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ASSISTED BY

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REMARKS
ON
THE USE OF BORAX AND FORMALDEHYDE AS PRESERVATIVES OF FOOD.

By W. D. HALLIBURTON, M.D., F.R.S.,
Professor of Physiology, King's College, London.

Some weeks ago, when I was giving evidence before the Food Preservatives Committee of the Local Government Board, I urged that the use of foreign substances as preservatives of food stuffs should be abandoned, and, if possible, replaced by a more wholesale use of the method of cold transport and storage. I took this view partly on general grounds, which were the following: (1) An antiseptic is inimical to the life of the organisms that cause putrefaction; it cannot, therefore, be harmless to the vital processes in the higher animals. (2) Numerous clinical observations have been recorded which show that dyspeptic and other troubles follow the use of foods which have been treated with commonly employed preservatives like borax. (3) Even if, as in the case of boric acid and borax, the poison is not cumulative, the continuous passage of foreign substances through the kidney cannot be beneficial to those organs.

It is perfectly true that most of us are probably taking small doses of antiseptics in our foodstuffs without any obviously bad results; those who suffer are peculiarly susceptible to such drugs, but, as such cases are by no means uncommon, it appeared to me of sufficient importance to recommend legislation in the direction I have indicated. If, on the other hand, trade influences are too strong, at least articles mixed with drugs should be labelled as such, and not sold as fresh foods. In this way those people who are peculiarly susceptible to any particular antiseptic could avoid it.

In any question of this kind one has to balance the good and the bad, that is to say, whether more harm will result from the products of putrefaction or from the antiseptic used to hinder or prevent putrefaction. But if the method of cold storage were made compulsory no such question could arise, for putrefaction would be prevented without foreign admixture. I was particularly questioned whether on physiological grounds there was any reason why the sterilising of milk by heat could give rise to any toxic material. This I answered unhesitatingly in the negative. The milk proteids are rendered somewhat more difficult of digestion by heat, as in the cooking of all albuminous foods. But most gastric juices are able to grapple with this difficulty. Of course, in cases of feeble digestion, raw or underdone meat and uncooked milk are preferable to foods which have been cooked too much, but there are no grounds for supposing that, in the case of milk, heating will split off from its proteid matter anything of the nature of a toxin.

The special ground on which I opposed the use of antiseptics arose from some experiments I had done with artificial digestive mixtures. These experiments were conducted to test the action of borax and formaldehyde on digestion. I selected these because they are the antiseptics most frequently employed as food preservatives. The experiments show that the antiseptics named act prejudicially on the digestive enzymes even in the doses which are employed as preservatives, and this furnishes an additional reason why their use should be prohibited. The following are the details of the experiments, the results of which I was briefly able to indicate before the Committee.

Boric Acid and Borax.

My attention was first called to the use of these substances in milk some years ago by Professor F. J. Allen (Birmingham). He noticed many cases of malnutrition in infants fed on such milk, particularly if borax was the adulterant. The condition passed off when pure milk was used. On examining the matter, Professor Allen found that borax prevents the normal action of rennet. The process of milk digestion in the stomach may be briefly explained as follows:—Milk is subjected to the action of two ferments in the gastric juice; one of these is called rennet the other pepsin. The preliminary breaking down of the molecules of caseinogen (the chief albuminous constituent of milk) by rennet is evidenced to the eye by the formation of a curd; this appears to be necessary before the subsequent peptonisation by pepsin can be properly carried out.

In repeating these experiments I have limited myself to observing the influence of borax and boric acid on the action of rennet. The following will serve as typical of numerous experiments I have made; all show analogous results:

Fresh cow's milk was divided into portions of 100 c.cm each.
To No. 1 nothing was added.
To No. 2 0.05 gram of boric acid was added.
To No. 3 0.1 gram of boric acid was added.
To No. 4 0.15 gram of boric acid was added.
These are quantities comparable to those used generally to keep milk sweet.

After the lapse of an hour, during which time the milk was well shaken with the acid, much was found to be undissolved, even in specimen No. 2. One cannot therefore say that any more boric acid had passed into solution in those specimens to which more of the solid had been added. Boric acid is a comparatively insoluble substance.

From all four specimens samples were taken and treated with a few drops of rennet extract. A well-marked curd occurred in all in less than a minute at 40° C.

The small amount of boric acid which will dissolve in milk in an hour will therefore not prevent, or even markedly hinder, rennet activity.

I kept the remainder of the specimens, 2, 3, and 4, for a few hours longer in order to test the matter again when all the boric acid had dissolved, but I found that still there was no hindering of rennet action.

In spite of the boric acid the milk went sour in a little over a day.

These experiments do not prove very much. They show, what was previously well known—namely, that boric acid by itself is a very inefficient antiseptic, and has but little if any inhibiting power over the unorganised ferment—rennet—selected for experiment. The cause of this feeble action both on organised ferments (micro-organisms) and unorganised ferments or enzymes is to be probably partly explained by its difficulty of solution.

I imagine it is for this reason that boric acid alone is seldom used as a preservative for milk: the preparation known as "glacialin" is what is usually employed. Glacialin is a mixture of boric acid and borax, and it can hardly be doubted that it is the borax which acts as the principal antiseptic. More interest and importance, therefore, must be attached to experiments with borax

As before, the milk was divided into portions of 100 c.cm. each. At the end of two days the unadulterated milk had gone sour; the specimens to which borax was added were still sweet.
To No. 1 nothing was added
To No. 2 0.05 gram of borax was added.
To No. 3 0.1 gram of borax was added.
To No. 4 0.15 gram of borax was added.
On testing samples of each with rennet at 40° C. half an hour after the borax had been added,
No. 1 coagulated in about 30 seconds.
No. 2 coagulated in about 2 minutes.
No. 3 and 4 did not coagulate at all.

These experiments show that 1 part of borax in 1,000 of milk completely inhibits rennet activity, and even smaller proportions will delay its action.

Formaldehyde.

This substance is most efficient as an antiseptic, but I cannot agree with Mr. A. H. Allen[1] that it is the least objectionable of the preservatives of food. Its very efficiency in

counteracting ferment activities render it particularly objectionable. The aqueous solutions of formaldehyde are very irritating to the skin. I noticed this even with solutions containing only 5 parts in 10,000 of water; the skin is roughened after dipping the fingers into it for a few moments, and any little abrasions that may be present in the skin are rendered intensely painful. Cervello states that by painting the ear of a rabbit three times a day with it ulceration and gangrene are obtained within a week. From this it will be gathered that though formalin has but little taste, it can nevertheless not be harmless to the mucous membrane of the alimentary canal, which is far more easily injured than the external skin. Bruni has shown that in animals vomiting is produced by very dilute solutions.

If the drug is introduced into an animal by intravenous injection, the red corpuscles of the blood are disintegrated, respiration is disturbed and may stop, convulsions and coma may also supervene. Its power as an antiseptic is, however, so marvellous that the experiment has been tried of treating consumptive patients with air charged with its vapour. Physicians have not entirely relinquished this method of treatment, for it has been stated that by mixing the vapour with other substances the air may be rendered respirable; but it has been fully shown that an admixture of air with the vapour of formaldehyde only is so irritating, and after a short time so impossible, that more harm than good has been the result.

The experiments I have performed myself were to test the influence of formaldehyde in digestion. I could wish that they were more complete, but they at least show that substances treated with even weak solutions are rendered very indigestible. They may be divided into four categories: the influence of formaldehyde (1) on gastric digestion of proteid; (2) on the pancreatic digestion of proteid; (3) on the pancreatic digestion of starch; (4) on the curdling action of rennet. I will quote illustrative experiments under each of the four heads.

1. *Influence of Formaldehyde on the Gastric Digestion of Proteid.*—Artificial gastric juice was prepared by adding Benger's liquor pepticus to 0.2 per cent. hydrochloric acid in the proportion 1 to 5. Fibrin was taken as the proteid or albuminous matter to be digested. The fibrin was divided into a number of portions and placed in various strengths of formaldehyde for two or three days. Even the weakest solutions employed kept the fibrin perfectly free from decomposition, but in all cases it was rendered very hard. Equal quantities of each were subjected to the action of the same volumes of the artificial gastric juice in a warm oven at 40° C. The end of digestion was considered to be reached when all lumps had passed into solution. The following table gives the results:

Experiment A.

1.	Fresh fibrin.	Digestion complete in 45 minutes.		
2.	Fibrin placed in	0.05 per cent. formaldehyde for 2 days		Digestion complete in 65 minutes.
3.	" "	0.10 " " "		
4.	" "	0.25 " " "		... In 3 hours.
5.	" "	0.50 " " "		... In 7 hours.
6.	" "	1.00 " " "		... In 24 hours.
7.	" "	2.00 " " "		Hardly any digestion at end of 24 hours.
8.	" "	4.00 " " "		

Experiment B.

1.	Fresh fibrin	... ...		Digested in 30 minutes.
2.	Fibrin placed in	0.05 per cent. formaldehyde for 3 days		... In 60 minutes.
3.	" "	0.01 " " "		... In 95 minutes.
4.	" "	0.25 " " "		... In 3 hours.
5.	" "	0.50 " " "		... In 5 hours.
6.	" "	0.10 " " "		... Had not digested at 6 hours, when the observation was stopped.

These experiments show that a percentage of 0.5 renders gastric digestion almost impossible; and that a percentage of over 0.05 considerably delays it.

2. *Influence of Formaldehyde on the Pancreatic Digestion of Proteid.*—These experiments were conducted in a corresponding way and led to a corresponding result. The fibrin, after a two-days' stay in various strengths of formaldehyde solution, was subjected to the action of artificial pancreatic juice at 40° C., and the time of digestion noted. The artificial pancreatic juice was made by mixing Benger's liquor pancreaticus with 1 per cent. solution of sodium carbonate in proportion of 1 to 4. The results are even more striking than in the case of gastric digestion. It will only be necessary to quote one illustrative experiment:

1.	Fresh fibrin	... ...		Digestion completed in 30 minutes.
2.	Fibrin previously placed in	0.05 per cent. formaldehyde		...In 95 minutes.
3.	" "	" 0.10 " "		No trace of digestion at end of 24 hours.
4.	" "	" 0.25 " "		
5.	" "	" 0.50 " "		
6.	" "	" 1.00 " "		
7.	" "	" 2.00 " "		
8.	" "	" 4.00 " "		

3. *Influence of Formaldehyde on the Pancreatic Digestion of Starch.*—A 1 per cent. solution of starch was prepared and divided into portions of 5 c.cm. each. To some of these were added 2 drops of formaldehyde of various strengths, and to all a few drops of Benger's liquor pancreaticus. All were placed in the warm bath at 40° C., and the time noted when the starch had disappeared—that is, owing to its conversion into dextrin and sugar, it ceased to give a blue colour with iodine. In the specimens to which no formaldehyde had been added the starch reaction was lost in one minute. In those to which formaldehyde had been added the time was prolonged to three to six minutes, according to the strength of the reagent added; even so weak an addition as 2 drops of a 0.1 solution of formaldehyde increased the digestion time to three minutes.

4. *The Action of Formaldehyde on the Rennet-curdling of Milk.*—The proportion in which formaldehyde is stated to be used in the milk trade is roughly 2 drops of formalin (40 per cent. formaldehyde) per fluid ounce.

In all cases such an addition to milk greatly delays rennet action. Various specimens of milk I have tested differ in the amount of delay. In some cases the amount added is sufficient to completely inhibit the action of the ferment; but in all cases the curd when it does form is very slow in making its appearance, and is never firm as it is in unaltered milk. Much smaller doses of formaldehyde have a similar though less marked effect; thus a few drops of a 0.2 per cent. solution of formaldehyde per ounce of milk raised the time of onset of curdling from 20 seconds to 1½ minute.

I have thought it desirable to publish my results as the question is now prominently before the public, and every additional piece of evidence has thus some value. Similar experiments have been published previously by others, for example, by Rideal and by Boyce, and although there are some differences of detail both of method and results between these experiments and my own, they all tend in the same general direction.

These experiments appear to me to prove conclusively the injurious effect produced by even minute quantities of certain preservatives on the activity of the enzymes concerned in ordinary digestion, and to furnish a cogent reason why the use of these substances should be prohibited for the preservation of food materials.

It will be noticed that all my experiments were performed *in vitro;* they require to be amplified by experiments *in vivo.* Artificial digestion experiments, however, as a rule form a very good guide to what occurs in natural digestion.

REFERENCE.
1 *Commercial Organic Analysis*, vol. iv.

THE RAINFALL IN THE WEST AND EAST.—At a recent meeting of the Royal Meteorological Society Mr. W. Marriott read a paper on Rainfall in the West and East of England in Relation to Altitude above Sea Level, in which he discussed the mean monthly and annual rainfall for the ten years 1881-90 at 309 stations, grouped according to altitude. The western stations were considered to be those which drained to the west, and the eastern stations those which drained to the east. A general increase in the annual amount of rain was observed as the altitude increased, and the rainfall was considerably greater in the west than in the east. The monthly rainfall in the west appeared to be subject to a much greater range than in the east; in the west the maximum at all altitudes occurred in November, but in the east generally in October. In the west the spring months April, May, and June were very dry, and in both west and east there was a very great increase in the rainfall from June to July.

NOTES
ON
SEVENTY-TWO CONSECUTIVE CASES OF REMOVAL OF GOITRE BY OPERATION (EXTIRPATION OR ENUCLEATION.)*

By JAMES BERRY, B.S., F.R.C.S.,
Surgeon to the Royal Free Hospital.

In the Hunterian Lectures, which I delivered at the Royal College of Surgeons in June, 1891, I gave an account of all the cases of goitre, 8 in number, upon which I had operated up to that time.

The present series of 72 cases is a direct continuation of that series, and embraces every case of removal of goitre, of whatever kind, performed by me between June, 1891, and the present time (July, 1899).

I have no desire to claim that there is anything particularly new or original about the methods I have adopted in these operations; nor do I wish to pretend that my results are any better than those obtained by many other surgeons. Indeed, I am painfully aware that they are inferior to those of some of the Continental surgeons, whose experience of these operations has been far larger than mine.

As my series of goitre operations is however, so far as I am aware, the largest that has yet been brought forward by any English surgeon, I have felt justified in bringing it before you, and thus placing it on record. The chief points of each case are shown in the accompanying tabular form.

Extirpation and Enucleation.

I presume that it is hardly necessary to explain the terms "extirpation" and "enucleation," but it is of the greatest importance that the difference between the two operations should be carefully borne in mind. By extirpation is meant the removal of a portion of the thyroid gland with its capsule; by enucleation is meant the removal of a localised tumour, a cyst, or an adenoma from within the gland. The difference between the two operations is similar to that which exists between the amputation of the breast and the removal of an encapsuled adenoma from that organ.

It will be seen from the table that in 33 cases extirpation was performed, and in 39 cases enucleation. In some of the cases both operations were performed upon the same patient on different sides of the neck.

It will also be noticed that among the earlier cases there is a larger proportion of extirpations; among the later ones a wider experience in diagnosis has led me to perform enucleation more and more. It must be remembered, however, that although enucleation is the simpler, safer, and therefore in most cases the better operation, it is not an operation that can be performed in all cases, but only in suitable ones, that is, in cases of localised tumour (cystic or solid) within the gland. Many goitres, including all the parenchymatous ones, cannot possibly be treated by enucleation without incurring grave and wholly unjustifiable risk.

A subsequent examination of the tumours removed has shown me that in the first 3 cases in my list and in a few others enucleation might have been performed. In no fewer than 25, however, of the 33 extirpation cases no enucleation would have been possible, and any attempt to perform it could only have been followed by failure or disaster. To attempt an enucleation in an unsuitable case, and to be obliged to abandon it and perform an extirpation instead, generally means considerable danger to the patient from hæmorrhage and increased difficulty in the performance of the extirpation.

It will be readily understood, then, that encapsuled tumours alone are suitable for enucleation; all other goitres requiring removal must be treated by extirpation or some modification of this.

The Question of Operation.

I come next to the question of the necessity for an operation for goitre.

A large number of goitres, especially the soft parenchymatous ones in young people, are curable by medical means, and require no operation. A still larger number, although not curable, yet do not cause sufficient trouble to demand an operation. No operation should be undertaken upon goitres belonging to either of these two classes.

In what cases, then, ought we to recommend a patient with goitre to submit to an operation for the removal of it? The answer to this depends upon the amount of trouble the goitre is giving, or is likely to give, and the ease and safety with which it can be removed.

In the great majority of my 72 cases—namely, in 54—it was difficulty in breathing which was the main or only reason for operating. In 9 other cases, in which the dyspnœa was comparatively slight, it was the displacement or narrowing of the trachea that led to the operation. In five cases only (29, 35, 39, 72, 73) was the operation undertaken mainly on the ground of deformity, and in some of these cases there was some dyspnœa as well. In three cases (38, 49, 56) the patients were middle-aged or elderly women, in whom the hardness of the tumour and a history of recent increase in size led to a suspicion of malignant disease in an early stage.

In one case (Case 10) it was done for prolonged suppuration following an incision into the goitre at another hospital some months before.

In many of the cases, besides dyspnœa, there was a good deal of difficulty in swallowing; these were mainly cases in which backward and inward growth of the tumour caused pressure upon the pharynx or œsophagus. In no case, however was an operation undertaken for this reason alone; indeed, dysphagia in my experience is rarely a prominent symptom of innocent goitre.

I may as well say at once that I do not consider that deformity alone should ever lead to the operation being pressed upon a patient; it should be undertaken for deformity only when it is certain that the simpler operation of enucleation is both feasible and easy. Extirpation for mere deformity I look upon as a scarcely justifiable proceeding.

Dyspnœa, on the other hand, almost always demands operation. The worse the dyspnœa the more urgently is the operation demanded. Extreme dyspnœa caused by innocent goitre should almost invariably be treated not by tracheotomy but by removal of the goitre.

Malignant tumours, however, which have already begun to cause serious dyspnœa are usually unfit for removal, and tracheotomy affords but too often the only means of giving relief.

Cases Especially Dangerous.

It should be borne in mind that there are two kinds of goitre that are especially dangerous to life owing to their great liability to cause sudden and dangerous dyspnœa. One is the rapidly-growing parenchymatous, and, of course, bilateral, goitre occurring in young people about the age of puberty. There are many such cases in my list. In these cases dyspnœa may increase so rapidly that in a few days, or even hours, a patient may pass from a condition of comparatively comfortable breathing to one of extreme, and even fatal, dyspnœa. This kind of goitre, if it does not yield to medical treatment is suitable for extirpation, but cannot be treated by enucleation.

The other very dangerous variety of goitre is that in which a unilateral tumour is situated so low down in the neck that it tends to become jammed in the upper opening of the thorax. Such tumours, by becoming displaced or by suddenly increasing in size from internal hæmorrhage, may cause most grave symptoms.

These are, on the whole, the most satisfactory cases with which I have had to deal; however deeply seated the goitre may be, it can almost always be drawn up and enucleated with scarcely any risk, and the benefit to the patient is enormous. Within a week the patient is perfectly well and completely freed from what has been to her a source of great danger and suffering.

These cases are by no means uncommon, and many on my list belong to this class (Nos. 16, 19, 45, 64, and several others); from the small size and little prominence of the goitre it is very liable to be overlooked. The cause of the dyspnœa is sometimes considered to be merely "asthma."

Unilateral goitres situated entirely above the upper border of the sternum and clavicle have, on the other hand, very

* Read in the Section of Surgery at the Annual Meeting of the British Medical Association, August, 1899.

little tendency to cause serious dyspnœa. Until they become large, and displace the trachea, they often cause little or no dyspnœa. Such goîtres are often very prominent and unsightly, but are rarely dangerous to life (see Figs. 5 and 6).

Case 59 is an excellent example of the sudden dyspnœa due to hæmorrhage into a goître. The patient was a woman, aged 25, who during a fit of laughter was suddenly attacked with great difficulty in breathing; her goître, which had been quite small, suddenly swelled up on one side. The swelling subsequently diminished a good deal in size, but, as the dyspnœa continued to be troublesome, I removed the goître, which was at that time not larger than a hen's egg. Several similar cases of sudden hæmorrhage into a goître have come under my notice.

Small tumours projecting from the back of the gland are not common, and are difficult to diagnose. They may cause considerable pressure upon the œsophagus or upon the side of the trachea; in the latter case the distortion is best ascertained by laryngoscopical examination. Cases 52 and 66 are good examples of this condition.

It is well to remember that if a prominent goître of small or moderate size is associated with severe dyspnœa, it is almost certain that the dyspnœa is due to the pressure upon the trachea of some other portion of the goître which is hidden from view. Such prominent goîtres often at first sight look as if they were easy to remove. But it may happen that it is not until the operator has got well down into the neck that he discovers that the real source of the dyspnœa lies in a downward prolongation of the goître behind the sternum. This downward prolongation may spring from the same lobe as the more prominent part of the goître, as in Case 30, or from the opposite lobe (Cases 20 and 41).

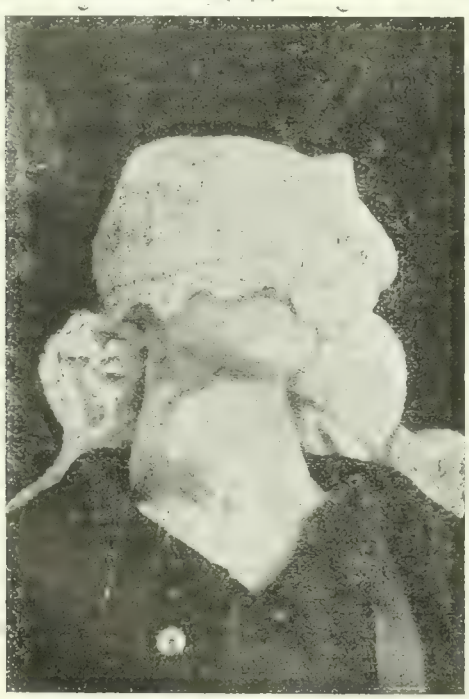


Fig. 1.—(Case 41) Miss H., aged 43. A bilateral parenchymatous goître which produced much dyspnœa. The left lobe, scarcely visible in the photograph, was deeply seated behind the sternum and caused much dyspnœa.

Case 41 was that of a lady who had, as may be seen from this photograph (Fig. 1), a bilateral, deeply-seated goître. The right lobe was much the more prominent. It was not until I had removed this lobe that I found that the lower part of the left lobe was deeply engaged in the upper opening of the thorax and had to be removed, since it was the chief cause of the dyspnœa.

Case 20 was that of a woman who had a small bilateral goître, the lower border of which could not be felt. As I was uncertain which lobe was the chief offender, I cut down in the middle line just above the sternum inserted a finger, discovered that it was the right lobe that was in the thorax, and then proceeded to remove it.

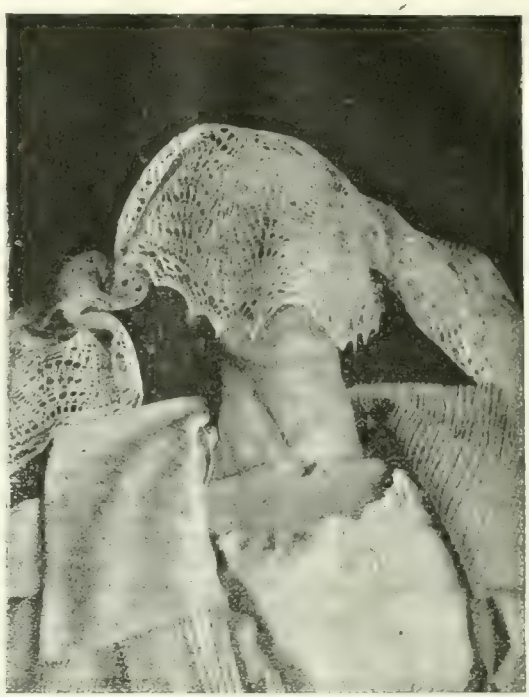


Fig. 2.—The preceding several months after extirpation of the whole of the right lobe and most of the left lobe. The infrahyoid muscles were not sutured, and the scar is consequently deeply depressed and ugly.

A careful examination of the position of the displaced trachea, if it can be felt, is often of much service in determining which lobe is the cause of the dypnœa.

CASE 65 is one of some interest; it was that of a lady aged 30, who first consulted me in 1893. She had then a bilateral goître of small size and a good deal of dyspnœa. I recommended an operation, but the patient would not have it done at the time, as she was going abroad. Within a month of my seeing her she was seized in the middle of the night with a bad attack of suffocation. A hurried tracheotomy was performed under circumstances of the greatest difficulty by the nearest surgeon, and for four months the patient appears to have been very ill with the resulting suppuration. It was not until five years later that this lady returned to me, still wearing the tracheotomy tube, which she requested me to remove permanently. Laryngoscopic examination showed that the upper part of the trachea was so narrow that the lateral walls were only a sixth of an inch apart. She could breathe only through the tracheotomy wound. In this case I was obliged, therefore, to do an enucleation of one lobe to enable the trachea to expand, which it slowly did. Four months later I closed the tracheal fistula, and the patient is now perfectly well; but all these years of suffering might have been avoided had the goître been removed when I first advised that it should be done.

DETAILS OF OPERATION—ANÆSTHETIC.

I will next consider some points connected with the operation itself; and the first point that admits of discussion is that of the anæsthetic. Now, if the goître is not causing dyspnœa, there is no reason in most cases why a general anæsthetic should not be given. In all my earlier cases a general anæsthetic was given, even when dyspnœa was present. But the occurrence of a death under chloroform in Case 21, and the knowledge of many other similar cases that have occurred at hospitals in London and elsewhere, have led me to take a somewhat serious view of the question of a general anæsthetic. I believe that when dyspnœa is severe there is grave danger in the administration of a general anæsthetic. This danger is especially great at the moment when the tumour is being lifted out of its bed. I am in the habit at this stage of the operation of paying particular attention to the condition of the breathing, and am prepared to relax the tumour at once if the patient's breathing shows signs of stopping or of becoming more embarrassed.

It will be seen from the table that in ten of my later operations a general anæsthetic has been wholly or almost wholly dispensed with, and the operation performed under morphine, or cocaine or eucaine.

There are great advantages in doing goître operations without a general anæsthetic when serious dyspnœa is present. The main advantage is that the patient can herself give immediate warning when too much traction is being exercised upon the goître; she exclaims at once, "You are choking me," and matters can be altered before any dangerous symptoms arise.

Another advantage of not giving a general anæsthetic is that the patient is saved from the retching and vomiting that are apt to follow general anæsthesia. The rapid healing of the wound is facilitated by the avoidance of anything that tends to favour venous hæmorrhage into the wound. All who have had much experience of goître operations, especially of enucleations, will admit that recurrent venous oozing into the wound is a complication that should be guarded against as far as possible.

It may be thought, perhaps, by some of you, if you have not seen such an operation, that the removal of a large goître without a general anæsthetic is a cruel and horrible performance. I can assure you that it is not. The only parts of a goître operation that are really painful are the beginning and the end, when the skin is being incised or sewn up, and this pain can be almost wholly done away with by local anæsthetics. The deeper parts are scarcely sensitive, and the only discomfort that the patients complain of is when the goître is being dragged upon unduly.

When the tumour has been removed, and all danger of suffocation is over, I have usually offered the patient a general anæsthetic, but it has always been declined. In many cases in which a general anæsthetic was employed, the degree of anæsthesia was very light, so that during a considerable part of the operation the patients were scarcely unconscious.

SKIN INCISION.

The next point is that of the skin incision: and I would merely state briefly that for large goîtres and for all goîtres in



Fig. 3.—Case 53. L. H., aged 54. The tumour lay partly behind the sternum and caused severe dyspnœa.

which it is desirable to have plenty of room the single oblique incision along the anterior border of the sterno-mastoid is by far the best. The complicated, angular, T-shaped, L-shaped, and other incisions are scarcely ever necessary. The median incision is chiefly useful when it is uncertain which lobe is to be removed. It is easily converted into the angular if more room be required (Cases 19, 20).

All longitudinal and oblique incisions have the disadvantage that, in young people especially, the resulting scar tends to become after a time contracted, thick, and ugly, a point which is worth considering if the operation is being undertaken for deformity. In middle-aged or elderly people, the scar usually remains fine and linear.

The transverse incision has the great advantage of leaving a better scar; it is low down in the neck, and therefore easily covered by the dress; it lies in the same direction as the natural creases in the skin, and is therefore scarcely noticeable (see Fig. 4). It has no tendency, even in young people, to become contracted and ugly.



Fig. 4.—The preceding, three weeks after enucleation of solid adenoma weighing 6 ounces. Showing transverse scar low down in the neck.

On the other hand, it does not give the operator nearly so much room. Except with very small goître it necessitates free divisions of the infrahyoid muscles and even of the sterno-mastoid. I have myself employed it only for enucleations, and its use is in my hands limited to easy cases of enucleation where appearance is of importance to the patient; that is chiefly in the case of young ladies who wish to wear low dresses.

So far, what I have been saying about the operation applies equally to extirpation and enucleation. I must now say a few words about these operations separately.

EXTIRPATION.

The operation of extirpation I have always done as quietly and deliberately as possible; all large vessels being tied before they are cut. Especial care must be taken not to wound the recurrent laryngeal nerve. Formerly I used to look for it and hold it out of the way; now I seldom even see it, and it is much better not to disturb it by dissecting it out. I have never cut it, but in one difficult case of bilateral extirpation (41) in which the wound healed by granulation the cord became paralysed soon after the operation, owing to involvement of the nerve in the inflammation.

A modification of extirpation that I have of late frequently adopted consists in cutting through the goître near the trachea after it has been isolated from the other parts. The capsule

Mr. James Berry's Seventy-two Consecutive Cases of Removal of Goitre by Operation (Extirpation and Enucleation).

No.	Date of Operation.	Name.	Age.	Chief Reason for Operation.	Operation.	Nature of Goitre.	Result.	Remarks.	Highest Temperature after Operation.†	Number of Days after Operation on which Temperature Reached or Exceeded 100°.	Incision.	Anæsthetic.	Latest Report (and Source of).
9*	1891 Dec. 8	Eliza R.	45	Dyspnœa	Extirpation, left	Cystic adenoma, mainly solid, size of tangerine orange, partly substernal	R.	No drainage; slight suppuration with sinus for 9 months.	102.2°	10	Median	A.C.E.	July, 1899.—Quite well (personal observation).
10	,, ,,	Kate C.	35	Continuous suppuration and severe sepsis following incision at another hospital 11 months previously	Extirpation, right	Cystic adenoma, size of goose's egg, mainly solid	R.	Drainage: primary union	99.0°	—	Oblique	,,	July, 1899.—Quite well (letter).
11	1892 Oct. 26	Amelia C.	25	Dyspnœa	Extirpation, right	Cystic adenoma, one-third solid; weight 4½ oz.	R.	,, ,, ,,	102.2°	3	,,	,,	July, 1899.—Quite well (personal observation).
12	1893 Jan. 5	Sarah B.	33	,,	Enucleation, right	Cystic adenoma, size of tangerine orange, half cystic, half solid	R.	,, ,, ,,	98.6°	—	,,	Chloroform	July, 1899.—Quite well (personal observation).
13	,, ,,	Annie W.	23	,,	Extirpation, left	Solid adenoma; weight 3 oz.	R.	,, ,, ,,	99.0°	—	Median	,,	April, 1894.—Quite well (personal observation). Not heard of since, having changed her address.
14	,, 7	Annie R.	15	Severe dyspnœa	Extirpation, both lobes (leaving small piece on each side)	Parenchymatous; weight 10 oz.	R.	Drainage: mild suppuration: wound had to be opened up at lower part on fifth day; slight pneumonia; temperature normal after 16th day; sinus for about 6 weeks	101.0°	9	Oblique, crossing middle line	,,	July, 1899.—Believed to be quite well (Dr. Marsh, of Yeovil).
15	Feb. 4	Albert N.	19	Dyspnœa, dysphagia	Extirpation, lower part of left lobe	Cyst size of small orange, substernal, very deeply seated	R.	Drainage; primary union; lower part of scar subsequently broke down and a sinus formed; this healed in a week	100.0°	1	Median	,,	Quite well on leaving hospital. Not heard of since; believed to be quite well at present time (relations).
16	March 8	Archibald T.	53	Severe dyspnœa	Enucleation, left	Cystic adenoma, four-fifths solid, size of orange, almost wholly substernal	R.	Drainage: primary union	101.0°	3	Oblique	,,	July, 1899.—Quite well (personal observation).
17	,, 25	Caroline B.	45	Dyspnœa	Extirpation, left; enucleation, right	Left, cystic adenomatous tumour 4½ ins. long; right, cyst size of walnut	R.	No drainage; primary union	98.8°	—	Median	,,	July, 1899.—Quite well (personal observation).
18	April 24	Emily J.	30	Stridor; displacement of trachea	Extirpation, left	Thick-walled cyst 4⅓ × 3½ × 2½ inches	D.	Drainage; operation difficult owing to adhesion of internal jugular vein to tumour. Death from recurrent venous hæmorrhage 8 hours after operation. Patient had mitral disease	97.8°	—	Oblique	,,	—
19	April 24	Lucy P.	33	Severe dyspnœa	Enucleation, left	Substernal adenoma, partly cystic, size of hen's egg	R.	No drainage; primary union, except at one corner of wound	101.4°	2	Angular	,,	July, 1899.—Quite well (Dr. Ingle, of Cambridge).
20	May 13	Ellen C.	44	Dyspnœa	Extirpation, right	Substernal, chiefly solid; measured 6 inches vertically, 5 inches in circumference; inferior horn 3½ inches, extended deeply into thorax; weight 6 oz.	R.	Drainage; primary union, except in track of tube; sinus healed in three weeks	100.8°	3	,,	,,	July, 1899.—Quite well (personal observation).
21	June 17	Jane V.	43	Dyspnœa (paroxysmal)	Extirpation, left	Parenchymatous, size of goose's egg	D.	Sudden death from anæsthetic 12 minutes from beginning of operation	—	—	Oblique	,,	—
22	June 21	Albert P.	25	Dyspnœa	Extirpation, right	Parenchymatous, 8¼ oz.	R.	Drainage; primary union except in track of tube; sinus healed within a week	100.0	1	,,	,,	Quite well on leaving hospital. Known to be well several months later; not heard of since (address changed).

* Cases 1 to 8 already published in the BRITISH MEDICAL JOURNAL, June, 1891. † Temperature taken every four hours.

23	Sept. 21	Mary Ann P.	24	,,	,,	,,	9 oz.	R.	Drainage; primary union	101.6°	2	,,	,,	Quite well when she left the hospital 13 days after operation (personal observation).—1898.—Believed to be quite well (Dr. Marsh, Yeovil).
24	Nov. 4	James C.	30	,,	,,	,,	1 7 oz.	R.	Drainage; slight suppuration; small sinus for a few days only; a semicretinous patient	102.0°	6	,,	,,	Quite well until 1895, when he died of typhoid fever (Dr. Ryan, Northleach).
25	1894 Jan. 28	Miss R.	22	Deformity; slight dyspnœa	Enucleation, left	Fœtal adenoma size of orange		R.	Severe hæmorrhage; wound plugged; primary union of upper half; sinus at lower part closed 6 months after operation	101.4°	16 (twice over 101°)	,,	,,	July, 1899.—Quite well (personal observation).
26	Feb. 24	Lucy O.	19	Dyspnœa	Enucleation, right	Cystic adenoma (mainly fluid) size of orange		R.	Drainage; primary union	100.0°	1	Median	,,	July, 1899.—Quite well (personal observation).
27	Mar. 17	Barkland C. (male)	15	Dyspnœa, dysphagia	Extirpation, whole of right, one third of left	Parenchymatous, 8 oz.		R.	,, ,, ,,	100.2°	2	Oblique	,,	July, 1899.—Quite well (letter).
28	Mar. 27	James H.	28	Dyspnœa	Extirpation, right lobe and isthmus	,,	6 oz.	R.	,, ,, ,,	100.2°	2	,,	,,	Jan., 1895.—Quite well (personal observation).
29	July 1	Mr. R. B.	38	Deformity	Enucleation	Prominent cyst size of golf ball in front of larynx		R.	,, ,, ,,	?	?	Median	,,	July, 1898.—Quite well (personal observation). July, 1899.—Quite well (Dr. Eminson Scotter, Lincolnshire).
30	July 22	Mary H.	42	Severe dyspnœa	Extirpation, right	Parenchymatous with cystic adenomata; 4½ × 3 ins.; 8 oz.; partly substernal		R.	,, ,, ,,	99.8°	—	,,	,,	July, 1899.—Quite well (personal observation).
31	Oct. 1	Constance R.	18	Dyspnœa	Extirpation, right and part of left	Parenchymatous; 4½ × 2½ ins.; weight of right 4 oz.		R.	,, ,, ,,	100.4°	2	,,	,,	July, 1899.—Quite well (Dr. Powell, Melton Mowbray).
32	Nov. 3	Kate M.	20	Dyspnœa, dysphagia	,,	Parenchymatous; 3½ × 1½ ins.; 13½ oz.; partly substernal		R.	Drainage; primary union except in track of tube	100.0°	1	,,	,,	July, 1899.—Quite well (Dr. Gilbertson, Hitchin).
33	Dec. 6 1895	Ellen S.	15	Dyspnœa	,,	Parenchymatous; extending into thorax		R.	Drainage; primary union	104.0°	2	,,	,,	July, 1899.—Quite well (personal observation).
34	Mar. 7	Ellen N.	43	Severe dyspnœa	Extirpation, right and isthmus	Parenchymatous; 4 × 3 ins.; 7 oz.		R.	,, ,, ,,	100.2°	1	,,	,,	July, 1899.—Quite well (personal observation).
35	Mar. 31	Miss S.	25	Deformity	Enucleation	Cystic adenoma (one-third solid) 2½ ins. in diameter		R.	No drainage; primary union	100.0°	1	Median	,,	July, 1899.—Quite well (letter).
36	May 12	Margaret L.	15	Dyspnœa	Extirpation, left	Parenchymatous; very large goitre		R.	Drainage: primary union except in track of tube; sinus healed in fortnight; considerable collapse; temporary paresis of sympathetic	101.4°	1	Oblique	,,	Nov., 1895.—Rather anæmic, otherwise quite well; no local trouble (personal observation). July, 1899.—In service and believed to be quite well (Dr. Maund, Newmarket).
37	Sept. 28	Mrs. B.	41	Dyspnœa	Extirpation, left and part of right	Parenchymatous, 4½ oz.		R.	Drainage; primary union	100.4°	3	,,	,,	June, 1899.—Quite well (personal observation).
38	Dec. 17	Hannah D.	50	Malignancy	Extirpation, left and isthmus, and small part of right	2 × 1½ × ¾ ins; pale non-encapsuled tumour, surrounded by thick layer of healthy thyroid gland; microscopically round-celled sarcoma (?)		R.	No drainage: primary union	98.8°		,,	,,	July, 1899.—Quite well; no recurrence (personal observation).
39	Feb. [illegible]	Mrs. W.	38	Deformity: slight dyspnœa	Enucleation, left	Cystic adenoma size of walnut		R.	Drainage; primary union	?	?	Median	Ether	July, 1899.—Quite well (Dr. Fergusson, Painswick, Gloucester).
40	Feb. 29	Clara S.	16	Dyspnœa, dysphagia	Enucleation, right	Cystic adenoma 1½ in. in diameter, partly substernal		R.	,, ,, ,,	99.2°	—	Transverse	Chloroform	July, 1899.—Quite well (Dr. Fergusson, Painswick, Gloucester).
41	March [illegible]	Miss H.	43	Dyspnœa	Extirpation, right and most of left	Parenchymatous; 11 oz.; partly sternal		R.	Drainage; mild suppuration; sinus for 8 months; operation prolonged and very severe; infrahyoid muscles not sutured; slight symptoms of cachexia strumipriva for some weeks	102.2°	16	Oblique	,,	June, 1899.—General condition excellent; not the slightest dyspnœa or trouble of any kind except some weakness of voice at times; left vocal cord paralysed (personal observation).
42	May 28	Sarah P.	25	Deformity, displacement of trachea	Enucleation, right	Cystic adenoma, one third solid; size of hen's egg		R.	Drainage; primary union	99.4°		Transverse	,,	Quite well on leaving hospital; not heard of since (address changed).
43	Oct. [illegible]	Kate C.	26	Dyspnœa	,,	Cystic adenoma, two thirds solid; 2½ oz.		R.	,, ,, ,,	100.2°	1	Oblique	,,	July, 1899.—Quite well (letter).
44	March [illegible]	Lilla W.	14	Slight dyspnœa	,,	Cystic adenoma size of orange		R.	,, ,, ,,	99.4°		Transverse	Chloroform	July, 1899.—Quite well (Dr. Skelding, Bedford).
45	May 17	Mrs. [illegible]	47	Severe dyspnœa	,,	Solid adenoma, 3 × 2½ inches, largely substernal		R.	,, ,, ,,	100.4°	2	Oblique	,,	May, 1898.—Quite well (letter).

No.	Date of Operation.	Name.	Age.	Chief Reason for Operation.	Operation.	Nature of Goitre.	Result.	Remarks.	Highest Temperature after Operation.	Number of Days after Operation on which Temperature Reached or Exceeded 100°.	Incision.	Anæsthetic.	Latest Report (and Source of).
46	May 22	Francis L.	18	Slight dyspnœa; tracheal stenosis	Extirpation, right	Parenchymatous, 10½ oz.	D.	Drainage; operation long (nearly 2 hours), but presented no unusual difficulty; profuse recurrent hæmorrhage 4 hours after operation; wound opened up by house-surgeon; death 18 hours later	101.8°	—	Oblique	Chloroform	—
47	July 17	Albert R.	22	Dyspnœa	,,	Parenchymatous, 7½ oz.	R.	Drainage; primary union	101.0°	3	,,	,,	July, 1899.—Quite well (Dr. Haig Brodie, Battle).
48	July 22	Sarah Ann H.	40		,,	Parenchymatous with adenomatous nodules; partly substernal, 11 oz.	R.	,, ,, ,,	101.4°	5	,,	Morphine and cocaine only	July, 1899.—Quite well (Dr. Perram, Whitchurch, Salop).
49	Sept. 16	Eliza B.	46	Dyspnœa, dysphagia; recent increase in size; suspected malignancy	Extirpation, right, enucleation, part of left	Solid adenomata, ⅜ oz.; right size of orange, left of walnut	R.	,, ,, ,,	101.8°	2	,,	Chloroform	July, 1899.—Quite well (personal observation).
50	Sept. 30	Lucy S.	38	Dyspnœa	Extirpation, right	Solid adenoma, 7½ oz.	R.	,, ,, ,,	100.6°	2	,,	,,	July, 1899.—Quite well (personal observation).
51	Oct. 16th	Edith W.	18	Dyspnœa, dysphagia	Enucleation, left	Two tumours.—1. Hæmorrhagic cystic adenoma, size of walnut. 2. Solid adenoma, size of hazel nut	R.	,, ,, ,,	100.2°	1	Transverse	,,	July, 1899.—Quite well (personal observation).
52	1898 Jan. 23	Mrs. F.	39	Dyspnœa	Enucleation, right	Solid adenoma size of large walnut, deeply-seated and projecting from back of gland	R.	,, ,, ,,	99.8°	—	Oblique	,,	April, 1899.—Quite well (personal observation).
53	Jan. 29	Louisa H.	54	Severe dyspnœa	,,	Solid adenoma, size of large lemon, partly substernal; 6 oz.	R.	,, ,, ,,	100.4°	—	Transverse	,,	July, 1899.—Quite well (personal observation).
54	March 2	Miss P.	25	Dyspnœa	Enucleation, left	Cystic adenoma, one-third solid, size of duck's egg	R.	,, ,, ,,	100.8°	1	,,	,,	June, 1899.—Quite well (personal observation).
55	May 7	Rénée C.	27	,,	Enucleation, right	Solid adenoma, size of an orange; the tumour was broken up and removed through an incision 2½ ins. long	R.	,, ,, ,,	101.0°	1	,,	,,	Quite well on leaving hospital; not heard of since (address changed).
56	May 13	Charlotte G.	40	Rapid growth; hardness; suspected malignancy	Extirpation, right	A hard, white, shiny solid tumour, size of a hen's egg, microscopically not malignant	R.	,, ,, ,,	99.8°		Oblique	,,	July, 1899.—Quite well (personal observation).
57	May 13	Alice B.	30	Dyspnœa, dysphagia	Enucleation, left (atypical)	Solid tumour, not well encapsuled; about 1½ in. in diameter	R.	,, ,, ,,	102° (temp. 100° before operation)	2	,,	,,	Nov. 2nd, 1898.—Quite well (personal observation). July, 1899.—Well as regards neck, but ill with renal disease (letter).
58	,, 21	Emily M.	33	Dyspnœa	Enucleation, right	Solid adenoma, size of orange, broken up and removed through incision 2½ ins. long	R.	,, ,, ,,	100.6°	1	Transverse	,,	July, 1899.—Quite well (Dr. Pruen, Cheltenham).
59	,, 21	Harriet S.	25	,,	Enucleation, right and left	R. hæmorrhagic cyst, size of hen's egg. L. Cystic adenoma, size of orange	R.	,, ,,	100.8°	1	Oblique	,,	July, 1899.—Quite well (Dr. Kendall, Chiddingfold, Surrey).
60	July 9	Charlotte J.	54	,,	Enucleation, right	Cystic adenoma with hæmorrhage; three-fourths solid; 3 × 2 ins.; patient also had cancer of breast	R.	,, ,,	99.6°	—	,,	,,	July, 1899.—Quite well (Dr. R. M. West, Leicester).
61	Oct. 6	Eliza J.	50	Dyspnœa, great deformity	Enucleation	Cyst 5 ins. in diameter	R.	,, ,, ,,	100.4°	1	,,	Morphine and cocaine only	July, 1899.—Quite well (Dr. Richardson, Alverstoke).
62	,, 6	Harriet M.	48	Tracheal displacement; increasing size; slight dyspnœa	Enucleation, left	Cystic adenoma, chiefly fluid; maximum diameter 5 ins.; 13 oz.	R.	,, ,, ,,	100.4°	1		,,	July, 1899.—Quite well (personal observation).

[illegible]	Nov. [illegible]	Rhoda S.	[illegible]	Dyspnœa	Enucleation, left	Cystic adenoma, mainly fluid; 4 × 2½ ins., patient has valvular disease of heart	R.	,,	,,	,,	100.0°	1	,,	,,	June, 1899.—Quite well (personal observation).
[illegible]	,, [illegible]	Edith C.	27	Dyspnœa; dysphagia	Enucleation, right	Hæmorrhagic cystic adenoma, partly substernal; three-quarters solid; 2 ins. in diameter.	R.	,,	,,	,,	99.6°	—	,,	,,	July, 1899.—Quite well (personal observation).
[illegible]	,, [illegible]	Mrs. W.	[illegible]	Extreme bilateral tracheal stenosis; old tracheotomy fistula	Enucleation, right (March 14, 1899, plastic operation on tracheal fistula)	Solid adenoma, size of large walnut	R.	,,	,,	,,	100.2°	1	,,	Chloroform	May, 1899.—Quite well; fistula closed (personal observation).
[illegible]	1896 Jan. [illegible]	Annie L.	24	Tracheal narrowing	Enucleation, right	Cystic adenoma two-thirds solid, size of walnut, deeply seated	R.	No drainage; primary union			99.2°	—	Transverse	,,	July, 1899.—Quite well (personal observation).
[illegible]	,, [illegible]	Ada H.	32	Steady increase in size; dyspnœa	Enucleation, left	Cystic adenoma two-thirds solid, size of hen's egg	R.	Drainage; primary union			99.4°	—	Oblique	,,	July, 1899.—Quite well (personal observation).
[illegible]	,, [illegible]	Miss S.	[illegible]	Deformity, displacement of trachea	Enucleation	Solid adenoma, size of hen's egg	R.	,,	,,	,,	100.0°	1	,,	,,	May, 1899.—Quite well (letter).
[illegible]	Jan. [illegible]	Caroline T.	[illegible]	Dyspnœa	Enucleation, right	Solid adenoma, 2½ × 1½ inches	R.	,,	,,	,,	100.4°	2	,,	,,	July, 1899.—Quite well (personal observation).
[illegible]	,, [illegible]	Phœbe H.	[illegible]	,,	Extirpation, right	Parenchymatous, 3 × 2 inches; 5 oz.	R.	,,	,,	,,	99.4°	—	,,	,,	July, 1899.—Quite well (Dr. Perram, Whitchurch, Salop).
[illegible]	,, [illegible]	Ernest W.	[illegible]	Slight dyspnœa; deformity	,,	Parenchymatous; 3½ × 2 inches; 3 oz.	R.	,,	,,	,,	102.8°	2	,,	,,	July, 1899.—Quite well (Dr. Wallis, Leiston, Suffolk).
[illegible]	Feb. [illegible]	Miss N.	[illegible]	Deformity	Enucleation, left (*Enclosed*)	Solid adenoma, size of walnut	R.	No drainage; primary union			99.6°	—	Transverse	,,	July, 1899.—Quite well (Dr. Crosskey, Lewes).
[illegible]	Mar. [illegible]	Mrs. M.	[illegible]	Deformity; slight dyspnœa	Enucleation, right	Cystic adenoma, 3½ inches in diameter (removal through incision 2 inches long)	R.	Drainage; primary union			100.4°	2	,,	,,	July, 1899.—Quite well (Dr. Baker, Rushden, Northamptonshire).
[illegible]	April [illegible]	Alice E.	[illegible]	Dyspnœa	Enucleation, left	Solid adenoma, size of duck's egg; 1½ oz.	R.	No drainage; primary union			99.8°	—	Oblique	,,	July, 1899.—Quite well (Dr. Tanner, Farnham).
[illegible]	,, [illegible]	[illegible] W.	[illegible]	Deformity; dyspnœa	Extirpation, right	Parenchymatous; 10½ oz.	R.	Drainage; primary union			100.8°	2	,,	Morphine; chloroform for skin incision only	July, 1899.—Quite well (Dr. Wallis, Leiston, Suffolk).
[illegible]	May [illegible]	Mrs. D.	[illegible]	Dyspnœa	Enucleation, left	Parenchymatous; about 5 oz.	R.	,,	,,	,,	101.0°	2	,,	Morphine and eucaine	July, 1899.—Quite well (Dr. Hulke, Deal).
[illegible]	[illegible]	[illegible]eat[illegible]	[illegible]	,,	Enucleation, right	Cystic adenoma, one-third solid, size of duck's egg; partly substernal	R.	No drainage; primary union			99.6°	[illegible]	Transverse	Eucaine only	July, 1899.—Quite well (personal observation).
[illegible]	[illegible]	Lu[illegible]	[illegible]	,,	,,	Two solid adenomata, size of hen's egg and cherry respectively	R.	No drainage; slight superficial suppuration; healed in 18 days			100.6°	2	,,	Morphine and eucaine	July 25th, 1899.—Quite well (personal observation).
[illegible]	,, [illegible]	[illegible]	[illegible]	Slight dyspnœa	Enucleation, left	Solid adenoma, size of duck's egg, broken up and removed through incision 2½ inches long	R.	Drainage; primary union except in track of tube			100.6°	2	,,	,,	July 25th, 1899.—Quite well except for small sinus (personal observation).
[illegible]	,, [illegible]	[illegible]W.	[illegible]	Slight dyspnœa going abroad	Enucleation, left (*Enclosed*)	Cystic adenoma, size of bantam's egg, two-thirds solid	R.	No drainage; primary union			99.4	[illegible]	,,	Chloroform	July 25th, 1899.—Quite well (personal observation).

and a small part of the goitre near the trachea are thus left to protect the nerve. Ligature of the main trunk of the inferior thyroid artery at a distance from the goitre is a proceeding that of late I have almost abandoned in favour of cutting the branches of this artery close to the capsule of the goitre.

Enucleation.

With regard to the details of enucleation I have but little to say. The chief difficulty in the operation is to recognise the thin layer of (often much altered) gland tissue that covers the tumour itself. It is essential for the proper performance of the operation that the incision be carried through this layer but no further. I have on several occasions seen an inexperienced operator begin to enucleate before he had divided this layer; on such occasions he has found the operation much more difficult than he expected, and the danger to the patient has been greatly increased.

Unlike some operators, I attach no importance whatever to removing the tumour in an unbroken condition; on the contrary, at an early stage of the enucleation I generally plunge a blunt instrument of some kind into the middle of the tumour and seek to diminish its size by letting out some of the fluid within it. By this means I have more than once been able to remove tumours 3 or 4 inches or more in diameter through skin incisions not more than 2 or 2½ inches in length. But before attempting this the operator should be quite certain of the nature of the case with which he is about to deal, or he may get into trouble with hæmorrhage.

I use my finger much less for the actual enucleation than I formerly did. I find that a finger is rather apt to leave the surface of the tumour, and to travel through the glandular capsule, especially if the goitre be a soft one. There is, however, little danger of this if the tumour is firm and well-defined. I usually prefer to draw the whole tumour forwards

with the left hand, the forefinger of which is inside the tumour. With a pair of dissecting forceps or a goitre scoop the healthy gland tissue can then be rapidly and easily peeled off the tumour. In most cases this part of the enucleation has to be done rapidly on account of the hæmorrhage.

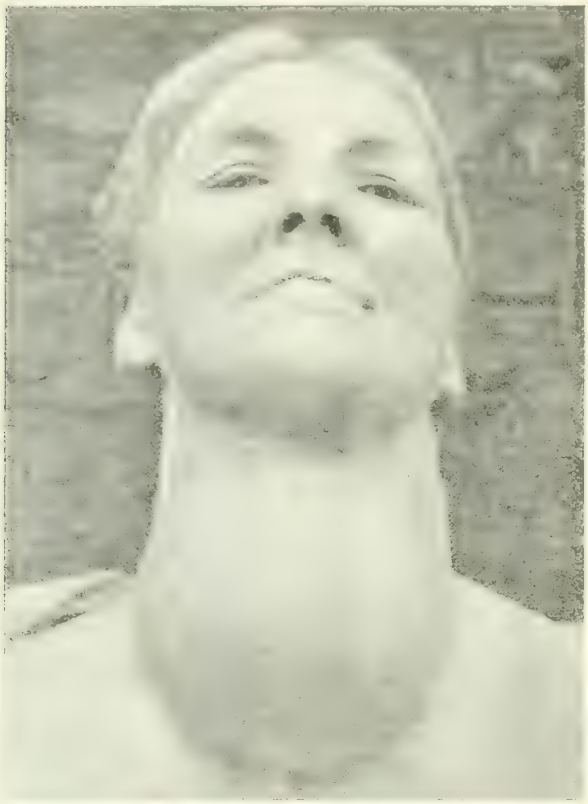


Fig. 5. Case 61.—E. J., aged 50. Large cyst of right lobe. It had been growing slowly for more than 20 years, and caused much discomfort.

In cases of large and old cysts or adenomata, such as that of Case 61 (Figs. 5 and 6), I have sometimes proceeded differently, by a slow and deliberate operation. In this case, where the cyst was 5 inches in diameter, and had been in existence more than 20 years, I exposed the gland as usual; then, instead of excising it in front, I cut horizontally all round it, clamping all the vessels met with, and some were as large as a little finger. The network of large vessels in the gland was then slowly peeled from off the surface of the nearly avascular tough old cyst. This is the operation known as resection-enucleation. By adopting this manœuvre I diminished by one-half the area of enucleation, and avoided the very serious hæmorrhage that would certainly have occurred had these huge vessels been torn through with a finger. I have seen an operator who adopted the more common method lose a somewhat similar case from venous hæmorrhage. The wound was packed, but the hæmorrhage continued, could not be controlled, and the patient died a few hours later. In this case the vessels were not nearly as large as they were in mine.

It must be borne in mind that in the enucleation of large tumours in old people and in the enucleation of solid tumours of any size, especially in young people, a large and even dangerous quantity of blood may be lost in a very few minutes, and it behoves the operator to be both prudent and dexterous.

Results.

Turning now to the results of the operations, it will be seen that among the whole 72 there were 3 deaths. One was from chloroform (Case 21) as already mentioned: in the other 2 cases (18 and 46) the goitres were large and the operations formidable ones: one of these patients had also valvular disease of the heart.

The total mortality amounts then to as nearly as possible per cent., but those who think such a mortality excessive must remember that many of these operations were extensive ones, performed often upon patients suffering urgently from dyspnœa. Among the 39 enucleation cases there was not a single death nor a serious complication of any kind either immediate or remote.



Fig. 6.—The preceding one week after resection-enucleation. Operation under cocaine and morphine only.

In 56 cases the wounds healed by primary union, in 9 other cases the wound healed almost by primary union, but a small sinus, generally in the track of the drainage tube, remained open for a few days. In 4 cases only was there any prolonged suppuration, and in these cases, fortunately, the suppuration was of a very mild type. All these occurred in the first half of the series.

It will be noticed that the results as regards the healing of the wound have been much better in the later operations than in the earlier. This is no doubt due partly to increased skill in operating, but largely also to the adoption of the dry aseptic method of operating.

In the last year and a-half I have with rare exceptions used only this method. It will be seen that in the last 34 operations primary union occurred in every case with two trifling exceptions (78 and 79). A temperature as high as 100°, and lasting for more than two days after the operation, was recorded in only 2 of these cases. In many of the cases it never reached 100° at any time. I think this a tolerable severe test when it is remembered that the temperature was always taken every four hours.

In most cases drainage has been adopted, but only for twenty-four hours. With scarcely an exception all patients have been allowed to get up on the fourth day after the operation, or even sooner, and by the end of a week they are perfectly well. Indeed, it is usually only in the first twenty-four hours after the operation that they suffer any real discomfort, and often there is no discomfort at all.

There was one case, already mentioned, in which a vocal

cord was found to be paralysed some weeks after the operation, and in two other cases which I examined many years after the operation I found that there was some impairment in the movement of the cords, although neither patient had noticed any alteration in her voice, and neither was aware that there was anything at all the matter with the larynx. A very slight attack of pneumonia in one case (Case 14), and I have now mentioned every complication that has occurred in the whole 72 cases.

The ultimate results have been uniformly good. There is not a single case, so far as I am aware (and I have traced all except three) in which the operation has been followed by any remote complications; none of the patients at present have dyspnœa or any other trouble. I know of no class of patients so grateful to the surgeon as those from whom a suffocating goître has been removed.

NOTE.—Since this paper was read I have operated on 20 more cases, bringing the total number of operations up to 100. Of these last 20, 18 healed by primary union, and the patients were well within a week; in the other 2 a sinus formed (May, 1900).

A CLINICAL LECTURE
ON
SOME UNUSUAL SEQUELÆ OF EPITYPHLITIS

Delivered at University College Hospital.

BY ARTHUR E. BARKER, F.R.C.S.,
Professor of the Principles and Practice of Surgery at University College.

GENTLEMEN,—Among the numerous routine cases of epityphlitis with which the modern surgeon has to deal wholesale, there crop up from time to time cases which illustrate more especially the many peculiarities of the disease and its more remote dangers. Of these I venture to think we require occasionally to be specially reminded.

The following cases serve to impress upon us that if we are disposed here and there to pause before operating in any given instance, such delay must not be too long. At the same time I confess I am one of those who believe that there is such a thing as unnecessary haste in operating in many cases of epityphlitis. But still, in numerous other instances delay is a terrible mistake. The study of any long series of consecutive cases teach us both these conclusions.

The first of the following cases illustrates the development of subphrenic abscess as the result of epityphlitis, a complication probably more frequent than is commonly supposed. Sonnenburg met with this complication 9 times in 600 cases operated on by himself.

The second case also emphasises the danger of lung complications from either extension of the inflammation around the cæcum upwards to the under surface of the diaphragm, or of infarcts lodging in the lung and producing an abscess there.

The third case shows the disastrous local results of leaving a perityphlitic abscess too long unopened, and the way in which the resulting "artificial" anus may be brought to heal.

The fourth case illustrates a form of ulceration due to concretion in the appendix with which I was before unfamiliar, and that it may open up adjacent small intestine without the formation of an abscess.

The fifth case shows almost the same course of events where an appendix inflamed, but without any concretion, and nearly ulcerated into the colon.

CASE I.—Some years ago a gentleman, aged about 30, called upon me from the country and gave the following history: He stated that some weeks before he had passed through an attack described by his medical attendant as acute typhlitis. In the course of this a large swelling had formed in the right iliac fossa, but though there was plain evidence of the formation of an abscess, the latter was not opened. In due time the swelling became smaller, but at the same time he began to suffer from night sweating and emaciation, with great enlargement, as was supposed, of the liver. When this condition had gone on for some time he came to consult me. He then looked very ill and thin. There was but little swelling now in the iliac fossa, but on examining the flank, fulness was found in the right renal region. The liver border was below the umbilicus, and the dulness behind extended upwards above the usual level on the right side. Just below the angle of the right scapula was a fluctuating swelling the size of half an orange. There were no signs of a general pleurisy or empyema.

On admitting him to a nursing home he was kindly seen for me by Dr. Sidney Ringer, who agreed with me as to the presence of a large sulphrenic abscess on the right side which was beginning to point through the lower pocket of the pleura, and which was pushing down the liver. On incising the abscess over about the eighth intercostal space behind and putting in my finger between the ribs, I found a track leading down to the diaphragm and apparently through it. From this a large quantity of pus was evacuated and a drain tube was inserted. The relief was immediate and great. The liver border began at once to rise, and during the six weeks of his stay in the home resumed its normal position. Finally the wound closed, and he went convalescent to the South of England.

In this case there appeared to be clear evidence that the original suppuration (probably behind the cæcum) had crept up behind the peritoneum, forming ultimately a very large subphrenic abscess, which worked its way at last through the lower pocket of the diaphragm and presented through the ribs under the skin of the back. When this was opened the rapid return of the liver to its normal level was most marked. There was a tuberculous element in this case, and some years later I heard of the patient's death from phthisis in Madeira.

CASE II.—In May, 1896, I was asked by Dr. F. Rushworth, of Hampstead, to see a gentleman, aged 25, who for some fourteen days had been suffering from typhlitis. He was a strong man and an active football player. The attack had begun in the usual way, and was treated by the expectant method. Some days after the onset there was evidence of right basal pleurisy, for which Dr. Mitchell Bruce was asked to see the patient. When I saw him on the fourteenth day this was not a very prominent feature in the case, but there was obviously a large abscess in the right iliac fossa and flank. This I opened on May 27th, 1896 (the fifteenth day) and evacuated a large quantity of pus containing fæces from behind the cæcum. On May 31st the patient was suddenly seized with the most intense dyspnœa, and coughed up a large quantity of foul pus. The dyspnœa was extreme, with great cyanosis, and required the frequent administration of oxygen, which was kept at the bedside in a cylinder for use during the paryoxysms which were frequent for some days, and then ceased. Our great fear now was that the other lung should become infected by inhalation of pus from the right bronchus into the left. This fear was justified, for on June 5th he began to complain of severe pain at the left lower base, where there was found to be evidence of pleurisy and consolidation. The next day he coughed up with the same severe dyspnœa a considerable quantity of foul pus, the right side of the chest in the meantime having greatly improved.

From this on there was steady improvement, and although a fæcal fistula lasted for some weeks it ultimately closed, and convalescence in the end was complete, and the patient was able to undertake a sea journey.

Here, too, I felt justified in the conclusion that the suppuration from the cæcum had extended up to the diaphragm on the right side and finally burst into the lung. From this it had infected the left lung, the abscess bursting into the bronchi finally, each attack nearly costing the patient his life.

CASE III.—On September 12th, 1899, a woman aged 42, was admitted into University College Hospital with a large abscess in the right iliac fossa and flank, dating apparently from an attack of suppurative epityphlitis. When this had been opened it was found not only to have run riot in the extraperitoneal areolar tissue of the flank, but also to have spread widely among the lateral abdominal muscles. The incision was made by Mr.

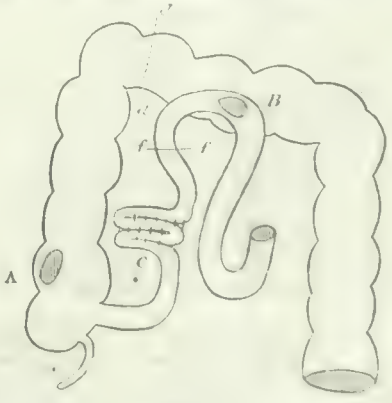


FIG. 1[1]

A. Fistula from sloughing of the cæcum. B. Anastomosis of ileum and transverse colon. C. Artificial kinking of ileum below anastomosis. *d.d.* Line of division of colon. *f.f.* Line of division of ileum.

Pollard above the crest of the ilium obliquely from above and behind downwards and forwards between the last rib and the iliac crest. The contents of the abscess were pus and fæces which evidently escaped from a wide opening in the large bowel. In due time the general cavity of the abscess began to contract, but practically all the fæces continued to be discharged from the opening in the loin, only a small fragment of solid material coming away at intervals *per rectum* when an enema was given.

This condition of things went on to the end of November, the patient's general condition improving, but the discharge of loose irritating fæces from the loin continuing to such an extent as to render the woman and all who attended on her very miserable on account of the constant discharge of liquid fæces and great fetor and excoriation of skin. As there appeared to be no prospect of this artificial anus in the groin closing, I opened the abdomen on November 23rd and made a lateral anastomosis between the ileum some 2 feet above its termination and the transverse colon (Fig. 1 B). Then fearing that the fæces might still reach the cæcum without going through the new short circuit I kinked the ileum on itself a few inches below the latter and stitched the kink in such a manner as to try to make it permanent and so prevent the fæces from passing beyond it. (Fig. 1 C). The ascending colon was not kinked or otherwise closed, as I expected there would be very little reflux from the anastomosis in the transverse portion towards the opening in the loin.

Whether this method of blocking the bowel below an anastomosis has been put in practice before by others I cannot say, but it appeared to have many obvious advantages if effectual, such as saving of time and absence of risk of infection, over the method of dividing the gut and turning in the ends with sutures. At all events, it answered its purpose very well up to a certain point and for a time in this case, and was easily and rapidly accomplished.

For some time there was still a little escape of liquid fæces from the fistula in the loin, especially when the bowels were relaxed. This I think I was justified in attributing to a slight reflux from the transverse colon, which now received the liquid fæces from the new ileo-colic opening. It must be remembered that a prolonged inflammation in and around the cæcum and ascending colon as well as in the abdominal wall would necessarily be followed by paresis of all these structures. It is natural to suppose that, owing to this condition, the ascending colon would not contract as firmly as the transverse, and consequently a contraction of the latter on fluid fæces would cause a regurgitation of a small quality towards the cæcum. As the latter recovered its tone this reflux ought to be prevented; and, as a matter of fact, this occurred, and the escape of fæces became less and less, and the fistula, which before my operation for anastomosis showed no signs of closing, became smaller and smaller but little came away. But after some weeks sufficient fæces began again to discharge from the fistula to prevent the latter from healing, although most of the motions came away now *per rectum*. I began to suspect, therefore, that the kinking of the ileum which I had made at the time of anastomosis was not effectual, but was allowing some of the contents of the small bowel to pass into the cæcum.

As the patient's condition had improved but was still so uncomfortable on account of the fæcal fistula that she could not have got about without much leakage, I again opened the abdomen through the former median scar. I then found the anastomosis most satisfactory, but that the kinking, although still existant, was not preventing the flow of fæces and gas through the doubled parts. The small bowel was therefore cut across just below the anastomosis (*ff*), its edges turned in and sutured, and the colon was similarly dealt with (*d d*). There was now no possibility of fæces reaching the cæcum from either direction. The recovery was uneventful from this operation. Henceforth no fæces appeared in the fistula. The latter still discharged a good deal of pus and some foul mucus from the abscess and bowel, but is now, as you see when the patient is dressed, very insignificant and is healing steadily. The patient has been getting up for some time past, and will soon leave hospital. A fistula will of course remain for a time, if not for good. This is inevitable, as some provision has to remain for a certain amount of gas and mucus to escape from the excluded portion of the colon, but this escape in similar cases has proved to be trifling, and to have caused but little inconvenience.

CASE IV.—Mr. F., aged 29, was always healthy until January 27th, 1898, when he had for the first time a typical attack of epityphlitis, with vomiting of green fluid. There had been looseness of the bowels previously, and during the attack the temperature rose to 101°. There was tympanites and tenderness over the whole abdomen, but most in the right hypochondrium. No tumour was felt at this time, owing to the distension; but later on Dr. A. Browne found a swelling in the right iliac fossa.

This attack passed off under Dr. Browne's treatment with opium and bismuth in a few days. On February 8th, 1898, the patient was sent to me with a view to decide whether it would not be well to forestall a possible second attack by removing the appendix. As the patient was looking well, and had but little remains of the tenderness, and only a suspicion of swelling, I was inclined to wait, and explained the matter to him. As he led an active life, and wanted to be able to hunt again soon, he decided, however, to have the operation performed. This I did for him on February 15th in the usual way. When the cæcum was exposed and drawn forwards it was found that the appendix was ulcerated completely through at its base, leaving a hole in the cæcum. This was at once stitched up with two rows of Lembert sutures. A mass was then found consisting of small intestine and the remains of the vermiform appendix wrapped round by adherent omentum. When this was unravelled, a concretion the size of a large filbert was found in its centre. It was dry, and lay in a mass of granulation tissue without any visible pus. On wiping away the granulations round the spot where the concretion had lain, it was found that a large hole had been ulcerated into the small intestine some considerable distance above the ileo-cæcal valve owing to the irritation of the concretion. This hole was closed by a row of stitches placed in the axis of the bowel, but with difficulty, owing to the rotten state of the surrounding bowel. The omentum was cut away, the whole area of operation dried, and the wound was partially closed, only leaving room for a gauze drain. A healthy piece of omentum had been first laid over the sutured points. Convalescence was steady and complete, and there was no trouble from the narrowing of the bowel where it was sutured. Dr. Browne tells me that the patient remains well, and has had no further trouble up to March, 1900.

This is the only case in which I have seen a stercolith causing quiet ulceration without visible suppuration. And it is very remarkable that not only had the concretion ulcerated through the base of the vermiform appendix, but it had later caused ulceration nearly into an adjacent adherent coil of small intestine. It appears probable that an earlier operation would have prevented this accident, and that any delay might have been followed by the most serious consequences; for the concretion was held from dropping into the pelvis by little more than the entanglement of the omentum.

CASE V.—A young lady recently returned from the colonies to have her appendix removed gave a very clear history of repeated attacks of epityphlitis with vomiting and rigidity of the abdominal wall. The last attack had been severe, and had determined a preventive operation. This was done on May 10th, 1900. On drawing out the cæcum the vermiform appendix was easily found as regards its proximal end, but when I tried to draw the whole organ out it seemed fixed by its distal end. Running my finger along it was found to enter a ring-like constriction, which held it fast. Firm traction, however, brought it eventually out of the wound still grasped by the constriction, which proved to be formed by the wall of the hepatic flexure of the colon. Into this the end of the appendix had thrust itself like an intussusception, and the edge of the ring was thickened, and adherent to the swollen appendix. It required some care to separate and draw it out of the deep pocket in which it lay. This, however, was done, and the organ, which was very long, was removed at its base by the usual method. As the wall of the colon looked softened round the pocket, the edges of the latter were brought together for safety's sake. Convalescence was absolutely uneventful, and when the first dressing was removed on the tenth day, perfect primary union was found.

In this case a very curious condition was found, which probably would have led to perforation either into the colon or general cavity of the abdomen.

Other cases illustrate the dangers from adhesions following inflammation of the vermiform appendix. Indeed, there is one now in hospital who very nearly fell a victim to them. She was admitted some weeks ago with symptoms of intestinal obstruction. It appeared that last Christmas I operated for a epicæcal abscess and drained. She left hospital well, but was suddenly seized with the usual symptoms of intestinal obstruction, at Easter, during my absence from town. Mr. Godlee opened the abdomen, and found extensive adhesions round the old seat of mischief. These he released, and recovery followed. This is alluded to here as an "unusual sequel," and perhaps justly, for it is remarkable among the countless cases of suppurative epityphlitis which recover after drainage, how few suffer subsequently from obstruction due to adhesions.

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.—The annual general meeting of this Association took place on July 3rd at the Café Royal, Regent Street. Dr. Gabe was elected President and Dr. Achard Vice-President. Drs. Younger and Greenwood were unanimously re-elected respectively Treasurer and Honorary Secretary. The following gentlemen were appointed members of the Council:—Drs. Snape, Haydon, Walter Smith, F. H. Edwards, E. Furniss Potter, Cowburn, Norman, Maughan, Sayres, and Langton. The members and their friends afterwards dined together to the number of fifty-five. Among the guests were Drs. Vivian Poore, Gilbart Smith, Dawson Williams, Ball, Clement Godson, Morgan Dockrell, Frederick Smith, and Mr. Howard Marsh. After the usual loyal toasts Mr. Howard Marsh proposed that of "The Brussels Medical Graduates' Association." This was responded to by Dr. Major Greenwood, the Honorary Secretary, who said that the Association was not in favour of the recent reciprocity scheme brought before the General Medical Council at its last session, and that although their members claimed the right to register foreign degrees in addition to English qualifications, they were strongly opposed to the registration of practitioners possessing only foreign ones. The President proposed "Our Guests," and this toast was responded to by Dr. Vivian Poore and Dr. Gilbart Smith.

THE CROONIAN LECTURES
ON
DEGENERATION OF THE NEURONE.

Delivered at the Royal College of Physicians of London

BY FREDERICK W. MOTT, M.D.LOND., F.R.S.,

Pathologist to the London County Asylums; Physician in Charge of Out-patients, Charing Cross Hospital.

LECTURE III.

THE CHEMISTRY OF DEGENERATION.

Osmic acid has long been known to have the property of staining fat (including myelin) black, but, owing to difficulty in penetration, it could not be made use of for studying the degeneration of the central nervous system in the same way as the peripheral, although Exner[1] was enabled to show by his method the existence of fine medullated fibres—tangential system and inter-radial—in the grey matter of the cerebral cortex, and Tuczek applied this method and demonstrated the important fact that atrophy of the tangential fibres of the frontal and central convolutions was the earliest and most constant morbid change in dementia paralytica. I have had the opportunity of confirming this observation in at least 50 cases by the Marchi-Pal method. This degeneration does not appear to be peculiar to general paralysis, as similar atrophy may occur in other diseases of the cerebrum, associated with paresis and dementia—as, for example, in alcoholic and epileptic dementia; it does not, however, exist in purely efferent systemic degenerations—for example, amyotrophic lateral sclerosis—although in this disease, as I shall show, the whole motor efferent system of neurones, from cortex to peripheral muscle, is degenerated. About ten years ago Marchi introduced his method of staining degenerated nerve fibres, using it for the purpose of demonstrating the degenerations which followed experimental ablations of the cerebellum performed by Luciani, and the most striking results were obtained. By this method Marchi showed a descending cerebellar system in the antero-lateral column of the same side as the half of the cerebellum that had been removed. Russell, Ferrier, and Turner have, however, shown that this tract does not proceed direct from the cerebellum, but through a relay in Deiter's nucleus.

It is now the method adopted by all investigators for determining the path not only of tracts of fibres, but of actual individual fibres, in the central nervous system. It has, in the hands of numerous investigators, served to demonstrate accurately the course and termination of nervous paths. There are a few fallacies in connection with it for the inexperienced, but if care be taken to avoid these, no method is so delicate or so reliable. By this method I was able experimentally to trace the course of the fibres of Gowers's tract, which I showed to consist of three sets of fibres—one, the more numerous, terminating in the middle lobe of the cerebellum after looping over the fifth nerve and running down on the surface of the superior cerebellar peduncle; another set terminating in the corpora quadrigemina; and the third, few in number, joining with the fillet fibres and ending in the optic thalamus. By this method single fibres can be followed in their course along the whole cerebro-spinal axis, from the cortex to the lumbar-sacral region, when they are efferent; and from the lumbar-sacral region to the optic thalamus when they are afferent. I was unable to find any evidence in monkeys for the existence of a cortical fillet (described by Flechsig), as after cutting off the posterior column nuclei and tracing the resulting degenerated fibres of the fillet upwards, they all terminated in the optic thalamus. Subsequent observations by independent observers have confirmed these conclusions.

THE CHEMISTRY OF THE MARCHI METHOD IN RELATION TO DEGENERATION.

In working with the Marchi method I was struck by the fact that in the neighbourhood of an experimental lesion vessels could often be seen with phagocytes containing black-stained particles in their sheaths. These were undoubtedly carrying away the products of degeneration. I also found that muscles which had undergone fatty degeneration reacted to the Marchi stain; that is to say, pieces of muscle which had been hardened in Müller's fluid, like pieces of the degenerated central nervous system, when placed in the Marchi fluid (1 part of 1 per cent. osmic acid and 2 parts Müller's fluid) revealed fatty degeneration by the fat particles being stained black. I had long before noticed that the fat particles in degenerated muscle were stained by the hæmotoxylon when the Weigert or Weigert-Pal

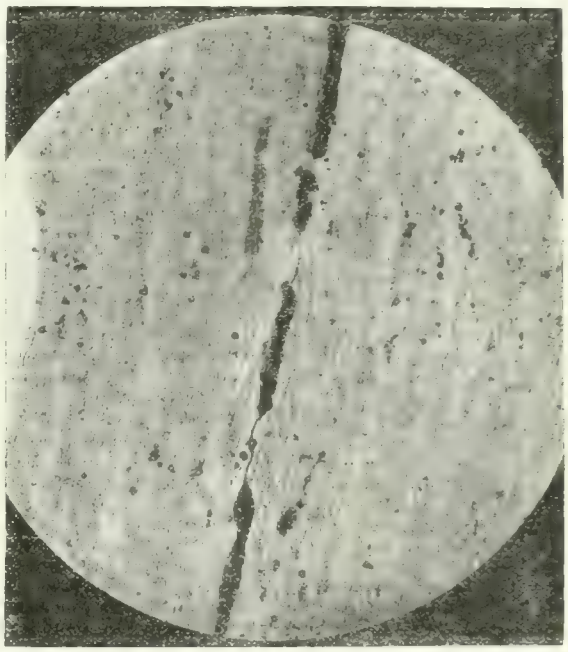


Fig. 1.—Photomicrograph showing degenerated nerve fibre in a longitudinal section of the spinal cord ten days after experimental lesion. In places the thin axial core can be seen stained black. The greater part of it, however, is covered up by the degenerated myelin sheath, also stained black.

method of coloration was used; therefore, I came to the conclusion that a non-phosporetted fat, the result of degeneration of proteid, would be stained by either of these methods. Putting this fact by the side of another—namely, that degenerating nerves of the central nervous system, stained by the Weigert or Weigert-Pal method, appear uniformly blue throughout; whereas in a transection of the normal nerve fibres only a ring of myelin stains blue, the central axon being unstained—the conclusion is that the proteid of the axon has degenerated and become converted into a fatty substance; but it is otherwise, as I shall now show, with the Marchi method, which really depends for the success of the reaction on the differential staining of the phosphoretted fat contained in the myelin (protagon) from ordinary non-phosphoretted fat, such as olein, palmitin, stearin, etc. In sections of a normal nervous tissues stained by the Marchi method the nerve fibres in transection present the following appearances. The central axial core is unstained; the ring of myelin is stained a greenish ash-grey colour; degenerated fibres are stained black throughout, so that no differentiation can be seen between the myelin sheath and the axial core. It might be said that this was due to the axial core having broken up, and its place been occupied by the degenerated myelin; but I have observed longitudinal sections of nervous tissue showing degeneration in the earliest stages, in which the axis-cylinder may be seen stained black as well as the myelin. (Photomicrograph. Fig. 1.) Moreover, there are chemical reasons for supporting this view. Examination of numbers of tissues, vegetable and animal, containing or consisting of simple non-phosphoretted fats, by the Marchi method showed that these fatty bodies gave the black reaction. I was led to the conclusion that probably the myelin in the process of degeneration underwent a chemical decomposition by which the complex phosphoretted fat was split up into simpler bodies, namely, glycero-phosphoric acid, stearic acid, and

choline; by the taking up of water, lecithin would undergo the decomposition shown below.[2]

$$\underset{\text{(lecithin)}}{C_{44}H_{90}NPO_9} + \underset{\text{(water)}}{3H_2O} = \underset{\text{(stearic acid)}}{2C_{18}H_{36}O_2} + \underset{\text{(glycero-phosphoric acid)}}{C_3H_9PO_6} + \underset{\text{(cholin)}}{C_5H_{15}NO_2}$$

To prove this I took the spinal cord from a case of right hemiplegia of fourteen days' duration, the result of thrombosis of the middle cerebral artery, and divided it longitudinally into as nearly as possible equal halves, reserving a small portion for microscopical examination by the Marchi method (Fig. 2). The



Fig. 2.—Section of first cervical segment of the spinal cord from a case of thrombosis of the middle cerebral causing left hemiplegia. It will be observed that there is scattered degeneration in the homolateral pyramidal tract and also in the direct tract, and in the antero-lateral region, probably due to some softening of the optic thalamus. There is a very marked degeneration in the left crossed pyramidal tract. The patient died at the end of twenty-one days. The result of the chemical examination of the two halves of the cord showed a diminution of lecithin on the left side, with an increase of ether extract, showing that a portion of the lecithin had been converted into stearin, which stains black with the osmic acid.

two halves of the cord were dried in a sulphuric acid exsiccator, and it was found that the right half lost the most in weight by this process. Both halves were then dried at 100° C. and extracted in a Soxhlet's ether apparatus, so that all the fatty matter was extracted. It was found that on the degenerated side the ether extract appeared like butter, whereas on the non-degenerated side it was more crystalline in appearance. The degenerated right side yielded a larger proportion *pro ratâ* of fatty matter than the left; but the phosphorus (the details of the estimation of which are given fully in the paper in the *Archives of Neurology*) obtained from the right half was less than the left. The conclusion, therefore, was that the phosphoretted fat (lecithin) had broken up in the way I have mentioned. This result I have stated in my article on the Pathology of Nutrition, Clifford Allbutt's *System of Medicine*, vol. i. I have since examined another cord with the same results, and two others in conjunction with Dr. J. Wakelin Barratt. Some of the increase of the fat cannot, however, be accounted for by the decomposition of the lecithin; it therefore probably comes from the degeneration of the proteid of the axis-cylinder process, which we have seen to give the black fat-staining reaction.

The Possibility of Degeneration causing Auto-intoxication.

While examining a case of acute general paralysis, with numerous epileptiform seizures, I was struck by the fact that the perivascular lymphatic sheaths of many of the vessels were filled with cells staining black like the Marchi reaction, and I came to the conclusion that very probably in this disease a decomposition of the myelin of the proteid matter of the nervous system occurred incidental to the degenerative process, and that the cerebro-spinal fluid, and possibly also the blood, would yield some of the products of degeneration, and perhaps the presence of such might account for some of the symptoms which occur in this disease (Fig. 3). On account of the laboratory of the London County Asylum not being licensed for experiments, I was fortunate enough to obtain

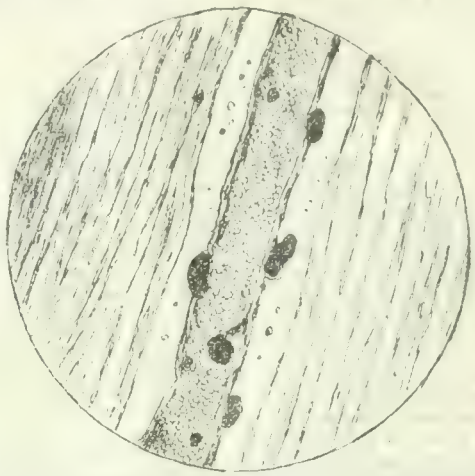


Fig. 3.—Photomicrograph of a small vein from an experimental lesion. The section was stained by Marchi's method, and in the external wall of the vein are seen phagocytes stained black by the fat contained in them taking up the osmic acid. Magnification 350 diameters.

the co-operation of my friend Professor Halliburton, who was good enough to associate himself with me and conduct a series of experimental inquiries relating to this subject, a full account of which has been published in the *Phil. Trans.* of the Roval Society. At first it was thought that choline only existed in the cerebro-spinal fluid and blood of patients who were suffering from general paralysis of the insane. This was no doubt due to the fact that in this disease choline was easily detected both chemically and physiologically, because in no other affection of the nervous

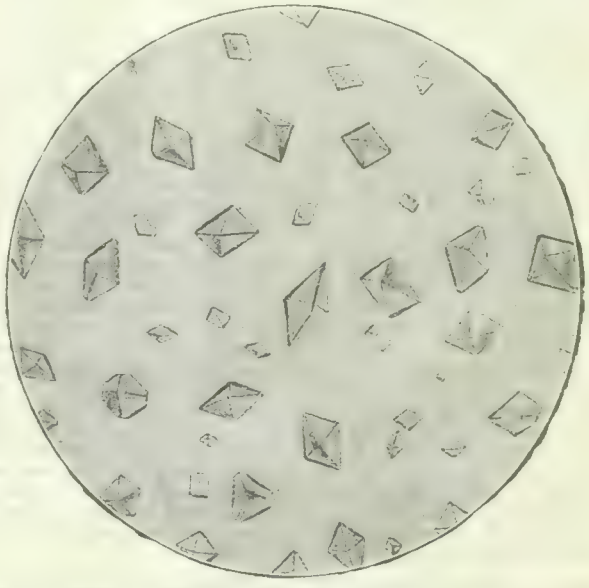


Fig. 4.—Crystals of the platinum double salt of choline crystallised from 15 per cent. alcohol.

system is there such a rapid and widespread degenerative process affecting the nervous system, but subsequent observations have shown that practically in any degenerative process affecting the nervous system, if extensive enough,[3] choline can be detected in the blood, although normally it does not exist in sufficient quantities to be recognisable.

Thus, it was found in two cases of combined sclerosis, in two cases of beri-beri, where the disease had been of sufficient duration to give the Marchi reaction in the nerves; but in another case which had died in the early stage from heart failure there was no evidence of choline. This led to further researches, and it was found that as soon as the myelin began to undergo decomposition in the peripheral portion of the experimentally-cut sciatic nerves, the blood of the animals so operated upon gave the physiological and chemical reactions indicating the presence of choline.

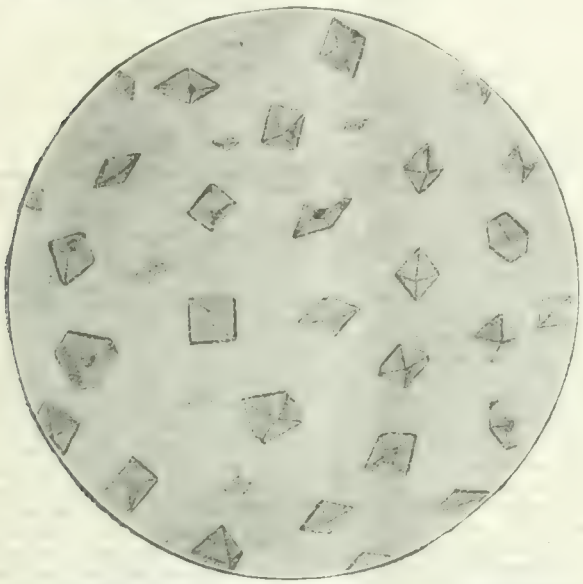


Fig. 5.—Crystals of the platinum double salt of the base separated from cerebro-spinal fluid in cases of general paralysis of the insane. Crystallised from 15 per cent. alcohol.

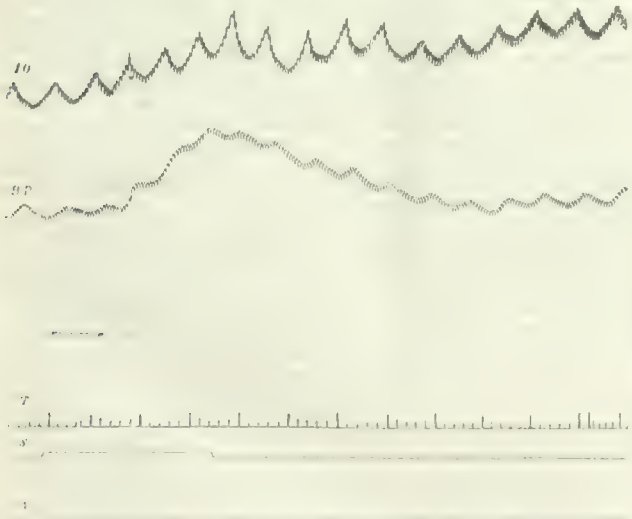


Fig. 9.—Injection of 5 c.cm. of pathological cerebro-spinal fluid in an animal anæsthetised with A.C.E. mixture, but which subsequently received an injection of atropine. It will be observed that now instead of producing a fall choline causes a rise of blood pressure. The same effect is produced by the injection of 5 c.cm. of a 0.2 per cent. solution of choline hydrochloride. (T, time in seconds; S, period of intravenous injection; A, abscissa, in Figs. 6, 7, 8, 9.)

These facts show that my original surmise was true, that the protagon splits up into simpler bodies with elimination of choline. Many observers have found that extract of brain matter gave a physiological reaction similar to that of choline, namely, upon injection of a solution of an alcoholic extract of brain matter, a fall in the blood pressure was produced. This was noticed by Schäfer and Oliver, Swale Vincent, and Halliburton. The latter two have continued these researches, but arrived at somewhat different conclusions; it appears, however, to me that Halliburton is right in assuming that the effect produced is due to the existence of choline, for he finds that brain extract, like choline after injection of atropine, produces a rise instead of a fall of blood pressure (Fig. 9). Again, the alcoholic extract of fresh brain tissue yields the characteristic octahedral crystals which choline forms with platinum chloride (Figs. 4 and 5). In consideration of this fact, we must conclude the probability that choline is continually being formed as a normal product of lecithin metabolism, and is continually escaping into the cerebro-spinal fluid which drains into the subarachnoid cavity and carries away the waste products of this metabolism. This view was put forward by Professor Gumprecht at the recent Congress at Wiesbaden. Although it is probable that choline is continually escaping into the cerebro-spinal fluid; either it must disappear very rapidly by absorption of the fluid, or it must be in very small quantities, for normal cerebro-spinal fluid did not give the physiological or chemical reaction indicating the presence of choline. Gurlewitz, Schäfer, and others corroborate this statement. Hunt, in a recent paper, finds choline existing in the suprarenal gland. I have often thought it possible that one function of the suprarenal capsule, which Schäfer and Oliver, in their valuable experiments, proved to possess a powerful stimulating action upon the peripheral neuro-muscular mechanism of the arteries, is to produce a substance which will neutralise the influence of these blood-pressure-lowering substances. Choline is not found in the urine, it is therefore probably oxidised into urea; it belongs to the same trimethylamine series of bodies as muscarine, neurine, and betaine; but it is not a powerful toxic substance, whereas neurine is. Many of the contradic-

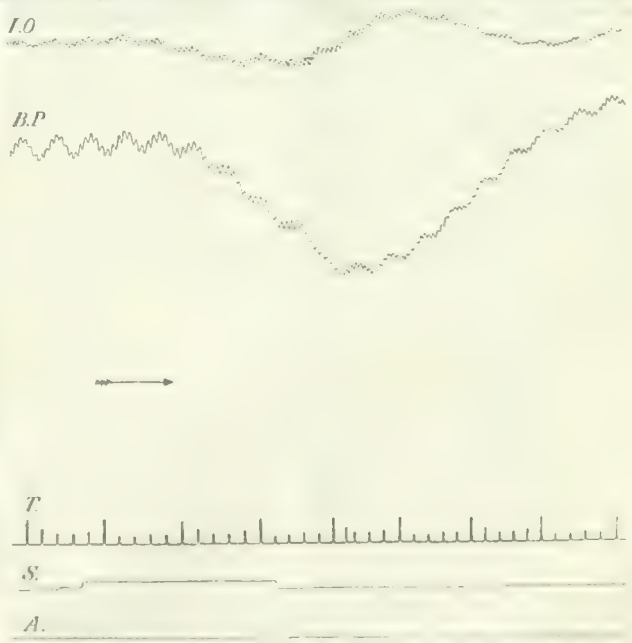


Fig. 6.—Effect of injecting 5 c.cm. of a solution of choline hydrochloride (0.2 per cent.). The fall of blood pressure (B.P.) is accompanied by a dilatation of the intestinal vessels; this is shown by the rise of the lever of the Marey's tambour connected with the intestinal plethysmograph (I.O.). Dog.

tory results which have been obtained, as regards the toxic effects of choline, are due to impure materials containing neurine having been used. Neurine, which is very much more poisonous than choline, has certain specific poisonous properties, and acts especially upon the respiratory movements. In general paralysis and other diseases where a large amount of nervous tissue is undergoing degeneration, choline may exist

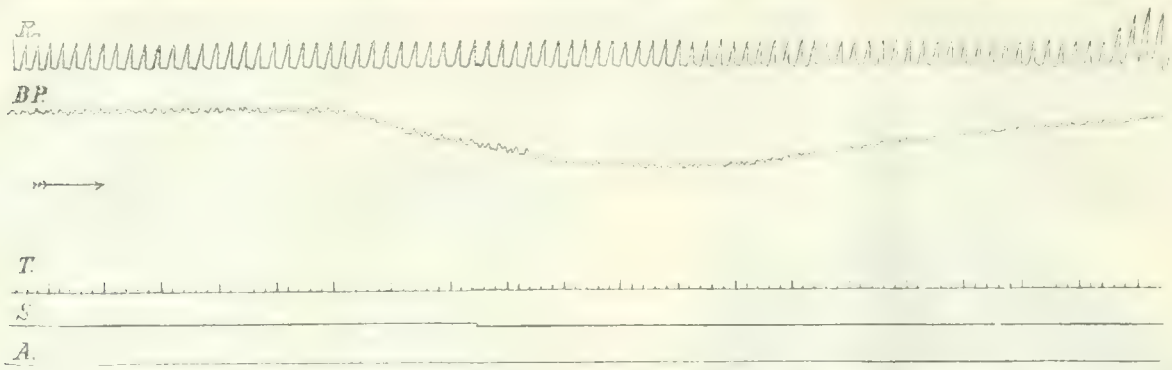


Fig. 8.—Effect in a dog of saline solution of the alcoholic extract of 70 c.cm. of blood removed during a seizure from a patient suffering from general paralysis of the insane. There is no effect on respiration (R), but there is a well-marked fall of blood pressure (B.P.). In the same blood choline was identified chemically.

in sufficient quantities in the cerebro-spinal fluid, taken from the cadaver soon after death, or even from the living subject by lumbar puncture, to give well-marked physiological and chemical reactions indicating its presence (two specimens by lumbar puncture were kindly forwarded by Dr. Turner, of the Essex County Asylum). It was also found in the blood taken for the purpose of treatment from patients suffering from prolonged seizures in general paralysis, and from cases of beri-beri with right heart failure and asphyxia, and in the blood of other cases such as combined sclerosis, experimental section of the sciatic nerves, etc. *We may therefore assume the premiss that choline is a product of nerve degeneration, the result of breaking up of protagon or lecithin, that it escapes into the cerebro-spinal fluid, thence into the blood in larger quantities than it can be disposed of by oxidation, and that its accumulation in the blood might produce auto-intoxication.* The

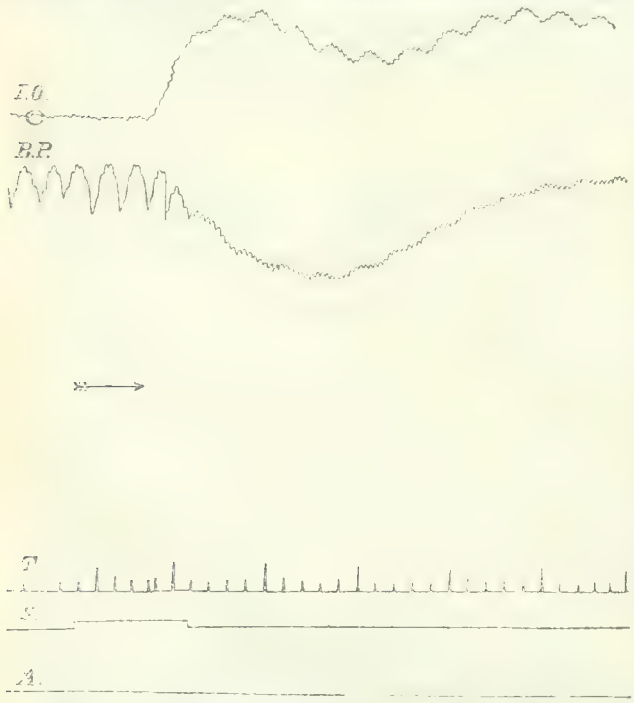


Fig. 7.—Tracing of intestinal oncometer (I.O.) and arterial blood pressure (B.P.) in a cat. 10 c.cm. of cerebro-spinal fluid were injected; the same effect was obtained in the same animal by injecting 2 c.cm. of 0.2 per cent. solution of choline; the fall of blood pressure is at first mainly cardiac in origin, for the oncometer tracing first follows the fall of arterial blood pressure passively; it, however, soon rises, indicating dilatation of the peripheral vessels.

principal physiological actions of choline were found to agree entirely with the effect produced by the injection of th cerebro-spinal fluid, or the alcoholic extract of the cerebro-spinal fluid and blood (see figs. 6, 7, 8, and 9) dissolved in normal saline solution obtained from these cases of disease associated with degeneration of the nervous system. They are as follows: A fall of arterial blood pressure, partly due to its action on the heart, but mainly due to the dilatation of the peripheral vessels, especially in the intestinal area (see figs. 6 and 7), for the fall occurs just the same after both vagi have been cut. This dilatation could actually be seen to take place through the glass lid of the *intestinal oncometer* when the solution was injected into the vein, or if the intestine were irrigated by directly allowing the fluid to flow into the oncometer. The action on the splanchnic vessels is due to the direct action of the substance on the neuro-muscular apparatus of those vessels, for after the influence of the central nervous system has been removed by the section of the cord or of the splanchnic nerves, choline still causes the typical fall of arterial pressure. (See figure.) Neurine, a very toxic substance, was not found in the blood or cerebro-spinal fluid, although it is possible that under certain conditions, such as the existence of micro-organisms, it might be produced. Neurine produces a fall of arterial blood pressure, followed by a marked rise and subsequent fall to the normal level. It produces a marked effect upon respiration. This is first greatly increased, but with each successive dose the effect is less, and ultimately the respiration becomes weaker and ceases altogether. The animal can still be kept alive by artificial respiration. It is probable that Cervello is right in asserting that neurine acts like curare on the nerve endings of striated muscles.

Another fact of interest and importance is the existence in the cerebro-spinal fluid of a relatively large amount of proteid matter—three times as much as normal. Seeing that the cerebro-spinal fluid in the cranial cavity is greatly increased in general paralysis, the quantity of proteid matter is very abundant. Examination of this proteid matter showed us that it contained a considerable amount of phosphorus; we were, therefore, led to believe that there was a nucleo-proteid present not found in normal cerebro-spinal fluid. As a rule, the fluid itself was not used for experimental purposes, but an alcoholic extract dissolved in saline solution, and the quantity we injected—5 to 10 c.cm.—would not contain enough nucleo-proteid to produce intravenous coagulation when diluted by the mass of blood; but in one specimen which contained a larger quantity than usual of proteid, 10 c.cm. of the cerebro-spinal fluid injected into a cat produced death by intravenous coagulation. It is therefore probable that a nucleo-proteid escaping into the cerebro-spinal fluid of the perivascular lymphatics may favour congestive stasis, and even coagulation in the veins of the brain in general paralysis—especially during the epileptiform seizures, when presumably the nervous tissue is undergoing disintegration. Congestive stasis in the vessels is the rule, and not infrequently intravenous coagulation and thrombosis of the large veins and even of the longitudinal sinus sometimes occurs. Thus, the disintegrating nervous tissue, by providing a substance which favours stasis and coagulation, may be the

means of setting up a vicious circle, whereby, owing to the circulatory disturbances, acute destructive processes of the nervous tissue are brought about. This hypothesis is supported by the fact that most of the nerve cells in the degenerating tissue of the cortex are devoid of the normal Nissl granules.

Now it has been shown by Held that these Nissl granules are the result of coagulated nucleo-albumen, for sections of alcohol-hardened nervous tissue treated by artificial gastric juice still show the granules, and these stain in a characteristic manner. Moreover, Macullum, by his modification of Lilienfeld and Monti's molybdate method, has micro-chemically demonstrated the existence of abundant phosphorus in these granules; we may therefore conclude that the disappearance of the same from the degenerating cells may be associated with the existence of a nucleo-proteid in the cerebro-spinal fluid. The researches of Halliburton have shown that the *tissue fibrinogen of Wooldridge*, which causes coagulation of the blood when injected intravenously, is a nucleo-albumen; and Halliburton has shown that the nucleo-albumen of brain tissue, like that of other tissues, has a powerful action in producing intravascular clotting. Seeing that in no disease do we find nervous tissue undergoing such rapid and extensive decay as in general paralysis, it is quite reasonable to presume that the existence of nucleo-proteid in the cerebro-spinal fluid contained in the perivascular lymphatics may be one factor in occasioning vascular disturbances and congestive stasis, especially in those regions in which mechanical conditions favour venous stasis, namely, the frontal and central convolutions. The accompanying diagrams show the regions where pia-arachnoid thickening and atrophy are most



Fig. 10.—External and upper surface of hemisphere, showing distribution of veins. The shading shows the usual area of pia arachnoid thickening. A large branch is seen running back into the lateral sinus, connecting it with the great central anastomotic vein. The lateral sinus is diagrammatically represented as continuous with the longitudinal sinus, and the torcular is not shown.

marked, and the area will be seen to correspond to the distribution of veins opening into the longitudinal sinus; and it will be observed that if there is a tendency to venous stasis

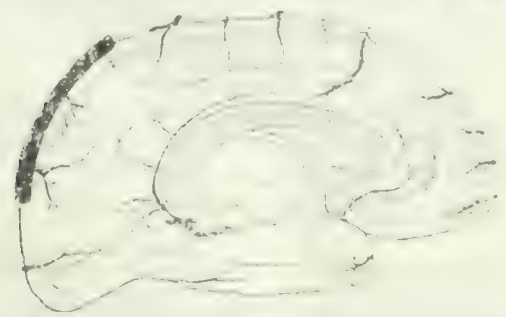


Fig. 11.—Mesial surface of hemisphere, showing the veins opening into the longitudinal sinus draining the upper portions where the thickening of the pia arachnoid occurs. Only a small portion of the longitudinal sinus is represented. These drawings are from Testut, modified to show the area of pia arachnoid thickening and its correspondence in great measure with the area drained by veins opening into the longitudinal sinus.

it would most likely take place in these veins, because the blood has to run contrary to gravitation. Again, we know that the veins run into the longitudinal sinus in a direction opposed to the current, so that any conditions which give rise to general venous congestion would make themselves felt, especially in the area drained by these particular veins. Of course it may be argued that the great anastomotic vein of Trollard has an important connection with the lateral sinus, and that this would prevent, in a measure, such mechanical disturbances. Still, look at it as we will, we must consider that the flow of blood in the veins I have indicated is at a mechanical disadvantage compared with that of the other veins which drain directly into the torcular or into the lateral sinus. That venous congestion does play an important part in the production of the congestive, epileptiform, and apoplectiform seizures of general paralysis, is shown by the fact that a brisk purge or an enema will often prevent or cut short these seizures, presumably by relieving portal congestion and general venous turgescence. If, as we have seen, choline has the property of dilating the intestinal vessels in such a marked manner, it is possible to conceive that it may cause portal congestion, and thus act as a factor in the production of venous stasis. The effect produced experimentally was only transitory, because the quantity of choline introduced was rapidly diluted by the mass of blood, and probably oxidised also, yet, when the whole mass of blood contains this substance in appreciable quantity continuously, it means the possibility of constant toxic effect; therefore, although choline can hardly be regarded as a dangerous toxic substance, still, under circumstances, it may serve as an additional factor in the production of complications in this disease.

The Marchi reaction applied to the central and peripheral nervous systems shows rather different results: one striking difference is the comparatively rapid disappearance of the products of degeneration in peripheral nerves as compared with the central nervous system. For example, if the posterior spinal ganglia be removed, and the animal kept alive for months, no traces of the products of degeneration can be found in the roots and peripheral nerves, whereas in the posterior columns of the spinal cord I have found well-marked evidence of the products of degeneration.

Dr. H. Head, who has worked extensively on the changes in the cord and peripheral nerves, the result of lesions of the posterior spinal ganglia, has observed the same conditions. From a large experience of this method of studying degeration, produced by all kinds of lesions of the cord and brain in animals, also from disease occurring in man, I have been struck by the long persistence of the products of degeneration in the central nervous system, as compared with the peripheral. Is this connected with the anatomical difference which we know to exist between the nerve fibres in the central nervous system and peripheral—namely, the existence in the latter of a chain of tubular cells of mesoblastic origin, forming the nucleated sheath of Schwann? And we may ask, Do these cells have a phagocytic action upon the products of degeneration, utilising the same for the formation of fresh protoplasm and myelin, and does the peripheral portion of the nerve fibre depend solely for its nutrition upon the central cell of origin? There is some evidence in favour of the view that nerve regeneration may take place from the periphery, but there is no evidence to show that regeneration of fibres of the central nervous system, where this sheath is absent, can take place.

There are two forms of degeneration but both may react to the Marchi stain, namely:

1. Secondary (Wallerian) degeneration due to interruption of the axon when it is cut off from its cell of origin, as, for example, in a focal transverse lesion of the spinal cord produced by disease or injury; tracts of fibres which have their cells of origin above the lesion, degenerate downwards, are recognised by the black-stained products of degeneration mapped out in definite areas corresponding to definite systems of efferent neurones, while tracts of fibres conducting afferent impulses, having their cells of origin below the lesion, have a normal appearance. The converse applies to tracts above the lesion, namely, all the afferent tracts which have their cells of origin below the lesion have their limits definitely mapped out by the black-stained products of

degeneration, while those with their cells of origin above have a normal appearance; therefore, secondary degenerations, whether occurring as the result of experiment or disease, may be considered of traumatic origin and arising from conditions outside the neurone, very frequently due to vascular occlusion and local softening.

2. Primary degenerations are clinically and pathologically quite different from secondary. They arise as a result of altered conditions of the blood and lymph, due generally to the introduction or generation within the body of poisonous substances, and are insidious in origin, progressive in character, and generally fatal in termination. They are influenced by hereditary or acquired tendency to nervous degeneration, and election of the particular system or systems of neurones not only constitutes definite groups of clinical phenomena, which admit of empirical classification into definite diseases, but also show that certain poisons have elective affinities for particular systems of neurones; but the election of certain structures may also be determined by occupation and habits, which induce stress on some particular system of neurones; or vascular conditions may lead to circulatory disturbances, which will determine the appearance of degenerative changes earlier and their more rapid progress in certain parts of the nervous system than in others. In connection with the latter contributory factor, we have already referred to the reason why certain portions of the brain should show more atrophy and degeneration in general paralysis than others.

Again, I have found the left hemisphere, which presumably is used more than the right in all right-handed people, more often atrophied in general paralysis. The two hemispheres in this disease seldom weigh equally, and the left hemisphere in two-thirds of these cases weighs less than the right. We know that the speech affection is one of the most characteristic and earliest clinical phenomena of this disease; possibly this difference in the weights may be the result of excessive activity of the left hemisphere while in a process of decay. At the same time, this tendency of the left hemisphere to waste more rapidly than the right might be explained on mechanical principles, for venous congestive stasis might take place more easily in the left hemisphere than in the right, owing to the fact that the blood in the internal jugular vein on the right side has a more direct course to the right auricle than the left.

NOTES.

[1] Exner's method is as follows: Small pieces of brain, 1 c.cm. in size, are placed in 1 per cent. osmic acid for 5 to 10 days: cut in alcohol with a wet knife; after sticking on cork with shellac, the sections, which must be very thin, are mounted in glycerine. If they are allowed to remain in alcohol they spoil; they are best transferred on a section-lifter in a drop of strongly-ammoniated water. The preparation should be examined at once; the essential in this process is the use of the ammonia, whereby the neuro-keratin supporting structure is swollen up into a homogeneous mass. The finest fibres of the cortical layers are demonstrated remarkably well by this method. [2] Liebreich and Diakonow considered that protagon was a mixture of lecithin and cerebrin, but numerous researches by Gamgee, Blankenhorn, Baumstark, Kossel, Freytag, and Ruppel have shown that protagon is a single chemical substance, without, however, its precise constitution being determinable. Noll, in an interesting paper refers to these researches and descibes a method for the quantitative estimation of protagon. By this method he was enabled to show that protagon rapidly diminished in quantity in degenerating nerves, and finally completely disappeared. He made comparative quantitative estimations of the two sciatic nerves after cutting the nerve on one side in dogs and horses. The protagon diminished in quantity, until on the twenty-eighth day it had completely disappeared. In one case he examined the central ends of the sciatic nerves, and found a considerable diminution on the side of section. He also did an experiment relating to phosphorus, and his results, he states, are in agreement with our results with regard to the splitting up of lecithin. [3] Choline can be detected chemically in the blood and cerebro-spinal fluid in the following manner: The blood or fluid is mixed with two or three times its volume of absolute alcohol. The filtrate is evaporated over a water bath to dryness. The residue is taken up with absolute alcohol and again filtered; the filtrate is evaporated to dryness and treated with 15 per cent. alcohol in distilled water and a drop of platinum chloride solution added. Octahedral crystals of the double salt of choline and platinum chloride are formed.

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ANTISTREPTOCOCCUS SERUM IN ERYSIPELAS.

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As antistreptococcus serum has not yet established itself as an efficient remedy in erysipelas, and as notes of cases treated with it, whatever the result, are useful in indicating its efficacy or the reverse, I offer no apology for the following brief account of a case treated by it.

Mrs. H., aged 26, was taken ill on April 11th, 1900, and complained of headache, backache, sore throat, and pain in the limbs. The next day, when I first saw her, the temperature was 104.6°, the pulse 130, the same symptoms persisted, and the nose was red, swollen, and blocked up. I diagnosed facial erysipelas, gave a saline aperient, and ordered 20 minims of liquor ferri perchloride with 2 gr. of quinine, to be taken every four hours, and the face to be covered with a mask of cotton wool.

The next day (April 13th) there was no doubt of the diagnosis, the eruption having spread on to the cheeks. That night, however, the face being very painful, the patient threw off the mask, and had the face constantly bathed with butter milk. The next morning she was much worse, the temperature 105°, the face a deep red, and the eruption had spread to the eyelids and forehead. I prescribed an ointment consisting of equal parts of lanolin and ichthyol to be smeared over the face, and ordered 4 grs. of quinine to be taken every six hours, alternating with half a drachm of liquor ferri perchloridi, which was also taken every six hours. The diet consisted of peptonised milk and Brand's beef essence (plain milk caused vomiting).

On April 15th the submaxillary region was involved, and the iron was dropped, as it caused vomiting and diarrhœa. The patient was delirious, and half an ounce of brandy was given every four hours. By April 19th the patient was so unconscious that all the excretions were passed under her, and half an ounce of brandy was being administered every hour. On April 22nd, the temperature being 104° and the pulse 120 and very thready, digitalis and strychnine were given with the quinine, the hair was cut short, and an icebag applied to the head, the delirium being of a low muttering character A bedsore had formed over the sacrum and another on one buttock.

On April 24th she was practically moribund; the pulse could hardly be felt and could not be counted. At 10 A.M. I injected 20 c.cm. of Burroughs and Wellcome's antistreptococcus serum under the skin of the abdomen. At 2 P.M. she became conscious for a time, though she became delirious again. At 6 P.M. the temperature had come down to 101°, and the pulse was of better tone. I injected another 10 c.cm. of the serum. Next morning the temperature was 99.6°, the pulse 98, and decidedly stronger. I gave another 10 c.cm. of serum. She was quite sensible, and complained of the prick of the hypodermic needle. She had another 10 c.cm. of serum the same evening. The next day she was not delirious, had some tea and toast, and asked for the bedpan when she needed it. This day and the next two days she had a daily dose of 10 c.cm. of serum, and on April 27th she sat up and ate boiled fish for dinner. From this time onward convalescence was uninterrupted, and the temperature remained normal, except for a rise to 102.6° on May 8th, when she complained of pain in her joints. This was entirely subdued by 15 grs. of sodium salicylate every four hours, the temperature next morning being 99°.

One noteworthy feature of the case was the almost entire lack of sleep. At various times the following doses were given: Dover's powder, 15 grs.; sulphonal, half a drachm; potassium bromide, 2 drachms; sulphonal, 35 grs., with ½ gr. morphine; trional, 1 drachm; none of these drugs produced more than twenty minutes' sleep, until the temperature had reached the normal point.

I have no hesitation in saying that the antistreptococcus serum, of which she had 80 c.cm. in all, saved the patient's life; as, in my opinion, when it was administered, she could not have lived more than twenty-four hours without it.

IMPACTION OF A BEAN IN THE AIR PASSAGES TRACHEOTOMY: EXPULSION THROUGH THE WOUND: RECOVERY.

BY BRUCE HAMILTON, L.R.C.P., M.R.C.S.,
Frognal, N.W.

THE following case of a foreign body in the bronchus presents several features of interest:

A boy, aged 12, when playing with haricot beans, had his elbow accidentally jerked upwards, with the result that a bean which he had been holding in his hand was shot into his mouth; coughing and retching instantly commenced. Attacks of coughing and retching recurred at intervals of a few minutes, and a little blood-stained mucus was coughed up. There was no evident laryngeal stridor, but the boy was greatly alarmed, and repeatedly sought to relieve his distress by cramming his fingers down his throat, an act that at once induced noisy retching; a period of comparative calm invariably followed.

The right lung was found to be quite inactive, no air whatever entering it; the left lung acted well. The heart's action was irregular; the apex beat was situated at one inch outside the nipple line, and a loud systolic murmur was conducted into the axilla. On laryngoscopic examination, the mucous membrane of the trachea was seen to be swollen and of a dull red colour. The bifurcation was not seen. The larynx presented a normal appearance. Throughout the case the voice remained faint and "ventriloquial;" there was never actual aphonia.

Thumping the back, with the patient both bent forwards and inverted, had no result. Copious vomiting ensued, induced by ipecacuanha wine, was followed by quieting of the symptoms, and he passed an excellent night. On the following morning a fit of coughing occurred, and the condition of the patient became rapidly worse. With the cessation of all intervals of quiet breathing the struggle for breath grew more fierce, and cyanosis deepened.

Eventually an incision was made into the trachea while the patient lay on the carpet, where he had fallen, unconscious, convulsed, and apparently *in extremis*. With the opening of the trachea respiration was re established. The outer cannula of a tracheotomy tube was slipped in, which was later replaced by a pair of sinus forceps used to stretch the tracheal opening. On enlarging the wound in a downward direction a large bean was expelled from the trachea with great force. No tube was worn, and the wound was allowed to granulate. The patient made an uneventful recovery.

The correct treatment in such a case as that which has been related is unquestionably tracheotomy. It obviates the possibility of the foreign body getting into the larynx and causing sudden death. It is a difficult matter to get the patient's friends to realise that procrastination may cost the patient his life; for with one lung acting well and the patient gently slumbering they not unnaturally fail to see the need for surgical interference. In the case in point, perhaps if a little more time had been bestowed on laryngoscopic examination the pearly white shining body of the bean might have been seen, which might have accelerated permission to operate. It is probable that the bean was stuck fast like an egg in a cup, and was prevented from escaping during forcible expiration by reason of its upper extremity being driven into the mucous membrane. The theory that closure of the glottis was entirely due to a reflex spasm brought about by peripheral irritation of the tracheal nerve endings does not seem to explain the case in its entirety.

The rapid onset of the asphyxia towards the last may be partly explained by the peculiar nature of the foreign body; the testa would take a long time to soften, and until that had taken place there could be no general increase in size; but once the substance of the cotyledons began to absorb moisture a great and relatively sudden expansion would occur. To Dr. MacFadden, of Hampstead, my thanks are due for timely and skilful assistance.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

SEPARATION OF CHONDRO-STERNAL JUNCTION WITHOUT FRACTURE.

SEPARATION at the chondro-sternal junction due to direct violence and uncomplicated by fracture, when it occurs in adults, is usually accompanied by fracture of the ribs or sternum. In children it may be the result of indirect violence (for example, swimming), and is then uncomplicated by fracture. This is explained by the cartilages being more yielding than in older people. Malgaigne quotes three cases of simple dislocation (that is, without fracture) of the costal cartilages forwards. Cooper mentions a dislocation of the fifth and sixth cartilages in a boy; Middeldorpf mentions two cases. Hamilton cites a dislocation of the fourth cartilage; Professor Gross says he has met with several. The comparative rarity of the accident has led me think it worth while placing this case on record.

On May 7th, 1900, I was called to see a miner who had been violently assaulted by a fellow-workman. I found him lying on his back in great distress and evidently suffering from severe shock. He was pale and almost pulseless. His breathing was extremely painful and shallow. On examination, I found some superficial abrasions on the sternum, but there was no deformity. Auscultation and palpation revealed no signs of fracture. In view of the collapsed condition I ordered hot fomentations to be applied to the precordia and gave him brandy. I then administered a sedative containing a little opium and potassium bromide.

As I was not satisfied that there was any fracture, and wishing to disturb the patient as little as possible, I did not apply the usual strapping and bandage to his chest. The following day there was no improvement. The breathing was still very shallow and painful, but there was no sign of any deformity. After auscultation I applied strapping across the sternum and encircled the chest in a broad bandage. The patient expressed himself greatly relieved by this. On the fourth day after the injury he had a violent attack of palpitation, and said he felt as if he were going to die. The next day he was much better, and could breathe more freely. It was now manifest for the first time that there was a separation of the second costal cartilage from the sternum, at the side of which it formed a small prominence. A distinct click could now be heard and felt with the respiratory movements. I applied a pad of lint over the displaced cartilage, and maintained it in position by strapping; finally a linen bandage was wound round the chest. I attribute the fact that the dislocation only became apparent some days after the injury to the freer expansion of his lungs as respiration became less painful.

Barnsley. S. GROSS, M.B.Lond.

A SIMPLE METHOD OF FIXING BLOOD FILMS.

FOR some time past I have been experimenting with the object of obtaining a simple and expeditious method of fixing blood films. Eventually I have used the vapour of formic aldehyde with extremely good results.

I make use of a bell-jar which is open at the top. The diameter of the jar is 135 mm., and the height to the lower border of the neck about 150 mm. The opening at the top is closed by an indiarubber cork on the bottom of which is glued an ordinary cover glass.

When in use the dry cover glasses which it is desired to fix are laid upon a glass plate and covered over by the bell-jar. The cork is removed and a drop of formalin is placed on the attached cover at its lower end, and the cork immediately replaced. The covers, which must be quite dry, are left exposed to the vapour for fifteen minutes or more, but not longer than thirty minutes, after which they will be found to be well fixed.

The results obtained in this way are extremely good, but it is necessary to see that the films, when made, are thin, as thick films are liable to crack.

ALEXANDER EDINGTON, M.B.,
Director of the Colonial Bacteriological Institute,
Cape of Good Hope.

PSEUDO-HÆMOPTYSIS IN AN INFANT.

I WAS called to an infant five days old as the nurse had found blood coming from its mouth, and as the motions, which had began to change, were again black. The child was perfectly well, and no lesion was to be found in the mouth nor in the mother's nipples. Next day I was sent for in haste, as the child had vomited a large quantity of half-digested blood, and the melæna was very marked. A renewed examination of the mother showed a very small crack in the right nipple, but no blood could be expressed, nor did the breast pump produce any; still, I felt confident of the origin of the blood. The breast was now given, and the child's mouth was found full of blood. Nursing was stopped. There has been no more blood, and the melæna has disappeared.

I have seen bleeding from the nipple before, but have never known a quantity swallowed (3 ounces at least) without the mother being aware of any unusual feeling, or noticing the blood at once. I could not make the nipple bleed with any manipulation.

Liverpool. W. MACFIE CAMPBELL, M.D.

ASEPTIC BARBER SHOPS.—The Boston Board of Health has issued regulations providing definite rules for the management of barber shops. Mugs, shaving brushes, and razors must be sterilised after each separate use by immersion in boiling water. The use of powder puffs and sponges is prohibited. Similar regulations have recently been made by the Municipal Health Office of Padua.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

EYE, EAR, AND THROAT INFIRMARY, EDINBURGH.

CASE OF NASAL GRANULOMA PROBABLY TUBERCULOUS.

[Under the care of Dr. Hunter Mackenzie.]

(Reported by Mr. John Cumming, F.R.C.S.E.)

Miss A. came complaining of complete obstruction of, and occasional severe bleeding from, the right nostril of about one year's duration. On examination the nostril was found completely blocked with what seemed to be a reddish-brown polypus, which on probing was found to be freely movable and very vascular. On attempting its removal in the usual way by the snare it was seen to be very friable, and with a marked tendency to hæmorrhage. A pair of dressing forceps pointed with cotton wool was accordingly introduced, and the whole growth was easily detached and pushed into the posterior nares, from which it was removed by the mouth. This was followed by very severe hæmorrhage, necessitating plugging of the nostril. The polypus was about 2 inches long, and had been attached along the ridge of the middle turbinate body. It was of a reddish-brown colour, interspersed with white streaks. Microscopically it was found to be a "granuloma with giant cells, probably tuberculous." The area from which it sprang was treated with the electro-cautery, and six months subsequently there was no indication of any tendency to recurrence. It may be added that the patient had enlarged glands on both sides of the neck, some of which had been excised about a couple of years previously. There were no indications of pulmonary phthisis. The middle turbinate body remained raw and inflamed for a longer period than after the removal of an ordinary mucous polypus, but no ulceration or necrosis of bone occurred.

Remarks by Dr. Mackenzie.—This case presents certain important features:

1. *Its Hæmorrhagic Character.*—It illustrates the diagnostic value to be attached to hæmorrhage as a concomitant of polypus of the nose. A polypus which bleeds freely on removal—more especially if there is a history of occasional troublesome spontaneous hæmorrhages, and even if to the naked eye it presents the appearances of an ordinary mucous growth—may be safely regarded as malignant, or, as this case tends to show, tuberculous. The only exception to this is in the case of what is known as bleeding polypus of the nasal septum (angioma), which is more generally found in women, and can be readily differentiated from other varieties of polypus by its extremely vascular appearance and by its microscopical characters. The hæmorrhagic tendency of these malignant or tuberculous polypi gives them a reddish-brown colour, as in the present case.

2. *Seat of the Polypus.*—It is most unusual for tuberculous polypi to spring from the middle turbinate area, that is, from the same locality as the benign. Chiari,[1] in fact, states that one of the diagnostic marks of a tuberculous polypus is its proclivity to be localised to the anterior portion of the septum, where it is particularly prone to recur and be followed by septal perforation and ulceration. In the case now recorded none of these peculiarities was present.

3. *Relation to Pulmonary Phthisis.*—It appears that a tuberculous polypus of the nose may occur as a primary growth, that is, without evidence of the existence of similar disease in other regions or viscera, especially of the lungs, as in the present instance, This has previously been noticed. Thus Wroblewski[2] reports the case of a recurrent tumour of the nasal septum about the size of a hazel nut, which was removed and on microscopical examination found to be tuberculous. It recurred five times, and during a period of six years over which these recurrences extended, examination of the lungs and sputum gave negative results. It was believed at first to be an ordinary polypus (although located on the septum), and on removal bled freely. Tuberculous ulceration of the septum ultimately ensued. In the present instance the enlarged glands in the neck tend to give a somewhat unfavourable shade to the prognosis. An endeavour will be made to have the patient inspected from time to time, and the ultimate result will form the subject of another report.

[1] *Archiv für Laryngologie und Rhinologie*, 1893, 1-2.
[2] *Internat. Centralblatt für Laryngologie*, vol. x. p. 17.

REPORTS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.

Laboratory Meeting.

Saturday, June 30th, 1900.

By the invitation of Professor G. Sims Woodhead, a laboratory meeting was held on Saturday, June 30th, at 4 P.M., in the Pathological Laboratory, New Museums, Cambridge.

After welcoming the Pathological Society in the name of the Medical School, Professor Sims Woodhead proposed that Professor W. Osler, M.D., F.R.S. (Baltimore), be invited to take the chair; this was carried unanimously.

Pathology of Tropical Dysentery.

Professor S. Flexner (Philadelphia) said that the dysentery which occurred in and about Manilla might be divided into acute and chronic. The acute form might terminate fatally in forty-eight to seventy-two hours, it might be followed by recovery or become chronic. The usual chronic form agreed with the so-called amœbic disease; the chronic form supervening on the acute variety had a different pathological anatomy from the amœbic disease, and amœba were not found, or at least so exceptionally, that they could have no causal relation to the disease. The two forms were also distinguished by their complications. Chronic amœbic dysentery was commonly followed by liver abscess, while the chronic form following the acute disease, as well as the acute disease itself, was very rarely attended by hepatic complications. The acute dysenteries were not caused by amœbæ. On the other hand bacteriological study of the dejecta showed the presence of a bacillus which was absent from normal fæces, and was not found in the intestinal contents of persons suffering from diseases other than dysentery in the same locality. This organism had close affinities with the bacillus typhosus; from which, however, it could be distinguished by its action on litmus milk, its slight motility and tendency to become immobile in artificial cultures, and the serum reaction. In the very acute cases it might be the predominating organism; as the cases became older the numbers of bacilli diminished until in the chronic form it might be very difficult to find any, or it might escape detection. This bacillus agglutinated with the blood serum of dysentery. It had yet to be determined whether the bacillus, which was a pathogenic species, occurred with regularity in the acute forms, and could be regarded as the cause of that affection. The limits of the applications of the serum test must also be determined. There was no doubt that this bacillus was identical with the organism obtained by Shiga from the endemic dysentery of Japan, and regarded by him as the cause of the disease. A similar bacillus had been found in dysentery by Baker and Pansini, and called the pseudo-typhoid bacillus. In a single case of dysentery contracted in Porto Rico that came to the University Hospital, Philadelphia, the identical bacillus was discovered. Animals were easily immunised, and a curative serum had been prepared.

Yellow Fever.

Professor Flexner made a short and critical statement on the bacteriology of this disease.

The Way in which Bones Break.

Dr. J. Griffiths gave a demonstration on this subject.

Mosquitos and Malaria.

Dr. Nuttall (Cambridge) gave a demonstration upon the relation of mosquitos to malaria. The demonstration consisted in the exhibition of the developmental changes undergone by avian and human parasites in species of *Culex* and *Anopheles* respectively, these being illustrated by means of specimens, photomicrographs, and drawings. Living speci-

means of *Anopheles maculipennis*, caught by Dr. Nuttall in the vicinity of Cambridge, as also of *Culex*, were shown in tanks, and their biological characters referred to. Maps showing the geographical distribution of malaria over the world, as also its former prevalence in England, were shown, and the present geographical distribution of the genus *Anopheles*, as far as known, described. A decided agreement between the former distribution of malaria in England and the present distribution of *Anopheles* (*A. maculipennis, bifurcatus nigripes*) was observable. The studies regarding this distribution were, however, not as yet concluded, the work, which was being conducted with the aid of British dipterists, being one of considerable magnitude. Further details would be given by Dr. Nuttall in a future publication. The development of human malarial parasites had been observed in nine species of *Anopheles* in different parts of the world—India, Africa, Italy, United States—whereas all experiments made with species of *Culex*, at least 10—in Italy, Africa, India—had given negative results. Though it was quite possible that species of *Culex* might be found which were capable of serving as intermediary hosts to human parasites, the evidence hitherto gathered pointed solely to *Anopheles* as fulfilling this function. The interesting fact that *Anopheles* persisted in England whilst malaria had to all appearances disappeared was a subject for further investigation. The disappearance of the parasites might very well be due to a progressive diminution in the number of *Anopheles*, a plentiful supply of which was absolutely necessary for their continued existence. There might, however, be other factors concerned in their disappearance which still remained to be discovered. It would be of the greatest interest to discover the true cause of this disappearance. It had been suggested that it might be due to the *Anopheles* in England not sucking blood; but this was untenable, for Dr. Nuttall had proved the contrary by experiments upon himself.

DIPHTHERIA OCCURRING SPONTANEOUSLY IN THE HORSE.

Dr. COBBETT showed some cultures of B. diphtheriæ which had been obtained from the nasal discharge of a pony. The original culture was sent by Dr. Mearns Fraser, M.O.H. for Portsmouth, who, while investigating the causation of an attack of diphtheria in a little girl, had noticed that her father's pony was suffering from a purulent and slightly sanguineous nasal discharge. Experiments were described which established the identity of the bacillus; 0.1 c.cm. of a living twenty-four hour old broth culture killed a guinea-pig in six days, while 1.0 c.cm. of the same culture to which 0.01 gram of antitoxin had been added was quite harmless to another. Again, 0.05, 0.1, 0.5, and 1.0 c.cm. of the filtrate of an eleven-day culture killed guinea-pigs within three days; while 5.0 c.cm. of the same filtrate with 0.01 c.cm. of antitoxic serum caused no local swelling and no disturbance of health. The horse had hitherto not been unknown to suffer from diphtheria.

EXCRETION OF DIPHTHERIA TOXIN IN THE URINE.

Dr. COBBETT described experiments which clearly showed that diphtheria toxin was excreted in the urine, both from susceptible and from relatively insusceptible animals (guinea-pig and rat). From these animals, injected with diphtheria toxin, the urine secreted in the next few hours was collected with a catheter, and injected subcutaneously into guinea-pigs. It produced an inflammatory swelling at the seat of inoculation, followed by dry necrosis and falling out of the hair, and in one instance death. Control experiments were made with the same urine to which a little antitoxin had been added. Other control experiments also were made with the urine of normal animals.

COMPOSITION AND ACTION OF BROWN-SÉQUARD'S FLUID.

Dr. W. E. DIXON described experiments dealing with the composition and action of Brown-Séquard's fluid. He showed that the physiologically active substances consist of a nucleo-albumin, spermine, other leucomaines, and salts. The nucleo-albumin produced great cardiac inhibition, with stoppage of respiration. This effect might be cut out by section of the vagi, and was produced reflexly. Spermine also had a slight cardiac effect (due to stimulation of peripheral vagal terminals), but its main action was vasomotor, resulting in considerable dilatation of the abdominal vessels.

NEUTRALISATION OF MEDIA.

Referring to the important influence exercised by the reaction of the medium upon the growth of an organism cultivated thereon, Dr. EYRE entered a plea for the adoption of media—broth, gelatine, and agar—of a definite "standard" reaction for ordinary laboratory use by English bacteriologists similar to that in vogue in America. He then pointed out that litmus—the indicator in general use in the country—was totally unsuited for exact work as it was not sufficiently sensitive to weak organic acids and acid phosphates, but that in phenolphtalein we possessed a sensitive and reliable indicator and one moreover which gave a very sharp and definite "end point." Dr. Eyre showed a series of flasks of agar and gelatine, demonstrating the colour produced when the end point, or neutral point to phenolphtalein was reached and showing the marked effect of the addition of minute quantities of decinormal solution of caustic soda to the medium after that point had been determined—an effect which proved that it was hardly possible for the most inexperienced worker to make a greater error than 5 per cent. when titrating with $\frac{N}{10}$ NaOH and using phenolphtalein as the indicator.

BRITISH GYNÆCOLOGICAL SOCIETY.

W. J. SMYLY, M.D., President, in the Chair.

Thursday, June 14th, 1900.

INDICATIONS FOR THE REMOVAL OF THE UTERINE APPENDAGES.

THE discussion on Dr. Macpherson Lawrie's paper on this subject, adjourned from the last meeting, was opened by a communication from Dr. MACNAUGHTON-JONES, who was unable to be present. He held that there was unanimity of opinion as to the necessity of removing the appendages in the case of (1) disease of the oviduct—suppurative, cystic, or other—destroying its integrity and obliterating its lumen; (2) in blood cysts, both of the ovaries and Fallopian tubes; (3) solid tumours of the ovary; (4) most cases of ectopic gestation. As to that large number of sufferers from reflex troubles and nervous conditions, in which gross changes might or might not be found in the genitalia, it had often been proved that the pathological changes found in the ovaries and tubes, though not apparently of great importance on examination beforehand, had been of a grave character, incurable in their nature, and therefore wrong to leave unremoved. On the general question of the removal of whole or part of the internal genitalia, such removal was not to be considered save, first, where other therapeutical steps had either been tried and proved valueless, or the procrastination involved in resorting to them was both directly and indirectly injurious to the woman, and, secondly, when the risk of operation was less than that of non-interference.

Dr. C. H. F. ROUTH strongly opposed the removal of the uterine appendages, whether the inflammation was suppurative or not. In the former case the plan he advocated was aspiration of the tumour, followed by the injection of iodine.

Dr G. ELDER said that when Lawson Tait had the inspiration to remove the ovaries and tubes in the case of inflammatory conditions, it was a great advance on previous methods; no doubt many ovaries and tubes were subsequently removed that ought to have been allowed to remain; probably most of those present had removed ovaries which on after-consideration they would have allowed to remain. He was led to reconsider the matter by the fact that in some instances after the removal of the appendages the pain was no better than before. His own practice now in doubtful cases was to examine the patient under an anæsthetic, and, if necessary, make an exploratory incision, dealing with the appendages according to the condition found at the time.

After remarks by Mr. STANMORE BISHOP, Mr. J. FURNEAUX JORDAN said he agreed with the greater part of the paper. He held that the appendages should never be removed unless palpably diseased; for the determination of this point an exploratory incision was often valuable.

Mr. J. BLAND SUTTON said that from the beginning of his surgical career he had always acted upon one rule—never to remove ovaries and Fallopian tubes unless there was very tangible evidence of disease in these structures. Increased experience had taught him to limit the removal of tubes and

ovaries to two sets of conditions—namely, inflammatory lesions and tubal pregnancy. Under the title of inflammatory lesions of the uterine appendages he included chronic salpingitis, pyosalpinx and hydrosalpinx, and tuberculous salpingitis. These were the commonest conditions for which double oöphorectomy was required. He had never performed oöphorectomy for the cure of neurotic conditions, and discountenanced removal of ovaries when there were no obvious physical signs in patients with dysmenorrhœa. It was disappointing to find that such a progressive surgeon as Dr. Lawrie still practised the removal of ovaries for the relief of fibroids; but that operation, like the still more unsatisfactory one of double oöphorectomy for the relief of mammary cancer, was rapidly disappearing from the field of legitimate surgery. The results in Dr. Lawrie's series of cases were very satisfactory. Dr. Victor Bonney had drawn up a series of cases in which Mr. Bland-Sutton had performed abdominal oöphorectomy for inflammatory lesions and tubal pregnancy at the Chelsea Hospital for Women since he was appointed surgeon to that institution. The table contained 92 consecutive cases, and there were no deaths in the series. This gratifying result was due to the maintenance of thorough asepsis, abstention from irrigation, and the substitution of a strip of sterilised gauze for the drainage tube. His results in private practice had been equally successful.

Mr. BOWREMAN JESSETT thought that Dr. Lawrie's attitude had been misunderstood; it had been assumed that he advocated operation in all cases, whereas he specified that it should be restricted to cases in which other methods had failed. Dr. Mary Dixon Jones had shown that there were cases in which the ovaries presented no enlargement and yet were much diseased; and he imagined that some of Dr. Lawrie's cases came under this category.

Mr. SKENE KEITH remarked that he did not believe in removing ovaries from patients in perfect health. There was a condition of the ovaries to which no reference had been made, in which the ovary appeared healthy on the surface, but on cutting it open there was a thick capsule almost as hard as cartilage. With each recurrence of ovulation much pain must necessarily result, and the patient became emaciated; if the general health of the patient was not thus affected it was not time to operate.

Dr. FRED EDGE said it had struck him that the cases where conservative plans had failed were much the same as those in which the removal of the appendages was not followed by full recovery, that is, the uterus and other pelvic structures were implicated, and either radical removal of the uterus and adnexa should be performed, or the case left to medical treatment. It was a rule with him to remove the appendages and not to try conservative operation in gonorrhœal cases; but Mr. Taylor had shown that many of these cases had a syphilitic basis, or at least alterative treatment would relieve them.

The discussion was continued by Mr. CHARLES RYALL and Dr. ARTHUR GILES; and Dr. MACPHERSON LAWRIE replied.

SPECIMENS.

The following were shown:—Dr. W. H. A. NEWNHAM (Bristol): Uterine myoma removed by intraperitoneal hysterectomy from a patient aged 24. Dr. G. ELDER (Nottingham): Double ovarian dermoid tumour. Mr. J. FURNEAUX JORDAN (Birmingham): Specimens removed by vaginal cœliotomy.

EDINBURGH OBSTETRICAL SOCIETY.

R. MILNE MURRAY, M.D., F.R.C.P.E., F.R.S.E., President, in the Chair.

Wednesday, June 27th, 1900.

SUPPRESSION OF URINE FOLLOWING CYSTITIS.

DR. LAMOND LACKIE read a paper on a case of suppression of urine following cystitis.

The patient first came under observation eight years ago, when she had all the symptoms of chronic cystitis. The usual treatment by irrigation, diet, and drugs was adopted without effect, and the pain during micturition continued to an aggravated degree. The urethra was dilated by Hegar's bougies, so that the bladder might be explored. This gave complete relief from all symptoms, but unfortunately the patient never regained control over the act of micturition; but by the aid of a portable urinal she in turn became fairly comfortable, and always refused to submit to any treatment to cure the incontinence as she dreaded a return to her former symptoms. In March, 1900, Dr. Lackie was called to see the patient, who said that but for some sickness she was quite well, but that she had not passed any urine for nine days. She was removed to the infirmary, when hot air baths and diuretics were administered, with the result that twenty-four hours later urine commenced to flow freely. For eight days she improved, and seemed to be getting well, when suddenly once more excessive sickness returned, and complete suppression of urine supervened. She had none of the usual symptoms of uræmia which at one time were supposed to be always present in non-obstructive suppression. The patient gradually became comatose, and died forty-eight hours after the onset of the second attack of anuria. *Post-mortem* examination showed that the bladder was reduced to the size of a small tube, that the right kidney was in a condition of acute septic nephritis, whereas the tissue of the left kidney was entirely replaced by tuberculous material.

In conclusion Dr. Lackie discussed the literature of the subject.

The paper was discussed by Drs. J. W. BALLANTYNE, JAMES RITCHIE, FOULIS, FORDYCE, and the PRESIDENT; and Dr. LACKIE replied.

CÆSAREAN SECTION FOLLOWED BY SUBPERITONEAL HYSTERECTOMY.

Dr. N. T. BREWIS read a paper on this subject, and related a case.

The operation was performed at term for contracted pelvis. The patient was pregnant for the fifth time; her first child was delivered stillborn at the seventh month with forceps, the *accoucheur* having to use great force. Two early miscarriages took place subsequently, then followed a labour at full term ended by basilysis. The true conjugate measured from 2½ to 2¾ inches.

The question of the particular operation to be adopted in the case was discussed. Symphysiotomy was out of the question, because it had been promised that measures would be taken to prevent a future conception. One of the following operations might be chosen: (1) Sänger-Cæsarean section; (2) Porro-Cæsarean section; (3) Cæsarean section followed by panhysterectomy; (4) Cæsarean section followed by subperitoneal hysterectomy. Dr. Brewis had performed the Porro-Cæsarean operation successfully some years ago in two cases. He had also performed, likewise with success, panhysterectomy four times for new growths between the fourth and sixth months of pregnancy. This experience had taught him that these operations were attended with no special difficulties, and that total hysterectomy during pregnancy was as easily performed as the Porro operation. The subsequent risks of hæmorrhage and sepsis he considered greater with the latter. He would restrict Porro-Cæsarean section to cases where the patient was in an exhausted state, and where the operator had not proper assistance, because it was an operation which could be done very quickly. Dr. Brewis had had no experience of the improved Cæsarean section, but he decided against it on account of the danger of subsequent gaping of the uterine wound, hæmorrhage, and peritonitis, and because the patient was liable to all the risks associated with the puerperium. He considered there was little to decide between Cæsarean section followed by panhysterectomy and Cæsarean section followed by sub-peritoneal hysterectomy. He selected the sub-peritoneal method of treating the stump because he had considerable experience of this technique in removing fibroids. The child was born alive, and the mother made an easy recovery.

CLEANSING OF THE PERITONEUM DURING CŒLIOTOMY.

Dr. BREWIS read a paper on this subject. After referring to the fact that irrigation, like drainage, was less frequently resorted to than formerly, owing to the confidence which surgeons now had in their technique and in the power of the peritoneum to dispose of fluids and minute solid particles, and to resist the invasion of pyogenic bacteria, he stated the conditions necessitating irrigation of the whole peritoneal cavity. He then proceeded to draw attention to the treatment of contamination caused by pus which had escaped into the pelvic cavity during the removal of such conditions as pyosalpinx and ovarian abscess. Dr. Brewis described the procedure in detail as follows:

In removing pus sacs of the appendages the surgeon will place the patient in the Trendelenburg position. After opening the peritoneal cavity he will most likely encounter the omentum adherent to the various pelvic organs, as well as perhaps to intestine and parietal peritoneum. This, along with adherent intestine, he will separate and pack off with gauze pads, so that the only part of the intestinal tract left in the pelvis is the rectum. He will now enucleate the pus sacs, taking care that they are completely liberated before bringing them through the abdominal wound. This careful handling is necessary to prevent rupture, and with the same object he may, before attempting withdrawal, empty the sacs by aspiration. In this way he will in many cases be able to successfully remove the diseased parts without contaminating the peritoneum. But in some instances, in spite of these precautions, pus will escape from swellings where its presence was unsuspected, or where the walls were thin. When this happens what is to be done? Is

the surgeon to consider the pus sterile and unlikely to cause serious results, and simply trust to sponging; or is he to look upon the presence of even a small quantity of pus as dangerous, and do all in his power to get completely rid of it? I think every wise surgeon will take the latter view, and will ask himself what is the best plan to adopt. The guiding principle should be that the method followed must not spread the infection, and with this end in view he must not irrigate over a wider peritoneum area than is already contaminated. Care must be taken to prevent the water flowing up among the intestines and distributing the infection..... The method which I now describe I can recommend with assured confidence. Immediately the pus escapes from the ruptured sac cover it over with a large gauze pad, then pack off the general peritoneal cavity carefully and thoroughly with gauze. Remove the diseased structures, then introduce a long pair of forceps or blunt-pointed scissors into the vagina, and push its point through the posterior fornix into the pouch of Douglas, and separate the handles widely to enlarge the opening. Now lower the pelvis and irrigate the cavity from above, introducing the end of the douche into the abdominal wound. The stream of water, or normal saline solution if you use it, washes out the pelvis, and escapes through the opening at the foot of Douglas's pouch into the vagina, and out at the vulva. By this method there is no chance of the contaminating material being carried upwards into the general peritoneal cavity, and it permits of most thorough cleansing.

The method was shown in a drawing, and illustrative cases were narrated.

Dr. Brewis's two papers were discussed by Drs. STUART NAIRNE, HAULTAIN, J. W. BALLANTYNE, FOULIS, JAMES RITCHIE, FORDYCE, and the PRESIDENT; and Dr. BREWIS replied.

TREATMENT OF ECLAMPSIA.

Dr. J. W. BALLANTYNE read a clinical note on a case of eclampsia at the sixth month of pregnancy, treated by saline infusion and veratrum viride.

A patient, aged 39, had reached the sixth month of her second pregnancy when "fits" occurred. She had had no known renal trouble, and had never suffered from dropsy. Her first pregnancy and labour were normal; the infant died at the age of 3 days from "blood poisoning" it was stated. For a month before the "fits" appeared she had some swelling of the legs, and for a week before she said her urine was very pale. Severe epigastric pain preceded the first "fit" by three hours, convulsions followed every half hour, and in two hours she was in a state of coma. Two drachms of sulphate of magnesium were given by the mouth, a convulsion almost immediately supervening; 20 grs. of chloral and 40 grs. of bromide of potassium were then exhibited *per rectum*. No convulsion followed for an hour and a half. The urine passed during the previous night was pale, turbid, had a specific gravity of 1014, and a deposit of about two-thirds albumen. Four hours after the first convulsion the pulse was 136 and of high tension; she was nearly unconscious; the cervix was undilated. An hour later 10 minims of the tincture of veratrum viride were injected hypodermically. An hour later still three-quarters of a pint of saline infusion was injected into the loose tissue below both breasts. Two convulsions occurred soon after, and 15 minims of the tincture of veratrum viride were again exhibited. Urine drawn off by the catheter at this time contained blood and nearly three-fourths albumen. Despite the treatment noted and the use of chloroform the condition became very grave, and it was decided to induce abortion. The internal os was found to be very undilatable, but labour pains at long intervals occurred, and convulsions were much less frequent. The last convulsion occurred twenty-six hours after the first. The fœtus was born seventeen hours after the last convulsion. The placenta was healthy and there was little hæmorrhage. In sixteen days from the onset of symptoms the urine was normal. The case was a typically severe eclampsia gravidarum; there were eighteen convulsions in fourteen hours; the urine was heavily loaded with albumen, and also contained blood and tube casts. The recovery was complete and rapid. The cessation of convulsions and the general improvement in the patient's condition occurred eighteen hours before the birth of the living fœtus.

The urine of the eclamptic had a singular power of resisting putrefactive changes; it remained acid for weeks.

SPECIMENS.

Professor A. R. SIMPSON showed: (1) Dermoid cyst of ovary which formed the channel of a fæcal fistula; (2) two fibroid uteri removed by panhysterectomy.—Dr. J. LAMOND LACKIE showed an early extrauterine gestation.—Dr. J. HAIG FERGUSON showed a uterus removed by vaginal hysterectomy for cancer of cervix.—Dr. J. STUART NAIRNE (Glasgow) showed a uterus with placenta *in situ* removed from a dwarf at full term by Cæsarean section.—Dr. BREWIS showed a fibroid of the uterus and an enlarged vermiform appendix.—Dr. JAMES FOULIS showed a series of photographs illustrating the development of the amnion and umbilical cord.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Sir J. W. MOORE, M.D., P.R.C.P.I., President, in the Chair.

Friday, May 18th, 1900.

CEREBRO-SPINAL MENINGITIS.

DR. H. C. DRURY, who read this paper, related 8 cases which had been in Cork Street Fever Hospital. A man aged 20, a boy aged 12, and a man aged 21, after prolonged illness, recovered. A man aged 48 died on the fourteenth day, a man aged 19½ died on the sixth day with very acute symptoms throughout, and a girl aged 17 died on the tenth day. A female child aged 6 years died on the fifth day, a male child aged 7 years was still alive on the eighteenth day, but with severe symptoms. In only one was there rash; this was pustular, with hæmorrhage into the pustules, and came late in the disease. All the cases commenced suddenly, had rigidity of the neck or actual retraction of the head, with, in some cases, opisthotonos; deafness in some degree, pain in the head and limbs, and Kernig's sign.

Dr. PARSONS also read a paper on cerebro-spinal meningitis, which was published in the BRITISH MEDICAL JOURNAL of June 23rd, p. 1529.

Dr. FALKINER presented a table, showing the number of deaths in the Dublin registration area from all forms of meningitis in the years 1895-1900. Taking the years 1895 to 1899 inclusive, the average number of deaths from all forms of meningitis for the first nineteen weeks of each year was 102.6; but in 1900 the number of deaths in a corresponding period was 182 0.

The PRESIDENT remarked that this was the first occasion on which meningitis had been made a notifiable disease. At the Meath Hospital they had had 11 cases with 3 deaths, and 8 cases still under treatment. This showed that the mortality was not at all so high as in the epidemic of 1867. He thought that in adults moaning took the place of the hydrocephalic cry. In cases that recovered the emaciation was very great. He had noticed that albuminuria was very constantly present from the start.

Dr. TRAVERS SMITH had had 14 cases in the Hardwicke Hospital this year; 5 other cases had been under the care of Dr. O'Carroll in the same hospital. Retraction of the head and rigidity of the neck, which gave pain on any attempt at flexion, was present early in 11 out of the 14 cases. The pulse was slow even while the temperature was rather high, in 8 of the cases as early as the first week. Loss of knee-jerk was apparent even at the time of admission in 12 of the cases; in one it was diminished and in one exaggerated. The pupil was dilated and somewhat irregular, responding slowly to light in the majority of the cases; 4 showed actual changes in the optic disc. Eight of the 14 cases had early eruptions, most commonly erythema and herpes. The erythema was most common on the neck, the herpes on the lips and neck. He had noticed the hydrocephalic cry only in children. The duration was variable: 1 case had already lasted 77 days; 1 proved fatal on the 80th day; 1, which recovered, lasted 73 days; and 1 died within a day and a-half; 4 of the 14 cases died. The prognosis as regards recovery was exceedingly difficult.

Professor BENNETT described the previous epidemic, and remarked that the *post-mortem* appearances were exactly the same as in the present epidemic.

Dr. KNOTT said that in the 1877 epidemic he was struck with the peculiar way in which the inflammation seemed to avoid the basilar membrane; the base of the brain was always free. The cervical cord was always intensely inflamed, but in patches, not continuously.

Dr. CRAIG described the case of a boy, now under treatment.

Dr. O'SULLIVAN described the *post-mortem* appearances of some of the cases. The fluid obtained by lumbar puncture was turbid but colourless. The pus in the spinal region lay in one case altogether outside the spinal dura, the cord being quite firm and apparently healthy. In the other cases it lay in the meshes of or underneath the pia mater, and the cord was softened. In the brain the pus was in all cases in or under the pia-arachnoid, and symmetrical. In all cases the cerebro-spinal fluid was greatly increased in quantity, and was turbid, but not bloody or, to the naked eye, purulent. The diplococcus intracellularis was found in the turbid fluid and in the pus, usually in pure culture. It grew best on Loeffler's serum, but also on glycerine agar, and less actively on ordinary agar. In the pus the organisms were seen in the pus cells usually in small numbers. They did not stain by Gram's method. Inoculation experiments were unsuccessful.

Professor MCWEENEY had always found the diplococci more abundantly in the sediment obtained by centrifuging the ventricular fluid, but he had not been so successful in cultivating the organism as Professor O'Sullivan. Even under favourable circumstances the organism was erratic in its behaviour. He discussed the question whether the inclusion

in cells was the result of phagocytism, and if so, whether Weichselbaum's organism was in reality a form of Fraenkel's pneumococcus altered by phagocytism. He alluded to the possibility of finding the meningococcus in the nasal mucus, but as Schiff had, out of 27 non-meningitic cases, found the organism in the nasal cavity of 7, this method of diagnosis could hardly replace lumbar puncture. In epidemics of cerebro-spinal meningitis the use of antiseptic nasal douches, and the disinfection of the nasal secretion and sputum, seemed to him important measures.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—At a meeting held on May 18th at the Medical School, Sheffield, Dr. HELLIER, President, in the chair, Dr. ARNOLD W. W. LEA (Manchester) read a paper entitled The Influence of Gonorrhœa on the Puerperium, with Notes of 50 Cases. The diagnosis of gonorrhœa at the time of delivery was based upon the occurrence of ophthalmia neonatorum in the infant within three days of delivery, combined with the previous clinical history.

The puerperium was normal in 60 per cent. of the cases, as judged by the absence of pyrexia. In 4 of these, however, on the fourteenth day there was evidence of pelvic inflammation. In 2 cases perimetritis with swelling in the region of the appendages; in 2 cases parametritic exudation was present. In 40 per cent. of the cases the puerperium was abnormal, and accompanied by pyrexia, with symptoms of local infection of the genital tract. The rise of temperature usually commenced on the third or fourth day after delivery, and was associated with purulent discharge from the uterus. In many of the cases the infection remained limited to the uterus, but in five instances (10 per cent. of the total number) acute pelvic peritonitis ensued with a severe illness lasting some weeks. Details were also given of 3 cases in which a previous gonorrhœal infection of the appendages became evident during or immediately after labour, each case terminating fatally.

From a study of these cases the following conclusions were drawn: 1. The presence of a purulent vaginal discharge during labour which is capable of causing ophthalmia neonatorum renders the patient liable to puerperal infection. 2. This infection is in many cases a mixed one, the gonococcus being found along with streptococci and staphylococci; the gonococcus itself is capable of causing severe infection, and may be obtained in pure culture from the uterine cavity (Krönig Bumm). 3. Lacerations of the perineum, vagina, or cervix, forceps deliveries, and prolonged labour, greatly increase the liability to infection. 4. The types of disease met with are: (1) purulent endometritic, (2) acute pelvic peritonitis, (3) acute parametritis, (4) septicæmia (rare). 5. In some cases an old infection of the appendages may light up during labour or after delivery leading to acute peritonitis, which is often fatal. 6. The prognosis as to life is usually good, though recovery is often imperfect. 7. The treatment by vaginal douches is insufficient in many cases to prevent infection of the endometrium. 8. If infection of the uterus occurs, uterine douches should be given daily, the patient maintained at absolute rest, and a careful watch kept for evidence of localised pelvic peritonitis; if uterine douches fail, an exploration of the uterine cavity, followed by curetting, may be required; collections of fluid in the pelvis are best treated by vaginal section.

Dr. H. BRIGGS (Liverpool) showed specimens and water colour drawings illustrating the various types of villous endometritis, benign and malignant adenoma of the uterus. He alluded more particularly to the difficulty of deciding from the microscopic evidence between inflammatory conditions of the endometrium and malignant adenomatous disease of the uterine glands and quoted several illustrative cases. Remarks were made by Drs. DONALD and MARTIN.—Dr. A. DONALD (Manchester) showed a uterus with multiple fibroids and containing a fœtus of 4½ months' development. The tumours were situated in the pelvic cavity below the fœtal sac, and would have obstructed labour. The whole mass was successfully removed by abdominal hysterectomy.—The PRESIDENT showed a large dermoid cyst with twisted pedicle, successfully removed by abdominal section.

CHELSEA CLINICAL SOCIETY.—At the annual meeting of the Society, the PRESIDENT (Dr. J. Foster Palmer) in the chair, the following were elected office-bearers for the session 1900-1901: *President:* Dr. William Ewart. *Vice-President:* Drs. C. C. Gibbes, C. J. Hamson, C. A. Morris, and A. F. Penny. *Council:* Drs. J. Barry Ball, J. Blumfeld, Vincent Dickinson, J. J. Marsh, J. D. E. Mortimer, and W. H. C. Staveley. *Treasurer:* Dr. A. Barry Blacker. *Secretaries:* Dr. Austin Cooper and R. L. Norman. A valedictory address was delivered by the retiring PRESIDENT.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—The following members have been elected as officers and councillors for the year 1900-1901:

President: John Ackery. *Vice-Presidents:* Resident: W. A. Maggs, Arthur S. Underwood, F. J. Bennett. Non-Resident: J. Henry Whatford (Eastbourne), G. Brunton (Leeds), W. S. Woodburn (Glasgow). *Treasurer:* W. H. Woodruff. *Librarian:* H. Baldwin. *Curator:* Storer Bennett. *Editor of Transactions:* J. F. Colyer. *Honorary Secretaries:* J. H. Mummery (Foreign), C. F. Rilot (Council), A. Hopewell Smith (Society). *Councillors:* Resident: E. Lloyd-Williams, W. J. England, J. O. Butcher, J. H. Reinhardt, H. G. Read, H. Lloyd Williams, W. Rushton, R. Wynne Rouw, G. Northcroft. Non-Resident: Walter Harrison (Brighton), Alexander Kirby (Bedford), Martin Henry (Folkestone), D. Corbett, jun. (Dublin), Rees Price (Glasgow), G. O. Whittaker (Manchester), T. Mansell (Birkenhead), W. A. Rhodes (Cambridge), W. Glaisby (York).

REVIEWS.

SOME RECENT WORKS ON MEDICAL PSYCHOLOGY.

DR. FRANCIS SIMPSON, in his book on the *Pathological Statistics of Insanity*,[1] has dealt with the material derived from the 398 necropsies made during the three years 1894-5-6 at the West Riding Asylum, Wakefield, Yorks, where the author was formerly Pathologist and Assistant Medical Officer. Naked-eye appearances or changes alone are stated; the microscopical are not referred to. Weights of the brains and of their component parts are also stated, and the breaking strains of the ribs are given. First come the appearances recorded in all forms of insanity—that is to say, so far as comprised in the 398 cases taken collectively, and expressed in an elaborately detailed statement similar to records published from time to time in the past by several observers. From the very nature and variety of the included elements, the results yielded by such inquiries must necessarily be of limited importance. But the rest of the work deals with more useful material, consisting as it does of systematised records of the pathological naked-eye changes found in various clinical forms of insanity; and perhaps the most interesting tables of statistics (and the work is chiefly tabular) are those summarising a comparison between those changes (pp. 42 to 46). Eight classes constitute the classification of the clinical forms of insanity used in this work:

1. General paralysis.
2. Dementia. "In this category are included all dements excepting the organic, senile, and epileptic."
3. Organic dementia—that is, cases showing naked-eye lesion.
4. Senile dementia—that is, arising from senility only.
5. Epileptic insanity.
6. Acute psychoses.
7. Chronic mania and melancholia.
8. Imbecility and idiocy.

Upon this the author's comment is apt: "It may be thought that the above classification is in many respects faulty, and there are unquestionably grave objections to its use; but it seems the most suitable for our present purpose." Under each class, and each condition of every anatomical part mentioned, the percentages are given for both sexes together, and for each sex separately. In examining the tables one must not lose sight of the fact that the personal factor necessarily has some influence upon the interpretation and estimate formed of the appearances observed. This work is the outcome of an enormous amount of careful observation and painstaking labour; and asylum and other pathologists will find in it much that will repay perusal and study, and with which they may with interest compare their own observations. Every asylum should possess it.

DR. MACPHERSON'S book on *Mental Affections*[2] is an amplified rearrangement of a course of lectures. The author devotes considerable space to those general considerations which may be called the institutes of psychological medicine. He deals with heredity, degeneration, etiology, etc., with originality and a firm hand. In fact, he is inclined to be somewhat dogmatical, as, for instance, when he writes: "It may be fairly asked whether the ideally normal man can possibly become insane, and the answer in the light of our present knowledge is that he cannot." Are we to grant to the sensitive organs

[1] *The Pathological Statistics of Insanity.* By Francis O. Simpson, L.R.C.P., M.R.C.S., Senior Assistant Medical Officer, Lancashire County Asylum, Rainhill. London: Baillière, Tindall, and Cox. 1900. (Royal 8vo, pp. 132. 10s. 6d.)

[2] *Mental Affections.* By John Macpherson, M.D., F.R.C.P.E. London: Macmillan and Co. 1899. (Demy 8vo, p.. 390, 12s.)

comprised in a normal brain that freedom from the effects of overuse or abuse which experience denies to coarser and stouter viscera? Pathological views are also pushed farther, perhaps, than is warranted by our present physiological knowledge. But such matters, so far from being detrimental, are of service, since in the uncertain state of our information as to the normal and morbid workings of the brain any teaching which induces a thoughtful and combative criticism on the part of an earnest student will tend to a better mastery of the subject. The general description and treatment of the various forms of mental disease are to a great extent elaborated in the light of pathology, and form a satisfactory basis for clinical observation. An essential point in any work on insanity is the classification adopted, and here we find a want. Perhaps on good reason being shown we might be reconciled to mania, melancholia, and paranoia being grouped together as idiopathic insanities; to clinically diverse types such as puerperal mania and general paralysis being associated and pathologically considered together under the head of toxic insanity; to the labelling of a large class of dissimilar conditions as confusional insanity, by virtue of a not very important group of external evidences being a common denominator. But in default of explanation we cannot consider such an arrangement as altogether sound or useful. The work is a good one and so well written that in course of time a reappearance may be looked for, when the author will perhaps consider a fuller defence of his grouping. To the publishers we suggest that the paperknife has long ceased to be regarded as an aid to scientific research.

The study of insanity is still in the descriptive or natural history stage, and nearly every book that deals with it is primarily a series of clinical studies, with secondarily, a quantum of more or less—chiefly less—philosophical speculation thrown in. In Dr. Wilson's *Clinical Studies in Vice and Insanity*[3] the clinical pictures are drawn with unusual vividness and dramatic force, while the abstract speculations which are interspersed among them are as much below the common run as the clinical studies are above it. The book is one of those instances in which the part is greater than the whole. If the subject described in the title had been rigidly adhered to, we should have had the advantage of the true and vivid pictures of mental disorder, of the candour, sound sense, and broad-minded views of the author in his comprehension and treatment of his patients, and our attention would not have been distracted from these great merits by the frequent digressions into subjects which are foreign to the title of the book, and which are, from an artistic point of view, a blunder. These, if introduced at all—and though we think they would have been better omitted, it is perhaps asking too much of human nature to suggest this course—should have been gathered together and placed at the end of the book, where they would not have disturbed the continuity of the narrative.

Dr. ARCHIBALD CHURCH, of Chicago, and Dr. FREDERICK PETERSON, of New York, have collaborated in writing a textbook of *Nervous and Mental Diseases*[4] for medical students and general practitioners. It consists of two parts—Nervous Diseases, by Dr. Church, and Mental Diseases, by Dr. Peterson. The authors claim to have sifted the literature of neurology and psychiatry, and to have presented a digest revised in the light of experience in practice and in teaching. In placing the correlated sciences neurology and psychiatry under the same cover an important departure has been attempted, and though the volume is bulky it is not unwieldy. The attempt to produce a textbook which holds an intermediate place between elementary works on neurology and psychiatry on the one hand, and advanced treatises like those of Gowers and Mills in neurology, and Krafft-Ebing in psychiatry on the other, deserves warm commendation. The present work only partially fulfils this aim. The section on nervous diseases is singularly clear and full. It is accompanied by 235 illustrations, all of high excellence. After dealing fully with the methods of clinical examination (70 pages), the diseases of the cerebral meninges and cranial nerves are taken up. Diseases of the brain proper follow, and such subjects as aphasia, cortical localisation, arterial diseases and their sequelæ, cerebral abscess and tumours, the cerebral palsies of children and hydrocephalus are carefully and well described. Lesions and diseases of the spinal cord follow, and are abundantly illustrated with clinical photographs. Tabes and the other "system diseases" receive satisfactory treatment. The trophoneuroses comprise a lucid and graphic account of acromegaly and the myxœdematous and cretinoid diseases. Other neuroses are included under "infection neuroses," "fatigue neuroses," neurasthenia, hysteria, epilepsy, migraine, and tics. Symptomatic disorders follow, and a masterly account of sleep and its disorders, brief but full of information, concludes the section. The mental diseases receive brief and rather sketchy treatment, somewhat out of proportion to their practical importance. The chapter on general etiology reaches a high level, and judicious remarks appear on treatment. There is no separate account of imbecility or of the alcoholic insanities, while paranoia is illustrated by a very prolix "autobiography" of a patient. On the whole, the work is a convenient and useful one.

In the second edition of Dr. SHUTTLEWORTH'S book on *Mentally-Deficient Children*[5] he has introduced two new chapters: one giving an account of the investigation and report by the Departmental Committee appointed by the Education Department of England and Wales on defective and epileptic children, the other describing the measures adopted for the special instruction of defective children. The Committee held numerous meetings and examined lay and medical witnesses who had special knowledge of the subject, and in the report proposals were submitted respecting the method of discriminating defective children; the way in which they were dealt with was examined and some desirable changes were pointed out. In the second chapter it is shown that we are much behindhand in organising arrangements for their training, the German and Scandinavian countries being in advance of us. In London the School Board has already established fifty special classes, and many provincial towns have done the same. Besides the usual instruction in reading, writing, and arithmetic, sensorial and manual training and objective methods of demonstration are made use of with marked success. In the appendix the text of the Elementary Education (Defective and Epileptic Children) Act, 1899, is given in full, and a list of the training institutions for mentally-deficient children in Great Britain and Ireland, America, and on the Continent will be found useful. The book should be in the hands of medical men, teachers and others who are interested in the treatment of these children.

[3] *Clinical Studies in Vice and Insanity.* By George R. Wilson, M.D. Edinburgh: W. F. Clay. 1899. (Demy 8vo, pp. 234. 7s. 6d.)

[4] *Nervous and Mental Diseases.* By Archibald Church, M.D., Professor of Clinical Neurology and of Mental Diseases in the Chicago Medical College; and Frederick Peterson, M.D., Clinical Professor of Mental Diseases in the Woman's Medical College, New York. London: the Rebman Limited. 1899. (Imp. 8vo, pp. 843. 305 illustrations. 28s.)

NOTES ON BOOKS.

The papers contributed to the Epidemiological Society of London, which appear in full in its *Transactions* for 1897-98 and 1898 99 (London: Shaw and Sons. Demy 8vo, pp. 202. 6s.) have been reported in the columns of the BRITISH MEDICAL JOURNAL. To have them collected into yearly volumes is an undoubted convenience for members and others particularly interested in epidemic disease. In the earlier volume appear the Observations on Leprosy in China, by Dr. Cantlie; papers on Typhoid Fever Epidemics, by Dr. Christopher Childs, Dr. D. S. Davies, and Dr. H. Cooper Pattin; and a paper on the Relation of Ground Water to Malarial Fever in India, by Captain L. Rogers, I.M.S. In the later volume, the papers on the Prospect of Abolishing Tuberculosis by Dr. Arthur Ransome, on Epidemic Cerebro-spinal Meningitis by Dr. Bruce Low, on Cerebro-spinal Fever by Drs. Still and Washbourne, on Blackwater Fever by Dr. W. H. Crosse of the Royal Niger Company and by Professor Saltet of Amsterdam on Enteric Fever in the Netherlands are especially worthy of being remembered.

[5] *Mentally Deficient Children: their Treatment and Training.* By G. E. Shuttleworth, B.A., M.D. Second Edition. London: H. K. Lewis. 1 00. (Cr. 8vo. pp. 180. 5s.)

BRITISH MEDICAL ASSOCIATION.

SIXTY-EIGHTH ANNUAL MEETING.

The sixty-eighth annual meeting of the British Medical Association will be held at Ipswich on Tuesday, Wednesday, Thursday, and Friday, July 31st, August 1st, 2nd, and 3rd, 1900.

President: John Ward Cousins, M.D.Lond., F.R.C.S.Eng., Senior Surgeon Royal Portsmouth Hospital.

President-Elect: William Alfred Elliston, M.D. Senior Surgeon East Suffolk and Ipswich Hospital.

President of the Council: John Roberts Thomson, M.D., F.R.C.P.Lond., Consulting Physician to the Royal Victoria Hospital and to the National Sanatorium for Diseases of the Chest, Bournemouth.

Treasurer: Andrew Clark, F.R.C.S., Surgeon to the Middlesex Hospital and Lecturer on the Principles and Practice of Surgery.

An Address in Medicine will be delivered by Philip Henry Pye-Smith, M.D., F.R.S., Consulting Physician, Guy's Hospital.

An Address in Surgery will be delivered by Frederick Treves, F.R.C.S., Surgeon Extraordinary to H.M. the Queen.

An Address in Obstetrics will be delivered by William J. Smyly, M.D., F.R.C.P.I., Examiner in Midwifery, Royal College of Physicians, Ireland.

The Scientific Business of the Meeting will be conducted in Thirteen Sections, as follows, namely:

A. Medicine.

Art Gallery.

President: Thomas Buzzard, M.D. *Vice-Presidents:* Mrs. E. Garrett Anderson, M.D.; Samuel J. Barton, M.D. *Honorary Secretaries:* Frederick William Burton-Fanning, M.D., 1 St. Faith's Lane, Norwich; Thomas Warner, M.D., 12, Museum Street, Ipswich.

The following discussions have been arranged:

Wednesday, August 1st.—Influenza as it affects the Nervous System. Dr. Judson S. Bury will open this discussion, and it is hoped that the following will take part in it: Sir Wm. Broadbent, Bart., M.D., F.R.S., Sir Peter Eade, M.D., Professor J. B. Bradbury, M.D., Dr. S. H. Habershon, Dr. James Taylor, Dr. J. S. Risien Russell, Dr. H. Handford, Dr. T. D. Savill, and Dr. F. M. Pope.

Thursday, August 2nd.—The Problem of Gastric Ulcer. This will be opened by Dr. J. F. Payne, and it is hoped that the following will take part in the discussion: Professor T. Clifford Allbutt, M.D., F.R.S., Dr. S. Martin, F.R.S., Dr. S. H. Habershon, Dr. Soltau Fenwick, Dr. R. Saundby, Dr. H. Handford, Dr. W. Gordon, Dr. G. Herschell, Dr. W. Calwell, and Dr. H. Walsham.

A list of papers selected for presentation to the Section will be published shortly.

B. Surgery.

Masonic Hall, Ground Floor.

President: Howard Marsh, F.R.C.S. *Vice-Presidents:* Samuel Herbert Burton, F.R.C.S.; Thomas Herbert Morse, F.R.C.S. *Honorary Secretaries:* Walter George Spencer, M.S., 35, Brook Street, W.; Herbert Henry Brown, M.D., F.R.C.S., 3, Museum Street, Ipswich.

The following discussions have been arranged:

1. Subdiaphragmatic Abscess. Introduced by Mr. Rickman J. Godlee, M.S., F.R.C.S. The following gentlemen will take part: Messrs. Bruce Clarke, Charters Symonds, Musgrave, Jordan Lloyd, and Bidwell.

2. The Methods at present available for the Treatment of Simple (Subcutaneous) Fractures. Introduced by Mr. William H. Bennett, F.R.C.S. The following gentlemen will take part: Messrs. Keetley, Robert Jones, Eve, J. Hutchinson, jun., F. F. Burghard, Jordan Lloyd, Wm. Thomas, and Langley Browne.

The following papers have been proposed:

Bidwell, Leonard, F.R.C.S. Pyloroplasty.

Boyd, Stanley, M.B., B.S. Oöphorectomy in Cancer of the Breast with Results to Date.

Burghard, F. F., M.S. Three Cases in which the Superior Cervical Ganglia were Excised, with Remarks on the Operation.

Burton, S. H., B.S. On the Removal of Large Stones from the Bladder, with notes of a case. (Messrs. Reginald Harrison and Keegan will take part in the discussion.)

Clarke, W. Bruce, M.B. Removal of the Prostate in Two Stages.

Eccles, W. McAdam, M.S. Hernia of the Large Intestine.

Freyer, P. J., M.Ch. Fifty-Three Operations for Stone in the Bladder of Two Ounces and Upwards, from the Author's Practice.

Griffiths, Joseph, F.R.C.S. Observations upon Injuries to the Internal Lateral Ligament and to the Internal Semilunar Cartilage of the Knee-Joint.

Hutchinson, Jonathan, jun., F.R.C.S. The Substitution (when practicable) of Subastragalar for Syme's Amputation.

Moullin, C. Mansell, F.R.C.S. The Advisability of Early Operation in Cases of Acute Inflammation of the Appendix.

Phelps, A. M., M.D. The Open Incision for Club Foot; its Indications and Abuses. (The following gentlemen will take part in the discussion: Messrs. Jackson Clarke, Wm. Thomas, and Tubby.)

Robinson, H. Betham, M.S. A Case of Obstructive Jaundice in which Cholecystcolostomy was performed with Complete Success.

Thomas, W. Thewall, F.R.C.S. An Operation for the Cure of Frontal Sinus Suppuration.

Thomas, William, F.R.C.S. The Treatment of Hallux Valgus and other Deformities of the Toes.

Wallis, F. C., M.B., B.C. Non-malignant Stricture of the Rectum: its Causes and Radical Cure.

Members proposing to take part in the discussions or desirous of reading papers are requested to send their names at their earliest convenience to the Hon. Secretaries.

C. Obstetrics and Gynæcology.

High School for Girls, Ground Floor.

President: Walter Spencer Anderson Griffith, M.D. *Vice-Presidents:* Michael Beverley, M.D.; Mrs. Mary Ann Dacomb Scharlieb, M.D. *Honorary Secretaries:* John David Malcolm, M.B., F.R.C.S.Edin., 13, Portman Street, Portman Square, W.; Samuel Oliver Eades, L.R.C.P., L.R.C.S.Edin., Manor House, St. Peters, Ipswich.

The following discussions have been arranged:

Wednesday, August 1st.—Puerperal Fever in Relation to Notification. To be opened by Dr. Berry Hart.

Thursday, August 2nd.—The Natural History of Fibroids and Recent Improvements in their Treatment. To be opened by Mr. Alban Doran, F.R.C.S.

Friday, August 3rd.—*Post-Partum* Hæmorrhage, its Prevention and Treatment. To be opened by Dr. Dakin.

The following gentlemen have signified their intention of joining in the discussions: Dr. Herman, Dr. Boxall, Mr. Stanmore Bishop, Dr. More Madden, Dr. Purslow, Dr. George Elder, Dr. Byers, Dr. John Campbell (Belfast), and Messrs. Harrison Cripps, Skene Keith, and W. H. C. Newnham.

The following papers have been proposed:

Cripps, Harrison, F.R.C.S. The Surgical Treatment of Uterine Fibroids.

Madden, Thomas More, F.R.C.S.Edin. On the Modern Treatment and Prevention of *Post-Partum* Hæmorrhage.

Newnham, W. H. C., M.A., M.B., M.R.C.S. Successful Removal of Fibroid, 13 lbs. 11 ozs., by Intraperitoneal Hysterectomy.

Purslow, C. E., M.D. An Account of a Case of Complete Inversion of the Uterus of Three Years' Duration.

Scharlieb, Mrs., M.D., M.S. The Method Used and the Results Obtained in 40 Cases of Abdominal Hysterectomy for Fibroids at the New Hospital for Women.

Williams, Wm. Roger, F.R.C.S. When are Radical Operations for Myoma of the Uterus Necessary?

D. State Medicine.

Library, Town Hall.

President: John Clough Thresh, M.D., D.Sc., D.P.H. *Vice-Presidents:* Henry Handford, M.D., D.P.H.; Harry Cooper Pattin, M.D., D.P.H. *Honorary Secretaries:* George Vincent, M.D., D.P.H., North Lodge, Anglesea Road, Ipswich; Edward Petronell Manby, M.D., D.P.H., Local Government Board, Whitehall, S.W.

The following discussions have been arranged:

1. Can Modern Systems of Sewage Treatment be depended upon to Remove the Bacillus Typhosus and Allied Organisms? To be opened by Dr. Houston, and illustrated by lantern slides. The following will take part in the discussion: Professor Boyce, Dr. Grünbaum, Dr. Kaye, and Dr. Kenwood.

2. The Provision of Cottages in Rural Districts, and its bearing upon Public Health. To be opened by Dr. Tew.

3. What Action can be taken by Sanitary Authorities for the Prevention of Tuberculous Disease, apart from the Control of Milk and Meat Supplies? To be opened by Dr. H. R. Kenwood. The following will take part in the discussion: Dr. J. Spottiswoode Cameron, Dr. Drysdale, and Dr. W. Brown.

4. Should Municipalities provide Common Lodging-houses and Workmen's Dwellings? To be opened by Dr. Cooper Pattin. The following will take part in the discussion: Dr. W. Permewan, Dr. Herbert Manley, and Dr. J. Spottiswoode Cameron.

The following papers have been proposed:

BEEVOR, Sir H. R., Bart. Rural Phthisis and the Insignificance of Case-to-Case Infection.
BERRY, William, F.R.C.S.I., D.P.H. Housing of the Working Classes.
BOYCE, Professor R. W., M.B. (Liverpool). The Construction of Sanatoria for Phthisis. (Illustrations by Lantern Slides.)
GRÜNBAUM, A. S., M.D. (Liverpool). Food Preservatives in Use on the Continent.
DRYSDALE, C. R., M.D. On the Notification of Venereal Diseases in Christiania, Norway, since 1879.
HARRIS, F. Drew, M.B. (M.O.H., St. Helens). Municipal Sterilisation of Milk: An Account of the Installation and Working of the System at St. Helens. (Illustrated by Lantern Slides.)
JONES, H. R., M.D., D.P.H. The Causes of Typhoid.
KAYE, J. R., M.B. (M.O.H. West Riding County Council). The Control of Milk Supplies.
MCWALTER J. C., D.P.H. The Hygienic Aspect of the Use of Water Gas.
MARSDEN, R. Sydney, M.B., D.P.H. What is the Mode of Action of Bacteria in Disease?
RAW, Nathan, M.D., D.P.H. (Medical Superintendent, Mill Road Infirmary, Liverpool). Rate-supported Sanatoria.
SCOTT, G. M., M.D. Cancer Mortality in East Anglia.
THRESH, J. C., M.D., D.Sc. (M.O.H., Essex County Council). Rural Water Supplies.
WALFORD, E., M.D. (M.O.H., Cardiff). The Etiology of Diphtheria.
WILLIAMS, W. Roger, F.R.C.S. The Prevalence of Cancer in different Countries and its Increase.

Dr. R. R. RENTOUL gives notice that he will move the following resolution:

That in order that the suggestion of the Registrar-General of Births and Deaths relating to childbirth mortality be more fully carried out, and more accurate statistics relating to such mortality be secured, this Section of State Medicine earnestly requests the Council of the Association to use its best efforts to induce all practitioners to carry out the above "suggestion."

E. PSYCHOLOGY.

Class Room No. 9, First Floor, Higher Grade School.

President: R. PERCY SMITH, M.D. *Vice-Presidents:* EDMUND LEWIS ROWE, L.R.C.P.; WILLIAM ALDREN TURNER, M.D. *Honorary Secretaries:* CECIL ANTHONY PERRIER OSBURNE, F.R.C.S.Edin., The Grove, Old Catton, Norwich; JAMES RICHARD WHITWELL, M.B., County Asylum, Melton, Suffolk.

The following discussions have been arranged:

Wednesday, August 1st.—The Bearing of Sexual Function and Disease of the Sexual Organs on Insanity and Crime. Introduced by Dr. Macnaughton-Jones.

Thursday, August 2nd.—The Colony Treatment of Epileptics. Introduced by Dr. Aldren Turner.

Friday, August 3rd.—Organotherapeutics in Mental Disease. Introduced by Dr. Easterbrook.

The following gentlemen have intimated their intention to take part in the discussion: Dr. Crochley Clapham, Dr. Rayner, Dr. Robert Jones, Dr. E. M. Corner, Dr. Soutar, Dr. Lewis Bruce, Dr. G. E. Mould.

The following papers have been proposed:

CRAIG, Maurice, M.D. On Blood Pressure in Mental Disease.
JONES, Robert, M.D. Saturnine Encephalitis.
MACCORMACK, J. M., M.D. The Relation of the Lunacy Laws to Neuro-psychological Diseases.
NORMAN, Conolly, F.R.C.P.I. The Method of Keeping Clinical Records in Asylums.
PASMORE, E., M.D. Epileptic Insanity.
SMITH, Percy, M.D. Peripheral Neuritis and Insanity.
TURNER, John, M.B. The Pathological Histology of Acute Delirious Insanity. (With Lantern Demonstration.)
WHITE, Ernest, M.B. The Treatment of the more Acute Forms of Melancholia.

F. PHYSIOLOGY.

Class Room No. 1, Ground Floor, Higher Grade School.

President: Professor WILLIAM DOBINSON HALLIBURTON, M.D., F.R.S. *Vice-Presidents:* EDWARD WILLIAM WACE CARLIER, M.D.; Professor CHARLES S. SHERRINGTON, M.D., F.R.S. *Honorary Secretaries:* W. H. THOMPSON, M.D., Queen's College, Belfast; WILLIAM LEGGE SYMES, M.R.C.S., Physiological Department, St. Mary's Hospital Medical School, W.

The following discussions have been arranged:

1. The Formation and Excretion of Uric Acid in Health and Disease. To be opened by the President. Professor Vaughan Harley, M.D., F.R.C.P., F. G. Hopkins, B.Sc., A. Haig, M.D., T. H. Milroy, M.D., W. J. Smith Jerome, M.D., William Bain, M.D., etc., will take part in the discussion.

2. Muscular Tonus in Relation to Affections of the Nervous System. To be opened by F. W. Mott, M.D., F.R.C.P., F.R.S. Professor Victor Horsley, F.R.S., Professor C. S. Sherrington, F.R.S., L. J. J. Muskens, M.D., etc., will take part in the discussion.

The proceedings will also include papers and demonstrations on other branches of physiology and histology, among others the following:

ANDERSON, Professor R. J. A Note on Respiration.
BUXTON, Dudley W., M.D., and Dr. LEVY. The Influence of Some Anæsthetics upon the Kidney.
CARLIER, Professor E. Wace. (1) Changes occurring in the Cell of the Newt's Stomach during and after Secretion. (2) Presence of the Ciliated Cells in Convoluted Tubules of Human and Mammalian Kidney.
COFFEY, Professor D. J. Histology of the Œsophageal Mucous Membrane.
GOODBODY, F. W., M.D. Influence of Sodium Salicylate on General Metabolism.
HARRIS, D. F., M.D. The Inertia of Protoplasm.
MILROY, T. H., M.D. The *Rôle* of the Liver in the Metabolism of Nucleins.
PARSONS, J. Herbert, M.B., B.Sc. Dilatation of the Pupil from Stimulation of the Cortex.
SHERRINGTON, Professor C. S., F.R.S. Spinal Vascular Reflexes.
THOMPSON, Professor W. H. Anæsthetics and Urinary Secretion.
WALLER, A. D., F.R.S. Influence of Massage on the Retinal Response to Light.

G. PATHOLOGY.

Chemical Lecture Room, Second Floor, Higher Grade School.

President: EDWARD E. KLEIN, M.D., F.R.S. *Vice-Presidents:* WILLIAM MILLER CROWFOOT, M.B.; Professor ROBERT MUIR, M.D. *Honorary Secretaries:* ALEX. GRANT RUSSELL FOULERTON, F.R.C.S., Dunsdale, Mulgrave Road, Sutton, Surrey; SYDNEY HERBERT LONG, M.B., 37, St. Giles Street, Norwich.

The following discussions have been arranged:

Wednesday, August 1st.—The Pathological Distribution of B. Diphtheriæ, and the Bacteriological Diagnosis of Diphtherial Infection. Introduced by Dr. F. W. Andrewes.

Thursday, August 2nd.—The Pathology of Cirrhosis of the Liver in Adults and Young Children. Introduced by Dr. Arthur Voelcker. The following gentlemen will take part in this discussion: Dr. Lazarus-Barlow, Dr. Poynton, Professor Simon Flexner, Dr. Wakelin Barratt, and Dr. Lister.

The following papers have been proposed:

FLEXNER, Professor Simon. The Bacteriology of Acute Tropical Dysentery.
HARRIS, Wilfred J., M.D. On the Pathology and Significance of the Argyll-Robertson Pupil.
LAZARUS-BARLOW, W. S., M.D. On Lipomata of the Kidney.
WALSHAM, Hugh, M.D. The Muscular Atrophy of Pulmonary Tuberculosis.
WILLIAMS, William Roger, F.R.C.S. The Pathogenesis of Myoma of the Uterus.

Members proposing to take part in the discussions or desirous of reading papers are requested to send their names at their earliest convenience to the Honorary Secretaries.

H. OPHTHALMOLOGY.

Class Room No 6, Ground Floor, Higher Grade School.

President: WILLIAM ARTHUR BRAILEY, M.D. *Vice-Presidents:* HAYNES SPARROW ROBINSON, M.R.C.S.; HENRY WORK DODD, F.R.C.S. *Honorary Secretaries:* CHARLES DEVEREUX MARSHALL, F.R.C.S., 112, Harley Street, W.; WALTER WILLIAM SINGLAIR, M.B., 16, Museum Street, Ipswich.

The following discussions have been arranged:

1. The Treatment of Chronic Glaucoma. Introduced by F. Richardson Cross, F.R.C.S. Messrs. T. H. Bickerton, K. A. Grossmann, G. Foggin, and John Hern will take part in the discussion.

2. The Treatment of Lachrymal Obstructions. Introduced by George A. Berry, M.B., F.R.C.S.E. Messrs. T. H. Bickerton, K. A. Grossmann, G. Foggin, John Hern, Kenneth Scott, and Ernest H. Cartwright, will take part in the discussion.

The following papers have been proposed:

BUCHANAN, Leslie, M.B. On a Case of Congenital Microphthalmos with Cyst.
FERGUS, A. Freeland, M.D. Some Forms of Optic Nerve Disease Probably of Sympathetic Origin.
FOGGIN, George, L.R.C.P. On Epicanthus.
GROSSMANN, Karl, M.D. Quantitative Colour Tests.
SCOTT, Kenneth, M.B. Dacryocystitis Aggravans resembling Tumour of Face.
STEPHENSON, Sydney, F.R.C.S.E. The Etiology and Association of Phlyctenular Affections of the Eye.

I. DISEASES OF CHILDREN.

Class Room No. 14, First Floor, Higher Grade School.

President: FREDERICK TAYLOR, M.D. *Vice-Presidents:* RICHARD WILLIAM BROGDEN, M.B.; JOHN THOMSON, M.D. *Honorary Secretaries:* WILLIAM SOLTAU FENWICK, M.D., 8,

Devonshire Street, Portland Place, W.; ALFRED M. GOSSAGE, M.B., 54, Upper Berkeley Street, W.

Wednesday, August 1st.—The Nature and Varieties of Pneumonia in Children. Introduced by Nestor Tirard, M.D. It is hoped that the following will take part in the discussion: More Madden, M.D.

Thursday, August 2nd.—On Lateral Curvature, Flat-foot and Knock-knee. Introduced by Arbuthnot Lane, F.R.C.S. It is hoped that the following will take part in the discussion: A. H. Tubby, M.S., J. Jackson Clarke, F.R.C.S., W. Thomas, F.R.C.S., Chisholm Williams, F.R.C.S.E., and Noble Smith, F.R.C.S.Edin.

Friday, August 3rd.—Enlargements of the Spleen in Children. Introduced by Samuel West, M.D.

The following papers have been proposed:

LITTLE, Muirhead, F.R.C.S. An Analysis of a Series of Cases of Infantile Paralysis, with some notes on treatment.
NICOLL, J. H., M.B. (Glasgow). Congenital Hypertrophic Stenosis of the Pylorus, with an account of a case successfully treated by operation.
OVEREND, W., M.D. (Clacton-on-Sea). The Caloric Values of Certain Artificial Infant Foods.
PARKINSON, Porter, M.D. Some Abnormal Empyemata in Children.
THOMSON, J., M.D., and LOGAN TURNER, M.D. The Causation of Congenital Stridor.
WILLIAMS, Chisholm, F.R.C.S.E. Analysis of 500 Consecutive Cases of Lateral Curvature of the Spine and Treatment.

J. PHARMACOLOGY AND THERAPEUTICS.

Class Room No. 12, First Floor, Higher Grade School.

President: Professor WALTER GEORGE SMITH, M.D. *Vice-Presidents:* EDWARD LIVEING FENN, M.D.; CHARLES ROBERTSHAW MARSHALL, M.D. *Honorary Secretaries:* ALAN REEVE MANBY, M.D., East Rudham, Norfolk; WALTER ESSEX WYNTER, M.D., 30, Upper Berkeley Street, W.

The following discussions have been arranged:

1. The Treatment of Internal Hæmorrhage. Professor J. B. Bradbury, M.D., Lindley Scott, M.D., James A. Lindsay, M.D., Walter G. Smith, M.D., and Walter E. Dixon, M.D.

2. Serumtherapy. T. J. Bokenham, M.D.

3. Diet in the Treatment of Disease. Professor J. B. Bradbury, M.D., G. King Martyn, M.D., Thomas Dutton, M.D., Arthur P. Luff, M.D., Lindley Scott, M.D., James A. Lindsay, M.D., David Sommerville, M.D., William Bain, M.D., Harry Campbell, M.D., Sarat K. Mullick, M.B., George Herschell, M.D., Wm. Calwell, M.D.

4. The Therapeutics of Open Air. F. W. Burton-Fanning, M.D., Lindley Scott, M.D., James A. Lindsay, M.D., C. Muthu, M.D., Ernest Kingscote, M.B., Wm. Calwell, M.D.

The following papers have been proposed:

DIXON, Walter E., M.D., The Influence of Certain Drugs on the Vascular Mechanism of the Testis.
EWART, William, M.D. The Subcutaneous Administration of Oxygen.
HERSCHELL, George, M.D. Demonstration of the Apparatus for Administering the Intragastric Shampoo.
JAMES, J. Brindley, L.R.C.P. Dietary in Rheumatism.
JOWETT, H. A. D., D.Sc. The Chemistry of the Jaborandi Alkaloids.
JOWETT, H. A. D., D.Sc., and MARSHALL, Professor C. R., M.D. Remarks on Extract. Jaborandi Liquidum (*B.P.*).
KINGSCOTE, Ernest, M.B. On Treatment of Asthma.
MCWALTER, J. C., L.R.C.P.I. On some Organotherapeutic Preparations.
MARSHALL, Professor C. R., M.D. The Pharmacology of the Jaborandi Alkaloids.
MARTYN, G. J. King, M.D. The Treatment of Gouty Eczema.
ROSS, F. W. Forbes, M.D. Medicinal and Dietetic Treatment of Heart Failure in the Aged.
SCOTT, Lindley, M.D. The Preventive Treatment of Oxalate of Lime Gravel and Calculus.
SINCLAIR, F. Howard, M.D. Open-air Treatment in Ireland.
TUNNICLIFFE, F. W., M.D. The Nutritive Value of Casein (Plasmon).

K. LARYNGOLOGY AND OTOLOGY.

Class Room No. 10, First Floor, Higher Grade School.

President: SCANES SPICER, M.D. *Vice-Presidents:* HERBERT TILLEY, M.D.; WILLIAM MILLIGAN, M.D. *Honorary Secretaries:* HARRY LAMBERT LACK, M.D., 48, Harley Street, Cavendish Square, W.; ARTHUR YOUNG PRINGLE, L.R.C.P., 64, St. Matthew Street, Ipswich.

The following discussions have been arranged:

The Indications for Intranasal Treatment in Ear Disease. Introduced by Dr. P. McBride, Dr. Dundas Grant, and Mr. Cresswell Baber.

The Pathology and Treatment of Toxic Paralyses of the Larynx. Introduced by Dr. Watson Williams.

The following gentlemen propose to take part in the discussions: Dr. StClair Thomson, Dr. Logan Turner, Dr. William Hill, Dr. Jobson Horne, Dr. Herbert Tilley.

The following paper has been offered:

MCKEOWN, David, M.D. Auditory Results of Removal of Post-nasal Adenoids. (Modified Operation.)

L. TROPICAL DISEASES.

Art Room, Second Floor, Higher Grade School.

President: Colonel KENNETH MACLEOD, M.D. (ret. I.M.S.). *Vice-Presidents:* Surgeon-Lieutenant-Colonel OSWALD BAKER, M.D., I.M.S.; Major RONALD ROSS, I.M.S. *Honorary Secretaries:* ANDREW DUNCAN, M.D., M.R.C.P., School of Tropical Diseases, Albert Dock, E.; GUTHRIE RANKIN, M.D., M.R.C.P., 4, Chesham Street, Belgrave Square, S.W.

On Wednesday the business will be introduced by a short address from the President, Colonel Kenneth Macleod.

The following subjects have been arranged for discussion:

Wednesday, August 1st.—Quinine: its Action and Modes of Employment in Malaria. The discussion on this subject will be opened by Dr. Andrew Duncan, M.R.C.P.

Thursday, August 2nd.—Ankylostomiasis. The discussion on this subject will be opened by Major G. M. Giles, M.B., F.R.C.S.

Friday, August 3rd.—The Etiological and Pathological Relationships of Yaws. The discussion on this subject will be opened by Mr. Jonathan Hutchinson, F.R.S., LL.D.

The following gentlemen have intimated their intention to take part in the discussions: Dr. Patrick Manson, Mr. James Cantlie, Colonel Kenneth Macleod, Deputy Inspector-General John Tyndall, Mr. Malcolm Morris, Surgeon-Lieutenant-Colonel Oswald Baker, Sir Wm. Kynsey, Major Wilson, Dr. Fielding-Ould, Dr. Alfred Hillier, Dr. James Watson, Dr. Sandwith (Cairo), Dr. Thin, Major W. J. Buchanan, I.M.S., Major F. P. Maynard, I.M.S., Lieutenant-Colonel Maitland, I.M.S., Lieutenant-Colonel Stewart, I.M.S., Major Ronald Ross, I.M.S., Mr. Sarat K. Mullick, M.B.

The following papers have been proposed:

BASSETT-SMITH, Percy W., Staff-Surgeon, R.N. Abscess of Left Lobe of Liver, with Remarks, particularly referring to the Amœbic Causation.
BUCHANAN, Major W. J., M.B. Hot Weather Diarrhœa in India.
CANTLIE, James, F.R.C.S. Subhepatic Abscess.
DUNCAN, Andrew, M.D. The Diseases of Ghoorkhas.
JAMES, Captain S. P., I.M.S. (Travancore). Observations on the Metamorphosis of the Filaria Nocturna in Mosquitos, especially in Mosquitos of the *Anopheles* Genus.
MACLEOD, Colonel Kenneth, M.D. The Management of Lung Lesions consequent on Liver Abscess.
MULLICK, Sarat K., M.B. Plague and its Prophylaxis.
ROSS, Ronald, Major, I.M.S. A List of Suggestions for the Improvement of Medical and Sanitary Practice in the Tropics.
SAMBON, Louis, M.D. The Geographical Distribution and Natural History of Plague.
SMITH, W. Johnson, F.R.C.S. The Surgical Treatment of Hepatic Abscess.
THIN, George, M.D. A note on a case of Blackwater Fever, with Specimens.
WILLIAMSON, George A., M.D. The Cyprus Sphalangi and its Connection with Anthrax.

Members proposing to take part in the discussions or desirous of reading papers should communicate, without delay, with the Honorary Secretaries.

M. NAVY, ARMY, AND AMBULANCE.

Gainsborough Hall, opposite St. Margaret's Church, Bolton Lane.

President: Inspector-General BELGRAVE NINNIS, M.D., R.N. *Vice-Presidents:* Surgeon-General HENRY SKEY MUIR, C.B., M.D., A.M.S.; Brigade-Surgeon-Lieutenant-Colonel G. S. ELLISTON, V.D., V.M.S. *Honorary Secretaries:* JAMES HARPER, M.D., Surgeon-Captain V.M.S.C., 25, Rosary Gardens, South Kensington, S.W.; FRANCIS AUGUSTUS BROOKS, M.D., Surgeon-Captain Suffolk and Harwich V.A., St. Felix, Felixstowe, Suffolk.

It is proposed to hold discussions as follows:

Wednesday, August 1st.—The Medical Service of the Army, Militia, Yeomanry and Volunteers.

Thursday, August 2nd.—The First Aid and Transport of Sick and Injured in Civil Life in Large Towns.

Friday, August 3rd.—On Modern Small-bore Rifle Wounds, and other Medical and Sanitary Matters of which the War in South Africa has Increased our Knowledge.

The following papers have been proposed:

BEADNELL, Surgeon C. Marsh, R.N. On Modern Small-bore Rifle Wounds.
CANTLIE, Surgeon-Captain J. How to Link the Militia, Yeomanry and Volunteer Medical Services with the Royal Army Medical Corps.
CAVERILL, Surgeon-Major T. F. S. On Cavalry Ambulance Service.
COLBORNE, Staff-Surgeon W. J., R.N. On Infectious Disease on Board Ship.
BIRCH, Surgeon-Captain De Burgh. On the Organisation of the Medical Department of the Volunteer Forces.
DENT, Clinton, F.R.C.S. On Modern Small-bore Rifle Wounds.

ELLISTON, Brigade-Surgeon-Lieutenant-Colonel G. S. On Brigade Bearer Companies.
HAMILTON, Surgeon-General J. B., R.A.M.C. On the Past, Present, and Future of the R.A.M.C.
HUTTON, Surgeon-Major C. A., On First Aid and Transport of Sick and Injured in Civil Life in Large Towns.
JAMES, Major H. E. R., R.A.M.C. On Camp Sanitation.
MATTHEWS, Surgeon-Major Valentine. On Cavalry Ambulance Service.
MARSHALL, Surgeon-Major de Zouche. On First Aid in Civil Life.
STEPHENSON, Surgeon-Captain F. L. On the Cycle in the Field for Medical Service.
RANKINE, Lieutenant-Colonel G. S., I.M.S. On Cavalry Field Ambulance.
SQUIRE, Surgeon Lieutenant-Colonel J. E., V.D. On the Augmentation of the R.A.M.C. for War.
TRIMBLE, Lieutenant-Colonel C. J., L.R.C.P., L.R.C.P. On the St. John Ambulance Brigade Organisation and Work.
WRIGHT, Professor A. E., M.D. On Anti-enteric Inoculation.

The following, amongst others, are expected to take part in the discussions: Surgeon-General Sternberg, Director-General U.S. Army; Surgeons-General O'Dwyer, Skey Muir, C.B., and Evatt, A.M.S.; Lord Knutsford, Lieutenant-Colonel C. B. Maitland, I.M.S.; Majors James and Treherne, R.A.M.C.; Brigade-Surgeon-Lieutenant-Colonel Hopson, V.D.; Captain Milburn, Messrs. Frederick Treves, Edmund Owen, M. K. Hargreaves, etc.

A Loan Collection of objects of special interest to the section will be formed in the anteroom off the Section meeting room, and on the lawn outside a tortoise tent of the Military Equipment Company will be pitched, in which many specialities for the field will be seen.

PROGRAMME OF PROCEEDINGS.

MONDAY, JULY 30TH, 1900.

9 P.M.—Mrs. Elliston "At Home," Stoke Hall.

TUESDAY, JULY 31ST, 1900.

9.30 A.M.—Meeting of 1899-1900 Council. Magistrates' Room, Town Hall.
11 A.M.—Church Service. St. Mary-le-Tower Church. Sermon by the Right Reverend John Sheepshanks, Lord Bishop of Norwich.
2 P.M.—First General Meeting. Report of Council. Reports of Committees: and other business. Central Hall, Higher Grade School.
4 P.M.—Garden Party by Mr. D. Ford Goddard, M.P.
8.30 P.M.—Adjourned General Meeting from 2 P.M. President's Address. Lyceum Theatre.

WEDNESDAY, AUGUST 1ST, 1900.

9.30 A.M.—Meeting of 1900-1901 Council. Magistrates' Room, Town Hall.
10 A.M. to 1 P.M.—Sectional Meetings.
2.30 P.M.—Second General Meeting. Address in Medicine by Philip Henry Pye-Smith, M.D., F.R.S. Presentation of Middlemore Prize. Central Hall, Higher Grade School.
4 P.M.—Garden Party at Felixstowe by Mr. Felix Cobbold.
9 P.M.—Reception and Garden Fête at Christchurch Park by His Worship the Mayor of Ipswich.

THURSDAY, AUGUST 2ND, 1900.

9.30 A.M.—Meeting of Council. Magistrates' Room, Town Hall.
10 A.M. to 1 P.M.—Sectional Meetings.
2.30 P.M.—Third General Meeting. Address in Surgery by Frederick Treves, F.R.C.S. Central Hall, Higher Grade School.
Extraordinary General Meeting of Members. Central Hall, Higher Grade School.
7 P.M.—Public Dinner of the Association. Council Chamber, Town Hall.
9 P.M.—Reception by Ladies of the East Anglian Branch at the Ipswich Museum.

FRIDAY, AUGUST 3RD, 1900.

10 A.M. to 1 P.M.—Sectional Meetings.
2.30 P.M.—Concluding General Meeting. Address in Obstetrics by William J. Smyly, M.D., F.R.C.P.I. Central Hall, Higher Grade School.
4.30 P.M.—River Trip by special steamer on rivers Orwell and Stour and round Harwich Harbour.
9 P.M.—Soirée (with dancing) in Christchurch Mansion and Park by the Members of the East Anglian Branch.

SATURDAY, AUGUST 4th, 1900
Excursions.

ANNUAL MUSEUM.

THE Annual Museum in connection with the sixty-eighth meeting of the British Medical Association will be arranged in the following Sections:

SECTION A.—Food and drugs, including prepared foods, chemical and pharmaceutical preparations, etc.

SECTION B.—Instruments, comprising medical and surgical instruments and appliances, electrical instruments, microscopes, etc.

SECTION C.—Books, including diagrams, charts, etc.

SECTION D.—Sanitary appliances and ambulances.

Two very good halls, practically adjoining each other, have been obtained for the Museum.

SECTIONS A and D will be held in the Public Hall, Westgate Street, a fine well-lighted and ventilated room. Length 119 feet, width 49 feet.

SECTIONS B and C will be held in the Old Museum Rooms, on the first floor, close to the Public Hall. Length of room, 71 feet, width 25 feet.

Both halls are very central.

PATHOLOGICAL MUSEUM.

SPECIMENS of interest for the Museum should be forwarded, addressed to the Secretary of the Pathological Museum, British Medical Association, Board Schools, Ipswich, during the last week in July.

Intending exhibitors are requested to communicate with the Secretary of the Pathological Museum, Sydney H. Long, M.B.Cantab., 37, St. Giles Street, Norwich, who will send a card to each exhibitor for a written description of his specimens. All specimens must be mounted ready for exhibition.

Members of the British Medical Association will be made honorary members of the following clubs for the week of the meeting, namely, Ipswich and Suffolk Club, Northgate Street; Ipswich Institute; and Ipswich Golf Club.

The Ipswich and East Suffolk Cricket Club invites an eleven from the British Medical Association to play a match on a day to be fixed during the meeting. Members wishing to play are requested to send their names to Dr. S. S. Hoyland, Museum Street, Ipswich.

RAILWAY ARRANGEMENTS.

ARRANGEMENTS have been made by which the railway companies of Great Britain and Ireland will issue to members and their friends attending the annual meeting at Ipswich *return tickets* at a *single fare and a-quarter*. These reduced tickets will be available from July 28th up to August 6th, both dates inclusive.

Those members and their friends desirous of taking advantage of this concession must produce, for the information of the railway booking clerk, a certificate signed by the General Secretary of the British Medical Association. A separate certificate will be necessary for each ticket required, and these certificates can be had on application to the General Secretary, 429, Strand, London, W.C. When more than one certificate is required the applicant should be careful to state the names for whom the extra certificates are intended.

Those members and their friends intending to travel from places where it is not likely that there will be through bookings to Ipswich, should give notice at the railway booking office a few days in advance, in order that the necessary application may be made to the head offices of the railway companies for the issue of through fares. It should be borne in mind that a separate certificate is necessary for every ticket required at the reduced rate.

During the meeting the Great Eastern Railway will grant to members and their friends return tickets at a *single fare* to all stations within a radius of fifty miles of Ipswich. To obtain this concession production of member's card will be necessary.

NEALE TESTIMONIAL FUND.—We are informed that this fund is about to be closed, but subscriptions received on or before Wednesday, July 11th, will be included in the complete list which will shortly be published. Subscriptions should be sent to Mr. J. Y. W. MacAlister, 20, Hanover Square, London, W., and it will save much trouble if cheques are made payable to "Bearer," and crossed "National Provincial Bank, Neale Testimonial Account."

REPORT FROM THE DEPARTMENTAL COMMITTEE ON SCOTTISH PRISONS.

THE report on Scottish Prisons by a Departmental Committee appointed a year ago, consisting of the Earl of Elgin, Sir Thomas D. Gibson Carmichael, Sir Colin C. Scott-Moncrieff, Sir John Batty Tuke, and Mr. James Parker Smith, M.P., has just been issued. The Committee was charged to inquire concerning:

1. The provision made in Scottish prisons for the nursing and accommodation of sick prisoners.
2. The sufficiency of the accommodation provided in the prisons of Scotland for ordinary prisoners.
3. Juveniles and first offenders, and to what extent they should be treated as classes apart.
4. The sufficiency of prison dietary.
5. Prison labour and occupation, with special reference to the physical condition and the moral improvement and training of the prisoners.

Provision for Sick Prisoners.—Taken as a whole, the Committee unhesitatingly affirm that the treatment of the sick in Scottish prisons is, and has been, successful and humane. A sick prisoner ought to receive at least as prompt and satisfactory treatment as he could have obtained had he not been in prison. It is impossible under any system to prevent the occurrence of sudden death in prison any more than outside the prison gates. The Committee recommend that a necropsy should be held in every case of sudden death, or by death from unascertained cause, and be conducted by an authority unconnected with prison administration.

Legislative Provision for Removal to Public Hospitals of Serious Cases.—The law in Scotland differs from the law in England in that it allows the removal from prison to infirmaries or hospitals of very serious cases. The Committee regard it as indisputable that the power of removal to hospital, especially for serious surgical cases, is one that ought to be preserved. The clause in the Prisons (Scotland) Act, 1860, relating to this matter should be altered to avoid ambiguity, which might in some urgent case paralyse the machinery on which the prison authorities have been wont to rely, and bring about regrettable results. This ambiguity especially affects the second clause of the conditions, which may be read to mean that no disease is removable, even if it "cannot be treated in prison," unless it also "threatens immediate danger to life." While provision should be made in every prison for accidental cases of infectious disease, it is not for the advantage of the locality that a prison should become the focus of infectious disease, and it is therefore to the interest of the local authorities to co-operate where the emergencies, fortunately not frequent, cannot be conveniently met within the prisons themselves.

Provision for Minor Cases.—The Committee is of opinion that there is no reason to go beyond the warder staff for officers perfectly competent for this duty, but that the training should be improved and systematised. In some at least of the larger prisons in England (for example, Wandsworth Prison), a system of training has been developed with satisfactory results. It would be advantageous if a school for male nurse warders could be established at Barlinnie; and if it were practicable to have similar arrangements for female warders in Duke Street Prison, the wants of the service could be gradually supplied. The hospital staff in these two prisons should, as in Wandsworth, be extra to the ordinary staff of the prison, but all should be under the orders of the Governor. On a careful review of the whole evidence on the association of prisoners on medical grounds, the Committee are not prepared to recommend that such association should be absolutely forbidden. When used on medical grounds and under proper safeguards it does more good than harm, and meets a difficulty in smaller prisons. In this view the Committee do not widely differ from the report of the English Committee.

Provision for Cases requiring Professional Nursing within the Prison.—The Committee hold that the better course is to act on the existing rules, and to call in nurses from the outside where any trained nursing is required in prison. The review of the methods employed in the treatment of the sick in Scottish prisons concludes thus: "It is certainly untrue that 'proper nursing arrangements are still entirely absent in Scottish prisons.' Considerable improvements have already been introduced in the last few years, and with the modifications which we have suggested we believe that they will be found adequate to all reasonable requirements."

Structural Accommodation for Nursing the Sick.—It is urged that hot water and lavatories should be provided. The condition of affairs at Duke Street Prison, Glasgow, is then explained and criticised. The medical staff at certain other prisons, the report then goes on to say, is doubtfully adequate to provide for the care of the sick.

The Sufficiency of Prison Dietary.—In England attention had been drawn to the subject of dietary in the Report of the English Prisons Committee of 1894, and by the conclusions of a Departmental Committee appointed by the Secretary of State in 1898, which found that certain of the English prison diets were inadequate. In Scotland the Prison Commissioners, acting on their own initiative, have from time to time referred the question of the sufficiency of the prison dietaries to committees of medical men, and on the recommendation of these Committees the dietaries have been periodically revised. Dr. Craufurd Dunlop, the present Acting Medical Adviser to the Prison Commissioners for Scotland, made a comprehensive report on the whole subject, published last session as a Parliamentary paper, and fully reported in the BRITISH MEDICAL JOURNAL at the time. On the data obtained from his investigation, Dr. Dunlop came to the conclusions:

1. That many prisoners were underfed, notably able-bodied men and women undergoing sentences of less than four months.
2. That the length of sentence is not a proper basis for dietetic classification of prisoners; and
3. That the guiding principle should be the special condition of the prisoner as regards sex, size, and the amount of labour exacted.

Acting on these conclusions Dr. Dunlop advises new dietary regulations. He fixes a standard rate of diet for all male ordinary prisoners, and another for all female ordinary prisoners, and advises that these standard rates be only departed from when there are good physiological reasons for doing so, more food being given where there are greater calls for food, as with prisoners of larger size or at harder work than the average, and less food when the food requirement is less than the average, as occurs when the prisoners do not work. The following is a list of the proposed new diet scales:—

1. For prisoners sentenced for inebriety: to be given during the first two days.
2. For unemployed women and juveniles.
3. For unemployed men and working women.
4. For working men.
5. For female convicts.
6. For convicts at industrial and light outdoor labour.
7. For convicts at hard outdoor labour.
8. For convicts at light indoor labour.
9. Punishment diet.
10. For criminal lunatics.

These proposed diet scales were submitted to a practical test of three months at Peterhead Convict Prison in the end of 1899, and were also tried experimentally at the General Prison, Perth, during October, 1899. The result of the testings to which the suggested alterations were subjected are fully detailed in a further report prepared for the Prison Commissioners by Dr. Dunlop, and tendered as evidence in the course of his re examination.

The Committee is of opinion that the proposed new dietary regulations should be adopted in Scottish prisons. Doubtless their adoption will entail increased expenditure, but it is necessary to ensure that all prisoners shall be sufficiently and at the same time not excessively fed.

Prison Labour.—The report concludes with a consideration of prison labour and occupation, with special reference to the physical condition and the moral improvement and training of the prisoners, the fifth and last clause of the reference. Under this head are discussed prison dress, religious instruction, prison libraries, discharged prisoners' aid societies, punishments, Visiting Committee, and the appointment of a Medical Commissioner on the Prisons Board. The appointment of the last is very strongly urged.

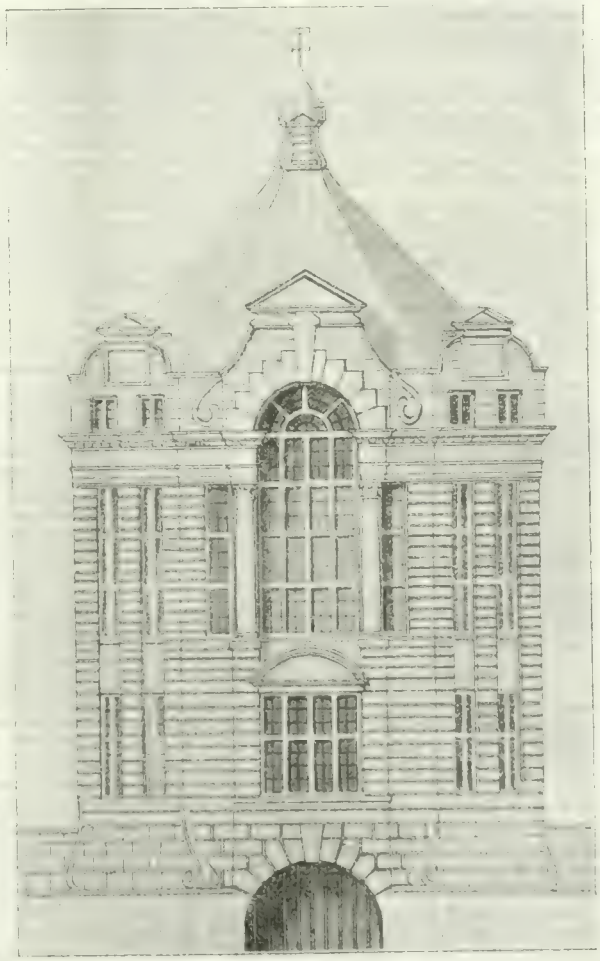
THE NOTIFICATION OF PHTHISIS IN THE UNITED STATES.—According to the *Boston Medical and Surgical Journal* the Board of Health of Trenton, New Jersey, with the support of the State Board, has recently adopted an amendment to the Health Code, placing consumption among the contagious and infectious diseases. It provides fines and imprisonment for practitioners who fail to report cases of consumption within thirty days after they are diagnosed. Hospitals are not exempted from the general provisions.

THE PROPOSED NEW MEDICAL BUILDINGS AT CAMBRIDGE.

By T. HOLMES,

Honorary Fellow of Pembroke College, Cambridge.

MANY indeed are the changes which a Cambridge man of my age has seen at the old University, most of them we may gladly allow for the better, though there are some over which an old fellow may be excused for entertaining more than a little doubt. But no one who knew anything of the medical school of Cambridge more than half a century ago could possibly doubt that in all essentials that school has progressed not more in numbers than in efficiency. As to numbers we are told that "there are now over 450 medical students in the University, about 140 matriculating each year." And as to efficiency, I believe it to be universally admitted that nowhere are the sciences on which the art of medicine is founded more efficiently and thoroughly taught than at Cambridge, so far, at least, as the "environment" permits. But it is there that at present the chief difficulty lies in carrying on this rising and famous school. When I was a student the only building in the University specially devoted to medical purposes besides the hospital was the old Anatomical Museum (irreverently called the Round House) in Downing Street. This building gave sufficient, though not very satisfactory, accommodation for the scanty crew of the medical students of that day. There we heard our lectures, studied the bones and other parts from preparations, had occasional opportunities for dissection,[1] and could make some acquaintance with pathology. Botany and chemistry being studies pursued for other purposes besides those of medicine, were taught elsewhere. Where the lectures on medicine and surgery were given I forget, and I left the University before I began regularly to attend them. Anyhow, in spite of admitted imperfections, the old school did good work. But in proportion as, under the vigorous leadership of Sir George Paget and Sir G. M. Humphry, the school began to increase and multiply, the old accommodation became utterly insufficient. Fortunately, in the adjacent College of Downing, through the benevolence of its distinguished Master, Dr. Hill, and of the Downing Professor of Medicine, room has been found to carry on teaching and research in pharmacology but the arrangement is only temporary (for the rooms are wanted by the College), and the accommodation becomes daily more and more inadequate. The study of anatomy is carried on in a separate building near at hand, though here also complaints of restricted space are beginning to be heard; but there is urgent need for providing proper buildings for the teaching of medicine and surgery, pharmacology, pathology, and public health, and also for the rebuilding of the present anatomical museum, now in almost a ruinous condition, and for adapting it for the modern requirements of teaching. All this is too plain to be contested by anyone, and the University fully recognises its duty to provide the necessary accommodation for the medical school by which it is so greatly strengthened and benefited. A syndicate has accordingly been formed to obtain plans for suitable buildings, a site having been granted by the University on land facing on one side into Downing Street, and running at an angle down Corn Exchange Street towards the building of the Department of Physiology. Plans have been obtained from Mr. E. S. Prior which are approved by a majority of the syndicate, and have been submitted to the Senate[2] with a detailed report. The Editor of the BRITISH MEDICAL JOURNAL has asked me to write an explanatory note about them, and I willingly do so, but more for the purpose of bringing the subject before the numerous medical graduates of my old University than with any hope of making intelligible to the ordinary reader the details of a complicated building which could only be followed by the help of plans. Suffice it to say that the financial position of the University compels it to appeal to the liberality of its members for aid, though the University chest will contribute to the very utmost of its power. This consideration has precluded any idea of erecting a magnificent or even an ambitious building—nor, perhaps, would any such building be in keeping with its objects—so that if any reader should be inclined to say that the building of which we reproduce the elevation is not in all respects "a thing of beauty," he may reflect that use, not beauty, is what was sought after. At any rate, the syndicate state in their report that they believe that the buildings "will, when complete, be worthy of the University, and that they will provide sufficient accommodation for the present and prospective requirements of the important departments for which they are intended." They consist of three portions (1) the block facing Downing Street, which is estimated to cost £16,000; (2) the Humphry Museum which is to replace the old Anatomical Museum, and to cost £8,000; and (3) the Corn Exchange block which will cost £11,200. Thus the total expense, when completed and furnished, will not be much, if at all, below £40,000. The University, however, is in no condition to provide this large sum out of hand; but a committee of graduates was formed, and met at the rooms of the Royal Medical and Chirurgical Society under the auspices of Dr. Dickinson, then President of that Society, and a subscription has been made, and promised, extending over five years from the date of the



The Humphry Museum, Cambridge: suggested front elevation.

[1] These opportunities were infrequent. The anatomical authorities had too recent remembrance of the great riot which had occurred a few years previously to risk a repetition of it. In that riot the populace attacked the Anatomical Museum, and would have wrecked it had not Dr. Whewell, who was Proctor that year, turned out all the men of Trinity, and I believe other Colleges, and given battle to the mob. As it was, the building was with difficulty saved. The cause of the riot was the well-founded belief that the body of a man who had died in the town was there under dissection.

[2] *Cambridge University Reporter*, March 13th, 1900.

meeting, which will, I believe, about pay the expense of the Humphry Museum. This movement, however, was stopped just as it was on the point of succeeding, in order not to interfere with the larger scheme for the endowment of the University. Now it is of urgent importance that the Humphry museum should be built tolerably soon, for the condition of the old building is such as to render it very expensive to keep it from falling into ruin; while there must be some place in which to store the preparations and conduct the work done in the old museum while it is being pulled down and its successor erected. So the syndicate proposes that the three portions of the building shall be taken in hand in the order in which they stand in the report, and it is hoped that with the sanction of the Senate the work may be begun at once.

Perhaps I may be allowed to extract from the report a short summary of the arrangements of the proposed building.

The block is of an irregular L-shape, and may be divided for convenience of description into three parts: (1) the Downing Street wing, (2) the museum, and (3) the Corn Exchange Street wing.

The Downing Street wing (commencing at the museum), in which will be accommodated pharmacology, surgery, medicine, and midwifery, morbid histology, and experimental pathology, is 178 feet long by 38 feet broad. The distance between the end of this wing and the chemical laboratory is 109 feet.

The museum is 62 feet long and 38 feet broad; it is placed obliquely to the other wings, and extends in height up to the second floor of these wings.

The Corn Exchange Street wing, in which the greater part of the pathological and public health departments will be housed, measures 42 feet across near the physiological department, but broadens out to 72 feet at the museum end. The length of this wing is 124 feet.

The ground area covered by the whole building is about 16,000 square feet. The accommodation provided is briefly as follows:

A large lecture theatre to accommodate about 200 is situated in the two lower storeys, and between the two limbs of the L. Above this is a room 46 feet by 33 feet adapted for use as a library and examination room. In each wing is a small lecture theatre to accommodate from 50 to 60 students.

In the basement are workshops, space for heating and boiler apparatus, stores, coals, sterilising and washing apparatus, etc.

On the ground floor a number of work rooms and laboratories are provided for comparative and chemical pathology, and preparation and balance rooms for the pathological department; experimental and research rooms and library for pharmacology; demonstration, preparation, and work rooms for surgery; and private rooms for the Regius Professor of Physic, the Professor (or Reader) of Surgery, and the lecturers in medicine, surgery, midwifery, and medical jurisprudence.

On the first floor are a number of workrooms for pathology, public health, and medical jurisprudence; a small chemical laboratory, materia medica museum, and Downing Professor's private room, and rooms for classes in medicine and surgery.

On the second floor are the class room for morbid histology, preparation room, rooms for experimental and clinical pathological work, and rooms for preventive medicine and for the Professor of Pathology. On this floor also are the rooms for chemical physiology, to be arranged as required by the physiological department.

Above this latter department on a third floor is a large bacteriology class room, with small preparation rooms.

In so deep a block as that facing Corn Exchange Street it would be difficult to obtain adequate window lighting for the whole of the rooms. In order to get over this difficulty the large and one of the smaller lecture theatres are placed in the interior of the building, and will be lighted entirely by artificial light. Special attention will be paid to their ventilation.

I hope the above account may not weary your readers. I thought it might interest some of the many medical graduates of Cambridge, and perhaps stimulate them to come forward to the assistance of one of the most useful departments of the University. Since writing the above I have seen the report in the *Cambridge University Reporter*, March 21st, of the debate in the Senate, March 15th, on the disposition of the Benefaction Fund. The upshot of this seems to be that the claims of the Faculty of Botany will probably be those first satisfied. But this disposition of the University funds has the sanction of Dr. Woodhead, the Professor of Pathology, as being necessary and in no way prejudicial to the prospects of the Medical School. The same debate only proves still more clearly the urgent need of the Faculty of Medicine and the desirability of a large contribution from those interested in that faculty towards the buildings which are essential to its working in the present and its enlargement in the future.

ANTIRABIC INOCULATIONS IN PRUSSIA.—In 1899 the number of persons bitten by rabid animals in Prussia was 287, of whom 201 belonged to the male and 86 to the female sex. The bites were inflicted in 193 cases by dogs, in 11 by cats, in 4 by cows, and 1 by a pig. In 231 cases inoculations by Pasteur's method were carried out; in 1 case in the Cracow Institute and in the other 230 at the Berlin Institute for Infectious Diseases. There were 2 deaths, being a percentage of 0.70.

MEDICAL OFFICERS OF THE HIGHLANDS AND ISLANDS OF SCOTLAND.

WE are informed that the following memorial has been presented to the Local Government Board of Scotland. It has been signed by forty officers concerned, who collectively represent every outlying parish in the north-west Highlands and Islands of Scotland. The following is the text of the memorial:

UNTO THE HONOURABLE
THE LOCAL GOVERNMENT BOARD OF SCOTLAND, THE MEMORIAL OF MEDICAL OFFICERS OF THE MORE REMOTE PARISHES OF THE HIGHLANDS AND ISLANDS OF SCOTLAND.

HUMBLY SHEWETH:

I.—That the Medical Officers of the more remote parishes of the Highlands and Islands of Scotland are required to perform their duties by night as well as by day, and on Sundays as well as week days, and in all states of the weather.

II.—That the areas of practice of many of these Medical Officers are of great extent, so that it is no uncommon occurrence for the Medical Officer to have to travel from 10 to 30 miles to see a pauper patient; that consequently his travelling expenses are heavy, and that, moreover, he is sometimes unable to return home the same night.

III.—That the work is very trying to the health of the Medical Officer, especially in winter time; yet, as matters stand, he may not leave his parish for a holiday rest unless he provides at his own expense a duly qualified and registered medical practitioner as his substitute.

IV.—That the salaries of the Medical Officers are small, and that the population of the districts is scattered and very poor, so that few Medical Officers can earn more than from £20 to £50 a year beyond their official parochial salary; and that consequently the expense of providing a qualified medical substitute during a reasonable holiday is out of all proportion to the emoluments attached to the office.

V.—That all other Parish Officers may have the privilege of an annual holiday without having to place a substitute in their place at their own expense; the Parish Medical Officer alone being compelled to provide such a substitute at his own expense.

VI.—That many of these Medical Officers are compelled to reside far from railway or other convenient communication with the South, so that, in most cases, two or three days are necessary to travel to Edinburgh or other centres of population, and that the expenses of living in such isolated districts are great and the social amenities few.

VII.—That the Local Government Board of Ireland requires that a Board of Guardians shall give its Medical Officer an annual holiday and pay a reasonable fee to a qualified substitute, and that most of these Boards have cheerfully acquiesced in this requirement.

VIII.—We, the undersigned Medical Officers, submit that, as is the rule in similar districts and under similar circumstances in Ireland, we also should be granted the privilege of an annual holiday, and that the Parish Council should pay a reasonable fee to a substitute; that if one month were allowed—deducting a week for going and returning—the Medical Officer would have a clear three weeks' holiday, and that the expense to the ratepayers would be trifling.

IX.—And the undersigned Parish Medical Officers earnestly pray that the Local Government Board of Scotland will be pleased to look into the difficulties and disadvantages, in the respects herein set out, under which their Medical Officers in the outlying districts at present labour, and will take the whole position of facts mentioned in this Memorial into consideration, and grant the prayer thereof.

And your Memorialists will ever pray.

A further memorial by members of Parliament and others, expressing their sympathy with the above memorial, has been signed by Lord Lister, by 27 members of Parliament (including many representing Scottish constituencies), by Dr. Bruce (Direct Representative for Scotland on the General Medical Council), by the Presidents of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons, Glasgow, by Professor McCall Anderson, Dean of the Medical Faculty of the University of Glasgow, by seven Professors of the Faculty of Medicine in the University of Edinburgh, by Professor R. W. Reid, Dean of the Medical Faculty of the University of Aberdeen, and by Professor Waymouth Reid, Dean of the Medical Faculty of the University of St. Andrews.

The memorial sets out in the plainest terms reasons why medical officers of these remote districts should be granted an annual holiday, and we do not think that anything we could say could add to the force of this plain statement of fact. The memorialists, we are sure, will have the sympathy of every member of the medical profession wherever his lot may be cast. The remuneration paid by the parishes is always small, and the opportunities for adding to the income by ordinary practice must obviously be few. The work is hard and responsible, and we think it is eminently desirable in the public interest, and as an act of simple justice, that steps should be taken without delay to grant the prayer of the memorial. The appeal which it makes is all the more forcible owing to the moderation of its tone.

THE LIGHT TREATMENT IN LONDON.

ALTHOUGH the Light Department at the London Hospital, a description of which appeared in the BRITISH MEDICAL JOURNAL of June 30th, is, as far as we are aware, the only public institution in this country where Professor Finsen's methods are employed in the actual treatment of disease, yet, as we have ascertained, this form of treatment in London was commenced in a tentative fashion and on semi-private lines some eighteen months ago and in spite of great difficulties for two months at least with an encouraging degree of success. On June 30th Mr. Malcolm Morris, of St. Mary's Hospital, gave a demonstration of the electric light treatment of lupus and other superficial skin diseases, to members of the Medical Graduates' College and Polyclinic at the Studio, 1A, Berkeley Gardens, Church Street, Campden Hill, Kensington, W. The apparatus there in use corresponds in every essential respect with that at the London Hospital, but several points were emphasised at the demonstration, more particularly in regard to the difficulties of the treatment, and how these may be met, that were both interesting and instructive.

The place in which the treatment is carried out by Mr. Malcolm Morris is a large well-ventilated room; the patients are under the supervision of Dr. Dore. A nurse from Professor Finsen's Institute has the direction of the actual treatment, and a practical electrician attends to manage the light apparatus.

HISTORICAL SURVEY OF THE TREATMENT OF LUPUS.

Mr. Morris pointed out that a great advance was made when the plan of scraping lupoid tissue with a Volkmann's spoon was adopted, but that there was always a tendency to relapse. Then the French school of dermatologists in particular enunciated the principle that no treatment of local tuberculosis of the skin was satisfactory which caused bleeding because of the risk of transference of the tubercle bacilli by the opened blood vessels to other organs. Consequently the method of applying strong acids, the acid nitrate of mercury, and even the actual cautery was commenced; but relapses still occurred. Then after years of almost hopeless effort Finsen's method, whereby with no opening of the blood channels there was yet a curative effect, was introduced. At the present time, although the treatment was in a probationary stage, and although all undue optimism was to be deprecated, there was a manifestation of very distinct progress.

FACTORS IN THE SUCCESS WITH LIGHT TREATMENT.

To avoid disappointment it was necessary to take into account certain factors in regard to prognosis, if there had been no previous treatment of the diseased area—or, in other words, if there were no scar tissue which impeded the passage of the chemical rays; if the disease was of recent standing; if there was no large amount of thickening of the skin; if the configuration of the part involved could be adapted to the pressure glass, and if the extent of the lesion was not too great. If these factors were favourable, then the prospect of cure was good. The fact that the treatment caused little if any pain, so that the use of an anæsthetic could be dispensed with, was a great recommendation. But if the disease was extensive, the treatment was very tedious, and especially so towards the end of a series of sittings, from two causes the production of scar tissue and the development of pigmentation—both of which obstructed the active rays.

Although a daily sitting on six days of the week was the desideratum in the majority of cases; yet if there were special need two sittings a day might as a matter of experience be given to a patient without any harmful result. The personal factor in administering the treatment was of the first importance; success depended not so much on the physician, but, for the one part, on the intelligence, skill, and devotedness of the nurse, and, for the other part, on the patience and perseverance of the patient, who must submit to absolute passivity for an hour or an hour and a quarter daily for, it might be, months. Perhaps the most important point in giving the treatment was the accurate apposition of the pressure glass to the skin so that the necessary focalisation of the rays was obtained.

POINTS IN THE TECHNIQUE OF THE TREATMENT.

The application of the pressure glass with sufficient force to produce the required degree of bloodlessness of the tissues caused in some positions serious discomfort; for example, it could not well be applied to lupoid tissue in the gums. To other regions the adjustment of the feebly convex glass was a physical impossibility. For instance, to the region of the internal canthus and the side of the bridge of the nose a more highly convex lens was needed, and then arose difficulties in focussing. Elastic bands as the source of the pressure were evidently more used in Mr. Malcolm Morris's institute than at the London Hospital; and there, as at Copenhagen, the patients themselves covered what corresponds with the eye-piece of the telescope with the hand while the pressure glass was being adjusted, whereas at the London Hospital red flannel caps are applied over it resembling the leather cap of a photographic camera. Successful cases were exhibited both by Mr. Malcolm Morris and by Dr. A. B. Blacker, Superintendent of the X-Ray Department of St. Thomas's Hospital, who with the assistance of another of Professor Finsen's nurses had for several months been obtaining gratifying results.

REACTION AND PIGMENTATION.

Mr. Malcolm Morris observed that the two conditions favourably governing the production and degree of the desired reaction were the absence of blood from the tissues and the comparatively feeble development of the skin pigment. The degree of the reaction as treatment was continued became less, owing to the increased deposition of pigment. In children, women, and thin-skinned men the reaction was more marked, and moreover it was greater in some diseases than in others. The tendency to pigmentation in different individuals depended on constitutional peculiarity, and a case was referred to in which there was much pigmentation where no reaction was obtained after an exposure of three hours' duration. The great fact, however, was that as a result of the reaction there was obtained a white, soft, supple scar. The pigmentation was said to die away very gradually.

THE QUESTION OF MUCOUS MEMBRANES.

It was certain that mucous membranes affected with lupus could not be satisfactorily treated by Finsen's method, partly because the pressure could not be borne, but chiefly because accurate focalisation was impossible, seeing that the surface to be treated was characterised by folds and crevices. Yet when it was considered that the tendency to relapse of "cured" lupoid areas probably depended on reinfection from unhealed mucous membranes, the desirability of their simultaneous treatment became obvious. Accordingly the plan was adopted of treating them, at the same time as the rest was being treated by light, with iodine or other agent, but this, unless the affected area was limited, was also unsatisfactory.

COMBINED FINSEN AND X-RAY TREATMENT.

A good instance of the difficulty experienced was in cases of lupus of the cheek implicating the interior of the nose. In such cases a combined method of treatment carried out by Mr. Malcolm Morris with the Finsen light and by Dr. F. H. Low, the Honorary Secretary of the Roentgen Society, with the x-rays had given excellent results.

This combined method had been in use at the Finsen Institute, but not as we understood systematically. Its *rationale* is that, as the Finsen rays cannot be brought to bear on any other than plane surfaces, the Roentgen rays, in virtue of their power of penetrating soft tissues, may be used to act on mucous membranes, however complicated their arrangement. Dr. Low stated that a mask composed of cardboard and lead foil was applied to the face, and an aperture cut in it corresponding with the part to be attacked. A 6 or 7-inch spark was employed, and a series of exposures were made, each lasting 10 or 15 minutes, until burning effects were produced, then a respite of some days was allowed. After about fifteen or sixteen exposures, a distinct improvement was manifest. The reaction produced was similar in kind to that of the Finsen system, but the dermatitis which was set up was said to be less marked in diseased tissues than in healthy ones.

One case was shown in which, before treatment was commenced, there was absolute obstruction of the nose, but after a number of exposures the ulceration entirely disappeared, and nasal respiration became quite comfortable.

Another case was referred to in which *x*-rays, directed through the opened mouth, had very favourably influenced lupoid ulceration of the palate and gums.

The advantages of this alternative method were stated to be that it gave easy access to difficult places, including cavities, that the necessary daily exposure was shorter, and that it was much less costly. The disadvantages were that there was risk of setting up a dermatitis which could only with great difficulty be controlled, and in any case healed slowly. The conclusion arrived at was that the one method was a valuable supplement to the other, and that the results were sufficiently good to encourage in perseverance with the combination.

LIGHT TREATMENT IN DISEASES OTHER THAN LUPUS VULGARIS.

Particular reference was made to lupus erythematosus, the pathology of which is still uncertain; some thinking that it is tuberculous, and others, among whom Mr. Malcolm Morris ranked himself, that it was not.

In one typical case a single exposure to the Finsen rays was followed by an intense reaction, in which the affected area became greatly swollen and very painful, and these effects did not completely subside until after ten days had elapsed. When, however, a thick crust which formed came away, the piece of skin underneath was found to to be in a perfect atrophic condition, its colour and the texture of its surface being hardly distinguishable from those of the adjacent healthy skin.

RODENT ULCER.

A case of rodent ulcer of nine years' duration was shown, in which the diseased area was just about the size of the pressure glass, in which after twelve exposures each of an hour's duration the greater part of the hard edge had disappeared, so that it was slowly healing.

THE MECHANISM OF THE IMPROVEMENT DUE TO LIGHT.

The marked benefit in such a disease as lupus erythematosus, together with such a fact as that good results had been obtained in Copenhagen in the case of simple nævi, raised the question as to what the intermediate cause of the benefit afforded might be. It seemed indeed that it was necessary to differentiate from the known bactericidal effect a trophic effect which might depend on purely chemical changes set up in the tissues themselves, or might be due to the production of gross vascular changes in the nature possibly of thrombosis.

SPECIAL ARRANGEMENTS OF THE INSTITUTE.

It was stated that the time was now considered to have arrived when the work done in the institute was sufficiently advanced to allow of its being given a more public character, and that a committee of management was about to be formed. A general invitation was extended to medical practitioners to inspect the procedure at Berkeley Gardens any morning between 9 and 12, when patients were ordinarily under treatment. The arrangements hitherto adopted had been very much those of the Finsen Institute and those in working at the London Hospital, that poor patients should be treated without any return, and that in the case of moderately well-off persons a small charge should be made to cover working expenses. The treatment carried on by Mr. Malcolm Morris and his colleagues may certainly be looked upon as valuable pioneer work of the method in this country.

DR. F. HARRISON LOW (W. Kensington) writes: Will you kindly permit me to point out a slight error in your article on the light treatment which appears in the BRITISH MEDICAL JOURNAL of June 30th. You mention that the Light Department at the London Hospital has been open for about a month, and a few lines further that the apparatus bears the inscription "that this, the first apparatus of its sort to be used in England, was, etc." this must, I think, be an error as to my own knowledge there are two medical men in London who have been employing Finsen's method and apparatus for some months, and on May 4th a case was shown at the West London Medico-Chirurgical Society which was being so treated for the cure of lupus. I think, also, that it is to be regretted that a large hospital should take payment for treatment of private patients, for it is difficult to see where a line is to be drawn if special departments are to commence receiving payment for the treatment of patients at a general hospital, competition in the ranks of the profession being already somewhat severe.

LITERARY NOTES.

THE Moscow Society of Physiologists, a branch of the Imperial Society of Friends of Natural Science, has undertaken to issue a journal entitled *Le Physiologiste Russe*, which is intended to made the work of members of the Society in physiology, physiological chemistry, histology, embryology, general pathology, and pharmacology known to that large section of the scientific world to which Russian is an unknown tongue. Original papers will be published in French or German; and summaries of all Russian work appearing elsewhere will be given in French. The first volume, which has already been issued, contains papers from the laboratories of Moscow, St. Petersburg, Warsaw, and Tomsk. Among the writers are Professor Morokowitz, head of the Physiological Institute of Moscow, and editor of the journal; Professors Setschenow, Bogdanoff, Salaskine, Chalfeieff, and Kulagin. *Le Physiologiste Russe* is sent gratuitously to all institutes of physiology, pathology, and pharmacology. As giving some idea of the relative numbers of such institutes in different countries, it is interesting to note that Austria receives 31 copies, Great Britain 23, Germany 46, France 42, other European countries 59, the United States 29, South America 4, Asia 5, Australia 3, and Africa 1. *Le Physiologiste Russe* is published and distributed with the help of contributions from friends of biological science, who have subscribed a capital sum of £2,000 for the purpose.

At the recent meeting of the American Academy of Medicine, Dr. Walter L. Pyle read a paper on the desirability of a medical editor on the staff of the daily newspapers. As an indication for this need he called attention to an article which recently appeared in the *New York Herald*, entitled "Sleep Cure for Nervous Diseases." This cure consisted of "8 grams of *bromin* every two hours in a glass half full of water." It was further stated that the discoverer of this rest cure maintains that rest, absolute and prolonged rest, is the one thing which persons suffering from nervous disorders stand most in need of, and that they can obtain such rest through the agency of "bromin" better than in any other way. Dr. Pyle went on to refer to the offensive medical advertisements as a crying disgrace which might be corrected by the medical editor, who should act as a censor on all notices of a medical nature. In this way newspaper readers, he said, might be protected from imposition by quacks and medicine vendors, and the feelings of women and children might be spared from the vile insinuations and villainous falsehoods of the lowest type of charlatan who have almost unbridled licence in the modern daily press. We think that a medical editor would certainly not be a superfluous luxury on the staff of the ordinary newspaper, for more nonsense is talked in the press about medicine than about anything else. Able editors know that this can be done with impunity, for the bulk of their readers are just as ignorant and as indifferent as themselves about such matters. But if Dr. Pyle thinks that the appointment of a medical editor would be sufficient to prevent the insertion of the kind of advertisements to which he properly objects, he must indeed be a sanguine man. The medical editor might anathematise such advertisements as much as he pleased; he would be met with the reply of the Roman Emperor who pocketed the money got from his latrines with a cynical *Non olet*.

The *British and Colonial Druggist* gives some interesting extracts from a MS. forming part of the collection of Sir Hans Sloane, now in the British Museum. It is entitled *A Booke of Plaisters, Spasmadraps, Ointments, Pulthes, etc., devysed by the King's Majestie, Dr. Butts, Dr. Chamber, Dr. Cromer, and Dr. Augustin.* The "King's Majestie" referred to is Henry VIII, who prided himself on his knowledge of medicine, and is said by his admirer Froude to have been one of the first physicians of his kingdom. Butts, who is mentioned in Shakespeare, was his physician; so was Chamber. Cromer was a well-known practitioner of the early part of the sixteenth century. Agostino was a doctor attached to the person of Wolsey. The collection contains in all 130 recipes: 39 plasters, 4 spasmadraps, 50 ointments, 5 balms, 12 waters, lotions, and decoctions, and 20 cataplasms and poultices. The following is one of the Royal prescriptions:

A Decoction devysed by the King's Majestie to restrayne humors. Take the leaves of centgrene, the leaves of nightshade, the leaves of roses, ana one lb.; the flowers of pomegranates, of sumach, hipocistidos, galles, ana ʒj, the barke of the barberrie, the barke of the slooe, ana ʒij. Set them in faire water and white wyne, and make thereof a decoction.

There is also an "ointmente to restrayne" devised by the King's Majesty. One cannot help wondering if Henry tried his dainty pharmaceutical devices on himself, for few men that ever lived had "humors" that more needed to be restrained.

THE NEW BELGRAVE HOSPITAL FOR CHILDREN.

LAYING THE FOUNDATION STONE BY H.R.H. PRINCESS HENRY OF BATTENBERG.

THE ceremony of laying the foundation stone of this hospital took place on June 27th, favoured by fine weather, in the presence of a large and representative assembly, including the Bishop of the diocese, the Vicar of Kennington, the local M.P.s, and many members of the medical profession. Previous to the actual laying of the stone by the Princess, a commendably short address on the work of the hospital was given by Lord Windsor, Chairman of the Executive Committee, and a printed statement was circulated, from which it appears that £50,000 is required for the site and buildings, of which £17,000 has been already subscribed. Of this sum £4,000 has been spent on the site, an admirable one, at the Kennington end of Clapham Road, adjoining Kennington Park, where the hospital—as will be seen from the sketch given above—will form quite an ornamental feature in a prominent position. It is proposed to build first the centre block and west wing, for which £25,000 is required; and the out-patient department, costing £5,000; leaving the east wing, which is to cost £8,000, and the south wing, £6,000, to wait until the generosity of the public has provided the remainder of the money.



New Belgrave Hospital for Children, Kennington.

As our readers will doubtless remember from previous notices in the BRITISH MEDICAL JOURNAL, the decision to change the site from the Pimlico district, where the work of the hospital had previously been carried on, to Kennington was caused partly by structural defects of the old hospital, necessitating rebuilding, and partly by the need of South London for increased hospital accommodation, to which attention had been drawn by the Select Committee of the House of Lords in 1892. The new site is in the centre of a poor and populous district not provided with any hospital for children within easy reach. In drawing up a scheme for the future management of the hospital, the Committee, finding that certain abuses have (as is now generally admitted) crept into hospital management, have devised means to counteract such abuses, and have also introduced some novel features. Only the children of the really poor will be eligible for treatment, and precautions will be taken to exclude from the benefits of the charity those who can pay. The part-payment system will not be adopted in any shape or form. The Committee propose also to limit the amount of work undertaken by their medical staff, rightly deeming it much better that those seriously ill should have thorough and efficient attention than that the time of the staff should be frittered away over very slight ailments. The hospital authorities desire to co-operate with local practitioners in carrying out the above principles, and do not intend to compete with them by treating gratuitously patients whose circumstances admit of their being suitably treated at their own homes. Naturally this declaration of adhesion to principles which have been advocated in the BRITISH MEDICAL JOURNAL for over a quarter of a century has secured the goodwill of the leading practitioners in the neighbourhood, several of whom were present at the ceremony.

A novel feature in hospital management will be the training of nursemaids in the ordinary methods of feeding and rearing infants, a babies' ward being provided for the purpose, to which ladies will have the opportunity of sending their nursemaids to obtain such training.

From the plans drawn by the architect, Mr. Percy Adams, it is evident that all possible precaution will be taken against the introduction of infectious disease into the hospital. Immediately after passing the porch of the principal entrance in Clapham Road there is to be an isolation room to the left, beyond which are the porter's room and the entrance hall, while to the right are the secretary's offices. From the central hall a staircase leads to the first floor, and corridors on right and left to the Board room and matron's apartments on the one side, and to the surgery and medical officers' rooms on the other; while further back kitchen accommodation with the usual offices will be provided, and in a separate corner of the courtyard a mortuary, *post-mortem* room, and clinical room will be found, and also a carriage shed. The entrance to the out-patients' department will be in Prima Road, and here also, as soon as the porch is passed, provision will be made for temporarily isolating cases of whooping-cough on the one side, and other doubtful cases on the opposite side. In the out-patients' waiting hall provision is to be made for warming by means of a stove on each side, and the whole building will be lighted by electricity. Opening out of this hall will be consulting and dressing rooms, and special provision for examination of the eye, ear, and throat. An operating room and dispensary are close by, and a little way off an out-patients' bath room. On the first floor there are to be three wards, each containing 14 beds, and each of these wards can readily be isolated from the others. There is also designed to be on this floor a babies' ward, with an open balcony looking on to Clapham Road. When the entire hospital is built, we think it would be well if this room could be converted into a day-room for the occupants of the three adjoining wards. The second floor arrangements will be similar to those of the first, and on the top floor accommodation will be provided for the nurses.

ALCOHOL IN LORRAINE.—The *Revue Médicale de L'Est* gives some figures showing the results in Lorraine of the unrestricted sale of alcoholic drinks which is allowed by the law of 1802. The deaths from tuberculosis have increased from 264 in 1882 to 322 in 1897, and those from nephritis from 19 to 35. At Maréville there was in 1875 only 1 alcoholic in 57 insane persons; in 1898 the ratio had risen to 1 in 12. The deaths from epilepsy, which averaged 7 from 1875-77, rose to 16 in 1888-92. The quinquennial average of suicides rose from 10 in 1877-81 to 24 in 1891-92, and that of accidental deaths from 9 to 21.

HOSPITAL REVENUES AND THE WAR EMERGENCY.

By T. Holmes.

I need hardly say with what gratification I have read Sir H. Burdett's paper under the above heading in the British Medical Journal for June 23rd, in reply to mine of March 10th. Sir Henry's most kind appreciation of my attempt at the close of my life to do some service to my old hospital and to the cause of hospitals generally is naturally very grateful to me; and still more so is his opinion, publicly expressed, that the large expenditure which the governors of St. George's have felt it their duty to bear has been "absolutely justifiable." It has not been incurred without severe searchings of heart, prolonged discussions, and considerable adverse criticism from some of our own body. But I believe it has borne good fruit in saving the lives of our patients and hastening their convalescence.

I hope Sir H. Burdett will bear with me while I make a few final remarks on his reply to my criticisms.

The Reserve Funds.

Sir Henry is in error in thinking that the publication in his *Hospitals and Charities* of the state of the funds of each London hospital in any way meets my objection to a method of reasoning which uses the fact that there is a large reserve fund at the disposal of hospitals generally as an argument against particular hospitals when they say they have no reserve. The list given in that book commences with one hospital—St. Bartholomew's—which is in need of nothing, and ends with seven hospitals which have no reserve at all. The whole number amounts to seventy-five, which are in every variety of pecuniary position from complete security to total destitution. What useful deduction as applied to any individual among them can be drawn from the total sum which they hold amongst their whole body?

Damaging Appeals.

I confess that I entirely missed the intention of Sir H. Burdett's sentence on this head, which ran thus—that "the financial position of the London hospitals can be made secure if the old bad system of making out a case by muddling the figures is given up of deliberate purpose by each institution." How was the reader to know that this did not refer to any "system" to which "each institution" had "deliberately" conformed, but only to some unnamed appeals issued by members of their body, and to which the whole body had never assented? I entirely agree that every appeal for funds should be a plain business-like statement of the facts. But is it wise at this time, when our hospitals are being assailed by "antivivisectors" on the one hand, and by "municipalisers" on the other, to throw out charges in general terms which are sure to be used by our enemies to impugn the honesty of the system under which they are carried on? I used the experience of St. George's to prove that at that hospital we at least try to put everything as plainly and as fully before the public as possible, and my belief is that the same plan is followed at all respectable hospitals. If it is not, it would be much to the public benefit to know who are the culprits, though one can easily apprehend the motives which restrain any individual from appearing as accuser.

Expenditure on Surgery and Dispensary, including Out-patients.

I do not see in the figures given by Sir Henry any proof that this is an item on which any really important economy can be made. The expenditure at St. George's is not higher than at most of the other hospitals in the list; and it is made apparently higher than it really is by the accidental fact that the comparison is made in a year (1898) when wards were closed in consequence of building alterations, and therefore the average of occupied beds was low.

Increased Cost of Nursing.

This is really the most important item of the whole, and I am inclined to agree with Sir H. Burdett that we have already reached the utmost limit of permissible (that is, remunerative) expenditure. But I doubt whether we ought to tie the hands of our successors in the way which he suggests, and I still more doubt whether we can.

Misuse of Hospital Funds.

I am glad that as to the financial arrangement between a hospital and school, Sir H. Burdett approves of the plan followed at St. George's, apart from the very trifling detail of providing for a sinking fund. I have no personal wish to argue the general question; but I believe Sir Henry underestimates the support which a hospital derives from its school. I know that a large percentage of our subscribers come to us through the medical school; and I quite fail to understand (I am afraid he will think me very stupid) what he means about "a young medical man economically managing his department." Surely he does not think that any departments are under the management of the honorary officers, who, though legally qualified, are of course *in statu pupillari*. I make this remark lest the paper should fall into the hands of one of the ill-informed people above referred to, and we should be told shocking tales about the house-surgeons managing the London hospitals.

I need make no observations on the remaining part of Sir H. Burdett's paper, beyond perhaps saying that it is no new thing to find the older hospitals alive to the necessity for reconstruction and refurnishing. This has being going on more or less for at least thirty years as their means have permitted.

THE PLAGUE.

Prevalence of the Disease.

India.

The plague deaths for all India were 503 and 417 for the two weeks ending June 9th and 16th respectively. During the previous week 746 deaths from plague occurred, so that there is again a substantial fall to be recorded. In Bombay city the deaths from plague during the fortnight numbered 281. In the Bombay Presidency beyond the city 160 plague deaths occurred. With all the improvement, however, it must be noted that the mortality from plague alone is twice what it was at this time last year. The same is also true of the general mortality, which is double the average normal rate. This is largely due to cholera, which, although not present in any epidemic form, is still giving rise to anxiety as to the future.

Calcutta.—On June 6th the total number of deaths in Calcutta for the first time since the recrudescence of plague was below the normal. Plague deathe during the weeks ending June 9th and 16th numbered 122 and 138 respectively. From what we know of the history of plague in Bombay and Calcutta, the death rate is likely to fall in the former still further, but in the latter city in all probability the number will remain stationary for some time. Plague in Calcutta has behaved as if the disease were endemic, whereas in Bombay epidemics have been the rule.

In Bengal, exclusive of Calcutta, 75 and 54 deaths from plague were recorded during the two weeks ending June 9th and 16th respectively, and in Karachi city 10 and 12. Aden seems for the time being to be free of plague.

Hong Kong.

During the three weeks ending June 16th, 23rd, and 30th, the plague statistics in Hong Kong were as follows: Fresh cases, 74, 63, and 99; and deaths, 57, 64, and 98 respectively. The Hong Kong Chinese community still seem to thwart the work of the Government in every way, as during the two and three weeks of May the sanitary officials discovered 20 plague cases by a house-to-house visitation: of these, 12 were dead when found. House-to-house visitation may be an objectionable form of eradicating plague from the native standpoint; but in view of such a state of affairs it seems absolutely imperative that it be enforced in Hong Kong at all events. It is particularly unfortunate that plague is present in epidemic form in Hong Kong at the present moment. The crisis in China is bringing an enormous increase of trade to the port and of residents to the town, and the presence of plague in the port is calculated to cause anxiety as to an active spread of the disease.

Japan.

Plague still continues to appear in what, from the information supplied, would seem to be isolated localities in Japan. The most recent notification of the kind comes from Nakanogo, on the Tokaido railway, where, during the third week in May, an alarming outbreak occurred.

Formosa.

Plague continues to appear in rather a sporadic form in Formosa. The number of cases and deaths for all Formosa since the commencement of the year up to May 5th were 379 and 273 respectively.

Arabia.

Muscat is now declared free of plague.

Turkey.

At Smyrna a death from plague was recorded on June 20th.

Portugal.

The announcement that plague had reappeared at Oporto caused considerable anxiety in Western Europe. The most recent information is, however, that only one case of the disease has been met with. The reassurance as to the limitation of the plague in Oporto must be received with caution. We are aware that Portuguese residents in Lisbon have taken their departure for Madeira for their summer change at a much earlier period than is usual, and the reason they assign for the haste is that plague existed in Oporto, in spite of official statements to the contrary, and they wished to avoid the impending quarantine.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

SUBSCRIPTIONS to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, JULY 7TH, 1900.

THE CONSTITUTION OF THE BRITISH MEDICAL ASSOCIATION.

THE Council of the British Medical Association gives notice in the BRITISH MEDICAL JOURNAL this week that an extraordinary meeting of the Association will be held at Exeter Hall on Wednesday, July 18th, at 2 P.M. to consider and, if approved, to adopt a new set of regulations for the conduct of the Association.

These new regulations have been drafted by eminent counsel, and we would earnestly ask all members of the Association to read them—they are printed in full at page 54—and to endeavour to be present at the special meeting on July 18th, in order to record their opinion on a matter which is of vital importance to the welfare of the Association.

The Association, which is registered under the Companies Acts, is at present governed by a memorandum and articles of association drawn up in 1874, as altered by certain special resolutions passed at various times, and by by-laws. The new articles are designed to amalgamate, codify, and make simple the articles and by-laws and to make certain additions. Many of the articles and by-laws are at present repetitions, the one of the other, and, owing to the modifications and additions adopted by the Association from time to time, the whole body of regulations has become so complicated that it is necessary to make constant reference from one to the other to ascertain by which the Association is regulated.

That the Association should have outgrown its original articles and regulations will surprise none of its members. Such a condition of things has happened, and must happen, in the history of every successful corporation, whether commercial or scientific.

It is easy to trace the origin of such a state of circumstances in the case of the British Medical Association. Its transformation from a voluntary body into a corporation was necessarily, in its inception, experimental. Hence the articles framed at its incorporation were to a great extent reproductions of the regulations by which the body had been governed as a voluntary association. Further, the growth of the Association in numbers and in the importance of the matters with which it deals renders it imperative that its constitution should be clearly defined.

Nor is it difficult to see why the task of providing the Association with articles and regulations adapted to the new conditions which have grown up has been so long postponed. The machinery provided by the Legislature for the alteration of their articles by bodies incorporated under the Joint Stock Acts cannot be easily worked by a body like the British Medical Association. When, therefore, nine years after the Association became incorporated changes of the first importance were introduced into its working, they were effected not by means of new articles but by by-laws.

The great growth of the Association in numbers and its extension, not only to all parts of the United Kingdom but to the great colonies and dependencies of the empire, must be reflected in its organisation and administration if it is to discharge the manifold responsibilities towards the profession for which it exists. The recognition of this fact dictated the policy by which the right to elect the Council, the chief executive and administrative body of the Association has been placed in the hands of the Branches, the number of representatives of a Branch being in proportion to the number of its members. With the object of maintaining continuity of practice and of retaining the services of active workers who have, as it were, "passed the chair," vice-presidents are also members of the Council. Their position is analogous to that of the aldermen of a county council.

The object of the alterations in the constitution carried out in 1874 was, as will be evident, to provide a means by which the opinion of the whole body of the Association might receive expression more completely and more deliberately than could be possible were the election of the Council and the whole policy of the Association dependent on the vote of a general meeting at which comparatively a small proportion of the home members can attend, and at which the Colonial members must be practically unrepresented. That the Association must have some representative body to administer its affairs, and to ascertain, to interpret, and to carry out the policy desired by the members is too obvious to need argument. Yet it may interest those members who have not given particular attention to the subject to be reminded that even so important and fundamental a matter as the mode of electing the Council is determined by by-law only, and that this by-law, although one which in its results vitally affects not only the parent Association but also its numerous and important branches, might like any other by-law suddenly be abrogated or changed.

If the original articles breathe the spirit of the comparatively small body which constituted the voluntary Association, the by-laws are evidence of the timidity felt in facing what were already accomplished facts. These facts must now be reckoned with. In any great body existing for definite and important ends there should be nothing in the conduct of its affairs savouring of caprice; nor should it be possible for the Association to be committed by the votes of a few to a course of which nine-tenths of its members might disapprove.

The consideration of the proposed new Articles of Association will, we understand, be the only business to come before the extraordinary general meeting on July 18th. The matter is of the utmost importance for the future of the British Medical Association, and we hope that all those who take a living interest in its work and welfare will make a special effort to be present and to record

their votes. It should be noted that a change in the Articles must be carried by a three-fourths majority, and that if the resolution to adopt the new Articles is carried at this extraordinary general meeting on July 18th, it will not be binding until confirmed by the vote of a second extraordinary general meeting, and this it is proposed to call on August 2nd, during the annual meeting of the Association at Ipswich.

INFANT MORTALITY AND MATERNAL EDUCATION.

The annual reports of Dr. Charles Porter furnish abundant evidence of the zeal and ability with which he has served the county borough of Stockport as M.O.H., and his record of good work augurs well for the value of his services in the more extended sphere of usefulness as M.O.H. for the county of Shropshire. The report for the year 1899 sets forth the experience and practice at Stockport in respect of many of the matters which are at present engaging the special attention of health officers, amongst which may be singled out for special mention the subject of infantile mortality.

The rate of infantile mortality in Stockport is excessive (221 per 1,000 births in 1899), and, as Dr. Porter points out, the evil wrought by the conditions responsible for it is very inadequately expressed by the mere number of infant deaths, for "the recent wholesale medical rejections in manufacturing districts of war service volunteers, have made it conspicuously evident that the survivors of an unhealthy infancy too frequently develop into puny and physically deficient adults." He shows, from an analysis of the deaths from 1890 to 1899, that the great loss of child life during the first month is almost entirely the result of a rapid weeding-out of infants prematurely born or imperfectly developed, and of weaklings who come into the world in a scarcely viable condition. Diseases of the respiratory system account for 19.1 per cent. of the total deaths under 1 year of age, and diarrhœa and gastro-intestinal maladies account for another 22.6 per cent., a figure which is seven times greater in towns like Stockport than in the country; whilst among the zymotics, measles and whooping-cough are by far the most fatal.

Dr. Porter is of opinion that the most harmful effects of female factory labour are experienced in the later months of pregnancy, when they conduce to premature birth. He estimates that probably over 50 per cent. of the infantile mortality in Stockport, and a corresponding proportion of non-fatal damage to infant life, result from errors of diet and lack of intelligent parental care; and he points out that while insanitary conditions, which are also important factors in promoting infantile mortality, are often capable of being summarily dealt with, the effect of maternal neglect and ignorance is much more difficult to combat.

The experience of Liverpool and other towns in providing municipal *crêches* or day nurseries appears to warrant the conclusion that the children who ought to occupy these institutions do not do so, and it seems certain that any change for the better in the rate of infantile mortality for the country will be commensurate with the spread of the knowledge of healthy infant rearing among those who in the natural course of events will become mothers.

Dr. Porter supports these views, and he is to be congratulated on having instituted at Stockport a scheme which has for its object the diffusion of the necessary knowledge among those who in process of time will incur this responsibility of maternity. The scheme includes (1) the granting by the Sanitary Committee of a prize to each school willing to teach, in the girl's department, the subject of "elementary hygiene" including the "care of infants"; (2) the distribution at the schools of a handbook on infant feeding; (3) the supply by the sanitary authority of suitable feeding bottles to each school, for the purposes of demonstration; and (4) the giving of advice by the medical officer of health as to the form which the instruction shall take and the best means of imparting it. The scheme is one which will commend itself to all medical officers of health; such education has been advocated over and over again for many years, and like many reforms demanded by preventive medicine the necessary measures are still left to local initiative, although nobody disputes their high value, and the central authority (in this case the Board of Education) has been petitioned for years to introduce such instruction in their scheme of compulsory education.

MEDICAL ARRANGEMENTS IN SOUTH AFRICA.

The debate which took place in the House of Commons on June 29th on the failures alleged against the military medical arrangements in South Africa was deeply interesting, but largely inconclusive. Mr. Burdett-Coutts, in a speech which lasted nearly two hours, repeated many of the statements made in his letter published in the *Times* on June 27th, added some details as to what he had seen, drew certain inferences from what he had not seen, and hinted that he could say a great deal more if he would. It was rather unfortunate that Mr. Wyndham had to begin the debate, for we should have been glad to have heard the Under-Secretary deal with some of the fresh matter brought forward by Mr. Burdett-Coutts with the frankness and lucidity which characterised the speech in which he reviewed the situation. He pointed out that there were three questions to be answered. First, were the allegations true? secondly, if true or partially true, could the evils have been prevented by more lavish provision on the part of the War Office or greater zeal and intelligence on the part of officers in South Africa, and especially officers of the R.A.M.C.? and, thirdly, are the evils remedied or in course of being remedied? To the first question Mr. Wyndham made answer that it was no doubt true that the sick and wounded in Bloemfontein had suffered terrible hardships, but he urged that Mr. Burdett-Coutts had painted a picture of one place at one time, and that a true picture of the medical arrangements throughout could be painted only by representing other facts in place and time to which Mr. Burdett-Coutts had not alluded. To the third question we understand Mr. Wyndham to have returned an affirmative answer. The main interest and most of the speeches in the debate therefore turned on the answer to be given to the second question.

Unfortunately, but no doubt inevitably, the debate had a very strong party complexion. The Opposition accused the Government of seeking to shelter itself from

the consequences of its own want of foresight by casting blame on Lord Roberts, and the Government retorted that the Opposition was for party purposes striking at the commanders in the field in the hope of wounding the Government through them. We may fairly leave all this aside. Such accusations and retorts make up the current and rather base coin of the political exchange.

A careful study of the statements made by Mr. Wyndham and of the information received from our medical correspondents in South Africa[1] leads to the conviction that there has been no slackness or want of provision shown by the heads of the Medical Department of the War Office in this country. The hospital accommodation for the sick and wounded and the medical stores sent out to South Africa from this country were most ample, and even in excess of the total needs at any given time.

But the distribution of these stores in time and place over the wide area of the seat of war has not always been such as could have been desired, or such as could have been confidently foreseen; being dependent on military exigencies, which could not always be controlled even by the general officers commanding on the spot, and of course entirely beyond the provision of the War Office at home. This was especially true of Bloemfontein from soon after the date it was occupied (March 13th), after the forced march across country, down to the end of April or beginning of May. The hospitals, fully equipped, were ready in Capetown; the P.M.O. there noted in his diary on April 10th, "There are three general hospitals trying to get to Bloemfontein. The traffic is so great that I am unable to get them through." The question therefore is narrowed to this, Why were they not sent up? The War Office military answer is first, that railway communications were not restored even partially until March 19th, and that the bridges were not repaired until a fortnight later; and secondly that after the railway was open it was essential to the very existence of the army to get up 500 tons of food and stores a day, and in order that it might be in a position to advance it was equally essential to send up another 500 tons of military stores a day. Mr. Burdett-Coutts retorted, and we think with a good deal of force, that "one day's trains on the railway would have saved the whole position of the sick and wounded." Underlying the defence made by the War Office there appears to be the fallacy that the medical is not an essential and integral part of the equipment of an army, deserving to rank not after but with food. In an emergency a healthy man will suffer less from being put for a short time on short rations than a sick man from being deprived of the shelter and food which, if provided at the right moment, may shortly restore him to his place in the fighting force. The greatest service that the Commission which Mr. Balfour has promised to send out to South Africa could render would be to go into this question thoroughly. Mr. Burdett-Coutts complained, and it was really the only serious criticism of the army medical officers throughout the whole debate, that they did not display sufficient provision and obstinacy in fighting for hospital supplies. But Mr. Burdett-Coutts did not indicate in what way or towards whom the medical officers were to have asserted themselves, or whether, indeed, they had the power to do so. This we do know, that the local rank of surgeon-general has been withheld from the principal medical officers, and in this way the military status and authority of those officers—ranking only as colonel or lieutenant-colonel—have been seriously curtailed. That is a point which demands elucidation.

As to prevision, when Sir Walter Foster said that the outbreak of enteric fever which had occurred in Bloemfontein in March among the troops who had been drinking the polluted water of the Modder River during the week for which Cronje had held out in his laager at Paardeberg could have been foretold, Mr. Wyndham interrupted with the statement that it was foretold. It is satisfactory to have this assurance publicly made, though it was, in fact, not needed, for it is certain that this must have been one of the chief preoccupations of Colonel Stevenson, the Principal Medical Officer with Lord Roberts, and we know that the first thing he did on arriving at Bloemfontein was to take over as many suitable buildings as he could obtain, and to organise a hospital of some 700 or more beds in them. This was in the middle of March. We know from Mr. Wyndham that the chief of the staff knew then that the medical officers expected that a large number of cases of enteric fever would very shortly occur. On March 21st one general hospital was idle at Capetown, and a fortnight later two more arrived from home, but the Principal Medical Officer at the base entered in his diary, "I cannot say when 9 and 10 will get through. Hospitals are urgently required in the Free State." Again, we cannot doubt that the responsible medical officers pointed out the greatly-increased risk of the spread of the enteric fever already present in Bloemfontein due to the fact that the main water supply of the town was cut off on April 3rd, and that the troops would have to depend entirely on wells in and about the town, but it was only some weeks later that the general hospitals idling at Capetown were allowed to go up. It is impossible not to share the fear to which Dr. Farquharson gave expression during the debate that "the chief of the military staff in this war and others had not always taken the Principal Medical Officer as much into his confidence as he might have done." Mr. Burdett-Coutts said that he felt certain that the blame for the deficiencies which he alleges, and which the War Office admitted did to some extent occur, "did not rest upon the Army Medical Service. He was afraid it rested upon the deficiencies of a system which was entirely unelastic. He felt that the policy which had governed the system of transport had not shown sufficient consideration for the needs of the sick." This, then, is the question at issue, and we do not wish to prejudge it. One point—the seriously undermanned condition as regards both officers and men of the Royal Army Medical Corps—was merely touched upon in the debate, but we are much mistaken if that does not form a very prominent and vital question in the promised inquiry arising out of Mr. Burdett-Coutts's allegations.

As was perhaps inevitable, the criticisms of the arrangements for the treatment of the sick and wounded in Bloemfontein and Kroonstad have been in some quarters interpreted as an attack on the Royal Army Medical Corps. It is only fair to say that Mr. Burdett-Coutts has formally

[1] We have been deprived for some time of the comprehensive and impartial letters of our correspondent in Capetown owing to the unfortunate circumstance that he contracted typhoid fever some eleven weeks ago.

repudiated any such intention. In a letter dated July 4th, after disclaiming any desire to make "an individual attack on Lord Roberts or any other officer," he writes: "What can only be characterised as a misrepresentation, and one as groundless as the last and as widely circulated, is that I have attacked the *personnel* of the Royal Army Medical Corps, the doctors and nurses, for the manner in which they have performed their duties, No suggestion could be more untrue. Not only throughout my series of articles in the *Times*, but in every word I have written or spoken, I have taken up an attitude most favourable to them. In the former I pointed out unfair disabilities which the system imposes on them; in the latter I have paid warm personal tribute to the work they have done under the very conditions I described."

It may be added that the *Times*, which published Mr. Burdett-Coutts's allegation observed in a leading article (July 2nd, 1900) that "If there was any thought of attack in the minds of reasonably informed persons the object of their hostility was the organisation of the War Office for which all parties were equally responsible. As for the *personnel* of the Army Medical Corps all observers and critics agree with Mr. Burdett-Coutts in giving unstinted and enthusiastic praise to the devotion—in not a few cases costing their lives—with which the members of that body have performed their duty in circumstances of overwhelming difficulty."

On Thursday afternoon Mr. Balfour announced that the Government had decided that the Commission should consist of only three members, and that Dr. Church, President of the Royal College of Physicians of London; Professor D. J. Cunningham, of Trinity College, Dublin; and Lord Justice Romer would form the Commission. These names will be accepted as guarantees of impartiality. We should, however, have been glad to have seen the Commission strengthened by the addition of representatives of the Army Medical Department and of the Public Health service.

UNIVERSITY OF LONDON.

THE statutes framed by the Commissioners appointed under the University of London Act have at length become law. The various bodies to whom the duty of electing members to the new Senate has been entrusted will now be set in motion. We understand that in the course of next week members of Convocation will be invited to nominate candidates for the sixteen seats on the Senate which have been allotted to that body. Six of these will be elected by the graduates in arts, six will represent the science graduates, one each will be elected by the legal and musical graduates, while two representatives are accorded to the medical members of Convocation. We understand that negotiations are on foot for the selection of a strong "ticket" in each of the faculties to include names which will command the respect and support of all sections of Convocation. Mr. Addington Willis, of 1, King's Bench Walk, who is Honorary Secretary of the University of London Graduates' Association, reports an accession of membership amounting to 1,400. The difficulties which have arisen at the new university buildings in regard to the catering are still the subject of correspondence between the Treasury and the Senate, and the latter has requested to be furnished with copies of any existing contracts between the catering syndicate and the Imperial Institute, and also a copy of any new contract proposed to be made with the syndicate by or on behalf of the Government. An important step was taken last Monday in the direction of providing additional teaching of university rank in London under the ægis of the reconstituted London University. The Bishop of London laid the stone of a school of economics, the site for which at Clare Market has been provided by the London County Council.

JENNER INSTITUTE OF PREVENTIVE MEDICINE.

THE annual general meeting of the Jenner Institute of Preventive Medicine was held at Chelsea on June 29th last, under the chairmanship of Lord Lister. Among those present were Sir Joseph Fayrer, Surgeon-General Hooper, Professor Greenfield, Professor Simpson, Dr. McCrury, Dr. Bridgwater, Colonel Addison, and Mr. Shattock. The governing body reported that the transference of Lord Iveagh's gift for the promotion of the objects of the Institute had been effected, and a governing body which would in future control its affairs had been constituted. The Director (Dr. Allan Macfadyen) reported satisfactory progress in the work of the Institute during the past year. The fitting up of the Institute buildings, with the exception of the museum, was now completed. Among other additions during the year were a physiological room, a room for incubating purposes, and a cold-storage room. Mr. Briggs had presented a Hansen apparatus for yeast culture, and considerable additions had been made to the library. The second volume of the *Transactions* contained nineteen contributions and included a paper by Professor Ehrlich. Three papers had been communicated to the Royal Society on the influence of the temperature of liquid air and hydrogen upon bacterial life. The experiments were conducted with the kind co-operation of Professor Dewar and a further series was contemplated. In conjunction with Dr. Morris and Mr. Rowland a paper had been submitted to the Royal Society on Expressed Yeast-cell Plasma (Buchner's "Zymase"), and the research had discovered a new method for triturating organisms. Systematic investigations were being carried out in the bacteriological department upon enteric fever, tuberculosis, and the etiology of cancer, with the co-operation of Dr. Hewlett and Mr. Rowland. Various investigations had been published during the year by Dr. Hewlett and other members of the staff. It was proposed to set on foot a systematic inquiry into the nature and origin of food poisons. A number of workers had utilised the laboratories for purposes of research during the year. Special investigations had been carried out for public authorities during the year on tubercle in milk, on glanders and anthrax, and other subjects. The illustrations for the *Transactions* had been prepared by Mr. J. E. Barnard in the photographic department of the Institute. Dr. Harden, Chemist to the Institute, was continuing his investigations on the chemical products of pathogenic and other micro-organisms. Dr. Harris Morris, Lecturer on Technical Mycology, reported that a number of students had made use of the Hansen Laboratory, and that researches on yeasts, diastases, zymase, and other subjects of technical interest had been prosecuted. Dr. George Dean, of the antitoxin department, had made experiments on the best conditions for obtaining powerful toxins and antitoxins, and the results of other workers had been tested; as a result a higher average of antitoxic value had been reached. Several races of streptococcus pyogenes had been used in immunising horses with the view of obtaining a polyvalent serum. Researches dealing with problems of immunity were in progress, and papers had been published on the diphtheria bacillus and a new pathogenic streptothrix.

SIR GEORGE HARE PHILIPSON.

PROFESSOR GEORGE HARE PHILIPSON received the honour of knighthood from the Queen on June 30th. The honour is conferred in connection with the recent laying of the

foundation stone of the new Royal Victoria Infirmary at Newcastle; but Dr. Philipson has well earned this recognition from the Crown by his long and valuable services to the University of Durham College of Medicine, Newcastle-on-Tyne, and to the Royal Infirmary in that town, to which he is now Consulting Physician. Sir George Philipson was the President of the British Medical Association in 1893, the year in which the annual meeting was held in Newcastle, and he is now a Vice-President. We venture to offer him sincere congratulations on the honour which he has just received. Upon no one in Newcastle or neighbourhood could the honour have been more appropriately bestowed. For many years past he has been identified with the public and medical life of the North of England.

THE COUNTESS OF DUFFERIN'S FUND.

THE fifteenth annual report of the Countess of Dufferin's Fund[1] notes a steady expansion of the work of providing female medical aid for women throughout India during the first year of Lady Curzon's tenure of office as Lady President. The financial statement shows a falling off in subscriptions, due no doubt to the special appeal for funds for plague, famine, and the war in South Africa. There are now 377 medical women of various grades employed by the Association, only 33 of whom, however, are qualified for registration in the United Kingdom, and only 15 of these were born out of India. Great difficulty is reported in procuring native women of sufficient education, even for the minor grades of hospital assistants and midwives, and the Central Committee pleads for funds specially to train these women. Colonel Hendley, I.M.S., submits a careful report of the women's hospitals in Bengal. He discusses the vexed question of the admission of non-purdah women to Dufferin hospitals, and sums up against it. The medical women employed by the Dufferin Association urge that, as few purdah women will consent to leave home at all, a hospital practice limited to them would offer too small a field for experience. The plea for greater experience is borne out by the facts reported by the Civil Surgeon at Gaya, and certainly requires investigation. The most obvious remedy would be for the Dufferin Association to engage more medical women of British education and registration, so as to provide for at least all the larger hospitals a senior surgeon under whom the newly licensed Indian women might gain experience. We believe most missionary hospitals insist on a medical staff of at least two, and it is no wonder if young practitioners of either sex or any race are not quite competent to fill, singlehanded, posts where such serious operations as laparotomies may have to be performed. It is suggested that in places where there is a civil hospital with women's wards, side by side with a Dufferin hospital, arrangements might be made for the medical woman serving the Dufferin to have leave to assist in these wards in order to increase her experience, while at the same time her own hospital remained strictly purdah. Another remedy would be to admit newly qualified Indian women to resident posts in charge of the women's wards of civil hospitals, with a view to their gaining experience before proceeding to singlehanded posts. Some of these remedies are expensive, but it would surely be better to have fewer but well-qualified medical women rather than a multitude of hospital assistants who command the confidence neither of British civil surgeons nor of their native patients, and who will certainly bring the name of medical women into disrepute in India—a result as disastrous for the Dufferin Association as for the medical women themselves. In a matter in which the interests of medical women are concerned, it seems clear that they should have representatives of their own sex and profession on the Committees. Even in the United Kingdom's Branch we see the name of only one medical woman. The Central Committee in India ought to be strengthened by the addition of a larger number of medical representatives, and among these might be included some of the medical women of British birth and registration who practise in India independently of the Dufferin Association.

[1] *Fifteenth Annual Report of the National Association for Supplying Female Medical Aid to the Women of India.* 1899; pp. 553. Government Press, Calcutta. 1s. 4d. (1 rupee).

THE BOMBAY PLAGUE.

SEVERAL voluminous reports have already appeared regarding the outbreak and prevalence of plague in the city of Bombay and the Bombay Presidency, and the measures which have been adopted with a view to prevent its spread and to extinguish it in places in which despite such preventive measures the disease made its appearance. Captain J. K. Condon, Indian Staff Corps, Under-Secretary to Government, Bombay, has now presented a report which purports to be a history of the progress of plague in the Bombay Presidency from September, 1896, to June, 1899, compiled under the orders of Government from the information supplied by these previous reports. His survey is most comprehensive and detailed and supplies a very methodical and careful view of the subject. His aim has evidently been to place on record every important fact relating to plague in the Bombay Presidency to which he has been able to obtain access, so as to furnish an exhaustive and enduring narrative and work of reference. It seems a pity, therefore, that he did not postpone the preparation and publication of the report until the termination of the outbreak, for although the disease is still raging in the Western Presidency, there is every reason to hope that the end of it will arrive sooner or later, and it will then be necessary to rewrite the report or issue another. This volume does not contain any information regarding the features of the present invasion of plague in other parts of India, nor does it embody the results of the elaborate inquiry which has recently been made in India by the Plague Commission. The report is therefore incomplete, however meritorious its construction and interesting its contents. In compiling the scientific and medical portions the author has availed himself of the assistance of Majors Bannerman and Crimmin and Captain Childe, of the Indian Medical Service, and others; and he has acted discreetly in embodying the results of their observations *in extenso* rather than attempting to paraphrase or condense them. One of the most important chapters in the book is a detailed account of the results of preventive inoculation according to M. Haffkine's method. The data which are accumulated offer strong evidence of the protective power of these inoculations. The closing chapter contains a useful *précis* of the literature of plague. The great bulk of this report and the vast amount of crude detail, arithmetical and otherwise, which it contains, renders it a dreary and hopeless task to read it from end to end; but it undoubtedly embodies much interesting information, to which an excellent index, compiled by Dr. Cuthbert Christie, makes access easy.

THE NURSING OF THE SICK AND WOUNDED.

MR. CLINTON T. DENT delivered an address at St. George's Hospital on July 4th on the general principles on which the nursing of the sick and wounded in war is conducted, and on the special conditions which have had to be met in the campaign in South Africa. He considered that the general principles on which the nursing was conducted were not appreciated. The army nursing system was essentially different from that which obtained in civilian hospitals. The description published of the nursing at Bloemfontein had come as a rude shock to many. The events to which attention had recently been called by Mr. Burdett-Coutts took place after he (Mr. Dent) had left South Africa, and in towns which he had not visited, but from what he had seen he had formed the opinion that while the hospitals in South Africa were most distinctly

good, they ought to have been fifty per cent. better. A base hospital, properly speaking, contained 520 beds, of which 20 were for officers, but this number might be increased indefinitely. Nine nursing sisters were allotted to the 520 beds, somewhere about 1 nurse for every 65 patients. At St. George's Hospital the proportion was 1 to 3. The number of orderlies allowed was 78 for a base hospital, and if these were added to the nurses the proportion of nursing attendants was about 1 to 5. The orderlies, however, had to work as porters, as wardmaids, and on transport work. The orderlies did their work well with a certain amount of supervision, but night work left much to be desired. Extra nurses had to be procured, and many fully-trained nurses were engaged in Natal. There were now about 600 nurses engaged in this service; but there were 18,000 beds to be nursed in South Africa, and nurses should be sent out by thousands. The quality of the nursing had not struck him particularly favourably. Whether it was due to the nurses and the orderlies nursing together he could not say, but he hoped it would be inquired into later on. The nurses constituted themselves the superintendents of the orderlies, and, on the whole, the plan worked remarkably smoothly, but the nursing, as a whole, suffered. In December, at Wynberg, there were not more than 2 or 3 cases of enteric fever, but there were a good many cases in Natal, and after Paardeberg the great outbreak of enteric fever occurred. He had never seen enteric fever of such severe type, and it had been anticipated that the mortality at the end of the war would be somewhere about 30 per cent., but the mortality had been much below what was expected according to the figures quoted by Mr. Wyndham on July 3rd in answer to Sir W. Foster. Discussing the question of accepting untrained women as nurses, Mr. Dent said he was wholly with the medical authorities in their decision to have none but thoroughly-qualified and fully-trained nurses in the hospitals. He considered that the entire nursing at a base hospital should be done only by women. In regard to the plague of women so much discussed, it was true to only a limited extent. The ladies who were such an extreme nuisance were practically confined to those living in one hotel in one town, and the matter had been exaggerated. In the field hospitals the usual number of beds was 100 with a staff of 14 orderlies. He had come to the conclusion that women should not be employed in these hospitals. Referring to the question of the proper supply of milk to the enteric cases, Mr. Dent explained that the difficulties of the conditions under which the milk had to be procured made it impossible to secure a regular supply, and to a great extent tinned milk had to be used. He concluded by pointing out that the results judged by figures were not unsatisfactory, for the number of those who had died in action and from wounds was 3,337, whilst the number of those who had died from disease amounted to 4,337.

A NEW MILITARY HOSPITAL IN ENGLAND.

A HOSPITAL and convalescent camp for 500 sick and wounded soldiers from South Africa is about to be founded at Alton in Hampshire. It is to be built, equipped, and maintained by the "Absent-minded Beggar Relief Corps," formed by the *Daily Mail*. The President will be the Princess Louise, who will be supported by a council of leading men and women. If all goes well it is expected that everything will be ready for the reception of the men by the first week in August. The offer to establish the camp was made to the War Office authorities several weeks ago and it was finally accepted on June 1st. A military medical officer will be appointed to have general medical charge over the hospital and to be responsible for the statistics and reports required by the War Office; otherwise it is to be in every respect a civilian hospital, the policing, catering, maintainance, and the appointment of the civilian medical and surgical staff, orderlies and servants being arranged for and financed by the A.M.B. Relief Corps. Lord Lansdowne has expressed in a letter dated June 1st his "very warm appreciation of the public spirit which has prompted the promoters and management in this handsome offer." The happy idea of the establishment of the hospital is an outcome of the recognition of the fact that the army medical authorities have on hand a Herculean task to meet and cope with the present extraordinary calls on their resources. This abnormal pressure the new hospital is intended to help in relieving. To provide adequately for the many thousands of sick and wounded who have been, are being, and are still to be invalided home from South Africa it is only necessary to supply increased accommodation for a small fraction of them, when the block will doubtless disappear and the machinery work with its wonted smoothness. The opportunity which the A.M.B. Corps has so happily seized was made by this need, in conjunction with the fact that a private charity can almost necessarily work more quickly than a Government department. The possibility has been faced, moreover, that the Alton Camp may be needed for other wounded than those from South Africa, and this before many months have elapsed. Thanks in great part to the public spirit of Mr. Montague Knight, a beautiful park-like piece of land of 155 acres has been secured as a site. It is on the slope of a wooded hill protected from the north and east winds, and large enough for buildings to accommodate 700 persons. The site is 400 feet above sea level; the subsoil is chalk and the water supply excellent; the new light railway to Basingstoke skirts the site, and a railway siding is now being constructed immediately to the rear of the wards. It is believed that the altitude will be of great advantage, in view of the fact that both the Netley and Woolwich Hospitals are low-lying. The medical and surgical treatment and the nursing will be rendered by the most highly-trained staff obtainable, but every other class of service will be rendered by old soldiers and sailors. The actual buildings will be made attractive in appearance, and it is intended that, when the present condition of stress is relieved, the buildings should remain as a permanent adjunct to or as an integral part of the Army Medical Department.

A MILITARY BAND AT NETLEY.

THE suggestion of Surgeon-General Evatt that a military band should be established at Netley is well worthy of consideration. Existence must be monotonous, and time must hang heavy on many a sick and wounded soldier at the great hospital. We would advocate the formation of a band more on the ground of enlivening the sick, and especially convalescents, than, as we see suggested, that the dead should be buried with full military musical honours. It has been stated that performers could probably be found among the staff if instruments and music were supplied. Such a band, however, would at best be a very scratch affair, and liable at any time to disorganisation through movements of the staff. If established at all it should have at least the element of permanency, without which it could hardly claim Government assistance.

A CHEMICAL ANALYSIS OF A SACRED WELL.

THE Temple of Asklepios at Epidaurus was the most famous healing shrine of antiquity, and the frequency with which the "miracle of cure" was wrought there is attested by many testimonials from grateful patients. Specimens of these were given by Dr. Caton in his lectures on the Temples and Ritual of Asklepios at Epidaurus and Athens, which were published in the BRITISH MEDICAL JOURNAL of June 11th and 18th, 1898. The treatment was, as at other miraculous shrines, largely of the nature of faith healing. But therapeutic, and particularly hygienic, measures were by no means neglected. Among these

bathing in the sacred well and "taking the waters" figured prominently. At the present day mysteries of all kinds are examined in the dry light of science, and nothing is, in a chemical sense, "sacred" to the analyst. The Holy Well of Mecca has been tested, with results which in one way go to prove that it has miraculous properties, for its composition being what it is, it must be considered a miracle that anyone who drinks it ever escapes with his life. Now a chemical detective has turned his bull's-eye on the sacred well of Epidaurus. There are, it appears, three springs at Epidaurus. One of them is within the precincts of the temple; the other two, known respectively as the Relia and the St. Anne springs, are in its immediate neighbourhood. Dr. A. C. Dambergis, Professor of Pharmaceutical Chemistry in the University of Athens, has analysed the water of all three, and has published the results in a recent number of *La Grèce Médicale*. The analysis, which was made in the laboratory of the University of Athens, showed that the water from the three springs is identical in chemical composition, and that they may be classed among the slightly alkaline mineral waters. The results of the analysis, in which Professor Dambergis had the assistance of Dr. Comninos, are shown in the appended table:

Constituent Elements in Grams per 1,000 c.cm.	Spring within the Temple.	Relia Spring.	St. Anne Spring.
Bicarbonate of calcium	0.395	0.346	0.458
,, magnesia	0.033	0.036	0.025
,, sodium	0.132	0.075	0.075
Chloride of calcium	0.037	0.039	0.004
,, magnesia	0.007	0.005	0.005
,, potassium	0.001	0.001	0.005
Sulphate of lime	0.014	0.014	0.022
Oxide of iron and alumina	0.003	0.002	0.003
Silicic acid	0.043	0.040	0.034
Ammonia	Traces	Traces	Traces
Organic matters	,,	,,	,,
Phosphoric acid	,,	,,	,,
Nitric acid	,,	,,	,,
Total of solid constituents	0.665	0.558	0.628

These waters if taken in large quantities may be beneficial to patients suffering from gravel, stone, and diseases of the stomach, and, as a matter of fact, several inscriptions found in excavations made within the area of the temple show that, among the records of cure, a considerable proportion relate to cases of such affections. In all probability it was the water of the spring situated within the temple itself that was most used, and analysis shows that this water is the most efficacious of the three, as it contains mineral ingredients in largest proportions. This is the water of which a contemporary of Marcus Aurelius, at a time when the temple and its sacred spring had somewhat fallen from their high estate, wrote as follows: "You might see the patients, as on summer mornings they swarmed like bees around the holy well of Asklepios, striving to catch the vapour which without other draught had power to quench their thirst. The water of that well was of no common efficacy. Cold in summer, and tepid in winter, sweet, and in taste not less delightful than wine, it had virtue to heal all physical ills; it could open the eyes of the blind, and make the lame leap like a hart. Great, therefore, was their faith in the holy spring; did it not flow from the very foundations of the temple, from the feet of the Saviour God himself?"

MEDICAL VISITATION OF SCHOOLS.

WE are glad to learn that the subject of the medical visitation of elementary schools has been brought under the notice of the London School Board, upon a report of the School Management Committee—presented by its Chairman, Mr. Graham Wallas—recommending the experimental appointment in two of the poorer districts of London of two medical men and six nurses, for the purpose of the systematic inspection of children attending the schools, with a view of the early detection and prevention of the spread of infectious disease. The report was, after considerable discussion, referred back to the Committee, which probably means that the question has been practically shelved during the life of the present Board, a moribund body which expires in November next. We quote from the memorandum printed by Mr. Wallas a short statement of the grounds on which he urges the new departure:

London stands almost alone among the great civilised cities of the world in making no provision for the periodical medical visitation of its schools.

Such visitation takes place in New York, Boston, Chicago, Philadelphia, and many other American cities, in Berlin, and most of the important cities of Germany, in Paris, Antwerp, Brussels and in the cities of Switzerland; visits being generally paid either once a week or once a fortnight.

The system is a new one, having been introduced, for instance into America by the Boston authorities in 1894, and into Germany by the Wiesbaden authorities in 1895.

It is the inevitable result of the growth of our knowledge as to the causes of infectious disease. As long as it was supposed that such diseases were mainly communicated by dirt or deficient drainage, or by infected rooms, it was reasonable to rely on the sanitation, closing and disinfection of school buildings. But now that it is known that the chief infectious diseases from which children suffer are caused by organisms which under most circumstances cannot exist for long outside the human body, and which may be present in an active condition in children who are very slightly unwell, it follows that inspection, if it is to be effective, must deal with the scholars themselves, and not merely with the building in which they were taught.

That no such system has been introduced in London is due to the fact that in England the educational and sanitary authorities are much more sharply separated than elsewhere.

Arguments are subsequently advanced to the effect that inasmuch as the inspection of school children in time of prevalent infectious illness, and notably of diphtheria, is even now spasmodically carried out by the Board's medical officer at the instance of local sanitary authorities, it is desirable that such inspections should be systematised and special machinery provided for them. How far the method suggested meets the case is, of course, a fair subject for discussion. It must be remembered that at the present time large powers of exclusion on grounds of suspected infection are entrusted to teachers: and it need not be regarded as a pandering to "medical tyranny" that there is a disposition in some quarters to substitute authoritative trained observation for the guesswork of those whose business it is to teach and not to diagnose incipient infectious disease. On the other hand, the susceptibilities of private practitioners must be borne in mind; and if it be intended to undertake treatment of any sort, as may be surmised from the proposed appointment of three nurses to each doctor, these will have reason to protest against such an application of the School Board rate; in fact, the whole question of school nurses is one bristling with difficulties. A voluntary society has hitherto supplied some half-dozen nurses for the poorer schools of London to attend to sore eyelids, chilled toes, and minor ailments of that sort in which, amongst the lower classes at any rate, a doctor is not usually consulted: and so long as their assistance is limited to such matters as an intelligent mother would in better social grades personally attend to, nothing but commendation can be given to the benevolent enterprise. But diagnosis of disease, early diagnosis especially, not to say anything of treatment, is essentially a function of medical men and women, not of nurses: and any scheme which would entrust to the latter the proper professional work of the former must necessarily be regarded with suspicion. The periodical medical visitation of elementary schools is, we believe, carried on in certain cities of America and Germany with general approval, and with-

out undue friction between the official and the family doctor, and considering the benefit likely to accrue to the health of the school population by such an extension of preventive medicine, any well-considered scheme which avoids the drawbacks we have alluded to should commend itself to our profession.

PROPOSED EXTENSION OF THE SITE OF ST. BARTHOLOMEW'S HOSPITAL.

On July 2nd His Royal Highness the Prince of Wales presided over a special general Court of Governors of St. Bartholomew's Hospital, convened to consider a scheme for the acquisition of a portion—or, as suggested by the medical staff, the whole—of the site of Christ's Hospital, 5 acres in extent. Sir Trevor Lawrence, the Treasurer of the Hospital, said that the area at the disposal of the governors had become insufficient. Among other urgent requirements were special departments for diseases of the eye, skin, ear, and throat, for dental surgery, and for electrical treatment, also new casualty and out-patient departments, a new nursing home, operating theatres, isolation blocks, pathological laboratory, and mortuary. A new college and quarters for the resident medical staff were likewise greatly needed. The only possible direction in which the grounds of the hospital could be extended was towards Christ's Hospital. In 1893 the Council of Christ's Hospital had voluntarily entered into an engagement that, subject to certain restrictions, the governors of St. Bartholomew's Hospital should be allowed to take as much of the site in question as they were disposed to have, on the principle of arbitration, and it was to this engagement that St. Bartholomew's Hospital had trusted. But on making an offer for a portion of the ground, the governors of Christ's Hospital replied that they had received a much better offer for the whole site. He maintained that Christ's Hospital was under strong moral obligation to adhere to the offer they had made. Sir Sydney Waterlow, after a reference to the satisfactory financial condition of the hospital, moved a resolution that the question be referred back to the treasurer and almoners of St. Bartholomew's Hospital, and if their negotiations should fail that they be empowered to apply for compulsory powers from Parliament. The resolution was seconded by Mr. William Flux, and supported by the Lord Mayor. After some remarks by Mr. G. Baker, the Prince of Wales, before putting the resolution, said that the present position of St. Bartholomew's Hospital was a very serious one, and that it was impossible to provide what was absolutely necessary unless more space were acquired. Personally he would have preferred that efforts should be made to obtain the whole site, but as it seemed that the means of doing so were lacking, he hoped that their wish to obtain 1½ acre of it would be supported by the Charity Commissioners and by Parliament. The resolution was then put and carried unanimously.

THE PREVENTION OF SUMMER DIARRHŒA.

Every year summer diarrhœa claims a large tribute of infant lives, and although at present the meteorological conditions are hardly such as favour its prevalence, the subject is always one of anxious interest to those responsible for the health of large towns at this season. Dr. F. J. Waldo, Medical Officer of Health of the Vestry of St. George-the-Martyr, Southwark, dealt with the subject recently in the Milroy Lectures which he delivered before the Royal College of Physicians of London, and he returns to it in his annual report to his Vestry. Dr. Waldo finds the *causa efficiens* of the disease in horse dung. Many bacteria are equally at home in the intestine of the horse and of man. These are deposited in the streets in enormous numbers, and when dry are blown about in the form of dust which finds its way into house larders, milk shops, and restaurants, and contaminate the alimentary material exposed therein. Milk is an excellent breeding ground for bacteria, and this fact may explain why town infants, who are fed mainly on milk, are so subject to the disease, which is hardly found in the country where the road dust is practically free from horse dung. A hot summer supplies the temperature which favours the growth and multiplication of the microbes; on the other hand, during a wet summer the microbes are washed from the air and exposed surfaces. Dr. Waldo's theory is that epidemic diarrhœa is due to a surface pollution derived from street dust. The practical moral which he draws is that sanitary authorities must carry out a policy of "thorough" in regard to what Lord Palmerston, or some one else, called "matter in the wrong place," whether in streets or in houses. The scavenger must be abroad with particular vigour during the third quarter of the year. Courts, alleys, and passages should be systematically flushed with hose. Roads and other pavings should be hard, smooth, and impermeable, so that they can be washed. The best material for roads, in Dr. Waldo's opinion, is hard asphalte or concrete, while courts and yards should be evenly paved with bricks or flags. Milk should be sterilised at the farm, and kept in sterilised bottles until required for use. All dairy farms and dairies should be under stringent sanitary control by a combined rural and urban authority. Dr. Waldo suggests the establishment of a public service of sterilised milk, where poor people could obtain a daily supply at a cost sufficient to cover expenses. Diarrhœa is one of the epidemic diseases that has shown no tendency to decrease with the advance of sanitation. There is every reason to believe that it is preventable. This being so, we venture to echo the Prince of Wales's famous question as to certain other preventable diseases, "If preventable, why not prevented?"

TUBERCULOUS MILK.

On July 3rd the Public Health Committee of the London County Council reported that the National Association for the Prevention of Consumption had expressed gratification at the action of the Council under the Dairies, Cowsheds, and Milkshops Order, 1899, and the Committee recommended the Council to support a representation to the Local Government Board as to the desirability of rendering obligatory the periodical examination of the udders of cows by veterinary surgeons throughout the country. The Committee at the same time reported that the Erith Urban Council had agreed to appoint a veterinary inspector who would visit the cowsheds monthly to inspect the cows, examine milk microscopically, and inoculate with tuberculin when requisite.

THE PREVENTION OF TUBERCULOSIS.

The meetings which are being held in various parts of the country in connection with the National Association for the Prevention of Consumption are arousing an interest throughout the kingdom in the possibility of preventing tuberculosis. Sir J. Crichton-Browne explained the situation in a clear and eloquent address at Bradford recently, at a meeting presided over by the Mayor, and largely attended by influential residents. It is significant that the initiative in the organisation of the meeting was due to the Bradford Trades and Labour Council. In deciding to establish a local branch of the National Association it was pointed out that the primary object of the branch was the dissemination of information as to the means to be taken for preventing consumption, and not the inauguration of a new charity. The Sanatorium established at Horn Hill, Stanhope, by the Society for the Prevention and Cure of Consumption in the county of Durham, has been formally opened by Lord Barnard. Patients had already been admitted, and the medical officer was able to report improvement in all cases almost from the first. The situation of the Durham County Sanatorium is

exceptionally favoured, standing as it does in lovely grounds at an elevation of 800 feet, in the midst of high moorland. The formation of this sanatorium is chiefly due to the initiative of Dr. William Richardson of Sunderland. From our Colonies and America also we hear of special efforts directed against tuberculosis. The Governor of Cape Colony has recently issued regulations for the examination and quarantine, for tuberculosis, of cattle imported into the colony by sea, which are to come into force on August 1st. In contrast to the endeavour which is being made in this country to bring about the necessary measures for the prevention of tuberculosis by educating the public rather than by compulsion, the Board of Health of Trenton, New Jersey, U.S.A., has passed a number of regulations, which include the compulsory notification of cases of tuberculous disease and the isolation of consumptive patients. Such measures may quickly stamp out consumption in the district affected by the regulations, by driving all sufferers from the disease to other districts. It may be doubted, however, whether they will do much towards the general prevention of consumption. Notification is desirable, and isolation is in some cases almost a necessity in the interests of the public health; but both will require to be very carefully applied in this country, and we may at least hope to avoid the compulsory isolation of all consumptives.

THE EVOLUTION OF FILARIA NOCTURNA IN THE MOSQUITO.

WITH reference to Dr. George M. Low's paper on The Evolution of Filaria Nocturna in *Culex Ciliaris*, published in the BRITISH MEDICAL JOURNAL of June 16th, and his interesting discovery that the filaria emerged through the proboscis of the insect, we understand that Captain C. P. James, M.B., I.M.S., at present stationed at Quilon, Travancore, has lately made some observations pointing to the same conclusion. Working with fresh mosquitos, belonging to the genus *Anopheles*, as well as to the genus *Culex*, and in complete ignorance of Dr. Low's results, Captain James has found the filaria in the head and proboscis of his infected mosquitos, and has independently arrived at the conclusion that the filaria is communicated by mosquito bite. A paper on the subject will be read for Captain James at the forthcoming meeting of the Association at Ipswich.

THE BACTERIOLOGY OF SCARLET FEVER.

So many micro-organisms have had greatness thrust upon them in connection with the etiology of scarlet fever, that a newcomer must present very good credentials if he wishes to obtain consideration. Professor A. Baginsky has recently brought forward a new candidate at a meeting of the Berlin Medical Society. He states that he has found a special streptococcus in association with the early sore throat of 363 cases of scarlet fever, and that in 336 of these it was present in pure culture. He furthermore examined the blood of 42 cases which had died early of the severe form of the disease; in 8 of these the heart blood contained the streptococcus, which was also present in the cerebro-spinal fluid drawn off by lumbar puncture from one patient during life. In all these cases secondary complications were of course excluded; in the last-mentioned convulsions were present. The form and virulence of the microbe were very variable; the latter could be greatly raised artificially, but agglutination experiments failed. The toxin was not attached to the bodies of the organisms, but could be separated by filtration. Although not able definitely to pronounce this streptococcus pathogenic for scarlet fever, Dr. Baginsky suggested that it might well be responsible for the infective phenomena of the disease, such as the sore throat, the otitis, the joint symptoms, and the sinus thrombosis. He put forward the view that the rash was a chemical manifestation, like a drug eruption. Professor Baginsky's paper was criticised, on the whole somewhat severely, by Drs. Heubner, Slawyk, and Hansemann, while Dr. Wassermann considered it of great importance. All, however, agreed that before the question of pathogenicity could be decided more experiments were required.

A RUSSIAN TUBERCULOSIS COMMITTEE.

ON the initiative of Professor W. D. Scherwinsky of Moscow a permanent committee for the study of tuberculosis as a national scourge has been formed in Russia. Professor Scherwinsky himself is the President; the other members are Messrs. Ph. M. Blumenthal, G. N. Gabritschewsky, F. A. Guetier, L. J. Golubinin, G. J. Gurin, P. J. Kurshin, A. G. Petrowski, J. W. Popoff, A. D. Solokoff, and A. N. Ustinoff. The committee which has met twice a month since the beginning of April has drawn up for itself the following programme of work: (1) Reports on the communications made on tuberculosis to the Pirogoff Congress and other medical societies in Russia; (2) reports of foreign congresses on tuberculosis; (3) reports on tuberculosis as an infectious disease (diagnosis, etiology—heredity, individual predisposition, external influences, mode of diffusion, economic and social factors); (4) statistical data respecting tuberculosis in Russia; (5) legislative measures and ordinances in regard to tuberculosis of human beings and beasts; (6) sanatoria, koumiss establishments, etc; (7) the means actually in use, and which should be used, for the prevention of tuberculosis in the different provinces of Russia; (8) tuberculosis in animals and its relation to the disease in human beings.

THE MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.

THE President and Council of the Medical Graduates' College and Polyclinic entertained over 800 members of the medical profession at a *conversazione* held in the College Buildings, at 22, Chenies Street, on July 4th. The guests were received by the President, Sir William Broadbent, Bart. The new Museum, which is to be called after the name of its founder, Mr. Jonathan Hutchinson, was then formally opened by the President, assisted by Sir Joseph Fayrer, Bart., Vice-President. Mr. Jonathan Hutchinson (Chairman of Council), Mr. Malcolm Morris (Vice-Chairman of Council), and Dr. C. Theodore Williams (Honorary Treasurer) having addressed the company, Professor Osler, of Baltimore, delivered an oration on The Teaching of Practical Medicine. At the conclusion of his speech Professor Osler received a cordial vote of thanks, which was passed with great enthusiasm. Subsequently Dr. D. C. Rees, Superintendent of the London School of Tropical Medicine, showed a series of lantern slides illustrating the various species of mosquito and their relation to malaria and filariasis, and Mr. Cantlie showed, in the lantern, a number of photographs of Hong Kong and China.

THE STERILISATION OF SEEDS BY HEAT.

SOME seeds have been exposed to the action of boiling water, and even to higher temperatures in an oven, without losing their power to germinate; but in water, or if their envelope be broken, or if they swell up and soften, they are devitalised. If they are first very carefully desiccated their power of resistance is greatly increased, so that the presence of water appears to be an important factor in their destruction. Following up this idea, Mr. Bretland Farmer has experimented upon the coagulability of albumen, and has found that if albumen be carefully dried it may be exposed for over thirteen hours to a temperature considerably exceeding 100° C. without its subsequent solubility being affected, while the solution thus obtained congulates at between 60° and 62° C. The

presence of a small quantity of moisture, such as was afforded by the air of the room, led, after heating for some time, to a change which resulted in the formation of a substance somewhat like alkali albumen, which refused to coagulate when dissolved until after the addition of a trace of acetic acid. But albumen in flakes—dry in the popular but not in the chemical sense—is rendered insoluble by very moderate heating. These facts are exceedingly suggestive, and may serve to explain the resistance of some spores to dry-heat sterilisation, and even to boiling for short periods, when they are possessed of dense envelopes, and it would be interesting to extend the experiments to pathogenic bacteria. If the same facts held good, it would be more difficult to devitalise spores which had become dry than those which had not been dried. In the same number of the *Proceedings* of the Royal Society which contains Mr. Farmer's paper are recorded some experiments made by Dr. MacFadyen and Mr. Rowland, who exposed various pathogenic and other organisms for seven days to the temperature of liquid air in broth emulsion. No structural alteration could be detected, notwithstanding the enormous strain to which they had been subjected, and subcultures made from them grew without the smallest impairment of vitality.

LEPROSY IN CRETE.

Dr. O. Cahnheim of Dresden and Dr. Ehlers of Copenhagen have completed the investigations on leprosy in the island of Crete, which they undertook at the instance of Prince George of Greece, the High Commissioner of the island. In the provisional report which they have presented to the Prince, they state that they found 380 lepers, of whom they personally examined 293. Of these, 153 (92 men, 61 women) were of the tubercular, and 170 (79 men, 91 women) of the anæsthetic form. As in cold countries the proportion of tubercular to anæsthetic cases is as 1 to 2, and in hotter climates as 1 to 3, the figures quoted appear to warrant the assumption that the total number of lepers in Crete is from 600 to 800. The investigators have no doubt that Zambaco Pasha's estimate of 4,000 is immensely exaggerated. Drs. Cahnheim and Ehlers were able to satisfy themselves that the disease was on the increase in Crete. The type of the disease met with in Crete is less severe than in colder regions, and the tendency to cure is on the whole greater. Prince George of Greece is anxious that the isolation of lepers, which is still carried out on the lines laid down by the Turks and is therefore very defective, should be made more stringent throughout the island. It is proposed to establish an asylum for lepers, and for that purpose the peninsula of Spina Longa is considered suitable. The Prince has also asked Dr. Cahnheim and Dr. Ehlers to draft a law for the repression of leprosy in accordance with the conditions of the island of Crete.

A MINISTERIAL OPINION ON HOMŒOPATHY.

According to the *Wiener medizinische Presse* the Bavarian Cultus-Minister was recently interpellated in the Chamber of Deputies as to the establishment of a professorial chair of homœopathy. The Minister replied that the Faculties had reported against the proposal. He went on to say that the question had also been brought before the Prussian Diet, when the Government Commissioner had explained that Berlin already rejoices in a private homœopathic clinic and a homœopathic central pharmacy, and there appeared to be no need for anything more. Homœopathy is only a special method of treatment, and there is no necessity to establish professorships of such methods. The Minister went on to express his belief that homœopathy has not now the importance which it had some decades ago. He added that he had been informed that a *rapprochement* was taking place between scientifically-educated homœopaths and allopaths (*sic*), inasmuch as the "allopaths" had learnt not to prescribe or use so much physic as formerly, which he looked upon as a blessing and a progress. He concluded by saying that it was most desirable that allopaths and homœopaths should come together. These *obiter dicta* of the Minister have a certain psychological interest, as showing how little the ordinary lay mind, even in Germany, is open to scientific ideas. By all means let the homœopaths have such credit as may rightly belong to them for having taught the profession that the processes of disease cannot be modified by drugs to the extent that was thought possible by our predecessors. They unintentionally and unwittingly made an experiment in therapeutic nihilism which convinced men that Nature, if not encumbered by injudicious help, will often bring about a cure. But this fact in no way justifies the ways of homœopathy with its doctrine of similars and its infinitesimal doses. As for the millennial union desiderated by the Bavarian Cultus-Minister, that will be accomplished whenever the homœopaths, by dropping their sectarian badge, re-enter the true fold of catholic, not "allopathic" medicine, which is one and indivisible, but also sufficiently comprehensive to include all forms of scientific thought and all methods of practice not professedly founded on "systems," which are like Bottom's dream, because they have no bottom.

THE PASTEUR HOSPITAL.

The Hôpital Pasteur, founded by a lady for the application of Pasteur methods, and situated in the Rue Dutot opposite the Pasteur Institute, was opened on July 1st. The Director, Dr. Louis Martin, who lives in the hospital, is responsible solely to the Committee of the Pasteur Institute, to whom at each annual meeting he will present a report. The Pasteur Hospital contains 58 beds distributed in two pavilions. For the present it will be reserved for the treatment of diphtheria and hydrophobia. No charge is to be made for treatment.

PROPOSED CONGRESS OF OBSTETRICS AND GYNÆCOLOGY IN LONDON.

We publish in another column a letter from Professor Sinclair of Manchester, which though it exceeds in length the usual standard, may not, we hope, on that account fail to receive the attention it deserves. We do not propose to enter into the merits of the dispute which has unfortunately arisen; but we apprehend that Professor Sinclair's suggestion to make a clean slate and start afresh will commend itself to impartial onlookers.

Sir William Gairdner has been appointed an Honorary Consulting Physician to the Glasgow Western Infirmary on his retirement from the active staff.

Professor Clifford Allbutt will distribute the prizes to the students of St. Mary's Hospital Medical School on Friday, July 13th, at 4.30 p.m.

The Queen, on the recommendation of the Secretary for Scotland, has appointed Professor McCall Anderson, Professor of Clinical Medicine in the University of Glasgow, to the chair of Systematic Medicine in that University, vacant by the resignation of Sir William Gairdner.

We are asked to state that the Long Vacation Course at Cambridge will be given as usual this summer. This statement appears necessary, as the abandonment of the summer school of medicine may have given rise to some misapprehension.

The annual dinner of the Medico-Psychological Association of Great Britain and Ireland will be held at the Hotel Métropole on Thursday, July 26th, at 8 p.m. The annual

meeting will be held on that and the following days at 11, Chandos Street, Cavendish Square, under the presidency of Dr. Fletcher Beach.

WE are informed that Mr. Watson Cheyne, Consulting Surgeon to the Field Force, South Africa, who accompanied Lord Roberts's headquarters from the time that the Free State was entered, left Capetown on June 27th by the *Moor*, which is expected to reach this country on July 14th.

WE have received from the Secretary-Director of the National Hospital for the Paralysed and Epileptic, Queen Square, a circular letter issued by the Board of Management to the Governors of the hospital. From it we learn that the Board has appointed a subcommittee to inquire into the complaints of the medical staff with regard to: (1) The diet of patients; (2) the condition, care, and treatment of the patients; (3) the nursing of the hospital.

MEDICAL NOTES IN PARLIAMENT.

[FROM OUR LOBBY CORRESPONDENT.]

The Sick and Wounded in South Africa have been the object of much attention all the last week. Questions have been plentiful, and on Friday, June 29th, to meet the desire for discussion consequent on the letter of Mr. Burdett-Coutts in the *Times*, Mr. Balfour put down a supplementary estimate for £5 for the Army Medical Service. This gave an opportunity for a full debate and resulted in a very interesting discussion. When the vote came on the House was crowded with a more anxious and expectant audience than had been seen for months, and most people looked to Mr. Burdett-Coutts, who sat below the gangway, to open the battle. He lay low however in his place, and so Mr. Wyndham was forced to come forward and make a speech directed against the revelations in the *Times*. His speech was a long and able defence based on the ground that the enormous requirements of the army and the terrible difficulties of transports over some 900 miles of railway with a narrow gauge and a single line, had made it impossible to provide all the necessaries to meet the outbreak of fever at Bloemfontein. He had no evidence at hand to rebut the statements made, but he was able to show how the Government had increased the medical staff in South Africa by comparing the strength of January 15th with that on June 15th. On the first date there were in South Africa 351 army medical officers, on June 15th, 446; in January there were 79 civil medical men, in June 348. Taking a total of all employed, there were in January 437, and in June 853; of nurses there were 43 in January and 53 in June, but the number of other nurses engaged had gone up from 12 to 335. The total beds were 18,600. He moreover argued that the death-rate for typhoid, or as the officials preferred to call it, enteric fever, had, on Lord Roberts's showing, been only 21 per cent. This he compared with the 28 per cent. of the Egyptian campaign and the still higher rates in other wars, and the rate of 20.4 for a ten years' average in military hospitals at home. He also quoted the diary of the P.M.O. at Capetown, which was one long wail at the difficulty of getting hospitals, staffs, and appliances through to Bloemfontein. At one time no fewer than three general hospitals were trying to get through. It was a clever speech, but really, as was afterwards said, an admission and an apology.

Mr. BURDETT-COUTTS, who had listened, as indeed the House generally had, to Mr. Wyndham's statement with a critical air, next rose and unfolded the long budget of his indictment. For over two hours he was on his legs, and he greatly lessened the effectiveness of his speech by the long personal details and explanations which occupied most of the first hour. He was more interesting when he came to what he had actually witnessed in overcrowded field hospitals at Bloemfontein, where men were treated—if it could be called treatment—in tents lying on the ground so close together that there was only space to kneel on one knee between them, and with only a waterproof sheet under them and a single blanket over them. In two hospitals for 520 men each there were 1,500 and 1,700 patients respectively. The horrible atmosphere of the tents under these conditions was graphically described, and the House harrowed by the statement that fever cases and wounded men were thus huddled together. Then he dwelt on the lack of both medical officers and nurses, and showed how in many cases the only orderlies were convalescent soldiers told off for the duty. Next, the sufferings of sick and wounded men sent for three days' journey over the veld in ox wagons with no doctor and not even a single trained orderly were described. This part of the speech was very effective, and showed that whatever stores and staff might have been sent to South Africa, the necessary distribution of the staff and materials had certainly broken down. The hospitals at Capetown were also criticised, and while those at Wynberg were admitted to be admirable, the convalescent home and the so-called Yeomanry hospital in Maitland Camp were condemned; and the Woodstock at Capetown was stated to be a disgrace.

Sir WALTER FOSTER next rose from the Front Opposition Bench, and led the debate into the more essential question as to how far there had been proper prevision as to the outbreaks of fever and provision made to meet their occurrence. He recalled the unsatisfactory experience of the Egyptian campaign, and observed that the true number of typhoid cases had then been obscured by many being entered under the general term "fever." He contended that the Government had been amply warned of the danger of a great typhoid fever epidemic in South Africa. After Paardeberg, where the men had to drink river water polluted by the Boer camp, an outbreak was certain, and should have been foreseen. Mr. Wyndham interrupted, and said it was foreseen, and Sir Walter Foster replied that then it ought to have been provided for. The mortality of 21 per cent. given by the Government he said was higher than it was in Natal some years back, and higher than the rate of hospital cases in this country. Sir Walter Foster pledged his reputation that if the conditions described were generally true, the mortality could with proper care and nursing have been reduced by one-half. He referred much of the breakdown to the cheeseparing policy of the War Office in dealing with the Army Medical Department.

Sir HOWARD VINCENT made a vigorous defence of the hospitals which he had seen, and generally supported the view taken by Mr. Wyndham. Sir Charles Dilke, on the other hand, said he thought the breakdown would be found to have been general, and declared that a deplorable condition of things had existed at Intombi Camp.

Dr. FARQUHARSON and Sir CHARLES CAMERON later on made valuable contributions to the debate. The former defended the army medical officers, but could not acquit the Government of a want of foresight. He deliberately recorded his opinion that the army doctors had done good work under difficult circumstances, and had attained an unprecedented measure of success. Sir Charles Cameron discussed the typhoid mortality, and showed that in many epidemics it was less than half that recorded in South Africa. He argued that nothing that had been advanced about transport and military exigencies could explain away the conditions described at the base hospitals at the Cape.

The end of the debate was characterised by much warmth. Mr. Balfour, in replying to Mr. Lloyd-George, who had attacked the Government, showed unusual temper, and afterwards sought to interpret the debate as an attack on Lord Roberts. Sir Henry Campbell-Bannermann replied, and argued that the Government would have done well to have sent out physicians as well as consulting surgeons, and that they should have provided against the outbreaks of which they had had ample warning. He especially inquired as to the kind of Commission of Inquiry that was to be appointed—appointed to inquire after it is too late. Mr. Labouchere said a few words urging that the names of the gentlemen selected to inquire should be submitted to the House of Commons; and then, after a division had been called but not taken, the vote was agreed to, and the House adjourned a few minutes before 12.

Fever among the Troops in South Africa. Mr. Wyndham, in reply to a question by Sir Walter Foster, informed the House last Tuesday that the number of admissions for enteric fever at Bloemfontein and the number of deaths from that disease for the eight weeks ending May 11th were: March

23rd, admitted 88, died 5; March 30th, admitted 160, died 9; April 6th, admitted 166, died 21; April 13th, admitted 377, died 34; April 20th, admitted 263, died 44; April 27th, admitted 224, died 54; May 4th, admitted 226, died 54; May 11th, admitted 583, died 65; making totals of 2,087 admissions and 286 deaths. The total admissions for simple continued fever were 5,860, with only 1 death.

The Appointment of a Sanitary Commissioner in South Africa to act with the R.A.M.C. in a similar relation to that of the consulting surgeons sent out, was the subject of the following question put by Sir H. Fowler last week:

Sir H. Fowler (Wolverhampton, E.) asked the Under-Secretary of State for War whether in October last he received a letter from the hon. member for Ilkeston pointing out that in all probability great loss of life from fever and other maladies, more or less preventable by careful sanitary work, was likely to occur in the South African campaign, and suggesting the appointment of a small sanitary commission, or a commissioner and assistants, to proceed to South Africa to assist the army medical officers in preventing the dangers referred to; whether the hon. member offered to place his services and his experience as a physician and as Secretary of the Local Government Board during the last invasion of cholera at the disposal of the War Office in an unpaid capacity, and whether the suggestion and offer were declined by the Secretary of State on the ground that the need of special assistance was not the same in sanitary matters as in surgical operations.

Mr. Wyndham: Yes, sir; the facts are as stated. Army surgeons are not in constant practice as operators, and therefore the Secretary of State was very glad to avail himself of the patriotic offers made by Sir W. MacCormac, Mr. Treves, and other specially-skilled surgeons. But army medical officers have special training in sanitation of camps and the management of diseases incidental to field service, and abundant opportunities of obtaining experience in these matters. It did not, therefore, appear that there was any occasion for the appointment of such a sanitary commission as the hon. member proposed.

In the course of his reply in the debate on the care of the sick and wounded in South Africa, Mr. Balfour made an elaborate travesty of this proposal, and described it as a roving commission to interfere with the generals in the field. Nothing of this kind was intended, but simply that one or more independent commissioners should be appointed who would assist the officers of the Royal Army Medical Corps in securing that due attention should be given to all questions relating to the sanitary administration, and the special provisions necessary for the care of the sick during the campaign.

The Medical Clause in the Companies Bill passed the Standing Committee on Trade, which had been reinforced by an addition of fifteen members. A general impression existed that there was little chance of the medical clause being allowed to remain in the Bill, Mr. Ritchie's remarks upon the second reading having distinctly indicated that the Government were prepared to drop it as well as the pharmacy clause. Several amendments had been set down to both clauses; but Mr. Ritchie rose at an early stage and said that it would save time to mention that he suggested that the Committee should expunge these clauses altogether as not being quite germane to the rest of the Bill. This led to some discussion, in which Mr. Renshaw, Sir Henry Fowler, and Mr. Warr took part, who urged their retention on the ground that they were in themselves very necessary, while not inappropriate in this Bill. A strong point was made by Sir Henry Fowler, who pointed out that it was a very unusual course for a Government to place clauses in a Bill, pass it through its second reading, and then propose to withdraw them before the Committee had heard one word against them. Mr. Ritchie replied that he had nothing against the clauses themselves for he approved of them, and that he would even be prepared to urge the Lord Chancellor to proceed with them in another form, but that he did not wish to retain them in this Bill. But the Committee, persuaded by the arguments used on behalf of the clauses, took a different view, and overruled the President of the Board of Trade, retaining the clauses by a vote of 17 to 12. It was stated that some members who were prepared to support the retention of the clauses were engaged in other Committee rooms and were unable to be present; but, of course, the converse may be equally true, though in practice it is found that in the House of Commons the opponents of a measure are more certain to be on the spot than its adherents. The result, though somewhat surprising, is eminently satisfactory. After Mr. Ritchie's declaration of his adhesion to its object and after its retention by such a substantial majority in the Committee, it will be almost impossible for the Medical Clause to be dropped. It may of course be thrown out by an adverse vote in the whole House upon the report of the Committee, and although it has weathered its greatest danger, it will be necessary to relax no effort to secure support. It is very encouraging to find that a medical clause can secure such strong support amongst influential members to carry it though the Standing Committee against the expressed wish of the member of the Government in charge of the Bill. At the same time, in such committees the voting is less determined by party lines than it is in the House itself. Even should the clause be unfortunate in the report stage there would be strong ground for the House of Lords to replace it. Failing that, as it has now secured much support and the approbation of a responsible Minister, its path will be smoothed in any future session.

The Medical Officers of Health and Sanitary Inspectors Bill, introduced by Dr. Farquharson, has been dropped. It had no chance of passing this session. The same fate has overtaken the Bill introduced by Mr. Percy Thornton on behalf of the sanitary inspectors, which had similar objects, and Major Rasch has also withdrawn the Local Authorities Officers' Superannuation Bill.

The St. Pancras Scandals.—Mr. Chaplin has ordered an inquiry into the irregularities in connection with the certification of lunatics in St. Pancras, and in making the announcement he stated that there was reason to believe that the system was more or less widely practised elsewhere in the metropolis. The guardians had been informed that the Local Government Board regarded the practices complained of as altogether indefensible, and any officer offending in this respect in the future should be dismissed.

Cremation.—Lord Monkswell's Bill has passed through Committee in the Lords, and has had its title simplified, so that it is now called the Cremation Bill, 1900. It has been amended so as to widen its scope, and bring under Home Office regulations private crematoria as well as those conducted by public authorities.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Council Election.

The ballot for the election of four members of the Council of the Royal College of Surgeons of England took place on Thursday, July 5th, with the following result:

	Votes.
Mr. Alfred Cooper	**304**
Mr. John Ward Cousins	**257**
Mr. Alfred Pearce Gould	**253**
Mr. John Tweedy	**233**
Mr. John Bland-Sutton	199
Mr. Richard Clement Lucas	170
Mr. William Johnson Walsham	159
Mr. Henry Hugh Clutton	148
Mr. Jordan-Lloyd	138
Mr. Cuthbert Hilton Golding-Bird	127
Mr. William Henry Bennett	121
Mr. John Astley Bloxam	82

Mr. Cooper and Mr. Tweedy were declared re-elected, and Mr. Ward Cousins and Mr. Pearce Gould were declared elected; 679 Fellows voted by paper, 34 in person; 1 paper was blank and 1 too late.

Presentation.—The sick and wounded who returned in the hospital ship *Simla* from South Africa—A and B wards—presented Dr. F. Pullin with a testimonial thanking him for many acts of kindness and sincere sympathy shown by him to them during the voyage home.

New School for Nurses in Russia.—On April 23rd the first meeting of the newly formed Committee of the Russian Red Cross for the organisation of a school of female nurses was held. The school will probably be established at Wassili-Ostroff and will be in connection with hospitals. Baroness W. Mexküll von Güldenband was elected President.

THE WAR IN SOUTH AFRICA.

THE EPIDEMIC OF ENTERIC FEVER AT BLOEMFONTEIN.

By A. CONAN DOYLE, M.D.

To the Editor of the BRITISH MEDICAL JOURNAL.]

The Langman Hospital, South African Field Force, Bloemfontein, June 5th, 1900.

DEAR SIR,—You were good enough to suggest when I left England that I should send you some notes upon any points which might strike me. The pressure of work has prevented me from complying with your request, and even now I feel that you will find these comments of a very scrappy character.

When the nation sums up its debt of gratitude to the men who have spent themselves in this war I fear that they will almost certainly ignore those who have done the hardest and the most essential work. There are three classes, as it seems to me, who have put in more solid and unremitting toil than any others. They are the commissariat, the railway men, and the medical orderlies. Of the three, the first two are the most essential, since the war cannot proceed without food and without railways. But the third is the most laborious, and infinitely the most dangerous.

THE OUTBREAK OF ENTERIC FEVER.

The outbreak of enteric among the troops in South Africa was a calamity the magnitude of which had not been foreseen, and which even now is imperfectly appreciated. We naturally did not dwell too much upon it while the war was in progress. But it was appalling in its severity, both in quantity and quality. I know of no instance of such an epidemic in modern warfare. I have not had access to any official figures, but I believe that in one month there were from 10,000 to 12,000 men down with this, the most debilitating and lingering of continued fevers. I know that in one month 600 men were laid in the Bloemfontein Cemetery. A single day in this one town saw 40 deaths. These facts would have stiffened the resistance at Pretoria if they had been generally known. It is only now, when the worst is past, that they can be talked of.

THE HOSPITAL ORDERLY.

How was this unforeseen and unprecedented crisis grappled with? Entirely by the efforts of the medical men and by the devotion of the orderlies. When a department is confronted by a task which demands four times more men than it has, the only way of meeting it is for each man to work four times as hard. This is exactly what occurred, and the crisis was met. In some of the general hospitals orderlies were on duty for thirty-six hours in forty-eight, and what their duties were—how sordid and obscene—let those who have been through such an epidemic tell.

He is not a picturesque figure, the orderly, as we know him. We have not the trim, well-nourished army man, but we have recruited from the St. John Ambulance men, who are drawn, in this particular instance, from the mill hands of a northern town. They were not very strong to start with, and the poor fellows are ghastly now. There is none of the dash and glory of war about the sallow, tired men in the dingy khaki suits—which, for the sake of the public health, we will hope may never see England again. And yet they are patriots, these men; for many of them have accepted a smaller wage in order to take on these arduous duties, and they are facing danger for twelve hours of the twenty-four, just as real and much more repulsive than the scout who rides up to the strange kopje or the gunner who stands to his gun with a pom-pom quacking at him from the hill.

Let our statistics speak for themselves; and we make no claim to be more long-suffering than our neighbours. We have 3 on the staff (Mr. Gibbs, Mr. Scharlieb, and myself). Four started, but one left us early in the proceedings. We have had 6 nurses, 5 dressers, 1 wardmaster, 1 washerman, and 18 orderlies, or 32 in all, who actually came in contact with the sick. Out of the 6 nurses, 1 has died and 3 others have had enteric. Of the 5 dressers, 2 have had severe enteric. The wardmaster has spent a fortnight in bed with veld sores. The washerman has enteric. Of the 18 orderlies, 1 is dead, and 8 others are down with enteric. So that out of a total of 34 we have 17 severe casualties—50 per cent.—in nine weeks. Two are dead, and the rest incapacitated for the campaign, since a man whose heart has been cooked by a temperature over 103° is not likely to do hard work for another three months. If the war lasts nine more weeks, it will be interesting to see how many are left of the original *personnel*. When the scouts and the Lancers and the other picturesque people ride in procession through London, have a thought for the sallow orderly, who has also given of his best for his country. He is not a fancy man—you do not find them in enteric wards—but for solid work and quiet courage you will not beat him in all that gallant army.

ANTITYPHOID INOCULATION.

There is one mistake which we have made, and it is one which will not, I think, be repeated in any subsequent campaign. Inoculation for enteric was not made compulsory. If it had been so I believe that we should (and, what is more important, the army would) have escaped from most of its troubles. No doubt the matter will be fully threshed out in statistics, but our strong impression, from our own experience, is that although it is by no means an absolute preventive it certainly modifies the course of the disease very materially. We have had no death yet (*absit omen*) from among the inoculated, and more than once we have diagnosed the inoculation from the temperature chart before being informed of it. Of our own *personnel* only one inoculated man has had it, and his case was certainly modified very favourably by the inoculation.

THE SOLDIER IN HOSPITAL.

Of the courage and patience of the soldiers in hospital it is impossible to speak too highly. We have had 500 cases pass through our hands, and can speak now from a fairly large experience. I had always imagined that in every large army there must be a minority of skulkers and shirkers, but they are singularly absent in the South African Field Force. I have not had more than two or three cases in my wards which bore a suspicion of malingering, and my colleagues say the same. They are uniformly patient, docile, and cheerful, with an inextinguishable hope of "getting to Pretoria." There is a gallantry even about their delirium, for their delusion continually is that they have won the Victoria Cross. One patient, whom I found the other day rummaging under his pillow, informed me that he was looking for "his two Victoria Crosses." Very touching also is their care of each other. The bond which unites two soldier pals is one of the most sacred kind. One man shot in three places was being carried into Mr. Gibbs's ward. I lent an arm to his friend, shot through the leg, who limped behind him. "I want to be next Jim, 'cos I'm lookin' after him," said he. That he needed looking after himself seemed never to have occurred to him.

THE SPECIAL HOSPITALS.

I do not think that any men have ever expended money better than those who fitted out the private hospitals. The officers of the Army Medical Department freely admit that they do not know what they would have done without their aid. They arrived out here at the very moment when the sickness was becoming alarming, and they took their share of the strain when the epidemic was at its

height. The large general hospitals found it difficult to get to work on account of the pressure on the line which prevented them from getting up their bulky equipment, but the private hospitals, more compact and mobile, got to work almost at once after their arrival. The pressure was severe. Our own hospital, with equipment and *personnel* for 100 cases, had 150 cases, most of them virulent Paardeburg enterics, shot upon them, and had to cope with them as best they might. But the men had come out to work, and the orderlies, though untrained, never once grumbled at the great exertions which were called for. Without the Yeomanry, the Portland, the Irish, the Scotch, the Welsh, and the other hospitals fitted up by private effort, and manned by volunteers, it is difficult to see how the epidemic could have been met.

The Work of the R.A.M.C.

There is sure to be some adverse criticism of the Army Medical Department after the war, because they have had to meet so difficult a situation with such inadequate resources; that it is impossible that there should not be particular instances where the machinery has broken down. A captious critic could quote cases of an overfilled, undermanned hospital without medical necessities in one place, or of hardships endured by the sick and wounded in another. How can it be otherwise, when a Department which is sufficient for the needs of two army corps has to provide for the wants of 200,000 men with typhoid raging among them? Taking it on the whole, the Department has been well organised and well worked, and has met an unforeseen and exceptional state of things with remarkable success.

"Simple Continued Fever."

The statistics of the campaign are likely to be vitiated by the employment of the vague and unscientific term, "simple continued fever," so largely used in the army returns. A great number of cases were classified under this head, and such terms as "veld fever," "camp fever," etc., were freely used. I think that nearly all medical men have come to the conclusion that all, or at least most, of these cases were really enteric of varying types and degrees of severity. Our senior surgeon, Mr. Gibbs, performed *post-mortems* on several cases which presented abnormal features, but never without finding the characteristic ulcers.

A. Conan Doyle.

THE ADMINISTRATION OF A GENERAL HOSPITAL.

The following letter from Lieutenant-Colonel R. T. Beamish, R.A.M.C., the Principal Medical Officer of No. 8 General Hospital, will be read with interest at the present time. It gives some insight into the nature of the emergency created in Bloemfontein by the epidemic of enteric fever and of the way in which it was met in the general hospitals. It would appear to have been written at a date subsequent to Mr. Burdett-Coutts's departure from Bloemfontein, but of course long antecedent to the publication of his letter in the *Times* which gave rise to the debate in the House of Commons last week. The opening passages of the letter, however, have reference to one of the earlier letters of the series "Our Wars and Our Wounded," all of which we are now given to understand have been written by Mr. Burdett-Coutts. It will be seen that Lieutenant-Colonel Beamish quite bears out the justice of the criticism published in the British Medical Journal on April 8th.

Our contentions, in commenting on these letters, were simply as follows: It is not the case—as was inferred—that strictly professional competence is officially considered secondary to administrative functions; the two are inseparably bound up, administrative ability being an outcome of true professional competence; no amount of civil professional skill can ensure administrative success without previous military training and experience; the discipline and administration of a military hospital can only be fully and properly carried out by an experienced military medical officer.

The establishment of these propositions, we conceive, entirely negatives the oft-revived fallacy that medical labour could or should be conserved by setting up a dual military authority in army hospitals—such, in fact, as history painfully proves was so disastrous in former wars. Who, indeed, but a thoroughly-trained medical officer accustomed to military details could have grappled with the work suddenly thrown on the Bloemfontein Hospital, as described in the letter?

We trust this discussion will prove to the official as well as to the public mind that the successful military medical administration of base hospitals is not only of prime importance as a link in the military machine, but of vital interest to the sick and wounded soldiers themselves. We hope, also, it will remove misconceptions as to what has been termed "wasted energies" of medical officers and men, for successful hospital administration is synonymous with efficient professional organisation. There can be no waste in perfecting the autonomy of the Army Medical Service, and no going back by insidiously inserting dual authority in military hospitals on the pretext of conserving professional energy.

Sir,—In your issue of April 28th there is an editorial discussing certain letters of the Capetown Correspondent of the *Times*, concerning the organisation and administration of general hospitals, etc., and there is no doubt that some conclusions of the writer are, as you say, "apt to be misconstrued."

In contrasting the relative merits of marquees and "tortoise" tents as sick wards, the latter, in my opinion, do not in the least "reign triumphant," and whilst I agree that they are pretty and convenient inside, and suited for a perfect, temperate climate, they cannot for a moment compare with the lofty, substantial, and serviceable marquees, *sub jove fervido vel frigido*.

Then as to the "lavish expenditure" on civil hospitals securing a "higher class of professional assistance," I am quite certain that the expenditure referred to is wholly unnecessary; for although we are all pleased and delighted with the presence of a famous consulting surgeon or physician, our experience proves to us that the average R.A.M.C. officer is quite capable of meeting confidently and successfully any emergency which may arise, while for all the thousand and one details of duty in cantonments and in camps he is absolutely indispensable and incomparably more safe and efficient than any civil officer, however eminent in civil society. The foregoing is a truism of which anyone acquainted with the working of military hospitals and with the maintenance of the health and welfare of the soldier must be perfectly aware, and the universal experience of this campaign proves how indispensable are the education and the discipline imparted at Netley and Aldershot and in the service generally.

With regard to the observations *re* the duties of the principal medical officer of a general hospital, the writer is entirely mistaken if he imagines that these duties are confined solely, or even chiefly, to administration. My experience of the position is that whilst the P.M.O. must be the administrator and commandant of the institution, he is also in the position of, as it were, senior divisional officer, and that at every hour of the day his professional knowledge and experience are in requisition.

For instance, he must see and approve of every operation requiring an anæsthetic, and must sanction the operative measure; he must make himself acquainted with all serious cases of disease or injury, and must carefully select and inspect every man about to be transferred to the base or other site; the greater portion of his time being occupied in these duties and in the supervision and sanitation of the camp.

Administration in a great general hospital is really nothing more than higher and more responsible professional duty, and without a sound knowledge of the profession it could not be properly or successfully exercised; and, after all, many years of his service must have been passed in the position of divisional officer, that is, in charge of large station hospitals at home or abroad. There is scarcely an hour of the day, and often of the night, that he is not consulted personally or on paper, and there is not an hour on field service when his professional and administrative interference are not required.

Take for example my own command. We came out equipped for 520 sick and wounded and pitched the marquees, etc., about two miles outside Bloemfontein upon an illimitable, sloping, and breezy upland, probably the finest position in South Africa. Immediately, owing to urgent exigency the hospital was rapidly increased, till now it is equivalent to nearly four general or upwards of eighteen field hospitals in accommodation.

An idea of the work to be done may be gathered from a single occurrence. One evening at 7 o'clock in the dark a convoy of 198 sick and wounded arrived, an hour afterwards 80 more, and again 95 before 10 P.M., and you can imagine what this meant in inquiry, examination, arrangement, dietary, dressings, etc., and how everybody had to be on duty far into the night. Rarely does a convoy numbering less than 100 arrive, and for weeks they were chiefly from the Modder and round about Paardeberg and ThabaNchu, almost all enteric fever patients; so that there are never fewer than from 600 to 800 diagnosed cases of this disease under treatment, many of a very severe type. With a diminishing staff through illness the duty on officers, nurses, and men has been heavy and continuous, but all work well and pluckily under immense pressure and determined to perform their several parts with credit and success.

The immense ocean of snowy canvas composed of stately marquees and bell tents arranged in mathematical order covers a wide area indeed and presents a most imposing spectacle from a distance; while the general disposition, order, cleanliness, and efficiency are the theme of universal comment and admiration.

R. T. Beamish,
Lieutenant-Colonel R.A.M.C.,
P.M.O. No. 8 General Hospital.

Bloemfontein, May 31st.

THE MEDICAL ASPECTS OF THE WAR.

By a South African Campaigner.

XXIV.

Typhoid Fever in South Africa.

The bane of tropical and subtropical towns has also proved the bane of military camps in South Africa. Typhoid has claimed more victims than war itself and is still the most deadly of our enemies. In various South African towns, especially Kimberley and Johannesburg, in the vicinity of the various mines, and wherever else men are congregated together in South Africa during war or peace, this disease occurs.

The alarming prevalence of typhoid among young soldiers and civilians in the East is well recognised, but it is not so generally known that the disease prevails in a like manner among young emigrants to South African towns during the first two or three years after their arrival. Fortunately the liability appears to diminish with length of residence. A sort of acclimatisation or habituation is presumably established with time.

On the question of the prevalence of typhoid among Europeans in tropical countries there is an admiral chapter in Dr. Patrick Manson's *Tropical Diseases*. He specially dwells upon the relative exemption of the native races, which he believes is due to the immunising effect produced by living in constant contact with typhoid and similar toxic agents. Thus he says:

> On visiting native cities—Chinese cities for example—one is filled with amazement at the state of filth in which the people live and thrive. The streets are narrow and never cleansed; the common sewer lies beneath the flagstones paving the streets, and through the interstices between the stones can be seen the black stinking slush in the sewer.....In every corner are filth and rubbish. And yet in such circumstances—circumstances in which the sanitarian would prophesy typhus and typhoid—the population seems to thrive.

The same state of things exists in a measure in South Africa. In the native kraals the arrangements are not altogether insanitary; but very similar conditions occur in the native quarters of all the big towns, such as Capetown, Port Elizabeth, Kimberley, and Johannesburg. In these native quarters typhoid does occur, still it is nothing like so common as among the white races.

According to my experience of typhoid fever in South Africa, I should say that as a rule it is grave from the outset, and that it is liable to relapse, but that it certainly is not as deadly as it apparently is in India. The death-rate among typhoid cases in the Kimberley and Johannesburg hospitals is approximately 1 in 4 or 5 cases.

With regard to the etiology of typhoid fever, there are two questions which in this connection appear to be of paramount importance: Can typhoid be transmitted only from man to man? or, Can it also be derived from some micro-organism which has a saphrophytic existence in no way depending upon an actual passage through the human body? If an occasional passage through the human body be essential, it is obvious that theoretically, with sufficient precaution, the disease should be entirely preventable; if, on the other hand, an occasional passage through the human body is not essential to the continued existence of the parasite, it is equally obvious that prevention of the disease, though still possible, must nevertheless be more difficult of accomplishment. Testimony from India on this subject as adduced by Dr. Patrick Manson is to the effect that sanitary safeguards, which are found to be practically sufficient in England, are by no means so effective in India. It would appear that soldiers on the march contract the disease in passing through uninhabited country in spite of the fact that the camp may be pitched in spots which presumably have never before been occupied by man, and although the men may have drunk from springs and streams that were above suspicion of fæcal contamination. Similar testimony comes from Australia, where typhoid has occurred in the back country in lonely spots hundreds of miles from habitations, and very similar evidence is forthcoming in South Africa. I am therefore disposed to admit, first, that typhoid attacks different races, and different individuals of the same race, at different ages, with a very varying degree of virulence; secondly, that the etiology of typhoid has not been absolutely cleared up; thirdly, that exposure to insanitary conditions does confer an undoubted degree of immunity, and that, conversely, the improved sanitation of English towns to-day seems to render young Englishmen particularly liable to attack when exposed to the virus.

Typhoid in the Campaign.

The occurrence of typhoid in the South African campaign has been alarmingly great, but while the actual occurrence of the disease is undoubtedly high, it must be admitted that the mortality among cases, which is stated at something like 1 in 5, is as low as that obtained in hospital practice in Kimberley and Johannesburg in times of peace. This in itself is satisfactory from more points of view than one. It is satisfactory to those who may be unfortunate enough to have friends now suffering from typhoid in South Africa, and it is satisfactory as *primâ facie* evidence against the allegation that the medical treatment and nursing of many of these cases has been so unwarrantably deficient, for if deficient medical and nursing aid is to be manifest at all in the results we are surely justified in looking for it in the case mortality. What is deplorable from a public standpoint, then, is the incidence of typhoid, not the high mortality from that typhoid among cases where it has actually occurred.

An officer in a South African regiment to which I was once attached as surgeon called upon me only a few days ago and reported that he had arrived by the last steamer from South Africa. He was himself a patient in Bloemfontein, and had comrades, some of whom were personally known to me, laid up in Bloemfontein with enteric. He had read Mr. Burdett-Coutts's letter shortly after landing, and called upon me to express strongly his dissent from the strictures and general tone of that letter, which he assured me he regarded as an unfair and distorted picture of the medical arrangements as he had seen them and known them. This young officer went up with General Brabant from Sterkstroom, and was with him up to Thaba Nchu, from which he went with a squadron to Bloemfontein, reaching it on May 9th. He spent nine days there, and visited several of the buildings used as hospitals in Bloemfontein itself. He found them, as he considered, well appointed and the men in them thoroughly satisfied. One man in particular, a trooper suffering from enteric, who is personally known to me, and who is by birth and education a gentleman, expressed himself as specially satisfied with the treatment he had received. My informant tells me that with the Colonial forces under Brabant practically no enteric had occurred, and this he attributed to the fact that they were continually on the move. If this be indeed the true explanation, it is significant evidence of the spreading character of typhoid when once established in a camp, whether that spreading occurred merely by pollution of water or also by pollution of dust, or through some other unknown channel. It is, however, to be borne in mind that the Colonial troops are men accustomed to the country, and probably more immune to typhoid and other saprophytic diseases than their European comrades.

With regard to the incidence of typhoid, my informant states that latrines undoubtedly have not always been carefully managed, and that in particular there is very apt to be a carelessness about throwing the earth into the ditches used in the latrines in a regular and efficient manner. This is a practical point of the greatest importance, and cannot be too rigorously insisted upon by the officers responsible for seeing this duty carried out.

THE PRINCESS CHRISTIAN HOSPITAL AT DURBAN.

This hospital, which has been built, equipped, and maintained by Mr. Alfred Mosely at his sole charge, was formally opened on May 25th, by Colonel Morris, the Commandant of Durban, on the occasion of the celebration of the Princess Christian's birthday. The site, the gift of Mr. Frank Stevens, is on a bracing elevation in his grounds at Pinetown Bridge. It is considered to be one of the most beautiful and salubrious spots near the railway line, and has near it an excellent water supply. The hospital itself consists of four large and five small wood and iron pavilions, which were taken out under the care of Mr. Mosely, and of the permanent buildings, the property of Mr. Stevens. The beds number 210, of which 34 are for officers. The wards are built on piles, and lined over

walls and ceilings for coolness; the ventilation and electric lighting are on the most approved methods, and the operating theatre, dispensaries, storerooms, and kitchens are admirably appointed. There has also been provided the most recent improvements for *x*-ray work. Patients are received from the Princess Christian Hospital train at the Pinetown Bridge station, and conveyed on Major McCormac's wheeled stretchers to the hospitals. Surgeon-Major Mathias, D.S.O., R.A.M.C., is the military medical officer, and the senior surgeon is Professor Paul Bush, of Bristol. There is a full staff of surgeons, nursing sisters, and 30 St. John Ambulance attendants. The generous donor himself superintends the administrative department. The first batch of patients were received on April 9th.

MEDICAL OFFICERS OF THE FIELD FORCE.

ADDITIONAL APPOINTMENTS.

FOR the following list of medical officers who have recently proceeded, or are proceeding to South Africa, we are indebted to the courtesy of the Medical Department of the War Office:

Table showing the Personnel of Medical Units on the Lines of Communication.

Unit and Place of Mobilisation.	Detail.	Remarks.
No. 14 General Hospital (Depôt, R.A.M.C., Aldershot).	*Royal Army Medical Corps.* Major S. Butterworth (*a*) Lieutenant F. W. Cotton " F. M. Parry " W. J. P. Adye-Curran " J. G. Foster " E. G. Ford " L. M. Purser " H. B. Fawcus " T. E. Fielding *Civil Surgeons.* Mr. W. J. I. Bruce " W. J. Collins " J. G. F. Hosken " A. W. Izard " M. E. O'Dea " L. E. Owen " W. M. Power " R. B. Williams	1 quartermaster to join the unit in South Africa, 1 warrant officer and 144 non-commissioned officers and men (including 52 men St. John Ambulance Brigade), 1 warrant officer to join the unit on its arrival in South Africa, 1 special cook.

(*a*) Secretary and Registrar, and to act as officer commanding the unit till its arrival in Natal.

The P.M.O., Natal, will arrange for a Lieutenant-Colonel, R.A.M.C., in South Africa, to be detailed as officer in charge of the unit.

THE ARMY NURSING RESERVE.

AT the present moment the following particulars, which may be accepted as quite trustworthy, with regard to the Army Nursing Reserve, will be read with interest.

Strength.—The Reserve is officially stated to consist of 100 or more nursing sisters, but it is not limited to 100, and as a matter of fact there are at the present moment 465 employed in South Africa, 7 in the Mediterranean, and 83 at home—a total of 555.

Training.—The requirement of three years' training in a civil hospital is invariably adhered to, and it is not the case, as has been asserted, that "female and children's ward" service will be accepted. Further, the committee are careful in their scrutiny of the hospital certificates produced by candidates—the institution granting them must be of sufficient size to insure varied training. This training does not include the special feature of gunshot wounds (and except during a war where can they be studied?) or of tropical diseases, but it does include the attention, the tact, the thousand and one points which go to make up the essential qualities of good nursing—obedience to the physician or surgeon being a *sine quâ non*.

Selection.—This rests with a sub-committee (of the Central British Red Cross Committee) which consists of Princess Christian as President, the matron of a large London hospital, a practising physician and a representative of the War Office. Certificates and credentials are carefully examined, and a personal inspection of each candidate is made whenever possible—in the majority of cases this has been done by Princess Christian. That the selection has been judicious may be gathered from the fact that the work of these ladies in South Africa has been beyond all praise.

THE MORTALITY OF TYPHOID FEVER.

THE Under-Secretary of State for War in his speech in the debate in the House of Commons on June 29th stated that the "percentage of mortality in enteric cases during this war, and more especially at Bloemfontein, has been 21 per cent. of the admissions to hospitals." He compared this not only with the percentage in other campaigns (Nile campaign of 1898, 28 per cent.; Dongola campaign of 1896, 50 per cent.; Matabele war of 1896-97, 32 per cent.; Chitral campaign of 1895, 28 per cent.; Soudan campaign of 1884-85, 39 per cent.), but also with the percentage mortality in the British army in India and in the United Kingdom. As Mr. Wyndham did not give the figures in full it may be interesting to reproduce them from the annual reports of the Army Medical Department.

BRITISH ARMY.

United Kingdom.

Year.	Admissions.	Deaths.	Mortality Per Cent.
1889	140	25	17.8
1890	126	30	23.9
1891	109	17	15.6
1892	132	23	17.4
1893	151	22	14.6
1894	124	21	16.9
1895	137	35	25.5
1896	94	22	23.4
1897	88	21	23.9
1898	89	12	13.5*
	1,190	228	19.16

* Excluding troops from Khartoum expedition, which had 90 cases, 10 deaths, 11.1 mortality per cent.

India.

Year.	Admissions.	Deaths.	Mortality Per Cent.
1889	1,092	283	25.9
1890	996	259	26.0
1891	998	268	26.8
1892	1,130	270	23.9
1893	1,076	276	25.6
1894	1,069	300	28.0
1895	1,544	383	24.8
1896	1,795	445	24.8
1897	2,050	556	27.1
1898	2,375	657	27.7
	14,126	3,697	26.17

In estimating the significance of these figures, it should be borne in mind that the majority of soldiers are young men between the ages of 19 and 30, and that in fact from 80 to 85 per cent. are under 30 years of age. The mortality of typhoid fever at ages from 20 to 30 is in excess of the average for all ages, and this well-known fact may be illustrated by the following tables of the percentage mortality in the London Fever Hospital and in the hospitals of the Metropolitan Asylums Board. The figures for the Metropolitan Asylums Board are taken from the report for 1898, and deal with a period of twenty-seven years. Those for the London Fever Hospital are for an earlier period of ten years (1848-57).

London Fever Hospital.

Admission, Deaths, and Mortality Per Cent. of Enteric Fever Patients during 23 Years.*

Males.

Ages.	Admitted.	Deaths.	Mortality Per Cent.
All ages	3,001	504	16.79
15-19	744	95	12.76
20-24	545	127	23.30
25-29	297	51	17.17

* *A Treatise on the Continued Fevers of Great Britain.* By Charles Murchison, M.D., LL.D., F.R.S. Third edition. Edited by W. Cayley, M.D., F.R.C.P. London, 1884. Pp. 606.

Metropolitan Asylums Board.

Admissions, Deaths, and Mortality per cent. of Enteric Fever Patients in the years 1871 to 1898.

Ages.	Males.		
	Admitted.	Deaths.	Mortality Per Cent.
All ages	6,346	1,092	17.2
15–20	1,356	208	15.3
20–25	937	209	22.3
25·30	733	179	24.4

Dr. Victor C. Vaughan, Professor of Hygiene in the University of Michigan, has recently published in the *Philadelphia Medical Journal*, June 9th, 1900, some of the results of an inquiry made by a Committee appointed for the purpose of ascertaining the causes of the existence and spread of typhoid fever among the American soldiers assembled in National Encampments during the brief war between the United States and Spain in 1898. He states that every regiment in the United States service in 1898 developed typhoid fever, and the disease appeared in nearly all regiments within less than eight weeks after going into camp. It not only appeared in every regiment, but it became epidemic both in small encampments of not more than one regiment and in the larger encampments.

Professor Vaughan concludes that the main cause of the dissemination of the disease was the greater difficulty of disposing of excreta in camps than in civil life, and observes that a single man attacked by typhoid fever may scatter the infection in every latrine of a regiment before the disease is recognised in himself. In a general way the number of cases of typhoid fever in the different camps varied directly with the efficiency of the method of disposing of excreta. He considers that flies undoubtedly were one of the means by which typhoid fever was disseminated, but that personal contact was also operative, and that it is probable that the infection was disseminated to some extent through the air in the form of dust. He gives some statistics, from which it appears that about one-fifth of the soldiers in the National Encampments developed typhoid fever. The number of cases of the disease which were studied for the purposes of this report was 9,660, and the number of deaths was 713, a percentage mortality of 7.38. This mortality, as we understand the report, occurred among men attacked in camp in the United States, and treated in hospital there, and not at the seat of war. He compares it with the extremely favourable mortality of 7.8 per cent. shown in the series of 19,017 collected by Brandt treated by cold baths, and with the mortality of 9.2 among 2,293 cases treated in some of the larger hospitals in the United States in 1897.

LONDON ASYLUMS: A DEADLOCK.

THE London County Council at its last meeting discussed for two hours, but with a singularly inconsequential result, an important report of its Asylums Committee in regard to better and newer methods of treating the insane who are committed to its care. So long ago as October 27th, 1896, the Council resolved:

That, having regard to the growing demands upon the ratepayers of the county of London in connection with the care of pauper lunatics, it be referred to the Asylums Committee to consider and report as to the expediency of adopting a better and less expensive method of housing and treating such persons, and that, in dealing with the question, the Committee do consider the systems adopted in the principal European and American cities.

In the spring of 1897 the Council was informed that the Special Subcommittee to which the above reference had been made had come to the conclusion that it was impossible to proceed further in forming any definite or practical opinion as to the merits of the modern Continental system of housing and treatment without personal inspection of some of the foreign asylums, where special methods, other than those obtained in this country, are in vogue, and that for this purpose it would be desirable to send a Commission to visit certain asylums abroad. This report was duly approved by the Council, and the travelling and out-of-pocket expenses of such Commission were authorised. Owing, however, to certain remarks made in the Council Chamber suggesting that certain members of the Council—which has justly earned a reputation for its austerity—were to have a trip abroad at the expense of the rates, it was difficult to find any Councillor to undertake the inquiry except at his own expense.

The sporadic information thus obtained, together with reports obtained from medical superintendents who had visited Continental and American asylums during their holidays, appeared only to have served to whet the appetites of the inquiring Subcommittee for more. Accordingly last July the matter was again brought before the Council and the Council sanctioned the expenditure of £1,000—

For inquiries and preparation of preliminary designs in connection with further asylum accommodation, such estimate to include cost, if any, of visiting foreign asylums.

Notwithstanding this specific authority the Subcommittee still hung fire; the fear that party or electioneering use might be made of rate-aided excursions appears to have operated in their minds. If Councillors were to go at all it appeared essential that they should do so at their own expense or sacrifice their self-respect, or at least the respect of their colleagues, so scrupulously austere is the London County Council. At length a discussion in May last, to which allusion was made in these columns, appears to have stung the Committee into action, and yesterday, though replete with ample authority to go and to spend, the Committee again invited the Council to express an opinion on their roving Commission. They proposed that the Commission should consist of the Chairman of the Committee (Dr. Forman) and Mr. Hunter, together with one Medical Superintendent, the Asylum's Engineer, and the Assistant Clerk. An amendment to refer the matter back to the Committee was proposed by Mr. Benn, and after debate the Council divided; there being 52 for and 52 against the amendment, the Chairman gave a casting vote for the amendment. When however the amendment was subsequently put to the Council as a substantive motion the Council by 54 to 50 rejected the motion. Accordingly nothing whatever was achieved. The result was further complicated, it appears, by two members for the City, who are not entitled to vote on asylum matters, having passed through the lobbies.

THE R.A.M.C. SOUTH AFRICA FUND.

WE have received the following notification:

Mrs. Skey Muir (Honorary Secretary) wishes to notify all those who have been interested in this work that the offices, 77, George Street, Portman Square, W., will be given up early in July, and that no parcels can be received after July 7th, though gifts in money may still be sent to the bankers, Messrs. Holt and Co., 3, Whitehall Place. Should it be found desirable to resume this work in the autumn due notice will be given.

THE HALF-CROWN FUND.

In consequence of the above notification it would seem that the time has come for closing, or at least suspending, the Half-crown Fund, to which so many medical men in almost every part of the United Kingdom and in some of the colonies have so readily responded. To those gentlemen who have taken a great deal of trouble to collect the subscriptions in so many localities the thanks of the R.A.M.C., and indeed of the profession generally, are due. We shall be much obliged if they will now send in their final lists.

LEPROSY IN PORTUGAL.—Dr. Zepherino Falcao has presented to the Royal Academy of Sciences at Lisbon a communication on the extension of leprosy in Portugal. Since the suppression of leper houses in that country the disease has gradually spread, and it is estimated that there are now some 1,500 lepers in the country: this is a considerable proportion in a population of 4,700,000. The lepers are scattered throughout the country, no district being exempt; most of them, however, are on the coast and in the deep valleys. There are, however, also foci in the mountain regions. Dr. Falcao considers that the disease as it is met with in Portugal is very slightly contagious, special conditions being necessary for transmission to take place from one patient to another.

ASSOCIATION INTELLIGENCE.

NOTICE OF SPECIAL BUSINESS.

NOTICE is hereby given that an Extraordinary General Meeting of members of the British Medical Association will be held in the Small Hall, Exeter Hall, Strand, London, W.C., on Wednesday, the 18th day of July, 1900, at 2 o'clock in the afternoon, when the subjoined resolution will be proposed on behalf of the Council. Should the resolution be passed by the required majority, it will be submitted for confirmation to a second Extraordinary General Meeting to be held in the Central Hall, Higher Grade School, Ipswich, on Thursday, the 2nd day of August next, immediately on the conclusion of the Third General Meeting after the Address in Surgery, at half-past 2 o'clock in the afternoon.

RESOLUTION.

That the draft new Regulations submitted to this meeting be and the same are hereby approved, and that such new Regulations be and they are hereby adopted as the Regulations of the Association. That they be adopted to the exclusion of and in substitution for all the existing Regulations of the Association, and that such last-mentioned Regulations and also all By-laws which have been made pursuant thereto, be and the same are hereby repealed and abrogated.

ARTICLES OF ASSOCIATION.

ELECTION OF MEMBERS.

1. In addition to the existing members, any qualified medical practitioner not disqualified by any regulation of the Association who shall be recommended as eligible by any three members may (subject as hereinafter mentioned) be elected a member by the Council or by any recognised Branch Council.

MEDICAL PRACTITIONERS.

2. The term qualified medical practitioner in the last preceding article includes Medical Practitioners, whether English, Scotch, or Irish, wherever residing, who are duly qualified to practise, and whose qualifications are registrable by the General Medical Council, and Foreign Medical Practitioners residing in this country who possess English degrees or diplomas, and have such degrees registered at the General Medical Council, and British subjects residing in British Colonies or other parts of the British Empire who are duly qualified medical practitioners in accordance with the Local Law.

3. No person shall be elected a member unless he has the votes of not less than three-fourths of the members present at the meeting of the Council or Branch Council at which he is proposed for election and has agreed in writing to become a member and to pay his subscription for the current year.

EXPULSION.

4. A member may be expelled from the Association by a resolution of the Council if carried by three-fourths of the members present, subject to confirmation by the next annual meeting, and he shall thereupon cease to be a member and shall not be eligible for re-election. One month's notice of the intention to propose and confirm such resolution shall be given to any member affected thereby.

5. Any member of the Association who shall have been convicted in a court of justice of any criminal offence, or whose name shall have been erased from the *Medical Register* on account of infamous conduct in any professional respect, shall *ipso facto* cease to be a member of the Association, but any such member shall be eligible for re-election in the event of his name being restored to the *Medical Register*.

SUBSCRIPTIONS.

6. Every member of the Association shall pay a subscription to the Association of one guinea per annum, but the Council shall have the power to increase or diminish the sum, provided that in no case shall the total amount to be paid by each member exceed thirty shillings. The subscription shall be considered due in advance, on the 1st of January in each year, except in the case of a member admitted on and after the 1st July in any year; and in such case the subscription of such member for the year of his admission shall be one-half the current annual subscription. Each year's subscription shall entitle a member to receive the JOURNAL of the Association for the current year.

7. Any member whose subscription shall not have been paid on or before the 31st of December of the current year shall, without prejudice to his liability to the Association, be suspended from all privileges of membership, and at the end of the succeeding year, if the arrears be still unpaid, he shall *ipso facto* cease to be a member, and shall be ineligible for readmission until he shall have paid all arrears due at the period of his suspension. No member shall (except in case of his death or expulsion, or his ceasing to be a member under the previous provisions of this Article) cease to be a member without having given previous notice in writing of his intention in that behalf on or before the 1st day of December in the current year to the secretary, hereinafter mentioned, and paid all arrears of subscriptions (if any) due from him.

HONORARY MEMBERS.

8. Honorary members without any of the liabilities of members as regards subscriptions may be elected from time to time by the Association, in general meeting, on the recommendation of the Council hereinafter mentioned. The following classes of persons shall be eligible as honorary members:

(*a*) Members of the medical profession of scientific eminence residing in the United Kingdom, in the Colonies, or in Foreign Countries.

(*b*) Persons not belonging to the medical profession, but distinguished in sanitary or physical science.

(*c*) Persons who may have rendered distinguished service to the Association, or whom the Council shall consider will confer honour on or advance the interests of the Association.

9. No honorary member shall be entitled to any vote, or any further privilege than that of attending the annual general meetings and of receiving copies (not exceeding twenty-five in number) of any memoir or communication of his own printed by the Association. Every honorary member shall cease to be such member upon a resolution to that effect passed in general meeting.

PUBLICATIONS.

10. A journal under the title of the BRITISH MEDICAL JOURNAL shall be published weekly in London by the Association, and shall be conducted by a paid Editor, who shall be responsible for all that appears in its pages, except such matters as may be printed by direction of the Council. The Journal shall contain papers on medical and the allied sciences, and on subjects of general professional interest. In it shall be inserted all notices of places and times of meetings of the Association, and any other matters which the Council may think fit to have inserted therein. Once in every year a list of the members and honorary members, and their addresses, shall be published in the Journal.

GENERAL MEETINGS.

11. General meetings shall be held once in every year at such time as shall be fixed by the Council, and at such places as may be prescribed by the Association in general meeting, and if no time is so fixed, a general meeting shall be held on the 20th day of August in every year, and shall, if no place is so prescribed, be held at such place as may be determined by the Council.

12. All such annual general meetings shall be called ordinary general meetings, and all other general meetings shall be called extraordinary general meetings.

13. The Council may whenever they think fit, and they shall upon a requisition made in writing by any 100 or more members, convene an extraordinary general meeting.

14. Any requisition made by the members shall express the object of the meeting proposed to be called, and shall be left at the registered office of the Association.

15. Upon the receipt of such requisition the Council shall

forthwith proceed to convene a general meeting, and if they do not do so within twenty-one days from the date of the requisition, any 100 members may themselves convene a meeting for the object specified in the requisition.

PROCEEDINGS AT GENERAL MEETINGS.

16. Seven days' notice at the least, specifying the place, the day, and the hour of meeting, and in case of special business the nature of such business, shall be given to the members in such manner as may be prescribed by the Council, but the non-receipt of such notice by or accidental omission to give such notice to any member shall not invalidate the proceedings at any general meeting.

17. All business discussed or transacted at a meeting, with the exception of the scientific and professional discussions and addresses, and the consideration of the annual accounts, balance sheets, and reports of the Council and the arrangements for annual meetings shall be deemed special.

18. No business shall be transacted at any meeting unless a quorum of members is present, and such quorum shall not be less than forty.

19. If within one hour from the time appointed for the meeting a quorum of members is not present, the meeting if convened upon the requisition of members shall be dissolved. In any other case it shall stand adjourned to the same day in the following week at the same time and place, and if at such adjourned meeting a quorum is not present it shall stand adjourned, *sine die*.

20. The President of the Association (to be appointed as hereinafter mentioned), or, in his absence, the President of the Council (to be appointed as hereinafter mentioned), shall preside as Chairman at every general meeting of the Association.

21. If at any meeting the President or President of the Council is not present at the time appointed for holding the same, the members present shall choose some one of their number to preside as Chairman.

22. The Chairman may, with the consent of the meeting, adjourn any business from time to time, and from place to place, but no business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting from which the adjournment took place.

23. At a general meeting, unless a poll is demanded by at least twelve members, a declaration by the Chairman that a resolution has been carried, or carried by a particular majority or lost, or not carried by a particular majority, and an entry to that effect in the book of proceedings of the Association, shall be sufficient evidence of the fact without proof of the number or proportion of the votes recorded in favour of or against any such resolution.

24 If a poll be demanded in manner aforesaid, the same shall be taken in such manner and either at once or after an interval or adjournment as the Chairman directs, and the result of such poll shall be deemed to be the resolution of the Association in general meeting. In case of an equality of votes at any general meeting the Chairman shall be entitled to a second or casting vote.

VOTES OF MEMBERS.

25. On a show of hands every member present in person shall have one vote, and upon a poll every member present in person shall have one vote. Votes must be given personally.

26. No member shall be entitled to be present or to vote on any question at any general meeting or upon a poll, or be reckoned in a quorum whilst any sum shall be due and payable from him to the Association for more than one year.

COUNCIL.

27. The Council shall consist of the President, the President-elect, the President of Council, the Vice-Presidents of the Association, and the Treasurer (who shall all be *ex-officio* members of the Council), and of members representing the Branches, who shall be elected as follows:

(*a*) Every Branch shall be entitled to elect one representative member, and every Branch consisting of more than 200 members shall be entitled to elect an additional representative member for every complete 200 members of which it shall consist.

(*b*) The election of such member or members shall be annual, and he or they shall hold office from the second day of the annual meeting of the Association next after his or their election until the second day of the next following annual meeting.

(*c*) The return of the election of the representative member or members of each Branch shall be communicated in writing to the Secretary of the Association by the President or Secretary of such Branch not less than one month prior to the annual meeting of the Association.

(*d*) No person shall be eligible as a representative member of a Branch within the limits of the United Kingdom of Great Britain and Ireland, unless at the time of his election he shall be resident within the area of the Branch nominating him as their member. No person shall be eligible as a representative member of a Colonial or Indian Branch unless at the time of his election he shall be a recognised member of the Branch, and shall have resided at some time within the area of the Branch for at least twelve months. The election of Colonial and Indian members of the Council shall be annual, and shall be subject to the same by-laws as the election of other representative members.

(*e*) In default of and until election by any Branch of a representative member or of representative members, or so far as such election shall not be complete, all the powers conferred on the Council shall belong to and be exercised by the *ex-officio* members thereof alone, or by the *ex-officio* members and such representative members of the Council as may have been duly elected by any Branch or Branches, and of whose election return shall have been duly made as before-mentioned.

28. Any casual vacancy occurring in the Council may be filled up by any Branch the representation of which may have become vacant. The return of the election of a representative member by any Branch to fill a casual vacancy shall be communicated in writing to the Secretary of the Association by the President or Secretary of such Branch. But any person so chosen shall retain his office so long only as the representative in respect of whom such casual vacancy may have occurred would have retained the same.

29. Notice shall be given forthwith to the Secretary of the Association by the Secretary or other recognised official of the Branch of a representative having ceased to belong thereto; but until such notice shall have been received by the Council no resolution or vote shall be deemed invalid by reason of a disqualified member taking part in its proceedings.

30. The Council shall annually prepare a report of the general state and proceedings, and a balance sheet and financial statement of the Association for the past year, to be presented by them at each annual meeting of the Association.

31. The Council shall meet not less than four times a year, and shall be presided over by the President of the Council, or in his absence by a Chairman to be appointed by the meeting. Its meetings shall be held at such time and place as the Council shall appoint. Seven members shall be a quorum.

32. The President of Council may, if he think right, and upon receiving a requisition signed by not less than ten members of the Council and specifying the business for which a special meeting is required shall, call together a special meeting thereof, but at such meeting no business shall be transacted other than that for which such special meeting was called.

33. The Council shall decide what business shall be submitted to each annual meeting and shall regulate the order in which such business shall be dealt with. They shall also nominate the readers of addresses at each annual meeting. They shall decide what shall constitute a Section and who shall preside over the same, and shall also arrange the division into Sections of the matters to be discussed and considered at such meeting.

34. In the event of the incapacity of any officer of the Association during his term of office the Council may appoint any member to act for him. In the event of the death or resignation of the holder of any office, the holder of which is re-

quired to be elected by the Association at annual meeting, the Council may appoint a successor till the next annual meeting.

35. The management and control of the business and affairs of the Association, including the disposition of its funds, shall be vested in the Council, who shall in addition to the powers and authorities by these presents expressly conferred upon them, exercise all such powers and do all such acts and things as may be exercised or done by the Association, and are not hereby or by statute expressly directed or required to be exercised or done by the Association in general meeting subject nevertheless to the regulations in these articles contained and to the provisions of the statutes and to any By-laws being By-laws not inconsistent with the aforesaid regulations and provisions which may be prescribed by the Association in general meeting, but no By-law made by the Association in general meeting shall (*a*) invalidate any prior act of the Council which would have been valid if such By-law had not been made, or (*b*) direct the expenditure of any of the funds of the Association.

BRANCHES.

36. For the wider diffusion of the benefits of the Association members may form themselves into separate bodies to be styled Branches.

37. The formation of Branches and the modification and division of Branches shall be subject to the decision of the Council.

38. Each Branch shall be free to govern itself as its members shall think fit, but no Branch law shall be valid which, in the opinion of the Council, may contravene any fundamental law of the Association, and accordingly all Branch laws must be submitted for approval to the Council, and shall not come into operation until approved by the Council.

39. Each Branch shall pay its own expenses other than those specially allowed by the Council, and no Branch shall be deemed for any purpose the agent of the Association, or have power to incur any obligation in its behalf.

OFFICERS.

40. There shall be the following officers of the Association—namely, a President of the Association, a President-elect, Vice-Presidents, a President of the Council, a Treasurer, an Editor of the JOURNAL, and a Secretary. The officers other than the President of Council, the Editor of the JOURNAL, and the Secretary shall respectively be designated or elected, and hold office for such period, and have and enjoy such duties, powers, and privileges as shall be determined from time to time by the Association in general meeting.

41. The President of the Council shall be elected by the Council, and hold office for such period and discharge such duties as shall be determined by the Council. The Editor of the JOURNAL and Secretary shall respectively be designated or elected, and hold office for such period and have and enjoy such duties, powers, and privileges, and receive such emoluments as shall be determined from time to time by the Council.

42. The President of the Association, the President of the Council, and the Treasurer, on the determination of their respective offices, shall be eligible for election as Vice-Presidents of the Association.

NOTICES.

43. A notice may be served by the Association upon any member either personally or by sending it through the post in a prepaid letter addressed to such member at his registered place of abode, or by publication of such notice in the JOURNAL, and forwarding a copy of the JOURNAL containing such notice to such member, prepaid and addressed as above-mentioned.

44. Any notice, if served by post, shall be deemed to have been served on the day following that on which the letter or a copy of the JOURNAL containing the same is posted, and in proving such service it shall be sufficient to prove that the letter or a copy of the JOURNAL containing the notice was properly addressed and put into the post office.

COMMITTEES.

45. Fifteen members of the Council to be elected by the Council, of whom twelve shall be representative members of Branches, shall, together with the President, the President-elect, the President of the Council, and the Treasurer (who shall be *ex-officio* members), constitute the Journal and Finance Committee. Five members shall form a quorum. The three elected members who shall have been longest in office shall retire annually, and if owing to any two or more having been in office for the same period there shall be any doubt as to which shall retire, the matter shall be decided by (1) number of attendances, and (2) ballot amongst such two or more. All elected members who have not attended at least half the meetings of the Committee during the preceding year shall also retire. Members retiring shall be ineligible for re-election for the ensuing twelve months. Members of the Council shall be annually elected by the Council to fill places for the time being vacant by retirement, death, or otherwise.

46. The Journal and Finance Committee shall examine into the general working of the Office and JOURNAL and certify the quarterly accounts prior to their being presented to the Council.

47. All other Committees shall be appointed by the Council in such manner and subject to such conditions and regulations as the Council may think fit.

48. The President and the President-elect of the Association shall be *ex-officio* members of all Committees of the Association.

WINDING UP.

49. The Association shall be wound up voluntarily whenever a special resolution as defined by the Companies Act (1862) is passed requiring the Association to be wound up voluntarily.

NUMBER OF MEMBERS.

50. The number of members of the Association is unlimited.

INTERPRETATION.

51. In these presents unless there be something in the subject or context inconsistent therewith words importing the masculine gender include the feminine gender and words importing the singular number include the plural.

FRANCIS FOWKE, *General Secretary.*
429, Strand, July 4th, 1900. British Medical Association.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association at 429, Strand (corner of Agar Street), London, on **Wednesday the 18th day of July next, at 10 o'clock in the forenoon**; not on July 11th at 2 o'clock in the afternoon as previously announced.

June 20th, 1900. FRANCIS FOWKE, *General Secretary.*

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1900.

MEETINGS of the Council will be held on July 18th and October 10th, 1900. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before the latter meeting—namely, September 27th, 1900.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can b elected by a Branch Council unless their names have bee inserted in the circular summoning the meeting at whic they seek election.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by a by-law of the Association, who shall be recommended eligible by any three members, may be elected a member the Council or by any recognised Branch Council.

FRANCIS FOWKE, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation o the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

SOUTHERN BRANCH: ISLE OF WIGHT DISTRICT.—The next meeting of this District will be held on Friday, July 20th, at the Royal Pier Hotel, Sandown, when the election of Honorary Secretary, *vice* Dr. Shirtliff, deceased, will take place It is therefore desirable that there should be a full attendance.—THOS. ALPH. BUCK, M.B., Ryde, President.

NORTH OF ENGLAND BRANCH.—The annual meeting of this Branch will be held at the Grand Hotel, Tynemouth, on Wednesday, July 25th, at 4 P.M. Members desirous of reading papers, showing cases or specimens, bringing forward any communication, or of proposing new members should communicate at once with THOMAS BEATTIE, 3, Ellison Place, Newcastle-upon-Tyne, Honorary Secretary.

OXFORD AND DISTRICT BRANCH.—The annual meeting of this Branch will be held at the Randolph Hotel, Oxford, on Friday, July 20th. There will be a luncheon at 2 P.M., price 3s. 6d. After the luncheon the following business will be transacted: Annual Report. Treasurer's Balance Sheet. Election of Officers. Discussion of Midwives Bill. Propositions, etc.—WM. COLLIER, St. Mary's Entry, Oxford, Honorary Secretary.

NORTH WALES BRANCH.—The annual meeting will be held at Denbigh on Thursday, July 12th.—W. JONES-MORRIS (Portmadoc), H. JONES-ROBERTS (Pen-y-groes), Honorary Secretaries.

BORDER COUNTIES BRANCH: SECTION FOR THE COUNTIES OF ROXBURGH, BERWICK, SELKIRK, AND PEEBLES.—This Section will meet at the Roxburgh District Asylum, Melrose, on Thursday, July 12th, at 3.45 P.M., on the kind invitation of Dr. Carlyle Johnstone, the Medical Superintendent, who will conduct the members over the wards of the new hospital and introduce a discussion on What to do with the Insane Poor Man. Dr. Johnstone has most kindly offered to provide tea after the meeting. It is hoped there will be a large turn-out of members to show their appreciation of Dr. Johnstone's kindness and hospitality.—W. HALL CALVERT (Melrose), Honorary Secretary.

MIDLAND BRANCH.

THE annual meeting of this Branch was held at the General Hospital, Nottingham, on June 28th. The PRESIDENT, Mr. Wrench, took the chair, and immediately vacated it in favour of the President-elect.

Luncheon.—The President-elect, Mr. A. R. Anderson, kindly entertained members to luncheon before the meeting.

Vote of Thanks to Retiring President.—A vote of thanks to the retiring President was moved by the new PRESIDENT, and seconded by Dr. HANDFORD.

Report of Branch Council.—It was reported that a balance of £143 14s. 1d. stood to the credit of the Branch on January 1st. Also that the following gentlemen had been elected members of the Association and Branch: John Richards, M.B., C.M. Edin. (County Asylum, Leicester); Philip Ephraim Snoad, M.R.C.S., L.R.C.P. (Aylestone Park, Leicester); William Frederick McAllister-Hewlings, M.B., C.M. (Humberstone Road, Leicester); Alfred Ernest Payne, M.B.Lond., M.R.C.S., L.R.C.P. (Melbourne Street, Leicester); Albert J. Riddett, M.R.C.S., L.R.C P. (Mere Road, Leicester); Thomas Villiers Crosby, M.B. (Osgathorpe, Loughborough); Alfred Charlton, M.B., C.M. (Linton, Nottingham). The following gentlemen were elected members of the Branch: J. G. C. Scott (Castle Donington); A. H. Finch (Market Harborough); A. E. Wilson (Boston); T. Robinson (Leicester); H. E. Davies (Lutterworth); L. Moysey (Nottingham).

Proceedings of Association Council.—Dr. HANDFORD read a statement of the proceedings of Council in 1899-1900. After referring to the work done by the Council in connection with the Midwives Bill, he proceeded: The Council is a large body holding meetings of two, three, or more hours' duration. To facilitate the progress of business it has been found necessary to draft a series of standing orders similar to those which regulate the proceedings of most public bodies. Much labour has been bestowed upon this work by the President of Council and by the Journal and Finance Committee. A much more serious and difficult matter is the proposed alteration of the Articles of Association. The necessity for this was shown by the passing of various resolutions at the annual meeting at Portsmouth by a majority of under 20 in a meeting of fewer than 50. These regulations appear to be binding upon the whole Association of upwards of 17,000 members, even though in direct opposition to the mature opinion of the Council. A critical position is thus created. The opinion of a most eminent Q.C. has been taken. He describes the position of the Association under the present articles as full of imminent and great danger, and advises alterations which are being considered. These, if approved, must be submitted to two special meetings of the Association. It is most earnestly to be hoped that every member of the Branch will fully realise the importance of keeping the control of the Association in the hands of the Branches and their elected representatives upon the Council, and of rendering it impossible for a chance vote of a few score members at an annual meeting to revolutionise the policy of the Association. Since the acquisition of a library housed in freehold premises valued at more than £80,000, the Association has gained in stability, and has much to lose. At the present rate of progress the remaining mortgage upon the premises should be paid off well within ten years. A sum of £1,000 a year is devoted to the maintenance of four research scholars, and to the payment of numerous grants in aid of scientific research. The numerous Committees of the Council meet, some of them, much more frequently than the Council, and do a very great amount of useful and necessary work. The Parliamentary Bills Committee is a large and powerful body, the importance and representative character of which is duly recognised by the Government Departments of Parliament and the General Medical Council.

Election of Officers.—The following were elected officers for 1900-1901.—*Representatives on General Council:* Dr. H. Handford,* Dr. F. M. Pope.* *Representatives on Parliamentary Bills Committee:* Dr. Carline,* Dr. Pope.* *Vice-Presidents:* Derby: Dr. MacPhail; Lincoln: Dr. Shipman (Grantham). *Branch Council:* Leicester: Dr. Davies,* Mr. Blakesley*; Lincoln: Dr. Carline,* Dr. Mounsey; Nottingham: Dr. Mutch,* Dr. Tomson*; Derby: Dr. Taylor,* Dr. Vaudrey.* *Local Honorary Secretaries:* Derby: Mr. Southern*; Nottingham: Dr. Laws*; Lincoln: Dr. Sympson.* *Local Secretary for Leicester, and Honorary Secretary and Treasurer for Branch:* Dr. Frank M. Pope.*

President's Address.—The PRESIDENT read an address dealing with operations for radical cure of hernia.

Communications.—The following cases were shown and papers read: Mr. C. J. BOND: Two cases of spina bifida, treated by excision.—Dr. G. LORIMER: Some observations on gonorrheal rheumatism.—Dr. E. MANSEL SYMPSON: A case of recto-vesical fistula in a boy of five years old, with colotomy operation.—Dr. POPE and Dr. ASTLEY CLARKE: Cases of acromegaly and myxœdema, occurring respectively in father and daughter, with remarks on the possible connection of the two diseases (cases shown).—Dr. H. HANDFORD: Three cases of cerebrospinal meningitis.—Dr. W. B. RANSOM: Notes on and specimens of a case of syringomyelia.—Dr. LAWS showed for Dr. RINGROSE a case of dislocation of cervical spine: recovery. Radiograph also shown.—Drs. RANSOM and HANDFORD showed pathological and microscopical preparations.

Dinner.—Some of the non-resident members dined together after the meeting.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

THE forty-sixth annual meeting was held at the Medical Institute on June 21st.

Introduction of New President.—The retiring PRESIDENT, Mr. Bennett May, introduced his successor, Dr. MILNER MOORE, to the chair.

New Member.—Mr. W. F. Cholmeley, of Wolverhampton, was elected a member of the Branch.

Revaccination Legislation.—The following resolution, moved by Dr. SAUNDBY, and seconded by Mr. LANGLEY BROWNE, was carried unanimously:

That the Birmingham and Midland Counties Branch of the British Medical Association calls upon the Government to redeem its promise to promote legislation in favour of revaccination and vaccination at the school age.

Election of Officers.—The following officers were elected:—*President-elect:* Dr. Malins. *Treasurer:* Mr. F. Marsh. *Representatives on the Parliamentary Bills Committee:* Dr. S. H. Agar and Mr. Barling. *Representatives in the Council of the Association:* Mr. Langley Browne, Dr. Carter, and Mr. Jordan Lloyd. *Council:* Mr. M. A. Messiter, Dr. E. N. Nason, Dr. H. Malet, Mr. Vincent Jackson, Dr. Holmes Joy, Mr. Alfred Freer, Mr. F. W. Underhill, Dr. T. E. Underhill, Dr. Foxwell, Dr. Saundby, Mr. Eales, Mr. Christopher Martin, Dr. Rickards, Mr. G. Heaton, Mr. J. W. Taylor, Mr. Haslam. *Ethical Com-*

* Held same office last year

mittee: Mr. Langley Browne, Dr. Carter, Mr. Vincent Jackson, Mr. Oakes, Mr. M. A. Messiter, Mr. Priestley Smith, Dr. T. W. Thursfield, Mr. P. Whitcombe, Mr. Haslam. *Honorary Secretaries:* Mr. J. T. J. Morrison and Dr. T. Stacey Wilson.

President's Address.—The President delivered an address on Some Forms of Neurosis, Old Age, and Medical Ethics.

WEST SOMERSET BRANCH.

The annual meeting of this Branch was held at Dulverton on June 26th under the presidency of Mr. G. F. Sydenham.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Report of Branch Council.—The report of the Branch Council was read and adopted. It showed that the numbers were now 78, an increase of 2 on last year.

Treasurer's Accounts.—The Treasurer's accounts showing a balance in hand of £5 7s. 8d. were adopted.

Election of Officers.—Dr. Winterbotham (Bridgwater) was re-elected Representative on Council and Parliamentary Bills Committee, Dr. Meade-King was re elected Honorary Secretary and Treasurer, and Dr. Brown (Taunton), Dr. Maidlow (Ilminster), Dr. Henry Bird (Bridgwater), and Mr. Rygate (Westonzoyland) were elected to the vacant places on the Council. Mr. Johnstone (Langport) was elected President for 1901-2.

Future Meetings.—It was resolved that the next annual meeting be at Langport. The intermediate meetings were left for the Council to arrange, and it was decided to have an annual dinner on the day of the autumn meeting at Taunton instead of dinners in connection with the meetings as before.

The Manchester Conference.—Dr. Macdonald read his report as delegate to the Conference on Medical Organisation at Manchester.

Royal Medical Benevolent College.—A circular from the Royal Medical Benevolent College was read.

President's Address.—The President then read an interesting address on the Vulgar Errors and Superstitions of West Somerset in their Relation to Medicine.

Vote of Thanks.—The meeting terminated with a hearty vote of thanks to the President.

Drive.—After lunch the party by invitation of the President, and accompanied by his guests, drove to The Harbourer's Cottage, Haddon Hill, where a tea was provided.

SOUTH OF IRELAND BRANCH.

The annual meeting of this Branch was held at Cork on June 30th, Brigade-Surgeon T. B. Moriarty, President, in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Communication.—A communication from the Lancashire and Cheshire Branch was read.

Royal Medical Benevolent College.—An appeal for funds from the Treasurer of the Royal Medical Benevolent College was read. It was unanimously decided that an annual subscription of £1 1s. be paid out of the Branch funds.

Election of Officers.—The following were elected officers for 1900-1901: *President:* Dr. P. J. Cremin; *President-Elect:* Dr. P. J. Macnamara (Kilmallock); *Vice-President:* Brigade-Surgeon T. B. Moriarty. *Representative on Council and Parliamentary Bills Committee:* Brigade-Surgeon T. B. Moriarty. *Council:* Drs. T. G. Atkins, R. J. Burke, J. J. Curran, Professor H. Corby, Professor W. Ashley Cummins, P. J. Macnamara, D. B. O'Flynn, A. W. Sandford, O. T. Woods, H. R. Townsend, J. Giusani. *Honorary Secretary and Treasurer:* Dr. P. G. Lee.

Insomnia.—The President read a paper on Insomnia, for which a cordial vote of thanks was accorded.

SOUTHERN BRANCH.

The twenty-seventh annual meeting was held on June 28th at Wilton, A. B. Wade, M.B. (Southampton), presiding. There were present Dr. J. Ward Cousins, President of the Association, and about 40 other members.

Election of Officers.—The result of the ballot for officers for the ensuing year was declared as follows:—*President:* C. R. Straton. *President-Elect:* C. Knott. *Vice-Presidents:* J. P. Williams-Freeman, M.D., G. Fuller England, M.D. *Members of Council:* C. C. Claremont, M.D. (Southsea), L. S. Luckham (Salisbury), Surgeon-General Cuffe, C.B. (Southsea), Norman Aldridge, M.B. (Southampton), R. Robertson, M.D. (Ventnor), D. Brown (Winchester). *Representative on the Parliamentary Bills Committee:* C. R. Straton (Wilton). *Representatives on the Council of the Association:* J. Groves, M.D., W. M. Harman, M.D. *Honorary Secretary and Treasurer:* H. J. Manning.

Treasurer's Statement.—The Treasurer presented a statement of accounts, showing balance in hand £64 19s. 7d.

Royal Medical Benevolent College.—It was resolved that a donation of 5 guineas be sent to the Royal Medical Benevolent College, Epsom.

National Conference on Tuberculosis.—It was resolved that a sum not exceeding £10 (the amount to be at the discretion of the President and the Treasurer) be contributed to the expenses of the proposed National Conference on Tuberculosis, to be held in the spring of 1901.

Annual Meeting of Branch.—It was resolved that the annual Branch meeting for 1901 be held at Portsmouth, under the presidency of Mr. C. Knott.

Communications.—Mr. Harcourt Coates related (1) a case of encapsuled ovarian cyst, operation; (2) a case of double ovarian cyst, operation.—Mr. Luckham showed a specimen of sarcoma of the kidney successfully removed from a child 11 months old.

President's Address.—Dr. Wade resigned the chair to Dr. Straton, who delivered an address on the ethics of professional secrecy.

Vote of Thanks.—On the motion of Dr. Watson, seconded by Inspector-General Turnbull, R.N., a hearty vote of thanks was accorded to Dr. Straton for his excellent address, and a general wish was expressed that it might appear in print.

Entertainments.—The members were hospitably entertained at luncheon by Dr. Straton before the meeting, and at tea in his garden after the meeting. During the afternoon Wilton House and picture galleries and Wilton Church were visited.

BORDER COUNTIES BRANCH.

The annual meeting of this Branch was held at Carlisle on June 29th, Dr. J. R. Hamilton (Hawick) President, in the chair. Twenty-eight members were present.

Confirmation of Minutes.—The minutes of the last meeting were read, approved, and signed by the President.

New Members.—Robert Selby, M.B., C.M. (Port William) was elected a member of the Association and of the Branch; Donald M. M. Ross, M.B., C.M. (Cockermouth), and Percy J. Henderson, M.B., C.M. (Galashiels), already members of the Association, were elected members of the Branch.

Deceased Members.—Resolutions expressing sympathy with the relatives of the late Dr. Thomas (Selkirk), the late Dr. Jackson (Whitehaven), and the late Dr. Mortlock (Heshet-Newmarket) were passed unanimously, and the Secretary was instructed to convey the same to the relatives of the deceased.

Report of Council.—The report of the Council was read and approved.

Donations.—It was decided to give a donation of 10 guineas to the Royal Medical Benevolent College, and a donation of 5 guineas to the British Medical Benevolent Fund.

Attendances at Council Meetings.—The attendances of members of Council at Council meetings held during the preceding year were announced, namely: Total number of meetings, 6; J. K. Hamilton, 5; J. Highet, 1; H. Barnes, 2; J. E. Bowser, 3; W. L. Cullen, 0; J. B. Fisher, 2; J. Haddon, 1; R. D Helm, 2; J. Macdonald, 2; J. M. Ross, 2; G. Wade, 0; R. Maclaren, 2; R. Somerville, 1; W. F. Farquharson, 6.

Election of Officers.—The following were elected office-bearers for the ensuing year: *President-elect:* W. Blair (Jedburgh). *Council:* J. S. Bell (Locherbie), J. E. Bowser (Penrith), F. H. Clarke (Dumfries), J. B. Fisher (Whitehaven), C. W. Graham (Carlisle), R. D. Helm (Carlisle), J. Carlyle Johnstone (Melrose), J. Macdonald (Carlisle), G. G. Bannerman (Hawick). *Representatives on Council of Association:* R. Maclaren (Carlisle), R. Somerville (Galashiels). *Representative on Parliamentary Bills Committee:* R. Somerville (Galashiels). *Auditors.*—J. B. Bird (Carlisle), G. Murphy (Car-

lisle). *Honorary Secretary and Treasurer:* W. F. Farquharson, (Garlands, Carlisle).

Expenses of Branch Section.—On the motion of the PRESIDENT, it was unanimously resolved that the expenses of the Section of the Branch for the past year be paid out of the Branch funds as usual.

Introduction of New President.—Dr. HAMILTON thanked the members of the Branch for the courtesy he had received during his year of office, and vacated the chair in favour of Dr. J. Highet. The new PRESIDENT proposed a vote of thanks to Dr. Hamilton for his services during the past year, and moved that he be elected a Vice-President of the Branch for life. This was carried unanimously.

President's Address.—Dr. HIGHET then delivered his Presidential address on the Necessity for a State Department of Public Health. He advocated the appointment of a State Minister of Public Health, and a State Board with a special department to deal with the whole sanitary administration of the country, the appointments to be regulated by the same; every county to have a medical officer of health, the same to be superintendent-registrar, and to have the conduct in criminal cases of *post-mortem* examinations; admission into the public health service to be by examination conducted by the Central Board on the principle of supply and demand, initial salary not less than £250 a year, with prospect of promotion. The two most important sanitary questions of the day—the prevention of consumption and better housing of the poorer working classes—were both intimately connected. There was little chance of medical officers of health as at present appointed being able to deal with this latter question, they being more likely to burn their fingers. Objections to the above were: (1) The probable expense; this should not be considered when one reflected how many millions were voted to the destruction of human life; and (2) the transference of spending powers to a central authority likely to be resented by local authorities. With regard to this latter, Dr. Highet declared himself in favour of a wise despotism.

Vote of Thanks.—On the motion of Dr. MAXWELL ROSS, seconded by Dr. BARNES, a hearty vote of thanks was accorded to the President for his address, and a request made that he should print it and circulate it amongst the members of the Branch.

Communications.—Dr. OGILVY-RAMSAY read (for Dr. GRAHAM) notes of a case of operation for a large renal calculus.—Dr. MACLAREN (Carlisle) read a paper on the treatment of superficial syphilitic gummata, in which he advocated the excision of gummata after medicinal treatment had failed. The PRESIDENT, and Drs. PALM, CRERAR, and BIRD, discussed the paper, and Dr. MACLAREN replied.—Dr. OGILVY-RAMSAY read notes of some interesting cases, chiefly obstetrical; and Dr. J. W. CRERAR (Maryport) read notes on two cases of extra-uterine gestation, and showed specimens. Time did not permit of discussion on the last two papers.

NEW SOUTH WALES BRANCH.

THE regular monthly meeting of the Branch was held at Sydney on April 27th, 1900, Dr. COUTIE, President, in the chair. There were about 150 members present, besides several visitors.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Member.—The PRESIDENT announced the election of Dr. James Reiach.

Communications.—Dr. TIDSWELL read a paper on Plague and its Dissemination, illustrated by maps, museum specimens, lantern slides, and microscopical preparations.—Dr. JAMIESON read notes on the record of *post-mortem* examinations of cases dying of the plague.—The PRESIDENT moved a hearty vote of thanks to Drs. Tidswell and Jamieson, which was carried by acclamation.

A SPECIAL general meeting was held in the Royal Society's Room on May 11th, Dr. W. H. COUTIE, President, in the chair. There were 37 members present.

Quarantining of Contacts.—Dr. WEST moved:

That the quarantining of contacts is in many cases unnecessary, and that in dealing with the matter discretionary powers be vested in the Board of Health.

Dr. CHISHOLM seconded the resolution, which was carried. The resolution was discussed by Drs. SPENCER, W. E. WARREN, CORLETTE, WILKINSON, HANKINS, and Dr. WEST replied. Dr. WEST moved the following resolution:

That a deputation be appointed to wait upon the Hon. the Premier to lay before him the views of the Branch, consisting of the following gentlemen: Drs. Coutie, Foreman, Crago, Hankins, Thring, Abbott, Clark, Brady, Blackwood, Rennie, Knaggs, Jamieson, Neill, Worrall, Sydney Jones, Graham, Angel Money, Murray Oram, Fairfax Ross, Jarvie Hood, Faithfull, Gwynne Hughes, Pain, McClelland, F. W. Hall, Sawkins, Gledden, Wilkinson, Taylor Young, and the mover, with power to add to their number.

Seconded by Dr. WILKINSON, and carried.

SPECIAL CORRESPONDENCE.

PARIS.

The International Exhibition.—The Section of Medicine and Surgery.—The Finsen Light Institute of Copenhagen.

CLASS 16, Medicine and Surgery, forms one of the subsections of Group III in the arrangement of exhibits, and under this general heading of "Instruments and General Methods of Letters, Science, and Arts" we have also included topography, photography, books and bindings, maps, instruments of music and instruments of precision, such as balances, microscopes, etc. After passing under the Eiffel Tower these classes are all to be found in the Champ de Mars, near the entrance to the right-hand range of buildings leading away from the river to the Salle des Fêtes.

The French exhibits in the medical and surgical class, numbering 121, are all to be found in the gallery at the head of the stairway, and include medical, surgical, and dental instruments, gum elastic and rubber catheters and bougies, trusses, elastic stockings, invalid chairs, beds, and tables, etc. The manufacture of gum elastic catheters and bougies is almost entirely done by women, the primary ingredients used being linseed oil, Parisian fatty varnish, and unalterable rubber. A good sound which will resist sterilisation very well has to be made with great care, and the process takes fifteen days. The annual production in France is valued at £64,000.

Among the foreign nations Germany and the United States are the largest exhibitors, the latter especially in dental surgery. The English exhibitors are eleven in number: Ross and Watson exhibit microscopes; Negretti and Zambra clinical instruments; the Cambridge Scientific Instrument Company instruments for physiological research, including a microtome and an oncometer. Swedish exhibits include various electrical vibratory apparatus for massage.

In the Danish Section, which may be found on the first floor in the right hand gallery, is the interesting exhibit of the Finsen Light Institute of Copenhagen. This institute, which was founded in 1896, receives a subsidy from the State and also from the city of Copenhagen. Three methods are represented in this exhibit.

1. The central section shows a room arranged with the apparatus used in the treatment of lupus by the direct concentrated application of the chemical rays in light. These chemical rays have a strong bactericidal property, they produce a localised inflammatory action and hyperæmia in the human subject, and can penetrate the skin and living tissues. An iron tripod supports the voltaic arc lamps of 60 to 80 ampères. The light is concentrated by means of divergent brass cylindrical tubes, four in number, provided with a system of lenses in rock crystal, which allows more of the ultra-violet rays to pass than would glass lenses. Between the lenses is a layer of distilled water to absorb the heat rays, and thus avoid any burning of the skin. Each of these four tubes is thus directed to a bed on which a patient reclines during treatment, a large brass funnel-shaped arrangement below the lamps preventing any sparks falling on the patients. To increase the effects of the chemical rays, the part to be treated is compressed by a small apparatus composed of two pieces of rock crystal, between which distilled water flows continuously, the object being to cool the skin and avoid pain from such a concentrated light; when the tissues are compressed and anæmic the light penetrates much more deeply.

When direct sunlight is obtainable, hollow glass lenses are used, filled with a weak ammoniacal solution of sulphate of copper—copper sulphate 10 grams, distilled water, ammonia solution aa 500 grams—to absorb the heat rays. Glass lenses can be used in this case, as sunlight contains relatively more ultra-violet rays than does electric light. On the walls of this room are exhibited photographs showing the above two methods, by arc light and sunlight, in course of application, also numerous photographs of patients before and after treatment. One may also see the thermostat of Dr. Bang, which is an incubator with incandescent lamps for the culture of microbes, the temperature being regulated by electricity.

2. The right-hand portion of the exhibit shows the method of treating patients with anæmia or during convalescence by means of light baths, either of solar or electric light, as experiments tend to prove that the light has a favourable influence on the regeneration of blood. Three cubicles are here shown, each with an inclined couch on which the patient lies nude. In the Finsen Institute 20 such radiating cubicles form one circular room, in the centre of which hang two voltaic arc lamps, each of 100 ampères, throwing the light into the different cubicles. The above two methods are based on the direct application of chemical light rays as a therapeutic measure.

3. The third left-hand section of the exhibit, on the contrary, is based on the total exclusion of all chemical rays. A "red room" is here arranged with two beds for the treatment of small-pox, the window panes being of red glass, and red curtains hang over the entrance, thus cutting off all the chemical light rays. This method is founded on Finsen's observations that the suppuration of the vesicles is due to inflammation caused by the chemical rays. Thus, if a patient at the commencement of the disease is placed in red light, the vesicles do not suppurate, and will quickly dry up without leaving a scar. Fever is only very slight; there are no complications, the disease nearly always terminating quickly and easily.

BERLIN.

An Institute for Medical Diagnostics.—Inhuman Experiments.

A NEW medical institute—an Institute for Medical Diagnostics—has just been opened in Berlin. Professor Posner, who has taken a prominent part in its establishment, and is a member of the medical staff, in his inaugural address, which was delivered to an audience composed of the *élite* of the Berlin medical profession, said that the well-known Blumenthal Institute in Moscow had served as a model for the new institute. Its object would be to place at the disposal of doctors the aids to diagnosis required in many forms of disease. Methods of examination were growing more subtle and more specialised every day, so that men in full practice could not find time for complicated manipulations, such as Roentgen-ray examinations, bacteriological, chemical and microscopic examinations, quite apart from the fact that the necessary apparatus was a serious expense. The new institute was designed to meet this difficulty in two ways; they would either place at the disposal of doctors their laboratories, instruments, and apparatus, or they would undertake to carry out the required researches and examinations by their own staff of scientific workers. Professor Kolle would superintend the bacteriological department; Dr. Zülzer, the chemical microscopical department; Professor Hansemann, the pathological-anatomical department; whilst the physiological department with Roentgen-ray room would be under the direction of Dr. Cowl. To Professor Eulenburg, Professor Klemperer, and the speaker himself (Professor Posner) would be entrusted the chief guidance of the institute.

Gross abuses in any profession should not be hushed up, but should rather be made public as freely as possible, so as to rouse public opinion against them and thus render their repetition or spread impossible. And therefore we have reason to thank the Social-Democrat newspaper *Vorwärts* for dragging into light the "experiments" made by Dr. Stubell (first assistant in Professor Stinzing's clinic at Jena) on patients suffering from diabetes insipidus, and published by him in the *Archiv für klinische Medizin*. Dr. Stubell there relates how he kept one of his patients in an attic with barred windows, the door of which he locked, putting the key in his pocket; how the patient, who was allowed only a very small amount of liquid, in the torturing thirst which is a symptom of the disease, drank his washing water, so that he was then no longer allowed to wash himself; how one night, in his agony, he drank about 1,400 c.cm. of his own urine; how another night he wrenched off one of his window bars, climbed over the roof to another small window, through which he crept, thus finding his way to a water-tap, where he was captured and brought back to his prison. Dr. Stubell calmly states that his patient must have "endured frightful tortures" one night, and gives the following account of his condition in the morning: "The patient was quite collapsed, his face seemed dried up, eyes and cheeks deeply sunken, pulse almost imperceptible, a great deal of pain, the joints stiff." The whole medical profession must reprobate cruelties such as these perpetrated in the name of science.

BRISTOL.

Fête in Aid of the Eye Hospital.

THE *fête* held in the Zoological Gardens in aid of the funds of the Eye Hospital suffered somewhat from the inclement weather of the last day, but there will be a considerable sum—at present stated to be about £800—to be handed over when the bills are all settled. Though to some extent worked on the same lines as the one held last year for the nursing home of the Royal Infirmary, several new features were introduced, all of which found favour with the public, who seem to have an inexhaustible supply of spare cash to spend at these entertainments. The *fête* was largely advertised as "Cyclopia," a word which caused a certain amount of wonderment as to its exact meaning and application, many thinking it was a new word for a cycle gymkana with a hidden reference to the Eye Hospital and spectacular display. Certainly the dancing by the little children, as well as their acting of a dramatised version of *Alice in Wonderland*, were exceedingly pretty and attractive, though unfortunately they had to be performed under very adverse circumstances on Saturday, when heavy showers caused several postponements. Wonderful accounts are heard of the amount of money taken at the roundabout and several of the stalls, all sorts and conditions of men and women gladly sacrificing themselves to vertigo, no doubt feeling that it was for charity's sake. The Committee is to be congratulated on the very successful and varied show provided, and from the way the public generally not only flocked to the gardens, but stayed there for hours, even when the grass was little better than trampled mud, it may be concluded that the "Cyclopia" was appreciated.

CORRESPONDENCE.

THE PROPOSED MEETING OF THE INTERNATIONAL CONGRESS OF OBSTETRICS AND GYNÆCOLOGY IN LONDON IN 1902.

SIR,—It is a fair question for discussion whether international medical congresses are of any real service to medical science, but most of us will agree that they may be made pleasant and interesting. They may be even advantageous to individuals in enabling them to form controlling personal impressions of men whose published contributions to special medical literature they have been accustomed to read, and so to assess the value of their work. Assuming that these congresses are worth the trouble of organising, we shall be unanimous in professing to believe that they are the last class of medical assembly in the arrangements of which mere local dislikes and jealousies should come into play, or where places of honour, rightfully bestowed in recognition of distinction upon those most honoured by their countrymen who know them best, should by misadventure or mismanagement be conferred upon mere pushfulness and self-seeking.

These reflections, and many others of a like nature, arise from the painful reading which you provided by the publication in May this year of the letters of the teachers of obstetrics and gynæcology in London, and of the chief official representatives of the British Gynæcological Society, anent the pro-

posed International Congress of Obstetrics and Gynæcology to be held in London in 1902. But to all who take an interest in the progress of gynæcological science in England, and are desirous of seeing British gynæcology held in honour by the medical profession throughout the United Kingdom, the feeling of pain and regret produced by the quarrel must be greatly deepened by a perusal of a "*précis* of proceedings relating to the proposed meeting of the International Congress, etc.," published in the last number of the *British Gynæcological Journal*. It is a summary of the proceedings of the British Gynæcological Society which culminated in the present unhappy position.

Many men who are provincial specialists, or who specialise to the extent of being interested, are asking whether something cannot be done to relieve the tension and remove the deadlock between the two great societies in London, the persistence of which will entail a disastrous fiasco and a discredit to British gynæcologists in general if the present project to hold an International Congress is not abandoned.

In intervening in the dispute and asking you to permit me to put certain considerations before your readers as a contribution towards the happy solution of existing difficulties, I am not unmindful of the possible consequences to the candid friend. But after much cogitation I have reached the conclusion that certain circumstances call upon me to say something on the subject, and I respond to the call in the hope that some others, placed like myself outside the circles where personal considerations may unconsciously exercise a biassing influence, may be encouraged to come forward and lend the assistance of their opinions and advice. I have reason to believe that at the present time I am a member of Council both of the Obstetrical Society of London and of the British Gynæcological Society; I am also on the Council of the North of England Obstetrical and Gynæcological Society. These three societies between them cover the whole of England, and to some extent overlap. Some provincial specialists are members of one or other of the London societies; many of my friends are, like myself, members of all three. I attended the International Congress at Geneva in 1896, and that at Amsterdam in August last. There were many opportunities of learning foreign and American opinion, and seeing ourselves as others see us. And these opportunities in my case were still further increased by renewing acquaintance with many American representative men at the Congress of American Obstetricians and Gynæcologists at Indianapolis last September, and hearing their frank but friendly criticism of the British *Fachgenossen*. Now, in the light of my own personal knowledge of American opinion, and remembering the importance of the American element in every international meeting, I am amazed at the want of consideration given by the Council of the British Gynæcological Society to the repeated spoken and written statements of Dr. Engelmann, President of the American Gynæcological Society, to the effect that "the invitation could be accepted only, and the Congress could be a success only, if the two great societies of Great Britain are united in their desire to see the Congress in their midst."

What, then, is the present situation? After this clear expression of opinion from the chief official representative of America; after the refusal of the Obstetrical Society to issue a joint invitation to the Congress; after the letter of the past and present lecturers and teachers of obstetrics and gynæcology in the London medical schools, unanimously declining to promote or join the Congress; and even after the withdrawal of Professor Simpson from the position of President-elect, on the ground that the Organisation Committee of the British Gynæcological Society was not sufficiently representative of metropolitan gynæcology, the Council of the British Gynæcological Society still persevere in their unfortunate course. They have assured the permanent Secretary of the Congress (Dr. Jacobs, of Brussels) "that the Organisation Committee are anxious to do all they can to make the 1902 Congress a success, and will continue energetically with the work they have commenced." Then they proceed to place themselves "at the disposal of the Founders," and to give these foreign gentlemen the opportunity of reconsidering their acceptance of the invitation. Now, with all respect to my friends of the British Gynæcological Society, I maintain that they thereby place themselves in an undignified, not to say ridiculous position, and if they are as representative as they allege, they drag British gynæcology with them. They reject the advice of friendly America, whose much-travelled representative men know us and understand us as we do one another, and they humiliate themselves before an unorganised committee of foreigners who are notoriously and incurably ignorant of the personality and relative standing of British gynæcologists, and are separated from us by the gulf of alien ethical standards.

Furthermore, there is a dilemma. If the invitation is still accepted the Congress is bound to be a failure, perhaps as marked as that of Amsterdam, which was shunned by all Germans of distinction. On the other hand, if the invitation is not accepted after all, then the Committee of the British Gynæcological Society bring upon themselves a snubbing which the consciousness of their singularly representative position must make all the more grievous and hard to bear.

In my humble opinion the Organisation Committee were in duty bound to make a stand, and in the exercise of their own judgment to come to a decision in this matter regardless of foreign influence. It is eminently a question for British gynæcologists, and for them alone. If the actions of the Organisation Committee originate in disinterested public spirit (and how can it be otherwise?) they must seek to co-operate in bringing about a congress, successful from both the scientific and social points of view, and they must desire to see in places of distinction on that occasion the colleagues whom we in England honour because of their character and work achieved. If this be so, then the Committee is bound to respond to unmistakable expressions of opinion which are of weight beyond cavil, to hold all proceedings so far as quashed, to withdraw their invitation, and to join in a movement *de novo* towards the end in view.

The relations between the Obstetrical Society of London and the British Gynæcological Society are pretty well known and appreciated by provincial specialists, both in their origin and incidents. But these relations, though largely responsible for the present situation, form too large and general a subject for discussion now. There have been, in the opinion of provincials, grievous faults on both sides. The refusal of the Obstetrical Society to co-operate with the British Gynæcological Society was perhaps too curt and unqualified, and is to be regretted. But those who know the history of the relations between the two Societies must feel that, until men have developed a saintly meekness almost incompatible with vigorous action, no other result was to be expected. The Obstetrical Society has never received much encouragement to take part in the proceedings of the International Congress. Members of an inner circle of the British Gynæcological have been too frequently nominated as the best that England could produce, to introduce or take prominent places in the official discussions, and these have too seldom been men who would have been selected as representatives by any conceivable parliament of British gynæcologists.

I remember well the presentation of the invitation from Great Britain to the Congress at Geneva. The deputation consisted essentially of two official members of the British Gynæcological Society who were notoriously antagonistic to the Obstetrical Society. And it should be remembered that the invitation presented at Amsterdam was merely a renewal of that given at Geneva. Dr. Macnaughton Jones and his colleagues appear to think that they play a trump card when they call attention to the fact that the invitation was presented at Amsterdam by Dr. Robert Barnes. Still, men have an awkward way of looking at the true inwardness of things, and not at mere formulæ; and the result of that honest examination of the situation was the remonstrances from America, and by no means cryptic hints from many other quarters as to the need for a working arrangement with the Obstetrical Society. These hints were ignored until it was discovered that arrangements which could be made apparently to succeed at meetings in foreign capitals would not suit a congress held in London. Hence, obviously, the too-belated proposal of co-operation made to the Obstetrical Society.

In some journals which have been sent to me I regret to read injurious references to the action of the lecturers and teachers of obstetrics and gynæcology of the London Medical Schools. Epithets are not arguments which tend to conciliation. The unanimity of these teachers, and their dignified

expression of refusal to take part in a congress for which important arrangements had been already made, is an impressive fact which should form food for reflection, not a subject for reviling and sarcastic levities.

The question still remains—Can anything yet be done to put British gynæcology in its proper place in the opinion of the specialists of Europe and America, and to bring about some time the holding of a creditably successful international congress in England? As a provincial specialist, knowing the opinions of many men similarly situated, who, like myself, are not conscious of envy or jealousy even towards London colleagues, I would submit that the time has long gone by when London societies could justly arrogate to themselves the right to speak for British gynæcology. Any truly representative body must have a wider basis. To be practical, I would suggest something like the following if the game be generally thought worth the candle. Let the honorary secretaries of all the existing societies of obstetrics and gynæcology in the United Kingdom of Great Britain and Ireland form a Convening Committee to start with. It should be the function of this Committee to form a Grand Committee of the members of these societies. Each of the societies could send a sufficient number of delegates to a meeting in London or elsewhere, as might be agreed, to elect an Executive Committee or to form an Executive Committee to deal with the question of an international congress and other matters. If from this movement a great comprehensive society, on the model of the German Gynæcological Society, were to take shape and development, so much the better.

It would be premature to suggest further details. If among the specialists in obstetrics and gynæcology of the United Kingdom there is sufficient goodwill, the way will be found.—I am, etc.,

Manchester, June 30th. W. J. Sinclair.

THE MIDWIVES BILL.

Sir,—With reference to the letter of the President of the General Medical Council which appears in the British Medical Journal of June 30th, permit me to inform your readers that the promoters of the Midwives Bill declined to place upon the order paper the amendment to which he calls your attention, or any other amendment which might lay them open to a charge of breach of faith with the General Medical Council.—I am, etc.,

July 2nd. F. R. Humphreys,
Honorary Secretary, Midwives Bill Committee.

THE MIDWIVES BILL AND SOME OF ITS OPPONENTS.

Sir,—Now that the Midwives' Registration Bill of 1900 has, we may hope, received its quietus, a breathing time is afforded to its opponents, in which they may with advantage consider their ways and discuss their future tactics. It is at this point that I would ask to put in a word of warning.

Some time ago you referred in the columns of the British Medical Journal to a "Memorial by (*sic*) Constituents" and other papers, issued by the Joint Committee to oppose Midwives' Registration. Since then I have been favoured with copies of them and I am convinced that you cannot have perused them, or you would have been constrained, like me, to some word of protest. I was appalled to learn that already 1,500 sets had been distributed to persons selected, presumably, for their standing and influence in society. My reason for this dismay is that, whether it be inaccuracy in fact and thought, muddling of terms and slipshod looseness of expression, errors of orthography and of punctuation, carelessness in proof-reading, tactlessness of methods, or unwisdom of proposals, these documents are teeming with them from end to end. If the Committee had used their own brains, they could surely among them have hammered out something verifiable in its facts, feasible in its projects and decent in its English. A more discreditable bundle of papers, issued for public use and scrutiny, it has not been my lot to meet. Sent out, as they are, in the name of a body of educated gentlemen, belonging to what is commonly regarded as one of the learned professions, they are nothing short of scandalous; and I, as a member of the same profession and jealous of its reputation, protest against our being made a laughing-stock for the flouts and sneers of the Atherley Joneses by a number of men, some of whom must have been able to save us this disgrace, if they had personally applied themselves to the task for which they had volunteered to make themselves responsible. If anything could have come as a godsend to the midwives, I should say it was the preposterous assertions and claims of this Committee, who have justified to the uttermost the damning contention that the whole medical opposition to the Midwives Bill is nothing but the organised selfishness—more or less dissembled—of a lot of greedy, jealous monopolists. Some of us had hoped from the Committee for a sane, dignified and disinterested resistance to the measure, which would not content itself with an attitude of blank negation and with destructive criticism only, but would offer to our puzzled legislators some valid constructive alternative for a Bill which, though a hollow and mischievous fraud, nevertheless gains a hearing and threatens eventually to become a law, just because it purports to meet a clamant social evil, too real and terrible to be any longer ignored. In view of these melancholy productions, we can but cry "Save us from our friends! They gave the cause into the hands of the enemy"—and thank our stars for this temporary escape and respite.—I am, etc.,

Vauxhall Bridge Road, S.W., June 29th. Thos. M. Watt.

CONTRACT MEDICAL PRACTICE.

Sir,—I am very sorry to see in the British Medical Journal of June 23rd, p. 1541, the spirit of miserable contention manifest in the article which deals with the subject of the friendly societies and medical aid. Every possible mistake and misstatement of any of their officials is held up to professional scorn and all errors on our side condoned. While it is ridiculous to suppose that Parliament will interfere to compel medical men to give their professional time and attention for a fixed sum, it is surely equally preposterous to expect that it will ever sanction any ruling of the General Medical Council which would indirectly deprive those societies of the right to supply any doctor on any terms they may offer, and which the aspirant for the situation shall never be at perfect liberty to accept or refuse as he may think best.

Again, it is surely a mistake to speak as if the medical profession is at all likely to combine to lay down unconditional terms of payment for club patients, or even to start provident dispensaries of their own constituting all over the land. The logical course to follow is to refuse all contract work for medical service, and only to accept club practice on the lines of the National Aid Friendly Society which pays item by item for the work actually performed. But surely the times are not yet ripe for such a proceeding, and, when a direct attack is hopeless, is it not in the highest degree fatuous to refuse to try to arrive at that happy conclusion by a different way, even if that be roundabout and tedious?

It is easy to make a bugbear of the project of a Conciliation Board. Let such a Board be selected on a properly representative basis, and with power merely to act as the intermediary between the disputants, and where is the risk of any possible mischief resulting to the profession?

Speaking from knowledge of the men who are likely to be chosen to act for the friendly societies, I repeat what has been so often and so much better said, that the medical members of such a Board when constituted will meet with gentlemen of the greatest good sense, of the highest business training, and withal possessed with the warmest feelings of regard and respect for our profession.—I am, etc.,

Dingwall, June 25th. William Bruce, M.D.

THE SOUTH WALES AND MONMOUTHSHIRE BRANCH.

Sir,—At a largely attended meeting of the South Wales and Monmouthshire Branch it was resolved that some recognition of the services rendered to the Branch by Dr. D. Arthur Davies should be made. As the British Medical Journal is the best medium of making this fact known I will ask you to allow me to say that subscriptions (limited to 10s.) will be gladly received by the Treasurer, Dr. Garrod Thomas, Newport, Mon., only.—I am, etc.,

Cardiff, July 3rd. T. Garrett Horder.

OBITUARY.

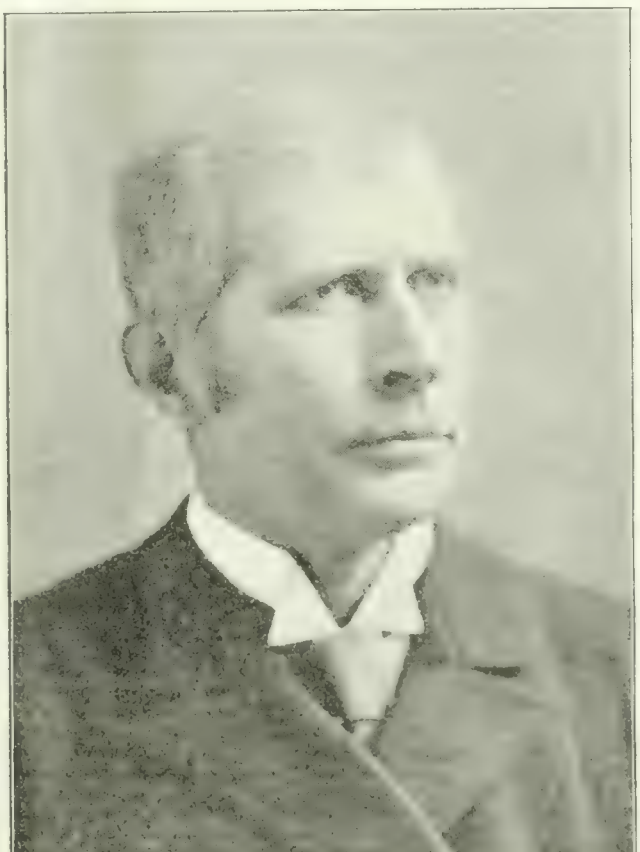
DANIEL JOHN LEECH, M.D., D.Sc., F.R.C.P.,

Professor of Materia Medica and Therapeutics in the Owens College; Consulting Physician to the Manchester Royal Infirmary.

By the premature death of Professor Leech at the age of 60 years the medical profession in Manchester loses one of its most distinguished leaders, and the city has to mourn a citizen who for many years has been closely identified with all public movements towards promoting healthy conditions of life, the spread of education, and the advance of social progress.

For three months he has been laid aside by the painful disease which eventually proved fatal, and during his illness he has borne his sufferings with a bravery and cheerful fortitude which at times almost deceived his attendants.

His last public appearance was on March 30th, when as Pro-Vice-Chancellor of the Victoria University he conferred the degree of M.B. upon the successful candidates at the March examinations. Since that date he has been almost entirely confined to bed, and gradually increasing weakness brought a peaceful end on July 2nd.



Daniel John Leech was the second son of the late Mr. Thomas Leech, and the younger brother of Sir Bosdin Leech, who is an ex-Mayor of Manchester. He was born at Urmston, near Manchester in January, 1840, and in 1854 he became a student of the Owens College, then recently founded, and situated in Quay Street. In 1856 he became a pupil of the late Mr. Richmond, then in practice in Manchester, and in October, 1857, he entered the Manchester Royal School of Medicine; in 1861, after a distinguished career as a student, he obtained the qualifications of M.R.C.S. Eng. and L.S.A. It is a proof of his great ability and of that capacity for hard work which distinguished him throughout life that in 1860 he passed the London Matriculation Examination in the first division, though at that time in the midst of his work for the Final Professional Examinations and performing his daily routine as assistant in a large general practice.

After becoming qualified Dr. Leech spent several months studying in Paris, and on his return was in 1862 appointed Demonstrator of Anatomy in the Manchester Medical School, a post which he held for two years. In 1864, after a further period of clinical study at St. Mary's Hospital in London he entered into partnership with Mr. Richmond, shortly afterwards succeeded him, and for some years remained in general practice.

In 1868 he took the degree of M.B. in the London University with first-class honours in obstetrics, and in 1870 he was appointed Honorary Physician to the Hulme Dispensary, then newly founded, and which his energy and ability did much to establish upon a firm basis. In 1873 he was appointed Honorary Assistant Physician to the Manchester Royal Infirmary and threw himself into clinical teaching with his accustomed ardour and thoroughness. In 1875 he was admitted a member of the Royal College of Physicians of London, and was elected a Fellow in 1882. In 1876 he took the degree of M.D. of the London University. In 1878 on the death of Dr. Eason Wilkinson he became Physician to the Manchester Royal Infirmary, and held the appointment for twenty-one years until July, 1899, when he resigned and was appointed Consulting Physician.

Dr. Leech took an active part in the establishment of the Manchester and Salford Hospital for Skin Diseases in 1885, and in the foundation of the Cancer Hospital in 1892. He was Honorary Consulting Physician to the former, and Honorary Physician to the latter, and never ceased to take a keen interest in the growth and development of both institutions. He was also Consulting Physician to the Deaf and Dumb Institute in Old Trafford.

In 1876 he was offered and accepted the co-Lectureship of Materia Medica and Therapeutics in the Owens College. On the death of Mr. Somers he became sole lecturer, and in 1881 he was appointed Professor of Materia Medica and Therapeutics. At the time of his appointment the Owens College possessed no materia medica museum; Dr. Leech threw himself into the work of his department with the greatest energy, and at no small cost to himself. He has formed one of the finest museums of materia medica in this country, has organised a department for experimental pharmacology, a pharmaceutical department in which instruction is given to medical students in dispensing and practical pharmacy, and also a pharmaceutical school for the education of pharmacists. He made himself master of his own subject, and kept himself constantly up to date. His lectures on pharmacology and therapeutics, while being thoroughly scientific, nevertheless bore the stamp of his eminently practical mind and wide experience of the needs of actual practice.

Great as were Dr. Leech's services in his own department, his services to the Owens College were equally great in a wider sphere. Successively a member of the Senate, the Council, and the Court of Governors, he took a deep interest in the development of all departments of the College, and bore a leading part in the organisation of the Medical Faculty of the Victoria University. Since the charter was obtained, and the University established, he has given his best work on its behalf. For many years a member of the Council and the Court, a Chairman of Convocation, Pro-Vice-Chancellor, and the representative of the University upon the General Medical Council, he has had an influential voice in shaping the policy of the growing University, and instituting a high standard for its degrees. In recognition of his services he received in 1895 the degree of D.Sc. of the Victoria University *honoris causâ*.

During his term of office on the General Medical Council, the revision of the *British Pharmacopœia* afforded him an opportunity of utilising his special knowledge as a member of the Pharmacopœia Committee, and the value of his work

was recognised by his colleagues in his appointment to the chairmanship of that Committee.

In the work of medical societies Dr. Leech took an active part, and especially in the work of the British Medical Association and the Lancashire and Cheshire Branch. He was Honorary Secretary of the Branch in 1877, and also one of the three General Secretaries for the annual meeting of the British Medical Association in Manchester in that year; to his work and to that of his colleagues, Mr. Hardie and Dr. Cullingworth, much of the success of that meeting was due. In 1890 he was elected President of the Lancashire and Cheshire Branch, and was appointed to the Council of the Association in 1884-5, 1885-6, 1891-2, 1892-3. At the annual meeting in Norwich, 1874, he was Secretary to the Section of Public Medicine; at the annual meeting in Dublin, 1887, he was Vice-President of the Section of Pharmacology and Therapeutics, and President of the same Section in 1897 at Montreal. At the Dublin meeting the Therapeutic Committee of the Association was formed, and in its work Dr. Leech took an active share, afterwards becoming Chairman of the Committee. He was largely instrumental in organising several important investigations.

To the Manchester Medical Society he contributed many papers, and was President for the years 1883 84. In 1897 he founded the Manchester Therapeutical Society, and was its first President.

In 1869 he joined the Manchester and Salford Sanitary Association, and became Secretary in 1870, retaining the post until 1873. During his tenure of office he produced several very able and valuable reports upon the health of Manchester and Salford, in which he called attention to the pollution of the rivers, the contamination of the air by smoke, the adulteration of food and milk, and the housing of the working classes. In 1895 he was elected Chairman of the Association, and held that position at the time of his death.

Since the establishment of the *Medical Chronicle* in 1884 Dr. Leech has been one of its strongest supporters. Its pages contain many articles from his pen. For five years he was joint Editor of the *Chronicle*, and for the last two years he has been Chairman of the Committee.

Dr. Leech was a member of the Pathological Society of London and of the Royal Medical and Chirurgical Society. To the latter Society he recently presented a valuable report upon the Health Resorts of North Wales. For several years he was an examiner for the Royal College of Physicians and also for the London University. Dr. Leech was an honorary member of the Pharmaceutical Society of Great Britain, a member of the Manchester Literary and Philosophical Society, a Justice of the Peace for the city of Manchester, and a Freemason.

In 1893 Dr. Leech gave the Croonian Lectures before the Royal College of Physicians, taking as his subject The Pharmacological Action and Therapeutic Uses of the Nitrites and Allied Compounds. These lectures, which were published in the British Medical Journal at the time, probably form his most important contribution to medical literature. He was a most painstaking writer, taking the greatest care to verify every fact or reference and weighing every statement that he made, consequently his writings are not voluminous; but among many other papers especial mention may be made of his many contributions to climatology, and his articles on The Treatment of Pneumonia (*Medical Chronicle*, 1894-95), The Principles of Drug Therapeutics (Allbutt's *System of Medicine*, vol. i), Asthma (*Encyclopædia Medica*, vol. i).

Dr. Leech was a clinician rather than a pathologist, and above all a therapeutist. His clear insight, clinical acumen, and wide experience enabled him to give wise counsel to all who sought his aid. Gifted with a frank and open disposition and a most lovable personality which endeared him to all, students and patients alike, he was always ready to help where help was needed, and there are many to whom his death is a personal loss which can never be replaced. Though he possessed intense energy and an almost unequalled capacity for work, it is difficult to realise that he accomplished so much in the thirty years since he obtained his first hospital appointment.

Dr. Leech married the eldest daughter of the late Mr. James Maclaren, of Whalley Range, and to Mrs. Leech we offer our deepest sympathy in her bereavement.

Professor Dreschfeld sends us the following tribute to Dr. Leech's memory:

Scarcely has the grave closed over the remains of the late Professor Thomas Jones, when the sad death of another Manchester medical worthy—Professor D. J. Leech—has to be recorded. Though his death was not unexpected, and his illness and suffering, which he bore with the greatest fortitude and calmness, had lasted for several months, yet it is only now that one begins to realise how great is the loss which Manchester, its medical institutions, and its University has sustained.

Having been closely associated with him for nearly thirty years, both at the Owens College and at the Manchester Infirmary, the two institutions with which his name is so intimately connected, and for whose benefit he did so much, I may be permitted to sketch briefly some of the salient features of his character, and allude to some of the important work he has done. One may well speak of him as a man of truly noble character: obliging, disinterested, anxious to help those who were struggling or those who were in trouble. Many are those whom he has assisted by word or deed; many a poor student has found in him a friend, and not a few who have risen to distinction and fame have to thank him for the support he gave them in their early struggle. Other prominent features of his character were his thoroughness, which he displayed in all he undertook, and to which his published work bears ample testimony; his honesty and uprightness, which made him beloved and respected by all who ever came in contact with him; his indomitable zeal, industry, and ambition, thanks to which he rose to the prominent position he occupied; and his enthusiam for work, which he instilled into those who worked with him.

I first met Professor Leech in 1873 at the Manchester In-

firmary, where he was Senior Assistant Physician and I was then appointed Junior Assistant Physician. He threw himself thoroughly into the work; he spent a great deal of his time in the Infirmary and inaugurated a new era in the history of the medical school by his thorough painstaking and systematic teaching. He still found time to act as Secretary to the Branch of the British Medical Association and to the Manchester Sanitary Association and to learn German, in which he soon showed great proficiency. His love for work was so great that when he was elected full physician to the Infirmary he for several years saw out-patients and thus did the work of physician and assistant-physician. The lecturership of Materia Medica to the the Owens College to which he was elected in 1874 opened out a new avenue for him and gave him opportunities to create a new department at the College and to distinguish himself as a scientific pharmacologist. He was not satisfied to give merely a course of lectures on materia medica—the driest of all medical subjects. He had heard and read a good deal of the pharmacological laboratories of Germany, and he started one at first of modest dimensions scantily equipped with scientific apparatus, but by his zealous endeavours, his perseverance and his industry and at great expense, which he mostly himself defrayed, it gradually developed into the present magnificent laboratory, in which such good work has been done and from which several of our young and prominent pharmacologists have gone forth. His chief aim was that Manchester should possess one of the best medical schools, and that the Owens College and the Infirmary should develop their teaching staff to the fullest possible extent. He was anxious that the young and rising men able and willing to teach should have full opportunities given to them, and him chiefly we have to thank for the creation of many new lectureships in special departments, and how little he studied his own interests is shown by the fact that when the Professorship of Medicine at the Owens College became vacant (a chair to which he was entitled and which he could rightly claim), he declined to take it and proposed me, as thereby by my vacating the Chair of Pathology the College was enabled to appoint a Professor of Pathology who would devote the whole of his time to the study and teaching of pathology. His earnest and persistent endeavours (which cost him much time and work, and caused a good deal of opposition) to have a new, enlarged, and fully-equipped hospital near the College are well known and need not be referred to. He met with a good deal of opposition, yet his opponents did not love or respect him any the less, knowing too well that his sole object was to have a hospital worthy of Manchester and its Medical School.

His work in connection with the Victoria University, in which he held a distinguished position, and the General Medical Council I need only allude to as showing how anxious he was to raise the standard of medical education and of the medical profession. Others will no doubt do justice to his scientific work, his connection with the British Medical Association, the Sanitary Association, and other institutions.

He was the promoter of almost every new movement in Manchester in connection with medical education or sanitary improvement, and one of his recent achievements was the creation of a therapeutic society in Manchester, the first, and so far the only one in England. His energy knew no bounds; he rarely took any rest, and his holidays he generally spent in visiting and studying the various health resorts of Europe, or in attending medical congresses.

Twelve months ago he retired from the active staff of the infirmary, but not to take the well-earned rest; he was anxious still further to develop the pharmacological laboratory and to give facilities for and prosecute original research; he wished also to take up again sanitary questions of public interest, such as the prevention of tuberculosis, the supply of pure milk, the purification of our rivers, the provision of sanitary dwellings for the poor.

Whilst in the midst of his work his fatal illness showed itself; but, in spite of pain and increasing weakness, he went on with his duties at the Owens College and the University, he conducted the Victoria Examinations last March, and as Pro Vice-Chancellor gave the degrees to the medical graduates, Mr. Thomas Jones, on the eve of his departure for South Africa, presenting the Manchester candidates. The same day he took to his bed, from which, alas! he never rose again.

With the death of Dr. Leech, who was universally beloved, and whose name and fame extended far beyond Manchester, we have lost a man who could be ill spared and whom we cannot replace. His name will always occupy a foremost place in the history of the Manchester Medical School, to which he had given the greater part of his life with such singular devotion.

From a sympathetic notice of Dr. Leech's career by Mr. Walter Whitehead, which appeared in the *Manchester Guardian* of July 3rd, we extract the following passage: "I knew him as a student, as a general practictitioner, as a physician to the Infirmary, and as a professor at the Owens College. In each capacity one always met the same man, the same beautiful character. In my life, which is pretty well advanced, I never remember a similar instance of a man who had lived a more public and yet a more retired life, whose illness gave rise to more constant inquiries from friends and strangers alike, all of whom took a sad and tender interest in the progress of his last illness. Having been able to visit him from time to time during the last months of his life, it is a privilege to be able to convey to others some knowledge of the quiet heroism and peaceful resignation of one who, whilst loth to leave incomplete a vast amount of work, begun for the advancement of education and the welfare of the general public, never uttered one word to convey the idea that his fate was hard or his lot unjust. He was one of the happiest of men, with a bright sanguine disposition and a generous heart. There could be no more genial companion, one who could in a moment relax his professional manner and thoroughly enjoy the society of friends. He was held in the highest esteem by his professional brethren, and was a great favourite with the students. Then he was remarkably free from prejudice, and never allowed his opinions to be biassed either by personal interests or public clamour. A staunch friend, he had the gift of captivating the sound friendship of those who came in contact with him. It was impossible not to be convinced of the absolute sincerity of all he said. One of his greatest pleasures always appeared to lie in helping others. Numbers of students would have been crippled in their curriculum for want of means but for his generous and timely assistance."

DENNIS CAWOOD EMBLETON, M.D.DURH., M.R.C.S., L.R.C.P.

IT will be a great shock to Dr. Embleton's large circle of friends to hear of his death. He was born in 1854, and had only just completed his forty-sixth year. His father, Dr. Embleton, of Newcastle, still survives, and must be one of the oldest members of the profession.

The subject of this notice was educated at a school in Rugby, and for a time he joined the Durham University and the Newcastle School of Medicine. In 1873 he entered University College, London, and took the M.R.C.S. in 1877. In the following year he settled in practice at Hurworth-on-Tees, but after a few months his lungs became affected, and he was advised to go abroad to Madeira. While there he had a severe attack of Bright's disease, which laid him up for some time. On leaving Madeira in 1882 he practised at Bordighera, but returned to England the following year, and settled at Bournemouth, where he started on his own account, and gradually worked up a first-rate practice. In 1883 he took the L.R.C.P., and last summer the M.D. of the University of Durham.

He was an ex-President of the Bournemouth Medical Society and a Fellow of the Medical Society of London. He was also a Fellow of the Royal Meteorological Society, in which he felt much interest, and took daily records of the weather for a considerable time.

Last summer he did not, unfortunately, take a holiday after passing his M.D., and about Christmas time he had an attack of epistaxis and began to show other signs of chronic renal disease. He still continued his professional work from a strong sense of duty, but on June 15th he had an attack of cerebral hæmorrhage, with right hemiplegia, and never completely recovering consciousness, he died on June 18th.

By Dr. Embleton's death the profession has been deprived

of a strong personality, the loss of which will be deeply felt by all who came in contact with him, for he was one of those men whose opinion and example exercise a great influence for good. His great characteristic was manliness. He had a fine presence and a frank open manner, which made him a general favourite; he heartily detested anything that was in any way mean or underhand, and was not afraid to express a strong opinion about any matter he considered to be derogatory to his profession. He was a true, staunch friend, and a most delightful companion. By his patients he will be sadly missed, for he had the power of gaining their confidence at once. No man was more beloved by his patients, and justly so; for, while he took infinite trouble, he was as much a kind friend as a medical adviser.

His energy and pertinacity were well shown by the fact that he lived entirely on milk for some months on his return to England, while at the same time carrying on his practice, and he succeeded by this means in apparently curing his renal trouble. But though he never completely recovered his former health, the amount of work he got through was wonderful, and we must admire the courage with which he was always struggling against a serious organic disease.

He died in harness, for on the day on which he had his attack he had seen several patients. He leaves a widow and seven children to lament his loss.

The funeral, on June 22nd, was very largely attended by the leading practitioners of Bournemouth, and amongst those who followed him were Dr. Gregory White and Dr. W. T. Gardiner, and his old fellow-students, Mr. Victor Horsley and Dr. Beevor.

ROBERT ARGLES, M.R.C.S.Eng., L.R.C.P.Edin.

With much regret we record the death of Mr. Argles, aged 60, at his house in Oxford Terrace, Hyde Park, on June 14th. He had a severe cardiac illness following influenza in the autumn of 1897, but recovered after an absence of several months from practice, and was then able to resume all his work. The affection of the heart seems, however, to have progressed recently, and his death was quite sudden, occurring in the night. To add to its pathos, his elder son was at home that night for the last time before sailing with a draft of the R.A.M.C. for South Africa.

Mr. Argles was educated at the Grammar School, Maidstone, and at Ramsgate, and his medical training was subsequently acquired at King's College Hospital, London. He became L.R.C.P.Edin. and L.S.A.Lond. in 1869 and M.R.C.S.Eng. in 1870. He was Assistant House-Surgeon to the Salop Infirmary for a time, and House-Surgeon to the West Kent General Hospital, Maidstone, and settled in practice in Paddington in 1871. His professional ability, sterling qualities, and social excellence enabled him quickly to obtain a large general practice, and amongst the patients whom he attended he numbered very many personal friends. He was without an atom of affectation, devoted to his family and his duty, and honourable and upright in every relation of life. As a friend he was unsurpassed in all the good qualities without which the highest forms of friendship cannot exist. He was a member of the Council of the Metropolitan Counties Branch of the British Medical Association at the time of his decease. He was married in 1871, and his widow and three sons have all survived him.

Dr. Cadet de Gassicourt, one of the leading French specialists in children's diseases, whose death was recently announced in the British Medical Journal, was born in Paris in 1826. He received his preliminary education at the Collège Sainte-Barbe, and afterwards studied medicine. He gained the coveted appointment of *interne* in 1852, and took his doctor's degree in 1856. He was appointed Physician to the Paris Hospital in 1863, and soon afterwards became the head of a special department for children in the Hôpital Trousseau. His clinical lectures were attended by large numbers of students, many of whom have since achieved distinction. These lectures formed the basis of his well-known *Traité Clinique des Maladies de l'Enfance*, the three volumes of which appeared at intervals from 1880 to 1884. A second edition was published in 1887. In 1883 Dr. Cadet de Gassicourt in conjunction with M. Saint-Germain, Surgeon to the Enfants Malades, founded the *Revue des Maladies de l'Enfance*. He was elected a member of the Académie de Médecine in 1870, of which body he was appointed Annual Secretary in 1890. In the discharge of the duties of this difficult office he always showed the strictest impartiality mitigated by delicate tact. Four years ago he retired from active practice. Dr. Cadet de Gassicourt was a distinguished physician and also a man of the most genuine benevolence and of the greatest personal charm. His kindness of manner, which was the outward expression of a true goodness of heart, won for him the affection of his little patients and the confidence of their mothers. He was most popular with his pupils and with his colleagues.

It is with much regret that we record the untimely death of Dr. James Alexander Baird, of 5, Blackhall Street, Dublin, which occurred at the residence of his brother, Dr. G. H. Baird, Charlton, Kent, on June 29th. Dr. J. A. Baird had not been in his usual good health for some weeks, and, in order to recuperate, had crossed over on a visit to his brother, when an attack of apoplexy suddenly carried him off, at the early age of 44 years. Dr. Baird obtained the Licence of the Royal College of Surgeons in Ireland in 1881, and that of the Physicians in 1890. He was Assistant Surgeon to the Royal Irish Constabulary, and had succeeded in acquiring a good general practice. He was the embodiment of a genial, kindly, and painstaking practitioner, whose loss will be keenly felt by a large circle of patients and friends. His funeral, which took place on July 4th from his late residence in Dublin, was attended by many of his professional brethren and others who in this way showed the public esteem in which deceased had been held.

Dr. Arnold Schetelig, of Nervi, who died recently, was born at Heide in Germany in 1835. He studied medicine at Göttingen and Kiel, taking his doctor's degree in the latter University in 1856. He then went to Hong Kong, where he practised his profession with much success for seven years. Returning to Germany he became assistant to Professor von Esmarch at Kiel, and afterwards studied in Paris and in London under Spencer Wells. In 1863 he settled at Hamburg. On the outbreak of the Franco German War the Senate of Hamburg put him at the head of its Red Cross Ambulance. In this capacity he did excellent work throughout the campaign and his services were rewarded with the Iron Cross. The fatigue which he underwent at the siege of Metz led to a breakdown in health, which compelled him after the war to go to the South for restoration. He travelled in Spain and Italy till 1873, when he settled at Nervi. There he continued to practise in the winter. To him in considerable measure Nervi owes its development as a health resort. He was unremitting in his efforts for the improvement of the hygienic conditions of the town and for the increase in its attractiveness. In the summer for the last twenty years of his life he practised at Homburg. Dr. Schetelig was an anthropologist and archæologist of no mean order. He had already in 1863 commenced to make investigations in the Philippine Islands, and afterwards he made researches in the ancient sepulchres of the Goths in Spain. At a later period he made similar researches as to the tombs of the ancient Saxon population in Germany.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Contancin, a French Senator; and Dr. E. O. Shakespeare, of Philadelphia, sometime Lecturer on Diseases of the Eye in the University of Pennsylvania, President of the Pathological Society of Philadelphia and of the Section of Pathology of the International Medical Congress held at Washington. In 1885 Dr. Shakespeare was commissioned by President Cleveland to investigate Asiatic cholera in Europe and India, and at the time of his death he was a member of the Commission attached to the office of the Surgeon-General at Washington to investigate the causes of typhoid fever in the United States army.

Women Doctors in the East.—The Hon. Ella Scarlett, M.D.Brux., has recently sailed for Korea to take up an appointment as Physician to the women of the Royal household at Seoul. She will assist Miss Cooke, who has been attached to the Court for some years.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF DUBLIN.

ON June 28th the Later Summer Commencement in Trinity Term was held in the Examination Hall of Trinity College for the purpose of conferring degrees. The Caput, consisting of Mr. Justice Madden, Vice-Chancellor; the Rev. Dr. Salmon, Provost, and Mr. Cathcart, Senior Master Non-Regent, presided. There was an unusually large attendance of members of the Senate and of visitors, owing to the fact that honorary degrees were to be conferred on several men distinguished in various spheres of intellectual activity. Among them were two eminent members of the medical profession—Sir William Mac Cormac, Bart., President of the Royal College of Surgeons of England, and Surgeon-General Jameson, C.B., Director-General of the Army Medical Service.

Sir William Mac Cormac, on whom the honorary degrees of Doctor in Medicine and Master in Surgery were conferred, was introduced by the Public Orator, Dr. Tyrrell, in a Latin speech, of which the following is a translation: I now introduce to you Sir William Mac Cormac, Bart., formerly Fellow of the Royal College of Surgeons in Ireland, now President of the Royal College of Surgeons in England, and Knight Commander of the Royal Victorian Order. It had been my intention to put together and enumerate the very many honours which Europe and America have vied with one another in heaping upon Sir William MacCormac, as well as the splendid posts which he has filled. But time would fail even for the mention of their names, nor, however willing, have we leisure to linger upon the various steps by which he reached that eminence, which, if I mistake not, has never previously been attained by anyone who has not practised in the English school of surgery and received his surgical training in England. We hail with triumph the Irishman, more Irish still by his name, now for the fourth time President of the English College of Surgeons. After, while still a young man, he had gained renown at home, he won equal praise, if I may say so, from the whole world when in the Franco German war, nearly thirty years ago, he took command of the movable hospital sent out by England and America for the care of the wounded, under the name strangely concocted from *ambulare*. Afterwards in Austria and Turkey, lately in Africa, he served with equal proficiency and skill in a not dissimilar office. Justly, therefore, do all countries and every State vie with one another in expressing their admiration for the man who has played so valorous and so brilliant a part in three mighty wars—so much so, indeed, that his bosom, though, as you may see, of no mean amplitude, is too narrow to contain all the decorations and medals which have been showered upon him from all quarters of the world. I would have you admire, therefore, these spoils, acquired not by the art of slaughter, but by the art of healing. He "wears these blazons on his breast" after feats which have been accomplished, not with the bloody, but with the health-giving hand. Very gladly, therefore, do we adorn with our purple Sir William MacCormac, pride of our land of Ireland.

The degree of Doctor in Medicine was conferred on Surgeon-General Jameson, who was introduced by Dr. Tyrrell with a speech of which the following is a translation: He who now comes before you filled the same office in the same Franco-German war as the distinguished man upon whom our praise has just been bestowed. Who can look without a certain elation of mind upon the men, true heroes, who, for the sake of succouring the wounded, joined the army, and exposed themselves to the common dangers of the field, while at the same time fulfilling the arduous duties of their own peculiar office—men who carrying in their right hands the arms of Machaon, in their left the arms of Achilles, save for their own side the life of which they rob the foe? Redouble, then, your applause in honour of the leader of this corps, as fearless as skilful—at this time especially, when the clash of that war still resounds in which the Army Medical Service has won such splendid distinction. I introduce to you Surgeon-General James Jameson, Commander of the Bath.

Both were warmly cheered by the students, Sir William Mac Cormac in particular being received with enthusiastic applause.

The following ordinary Degrees and Licences were also conferred:

Licentiati in Medicinâ, Chirurgiâ, et Arte Obstetriciâ.—R. M. Le Clerc, W. P. Murphy.

Baccalaurei in Medicinâ, in Chirurgiâ, et in Arte Obstetriciâ.—S. P. Barton, P. J. S. Bird, J. H. Brunskill, L. J. S. Cahill, H. A. Dougan, G. Fitz-Gibbon, R. B. B. Foster, W. G. Joynt, C. D. Myles, C. V. B. Stanley, W. C. Stevenson, R. F. C. Talbot, A. Tarleton, E. J. M. Watson.

Doctores in Medicinâ.—P. Armstrong, P. J. S. Bird, N. M'I. Falkiner, J. Greg (*in absentiâ*), J. A. Johns, A. H. Shepard, R. Smyth (*in absentiâ*), E. J. M. Watson.

UNIVERSITY OF EDINBURGH.

FINAL PROFESSIONAL EXAMINATION.—The following candidates have passed this examination:

M.B. and Ch.B.—R. C. Affleck (with distinction), H. Alexander, T. H. W. Alexander, Eliza M. Anderson, H. E. Arbuckle, Mary S. Anderson, R. A. J. Asbury, B. H. S. Aylward, A. A. Ayton, A. J. Baird, M.A., H. Baird, S. A. Ballantyne, L. D. H. Baugh, J. H. Bell, J. M. Benson, H. Bishop, A. B. Black (with distinction), J. S. Bostock, O. C. Bradley (with distinction), L. P. Brassey, J. M'C. L. Brown, M.A., L. Bruce, A. Brydon, G. F. Buist, G. B. Butt, J. P. Campbell, M. Campbell, M.A., S. M. D. Campbell, G. S. Carmichael (with distinction), Violet A. P. Coghill, J. Craig (with distinction), L. Crossley, H. B. Dodds, J. P. Douglas, C. H. Durraut, W. Eadie, R. S. Ellis, C. H. Elmes, J. S. Enslin, D. R. Evans, E. Ewart, D. J. Fergusson, A. Fleming, B. G. Forman, Catherine Fraser, A. Frew, W. E. Frost (with distinction), Y. Fukuda, J. S. Goikie (with distinction), W. Girdwood, A. E. Goldie, G. W. Guthrie, G. H. Hanna, F. Hardie, N. E. J. Hardie, H. Harris, T. Henderson, D. Heron, Eleanor Hodson, K. W. Hogg, B.A., H. J. Hoile, M.A., L. J. Hood, W. Hutchison, F. F. C. Jagger, E. B. Jamieson, J. G. S. Jamieson, M.A. (with distinction), J. C. Kennedy, F. K. Kerr, H. C. Kerr, S. Meyer de Kock, G. R. Laing, L. Laurie, R. G. Leach, T. G. S. Leary, C. G. S. Leeds, G. H. Lewis, R. J. M'Lelland, C. B. M'Conaghy, J. E. M'Dougall, Sara L. M'Elderry, Elizabeth M'Elney, A. C. N. M'Hattie, J. H. Kee, A. J. M'Kenzie, D. S. M'Knight, R. C. M'Lachlan, Harriet J. C. M'Laren, M.A., H. J. M'Lean (with distinction), D. M. M'Leod, J. M'C. A. Macmillan, M.A. (with distinction), Elizabeth M'Rory, A. A. Martin, H. Mason, F. C. Matthew, M.A. (with distinction), M. J. Menzies, H. C. Miller, M.A., J. B. Milne, R. M. Mitchell, Janet A. S. Mowat, J. Munro, Florizel de L. Myers, H. C. Nixon, Caroline E. O'Connor, J. C. Parker, N. Patterson, C. B. Paul, J. Pender (with distinction), Mary C. Pepper, J. B. Primmer, J. P. Prytherch, S. Rattray, P. C. Rayner, J. L. Rentoul, O. L. Rhys, Catherine M. Richardson, L. C. P. Ritchie, T. R. Robertson, W. Rogers, R. A. Ross (with distinction), W. C. Ross, A. J. Ryle, Laura Stewart Sanderson, R. A. Savage, T. B. H. Scott, W. S. Scott, A. K. S. Shand, H. D. Shepherd, T. S. Shepherd, S. R. Sibbald, F. D. Simpson, W. Sloss, H. O. Smith, C. B. Snow, C. E. Southon, H. M. Spiers, A. D. Spence, Eleanor R. Sproull, T. G. Stewart, C. P. Strong, F. T. Thompson, J. Thornhill, J. H. Thornley, A. Trotter, G. R. Turner, K. H. H. Uffmann, W. Wallace, A. G. Watson, N. S. Wells, G. D. White (with distinction), F. W. Wiggs, A. J. Williamson, T. J. E. Wilson, A. E. B. Wood, A. M. Wood (with distinction), G. Wright, J. H. Wrightson, J. C. Zuidmeer.

Grocers' Scholarship.—Mr. E. F. Bashford, M.B., Ch.B., of the University of Edinburgh, has been appointed to the Research Scholarship of the Grocers' Company, London. The scholarship is of the annual value of £250, and is tenable for three years. Mr. Bashford was educated at George Heriot's School, and at the University of Edinburgh where he was a distinguished student in science and in medicine. Thus he was the Houldsworth Scholar in Pharmacology, Pattison Prizeman in Clinical Surgery, and Stark Scholar and Wightman Prizeman in Clinical Medicine.

CONJOINT BOARD IN ENGLAND.

THE following gentlemen have passed the Second Examination of the Board in the subjects noted:

Anatomy and Physiology—H. W. J. Hawthorn, H. F. Marshall, S. G. Barling, C. K. Getting, R. B. D. Hird, J. A. McIlroy and E. B. Garrard, Mason University College, Birmingham; I. C. G. Glassford, Melbourne and Edinburgh University; H. H. Burpitt and H. Jones, University College, South Wales, Cardiff; E. A. G. Wilkinson, Oxford University; G. Hamilton, Otago University and Middlesex Hospital; H. T. Webb, University College, Bristol; H. J. Moon Owens College, Manchester; W. P. Jones, Firth College, Sheffield; G. Raymond, St. Thomas Hospital; F. H. Wood, G. H. Adam, and W. B. Ainger, St. Bartholomew's Hospital; N. B. V. Jacob, London Hospital; G. E. Bellamy, Charing Cross Hospital; A. F. Cole, St. Mary's Hospital; W. A. Aldred, T. W. Chaff, J. W. Cleveland, F. S. Lister, and H. T. Wilson, St. Bartholomew's Hospital; J. Avery, H. Munro Scott, and C. Colmer, London Hospital; H. E. Batten, E. G. Anthonisz, and R. Butterworth, St. Mary's Hospital; W. A. D. King, Middlesex Hospital; W. E. Fisher, P. H. Seal, and I. Tritsch, University College, London; E. U. Williams, S. G. Scott, and G. H. Warren, King's College, London; M. W. Shutte, and P. R. Humphry, St. George's Hospital; B. Higham and J. H. Chauncy, St. Thomas Hospital; R. E. Brayne, W. W. Read, and G. L. Buckridge, Guy's Hospital.

Twenty-five gentlemen were referred back to their professional studies for three months.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following gentlemen having passed the necessary Examinations have been admitted Licentiates in Dental Surgery:

R. W. Allen and J. Bennett, Guy's Hospital Dental Department and School; T. A. Baker, Mason College, Queen's, General, and the Dental Hospital, Birmingham; M. H. Bartlett, W. B. Blandy, and H. Bristow, Charing Cross and the Dental Hospital of London; C. J. Burton and A. E. Chaundry, Middlesex and the National Dental Hospital; G. B. Ciceri, M.D. Pavia, University of Pavia, Italy, and the Dental Hospital of London; E. Couchman, Guy's Hospital Dental Department and School; H. O. Dickin and E. Entwisle, University College, Royal Infirmary, and Dental Hospital, Liverpool; A. C. Edwards, P. H. Furnivall, A. M. Gabriel, and J. H. Greenwood, Guy's Hospital Dental Department and School; C. B. Grenside, R. H. Heath, A. G. Heydon, and R. Hooper, Charing Cross Hospital and the Dental Hospital of London; G. H. Hiorns, Middlesex and the National Dental Hospital; R. Howard, E. G. Jones, and S. Kersh, Owens College, Royal Infirmary, and Victoria Dental Hospital, Manchester; W. Jarvis, L. A. C. Knight, and A. L. Lambert, Guy's Hospital Dental Department and School; W. Kittow, Charing Cross and the Dental Hospital of London; E. F. Lane and T. C. Mills, Middlesex and the Dental Hospital; H. E. Laurence, Middlesex and the National Dental Hospital; [illegible] R. C. G. May, C. S. Morris, K. C. Ness, and S. L. [illegible] pital Dental Department and School; P. G. [illegible] Prickett, Middlesex and the National Dental Hospital; [illegible] Charing Cross and the Dental Hospital of London; [illegible] M.R.C.S.Eng., St. Thomas's and the Dental Hospital of [illegible] B. Recordon, W. R. Searle, H. L. Shelton, and A. M. A. Stevens, Guy's Hospital Dental Department and School; S. H. Rowe, H. Round, and H. S. Steynor, Mason College, Queen's, General, and the Dental Hospital, Birmingham; E. G. Simmonds, M.R.C.S.Eng., St. Bartholomew's, and the National Dental Hospital; P. F. Swabey, A. E. Toogood, W. White, and R. A. Windor, Charing Cross and the Dental Hospital of London; J. N. Taylor, University College, Royal Infirmary, and Dental Hospital, Liverpool; and J. L. Warlski, Guy's Hospital Dental Department and School.

GUY'S HOSPITAL.

DISTRIBUTION OF PRIZES.—There was a pleasant garden party at Guy's Hospital on July 4th, when the medals and prizes gained by the students of the medical and dental schools during the past year were distribute

by the Countess of Pembroke. This part of the proceedings took place in the Lecture Theatre in the new school buildings, where Mr. Cosmo Bonsor, M.P., the Treasurer, took the chair. The Treasurer stated that two of the Governors, Messrs. Harvey and Stewart, had died during the year, whilst the school had lately had to deplore the loss of Mr. Davies-Colley, in whose honour the staff were raising a memorial. They had also to deplore the deaths of some former students of the hospital in the present South African campaign. The new nursing home was rising from the ground, and the sons of the late Mr. Raphael had given a swimming bath, and a fund for nurses who might break down in the discharge of their duties. A new laundry and department for x-ray work were also being added. Astley Cooper Ward had just been fitted up for patients, and was ready to be occupied. The provision of the funds for the maintenance of the hospital, notwithstanding the sum subscribed by the public, still caused great anxiety. The prizes were then distributed by Lady Pembroke, and Lord Pembroke congratulated the prize winners. He said that students of medicine had a great advantage over those of other professions since medical students did a practical work. Formerly there was only one operating theatre, occupied perhaps twice a week; now there were three used almost daily, and shortly there would be two more. The practical work of tending the sick could not be carried on as it is except with the help of the students. The Yeomanry Hospital in South Africa had three of the staff of Guy's amongst its medical officers, and he was confident that when the inquiry into the medical problem of the war was held, it would be abundantly proved that the medical officers of the army and their civilian brethren had done most excellent work. Dr. Frederick Taylor, Senior Physician, proposed a vote of thanks to Lord and Lady Pembroke, and observed that the students and the hospital both benefited by the union between the hospital and the school, and neither could do without the other. The vote was seconded by Dr. Thomas Stevenson, representing the medical school, and acknowledged by the Earl of Pembroke.

THE LONDON SCHOOL OF MEDICINE FOR WOMEN.

The prizes were distributed by Sir Owen Roberts on June 28th. Mr. Charles Burt, J.P., Chairman of the Weekly Board of the Royal Free Hospital, who presided, spoke of the pleasure at the connection between the School and the Royal Free Hospital. He made the announcement that the increased accommodation for the medical and nursing staff at the Royal Free Hospital had made it highly probable that in future two of the Resident Medical Officers would be women. The posts will of course be invaluable to old students of the School, and keen competition for them may be expected. Sir Owen Roberts attributed his views on the education of women to his perusal at Oxford of John Stuart Mill. He has been instrumental in obtaining from the St. Dunstan's Charities a sum of £300 a year at least for the medical education of women in connection with the University of London. Mrs. Garrett Anderson said that two new wings of the new school buildings were paid for, but that it had been necessary to borrow £8,000 for the third wing, and that a special effort must be made when the war was over to pay off this debt. The principal prize takers were as follows: Misses Slater, Bolton, Whitlock (anatomy), Mrs. Willey (Medicine), Misses Shepheard, Scharlieb, and Walters (Midwifery), and Miss McDougall (operative midwifery). Misses Smith and Hooper won the Mackay Prizes and Miss Sommer the Entrance Scholarship.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty:—Gerald B. Brown, Surgeon, to the *Britomart*, June 28th; John W. Bird, Surgeon, to the *Bramble*, June 28th; J. O'Hea, Surgeon, to the *St. Vincent*, lent during the manœuvres, July 10th; G. M. Eastment, Surgeon, to the *Excellent*, lent during the manœuvres, July 10th; Hubert Holyoake, Staff-Surgeon, and George E. Glynn, B.A., M.B., Surgeon, to the *Vindictive*, July 4th; John H. Lightfoot, Surgeon, to the *Boscawen*, for the *Wanderer*, July 4th.

Staff-Surgeon E. P. Mourilyan, M.B., of H.M.S. *Doris*, who has been serving in South Africa, is returning home invalided in the transport *Montcagle*.

ROYAL ARMY MEDICAL CORPS.

Colonel W. E. Riordan is placed on retired pay, July 4th. His commissions are thus dated: Assistant-Surgeon, September 30th, 1864; Surgeon, March 1st, 1873; Surgeon-Major, September 30th, 1876; Brigade-Surgeon, May 6th, 1890, and Surgeon-Colonel, April 15th, 1895. He was in the Egyptian War of 1882 and was at the surrender of Kair Dowar (medal and Khedive's star); in the Soudan campaign in 1885 in charge of No. 3 Field Hospital and organised the Camel Ambulance of the force; and at Suakin from May 28th to November 28th as Senior Medical Officer of the British troops there (clasp).

Lieutenant-Colonel James McNamara, M.D., is promoted to be Colonel, *vice* W. E. Riordan, July 4th. Colonel McNamara was appointed Assistant Surgeon, April 1st, 1871; Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1883; granted the rank of Lieutenant-Colonel, April 1st, 1891; and made Brigade-Surgeon-Lieutenant-Colonel, July 9th, 1895. He was in medical charge of the troops (detachments of Royal Artillery and 10th Foot) sent into the Native State of Sunghie Ujong, Malay Peninsula, in 1874, and was present at the attack and capture of the Kapayan stockades (medal with clasp). He served in the Afghan war in 1880, and was in medical charge of Brigadier-General Brooke's Brigade covering the retreat from Maiwand (mentioned in despatches), took part in the defence of Candahar, and present at the battle of Candahar (medal with clasp). He was also in the Soudan expedition in 1884 under Sir Gerald Graham, and was present in the engagement at El Teb and Temai (mentioned in despatches, medal with clasp, and Khedive's Star).

Sergeant-Major Alfred H. H. Niblett is appointed Quartermaster, with the honorary rank of Lieutenant, to complete establishment, July 4th.

Major Dodd, R.A.M.C., is seriously ill at the Base Hospital at Maritzburg; and Civil Surgeon W. B. Bennett is reported dangerously ill at No. 1 Stationary Hospital, Mooi River.

Major A. Wright, R.A.M.C., has been discharged from hospital to duty.

INDIAN MEDICAL SERVICE.

The following officers will accompany the regiments proceeding to China: Lieutenant-Colonel Bookey (Principal Officer), Lieutenant-Colonel Esmonde-White, Majors Mould and Whitchurch, and Captains Kenrick, Walton, and Price. Those proceeding with the hospitals are: Lieutenant-Colonel Waddell, Majors Burton, Fooks, Thomson, Marshall, and White, Captains Jenny, Carr, Moorhead, Harriss, and Hamilton, and Lieutenants Fenton, McCay, Megaw, G. Stewart, Willmore, Meakin, Gidney, and Douglas. Captain Walton and Lieutenant Douglas have been placed in charge of the x-rays apparatus. Major Cree, R.A.M.C., also proceeds on hospital duty with the force. The 1st Brigade will be accompanied by Nos. 39 and 43 Field Hospitals; the 2nd Brigade by Nos. 42 and 47 Field Hospitals. Nos. 25 British and 54, 63, and 66 Native Hospitals also proceed to China.

Surgeon-General G. G. W. Maitland, late of the Bombay Medical Department, died at Sion Place, Bath, on June 30th, aged 82. He entered the service as Assistant-Surgeon, March 6th, 1842, and became Deputy-Surgeon-General, October 20th, 1871. He retired with the honorary rank of Surgeon-General, February 24th, 1877.

MILITIA MEDICAL STAFF CORPS.

Mr. Ernest U. Bartholomew is appointed Surgeon-Lieutenant, June 18th.

THE VOLUNTEERS.

The undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps respectively specified, dated July 4th: Arthur C. Hartley, M.D., 1st Bedfordshire Engineers; James M. Duncan, M.B., 3rd Volunteer Battalion the Lincolnshire Regiment; Cecil A. Corke, 2nd Volunteer Battalion the Worcestershire Regiment.

Surgeon-Captain John H. A. Laing, the Queen's Rifle Volunteer Brigade, the Royal Scots (Lothian Regiment), resigns his commission, and is appointed Captain, July 4th.

Surgeon-Captain Charles S. A. Rigby, 1st Volunteer Battalion the Loyal North Lancashire Regiment, also resigns his commission, and is appointed Captain, July 4th.

COLONELS, R.A.M.C.

The increase of three colonels, R.A.M.C., in the Home Establishment, foreshadowed in the estimates for the current year, has not yet been carried out. We suppose the war is responsible for the delay, but trust the increase will soon be effected. Meanwhile the loss to the Corps is considerable.

MEDICO-LEGAL AND MEDICO-ETHICAL.

PARTNERSHIP ACCOUNTS.

M.B. Due. writes: A. has recently taken B. into partnership. Should all bills from date of partnership be sent in in the joint names of A. and B., or only those that bear date after the partnership?

*** After the partnership all bills should be sent in the name of the firm.

MEDICAL ADVERTISING.

M.D.—Such a paragraph appearing every second day in a public newspaper is unquestionably advertising. As the offender is a member of the British Medical Association, we will refer the matter to the Ethical Committee.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,592 births and 3,368 deaths were registered during the week ending Saturday last, June 30th. The annual rate of mortality in these towns, which had been 18.0 and 14.9 per 1,000 in the two preceding weeks, rose again to 15.1 last week. The rates in the several towns ranged from 9.0 in West Ham, 9.4 in Portsmouth and in Swansea, and 9.9 in Croydon, to 18.1 in Halifax, 18.6 in Wolverhampton, 20.7 in Manchester, 21.3 in Salford, and 22.7 in Liverpool. In the thirty-two large provincial towns the mean death-rate was 15.6 per 1,000, and exceeded by 1.1 the rate recorded in London, which was 14.5 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.9 per 1,000; in London this death-rate was equal to 2.0 per 1,000, while it averaged 1.8 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.2 in Sunderland, 3.4 in Derby and in Sheffield, 3.5 in Huddersfield, and 3.8 in Blackburn. Measles caused a death-rate of 1.0 in Huddersfield, 1.1 in Cardiff and in Hull, 1.8 in Sunderland, and 1.9 in Derby; scarlet fever of 1.0 in Gateshead and 1.9 in Blackburn; whooping cough of 1.0 in Oldham and in Sheffield, 1.4 in Derby and in Gateshead, and 1.7 in Wolverhampton; "fever" of 1.0 in Huddersfield; and diarrhœa of 1.1 in Blackburn and 1.8 in Birkenhead. The 70 deaths from diphtheria in the thirty-three towns included 29 in London, 10 in Sheffield, 6 in Leicester, and 5 in Liverpool. One fatal case of small-pox

was registered in Salford, but not one in any other of the thirty-three towns. There were 16 cases of small-pox under treatment in the Metropolitan Asylum Hospitals on Saturday last, June 30th, against 15 and 13 at the end of the two preceding weeks; 8 new cases were admitted during the week, against 8 and 0 in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,754, 1,766, and 1,810 at the end of the three preceding weeks, had further risen to 1,832 on Saturday last; 210 new cases were admitted during the week, against 203, 210, and 219 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, June 30th, 1,056 births and 552 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 19.9 and 16 5 per 1,000 in the two preceding weeks, rose again last week to 17.9, and exceeded by 2.8 per 1,000 the mean death-rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 12.6 in Leith and 13.3 in Aberdeen to 21.9 in Perth and 25.8 in Greenock. The zymotic death-rate in these towns averaged 2.7 per 1,000, the highest rates being recorded in Glasgow and Greenock. The 271 deaths registered in Glasgow included 2 from small-pox, 11 from measles, 5 from scarlet fever, 23 from whooping-cough, and 8 from diarrhœa. Four fatal cases of measles, 2 of "fever," and 4 of diarrhœa were recorded in Edinburgh. Four deaths from diarrhœa occurred in Dundee, 3 in Aberdeen, and 3 in Greenock.

THE RELATION OF THE NEW FACTORY BILL TO CERTIFYING SURGEONS.

WE have received from the Association of Certifying Factory Surgeons a statement concerning the Factories and Workshops Amendment and Consolidation Bill, 1900, lately introduced into the House of Commons by Mr. Caldwell and others, and particularly to those portions of it which relate to the duties at present performed by certifying surgeons. These duties, according to existing Factory Acts, include (1) the medical examination of persons under 16 as to fitness for employment in factories; (2) the investigation of the cause and results of accidents; (3) the investigation of cases of industrial poisoning and disease; and (4) the periodical medical examination of those engaged in certain dangerous trades.

The Bill proposes to abolish all this supervision of factory surgeons except the periodical examination of persons in dangerous trades by excluding all persons under 14 from employment, and by requiring the local inspector to investigate all accidents and poisoning cases. It undertakes to provide what shall take the place of medical supervision of persons from 14 to 16 by requiring the inspector to detect in them any disease or bodily infirmity, and, as an additional duty, to diagnose any infectious disease which may affect the workpeople generally.

The returns of the Association for the year 1899 show that of the total number of candidates for employment under 16 which were examined by the factory surgeons only 15 per cent. were under 13, 41 per cent. under 14, while 59 per cent. were 14, 15, or 16. The rejections were 1.54 for children under 13, and 1.86 for those under 14, but 2.54 for those from 14 to 16. It is contended therefore that if, as is purposed by the Bill, the qualifying age is raised to 14, and thereby between 15 and 30 per cent. of the candidates excluded there are still at least 70 per cent. of the 400,000 who yearly present themselves that need medical inspection proper. The memorial points out that while the inspectors acted as detectors of weakly candidates during four years from 1895 to 1898, 3 persons alone were referred back, all of them in 1897, to the certifying surgeon for re-examination. During the same period 1,439,271 medical examinations were made, and 18,919 persons were rejected. The comparative value of the two methods is therefore in the ratio of 18,919 to 3. The statement further points out that the provision of sufficient inspectors to meet the requirements of the Bill would mean a very large increase in the expenditure of the department. The position of the Bill on the papers is so unfavourable that it hardly appears to come within the range of practical politics at the present moment.

FREE SANITARY CONVENIENCES FOR WOMEN.

WITH reference to some remarks on this subject published in a recent issue, we have received a communication from Messrs. Finch and Co., Lambeth, the engineers who erected most of the underground conveniences in London. The managing director states that except where the traffic is very great such conveniences are run at a loss. He considers that the charge for use of a closet by women should be reduced to a halfpenny, though he says that the charge of 2d. for washing only just covers expenses. We still hold that some such conveniences should be free. Messrs. Finch and Co. have introduced a urinal for women, which would be very useful in schools, shops, etc., and would obviate in some cases the objectionable practice of keeping utensils in dormitories. It can be erected at an average cost of £2 a seat, and is stated to be more economical in the matter of water than a closet.

THE WILLESDEN BOARD OF GUARDIANS AND THEIR MEDICAL OFFICER.

A.B.C. writes with reference to the statement of "X.Y.Z.," published in the BRITISH MEDICAL JOURNAL of June 9th, p. 1448, that three of the four medical officers are in favour of the district being divided into three, that there are only two medical officers, and both condemn the tripartite arrangements. "A.B.C." also states that Kensal Green is one of the poorest wards in Willesden, all the houses being of the artisan class, and that it is also the most populous.

"*" We do not think the discussion of this subject, which can only be settled by local arrangement, can be profitably continued in our columns.

HOSPITAL AND DISPENSARY MANAGEMENT.

THE EXEMPTION OF HOSPITALS FROM LOCAL RATES.

THE Parliamentary Committee on this subject met for the second time on June 22nd. Mr. C. Burt, Chairman of the Central Hospital Council for London, said that the rates levied upon London hospitals amounted to £21,301 a year, which would provide for 4,000 more patients. He thought all institutions should be exempted which were carried on without profit, and would not include the medical schools. Mr. Manders, of the Irish Office, recounted the exemption of hospitals and charitable institutions in Ireland. The Hon. Sydney Holland, Chairman of the London, Poplar, and Tilbury Hospitals, thought that whether or not any particular hospital was to be exempted should be decided by the Local Government Board, and suggested that when an institution relieved the rates to a greater extent than it contributed to them, exemption should be allowed.

At a meeting of the Select Committee of the House of Commons, held on June 26th, Sir Edward Hamilton, Assistant Secretary to the Treasury, and a member of the Royal Commission on Local Taxation, said that he was opposed to the principle of exemption because it was equivalent to a grant from the rates. He drew a distinction between voluntary schools, which were given exemption three years ago, and hospitals, in that the benefit derived from schools could be much more definitely localised than in the case of hospitals, and he quoted the Ventnor Consumption Hospital as a case illustrating his point. If the hospitals were rate-aided the ratepayers would know what they were doing, but if exemption were granted they would not. Mr. Ralph Brocklebank, treasurer of the Liverpool Infirmary, claimed that hospitals should be completely exempted because they relieved the poor and municipal rates. The total exemption of the fourteen Liverpool hospitals would mean an increased rate of one-thirtieth of a penny, but, if supported out of the rates, of 4d. in the pound. Mr. Wainwright, Treasurer of St. Thomas's Hospital, stated that that hospital paid £2,566 last year in rates, and if the hospital was relieved of this it could reopen two wards which had been closed owing to lack of funds, and treat 380 or 400 additional in-patients.

The Rev. W. A. Jephson, speaking on behalf of the London School Board, and Dr. Rhodes, President of the Poor-law Unions Association of England and Wales, also gave evidence.

On July 2nd Sir W. Hart Dyke, M.P., in giving evidence, drew a distinction between institutions for the benefit of the inhabitants of a large town but supported in another locality by voluntary contributions and local institutions for local requirements, and contended that the inhabitants of the locality in the former case would have a grievance if the outside institution were exempt from rates, and especially so if it were for infectious cases. As an example he quoted the conditions obtaining in the Dartford district. In this was a home for waifs and strays, certain convalescent homes, an asylum for idiots, the county asylum, and the City of London Asylum. On the other hand the cottage hospital at Dartford was properly not rated. The justice of the claims of the hospitals for exemption should be decided by the Legislature, and should not be left to the local rating authorities.

Mr. Barton, Commissioner of Valuation in Ireland, said that the Irish Valuation Act exempted all institutions purely for public, scientific, and charitable purposes from rates, and these alone. He was now engaged on the revaluation of Belfast, and he proposed to exempt all hospitals open to everyone without fee and without paying beds, but for those having one or other or both to make a separate valuation. The Marquis of Bristol made special reference to the Eastern Counties Asylum for Idiots and Imbeciles, and pointed out certain inequalities in rating. This and similar institutions were really voluntary schools as well as homes, and were heavily handicapped by having to pay local rates, especially School Board and Poor-rates. He argued that because these institutions derived no benefit from the Poor Law or School Board, they should be exempt from these particular rates. Mr. Hayward, Clerk to the Dartford Board of Guardians, while not opposing the principle of exemption, argued that the locality should derive benefit at least equal to the amount of the rates.

OPENING OF A NEW WING OF THE GENERAL HOSPITAL AT CROYDON.

ON June 30th H.R.H. Princess Christian, accompanied by the Princess Victoria, opened the Diamond Jubilee Victoria Wing of the Croydon General Hospital. Mr. C. T. Ritchie, member for the Borough, in thanking their Royal Highnesses for their presence, said they were especially glad to see Princess Christian, because they knew how closely to her heart lay the work of all hospitals, and how much the increase in the efficiency of hospital work, and especially of nursing work, was due to her efforts and sympathy.

THE JENNY LIND INFIRMARY FOR SICK CHILDREN AT NORWICH.

THE new Jenny Lind Infirmary for Sick Children was opened at Norwich by the Prince and Princess of Wales on July 1st. The site of the present building was presented in 1896 by the late Mr. J. J. Colman, and its erection was intended to commemorate the Diamond Jubilee of the Queen. The hospital, the only one of its kind in the eastern counties, was established in 1849 from the proceeds of two concerts given by Madame Jenny Lind, who, throughout the closing years of her life, as was remarked by His Royal Highness, evinced the greatest interest in it. In 1897 it was considered that the site of the old buildings was not sufficiently salubrious for the use of in-patients, and the wards were accordingly closed and it was decided to build an entirely new hospital on the site given in the previous year by Mr. Colman. The Lord-Lieutenant of the county, the Earl of Leicester, subscribed £2,000, and afterwards an additional £1,000, to an endowment fund, which has since been raised to £10,000, leaving £4,000 still to be raised. Mr. Russell Colman, in the course of an address, in which he described the origin and history of the institution, said that he had every confidence that as a result of the honour conferred on the infirmary by the presence of their Royal Highnesses, the amount required to complete the endowment would be speedily contributed. The Prince of

Wales, in supporting this appeal, and speaking both on behalf of the Princess of Wales and himself, said that all matters affecting the welfare of hospitals engaged their warmest interest, that they were always most anxious to take a personal part in measures calculated to promote their practical utility, and that they sympathised especially with every institution designed to benefit children.

MEDICAL NEWS.

THE annual meeting of the National Association for Promoting the Welfare of the Feeble-Minded will take place at Aubrey House, Kensington, on Monday, July 9th, when Mr. W. H. Dickinson, L.C.C., Chairman of the Executive Committee, will preside.

THE medical staff and lecturers of the Dental Hospital of London have issued invitations to a *conversazione* at the Royal Institute Galleries, Princes Hall, Piccadilly, on July 18th, at 8 P.M., when the prizes will be distributed by Mr. F. A. Bevan.

PRESENTATION.—On June 16th Mr. Richard Ellery, M.R.C.S., L.R.C.P., who is about to leave Plympton for Dawlish after practising in the village for thirty-five years, was presented with a piece of plate—a handsome silver salver—by 150 subscribers, and Mrs. Ellery with a purse of gold. Expression was given to the feeling of esteem in which Dr. and Mrs. Ellery were held by the people of the village and district.

COMPLIMENT TO UNIVERSITY ASSISTANTS IN EDINBURGH.—On June 29th a dinner was given in the Royal Hotel by members of the classes of surgery, midwifery, and clinical surgery of the University of Edinburgh in honour of Mr. Stiles, Dr. Fordyce, and Mr. Bowden, the assistants in these classes, who were retiring from their respective posts. Mr. J. C. Mitchell, D.Sc., presided over a gathering of over one hundred gentlemen, among whom were Dr. G. A. Gibson, Mr. F. M. Caird, Dr. Haultain, and other colleagues of the guests.

MEDICAL VACANCIES.

The following vacancies are announced:

AMERSHAM UNION.—Medical Officer and Public Vaccinator for the Beaconsfield District. Salary, £43 per annum, and fees. Applications to the Clerk, Union Offices, Amersham, by July 16th.

BIRMINGHAM CORPORATION.—Second Assistant Medical Officer to the City Hospital, Lodge Road. Salary, £120, with board, residence, etc. Applications to the Medical Superintendent.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, with apartments and board. Applications to the Chairman of the Medical Board by July 16th.

BIRMINGHAM: RUBERY HILL ASYLUM.—Senior Assistant Medical Officer, unmarried. Applications to the Medical Superintendent.

BRIDGWATER INFIRMARY.—House-Surgeon. Salary £80 per annum, with board and residence. Applications to the Secretary by July 12th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Assistant House-Surgeon, unmarried, and under 30 years of age. Salary, £30 per annum, with board and residence. Applications to the Secretary by July 11th.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House-Surgeon. Salary £120 per annum, with rooms and attendance without board: or £80 with board. Applications, endorsed "House-Surgeon," to the Secretary by July 12th.

BUXTON: DEVONSHIRE HOSPITAL.—(1) House-Surgeon. Salary, £100 per annum. (2) Assistant House-Surgeon. Salary, £50 per annum. Furnished apartments, board, and washing provided in each case. Applications to the Secretary.

CARDIFF INFIRMARY.—Assistant House-Physician. Appointment for six months, but renewable, salary at the rate of £75 per annum, with board, washing, and apartments. Applications, endorsed "Assistant House-Physician," to the Chairman.

CARDIFF: UNIVERSITY COLLEGE.—(1) Demonstrator and Assistant Lecturer in Anatomy; (2) Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120. Applications to the Secretary by September 8th.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—Physician to the Out-patient Department. Applications to the Secretary before July 7th.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—Registrar. Honorarium, 20 guineas per annum. Applications to the Secretary by July 21st.

CHORLEY DISPENSARY AND COTTAGE HOSPITAL.—House-Surgeon. Salary commencing at £80 per annum, with board and lodging. Applications to the Honorary Secretary.

CITY ORTHOPAEDIC HOSPITAL, Hatton Garden.—Physician. Applications to the Secretary by July 14th.

CORNWALL COUNTY ASYLUM, Bodmin.—Locum Tenens. Terms, £3 3s. a week and all found, with second return journey. Applications to the Medical Superintendent.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House-Surgeon. Appointment for six months. Salary, £30, with board, residence, and washing. Applications to the Secretary by July 20th.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary, £140, increasing to £160, per annum, with board, laundry, and attendance. Applications to the Medical Superintendent.

CHESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £60 per annum, with residence and maintenance. Applications to the Chairman of the Board of Management, 29, Eastgate Row North, Chester, by July 28th.

GLASGOW: ST. MUNGO'S COLLEGE.—Bellahouston Chair of Anatomy. Emoluments, £300 per annum. Applications to the Secretary, 93, West Regent Street, Glasgow, by August 7th.

GREAT NORTHERN CENTRAL HOSPITAL.—Senior House-Physician. Appointment for six months. Salary at the rate of £60 per annum, with board, lodging, and washing. Applications, on forms provided, to be sent to the Secretary by July 16th.

HALIFAX ROYAL INFIRMARY.—(1) Senior House-Surgeon. (2) Third House-Surgeon. Candidates must be unmarried. Salary, £90 and £50 per annum respectively, with residence, board, and washing. Applications to the Secretary by July 11th.

HAMPSTEAD HOSPITAL, Parliament Hill, N.W.—Resident Medical Officer. Appointment for six months, but eligible for re-election. Salary at the rate of £120 per annum, with rooms, coal, and gas. Applications to the Honorary Secretary by July 10th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) Two House-Surgeons to Out-Patients. Salary, 25 guineas each. (2) House-Physician, unmarried. Salary, £30, with board and residence. Appointments for six months. Applications to the Secretary for (1) by July 10th, and for (2) by July 25th.

HUDDERSFIELD INFIRMARY.—Junior House-Surgeon. Salary, £60 per annum, with board, residence, and washing. Applications to the Secretary.

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer. Salary, £120, rising to £150 per annum, with board, apartments, and washing. Applications on forms provided, endorsed "Assistant Medical Officer," to be sent to the Chairman of the Asylum Committee, care of the Town Clerk, Town Hall, Hull, by July 17th.

KING'S LYNN; WEST NORFOLK AND LYNN HOSPITAL.—House-Surgeon. Salary, £80, increasing to £100, per annum, with board, residence, and washing. Applications to the Chairman of the Weekly Board by July 20th.

LANARK COUNTY ASYLUM, Hartwood, Glasgow.—Third Assistant Medical Officer. Salary, £120, with fees, board, washing, and residence. Applications to the Medical Superintendent.

LIVERPOOL: STANLEY HOSPITAL.—Senior House-Surgeon. Salary, £80 per annum, with board, lodging, and washing. Applications, endorsed "House-Surgeon," to the Secretary, Medical Board.

LONDON HOSPITAL, Whitechapel.—Assistant Surgeon. Applications to the House-Governor by July 13th.

METROPOLITAN ASYLUMS BOARD.—Four Assistant Medical Officers at the Fever and Small-Pox Hospitals. Salary, £160 for first year, £180 the second, and £200 the third and subsequent years. Board, lodging, and attendance provided. Candidates must be unmarried, and not exceed 35 years of age. Applications on forms provided to be sent to the office of the Board, Victoria Embankment, E.C., by July 12th.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee by July 18th.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Soho Square, W.—Physician to Out-patients. Must be M.R.C.P.Lond. Applications to the Secretary by July 13th.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—(1) House-Physician. Appointment for six months. Salary at the rate of £80 per annum. (2) Resident Medical Officer. Salary, £120 per annum. Board, residence, and washing allowance provided in each case. Applications to the Secretary, 27, Clement's Lane, E.C., by July 21st.

NORTH RIDING ASYLUM, Clifton, York.—Junior Assistant Medical Officer; unmarried, age not exceeding 30. Salary, £125 per annum, rising to £175, with board, furnished apartments, etc. Applications to the Medical Superintendent.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Unmarried. Salary, £140 per annum, with all found except board. Applications to the Secretary.

OLDHAM INFIRMARY.—(1) Senior House-Surgeon. (2) Junior House-Surgeon. Salary, £100 and £75 per annum respectively, with board, residence, and washing. Applications to the Honorary Secretary by July 9th.

PERTH COUNTY AND CITY ROYAL INFIRMARY.—House-Surgeon. Salary £60 per annum, with board. Applications to the Secretary, 38, Tay Street, Perth, by July 9th.

PLAISTOW: ST. MARY'S CHILDREN'S HOSPITAL.—Assistant Resident Medical Officer. Appointment in first instance for six months. Salary, £80 per annum, with board, residence, laundry, etc. Application to the Secretary by July 14th.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary, £125, increasing to £175 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant Medical Officer," to Dr. W. H. Bowes, Medical Superintendent, Plymouth Borough Asylum, Blockadon, Ivybridge, Devon, by July 30th.

RAINHILL COUNTY ASYLUM.—Assistant Medical Officer, for a few weeks. Salary, £3 3s. per week, with furnished apartments and board. Application to the Medical Superintendent.

ST. ANDREWS UNIVERSITY.—Additional Examiner for Graduation in Physiology. Applications to the Secretary by July 14th.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Demonstrator of Physiology. Salary, £150. Applications to the Dean by July 14th.

SCARBOROUGH HOSPITAL AND DISPENSARY.—(1) House-Surgeon. Salary, £90 per annum. (2) Assistant House-Surgeon. Salary, £75 per annum. Residence, board, and washing provided in each case. Applications to the Honorary Secretary by July 18th.

SHREWSBURY: SALOP INFIRMARY.—Assistant House-Surgeon. Appointment for six months, but renewable. Salary at the rate of £60 per annum, with board and washing. Applications to the Secretary.

STAMFORD, RUTLAND, AND GENERAL INFIRMARY.—House-Surgeon. Salary, £100 per annum, with board, lodging, and washing. Applications to the Secretary by July 10th.

SWANSEA GENERAL AND EYE HOSPITAL.—House-Physician. Salary, £50 per annum, with board, apartments, washing, and attendance. Applications to the Secretary.

TEIGNMOUTH HOSPITAL.—House-Surgeon. Salary, £70 a year, with board, lodging and washing, and allowance. Application to the House Committee

WAKEFIELD: CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House-Surgeon, unmarried. Salary, £30 per annum, with board, lodging, and washing. Applications to the Secretary by July 12th.

WESTBURY AND WHORWELLSDOWN RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary, £50 per annum. Applications to the Clerk, Westbury, Wilts, by July 9th.

WEST HAM UNION.—Medical Officer for the No. 4 District. Salary, £130 per annum, rising to £180, and fees. Applications on forms provided to be sent to the Clerk, Union Workhouse, Leytonstone, N.E., by July 11th.

WEST RIDING ASYLUM, near Leeds.—Locum Tenens, for two months. Applications to the Medical Superintendent.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried, and not exceeding 30 years of age. Salary, £130, rising to £160, with board, residence, attendance, and washing. Applications to the Medical Superintendent by July 14th.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Surgeon; appointment for six months. Salary at the rate of £75 per annum. Board, lodging, and washing provided. Applications to the Chairman of the Medical Committee by July 12th.

YORK DISPENSARY.—Resident Medical Officer. Salary, £110 per annum, with board, lodging, and attendance. Applications to Mr. W. Draper, De Grey House, York, by July 10th.

MEDICAL APPOINTMENTS.

GIMSON, Karl, M.B., B.C.Cantab., appointed Medical Officer of Health to the Witham Urban District Council.

HAMILTON, D. L., L.R.C.P., F.R.C.S.Eng., appointed Medical Officer for the Timsbury District of the Clutton Union, *vice* F. Woods, L.R.C.P., M.R.C.S., resigned.

HANNAH, E. W. St.Clair, M.B., Ch.B.Aberd., appointed House-Surgeon to the Kent County Ophthalmic Hospital, *vice* Percy E. Turner, M.B., B.S.Durh., D.P.H.Oxon., resigned.

KEATING, James, L.R.C.P., L.R.C.S.Edin., appointed Certifying Factory Surgeon for the Ballygarvan Dispensary District, co. Cork.

KELLY, T. J., Lic. Med. T.C.D., L.R.C.S.I., appointed Certifying Factory Surgeon for the Enniscorthy No. 1 and No. 2 Dispensary District.

LIMERICK, W. S., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer of Health for the Great Crosby Urban District.

MANNIX, J. F., L.R.C.P., L.R.C.S.I., appointed Certifying Factory Surgeon for the Caherciveen District, co. Kerry.

MARSHALL, Charles Devereux, F.R.C.S., appointed Assistant Surgeon to the Royal London Ophthalmic Hospital (Moorfields Eye Hospital), City Road, E.C.

ARMISTEAD, H., M.B., C.M.Edin., appointed Medical Officer for the Oswaldtwistle District of the Blackburn Union, *vice* W. Loynd, M.R.C.S.Eng., L.R.C.P.I., resigned.

BARRON, H. T., M.B.Lond., L.R.C.P., M.R.C.S.Eng., appointed Medical Registrar to the Westminster Hospital.

CHESTNUTT, J., L.R.C.P., L.R.C.S.Edin., appointed Certifying Factory Surgeon for the Howden District.

CRUICKSHANK, R., M.B., appointed Certifying Factory Surgeon for the civil parishes of Cruden and Slains, county Aberdeen.

DALLEY, H. P., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., appointed Medical Officer for the Syston District of the Barrow-upon-Soar Union, *vice* W. C. Dalley, M.R.C.S.Eng., resigned.

EMMETT, Richard, M.R.C.S Eng., L.R.C.P.Lond., L.S.A.Lond., appointed Medical Officer to the Portsmouth Post Office.

GILLETT, J. F., M.B., B.C.Camb., appointed Medical Officer for the Second District of the Andover Union, *vice* L. W. Oliver, M.R.C.S., L.R.C.P., resigned.

MARTIN, Fred W., M.R.C.S.Eng., L.R.C.P.Edin., reappointed Medical Officer of Health to the Borough of Brighouse.

NICHOLSON, T. D., M.B., C.M.Edin., appointed Certifying Factory Surgeon for the Shap District.

O'DRISCOLL, A., L.R.C.P., L.R.C.S.Edin., appointed Certifying Factory Surgeon for the Valencia Dispensary District in Cahercivcen Union, co. Kerry.

SMITH, G. H., M.B., appointed Medical Officer to the Bucklow Union Workhouse, *vice* J. T. Appleby, L.R.C.P.Edin., M.R.C.S.Eng., resigned.

TETLEY, T. Walsh, M.R.C.S., L.R.C.P.Lond., appointed Senior House-Surgeon to the Clayton Hospital, Wakefield.

WRIGHT, G. A., F.R.C.S.Eng., Senior Honorary Assistant Surgeon, appointed an Honorary Surgeon to the Manchester Royal Infirmary, *vice* Thomas Jones, F.R.C.S., deceased.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. T. Colcott Fox: Consultation (Skin).

London Throat Hospital, 204, Great Portland Street, W., 4.30 P.M.—Dr. Furniss Potter: Post-nasal Growths.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Seymour Taylor: The Diagnosis of Chest Cases. (Lecture I.)

TUESDAY.

National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W.C., 3.30 P.M.—Dr. Aldren Turner: Tabus Dorsalis.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. W. B. Cheadle: Consultation (Medical).

Society for the Study of Inebriety, 11, Chandos Street, Cavendish Square, W., 4 P.M.—Dr. W. L. Brown: A Consideration of the Question of the Toleration of Wines, Beers, and Spirits as a Factor in the Etiology of Inebriety.

WEDNESDAY.

Evelina Hospital for Sick Children, Southwark Bridge Road, S.E., 4.30 P.M.—Mr. C. H. Fagge: Selected Surgical Cases. (Post-GraduateCourse.)

Hospital for Consumption and Diseases of the Chest, Brompton, S.W., 4 P.M.—Dr. Habershon: Auscultatory Percussion as a Means of Diagnosis in Thoracic Disease.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Guthrie Rankin: Consultation (Medical).

THURSDAY.

Charing Cross Hospital, Post-Graduate Course, 4 P.M.—Dr. Willcocks: Medical Cases.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Seymour Taylor: The Diagnosis of Spinal Cord Cases. (Lecture II.)

FRIDAY.

British Gynæcological Society, Buxton, 10.15 A.M.—Specimens will be shown by Messrs. Furneaux Jordan, Christopher Martin, Macnaughton-Jones, and Charles Ryall. Discussion: Some Untoward Results following Abdominal and Pelvic Operations, and the Means Requisite to Prevent Them. To be opened by Mr. Stanmore Bishop.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Tilley: Consultation. (Nose and Throat.)

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

NEWBOLT.—On July 2nd, at 42, Catharine Street, Liverpool, the wife of George Palmerston Newbolt, M.B., F.R.C.S., of a daughter.

MARRIAGES.

ARNOTT—HEWLETT.—On June 27th, at St. George's (Parish) Church, Beckenham, by the Rev. Henry Arnott, F.R.C.S. Eng., Rector (father of the bridegroom), assisted by the Rev. Chas. Green, Vicar of St. Paul's, New Beckenham, Neil, eldest son of the Rev. Hy. Arnott, to Evelyn Mary, eldest daughter of John C. Hewlett, Esq., F.G.S., of Hillside House, Beckenham, Kent, and 10, 11, and 12, Charlotte Street, London, E.C.

EYRES—TEMPERLEY.—On July 3rd, at St. Helen's Church, Low Fell, by the Rev. Canon Moore Ede and the Rev. A. H. Patterson, Hugh Middleton Eyres, M.B., of Richmond, Yorkshire, to Nellie, younger daughter of Nicholas Temperley, J.P., of Low Fell, Gateshead-on-Tyne.

STOCKTON—WORLEY.—On June 27th, at St. Mary's, Witney, Oxon., by Rev. Canon Foxley Norris and Rev. B. S. Hack, Arnold Stockton, M.R.C.S., L.R.C.P., King's Sutton, Banbury, youngest son of the late James Stockton, of South Bank, Banbury, to Nora Worley, elder daughter of the late William Worley, of Field House, Witney, Oxon.

DEATHS.

GOULD.—At Whiteknight's Park, Reading, on July 1st, after a very short illness, Catherine Alfreda, the oldest and dearly-loved daughter of Alfred Pearce Gould, of 10, Queen Anne Street, London, aged 20.

LEECH.—On July 2nd, at his residence, Elm House, Whalley Range, in his 61st year, Daniel John Leech, M.D., D.Sc., F.R.C.P., Professor of Materia Medica and Therapeutics in the Owens College, Manchester.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—I.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Roentgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, i.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, i.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, i.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, i.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, i.p., 3; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, i.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, i.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Tu. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; i.-p., Tu. Th., 2.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 3; Skin, Tu., 9; Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; i.p., 1; o.p., 12; Obstetric, i.p., Tu. F. 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—I.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30-Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Tu., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

WE would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided.

CURIOUS would like to know why a chilblain on the heel is commonly called in France *la mule*. What connection can there be in the mind between such a complaint and that animal?

C. E. S. would be glad of any hints for improving an old floor in an operating theatre, short of complete reflooring. Is the plan of putting zinc in the centre, extending a few feet from the operating table, satisfactory?

CANADA asks for information relative to practice in Canada (especially Ontario) for men with English qualifications; as to whether there are good openings for such in the chief towns, general scale of fees; or, in fact, particulars of any kind.

BYCULLA (India) asks for information as to a liquid invented by a gentleman named Cooper in 1872 for watering streets. It was, he states, a solution of chlorides of calcium and sodium in water. It was claimed that a much smaller quantity of liquid was required, and that the effects were more lasting than if plain water was used. Our correspondent believes that the system was tried by the Paddington Vestry.

ENTERIC FEVER IN SOUTH AFRICA.

H. F. writes: In Mr. Bowlby's report in the BRITISH MEDICAL JOURNAL of June 30th occurs the statement: "The water was bad." This tended doubtless to the rapid increase of the fever cases. Is it known whether sterilised milk was used for these cases, or was condensed milk used diluted with water? Pure sterilised milk could have been supplied if ordered.

STEREOSCOPIC PHOTOGRAPHY.

DR. W. COTTON, M.D. (Bristol), writes: In reference to the paper in the BRITISH MEDICAL JOURNAL of December 3rd, 1898, on Stereoscopic Photography, I should be much obliged if you would give a reference as to where I could find Sir Charles Wheatstone's paper on the Physiology of Vision; also Sir David Brewster on his Lenticular Stereoscope.

*** *Wheatstone's Scientific Papers.* Published by the Physical Society. London: Taylor and Francis, Red Lion Court, Fleet Street. 1879.
Brewster: *The Stereoscope: Its History, etc.* John Murray, Albemarle Street. 1856.

ANSWERS.

DISPENSARY.—We do not feel disposed to express an opinion to a third party.

R. C. W., who asks to be referred to a work on chronic mucous catarrh of the bowels, might consult the chapter on Diseases of the Intestine by Professor C. A. Ewald, of Berlin, in the *Twentieth Century Practice of Medicine*, vol. ix, p. 125 *et seq.*; the chapter on Diseases of the Intestine in Osler's *Principles and Practice of Medicine* (1898), p. 505, and that on Diseases of the Bowels in Allbutt's *System of Medicine*, vol. iii, pp. 709 and 937. These works are in the library of the British Medical Association.

MEDICAL FEES.

STATHERN.—We think that, considering the time occupied, two guineas a visit would not have been an excessive charge, but it is not possible to amend the claim in that respect. It is not, however, usual to charge travelling expenses in addition to the fees.

NOTES, LETTERS, Etc.

CHANGE OF ADDRESS AND REMOVAL FROM THE "REGISTER."

SOUTHAMPTON, who refers to the correspondence on this subject which has recently taken place in our columns, informs us that he recently notified the Registrar of the General Medical Council that he had changed his address, and enclosed a reply postcard. In reply he received this postcard with the words, "I have received your postcard of 23rd inst., and have noted your change of address. 27/6/1900." He points out that the postcard has no heading and no signature, and he asks whether the form of acknowledgment is not very casual. We suspect that most people will be inclined to reply in the affirmative.

THE MIDWIVES BILL: THE CANNON STREET HOTEL MEETING.

WE have received a communication from Dr. F. S. Toogood, Chairman of the meeting, in reply to Dr. Sturges and the Beckenham and Penge Medical Society. As the matter has already been dealt with by Dr. Lorimer Hart, and as the question of the legislation of midwives has fortunately ceased for a time to have actuality, it does not appear to be necessary to publish further correspondence on the matter at present.

SHORTHAND FOR MEDICAL STUDENTS.

THE Society of Medical Phonographers offers for competition among registered medical students two prizes, each of the value of £5, one for those studying in England, and one for those studying in Scotland or Ireland, for proficiency in the groundwork of phonetic shorthand (phonography). A second prize will be given in each case, consisting of one year's free membership of the Society, and a selection from its shorthand publications. The examination will have for its chief object legibility, accuracy, and neatness of writing rather than speed, and will consist of two simple tests: (1) The ability to read at sight a passage of a few hundred words printed in a freely vocalised style of shorthand; (2) the ability to write shorthand at a low rate of speed (60 words per minute), and to produce a correct long-hand transcript of the passage so dictated. In this test the quality of the shorthand note, as well as the correctness of the transcript, will be taken into account. The passage used in each test will consist of some straightforward medical matter. The examination will be held the first week of November, simultaneously in London, Edinburgh, and Dublin, and at any provincial medical school in the United Kingdom at which not fewer than three candidates shall offer themselves. Intending candidates are requested to send in their names at as early a date as possible to the examination secretary (Dr. Gray, Oxford), who will inform them in due course as to the precise date and place of examination at each centre.

VOLUNTEER MEDICAL STAFF CORPS RELIEF FUND.

SURGEON-MAJOR VALENTINE MATTHEWS, V.M.S.C. (Honorary Secretary, Headquarters, London Company V.M.S.C., 51, Calthorpe Street, W.C.) writes: This fund is established to assist the families on or off the strength of non-commissioned officers and men of Royal Army Medical Corps on active service in South Africa. All moneys received will be handed over to the Royal Army Medical Corps Depôt Mobilisation Relief Fund, Aldershot.

	£	s.	d.
Amount already acknowledged	291	3	7
Woolwich Company V.M.S.C.	21	0	11
Rogers, Finch, and Co.	2	2	0

THE VALUE OF RECTAL EXAMINATION BEFORE AND DURING LABOUR.

DR. ALEXANDER DUKE (Cheltenham) writes: I consider "J. T. H." is quite right as to the value of rectal examination "before labour has commenced" in order to determine the presentation. But I consider it of much more value during the course of labour. We may be called when labour has advanced and a "caput succedaneum" formed, making it almost impossible to diagnose position of fœtal head through vagina. It is quite a simple matter to feel one fontanelle through rectal wall, which will often explain the cause of delay in face to-pubis presentation. I have drawn attention to this point several years ago when Assistant Master to Rotunda Hospital, Dublin, and have found its value ever since, and can recommend its trial.

LETTERS, COMMUNICATIONS, ETC., have been received from **A** Abstainer; A. R. W.; **B** Mr. W. Brown, London; Byculla; T. A. Buck, M.B., Ryde, Isle of Wight; Dr. L. W. Bathurst, London; Dr. T. Beattie, Newcastle-on-Tyne; Mr. L. A. Bidwell, London; Mr. I. K. Bellis, London. **C** Dr. W. A. Carline, Lincoln; Hon. S. Coleridge, London; Dr. W. Cotton, Bristol; Dr. C. Coppinger, Dublin; C. E. S.; Canada; Cante. **D** "Daily Mail," Editor of the, London; Miss A. Dowling, Fermoy; Mr. P. J. Dempsey, Dublin; Dr. J. Dreschfield, Manchester. **E** E. D. D.; A. Edington, M.B., Graham's Town; Mr. W. R. Etches, Farnham Common; Mr. M. Eustace, Bristol. **F** Mr. J. M. Fullard, Pensarn; C. Frier, M.B., Grantham; Mr. B. FitzHugh, Nottingham; Dr. E. T. Fison, Salisbury; Fibroid; F. C.; Dr. W. F. Farquharson, Carlisle; Former House Physician. **G** Dr. E. B. Gray, Oxford; G. E. Gordon, M.B., Dublin. **H** Dr. H. Handford, Nottingham; Mr. F. R. Humphreys, London; F. J. Hicks, Madeira; H. F.; H. J. B.; Dr. J. S. Haldane, Oxford; Mr. H. Hemsted, jun., Winchester; Mr. W. F. Haslam, Birmingham. **J** J. S.; J. R. B. **K** Mr. T. J. Kelly, Enniscorthy; Dr. J. King-Warry, London. **L** Lost. **M** Dr. R. L. Meade-King, Taunton; M.D.; Mr. E. R. Morgan, Morriston; Dr. R. M. Miller, London; M.B.; Dr. A. Macfadyen, London; M.P.; J. A. Mitchell, M.B., Edinburgh; Mr. J. Y. W. MacAlister, London. **N** Non-smoker; R. H. Nootts, M.B., Wokingham. **O** Dr. J. A. Ormerod. **P** F. M. Pope, M.B., Leicester; Perry; Dr. E. F. Potter, London. **Q** Q. A. **R** Mr. C. F. Rilot, London; R. O.; Mr. C. Ryall, London; Rusticus. Mr. M. Smale, London; Mr. C. J. Symonds, London; Southampton; Dr. J. A. Shaw-Mackenzie, London; Dr. W. J. Sinclair, Manchester; Dr. J. A. Smith, London. **T** Dr. F. S. Toogood, London. **W** Mr. H. White, Manchester; W. B.; Mr. O. Williams, London; Dr. T. M. Watt, London; Dr. F. Willcocks, London; J. Walters, M.B., Reigate; Mr. W. Woodward, Wilton; Dr. A. Wilson, South Woodford. **X** X. Y. Z.; etc.

BOOKS, ETC., RECEIVED.

Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. Sixteenth Annual Issue. London: C. Griffin and Co. 1900. 7s. 6d.

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AN ADDRESS
ON
THE IMPORTANCE OF POST-GRADUATE STUDY.

Delivered at the Opening of the Museums of the Medical Graduates College and Polyclinic, July 4th, 1900,

BY WILLIAM OSLER, M.D., F.R.S.,
Professor of Medicine, Johns Hopkins University.

IF the licence to practise meant the completion of his education how sad it would be for the doctor, how distressing to his patients! More clearly than any other, the physician should illustrate the truth of Plato's saying—that education is a life-long process. The training of the medical school gives a man his direction, points him the way, and furnishes a chart, fairly incomplete, for the voyage but nothing more. Post-graduation study has always been a characteristic feature of our profession. These three hundred years the schools of Italy, Holland, France, Austria, and Germany have in turn furnished instruction to the young English doctors who believed in the catholicity of medicine, and who felt the sharp sting of the remark which associates homely wits with home-keeping youths. At first it was the grand tour, and many of the masters spent years in foreign study. In spite of our journals and international societies, and increased facilities for travel, I am not sure that among the teachers in our art, the world over, medicine to-day is any more cosmopolitan than in the seventeenth and eighteenth centuries. Men now spend a few months or a year in foreign study, whereas our great-grandfathers thought nothing of two and three years. I have seen the MSS. journal of Dr. John Morgan (a Pennsylvania colonist), the founder of the first medical school in America (University of Pennsylvania), who, after graduation at Edinburgh, spent three years on the Continent and became thoroughly familiar with Italian, Dutch, and French medicine, reaching such distinction as a student that he took his seat as a corresponding member of the Paris Academy of Surgery, and was elected a Fellow of the Royal Society. Linacre, Caius, and Harvey remain to-day the models for all students in foreign lands, but the pace they set is a hard one to keep up. In the rapid extension of methods and subjects in medical education during the past quarter of a century post-graduate teaching has come in for a full share of attention. In the United States many special schools have been organised, and perhaps more systematic attention has been paid to the subject than anywhere, except in Germany. In New York, in Philadelphia, and in Chicago, the polyclinics and post-graduate colleges have been widely appreciated by the practitioners, and have done much good. Less successful attempts have been made by some of the ordinary medical schools, but the leading ones have now abandoned in great part the teaching of graduates. Personally I have been engaged in the work for the past eleven years. For the first five years of the organisation of the Johns Hopkins Hospital we admitted only physicians, but since the medical school proper began we have had courses for graduates in the months of May and June. At any time during the year, at the discretion of the professor, a few special students may enter the classes or work in the laboratories. So far as the subject of medicine is concerned it is easy to arrange very attractive courses in routine ward instruction, in physical diagnosis, and in clinical microscopy, I have just finished a six weeks' course of clinical instruction to a class of of about thirty general practitioners, and to meet these good earnest students from all parts of the country, some of whom have been in practice fifteen or twenty years, stimulates one's optimism as to the outlook in the profession.

Upon the advantages which London offers for graduate study it would be superfluous to dwell, since here is collected a larger number of sick people than in any city in the world. The special hospitals offer unequalled facilities for the study of diseases of the eye, of the skin, of the nervous system, and of the diseases peculiar to women and children. The absence of concentration of material so convenient in Vienna is counterbalanced by the much more elaborate equipment to be found in the special hospitals. There has been but one thing lacking—the organisation necessary to bring patients and students into intimate association, for which purpose this College for graduates was started. Until recently the physician who came to London felt lost and perplexed, and even if he took out three or four hospital tickets, there was but little systematic teaching, and he had to pick up information as best he could. Here he finds a local habitation, with a comfortable reading room, a good library, and a well-arranged curriculum embracing all the practical branches of medicine and surgery.

The value of a Museum as a means of practical instruction was first practically demonstrated by John Hunter, whose magnificent collection is in itself a college for graduates. So extensive is the material, so admirably arranged, and so well catalogued, that to the general practitioner and to the special student it offers a unique field for study. I am surprised that a larger number of physicians do not take advantage of the opportunity there offered to study accurately and systematically the manifold manifestations of disease. To Hunter's example is owing the place which the Museum occupies in the medical schools of this country. You have been fortunate in having associated with your college a man with a truly Hunterian mind. In the broad scope of his work, in the untiring zeal with which he has studied the natural phenomena of disease, in his love for specimens and collections, Mr. Jonathan Hutchinson bears a strong likeness to the immortal Hunter. No individual contributor in this country has made so many careful observations upon so many diseases. He is the only great generalised specialist the profession has produced, and his works are a storehouse upon which the surgeon, the physician, the neurologist, the dermatologist, and other specialists freely draw. When anything turns up which is anomalous or peculiar, anything upon which the textbooks are silent, and the systems and cyclopædias dumb, I tell my students to turn to the volumes of Mr. Hutchinson's *Archives of Surgery*, as, if it is not mentioned in them, we have surely something very much out of the common. It is very fortunate that the collection which he has made will be kept together, as it will be of great service to students from all parts of the world. In one respect it is a unique collection, pictorial and clinical, not anatomical and pathological, and it will remain a worthy monument to the zeal and perseverance of a remarkable man—a man who has secured the homage of a larger number of clinical workers than any Englishman of his generation.

Post-graduate instruction is needed in all classes among us. The school for the young doctor is a general practice, in which the number and variety of cases will enable him at once to put his methods into daily use. A serious defect may warp his course from the outset. Our students study too much under the one set of teachers. In English and American schools they do not move about enough. At a tender age four or five years give a man a sense of local attachment to place and teachers which is very natural, very nice, but not always the best thing for him. He goes out with a strong bias already in his mind, and is ready to cry "I am of Guy's," "I am of Bart's," "I am an Edinburgh man." To escape from these local trammels, which may badly handicap a man by giving him an arrogant sense of superiority, often most manifest when there is least warrant, is very difficult. I knew three brothers in Canada, Edinburgh men, good fellows at heart and good practitioners, but for them the science and art of medicine never extended beyond what their old teachers had taught. A Guy's man they could just endure, for the sake, as one of them said, of Bright, and Cooper, and Addison, but for men of other schools they entertained a supreme and really ludicrous contempt.

There are two great types of practitioners—the routinist and the rationalist—neither common in the pure form. Into the clutches of the demon routine the majority of us ultimately come. The mind, like the body, falls only too readily into the rut of oft-repeated experiences. One evening in the far North-West, beneath the shadows of the Rocky Mountains, we camped beside a small lake, from which, diverging in all directions, were deep furrows, each one as straight as an arrow, as far as the eye could reach. They were the ruts or tracks which countless generations of buffaloes had worn in the prairie as they followed each other to and from the water. In our minds

countless, oft-repeated experiences wear similar ruts, in which we find it is easiest to travel, and out of which many of us never dream of straying. Year by year we follow the same plan in practice, give the same drugs, and settle down into routinists of a most commonplace type. Last year I was called to a town in Pennsylvania, and having to wait until late in the evening for the return train, I insisted, as is my wont, that the doctor should carry on his daily work, and allow me if possible to help him. An afternoon round among patients, chiefly of the mechanic class, showed me a shrewd cheery man, who in twenty years had gained the confidence and esteem of his patients. Kindly, hopeful words, very sensible directions about diet, and some half dozen drugs, seemed the essentials in his practice. In the evening I saw him dispose of a dozen patients at an outdoor-dispensary rate; the examination was limited to the pulse, the tongue, and sometimes the throat. The dispensing, of the most primitive sort, was done at the table, on which stood four or five tin and paper boxes containing large quantities of calomel, soda, antipyrin, and Dover's powder. Other drugs, he said, were rarely necessary. He never used a stethoscope, he had no microscope, or instruments of precision other than the thermometer. In reply to my questions he said "that he rarely had to make an examination. If the patient has fever I send him to bed: if there is œdema I ask for the urine. Of course I make many mistakes and I sometimes get caught, but not oftener than the other fellows, and when I am in serious doubt I ask for a consultation." This was a man of parts, a graduate from a good school, but early in his career he had become very busy, and gaining the confidence of the people, and having much confidence in himself, he had unconsciously got into a rut, out of which at 40 only one thing could lift him—a prolonged course of additional study. This is by no means an exaggerated picture of a routinist in general practice. We all have our therapeutic ruts, and we all know consultants from whom patients find it very difficult to escape without their favourite prescription, no matter what the malady may be. Men of this stamp gain a certain measure of experience, and if of a practical turn may become experts in mechanical procedures, but to experience in the true sense of the word they never attain. In reality they suffer with the all-prevailing vice of intellectual idleness. It is so much easier to do a penny-in-the-slot sort of practice, in which each symptom is at once met by its appropriate drug, than to make a careful examination and to really study the case systematically. Much depends on a man's mental constitution, but much more on the sort of training he has had. If when a student good methods are not acquired it is very hard to get into proper habits of work in practice.

The rationalist, on the other hand, always approaches a patient as a mathematician does a problem. There is something to be found out; in each case, however trivial there is something novel; and the problems of causation and the question of relief, while not, perhaps, of equal importance, are of equal interest. He may be just as busy as his idle brother, but he finds time to keep up a technical dexterity in the use of instruments of precision, and the stethoscope and the microscope are daily helps in diagnosis. These men are the delight of the consultant. To go into the country and find the diagnosis made in a case of mitral stenosis, a Friedreich's ataxia, a case of leukæmia, or one of myxœdema, gives a man a thrill of pleasure, such as Comte says he always felt when a student gave him an intelligent set of answers in an examination. It is this class of practitioners for which the post-graduate courses are helpful and necessary. They alone feel the need of keeping abreast with the times, and men of this type will return every few years, finding that a three months' course of study not only improves and helps them personally, but is most beneficial in their practices.

The members of no class in our ranks travel to the waters in deeper or straighter ruts than the specialists. To work for years at diseases of the skin, ophthalmology, gynæcology, etc., necessarily tends to make a man narrow, not only as a practitioner but in other relations. One of the best features of British medicine has been the practice of specialities by general surgeons and physicians. It has been better for the men themselves, perhaps, than for the patients and for the particular branch practised. Nowadays, to master even the smallest speciality requires concentrated effort of years' duration, and to counteract the benumbing influence of isolation a man must scan the wide horizon of pathology, and must cultivate ardently the general interests of his profession. The degree of advancement of the specialities in different countries must be borne in mind by our friends, and there are few who have been in practice for five or ten years who would not be benefited by a course of study in some foreign country.

After all, no men among us need refreshment and renovation more frequently than those who occupy positions in our schools of learning. Upon none does intellectual staleness steal "with velvet step, unheeded, softly," but not the less relentlessly. Dogmatic, to a greater or less degree, all successful teaching must be; but year by year, unless watchful, this very dogmatism may react upon the teacher who finds it so much easier to say to-day what he said last year. After a decade he may find it less trouble to draw on home supplies than to go into the open market for wares, perhaps not a whit better but just a wee bit fresher. After twenty years the new, even when true, startles—too often repels; after thirty, well, he may be out of the race—still on the track, perhaps, even running hard, but quite unconscious that the colts have long passed the winning post. These unrefreshed, unregenate teachers are often powerful instruments of harm, and time and again have spread the blight of a blind conservatism in the profession. Safely enthroned in assured positions, men of strong and ardent convictions, with faithful friends and still more faithful students, they too often come within the scathing condemnation of the blind leaders of the blind; of those who would neither themselves enter into the possession of new knowledge, nor suffer those who would to enter. The profession has suffered so sorely from this blight of intellectual old fogeyism, that I may refer to the most glaring instances in our history. In the scientific annals of this great metropolis there is no occasion more memorable than April 16th, 1616, when Harvey began his revolutionary teaching. Why the long, the more than Horatian, delay in publishing his great discovery? He knew his day and generation, and even after twelve years of demonstration, which should have disarmed all opposition, we know how coldly the discovery was received, particularly in certain quarters. Harvey, indeed, is reported to have said that he did not think any man above 40 years of age had accepted the new truth. Many of us have lived through and taken part in two other great struggles. The din of battle over the germ theory of disease still rings in our ears. Koch's brilliant demonstration of the tubercle bacillus had a hard up-hill fight to recognition. The vested interests of many minds were naturally against it, and it was only the watchers among us, men like Austin Flint, who were awake when the dawn appeared. It is notorious that the great principles of antiseptic surgery have grown slowly to acceptance, and nowhere more slowly than in the country in which they were announced, the country which has the great honour to claim Lord Lister as a citizen. Old-fogeyism of the most malignant type stood in the way, and in some places, strange to say, still stands. Mentally it is possible that surgeons age earlier than physicians. I remember as a student listening to the introductory lecture of a distinguished surgeon at one of the metropolitan schools, the burden of whose discourse was the finality which had been reached by modern surgery. In boldness of conception and in precision of execution, he said, we could scarcely hope to see any further progress. Poor man! Cerebral, renal, and hepatic surgery, to say nothing of other operative advances, followed in rapid succession, and I only quote this as illustrating the state of mental blindness with which we teachers may be smitten.

As Locke says: "Truth scarce ever yet carried it by vote anywhere at its first appearance," and these well-known examples illustrate a law in human knowledge that a truth has to grow to acceptance with the generation in which it is announced. Progress is an outcome of a never-ending struggle of the third and fourth decades against the fifth, sixth, and seventh. Men above 40 are rarely pioneers, rarely the creators in science or in literature. The work of the world has been done by men who had not reached *la crise de quarante ans*. And in our profession wipe out with but few exceptions the contributions of men above this age, and we remain essentially as we are. Once across this line we teachers and consultants are in

constant need of post-graduate study as an antidote against premature senility. Daily contact with the bright young minds of our associates and assistants, the mental friction of medical societies and travel are important aids. Would you know the signs by which in man or an institution you may recognise old fogeyism? They are three: First, a state of blissful happiness and contentment with things as they are; secondly, a supreme conviction that the condition of other people and other institutions is one of pitiable inferiority; thirdly, a fear of change which not alone perplexes but appals.

Conservatism and old fogeyism are totally different things; the motto of the one is, Prove all things, and hold fast that which is good; of the other, Prove nothing, but hold fast that which is old. Do not suppose that you have here a monopoly of the article, which is a human, not a national, malady, for we see a very virulent type in America. In its illusiveness and in the disastrous consequences which have often followed its hunting, old-fogeyism is a sort of Snark in the medical profession. Before the Boojum, in the form of an entrenched variety, many good men and true have softly and silently vanished away, like the beamish nephew of the bellman, sacrificed to intellectual staleness in high places. One of the best correctives is the plan followed at Harvard, which compels (?) every teacher to take the Sabbatical year, ensuring in this way intellectual rest of the mind, if not refreshment. To maintain mental freshness and plasticity requires incessant vigilance; too often, like the dial's hand, it steals from its figure with no pace perceived except by one's friends, and they never refer to it. A deep and enduring interest in the manifold problems of medicine, and a human interest in the affairs of our brotherhood—if these do not suffice, nothing will.

As I stated at the outset, during the past three centuries English students have frequented in turn different countries, drinking deep, deep draughts at the great fountains of learning. Think of the debt we owe to these men and to their foreign masters! Linacre, and his successors, Caius, Harvey, and Glisson brought the new learning from Italy, and, moreover, gave to English medicine that smack of culture, that tincture so peculiarly its own. From Holland a succeeding generation drew rich stores of knowledge, and the methods of teaching of the great Boerhaave were quickly adopted by English and by Scotch students. From France came next the new science of Bichat, the new art of Laennec, and the new methods of Louis. To another group the great teachers of Austria contributed accuracy in clinical methods, a zest for the study of special branches, and a much-needed, at the time, therapeutic nihilism. The debt of the present generation to Germany can never be paid. Think of the scores who have found inspiration in our common master Virchow; and in the scientific study of disease the Fatherland is still in the van. The great republic of medicine knows, and has known no national boundaries, and post-graduate study in other lands gives that broad mental outlook and that freedom from the trammels of local prejudice which have ever characterised the true physician.

The course of Empire has opened new fields, in which problems new and old have been presented for solution, some of which are of great interest to you on this side of the water. In any comprehensive survey of the educational field in medicine, perhaps the most important single event during the past quarter of a century has been the silent revolution which has taken place in the United States, a revolution which has a direct bearing upon the matter in hand. Everywhere in the schools the entrance requirements have been strengthened, the course of study prolonged, and the character of the examination changed. The hospital equipment has been enormously improved and the clinical facilities correspondingly increased. But a still more striking change has been the cultivation of the scientific branches of medicine. Twenty-five years ago physiological laboratories were few and far between; now the output of a score of well-established laboratories supports one of the best journals of physiology in the world. The study of pathology has shown a corresponding growth. The most hopeful feature is a restless discontent which, let us hope, may not be allayed until the revolution is complete in all respect. Meanwhile, to students who wish to have the best that the world offers, let me suggest that the lines of intellectual progress are veering strongly to the West, and I predict that in the twentieth century the young English physicians will find their keenest inspiration in the land of the setting sun.

A CASE OF ACUTE AND CHRONIC TORSION OF THE OVARIAN PEDICLE IN THE SAME SUBJECT.

BY ALBAN DORAN, F.R.C.S.,

President of the Obstetrical Society of London; Surgeon to the Samaritan Free Hospital.

TWISTING of the ovarian pedicle is a well-known condition, and much has been written about it on account of its high importance, both from clinical and surgical points of view. Among recent cases, I may quote Dr. Boxall's, where torsion of the same pedicle, manifested by distinct symptoms, occurred twice at an interval of eleven months.[1] According to Dr. M. Storer, a great authority on the literature of torsion, bilateral rotation is not uncommon. The case which I here relate is, however, unusual. One pedicle underwent gradual torsion, the other became suddenly twisted, affording a perfect study of the two varieties of torsion in the same subject.

Mrs. A., aged 60, was admitted into the Samaritan Free Hospital under my care on April 22nd, 1900. Dr. G. Fisher, of Shere, near Guildford, had detected an abdominal tumour, which caused much pain in the hypogastrium and left iliac fossa. These symptoms began in December, 1899. The patient had been married for over thirty years; her eighth and last pregnancy occurred over twenty years ago; the menopause was not complete till she was over 52. The abdominal walls were somewhat distended and tender. The left fornix and Douglas's pouch were occupied by an exceedingly tender bilobed swelling which rose for an inch or so above the left groin; the uterus was displaced forwards. A little to the right of the middle line lay an irregular mass reaching nearly to the umbilicus. On the night of April 24th the patient took 10 grains of pil. coloc. et hyoscyam. On the next morning, immediately after a slight action of the bowels, acute abdominal pain and vomiting set in, with distension. Flatus passed and there was no rise of temperature. The tumour on the right of the middle line was now extremely tender to touch. In a few hours the acute agony was replaced by a continual dull pain uniform with that in the left iliac fossa.

On the morning of April 26th I operated, assisted by Mr. Butler-Smythe. On making the abdominal incision a cluster of livid cysts came into view. I passed my hand behind them and turned out the whole tumour: the pedicle was firmly twisted two turns, very œdematous, and engorged with blood. There were no adhesions, nor was there any free fluid in the abdomen. I untwisted the pedicle, ligatured and divided it: the tumour, developed from the right ovary, came away. The second tumour, also made up of a cluster of smaller cysts, was then raised from behind the uterus and lifted out of the wound. Its pedicle, rather short, was twisted two turns, and atrophied in consequence. A long narrow piece of omentum was involved in the twist, running on to the pedicle from the left, posteriorly. The pedicle was ligatured and divided; the tumour originated in the left ovary. No flushing or drainage was required, the abdominal wound was closed. On recovery from chloroform the patient declared that she felt absolutely free from pain. She did not complain of any unpleasant feeling, which is the rule when even only one short pedicle has been ligatured. In this case there were two such pedicles, but so great was the relief from the pain caused by the torsion that the patient felt perfectly comfortable. Convalescence was uneventful.

The right tumour weighed 1 pound 9 ounces, and was made up of a cluster of cysts purple through ecchymoses. This appearance has been mistaken for gangrene. The cysts contained much grease. The left tumour, half a pound in weight, also consisted of a cluster of dermoid cysts. Their walls were not ecchymosed.

In this case I made the abdominal incision about 4 inches long, as directly I saw the right tumour I concluded that it would be best to take it out entire. The left, much smaller, came out easily. Not a drop of the greasy contents of either escaped before extraction. I find that small, non-adherent cysts with suspicious contents are best extracted entire; this is especially the case in pregnancy, when as little disturbance of the peritoneum as possible is important. A 4-inch incision and a peritoneal cavity found clean and left clean are better than a 3-inch incision and a peritoneal cavity fouled, however carefully it may be flushed or drained afterwards. It is quite otherwise with big multilocular cysts, which in favourable cases can be readily removed through an abdominal incision under 3 inches in length.

The literature of torsion of the pedicle is voluminous. Perhaps the most complete essays on the subject are those written by Dr. Storer of Boston U.S.A.,[2] and Professor Martin.[3] Dr. Cullingworth[4] has recently turned attention to cases where acute torsion has led to the diagnosis of an unsuspected ovarian cyst; in the present case chronic torsion of one cyst

led to its detection, whilst purgation preparatory for ovariotomy caused acute torsion of a cyst of the other ovary.

Tumours irregular in form, are very liable to become wisted, and short pedicles are particularly subject to torsion. It has for long been known that dermoids are specially exposed to this complication. Where there are two tumours the one may cause the other to rotate on its pedicle. All these predisposing conditions were present in my case. Irregular dermoids, forming a cluster of cysts, usually, as in this instance, have very small pedicles, consisting of the Fallopian tube and mesosalpinx, hardly if at all hypertrophied. The same is seen in malignant ovarian tumours of the same irregular form and also in fibroma. It is not clear why the pedicle does not in these instances undergo the well-known hypertrophy so familiar in the common multilocular ovarian cyst. But it is not hard to understand that an irregular tumour longest in its horizontal axis may easily rotate around a short and narrow pedicle. I observed this condition once in an ovarian fibroma. I made a 4-inch abdominal incision, lest the parietes should be bruised by the hard tumour during extraction. The pedicle was twisted half a turn to the right, causing œdema of the Fallopian tube. This pedicle was relatively short, though fairly long for a fibroma, where shortness is the rule. In this case, as in that which is the subject of these notes, the tumour was extracted entire and the twist of the pedicle was detected before extraction. We must not forget that when a big cyst is tapped during ovariotomy it often produces, as it empties and slips out of the abdominal wound, a torsion which did not exist before. I have observed rotation of a collapsing cyst many times; it must not be registered in statistics as torsion existent before the operation.

Dermoids specially tend to rotate on their pedicles, partly because they are often irregular in form, and partly because they are often overweighted at one point by masses of bone or other solid, heavy structures. The phenomenon of one tumour twisting its fellow has been noted more than once. In the present case the right tumour probably pushed against the left and caused it to roll over into the pelvis. Some other cause, however, may have brought about the torsion of the left pedicle, which was typically chronic. The acute torsion of the right pedicle is of greater interest. It followed immediately upon the action of the bowels about twenty-four hours before operation. The subsequent enema thrown up six hours before operation did not, by the way, aggravate the symptoms. The contraction of the abdominal walls against the right tumour during defæcation, when little was passed though not without much straining, must have been the chief, if not the sole, cause of the torsion. The action of the abdominal muscles seems more likely to be effectual than peristalsis or the passage of fæces along the intestine in making a tumour rotate.

Authorities are divided on this question, but Cario believes that all these agencies in defæcation unite in causing torsion. If so, it seems strange that torsion is not even commoner than statistics show it to be. In one instance the complication was caused by the struggles of a patient under nitrous oxide at a dentist's (Fäntes, Martin). Here rigid contraction of the abdominal muscles was probably the sole cause, and this contraction may as probably be the only cause of torsion set up during defæcation. I admit that when a large irregular ovarian tumour lies down in the pelvis, the passage of scybala may cause it to rotate for a quarter of a turn or so, but in my case the right tumour, which underwent acute rotation, lay entirely above the pelvic brim.

As to treatment, no delay was indicated in this case. The acute torsion was an accident caused by the preparations for ovariotomy, decided upon before it occurred. Both tumours were removed before peritonitis had been set up by the complication. It is not torsion of the pedicle in itself, but the secondary disturbances which it causes within a short time that so greatly increase the difficulty and danger of ovariotomy. This fact is very manifest in neglected cases where the torsion is associated with pregnancy and labour.

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[1] Dermoid Tumours of Both Ovaries; Twisted Pedicle. *Trans. Obstet. Soc.*, vol. xli, 1899, p. 5. [2] A Study of Axis Rotation with especial reference to the Torsion of Ovarian Tumours, *Boston Med. and Surg. Journ.*, vol. cxxxv, 1896, p. 461. [3] *Die Krankheiten der Eierstöcke und Nebeneierstöcke*, 1899, p. 442. [4] Acute Twisting of the Pedicle in Cases of Unsuspected Ovarian Cyst, *Practitioner*, April, 1900.

TWO CASES OF CONCEALED ACCIDENTAL HÆMORRHAGE.

BY A. E. LARKING, M.D.DURH.,

Folkestone.

CONCEALED accidental hæmorrhage, according to Galabin, occurs only once in nearly 50,000 cases. It is very rare and very fatal, more so than placenta prævia. In accidental hæmorrhage, when there is hæmorrhage from the vagina, the treatment is to rupture the membranes at once in order to induce uterine contraction. In both these cases there was no hæmorrhage from the vagina, and the amniotic fluid was so scanty that very little effect would have resulted from rupture of the membranes, and it was evident that labour had commenced in both cases. They were both suffering so much from shock that one was loath to do much. Their general condition did not get worse, and in all probability the internal hæmorrhage ceased after the first few minutes. The uterine contraction was sufficient to stop the hæmorrhage.

Mrs. C., a strong, healthy woman, aged 33, seven and a-half months pregnant with her seventh child, was sitting in a chair one afternoon at 2.30, when without obvious cause she became suddenly faint, and fell on the floor unconscious. When seen shortly afterwards she was lying on her bed with a weak, quick pulse, greatly blanched and collapsed, but conscious.

There was continuous uterine pain of a very severe character, a sensation of pressure over the pubes, and desire to micturate. The uterus felt hard, and was tender to touch; it had increased in size since the beginning of the attack. There was no hæmorrhage from the vagina; the os uteri admitted the tip of the finger only; the membranes were felt in close contact with the fœtal head, and did not bulge. Owing to the collapsed state of the patient, active treatment was postponed, and she was given quinine, ergot, and fluid nourishment. Her general condition remained the same or slightly improved, and at 10 P.M. the os admitted two fingers. The next morning, at 2 A.M., slight vaginal hæmorrhage occurred, and the membranes were ruptured, but the liquor amnii was very scanty, amounting to less than 6 ounces. The head descended into the cervix, and the patient suffered excessive pain, which was continuous with exacerbations. Whiffs of chloroform were given.

As the os remained rigid, Champetier de Ribes's bag was introduced to dilate it, but this burst. An effort was then made to seize a leg and perform version, but, owing to the clots tightly surrounding the fœtus, it was impossible to bring the leg down. Forceps were applied, and after some difficulty the child was delivered dead. The placenta was expelled with ease, and fully two chamberfuls of blood clot followed it. The uterus contracted well, and no *post-partum* hæmorrhage occurred. The patient was douched with perchloride of mercury, and ergot was given. She slept for some time afterwards; the pulse remained quick and weak, and she was much blanched. The head was kept low, liquid food, in the shape of Carnrick's liquid peptonoids, milk, etc., was given, also alcohol. Her pulse remained at 120 for some days, but her temperature never rose above 100°. She made a slow recovery, complaining for some time of severe temporal headache. She is now quite well.

Mrs. M., a weak anæmic woman, aged 37, when about full time of pregnancy with ninth child, was taken suddenly faint at 8 A.M. without obvious cause, and had to go to bed. Labour pains commenced, she had vomiting and several fainting attacks. When seen at 10 A.M. she was very blanched, pulse weak and slow, but she was conscious, and said she felt very ill. There was continuous pain in uterus, with exacerbations; patient stated that the uterus had increased in size since the attack began. There was no hæmorrhage *per vaginam*, the os was the size of a two-shilling piece, the head presented, and the membranes were intact.

The patient was evidently suffering severely from shock; stimulants were given, also ergot. The pains increased, but the os remained rigid, and did not dilate. Her general condition remained the same. At 12.30 the membranes were ruptured, but the liquor amnii was scanty; the os was dilated by the fingers. As the head did not come down forceps were applied, and delivery took place at 1.30 (5½ hours after first symptoms). There was no loss of blood *per vaginam* before delivery, and immediately after the dead child was born the placenta was in the vagina. The uterus contracted well, and clots amounting to half a chamberful were pressed out. The patient was douched. The foot of the bed was raised and the head kept low. Owing to vomiting she could retain very little nourishment. Two hours afterwards she had not rallied; she had two or three convulsive attacks; the pulse was weak, but she was conscious. The uterus remained well contracted, and there was no hæmorrhage. Rectal injection of hot water and brandy was given, and strychnine and digitalis administered hypodermically. She died at 6 P.M. in convulsions.

Intravenous injection was not performed, as in the first case one thought the condition was a recoverable one, and in the second the patient's death in a convulsion took one by surprise.

The second case presented symptoms more of shock than hæmorrhage. She had few of the symptoms of death from hæmorrhage, such as loss of sight, noises in the head, hallucinations, sighing respiration, and imperceptible pulse. She was a woman of weak health, and had had much domestic worry and trouble, and from the first was under the fixed impression that she was going to die.

CASE OF EXTRAUTERINE GESTATION RUPTURED AT MID-TERM TREATED BY ABDOMINAL SECTION.

By J. B. HELLIER, M.D.,

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History.

On March 29th, a young married woman, aged 22, came to the Leeds Infirmary as companion to a friend who was attending as gynæcological out-patient, she herself being, so far as she knew, in perfect health, but believing herself to be about three months pregnant. Whilst sitting in the waiting-hall she felt some abdominal pain; she went to pass urine, but was unable to do so; she then felt dizzy and fell on the floor, striking her forehead. Her pulse was so weak, and she seemed so ill, that she was admitted an in-patient for the night.



Next morning the patient was no better. She was very pallid; the pulse was 135 and exceedingly weak, and it seemed evident that she was suffering from internal hæmorrhage. She was well-developed and healthy in her general aspect, and had had no serious illness. She had menstruated regularly up to Christmas, and had had no dysmenorrhœa. She became pregnant at Christmas, but could not give the date of her last period. She had no discomfort except some degree of abdominal pain on lying down at night, and she had no suspicion that anything was wrong.

On physical examination the abdomen was a little full in the lower part, the flanks were resonant, but there was some dulness above the pubes in the central line reaching nearly to the umbilicus. The abdomen here was tender, but no distinct lump was felt and no fluctuation was made out, and no auscultatory sounds were perceptible. The dulness did not vary much with the position of the body. The mammæ showed the usual signs of early pregnancy. On vaginal examination, there was a cyanotic tinge of the vaginal mucous membrane, and the cervix was soft; a swelling which resembled the body of an enlarged uterus could be felt in the *cul-de-sac* behind, on the right side, and to some extent in front of the cervix. The pelvi-abdominal swelling was somewhat indefinite in outline, and was larger than a three or four-month pregnancy would account for. The sound was not passed. There was no vaginal discharge.

It seemed clear that there were (1) pregnancy, (2) internal hæmorrhage. The pregnancy did not seem to be advanced enough for concealed intrauterine hæmorrhage to account for the condition present, to say nothing of the rarity of such complete concealment. Hence the diagnosis seemed to lie between ruptured extrauterine gestation and intrauterine gestation with abdominal hæmorrhage from a pelvic vein. Dr. Braithwaite kindly came down to see the case with me, and we decided that abdominal section afforded the only chance of saving the patient's life.

Operation.

On March 30th, at 8 P.M., ether was administered by Mr. Nicholson, anæsthetist to the hospital, and I performed abdominal section, assisted by my resident obstetric officer, Mr. Mosley, Dr. Braithwaite being present also. A median incision exposed a large quantity—about a quart—of dark blood clot lying in the pelvis and hypogastrium. Just above the pubes was a dead fœtus, 8 inches long, free in the abdominal cavity. The umbilical cord could be traced to the floor of the pelvis, where the placenta was lying. It was not, however, adherent here, but could be easily lifted up, and then it was found that the placenta and sac were attached on the right side of the uterus, and that this attachment constituted a fairly narrow pedicle. When this was ligatured and divided, and the blood clot removed from the pelvis, it was found that hæmorrhage was well controlled, and that the pelvis could be sponged dry. The abdomen was not irrigated, but a Bantock's tube was inserted, and the operation was terminated as rapidly as possible by the closure of the wound by continuous suture of the peritoneal edge by catgut, and interrupted silkworm-gut sutures through the remaining layers.

At the commencement of operation the patient was almost pulseless; 10 minims of liquor strychninæ were given by hypodermic injection, and this was repeated three times during the operation. Four pints of normal saline solution were transfused into the vein by Mr. Dobson, the resident surgical officer, during the operation, and brandy ℥ss was injected into the cellular tissue. During the operation hardly any fresh blood was lost.

After-History.

The after-course was very satisfactory. The shock of the operation was well stood. The Bantock's tube was removed in 36 hours, about 7 ounces of blood and serum having drained away; a rubber drainage tube was inserted for two days longer. There was no abdominal distension, no sign of sepsis or inflammation, and no suppuration in the wound. The temperature rose to 101° on the third night but was normal on the fifth day. Menstrual discharge was present from April 6th to 9th, and was moderate in amount, and she has continued to make satisfactory progress up to date.

Description of Parts Removed.

The photograph on p. 77 shows the parts removed. The fœtus, a male, measures 8 ins. long and weighs 4½ ozs. The umbilical cord is 9½ ins. long, the placenta and sac weigh 5¼ ozs. The period of gestation may be estimated at about four and a half calendar months, or mid-term.

The photograph shows a rounded conical portion (A), terminating in a cut surface (B) on the one aspect and in a ragged fringe of tissue and membrane on the other. This conical portion is the uterine end of the sac, which seems to consist of expanded oviduct and the layers of the broad ligament containing the central portion of the placenta, and some portion of uterine tissue. The ragged fringe is the distal portion of the sac ruptured, and consists of placental tissue (P P), torn peritoneum, and torn fœtal membranes (M). At the upper part of the uterine end of the sac just above the cut surface is seen the stump of the round ligament (C). Hence the gestation should probably be described as tubal gestation, becoming intraligamentous by primary rupture, and ending in abdominal pregnancy by secondary rupture, with intraperitoneal hæmorrhage, at mid-term.

Remarks.

The speedy recovery of this patient from one of the most serious of obstetric accidents was contributed to, first, by the singular circumstance that she was already in the hospital when her first symptoms occurred; secondly, by the fact that the placenta was so attached that it could be removed at once and completely, a single ligature sufficing to control all hæmorrhage. The free employment of strychnine and saline transfusion did much to enable an almost pulseless patient to survive the operation.

The question arises whether this specimen may not be an example of pregnancy in a rudimentary horn of a bicornate uterus. If the insertion of the round ligament marks the point where the uterine cornu ends and the oviduct begins, then it seems plain that in this case the sac lies on the distal or tubal side of this point, and that it is a specimen of tubo-ligamentary pregnancy, but situated in the closest proximity to the uterus. During operation the fundus uteri seemed to be normal, but my anxiety to terminate the operation speedily prevented me from making a very detailed examination of the relations of the parts.

THE NATURE AND TREATMENT OF PUERPERAL INFECTION.

By THOMAS E. MITCHELL, M.B.,
Old Hill, Staffs.

I think that those who have seen much of puerperal fever will agree with Dr. Edge,[1] that antistreptococcus serum can be of little value in the late stages of puerperal infection to which he refers. It seems, however, that an early and energetic use of the older therapeutic means should in a very large proportion of cases prevent the development of large septic thrombi, and the necessity for such heroic measures as hysterectomy and dissection out of thrombosed ovarian veins.

The slighter cases of septic intoxication (often with very high temperature) are very amenable to treatment, and what I have to say refers to well-defined cases of septic infection of more or less prolonged duration. From time to time general practitioners are admonished and to some extent accounted responsible for the large puerperal death-rate, and this is held to be due to their not scrubbing themselves or their patients; to their not pinning their faith on lysol, or finding their only salvation in corrosive sublimate. Those whose experience of midwifery is confined to the wards of lying-in hospitals where they have their patients under complete control, or to the homes of the well-to-do where efficient nursing is available, are often quite convinced that a large number of cases of infection arise from contagion conveyed by the accoucheur.

As one in general practice who has had a large experience of midwifery extending over some years, I should like to take exception to this view. Some of the worst cases of puerperal fever I have seen have occurred after perfectly natural labours, where no digital examination or manipulation at all had occurred. The majority of cases which I have seen have seemed to me to have originated in the impossibility of inducing many working-class patients to observe the ordinary rules of *post-partum* cleanliness. The bugbear of catching cold leads them to neglect change of clothing and ordinary lavage.

Quinine in large doses has long had a high reputation in the treatment of puerperal septicæmia, and I think that those who find it ineffective owe their disappointment to their failure to push it boldly and combine its use with attention to other details.

In a well-marked case of septicæmia, my routine is to administer a preliminary dose (gr. xij) of quinine sulphate. This is followed by douching of the vagina, and digital exploration of the uterus for any retained secundines. The uterus is then washed out with a weak solution of corrosive sublimate, and an Ehrendorfer's pencil of iodoform (larger than the size usually sold) is introduced into the uterus. This is followed up by a mixture containing in 8 ozs. gr. xl of quinine sulphate and ℿx of carbolic acid, with bismuth, bicarbonate of soda, and carminatives. In cases of prolonged diarrhœa tincture of opium is added. The introduction of iodoform pencils is repeated if necessary, and in suitable cases repeated vaginal douching is employed. So far from finding such large doses of quinine depressing, it has always been my endeavour to produce cinchonism.

In many cases the tendency to hyperpyrexia directly tends to hasten a fatal issue, and in such cases I have always found the ice cap and cold sponging, repeated when the temperature exceeds 103°, have an excellent effect alike on pulse and temperature. In event of sickness, iced champagne, brandy, and peptonised foods can generally be retained.

Such a course of treatment I have almost always found sufficient to secure recovery, and that in cases marked by rapid pulse (140 to 160), as well as in cases of very high temperature. The addition of carbolic acid I have found especially valuable in cases complicated by diarrhœa, vomiting, and tympanites. The "dressing" of the uterine cavity with a slowly dissolving iodoform ointment, the prevention of waste and deterioration of the cardiac muscle by excessive pyrexia, and the creation of a resistant condition by saturation with quinine, certainly seems to give time for the system to organise its natural method of defence, and what might otherwise become a general blood poisoning results only in a localised inflammatory process.

In the last seven years I have seen only two cases of puerperal septicæmia go on to pyæmia with secondary abscess. One of these eventually recovered more or less, with the loss of an eye and the development of abscesses, which still (five years after) occasionally break out again. The other lived for a considerable number of weeks.

The difficulty of diagnosing the extent of secondary septic thrombosis must surely limit the applicability of operative procedure, even if the general condition of such patients offered a fair chance of recovery. The evidence of the *post-mortem* room, although doubtless an aid to scientific pathology, has surely tended to produce a scepticism unwarranted by the results of therapeusis, for deductions as to the efficacy or otherwise of remedial treatment can only be drawn from those cases in which treatment has undoubtedly failed.

Prevention is doubtless better than cure, and no one would hesitate to avail themselves of the help of antiseptics in midwifery, but in general practice, especially amongst ignorant people, where after-treatment cannot be entirely controlled, cases of sepsis must from time to time arise.

REFERENCE.
1 British Medical Journal, March 3rd, p. 546.

A Medical Missionary for Chinese Lepers.—Father L. L. Conrady, who worked for eight years among the lepers in Molokai, where he succeeded the heroic Father Damien, has recently taken the degree of Doctor of Medicine in the University of Oregon. His medical studies are said to have been undertaken solely for the purpose of making himself more capable of alleviating the sufferings of lepers. Although 60 years of age, and worn by a life among savage and semi-civilised people, his intention was to proceed to the largest leper colony in China, situated in the province of Canton, where, according to the American papers, he will be the pioneer white man.

A LARGE MULTILOCULAR OVARIAN TUMOUR.

BY F. A. BALDWIN, M.R.C.S., L.R.C.P., L.S.A.,
Manchester.

ON October 23rd, 1899, I was called to see Mrs. S. She was 59 years of age, and had been a widow since she was 30. She had two children, the first when she was aged 23, and the second two years later. Both confinements were of the ordinary type. She never had a miscarriage, and when not pregnant she was always regular. She never complained of any ailment of the genito-urinary tract. The menopause came on without incident at 45 years of age.

About two years after the menopause she noticed that the lower part of the abdomen was swelling. This gradually increased, until from the last four years she had been quite incapacitated from work owing to the size and weight of the abdomen. She has, however, been able to get about the house. For two or three years she has also been much troubled by swelling of her legs. A fortnight previous to the date on which I first saw her she was able for the last time to get upstairs, unaided, by crawling "on all-fours," dragging her abdomen over the stairs, which are steep and narrow, such as are found in workmen's dwellings.

When I first saw her she was seated in an armchair, wrapped in blankets. Any attempt to lie in bed caused such distressing dyspnœa as to render it impossible. The enormous size of the abdomen is well shown in the photograph (Fig. 1). Both forearms rest on the arms of the chair, which are clutched by the hands. Both biceps and pectoral muscles are rigid with the continuous effort of keeping herself from slipping downwards. Her position is also maintained by the sagging of the bottom of the chair and by a pillow across the front half beneath her thighs. The face expresses weariness from the continual dragging weight of the abdomen. There is no subcutaneous fat on her arms, chest, neck, or face. The veins of the abdomen are large, full, and clearly defined.

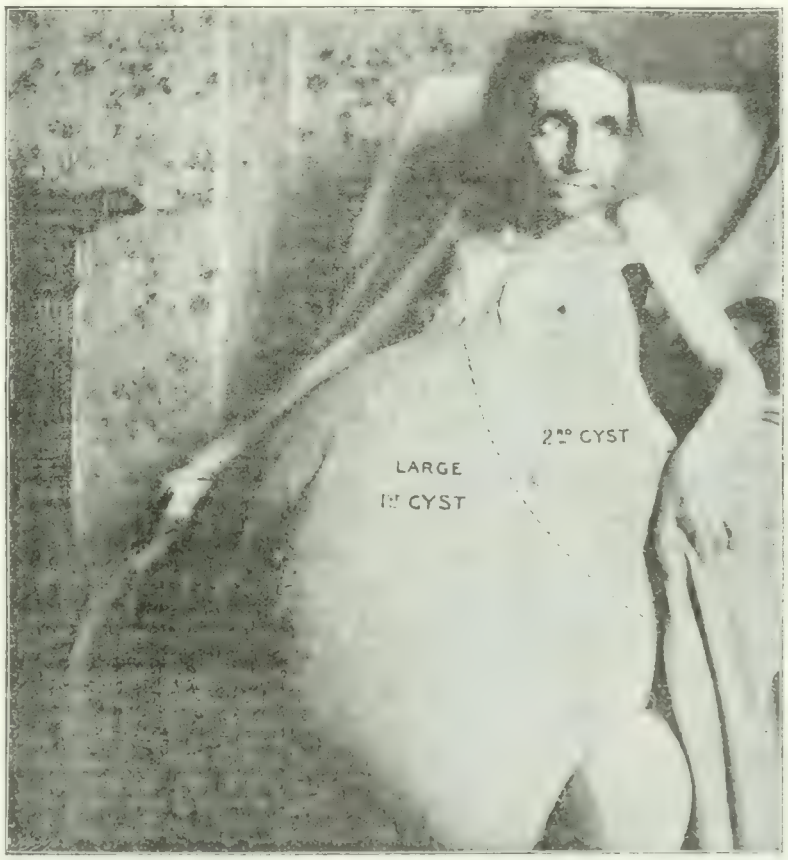


Fig. 1.

From the xiphoid tip to the umbilicus measured 27 inches. From the umbilicus to the pubes I was unable to measure; but it was a great deal more than that. From right to left anterior superior spine of the ilium, passing through the umbilicus, was 58 inches. This line, as the patient sat, was almost horizontal. Although the abdomen appeared to be symmetrical, the umbilicus was displaced 3 inches to the right of the middle line.

The most dependent point of the abdomen was 3 inches below the edge of the seat of the chair.

The œdema of the legs (Fig. 2) was due to the pressure of the abdomen on the saphena and femoral veins. It was quite impossible to lift the overhanging abdomen, but subsequently on *post-mortem* examination I found that the thighs above the line of contact with the abdomen were wasted, and in a condition similar to the arms. The œdema was greater in the left leg than in the right, as the following measurements show:—

	Right.	Left.
Ankle	13 inches	14 inches.
Calf	15 ,,	17 ,,
Knee	15½ ,,	17 ,,
Thigh (about middle)	14 ,,	19½ ,,

The upper limit of the œdema in the thighs ran from just above the knees on the inner side—to the middle line of the limb at the junction of the middle and lower third, and from thence it tapered off to the outer edge of the thigh, about the middle of the limb. This was the line of contact with the abdomen as the patient sat in her chair.

The skin of the thighs where it was in contact with the abdomen was of a dirty brown colour; the capillaries in many places were remarkably injected. The skin on the under surface of the abdomen was brown, brawny, and œdematous.

Fig. 2 shows the lower portion of the abdomen at a slightly nearer focus than in Fig. 1. The umbilicus is in the shade to the left hand side. The spot in the centre is a small scab. The mark on the middle of the left leg is where I pressed my finger to show the œdema.

There had been complete procidentia uteri for about two years. I failed to get a specimen of urine for analysis, as she was unable to lift herself sufficiently to pass a bed slipper beneath her.

On October 24th (next day) Mrs. S. had been moved on to two mattresses on the floor, and was propped up in a reclining position with pillows and cushions, the lower portion of her abdomen resting on the mattress. She was also able to relieve the feeling of tension in her legs by spreading them apart, a position prevented by the arms of the chair.

She died suddenly and quietly on November 1st, and I was permitted to make an examination of the abdomen. From an incision in the abdomen at X (Fig. 1) I drew off 114 pints of fluid. The first half-dozen gallons of fluid were of a red-brown coffee colour, and fairly clear. The next was thick, and contained many flocculent masses. There were numerous clear colloid masses adherent to the inner surface of the cyst wall, which varied in size up to half a walnut, and were easily detached. The "well" of this cyst was completely outside

the pelvic brim. Nowhere did its posterior wall pass into the pelvic cavity.

A second large cyst occupied the upper abdomen; from it I took 28½ pints of fluid similar to that from the first cyst.

I detached the upper cyst from the diaphragm, to which it was adherent on the left side to within a couple of inches of its posterior margin. The rest of this cyst wall was free, but in contact with the intestines. The omentum was free, but crumpled up into a small ridge or oblong pad, and was pushed up into the left hypochondriac region. The cyst rose high up under the left costal margin.

At the root of these cysts were two smaller ones—one on either side, each about the size of a cocoanut. All four cysts sprung from a thick fibrous base, mushroom-shaped, and about 3 inches in diameter. From the under surface of this base ran a twisted pedicle about 3 inches long and about the thickness of a thin umbilical cord.

The total amount of fluid obtained from the cysts were 18 gallons, and I estimate the weight of the tumour at 185½ lbs.

The uterus and left ovary were normal; the abdominal wall above the level of the umbilicus was very thin. Nowhere could I find much fibre in it. I removed the tumour, and when all the cysts were empty the mass weighed 5½ lbs.

Both kidneys were normal; the spleen slightly enlarged; the liver was displaced upwards, so that the highest point was on a level with the upper border of the third rib in the nipple line. The lower (anterior) border of the liver was very thin, and about 2 inches above the costal margin.

In deference to the relatives' wishes I did not open the thorax in the usual way, but by opening the diaphragm, which was highly arched, I found that the heart was displaced towards the middle line, the apex being rotated forwards, and was situated at a point in the middle line of the sternum level with the junction of the fourth rib; the heart was small and firm. Both lungs were cramped up in the thorax, their apices being higher than usual above the level of the clavicles; there were no pleural adhesions.

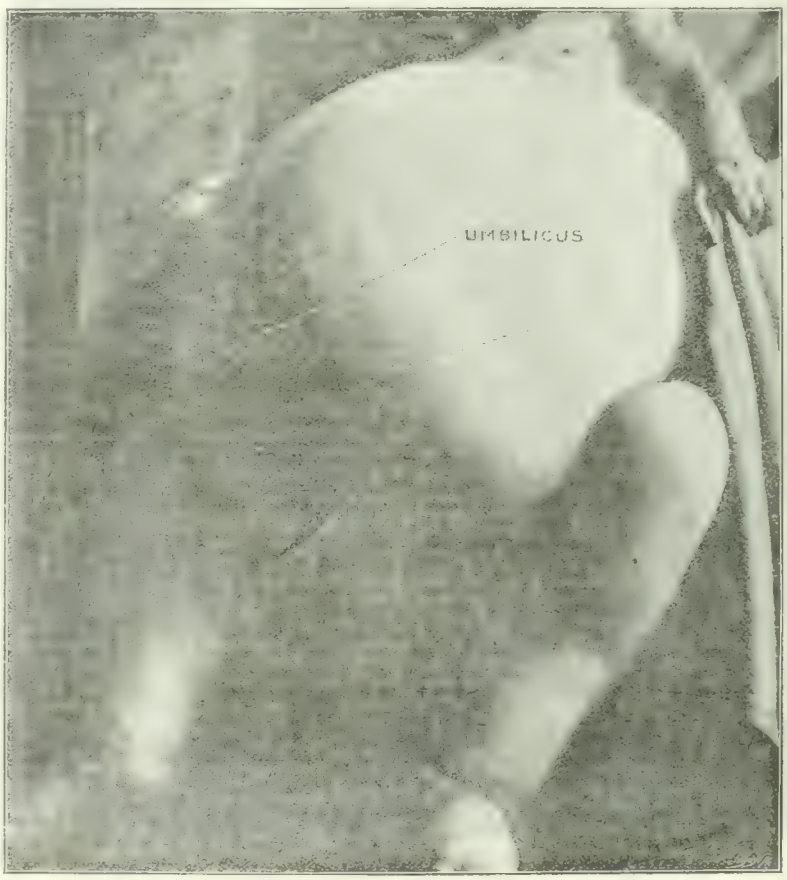


Fig. 2.

A COMBINED RECTO-VAGINAL OPENING IN THE HUMAN SUBJECT.

BY J. G. MODLIN, M.D., B.S.,
Hon. Surgeon to Monkwearmouth Hospital.

IN September, 1899, I was asked to operate on Mrs. X. for deformity in the perineal region. On examination I found a well-formed perineum, and a slight dimple in the position of the anus, but no rectum or sphincter. The vulva seemed normal; but on separating the labia a movable septum was seen, which proved to be formed by the posterior vaginal and anterior rectal walls. It was about one-sixteenth of an inch in thickness, and was freely movable from before backwards. The condition was not one of cloaca. The vagina and rectum were, excepting at their orifices, distinct. But the urethra, vagina, and rectum all opened into one common vulva. The vaginal and rectal tubes may be compared to the two barrels of a double-barrelled gun, the muzzles of which were seen on separating the labia.

Mrs. X. was 24 years of age, had been married four years, and had had two abortions. The condition described had given rise to no symptoms beyond obstinate constipation, and the unpleasantness due to the abnormality. The constipation had probably been to some extent caused by the patient putting off the act of defæcation as long as possible, owing to the pain and discomfort produced. The act usually took about half an hour, caused such severe pain that the patient nearly always fainted, and always caused hæmorrhage.

After the usual preparation, the patient being anæsthetised with chloroform, I first cut through the perineum in the middle line from the posterior angle of the vulva to the normal situation of the anus. I continued the incision upwards through the fibrous tissue filling in the space between the rectum and the coccyx. I then separated the posterior wall of the rectum for about two inches. The next step was to dissect up the recto-vaginal septum, thus separating the two passages. The rectum was then detached from the surrounding tissue, so that its lower end was freely movable. I brought it backwards through the opening I had made to its normal situation, and sutured it with fine silk sutures posteriorly and laterally to the skin of the perineal incision. I then again brought to the middle line the two flaps produced by the first incision to form the new perineum, and sutured them together with silk sutures, deep and superficial. The posterior border of this new perineum was sutured to the anterior wall of the rectum, thus completing the new anus; and the anterior border of the new perineum was sutured to the raw surface of the posterior vaginal wall, thus completing the vagina. The case did well, the temperature never rising above 99.8° for twelve days after the operation, when constipation proved very troublesome; there had been a motion every day, but scybalous masses formed, so that chloroform was again administered, and the scybala broken down with a Volkmann's spoon. From this time the patient made an uninterrupted recovery. The present condition is most satisfactory. There is a good, firm perineum an inch a-half long, the vagina is perfectly normal. The constipation is greatly improved and is still improving under treatment. There is no hæmorrhage with defæcation, and the act is easily performed.

There is perfect control over the bowel, so that I believe the muscular fibres of the rectum have undertaken the functions of a sphincter. I publish this case as I have never seen reported or heard of one in which the condition of the parts was precisely similar.

A NOTE ON A SERIES OF CASES OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.

BY HENRY HANDFORD, M.D., F.R.C.P.,
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IT may be of interest to give a very short account of 5 cases of the above disease seen during the past year. In addition, during the last few months, I have heard of, but not seen, 5 others, 3 of them with suppuration of the choroid. The cases, though occurring sporadically, are indistinguishable clinically from the epidemic disease, but there can be no very extensive and fatal epidemic as no unusual number of deaths from meningitis are being registered. The cases form a striking group with many and characteristic points of resemblance, and differ essentially from anything I have been accustomed to see. Three were hospital patients and 2 were seen in consultation. The ages were 3, 4, 5, 14, and 22 years. One proved fatal after fourteen weeks' illness, and a necropsy was obtained; the others recovered or are still under treatment; one was complicated by suppurative choroiditis. The most prominent symptoms common to all were:

1. Rapid, if not actually sudden, onset, without injury or previous failure of health.
2. Fever—the temperature rose at once to 102°-104° and very slowly subsided, sometimes showing distinct and regular intermissions. In 3 cases (1 fatal) the temperature remained normal for weeks without any other sign of improvement.
3. The intensity of the pain in the head and neck, aggravated by the slightest movement.
4. Marked retraction of the head,
5. Muscular hypertonicity, twitching or rigidity. (The man, aged 22, was sent into the hospital as a case of tetanus).
6. Extreme and rapid emaciation.
7. Tendency to relapse and to intermissions.

Lumbar puncture was not practised during life. In the fatal case some turbid fluid was removed by lumbar puncture two hours after death and sent away for examination, but owing chiefly no doubt to unavoidable delays, the results by cultivation and otherwise were negative.

There was distinct exudation over the under-surface of the cerebellum, pons, and medulla. It differed from that most commonly found in tuberculous meningitis in position, not extending so far forwards and not spreading to the Sylvian fissures. No tubercles were detected in the exudation or in the viscera. The hemispheres appeared normal. The ventricles were greatly distended, and contained about 10 ounces of slightly turbid fluid. The choroid plexuses were adherent to the ependyma of the ventricles. On removing the spinal cord, a blood clot was found between the dura and the bone as far as the eighth dorsal vertebra. At the ninth dorsal, there was a small hæmorrhage beneath the dura. The membranes were intimately adherent to the cord in the cervical and lower dorsal regions.

The cases differ in their clinical course very markedly from tuberculous meningitis. The onset is more acute, the retraction of the head much more marked, the duration of the disease much longer, and percentage of recoveries far greater. None of the 5 cases had herpes, and only 1 showed some patchy erythema.

Clinically, the distinction between individual cases of posterior basic meningitis, sporadic cerebro-spinal meningitis, and epidemic cerebro-spinal meningitis seems impossible. Bacteriologically, the distinctions between the diplococcus meningitidis intracellularis found in cerebro-spinal meningitis and that found in posterior basic meningitis seems chiefly one of degree, shown by slight cultural variations and less or greater virulence in inoculation experiments.

As regards treatment, morphine was given in full doses to relieve the intense pain. In 3 cases potassium iodide appeared to do good; in 1 it was evidently prejudicial, and in 1 without distinct effect. Morphine appeared to do good beyond the mere relief of pain.

CASE I.—H. G., aged 22, a coal miner, admitted August 12th, 1899, in a state of active delirium, with temperature 103°. He was at work thirty-six hours before admission. He was seized with pain at the back of the head about noon on August 11th, and rapidly became worse. His previous health had been good, and the only illness measles in childhood. He had a blow on the head eight weeks ago, but it did not disable him. After admission he suffered the most intense pain in the head and neck, causing him to scream and roll about. The head was greatly retracted, the neck muscles rigid, and there was slight rigidity of the limbs. No rash or affection of joints, and no discharge from the ears. The knee jerks were present, the pupils dilated, equal, and reacting to light; no ocular paralysis, fundi normal. He passed everything into the bed, but was never unconscious. The temperature was very variable. For the first three weeks the extremes were 104.2° and 98.6°, and the average about 101.8°, for the second period of three weeks about 1° less, from the sixth to the ninth week about 1.5° still less, and after nine and a half weeks the temperature remained normal. He reached an extreme degree of emaciation and mental apathy. After seventeen weeks illness he was discharged to the convalescent home practically completely recovered in every respect. He was treated by hypodermic injections of large doses of morphine for the first three weeks, and by potassium iodide with mercury, from all of which he appeared to derive much benefit, as he was not so well when when they were omitted.

CASE II.—A girl, aged 5, was admitted December 19th, 1899. Her illness commenced somewhat suddenly eight weeks previously with headache, vomiting, and some fever. On admission she was very emaciated, had bedsores over each trochanter, and lay curled up in a torpid, but not unconscious, state, with very marked and persistent retraction of the head, which continued during the whole illness, and with some tonic flexor spasm of the limbs. She never complained of pain in the head (or elsewhere), but frequently used to scream in a purposeless way. She always understood what was said. There was some strabismus, but no optic neuritis. The temperature reached 101° on three occasions, and was 100° on eight other occasions, but was generally normal or subnormal. Her appetite was very variable. There was no sickness after her admission to the hospital. She gradually became more feeble and emaciated, and died six weeks after admission and fourteen weeks from the commencement of her illness. For *post-mortem* condition see the general report.

CASE III.—L. T., aged 4, admitted April 2nd, 1900. No previous illness; never any discharge from ears. Illness began during the night, seventeen days ago, with "pains all over," headache, and vomiting; he had appeared quite well when put to bed. Retraction of the head was noticed on the third day of the illness. During the second week pain in the head and neck continued, but vomiting ceased.

On admission he was well nourished, lay curled up in bed with his knees drawn up, head greatly retracted, and the muscles of the back and neck rigid. He complained of headache and pain in the neck, and put his hand to the back of the neck. The abdomen was somewhat retracted, pupils small but equal, knee-jerks absent, skin reflexes present. The mind seems clear; he asks for what he wants and understands what is said to him. Temperature varied between 99° and 103.6°, and pulse from 120 to 140.

On April 5th there was slight conjunctival injection; on the 6th that had improved; the fundi were examined with the ophthalmoscope, and found normal. April 13th, the left conjunctiva became rapidly swollen and inflamed; on the 14th there was chemosis, the pupil was contracted, iris bulged forward, margin irregular, and only a yellow reflex was obtained with the ophthalmoscope. The patient was very kindly seen by Dr. Laws, who diagnosed suppurative choroiditis.

June 19th. The febrile attacks have become less and less severe, and have occurred at longer intervals; the temperature has now been normal for a fortnight. The child is extremely emaciated and feeble, but conscious. The left eye is much shrunken. There have been four attacks of opisthotonos, and frequent tremors with muscular twitchings, especially of the arms, but these seem now to have ceased, and there is no longer rigidity of the limbs. Recovery is still very doubtful.

CASE IV.—A robust child, aged 3 years 4 months, good family history. Quite well till 4 P.M. on May 20th, when he complained of headache, and shortly afterwards vomited; temperature, 10 P.M., 103.5°. He screamed with pain in the head. May 21st: Temperature, 102°; vomited; pain very severe at times; took scarcely any food. May 22nd: At times semi-comatose; at others frantic with pain. At midday very marked retraction of the head began. I saw him, in consultation with Dr. Stafford, in the evening, when the temperature was 99°, pulse 80; the head was very retracted, and back slightly arched. He lay on the left side, and cried if disturbed. Cerebro-spinal meningitis was diagnosed, and morphine, with potassium iodide, advised. After a few days the symptoms abated, and he was doing well. A fortnight later he had a relapse again with sudden onset, and a return of all the symptoms. After improving so as to be ready to come downstairs he had a second relapse, still more severe, but gradually recovered, and now (June 26th) seems quite well.

CASE V.—A boy, aged 14, seen in consultation with Dr. Kenway Williams June 15th, 1900. Illness commenced abruptly seventeen days with pains in the back and general illness. A few days later pain and swelling of the foot was noticed, and on May 24th Dr. W. opened a foul abscess in the cellular tissue beneath the os calcis; temperature 104°. May 20th. Muscular twitchings, arching of back, and violent pain in the head causing patient to scream. When seen on June 5th the foot was soundly healed, and there was no fresh suppuration anywhere. The temperature had remained from 103.8° to 104.5° in the mornings and about 0.5° less in the evenings. Pains in the head very violent but only last a few hours at a time. Does not like the head to be moved in the slightest; pain in the back with some arching; occasional vomiting; eyes and ears normal; pulse 112; mind clear; much emaciation. To-day, June 26th, I hear from Dr. Williams that the patient is extremely emaciated, all the symptoms are gradually abating, temperature intermits and is much lower. During the intermissions he refuses food and is difficult to manage, but during the febrile attacks he takes milk well. There has been much trouble with retention of urine. The patient is not yet out of danger. There has been a very partial erythematous rash.

THE CROONIAN LECTURES
ON
DEGENERATION OF THE NEURONE.

Delivered at the Royal College of Physicians of London

By FREDERICK W. MOTT, M.D.Lond., F.R.S.,
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Lecture IV.
Some Chronic Toxic Conditions in Relation to Degeneration.

I shall to-day refer to the effects of chronic poisoning of the system, especially in reference to two factors, which are the most potent, the most prevalent, and the most persistent poisons in the production of the degeneration of the neurone, and which frequently act in combination, affecting not only the nervous system of the individual but also of the offspring. Such are alcohol and syphilis.

The Close Relationship in the Etiology and Pathology of General Paralysis and Tabes.

Syphilis is the best example of a poison—probably, though not proved to be, of microbial origin—which has a selective influence upon the nervous system, with a remote effect; it is the most important factor in the production of two progressive degenerations of the nervous system, one affecting especially the exogenous afferent spinal neurones, namely, *locomotor ataxy*—the other affecting especially the association neurones of the frontal and central convolutions of the cerebral hemispheres—namely, *general paralysis of the insane*.

A striking instance of the selective action of the syphilitic poison is shown in the fact first pointed out by Sir William Gowers that only in persons affected with acquired or inherited syphilis is the symptom known as the Argyll-Robertson pupil found; indeed, it is sometimes the only symptom. Seeing that this is the most common objective phenomenon in the two diseases mentioned, it strengthens the presumption, based on experience, that the syphilitic poison is the cause of the disease in the majority of instances. It is the opinion of many authorities—and I may say that my experience supports it—that locomotor ataxy and general paralysis are one and the same morbid process, affecting different parts of the nervous system. They are, in my opinion, both a primary and a progressive decay of the nervous elements, and are, etiologically, clinically, and pathologically, very closely related.

At a discussion held at the Pathological Society I supported the view that tabes and general paralysis are one and the same disease, affecting different parts of the nervous system. It may be asked then, if this be so, how do you explain the fact that in general paralysis it is the brain, and especially one particular part, which is affected, while in locomotor ataxy it is the cord? Let us consider the effects of poisons like alcohol, lead, ergot, lathyrus, and diseased maize (pellagra). They may produce both peripheral nerve and cord changes, together with brain changes, in the same individual. It is the *individual*, his occupation and habits which determines the seat of the morbid process. In some cases, however, the cord symptoms, on the one hand, predominate, and the brain symptoms may be slight, or even absent; on the other hand—and these are the cases of lead and alcoholic poisoning which come into the asylums and are not seen in the hospitals—we have the brain symptoms predominant, and the paralytic symptoms often less defined, overshadowed by the brain affection or even absent. So it is with general paralysis; cases come into the hospitals with Argyll-Robertson pupils, marked paresis, and speech affection, but with the mental symptoms only comparatively slightly developed. Likewise numerous cases of tabes attend the hospitals for a considerable time, and then marked mental symptoms develop, when the case is certified as tabetic general paralysis. In all these degenerative diseases we have more than one factor in operation; and I quite agree with Edinger in his opinion that *stress* will determine the initial localisation of the degenerative process. I do not know that we can learn very much about these primary degenerations from experiments upon animals; however, much valuable knowledge undoubtedly has been obtained by the effects of poisons in producing acute or subacute degeneration of the neurones. Certainly animals have not been inoculated with syphilis. Tuczek, who first described the changes in the nervous system in ergotism and pellagra, was unable to produce these degenerative processes in animals by long-continued feeding with diseased maize or rye, nor have other experimenters been successful with injection of ergotin and sclerotic acid. Likewise alcohol and lead administered to animals do not produce the characteristic clinical and pathological conditions found in man. Moreover, many other poisons, the products of micro-organisms, produce different effects in man to those produced in animals.

The close association of tabes and general paralysis is to my mind clearly shown by the fact that there are a considerable number of cases in which it is difficult to say whether they should be classed from their clinical symptoms and morbid changes found *post mortem*, as tabes with mental symptoms, or as cases of tabetic general paralysis. I have seen cases in which the diagnosis of general paralysis has been made, because the patients were suffering with mental symptoms indicating that disease; namely, maniacal or melancholic symptoms, and delusions associated with ataxy. After a time the mental symptoms have cleared up, and the case has then been called tabes. Again, I have frequently seen cases of tabes which begin with all the characteristic phenomena of this disease, and then terminate in progressive dementia and paresis, dying in an asylum from general paralysis. Symptoms which are looked upon as characteristic of tabes, such as grey atrophy of the discs, are not at all uncommon in general paralysis, and I have met even with symmetrical perforating ulcers and Charcot's joint. I have recently examined 12 cases



Fig. 1.—Symmetrical perforating ulcers from a case of tabetic general paralysis.

of the tabetic form of general paralysis, in which the changes in the brain—naked eye and microscopical—were characteristic of general paralysis, and the cords showed the characteristic lesions of tabes. My experience would point to about 10 per cent. of the cases of general paralysis being associated with tabetic cord lesions. The etiological relationship of the two diseases is almost identical; both are affections of men in the prime of life, of townspeople, of men of all grades of society, but women of the lower and lower middle class only; moreover, juvenile general paralysis and juvenile tabes occur in the subjects of congenital syphilis, and affect the sexes with equal frequency. I have met with 1 case of the latter and 30 cases of the former with 24 *post-mortem* examinations. In 80 per cent. of the cases of juvenile general paralysis, a definite

history, or signs of syphilis, were obtained. A considerable number of cases have now been recorded of married couples being affected with general paralysis. I recently saw a man who had well-marked signs of syphilis suffering from the tabetic form of general paralysis, from which he subsequently died; his wife, who had healthy children by the first husband, none by the second, is now dying of general paralysis. Dr. T. Buzzard related a similar case at the same discussion, previously referred to.

SOME FACTS CONCERNING THE ETIOTOGY AND PATHOLOGY OF GENERAL PARALYSIS.

There are two types among the juvenile general paralytics: (1) In which the syphilitic poison seemed to have produced an arrest or impaired development of the higher centres, so that the child was weak-minded or imbecile; (2) in which the child was mentally capable, in some cases highly intelligent and active-minded.

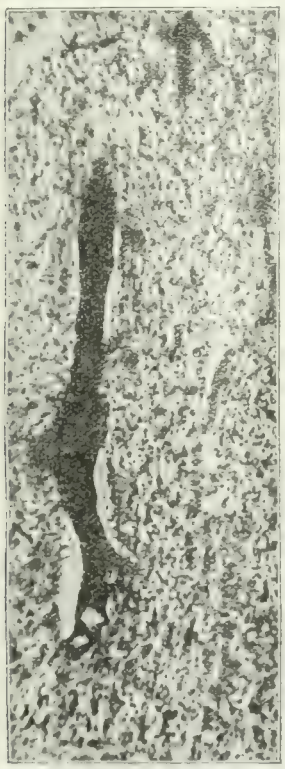


Fig. 2.—Section of ascending frontal convolution from a case of general paralysis, showing engorgement of vessels, disappearance of Meynert's columns from displacement of the nerve cells and overgrowth of glia cells.

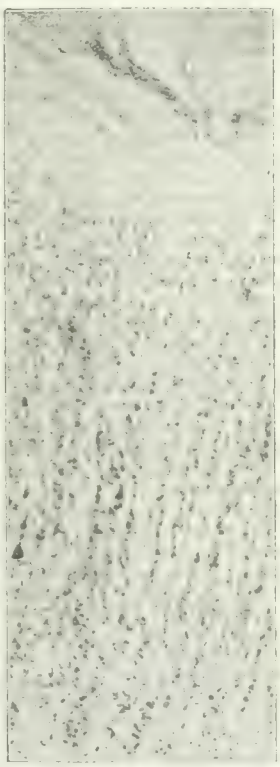


Fig. 3.—Section of occipital lobe from the same case, showing practically normal appearance of cortex. The Meynert's columns are distinctly seen, and there are no vascular changes.

The cause of the degenerative process in most of these cases seemed to be associated with the increased *psychical activity*, which must of necessity develop after puberty, when new emotions, objects, and ambitions are awakened by the sexual instinct, and the struggle for existence. That psychical activity plays a very important part in this disease, as affecting adults, is clearly shown by the following facts: the sufferers are nearly all townspeople, with a quick reaction time, ambitious and energetic, and the first symptom of the disease may be undue mental activity, approaching now and then to that of genius. It might be argued that a large number of these people are from the lowest and least educated classes; still, I am convinced that they belong to the mentally active class. Not only do we find the people affected possess mental activity, but also usually, sexual proclivity; and it is very difficult to decide whether the increased sexual activity so frequently met with in the early stages of this disease is a cause or an effect. But all forms of mental excitement are associated with fatigue, and too often the *neurasthenic* condition, which precedes the more definite symptoms of the organic brain affection leads to alcoholic excesses; and it is often very difficult to decide whether a case is one of *mania a potu* or of general paralysis. The two are frequently combined, and if so the disease runs a more rapid course. The researches of Bonhofer and Trömner have shown that acute degenerative changes may occur in the cortical cells as a result of acute alcoholism; and I have found, and can therefore agree with Jolly, that in cases of alcoholic dementia there exist organic changes affecting the superficial layers of the cortex, and causing atrophy of the tangential and super-radial fibres. It is then probable that although alcohol will not of itself produce general paralysis, it will materially increase the rapidity of the progress of the disease. Krafft-Ebing sums up the etiology of this disease in two words—Civilisation and Syphilisation; and he brings forward very strong arguments in support thereof. It has been argued that in Mohammedan countries, where syphilis is rife, general paralysis is unknown. The recent report by Dr. Warnock from the Egyptian hospital for the insane, states that during 1899, 57 general paralytics were under care out of a population of 500. The large towns furnished nearly all the cases of this disease, and syphilis was known to be the cause in 29 of the 35 cases admitted; 24 of them were native Egyptians. These facts upset the above argument.

Why should general paralysis be associated especially with atrophy of the frontal and central convolutions? It has already been pointed out that in these regions venous stasis is most likely to occur. Psychical activity is associated with hyperæmia of the brain and congestion; those portions of the brain in which the mechanical conditions favour this congestion in the most marked degree would be more likely to suffer from the effects of the congestion. The whole cerebrum and spinal cord waste in advanced general paralysis, but certain regions are earlier and more markedly affected than others—namely, the frontal and central convolutions. These are the regions



Fig. 4.—Case of juvenile general paralysis from which these preparations were made. The photograph shows Hutchinson's teeth and rhagades round the mouth.

whose veins drain into the longitudinal sinus, and in which, therefore, for reasons previously mentioned, congestive stasis is more liable to occur. If it be admitted that owing (in the majority of cases) to the influence of the syphilitic poison the durability of the nervous system has been lowered, increased psychical activity will tend to exhaustion and disturbance of the normal nutritional equilibrium of the neurones. But psychical activity will cause hyperæmia and congestion of the brain, and in regions where there is a tendency to stasis the congestion may persist, especially if it leads to insomnia. A vicious circle becomes established by conditions which tend, on the one hand, to perpetual venous congestion in certain regions, on the other hand to increase excitability of the neurones; these factors mutually interact.

Venous congestion (according to the researches of Waller, who has shown that CO_2 increases the excitability of nerve), may lead to hyperexcitability of those regions in which the stasis occurs. Likewise there is probably an impaired supply of arterial blood to the brain, for the following reasons: The experiments of François-Franck show that excitation of the Rolandic area of the cortex causes contraction of the arterioles and rise of blood pressure; observations which I have made upon the blood pressure in general paralysis by Hill's sphygmo-

meter[1] entirely accord with the results obtained by Leonard Hill and Craig. There is a considerable rise in the arterial pressure above the normal, and this is increased markedly during the occurrence of seizures, whether congestive or epileptiform. The blue condition of the skin and the coldness of the hands and feet of patients suffering from general paralysis, suggest a small amount of blood in the arterial system and a large amount in the venous. Although we find this high arterial pressure, there is seldom marked hypertrophy of the left ventricle, and I have found that if a patient has a great number of epileptiform seizures the arterial pressure falls, right heart distension and sometimes a condition of asphyxia arise with great engorgement of the veins, and death in consequence. The heart muscle in these cases exhibits early and often extensive fatty degeneration, due to a combination of causes—insufficient oxygenation of the blood, autointoxication probably from fatigue products, and increased destructive metabolism owing to the much greater resistance to be overcome. Not only the heart, but also the striated muscles show this change; I could not find evidence of degeneration of nerves to account for this change, neither do I believe this to be the effective cause, seeing that exactly the same changes in heart, diaphragm, and other striped muscles have been found by me in seven cases of *status epilepticus*.[2] Some of the latter patients, prior to the fits, were in perfect health. In connection with this, I may mention that the venous congestion of the brain, caused by the *status epilepticus*, produced marked changes in the cells of the cerebral cortex, changes which corresponded with the appearances presented by many of the large pyramidal cells in general paralysis, and not unlike those found in experimental anæmia with convulsions. There was great swelling of the cell (œdema), disappearance or disintegration of the Nissl granules, often eccentric position of the nucleus, and dilatation of the perineuronal and perivascular lymph spaces. Moreover, epilepsy frequently ends in dementia, and we find in such cases atrophy of the tangential, super-radial and inter-radial association fibres, a condition which is always found in general paralysis even in the earliest stages, frequently before any fits have occurred. Dr. George Watson, who has looked over a large number of my specimens, reports that in 20 cases which he has examined he found the tangential fibres, the super-radial and inter-radial fibres atrophied in all the 16 cases of general paralysis; but that of these 16 none showed any recent changes by the Marchi method, consequently we must suppose the atrophy was of some considerable standing, and probably years before the patient comes to the asylum a regressive change has commenced in these latest morphologically-developed structures.

Occasionally I have been able to show that the tangential fibres of Broca's convolution are more atrophied on the left than the right side when the left hemisphere has weighed less than the right. The four cases in which he did not find atrophy of the association systems mentioned were primary degenerations of projection systems, namely, two of amyotrophic lateral sclerosis, one of combined sclerosis, and one of universal syphilitic arteritis. In a considerable number of the cases of general paralysis there was recent degeneration of the radial fibres, especially in those cases where there had been epileptiform seizures. The perivascular lymphatics frequently contained the fatty products of degeneration.

We can thus understand that a number of contributory factors may arise to establish a vicious circle, which is continually enlarging, until a fatal termination occurs. Such factors may not only lead to rapid destruction of the neurones or nervous elements, but by irritation lead to a proliferative formation of the neuroglia cells, and we can account for the ependymal granulations almost invariably met with in this disease by the irritation caused by an altered cerebro-spinal fluid. Although the most constant, naked-eye changes are not found exclusively in general paralysis, but sometimes in other wasting diseases of the brain.

General Paralysis a Primary Degeneration.

The morbid process in general paralysis has been considered by Mendel and many other authorities to be a primary-meningo-encephalitis with secondary atrophy. I would advance the following reasons for considering it a primary degeneration of the neurone with secondary meningo-encephalitis:

1. Its relation to tabes dorsalis, and the probability of its being the same morbid process due to the same cause (syphilis) commencing in a different part of the nervous system.

2. The existence of the Argyll-Robertson pupil in the majority of cases.

3. The existence of grey atrophy of the discs in a number of cases—much more frequent than can be explained by mere coincidence. The last two symptoms cannot be explained except by a primary atrophy.

4. The evidence of a wasting of the whole nervous system, affecting some parts more than others, but out of proportion to the evidences of inflammation. This wasting must be primary in the nervous system and not secondary to bodily disease, for in no cachectic disease, nor even in starvation, do we find extensive wasting take place.

5. The thickening of the pia-arachnoid membrane is proportional to and corresponds with the degree and locality of the atrophy; so it is with tabes.

6. In many cases of tabes, especially those with mental symptoms, atrophy of the tangential and super-radial association fibres of the brain are found, quite similar to but in different situations to general paralysis.

7. In diseases with well-marked meningo-encephalitis—about which there can be no dispute that it is primarily an inflammatory process—we do not find this extreme atrophy.

In illustration of this I would call attention to two cases of African lethargy which I had the opportunity of examining, and of describing for the first time the histological changes in the central nervous system. Throughou the whole central nervous system in both these cases there was evidence of a profound and widespread chronic inflammatory process. The whole of the perivascular lymphatics were choked up with mononuclear leucocytes. The pia-arachnoid membrane was similarly infiltrated, indicating the existence in the cerebro-spinal fluid or blood of an irritant poison, the nature of which I was quite unable to discover, although the most painstaking efforts were made by me and Dr. J. E. Bulloch, both *post mortem* and during life, to discover a micro-organism. The only abnormal condition that was found in the blood of these negroes, a; also in a previous case of Dr. Stephen Mackenzie's (the tissues of which by his courtesy I was able to examine, and observed similar histological changes), was the existence of the embryo *filaria perstans*. The evidence of this being the cause of the symptoms, or of the morbid process found in the nervous system, is wholly inadequate. Although there was this chronic inflammation, yet throughout the nervous system there was far less cellular atrophy and nerve-fibre destruction, even in the most advanced case, than one meets with in quite the early stages of general paralysis. In fact, the brains showed little or no atrophy or change to the naked eye; and microscopically there was very little disarrangement of Meynert's columns in one case. The weight of the brains showed little deviation from the normal in one case, none in the other, whereas the bodies were extremely emaciated in both cases. I think this evidence tends to show that there is a primary atrophy in general paralysis, and that the inflammatory and vascular changes are secondary complications.

Primary degeneration of the neurones may affect the afferent, efferent, or association systems singly or combined; and in the tabetic form of general paralysis all these may be affected.

Primary Degeneration of the Afferent System of Neurones.

In tabes we have an example of degeneration of the afferent projection system, which for reasons already mentioned is probably due to nutritional failure on the part of the posterior spiral neurone, by which parts most remote from the centre of nutrition undergo a regressive atrophy. The cells of origin seldom undergo marked changes, unless pigmentation can be considered evidence of degeneration, but there seems to be some reason why the cells of the posterior spinal ganglia should be able to maintain a trophic independence. Possibly it may be the existence of the nucleated capsule; or possibly the cells receive stimuli from the viscera

by sympathetic branches; or lastly, it may be that they have become more or less independent of the influence of stimuli by the impulses from the periphery travelling directly across the T-shaped process. Again, after section of the posterior spinal roots, I did not find any change in the posterior spinal ganglion cells. Moreover, we know that in amputation cases of long duration, although the nerves and posterior roots waste, the spinal ganglion cells undergo little change. It is particularly the central projection of the neurone that undergoes the degenerative process in tabes, and from the experimental evidence above adduced this would not suffice to cause changes in the cell. The peripheral portion of the neurone—namely, the sensory peripheral nerves—have been shown to undergo regressive atrophy in tabes and degeneration from the termination towards the centre. We know that the peripheral portion of the T-shaped process is ensheathed by the hollow mesoblastic cells forming the sheath of Schwann, which probably exercise an indirect trophic influence upon the long axis-cylinder process.

Again, in tabes the idea that a sclerosis of the posterior columns produced by an irritative proliferation of the glia tissue is the initial morbid process causing a secondary degenerative atrophy is the result of confusion of cause and effect. The overgrowth of the glia tissue is the result of, and proportional to, the primary progressive atrophy of the nervous elements, for we cannot suppose that the glia tissue would electively destroy exogenous fibres, leaving the endogenous intact. In support of this statement I show a photomicrograph (Fig. 5) of the sixth cervical segment of the spinal cord of a monkey, in which the third, fourth, fifth, sixth, and seventh cervical, and first, second, and third dorsal posterior spinal roots were cut on the left side. The eighth cervical, which especially supplies the hand, was not cut. This animal was kept alive six months, and it was after a time very difficult to determine upon which side the operation had been performed, as it used each hand equally well, thus behaving entirely differently to the animals which had had all the roots cut.[3] The result of this operation is shown in two bands of sclerosis in the posterior column on the side of the divided roots, with an area of normal fibres corresponding to the undivided root lying between.



Fig. 5.—Described in text.

It will be observed in this photomicrograph of the sixth cervical segment that fine fibres are passing across the area of sclerosis to the grey matter of the posterior horn; in not a single section of all the segments of the upper part of the cord could I find the absence of these fibres which could only be terminal branches of the undivided eighth root. This points to the probability of the overlapping of roots of spinal segments. It certainly shows that sclerosis does not cause atrophy of fibres, for here is a band of fibres lying between two definite bands of sclerosis, with delicate fibres passing across the sclerosed area. Obersteiner has maintained that the degeneration of the posterior columns is due to a meningitis affecting the roots at their entry, thereby compressing the accompanying nutrient vessels; but there are so many facts against this theory which will occur to everyone upon consideration that I need not mention them. Suffice it to say that one does not find this *same* degeneration of the posterior columns in obvious cases of meningitis, syphilitic in origin. Obersteiner figures specimens stained by the Pal method, showing, as the fibres pass through the membranes to enter the cord, disappearance of the staining. This, however, must not be taken as indisputable evidence of degeneration at this particular point, because the anterior roots sometimes show a similar defect in staining upon their emergence from the cord. Moreover, the meningitis theory does not explain the changes in the peripheral nerves met with in this disease, nor does it explain the affection of the posterior roots as far back as the ganglion, leaving the anterior roots quite intact. That some anatomical condition of the circulation in the posterior columns may act as a contributory factor, as occurs in the frontal and central convolutions in general paralysis, is possible, especially when one takes into consideration the effects of cerebral tumour in the production of degeneration limited to the posterior columns (Hoche, Batten).

PRIMARY DEGENERATION OF THE EFFERENT SYSTEM.

In amyotrophic lateral sclerosis we have an example of a systemic degeneration affecting the motor efferent system of neurones, from cortex to periphery. I have had the opportunity of examining three typical cases of this disease; in all three I have found degeneration of the whole efferent system comprising the cortico-spinal neurone and the spinal muscular neurone; the degeneration being limited to these neurones alone. This was pointed out by Sir William Gowers in the first edition of his *Manual*. Certain groups of the motor-spinal neurones we know from clinical and microscopical observation are affected before others; for example, the postero-external group in the eighth cervical and first dorsal segments of the cord is especially proved to be the seat of the earliest and most severe change in a large number of cases. This is a group of neurones which presides over the small muscles of the hand. I am of opinion that the morbid process in these systemic degenerations commences at the periphery of the neurone and

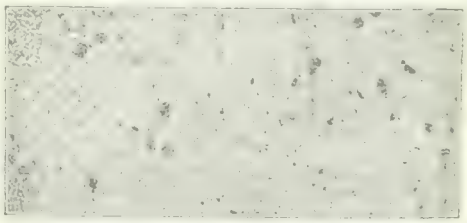


Fig. 6.—Section of the corpus callosum from a case of amyotrophic lateral sclerosis showing large black degenerated fibres in transverse section.

extends back towards the trophic and genetic cells of origin finally, in prolonged cases, causing the destruction of the cells themselves. The arguments I would advance in favour of this view are that in some cases of amyotrophic lateral sclerosis degeneration could only be followed as far as the pyramids; in others, to the crus cerebri; while in other cases, published by Charcot and Marie, Kahler and Pick, and Kowjenikoff, the atrophy had extended to the pyramidal cells of the cortex. In the case referred to by the last observer there was even atrophy of the motor convolutions with thickening of the membranes; this I have also observed in one of the three cases I have above mentioned. In two of the three cases which I have examined there was not only degeneration discoverable by Marchi method of the whole cortico-spinal neurones, *but of the lateral branches, which pass off from the axis-cylinder processes to enter the corpus callosum.* This degeneration of the motor fibres in the corpus callosum strongly favours the primary degeneration theory of the origin of the disease being a nutritional degrada

tion of the neurones themselves, independent of external vascular or supporting tissue changes. Moreover, in these cases, I have found that the tangential and super-radial and inter-radial systems of fibres were intact.

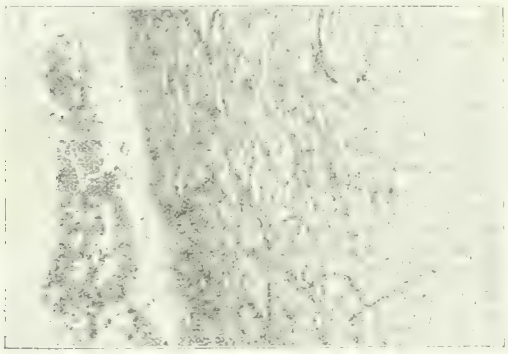


Fig. 7.—Section of the superficial cortex cerebri of the Rolandic area, stained by Marchi-Pal method, showing the super-radial and tangential fibres intact.

Now, if it were any external condition these neurones would have suffered with the motor neurones. Senator published a case of typical amyotrophic lateral sclerosis, in which there was no degeneration found in the pyramidal tracts; we can only explain the symptoms by supposing that there was interruption between the cortico spinal and spinal muscular neurones, either a failure of junction between the two, or possibly, in view of the opinion of Von Monakow and of the recent interesting observations of Schäfer, an atrophy of intermediate cells (of Golgi). Schäfer is of opinion, based upon observations made by the Marchi method on spinal cords of animals on which he had performed hemisection of the spinal cord, that the fibres of the pyramidal tract do not end in the terminal arborisation around the anterior horn (spino-muscular neurones), but are in connection with intermediate cells situated at the base of the posterior horn; if this doctrine be true, a voluntary motor impulse will pass through three sets of neurones instead of two. There is always a considerable amount of cellular atrophy at the base of the posterior horn in amyotrophic lateral sclerosis, therefore the appearances presented by this disease do not negative this theory.

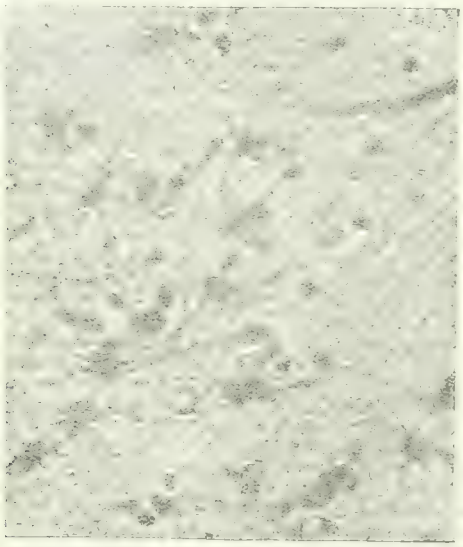


Fig. 8.—Section of lower portion of grey matter showing absence of large pyramidal cells and replacement by Deiters's cells. This occurred in little isolated foci of the motor area of the cortex.

DEGENERATION OF AFFERENT AND EFFERENT SYSTEMS.

Both afferent and efferent tracts of the spinal cord may undergo degeneration, giving rise to the condition known as *combined sclerosis*, which is met with in various forms of grave anæmia, and in pernicious anæmia, first described by Lichtheim and Minnich; it may occur also in ergotism and pellagra.

This degeneration cannot be produced experimentally in animals, and we must suppose that some auto-intoxication occurs, by which a progressive degeneration affecting primarily the long tract afferent and efferent systems in the cord takes place. I have had the opportunity of examining microscopically 3 cases of combined sclerosis, with grave anæmia, and I found the process of degeneration was not limited to the spinal cord. In 2 cases, which I examined by the Nissl method, there were marked changes in the cortico-pyramidal cells, and by the Marchi method all these cases showed degeneration in the whole pyramidal system from the cortex downwards, although it was more marked and extensive in the spinal cord than in the pyramid and pons. Likewise, the cells of Clarke's column showed in 2 cases, examined by the Nissl method, degenerative changes, and both ventral and dorsal cerebellar tracts were extremely degenerated. The changes, however, in the posterior spinal ganglia were not marked, probably for the same reasons as I have mentioned in referring to tabes.

A valuable paper on subacute combined degeneration has recently appeared in *Brain* by Batten, Russell, and Collier. Twelve cases are narrated and seven necropsies with microscopical examinations. The authors are of opinion that the disease is a degeneration due to a toxic agent in the blood.

PERIPHERAL NERVE DEGENERATPON.

Multiple polyneuritis occurs as the result of toxæmia; the poisons which give rise to the condition are numerous, but by far the most common is alcohol, and it is about this that I shall speak more particularly. Alcohol affects not only the peripheral nerves, but the brain too, where it produces degenerative changes accounting for the symptoms manifested by the patients during life. A consideration of the extent of surface of the motor and sensory neurones shows that relatively the portions covered with the myelin sheath and sheath of Schwann, as compared with the rest of the neurones, are enormous; for it is obvious that the neurones supplying sensation to the soles of the feet and the motor neurones supplying the muscles of the feet are 3 to 4 feet long, and if we admit that the trophic centres are in the cells of origin at the lower end of the spinal cord, then it is quite obvious that parts so remote from the trophic and genetic centres will first suffer from nutritional failure caused by the insidious action of toxic substances such as alcohol. As the effects of the poison become more marked, so the functional defect of sensation and movement travels up the legs towards the centres, so that we have in peripheral neuritis an anæsthesia progressing in the manner one puts on a stocking, and as sensation returns on recovery, it proceeds as one takes off a stocking, except that there is not a sharp upper border. This would quite accord with the fact that the parts most remote from the centres of nutrition are the first to be affected and the last to recover. Very probably, also, the parts most remote from the centre of circulation (the heart) are more liable to be affected. Thus the extremities of the limbs are most affected as regards movement and sensation, and it seems that mineral poisons, arsenic, lead, etc., and alcohol, which are taken into the system for some time before effects are produced, act more particularly on the peripheral nerves. There is very little evidence in these cases of the poison-producing interstitial inflammation, neither do we find changes sufficiently marked, as a rule, in the ganglion cells to account for the symptoms. The earliest and most obvious change is a proliferation of the nuclei of the sheath of Schwann; and this condition may frequently be found before microscopical evidence exists of the degeneration of the myelin sheath as revealed by the Marchi method. This does not, however, show that changes have not taken place in the myelin sheath, for the following reasons:—The products of degeneration, we know from experimental section of the nerves, are rapidly absorbed, and are by no means so obvious as in the central nervous system. Again, a chemical change may have taken place in the protagon, which has not advanced to a stage in which a non-

phosphoretted fat, essential for the Marchi reaction, has been produced. We know that for at least four days after section of the nerve the Marchi reaction is not given, and yet we have no reason to believe that protagon has not been undergoing some chemical change during that period. Again, the nerve fibres are not all affected equally and simultaneously, some fibres being affected more than others. It may be asked, If the poison, which has been accumulating in the system and producing its toxic effects on the nervous system, acts upon the whole neurone why are changes not seen throughout the whole neurone, and why should the poison not be the effect of irritation of the chain of tubular mesoblastic cells which surround the axis-cylinder process of the neurone? If it were so, there is no reason why it should not affect the nerves of all parts of the body equally. I conceive that this pro-

Figs. 9, 10, 11, and 12 are microphotographs of cells of the anterior horns of the lumbo-sacral enlargement, from a case of a woman with severe alcoholic paralysis, muscular atrophy and degenerative changes in the nerves and muscles of the legs. (Magnification 600.)

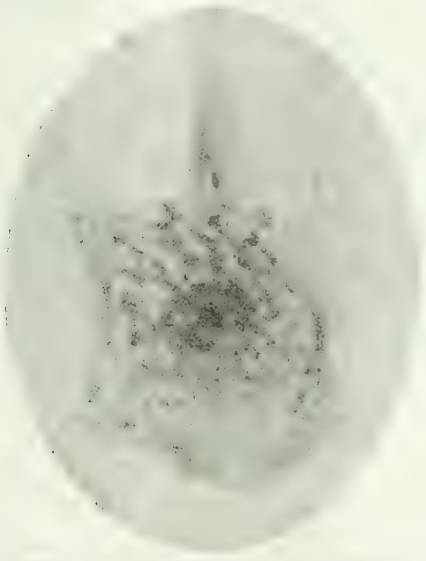


Fig. 9 shows a cell with commencing chromolytic change.



Fig. 10 shows a cell with advanced chromolytic change and eccentric nucleus. Both these cells resemble the appearances presented by cells after section of a nerve, and the change may be due to the morbid process having caused destruction of their axis-cylinder processes. They, however, are capable of regenerating the axis-cylinder process, just as regeneration may occur after section of a nerve.



Fig. 11.



Fig. 12. (Figs. 11 and 12 show morphological changes indicating death of the trophic and genetic centre. We see in Fig. 11 a cavity on one side indicating rupture of the nuclear membrane; and in Fig. 12 there is so much vacuolation of the protoplasm of the cell as to indicate its destruction.)

liferation of the nuclei of the sheath of Schwann is due to a disturbance of the normal physiological nutritional inter-relationship between the neurone and the cells which ensheath its axis-cylinder process. It is a vital reaction on the part of these cells against the progressive nutritional failure of the neurone, which will eventually terminate in destruction of the essential conducting axis cylinder. In fact, we know that this takes place when a nerve is cut, and it is a provision for repair, therefore, it is wrong to look upon this proliferation of nuclei of the sheath as evidence of irritative effects of the poison, but rather as an attempt to repair the destruction caused by the poison.

In three cases of alcoholic neuritis which I have lately examined in conjunction with Mrs. Williams, M.B. (late Technical Scholar), it was found that many of the nerves did not show very marked evidence of degeneration by the Marchi method; there was, however, considerable nuclear proliferation of the sheath of Schwann, especially marked in the nerves of the lower extremities. In one case in which there was complete paraplegia the ganglion cells of the lumbar-sacral spinal cord showed well-marked chromolytic changes; the Nissl granules in many of the cells of the anterior cornua

had entirely disappeared; the nucleus was eccentric and the processes broken off; some of the cells were vacuolated, and degenerative changes were observable in nearly all the nerves of the limbs by the Marchi method. The changes in most of the cells resembled the condition which one would find after section of a nerve, the reaction phase mentioned in Lecture II; in fact, when we consider it, the condition is really very much the same as that produced by section, for the axis-cylinder processes of the sensory and motor nerves have in such advanced cases died for a considerable part of their extent; but under favourable circumstances, especially if the poisonous influence

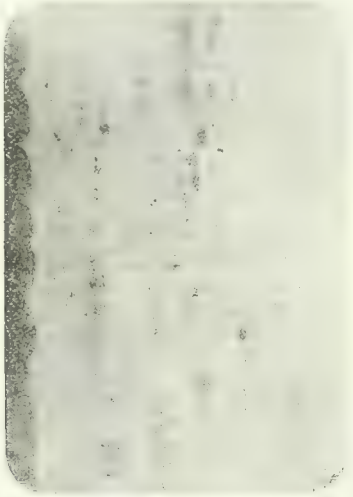


Fig. 13.—Section of the external popliteal nerve stained by Marchi method The black degenerated myelin is not very abundant because it has in great part been absorbed, but other stains, for example, Stroebe, show that hardly any healthy fibres exist. This preparation is from the same case as the cells described above. (Magnification 200.)

be removed, and the nutrition of the muscles be maintained by appropriate treatment, there is no reason why, the same as in section of a nerve, regeneration should not take place. The great thing to remember is that the joints should not be allowed to become stiff nor the muscles inactive. Passive



Fig. 14.—Section of the vagus nerve from a case of acute alcoholic neuritis with hæmorrhagic encephalitis and dementia. The patient suffered with very marked signs of cardiac failure, and died comparatively suddenly. Marked fatty degeneration of the heart was found *post mortem*. The section, stained by Marchi method, shows fine medullated fibres undergoing degeneration. (Magnification 600.)

movements, massage, and galvanism will stimulate the neurones and hasten regeneration, for we have already had abundant evidence to show the important influence stimulus exercises upon the metabolism of the neurones, and the degenerating and atrophic effects of non-stimulation. In two of these cases, in which there was marked fatty degeneration of the heart, we found fatty degeneration of the fine myelinated fibres of the vagus.

Examination of the brains of 2 cases showed a certain amount of atrophy of the tangential and super-radial systems of fibres, accounting for the dementia which existed. There were also changes revealed by the Nissl method in the cortical pyramidal cells, but seeing that there was no degeneration discovered by Marchi's method in the spinal cord, we cannot *assume* that these were more than of a functional nature. In one case there were marked congestion and microscopical intracerebral hæmorrhages. The condition of the cortex could not be mistaken for general paralysis, for there was not the same overgrowth of glia cells or atrophy, nor was there the same disappearance of Meynert's columns so characteristic of the latter disease.

Relation of Structure to Degeneration of the Neurone.

Structure and function are mutually reciprocal and interdependent, and we know that a structure which is not used will gradually lose its function, while its nutrition will also suffer, and in time atrophy may occur. Consciously and unconsciously a continuous stream of impulses pours into the nervous system from without by the sensory channels, which are the avenues of experience and intelligence, and our bodily and psychical life depends on the existence of such stimuli.

Excess of normal stimulation of itself is seldom the cause of organic disease, although we have examples of psychomotor paralyses in the palsy affecting scriveners, typewriters, pianoforte players, violinists, hammermen, etc.; but whether this is due to an actual degeneration or to a functional depression is not known. If, however, by excessive exercise such a disturbance can take place without any other apparent cause, then undoubtedly *stress, acting upon structures in a state of nutritional deficiency*, will lead to a disturbance of the normal physiological equilibrium and a progressive degeneration of those structures which are most remote from the centre of nutrition. But increased functional activity of a part is associated with increased blood supply, and if the blood contains a toxic substance, a larger amount of that toxic substance will be carried to the functionally active part, so that whatever benefit might arise in the way of repair from the additional amount of blood will be neutralised by the excess of poison. Numbers of instances have occurred in my experience in which stress seemed to determine the seat of the degenerative process. I will give a few illustrations:

1. A policeman, who was affected with tabes commencing in the arms, turned out to be a mounted policeman, and when I pointed out to the students the unusual situation, he immediately volunteered the information that the pains began in the arm in which he held the reins
2. A case of amyotrophic sclerosis affecting a cooper began in the muscles of the right arm, with which he wielded a 4 lb. hammer.
3. A man, who had alcoholic dementia, paralysis, and wasting of the muscles of the upper extremities, the lower being unaffected. This man was shown to me as a case of progressive muscular atrophy. I found that he was a porter at Covent Garden Market, and the symptoms he presented were determined by his occupation of carrying boxes of potatoes all day on his shoulders. This patient completely recovered.

I will not detain you with a number of further examples; but asylum experience only too well demonstrates the importance of undue mental excitement in causing degeneration of the higher structures of the brain, as in general paralysis. Professor Edinger has emphasised the important influence of stress in determining the seat of nervous degeneration, and his philosophical writings on the subject are worthy of careful consideration; he has, too, endeavoured to prove it experimentally.

Voss was unable to produce degeneration in the spinal cord in rabbits, guinea-pigs, and dogs by injections of pyridine sufficient to produce a severe anæmia; but Edinger repeated these experiments, varying them by inducing stress upon the nervous system by various means, one of which was to place the animals (rats) in a wheel cage. He claims then to have shown:

1. That abnormal stress can produce in animals a degeneration of the posterior columns.

2. That it is possible to produce a predisposition by artificial anæmia, by which the influence of stress of much less degree and of much shorter duration can cause this posterior column degeneration.

3. That this disease stands in close relationship, both as to localisation and cause, to the tabetic degeneration of the posterior columns in man.



Fig. 15.—Case of tabetic form of juvenile general paralysis, which died, aged 20, 3 months after onset of symptoms. The photograph shows characteristic teeth.

RELATION OF HEREDITY TO DEGENERATION OF THE NEURONE.

Of all the causes of nervous disease, hereditary predisposition stands pre-eminently first. It may be paternal, maternal, convergent, from grandparents, or according to Weismann's theory of the continuity of the germinal plasm there is no limit to the remoteness of the origin of a neuropathic taint. This doctrine must have been known to the high-born Romans, who carried the masks of all their ancestors upon public occasions. In fact, in *Lucretius*, vol. i, p. 207, it is stated: "Sometimes, too, the children may spring up like their grandfathers, and often resemble the forms of their grandfather's fathers, because the parents often keep concealed in their bodies many first beginnings mixed in many ways, which, first proceeding from the original stock, one father hands down to the next father, and then from these Venus produces forms after a manifold chance, and repeats not only the features but the voices and hair of forefathers; and the female sex equally springs from the father's seed, and males go forth equally from the mother's body, since these distinctions no more proceed from the fixed seed of one or other parent than our face, and bodies, and limbs. Again, we perceive that the *mind is begotten along with the body*, and grows up together with it and becomes old along with it." The history of the Roman Emperors from Julius Cæsar, one of the greatest geniuses the world has seen but an epileptic, shows how the endeavour to keep the sacred Julian blood for the dynasty culminated under the influence of a depraved environment in the criminal madness of Tiberius, Messalina, Caligula, and Nero.

Strictly speaking, it is the tendency to nervous disease rather than the disease itself which is inherited, and this is frequently spoken of as neuropathic or neuropsychopathic taint. There are, however, a number of inherited diseases, which although rare, are of great interest, inasmuch as they affect members of a family, the disease frequently commencing in each individual at about the same age. These are termed *family diseases*, and include hereditary ataxia (Friedreich's disease), hereditary chorea, amaurotic idiocy, paramyoclonus multiplex, an interesting family of cases of which I have recently seen. Two boys and two girls were affected with epilepsy, and this clonic choreiform spasm of the muscles; in each it commenced at the age of 15; there was no direct hereditary history in the parents of any nervous affection, but an uncle suffered with epilepsy. Presumably, therefore, ancestral germinal plasm possessed the neuropathic predisposition, which possibly under some influence which I was unable to ascertain, for example, some acute specific fever affecting the members of the family, or possibly alcoholism or syphilis in the parents, had supplied the contributory factor to develop the disease.

In a healthy nervous system, we must suppose that the balance of potential is high, and that the sense of fatigue is the natural indication for sleep and repose by which nervous energy may be recuperated. The neuropath may be conceived to possess in some portion of his nervous system communities, groups, and systems of neurones either of defective durability or with an inherited *low potential* readily becoming exhausted, and especially liable to functional depression, and which under the influence of contributory factors such as *toxic conditions* of the blood or *undue stress*, undergo premature degeneration. To explain the inherited neuropathic tendency morphologically, we may suppose that there is an inherent defect in the germinal plasm, which is concerned in the formation of the neurones.

Certain acquired conditions in the parents, affecting them especially at the time of conception, are liable to produce this defect in the germinal plasm; they are acute and chronic *alcoholism*, *syphilis*, and *tuberculosis*. Statistics by Mr. Tredgold relating to 40 cases of congenital imbecility, although not numerous, are valuable because reliable; and in course of time, when he has completed the investigation of this question in all the London county asylums, as he has done in Claybury, will be of still more value. As far as they go, they show that the most important cause of *congenital imbecility* is *inherited neuropathic taint*, 70 per cent. generally in some form of insanity, but that *alcoholism*, *tuberculosis*, and *syphilis* are important contributory factors.[4] My own researches on juvenile general paralysis, of which I have now had the opportunity of examining 30 cases, show:

1. That the disease affects both sexes equally.

2. That it may commence at any age from 8 to 23 years (according to my statistics).[5]

3. That in 80 per cent. of the cases there were either undoubted signs or history of congenital syphilis, and that in 20 per cent. it could not be excluded.

Therefore we may assume that the effect of syphilis on the germinal plasm on one or both of the parents is the essential cause. In the greater proportion of the cases I was unable to obtain a history of insanity or nervous disease in the family; although it was remarkable that in four of the cases and also in one hereditary case of tabes the fathers suffered with general paralysis; but the *notes* of their cases give no evidence of their having acquired syphilis, yet in four out of the five cases there were distinct and well-marked signs in their offspring. From a very careful study of the family histories of these 30 cases I was led to believe that the germinal plasm of the parents, particularly of the father, may be very unequally affected by the syphilitic poison, and it seemed to me that the inherited syphilis was not infrequently the result of spermatic infection only. Many of the mothers never had any illness that they knew of, yet some of their children showed syphilitic teeth, chorio-retinitis, rhagades, and other characteristic signs, while other children appeared perfectly healthy. Generally, however, the history was miscarriages, stillbirths, syphilitic children, and healthy children in succession. In one family there were three children; the eldest had no external signs of congenital syphilis, but a syphilitic liver was found *post mortem*. He was an able-bodied seaman, but at the age of 20 broke down with general paralysis. I consider that this was induced by *stress*, for he was on duty in the Mediterranean just at the Fashoda crisis, when the disease commenced by a fit. The next brother had a characteristic syphilitic nose and teeth, but was earning his living as an artisan. The youngest boy is an imbecile in an asylum with characteristic objec-

tive signs of congenital syphilis. Another family was interesting in this respect, that the eldest daughter of a mother who gave a history of infection showed no signs of syphilis on the body, yet died of general paralysis. The next daughter presented well-marked external signs, but at present is healthy otherwise. The majority of the 30 cases gave some interesting details bearing upon this question. Another factor which seemed to have an important bearing upon the occurrence of general paralysis in children of parents suffering with syphilis was the existence of chronic alcoholism in one or both of the parents. Thus, we see impaired vitality of specialised structures may result from devitalising influences acting upon the germinal plasm of one or both of the parents. Inherent defect in the germinal plasm as the cause of juvenile general paralysis is supported by the fact that very frequently the reproductive organs in both sexes never come to maturity, the genitals in the males being of infantile proportions, with absence of or very scanty hair on the pubes. Menstruation may never occur in the females, and if it does it is scanty as a rule and soon ceases. The ovaries and uterus are often of infantile proportions. In fact, Fournier regards infantile development of the genital organs as strong presumptive evidence of hereditary syphilis. If we admit the Weismann doctrine of the continuity of the germinal plasm, it is probable that the syphilitic poison has had a devitalising influence, which may cause arrest of development in the offspring of infected parents. With regard to the toxic influence of alcohol on the nervous system of individuals with an inherited neuropathic or psychopathic tendency, I have been particularly struck with this fact that, although at least 20 per cent. of the people admitted into the London County Asylums yield a history of intemperance as a result of their mental symptoms, yet I only once remember seeing in the *post-mortem* room of the asylums a case of well-marked cirrhosis of the liver with ascites, and that was in a person celebrated in the police courts, who was convicted nearly 400 times of drunkenness before she was found to be certifiable as incapable of taking care of herself. One must suppose, therefore, that these people who came into the asylum are susceptible to the toxic influence of alcohol, and long before they could drink sufficient to produce cirrhosis of the liver, symptoms of alcoholic poisoning of the nervous system arise. In fact, it would rather show that a person who could drink sufficiently long to get a hobnailed liver has inherited a nervous system of unusual stability. To the mentally unstable alcohol is a poison, and I have been particularly struck with the fact that it acts even in moderate quantities as a poison on women at the climacteric period when potential is low in the nervous system. Another class of individuals of low potential to whom alcohol is unquestionably dangerous is the neurasthenic. The sense of fatigue, whether of mind or body, is physiological and protective. It should be responded to by rest, but the active-minded town dweller who is suffering from nervous exhaustion takes spirits to enable him to make up the deficient energy. "He draws, so to speak, a bill on his health which must always be renewed at a higher rate of interest."

My own observations and those of Mr. Tredgold, the Technical Scholar, entirely agree with the observations of numerous authorities, who have shown that epilepsy, insanity, imbecility, idiocy, mental weakness, and loss of moral control and will power are frequently the heritage of children born of drunken parents and chronic tipplers. I am convinced that the two most important *extrinsic* (and therefore in some measure remediable) causes of the degeneration of the neurone are syphilis and alcohol.

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NOTES AND REFERENCES.

[1] *Archives of Neurology*, p. 192. [2] *Ibid.*, p. 493. [3] Mott and Sherrington, *Proc. Roy. Soc.*, 1895. * It is very interesting to note that two of the cases of imbecility with congenital syphilis have become juvenile general paralytics, and in neither of these cases was there a family history of insanity, which is independent corroboration of my observations, as neither of these cases is included in my 30 cases. [3] A patient died in Banstead Asylum who was under Dr. Percy Smith in Bethlem for general paralysis. She had well-marked signs of congenital syphilis, but the dementia did not commence till after 25. It is possible, therefore, that cases occurring in adults in which no history can be obtained may owe the disease to an inherited syphilitic taint. It is not necessary that they should show external objective evidence of syphilis, for many of the cases which I have recorded were proved to be born of syphilitic parents, although manifesting no external signs of the disease.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

SCHOOLS AND DIPHTHERIA INFECTIVITY.

Cases in which the infectivity of diphtheria patients is unduly prolonged appear not uncommon; but in view of their great importance amongst children returning to school, the following case may be instructive.

Early in February I was called to a boy in a boarding school said to be suffering from a severe cold. A nasal discharge had been noticed staining the bedclothes from the first day of term. Correlative symptoms led me to suspect diphtheria, and bacterial test confirmed the suspicion. Other boys were suffering from nasal catarrh, but in no case was the Klebs-Loeffler bacillus found. Every boy, master (except one), and servant about the school was inoculated with antitoxin, with the result that no one else contracted the disease except one master, the one who was not inoculated. He had a not severe faucial attack.

In the case of both master and boy the bacillus was found to linger for three months, in throat and nose respectively, in spite of energetic and constant disinfection.

Five weeks before the summer term and after disinfection had been stopped some days, both were tested with negative result, and the test was again repeated two days before term. In the case of the master the bacillus was again found to be present, and he was kept away from school altogether; but the test was again negative in the boy, and his nasal passages were quite clean. It was, therefore, looked upon as quite safe to let him return. Both cases were treated at the beginning with diphtheria antitoxin.

Three weeks after the beginning of term, another boy was found to be suffering from a severe type of the disease, to which he subsequently succumbed. The original case was, of course, immediately tested again, and the Klebs-Loeffler bacillus once more found to be present. Antidiphtherial inoculation was again practised throughout the school; and bacterial tests showed that three other boys were going about with the bacillus in their throats, two of them being quite well, while the third had only a slight rise of temperature for one night.

It should be mentioned that a small epidemic was present in the town during the whole of the winter 1899-1900, as to the origin of which local medical opinion was not in doubt.

Cases such as these seem to me to make it urgently necessary to modify the instructions issued by the Medical Officers of Schools Association in their code of rules. They run as follows:

A pupil may.....rejoin the school after diphtheria. In no case in less than four weeks, provided convalescence is completed, and that there is no longer any sore throat, or any abnormal discharge from the throat, nose, ears, or eyes, and no albuminuria; and that bacterioscopic examination of the pharyngeal (or nasal) mucus for the specific bacillus has been attended with negative results, this examination having been made in not less than three days after the discontinuance of local antiseptic precautions.

I would suggest that:

1. In the case of every boy returning to a boarding school, two or three days before the beginning of term, both throat and nose should be bac-

clerially tested for diphtheria. Only so could the above-mentioned boy have been excluded from school in January with absolute certainty.

2. In the case of any boy or person who has recently suffered from the disease, not less than six months should be allowed to elapse before his return to school; and then only after a negative test has been obtained on two or three separate occasions at intervals of one week, the use of disinfectants of course having been stopped during this month (if not dropped long before).

The above precautions may seem severe, but when one considers the number of instances in which an infectious boy returning to school has started an outbreak, and the incalculable damage such an event does to a school, schoolmasters, at any rate, are not likely to object to such measures; and I scarcely see how we of the profession can in future sign certificates without actual bacteriological evidence.

Sevenoaks. FRANK M. BURNETT, M.D.Lond.

CONJUNCTIVAL DIPHTHERIA: RISK OF INFECTION.

A CHILD, aged 2 years, had been suffering from epileptiform convulsions on and off for seven months, but had not been seen by me for a fortnight, when a message came for me to see the child as the convulsions were worse. The first thing which attracted my attention was a slight sanious discharge from the right eyelids, which immediately made me suspect diphtheria. The parents, on being questioned, said that there had been a "cold in the right eye" for three days, but they had attached no importance to it. On examination I found no membrane, but I took a specimen of the discharge with the usual precautions, and had cultivations made from this, the result being that typical diphtheria bacilli were found. There was no lesion of the throat nor of the nose, and there had been no other cases of diphtheria in the same house.

The site of the local lesion is, of course, unusual, but the chief points of interest are: (1) the cause of illness might easily have passed unnoticed; (2) infection might readily have been spread; (3) the origin of such spread would probably not have been recognised.

HARRY E. SMITH, M.A., M.B., B.C.Cantab.

Streatham, S.W.

WEIL'S DISEASE.

WEIL'S disease, or acute febrile icterus, being a somewhat rare condition, the following notes of two cases which have recently been under my care may be of interest:

CASE I.—W. B., aged 52, male, a butcher, was suddenly seized with intense headache, backache, and pains in the calves of the legs. When I first saw him his temperature was 103° F., pulse 135. The abdomen was slightly distended and tender over the right half. The following morning the temperature was normal, but the pains in the back and calves and the abdominal tenderness still persisted. The temperature rose again the same evening to 103°. He become very restless and slightly delirious. The next morning, that is, forty-eight hours after I first saw him, there was well-marked jaundice. The liver was enlarged and tender. The urine contained a small quantity of blood in addition to bile pigment. The stools were slightly clay-coloured. This condition persisted for five days, during which time an extensive crop of herpes appeared round the patient's nose and upper lip. Improvement commenced by the eighth day, and the patient was convalescent at the end of a fortnight. The blood was examined for the Widal reaction, which was, however, not obtained.

CASE II.—J. H., aged 35, a coachman, had been ailing for some three or four days. He said he had "pains all over him," particularly severe in the calves of the legs. He had vomited several times. When I first saw him he was slightly jaundiced, the liver was enlarged and tender. The temperature was 102.5°. The stools were of normal colour and consistency. The urine was albuminous, and contained bile pigment. The spleen was enlarged. The temperature was irregular for five days. The pulse was never abnormally slow, but varied in speed with the temperature. The jaundice gradually cleared up, and the patient was convalescent in a little over a week. The Widal reaction was not obtained.

The treatment adopted in both cases was rest in bed, milk diet, a laxative, a diaphoretic mixture, and intestinal antiseptics.

The pathology of this disease appears to be that of an acute general febrile disease due to a specific organism, which probably gains entrance through the digestive or respiratory tracts. It occurs generally during the warm summer months amongst people who have been in contact with decomposing organic matter. The jaundice in both these cases seemed to be of the toxæmic type, due to the destruction of the red blood corpuscles by the specific toxin of the disease, the freed hæmoglobin increasing the bile pigment and viscosity of the bile, and thus producing virtual biliary obstruction. The disease in its early stage resembles the abdominal type of influenza, and later might be mistaken for enteric fever or one of the rarer forms of pernicious malarial fever known as "bilious typhoid."

Macclesfield. J. H. MARSH, M.R.C.S., L.R.C.P.Lond.

OPIUM IN PNEUMONIA.

IN reference to Dr. de Winter Baker's memorandum on the use of Dover's powder in pneumonia, the following case may be of interest:

A man, aged 49, consulted me on June 4th for a pain in the right axillary region. He related a history of influenza (pains in limbs and head, etc.) of two or three days' standing. His temperature was 100°; there was dyspnœa and slight pleural friction in the axillary region, the pleurisy being evidently chiefly diaphragmatic. I sent him home to bed, having ordered linseed and mustard to the side. Next day he appeared better.

A day or two later well marked consolidation was found at the right apex and violent delirium. On June 8th he was very ill—sleepless, tremulous, picking the bedclothes, with rapid pulse, presenting the appearance of impending collapse, and all the signs of one of those unfortunately rapidly fatal cases of pneumonia. As he had not slept for forty-eight hours, I injected at 10 A.M. ¼ gr. of morphine. At 5.30 P.M. this had had no effect; therefore I injected a further ¼ gr. On visiting him at 10 P.M. I was told there was a great change for the worse, and I was somewhat startled to see him soundly asleep, breathing stertorously, and with almost pinhole pupils; but the pulse had slowed down considerably, and he was in a profuse perspiration. As he had slept for four hours, I roused him and injected $\frac{1}{75}$ gr. of sulphate of atropine. Next day he was better, but as he was again sleepless I injected once more ¼ gr. of morphine with the most decidedly beneficial effect, especially on the pulse, which again was much reduced in frequency.

From that time, with the exception of one rise of temperature to 103°, his progress towards recovery was uninterrupted. The lung has now entirely cleared up, and, except for debility, he is as well as ever. He was given liq. strych. ♏v and tinct. digitalis ♏v almost from the beginning, and all poultices, except for the first day's pleurisy, were forbidden—an important point, I think.

I attribute the good effect of the morphine to its action in reducing the frequency of the pulse. No doubt the heart was also strengthened by the strychnine.

H. BOWEN WILLIAMS, M.D.Brux., M.R.C.S.Eng., L.R.C.P.Lond.

Lewisham High Road, S.E.

INFANT MORTALITY IN LOWER EGYPT.—Dr. Engel Bey, in a continuation of his summary of the statistics of the towns of Lower Egypt for the period 1886-90, a previous instalment of which was noticed in the issue of the BRITISH MEDICAL JOURNAL for March, 1899 (p. 572), presents elaborate tables and diagrams illustrative of the mortality of infants under 5 years of age. He finds that the mortality reckoned on births (for census bases are not available) of the first year of life compares favourably with that of European cities, whereas the mortality of the succeeding years, especially of the second and third, is much higher. This is due to deaths caused by digestive and respiratory diseases and by measles, which he holds accountable for much of the stomach and chest troubles so prominent in the returns. The mortality of the first year is higher than of the succeeding years, which present the normal progressive decrease. When these later years give unusually high figures, the result is due to the excessive prevalence of measles. Scarlatina is almost unknown in Egypt, and both diphtheria and whooping-cough, which account for many deaths, occur mostly during the first year of life.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

PROCIDENTIA UTERI IN A GIRL AGED 17: VENTRIFIXATION.

(By THOMAS OLIVER, M.D., F.R.C.P., Physician to the Infirmary.)

History.—A healthy-looking girl, aged 17, came under my care on November 7th, 1899, complaining of a "fall of the womb." At the age of 13 she went into domestic service. The family consisted of six, there being four grown-up sons. The wife was an invalid, and was confined to bed. The patient had to do the house-cleaning, cooking, washing, and waiting upon her mistress. The work was very heavy, frequently continuing from 7 A.M. until 11 P.M. Despite this she remained in her situation for two years and a-half. After being three months at service she commenced to menstruate, and some little time afterwards experienced uneasy sensations in the lower part of the abdomen. At the age of 14 she felt a swelling in the vagina which all but protruded through the orifice. This remained very much the same until nine months before admission, when after putting in a load of coals the mass appeared outside the vulva. Menstruation was regular for the first few months, when it ceased altogether without any apparent cause or injury to health, and was absent for nearly a year. Since then it has been regular, the loss being rather considerable. There has been no trouble with the bowels nor bladder other than the inconvenience and sense of dragging associated with the procidentia.

Condition on Admission.—The uterus projected 3 inches beyond the vulva; the os was well defined; the mucous membrane of the cervix was dry and wrinkled, and there was a small ulcer just to the right of the entrance into the womb. She was able to replace the uterus herself, but it came down again when she began to walk about. The sound while slightly caught at the internal os, passed into the uterus in a backward direction to half an inch beyond the bend. After replacing the uterus the vagina was found to be extremely roomy, and capable of receiving a large-sized apple. Lying in Douglas's pouch on the left side could be felt a rounded body, tender on pressure, apparently a prolapsed and enlarged ovary. There were no signs of hernia. The right kidney was slightly enlarged and mobile. The heart and lungs were healthy.

Operation.—The case was clearly not one for the use of pessaries. The age of the patient, the toneless condition of the vagina, the extremely relaxed condition of the uterine ligaments, and the fact that the girl had to work for her living, all pointed to surgical rather than mechanical treatment as being the more appropriate. Accordingly I asked my colleague, the late Mr. Williamson, to perform ventrifixation of the uterus. This he did by the ordinary method, stitching the womb to the internal surface of the abdominal wall. The patient made an excellent recovery.

Remarks.—Dr. J. D. Duncan reported in the BRITISH MEDICAL JOURNAL, February 18th, 1899, the case of a girl aged 16 years, who was suffering from complete prolapse of the uterus, and was successfully treated in the Cumberland Infirmary, Carlisle, in a manner similar to that which I have mentioned. In his case, as in my own, the interesting points are the youth of the patient, and the fact that each was a nullipara, and was engaged in domestic service. No such strain as that caused by pregnancy had been brought to bear upon the pelvic floor. My patient had been exposed to the hard work and heavy lifts, the long hours and drudgery, of a general servant. I have had no experience of the treatment of prolapsus uteri by the injection of a solution of quinine into the broad ligaments, recommended by Parsons, and as my experience of the treatment of the displaced uterus by shortening the round ligaments has not been satisfactory, I preferred recommending ventrifixation of the organ, which on this as on previous occasions but in older patients has been most successful.

REPORTS OF SOCIETIES.

OBSTETRICAL SOCIETY OF LONDON.

ALBAN DORAN, F.R.C.S., President, in the Chair.

Thursday, July 5th, 1900.

PORRO-CÆSAREAN HYSTERECTOMY.

Dr. AMAND ROUTH read a paper entitled Porro-Cæsarean Hysterectomy with Retroperitoneal Treatment of the Stump in a Case of Fibroids Obstructing Labour; with Remarks upon the Relative Advantages of the Modern Porro Operation over the Sänger-Cæsarean in most other Cases requiring Abdominal Section.

When the patient was first seen the pelvis was occupied by a large fibroid, and the cervix uteri was out of reach above the symphysis. During the thirty-fourth week the pelvic fibroid was rather suddenly drawn up out of the true pelvis; as it was found that the head was arrested just above the lower segment of the uterus by two opposing fibroids, a Porro-Cæsarean operation was performed, in preference to a panhysterectomy or to Cæsarean section with removal of the appendages. When the abdomen was opened in the middle line, the left broad ligament came into view, with the largest fibroid on its right. The incision into the uterus had therefore to be made posteriorly to the left broad ligament, and was directly over the placental site. The placenta was stripped off, the membranes incised, the child extracted, the placenta and membranes removed, and the uterus brought out through the abdominal incision. The operation was then completed by Baer's method. Both mother and child had an uneventful recovery. The author said it was a point worthy of discussion whether supravaginal amputation of the uterus (Porro's operation), with retroperitoneal treatment of the stump, was not safer for the patient in skilled hands than a Sänger-Cæsarean section with sterilisation in all cases of permanent obstruction to labour requiring abdominal section, except perhaps those due to cancer of the supravaginal cervix. When it had been decided that a viable child had to be delivered from a living mother by abdominal section, all cases would resolve themselves into three groups: (1) Those where hysterectomy (Porro, or panhysterectomy) with retention of one or both ovaries was absolutely indicated; (2) those where a Sänger-Cæsarean operation (with or without sterilisation) was absolutely indicated; (3) those capable of being treated by either operation. It was agreed that a Porro (or panhysterectomy) was absolutely indicated in the following cases: Obstructing fibroids, cicatricial stenosis of the vagina where the lochia cannot escape, septic endometritis, decomposed fœtus (osteomalacia owing to the fact that removal of the appendages was often curative), uterine hæmorrhage from uterine inertia during Cæsarean section, after much previous manipulation of the uterus in attempts to extract *per vaginam*. Sänger-Cæsarean section without sterilisation was, on the other hand, absolutely indicated, instead of a "Porro," where it was considered desirable for the woman to have a chance of another child; and Sänger-Cæsarean section with sterilisation was required (?) in cases of cervical cancer, when the supravaginal cervix was involved. There only remained, therefore, a third group of cases where a Cæsarean section with sterilisation was usually done, but where it would, in Dr. Amand Routh's opinion, be quite as reasonable to do a modern "Porro." This third group included all cases of sufficient pelvic contraction, and it was in such cases that the relative value of a modern "Porro" operation as compared with a sterilising Sänger-Cæsarean operation demanded serious consideration.

Dr. GALABIN preferred to call the operation performed by Dr. Routh a Baer-Cæsarean, or simply a Cæsarean hysterectomy, as the original operation of Porro was hysterectomy with the uterine stump fixed in the abdominal wound, instead of being covered by peritoneum and dropped into the abdomen as Dr. Routh had done. He thought the best operation had been done, and had performed a Porro's operation in a similar case five years previously. He did not think pregnancy added to the difficulties of such a hysterectomy, and was led by this experience to recommend it as the best operation when fibroids obstructed labour, and also as an alternative to the ordinary Cæsarean section apart from fibroid tumours. In several other cases of pelvic fibroids complicating pregnancy, he had found that the fibroids became elevated during the first stage of labour, and had enabled forceps to be used to complete delivery. He asked Dr. Routh whether there was much hæmorrhage before the ovarian and uterine arteries were tied, and whether the elastic ligature was used.

Dr. WILLIAM DUNCAN believed that abdominal hysterectomy with intraperitoneal treatment of the stump was much less dangerous than any Cæsarean section, except in cases of cancer of the cervix, where he would prefer to treat the stump extraperitoneally. He preferred to leave both ovaries instead of only one, as he had several times noticed that when one ovary was removed various unpleasant "menopause" symptoms supervened, although never so severely as when both ovaries had been removed.

Dr. P. HORROCKS preferred to speak of Cæsarean rather than of Sänger-Cæsarean section, because the evolution of asepsis had led many operators to abandon Sänger's main improvement, which was to sew the peritoneum completely over the deep

sutures. Although he believed that Dr. Routh had done quite the best thing in his case, he did not think it was possible to formulate rigid rules for all cases, for it often happened that it was found best to do something quite different from what was intended before the operation was begun. Speaking generally he preferred Cæsarean section to Porro, sterilising the patient by snipping half an inch out of the middle of each Fallopian tube. This operation was, he considered, easier and safer for the patient. If possible he always left both ovaries when performing hysterectomy, although he had never found that climacteric atrophic changes ensued if only one were left behind.

Dr. W. R. DAKIN believed that if one ovary were left behind after hysterectomy the effect was the same as if both were left. He agreed with Dr. Routh that the woman escaped certain risks if the uterus was removed instead of being merely sutured and the patient sterilised, and alluded especially to the risks of infection of the peritoneum through an imperfectly-sutured wound, and of adhesions between the uterine and abdominal wounds which might cause strangulation of the bowels. If the woman wished to have a family, all members of which were to be delivered through the abdominal wall, it was another matter. He had observed no greater shock after supravaginal hysterectomy in these cases than after an ordinary Cæsarean section, but agreed that it was wise not to decide how the operation was to be finished till the child was actually extracted from the incised uterus. He had recently operated with successful results to both mother and child, where the true conjugate was only $2\frac{3}{4}$ ins. In a previous pregnancy labour had to be induced at the sixth month. The patient agreed to an abdominal operation but wished at the same time to be sterilised. At the operation, after extracting the child, he found the uterine vessels were standing out so clearly and were so easy to ligature, that he decided it would be a much shorter procedure to remove the body of the uterus, treating the stump by the retroperitoneal method, than to suture the uterine wound and to ligature and excise a part of each tube. He thought this would be the decision most often arrived at under similar circumstances.

Dr. HERBERT SPENCER agreed that the best operation had been done in this case, and he had himself performed Porro's operation under similar circumstances eight years ago. While the intra-abdominal treatment of the stump shortened the convalescence and lessened the risk of hernia, it did not always prevent septic peritonitis by infection of ligatures through the vagina (Klotz), nor the risk of adhesion of bowel to the seam causing intestinal obstruction, which had occurred in one of his own cases. He did not consider that Porro's operation should be done in all cases of permanent obstruction, such as contracted pelvis. He much preferred the conservative Cæsarean section. He would, however, have nothing to do with sterilisation by tying or cutting the tubes, which, besides exposing the patient to additional risks, was very unreliable in its effects, and was at least debateable from the moral standpoint. The conservative Cæsarean section was a very successful one and left no stump for intestines to adhere to, the wound in the puerperal uterus lying up against and becoming adherent to the abdominal wall, so that in a subsequent operation the peritoneal cavity was sometimes not opened at all. He had recently performed Cæsarean section under local anæsthesia upon a patient whom he had delivered by Cæsarean section twice previously. As both the children previously thus delivered had subsequently died, the advantage to the mother of having a third and this time a very healthy child was obvious. He had also successfully repeated Cæsarean section in another case.

Dr. COLLINGWOOD ANDREWS had had opportunities of comparing the progress of cases of hysterectomy during pregnancy where both the extraperitoneal and intraperitoneal methods of treating the stump had been adopted, and greatly preferred the latter method.

Mr. A. C. BUTLER-SMYTHE thought that the operation performed by Dr. Routh was only possible in a hospital, or where skilled assistance was obtainable. Wherever a Porro's operation was required, as in cases of fibroids, he considered the retroperitoneal treatment of the stump far preferable to the old method, but he would leave the precise details of the operation to be decided when the abdomen was opened, and the child extracted. That was also the time to consider whether the woman should be allowed to run the risk of another pregnancy.

Mr. J. H. TARGETT said he considered that a non-sterilising Cæsarean section was very rarely justifiable, while between a supravaginal hysterectomy and a Cæsarean section with sterilisation, the balance would usually be in favour of hysterectomy, because it would be more rapidly performed, and prevented the risk of hæmorrhage and subsequent sepsis. When the pregnancy was complicated with fibroids the advantages of supravaginal hysterectomy were obvious.

As evidence of an additional risk in the after-history of cases where Cæsarean section without sterilisation had been done, he showed a specimen of a uterus which he had removed from a woman who had had Cæsarean section performed by him two years and a-half previously for impacted shoulder presentation. When readmitted she was in a state of collapse, and when the abdomen was opened, the child and placenta were found free in the peritoneal cavity, and there was a large rupture in the anterior uterine wall along the scar of the previous operation. The patient fortunately recovered.

The PRESIDENT believed that the retroperitoneal operation was best, provided that, as in the present case, the obstetrician had already performed it more than once on non-pregnant subjects, and in hospital practice with plenty of assistance. Country practitioners with large midwifery practices, but without experience of abdominal section, had, as in a case within his own knowledge, had excellent results after the old Porro-Cæsarean operation, which was easy and could be done quickly. On that account Lepage performed the old operation in a hospital on a case of labour at term, complicated by fibroids, where there was free hæmorrhage, saving mother and child. Weiss and Schuhl reported the removal of the uterus in two cases of spontaneous rupture during labour occurring in a hospital. In one case the elastic ligature and pins were used, and the patient recovered; in the second, which was lost, the retroperitoneal operation was undertaken, but this case was septic. Panhysterectomy had the disadvantage of being yet lengthier than retroperitoneal hysterectomy.

Dr. AMAND ROUTH, in reply, agreed that the nomenclature was not altogether satisfactory, but thought that all cases of hysterectomy during late pregnancy (except panhysterectomy) were of the nature of a "Porro," the treatment of the stump being a detail capable of many renderings. He did not consider that the old "Porro" operation was suitable for cases of advanced cancer of the cervix, owing to the great strain on the friable supravaginal cervix, which would almost certainly give way. He did not think it made any difference to the patient's after-history whether one or both ovaries were left. Most of the speakers had, with certain reservations, approved of his view that hysterectomy was in most cases preferable to Cæsarean section with sterilisation, and, as the President had stated, if haste was essential the old "Porro" was indicated, otherwise the modern retroperitoneal hysterectomy. Dr. Herbert Spencer's contention that, wherever possible, Cæsarean section without sterilisation should be performed, so as to allow another pregnancy to occur, was not in his opinion justifiable. The patient might at full term be far away from skilled assistance, and would, moreover, run all the risks mentioned in his paper, both during the puerperium and subsequently. The adhesions which Dr. Spencer stated occurred between the uterine and abdominal incisions constituted one of the dangers, and involved the risk of intestinal obstruction. He preferred catgut to silk for suturing the muscle of the stump, owing to its quicker absorption, which therefore caused a smaller chance of subsequent infection. He had not found the elastic ligature necessary, but had quickly tied or clamped the uterine vessels.

SPECIMENS.

The following were shown:—Dr. G. F. BLACKER: Frozen sections of an early (ten weeks) pregnant uterus.—Dr. PETER H[illegible] uterus with fibroids, removed at the fifth month [illegible] tomy.—Mr. J. H. TARGETT: A pregnant uterus [illegible] through the scar of a previous Cæsarean section, removed by abdominal hysterectomy.—Dr. AMAND ROUTH: A pregnant uterus with fibroids, re[illegible] at full term by abdominal hysterectomy.—Dr. WILLIAM DUNCAN: Multiple myxomatous polypi from cervix uteri.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.—At a meeting on July 3rd Mrs. SCHARLIEB, M.D., M.S., President, in the chair, Miss GOUGH, L.S.A. (China), sent a short report of a midwifery case presenting unusual difficulties in delivery,

owing to the large size of the child.—By kind permission of Dr. JOHN TURNER (Essex County Asylum, Brentwood), Miss DE STEIGER, M.B., showed some lantern slides of preparations of various cases of cortical disease, specially illustrating the "Nissl" bodies found *post mortem* in the large cells of the cortex of the brain.—Miss ELLABY, M.D., showed some slides illustrating different stages in the development of the eye, also some of glaucoma, and other diseases of the eye.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

G. ANDERSON CRITCHETT, M.A., F.R.C.S.E., President, in the Chair.

Friday, July 6th, 1900.

"HOLES" AT THE MACULA.

MR. F. M. OGILVIE read a paper on one of the results of concussion injuries of the eye—"holes" at the macula. He had collected all the published cases presenting this lesion, and he divided them into two large classes: (*a*) those in which there was no detachment of the retina, and (*b*) those in which detachment was present. He showed lantern slides of the appearances of the fundi in all these cases which invariably followed concussion injuries, such as blows from blunt objects, from stones thrown from catapults, while one most interesting case he had previously shown to the Society in which the injury was due to a bullet which apparently hit the back of the eye in passing through the orbit. He advanced several theories to account for the holes which, as a rule, were about 1½ dioptre in depth. He summarised the conditions brought about as follows: (1) The lesions are definite and central; (2) they are the direct result of violence; (3) the injuries are permanent; (4) the general disturbance of vision is not great; (5) they are the result of concussion injuries only.

Mr. ADAMS FROST endorsed all that Mr. Ogilvie had said regarding the appearance of the lesion, and in view of the fact that no case had as yet been examined pathologically he suggested that possibly a similar condition might be brought about by a like injury in the eyes of animals or in eyes recently excised.

OPTIC NERVE TUMOUR PREVIOUSLY REPORTED.

Mr. C. DEVEREUX MARSHALL read some further notes of a case reported to the Society in November, 1899. The patient was a woman, aged 46, upon whom he operated at the request of Mr. Poulett Wells on November 30th, 1897, when the contents of the orbit were thoroughly removed. She remained in very fair health until shortly before her death, which took place on May 4th, 1900 (2½ years later). Owing to the kindness of Mr. Austin Reynolds, who attended her up till the time of her death, which occurred very suddenly, Mr. Devereux Marshall was enabled to obtain a *post-mortem* examination. The necropsy was made on May 6th, and the following was the condition found:

On removing the calvaria the middle meningeal vessels were found to be distended, and the Pacchionian bodies very large. The cerebral convolutions were very much flattened. The optic chiasma had entirely disappeared and its place was occupied by a large diffuse and very soft tumour, about the size of a bantam's egg. So soft was it that its actual limits could not be defined, and the greater part of it could easily have been washed away with a moderately strong stream of water. The centre of the growth was the right optic tract, and it spread along the chiasma, involving the optic tract and optic nerve on the left side, both of which were considerably enlarged. The tumour reached the pons on both sides, invaded the lateral and third ventricles, and on the left side the optic thalamus and corpus striatum. The growth was so very diffuse that it appeared that the third, fourth, fifth, and sixth nerves on both sides were more or less included in it. On both sides the under surfaces of the temporo-sphenoidal lobes were invaded. The tumour was still further broken down by recent hæmorrhage in the vicinity of the left optic tract. No separate deposits were found in the brain, and the growth had evidently spread by continuity only. In the thorax nothing abnormal was found, except that the mitral valve was very much thickened. In the liver a few cysts were found containing clear fluid, but it was otherwise healthy, and there was no sign whatever of any new growth. The spleen, pancreas, and uterus were free from disease, but the kidneys were slightly granular, and the capsule tore the kidney tissue in separating. The aorta was somewhat atheromatous. The microscopical appearance of the growth closely resembled those of the original nerve tumour. The main substance of it was made up of a network of irregular branching cells, in which were small spaces mostly circular, similar to those described as being present in the original nerve tumour, and which were thought to be channels from which the nerve fibres had disappeared. Seeing that this also was a growth mainly involving the medullated nerve structures, probably the same explanation of the spaces held good. Here and there in the growths were strands of a dense fibrous tissue in which blood vessels were seen in section.

Briefly, the neoplasm seemed to be due to an immense overgrowth of the connective tissue framework of the nerve, mainly the neuroglia, but also of the more fibrous prolongations from the pial sheath. The optic nerve on the opposite side was much enlarged, and on examining it microscopically the sections were seen to present precisely similar appearances to those of the right nerve, which was described in the first paper. Mr. Devereux Marshall added that in the last volume of the *Transactions* would be found a paper by Bullar and himself, the basis of which was a case of optic nerve tumour somewhat similar to the one described that evening, and at the present time (three years after removal) the patient was alive and well. In that paper the question of prognosis was fully discussed, and the conclusion arrived at from published cases was that the disease, although of not a very malignant type, could by no means be considered innocent, and it was advisable to remove it as thoroughly as possible. This remark was justified by the present case, which, although removed as completely as possible, yet the nerve was affected further back than the orbit, and this was of course the way by which the growth reached the brain.

PSEUDO-GLIOMA.

Mr. PERCY FLEMMING read a paper on three cases of ophthalmitis (pseudo-glioma) in children.

Case I recovered after a four months' illness, the main symptoms being irregular pyrexia, vomiting, head retraction, and diarrhœa. There was a history of convulsions and ear discharge, but no history of syphilis or acute specific fever. Case II died with typical posterior basic meningitis and pus in right middle ear. (This patient had an attack of chicken-pox four weeks after the eye became affected.) Case III died after an illness very similar to Case I, and *post mortem* was found to have basic meningitis: middle ear healthy.

These cases, considered in relation with others published, might be taken to indicate that meningitis was the common cause of this particular form of ophthalmitis, and, further, that middle-ear disease was a likely cause of the meningitis. The following objections were urged against this view: (1) The fact that these cases in children rarely ended fatally; (2) pseudo-glioma was a rare complication of posterior basic meningitis, as was also optic neuritis; (3) the usual unilateral character of the affection. Mr. Flemming considered that the eye condition was part of a septicæmic or pyæmic process, which in most cases was limited to the eye, such cases recovering; whilst in others the meninges might be affected by the same process, these cases terminating fatally. The otitis might be the starting point of the infection, and in any case of ophthalmitis (pseudo-glioma) it was most important to have the ear examined, and even to puncture the membranes though apparently healthy.

ALVEOLAR CARCINOMA OF EYELID.

Mr. KENNETH SCOTT and Mr. JOHN GRIFFITH read a paper on a case of alveolar carcinoma of the eyelid, which was removed from an Egyptian. The specimen on examination proved to be a carcinoma of the Meibomian glands.

CARD SPECIMENS.

The following were shown:—Mr. E. W. BREWESTON: Case of pseudo-glioma.—Mr. W. T. HOLMES SPICER: Sections of conjunctiva from a case of spring catarrh.—Mr. W. H. JESSOP: Tuberculous ulceration of the conjunctiva.—Mr. W. ADAMS FROST: Peculiar crescentic opacities in the cornea.—Mr. TREACHER COLLINS: A case of congenital notch in each lower lid with defective development of the malar bones.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

ALEXANDER G. MILLER, M.D., F.R.C.S.E., President, in the Chair.

Wednesday, July 4th, 1900.

RESIDUAL URINE IN CASES OF ENLARGED PROSTATE.

THE PRESIDENT read a clinical note on this subject. He said there was no harm in an enlarged prostate *per se*; the danger lay in accumulation of residual urine, and in what that might lead to. He gave notes of a case, a medical man aged about 70, with enlarged prostate, and residual urine to the amount of three ounces. He advised the patient, after making water, to try again, so as to make sure of emptying the bladder. The result was a decided improvement in every way. He practised making a second effort thrice daily. He had seen equally successful results in other cases. The argument:

How does residual urine occur? (1) There is some obstruction to the flow. (2) The bladder tone is not so good in old men. (3) There is an indisposition to make an effort to empty the bladder. The cause of residual urine was far more frequently neglect rather than inability to empty the bladder. This, of course, was in early cases. The practical deductions from this were: (1) Residual urine was due at first to neglect to empty the bladder. (2) Accumulation of urine was due to this becoming a habit. The advice he gave to old men with enlarged prostate, and commencing residual urine, was, after passing water in the usual way (without effort), try again after a minute or two. Let this be practised as frequently as possible till only a small quantity can be squeezed out, say one drachm. When that point had been reached once or twice daily would suffice. By doing this a habit of emptying the bladder would be acquired, and the accumulation of residual urine probably prevented, and the evil day of catheterism postponed.

PARALYSIS OF THE VERTICAL MOVEMENTS OF THE EYE, WITH CONSERVATION OF THE LATERAL CONJUGATE DEVIATION.

Dr. ALEXANDER BRUCE read notes of a case of paralysis of the upward and downward movement of both eyeballs without ptosis and with conservation of the lateral conjugate deviation of both eyes, as well as of the power of convergence.

This condition was associated at first with a tendency to fall directly backwards, when the patient was placed in the erect position or made to sit erect in bed. Subsequently a progressively-increasing torpor ascribed to an accumulation of fluid in the ventricles from closure of the aqueduct of Sylvius developed. A *post-mortem* examination revealed a small vascular tumour growing from the grey matter round the aqueduct of Sylvius, and projecting to about the size of a bean into the third ventricle. The tumour had also grown in a downward direction in the substance of the Sylvian grey matter as far as the level of the posterior corpora quadrigemina. A small similar tumour was found growing from the left septum lucidum into the lateral ventricle, and there was a considerable excess of fluid in the lateral ventricles.

The symptoms were evidently, in so far as the eye was concerned, to be ascribed to the gradual involvement of the third nuclei, and to the absolute escape of the sixth nuclei, which were remote from the causal lesion. The escape of the elevators of the lids, as well as the almost complete escape (until almost the end of the progress of the case) of the internal muscles of the eye and of convergence was remarkable. The tendency to fall, or more strictly speaking to bear, backwards was constant during the patient's stay in the Royal Infirmary, and was very difficult to explain. It might have been due to the pressure of the tumour on the walls of the third ventricle, to which equilibrating effects have been ascribed by Hamilton and others.

LANDRY'S PARALYSIS.

Dr. ALEXANDER JAMES made a communication on this subject. The influenza organism affected injuriously practically all the systems of the body, and when it affected the nervous system it could bring about a manifestation of one or other of practically all the symptoms of nervous-system disease. Oculo-motor paralysis, one used to be told, wherever it was found, must be ascribed to syphilis. That judgment must be modified since we had made the acquaintance of influenza. During the past winter and spring Dr. James had seen in 3 cases the effects of the action of the influenza poison on the nervous system in a way which he had never seen before, in inducing a rapidly-progressive paralysis of limbs and trunk from below upwards, in the manner described as Landry's paralysis. He described one of these cases in detail:

A housekeeper, aged 23, residing in London, but on a visit to friends in Edinburgh, was admitted to Ward 23 of the Royal Infirmary on January 21st, 1900, complaining of pains in the head and back. She looked very ill, was at times delirious, and she had been ailing for two weeks. Bright's disease, heart disease, and insanity were points in her family history. Her work was not too hard, and her surroundings were comfortable. She had influenza in May, 1899, but made a good recovery. Before admission to hospital she had become very weak, very sleepless, calling out continuously and apparently meaninglessly, and required constant attendance. On admission, her temperature was 103°, pulse 130, regular, and of fair strength, respirations 22. She would not answer questions, but kept moaning and crying out. She lay on her back and did not move either arms or legs; the urine and fæces were being passed almost involuntarily. Cutaneous sensibility to touch and pain was little impaired. The pupils were dilated. Voluntary motor power in arms and legs was lost, and the muscles were flaccid. There seemed no diaphragmatic paralysis. Cheyne-Stokes breathing was present save when she was deeply asleep. Superficial and deep reflexes in legs and trunk were absent. Swallowing was becoming impaired. She complained of a lump in her throat, and of pain behind the sternum on one of the occasions when she responded to questions. At 8 P.M. on the day of admission she appeared rather better; the temperature was 99.4°, and the pulse 130. Shortly after this curious nodding and shaking movements of the head occurred, and she began to cry out "murder." Digitalis and chloral were given, and she soon fell asleep, and awoke at 11 P.M., expressing herself as better. She looked more sensible. She went to sleep again, and about 1 A.M. the nurse observed that her breathing was very quiet. She died quietly a few minutes after.

Dr. ROBERT A. FLEMING described the *post-mortem* appearances in Dr. James's case. There was some bronchopneumonia limited to the root of the left lung. There was cloudy swelling of liver and kidneys, and the spleen was acutely congested. The brain was œdematous, and the grey matter of brain and cord was congested. Microscopic examination showed: (1) Tracts in cord and nerve roots unaffected; (2) marked engargement of blood vessels, and many minute hæmorrhages in the anterior cornua of the cord and in the medulla; (3) the multipolar cells in the cord were mostly atrophied and stained deeply with basic dyes, especially so the cells in the lumbar and cervical enlargements; (4) many of the nuclear cells in the medulla were swollen, showed eccentric position of nuclei and chromatolysis, and the cells stained faintly and homogeneously. The peripheral nerves were not examined.

CASES AND SPECIMENS.

Dr. NORMAN WALKER showed two cases of late syphilides, and a case of ringworm of the ear.—Mr. DOWDEN showed a boy of 5 after operations for tubercle of upper ulnar epiphysis.—Dr. LOGAN TURNER showed a case of asthma associated with chronic suppuration in the left frontal and maxillary sinuses.—Dr. WILLIAM RUSSELL showed a case of myxœdema in a man of 58.—Dr. W. RUSSELL showed (1) the brain from a recent case of aphasia and hemiplegia. There was a cyst in the left hemisphere due to an embolism. (2) The brain and heart from a case of long-standing aphasia and hemiplegia due to thrombosis.—Dr. PEARSON for Dr. GEORGE GIBSON showed (1) a patent ductus arteriosus from a patient who died of pneumonia; and (2) microscopic specimens of the filaria sanguinis in the proboscis of the mosquito.—Dr. HARVEY LITTLEJOHN showed (1) traumatic rupture of heart unaccompanied by external signs of injury or fracture of ribs; (2) two stomachs from cases of carbolic acid poisoning; (3) a liver and *post-mortem* digestion of stomach and uterus from a case of acute yellow atrophy. The patient, a young woman, died thirty six hours after delivery of an illegitimate child, and there was the question whether the case was not one of phosphorus poisoning.—Dr. R. A. FLEMING showed (1) tuberculous pericarditis; (2) hearts with patent foramen ovale; (3) fatty degeneration of the heart.—Dr. BRUCE showed the brain from a case of aphasia with right hemiplegia. The patient understood what was said to him, spoke volubly and unintelligibly, had no word deafness, but was entirely word blind and retained the power of tune. There was softening along both margins of the Sylvian fissure, in the island of Reil, and in Broca's convolution.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

A. V. MACAN, M.D., President, in the Chair.

Friday, May 25th, 1900.

SPECIMENS.

Dr. ALFRED SMITH showed a specimen of ruptured tubal pregnancy removed from a patient aged 33, who had given birth to a full-term child six months previous. Menstruation returned one month after confinement, and continued regularly up to time of rupture.—Dr. SMYLY read notes on a case of ectopic gestation and exhibited the specimen.

PANHYSTERECTOMY AT FULL TERM.

Dr. KIDD described a successful case of panhysterectomy performed on the pregnant uterus at full term.

A primipara, aged 40, was admitted to the Coombe Hospital, at 9.30 P.M. on January 14th, 1900. She had been in labour from early on the preceding day. The medical men in charge could not reach the presenting part owing to the whole of the true pelvis being blocked with myomatous growths. When examined some presentation like an arm could just be touched, but no definite diagnosis could be made. She was much exhausted, her pulse was 120, her temperature only 98°, and she had vomited. There was no fœtal heart to be heard, and she had felt no movement for some time before admission. An abdominal incision was made, extending from 2 inches above the pubes to 2 inches above the umbilicus. The broad ligaments were first ligated, and then cut, then the round ligaments, then the peritoneum on the outer surface of the uterus was divided transversely and stripped down, taking the bladder with it; the uterine vessels were tied, and when the peritoneum had been stripped down posteriorly the vagina was cut across, as close to the presenting head and arm as possible. The vagina was inverted and sutured, turning in the mucous membrane, the broad ligaments were brought together, and in the middle line the peritoneum attached to the anterior surface of the bladder was sutured to the peritoneum on the posterior wall of the vagina, completely covering over the stump of the vagina, and leaving the pelvis quite clean and dry; the ligatures on the uterine vessels were drawn down before the peritoneum was stitched over them. Convalescence was uninterrupted. Her temperature at no time exceeded 100.4°.

After Dr. MACAN and Dr. SMYLY had made some remarks, Dr. KIDD replied.

THE DUBLIN METHOD OF EFFECTING THE DELIVERY OF THE PLACENTA.

Dr. HENRY JELLETT read a paper on this subject, in which he maintained that the method of obtaining the delivery of the placenta by external manipulations as opposed to its manual removal or its delivery by traction in the funis, was originated in Dublin; that Credé's method when originated in Germany was identical in principle with the Dublin method, and that it rapidly came to assimilate itself to the Dublin method in its most important details; that, consequently, there was no difference between the Dublin method and Credé's method, and that inasmuch as the method originated in Dublin many years before the time that Credé discovered it for himself, its name was and ought to be "The Dublin Method."

Dr. SMYLY thought that there was a distinction between Credé's method and the Dublin method. The fault of Credé's method was that it was too active, and if they expelled the placenta too soon they might leave portions behind leading to *post-partum* hæmorrhage and subinvolution. As Professor Spiegelberg had said, the Dublin method was superior because it was not so active, as it waited till the placenta had been expelled from the uterus, and it then expelled it from the vagina.

Dr. COLE-BAKER took exception to the word "pressure," which was a vague term. Once the placenta had left the uterus it could not be called a method of expression. If they pushed the uterus down, and thereby pressed out the placenta, it was a method of detrusion, not expression.

Dr. MACAN wished to emphasise the fact that the Dublin method began before the third stage of labour, namely, the moment the child's head was born. He was convinced that in the great majority of cases the third stage of labour should be left alone as well as the second stage.

Dr. JELLETT, replying, said he had purposely omitted any reference to anything before the third stage, because there was an impression that the Dublin method included not only getting rid of the placenta, but also expelling the child.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—Officers and members of Council for 1900-1901 :—*President:* Dr. F. F. Schacht. *Vice-Presidents:* Dr. Seymour Taylor, Dr. Neville Wood, Dr. F. J. McCann,* Dr. F. H. Low,* Mr. C. Andrews,* Dr. J. A. Coutts,* Dr. J. Crombie,* Dr. S. A. Bontor.* *Council:* Mr. F. R. Mallard, Mr. F. Savery, Mr. E. Bartlett, Dr. D. R. Pearson, Mr. G. E. Twynam, Mr. H. W. Chambers, Mr. G. D. Robinson,* Mr. H. Webb,* Dr. T. R. Atkinson,* Mr. S. W. Fincham, Dr. A. Baldock, Mr. M. H. Taylor. *Treasurer:* Mr. T. Gunton Alderton. *Secretaries:* Dr. G. P. Shuter, Dr. Leonard Dobson.* *Librarian:* Mr. C. B. Keetley. *Editor of Journal:* Mr. H. Percy Dunn. *Editorial Secretary of Journal:* Mr. McAdam Eccles.

* Did not hold similar office last year.

REVIEWS.

RECENT WORKS ON THE NATURE AND TREATMENT OF DIABETES MELLITUS.

THE CLINICAL EXPERIENCES OF THE LATE PROFESSOR KÜLZ. By the lamented death of Dr. KÜLZ in his 50th year, the medical profession was deprived of an indefatigable worker, and those interested in the subject of diabetes lost a collaborator who had already given to the world many evidences of his industry and originality, from whose growing experience much more was to be hoped. It was known that Dr. Külz had been accumulating for many years a valuable series of cases dictated by himself and carefully studied throughout the time they were under observation. This valuable material was placed by Külz's widow at the disposal of Professor Rubner, and after some consideration Professors Rumpf and Sandmeyer and Dr. Aldehoff, all of whom had been closely associated with the late Professor Külz during his life, undertook to edit the series for publication. As it was obvious that no publisher would undertake a book which consisted merely of a series of cases, however carefully compiled, these have been in the first place shorn of all redundancies and arranged in four groups. Then these groups have been analysed and critically considered under various aspects by the editors, so that the work as now published[1] is a valuable manual of the clinical history of diabetes, and a store of information upon many interesting points.

Grouping of Cases.

In dividing the cases into groups, the editors recognise that they are departing from Külz's doctrine of the indivisibility of diabetes, but we believe most readers will regard their reasons as sufficient. The four groups are: (1) Those passing no sugar on strict diet; (2) those passing no sugar or merely traces on strict diet, but with evidences of kidney disease (albuminuria); (3) cases still passing sugar on strict diet; (4) transition cases. The total number of cases dealt with is 692, of whom 526 were males and 166 females. It is quite impossible in the space of this review to do justice to a tithe of the subjects discussed by the editors: we can only pretend to draw attention to a few special points. We are told that Dr. Külz was fond of ridiculing the practice of speaking of a diabetic as passing so much per cent. of sugar, which, he said, was as foolish as for a man to say that his income consisted of so much per cent. in the funds. The only proper method of thinking about the amount of sugar excreted is the total quantity eliminated in twenty-four hours.

Group I.—Sugar Eliminated by Strict Diet.

By many careful examinations of the cases in Group I, which it may be remembered were rendered free from sugar by strict diet, the effects of the addition of 100 grams of white bread to the breakfast meal was studied in many cases, and it was observed that the resulting sugar excretion never lasted more than six hours, and took place chiefly in the first three or four hours after breakfast. It was also apparent that as a rule patients assimilated carbohydrates better after breakfast than later in the day, but there were exceptions to this rule. It was also found that the same quantity of bread was assimilated better if given in divided portions at three meals than if given all at once at any time. In the various experiments with diet, 100 grams of white bread = 60 grams of grape sugar = 120 grams of black bread = 70 grams of rusk = 300 grams of potatoes = 1½ litre milk = 1½ litre light beer. Many experiments were made to determine whether the capacity for assimilation varied for the different articles of carbohydrate food, the result being to show that there are great individual differences, and that these can only be determined in each case by careful trials. The capacity for assimilation seemed as a rule to diminish by the continued use of carbohydrates, so that from time to time it is necessary to return to restricted diet for short periods. The influence of exercise in favouring assimilation of carbohydrates was very well marked in the patients of this group.

Group II.—Concurrent Renal Disease.

In the second group, where there was evidence of kidney disease, the experiments gave very similar results.

Group III.—Sugar not Eliminated by Strict Diet.

This group comprised the most severe cases in which the strictest diet failed to remove the sugar from the urine. Contrary to the doctrine that a diabetic has lost all power for assimilating carbohydrates, it has been maintained in modern times with much more reason that every diabetic retains the power of assimilating a certain amount of carbohydrate, and it is justly held to be the duty of the physician to determine that quantity so that the patient may not be deprived altogether of these elements of diet. Külz set himself to answer this question, and found that out of 179 cases in this group, only 21 cases, or 11 per cent., gave room to doubt their capacity for assimilating some carbohydrate, and even in these further investigations showed that only four, after treatment and careful regulation of diet, persisted in their incapacity. It is noteworty that some of the cases in this group got worse on strict diet and improved where a certain amount of carbohydrate was allowed. The individual differences in respect of the assimilation of various sorts of carbo-

[1] *Klinische Erfahrungen uber Diabetes Mellitus* [Clinical Experiences on Diabetes Mellitus]. Von Dr. E. Külz. Jena: Gustav Fischer 1899. (Roy vo, pp. 566. M. 14.)

hydrate were quite as marked in this group as in Group I. The good effects of exercise were by no means so constant and in many cases it seemed to be injurious.

Group IV.—Transition Cases.

This group gives some very interesting examples, not only of mild cases passing into severe, but of severe cases becoming mild, and even of an alternation from mild to severe occurring more than once in the course of the disease. The change from severe to mild was generally due to the influence of careful diet, while the change from mild to severe was frequently attributable to the excessive use of starchy food, although many other causes, amongst which intercurrent diseases were most common, played their parts. Among the complications of diabetes we notice a reference to a functional affection of the larynx, with hoarseness and aphonia, which we do not remember to have seen mentioned before.

Prognosis.

Professor Sandmeyer deals with a question which has not received much attention in England—it is that of the increased excretion of ammonia in diabetes. About the fact there seems to be no doubt, and the figures given seem to prove that where the excretion exceeds 2 grams daily it is of bad prognosis. As to the value of acetone, acetic acid, and oxybutyric acid in prognosis, the results seem to be in accordance with those generally accepted here—that is to say, where these substances are present in traces only they have no significance, but where the reactions are well marked and constant they warn us to observe the patient very carefully.

Treatment.

The data derived from these cases afford no special support for any particular plan of treating diabetes by drugs or other remedies apart from regulation of the diet. As has been already indicated, Külz's plan was to give a sufficient diet composed of albuminous and fatty food, and then to add to this after trial in each case such articles of carbohydrate food in definite amounts as the patient showed himself to be able to assimilate. The following is an example of his strict diet:

Breakfast at 8 o'clock.—2 cups of coffee, 1 yolk of egg, 2 tablespoonfuls of cream, 2 eggs, 150 grams (5 ozs.) of ham, 50 grams of cheese, 10 grams of butter.

Second Breakfast.—1 cup of bouillon, 2 yolks of eggs, 200 grams roast beef, 30 grams of cheese, 10 grams of butter.

Dinner.—1 cup of bouillon with yolk of egg, 100 grams salmon, 15 grams of butter, 200 grams of sirloin with 20 grams of butter sauce, spinach salad with oil, 30 grams curds with butter, 1 cup of coffee, 2 tablespoonfuls of cream, 1 cup of tea, 2 eggs.

To this is to be added a litre of wine and 30 grams of cognac.

It will be noticed that in this diet, which contains a very large amount of butter and other fatty foods, there is no mention of bread or any bread substitute. Apparently the author desired his patients when on strict diet to abstain altogether from bread, for he knew that the bread substitutes ordinarily sold in Germany contain a considerable percentage of starch, and when eaten, as they so frequently are, even with the concurrence of the doctor, *ad libitum*, the quantity of carbohydrate taken in this way is very considerable, and entirely vitiates any experimental results which the physician may desire to ascertain. We hope we have said enough to show that this book will well repay the attention of all who are interested in diabetes.

THE FORMATION OF SUGAR IN THE BODY.

Professor SEEGEN is one of the veterans who continues fighting to the end, and he congratulates himself with some reason on having been upon the winning side. He tells us in *Die Zuckerbildung im Thierkörper*[2] that he has lived to see the doctrine of sugar-formation in the liver, which in his youth was sorely discredited, placed upon a sound basis, and his views on the formation of sugar from albumen accepted with certain modifications as essential physiological data. Professor Seegen believes that the carbohydrate of food is stored up in the liver as glycogen, burnt off in the tissues, or stored up as fat; that the actual production of sugar in the liver is through the decomposition of albumen into urea, when the sugar molecule is split off so that the carbohydrates of the food have really no direct relation to the process, and that the liver forms sugar not only from albumen but from fat, although only in minimal amounts. He also holds that the clinical forms of diabetes correspond to these sources of sugar, that is to say, that in the milder cases the disease is due to the inability of the liver to store carbohydrate food as glycogen, while in the severe cases where failure of the tissues to consume sugar is superadded, not only the sugar derived from the carbohydrates but that derived from the albumen and fat is wasted and escapes from the body. When the latter conditions exist, the patient rapidly perishes from innutrition. This statement is really not quite correct, as the two forms are not so distinctly divided. Although Professor Seegen is no longer engaged in practice, we rejoice to notice his continued interest in the work to which he has devoted so much of his life. We trust he may be spared for many years to take the same active share in the progress of medical science.

(To be continued.)

[2] *Die Zuckerbildung im Thierkörper* (Sugar-formation in Animal). Von Professor Dr. J. Seegen. Zweite vermehrte Auflage. Berlin: A. Hirschwald. 1900. (Demy 8vo, pp. 292. M. 7.)

NOTES ON BOOKS.

A NEW (third) edition of *Philip's Handy Volume Atlas of London* has been issued (London: George Philip and Son. 1900. 5s.) It covers the whole area of the County of London in 55 sectional maps on a scale of 3 inches to the mile, and is provided with an index to streets. Experience of the first edition leads us to believe that the third will be found very trustworthy and exceedingly convenient, since the volume may be consulted without the difficulty which attends the unfolding of a large sheet map. It contains also a geological map, a map of the suburbs, and several other general maps.

A Tract for Chest Cases states in plain but forcible language the main dangers which a consumptive should guard against, both for his own sake and for the safety of others. It is—in the words of the first paragraph—"not a set of rules, but an endeavour to give you information which will enable you to help in the management of your own case." The tract has been compiled by Dr. AIKMAN, of Guernsey, for use amongst his own patients, and by his permission the printer (Clarke, States Parade, Guernsey) is able to supply copies for his own profit to medical men only at 6s. per 100. There are now many leaflets giving instructions to consumptive patients, and this tract may be classed amongst the best of them.

A Committee of the Hospitals of Glasgow is issuing a yearly volume of *Hospital Reports*, under the editorship of Drs. G. S. Middleton, H. Rutherfurd, and W. K. Hunter (Glasgow: J. Maclehose and Sons. 1900. Demy 8vo, pp. 410, 12s. 6d.). In the first volume, for 1898, among other valuable contributions may be mentioned Professor McCall Anderson's on cerebral tumour and Dr. A. Robertson's on his method of percussion of the skull in diagnosis and treatment of cerebral disease. Mr. J. H. Nicoll recounts the results of investigations on urinary asepsis in operations on the urethra, and Dr. H. Rutherfurd discusses the management of ruptures of the urethra. In the second volume, for 1899, of the papers having special interest are one by Dr. Lindsay Steven on the clinical phenomena of chorea, that by Professor Stockman on the therapeutical action of iodine and the iodides, by Dr. C. S. Marshall on the application of antistreptococcus serum in the treatment of scarlatina angiosa, by Dr. R. S. Thomson on the glycosuria of whooping-cough, and a criticism on the recent views in regard to immunity by Professor Muir.

LOSS OF LIFE BY LIGHTNING IN AMERICA.—According to A. J. Henry (quoted in *Science* of June 15th) the loss of human life by lightning in the United States during the year 1899 was greater than in any preceding year for which statistics have been collected. The number of persons killed outright, or who suffered injuries resulting in death, was 562, and the number of those who received injuries varying in severity from slight physical shock to painful burns and temporary paralysis of some part of the body was 820. The greatest number of fatalities (45 per cent.) occurred in the open; the next greatest number (34 per cent.) occurred in houses; 11 per cent. occurred under trees, and 9 per cent. in barns. At least a dozen persons were [illegible] clothes from a wire clothes-line, or by coming in proximity thereto during a thunderstorm.

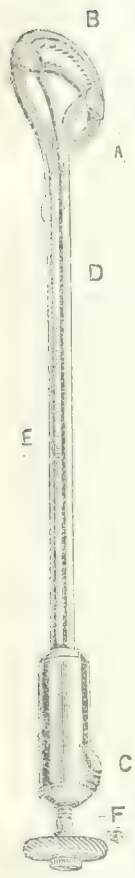
REPORTS AND ANALYSES

AND

DESCRIPTIONS OF NEW INVENTIONS

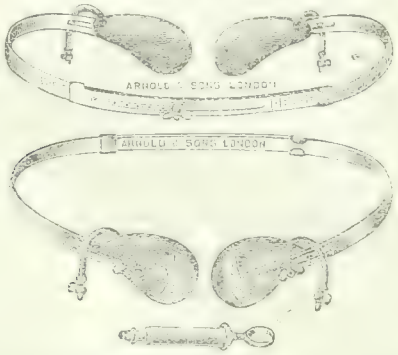
IN MEDICINE, SURGERY, DIETETICS AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.



A Tonsil Guillotine.—Dr. D. M. Aitken (Islington, N.) has devised a form of tonsil guillotine shown in the accompanying drawing. The instrument in general form resembles the guillotine, but what corresponds to the blade (A) has instead of a cutting edge a somewhat broad and serrated border. When the instrument is in action this border presses the tonsillar tissue, which it constricts, against a similar serrated surface on the concavity of the ring (B). After the fashion of the lithotrite the instrument has a male (D) and female blade (E). On bringing the former home upon upon the part where constriction is desired, the button (C) throws the screw (F) into action, so that as much pressure as is desired can be effected. The tissue can then be shaved off with a blunt-pointed bistoury. Dr. Aitken states that by its use the tonsils can be removed with the loss of scarcely a drop of blood, a special advantage which he claims for the instrument. It is made by Messrs. Arnold and Sons, West Smithfield.

A Truss Gauge or Instrument for Measuring for Trusses.—Dr. T. J. Kelly (Enniscorthy) has devised an instrument as a ready means of ascertaining the dimensions for fitting a truss and to facilitate accurate adjustment of standard hernial trusses. Also to furnish every surgeon with an instrument which he can apply to any case of any form of hernia and leave on whilst the permanent appliance selected is being manufactured. The pads are of rubber, inflatable by an injector of standard capacity, so that by recording on the cards supplied the number of strokes of the injector which it takes to fill the pads the exact dimension is ascertained. The body spring of the "gauge truss" is divided into two parts, one sliding over the other and secured by a thumbscrew, while on the surface of the body are indexes engraved one at each end, one for right, and one for left side spring. On the surfaces of the pads are quadrants also indexed to give the angle at which the pads are to be set. Additional terminals are supplied applicable to cases of femoral hernia, umbilical and ventral hernia, and cases of extra large abdomens. In the



box with each instrument there is a stock of cards on which are printed divisions with suitable headings for recording the sizes of the different parts of truss, and these cards when filled can be sent direct to any instrument maker who on placing his "gauge truss" in the indicated form can at once supply an absolutely perfect counterpart truss. By dividing an ordinary telegram form into divisions like the card, the directions can be supplied to the maker by telegraph. The accompanying illustration shows the general appearance and arrangement of the instrument. Dr. Kelly has demonstrated his instrument before the Surgical Section of the Royal Academy of Medicine in Ireland, the Clinical Club in Dublin, and at several of the Irish metropolitan hospitals. It is manfactured by Messrs. Arnold and Sons, of London.

Hygienic Handkerchiefs.—In reference to a paragraph which appeared under this heading in the BRITISH MEDICAL JOURNAL of June 9th, we are informed by Messrs. A. E. Burnell and Co., 77A, Queen Victoria Street, E.C., that such handkerchiefs have for some time been made at Fiegel's paper mills in Dresden. Messrs. Burnell and Co. have forwarded some samples of the handkerchiefs, which are made of very soft paper, and appear to be suitable for the purpose for which they are intended.

MEDICINAL AND DIETETIC PREPARATIONS.

Carnigen.—We have analysed a sample of a preparation known as "Carnigen," which is described as a "meat powder." As a matter of fact it is a peptone, and, as we understand it, is intended to be used as such. The preparation consists of a light-yellowish granular powder possessing the taste and the physical and chemical characters of a peptone. The results of our analysis show that it contains 53.81 per cent. of total proteid matter, 16.2 per cent. of nitrogenous "extractives," and 5.2 per cent. of total mineral matters; and that it gives the reactions characteristic of true peptones. It is very soluble in water, and the amount of insoluble matter is only 0 96 per cent. It is claimed that the preparation has been found to be valuable for feeding invalids and persons of weak digestive powers.

THE LIVERPOOL MALARIA EXPEDITION TO NIGERIA.

[FROM A CORRESPONDENT.]

TOPOGRAPHY OF OLD CALABAR.

THE expedition arrived at Old Calabar, the seat of Government of the Niger Coast Protectorate, on April 11th. The town is situated about 50 miles above the mouth of the Cross River, on the Calabar River, which, together with Kwa River and numerous other smaller streams, flows into the Cross River near its mouth. The left bank of the river, that on which Calabar stands, is edged for many miles up by a range of low hills, reaching about 200 feet in height in parts. On the right bank is a mangrove swamp extending up the river above Calabar for a distance of about 20 miles—beyond this is African bush. Several islands of mangrove swamp are scattered about in the river mouth. Thus Old Calabar is built on the edge of a low plateau about 180 feet high, which terminates at the river bank in a fairly steep decline, at the bottom of which, on the water's edge, the traders' factories, some twelve in number, have been erected. A creek cuts deeply for a considerable distance into the hill, and serves to divide off the native from the European (administrative) quarters. These latter are admirably placed, dotted about on the side and top of the hill on the north side of the creek; while on the south side the native huts of Duke Town are closely built on the more gradually rising slope, and extend over Mission Hill on to the other side to form Henshaw Town. Other small villages are dotted about some little distance in the bush, such as Kwa Town, Old Town, etc. Creek Town is a small village higher up the river on the opposite bank.

The number of inhabitants is from 15 000 to 20,000; there are about 100 Europeans—Government officials, missionaries, and traders. The natives seem to be an indolent people, understanding English but little, and speaking it less; they appear much inferior intellectually to many of the other natives in the Protectorate.

As mentioned above, the Europeans are extremely well housed in very good positions on the hill, some distance generally from native quarters, with the exception unfortunately of the traders on the river's edge, whose factories are

often almost surrounded by native huts. It is difficult to understand why, though the factories themselves must be on the beaches, the traders should not be housed on the hill.

By the efforts of the medical and public works departments very considerable improvements have been made, and are at present being continued, in the native quarters; and in parts one is struck by the width of some of the roads and the regularity of their surfaces, as compared with other West African towns.

There is both a European and a native hospital, the former with five beds, the latter with about forty. The expedition arrived during the latter portion of a somewhat irregular dry season. Continual bright sunshine, interrupted about once a week by heavy downpours of rain, was the meteorological condition during the expedition's stay of five weeks in Old Calabar. The heat was occasionally excessive, the temperature continually reaching 94° F. in the shade.

DISEASES.

Cases of malarial fever (hæmamœbiasis) during the period were few; some four occurred among the Europeans, while even fewer cases came to be treated at the native hospital. Occasionally a case was met with among the coloured population. The parasites found were typical æstivo-autumnal fever forms.

A case of blackwater fever which recovered in a few days, was examined a few hours after the onset, but no blood parasites could be demonstrated after a most careful search.

Besides these, there were another class of cases with a slight rise of temperature lasting a few days, which, however, showed none of the classical symptoms of malarial fever, and were uninfluenced by quinine, and in whose blood, in spite of numerous examinations at every stage of the disease, no parasites could be found.

There was also still another class of cases, characterised by a tendency to hyperpyrexia, but with no other sign nor symptom of malarial fever, showing also no blood parasites. These were always very serious cases, lasting from three to eight weeks, and often fatal. A record of a number of cases has already been sent to the BRITISH MEDICAL JOURNAL for publication by the Acting Principal Medical Officer, Dr. S. W. Thompstone. The etiology, symptoms, and course of these two latter classes of cases will be published and discussed later in the report of the expedition's proceedings.

ANOPHELES.

From the backward character of the natives access to their huts was exceedingly difficult, and the training of native boys to catch mosquitos for the expedition was almost impossible. However, some thirty were caught and examined, but none were found infected. When the scarcity of fever cases is considered this was only to be expected. The species of *Anopheles* included both *A. costalis* and *A. funestris*, as described in the *Report* of the Liverpool Malaria Expedition to Sierra Leone; and, in addition, another species, which, as far as can at present be ascertained, is undescribed.

As to breeding places of *Anopheles*, the puddles—described as abundant at Sierra Leone—are of exceedingly exceptional occurrence. The surface does not permit of their formation except in a very few places in the lower and flatter parts in the neighbourhood of the above-mentioned creek, and along a footpath running the whole length of the beach immediately behind the factories. The common breeding places were the native dug-out canoes lying on the beach and along the banks of the creek. These were mostly disused, or only occasionally used, canoes, partly filled with rain-water and swarming with *Anopheles* larvæ. They are practically never dry—as commonly occurred with the few puddles mentioned—and lie about in close proximity to the native huts. These conditions obtained at Henshaw Town, Creek Town, and Old Town, as well as at other villages some miles up the Calabar and Cross rivers, which were also visited. Exceptional breeding places for *Anopheles* were water tubs, old iron boiling pots, duck ponds, and holes from which the natives dug mud for the construction of their huts.

In the neighbourhood are three springs, one in the creek already mentioned, which serves as the water supply for the natives of Duke Town; another about three miles in the bush, used by the natives living on small plantations in the bush. In these and in the pools they formed no larvæ of any sort could be found. The third—Old Town Spring—about two miles from Old Calabar in the bush, used formerly by the natives of that town, and now intended to form the water supply of Old Calabar, is being worked at by a gang of native labourers, constructing a well and the necessary works for pumping purposes. The nearest native huts are about 500 yards distant, but natives come from a good distance round for drinking water and for bathing. In the numerous pools about the springs and in the water of the well itself were *Anopheles* larvæ in great abundance.

It is, then, not surprising, when the segregation of most of the Europeans from the natives and also the distribution of *Anopheles* breeding places is considered, that Old Calabar is one of the least unhealthy spots on the West Coast of Africa, and also that the majority of cases of malarial fever occur among the traders and their assistants. It is also easy to perceive that here, by a comparatively small expenditure, *Anopheles* breeding places could be almost entirely abolished.

It is to be mentioned that the members of the expedition penetrated as far as was possible from two or three points into the mangrove swamp on the opposite side of the river; but, as was expected, neither breeding places nor adult mosquitos could be seen.

THE BACK COUNTRY.

One of the members was detailed off to visit the towns Adiato up the Calabar River, Okoyong in the interior, in the bush, and Ikoneto up the Cross River. Here the conditions were very similar to those obtaining at Old Calabar. In the two former, native canoes and mud holes formed the breeding places of *Anopheles*, and occasionally a hole deepened out by the torrent in the hillside; while at Ikoneto mud holes alone were found. Here also cases of fever were at that season very rare; June and July, after the onset of the rains, and December and January, after their cessation, were described by the natives as the "fever" periods.

PREVENTION OF MALARIA IN THE PROTECTORATE.

The experiences of the members of the expedition are such as to be already capable of throwing further light upon some of the opinions lately freely expressed and published in some of the medical journals. At a lecture given before the members of the Colonial Institute, recorded in the BRITISH MEDICAL JOURNAL of March 17th, in which special reference was made to West Africa, it was stated that all the deaths and invaliding from malarial fever could be prevented, and that malarial fever could be stamped out by the following methods:

1. An all round free drugging with quinine for a month or two.
2. Causing all malarials to sleep under mosquito curtains or in mosquito houses.
3. Causing the uninfected to live in mosquito-proof houses and sleep in mosquito-proof beds.
4. Killing by culicicides all mosquitos entering a house.
5. Destruction of larvæ.

The members of the expedition at present in the Protectorate have seen how utterly inapplicable would such methods be in most parts and capable of very limited application in others at the present time and probably for many years to come, but there is no doubt that a little can be done in the Protectorate by these and other means to diminish the number of "fever" cases. Any such reference to West Africa could only have been made by one having very little knowledge of the conditions of living of Europeans and natives here. It is well known that malarial fever is more or less endemic in almost every West African town and village. There are also such towns and villages at present quite unexplored within 100 miles of Old Calabar, others where the natives flee at the sight of a white man, others which are only visited by white men for administrative purposes once a month, quarter, or year as the case may be, and still others where Europeans in number from six to one hundred are located the whole year round. These towns have populations of from 1,000 to 50,000. Moreover, it is well known by the medical officers of the Coast that the greatest number of "fever" cases occur among men travelling from town to town or engaged on expeditions up the rivers, who live and sleep in native quarters, often in native huts, and that it is here where most of the Europeans contract their fever. Hence it is easily seen how the methods suggested for the stamping out of malarial fever in West Africa are only applicable, and then only to a limited extent, in those

towns where a number of Europeans are stationed more or less permanently.

ANOPHELES ATTACKS BY DAY.

The experiments now being carried on in the Roman Campagna are awakening the most lively interest among the white inhabitants of the West Coast of Africa. It is reported that the experimenters and their servants propose to remain inside their mosquito-proof houses from one hour before sunset to one hour after sunrise, and in the daytime to go about performing their ordinary occupations. It has been noticed by the members of the expedition that, contrary to what is usually believed, *Anopheles* often settle on various parts of their bodies and suck blood during the daytime. Further, they have collected *Anopheles* from offices in Old Calabar which were only occupied during the day between the hours of 8 A.M. and 5 P.M., and moreover, in their experiments they always find that *Anopheles* which have been kept unfed for one or two days will feed eagerly at the first opportunity, in broad daylight. Unless, therefore, the Italian species are very different in their habits from those of West Africa, there seems to be a very fair chance of infection by mosquito bites during the daytime, and the members would suggest that, if any such experiment, endangering the health of a number of men, be made at all, it be a radical experiment, which will settle the question completely.

The expedition left Old Calabar on May 17th for Bonny, from whence, as headquarters, Opobo, Buguma, Deguma, Okrika, Bakana, and other places on the Oil Rivers will be visited.

NATIONAL ASSOCIATION FOR PROMOTING THE WELFARE OF THE FEEBLE MINDED.

THE annual meeting of this society was held on July 9th at Aubrey House, Kensington, by the kind permission of Mrs. Alexander.

Mr. W. H. DICKINSON, L.C.C. Chairman, presided, and in moving the adoption of the report, pointed out the double function of the Association: (1) To investigate and spread information about the best methods of ameliorating the condition of the feeble minded; and (2) to provide homes in cases in which they seemed necessary. Under the first head much had been done in promoting legislation to facilitate the education of this class under School Boards; under the second, four small homes for young people of different sexes and ages had been established by the Association itself, and some dozen others were affiliated to it in various parts of the country. A conference convened by the President, the Duchess of Sutherland, had been held, at which views were exchanged between members of this Association and representatives of the principal idiot asylums, which had been productive of interesting discussion. There was plenty of work for the society to do, but the difficulty in these warlike times was to raise sufficient money for such a peaceful object; the accounts showed a deficit of £39 for the past twelve months.

Lord DAVEY, in seconding the adaption of the report, remarked on the excellent work done by the Homes, though that was not the sole good done by the Association, which also busied itself with seeking out the best methods of training and putting its results—which must necessarily be to some extent experimental—at the service of the community at large. Whilst much had been done of late years for the lunatic and the idiot comparatively little attention had been given to borderland cases—those not bad enough for asylums but still to some extent mentally incapable—till this society took the matter up. As was said in the report they looked after a pitiable class of cases which, if left uncared for and unloved, must inevitably work their own undoing—many of them, indeed, becoming criminals and a danger to the community.

Mr. R. B. MARTIN, M.P. (Treasurer) supported the motion, which was unanimously carried.

A resolution approving the objects of the society and pledging the support of those present, was proposed by Mr. ERNEST FLOWER, M P., L.S.B., and seconded in an eloquent speech by Mrs. BOYD CARPENTER, who gave an impressive account of the benefits already effected by her small training home for girls in Yorkshire.

Mr. BURGWIN moved the re-election of officers and the Executive Committee, and this was seconded by Dr. MILSOM RHODES of Manchester.

A cordial vote of thanks to Mrs. Alexander and family, moved by Dr. SHUTTLEWORTH and seconded by Dr. NEEDHAM, Commissioner in Lunacy, brought the meeting to a close.

This Association has presented a memorial to the President of the Local Government Board asking him to institute an inquiry as to the number and condition of feeble-minded persons in receipt of Poor-law relief. The memorial points out that the Departmental Committee on Defective Children (1897) estimated that 1 per cent. of the children in elementary schools were feeble-minded, which would give a total for England and Wales of 42,000. Evidence given before the Poor-law Schools Committee showed that an even larger proportion of the children under the care of Boards of Guardians were mentally defective. A few of this class are able to earn a livelihood, but a large proportion sooner or later enter the workhouse; they differ greatly in character and habits, being sometimes docile and contented, but more often restless and intractable, constantly leaving the shelter of the workhouse to go into the world, where they are a source of evil and danger to the community. The memorial expresses the opinion that the inquiry should be conducted on lines which would ensure a uniform standard of opinion, and that it should include such an amount of medical examination as would ensure a trustworthy report on the mental condition of each case.

THE HOUSING OF THE WORKING CLASSES AMENDMENT ACT.

THE Bill to amend Part III of the Housing of the Working Classes Act, 1890, as altered by the Committee of the House of Commons, has been printed. It consists of six sections, and deals entirely with the third part of the Housing Act.

It will be remembered that the Act of 1890 deals in its first part with unhealthy areas—that is large areas[1]—in its second, with unhealthy dwelling houses and small areas, including the power of dealing with obstructive buildings; whilst the third part is entitled "Working-Class Lodging Houses." The last-named part, it will be remembered, is adoptive, that is to say, any urban authority in England or Wales, or the city of London, or the London County Council, might adopt this part of the Act, and any rural sanitary authority under certain conditions. The expression "lodging houses for the working classes," used in the third part of the 1890 Act, includes, it will be remembered, separate houses or cottages for the working classes, whether containing one or several tenements; and the expression "cottage" may include a small garden.

The Bill as amended enables any council, other than a rural district council, who shall have adopted this part of the Housing Act, to go outside their district, if they deem it desirable, in order to provide such lodging houses. A rural district council which previously desired to adopt Part III had to apply to their county council, who might hold an inquiry, and, under certain provisos, consent to such adoption. The clause (55) of the 1899 Act dealing with this matter is repealed in the Bill, and a simpler one put in its stead.

The Bill will enact that the council of any rural authority may, with the consent of the county council, adopt Part III, either for the whole of their district, or for any contributory place within it. In sanctioning such action, the county council must, however, have regard to certain points set forth.

In the third clause provision is made for the adoption of the Act by the new metropolitan boroughs, and the allocation of their expenses.

In the fourth section, it is directed that the expenses of the council under Part III of the 1890 Act in re-housing persons displaced under other powers, may be treated as expenses under those powers, but the account must be kept separate.

The fifth section enables a non-rural authority outside London, with the consent of the Local Government Board, a London Council with that of a Secretary of State, and a rural

[1] BRITISH MEDICAL JOURNAL, May 19th, p. 1241.

district with the sanction of the county council, to lease any land acquired by them for the purposes of Part III; but enacts that certain conditions providing for the legitimate use of such land and buildings for the purposes of the Act, shall be inserted, and that the deed of demise shall be endorsed with notice of the subsection. This section provides that Sections LXI and LXII of the 1890 Act, dealing with the management of lodging houses, shall not extend to premises so leased. The sixth section deals with the title, and excludes Scotland and Ireland from the provisions of the Bill.

There is an ambiguity in Section v, Subsection (2) as to the exclusion of certain lodging houses from the management clauses of the 1890 Act. The words state that these sections "shall not extend to any lodging house to which this Act applies." The apparent meaning is "to which Section v applies." It would be quite possible, if the Bill becomes law, to argue that the adoption of Part III by a rural district council was under this Act, and that any lodging house erected in consequence was one "to which this Act applies." This is not, probably, what is meant by Section v, Subsection 2. In Section II, Subsection (3) the words "to the end of the section" should not be in inverted commas. They are not a quotation, but a description.

On the principle of being thankful for small mercies, we, of course, welcome this Amendment Bill. It deals only with one or two minor matters which it is certainly desirable to put right, but the whole of the Act of 1890 requires redrafting. Some of its absurdities were commented upon recently, in speaking of the action of the vestry of St. George-the-Martyr.

THE MEDICAL SICKNESS AND ACCIDENT SOCIETY.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, on June 29th.

The accounts presented showed that the sickness experienced during the spring of this year was well under the amount expected, and compares very favourably with the records for the same period of 1899. Almost the whole of the difference is accounted for by the absence of the large number of claims arising from influenza which appeared in the accounts for last year. In 1899 no fewer than 164 such cases were on the books, and the total of the sickness pay granted to the members in respect of these amounted to nearly £2,000.

The Society has now been in existence for more than sixteen years, and the experience so far obtained seems to show that the calculations on which the contribution rates were based were sufficiently liberal to allow a good margin on the ordinary sickness business.

Over a dozen members of the Society are now considered to be on the chronic list, and will draw their sick pay until the age of 65, if they survive so long. A large sum is disbursed annually in this manner, but the Committee have always felt this to be the most valuable and satisfactory branch of the Society's operations.

Prospectuses and all particulars from Mr. F. Addiscott, Secretary Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

THE INTERNATIONAL MEDICAL CONGRESS.

THE following arrangements have been made for British members who wish to attend the Congress to be held at Paris from August 2nd to 9th:

The *South-Eastern and Chatham and Dover Railways* will issue tickets to members and their wives, but not to their families, on presentation of their cards of membership, at the reduced rate for return tickets of 38s. 4d. first class and 27s. 6d. second class, *viâ* Dover and Calais or Folkestone and Boulogne. The tickets are available for fourteen days by the 2.45 P.M. service from Charing Cross or Cannon Street *viâ* Folkestone and Boulogne, and by the 9 P.M. service from Charing Cross, Victoria, Cannon Street, and Holborn *viâ* Dover and Calais. Each ticket will entitle the holder to a free allowance of 56 lbs. of luggage, and will be available to return from the Gare du Nord at Paris by the 3.30 P.M. or 9 P.M. services. Those who wish to return by the 9 A.M. service *viâ* Calais and Dover, or the 10.30 A.M. service *viâ* Boulogne and Folkestone, may do so on payment of 7s. 1d. first and 3s. 9d. second class on board the steamers. The special tickets will be issued every day from July 21st to August 10th, and will thus be available for those who wish to attend the Congresses of Medical Ethics, Medical Press, General Medical Congress, and Hygiene.

The *London, Brighton, and South-Coast Railway* will issue, on application to the Continental Traffic Manager, London Bridge Terminus, a day or two in advance of departure, 14-day excursion tickets available from London or any station on the Brighton Railway to Paris at 39s. 3d. first-class, or 30s. 3d. second-class, to members of the Congress. The tickets can be made available for the day service, and the availability can be extended to, say, 25 days if desired. These tickets allow a break of journey at Brighton or Lewes, Newhaven, Dieppe, and Rouen both going and returning. Members who apply for these tickets are required to give proof of their membership, and should make their cheques payable to the London, Brighton, and South-Coast Railway Company, and addressed to Mr. T. N. Wylie, the Continental Traffic Manager, at the London Bridge Terminus.

It may be noted that the travelling concessions made by the French railways are of no service to British and Irish members.

The *London and North-Western Railway Company* states that for parties of 30 or more passengers travelling to Paris this season from a station outside the radius of 20 miles of London (the party travelling together on the outward journey, but individually, if desired, on the homeward journey) would be charged the single fare and a quarter for the double journey from the North of England to London and back, *plus* the 14-days' excursion fares from London to Paris in force by the different routes beyond London. The tickets will be available for 16 days, that is, 14 days between London and Paris, and two days extra between London and the provincial station.

The *Midland Company* is prepared to make a similar concession for parties of 30 and upwards travelling together from stations over 20 miles from London.

The *International Sleeping Car Company*, 14, Cockspur Street, Charing Cross, London, S.W., are the agents for the Trocadéro Hotels in Paris. These hotels are situated on the Quai de Passy and the Boulevard Delessert, immediately adjoining the Trocadéro section of the Exhibition. They consist of four separate blocks, and being constructed solidly of stone, are so designed that when the Exhibition is over they may be used as flats. Their immediate proximity to the Exhibition grounds renders them most convenient for visitors to the Exhibition. At present visitors are able to obtain bedrooms with one bed from 9 to 16 francs, and double bedrooms from 15 to 28 francs per day, including lights and attendance. The tariff for visitors *en pension* varies between 16 and 23 francs per head a day, according to the floor and aspect of the room occupied. These prices include bedroom, electric light, attendance, breakfast, luncheon, and dinner with wine or beer, or mineral water or milk. Early application, however, is now necessary, and should be made direct to the Manager of the Sleeping Car Company, 14, Cockspur Street, S.W.

At Paris special rooms will be set apart on and after Monday, July 30th, for the use of the National Committees of each country, which may be used as a *rendezvous* for each nationality. These rooms will be in the buildings of the Faculté de Médecine. A postal telegraph office will also be opened at the Faculté de Médecine, where members will find their letters and telegrams, if they are addressed as under:—

Dr. .....,
Member of the XIIIth International Congress of Medicine, Paris.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE pathological and other preparations added to the Museum for the year were on view during last week. Amongst the pathological series, the following may be briefly noticed as certain of the more interesting.

An entire gracilis muscle removed during life by Mr. C. Stonham for a diffuse angeioma. The clinical diagnosis of angeioma was made, though the seat of the disease was thought before operation to be beneath the muscle.

The fractured bones, and bullets from the seat of war in South Africa, presented by the President, Sir William MacCormac, Bart., K.C.V.O., and by Mr. F. Treves, and described lately at the Royal Medical and Chirurgical Society. Four examples of gunshot fracture of the skull from the battle of Omdurman. (Major H. E. Hill Smith.)

A laryngeal pouch, excised by Mr. H. T. Butlin, from a patient who presented the symptoms characteristic of this condition.

An extensive collection of foreign bodies, chiefly garden nails, removed from a girl's stomach by Mr. Mayo Robson.

A sample of the urine from Dr. R. Bradshaw's case of "myelopathic" albumosuria; the urine was turbid with albumose when passed, and now exhibits an abundant sediment of this class of proteid; the patient died with an extensive disease of the bones.

Homogentisinate of lead, prepared from the urine in cases of alcaptonuria. (Dr. A. E. Garrod.)

Two specimens of carcinoma of the bladder removed by partial cystectomy. In each case recovery ensued: one of them was under the care of Mr. E. H. Fenwick, the other under that of Mr. H. Morris.

A submucous lipoma of the colon, removed by operation, the tumour having caused repeated attacks of obstruction. (Mr. J. Bland-Sutton.)

A large series of calculi, presented by Brigade-Surgeon Lieutenant-Colonel D. F. Keegan, and removed by the donor in India. The interest attaching to this series is that it illustrates the systematic application of lithola paxy to young subjects. The earliest cases are under two years, and beyond that nearly every year is represented up to the age of puberty.

A stomach excised for diffuse carcinoma by Mr. T. F. Chavasse. In this case the result was unsuccessful owing to the œsophagus having been involved, a complication which rendered it impossible to unite the intestine with the latter structure.

Portions of dogs' intestines showing experimental end-to-end union which was carried out by means of Laplace's forceps. Several operations were performed, the conclusion of the donor, Mr. W. Edmunds, however, being unfavourable, since the majority ended fatally

Unilateral synostosis of the lower jaw after an unusual degree of destruction of the condyle, neck, and adjoining part of the ramus. The amount of destruction suggests a tabetic arthropathy, but no history was forthcoming with the specimen. (Purchased.)

A specimen of infective aortic valvulitis, in which perforation of the ventricular wall below ensued, and led to acute pericarditis and hæmopericardium. (Mr. W. D. Wiggins.)

Portion of a large chondroma of the scapula successfully removed by operation. (Mr. C. B. Lockwood.)

Amongst the gynæcological additions the following may be mentioned:

A very large fibroma removed from the broad ligament; a full-term fœtus removed from the broad ligament in a case of intraligamentary gestation following rupture of a pregnant tube; and a very perfect example of unruptured tubal pregnancy. These specimens, which have been presented by Mr. Alban Doran, were described during the past year in the *Transactions* of the Obstetrical Society.

Amongst the objects of curiosity come, in conclusion, the following:

A cane shield used for the protection of a boil, or similar purpose, by Dyaks, Borneo; cane splints of the Kenyah tribe, Baram District, Sarawak; and a bow with captive arrow armed with a sharp fragment of glass, used for puncturing the skin to relieve pain (Bulaa, Rigo District, British New Guinea), presented by Mr. C. G. Seligmann; and a terra-cotta votive offering, ancient Italian, by Mr. C. L. Taylor.

[An account of such offerings will be found in the British Medical Journal, June, 1899.]

During the past year there has been placed in the Museum a novel and instructive bacteriological group of specimens, mostly prepared by the formalin method with the object of preserving colour; these exhibit most of the typical lesions occurring in infective processes and diseases. The subject is illustrated, moreover, by a set of permanent bacteriological cultures, comprising the chief organisms pathogenic in the human subject. These are all carefully grouped, and accompanied with a descriptive catalogue; and they provide an excellent means for the study of this highly important and interesting class of diseases.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

At the annual meeting of the Medico-Psychological Association of Great Britain and Ireland, which, as already announced, will be held in London on July 26th and 27th, the President, Dr. Fletcher Beach, will give an address on the first day. Dr. Wynn Westcott, Coroner for North-East London, will open a discussion on Inebriety, its Causes, Results, and Treatment, in which Dr. W. J. Collins and Dr. Forman, members of the Inebriates Committee of the London County Council, are expected to take part. The following resolution which has been drawn up by the Council, after consultation with the divisions of the Association, will be proposed:

It is the unanimous recommendation of the Medico-Psychological Association of Great Britain and Ireland that in union workhouses in which insane persons are detained a properly-qualified and trained mental nurse should be employed in the insane wards.

On the second day of the meeting demonstrations will be given by Drs. Ford Robertson, Shaw Bolton, David Orr, George A. Watson, Wakelin Barratt, and John Turner. Dr. Hayes Newington will show the plans of the new East Sussex Asylum, and a number of papers will be read.

On Saturday, July 28th, Dr. and Mrs. Fletcher Beach will be at home to members and their friends at Winchester House, Kingston Hill, S.W.

As already stated the annual dinner will take place at the Whitehall Rooms, Hotel Métropole, on July 26th.

CONTRACT MEDICAL PRACTICE.

Juvenile Clubs.

Dr. Sidney Davies, M.D., Honorary Secretary, informs us that the Woolwich, Plumstead, and Charlton Medical Union has passed the following resolutions:

1. That medical officers of friendly societies be recommended to decline to attend juvenile members of clubs for a less sum than shall be agreed upon by members of this Union.

2. That the Union's resolution, "That the same annual subscription with respect to juvenile clubs should be required as for men's clubs, namely, 4s. a year per member," be taken to apply to clubs taking children over 8 years of age only.

3. That under 8, children should be only taken at 8s. a year.

A Suggested Remedy.

Grays writes: On the principle advocated long ago by St. Paul ("To write the same things to you to me indeed is not irksome, but for you it is safe," Ep. Phil., iii, 1), may I again urge that no more powerful argument against cheap contract practice could be found than a carefully constructed balance sheet supported by vouchers for payments, and supplemented by a journal showing the time given to each case? No man living believes that a shilling will buy two shillings' worth of skill or work or time, and no man living expects to get sixpennyworth of these in return for his shilling. Time sheets and books must tell in the long run, and nothing else will.

LITERARY NOTES.

Two Spanish medical men (Drs. Buylla y Sarandeses, in conjunction with the learned scholar, Señor Canella), have reprinted the curious *Memorias de Historia Natural y Médica de Asturias*, by Dr. Gaspar Casal (1762), adding notes and a memoir of the author.

In the last number of the British Medical Journal, "Curious" expressed a wish to know why a chilblain on the heel is commonly called in France *la mule*. "What connection," he asked, "can there be in the mind between such a complaint and that animal?" The question has produced a small avalanche of replies. Briefly their purport is to show that there is no connection between the complaint and the animal. Dr. Saundby points out that Littré in his great Dictionary says that *mules*, signifying chilblains, is used only in the plural, and cites the phrase "avoir les mules aux talons." *Mule* is a kind of slipper, and Littré suggests that chilblains were called *mules* either from the idea of a shoe that galls the heel, or because chilblains make the heel red like a *mule* or red slipper. The word *mule*, though still used in certain provinces, is not employed in modern French except in the phrase "baiser la mule du Pape." We have to thank Drs. R. W. Leftwich and M. C. Moxham, the Rev. F. A. Gace, M. T. S., and W. E. S. S. for communications to the same effect. Mr. G. Pernet and M. T. S. give the derivation of *mule* in the sense of a slipper from *mulleus*.

As the matter appears to excite some interest, we have looked up one or two authorities, and we give the results of our researches, though they do not carry the question much further. Cotgrave, in his famous Dictionary (1611) defines "Mule" as "a mule, also a Kibe." As the equivalent of "Mules" he gives "Mules; also Kibes; also ..... pantofles, high slippers." He cites the phrase, "Il va sur mule aussi bien que le Pape," which he explains as "an equivocation applicable to one that hath kibed heels." Ducange, in his great *Glossarium infimæ et mediæ Latinitatis*, defines "Mule" as *genus calceamenti*, and suggests that it is so called because, in slippers we step softly like unto mules! Ménage, in his *Dictionnaire Etymologique de la Langue Françoise*, quotes a certain Père Labbé as having propounded the remarkable etymology that *mules* came to signify slippers, *peutestre d'autant que les Présidens et autres qui alloient au Palais et ailleurs sur des mules ne quittoient point leur chaussure de chambre pour prendre de souliers*. As regards *mules*, which he defines as "mal au talon," giving *pernio* as the Latin equivalent, Ménage frankly confesses that the origin of the word in that sense is a mystery to him. Yet he was a man of remarkable etymological ingenuity, as is shown by his derivation of Alfana—the name of the charger of some hero of romance—from *equus*, which gave occasion for an epigram, of which we remember only a fragment, though, luckily, it is the part that contains the point:—

"Alfana" vient *d' equus* sans doute
Mais il faut avouer aussi
Qu'il a bien changé en route.

Ménage, however, says that some have derived *mules* (in the sense of chilblains on the heel) from the Greek χίμετλα which at first sight looks as far-fetched as Alfana from equus. The process of etymological evolution is shown as follows: χίμετλον, *chimetlum*, *chimetulum*, *metulum*, *metula*, *meula*, *mule*. This reminds one of some of the higher flights of the scientific imagination.

Ménage goes on to say that others more reasonably have suggested that the origin of *mules* in the sense of chilblains is that those who have chilblains on the heel are obliged to wear *mules* or slippers. But he adds—and one can almost hear the tears of despair in his voice: *Encore une fois je ne say d'où vient ce mot*.

Mulleus calceus or *mulleus* certainly appears to be the original of *mule*, a slipper. The old Roman etymologist,

Festus, says that red or purple shoes, called *mullei*, were used first by the Alban kings, and afterwards by the Roman patricians. Some derive the word *a mullando*—that is, *a suendo*, because the shoes were stitched; others from *mullus*, a mullet, because of their red colour. There be yet others who hold that the fish was called after the shoes for the same reason.

An anonymous correspondent refers us to a passage in the *Tempest* as showing the connection between slippers and chilblain on the heel. In Act II, Sc. 1, Sebastian hints to Antonio about his conscience, and the latter replies:

> Ay, sir, where lies that? If t'were a kibe
> T would put me in my slipper.

This appears to illustrate the theory that *mules* make one have recourse to *mules* for protection of the affected heel; but in the *Merry Wives of Windsor* there is a passage in which there is an inversion of the cause and effect as conceived by Sebastian. Falstaff, deploring the low state of his fortunes to his followers, says: "Well, sirs, I am almost out at heels." Whereupon Pistol unfeelingly retorts, "Why, then, let kibes come!" Whichever way the question is looked at, the connection between chilblains on the heels and slippers (or the want of them) is clear enough.

Dr. Theodore Beer, of Vienna, whose studies on the sensory organs of both vertebrates and invertebrates are well known, is engaged in writing a comprehensive work on the *Comparative Anatomy and Physiology of the Organs of Vision*. To make this as complete as possible, he is anxious to procure reprints of all articles—for which, if desired, he will send his own writings in exchange—dealing in any way whatever with the anatomy, embryology, zoology, pathology, or literature of the organ of sight in animals or the eye of man, or with reactions to light. His address is Dr. Theodore Beer, Privat-docent für vergl. Physiologie a. d. Universität, Anastasius Grün-Gasse 62, Wien, xviii, Austria.

The following story is taken from the *Revue des Traditions Populaires*:

> One day, said a dervish, in a Western land I was passing near a physician; patients were before him, and he was prescribing remedies for them. I went to him and said: "Treat my ailment, and may God have mercy on you!" He inquired for a minute as to my suffering, and said, "Take roots of poverty, leaves of patience with myrobalan of humility; collect all in the vessel of certainty; pour on it the water of the fear of God; kindle underneath the fire of sorrow; filter with the filter of conscience into the cup of satisfaction; mix with the wine of trust in God; take it with the hand of sincerity and drink with the glass of entreaty. Afterwards rinse thy mouth with the water of abstinence, refrain thyself from concupiscence, and the most high God will heal thee—if such be his pleasure.

The last five words may be commended as a model of prognostic discretion. As for the prescription itself, though it is already a notable example of polypharmacy, we think it would be improved by the addition of the bark of industry to the leaves of patience and the other simples recommended. Thus amended the prescription would doubtless have a wide range of usefulness, not only therapeutically but prophylactically. The ingredients, however, are not always easy to procure in a pure state, and there might be some difficulty in compounding them. And then the patient must do both these things for himself!

At the meeting of the Verein fur innere Medicin of Berlin on June 18th, Dr. G. Meyer showed the dissertation presented by Catharina Erxleben for the degree of doctor of medicine at Halle in 1754. This is said to have been the first medical thesis presented by a German woman. The lady's father was a medical practitioner, and Catharina often acted as his assistant. She married a deacon in Quedlinburg. The dissertation deals with the management of patients, and is remarkable as referring to the need for good nursing—a subject which physicians in her day did not often condescend to touch.

THE Chancellor of the German Empire has issued an ordinance to the effect that the Réaumur thermometer will not be admitted to official control after January 1st, 1900. This means that only the centigrade thermometer will henceforth be employed in Germany.

RABIES QUARANTINE.—The Governor of New York has signed a Bill giving power to the State Commissioner of Agriculture to quarantine a district in which rabies is prevalent, and exempting from liability any person who kills an animal affected with the disease.

THE INSPECTION OF FACTORIES AND WORKSHOPS.

FROM the Annual Report of the Chief Inspector of Factories and Workshops (London: Eyre and Spottiswoode. 1900. 6s. 11½d) it would appear that 1899 was not only a busy year for the whole country from an industrial point of view, but also for the Factory Department of the Home Office. More premises were registered and inspected than in previous years, and a large number of accidents investigated. There was an increase in the number of accidents during 1899 over 1898, but the rate of increase was less. It was among adult males that this increase mostly occurred, although females and children also showed a slight rise. The total number of accidents reported to certifying surgeons for 1899 was 22,771, as against 19,227 for 1898. Of these, 871 were fatal, while for the previous year the fatal cases numbered 727. The actual number of accidents reported to factory inspectors amounted to 47,989. Machinery, engineering, shipbuilding, and warehouses were responsible for the increased number. It is interesting to note that it was during the month of November that the largest number of accidents occurred.

INDUSTRIAL POISONING.

In this preliminary notice of the Annual Report space only allows of the excellent summary by Dr. Whitelegge being dealt with. From this it would appear that there were fewer cases of plumbism, owing very largely to a decrease in the number of cases of lead poisoning in the potteries, although a similar reduction was observed in glass making, file cutting, and smelting. In the manufacture of white lead, paints, and colours, as also in the miscellaneous group of trades known as the minor lead industries, a slight increase of plumbism occurred. During the last three years there has been no case of industrial arsenical poisoning. There have been fewer cases of phosphorus necrosis, but more of anthrax, and for the first time in the pages of the Annual Report industrial mercurial poisoning is reported.

The subject of dangerous industries and processes has again received considerable attention from the Home Office. For several trades special rules have been framed, while other trades have been brought under more effective control by amending the rules in existence. Owing to the larger number of cases of plumbism in white lead works it has been found necessary, after conference with the manufacturers, to increase the stringency of the Special Rules of 1894. The most important alterations are the provision of a window or windows in the stoves made to open so as to secure through ventilation, the placing of the bowls upon the racks and not upon each other, and allowing the temperature of the stove to fall to 70° F, before being entered. The drawing or emptying of the stoves is justly regarded as the most dangerous process in white lead manufacture. It is an excellent rule, therefore, which prohibits men working in the stoves on more than two days in one week. To some it might appear as if it would have been better to have made the rule two days but not consecutively. It has to be remembered, however, that much of the work done in white lead works is unskilled labour, and that as the supply of labour is intermittent and the men are somewhat casual, it might be difficult to insist upon this point. A man would probably turn up and do his second day's work in the stoves if his pay was withheld but not care to do so if the days were alternate.

MEDICAL INSPECTION.

There is no doubt as to the immense value of the medical inspection of the workers once a week. Already in the Potteries the good results of periodic medical inspection are being seen; and as work in white-lead factories is more dangerous, the weekly inspection, with power on the part of the appointed surgeon to suspend cannot but be beneficial.

EXPERTS' REPORTS AND LUCIFER MATCH INDUSTRY.

As the outcome of the reports of Dr. Thorpe, Dr. Oliver, and Dr. Cunningham, published in 1899, special rules were drafted and served upon the manufacturers using white or yellow phosphorus in the manufacture of lucifer matches. Several objections were raised, and it became necessary to submit the points at issue to arbitration. When trade matters

are submitted to arbitration it invariably happens that the rules as originally drafted have to be considerably modified. It is because of the compromises that have been effected between the Home Office and manufacturers that there has been in certain quarters an outcry against arbitration as at present conducted, and it was to overcome some of these objections that, in the Factory Bill of the present Government, it was proposed to modify to some extent the lines upon which arbitration is conducted.

The present rules, however, are still in advance of their predecessors. For the first time in this country a periodical examination by a dentist of the mouths of workers in the dangerous processes in a lucifer match factory is required. This ought to be helpful, and, as machinery is replacing hand labour, and already a large firm of manufacturers has discarded the use of yellow phosphorus altogether and is still producing a successful "strike anywhere" match without it, all of these conditions must make for the better health of the workpeople.

(To be continued.)

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

THERE were only 319 deaths from plague reported for all India during the week ending June 23rd. For the previous week 417 were recorded. In the city of Bombay 97 plague deaths occurred, and 32 in the Bombay Presidency exclusive of the city. Although plague is disappearing, the general mortality returns in Bombay, for the first time for many months, show an increase. During the third week of June 1,183 deaths from all causes occurred in Bombay, a high rate when compared with the average for the past five years of 478. Plague is therefore no longer a serious factor in the vital statistics of the city; and the causes are to be found in the destitute state of the people owing to famine in the surrounding districts. Cholera claims a large number of victims. In the Mandvie district of Bombay, the first attacked and the most seriously affected throughout all the epidemics, during the week ending June 23rd the deaths from plague were 10 as compared with 10 during the previous week. Mandvie is, however, the only section of the municipality of Bombay in which an increased death rate from plague has occurred. In view of the serious sanitary condition of Bombay it seems inexpedient that Lieutenant-Colonel Weir, the Health Officer, should be removed from the post he has filled so satisfactorily. This step, however, is contemplated—if in fact it has not already been carried out—by the military authorities recalling Lieutenant-Colonel Weir to his military duties.

In Calcutta the number of plague deaths during the week ending June 23rd numbered 125, and in Bengal, exclusive of the metropolis, 37. Calcutta seems to retain its persistently high plague death-rate even after the subsidence of an epidemic. This peculiarity of the behaviour of plague in Calcutta is not calculated to allow a favourable prognosis to be made as to the ultimate disappearance of the disease in the near future.

At Karachi 12 fatal cases of plague occurred during the third week of June. At Aden and in Madras, 5 and 4 deaths from plague respectively were recorded during the third week of June.

HONG KONG.

During the week ending July 7th, 65 fresh cases of plague were notified in Hong Kong, and 68 deaths from the disease. This is a great improvement on the previous week, when the numbers were 90 and 98 respectively. During July plague, when rife in Hong Kong, has always rapidly disappeared, and the deaths being higher than the fresh cases is, according to the last report, a sure sign of a decline in the prevalence of the disease.

JAPAN.

Japan is declared free of plague at present. In Formosa, however, the disease still lingers.

TURKEY IN ASIA.

At Smyrna a death from plague occurred on July 4th. Since the appearance of plague in Smyrna, 16 cases have been reported up to the present.

MAURITIUS.

A telegram received at the Colonial Office states that a case of plague was reported there on June 22nd.

SOUTH AMERICA.

Rio de Janeiro.—The total number of plague cases in the capital of Brazil since the commencement of the outbreak until June 29th amounts to 200 cases with 11 deaths. The previous information given was dated May 29th, when 45 cases of plague had occurred during May, and 9 deaths. The information now received does not supply any data to go upon as to the actual increase of the disease, but the disproportion of deaths to cases is altogether anomalous.

In no outbreak of plague ever recorded has the death-rate been only 5½ per cent. of cases attacked, and there is some reason to question whether plague actually exists in South America. On all hands the disease has behaved in a peculiar manner. It was first recorded from an inland town the spread has been peculiarly limited, and the death-rate low.

AUSTRALIA.

Our special correspondent in Sydney writes that in the week ending May 26th the number of cases of plague reported to the Health Board in Sydney showed a satisfactory diminution. Only seven new cases occurred during that week. The total number of cases since the outbreak is 247, of whom 89 have died and 76 have recovered. Isolated cases still continue to be reported from the Queensland seaports. There was a considerable falling off in the number of cases in the early part of the following week, but at the end of the week a slight increase again; 10 cases were reported in three days, 2 of which proved rapidly fatal. The total number of cases reported in Queensland up to date is 47, of which 16 have died. Of these cases 14 have occurred in Brisbane, 5 of which proved fatal.

NEW CALEDONIA.

Our correspondent in Sydney, writing on June 5th, states that no further cases have been reported from New Caledonia. As a measure of precaution against its reintroduction the Government have fenced off a wharf with galvanised iron, for the use of ships arriving from infected ports. In this area the cargo is disinfected, all the produce being emptied from sacks, and delivered to the consignees loose in drays. The sacks are then all destroyed. Passengers from infected ports are still required to present themselves for examination at the hospital daily, until the twelve days' quarantine is completed.

CREMATION IN THE UNITED STATES.—Dr. Samuel Abbott, author of *Public Hygiene and State Medicine in the United States*, quoted by the New York *Medical Record*, states that within the past twenty years the custom of cremating the bodies of the dead has obtained a considerable foothold in the United States, and several crematories have been built in different parts of the country. The first was built by Dr. Julius T. Le Moyne, at Washington, Pa., in 1876, and was used for the disposal of his own remains. From that time to the present much has been written in America in relation to this safe and rational method of disposal. No more establishments for incineration were erected till 1884, but from 1884 to the present time 26 crematories have been established. In some instances laws have been enacted favouring the practice and placing it under proper restrictions. That the public sentiment in favour of incineration is steadily increasing is shown by the rapidly-augmenting number of bodies submitted to this method of disposal. The following list, furnished by Mr. Louis Lange, of New York City, shows the rapid progress which has been made in the establishment of crematories in the United States and in the number of persons whose remains have been incinerated in these since their introduction in 1876. In the eight years, 1876 to 1883, only 25 bodies had been disposed of in this manner, and all these were treated in the crematory built by Dr. Le Moyne at Washington, Pa. From that time the annual number increased to 1,699 in 1898, with a total of 8,885 in all up to the close of 1898, and at the present date the number has probably reached 10,000.

COTTAGE NURSING ON THE HOLT-OCKLEY SYSTEM.—The Association for Supplying the Cottage Nurses held its seventh annual conference recently at Bury House, Edmonton. This was the usual annual meeting; but it also marked a new departure, as it was the opening of the training home of the Association. The Association finds an increasing difficulty in securing such a training for the nurses as it considers suitable—"to be properly trained and not over-trained." To meet that difficulty Bury House has been taken, and there the nurses are to work under the supervision of a lady superintendent, assisted by a certificated midwife. As it is the principle of the Association that the nurses are to do the housework in the family as well as nurse the patient, it is obvious that the style of training differs from that given in the hospitals. The work lies among the thickly-populated neighbourhood around Tottenham and Edmonton: a room in the Home is to be turned into a ward; the practical work will be taught in the Home and in the cottages of the patients, and lectures will be given by the lady superintendent concerning the theory of the work. Miss Hogg, lately Head Sister of the Royal Naval Hospital, Plymouth, is the lady superintendent. According to last year's report, 68 nurses had been trained at the Plaistow Maternity Home and other places. There is no list of cases visited by the nurses appended to the report, but Miss Broadwood mentioned in her speech that the nurses were sent to all forms of disease. There is a sliding scale of payment, regulated by wages, for the services of the nurses, but the necessitous, if properly recommended, are nursed free.

A NEW ANTIRABIC INSTITUTE IN ITALY.—An antirabic institute has recently been established at Sassari. The funds for the maintenance of the institute will be provided by the communes of the province.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

SUBSCRIPTIONS to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, JULY 14TH, 1900.

THE NEW NEUROLOGY.

THE last fifty years have witnessed the recasting of the whole science of pathology, but it has been reserved for the time in which we live to see the evolution of one of its special departments along lines undreamt of by the wildest visionary of the last generation. Scarcely a quarter of a century has elapsed since the researches of Dr. Ferrier crystallised the doctrine of cerebral localisation, and only fourteen years have passed since the appearance of Professor Golgi's classical memoir led to an entire reconstruction of our conceptions as to the histology of the central nervous system. In the muster-roll of the great investigators who have laid the foundations of the new neurology the names of British men of science occupy an honourable and prominent position, and in the whole list none has achieved more brilliant distinction than the pathologist to the London County Council, Dr. F. W. Mott. Dr. Mott is at once a patient, skilled and original investigator and a scholar admirably versed in the literature of his science: but in addition to these qualities he possesses a quite exceptional gift of analysis, a subtle penetrativeness which enables him to co-ordinate his own researches and those of others into a solid and imposing fabric based upon fundamental principles simply conceived and firmly established.

It is, so to speak, a ground plan of this edifice which Dr. Mott has given us in the Croonian Lectures, the last of which we publish this week. The primary conception of modern neurology is that of an essential element or unit—the neurone—consisting of a nerve cell and its various processes. Of these elements, imbedded in a supporting tissue, the whole nervous system is built up, and their interaction underlies all the phenomena to which the name "nervous" has been applied. The neurones are generally believed to be anatomically discontinuous, the network in which their processes were formerly considered to end being replaced by an interlacement like that of the branches and leaves of the trees in a forest. This view accords closely with clinical findings, but it should be said that Golgi himself and some other recent observers still maintain the existence of a network. However the anatomical question may be decided, there can be no doubt as to the physiological continuity of the neurones. From this point of view there is no such thing as an isolated neurone—one which is out of contact with its fellows. Every neurone in the body communicates with another neurone by one set of terminations at least; most, indeed, act channels or conduits of communication, and abut up other neurones by both their axonic and dendronic extremities. From this doctrine arises a profound modification in our views as to the importance of the nerve cell. It was formerly held that the true nervous act, the generation of the nervous impulse, occurred in the cell as the resultant of impulses conveyed to it along what we now call the dendrons. The present tendency is, however, to assign to the nerve cell the sole function of maintaining the nutrition of its neurone, while the development of nervous energy takes place in the interneuronal arborisation. The nerve cell is, in other words, relegated from the position of driver of the nervous engine to that of stoker.

It is obvious that the conception of the neurone as an isolated entity adds greatly to the importance of the study of its biology, for each neurone lives its separate life just as an amœba; and now that the methods devised by Marchi and Nissl allow us to follow with the microscope changes in every part of it, it is possible to observe its growth and decay under physiological and pathological conditions. It is to these studies, many of the most important of which are his own, that Dr. Mott's lectures are mainly devoted. With regard to the structure of the neurone, it is now generally believed that the conspicuous granules seen in specimens stained by Nissl's method are not preformed, but result from precipitation of nucleo-proteid by the fixative agents employed. Hence the chromatolysis, which is one of the earliest and most constant signs of nerve-cell degeneration, indicates that the first chemical constituent of the cell to break up is its nucleo-proteid. The myelin sheath has been worked at from two standpoints. Its development has been shown by Flechsig to correspond with that of the function of the fibre which it enwraps, a fact which has led to many discoveries in the domain of cerebral and spinal localisation. Its degeneration precedes that of any other part of the nerve fibre, and is particularly well investigated by means of the Marchi method. Finally, Dr. A. D. Waller's beautiful researches seem to show that the myelin sheath replenishes the energy of the nerve fibre, and is hence the real cause of its inexhaustibility. A further point of great interest is the effect exerted by the physiological activity of a neurone upon those with which it is associated. Thus Dr. Mott and Professor Sherrington have shown that section of the posterior roots of the nerves supplying an arm not only render the limb anæsthetic, but also preclude the performance by it of the finer voluntary movements. Moreover, the vitality of a neurone is, as one would expect from analogy, dependent on its functional activity. This has been histologically demonstrated by observing the degenerative changes in nerve cells consequent upon section of the nerve fibres leading from them.

Recent work on the degeneration of the neurone has also been many-sided. The effects of hyperpyrexia, of artificial anæmia, and of various poisons, have been the subject of careful studies in which Dr. Mott has taken an important part. He has also, in conjunction with Professor Halliburton, paid particular attention to the chemical aspect of the question, arriving at conclusions which are both original and suggestive. The actual chemical

change appears to be a splitting-up of lecithin into stearic and glycerophosphoric acids, and a base of the nature of choline. The latter has now been demonstrated in the cerebro spinal fluid and blood in cases of acute nerve-degeneration, especially in general paralysis of the insane. It is probably a constant product of lecithin metabolism, but may in normal circumstances be rapidly disposed of by oxidation processes. Abnormally it may, as Dr. Mott suggests, be present in sufficient amount to cause auto-intoxication. Another substance which may produce this is the nucleo-proteid material of the nerve cells themselves, and Dr. Mott adduces striking evidence in favour of the participation of this in the symptomatic pathogenesis of general paralysis of the insane.

But if pathology stands at the summit of the biological sciences it is at the same time the basis of medicine, and as the ultimate goal of the latter is the prevention of disease, the last lecture deals appositely with the practical deductions which can be drawn from this mass of clinical and experimental data. Every neurone, like every other living unit, comes into the world endowed with a certain specific measure of vitality. Many poisons exert a selective influence, either on the nervous system in general or on certain of its constituent neurones. This influence manifests itself by shortening the life of the parts attacked; after awhile these perish before their time, and the symptoms of the system of neurones affected or other degenerations of the nervous system ensue. Of these poisons, syphilis is, by virtue of its causative influence in relation to tabes and general paralysis, the most important, while alcohol is not far behind in deadliness. Their effects, moreover, do not limit themselves to the original patient, but taint the existence of his offspring. Here, then, we touch the vital problem: the prevention of nervous and mental disease. The conditions of the solution are defined by the pathological data, and the London County Council has reason to congratulate itself on the success of its enterprise in engaging Dr. Mott's abilities in this great public service.

THE HOUSING OF THE RURAL LABOURER.

THE difficult question of the housing of the rural labourer is occupying the minds of many, and we are glad to see that the subject is to be discussed in the Section of State Medicine at the annual meeting of the British Medical Association at Ipswich. Every person of experience must recognise the difficulty of housing the farm labourer without pauperising. As to the extent of the difficulty and as to the remedy there seem to be as many opinions as men. Some there are who deny that the rustic is so badly housed, and who assert that we must not look only at the house but at the surroundings. The cottage may appear tumble-down and stuffy, but there is a plenitude of fresh air around it which the town dweller cannot get at any price, and it must not be forgotten that while the rent is almost nominal (1s. or 1s. 6d. per week), the produce of the quarter-acre kitchen garden, if cultivated or managed by a clever couple, will produce food which if purchased at the village shop would cost £7 or £8 a year. Not long since in Wiltshire a cottage owned by a rustic, which was sadly out of repair, was condemned as "unfit for human habitation." The owner appeared before the Bench, and made a little speech to them as follows: "I want to know what I be here for: I 'ant hurt nobody, and I 'ant stole nothin'"? In support of the character of his dwelling he produced a stalwart wife and six rosy, mischievous children, who had doubtless had their share in producing the disrepairs of the family mansion. Case dismissed. What other result was possible? There was no "slum owner" or harsh landlord of a "tied" tenant to denounce.

Political economists used to hold up their hands if farm labourers in former times got a dole from the poor-rate in the winter, or even if they were employed on the roads and were paid for their useful work from the poor-rate. Now the farm labourer gets his children educated for nothing out of the rates, and a visit to the Sunday school will convince any but the most prejudiced that however grievous may be his lot, there is still a good deal of money available for smart Sunday clothes. During the last half-century the trade of the country has increased by leaps and bounds. The wages of artisans have gradually increased, while the price of food and clothing has gradually decreased. The cheap imported necessaries of life have unfortunately decreased the demand for rural produce, with the result that the land barely pays for cultivation on the old lines. Agricultural interests from the highest to the lowest have suffered most seriously. It is almost hopeless to ask the labourer to look beyond the question of wages. Few of them are capable of seeing that 6s. a week rent and no garden leaves a carter in a big town only 15s. to spend out of 21s., while 1s. a week rent (£2 12s. per annum) for a holding which yields him produce from his garden which it would cost him £7 a year to buy adds an average of 2s. a week to his wages, and that he is really richer in the country although his Saturday's money may be only 14s. a week. In the country the cost of living is less than in town, while the precious boon of fresh air and some chance of escape from the moral contaminations of undesirable neighbours are two facts which might be thought to compensate for music-halls and barrel organs.

Much of our modern legislation is not favourable to the agriculturist. The new heir on coming to his estates is confronted with "death duties," which effectually check any yearnings which he may feel towards bettering the condition of his poorer neighbours. Again, cottages are not cheapened by restrictions and conditions which formerly were not deemed essential, and are at best doubtfully essential in rural places; and it is quite possible that squires do not relish having their plans submitted to the "Council," and criticised by the politico-neurotic "anti" whose remarks are published in the local press.

The modern craze for reforms of all kinds at express speed is generally paid for by a tax on our houses, and while it seems hopeless to expect that houses for the farm labourer built on modern lines can be made to pay, it does not seem a hopeful way out of the difficulty to further increase the burdens on the dwelling by launching out in building schemes which Mr. Micawber himself would have frowned at.

On the other hand, the parcelling out of land is getting more common, and we have in mind at least three recent instances in which moderate tracts of land have found ready purchasers when they have been divided into small plots (from 1 to 10 acres). Upon these the purchasers have

built the kind of dwelling which they would build in Canada or on the veld, and which do not seem comfortable or perhaps "sanitary" to the average town-dweller. But it must be remembered that the owners live mainly out-of-doors, and that by day at least they are advocates of "open air treatment," though by night they may show a perverse ingenuity in the opposite direction. We should find it difficult to account for the magnificent health and physique of sailors if we looked only at the forecastle, and we must also bear in mind that a good "run" for the little ones is a most important feature of every dwelling.

At least we are sure of one thing—that facilities for the transfer of land are much needed. A correspondent who recently purchased a small piece of land tells us that after the bargain was concluded the transfer took six months, and cost 4 per cent. on the purchase money. This surely is a mediæval scandal.

THE MEDICAL SERVICE AND THE WAR.

THE discussion in the House of Commons on the nomination of Commissioners to investigate, according to the desire of Lord Roberts, the allegations against the medical management of the campaign in South Africa, did not, we fear, promise a very speedy or satisfactory solution of the matter in dispute.

There was too obviously a tendency to make party capital, and too much carping at the preponderance of the medical element in the Commission. At the same time we welcome the enlargement of the Commission, if perchance this may exclude future party recrimination, but would regret to see the medical element unduly weakened on the augmented Commission. It is difficult to understand why it should be held that the much-desired element of "common sense" with common fairness should not exist among lawyers or doctors, as among so-called business men. The matters in dispute have, in truth, little to do with the trader or contractor, while they involve military considerations which may override all ordinary business calculations.

We observe that Mr. Burdett-Coutts, while he does not apportion blame, seems unable to show how the lamentable suffering he described could have been avoided. He has, indeed, disclaimed any attack on the Army Medical Corps; therefore we conclude, with many of our contemporaries, that his strictures are really directed against the transport branch. But in suggesting this we by no means seek to shelter the medical service from just and searching criticism, for the wide general testimony to its efficiency and devotion, often in circumstances of supreme difficulty, throughout the campaign has been so overwhelming as to absolutely dwarf isolated cases of alleged breakdown.

As hospital equipment and stores were unquestionably sent from home in almost superfluous abundance, the real question is, Why were they not always distributed in proper time and place; and who is responsible for this failure or delay? The medical service is grievously undermanned both in officers and men, but parsimony in the matter of equipment and stores cannot, we think, be justly laid to its charge. Whether it is sufficiently autonomous is another matter. We welcome impartial investigation, feeling certain that while that cannot show general inefficiency in the medical officers and men, it may lead to a much-needed strengthening of the corps, and of the weak points in its field organisation; good may thus really result from apparent evil.

The facts to be investigated by the Commission will necessarily be limited by the terms of reference; but we cannot conceive any terms that could exclude from the purview what Mr. Arnold Forster tersely called "the general efficiency of the Army Medical Department; and whether its organisation was such as to enable it to work with the maximum of efficiency."

Such points must be investigated. The numerical and organic efficiency of the medical service must be reviewed; in both it is undoubtedly lacking. Month by month since November we have given an analysis of the distribution of army medical officers, from which it appears, as Dr. Conan Doyle points out, that the authorities have been vainly trying in South Africa to meet the necessities of over 200,000 men from a regular medical establishment sufficient only for two army corps, or less than 80,000 men. That establishment has been largely and well reinforced by civilian surgeons and nurses working under the War Office, as well as by Red Cross aid societies and privately equipped civil hospitals established on a lavish scale. Yet at best such invaluable help must, from a military point of view, be an imperfect part of the military machine, and cannot wholly compensate for, much less excuse, grievous numerical deficiency in the regular service. It is as much the duty of the War Office to provide sufficient medical establishments for peace and war, as to organise sufficient transport or artillery.

Had it not been for this voluntary aid our South African medical arrangements must have collapsed long ago, so that it would be neither just nor fair to blame the Army Medical Corps in its shrunken condition for local and temporary breakdowns under the stress of supreme military exigencies, or of sudden and paralysing epidemics.

There is one point of great importance that has not been touched on in these discussions—one which we cannot help thinking has had much to do with the alleged deficiencies in the medical arrangements at the front: it is the enforced absence of the Principal Medical Officer of the army in the field from the headquarter staff of the Commander-in-Chief.

This new and, we venture to say, preposterous rule was forced into the regulations in the teeth of protests both from the medical service and the civil profession. By it the medical chief, instead of being at the right hand of the commander-in-chief, is relegated to the lines of communications, under the officer in command of them. Lord Roberts may be separated from his chief medical adviser by 1,000 miles! Could any arrangement be more contrary to the "common sense" which he tells us is needed in considering these matters? Such an absurd regulation was understood to be the outcome of paltry jealousies connected with the headquarter staff, and is surely incapable of defence.

These considerations lead us to think that, apart from the allegation of mismanagement, three cardinal points connected with the general efficiency of the army medical service must come under review by the Commission:

First, whether the medical establishments are numerically deficient.

Secondly, whether they possess sufficient autonomous organisation in the field in the matter of directly obtaining supplies, and in the movement of sick and wounded and the transport of hospital stores and equipment.

Thirdly, whether the enforced absence of the principal medical officer of the army from the headquarter staff is not contrary to sound organisation; and whether the denial of local and temporary increase of rank to acting principal medical officers, as to officers of other branches, does not handicap them in regard to army status and influence.

THE SPECIAL GENERAL MEETING OF THE ASSOCIATION.

We would again call the special attention of all members of the Association to the notice summoning a special general meeting of the British Medical Association at Exeter Hall, Strand, on Wednesday next, July 18th, at 2 P.M. It is most desirable that every member who can by any means do so should arrange to be present, as the business to be brought before the meeting is of the greatest importance to the future of the Association. The Association is registered under the Companies Acts, and under these Acts the powers of a general meeting are very extensive. Unfortunately the general meetings of the Association, when summoned to transact matters of business, are as a rule very scantily attended, and at the annual meetings the commencement of the discussion of business matters is generally taken as the signal for the departure of nearly all the members who had assembled to hear the address by which the business is usually preceded. That this constitutes a serious danger for the Association is acknowledged, we believe, by nearly all its friends, and it is important that all the members of the Association should recognise that it may be claimed that the majority of a handful of members at a general meeting may commit the Association to a course of policy which has not been considered, much less approved, by the general body of members. The proposed new Articles of Association excite, as was to be expected, differences of opinion. To those who see in the local organisation of the Association in Branches throughout the United Kingdom, and indeed throughout the British Empire, its chief source of strength, the new Articles, which would at least ensure that the policy of the Association would be determined by the deliberate decision of the elected representatives of the Branches, appear to define a practice which already exists, while reducing to order a mass of by-laws and regulations which have grown up in the course of time in pursuance of the policy of placing the government of the Association mainly under the control of the Branches. To those, however, who wish to reverse the policy by which the Association has hitherto been guided and to give to the general meetings of the Association, which are as a rule scantily attended, all the powers which the most strict interpretation of the Companies Acts could confer, the new Articles appear objectionable, and they are, we understand, taking steps to obtain their rejection.

THE ANNUAL MEETING AT IPSWICH.

We are asked to call attention to the facilities which are offered by the railway companies in Great Britain and Ireland to members attending the annual meeting at Ipswich. On production of a certificate signed by the General Secretary of the British Medical Association to the booking clerk at the station of departure a return ticket, available from July 28th to August 6th, both dates inclusive, will be issued at a single fare and a quarter. This concession will be extended to friends of members, but it should be noted that a certificate will be necessary for each ticket required. The certificates can be obtained on application to the General Secretary of the British Medical Association, 429, Strand, London, W.C. At stations from which there is no through booking to Ipswich, a few days' notice must be given at the booking office. This is the second occasion upon which the railway companies have made this concession in connection with the meetings of the British Medical Association, and it is the result of recent arrangements made by a conference of railway companies. It was hoped that the period for which the tickets are to be available might have been extended, but after consideration of the application made the conference has stated that they are unable to go beyond the concession now stated, and that this is made as an experiment. During the meeting the Great Eastern Railway Company will issue return tickets at a single fare to all stations within a radius of fifty miles of Ipswich upon production of the card of membership.

THE CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The arrangements for the centenary festival of the Royal College of Surgeons of England are now complete. The celebration will extend over three days—Wednesday, July 25th, Thursday, July 26th, and Friday, July 27th—but the centenary meeting itself, which is to take place in the theatre of the old buildings of the University of London, Burlington Gardens, will be held on Thursday, July 26th, at 2.30 P.M. After the reception of the guests, the President will deliver an address, and subsequently Honorary Fellowships will be conferred. In the evening the festival dinner will take place in the Hall of Lincoln's Inn, and will be attended by the Prince of Wales. On Wednesday evening a *conversazione* will be held at the Royal College of Surgeons, and on Friday evening the Lord Mayor will give a *conversazione* at the Mansion House. Ladies will be present at both *conversaziones*, and also at the centenary meeting. For the convenience of guests a reception room will be opened in the College from 10 A.M. to 4 P.M. on each day from July 23rd to July 28th inclusive, and guides and interpreters and a foreign correspondence clerk will be in attendance at the College. Professor Stewart, F.R.S., the Conservator, will give demonstrations on Wednesday, Thursday, and Friday in the Museum of the College from 11 to 1 P.M. On Wednesday, Thursday, and Friday Dr. T. G. Brodie, Director of the Laboratories, will give lantern demonstrations from 11 A.M. to 1 P.M. at the Examination Hall, Victoria Embankment, illustrating the work done in the laboratories. Between the same hours on Friday Mr. V. G. Plarr, the Librarian, will give an exhibition in the Library of objects of interest in connection with the history of the College.

GLANDERS IN LONDON.

The Public Control Committee of the London County Council last Tuesday reported upon the prevalence of glanders in London, and the measures they considered necessary for more efficiently dealing with that epizootic. The report pointed out that though, after the passing of the Glanders Order in 1894, there was at first a considerable reduction in the number of reported cases, yet during the past six years there has not been any decided diminution. With regard to compensation the practice of the Council is to give the minimum compensation in cases showing clinical symptoms, but if the owner of an infected stud has consented to the injection of apparently healthy horses with mallein increased compensation up the highest permitted, which is one-fourth of the value of the horse before it became affected, has been given. Since this policy was adopted three years ago £6,251 has been paid

in compensation for 2,688 horses slaughtered by order. If the minimum compensation (carcass value) had been paid the amount would have been £5,376. The Committee stated that they were using all the powers the law gave to suppress the disease, which is not only a cause of serious loss to horse owners, but a danger to persons brought into contact with infected horses. The Committee is satisfied that its want of success is due to the lack of adequate powers, and express the hope that the recommendations of the Departmental Committee which sat in 1899 may be adopted. In the discussion which followed Dr. Collins drew attention to certain recent experiences at Glasgow with regard to the use of mallein. It appears that the Corporation, finding they were slaughtering many of the finest-looking animals in their tramway stud upon the diagnosis by mallein, but without any physical signs of the disease, has changed its policy, and has treated such horses as "suspects." They justify their "new departure" by finding that of 278 horses which "reacted" on the first test, on repetition of the testing seven times no "reaction" among the 278 could be found. Apparently either the glanders was "cured," or the test needs a new interpretation. The Chairman of the Committee undertook an investigation of this evidence, and the Council adopted the report of the Committee.

EXPERIMENTS ON LIVING ANIMALS.

THE annual report showing the number of experiments performed, under licences, on living animals during the year 1899 has been published as a Parliamentary paper. The report, which is signed by Professor G. D. Thane, who has succeeded Dr. G. Vivian Poore as Inspector for England, states that the total number of experiments performed (8,469) was somewhat less than in the preceding year (9,151). The number of experiments performed under licences alone was 820, and under Certificate C 182. In these the animal suffers no pain, because it is kept under the influence of the anæsthetic from the beginning of the experiment until it is killed. The number of experiments performed under Certificate B was 449, and under Certificate B *plus* EE 205; in these the animal is anæsthetised during the operation, but is allowed to recover. The operations, in order to ensure success, are necessarily done with as much care as are similar operations upon a human subject, and, being performed aseptically, the process of healing takes place without pain. Alterations have been made in the tables this year, inasmuch as inoculations made (upon rodents) for the diagnosis of rabies in dogs have been placed, together with other inoculations requiring a preliminary incision to expose the part into which the injection is made, in Table III A, and in all these cases the whole operation is performed under an anæsthetic. The number of inoculations for the diagnosis of rabies was 164, showing that the steady decrease noticed during recent years has been maintained. In a separate table (III B) inoculations, hypodermic injections, and some few other proceedings performed without anæsthetics are set out; it contains 6,813 experiments, all but 124 of which were performed under Certificate A. A large number of these were performed as a matter of professional duty for the diagnosis and prevention of disease, for the standardisation of remedies, and for the testing of articles of food, such as water, milk, and butter, many of them on behalf of Government departments, county councils, and municipal corporations. The demand for antitoxins continues to increase, and during the past year 54,569 doses of diphtheria antitoxin have been sent out from two institutions. The inspector reports that he found the licensees in all cases desirous of acting in strict accordance with the spirit as well as with the letter both of the Act and of the special conditions attached to their licences. The irregularities to which notice is drawn are few in number, and may be termed accidental. The report of Sir Thornley Stoker for Ireland shows that 227 experiments were performed, 79 under licence alone, and 148 under certificates.

ANTIRABIC VACCINATION.

THE current number of the *Archives des Sciences Biologiques*, published by the Imperial Institute of Experimental Medicine of St. Petersburg, contains a report by Dr. Kraiouchkine of the work of the department for the treatment of hydrophobia for the year 1898. The total number of persons who presented themselves during that year was 425. Of these 70 were not treated for various reasons (animals which inflicted the bite found to be not rabid; no visible wound: clothes intact at the point corresponding to the bite, etc.). Among the persons actually treated 22 had only had their hands soiled with saliva, and were inoculated by way of precaution; 5 discontinued the treatment soon after its commencement; in 3 cases an intercurrent illness having no relation to rabies developed; 9 who went through a whole course of treatment were found to have been bitten by animals not rabid; and, lastly, one insisted on being treated, although his clothes were intact at the place corresponding to the bite. Deducting these 107 cases there remain 318, of whom 139 were men, 71 women, and 108 children. Of this number 301 were bitten by dogs, 14 by cats, 2 by calves, and 1 by a horse. There were two deaths, the bite in each of these cases having been inflicted by dogs. In one of these cases the disease developed during the period of treatment, before the inoculation had had time to exert any preventive action. The total rate of mortality was 0.6, or, omitting the case just referred to, 0.3 per cent.

THE TREATMENT OF "SPELLS."

THE treatment of "spells" does not usually come within the province of the medical practitioner in this country, but some hints on this abstruse branch of therapeutics may be interesting to those who deem nothing human foreign to themselves. The belief in "spells" is deeply ingrained in the mind of the negro, who looks upon the visitation as being beyond the resources of medical art, and requiring a form of exorcism. Nevertheless, in his terror he has recourse to the doctor. Such an experience befell Dr. F. Julian Carroll (Summerville, South Carolina) not long ago to his no little embarrassment, as he confesses in a recent number of the *New York Medical Journal*. Having no idea how to deal with the case, he sought counsel of an old physician who had practised extensively among the negroes. His mode of treatment is so simple and so successful that the details may be interesting. The method is founded on the fact that the negro believes his trouble to be caused by a reptile which has been introduced into his economy by means of a "spell," and that until he can rid himself of this parasitical pest his recovery is impossible. For the treatment a sharp scalpel or knife, a tumbler, a candle, and a live lizard or frog are required. The technique is as follows: An intimation is sent to the patient that at a certain hour of a specified day or night the operator will call and relieve him of his tormentor. The call must be paid precisely at the appointed time. The doctor goes at once to the patient's bedside, and standing over him makes a number of mystic passes over his body until the seat of the "spell" has been exactly localised. The affected area is then laid bare, and solemnly marked out with chalk. The patient is then placed upon a table and the room darkened if it is daylight, or the lights extinguished if it is night. Next, having requested the bystanders to withdraw, the doctor lights a candle which he places under an inverted tumbler so as to create a partial vacuum. A rapid incision is then made through the skin in the area previously mapped out. This cut must be sufficiently deep to draw blood rather freely. The tumbler is

quickly placed over the wound, and the patient's attention called to the resulting phenomena. The tumbler acts as a cupping glass, the blood being sucked up in bubbles, while the tumbler itself is made to turn about in a weird and mysterious manner. Meanwhile the operator should repeat an incantation suitable for the occasion. *Bonus, bona, bonum,* pronounced in an impressive tone, will be quite effective, and will not, Dr. Carroll says somewhat maliciously, strain the doctor's knowledge of Latin too much. But if the latter is, like Mr. Jobling, the doctor in *Martin Chuzzlewit,* a classical scholar, he may make his triumph more brilliant and win greater glory for himself by bombarding the foe with such linguistic lyddite as *Veni, vidi, vici; sic transit gloria mundi; sic semper tyrannis; e pluribus unum,* etc. We venture to suggest the elder Cato's incantation for dislocated hip as a useful variant. Such a formula as *Daries, dardaries, astatiries, dissunapiter* would excite a proper degree of faith in the most sceptical. When the psychological moment has arrived, the operator deftly inserts the lizard under the tumbler, where it wriggles about in the blood till it looks as gruesome as the situation demands. The lights are then turned on, and the friends called in to praise the operator's skill. The sufferer, seeing the supposed cause of his troubles, exclaims devoutly "Teng Gawd! Teng Gawd! Look a' da lettle debbil a-jumpin' roun' dere—das de way him bin a-doin' een mah in'ards." The doctor then collects his "properties," and prudently takes his departure. As for the afflicted patient the pain vanishes veritably as if by magic. The old physician learnt this treatment by watching the performance of a Voodoo doctor who had a great reputation for curing spells. The method may appear to be beneath the dignity of orthodox medicine, but there is high warrant for the doctrine that a fool should be treated according to his folly, and we have known a hysterical girl who thought she had swallowed a pin, cured by the simple device of throwing one, with a sufficient clatter, into the basin while she was retching. A famous oracle of science—long since dumb—to whom such sufferers were wont to resort, had a collection of foreign bodies of the most diverse kinds ready for all emergencies, and with the help of them wrought many remarkable cures. May not imaginary diseases fairly be treated by imaginary remedies?

THE GENESIS OF EMOTION.

WHEN from a wilful child some coveted object is withheld the child weeps. Does it then shed tears as a direct result of the visual perception, and feel mortified only as a consequence of the lachrymation? This, if we understand him aright, is a rough statement of what Professor W. James would have us believe, and what Professor Sherrington, in a recent communication to the Royal Society, set himself to test experimentally. Only, Professor James would limit these excito-emotional stimuli in their seat of origin to the viscera of the thorax and abdomen, the blood vessels, and the skin. When the Psalmist's bowels yearned within him he felt the emotion of pity, according to Professor James, as the direct result of intestinal disturbance, which was set up by the contemplation of the pitiful object seen. His theory, as he expresses it, is that "the bodily changes follow directly the perception of the exciting fact, and that our feeling of the same changes as they occur is the emotion." He goes so far as to say, "If I were to become corporeally anæsthetic I should be excluded from the life of the affections, harsh and tender alike, and drag out an existence of merely cognitive or intellectual form." Professor Lange goes further and Professor Sergi closely follows him in thinking that emotion depends on the effects that result from excitation of the vasomotor centre by psychical states. When a schoolboy commits some public error against conventionality the psychical state inhibits a portion of his vasomotor centre; he blushes, and as a result of the blushing feels ashamed. On Professor James's theory, if his cheeks could be cut off so that he could no longer blush, he would never more feel ashamed. What Professor Sherrington has done is, so to speak, to have cut off the boys' cheeks, and to have made Professor James "corporeally anæsthetic," and crudely stated that he has found that the boy, although he cannot go red in the face, still feels shame; and that Professor James, although anæsthetic in his body, is not anæsthetic in the physical basis of emotion; he is not "excluded from the life of the affections." Professor Sherrington has come to these conclusions by observing that certain dogs who were anæsthetic as regards the skin, and paralysed as regards any vasomotor or visceral influence from the brain from complete transverse lesions in the lower cervical cord, showed every evidence of emotion—whether of pleasure or anger, fear or disgust—when means were taken to induce corresponding psychical states. The manner in which these states were brought about is immaterial for our purpose. To carry the investigation still further, the stomach, the lungs, and the heart were rendered anæsthetic by section of their sensory nerves—the vagi—and the animals were as emotional as before. The experiments thus seem to show that corporeal states of the nature described are a concomitant or a result of emotional conditions, but not their cause.

BARRACK SCHOOLS.

THE supporters of barrack schools are making a move this week in the hope of reinstating them in public favour, and the exhibition opened as we go to press by the Duke and Duchess of York will, we have no doubt, be far from unattractive; but because a few children can sew finely—too finely often for the good of the eyesight—can hammer ironwork, can play patriotic tunes with spirit and in harmony, it does not follow that the system by which they are educated is a good one, or that the many thousands who are not brought forward as examples of special training are being reared so as to produce healthy minds in healthy bodies. A few years ago the evils of the barrack schools of the metropolis were clearly shown by a series of articles published in these columns which aroused the attention of the public, and led to many improvements in their administration. But however well an institution is managed, it cannot be the best place in which to bring up children, each one of whom requires personal care and individual attention. Mr. T. W. Russell has strongly condemned the custom of leaving children in workhouses. Yet the fact remains that there are more children now in the London workhouses and infirmaries than there were four years ago; and in spite of the assurances of the President of the Local Government Board that he is in sympathy with those who condemn the system of aggregation, he yet has recently sanctioned the expenditure of over £40,000 in increasing the buildings of various schools. We can but hope that the public will not be misled. "One swallow does not make a summer," nor batches of well-drilled children give evidence that massed methods of educating the young are either right or wise.

AN ANTIMALARIA LEAGUE IN SARDINIA.

PROFESSOR FERMI, Director of the Hygienic Institute of Sassari, has issued a circular relating to the prophylaxis of malaria in Sardinia, where the disease is widespread. In this respect the two Sardinian provinces head the list of the sixty-three provinces of Italy that are affected with the scourge. He invites the co-operation of all persons who are interested in the work of prevention, and as a means to the end which he has in view he suggests that an anti-malaria league should be formed. Membership is not to be confined to the medical profession, but will include municipal bodies and private individuals willing to take an

active part in the movement. The object of the League is to make the new prophylactic measures known as widely as possible by means of addresses, practical demonstrations, and leaflets, and to induce all landowners to destroy mosquitos and to protect their dwellings by means of metallic network, and their labourers in malarious districts by means of hoods and large gloves. All landowners willing to adopt these measures will be helped by the local health office in conjunction with the Director of the Institute of Hygiene at Sassari. An annual report of the investigations of the League will be compiled and published. Donations, to be applied to purposes of scientific research or in the practical study against malaria, are asked for.

GUY'S HOSPITAL BIENNIAL FESTIVAL.

THE biennial dinner of past and present students of Guy's Hospital and their friends took place at the Whitehall Rooms, Hôtel Métropole, on July 6th. Mr. Charles Higgens occupied the chair, and was supported by the Treasurer (Mr. H. Cosmo Bonsor, M.P.), Sir S. Wilks, Sir Cameron Gull, M.P., Sir Joseph Fayrer, the members of the staffs of the hospital and the medical and dental schools, and a company which altogether exceeded 230. Much enthusiasm, as usual, reigned throughout the evening; and the singing of "Auld Lang Syne" by all assembled after the Treasurer's speech was particularly hearty. The toasts of "The Queen" and "The Prince of Wales" were proposed by the Chairman, who remarked that financially the hospital was in great straits a few years since, when the Prince of Wales came to the rescue. The chief toast, "Prosperity to Guy's Hospital and its Medical School," was also proposed by the Chairman, who first asked all to drink in silence to the memory of Mr. Davies-Colley, a man whom all that knew him could not but esteem. Mr. Higgens then said that to Mr. Bonsor, the present Treasurer, was due all the credit of introducing that cordial feeling which now existed between the governing body and the medical staff of the hospital; whilst he had raised or laid down as a permanent monument to himself the pavement now found in the colonnade. Thirteen Guy's men who were now in South Africa at the Yeomanry Hospital had sent their greetings in a message in which the fifteen Guy's nurses who were nursing the troops desired also to be included. Of the seventy Guy's men who had gone out two had been killed, seven had died of enteric fever, and one had been invalided home. To the memory of these men "who had given up their lives to the honour of the Empire" all drank in silence. Finally he coupled with the toast the name of Mr. Bonsor, "the best Treasurer in the world." Mr. Bonsor, in reply, said that Guy's Hospital Medical School was the only medical school which was perfectly independent of the hospital to which it is attached, and he thought the hospital was more dependent for its well-being on the school than the school on the hospital. Mr. Howse proposed "The Imperial Forces," to which Surgeon-General Muir, C.B., responded. He said that, supposing peace were proclaimed to-morrow, the medical troubles would last three or four months more. It had been expected that the enteric fever epidemic would lessen at the middle or end of June, and that day a telegram had been received from Mr. Fripp saying that enteric fever was greatly abating. The Chairman stated that he had sent the following message from that meeting to the staff of the Yeomanry Hospital: "Heartiest greetings from Guy's Biennial to medical and nursing staff." Dr. F. Taylor proposed "The Consulting Staff," to which Sir S. Wilks and Dr. Pavy responded, whilst Dr. Pye-Smith and Dr. Goodhart, being called upon, also made short replies. Dr. Savage proposed the toast of "The Chairman," who said that the success of the dinner was due to the excellent organisation of the Secretary, Mr. C. J. Symonds, whom the meeting toasted. With a reply from Mr. Symonds, who stated that this was the fourth biennial festival at which he had officiated, this very successful meeting terminated.

SMALL-POX IN LONDON.

AT the meeting of the London County Council on July 10th, the Public Health Committee reported that since the beginning of the present year between 60 and 70 cases of small-pox have occurred in London. Apart from six cases which apparently were unconnected with each other, or with any other case occurring in London, there have been five series of cases, each traceable directly or indirectly to the first of the series. The report further states that in a considerable number of cases the disease has been unrecognised in the first instance, and that it was not until subsequent cases occurred, through direct or indirect infection, that the nature of the disease was recognised. The five series were stated to be (1) seventeen cases occurring from December to March, all traceable directly or indirectly to a case of a house in Hackney; (2) four cases in January and February, probably connected with the Hull outbreak; (3) nine cases occurring in April and May, connected with cases which occurred on the ss. *Caledonia;* (4) six cases which occurred at the Infirmary of St. George-in-the-East, and (5) twenty-two cases connected with an unrecognised case at a house in Westminster. Five of the cases of the last series occurred in Kensington, and have given rise to very alarmist reports, which appear to give an entirely erroneous impression of the actual facts.

THE BRITISH ASSOCIATION.

THE seventieth annual meeting of the British Association for the Advancement of Science will commence in Bradford on Wednesday, September 5th, on the evening of which day Sir William Turner will assume the presidency in succession to Sir Michael Foster, and will deliver an address. There will be nine sections, those having relation to biology being Section D., Zoology (and Physiology); Section H., Anthropology; Section K.; Botany. The President of Section D. is Dr. R. H. Traquair, F.R.S.; the Vice-Presidents are Professor F. Gotch, F.R.S., Professor S. J. Hickson, F.R.S., and Mr. Adam Sedgwick, F.R.S.; the Secretary for Physiology is Dr. Swale Vincent. On the evening of September 6th there will be a *soirée* in St. George's Hall, and on the following evening Professor Gotch will deliver a discourse on animal electricity. There will be another *soirée* on the evening of September 11th, and the concluding general meeting will be held on the afternoon of September 12th. The local secretaries for the meeting at Bradford are Messrs. Ramsden Bacchus, J. E. Fawcett, J.P., and Frederick Stevens (Town Clerk).

PROFESSOR CORFIELD has been elected a Foreign Corresponding Member of the Royal Academy of Medicine of Belgium.

LEPERS IN LOUISIANA.—Thirty-three lepers are now receiving treatment in the leper home of Louisiana. The Legislature of that State recently made an appropriation for the erection of a more commodious building for the housing of these unfortunate sufferers. The institution will be situated in the neighbourhood of New Orleans, an arrangement which will have the advantage that it will afford opportunities for the study of the disease by scientific investigators.

TUBERCULOSIS IN NORWAY.—Dr. Claus Hansen, of Bergen, recently delivered a lecture before the Storthing, at Christiania, on the causes of tuberculosis and the fight against it. He stated that in 1896, 54.5 per cent. of all deaths between 15 and 30 years of age were caused by tuberculosis, and that about 7,000 of the inhabitants of Norway die every year of this disease. During the thirty years of his own experience consumption had increased in the Bergen district 80 per cent.

MEDICAL NOTES IN PARLIAMENT.

[FROM OUR LOBBY CORRESPONDENT.]

The Sick and Wounded in South Africa was the subject of another debate last week after we had gone to press. The Commission of Inquiry which Mr. Balfour had announced was regarded as not broad enough for an investigation involving more than merely medical considerations. Mr. Labouchere on this ground moved the adjournment of the House, urging that Lord Roberts, who suggested the Commission, had asked for some men of sound common sense in addition to two doctors. Medical men, he urged, ought not to form the majority of the committee. Mr. Burdett-Coutts, who seconded the adjournment without any previous consultation with the Member for Northampton, also objected to the constitution of the committee. Sir Henry Campbell-Bannerman strongly insisted on the necessity of having more laymen on the body appointed to inquire. It was not merely a medical question, but one affecting transport and the organisation of relief, and he pressed for the addition of two more men chosen impartially, who possessed not only competence but the priceless quality of common sense. Sir James Fergusson supported this view from the benches behind the Government, and then Mr. Balfour replied in a speech which showed considerable resentment at the criticism of his proposed commission. Later on, after Mr. Asquith had spoken, and Colonel Saunderson and others on the Government side had supported the proposal to increase the number of Commissioners, Mr. Balfour yielded to the manifest opinion of the House that the number should be increased by two, although he said he thought the House was wrong. Dr. Farquharson approved of the addition of business men as a means of strengthening the authority of the inquiry, and then the motion for adjournment was by leave withdrawn, and the rest of the evening was devoted to the Irish Tithe Rent Charges Bill.

The South African Medical Commission continues to excite great interest in the House of Commons. On Tuesday Mr. Swift MacNeill asked the First Lord of the Treasury whether Sir William MacCormac, who was last week the guest in Dublin of Professor Cunningham, and Dr. Jameson, the Director-General of the Army Medical Department, or either of them, were consulted with reference to the appointment of Professor Cunningham as a member of the South African Commission to inquire into the charges brought against the administration of the Army Medical Department, and whether there was any communication with these gentlemen directly or indirectly with reference to Professor Cunningham's appointment. Mr. Balfour replied that he thought the hon. member would see that this was a question which ought not to be put; and if put, one which ought not to be answered. Mr. MacNeill retorted by asking, "Am I to conclude that the answer to the question is in the affirmative, and that he is an agent of the Army Medical Department?" Mr. Balfour replied, "No, Sir; the hon. member must only conclude that the question is one which ought not to be put." Mr. Burdett-Coutts afterwards asked when the new members of the Commission would be announced, but the First Lord could only promise information at an early date, adding "that it is not a matter easy of negotiation, nor is it to be rapidly carried through." The "men of sound common sense" whom Lord Roberts specially desired to be sent out with one or two medical men do not appear, from all that is rumoured, very easy to obtain.

The Suggestion of a Sanitary Commission for South Africa, which was the subject of correspondence between Sir Walter Foster and the War Office last October, was the cause of a question by Sir James Kitson on Monday last. The honourable baronet asked the First Lord of the Treasury whether he would consent to lay upon the table of the House a copy of the correspondence which passed between the honourable member for Ilkeston and the War Department in relation to medical and sanitary arrangements at the Cape. Mr. Balfour promised to lay the papers as requested.

Hospital Orderlies in South Africa.—Last week, in reply to a question by Sir Walter Foster, Mr. Wyndham stated that the numbers of hospital orderlies employed in South Africa were as follows: March 17th, 2,936, including 560 St. John Ambulance Brigade; April 21st, 3,739, including 766 St. John Ambulance Brigade, 84 Militia Medical Staff Corps, and 361 Volunteers; May 19th, 3,943, including 986 St. John Ambulance Brigade, 91 Militia Medical Staff Corps, and 492 Volunteers. This does not include the staff of such hospitals as the Yeomanry Hospital, Portland Hospital, etc., the subordinate male staff of which numbers 519, but of which it is not known how many are employed as orderlies. The returns of medical staff raised locally in addition to the above are not furnished to the War Office: but 1,200 stretcher bearers are known to have been raised in Natal, thereby releasing orderlies of the R.A.M.C. for duty in the hospitals.

The Medical Acts Amendment Bill of the General Medical Council has been taken charge of by Sir Richard Jebb, M.P. for the University of Cambridge. The principal objects of the Bill, it will be remembered, are: (1) To give the General Medical Council power to erase from the *Medical Register* for a limited period the name of a registered practitioner who has been guilty of a crime, or who has been adjudged guilty of infamous conduct in a professional respect; (2) to enable the medical authorities summarily to deprive a practitioner whose name has been erased from the *Medical Register* of the medical diploma obtained from that authority; (3) to provide that the fines and penalties recoverable under the Medical Acts shall be paid in all cases to the General Medical Council, to be applied in aid of the expenses of executing the Medical Acts. The Bill is to be introduced on Friday, but it is not likely that time will be found for it this session.

Death Certification.—In the debates on the Scottish Estimates last Friday Mr. Weir called attention to the fact that a large proportion of deaths in the Highlands did not appear to be certified by medical men, and urged that figures should be given by the Registrar-General of Scotland to show the number of certified and non-certified deaths. Sir Charles Cameron backed up this appeal, and quoted the report of the Select Committee, which showed that 50 per cent. of the deaths in the West of Scotland were uncertified by medical men, and yet the recommendations of the Committee had not been carried out. The Lord Advocate promised attention to the matter, but the Committee went to a division to mark their sense of the importance of the question.

Glycerinated Calf Lymph appears not yet to have become very popular in Scotland. Sir Charles Cameron pointed out, in the discussion of the Scotch Estimates, that the public vaccinators in Scotland mainly used infant lymph, and received a far less proportion of the glycerinated calf lymph than English vaccinators. He asked whether any steps had been taken to assimilate the Scotch to the English practice. The Lord Advocate said the advantage of glycerinated calf lymph had not been brought home to the minds of the people as clearly in Scotland as in England, but that the demand for the new lymph was steadily increasing.

NEW PATHOLOGICAL SOCIETY IN AMERICA.—At a meeting of pathologists and bacteriologists recently held in Washington, it was decided to establish a National Society for the furtherance of the study of these subjects. A Committee consisting of Drs. W. T. Councilman, H. C. Ernst, S. Flexner, L. Hektoen, W. T. Howard, jun., W. H. Park, and Theobald Smith was appointed to arrange a plan of organisation.

MEDICAL STUDENTS IN ITALY.—The total number of students in the faculties of medicine and surgery of the Italian Universities during the present academic year (1899-1900) is 6,388. They are distributed as follows: Naples 2,009, Turin 783, Rome 530, Bologna 504, Pavia 496, Genoa 358, Padua 309, Palermo, 270, Pisa 218, Parma 175, Catania 167, Modena 152, Messina 128, Cagliari 95, Siena 81, Sassari 54. In addition to these there are three free Universities: Camerino, which has 35 medical students, Perugia with 29, and Ferrara with 15. In the faculty of medicine of the Royal Institution of Superior Studies at Florence there are 260 students.

THE WAR IN SOUTH AFRICA.

ANTITYPHOID INOCULATION.

DR. A. E. WRIGHT, Professor of Pathology in the Army Medical School, Netley, sends us the following note on the results obtained by the antityphoid inoculations in the beleaguered garrison in Ladysmith:

By the kind permission of Surgeon-General Jameson, C.B., I am enabled to publish the following officially collected statistics with regard to the results obtained by the antityphoid inoculations in the military garrison during the siege of Ladysmith.

TABLE I.—*Results obtained by the Antityphoid Inoculations in the Case of the Officers and Men of the Military Garrison during the Siege of Ladysmith.*

	Number under Observation.	Number of Cases of Enteric.	Proportion in which Attacks stand to Total Number of Men in Group.	Number of Deaths from Enteric.	Proportion in which Deaths stand to Total Number of Men in Group.	Proportion in which Deaths stand to Total Number of Attacks in Group.
Not inoculated...	10,529	1489	1 in 7.07	329	1 in 32	1 in 4.52
Inoculated ...	1,705	35	1 in 48.70	8	1 in 213	1 in 4.40

In addition to the above summary of results, obtained on officers and men combined, the figures relating to officers separately are also given in the official statistics. With regard to these last it may be pointed out that quite apart from the fact that these figures relate to a quite small group of persons (44 in number) the figures considered as statistics are probably fallacious, owing to the fact that the group of inoculated officers (consisting as it must have done almost, if not exclusively, of young men at the most susceptible age), is compared with a group of officers which includes all the older and less susceptible men and the men who have already suffered from typhoid. The figures referred to are none the less subjoined with a view to conforming to the arrangement adopted in the official statistics.

TABLE II.—*Results obtained by the Antityphoid Inoculations in the Case of the Officers of the Military Garrison during the Siege of Ladysmith.*

	Number under observation.	Number of Cases of Enteric.	Proportion in which Attacks stand to Total Number of Men in Group.	Number of Deaths from Enteric.	Proportion in which Deaths stand to Total Number of Men in Group.
Not inoculated...	171	43	1 in 4	5	1 in 34.2
Inoculated ...	44	9	1 in 5	2	1 in 22.0

In drawing inferences from the figures in this table it is to be borne in mind that the erroneous inclusion or exclusion of a single case or a difference in the event in the case of any patient included in the category of the inoculated would sensibly alter the present aspect of the table.

The same circumstance must be borne in mind in connection with any attempt to base a comparison of the case mortality in inoculated and uninoculated upon the figures in Table I. For it will be manifest that in no circumstances could a trustworthy estimate of case-mortality be based on a series of only 35 cases. Least of all would it be permissible to do this under conditions such as those of Ladysmith during the siege, where many other factors in addition to the severity of the attack must have determined the favourable or unfavourable event of the cases. It would, however, appear probable in view of the figures given in the table that the case-mortality was not influenced by the inoculation. On this subject further light must be awaited, especially as it would appear from certain statements, which have emanated from the seat of war, that the disease generally runs a milder course in the inoculated.

The question of case-mortality is, however, quite subordinate in interest to the question as to how far the figures presented in Table I enable us to estimate in quantitative terms the reduction in incidence and mortality which can be achieved by the process of antityphoid inoculation.

To answer this question it will be necessary to inquire on the one hand whether there were any circumstances other than inoculation which may have tended either to diminish the incidence of typhoid among the inoculated in Ladysmith or unduly to swell the roll of typhoid among the inoculated.

In connection with the former question, the only point which comes up for consideration is the question as to whether the inoculated were more favourably circumstanced in the matter of the sanitation of their camps than the uninoculated. No detailed data for the determination of this are at present at hand. But this will be seen to be unimportant in view, first, of the fact that there was in each regiment and corps an uninoculated majority who must, equally with the inoculated, have benefited or suffered from the sanitary or insanitary condition of the various camps; and secondly, of the fact that the inoculated who were attacked were drawn from twelve different corps and regiments. It may therefore be assumed that the inoculated and uninoculated were equally exposed to the risk of infection.

The question as to whether there were any circumstances which tended unduly to swell the roll of typhoid among the inoculated is one which requires to be treated at somewhat greater length. The following points must be kept in view:

1. So far as is known, with hardly an exception, the men who are set down as inoculated were only once inoculated. It seems probable, from the fact that only two cases among twice-inoculated persons have as yet come to my knowledge, that second inoculation confers a considerable additional protection.

2. It is possible that certain of the officers who are set down as inoculated may have been inoculated with an antityphoid serum, and not with a vaccine consisting of a sterilised typhoid culture. Two or three instances have been reported to me where this error was committed in the case of officers proceeding to South Africa. In the case of the statistics now in question the date and place of inoculation are in the case of 5 out of the 9 officers attacked set down as unknown.

3. It is possible in the case of the men, as distinguished from the officers, that revaccination against small-pox, which, like anti-enteric inoculation, was in many cases carried out on board the transports, may in certain instances have been confused with the latter inoculation. Instances of this confusion have already several times come to my knowledge

4. Lastly, it is possible that, owing to the exigencies of military service, or owing to other reasons, the full prescribed dose of typhoid vaccine may not in all cases have been injected. Instances of the employment of the vaccine in fourfold reduced doses have come to my knowledge. It is conceivable, but there is nothing either to support or rebut the suggestion that some reduction of the dose may have been found necessary in the case of the Liverpool Regiment, which was inoculated (presumably, as in the case of other regiments, only very partially inoculated) at Ladysmith on the eve of the outbreak of hostilities. At any rate, it is noticeable that this regiment furnished 13 cases of enteric among the inoculated men, whereas the whole rest of the garrison of Ladysmith furnished only an equal number of such cases.

In view of the above points regarding which there is not at present any information available, it is at this stage impossible to determine precisely to what extent the inoculated were protected by inoculation. But the results set forth in Table I would appear to be distinctly encouraging, inasmuch as they show that the proportion, on the one hand of attacks, and on the other hand of deaths, from typhoid was seven times smaller in the inoculated than in the uninoculated, and it may be borne in mind that if the number (no doubt a considerable one) of men who had previously suffered from typhoid had been subtracted from the number of the uninoculated, as might quite legitimately have been done, the statistics would have borne an even more favourable aspect.

THE INCIDENCE AND MORTALITY OF TYPHOID FEVER.

THIS subject is at present attracting the anxious attention of the public owing to the severe epidemic which has affected the troops in South Africa, but which is now, there is reason to hope, beginning to decline.

INCIDENCE.

While it is a truism that prevention is better than cure, this aspect of the subject seems to have been almost entirely overlooked, except by Sir Walter Foster, in the discussion which took place in the House of Commons. From this point of view the statement of percentage mortality is of very little value, because if there had only been a small incidence of the disease a heavy mortality would not have been a very serious matter, but when we are informed that about 10 per cent. of the whole army of 220,000 men have been affected with typhoid fever, a death-rate of 21 per cent. gives a total mortality of four or five regiments, or over 4,000 men. It would seem, therefore, that the primary defect must have been in the sanitary administration of this large body of men. While the difficulty of preventing soldiers in a hot climate, after an exhausting march, from drinking the polluted water of the Modder River may be admitted, it seems clear, from Mr. Watson Cheyne's letter, published in the BRITISH MEDICAL JOURNAL of May 5th, that the transport was so cut down that there were no means for boiling water, while the filtering appliances failed to supply this deficiency.

Epidemics rarely occur when men are on the march, but only after they have settled down in camp for a few weeks, and it is evident that this is what occurred in South Africa. When men are on the march they leave their dejecta, the sick, and other sources of contagion behind them; but when they have halted for a few weeks it has been the invariable experience of all previous campaigns that typhoid fever has made its appearance. Our painful experience on this occasion will, it is to be hoped, impress on commanding officers the paramount importance of attention to the sanitary administration of camps in the future.

The Special Commission for which Lord Roberts has asked will doubtless inquire what means were adopted to prevent the occurrence and limit the spread of this disease; what means to prevent the contamination of the water supply, and to destroy any pathogenic organisms which it contained; what means were taken for the disposal of the excreta; whether Mr. Treves's plague of flies was allowed to carry typhoid bacilli direct from the fæces to the food supply; what means were adopted to disinfect the emanations from the sick.

The reply of the Under-Secretary of State for War to Sir Walter Foster shows that the means adopted were ineffective. The admissions of cases and of deaths from typhoid fever in the Bloemfontein hospitals during the eight weeks ending May 11th were:

	Admitted.	Died.
March 23rd	88	5
,, 30th	160	9
April 6th	166	21
,, 13th	377	34
,, 20th	263	44
,, 27th	224	54
May 4th	226	54
,, 11th	583	65
Total	2,087	286

Of course it must be apparent to everyone that the mortality of these 2,087 cases is not yet told, so that it is impossible to return the death-rate. Dr. Conan Doyle, while speaking very highly in our last issue of the manner in which all concerned met and dealt with this "calamity," draws a very gruesome picture of the epidemic itself.

It was appalling in its severity, both in quantity and quality; I know of no instance of such an epidemic in modern warfare. I have not had access to any official figures, but I believe that in one month there were from 10,000 to 12,000 men down with this, the most debilitating and lingering of continued fevers. I know that in one month 600 men were laid in the Bloemfontein Cemetery. A single day in this one town saw 40 deaths.

Such an epidemic in any of our large towns would have created a panic.

It is practically impossible to get exact data as to the incidence of typhoid fever in civil life, notwithstanding the notification of infectious diseases, but we can readily get the mortality in every 100,000 inhabitants.

	Year.	Per 100,000
England and Wales	1888-97	17.2
London	,, ...	15.0
Birmingham	,, ...	16.●
Leeds	,, ...	22.0
Manchester...	,, ...	26.0
Liverpool	,, ...	35.0
Glasgow	1891-97	20.0
Edinburgh	,, ...	15.0

British army in South Africa, 220,000 men (incidence, 10 per cent. = deaths, 21 per cent.) = ? about 2,000 per 100,000.

When an army is in camp the water supply is a matter of the first importance, but many other preventive measures should be adopted, the majority of which can be summed up in the words "absolute cleanliness." When the disease broke out it would become necessary to take special precautions regarding the disinfection and disposal of the excreta, and this applies to the urine and other emanations from the sick as well as to the fæces. The supervision of all food supply to the sick and healthy to ensure that it is above suspicion is another duty which calls for the exercise of great care.

Regarding the mortality all information supports Dr. Conan Doyle's statement that everything possible was done for the patients by the medical men, nurses, and orderlies with the means at their disposal, and that the death-rate was as low as could be expected under the circumstances.

RESULTS OF EXPECTANT AND SYMPTOMATIC TREATMENT.

Still there may be an advantage even now of comparing death-rates under widely different systems of treatment with the view of arresting medical attention, and improving on the expectant and symptomatic treatment which has hitherto prevailed in this country. The Under-Secretary of State for War says that "the percentage mortality in enteric cases during the war, and more especially at Bloemfontein, has been 21 per cent. of the admissions to hospital." This no doubt represents the condition up to date, but as there is likely to be still further mortality among the recent admissions, it is too soon to arrive at any definite conclusion on the subject. No doubt 21 per cent. compares favourably with many of our statistics both at home and abroad, as will be seen from the following table. As our soldiers are mostly young men between 20 and 30 years of age, in comparing army with civil statistics we have taken the mortality of males at similar ages.

	Year.	Mortality in Typhoid Cases.
Nile campaign, 1898		28.00 per cent.
Dongola, 1896...		50.00 ,,
Matabele, 1896-97		32.00 ,,
Chitral, 1895		28.00 ,,
Soudan, 1884-85		39.00 ,,
British Army (United Kingdom), 1889-98 ...		19.16 ,,
British Army (India), 1889-98		26.17 ,,
London Hospital, 1895-99 (20 to 30 years of age)...		22.35 ,,
Metropolitan Asylums Board:		
20 to 30 years of age,	1871-98	23.23 ,,
20 to 25 ,, ,,	... ...	22.30 ,,
25 to 30 ,, ,,	... ...	24.40 ,,
30 to 35 ,, ,,	... ...	27.80 ,,
35 to 40 ,, ,,	... ...	27.90 ,,

The above statistics are drawn from a large number of cases, and fairly represent the results which have been attained by the expectant and symptomatic system of treatment in males at the ages specified. For the purpose of comparison with the results of hydrotherapeutic measures, we must take the figures for all ages and both sexes. During the years 1871-98 the number of cases of enteric fever treated in the hospitals of the Metropolitan Asylums Board was 12,017, with a percentage mortality of 17.4.

RESULTS OF HYDROTHERAPEUTIC TREATMENT.

No doubt there have been many large epidemics in this country where the type of the disease has been comparatively mild and the mortality low. In the Maidstone epidemic there were 1,886 cases and 141 deaths, giving a percentage mortality of 7.6. Perhaps the only favourable statistics in

this country over a series of years from the expectant treatment were obtained at the Cork Street Fever Hospital, Dublin, where between 1871 and 1890 inclusive there were 1,405 cases at all ages, with a death-rate of 8.6 per cent.

These exceptional statistics do not detract from the value of the uniformly favourable results which have attended the use of hydrotherapeutic measures. Liebermeister showed that at the Basle Hospital the death-rate was reduced under the cold-bath treatment from 27.3 to 8.2 per cent. Dr. Hare has shown that at the Brisbane Hospital during the expectant period out of 1,828 cases 271 died, giving a percentage mortality of 14.8, while during the bath period out of 1,902 cases only 143 died, or 7.5 per cent. This is very striking evidence in favour of the bath treatment obtained from two sets of cases in the same hospital under otherwise precisely similar conditions. Of 685 cases under the care of Professor Osler only 8 per cent. died; in the Red Cross Hospital at Lyons the death-rate was 7.3 per cent.; at the German Hospital, Philadelphia, under the care of Dr. J. C. Wilson, the death-rate was 7.8 per cent. In the *Philadelphia Medical Journal* of March 3rd Dr. J. C. Wilson and Dr. J. L. Salpinger give the result of ten years' experience in the treatment of enteric fever by systematic cold bathing based on 1,904 cases collected from fever hospitals in Philadelphia, with a death-rate of 7.5 per cent. In the German army, where Brand's system is rigorously carried out, the death-rate for many years has been less than 8 per cent. In the American army from 1888 to 1897 inclusive, out of 1,303 cases there were 141 deaths, or 10.8 per cent. In 1898 there were 1,415 cases, with a death-rate slightly under 9 per cent.

It may have been quite impossible to carry out any systematic bath treatment in the South African hospitals, but cold sponging and cold compresses are always available. Dr. Barr, of Liverpool, has been for some time swinging severe cases in hammocks in substitution for his continuous bath treatment. Here the patients can be submitted to a continuous stream of tepid water or an occasional douche of cold water. This method is very simple and very effective in controlling the temperature. Under no circumstances should overcrowding be permitted. Personally, if suffering from typhoid fever, we would rather sleep under the canopy of heaven than in any close hospital or tent. Febrile patients do not catch cold.

THE IMPERIAL YEOMANRY HOSPITALS.

THE work done by the Committee of the Imperial Yeomanry Hospitals is remarkable both by its extent and its excellence. The original Imperial Yeomanry Hospital of 500 beds, which was established at Deelfontein, was shortly followed by the the Imperial Yeomanry Field Hospital and Bearer Company.

The hospital at Deelfontein has been increased until Mr. Fripp, the Senior Surgeon, was able to report on June 18th that he had 600 beds completely equipped. A branch hospital at Maitland Camp, near Capetown, has now been taken over and will be placed in the charge of Dr. Saunders, one of the medical officers of the Deelfontein Hospital. In addition a branch hospital for 400 beds will be opened at Pretoria within the next few weeks. Major Reade, R.A.M.C., has been appointed commandant, and the members of the medical staff sent out from this country are as follows:

Mr. W. Langdon Brown, Physician, M.A., M.B., and Mr. Herbert Williamson, Surgeon, M.A., M.B., St. Bartholomew's Hospital; Dr. Sandwith, M.D., F.R.C.P., M.R.C.S., Kasr-el-Aini Hospital, Cairo; Mr. Stanley F. Crowther Smith, Physician and Surgeon, M.B., M.R.C.S.; Mr. A. R. J. Douglas, M.B., B.S.Lond., F.R.C.S.Eng.; Mr. Howell Davies, Surgeon, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Mr. F. Brickwell M.B.Lond., M.R.C.S., L.R.C.P.; Mr. F. L. Provis, Tottenham Hospital, M.R.C.S.Eng., L.R.C.P.Lond; Mr. A. H. Hayes, M.R.C.S., L.R.C.P.; and Mr. C. S. Frost, M.B.Lond., M.R.C.S., L.R.C.P.

The nursing staff consists of 40 lady nurses, and there are in addition 82 ward orderlies and 8 ward maids.

The Imperial Yeomanry Field Hospital and Bearer Company have reached Pretoria, after having on the way up been of great service at the action of Roodeval.

Mr. Alfred D. Fripp writes that on June 15th the hospital at Deelfontein received two trains full of sick and wounded. The first train was the earliest out of Mafeking, the second train brought the sick and wounded from Winberg and Senekal, and out of its 96 occupants no fewer than 50 were stretcher cases, that is to say patients so gravely ill that they had to be carried from the train to their beds. Of the wounded from Senekal he writes:

> Many of the wounded from the latter neighbourhood presented a feature which was entirely novel to our experience in that they were burned more or less severely. It seems that our troops had had to advance through veld fires. A few of them were burned in running through; others only got their burns when they fell to the ground wounded; but from the accounts of the survivors I fear that there must have been others again still less fortunate, who, when they fell to the ground, were unable to move, and were burnt to death.

Colonel Sloggett, the military medical officer in command of the Imperial Yeomanry Hospital, left at once with this train for Mafeking, to bring down the remainder of the sick and wounded from that place. Fortunately, when the railway was blown up north of Kroonstadt the hospital trains were south of that place. There are now three such trains, a third having recently been improvised out of ordinary saloon carriages, with a kitchen truck in the middle.

Mr. Fripp has to report a considerable amount of sickness among the staff at Deelfontein. He writes:

> We have had to turn one of the smallest huts into a sick room for the sisters. They are so closely packed in the ordinary sisters' sleeping huts that it is extremely inconvenient there when one of them is ill. I am glad to say that there are no serious cases amongst them, but their work is very heavy now, and their sick room is in perpetual request for slight cases. Greenfield and Parker, the other two doctors who I told you had enteric, are both doing well. Three others of our medical staff have had to be admitted the officers' ward during the past week, but we do not think that any of them have enteric. Exactly a quarter of the orderlies we brought with us are now sick in hospital.

THE PRINCE AND PRINCESS OF WALES'S CONVALESCENT HOME.

IT is announced that the Prince and Princess of Wales have fitted up a very pretty farmhouse close to Sandringham for the use of officers invalided from the war who need convalescent help. The intention is to offer the home in the first place to colonial officers, who during their stay will be the guests of the Prince and Princess.

HOSPITALS IN ROUMANIA.—In the *Archives Orientales de Médecine et de Chirurgie*, Dr. Cosma de Ploiesti gives some statistics which appear to show that Roumania is more liberally supplied with hospitals than most countries of larger size. For a total population of 5,000,000 there are 188 hospitals, with an aggregate number of 7,334 beds. All patients are treated gratuitously, without distinction of nationality, and the foreigners from neighbouring countries admitted every year to the hospitals of Roumania are numbered by thousands. The hospitals are kept up by the State or by the Communes, or by the private administrative bodies called "Ephorias," which manage special funds bequeathed by charitable persons. The hospital establishments are subdivided as follows: — Fifty-three departmental or district hospitals, with 1,355 beds: 26 communal hospitals, with 756 beds; 33 rural hospitals, with 1,602 beds; 10 belonging to the Bucharest Ephoria, with 1,016 beds; 11 under the Jassy Ephoria, with 638 beds; 10 maintained out of private funds, with 591 beds; 11 maintained by Jewish communities, with 289 beds; 5 lunatic asylums, with 749 beds; 11 homes for infirm people, with 405 beds; 1 hospital for sufferers from pellagra, with 40 beds; 16 homes for aged persons, with 324 beds; 2 night refuges, with 40 beds. In addition to these there are 6 nursing homes with 137 beds for paying patients.

THE QUEEN'S NURSES.—The annual report of the Queen Victoria Jubilee Institute for Nurses states that the demand during the past year invariably exceeded the supply, although more nurses had been placed on the roll than in the previous year. The expenditure for the year had amounted to £8,746, of which £2,500 was paid out of the money of the Queen's Commemoration Fund. Princess Henry of Battenberg presented the badges and certificates to the nurses on July 5th. The President of the Institute said that 1,000 nurses had been enrolled, of whom 533 had been trained in England and at least two-thirds of the whole number in the United Kingdom. The Treasurer stated that the financial resources of the institute were taxed to the utmost and that the original endowment was now found to be insufficient for the work to be done. After the distribution Sir Dyce Duckworth, one of the Council of the Institute, congratulated the nurses, and said that though the training already given was of a high character he hoped that it would be improved in the future, and in particular that a term of three years' training in hospital would be required.

ASSOCIATION INTELLIGENCE.

THE following is a copy of the notice which appeared in the JOURNAL of July 7th, 1900.

NOTICE OF SPECIAL BUSINESS.

NOTICE is hereby given that an Extraordinary General Meeting of members of the British Medical Association will be held in the Small Hall, Exeter Hall, Strand, London, W.C., on Wednesday, the 18th day of July, 1900, at 2 o'clock in the afternoon, when the subjoined resolution will be proposed on behalf of the Council. Should the resolution be passed by the required majority, it will be submitted for confirmation to a second Extraordinary General Meeting to be held in the Central Hall, Higher Grade School, Ipswich, on Thursday, the 2nd day of August next, immediately on the conclusion of the Third General Meeting after the Address in Surgery, at half-past 2 o'clock in the afternoon.

RESOLUTION.

That the draft new Regulations submitted to this meeting be and the same are hereby approved, and that such new Regulations be and they are hereby adopted as the Regulations of the Association. That they be adopted to the exclusion of and in substitution for all the existing Regulations of the Association, and that such last-mentioned Regulations and also all By-laws which have been made pursuant thereto, be and the same are hereby repealed and abrogated.

For Draft New Regulations see JOURNAL July 7th, page 54.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association at 429, Strand (corner of Agar Street), London, on **Wednesday the 18th day of July next, at 10 o'clock in the forenoon.**

The following Committees will also meet:

Tuesday, July 17th, 1900.—1.30 P.M., Medical Charities Committee.—2.0 P.M., Premises and Library Committee.—2.30 P.M., Conciliation Board Committee.—3.0 P.M., General Practitioners and Ethical Committee.—4.0 P.M., Parliamentary Bills Committee.—5.0 P.M., Journal and Finance Committee.

July 10th, 1900. FRANCIS FOWKE, *General Secretary.*

COUNCIL.

NOTICE OF MEETINGS.

MEETINGS of the Council will be held in the Magistrates' Room, Town Hall, Ipswich, on Tuesday, July 31st, Wednesday, August 1st, and Thursday, August 2nd next, at 9 30 o'clock in the forenoon of each day.

FRANCIS FOWKE, *General Secretary.*

July, 1900.

PROCEEDINGS OF COUNCIL.

AT a special meeting of the Council called for the purpose of considering the proposed Articles of Association as settled by counsel, and the proposed Standing Orders, held at the office of the Association, 429, Strand, London, W.C., on Wednesday, July 4th, 1900.

Present:

Dr. JOHN ROBERTS THOMSON, President of the Council, in the Chair.
Dr. JOHN WARD COUSINS, President.
Mr. ANDREW CLARK, Treasurer.

Dr. JAMES BARR, Liverpool.
Dr. RAYNER W. BATTEN, Gloucester.
Dr. THOMAS BRIDGWATER, LL.D., Harrow-on-the-Hill.
Dr. J. BRASSEY BRIERLEY, Old Trafford.
Dr. GEORGE W. CROWE, Worcester.
Dr. WILLIAM DYSON, Sheffield.
Mr. GEORGE EASTES, M.B., London.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. BRUCE GOFF, Bothwell.
Dr. JOSEPH GROVES, Carisbrooke.
Dr. HENRY HANDFORD, Nottingham.
Dr. T. ARTHUR HELME, Manchester.
Dr. HOLMAN, London.
Mr. T. VINCENT JACKSON, Wolverhampton.
Mr. T. R. JESSOP, Leeds.
Mr. EVAN JONES, Aberdare.
Mr. N. C. MACNAMARA, London.
Dr. C. H. MILBURN, Hull.
Surgeon-General T. F. O'DWYER, Aldershot.
Mr. LANGLEY BROWNE, West Bromwich
Mr. HENRY T. BUTLIN, London.
Mr. THOMAS H. CHEATLE, Burford.
Dr. H. RADCLIFFE CROCKER, London,
Mr. C. H. WATTS PARKINSON, Wimborne Minster.
Dr. CHARLES PARSONS, Dover.
Dr. FRANK M. POPE, Leicester.
Dr. A. BROWN RITCHIE, Hulme.
Dr. JOHN ROLSTON, Devonport.
Dr. L. W. SEDGWICK, London.
Dr. ALFRED SHEEN, Cardiff.
Dr. G. E. SHUTTLEWORTH, Richmond Hill.
Dr. E. MARKHAM SKERRITT, Clifton.
Dr. R. SOMERVILLE, Galashiels.
Mr. C. S. TOMES, F.R.S., London.
Dr. W. J. TYSON, Folkestone.
Dr. W. L. WINTERBOTHAM, Bridgwater.
Dr. S. WOODCOCK, Old Trafford.

Read notice convening the meeting:

British Medical Association, 429, Strand, London, W.C., June 27th, 1900.

Dear Sir,—I am directed by the President of Council to inform you that a Special Meeting of the Council will be held on Wednesday, the 4th day of July next, at 2 o'clock in the afternoon, to consider the Articles of Association as proposed by counsel in substitution for the present Articles, also Standing Orders of the Council. The Ordinary Quarterly Meeting of the Council originally called for July 11th will be held on Wednesday, July 18th.

I am, yours faithfully,
FRANCIS FOWKE,
General Secretary.

Read letters of apology for non-attendance from Sir George H. Philipson, M.D.; Sir John William Moore, M.D.; the President-elect, Dr. Edgar Barnes, Dr. M. Beverley, Dr. T. M. Dolan, Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, Professor D. W. Finlay, M.D.; Dr. A. Godson, Mr. C. G. Gooding, Mr. Jordan Lloyd, Dr. R. Maclaren, Mr. H. J. Manning, Dr. J. W. Miller, Dr. C. G. D. Morier, Dr. R. W. Philip, Mr. H. Stear, Mr. T. J. Verrall.

Read resolution of the Journal and Finance Committee.

Resolved: That the Articles of Association as revised, subject to Mr. Palmer's final revision, be submitted to the Council at a special meeting on Wednesday, July 4th.

The proposed Articles of Association were then considered *seriatim*. After considerable discussion they were adopted as amended for presentation to an extraordinary general meeting, as published in the JOURNAL of July 7th, p. 54.

Resolved: That an extraordinary general meeting of members be called for Wednesday, the 18th day of July, 1900, at 2 o'clock in the afternoon, in the Small Hall, Exeter Hall, Strand, London, W.C., when the subjoined resolution will be proposed on behalf of the Council. Should the resolution be passed by the required majority, it will be submitted for confirmation to a second extraordinary general meeting to be held in the Central Hall, Higher Grade School, Ipswich, on Thursday, the 2nd day of August next, immediately on the conclusion of the third general meeting after the Address in Surgery, at half-past 2 o'clock in the afternoon.

Resolved: That the draft new Regulations submitted to this meeting be and the same are hereby approved, and that such new Regulations be and they are hereby adopted as the Regulations of the Association. That they be adopted to the exclusion of and in substitution for all the existing Regulations of the Association, and that such last-mentioned Regulations and also all By-laws which have been made pursuant thereto, be and the same are hereby repealed and abrogated.

The Standing Orders were then considered, paragraph by paragraph, in accordance with resolution 1052 of the Special Meeting of the Journal and Finance Committee, namely,

Resolved: That the Standing Orders be received and approved, and also submitted to a Special Meeting of the Council on July 4th, 1900.

Resolved: That the Standing Orders as amended be received and adopted.

STANDING ORDERS RELATIVE TO BUSINESS AT MEETINGS OF COUNCIL AND COMMITTEES.

ORDER OF BUSINESS.

1. CONFIRM Minutes of previous meeting as correct.
   (*a*) The President (or Chairman), on taking the Chair, shall ask if any member present objects to the Minutes of the previous meeting as printed and circulated. He shall then ask the General Secretary if any written objections have been received. In the absence of any objections the Minutes shall be confirmed by the Chairman signing them, the sanction of the members present having been obtained.
   (*b*) This shall not apply to special meetings.
2. Letters of apology.
3. Special communications to President of Council.
4. Minutes of Committees.

5. Ordinary Council business.
6. (*a*) Notices of motion.
(*b*) When any motion, of which due notice has been given, has special reference to any matter dealt with in the Minutes of a Committee, it shall be considered along with the Minutes of said Committee.
7. The Council may at any meeting vary the order of business so as to give precedence to any business of special urgency, but, except the Chairman rule otherwise, the general business of the Association shall always take precedence over mere purely local or personal matters.

REGULATIONS FOR MEETINGS OF COUNCIL.

8. Minutes shall be taken of the proceedings of the Council, and same shall be duly entered in a book provided for that purpose. These Minutes shall be printed, and a copy sent to every member of Council.
9. The Minutes of Council Meetings and of Committees, also the Agenda, which are printed and issued to members of the Council, shall be considered "confidential" except when the Council shall otherwise determine. Provided always that any Member of Council shall be entitled to submit any matter included in the Agenda or Minutes of Council to the Council of the Branch which he represents.
10. Every member of the Council attending a meeting of the Council shall sign his name in the attendance book kept for the purpose, and no member shall leave a meeting of Council without the permission of the Chairman.
11. Any decision of the Council which involves any departure from the usual policy of the Association—or is otherwise deemed of such importance as to render it desirable that the opinion of the Branches shall be heard on the matter—shall not be binding upon the Council until it has been before the Council at a subsequent meeting, three months at least after the first vote was taken.
12. On the motion of any member the Council may at any meeting refer any such decision to the Branches for consideration and report.
13. A report of the business transacted at each Council meeting, to be termed "Proceedings of Council," shall be published in the JOURNAL of the Association as soon as possible after each meeting of Council.

SPECIAL MEETINGS.

14. For special meetings of Council at least seven clear days' notice shall be given. At such meeting no business shall be transacted other than that for which such special meeting was called.
15. Before proceeding to business, the notice setting forth the business to be considered shall be read.

NOTICES OF MOTION.

16. Notices of motion must be sent to the General Secretary at least fourteen clear days before the meeting of Council at which they are to be considered, and the Agenda shall be sent to each member of Council at least seven clear days before a meeting of Council, but this Standing Order shall not apply to the meetings of Council held during any annual meeting of the Association. For such meetings twenty-four hours' notice of motion will suffice.
17. Before a notice of motion be placed on the Agenda paper, it shall be submitted to the President of Council, who, if he be of opinion that it is out of order, or for other good cause is inexpedient, shall cause the giver of the notice to be so informed.

EXPENDITURE OF MONEY.

18. The Council shall not proceed on any motion involving an expenditure of money which has not previously been brought under the notice of the Journal and Finance Committtee.

REGULATIONS FOR COMMITTEES.

19. Committees shall be subject to the same Standing Orders as regulate the proceedings of Council, otherwise they shall regulate their own procedure.
20. Every Committee shall make Minutes of its proceedings, and cause the same to be duly entered in a book provided for that purpose. These Minutes shall be printed, and a copy sent to every member of the Council.

PRESENTATION OF MINUTES OF COMMITTEES TO COUNCIL.

21. (*a*) The Minutes of a Committee shall be submitted by the Chairman of the Committee, or in his absence by a member of the Committee, who shall move—"That the Minutes be received."
(*b*) On this motion, any amendments disagreeing with Minutes, or parts of Minutes, may be moved.
(*c*) Any recommendations proposed to be made shall be printed at the end of each Committee's Minutes, and shall be put separately from the chair.
22. The Chairman of a Committee, or other member bringing up a Minute or Report, shall be held to move each recommendation contained in the said Minute or Report, unless he shall have previously stated his disagreement with it.
23. On the consideration of any such recommendation, it shall be competent for any member to move:
(*a*) That it be referred back for reconsideration (with or without instructions); or
(*b*) That the Council do disagree with the recommendation; or
(*c*) That the recommendation in its present form is not satisfactory, and that the following amendment be made, namely; or
(*d*) That the consideration of the recommendation be adjourned.
24. The Chairman of a Committee or other member bringing up a Report may withdraw or amend any paragraph with the consent of the Council. The final motion for adoption of a Report shall be, "that the Report (as amended) be adopted," and the question shall be immediately put without discussion.
25. In the case of the Parliamentary Bills Committee, the Minutes shall be presented by a member of Council appointed by the Committee.

SUBCOMMITTEES.

26. Any matters in Committee, being dealt with by a Subcommittee, and still proceeding, which form part of the Committee Minutes, shall be printed within brackets, or as an appendix to the Minutes, for information merely, and shall not form part of the Minutes presented to the Council.

RULES OF DEBATE.

27. A member of Council shall stand when speaking, and shall address the Chair.
28. A member who speaks shall direct his speech strictly to the motion under discussion, or to a motion or amendment to be proposed by himself, or to a question of order.
29. A member shall not address the Council more than once on any motion or amendment, but the mover of an original resolution may reply, and in his reply shall strictly confine himself to answering previous speakers, and shall not introduce any new matter into the debate; provided always that a member may speak to a point of order, or in explanation of some material part of a speech made by him, which he believes to have been misunderstood.
30. A motion or amendment once made and seconded shall not be altered or withdrawn without the consent of the Council.
31. Any amendment shall be strictly relevant to the motion on which it is moved.
32. Whenever an amendment upon an original motion has been moved and seconded, no second or subsequent amendment shall be moved until the first amendment shall have been diposed of, but notice of any number of amendments may be given.
33. aAn mendment shall be either—
To leave out words;
To leave out words and insert or add others;
To insert or add words;
Or in such form as shall be approved of by the Chairman.
34. If an amendment be rejected, other amendments may be moved on the original motion. If an amendment be carried, the amendment or motion as amended shal take the place of the original motion and shall become the question upon which any further amendment may be moved.
35. If it be proposed and seconded that the Council adjourn, or that the debate be adjourned, or that [illegible] do proceed to the next business, or that the question be now

put—such resolution shall immediately be put to the vote without discussion, except as to the time of adjournment.

36. A second motion, that the Council do now adjourn, or that the Council do now proceed to the next business, or that the debate be now adjourned, or that the question be now put, shall not be made within a period of one hour after a previous notice to the like effect, unless, in the opinion of the Chairman, the circumstances are materially altered.

37. Every question shall be determined by the voices of those present, or by a show of hands. In the event of five members demanding it, either a ballot vote or a division shall be taken. In this latter case the names for or against the motion or amendment shall be taken down in writing and entered on the Minutes.

38. No motion to rescind any resolution which has been passed within the preceding nine months, and no motion to the same effect as any motion which has been negatived within the preceding six months, shall be in order.

39. Any one or more of the Standing Orders, in any case of urgency, or upon motion made on a notice duly given, may be suspended at any meeting, so far as regards any business at such meeting, provided that three-fourths of the members of the Council present and voting shall so decide.

July 4th, 1900.

BRANCH MEETINGS TO BE HELD.

SOUTHERN BRANCH: ISLE OF WIGHT DISTRICT.—The next meeting of this District will be held on Friday, July 20th, at the Royal Pier Hotel, Sandown, when the election of Honorary Secretary, *vice* Dr. Shirtliff, deceased, will take place. It is therefore desirable that there should be a full attendance.—THOS. ALPH. BUCK, M.B., Ryde, President.

NORTH OF ENGLAND BRANCH.—The annual meeting of this Branch will be held at the Grand Hotel, Tynemouth, on Wednesday, July 25th, at 4 P.M. Members desirous of reading papers, showing cases or specimens, bringing forward any communication, or of proposing new members should communicate at once with THOMAS BEATTIE 3, Ellison Place, Newcastle-upon-Tyne, Honorary Secretary.

OXFORD AND DISTRICT BRANCH.—The annual meeting of this Branch will be held at the Randolph Hotel, Oxford, on Friday, July 20th. There will be a luncheon at 2 P.M., price 3s. 6d. After the luncheon the following business will be transacted: Annual Report. Treasurer's Balance Sheet. Election of Officers. Discussion of Midwives Bill. Propositions, etc.—WM. COLLIER, St. Mary's Entry, Oxford, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH.

THE sixty-fourth annual meeting of this Branch was held at Preston on June 27th, and was attended by over 100 members from various parts of Lancashire and Cheshire. On their arrival the guests were entertained at luncheon in the Assembly Hall by the President-Elect (Dr. R. C. Brown). The general meeting took place at 2.30 P.M., the chair being taken by the PRESIDENT, Dr. Charles Macfie, of Bolton.

Confirmation of Minutes.—The minutes of the last annual and intermediate meetings were confirmed.

Death of Professor Tom Jones.—On the proposition of the PRESIDENT, seconded by the PRESIDENT-ELECT, it was resolved that a letter of sympathy should be sent from the Branch to the widow and daughter of the late Mr. Tom Jones in their great bereavement.

Report of Council and Financial Statement.—The report of Council was read as follows: The Council of the Lancashire and Cheshire Branch of the British Medical Association has much pleasure in presenting its report for 1899-1900 to the members of the Branch. The Council has held seven meetings during the year, and has assiduously watched all matters pertaining to the welfare of this Branch, the Association, and the profession generally. In order to provide the means for co-operative action, the Council has constituted as Committees of the Branch those members elected to serve on the Parliamentary Bills Committee and on the central Council of the Association respectively. The Council appointed two delegates to attend a Conference of Medical Societies for the discussion of Medical Ethics and Politics, which was held in Manchester in May, 1900, and now recommend that the sum of £7 10s. be contributed by this Branch towards the expenses of that conference. A Bill for the Registration of Midwives having been introduced into Parliament, and having unexpectedly passed its second reading, the Council on March 14th, 1900, passed a resolution requesting the general Council of the Association to use all means in its power to prevent the Bill in its present form from becoming law; after discussion, the Council of the Association passed a resolution affirming its unanimous opinion that the Bill, if it became law in its present form, would be a direct danger to the public safety, and a copy of this opinion was ordered to be sent to each member of Parliament. In view of the resolution of this Branch that, when matters of general policy or affecting the profession at large are about to be discussed by the central Council of the Association, the Branches should have an opportunity of expressing an opinion on such matters, the Council instructed the representatives to bring the matter before the central Council. After some discussion the general Council of the Association resolved to accept the principle for the necessity of consulting the Branches on all important questions, and this matter, along with others connected with the organisation of the Association, was referred to the Journal and Finance Committee, in order that a well-considered scheme of reform should be drawn up. The Council has invited Dr. Charles J. Renshaw, of Sale, to represent this Branch at the International Medical Congress to be held in Paris during the present year. The Council reports with pleasure the continued growth of the Branch: during the past 12 months 124 new members have been elected, while the number has been depleted by 19 deaths and 22 resignations, leaving a present membership of 1,200; this membership now entitles the Branch to an additional representative on the General Council of the Association and on the Parliamentary Bills Committee. There still remain about 250 unattached members of the Association residing in this district. The members who have been removed by death and whose loss the Council sincerely deplores, are: Dr. H. H. Vernon, of Southport, who was President of the Branch in 1896-97; Professor Tom Jones, who was Vice-President in 1898-99 and a member of the present Council; Dr. G. M. King, the Local Secretary for Preston; and Drs. J. T. Cooke, R. P. Dunbar, E. Eccles, T. H. Fisher, J. Livy, G. Miller, A. A. Mitchell, A. I. Richards, R. Robertson, A. Sutcliffe, A. T. Townley, A. Walker, R. Wearing, D. F. Williams, John Williams, R. Williams. Financially the Branch is in a satisfactory position, the balance at the end of last year being £414 16s. 9d.

Statement of Accounts.—The statement of accounts as on December 31st, 1899, was as follows:

Receipts.	£ s. d.	*Disbursements.*	£ s. d.
1899		1899	
Balance in bank, June 21st, 1899	549 14 2	Printing, stationery, and printer's postages	11 1 0
Interest, less commission, January 1st to June 21st, 1899 (per Dr. J. Barr) ...	4 0 4	Secretary's postages ...	2 6 7
Interest, less commission, June 21st to December 31st, 1899	7 9 6	Travelling expenses—	
Subscriptions per Hon. Sec. ... 8 5 0		P. B. C.	10 14 0
Subscriptions per Mr. Fowke ... 32 9 10	40 14 10	Liverpool meeting	1 [illegible]
		Medical Directory	0 10 0
		Dr. Barr's testimonial ...	157 10 0
		Balance in bank	414 16 9
	£597 18 10		£597 18 10

T. ARTHUR HELME, Hon. Secretary.
Audited and found correct, June 13th, 1900.
D. A. O'SULLIVAN.
JOSEPH THORNLEY.

On the motion of Dr. T. R. BRADSHAW (Liverpool), seconded by Dr. S. WOODCOCK (Manchester), it was resolved:

That the report of the Council and the financial statement be received and adopted.

Election of Officers.—The HONORARY SECRETARY (Dr. T. Arthur Helme) having read the list of officers and Council for 1900-01 nominated by the present Council, the PRESIDENT announced them duly elected in accordance with the laws of the Branch. The following is the list:—*President:* R. C. Brown, M.B. (Preston). *President-Elect:* James Corns, M.D. (Oldham). *Vice-Presidents:* W. D. Dobie, M.B. (Chester) and W. Hall, M.D. (Lancaster). *Honorary Secretary:* T. Arthur Helme, M.D. (Manchester). *Seven Representatives in the Council of the Association:* J. Barr, M.D. (Liverpool), Colin Campbell (Uppermill), A. Godson, M.B. (Cheadle), D. A. O'Sullivan, M.D. (Southport), A. Brown Ritchie, M.B. (Manchester), S. Woodcock, M.D. (Manchester), and T. Arthur Helme, M.D. (Manchester). *Five Representatives in the Parlia-*

mentary Bills Committee: J. Barr, M.D. (Liverpool), T. R. Bradshaw, M.D. (Liverpool), A. Brown Ritchie, M.B. (Manchester), S. Woodcock, M.D. (Manchester), and Colin Campbell (Uppermill). *Fifty Ordinary Members of Council:* J. P. Aitchison, M.D. (Blackburn), *J. Lawton Andrew, M.D. (Heaton Norris), William Armstrong (Buxton), F. H. Barendt, M.D. (Liverpool), W. Berry, F.R.C.S.I. (Wigan), H. W. Boddy, M.D. (Manchester), Owen Bowen (Everton), *W. G. Booth (Manchester), W. H. Brazil, M.D. (Bolton), *J. B. Brierley, M.D. (Manchester), William Campbell, M.D. (Liverpool), William Carter, M.D. (Liverpool), J. Nelson Cregeen (Liverpool), E. T. Davies, M.D. (Liverpool), W. J. Robertson Dunn (Liverpool), *T. Fawsitt (Oldham), E. A. Fox, M.D. (Warrington), T. W. H. Garstang (Knutsford), C. R. Graham (Wigan), K. Grossmann, M.D. (Liverpool), A. C. E. Harris, M.D. (Birkenhead), *J. Henry, M.D. (Rochdale), J. M. Hunt, M.B. (Liverpool), Horace Jefferies (Bolton), J. Lambert, M.D. (Birkenhead), C. J. Macalister, M.D. (Liverpool), *Charles Macfie, M.D. (Bolton), B. J. Massiah, M.D. (Didsbury), *T. Moreton (Northwich), A. P. Mooney, M.B. (Preston), *E. H. T. Nash (Accrington), J. T. Neech (Tyldesley), H. Laird Pearson (Birkenhead), Edwin Rayner, M.D. (Stockport), C. J. Renshaw, M.D. (Ashton-on-Mersey), *G. Robertson, M.B. (Oldham), James Robinson, M.D. (Dunscar), *J. M. Ruxton, M.D. (Blackpool), D. Turnbull Smith, M.B. (Preston), A. Stewart, M.D. (Pendleton), *J. W. Talent, M.D. (Ashton-under-Lyne), J. Thornley, M.D. (Bolton), C. W. Thorp (Dobroyd), J. J. Tisdall (Liverpool), Francis Vacher (Birkenhead), C. V. Vereker (Woolton), *G. C. Walker, M.D. (Southport), J. W. Watkins, M.D. (Newton-le-Willows), T. M. Wills (Bootle), *R. H. Wolstenholme (Salford). * New nominations, being gentlemen who were not ordinary members of Council within the last twelve months.

Appointment of Auditors.—It was proposed by Dr. HELME, seconded by Mr. W. BERRY, and resolved:

That Dr. O'Sullivan and Dr. Thornley be re elected auditors.

Next Annual Meeting.—The HONORARY SECRETARY read a letter of invitation from the members of the Branch resident in Oldham to hold the next annual meeting in that town. It was proposed by Dr. WOODCOCK, seconded by Dr. THORNLEY, and resolved:

That the next annual meeting be held in Oldham.

Report of Representatives.—Dr. RITCHIE read a report of work done by representatives of the Branch on the General Council of the Association and on the Parliamentary Bills Committee.

Vote of Thanks to the Retiring President.—It was proposed by Dr. S. WOODCOCK, seconded by Dr. W. HALL (Lancaster), and resolved with acclamation, that a very hearty vote of thanks be accorded to the retiring President. This was replied to by Dr. MACFIE.

Vote of Thanks to the Office-bearers, etc.—It was proposed by Dr. COLLINSON (Preston), seconded by Dr. KELYNACK (Manchester), and resolved, that a hearty vote of thanks be accorded to the office-bearers and members of the late Council and the auditors. Dr. HELME responded on behalf of the Council and himself.

Induction of New President.—Dr. CHARLES MACFIE, the retiring President, then introduced his successor to the presidential chair, Dr. R. C. Brown (Preston).

President's Address.—The PRESIDENT, after thanking the members for the honour conferred upon him for the second time, proceeded to give a very interesting address upon some of the causes of disease considered in their relation to diagnosis, prevention, and cure fifty years ago compared with to-day. On the proposition of Dr. MACFIE, seconded by Dr. BARR, and supported by Dr. THORNLEY, who asked that the address should be printed, it was resolved:

That a very hearty vote of thanks be accorded to the President for his valuable and interesting address.

to which Dr. R. C. BROWN responded in suitable terms.

Communications.—As the time arranged for the excursions had now arrived, the following communications were held over:—Dr. T. R. BRADSHAW: Myelopathic albumosuria.—Dr. KARL GROSSMANN: Note on cyst of frontal sinus.—Dr. J. DRESCHFELD: On a case of haemorrhagic meningo-encephalitis due to influenza (the specimen was shown).—Dr. T. ARTHUR HELME: The notes of two cases in which the symptoms and signs simulated extrauterine gestation, (1) pregnancy with ovarian cyst, (2) chronic metritis with peritonitic cyst.—Dr. NATHAN RAW: A woman on whom Cæsarean section and embryotomy had been performed for successive pregnancies.

Exhibits.—In a hall adjoining the meeting hall there was a large exhibition of surgical instruments, drugs, foods, medicinal and aërated waters, etc.

Excursions.—At 4 P.M. the members were driven in brakes, provided by the members residing in Preston, on the following excursions:—(1) To the County Council Farm. A demonstration on the sterilisation of milk was given. Conducted by Dr. Turnbull Smith. (2) To the Electric Tram and Carriage Works, and to the Equipment Works adjoining. Conducted by Dr. Sellers. (3) To the Royal Cross Deaf and Dumb School. A demonstration on the difficulties of the instruction of the deaf to articulate. Conducted by Dr. D. W. Brown. (4) To the Free Library, Museum, and Picture Galleries. Conducted by Dr. Dunn. (5) To the Infirmary. Conducted by Dr. Trimble. (6) To the Golf Course. Conducted by Dr. Taylor.

Dinner.—In the evening about 100 members and guests sat down to dinner in the Assembly Hall. Dr. R. C. Brown occupied the chair, supported by the High Sheriff and Mayor of Preston. After the usual toasts had been honoured, "The Navy, Army, and Auxiliary Forces" was proposed by the Mayor of Blackpool and responded to by Colonel Hunt, R.A.V. "The Clergy" was proposed by Mr. W. P. Park, and responded to by the Vicar of Preston and Dean Pyke. Dr. O'Sullivan proposed "The Lancashire and Cheshire Branch of the British Medical Association," which was responded to by Dr. T. Arthur Helme. "The Town of Preston" was proposed by Dr. Woodcock and responded to by the Mayor of Preston. "The Local Medical Men" was proposed by Mr. J. Forshaw and Dr. Hammond responded. Dr. Sellers proposed "The Guests" and the High Sheriff and Mr. W. Ascroft responded; and finally "The President's Health" was given by Dr. Macfie. Owing to the lavish hospitality and arrangements made by the President and local Committee a most enjoyable day was spent by all, and the thanks of the Branch are due to those gentlemen who provided so well for the comfort and enjoyment of the members.

BATH AND BRISTOL BRANCH.

THE annual meeting of this Branch was held at University College, Bristol, on June 27th. Thirty-five members were present.

New Member.—Mr. W. P. Dickson, L.R.C.P., L.R.C.S.Edin. (Bath), was elected a member of the Branch.

Introduction of New President.—Dr. A. J. HARRISON resigned the presidential chair to Mr. A. W. PRICHARD, who delivered the presidential address on Past Members of the Staff of the Bristol Royal Infirmary.—A vote of thanks to the President for his interesting and valuable address was moved by Dr. SHINGLETON SMITH, seconded by Dr. WATSON WILLIAMS, and carried by acclamation.

Report of Council.—The report of the Council stated that the total number of members of the Branch was 284, of whom 192 belonged to the Bristol and 92 to the Bath section. During the past year 8 new members were elected to the Bristol and 6 to the Bath section. The Council expressed regret for the loss by death of Dr. W. F. Carter, Dr. J. Broom, and Mr. J. G. Walker in the Bristol, and of Mr. H. E. Hopkins and Mr. S. P. Budd in the Bath district. Mr. S. P. Budd belonged to the well-known medical family of that name, and enjoyed for many years a large practice in Bath. Mr. H. E. Hopkins was a regular attendant at the Branch meetings and served upon the Council, where his opinion was much valued; his genial presence would be much missed at the Branch meetings. The meetings throughout the session had been well attended, and the papers read, pathological specimens, and clinical cases shown had maintained a good standard. The discussion on the surgery of the stomach, held at Bath, was opened by Mr. F. Lace in a very able and well-thought-out paper, which was followed by a good discussion of the subject. The Council announced with regret that Mr. R. S. Fowler had resigned the representation of the Branch on the Council of the Association, a post which he had held for many years. Although few members remembered his appointment as secretary and representative in 1859,

they had all in later years witnessed his untiring energy in the service of the Branch. His resignation broke a tie with the past, but the Council were glad to think that his interest in the Branch was unabated, and that his advice was still available. Messrs. Goss, Ransford, and Ellis had been elected to fill the vacancies on the Bath, and Dr. Aust Lawrence and Mr. Harsant those on the Bristol Council.

Report and Financial Statement.—The total receipts for both sections amounted to £65 11s. 2d., and the expenditure to £35 4s. 10d., leaving a balance in hand of £30 6s. 4d.

Donations.—A donation of £10 10s. was recommended to be made to the British Medical Benevolent Fund, and of £5 5s. to the Royal Medical Benevolent College, Epsom. On the motion of Dr. J. Swain, seconded by Mr. Goss, it was resolved unanimously:

That the report and financial statement now read be received and adopted.

Election of Officers.—Dr. G. C. Tayler, of Trowbridge, was appointed President-elect; Dr. E. J. Cave and Dr. E. Markham Skerritt, Representatives of the Bath and Bristol Sections on the Council of the Association; Dr. A. J. Harrison, Representative of the Branch on the Parliamentary Bills Committee.

Votes of Thanks.—A vote of thanks to the retiring President, Dr. A. J. Harrison, for his able and courteous conduct in the chair during the past year was proposed by Mr. F. R. Cross, seconded by Dr. Markham Skerritt, and carried by acclamation; and a vote of thanks to the Council and Honorary Secretaries for their services during the year, with a request to the latter to continue in office, was proposed by Dr. Aust Lawrence, seconded by Dr. G. Parker, and carried unanimously.

Annual Dinner.—Fifty-one members and visitors afterwards dined together at the Clifton Down Hotel.

CAMBRIDGESHIRE AND HUNTINGDONSHIRE BRANCH.

The annual meeting of this Branch was held at Royston on July 5th.

Luncheon.—The members were entertained at luncheon by the President, Mr. Balding, F.R.C.S., when the Master of Downing spoke in eloquent terms of Mr. Balding's services to the Branch, and of the high regard for him and for his services to the Branch which he shared with all the members.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

New Members of Branch.—The following members of the Association were elected members of the Branch:—Dr. W. E. Dixon (Downing College); Dr. Headley Bartlett (Saffron Walden).

Next Meeting.—It was arranged that the next meeting should be held at Huntingdon.

Election of Officers.—The following officers were elected:—*President:* Herbert Lucas (Huntingdon). *Honorary Secretary and Treasurer:* Dr. E. Lloyd Jones. *Representative on the Council:* Dr. Stear. *Representative on the Parliamentary Bills Committee:* Mr. Balding, F.R.C.S. *Additional Members of the Council:* Dr. Griffiths, Dr. Lawrence Humphry, Dr. Roper.

Balance Sheet.—The balance sheet for the year was presented and approved.

President's Address.—The President delivered an address, which was devoted to an account of the work and object of the Parliamentary Bills Committee.

Communications.—Dr. Griffiths gave a sketch of the History of the Branch for the last fifty years.—Dr. Windsor (Royston) showed a remarkable case of pseudo-hypertrophic paralysis occurring in a man of 42.—The President showed a very interesting case of symmetrical gangrene of the fingers, and, with Dr. Griffiths, he showed a very remarkable case of arthritis ossificans, with ankylosis of all of the joints of the body.

NORTH OF IRELAND BRANCH.

The twenty-second annual meeting of this Branch was held at Portrush on July 5th; Dr. J. C. Martin (Portrush), President, in the chair. Eighty members were present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Report of Council.—The Council's annual report and the Treasurer's statement of accounts were taken as read and adopted by the meeting.

New Members.—It was announced that the following new members had been elected by the Council: Theodore Bell, M.D., Warrenpoint; Wm. Porter, M.B., Portrush; John A. Kennedy, M.B., Portstewart; John McLiesh, M.B., Belfast; Benj. B. Ferrar, M.D., Armagh; James McAvoy, M.D., Newry; John Jamison, M.B., Belfast; Wm. H. Caldwell, M.D., Coleraine; Thos. Adair, L.R.C.P. and S., Belfast; Jas G. Jefferson, L.R.C.P. and S., Lisburn; Jas. P. Lavery, L.R.C.P. and S., Armagh; Jos. S. Gill, L.R.C.P. and S., Castlecaulfield.

Election of Officers.—The following were elected officers of the Branch for 1900-1901:—*President:* Professor J. W. Byers, M.D. *Vice-Presidents:* (Country) Dr. Darling, Lurgan; (Town) Professor Lindsay. *Council:* (Country) Dr. Thompson, Omagh; Dr. Stewart, Ballymena; Dr. Martin, Portrush; Dr. Hall, Monaghan; Dr. St. George, Lisburn; Dr. Agnew, Lurgan; Dr. Gray, Armagh; Dr. Gaussen, Dunmurry. (Town) Dr. J. Campbell, Dr. Dempsey, Professor Sinclair, Dr. McKisack, Professor Whitla, Dr. McCaw, Dr. Biggar, Dr. Mitchell. *Representatives on the Council of the Association:* Professor Byers and Dr. Calwell. *Representative on the Parliamentary Bills Committee:* Dr. Dempsey. *Honorary Treasurer:* Dr. Grey, Newcastle. *Honorary Secretary:* Dr. Calwell, Belfast.

Deputation.—The Secretary reported that the deputation appointed at the special meeting in May had not waited on the Local Government Board, as there was considerable probability that the required change in Article 28 would be made.

Nursing Board for Ulster.—Dr. Darling introduced the consideration of the draft scheme for the formation of a Nursing Board for Ulster, and after considerable discussion it was referred back to a special committee consisting of the President-elect (Dr. Byers), Drs. Darling, Thompson, J. Campbell, McCaw, Dempsey, and the Secretary.

President's Address.—The President delivered an address on Portrush from a Medical Aspect, in which he spoke of the healthiness of the town, its freedom from epidemics, its excellent sanitation, and the unrivalled bracing properties of the air.

Communications.—Mr. Kirk (Belfast) read notes of a successful case of splenectomy for Dr. Strafford Smith and himself, and of a successful case of intra abdominal fixation of rectum for complete prolapse.—Dr. Williamson read notes of a case of uterus bicornis, and showed the hour-glass placenta; also an anencephalous fœtus.—Dr. Mitchell read notes of a successful case of ligature of the third stage of the subclavian artery for axillary aneurysm, and showed the patient. He also read some notes on his two last gastric operations.—Dr. Calwell showed a specimen of dilatation of stomach due to stenosis and adhesions of the first part of the duodenum, from a patient who had been twice urged to submit to operation. He also showed photographs of a congenital thickening of the nail, which resembled somewhat the claws of a bird, and associated with a bullous eruption on one ankle.

READING AND UPPER THAMES BRANCH.

The annual meeting of this Branch was held in the Library of the Royal Berkshire Hospital, Reading, on June 29th, the President, Dr. Freeman, in the chair.—The officers for the coming year were elected and other business transacted.—The President for the coming year, Dr. Nootт (Broadmoor Asylum), then took the chair, and a vote of thanks was passed to the retiring President.

Combined Meeting.—A combined meeting of the Oxford Branch and the Reading and Upper Thames Branch was afterwards held under the presidency of Dr. Nootт.—Mr. H. P. Simonds (Oxford), and Dr. G. Farmer and Dr. Whitelock (Oxford) showed some very interesting cases.—Dr. Freeman, Mr. Walters, and Mr. Child (Reading) also showed cases.—Dr. Nootт (President) then read a paper on the Alleged Increase of Insanity, which gave rise to an interesting discussion.—The Bayer Company, Limited, had some specimens of their preparations on view.

Dinner.—The annual dinner was held on the same evening at the Great Western Hotel, to which 26 sat down, including 13 members of the Oxford Branch.

SPECIAL CORRESPONDENCE.

PARIS.

The International Exhibition.—The Section of Hygiene.—The Retrospective Exhibition of the Work of Pasteur.—Exhibits of Foreign Nations.

IN the Pavillon des Armées de Terre et de Mer, at the end nearest the Pont de l'Alma, we first enter the Salon Pasteur. On either side of the entrance are cabinets filled with cultures of different microbes. In the centre of the room is the bust of Pasteur on a pedestal, round the base of which is an octagonal case containing a retrospective exhibition of the work of Pasteur. Here we see the manuscript of the thesis presented before the Faculty of Science in 1847 on molecular dissymmetry; the microscope used by Pasteur to measure the angles of crystals, and models of various cystals; his work on fermentation, with the original apparatus used for the study of butyric acid fermentation, and the apparatus for the study of living anaërobic microbes. Pasteur's researches on spontaneous generation are illustrated by the apparatus to prove that calcined air contained no germs, and the flasks used in the experiments on the organised dusts in the atmosphere, and opened by him on October 3rd, 1860, at the summit of Mount Poupet. In connection with his investigation into the diseases of wines and beer, flasks for the pure culture of yeast and experiments on the ageing of wines are shown. The microscope used by Pasteur in his investigation of the diseases of silkworms is shown, together with baskets for rearing silkworms, chains of cocoons, and pigeon-holes for rearing isolated worms. Methods of sterilisation are illustrated by the first model of the Chamberland autoclave used in Pasteur's laboratory, and by Chamberland filters. Virulent diseases are illustrated by the flask of putrified blood from which Pasteur obtained the anaërobic microbe which he called the "vibrion septique." U-shaped tubes from Pasteur's laboratory containing anthrax blood, with samples of the first and second vaccines against anthrax as supplied to veterinary surgeons, are exhibited. Down to January 1st, 1900, in France alone, 4,971,494 sheep and 708,980 cattle have been inoculated. Some manuscript notes by Pasteur on the experiments in his laboratory in 1881 on hydrophobia are shown, as are also his platinum spatula instruments for trephining rabbits and to remove the spinal cord, dried cords, etc.

On the right-hand side of the Salon Pasteur is a model of the Pasteur Institute, with the recently-completed Annexe of Biological Chemistry and hospital for hydrophobia and diphtheria patients. An adjacent glass case contains a bouillon culture of the bacillus of diphtheria in a large flat-bottomed flask, the trocar of Roux and Nocard with rubber tube to collect the blood from the immune horse, the jar in which the clot and serum separate; a small filter by L. Martin for experiments on the toxin, the large filter used to filter the cultures of diphtheria to prepare the toxin, the filtered culture, and bottles of the serum in liquid and dried form.

On the left-hand side is the exhibit of the Pasteur Institute at Lille, showing cultures of the plague bacillus of Yersin-Kitasato and the antiplague serum; venomous snakes, with Calmette's serum against snake bite; the sterilisation of water by ozone, with numerous maps, plans and photographs of the Lille Institute.

In small rooms leading out of the Salon Pasteur is a portion of the hygiene exhibit of foreign nations, the major portion being in the Champ de Mars. Germany here shows a large model of the Imperial buildings for sanitary administration, a map of the mineral waters of Germany, numerous plans and elevations of the many sanatoria for the open-air treatment of consumption; also numerous graphic models to show the increase in the population, the fall in death-rates, the hospital accommodation, etc., the most striking being black and red cubes showing the number of deaths from small-pox in 1862-76, that is, 199,410 compared with the number of deaths in 1882-96, that is, 3,291; in 1897 there were only 5 deaths from small-pox. Vaccination and revaccination became compulsory by law in 1874.

Cones show the comparative diphtheria mortality in the age group 1-15 years, in the years 1892-93 (113,259 deaths) before, and, in the years 1896-97 (45,950 deaths) after the introduction of the serum treatment.

Austria exhibits the method of preparing vaccine at the Royal and Imperial Vaccine Institute. The State Serotherapeutic Institute of the Rudolfstiftung Hospital in Vienna exhibits some very interesting tables of the diphtheria mortality in Austria and of the results of serum treatment.

A.—Results of Diphtheria Treatment.

	Treated without Serum.		Treated with Serum.	
	Cases.	Deaths.	Cases.	Deaths.
1896	24,915	8,820	11,432	1,659
1897	20,044	7,599	11,640	1,841
1898	16,963	6,667	15,333	2,428

B.—Deaths from diphtheria before and during the period of serum therapeutics established from the result of post-mortem examination by Dr. Kretz in the Emperor Franz-Joseph Hospital in Vienna.

	Cases treated without Serum.	With Serum.
Total deaths	42.87 per cent.	19.64 per cent.
Of these—		
a. Primary acute diphtheria	25.51 ,,	4.88 per cent., a diminution.
b. Diphtheria with complications, pneumonia, tubercle, &c.	14.09 ,,	7.25 per cent., a diminution.
c. Deaths after cure of diphtheria due to other diseases—pneumonia, tubercle, hydrocephalus, paralysis of the heart ...	3.26 ,,	7.51 per cent., an increase.

C.—Table showing the diphtheria mortality according to the day of the illness on which the serum was first injected.

First day	5.27 per cent.	Fourth day	23.87 per cent.
Second day	8.11 ,,	Fifth day	26.70 ,,
Third day	14.21 ,,	After fifth day ...	28.70 ,,

Italy, Switzerland, and Holland are also exhibitors.

The French Minister of the Interior here exhibits models of the lazarettes and disinfecting stations at Havre, on the Isles of Frioul at Marseilles, at Pauillac, and elsewhere, and numerous statistical tables of the annual mortality in French towns of more than 10,000 inhabitants from all causes, and from certain specified diseases. Here also we see a very great difference in the diphtheria mortality in France since February, 1894, when the serum treatment was first applied in Paris, and has since gradually extended to the whole of France. An interesting map of France shows graphically the number of doctors in proportion to the population, the various cantons without a doctor being painted in black.

The English statistics hang in the adjacent corridor; the diphtheria death-rate, however, does not show any marked decrease since the introduction of serum treatment as in the above-mentioned countries.

BERLIN.

The Red Cross Societies and the Chinese Outbreak.—New Hospital at Charlottenburg.—Jewish Hospital in the East End of Berlin.—The Congress of Medical Men and Naturalists at Aix la Chapelle.—Appointments.

THE Central Committee of the German Red Cross Societies is preparing to send out to China a hospital ship and a stationary hospital, both fully equipped. Count Sohns-Baruth, the Imperial Commissioner and Inspector of German Voluntary Ambulance undertakings, has published an earnest request to the general public that all offers of help in the shape of nurses or nursing material, and all money collected for the same purpose, should be addressed to the existing great organisations for the care of the sick and wounded—the Red Cross societies and the knightly orders.

Charlottenburg, the residential suburb of Berlin, which has grown so quickly of late as to have attained the dimensions of a small town, is beginning to build a fine new hospital of its own, with 600 beds, and capable of enlargement up to the number of 1,000 beds. The estimated cost of the building, for 600 beds, is 7,000,000 marks (£350,000). It is to be a model institute, fulfilling all modern hygienic requirements, and utilising all modern technical expedients.

A small Jewish hospital (for 20 patients) built and endowed by the orthodox portion of the Berlin Jewish community, has just been opened in the East End of Berlin. The peculiar feature of this new establishment is the strict attention which will be given to Jewish ritual in the preparation of food, etc.

Notices have already been given of more than 300 papers and addresses for this year's Congress of German medical men and naturalists, which is to take place in Aix la Chapelle

from September 17th to the 21st. On the first day there will be a general sitting, in which some of the most eminent specialists will give a general view of the progress made in medicine and natural science during the nineteenth century. Professor van 't Hoff (Berlin) will speak on anorganic natural science; Professor O. Hertwig (Berlin) on the development of biology; Professor Naunyn (Strassburg) on internal medicine, including bacteriology and hygiene; and Professor Chiari (Prague) on pathological anatomy and external medicine. At another of the general meetings Professor D. Hansemann (Berlin) will deliver an address on some cell problems and their importance for the scientific basis of organotherapeutics, and Professor Julius Wolff (Berlin) will speak on the interrelation between form and function of the different parts of the organism. In connection with this Congress the new German Society for School Hygiene, founded by distinguished educationalists as well as doctors, will hold its first annual meeting in Aix la Chapelle; and the Medical Society of Total Abstainers will likewise hold its annual meeting at the same place and time.

Professor Brieger is to be appointed to the newly-endowed Professorship for Hydropathy in the Berlin University, and will begin his first course of lectures on the subject directly after the summer holidays, when the hydropathic department of the new Charité building will be completed and ready for practical work. The new hospital in Gross-Lichterfelde, a suburb of Berlin, has appointed Professor Schweninger physician in chief, and Dr. Schleich, the eminent young surgeon, director of the surgical department.

MONTREAL.

Threatenings of Plague.—Small-pox.—Ontario Association for the Prevention of Consumption.—Ontario Medical Association.—Quebec Medical Society.

THE health Boards of the towns and cities on the Pacific Coast are instituting measures to control any outbreak of the plague, isolated cases of which have been reported in some of the seaports on this coast. Several cases of plague have been seen in San Francisco, U.S.A., which city has been in danger of quarantine by all Canadian cities. The danger of cutting off San Francisco's coal supply, which is largely derived from Victoria, B.C., has led to the publishing by the Board of Health of San Francisco of information proving that no case of plague now exists in the latter city. The large Chinese population there has made an epidemic of the plague quite possible during the summer months. A similar Chinese population in Montreal has emphasised the existence of the same danger of infection should any isolated case break out among these people here. Following the example of all of the cities on the Pacific Coast, Dr. Laberge, of the Montreal Board of Health, has recently overhauled the many residences of the Chinamen living in this city and has insisted on the proper renovation of the dirty huts and hovels where so many of the Celestials were crowded together.

A mild case of small-pox was discovered in a house in Market Street, Montreal, recently. The patient was a Syrian girl, 17 years old, who had been in Montreal for only four days. She had just arrived from Syria, by way of Quebec and England. It is supposed that she was suffering from some slight ailment when the vessel arrived in port. The disease seems to be of the mild character seen so frequently in this country, and the patient now at the Civic Hospital is well on the way to recovery. No other new cases of this disease have been discovered in Montreal for the past six weeks.

The interest of medical men in problems of hygiene, especially those connected with the spread of contagious disease, is manifested by the formation in Ontario of a provincial association for the prevention of consumption. Dr. James Thorburn was elected President of this Association; Dr. P. H. Bryce, of the Provincial Board of Health, Secretary; Dr. Brock, London, Treasurer; and the Rev. Dr. Eby, Toronto, organiser. By recent provincial legislation local municipalities have power to establish sanitaria directly under the control of the Government, and it is the object of this association to stir up a general interest in limiting the spread of this disease, and the ultimate establishment of as many properly endowed sanitaria for the care of consumptives as possible.

The Ontario Medical Association held its annual meeting during June. The most important work done at this meeting was the consideration of a number of propositions with respect to Dominion registration. A special committee was appointed to forward the project which has been inaugurated by Dr. Roddick of Montreal, who has introduced a measure before the Dominion Legislature. Another method of accomplishing the same object was advocated by Dr. Campbell, of Toronto, who introduced a resolution to the effect that the Ontario Medical Council should agree to register practitioners hereafter registered in any other province which may agree to register Ontario practitioners under similar conditions. In the event of two or more provinces agreeing with Ontario in a system of interprovincial registration, the Ontario Council should approve of legislation by the Dominion Government to provide Dominion registration for anyone registered in two or more provinces. The next meeting of the Association will be held in Toronto next year, and Dr. A. McKinnon was elected President.

The annual meeting of the Quebec Medical Society was held on June 25th and 26th. A conference held in the lecture hall of Laval University was opened by Rev. O. Mathieu, rector of the university, who welcomed the society in the name of the university. The annual address was delivered by Dr. S. J. Simard, who spoke on the progress of Laval since 1852.

SHEFFIELD.

The Royal Infirmary.—The Hospital Saturday Fund.—The Anti-vivisection Agitation.

THE Chairman of the Weekly Board of the Royal Infirmary received last week a very cordial welcome from the Board and medical staff on his return to his duties after a prolonged absence owing to serious illness. The medical staff presented him with a resolution complimenting him on his recovery and setting forth their appreciation of the manner in which he had promoted and sustained a cordial relationship between the Weekly Board and themselves. They recognised also the great and rapid progress the institution had made under his chairmanship. The harmony existing between the medical staff and the Board of Management is a matter for mutual congratulation, and the advantages accruing to an institution from a cordial working together of the management and staff has been evidenced in many ways, but especially perhaps in the many improvements that have of late been promoted at the infirmary.

It is satisfactory to note that notwithstanding the calls for the War Funds the sum collected for Hospital Saturday considerably exceeded that of last year. The total sum last year was £1,648 17s. 9d., and this year it is £1,780 7s. 10d. This may be taken as evidence of the good state of trade, but also of the generous manner in which the working classes are giving some of their earnings to good objects, for during the continuance of the war weekly collections have been made at most of the works for the Reservists' Fund and more recently, in addition, for the Indian Famine Fund.

The antivivisectors after a lull are again on the war path. The walls and hoardings of the town are placarded with "torture" pictures calculated to hold the medical profession up to opprobrium and possibly to arouse the sympathies of the ill-informed. The campaign is fairly launched against the holding of a licence at the University College. An office has been started and signatures are solicited for a petition for the withdrawal of the licence. An active canvass is also being promoted with the same object in view.

FRENCH-CANADIAN FECUNDITY.—A French Canadian livin in a Rhode Island town was recently presented by his third wife with his forty-first child. His first wife gave birth to several pairs of twins, and his second presented him with three sets of triplets. Thirty-six of the children are living, and many of them have families of their own. Eight of the grandchildren also are parents. This patriarch may be congratulated on a "fecundity" which should satisfy even the large ideas of M. Zola on the subject. The case here quoted, though remarkable, is by no means a unique instance of the fidelity with which the French Canadians carry out the precept "Increase and multiply," which is so generally neglected by their cousins in the mother country.

CORRESPONDENCE.

THE MILITARY MEDICAL ARRANGEMENTS IN SOUTH AFRICA.

SIR,—Mr. Burdett-Coutts has very fairly and justly admitted the admirable and devoted work done in South Africa by the army doctors, and laid the saddle of blame on the back of the organising authorities at home and abroad, and I am sure that no one will regret more than he must the tone imported into this controversy by some of his professed supporters. We shall, I hope, continue to pursue our investigations calmly and temperately, and in a judicial spirit without heat or spite, or imputation of motives, and with the one and only desire to reach the truth, and therefore we shall do well to disregard as entirely unworthy of serious consideration the shrill protests of certain ladies who are making their voices heard. Even the man in the street knows the motives by which they are actuated, and that their observations are simply due to the fact that they failed to persuade the authorities to take them seriously as nurses, and that they are now endeavouring to reassert their position at the expense of those who not only know but do their work. Let them take refuge in the sacred circle of smart society, where they can pose as martyrs, and receive the sympathy of their friends.

We must admit that there was a good deal of confusion and disorganisation in the hospital arrangements at Bloemfontein, but what we want to know is how far this was unavoidable under the stress and strain of military necessity, and whether the discomfort and overcrowding observed by Mr. Burdett-Coutts were due to the rapid march of the troops, the annexation by the chief of the staff of all means of transport, and by the mysterious loss of the convoy to which so little attention has been directed in or out of the House. Finally, who is to blame for all those, and who are to hang—metaphorically or otherwise? Sir Charles Dilke, though an opponent of capital punishment, is keen to put someone's head in a noose; but I cannot believe with him that the arrangements in South Africa are all wrong because someone stole some condensed milk, or that the condition of the single hospital described by Mr. Burdett-Coutts should be taken as a type of all the others. All this must receive most careful investigation; but where the right. hon. baronet has done such admirable service, in conjunction with Sir Walter Foster, Mr. Arnold Forster, Captain Norton, and others, has been by his persistent efforts in season and out of season to rouse an apathetic House of Commons and country to the great danger of the cheese-paring depletion of the ranks of the Army Medical Department, and the hopeless impossibility of its present constitution to meet the requirements of an extended and prolonged campaign.

What must strike the ordinary mortal most as he lays down his morning paper is the amazing divergence of testimony of onlookers and hearers at the seat of war. Mr. Burdett-Coutts says one thing, and his facts are vigorously disputed by eminent specialists who have travelled over the same ground. We all remember the story of eyes and no eyes, and, although it is a trite remark, it is none the less true that the faculty of correctly observing the most ordinary and patent things not only requires careful training, but is nearly as rare as the power of recording accurately without oratorical adornment what we have seen. What Mr. Burdett-Coutts's qualifications for the part of critic may be I do not know, but I cannot quit him from the too common mistake of merging the particular in the general, and drawing wide deductions from a too slender basis of facts. Some of his individual accusations no doubt are startling enough, but I may venture to place my own interpretation on them.

To begin with, the ratio of success in the treatment of the wounded was abnormally high. This was due, in my humble opinion, partly to the nature of the Mauser bullet which slips through the most important tissues and leaves scarcely a trace of its visit, partly to the skilful application of antiseptic first dressings in the field, and the scientific conduct of the cases afterwards, and finally to the fact that the wounded were frequently enabled to go through their early and most perilous stages in the open air, in a fine dry climate, and with that perfect immobility which is so absolutely essential to abdominal wounds. Coming next to enteric, let it be noted that the type of disease in South Africa is both severe and prolonged, and that the antiquated and misleading term of "common continued fever" is made to include many of the slight cases, and therefore to vitiate the statistics. Here again a gratifying amount of success has to be acknowledged, and this with Mr. Treves I hold to be due to the fact that they were treated in the open-air or in tents, not in stuffy houses or insanitary huts, and above all that they were kept perfectly quiet—an essential condition of success in this most insidious and treacherous disease. Mr. Burdett-Coutts does I think scant justice to the work of the hospital orderlies. All I can say is that during nine years of medical service in the army I never saw a female nurse, and that I can speak in the highest terms of the work done by these men. As a rule the orderly is patient and reliable and temperate; above all things he is accustomed to discipline and will do as he is told, which is about the last thing that occurs to the mind of the society amateur.

In conclusion, may I utter a word of earnest protest against the cheap comments of Mr. Burdett-Coutts on the Reform Club banquet and its distinguished guests? Why Sir William MacCormac and Mr. Treves, after patriotically leaving their homes and lucrative work and returning in impaired health, bearing with them the most brilliant record of surgical achievement known in ancient or modern times, should be grudged the social recognition so freely granted to the so-called combatant branches of the army passes my comprehension. Why a dinner given to these patriotic gentlemen on their return should be "ill timed" is not very obvious. The new humour, like the new diplomacy, is sometimes a little difficult to understand, but if we are expected to smile genially at all this, I must claim the privilege of my country and protest that the member for Westminster "jokes wi' deeficulty." But if we are to take it all in solemn earnest, then the case is very serious indeed, for we are told of the "incredible ignorance" of my two friends of "current facts;" of their "bankruptcy of insurance against patent dangers"; and, finally, they are roundly accused of misleading and misinforming public opinion—in other words they are stupid, ignorant, and dishonest, and are only fit to be classed with the modern correspondent who is afraid to write the truth, and the British soldier who is too craven-spirited to make his complaints known.

But on these and all other questions we must suspend our judgment until we read the evidence and receive the report.—I am, etc.,

House of Commons, July 6th. ROBERT FARQUHARSON.

THE PROPOSED NEW ARTICLES.

SIR,—In order that the general meeting should more accurately than in the past represent the general feeling of the members of the Association, I would like to suggest that the principle of delegation should be adopted; that questions affecting the general welfare of the profession be brought forward at the annual meetings of the Branches; the feeling of the members ascertained—if necessary by voting cards sent to the members, and that the delegates be instructed accordingly. Delegates could be appointed in proportion to the number of the members of the Branches; their votes would be the votes of the individual members, and according to the numbers they represented. If this was done it could no longer be said that "the general meetings were merely a fortuitous congress of atoms dragged together from all parts of the country." It might be argued that this would do away with the power of the individual members, as under the proposed arrangement delegates alone would have the power of voting, but they would be represented by their delegates. An additional advantage would be that there would be another inducement for every member to join a Branch in order to obtain representation. It is to be regretted that it is not the invariable rule that matters affecting the honour and interests of the profession are discussed at the annual meetings of Branches. I have reason to believe that they are generally made an excuse for a holiday. I do not wish to pose as a scorner of holidays or recreation, but I think that when a number of intelligent and thinking men are gathered together, it is a pity to waste the opportunity of discussing matters of interest to

the profession at large, and arranging matters of policy.—I am, etc.,

Plymouth, July 8th. G. JACKSON, F.R.C.S.Eng.

P.S.—I regret to see no mention of the principle above referred to in the proposed new constitution.

SIR,—The Council of the Association deserve the cordial thanks of the members for the draft copy of the new proposed regulations published in the last number of the BRITISH MEDICAL JOURNAL. Its preparation was by no means premature; the passing of such a code will be an important epoch in the history of the Association; and it may be hoped that in the meetings appointed for the discussion of the many matters therein all reasonable latitude will be allowed for full and free consideration of the same.

In the meantime I would ask your permission to make the following suggestions upon some of the paragraphs of the draft copy:—

Paragraph 4.—That "Removal of Members" be the heading instead of "Expulsion."

Paragraph 16.—That the notice of general meetings be 21 days instead of 7 as proposed.

Paragraph 18.—That the quorum at a general meeting be 100 instead of 40, and exclusive of members of the Council.

Paragraphs 23, 24, and 25.—That in case of any unusually important subject, or scheme involving a modification of the objects of the Association, provision should be herein made for the power of referendum to the general body of members, at least those residing in the United Kingdom—by means of voting papers, so as to safeguard the rights of the minority of voters at any general meeting, provided such minority be not less than two-fifths of the total number of members present, and that such referendum be unanimously claimed by the said minority.

Paragraph 31.—That the quorum of a Council meeting be equal to one-third of the total number of representative members of the Council instead of 7.

Paragraph 40.—That "Chairman" be substituted for "President" of the Council.

I would also suggest that these "Articles" be called the "By-laws" of the Association—that each heading be called a "Section" and numbered consecutively in Roman figures, and that each paragraph be called a By-Law.—I am, etc.,

Swanley, July 8th. JOHN INCE, M.D., I.M.S. (Retired).

SIR,—The appearance of the new regulations proposed by the Council marks an epoch in the history of the British Medical Association. For years the demand for a policy more active and more in harmony with the expressed wishes of the profession has been growing louder and more persistent. The response by the Council is an attempt to get the entire control of the Association into its own hands. No business is to be brought before the annual meeting except by the permission of the Council. Nothing that the Council may have done, or may be about to do, is to be invalidated by any action of the annual meeting, and all power of voting money for the legitimate purposes of the Association is to be taken away from the members assembled therein. In other words twenty thousand shareholders in a limited liability company, each possessing the same number of shares, are asked to waive their legal right to control their own affairs, whilst still continuing their liability. I venture to hope, in the interest of the Association itself, that this attempt at "jerrymandering" will be quashed once for all.—I am, etc.,

Salford, July 8th. R. HANSON WOLSTENHOLME.

SIR,—The draft articles of the Association given in the BRITISH MEDICAL JOURNAL of July 7th, p. 54, look harmless and specious, but in Article 35 the snake lurks in the grass. This article, if passed, will hand over to the Council in a most dangerous manner "the business and affairs of the Association, including the disposition of its funds." The Council will then have absolute control of the expenditure of the Association, and the chairman at any general meeting can rule out of order any comment or consideration by members of any financial statement whatever.

The Council have long disregarded any general instruction given by general meeting, but the general meeting has retained certain power in the framing of by-laws. The subclauses (*a*) and (*b*) closing Article 35 entirely remove all power of changing by-laws from the hands of the general meeting and vest them in those of the Council.

Such important points as the salaries of the salaried officers were placed, and rightly placed, at the discretion of the Council, but this discretion was allowed by By-laws 12 and 13, which were revocable by general meeting. Under the new articles it would be impossible for the general meeting even to consider the application of their funds to such salaries.

The Council, or even a small section of the Council, might hand over the savings of the Association (some £50,000) to anybody it chose, if it was only dimly connected with the medical profession, with no other safeguard than that vaguely afforded by Article 3 of the Memorandum of Association, and no comment on such expenditure will be allowed to the members.

I cannot conceive any sensible man investing money with a commercial undertaking managed on these lines, even if the directors were elected directly. As, however, in the British Medical Association the Council (who are the directors) are elected practically by various and diverse forms of obscure co-optation, the risk to the shareholders is greater still.

Further, it is open to serious question whether Article 35 is not an absolute contravention of the Companies Acts (1862-67 and 1874), which provide for the control of directors by their shareholders in general meeting. The Council of the Association is a body of directors of a commercial undertaking incorporated and registered under these Acts.—I am, etc.,

Westerham, July 9th. ARTHUR MAUDE.

THE PROPOSED MEETING OF THE INTERNATIONAL CONGRESS OF OBSTETRICS AND GYNÆCOLOGY IN LONDON IN 1902.

SIR,—Everyone will, I trust, sympathise with the motives which have induced Professor Sinclair to write the excellent letter which appears in the BRITISH MEDICAL JOURNAL of July 7th on the proposed meeting of the International Congress of Obstetrics and Gynæcology in London in 1902. I think it beyond doubt that if this meeting is persevered in as at present arranged it will be a most deplorable fiasco.

In addressing you on the subject I am speaking for myself alone. I have no right to represent my co-signatories, and the fact of my taking the chair at the meeting of the Metropolitan Teachers of Obstetrics and Gynæcology, and signing the covering letter addressed to you, was simply due to seniority. Personally I have no feeling of animosity to the Gynæcological Society, whose action has led to the present unfortunate state of affairs. In common with many others I deplored the circumstances which led to its formation, but after it had been founded I felt that the sooner these were forgotten the better. It seemed to me that there was plenty of room in the metropolis for both societies, and that the sooner they could be got to work amicably together the better it would be for both. To promote a more friendly feeling between them I successfully moved a resolution in the Council of the Obstetrical Society to rescind a rule of the Council which must necessarily have proved irritating to the Gynæcological Society. I am afraid that the *rapprochement* which I had hoped to bring about has been indefinitely postponed by this unfortunate affair, the facts of which I do not wish to discuss. My present object is to join Professor Sinclair in discussing what should be done to welcome our foreign friends in a manner worthy of this great metropolis.

My own idea is that it would be wiser to give up any attempts at holding the Congress in London in 1902. If the next meeting were held elsewhere, time would be given for all ill feeling to subside, and the meeting after that might be held in London to the satisfaction of everybody.

Even then, it seems to me that neither the Obstetrical nor the Gynæcological Society should take an active part in the arrangements, *qua* Societies. Surely it would be better for the London and provincial teachers of obstetrics and gynæcology to meet, as Professor Sinclair suggests. The Honorary Secretaries of the Societies should meet and elect an executive committee which would be thoroughly representative, and which would, it is to be hoped, meet with the approval of all interested in the matter.—I am, etc.,

London, July 9th. W. S. PLAYFAIR.

CHEESEPARING AT THE COLONIAL OFFICE.

SIR,—The Colonial Office is advertising for temporary civilian medical officers for an expedition—presumably military—to Coomassie. The emoluments offered for this

service are £30 a month for a six months' engagement, free rations, a gratuity of ten days' pay for every complete month served on the Coast—time occupied on the passage out and home apparently not counting towards the gratuity—and a free passage out and home.

When these terms are compared with the War Office remuneration to civilian surgeons in South Africa, namely, £1 a day, 3s. a day allowance, free rations, a horse and servant, two months' pay as a gratuity, and a free passage out and home, and when one considers that the climate of this part of the West Coast is the most deadly along that most deadly littoral—while that of South Africa is, under ordinary conditions, perhaps the best in the world—the total inadequacy of the pay offered for the temporary, but arduous and deadly work demanded is at once apparent. If there is any sliding-scale of remuneration based on the risks involved and the work entailed, then the pay and allowances of these West Coast officers should be at least double those of their South African *confrères*.

Men must be down on their luck indeed, professionally, socially, and financially, to accept this work at the rates offered, and I can hardly congratulate the Colonial Office on the type of medical man they are likely to obtain by their munificent offer.—I am, etc.,

July 10th. CANTAB.

HOSPITAL REVENUES AND THE WAR EMERGENCY.

SIR,—Mr. Timothy Holmes, in the BRITISH MEDICAL JOURNAL of July 7th, says: "I quite fail to understand what he (I) means about 'a young medical man economically managing his department.'" My actual words were: "It is well known that it takes at least a year for any young medical man to learn how to economically manage his department." Is it possible that Mr. Holmes, with his great experience, can fail to grasp the fact that the house-surgeon and house-physician in practice are the officers who *de facto* control the dieting of the patients to a larger extent than anybody else? In my own experience I have found the expenditure upon provisions, etc., to be increased in a hospital containing rather more than 100 beds by quite £250, owing to a change in the office of house-surgeon or house-physician, because the ordering of diets and the relative cost of particular items of diet is a matter of experience which no young official can attain to without considerable practice, no matter how anxious he may be to promote economy in the administration of his department. I would refer Mr. Holmes and others interested in this question to vol. iii of *Hospitals and Asylums of the World*, pp. 174-7 and 905-11. I there go fully into this point, and show how important a bearing it has upon economical expenditure, and how it tends to account in large measure for the relatively lower expenditure at provincial and Scotch institutions.

At the Scotch hospitals, where thrift is a prominent feature of the administration, very great care is exercised in all directions to secure the maximum of economy throughout the establishment. At the Edinburgh Royal Infirmary, for instance, the expenditure upon the patients under the care of each member of the honorary medical staff is carefully recorded. All the books have for years been kept upon a system which makes it possible to bring out in the monthly return the relative cost of treating patients under each physician and surgeon. A set of the forms used will be found on pp. 905 *et seq.* of vol. iii of *Hospitals and Asylums of the World*. Copies of these returns are submitted to the Board, and are also furnished monthly to the superintendent and to each of the principal physicians and surgeons.

In practice the system has proved most effective in reducing expenditure. Dr. A., for instance, sees that his patients cost considerably more than Dr. B.'s, and as a result he goes down to the hospital when the monthly return is delivered, and, accompanied by his house-physician or house-surgeon, carefully revises the whole of the diets and lists of extras, so as to secure that he shall not occupy in the succeeding month the invidious position of spending say, twice as much as any of his colleagues upon the cases which occupy beds allocated to himself.

I have visited the Edinburgh Royal Infirmary several times, have conferred with the superintendent, examined the system and its results, and have formed the conclusion that its general adoption would tend to bring down the expenditure in metropolitan and provincial hospitals to an extent which would largely remove the existing differences in the actual cost of each bed occupied in each of the principal British hospitals. This must be my excuse for troubling you once again on this subject, especially as Mr. Holmes's statement that he quite fails to understand what I meant by my previous reference to the point, leads me to think that it is essential, in the interests of all the hospitals, that it should be fully gone into, debated, and reconsidered without further delay.—I am, etc.,

Porchester Square, W., July 7th. HENRY C. BURDETT.

THE USE OF BORIC ACID AND FORMALDEHYDE AS PRESERVATIVES OF FOOD.

SIR,—Dr. W. D. Halliburton, in his interesting article on this subject, states that he is unable to agree with my opinion that "formaldehyde is the least objectionable of the preservatives of food." It is true that I use these words in my *Commercial Organic Analysis*, vol. iv, p. 180, but the context shows the grounds on which I gave it the preference. The passage in question is as follows:—

> Formaldehyde is probably one of the least objectionable preservatives of milk, since it does not introduce extraneous mineral matters, like boric acid, borax, and fluorine compounds; and the readiness with which it suffers oxidation gives it the preference over antiseptics of the salicylic acid class. But the physiological effects of formaldehyde are at present very imperfectly known, and the practice of adding antiseptics to food is to be deprecated. In this connection, it is noteworthy that several observers have found the casein of milk containing formaldehyde to be dissolved by acid with much less facility than the casein of pure milk.

I am, etc.,

Sheffield, July 9th. ALFRED H. ALLEN.

MR. JONATHAN HUTCHINSON ON LEPROSY IN SOUTH AFRICA.

SIR,—At a *conversazione* held recently at the Polyclinic, Mr. Jonathan Hutchinson in a lecture on the Story of Robben Island, gave an account of this leper establishment at the Cape of Good Hope. He at the same time avowed his belief that leprosy was produced by food and not by contagion, and finally stated that he held the detention of lepers on Robben Island to be a great injustice. So strong a statement on the subject of a public institution from a man of Mr. Hutchinson's high standing naturally found its way into the press, and appeared, among other journals, in *South Africa*, where it will doubtless be read by colonial voters and legislators. In consideration of the fact that the great bulk of modern scientific opinion supports the view that leprosy is contagious—in the sense which bacteriology has attached to the term—Mr. Hutchinson's assertion seems distinctly unfortunate, and might conceivably do positive mischief. I have read what Mr. Hutchinson has written on the question, and I have listened with attention to what he has said on different occasions at the Polyclinic. If in spite of this I should inadvertently in the least degree misrepresent his views he will doubtless correct me.

Mr. Hutchinson has stated that he believes leprosy to be produced by certain kinds of food, and that fish, especially partially cooked salt fish, is the most common kind of such food. He believes that the disease cannot be conveyed from man to man. At the same time he admits the bacillary view of the disease, and says he has practically no doubt that the bacillus leprae is the cause of it.

Let us consider for a moment what these views involve. If the bacillus leprae be the cause of the disease and fish be the means of its conveyance, one might suppose that the bacilli would ere this have been discovered in some species of fish. They have hitherto been sought in vain in fish. This is, however, merely negative evidence, and I do not desire to attach undue weight to it. I would merely point out that until the bacilli are found in fish there is no positive evidence to adduce as to fish being a means for conveying the disease. Such evidence as exists, then, is merely circumstantial—that is to say, certain people eat salt fish, they develop leprosy; therefore the salt fish may be the cause. Setting aside for the moment the fact that many cases of leprosy occur among people who practically never take such food, I will admit that, for aught we know to the contrary, salt fish may in some cases be the cause. At the same time, I must point out that an even better case, if case it can be called, could be made

out in South Africa for other articles of food—say mealies (maize) (I am not sure that even the wearing of ready-made boots might not be urged with equal force as a possible cause).

But let us extend to Mr. Hutchinson all that he would desire in this matter; let us for the sake of argument assume that fish, cooked or uncooked, salt or fresh, are responsible for producing the disease. How much further does this carry us? Does the acceptance of such a hypothesis tell for or against contagion—or, to be explicit and avoid misunderstanding with regard to a term the connotation of which has been so radically modified by bacteriology, for or against the view that a man who is the host of the bacillus leprae may at certain stages of the disease, when these bacilli escape in discharges, be, through channels not yet definitely ascertained, a source of danger to man? I submit that Mr. Hutchinson's fish theory tells absolutely in favour of communicability from man to man. For, in whatever organ or organs the bacilli leprae in the affected fish, not yet discovered, may be supposed to reside, of one thing at least we are certain: the bacilli leprae abound in the tissues of the leper himself in certain stages of the disease. Bacilli do not arise *de novo*. They must come from somewhere. They may or they may not exist in the fish, but they undoubtedly can be obtained from, and are, under conditions of native life, indiscriminately shed from a leprous man in the ulcerative stage. Surely what the bacilli from fish do the same bacilli from man may do. If, then, the bacillary view of the disease be, as Mr. Hutchinson believes, accurate, and fish, as he further believes, convey the bacilli, and so successfully establish leprosy in man, it follows that a leprous man is himself a possible danger to man. Under these circumstances the segregation of lepers, the vast majority of whom are natives, on an island in the finest climate in the world, is not fairly described as a cruel injustice.

But leaving the fish for a moment at the bar of scientific opinion, let us turn to the leper himself. The development of anthrax may be numbered by days, of tuberculosis by months, of leprosy by years. Different bacilli have different life-histories and different rates of development. The slower the rate of development the more difficult is it to follow the life-history. Twenty years ago the commonest malady of mankind—tuberculosis—was held to be non-communicable from man to man, unless it were so by inheritance. This belief was held by the bulk of the medical profession for centuries. To-day we know that tuberculosis may be communicated from man to man by inhalation of dust containing dried tuberculous sputum, more rarely by inoculation.

What are the facts with reference to leprosy? Leprosy and tuberculosis both belong to the granulomata. The bacillus tuberculosis produces the tubercle, the bacillus leprae the leproma. Both these nodules in time ulcerate and give rise to a discharge containing living bacilli, which may, and in the case of the neglected leper do, pollute dust. The dust of tuberculosis, inhaled or ingested in quantity, may produce in the course of a year tuberculosis. What evidence of a reliable character have we that inoculated, inhaled, or ingested leprous dust may not in the course of several years set up leprosy? If the bacillary view be accurate, it is reasonable to suppose it may. I admit we still want positive proof. But the difficulties of such direct proof are very great—greater by far than in the more rapidly-developing tuberculosis—and the detection of the channels of tuberculous infection was no light task. The condition of the tissues, the soil receiving the seed, is doubtless as important a factor in leprosy as in tuberculosis.

It is said that little or no positive results have been obtained from inoculation experiments with leprosy. Nevertheless one or two significant cases have been recorded. Moreover inoculation of tuberculosis is a rare occurrence in man. Inhalation and ingestion are both commoner modes of conveyance. Certain facts with regard to leprosy are unanswerable. It does not arise *de novo*. Where it has once vanished from a community it does not again appear. All the salt fish consumed in Shetland, the Isle of Man, and even Ireland for a century have not produced a single case. It only occurs where the victim has been brought into contact with other cases of leprosy.

On every ground then, including even that taken by Mr. Jonathan Hutchinson, I submit that to publicly denounce segregation of poor native lepers, unable in many cases to provide for themselves, is not warrantable.—I am, etc.,

Wimpole Street, W., June 19th. ALFRED HILLIER.

SICK AND WOUNDED OFFICERS' SURGICAL AND MEDICAL AID COMMITTEE.

SIR,—The outbreak of hostilities in China and on the West Coast of Africa must, it is feared, result in the early arrival of many naval, military, and other officers invalided home from the operations now being carried on in those quarters.

Would you kindly allow me to make known through your columns that this Committee, originally formed to provide medical and surgical aid for those who have suffered in South Africa, will be equally prepared to render assistance to officers returning home from these other theatres of war?

Applications should be addressed to the Honourable Arthur Brodrick, at Hampden House.—I am, etc.,

Hampden House, Green Street, W., July 11th. ABERCORN.

PECTORAL MUSCLE ASPIRATION A PROBABLE CAUSE OF BREAST CARCINOMA.

SIR,—Histological methods in the hands of Sanfelice, Plimmer, and others have placed it beyond doubt that sections of breast carcinoma contain foreign bodies. The question now is, How do they get there? I wish to lay before the profession a probable explanation based on the aspiration action of the great pectoral muscles. When the horse is young, he passes through a disease called "strangles," during which an abscess forms between the rami of the lower jaw in close proximity to the larynx. Occasionally this abscess is situated between the fore extremities over the large pectoral muscles. When ripe and ready, when lanced, either a ligature (surcingle) is tightly strapped around the thorax to limit the action of the pectorals, or the head is tied to the hay rack to prevent movement of the fore extremities altogether. Where one or other of these precautions is not taken, air gets into the cellular tissue and separates the skin from the subjoined tissue, it may be over half the body, and gives rise to slight fever and distress, while pressure over the skin elicits egg-shell crackling. The same phenomenon sometimes happens in wounds of the same part made in leaping over a hedge and alighting on the point of a hedge stake.

If, then, an organism which either has or has not the power of self-propulsion finds its way into the mouth of any one of the ducts which go to form the nipple, we can conceive its power to invade any part of the breast if the duct which contains it is pervious to air. Duct carcinoma occurs at any point along the duct from its entrance (nipple) to the base of the breast apposed to the pectoral muscle. To account for extra-duct carcinoma, if I may use so wide a term, we have only to bear in mind the brittleness of basement membranes probably in the body everywhere, but certainly in those organs going over into old age, as in the case of the woman's breast during the last years of child-bearing. A blow or other injury fractures this basement membrane, and allows the foreign organism to invade those structures from which the basement membrane has hitherto separated it. We have still to account for those cases in which injury is either not to be traced, or may not have taken place. These, however, can easily be accounted for if we admit that grave nutritional changes are implied in the physical attribute, brittleness. A brittle basement membrane must be incapable of self-repair if split or torn, and also incapable of withstanding phagocytic or other disintegrating action.—I am, etc.,

Harrogate. WILLIAM FEARNLEY, M.D.

IS CANCER CURABLE?

SIR,—Very few medical men will be found to disagree with the dictum that cancer is curable by operation, but how soon we may safely say that any individual case is cured, is a question which is always very doubtful. Although several cases of long-continued immunity followed by an apparently fresh outbreak of disease have been published, yet we ought to receive with caution the hypothesis that, because the interval has been long, the new outbreak cannot be due to a secondary deposit; especially when we bear in mind the length of time cancer may be latent and undiscovered. I very well remember a case illustrating this point. An elderly man was operated

on for epithelioma of the lip; he remained free from disease and in good health for five years. At the end of that time he noticed a small lump under the chin which rapidly enlarged, until at the time I saw him it was as large as a walnut. The gland was removed and was demonstrated microscopically to be infiltrated with epithelioma. At the time of the operation the scar on the lip was quite healthy and hardly visible, and there was no sign of any epitheliomatous growth elsewhere in the body. I can only suppose that this lymphatic gland was infected prior to the first operation and took on active growth after remaining quiescent for five years.

I have no doubt that many of your readers could supply other cases of a similar character from their own experience. While freely admitting that some subjects may be more susceptible than others to the inroads of malignant disease, yet I think most of our facts point to the conclusion that in all but a very few cases the recurrence is secondary to the primary lesion. Is it not possible, in those cases of mammary carcinoma in which both breasts are diseased, that one gland becomes infected from the other? The growth is usually of older standing and more advanced in one gland than in the other. An explanation of this unusual infection may be found in the blocking of the lymph channels. The costal lymphatics anastomose across the middle line; when therefore the axillary and other lymphatics on one side are blocked by new growth, the lymph stream might very easily be diverted across the middle line through the opposite breast infecting that side with the growth from the diseased side.

Another point to remember is that when a patient is again attacked—if the cancer has not become generally diffused through the body—the disease usually returns in the same locality or in the glands of the neighbourhood. As Mr. Jennings says of his case, he would expect to find a recurrence in the old operation scar. The weight of evidence is distinctly against Dr. Raven's and Mr. Jennings's hypothesis.—I am, etc.,

G. P. S.

MEDICAL CO OPERATION AS APPLIED TO MEDICAL AND SURGICAL REQUIREMENTS.

SIR,—In reply to "Another M.D., M.S.," permit me to say that the Surgical Supply Association, Limited, of Market Street, Manchester, has travellers. One called upon me last year, and I regret to say I gave him an order to get rid of him.—I am, etc.,

June 22nd. BIRMINGHAM.

THE REMOTER CONSEQUENCES OF GONORRHŒA.

SIR,—At the meeting of the British Medical Association last August I submitted the syphilitic factor in the etiology of pelvic inflammation and chronic invalidism in women, as partly opposed to the usual and, it seemed to me, inadequate explanation of gonorrhœa and sepsis. In the BRITISH MEDICAL JOURNAL of April 7th it is stated in a leading article that "the importance of gonorrhœa as an etiological factor in the diseases of women is now generally recognised by gynæcologists, and it is probably responsible for more chronic invalidism amongst women than any other affection." As this is partly based on Professor Neisser's recent paper,[1] I would point out from the same source that the proportion of gonorrhœa he gives to other venereal diseases is 47.3 of the whole number. He thinks this too low for women, and Saenger's estimate of 50 per cent. complications too high. He agrees with Saenger's estimate of 12 per cent. gonorrhœa as a disease in the female, and with Bumm's 14 per cent. uterine complications and 3.6 tubal.

No statistics of mixed gonorrhœa and syphilis are apparent, nor of the direct proportion of gonorrhœal complications to secondary syphilo-septic or other causes of endometritis, cervicitis, and pelvic inflammations; while in dealing with the statistics of operation mortality Neisser states that "it is difficult moreover to make the necessary separation between what are surely gonorrhœal and non-gonorrhœal affections of the uterine adnexa." This necessarily applies in the main to the systemic affections and toxæmias of gonorrhœa pictured by him. This doubt seems to me only to emphasise the teaching of modified mercurial treatment in chronic cases in both sexes which have been explained as cases of syphilitic contamination or of double acquisition. While acknowledging the immense value of Neisser's discovery of the gonococcus and its causal agency, nevertheless in opposition to him, the suggestion that it may not always arise from contamination of a previous case, but also be an effect of disease, irritation, and filth, by conversion of pre-existing non-pathogenic germs into pathogenic, finds support in the work of Lustgarten,[2] Lydston,[3] and others.—I am, etc.,

Grosvenor Street, W. JOHN A. SHAW-MACKENZIE.

[1] Gonorrhœa; Its Dangers to Society, *New York Medical News*, January 13th to 20th.

THE COCKADE.

SIR,—Mr. Fox-Davies, in his *Armorial Bearings*, states that there is no law as to cockades, and speaks of their usage as being regulated by custom. What is sauce for the military goose must surely be sauce for the civil gander. The cockade was originally a "mere fighting badge." It was custom which enlarged its usage. First, as a complimentary military sign, and now as a mark of distinction adopted by gentlemen (or their widows) owning civil commissions, such as Her Majesty's judges, counsel, and justices of the peace.

It is indisputable that the habit for magistrates as such to adopt the cockade is widespread, if not universal. The man in the street associates it with the "beak" rather than with the deputy-lieutenant, of whose dignity he has perhaps never heard.

If a purely military distinction to-day, why do peers and baronets who have no military or quasi-military qualification use it? And to which of the services is a bishop, or an archbishop attached, or a privy councillor? The fact is that the same custom which ordained the brooch on the three-cornered hats, which allows the cockade to a high sheriff or a court physician has (*pace* the Heralds) entitled "Justices of the Peace and other persons holding civil commissions, to mount the cockade on the person of their servants."—I am, etc.,

June 24th. "ON TWO COMMISSIONS."

THE PREVENTION OF HEAT EXHAUSTION.

SIR,—With reference to the fatal field day at Aldershot, I am convinced the insufficient quantity of fluid provided—or was it none at all in some cases?—for the troops was an important contributory factor. On this point an instructive case of insensibility supervening on extreme muscular exertion will be found recorded in Dr. Poore's *Nervous Affections of the Hand and Other Studies* (1897, pp. 205, *et seq.*).

As to the fluid it should not be of an alcoholic nature, for the saying "*L'eau de vie coupe les jambes*" is a true one. Plenty of weak warm or cold tea is the best thing. Soda water is a craze. In Australia, up-country, I have seen men go through great exertions on plain tea (usually called posts and rails), sometimes sweetened with a small quantity of coarse cane sugar, a little beef, and a few sweet potatoes, *ter in die*. It should not be difficult to provide the men at Aldershot with billies, tea, sugar, and water. In his account of the Matabele campaign General Baden-Powell frequently refers to the useful billy, and in his *Aids to Scouting* (p. 105) he very truly says: "In your water bottle cold tea in hot climates is a very useful drink, as it puts more strength into you than cold water, and ensures the water having been boiled, which is the best preventive against enteric and other sickness." Before a hot bicycle ride there is nothing better than two or three large cups of warm tea.—I am, etc.,

Upper Gloucester Place, N.W., June 22nd. GEORGE PERNET.

THE TREATMENT OF SMALL-POX BY SALOL.

SIR,—I have read with great interest the account given by Drs. Biernacki and Jones in the BRITISH MEDICAL JOURNAL of June 2nd, p. 1337, of the results obtained in the Dagenham Hospital from my treatment of small-pox by salol.

It is most satisfactory to find the observations I made in China confirmed here. Although, as I pointed out at the time, small-pox, occurring as it does during the cold season in China, it was highly probable that they would be. It is

[2] *Syst. Genit.-Urin. Dis.* P. Morrow. 1899.
[3] *Genit.-Urin. Dis.* L. Bangs. W. Hardaway. 1898.

to be noted that in none of the recorded cases was the salol treatment commenced at as early a stage as we are enabled to do in the East, where patients are "on the doctor's list" and are seen by him in the initial stages generally before any rash is visible, and when we are only in a position to suspect what is coming. To see what salol can do we must see it when given in such cases. It has time then to saturate the system well in advance of the date of maturation and produce its abortive effect which I found so striking. Sufficient evidence, however, was present at Dagenham to point to the desirability of at once exhibiting the drug to persons who have been exposed to infection, just as at present we content ourselves with revaccinating them. Let us in future do both, and then we shall find ourselves in a position to deal successfully with this scourge.

The results of the observations at Dagenham, namely, absence of irritation and of secondary fever, can be obtained in all cases, although the treatment may be too late to prevent all maturation. How shall we estimate the value of even that gain? Cases I, IV, and VI would under ordinary treatment most probably have been fatal had they had to suffer the usual maddening irritation and severe secondary fever, while in Case VIII, although the drug did not apparently influence maturation, yet the mild character of the secondary fever and the absence of irritation must have had a great deal to do with the escape from abortion. I agree with all Drs. Biernacki and Jones say in paragraphs 2 and 3 of their paper. I think now that my treatment has been confirmed at Dagenham, I am justified in again urging on all those who are in charge of small-pox cases the importance and duty of putting it to the test and reporting the result.

I regard it as important to begin the drug as soon as possible. If the public knew there was a means of treating small-pox with good results we would get our cases sooner. At present concealment is the order of the day, the belief being that they are taken to hospital not so much for their own good as to protect others. We must educate our public, and emphasise the value of getting hold of our cases as soon as possible.

I know nothing to contraindicate salol; even the delirium mentioned in Case I would not have led me to discontinue its use. Seeing that its usual mental effect is depression, I would have been inclined to increase the dose. The only guide would be the state of the urine, and I would look to its condition as giving an indication of the point of saturation of the system. The depression is seldom great, and never, in my experience, permanent or damaging. The amount of the drug necessary cannot be constant in all cases, and we have yet to find out how far we may push it. In my experience 60 grs. a day in adult cases did all that I asked it to do.—I am, etc.,

Edinburgh, June 2nd. CHARLES BEGG.

HEREDITY AND DISEASE.

SIR,—I had declared "that though the whole plant and animal world had been ransacked, no single instance of the transmission of an acquired character had been proved," and asked for evidence to the contrary. Dr. Lomax replies that "as most known facts point against Dr. Reid's contention, it might be supposed that the *onus probandi* lay with him." Will Dr. Lomax tell us of a single known fact that points against my contention? At the end of his letter he mentions one which he thinks does so, but, as will be seen, he is mistaken. As to the *onus probandi* being with me, neither I nor anyone else can prove a universal negative. I am ready to meet any evidence Dr. Lomax may bring forward, but obviously I cannot deal with all characters acquired by every plant and animal during all past, present, and future time. He ingeniously attempts to refute me by demolishing Weismann. It so happens that I have continually deplored the "metaphysical nonsense" of which, in my opinion, Weismann has been guilty.[1]

Weismann attempts by his theory to explain how inborn characters are transmitted, that is, how parents transmit arms, legs, heads, lungs, etc., to their offspring. He supposes that there is a continuity of the germ plasm. But no one has seen the germ plasm; at any rate, no one can recognise it. His hypothesis involves the corollary that acquired characters are not transmissible. But a theory as to how inborn characters are transmitted is one thing; it is almost pure guess work since there are practically no data on which to work. A denial of the transmission of acquired characters is quite another thing; it is supported by abundant evidence. It rests on the plain facts that each individual is derived from a single cell, the fertilised germ: and that there is no evidence that the somatic cells influence the germs in such a special and unlikely manner as to cause the particular characters the parent acquired to be reproduced by the children.

The doctrine which denies the transmission of acquirements therefore rests, or should rest, on the cell theory. The body is a community of specialised cells, of which one set—the germs—are specialised for the production of similar communities, just as other sets are specialised for other purposes—for the production of motion or of bile, for instance. We have no more reason to suppose that muscle or liver cells play a part in heredity than to suppose that the germ cells play a part in the production of movement or of bile. Suppose, for example, a man by exercise strengthens his arms, or by laziness weakens his legs, or by study improves his brain, or by debauchery or accident injures it, how can changes in muscle or brain so affect the germ cells situated far distant that after fertilisation and long separation from the parent organism, they shall proliferate into offspring which have inborn the particular traits the parent acquired? The traits acquired by every parent are millions in number, and therefore each of his germ cells would have to be affected in millions of special ways. By what machinery is this magical process carried out?

I have not space to consider fully my critic's last paragraph, more especially as I have dealt with its subject matter elsewhere.[2] He speaks of "those useless or abnormal variations which constitute disease." But disease is hardly ever a "variation"; it is almost always a "modification," a thing entirely different. By transmission of an acquirement is meant that the character acquired by the parent (that is, the modification) so affects his germ that that particular character reappears in the offspring as an inborn trait (that is, variation). Dr. Lomax speaks of hæmophilia as a case in point. Will he tell us when hæmophilia is acquired? As a fact, it is one of those rare instances in which the disease is inborn. I fear in this paragraph he confused the new with the acquired. A new character is not necessarily an acquirement. It must be clearly borne in mind that the distinction between the inborn and the acquired is not one between the old and the new; it is wholly one of origin. Inborn characters originate in the germ cell; acquired characters in its descendants, the somatic cells. To take an example, suppose the child of a normal man is blind; then the blindness is inborn if due to a defect in the germ whence the child sprang, but acquired if due to disease or accident to his visual structures after they have developed from the germ. Inborn characters are admittedly transmissible. In the former case the new character (the variation) would tend to be transmitted, the defective germ would tend to produce another like itself; in the latter case it (the modification) would tend not to be transmitted. We do not know how variations arise, but there is abundant evidence that they are not caused by the transmission of acquirements, for otherwise terriers would tend to be born without tails and women without hymens, and every man who acquired immunity against disease would tend to have offspring similarly immune.—I am, etc.,

Southsea, June 11th. G. ARCHDALL REID.

SIR,—Mr. Lomax appears to consider "variation" in organisms as identical with transmission of acquired characters. I fancy most biologists would differ from him. Variations may be hard to account for, and, even supposing they are connected with "reversion," this would in no way identify them—whether hurtful or useful—with acquired characters. No doubt in a sense all characters are acquired, possibly millions of years ago; but the term "acquired characters" has a much more recent signification.—I am etc.,

Porlock June 19th. J. HOPE POTTER.

[1] *Vide Lancet*, January 20th, 1900; the *Scottish Medical and Surgical Journal*, June, 1900.

[2] *The Present Evolution of Man* (London: Chapman and Hall); *Lancet* October 14th, 1899.

OBITUARY.

THE LATE DR. LEECH.

THE funeral of the late Dr. D. J. Leech took place at the Southern Cemetery, Manchester, on July 6th. The first part of the funeral service was held in the Cathedral, and a large number of institutions with which Dr. Leech had been connected sent representatives, including the Victoria University, the Manchester Royal Infirmary, the Council of the British Medical Association, represented by Dr. Godson (Cheadle) and Dr. Woodcock (Old Trafford); the Lancashire and Cheshire Branch of the British Medical Association, represented by Dr. Helme, Dr. Ritchie, and Dr. R. C. Brown; the Manchester Therapeutical Society, the Manchester Pathological Society, the Owens College Materia Medica Department, the Pharmaceutical Society of Great Britain, and the Manchester Pharmaceutical Association; Owens College was represented by members of the Council and of the Senate; Owens College Union and the medical students of Owens College were also represented, as were the Manchester and Salford Sanitary Association and the Salford Royal Hospital. The funeral was also attended by a large number of Dr. Leech's colleagues on the staff of the Royal Infirmary.

A FORMER HOUSE-SURGEON sends us the following notes to add to the obituary notice which was published last week: Not the least advantage which a young man derives by holding a resident appointment in a great hospital is the opportunity of coming into intimate contact with the noble personality of his chief. All who served as house-physicians to the late Dr. Leech could appreciate this advantage to its full extent. He not only taught his house-physicians the art of careful observation and accurate description, but gave to them a living example of what a physician ought to be. He was to his hospital patients the beloved physician. He considered their feelings and taught us to neglect no detail of treatment which might add to their comfort. I shall never forget the way in which he steered a desperate case of enteric fever reduced to the lowest ebb by repeated hæmorrhages to complete recovery. With his own hand he arranged the ice packs and brewed the turpentine punch. He made us realise in this and many another case that with constant care recovery may be possible when the outlook appeared all but hopeless. His interest in his pupils was not less than in his patients, and followed them as they passed from hospital to private practice. Although he had so many public claims upon his time he was always ready to give a patient hearing and wise counsel to any old pupil in a difficulty. His opinion on matters of professional honour and etiquette was often sought, and his decision accepted as final; for all felt that he was the soul of honour, and would never countenance anything mean or dishonourable. Truth with him was a cardinal virtue. I remember on one occasion thanking him for a supposed introduction to a wealthy patient. He at once replied: "Don't make a mistake; I did not recommend you, but your neighbour." He was a most helpful consultant, ready, as in his hospital work, to go minutely into details of treatment; and if he had not the gift of the fluent speaker on the platform, he had that of saying the right thing in the sick room, and of knowing how to inspire confidence and cheer the depressed. His humour was delightful. He had a unique position here in Manchester, and his departure leaves a void not easily filled in many a society, but chiefly in the hearts of his friends.

HENRY BURFORD NORMAN, F.R.C.S.

WE regret to record the death of Mr. Burford Norman, which took place on June 11th at Chesham, Bucks, and its announcement will be read with great sorrow by all his friends. He was a well-known surgeon in Portsmouth, where he practised very successfully for many years. His father, Mr. William Norman, was also a medical man, and a descendant of an old Somersetshire family—the Normans of Fiveheads.

Mr. Burford Norman was born at Langport on April 11th, 1819, and after receiving a liberal education he commenced his early professional training with his father. In 1837 he entered as a student at University College. Guy's Hospital had been originally selected for him by his friends, but on his way to town he met a student of University College, who so effectually dilated on the advantages of his own school that he was persuaded to follow in the footsteps of his friend.

Mr. Burford Norman's career at college was marked by much success, and he had for his companions John Eric Erichsen, Henry Thompson, John Marshall, and Spencer Wells. In 1841 he took the M.R.C.S., and received the appointment of House-Surgeon to Liston. He obtained the Fellowship of the College in 1846, and a few years after he was a candidate for the post of Assistant-Surgeon to University College Hospital, but he was beaten in the contest by the late Sir John Erichsen. Mr. Burford Norman then worked at the eye as a speciality, and he obtained the appointments of Surgeon to the North London Eye Hospital and Surgeon to the Marylebone General Dispensary. At this period he resided in Duchess Street, Portland Place, W. After a few years' hard work his health unfortunately began seriously to fail, and he was compelled to leave London for rest and retirement.

In 1858 he commenced practice again at Southsea as the successor of the late eminent surgeon, Dr. Edward J. Scott, and he soon rapidly gained a leading position in Hampshire. He was elected in 1861 on the surgical staff of the Royal Portsmouth Hospital, an appointment which he held with marked distinction for several years. He took also a leading part in the foundation of the Portsmouth and South Hants Eye and Ear Infirmary, and filled the position of Consulting Surgeon to that institution. Mr. Norman was a very able surgeon, and from time to time contributed many valuable contributions on surgical topics to the medical journals. Throughout his long career he enjoyed the entire confidence of his professional friends, and on his retirement from practice in 1889 he was entertained at dinner by the medical men of Portsmouth, and was presented with a valuable silver service as a token of their high esteem and regard. He was a Fellow of the Royal Medical and Chirurgical Society, and an ex-President of the Harveian Society. He was a warm supporter of all the interests of the British Medical Association, and in 1874 he acted on the Provisional Committee in connection with the formation of the Southern Branch, and in 1888 he occupied the position of President.

Mr. Burford Norman was a man of sterling character, possessed with a kind and generous disposition, and at all times ready to help in every good and charitable enterprise. He took a keen interest in the progress of surgical science. He was a staunch Liberal in politics, and broad and charitable in his religious sentiments; still in this direction his convictions never wavered, and he anticipated the future with hope and confident expectation. He was twice married, and has left behind him a widow and six children. Two of his sons are members of the medical profession. By his unfailing courtesy and honourable conduct he obtained the affection and esteem of a large circle of friends, and when the announcement of his death reached Portsmouth, it was received with great regret by all classes of the community.

RICHARD TRUMAN FITZ HUGH, M.B.LOND.,

Medical Officer to the Imperial Yeomanry Hospital, South Africa.

IT is with deep regret that we record the death of Dr. Richard Truman FitzHugh, of Nottingham, which has recently occurred as the result of enteric fever at the Imperial Yeomanry Base Hospital at Deelfontein, near De Aar Junction, South Africa. He was the only son of Mr. R. FitzHugh, J.P., of Clumber Crescent, The Park, Nottingham, and was only 28 years of age when he died. He was first educated at a private school, then at the Nottingham High School, and subsequently at the Shrewsbury Grammar School. His medical training he received at Guy's Hospital, to which he was attached for seven years. At this hospital he held the posts of house-physician, assistant house-surgeon, obstetric resident, clinical and gynæcological assistant, and dresser in the eye wards. On leaving Guy's he returned to Nottingham, and acted as *locum tenens* at the General Hospital, which position he only relinquished in order to serve his country in South Africa. He took the Degree of Bachelor of Medicine of the University of London in 1898, and in the previous year he had been admitted a M.R.C.S. and L.R.C.P.

Early in February last he sailed from Southampton with other members of the staff of the Imperial Yeomanry Hospital. An indication of his indisposition had reached his friends at Nottingham about three weeks before they received

a telegram that he was seriously ill. Two days later his father received the following telegram from Colonel Sloggett, at Deelfontein: "Deeply regret to inform you of the death of your son from enteric fever—an irreparable loss to this hospital, he having endeared himself to all."

He was held in high regard by his associates also at Guy's, not only on account of his medical skill and scientific attainments, but also of the part he took in its social and recreative life; he was an enthusiastic and good all-round athlete, as well as a man of culture and ability. The termination of a career so rich in promise by a disease which is causing more deaths than the bullets of the enemy, has evoked much sympathy for his family.

Mr. Fripp, the Senior Surgeon to the Imperial Yeomanry Hospital at Deelfontein, writes under date June 18th:

By the death on June 15th of Dr. Fitzhugh, everybody here felt that they had lost a friend whose value they had had the opportunity of realising. He was one of the juniors among our medical officers, but his practice here among the patients had cemented the high opinions which had been formed at Guy's by his teachers, no less than by his contemporaries from his earliest student days, and which had been fortified by the high degrees he had taken at the London University. He was popular alike with his colleagues, with the nursing sisters, with the non-commissioned officers and orderlies, and with the patients. His career gave every promise of his attaining a very high place in his profession, but apart from his value to this hospital in his professional capacity, he had many characteristics which had endeared him to those who knew him. He was a thorough sportsman, a prominent member of our cricket eleven, though perhaps best of all at Association football, in both of which sports he used to play for Guy's when he was a student. He was a man with a keen sense of humour, and quite the most popular performer at the smoking concerts which do so much to keep up the spirits of our camp. One song of his in particular was so popular that, however much he tried to satisfy the audience with others, they never would let him leave the piano until he had given them their favourite one. Poor old "Fitz," as we always called him, will not quickly be forgotten by his friends. There was an enormous congregation at his funeral service, the first part of which was held in the church. All ranks of the hospital were largely represented, and formed into a long procession to follow him to the cemetery about a quarter of a mile away. The coffin was carried by orderlies, and some of his fellow Guy's men acted as pall-bearers.

CORRADO TOMMASI-CRUDELI, M.D.,

Professor of Hygiene, University of Rome.

Professor Corrado Tommasi-Crudeli, who died recently in Rome at the age of 66, had had a varied career, having served in the field as a soldier and in cholera epidemics as a physician before he became a professor. He took his doctor's degree in the University at Pisa, and afterwards, in order to extend his knowledge of biology, went to Paris and Berlin. In the latter city he worked under the leading pathologists, especially Virchow. On his return to Italy he was appointed Lecturer in the Institute of Superior Studies at Florence. Thence he migrated to Palermo, and afterwards to Rome. In the Eternal City he, after strenuous efforts, induced the Minister of Education to establish first a physio-pathological institute and later an anatomical-physiological institute in S. Spirito. His first scientific publications dealt with normal histology, pathological anatomy, and physio-pathology. His researches on the Lymph Vessels of the Testis (1863); on Thrombosis and Embolism (1864); on Sarcoma (1871); on Diffuse Periosteal Lymphoma (1871); on Melanæmia (1872) are sufficient evidence of the keenness of observation and insight which he displayed in all his work.

In 1866 as a follower of Garibaldi he took part in the fighting at Palermo; and afterwards he was active in combating the cholera which the Italian troops had introduced. For his services in these two capacities he obtained the medal for civic valour and the honorary freedom of the City of Palermo. He afterwards wrote a report on the cholera epidemic.

When Rome became the capital of Italy in 1870 Tommasi-Crudeli was invited to occupy the Chair of Hygiene in the University. He at once entered on the study of the sanitary conditions of the Roman Campagna. He devoted himself particularly to the investigation of malaria, and between 1879 and 1887 he published a series of writings dealing with the distribution of the water in the subsoil of the Campagna and its influence on the introduction of malaria. These researches have not been made obsolete even by the most recent investigations, and no writer since Lancisi gives so graphic and accurate an account of Roman malaria as Tommasi-Crudeli. He raised his voice with no uncertain sound in warning against the evils likely to be caused by premature and injudicious legislation for the sanitation of the Campagna.

In 1883 Tommasi-Crudeli founded a hygienic laboratory, which was the first of its kind in the whole of Italy; and in 1886 he succeeded, after long struggles, in which even his energy and perseverance were taxed to the uttermost, in getting an Institute for Experimental Hygiene established. At that time Pettenkofer's Hygiene Institute at Munich was the only one of its kind in Europe. In the new Institute Tommasi-Crudeli delivered his classic lectures on the climate of Rome. He occupied himself with the most various hygienic problems, including the health conditions of the city of Rome, and anthrax inoculation in the Campagna. In 1888 he began his noble fight for the reform of public morals in Italy. In conjunction with Professors Albanese and Durante he drew up the new regulations for the repression of vice, which were adopted by Crispi. In spite of this, he had still to fight against the authorities, till after a ten years' struggle he had the satisfaction of seeing his salutary reforms actually carried into effect. He also tackled the tobacco question, showing how methods of home culture of the plant might be improved. The profits which have accrued from this to Italy and to its people are estimated at many millions of lire.

In the last year of his life Tommasi-Crudeli took up with all the enthusiasm of youth the question of foundlings. He was President of the Committee of Inquiry as to Foundling Hospitals, and even when his health had begun to fail he took an active part in discussions as to the means of improving the condition of foundlings. This was his last public service.

As a teacher Tommasi-Crudeli was exceedingly popular, and his lectures were greatly valued by students. He was a many-sided man, and was interested not only in medicine but in history, philosophy, literature, and political economy. He published a course of lectures for students, and afterwards a short treatise on pathological anatomy, in which he taught the doctrine of the parasitic origin of many diseases. This was before Koch's great discoveries. Even before 1880 Tommasi-Crudeli is said to have demonstrated to his class many pathogenic organisms. From 1877 to 1885, and again from 1892 as a member of the Examination Committee and of the Superior Council of Education, he exercised a great influence on the selection of Professors for the medical Chairs in the Italian Universities. It is largely to him that Italy owes the appointment of such men as Bizzozero, Golgi, Mosso, Perroncito, Foà, and others to University Chairs.

Inspector-General Thomas Waller Barrow died at Woolwich on July 1st, aged 83 years. He entered the service as Assistant Surgeon June 8th, 1841; became Surgeon December 26th, 1851; Surgeon-Major June 8th, 1861; Deputy Inspector-General May 9th, 1865; and Honorary Inspector General on retirement on half-pay June 20th, 1868. He served with the 2nd Queen's (Royals) in the Sind Desert after the battle of Meanee in 1843, when four forts were captured. In the Southern Mahratta war of 1844 he was present at the storming and capture of Fort Punella, and he took part in the campaign in the Concan in 1845, when Forts Monahur and Munsuntosh were captured. He was also engaged in the Kaffir war of 1852-53, and in the Crimean war. In August, 1864, he proceeded to Bermuda as Principal Medical Officer of a medical relief force, in consequence of an epidemic of yellow fever, which devastated the troops and population of the islands. For this service he was promoted to the rank of Deputy Inspector-General, the Special General Order issued referring to his "highly meritorious services" in connection with the epidemic. In 1865 he was appointed Principal Medical Officer of Nova Scotia, and in 1866 to the same position at Woolwich and the London District.

Dr. Paul Gibier, Director of the New York Pasteur Institute, whose death as the result of an accident was recently announced in the British Medical Journal, was born in France in 1851. He was a graduate of Paris. For his investigations on the cholera in Spain he received a gold medal, and for his work upon the same disease in the South of France he was made a Chevalier of the Legion of Honour. His Government sent him to Florida and Havana in 1888 to study yellow fever, and two years later he established the Pasteur Institute for the inoculation of persons bitten by rabid animals in New York. Dr. Gibier was a member of the New

York Academy of Medicine and the Medical Association of New York, and was the editor of the *Therapeutic Review*. He was greatly interested in psychic phenomena, and he wrote a book entitled *Spiritisme: Analyse des Choses*, which was translated into English under the title *Psychism: Analysis of Things Existing*. He was a voluminous writer. The *Banner of Light* says that by the "transition" of Dr. Gibier spiritualism has lost one of its truest friends. By his will he left £4,000 to the Pasteur Institute, New York.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE KAISER-I-HIND HONOURS.

We find much disappointment and dissatisfaction expressed in the *Times of India* over the recent distribution of the birthday new Kaiser-i-Hind honours. The medals of the order are intended to mark meritorious services, such as are performed on plague duty, and the Military and Civil Chairmen of the Plague Committees have properly received gold medals. Silver medals have also been awarded to certain distinguished civilians who have shown "patient and unsparing devotion to plague work." But there commendation stops. As the *Times of India* declares, a "somewhat fuller sense of proportion in the recognition of plague services both in Bombay and Poona would have saved the first of the Kaiser-i-Hind lists from criticism." For "no account seems to have been taken of the medical work done there (Poona), though with a general hospital which at one time had close upon five hundred plague cases under treatment the doctors cannot have had a much easier time than either the soldiers or the civilians." It is declared by a correspondent of the paper quoted that "men who really deserved reward have been passed by." What men? Officers of the Royal Army Medical Corps, and of the Indian Medical Service, and the whole community of devoted nurses! The very persons in Bombay who at enormous risk and marvellous self-sacrifice fought the plague personally for weary months and years are thus deliberately excluded from these honours. It can hardly be credited, but such seems the fact. Who is to blame? Not, we are told, Lord Curzon, because "the omissions belong to a time preceding his arrival in India." Of one thing we may be sure, such omissions would meet with deep reprobation if known by the Empress of India, the august source of the Kaiser-i-Hind honours.

THE HOSPITAL SHIP *MAINE*.

THE hospital ship *Maine*, lent by Mr. Bernard Baker, of the Atlantic Transport Company, and managed by a committee of American ladies, has been offered to the Government for service in China instead of South Africa. The offer has been accepted, and it is hoped that the *Maine* will sail next week.

ROYAL NAVY MEDICAL SERVICE.

STAFF-SURGEON JOHN H. THOMAS has been appointed to the *Camperdown*, July 5th, and Staff-Surgeon ALFRED M. PAGE to the *Australia*, July 4th.

ROYAL ARMY MEDICAL CORPS.

THE following officers have been discharged from hospital in South Africa for duty: Major NICHOL, Major O'HALLORAN, Civil Surgeon J. INVERARITY.

INDIAN MEDICAL SERVICE.

DEPUTY-SURGEON-GENERAL HENRY CAYLEY, Bengal Establishment, retired, is appointed Honorary Surgeon to the Queen, *vice* Surgeon-Major A. GRANT, retired Indian Medical Service, July 11th. Deputy-Surgeon-General CAYLEY entered the service as Assistant-Surgeon, January 29th, 1857; became Brigade-Surgeon, April 10th, 1884; and retired, with the honorary rank of Deputy-Surgeon-General, April 29th, 1887. He served in the Indian Mutiny campaign in 1857-8 in the Benares, Allahabad, and Goruckpore Districts, receiving the medal.

Colonel G. W. R. HAY, M.D., Bombay Establishment, is promoted to be Surgeon-General, *vice* Surgeon-General C. E. M'Vittie, Madras Establishment, retired, dated May 26th. Surgeon General Hay joined the department as Assistant Surgeon, April 1st, 1868, and became Surgeon-Colonel August 16th, 1897. He is appointed Principal Medical Officer, Madras Command, from May 26th, *vice* C. F. M'Vittie.

Lieutenant-Colonel J. F. TUOHY, M.D., Bengal Establishment, has retired from the service from June 24th. His first commission dates from October 31st, 1879; that of Lieutenant-Colonel from October 31st, 1890. He was in the Afghan war in 1880, and has the medal for that campaign.

Lieutenant-Colonel D. W. D. COMINS, Bengal Establishment, also retires from July 16th. He was appointed Assistant Surgeon, March 31st, 1875; and Surgeon-Lieutenant-Colonel March 31st, 1895. He served in the Afghan war in 1878-9 with the Kandahar Field Force, and was in the engagement at Charasiah on October 6th, 1879, at the capture of Cabul, the action at Lataband, and the relief of Sherpur; he was twice mentioned in despatches, and received the medal with two clasps.

Lieutenant-Colonel J. W. EVANS, Madras Establishment, likewise retires from May 9th. He entered the service as Assistant Surgeon March 31st, 1880, and became Lieutenant Colonel, March 31st, 1900. He was with the Burmese Expedition in 1885-6, and has the Frontier medal, with clasp.

THE MILITIA.

SURGEON-LIEUTENANT-COLONEL JAMES CREAGH, 9th Battalion King's Royal Rifles (North Cork Militia), died of enteric fever on the 6th instant, between Viljoen's Drift and Kroonstad. He was medical officer to the 9th King's Royal Rifles, and a Surgeon-Lieutenant-Colonel of the Medical Reserve of Officers.

MILITIA MEDICAL STAFF.

SURGEON-LIEUTENANT-COLONEL D. JACOB, M.D., 4th Battalion the Prince of Wales's Leinster Regiment (Royal Canadians), retires, retaining his rank and uniform, July 11th.

THE VOLUNTEERS.

THE undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps respectively specified, dated July 11th: WILLIAM GRAY, M.D., 4th Durham Artillery (Western Division Royal Garrison Artillery); JAMES GRAY, M.B., 1st Forfarshire Artillery; GEORGE HIGGINSON and WHEELTON HIND, M.D., 1st Shropshire and Staffordshire Artillery; MARCUS J. EUSTACE, M.D., 2nd Gloucestershire (the Bristol) Artillery; EDWARD S. CARDELL, 1st Sussex Artillery; HARRY GUY MALLAM, 1st Volunteer Battalion the Royal Sussex Regiment.

Surgeon-Lieutenant D. A. DAVIES, M.B., 1st Glamorganshire Artillery, is promoted to by Surgeon-Captain, July 11th.

Surgeon-Captain J. P. MASSINGHAM, 1st Shropshire and Staffordshire Artillery, is promoted to be Surgeon-Major, July 11th.

Lieutenant HENRY D'A. BLUMBERG, 3rd Volunteer Battalion the King's (Liverpool Regiment), resigns his commission and is appointed Surgeon-Lieutenant, July 11th.

VOLUNTEER MEDICAL STAFF CORPS.

SURGEON LIEUTENANT W. S. SHARPE, the London Companies, is promoted to be Surgeon-Captain, July 11th.

Mr. ALFRED H. MINTON is appointed Surgeon-Lieutenant and Mr. JOHN NAYLOR Quartermaster in the Woolwich Companies, July 11th.

VOLUNTEER MEDICAL ASSOCIATION.

THE annual meeting of the Volunteer Medical Association will be held at 20, Hanover Square, on Tuesday, July 24th, at 4.30 P.M., a meeting of the Council being held previously at 4 o'clock. Surgeon-Captain F. J. Warwick, V.M.S.C., has resigned the post of Honorary Secretary, and has been succeeded by Surgeon-Major John J. de Zouch Marshall, 3rd Volunteer Battalion East Surrey Regiment.

NETLEY HOSPITAL.

THE DUCHESS OF YORK paid a visit on Tuesday last to the sick and wounded in Netley Hospital who had lately returned from South Africa. She went into a great many of the wards in both the surgical and medical divisions, and was most gracious and sympathetic in her kind inquiries after each poor fellow, and presented each with a pretty bouquet of flowers. On the termination of her visit she honoured the Principal Medical Officer and Mrs. Charlton with her company at afternoon tea. Before driving back to Portsmouth she expressed the great pleasure she felt in her first visit to Netley Hospital.

MEDICO-LEGAL AND MEDICO-ETHICAL.

Replies in this column are limited to questions affecting the legal interests and privileges of the medical profession at large. The column is not to be used as a medium for affording legal advice in private or personal matters as to which the applicant ought to consult his own solicitor.

From communications which we have received recently it appears to be necessary to repeat that we cannot undertake to express any opinion upon medico-ethical cases submitted to us unless we have before us statements by both parties to the controversy.

THE POWERS OF THE GENERAL MEDICAL COUNCIL.

C.—The General Medical Council can remove a name from the Register in case a professional offence amounting to infamous or [illegible] conduct in a professional respect has been committed, or [illegible] offence against the common law amounting to felony or misdemeanour has been committed, and a conviction in a court of law has been proved. What action the Council might take if a conviction for fraud were obtained it is not for us to forecast.

A QUESTION OF COMMISSION.

E. D. D.—Without seeing the actual form signed by [illegible] we are unable to express any positive opinion [illegible] but under the circumstances stated we can hardly [illegible] respondent can have rendered himself [illegible] claimed unless the "practice for sale" was [illegible] actual purchaser by or through the medium [illegible]

ASSISTANT OR *LOCUM TENENT*.

A CORRESPONDENT asks if it is usual to expect a qualified assistant to take sole charge of a practice without extra remuneration during the absence of the principal.

*** It is not usual. A qualified assistant is paid at a higher rate when he takes entire charge of his principal's practice.

THE COMPANIES BILL.

G.M.P.—The effect of Clause 2 in the Companies Bill upon friendly societies and the like has not [illegible] In the opinion of the lawyers who have been [illegible] *bonâ fide* conduct of practice by a company not be held to be practice by a company contract with the company. In the [illegible] had been set down by Mr. Marks to [illegible] tion should prevent a company from entering into contracts with medical

cal men for services to be rendered at the request of the company, and it was urged that steamship companies, etc., constantly did this. This amendment was withdrawn upon the assurance of the Attorney-General that it was quite unnecessary, inasmuch as the clause would not have the effect supposed by the mover of the amendment. Speaking for ourselves, we should imagine that the clause in its present form, or in any amended form which is likely to be adopted, could only have one effect upon this form of practice, and that an advantageous one to the medical profession. If it touched the question at all it would be in the direction of securing that the personality and individuality of the actual practitioners would be brought into greater prominence.

EMPLOYMENT OF UNQUALIFIED ASSISTANTS.

M. P. wishes to know whether it would be contrary to regulations to engage a Swiss medical man as an assistant. He has no English qualification.

*** As the gentleman is not registered in this country, his employment would be contrary to the regulations of the General Medical Council.

THE ETHICS OF CONSULTATION.

M. B.—It would be unethical for B. to visit the patient or his family in future illnesses without reference to A. This rule would not apply to visitors staying in the house.

MEDICAL ADVERTISING.

X. Y. Z.—Our correspondent has undoubtedly legal rights in the matter, and can, if he wishes, dissociate himself from an institution which is managed in a way he considers improper.

PROFESSIONAL SECRECY.

A. being called upon to see B., whom he finds dangerously ill, is informed by her that she has been the subject of an illegal operation, and at different times she accuses two individuals of being the operator. A. asks whether it is incumbent upon him to inform the police authorities?

*** A. is not bound to reveal to the police that a breach of the law has been committed when his information has been derived from the patient's confession; but this doctrine should not be pushed so far as to make a doctor accessory to a crime which he could by any means prevent.

UNIVERSITIES AND COLLEGES.

THE VICTORIA UNIVERSITY.

THE following degrees were conferred by the Chancellor, Earl Spencer, K.G., on June 30th, at the Free Trade Hall, Manchester, at a meeting of the Court:

M.D.—H. Armstrong, University; A. Greenwood, Owens; J. A. MacLaren, Owens; W. A. Newall, Owens; F. W. Stansfield, Owens.

THE UNIVERSITY OF NEW BRUNSWICK.

THE University of New Brunswick, at Fredericton, celebrated its centenary during June. Honorary degrees were conferred on Principal Peterson of McGill University, representing Oxford University; Dr. J. G. Adami, of McGill University, representing Cambridge University; Professor Alexander Johnson, and Rev. Dr. Hackett, representing Dublin University; the Rev. Abbe Lefiamme, of Quebec, representing Laval University; and on the Rev. R. A. Parrock, Bishop's College, Lennoxville. An honorary degree was conferred also on Professor William Crockett, of Quebec, for his distinguished services to the cause of education in the province of New Brunswick.

UNIVERSITY OF TORONTO.

THE vacancy in the Toronto University staff caused by the retirement of Professor Pike from the Chair of Chemistry has been filled by the appointment of Mr. William R. Lang, who has for some years filled the position of Lecturer in Organic Chemistry and Assistant to Professor Ferguson, of Glasgow University.

McGILL UNIVERSITY, MONTREAL.

THE annual commencement of the medical faculty of McGill University was held during the latter part of June, at which time 75 men received the degree of M.D., C.M. Mr. E. R. Secord Brantford, Ontario, received the Holmes Gold Medal for the highest record for the four years of the curriculum. Mr. J. W. T. Patton won the Final Prize for highest aggregate for third and fourth year subjects. The diploma of D.P.H. was awarded to four candidates who had passed through the course recently inaugurated in McGill University, which is thus the first in America to award this diploma. The course leading up to it has been modelled on that given in the universities and colleges in England and Scotland, and includes six months' training in the various laboratory and clinical studies necessary for the proper qualifications of medical officers of health.

As a result of the recent third year examinations in medicine, Mr. R. H. Ker, of Montreal, was awarded the prize for the highest record made by the students of that year.

CONJOINT BOARD IN ENGLAND.

THE following gentlemen have passed the Second Examination of the Board in the subjects indicated:

Anatomy and Physiology.—R. M. im Thurn and A. Hallowes, St. Bartholomew's Hospital; J. S. Le Fevre, S. Smulian, G. D. Walsh, and G. M. Sanderson, London Hospital; R. H. Hardwick and T. A. Chater, St. Thomas's Hospital; J. M. O'Brien, G. S. Oades and J. Bourdas, Charing Cross Hospital; E. H. Griffin, Cambridge University and Guy's Hospital; P. C. V. Bent, H. D. Smart, and E. N. Jupp, Guy's Hospital; G. C. B. Micville, University College, London; B. N. Footner and W. J. E. Stuttaford, King's College, London; F. R. Harris and G. R. H. Crozier, St. Mary's Hospital; C. O. Godson, H. B. Drake, and L. E. Ellis, St. George's Hospital; B. B. Riviere, L. L. Winterbottom, A. H. Pinder, and K. D. Bell, St. Bartholomew's Hospital; H. H. E. Scatliffe and L. D. Bailey, St. George's Hospital; C. H. L. Coltart, Westminster Hospital; W. P. Hingston and P. G. Foulkes, Middlesex Hospital; C. R. Shattock, F. P. Hughes, C. F. Fraser, and F. W. Fawssett, Guy's Hospital; G. R. Rew, C. T. Cheatle, and J. H. Napper, King's College, London; W. G. Cheatle and R. E. Palmer, St. Mary's Hospital; A. C. Dixon, J. Stewart, and E. J. H. Rudge, London Hospital; H. M. Gilmour and A. H. Hudson, St. Thomas's Hospital; J. V. Arkle, University of New Zealand and St. Thomas's Hospital; G. A. Bosson, University College, London.

Anatomy only.—S. Goodman, St. Thomas's Hospital.

Physiology only.—C. G. Simms, Middlesex Hospital; J. Wilding, St. Bartholomew's Hospital; E. J. H. Bowen, University College, Cardiff, and King's College, London.

Twenty-one gentlemen were referred in both subjects; 2 in anatomy only, and 2 in physiology only.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

LICENTIATES of the College who desire to claim the advantage of the concession for the Fellowship, in recognition of the Royal visit, should apply before July 31st, 1900.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, EDINBURGH.

AT a meeting of the Governing Board of the School of Medicine of the Royal Colleges, Edinburgh, the Secretary, Mr. R. N. Ramsay, reported that the number of students attending the School during the session was 1,109.

SOCIETY OF APOTHECARIES OF LONDON.

PRIMARY EXAMINATION, PART II.—The following candidates have passed in:

Anatomy.—J. J. Anning, Leeds; W. H. Bush, Guy's Hospital; D. Cotes-Preedy, Cambridge and St. George's Hospital; W. L. Crabtree, Leeds; J. Cretin, Bristol; I. Griffith, London Hospital; E. W. Hutton, St. Thomas's and Westminster Hospitals; H. A. Parker, St. Thomas's Hospital; W. W. Read, Guy's Hospital; Z. Rowlands, Royal Free Hospital; E. Serjeant, Royal Free Hospital; J. P. B. Snell, Middlesex Hospital; A. W. D. Thomson, St. George's Hospital; E. N. L. Wilson, Royal Free Hospital.

Physiology.—J. J. Anning, Leeds; F. D. S. Barker, Royal Free Hospital; D. Cotes-Preedy, Cambridge and St. George's Hospital; J. Cretin, Bristol; E. W. Hutton, St. Thomas's and Westminster Hospitals; H. Johnson, Guy's Hospital; A. R. McEnnery, Bristol; W. W. Read, Guy's Hospital; Z. Rowlands, Royal Free Hospital; E. Serjeant, Royal Free Hospital; J. P. B. Snell, Middlesex Hospital; W. P. Taylor, Sheffield and Bristol; A. W. D. Thomson, St. George's Hospital; E. N. L. Wilson, Royal Free Hospital.

PRIMARY EXAMINATION, PART I.—The following candidates have passed in:

Biology.—C. H. Osmund, Glasgow.

Chemistry.—A. G. Gamble, Leeds; J. E. Jones, Bristol; O. F. W. Steele, Birmingham.

Materia Medica and Pharmacy.—B. F. Board, Royal Free Hospital; M. Foley, Royal Free Hospital; E. M. Handley, Royal Free Hospital; C. Kellgren, Royal Free Hospital; A. M. Marval, Royal Free Hospital; J. E. Mondon, Glasgow; O. P. N. Pearn, Westminster Hospital; E. Renouf, Royal Free Hospital.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,553 births and 3,220 deaths were registered during the week ending Saturday last, July 7th. The annual rate of mortality in these towns, which had been 14.9 and 15.1 per 1,000 in the two preceding weeks, fell again to 14.5 last week. The rates in the several towns ranged from 9.1 in West Ham, 9.9 in Croydon, 10.1 in Bristol, and 10.2 in Birkenhead to 18.9 in Salford, 19.3 in Manchester, 19.9 in Liverpool, and 24.1 in Sunderland. In the thirty-two large provincial towns the mean death-rate was 15.1 per 1,000, and was 1.6 above the rate recorded in London, which was 13.5 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.5 per 1,000; in London this death rate was also equal to 1.5 per 1,000, while it averaged 1.6 in the thirty-two provincial towns, among which the highest zymotic death-rates were 2.4 in Derby, 2.5 in Sunderland, and 3.0 in Swansea. Measles caused a death-rate of 1.4 in Oldham and 2.4 in Derby; whooping-cough of 1.1 in Sunderland and 1.7 in Wolverhampton; and diarrhœa of 1.4 in Gateshead. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 53 deaths from diphtheria in the thirty-three towns included 20 in London, 4 in Swansea, 4 in Liverpool, and 4 in Leeds. Two fatal cases of small-pox were registered in Liverpool, but not one in any other of the thirty-three towns. There were 17 cases of small-pox under treatment in the Metropolitan Asylum Hospitals on Saturday last, July 7th, against 13 and 16 at the end of the two preceding weeks; 4 new cases were admitted during the week, against 0 and 8 in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,766, 1,810, and 1,832, at the

end of the three preceding weeks, further rose to 1,843 on Saturday last; 229 new cases were admitted during the week, against 210, 219, and 210 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, July 7th, 938 births and 546 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.5 and 17.9 per 1,000 in the two preceding weeks, fell again last week to 17.7, but was 3.2 above the mean death-rate during the same period in the thirty-three large English towns. Among these towns the death-rates ranged from 8.4 in Perth and 9.3 in Paisley to 20.2 in Dundee and 20.3 in Glasgow. The zymotic death-rate in these towns averaged 2.8 per 1,000, the highest rates being recorded in Leith and Paisley. The 290 deaths registered in Glasgow included 17 from whooping-cough, 16 from diarrhœa, 13 from measles, 3 from scarlet fever, 3 from fever, and 3 from small-pox. Five fatal cases of diarrhœa, 3 of measles, and 1 each of diphtheria and whooping-cough were registered in Edinburgh. Diarrhœa caused 4 deaths in Dundee, 4 in Aberdeen, and 3 in Leith. Two fatal cases of measles were recorded in Dundee.

DUTIES OF MEDICAL OFFICERS OF HEALTH TOWARDS OTHER PRACTITIONERS.

J. M. McL.—The following extract from a memorandum drawn up by the Society of Medical Officers of Health for Scotland on the duties of the medical officer of health under the Infectious Disease (Notification) Act (BRITISH MEDICAL JOURNAL, June 4th, 1898, page 1468), will perhaps be accepted as an authoritative answer to our correspondent's question:

"In all cases, even where there may be grounds for suspecting gross carelessness or *mala fides*, the revisal of a diagnosis ought to be carried out by prearrangement as a professional consultation. In no such case should the patient be visited without prior communication with the private practitioner. The right of personal inspection conferred upon the medical officer of health by Section XLV of the Public Health Act ought to be held in reserve for the direst emergency."

DISTRICT MEDICAL OFFICER'S FEES FOR OPERATIONS.

G. S. W. writes saying that he had occasion to amputate six fingers for one of his pauper patients, he asks whether he can claim the fee of £2 for each finger amputated.

*** If (as we assume) these six fingers required amputation from one and the same cause, or as a consequence of the same injury, £2 only can be claimed for the case.

VACCINE LYMPH.

WE have received from Dr. Chaumier (Tours) a letter, of which the following is a translation:

Sir,—I am writing merely to refer to the note which appeared in the BRITISH MEDICAL JOURNAL of May 5th, p. 1137, on the subject of my vaccine. The author of the letter wrote: "Since the breakdown last summer of the Local Government Board lymph I have been using Dr. Chaumier's lymph with the best results, but I fear that in the hot weather it will be too lively. Even with the present weather the vesicles are very inflamed."

The season, whether hot or cold, has no influence on the inflammation of the vesicles. The vaccine of great activity (virulence) always produces a more extensive inflammatory areola than that of slight virulence. The highly virulent vaccine gives beautiful pustules, well developed, and as numerous as the points of inoculation. If one vaccinates by incisions about a centimetre in length, the highly virulent vaccine gives a vesicle as long as the incision, pustulating in regular cords, whilst the vaccine of slight virulence produces in any incision only one or two small round vesicles instead of an elongated vesicle as long as the incision. I make every endeavour that my vaccine shall be the most virulent possible in order that those who are vaccinated with it may be certainly protected from small-pox. If one vaccinates a person, who has been inoculated several years before, with a slightly virulent vaccine, and if the result is negative, that person believes himself (but wrongly) to be protected against small-pox, whilst if he be vaccinated with a highly virulent vaccine it produces vesicles unless the person is really protected from small-pox. There are certain organisms which can produce excessive inflammation (ulcerating vaccine), but I always test my vaccine both bacteriologically and clinically, and eliminate by subculture the organisms capable of producing this excessive inflammation, besides which the inflammation is in no way dangerous.—I am, etc.,

Dr. CHAUMIER.

HOSPITAL AND DISPENSARY MANAGEMENT.

CONFERENCE ON NURSING.

A PAPER on Poor-law Nursing was read at the third annual conference of the Matrons' Council of Great Britain and Ireland by Miss Julian, Matron of Croydon Infirmary. Miss Julian put forward the disabilities which confront nurses working under the Poor Law in forcible language; her long experience of infirmary work enabling her to speak with no uncertain sound. The matron of a large infirmary only holds her authority by acts of grace; the superintendent nurse is under the control of the workhouse master and matron, and if the size of the infirmary only requires one nurse her lot is, in nine cases out of ten, a most unenviable one. The whole question of Poor law nursing requires to be considered in the light of modern experience, to be entirely reorganised, accepting the fact that the workhouse hospital does the same kind of work as the voluntary hospital, and that therefore those who are responsible for the nursing of the patients are entitled to the amenities of the position.

Dr. Toogood (Medical Superintendent of the Lewisham Infirmary) spoke some thoughtful words on the registration of nurses, which he said was a demand which could not long be neglected, in justice to the patient and to the medical man. He urged the nurses to close their ranks and reconcile their factions, the present divided state being the great hindrance to registration.

MEDICAL NEWS.

SUCCESSFUL VACCINATION.—The grant for successful vaccination has been awarded to Mr. George Gilmore Willett, Public Vaccinator of the Marksbury District of the Keynsham Union.

THE new Clubs Union Rooms, Garden, and Fives Court of the London Hospital Medical College will be opened by Mr. Frederick Treves on Thursday next at 3.30. Mr. Treves will at the same time distribute the prizes to the students and nursing probationers.

FOREST SANATORIUMS FOR THE TUBERCULOUS.—According to the *Philadelphia Medical Journal* the Commissioner of Forestry of Pennsylvania is in favour of throwing open to consumptives the forest lands owned by the State. They are the property of the people, and were pledged to the maintenance of public health.

THE *Parish Magazine* of Tideswell (Derbyshire) for July contains a warm tribute to the services of Dr. J. L. Parke, who for over fifty years has practised in that place. This must be, we should imagine, almost a "record," and we would join the writer of the article to which we have referred in wishing Dr. Parke, who is a member of the Midland Branch of the British Medical Association, many more years of good health and activity.

EPSOM COLLEGE.—The following are the results of recent examinations for entrance scholarships and exhibitions:—Senior Scholarships: A. Master and A. C. C. Parkinson. Junior Scholarships: C. E. Milner and A. Ll. Jones. Entrance Scholarships: G. T. Vivian, D. Rahilly, E. A. C. Fazan, and E. L. M. Emtage. Council Exhibitions: R. Nankivell and J. H. A. Hynes.

IDENTIFICATION OF CRIMINALS.—The Home Secretary has appointed a committee to enquire into the working of the method of identification of criminals by measurements and finger prints, the administrative arrangements for carrying on this method, and to make recommendations as to any changes desirable. Lord Belper is the Chairman, and the members are the Common Serjeant (Mr. F. A. Bosanquet, Q.C.), Mr. A. De Rutzen, metropolitan police magistrate, Mr. C. S. Murdoch, C.B., and Mr. C. E. Troup, C.B., of the Home Office, with Mr. C. Lubbock, of the same office, as Secretary.

OPPOSITION TO MIDWIVES' REGISTRATION.—Dr. F. S. Toogood, Chairman of the Joint Committee to Oppose Midwives' Registration, desires to ask for contributions to continue the work of the Committee. He states that the Committee is not opposed to the registration of midwifery or monthly nurses. "The distinction taken is that diagnosis of presentation and conditions in labour is a difficult and highly responsible medical service, which can be safely entrusted only to medical skill and knowledge." Donations may be sent to the Honorary Treasurer, Dr. F. Lorimer Hart, Kirkdale, Sydenham, S.E., and further information may be obtained from the Honorary Secretaries, Messrs. R. B. Anderson, F.R.C.S., and S. R. Russell Matthews, at the Secretarial address, 32, Montague Place, London, W.C.

MEDICAL VACANCIES.

The following vacancies are announced:

AMERSHAM UNION.—Medical Officer and Public Vaccinator for the Beaconsfield District. Salary, £43 per annum, and fees. Applications to the Clerk, Union Offices, Amersham, by July 16th.

BANBURY HORTON INFIRMARY.—House-surgeon and Dispenser. Salary, £[illegible] per annum, with board and lodging. Applications to the Hon. Secretary.

BEDFORD COUNTY HOSPITAL.—[illegible] Salary £[illegible] per annum for six months, with board, lodging, and [illegible]. Applications to the Secretary by July 16th.

BIRMINGHAM CORPORATION.—Second Assistant Medical Officer to the City Hospital, Lodge Road. Salary, £120, with board, residence, etc. Applications to the Medical Superintendent.

BIRMINGHAM GENERAL HOSPITAL.—House-Surgeon. Appointment for six months. No salary, but board, residence, and washing provided. Applications to the House Governor by July 28th.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with apartments and board. Applications to the Chairman of the Medical Board by July 16th.

BOOTLE INFECTIOUS DISEASES HOSPITAL.—Resident Medical Superintendent, unmarried. Salary, £120 per annum with board, washing and apartments. Applications, endorsed "Resident Medical Superintendent," to the Chairman of the Health Committee, Town Hall, Bootle by July 21st.

BOURNEMOUTH ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £80 per annum, with board. Applications to the Chairman of the Committee by September 6th.

BRECON INFIRMARY.—Resident House-Surgeon, unmarried. Salary, £100 per annum, with furnished apartments, board, etc. Applications to the Secretary, 5, Bulwark, B.

BUXTON: DEVONSHIRE HOSPITAL.—(1) House-Surgeon. Salary, £100 per annum. (2) Assistant House-Surgeon. Salary, £50 per annum. Furnished apartments board, and washing provided in each case. Applications to the Secretary by July 24th.

CARDIFF INFIRMARY.—Assistant House-Surgeon. Appointment for six months, but renewable. Salary at the rate of £50 per annum, with board, washing, and apartments. Applications, endorsed "Assistant House-Surgeon," to be sent to the Secretary.

CARDIFF UNIVERSITY COLLEGE.—(1) Demonstrator and Assistant Lecturer in Anatomy. (2) Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120. Applications to the Secretary by September 8th.

CARLISLE DISPENSARY.—House-Surgeon. Salary, £150 per annum, with apartments. Applications to the Secretary, 23, Lowther Street, Carlisle.

CENTRAL LONDON SICK ASYLUM DISTRICT.—Locum Tenens at the Hospital, [illegible] Street, W. Remuneration £3 3s. weekly, with board, lodging, and washing. [illegible] Hospital.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—Registrar. Honorarium, £60 per annum. Applications to the Secretary by July 21st.

CHORLEY DISPENSARY AND COTTAGE HOSPITAL.—House-Surgeon. Salary commencing at £80 per annum, with board and lodging. Applications to the Honorary Secretary.

CORNWALL COUNTY ASYLUM, Bodmin.—Locum Tenens. Terms, £3 3s. a week and all found, with second return journey. Applications to the Medical Superintendent.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House-Surgeon. Appointment for six months. Salary, £70, with board, residence, and washing. Applications to the Secretary by July 20th.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary, £110, increasing to £160 per annum, with board, laundry, and attendance. Applications to the Medical Superintendent.

CHESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £60 per annum, with residence and maintenance. Applications to the Chairman of the Board of Management, 24, Eastgate Row North, Chester, by July 28th.

CLASGOW DENTAL HOSPITAL.—Junior Medical Officer for the Gratuitous Attendance Department. Salary, £100 per annum. Applications to the Secretary.

GLASGOW ST. MUNGO'S COLLEGE.—Bellahouston Chair of Anatomy. Emoluments, £500 per annum. Applications to the Secretary, 230, West Regent Street, Glasgow, by [illegible].

GREAT NORTHERN CENTRAL HOSPITAL.—Senior House-Physician. Appointment for six months. Salary at the rate of £100 per annum, with board, lodging and washing. Applications, on forms provided, to be sent to the Secretary by July 16th.

GROVE HALL ASYLUM, Bow, E.—Senior and Junior Assistant Medical Officers. Salary at the rates of £170 and £130 per annum respectively, with board, furnished apartments, etc. Applications to the Medical Superintendent.

HALIFAX ROYAL INFIRMARY.—(1) Senior House-Surgeon. (2) Third House-Surgeon. Salary, £40 and £50 per annum respectively, with residence, board, and washing. Applications to the Secretary by July 25th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.—House-Physician, unmarried. Salary, £75, with board and residence. Appointment for six months. Applications to the Secretary by July 25th.

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer. Salary, £120, rising to £150 per annum, with board, apartments, and washing. Applications, on forms provided, endorsed "Assistant Medical Officer," to be sent to the Chairman of the Asylum Committee, care of the Town Clerk, Town Hall, Hull, by July 17th.

IPSWICH EAST SUFFOLK AND IPSWICH HOSPITAL.—House-Surgeon, unmarried. Salary, £100 per annum, with board, lodging, and washing. Applications to the Secretary by July 18th.

JENNER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea.—Assistant Bacteriologist to the Antirabic Department at Parkes Museum. Salary, £250 per annum, with lodging. Applications to the Acting Secretary, Hunterian [illegible].

KING'S LYNN: WEST NORFOLK AND LYNN HOSPITAL.—House-Surgeon. Salary, £60, increasing to £80 per annum, with board, residence, and washing. Applications to the Chairman of the Weekly Board by July 14th.

LANARK COUNTY ASYLUM, Hartwood, Clarkston.—Third Assistant Medical Officer. Salary, £120, with board, washing, and residence. Applications to the Medical Superintendent.

LIVERPOOL DISPENSARIES.—Four Assistant House-Surgeons, unmarried. Salary, £100 per annum, with board and apartments. Applications to the Secretary, 32, Moorfields, Liverpool, by July 28th.

LIVERPOOL STANLEY HOSPITAL.—Senior House-Surgeon. Salary, £50 per annum, with board, lodging, and washing. Applications, endorsed "House-Surgeon," to the Secretary, Medical Board.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £30 per annum, with board and residence. Applications to the Chairman of the House Committee by July 19th.

METROPOLITAN ASYLUMS BOARD.—Fourth Assistant Medical Officer to the Darenth Asylum, unmarried, and not exceeding 30 years of age. Salary, £100 per annum, rising by £10 per annum to £150, with board, lodging, washing, and attendance. Forms of application to be sent to the Office of the Board, Victoria Embankment, E.C., by June 18th. [illegible] of the Board.

NEWCASTLE-UPON-TYNE, ROYAL INFIRMARY.—Honorary Assistant Surgeon. Applications to the Secretary by July 25th.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—(1) House-Physician. Appointment for six months. Salary at the rate of £30 per annum. (2) Resident Medical Officer. Salary, £120 per annum. Board, residence, and washing allowance provided in each case. Applications to the Secretary, 27, Ormonde Lane, E.C., by July 21st.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—House-Surgeon. Salary, £120 per annum, increasing £10 yearly to £150, with furnished apartments, board, and washing. Applications to the Secretary and House Governor by July 28th.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Unmarried. Salary, £140 per annum, with all found except board. Applications to the Secretary.

OLDHAM INFIRMARY.—Junior House-Surgeon. Salary, £35 per annum, with board, residence, and washing. Applications to the Honorary Secretary by August 6th.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £125, increasing to £175 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant Medical Officer," to Dr. W. H. Bowes, Medical Superintendent, Plymouth Borough Asylum, Brookfield, Tavistock, Devon, by July 30th.

RAINHILL COUNTY ASYLUM.—Assistant Medical Officer, unmarried, and not more than 27 years of age. Salary £120 per annum, with prospect of increase to £150, with furnished apartments, board, attendance, and washing. Applications to the Medical Superintendent by July 21st.

SCARBOROUGH HOSPITAL AND DISPENSARY.—(1) House-Surgeon. Salary £80 per annum. (2) Assistant House-Surgeon. Salary £70 per annum. Residence, board, and washing provided in each case. Applications to the Honorary Secretary by July 18th.

SHEFFIELD UNION.—Junior Assistant Medical Officer for the Workhouse Infirmary, Fir Vale. Salary, £50 per annum, with furnished apartments, board, and washing. Applications to the Clerk to the Guardians, Union Offices, Westbar, Sheffield, by July 28th.

SHREWSBURY: SALOP INFIRMARY.—Assistant House-Surgeon. Appointment for six months, but renewable. Salary at the rate of £60 per annum, with board and washing. Applications to the Secretary.

TEIGNMOUTH HOSPITAL.—House-Surgeon. Salary, £70 a year, with board, lodging and washing, and allowance. Application to the House Committee.

TUNBRIDGE WELLS EYE AND EAR HOSPITAL.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Honorary Secretary by July 24th.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon. Salary, £75 per annum, with board, residence, etc. Appointment for one year, but eligible for re-election as Senior, salary £160. Applications, marked "Junior House Surgeon," to the Secretary by July 18th.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Physician. Appointment for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing. Applications to the Secretary by August 2nd.

MEDICAL APPOINTMENTS.

ASTIN, Wilson, M.B., C.M.Aberd., appointed Medical Officer of Health for the Loughton Urban District.

BELLAMY, John Hy., M.R.C.S., L.R.C.P., appointed Senior Resident Medical Officer to the Sheffield Union Infirmary, *vice* A. F. Cameron, M.B., C.M.

BURGESS, G., M.B., C.M.Aberd., appointed Medical Officer of Health for the Great Driffield Urban District, *vice* R. Wood, M.D.St.And., resigned.

CRESWELL, F. P. S., B.Sc., B.S.Lond., F.R.C.S.Eng., appointed Assistant Ophthalmic Surgeon to the Cardiff Infirmary.

FERGUSON, R. B., M.D., appointed Certifying Factory Surgeon for the New Southgate District.

GOLDSMITH, G. H., M.B.Cantab., appointed Medical Officer to the Bedford Union Workhouse.

GRAY, W. G., L.S.A., appointed Medical Officer of Health for the Holsworthy Urban District.

HOWELLS, W., M.D., C.M.Glasg., appointed Medical Officer to the Brecon Union Workhouse, *vice* W. M. Parham, M.B.Edin., resigned.

HUTCHENS, H. J., M.R.C.S., L.R.C.P., appointed Medical Superintendent of the Plague Hospital, Brisbane, Queensland.

MCCALL, Eva, M.B., Ch.B.Glasg., appointed Assistant Resident Medical Officer to the Infirmary of Salford Union.

MACKEITH, J., M.B., C.M., appointed Surgeon to the Exeter Dispensary.

PICKARD, Ransom, M.S., M.D.Lond., appointed Surgeon to the Exeter Dispensary.

PLATT, J. E., M.S., M.D.Lond., F.R.C.S.Eng., appointed Honorary Assistant Surgeon to the Manchester Royal Infirmary, *vice* G. A. Wright, F.R.C.S.Eng., appointed an Honorary Surgeon.

WEBSTER, T. J., M.R.C.S. Eng., appointed Medical Officer of Health for the Vaynor and Penderyn Rural District, *vice* T. J. Dyke, F.R.C.S.

WEIGHTMAN, E. J., M.B., C.M.Edin., appointed Medical Officer for the Workhouse and the Children's Homes of the Middlesbrough Union, *vice* L. G. Davies, M.D.Camb., resigned.

WHITAKER, E. T., M.B., C.M.Edin., D.P.H.Camb., appointed Medical Officer of Health for the Wem Urban District.

WILLIAMS, W. R. E., M.B., M.R.C.S., etc., appointed Assistant Resident Medical Officer to the Mill Road Infirmary, Liverpool.

CENTRAL LONDON THROAT AND EAR HOSPITAL.—The following appointments have been made:

Assistant-Surgeons.—Peter H. Abercrombie, M.D., C.M.; W. J. C. Nourse, F.R.C.S.E.

Assistant Anæsthetist.—Arthur Barford, M.D.

DIARY FOR NEXT WEEK.

MONDAY.

London Throat Hospital, 204, Great Portland Street, W., 4.30 P.M.—Dr. Davis: Nasal Obstruction.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Mr. A. Baldwin: The Importance of Methodical Physical Examination.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Malcolm Morris: Consultation (Skin).

TUESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Consultation (Medical).

National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W.C., 3.30 P.M.—Dr. Batten: Subacute Combined Degeneration of Spinal Cord.

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 5 P.M.—Mr. Mayo Robson: Clinical Lecture, Chronic Pancreatitis.

THURSDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Mr. Bidwell: The Application of Plaster-of-Paris Splints.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. R. Lake: Consultation. (Ear.)

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 5s. 6d., which should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

VIGURS.—On June 28th, at Fernside, Newquay, Cornwall, the wife of C. C. Vigurs, M.D. [illegible]

WARD.—On July 9th, at 25, Museum Street, Ipswich, the wife of Francis Ward, M.D., of a son.

DEATHS.

BALDING.—On July 2nd, at her residence, Barkway, Herts, Octavia, youngest and last surviving daughter of the late Susan and James Balding, M.R.C.S., after a long and painful illness, aged 56.

DONALDSON.—On July 7th, at his residence, Mearns Villa, Saltburn-by-the-Sea, Surgeon-General J. Y. Donaldson, M.D., in his 85th year.

JAMES.—On July 9th, at 65, Conlan's Road, West Kensington, Henry James, formerly of Wimborne, Surrey, F.R.C.S., aged 83. Nuthowerl, by [illegible]

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30: Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Ophthalmic, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, i.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, i.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, i.-p., M. Tu. Th. F., 1.30; o.-p., Tu. S., 12; Eye, i.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, i.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, i.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, i.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S. 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; i.-p., Tu. Th., 3.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Th., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; i.p., 1; o.p., 12; Obstetric, i.p., Tu. F. 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th.,

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females, W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30 Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M. 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th. 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Gynæcological, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

T.M.W. asks to be referred to an authority on the nature, causes, and treatment of "the fidgets"? Neale's *Digest* is no help here.

A. I. asks for advice as to the local treatment of the parasitic skin disease seen occasionally over the sternum and between the scapulæ of consumptives. He has a case dating back six or seven years in a man, aged 20, who has had symptoms of phthisis, but whose lung and general condition is evidently improving. Amongst the numerous lotions and ointments tried, ung. acid. chrysophanic. seems to have most effect, but it stains and destroys the underclothing. What material should be worn over the chest, and what are the prospects of getting rid of the disease? Itching is intolerable in bed.

SALARY OF LOCUM TENENS.

H. M. D. asks what weekly salary a reliable *locum tenens*, with two years' experience and not afraid of hard work, should be able to command during the coming August and September?

*** We are advised that three guineas a week would be a usual fee.

ANTITOXINS AND SEA.

A. L. asks what antitoxins and what amount should be taken for a yacht's crew of 10 and 12 passengers for eight months going to Japan.

*** We are indebted to Dr. Allan Macfadyen, the Director of the Jenner Institute of Preventive Medicine, for the following reply to the above question: "I would suggest ten cases of diphtheria antitoxin, ten cases of tetanus antitoxin, and if they are likely to meet snakes some bottles of Calmette's antivenene. The party ought of course to be vaccinated."

THE DISSEMINATION OF TYPHOID FEVER.

R. N.—Neither water nor air can be looked upon as the real "culprit," but the specific organisms which were present in both. Supposing that the Modder River water were the channel of infection for the earlier cases, it is probable that the air was the channel for the bulk of the later cases corresponding with the experience in the war between the United States and Spain in 1898. We would like our correspondent to include under the term "climate" all external hygienic conditions as contrasted with the artificial conditions produced by the use of antiseptics.

ANSWERS.

DR. W. HARDCASTLE.—The wording of the rule is defective, but we should certainly interpret it as including Licentiates of the Royal College of Surgeons of Edinburgh.

CANDIDATE.—Medical inspectors to the Local Government Board for Ireland are appointed by that Board. The candidate must have been in practice for seven years, but the appointments are made as a rule from men acquainted with the Poor-law Medical Service, or from those who have specially interested themselves in public health work. Further particulars will be found in *The Guide for Irish Medical Practitioners*, by Professor R. J. Kinkead. Dublin: John Falconer. 1899.

PRACTICE IN CANADA.

DR. WM. C. RAINSBURY (Skegby, Notts) writes: In reply to "Canada" (BRITISH MEDICAL JOURNAL, July 7th, p. 72) having obtained the M.D., C.M. degrees of Queen's University, Kingston, Ontario, last year, I am able to give some "first hand" information. No man is allowed to practise in Ontario on British qualifications; he must first pass the examinations of the Ontario Medical Council. There are "openings" in Canada as in any other British colonies for an English doctor. The fees vary, but the lowest visiting fee is one dollar. I have before me copies of the Regulations of the Ontario Medical Council for the last few years. In last year's copy I find that British registered practitioners who have been domiciled in Great Britain for five years after registration can enter for the examination of the Ontario Medical Council. This rule does not appear in the current year's copy; it may be an oversight. However, "Canada" could proceed now or in a month or two to Ontario and attend lectures in my university, and after taking the degrees could then sit for the council examination, which, by-the-bye, will not be held until next May. I shall be pleased to communicate privately with "Canada," as I could furnish him with useful information.

"ORIENTING" ACTION OF EPITHELIUM.

IN reply to Dr. T. M. Watt's query regarding the exact meaning of the word "orienting" used in connection with the action of the epithelium in the article on Intestinal Absorption in the BRITISH MEDICAL JOURNAL of July 7th, the writer of the article in question has sent us the following:

"The word 'orient' literally means the east. The verb to orient in connection with a church, means to arrange its direction so that the altar end of it is eastward. The word orientation has been extended to include cases of buildings arranged to lie in a fixed geographical position which may not necessarily be east and west. Thus in the orientation of Greek temples they are arranged to face certain heavenly bodies at certain times of the year. By a very common usage in the history of words, the literal meaning of the word has been gradually lost, and its meaning widened to include cases in which a fixed direction is given to a structure or a movement. Thus Cohnheim finds the gut wall permeable to sodium chloride from the gut side, but relatively impermeable to that salt from the blood side. Reid showed a similar one-sided permeability to salts in the living skin of the frog. This power of living cells to determine the direction in which certain substances are allowed to pass through them is very conveniently termed orientation

NOTES, LETTERS, Etc.

ENGLISH VISITORS TO THE INTERNATIONAL MEDICAL CONGRESS.

DR. P. LACROIX (41, Rue de Berlin, Paris) writes: I always remember the kind welcome which we received last year in England at the annual meeting of the British Medical Association at Portsmouth. Owing to the Paris Exhibition and the International Medical Congress, which is soon to take place here, this year affords us an opportunity of thanking our English *confrères*. Personally I should be very pleased to help in every way and at any moment those of my English colleagues who may come to Paris, especially those who have never been in France. I should have much pleasure in aiding them, namely, by taking them to places of interest and amusement in our metropolis, and thus, I hope, they would enjoy their stay here better. I should be glad to be of use in such a way to the members of the British Medical Association. If my proposal should suit any of them I shall have much pleasure in placing myself at their disposal.

CHANGE OF ADDRESS AND REMOVAL FROM THE "REGISTER."

DR. R. FLETCHER (Sutton, Surrey) writes with reference to the letter from "Southampton" in the BRITISH MEDICAL JOURNAL of July 7th: In justice to the Registrar of the General Medical Council, I must say that notifying my change of address a fortnight before "Southampton" I received in reply a printed postcard with General Medical Council Office address and Mr. Allen's name attached. The use of a printed card suggests that that is the usual method of acknowledgment.

IRISH DISPENSARY DOCTORS AND GUARDIANS.

DR. HENRY (Belfast) wishes to acknowledge the following sums which he received direct, independently of the sums received by Dr. W. Calwell, on behalf of the Dr. Moses Henry "Legal Expenses" Fund:

	£	s.	d.
Dr. Robert Henry, Comber	0	10	0
Dr. Craig, Londonderry	0	10	0
Dr. Dunlop, Croagh	0	10	0
Dr. McKee, Randalstown	1	1	0
	£2	11	0

AMMONIUM CHLORIDE IN CHRONIC DYSPEPSIA.

DR. A. R. HENCHLEY (Blagdon, Somerset) writes: Chronic dyspepsia in its various forms is one of the common complaints that general practitioners are frequently called on to treat. Its varieties have been classified in many ways, some under the heading of the cause, whilst others have been named after its results. A drug which does not seem to be mentioned much in connection with this complaint is ammonium chloride. I have tried it in quite a number of cases, especially in those of a gouty nature, in conjunction with small doses of the solution of mercury perchloride, and if the patient followed out directions in the matter of diet (and even in some who did not) the results were most satisfactory. A somewhat important matter is how to get rid of the very unpleasant taste that it leaves in the mouth. I have usually commenced with ammon. chlor. pur. gr. v and liq. hydrarg. perchlor. mx (gradually increased to gr. x and m xv respectively in the course of a fortnight) three times daily, about half to one hour after each meal. During the first week the symptoms have become much less pronounced—the appetite improves, the tongue is cleaner, and the epigastric pain is all but gone.

*** The prescription should be dispensed with distilled water; if prepared with common water (containing carbonate of lime) a white precipitate is formed and very little mercury is left in solution. The taste of ammonium chloride can be covered by ext. glycyrrhizæ liquidum. A palatable draught may also be made with spirit. chloroformi and tinct. limonis.

PREVENTION OF LACERATION OF PERINEUM.

DR. J. WALTERS, M.B. (Reigate) writes: The letters of Dr. Gardner and others on the above subject seem to be calculated to revive what I thought was an exploded error in the delivery of the child's head when in the ordinary position. I have for some years practised what I believe to be the more modern practice with excellent results, namely, to prevent over-extension of the head as far as possible so that the perineum is distended by the shorter diameter (occipito-frontal) instead of by the longer (occipito-mental) diameter of the head, thereby diminishing the liability to rupture. One gentleman has devised an instrument to facilitate this erroneous practice. Another gentleman claims credit for having devised the plan of dilating the perineum with his fingers to prevent rupture. Surely this manœuvre has been practised ever since the days of Eve. Dr. Gardner claims some credit for mentioning introducing two fingers into the rectum to promote extension of the head. Surely in these antiseptic days such a disgusting proceeding should with the instrument before alluded to, be at once consigned to oblivion.

EPIDEMIC DIARRHŒA.

DR. C. STUART VINES (Newport) writes: In the interesting report by Professor Adami on the diseases of Canada to the Secretary of State for the Colonies published in the BRITISH MEDICAL JOURNAL of June 23rd occurs the following: "Summer diarrhœa or cholera nostras is much more common and more fatal in the large towns in Canada than it is in the British Isles." Is not this the same disease known here by the name of epidemic diarrhœa? In the *Nomenclature* of the College of Physicians cholera nostras and epidemic diarrhœa are scheduled as two distinct diseases. There is no definition given to show what distinction there is between the two. Again, in the United States, cholera infantum seems to be a very prevalent and fatal disease, especially in the summer months. Is it not reasonable that all three are the same disease, which is perhaps more fatal among adults in Canada, but in England finds its chief victims in children?

ACADEMIC COSTUME.

H. writes: Now that the various colleges have granted their members the right to use a certain regulation academic costume, surely there can be no objection to those men who intend being present at the Ipswich meeting this year bringing with them their gowns, so that the parade or procession to church may be impressive as well as picturesque. St. Luke's Guild at St. Paul's is crowded with men in their various gowns and hoods, and is a complete success. What, then, is the objection to us wearing our gowns in the church procession at Ipswich? Some say the expense of a gown. But one can hire the complete costume for a few shillings a day if one cannot afford the few pounds necessary to buy the outfit complete.

I am sure the wearing of gowns would be an inducement to those licensing bodies who have not yet done so to at once grant their members a suitable costume; in fact it would almost compel them to. The fact of it is medical men do not make full use of their privileges, and I think nothing would more impress the general public than to see us at least once a year in our proper academic costume.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Association of Registered Medical Women, Secretary of, London; Mr. A. H. Allen, Sheffield; Dr. R. Anderson, Gateshead-on-Tyne; Mr. H. B. Argus, Newcastle-on-Tyne; Acetylene Illuminating Company, Manager of, London. **B** Messrs. Burgoyne, Burbidges, and Co., London; Mrs. A. S. Ballin, London; J. J. Buchan, M.B., Motherwell; Dr. J. Beddoe, Stratford-on-Avon; J. F. Bullar, M.B., Southampton; Dr. J. Braithwaite, Leeds; Dr. W. A. Brailey, London; Mr. L. A. Bidwell, London; Mr. C. A. M. Bailey, London; Mr. H. J. Blakesley, Leicester. **C** Mr. F. Clarke, Guernsey; W. S. Carpenter, M.B., London; Dr. H. Campbell, London; Dr. C. J. Cooke, Plymouth; Dr. W. Calwell, Belfast; Dr. W. H. Corfield, London; Cantab.; Mr. J. M. Clarke, Clifton; T. D. Cook, M.B., Torquay. **D** J. W. Downie, M.B., Glasgow; Dr. T. O Dudfield, London. **E** Dr. M. G. Evans, Caerphilly; Dr. J. Edmunds, London; W. Edmunds, M.B., London; Dr. W. A. Elliston, Ipswich. **F** Mrs. J. G. Forrester, London; Dr. E. I. Fison, Salisbury; Fiat Lux; Messrs. H. Francis and Co., London; Dr. R. Fullerton, Glasgow; Mr. H. W. Fagge, Lutterworth; Mr. R. Fletcher, Sutton; Mr. C. Frost, Manchester; Mr. J. Fullard, Pensarn. **G** Mr. F. J. Gant, London; Grays; Dr. J. Griffiths, Cambridge; Gastric; Dr. J. H. Galton, London; Glendale, Northumberland; General Medical Practitioner; Mr. F. A. Gace, Shoeburyness. **H** F. G. Haworth, M.B., Darwen; Dr. W. S. Hedley, London; W. Hardcastle, M.B., Newcastle-on-Tyne; Dr. T. A. Helme, Manchester. **I** Ignorance; Dr. J. Ince, Swanley. **J** J. H. D. **K** K.C.; K. H. D.; Mr. F. Kinton, London. **L** Mr. W. S. Low, London; F. H. Low, M.B., London; Mr. P. G. Lodge, Bradford; Mr. A. Leche, Axbridge; Dr. R. W. Leftwich, London; Mr. H. Lucas, Huntingdon; G. Leighton, M.B., Pontrilas; Dr. E. G. Little, London. **M** Dr. T. Morton, London; Dr. A. Macfadyen, London; M. T. S; Dr. A. MacGregor, London; Dr. M. Moore, Coventry; Mr. M. C. Moxham, Boston, Lincs.; Dr. R. Maclaren, Carlisle; Mr. A. Maude, Westerham. **N** G. B. Newbolt, M.B., Liverpool; Mr. W. J. C. Nourse, London. **O** Obstetrical Society o London, Secretary of, London; Dr. C. A. Owens, Long Stratton. **P** Mr. G. Pernet, London; Dr. G. C. Purvis, Grahamstown; Plumbism; Mr. W. S. Playfair, London; Puritan; Dr. H. H. Phillips-Conn, Reading. **R** Dr. M. A. Ruffer, Alexandria; Dr. W. C. Rainsbury, Skegby; Dr. J. C. Renton, Glasgow; Mr. F. J. Rebman, London. **S** Scotia; Mr. E. T. A. Smith, London; Mr. W. L. Saunders, Manchester; W. G. Spencer, M.B., London; G. P. Shuter, M.B., London; Sanitary Wood Wool Company, Manager of, London. **T** Dr. D. G. P. Thomson, Penrith. **W** Mr. C. Williams, Bristol; Working Men; Dr. A. Wilson, South Woodford; Mr. G. G. D. Willett, Keynsham; Mr. E. S. Warburton, Treherbert; Mr. R. H. Wolstenholme, Salford; W. E. S. S. etc.

BOOKS, ETC., RECEIVED.

Hernia: its Etiology, Symptoms, and Treatment. By W. McA. Eccles, M.S., F.R.C.S. London: Baillière, Tindall and Cox. 1900. 7s. 6d.

Traité de Chirurgie Clinique et Opératoire. Publié sous la direction de MM. A. Le Dentu et P. Delbert. Tome Neuvième. Paris: J. B. Baillière et Fils. 1900. Fr.12.

The Human Flower. By Ellis Ethelmer. Fourth Edition. Congleton: Mrs. W. Elmy. 1900. 1s.

On the Operative Treatment of Strabismus. By F. Fergus, M.D. Glasgow: J. Maclehose and Sons. 1900.

Operative and Practical Surgery. By T. Carwardine, M.S., F.R.C.S. Bristol: J. Wright and Co. 1900. 10s. 6d.

Mikrophotographischer Atlas zum Studium der pathologischer Mykologie des Menschen. Dr. E. Fraenkel. Lief. 3. Hamburg: L. Gräfe and Sillem. 1900. M.4.

Chirurgie du Rein et de l'Uretère. Par V. Rechet. Paris: G. Steinheil. 1900. Fr.6.

Guide Medical Parisien. Paris: A. Maloine. 1900.

Flesh Foods, with Methods for their Chemical, Microscopical, and Bacteriological Examination. By C. A. Mitchell, B.A., F.I.C., F.C.S. London: C. Griffin and Co. 1900. 16s. 6d.

Le Vade-Mecum du Médecin-Expert. Par A. Lacassagne. Deuxième Édition. Lyons: A. Storck et Cié; and Paris: Massou et Cie. 1900.

Mosquitos and Malaria. By C. Christy, M.B., C.M. Bombay: "Times of India" Press. 1900.

Medical Electricity. By H. L. Jones, M.A., M.D. Third Edition. London: H. K. Lewis. 1900. 10s. 6d.

Die Grundzüge der Tropenhygiene. Von Dr. K. Däubler. Zweite Auflage. Leipzig: O. Enslin. 1900.

Rheumatoid Arthritis and Subcutaneous Nodules. By C. O. Hawthorne, M.D., M.R.C.P. London: J. and A. Churchill. 1900. 2s. 6d.

Medical Electricity. By H. Lewis Jones, M.A., M.D. Third Edition. London: H. K. Lewis. 1900. 10s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Eight lines and under	0	4	0
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A whole column	1	17	6
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An average line contains six words.

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Post-Office Orders should be made payable to the British Medical Association at the General Post Office, London. Small amounts may be paid in postage-stamps.

N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

PRESIDENTIAL ADDRESSES
TO THE
BRANCHES OF THE BRITISH MEDICAL ASSOCIATION.

METROPOLITAN COUNTIES BRANCH.

OUR NUMBERS AND OUR WORK AT THE CLOSE OF THE CENTURY.

By GEORGE EASTES, M.B.Lond., F.R.C.S.Eng.,
President of the Branch.

GENTLEMEN,—My first duty on assuming this responsible position is to thank you, as I do most heartily, for the high honour you confer upon me by placing me here. In return I shall do my best to serve you, and I trust our Branch may during the coming year be usefully employed and exhibit signs of healthy growth.....

The subject to which I desire to direct your attention during the short time at our disposal is that of our numbers and our work at the close of the century. This is one of the few occasions when such a theme is allowable, and it must for all of us possess considerable interest. By our work we live, and the amount falling to each of us to perform depends largely on the number of those amongst whom that work as a whole is divided. In dealing with each branch of the subject I have treated it by comparing the present with the past. With these preliminaries I pass to

OUR NUMBERS.

The medical practitioners in England and Wales in the census of 1861 were returned as 14,415 "physicians and surgeons," in that of 1871 as 14,684, and in that of 1881 as 15,116 "physicians, surgeons, and general practitioners," being an increase of 701 only in twenty years, whilst the population of the country grew by nearly 6,000,000. In 1861 the average number of persons to each medical practitioner was 1,392; in 1881 that average had risen to 1,718—that is, to 326 more persons for each practitioner than there had been twenty years before. Indeed, Dr. William Farr, whose statistical acumen was rarely at fault, was of opinion as late as 1876 that "there was imminent danger that medical attendance might become quite inaccessible to vast numbers of people."

A great change, however was at hand. In the succeeding decade ending in 1891 the profession in England and Wales was increased, by the addition of nearly 4,000 members, to 19,037, reducing the average number of persons for each practitioner from 1,718 to 1,523. And during the past nine years 4,000 practitioners have also been added to our ranks, making their present total 23,023. The average number of persons to each practitioner has consequently sunk again to 1,393, which is almost the identical proportion that existed in 1861, but with a very different amount of work for the present practitioners to do, as we shall presently see.

THE RECENT GROWTH OF THE PROFESSION.

The average "growth" of practitioners, after allowing for the "nutrition" of our ranks and their normal increase required by the addition to the population, has during the last nineteen years been 228 per annum, so that to every 8,500 inhabitants of England and Wales there are to-day 6 medical practitioners where in 1881 only 5 would have been found. This "growth" of the profession was especially vigorous from 1883 to 1898.

We will now inquire whether the growth has been uniform throughout the country. A valuable but little known report of the General Medical Council, published in 1888, and containing a census of the registered medical practitioners of England and Wales for the years 1881 and 1886, supplies a trustworthy basis for our inquiries. The report states that in London in 1881 there were 3,837 practitioners. Now, in 1900, we are 6,102. In 1881 there were on an average 1,007 persons to each practitioner; to-day there are 803. If the 1881 standard of 1,007 persons to one practitioner were still the rule, there would be quite 1,200 fewer practitioners in London than there are at present. In round numbers, each 4,000 of the population has now 5 practitioners instead of the 4 who were its share in 1881.

In the other large towns (27 in number in 1881) there is the same story of growth. In 1881, to each practitioner there was an average of 1,939 persons; now that average is fewer by 272.

In the rest of the country each practitioner in 1881 had an average of 1,996 persons; this year that average has decreased to 1,562.

THE DISTRIBUTION OF PRACTITIONERS IN ENGLAND AND WALES.

The above figures reveal another important fact, namely, that practitioners are distributed in very varying proportions among the population in different parts of the country. Of the large towns Brighton had, in the Eighties, by far the largest proportion of practitioners to population; in 1881 the average number of persons to one practitioner was 741; the average has since then steadily decreased, until to-day the apportionment there is barely 615. London comes next, and is not very far behind Brighton, there being in the metropolis barely 800 persons to each practitioner. Next come Plymouth with 1,130, and Bristol with 1,230. In the next rank are Manchester, Liverpool, and Birmingham, with averages not unlike the general average of this year for the whole country, namely, 1,393. Lastly, the fewest proportion of practitioners (so that each has an average of over 2,000 persons) is found in Huddersfield, Norwich, Hull, and Bolton. In some large towns there is double the number of practitioners found in other towns equally populous.

In the counties, too, a great disproportion between the different divisions existed in 1886, and has not since then apparently abated. The South-Eastern and South-Western Divisions of England have the largest proportion of practitioners, and, generally, southern towns and districts and health resorts have the largest proportion of medical men; but the rule has several exceptions. Even in different parts of London the proportion varies considerably. Thus, in the district best known to myself, South Paddington, there are 130 practitioners, nearly all in general practice. (This point is of consequence. As patients usually reside within easy distance of the "family doctor," it is important for general practitioners not to be too closely congregated together. But with "consultants," whose patients come from all parts, crowding—as in the districts around Grosvenor and Cavendish Squares—is a matter of little moment.) Now, South Paddington was already entirely built over in 1861, when its population numbered 36,769. At a local census in 1896, the last taken, it contained 3,000 fewer people; but, notwithstanding that decrease, the number of medical practitioners has increased by 20 since 1861, and the average of persons for each practitioner can be very few more than 300. Several adjoining parishes—Marylebone and South Kensington, for example—are probably no less plenteously furnished with practitioners. But, if this be so, there must be parts of London where the proportion of persons to each medical man must be three or even four times the number found in these well-to-do West End parishes.

MEDICAL WOMEN: THEIR NUMBERS AND DISTRIBUTION.

It might be expected that the recent growth of the profession would be partly traceable to the admission of women to its ranks, but their numbers are not at present very formidable. In the census of 1871 all the practitioners were classed as males. In 1881 there were 25 females, in 1891 the number was 101; and in 1899 the medical women on the *Register* were 336. I learn that 30 should probably be added for the present year. There are now 92 practising in London, 90 in the rest of England and Wales (chiefly in towns or institutions), and about 97 in India.

CAUSES OF THE RECENT GROWTH OF THE PROFESSION.

It is not possible to fathom the manifold factors which have led to this recent growth of practitioners, but many may be indicated. First, the great agricultural depression due to a variety of complicated causes, and beginning in the Seventies, was probably the determining agent that flooded the professions in general with neophytes between the census re-

turns of 1871 and 1891. But neither the Church nor the Law attracted so many entrants as did Medicine. Possibly the opinion of Dr. Farr (which I just now quoted) as to the dearth of medical practitioners in 1876, was acted upon, wherever known, by parents and guardians of slender means having well-educated boys eager and ambitious to succeed in life's race. Wealthy parents do not usually send their sons into our profession. They have opportunities of fitting them for commerce, with its many short runs to fortune, and with occupation that allows far more relaxation than does the medical life. But for those who have not a superabundance of ready money at command, our profession offers the temptation that the cost of education is spread over several years and does not require the expenditure of a large sum early in its course.

Lastly, the triumphs of anæsthetics and antiseptics during the quarter of the century now ending have directed so prominent a share of public attention to our work, that large numbers have doubtless been thereby induced to join our ranks. But such speculations regarding the past probably possess little more than academic interest; I, therefore, leave them and pass to the second branch of the subject, namely:

Our Work.

This is, at any rate, a topic of vital importance to all of us. Let us consider it by contrasting our present work with the work of the profession in the past: first, in its entirety; secondly, in its primary divisions—medical, surgical, and special. Judged under these conditions, it is manifest to anyone whose recollection extends back some thirty years, that the work of the present general practitioner is much less in the aggregate than that which came to his predecessor at the beginning of that period. Nor are the causes of this diminution difficult to trace. An efficient State control of infection has been organised, and immense advances have in those years been made in every branch of applied medicine and surgery. In our own country notification and isolation have gone far towards stamping out some of the worst infectious maladies; the horrors of tuberculosis are yearly lessening; and various diseases formerly requiring weeks of attention are now altogether prevented, or are, by treatment probably then unknown, greatly shortened in their duration. Surgery is revolutionised. The healing of wounds, even of those inflicted by the surgeon, rarely occurred in the past without some septic process, which to-day is hardly ever seen; so that the wound in the course of a few days, possibly even at the first dressing, is quite healed.

Effects of Recent Advances in Medicine and Surgery upon the Public and the Profession.

And not upon our race only, but upon all civilised peoples has the boon implied by these advances been conferred. But the practitioner reaps no corresponding advantage; rather, his work is thereby curtailed. Now, please do not let me be for one moment misunderstood. The practitioner's *rôle* and his greatest joy are to alleviate suffering, cut short disease, and lengthen life; and unless he acts in this spirit towards all those of every station who entrust themselves to his guidance, he is utterly unworthy of the great trust which he holds. Also, "though it be to his own hurt," he must under all circumstances do the best possible for his patient; just as a soldier, knowing that an enterprise on which he is engaged is attended with the greatest danger to himself, nevertheless does his duty, disregarding the risk to his own limb or life which it involves. Similarly, we endeavour to perform our duty, and glory in the thought that our profession has wrought this great benefit to mankind in general. At the same time, however, the prevention and improved treatment of disease have undoubtedly diminished very greatly the amount of work within the province of medical practitioners. And, however altruistic they may be, they cannot quite forget that the very perfection of their art has palpably decreased the sphere of their daily toil.

Effect of Hospitals and Cheap Dispensaries on Practitioners' Work.

Another element of diminished work, less pleasant to contemplate than the foregoing, arises from the keen competition to which practitioners are subjected, especially in the less wealthy districts of London and most other cities, from hospitals and dispensaries; also from medical aid societies and other agencies which parade their cheapening of professional attendance. This competition grows yearly. The large general hospitals of London, to which schools are attached, remain as they were forty years ago; not one has been added in the interval; and as far as their in-patient departments are concerned, they do magnificent work, and for the most part admit to their wards only cases which cannot be adequately treated at home. But of the out-patient departments one cannot be quite so assured. So long as the double function of tending the sick or maimed and teaching students is fairly performed, no exception can reasonably be taken to their out-patient work; but the enormous number of out-patients treated at some of them (at one hospital 178,000, and at another 160,000 in one year) causes the doubt to arise whether it is possible for the medical and surgical officers to give to the problems which each case presents sufficient time for both the teaching and the treatment. Hospitals for special diseases or for diseases and injuries of definite organs or regions of the body have lately multiplied greatly in London, and it is authoritatively stated that the out-patients' visits in these institutions last year numbered 1,335,000. Does not this huge total suggest a considerable transference of work which not long since would have been in the hands of general practitioners? I believe that teaching, at any rate, in these special out-patient rooms plays with few exceptions quite a subordinate part. One class of institutions, conducted on fair economic principles, and affording moderate recompense to practitioners for services rendered, is that of the provident dispensaries; but at present they do not seem to flourish abundantly. Medical aid societies, worked by outsiders, and cheap dispensaries run by enterprising practitioners at rates that can only produce slender remuneration, attract work that must be done hastily to make it "pay" at all, and which would formerly have gone to practitioners able to bestow upon it a reasonable amount of time and thought.

Specialists, Consultants, and General Practitioners.

A notable feature of the last thirty or forty years in medicine and surgery, as in almost every other department of human work, has been the increase of specialists, for whom, so far as our profession is concerned, London with its aggregation of wealthy inhabitants is a veritable paradise.

In the past it was customary for patients to consult the same general practitioner in all ailments, and upon his advice to call in an appropriate consultant for any serious departure from health or for the settlement of any grave question connected with treatment. But now many wealthy people try to dispense with the services of the general practitioner completely and have recourse at first hand to consultants or specialists for even trivial ailments. And this system of procedure seems to be growing as the wealthy classes increase; though report has it that the blunders committed by the patients who diagnose their own ailment and then choose "the best man in town" for it are sometimes ludicrous. The system which thus deprives general practitioners of highly remunerative work is perhaps most prevalent in the West End of London.

Visits to consultants are less easy for patients living out of town; they therefore usually seek first the help of the local practitioner, and are thereby, in the majority of cases, saved all necessity for further treatment.

The truth is that the grades in our profession seem never to have been so rigidly observed as the corresponding grades of barrister and attorney in the law; and wealth and fashion have now almost completely broken down any such distinction as formerly existed. In the *Medical Directory* of 1845, 1846, and 1847 the status of each practitioner was placed after his named, such as physician, surgeon, obstetric and general physician, ophthalmic surgeon, general practitioner, etc. But there is nothing of the kind in recent directories.

One great distinction at present between law and medicine is that the consultant in the former profession—the barrister—deals with the client through the solicitor only; but the physician, surgeon, or specialist, though the bulk of his practice may be consultative in the best sense of the term, almost invariably also attends patients without the intervention of a general practitioner. Thus, between consultants

and specialists on one side and cheap hospitals and dispensaries on the other, general medical practice in the present day suffers from attrition both above and below, whilst its substance is honeycombed in various directions, as I have already indicated.

RECENT ADVANCES IN SURGERY.

Another transference of practice, yearly growing more pronounced, is that of cases once invariably considered the physician's appanage to the domain of surgery—for example, cases of abdominal or pelvic disease, and thoracic, cerebral, and spinal diseases, both acute and chronic. Moreover, certain operations now frequently performed—such as the removal of adenoids—were formerly unknown. Altogether, it must be acknowledged that surgery has greatly extended its field of work, and that the young surgeon of to-day has employment which never came to his seniors until far advanced in their careers. He is the modern Fortunatus of the profession; each advance seems only to render his skill more and more necessary to suffering humanity and his success assured. With the surgeon also the anæsthetist of to-day finds greatly increased employment; and anæsthetists have become far more numerous of late years. Operating surgeons and anæsthetists form, however, a small part of the profession, while the increased area of their work has correspondingly lessened that of their professional *confrères*.

PRESCRIBING AND MODERN METHODS OF DISPENSING DRUGS.

But certain other causes of diminished work have yet to be mentioned. In the country medical men must dispense their own drugs, as there is rarely a chemist at hand to undertake the work. But in London and other cities practitioners have gradually ceased to "dispense," giving, instead, prescriptions to their patients. This practice enables the patient to continue the remedy for any length of time without again seeing the practitioner; also, the greater the benefit derived from the prescription the greater is the chance that it will be used by the friends of the first patient for ailments judged by them to be similar to that for which it was originally given. Lastly, the convenient modern method of administering medicines in tabloid form has "caught on" with the public; and drugs of all kinds are swallowed by huge numbers of people, who diagnose their own ailments without reference to any medical man.

NEW PATHS OF PRACTICE.

Now let us consider the other side of the question. Whilst the work of the profession—especially that of the general practitioner—has in several ways lessened, there are a few directions in which it has increased. The 12 large fever hospitals of London, all opened since 1868, with their 6,500 beds, employ about 48 medical officers; the 28 Poor-law parochial infirmaries are worked by a staff of over 70 practitioners, and have nearly all been established within the last thirty years. These hospitals, however, it must be remembered, admit cases that in former years were nearly all treated by the general practitioner. The teaching staffs of the medical schools have received a great accession of teachers during the same period, especially amongst their junior members, who give instruction in bacteriology, Roentgen-ray work, and other subjects unheard of some few years ago. But the three or four hundred practitioners finding employment in these newly-created posts account for only a small proportion of the 1,200 practitioners who since 1881 have swelled our ranks beyond the standard then obtaining in London of one practitioner to each 1,000 persons. Nor does the increase in the ranks of the physicians, surgeons, and specialists account for more than a small proportion of the 1,200 thus added.

QUALIFIED ASSISTANTS.

I am, therefore, driven to the conclusion that the recent chief increase of the profession has been in the ranks of general practitioners. Some of these undoubtedly fill places formerly held by unqualified assistants. But, much of the private dispensing of former years having passed to the pharmaceutical chemists, fewer assistants are employed now than formerly. It is true that good assistants, or men qualified to take the part of "locum tenens," are just now difficult to find; and that this fact apparently disproves my contention that the profession, in London at any rate, is overstocked. But the dearth of assistants seems to me to be capable of another interpretation. Their salaries were formerly kept down by competition with unqualified men; and principals have perhaps not yet quite appreciated the fact that four or five years' training entitles an assistant to a larger salary, which in these days of decreasing work is doubtless sometimes a matter of real consideration to the principal. Nevertheless, assistantships often reveal royal roads to successful practice, and offer means of obtaining insight into the conduct of much professional work that cannot possibly be acquired in the medical schools.

Besides, the war in South Africa, having recently absorbed many of our younger brethren, has temporarily accentuated the dearth of qualified men. But I must cease.

THE CONCLUSION OF THE WHOLE MATTER

is that in recent years practitioners have greatly grown in numbers, whilst general medical work has undergone marked shrinkage in several directions. Nor will that work probably again reach former dimensions, except under very special and temporary circumstances, as in the epidemic of influenza at the beginning of this year. The result is obvious, and "spells" competition, ever growing keener, in which several of the professional troubles of to day, such as cheap dispensaries and medical aid societies, have their origin. Nor, unfortunately, does the future prospect appear to be more roseate for the general practitioner.

SUGGESTED REMEDIES FOR THE OVERCROWDING OF THE PROFESSION.

It is of no use, however, to draw this pessimistic sketch without also suggesting remedies for the state of things that it discloses.

If our medical work continue to decrease, the only method of keeping it up to a reasonable standard for each practitioner is to reduce the number of practitioners. Apparently this redress is already acting in a moderate degree.

The fifth year, added in 1892 to the student's curriculum, has reduced the entries of students in the United Kingdom by nearly 300 a year since that date, and will doubtless for a time continue to exercise the same deterrent effect.

Young practitioners about to "settle" should remember that in almost all places outside London rivalry is much less keen than in the metropolis, whilst in India and the colonies of Britain's expanding empire there are immense fields open to energy and professional talents. Indeed, South Africa, as I have already hinted, has during the past nine months made so extensive a call upon young practitioners from this country that for a while our numbers here must cease to grow.

With the object of ascertaining the conditions of medical practice in the Colonies, the Council of the British Medical Association recently requested Mr. Chamberlain to obtain information upon the point. This he has most obligingly done; and the replies from every Colony, containing the conditions in question, have been furnished to our Association, and may be inspected at the central office by anyone interested in the subject.

Thus it appears that, although our work in the aggregate is diminishing, our numbers in the near future seem also destined to lessen, and thereby adjust the inequality. The conclusion of my diatribe is consequently somewhat less discouraging than were its opening paragraphs. Its subject, though not exhilarating, nevertheless merits the serious attention of most of us, and particularly of those about to embark in practice. I have, at any rate, endeavoured to state "the plain, unvarnished truth," and to put it before you with fairness and moderation.

THE ROENTGEN SOCIETY OF THE UNITED STATES.—Under this title a Society has recently been organised in the United States. The *American X-Ray Journal*, published at St. Louis, Mo., will be the official organ of the Society. The Society is the only one of its kind in America, and is national in character. The first regular meeting will be held in New York in December, 1900. Many papers have been promised by eminent men, and there will be an exhibition of x-ray and electrotherapeutic apparatus, radiographs, etc., during the meeting. The President of the Society is Dr. Heber Robarts, of St. Louis.

SOUTHERN BRANCH.

THE ETHICS OF SECRECY IN THE LEARNED PROFESSIONS.

By Charles R. Straton, F.R.C.S.Edin.,
President of the Branch.

A few years ago a surgeon was called to attend a gentleman just recovering from an outburst of debauchery, in which he had contracted gonorrhœa and two soft sores. The patient was in a state of maudlin contrition, and had sent that morning for his spiritual director, to whom he had made certain confessions. The surgeon could see for himself all that he considered necessary, and begged him to be silent, but he insisted on confessing how it all had happened. A few weeks afterwards, as his wife "had turned quite nasty about his illness," he sent for his solicitor, and then for the third time he made a clean breast of it. For some months those confessions remained securely locked in the breasts of the priest, the surgeon, and the solicitor; but the matter then came before the Divorce Court, and the three confessions were treated in an entirely different manner. The solicitor in virtue of the privilege accorded by the law of England to the legal profession maintained absolute silence. The priest, having no claim to privilege, had he refused to reveal the confession might have been committed for contempt, but the judges have an unwritten rule that overrides the law: no priest ever reveals a confession, and no judge ever commits him for observing silence. But neither privilege nor unwritten rule comes to the aid of the surgeon; in this case he was sworn, and had to tell in court all about the gonorrhœa and the two soft sores, and was also asked about the confession. Here he appealed to the Bench, and wished to draw the line at confessions made under the seal of secrecy, but the judge ruled that the questions must be answered. Then the secret came out. The gonorrhœa and the two soft sores had been contracted one dark night while making water against a dirty cart wheel. Whether the confession made to the solicitor was the same we shall never know, for lawyers are privileged. Sir George Jessel says that it is quite necessary they should be so, because the law is so complex that a man must have a lawyer to defend him.

The rule really arose in classical times although from the same necessity. Each kind of injury required its own particular form of action to redress it, and the formulæ of these actions were guarded with the greatest secrecy by the Pontifical College.[1] It became absolutely necessary, therefore, to employ a lawyer skilled in these mysteries, and the lawyer and the client came to be regarded as one person in the suit, one body with one tongue. From that time until now the lawyer has had the right to be silent except when his client consents to his secrets being revealed. The secret, however, was always regarded as the property of the client, not only in Greece and Rome but by the great civilians of Holland.

"Neither attorney nor counsel," says John Voet, "may be called as a witness in any case in which they are engaged; and it would be quite as infamous for them to reveal the secrets of their client as for a priest to reveal the secrets of auricular confession."[2]

Evidently in Voet's day the priest possessed the greatest right to be silent, and the secrets of the confessional the highest claim to be kept sacred. But they were not always so regarded. During the first few centuries of the Christian Church the confessions of penitents were in no way secret, but were made publicly before the congregation of the faithful. This custom was continued in the Eastern Church down to the end of the fourth century when the practice gave rise to scandal, especially on the occasion of a lady of high rank publicly confessing that she had been seduced by one of the deacons of the church. To prevent a repetition of this scandal Nacterius, the patriarch of Constantinople, abolished public confession, and ordained that in future confession should be made in sight of the congregation but into the ear of the priest.[3] Both in the legal and in the clerical professions it is clear that secrecy arose out of a regard for the interests of the attorney and of the priest, and not from any special consideration for the client or the penitent.

In England the silence of the attorney is a duty from which the client may release him, but as soon as we pass from Dover to Calais we find the whole position and moral aspect of secrecy is changed. In France it is no longer a moral duty, it is a jural obligation, and the State has a right to the attorney's silence. In England the attorney ought to be silent, in France he must be silent, and any breach of silence is a misdemeanour under the Penal Code. The full bearing of the Code was not at first realised, and for fifty years after it came into force it was regarded as directed only against indiscreet revelations, and an attorney might answer or abstain from answering as his conscience might direct;[4] but gradually the rulings of the courts have made secrecy more and more absolute, and now neither the client nor the Bench[5] can absolve the attorney from it.

The law views the transgression of this professional duty independently of any motive leading to its violation, or any malice influencing it; it has desired in the interests of public order and higher morality to make secure and unassailable the confidences which are entrusted to certain professions and to guarantee the repose of families who have been led to disclose their secrets by reason of the necessity for this confidence.

Finally last year it was laid down that lawyers have "no option or discretion and the rule of professional secrecy permits of no exception."[6] So much for legal privilege in this and other countries.

In commenting on the privilege of lawyers Lord Brougham said, "It is certainly not easy to discover why a like privilege has been refused to others and especially to medical advisers.[7] But if we consider the three confessions with which we started we cannot fail to observe that after all what the priest or the lawyer knew was only what the patient had told them. It was at best but secondary evidence, and if his confessions to them were identical with that which the surgeon was obliged to disclose, you will, I think, agree with me that they would have afforded testimony of very questionable value. But the rest of the surgeon's evidence must stand in a different category: he was no longer speaking of something that someone had told him, but of material facts within his own knowledge; and if the existence of gonorrhœa and soft sores was a fact necessary to enable the court to discover the truth of the matter in issue, then his evidence is essential; and if evidence that is essential be technically excluded the proper administration of justice becomes impossible.

Medical secrecy has another aspect. Besides disclosures made compulsorily in a court of law, revelations may be made indiscreetly in the intercourse of daily life. By the "Oath of Hippocrates" the young physician abjured gossip and promised not to reveal what he saw or heard.[8] Various modifications of this *sponsio academica* have been in use ever since by universities and corporations in all countries. After a time it was found that many secrets were not included in this oath, as they were neither seen nor heard, and in the sixteenth century the University of Paris used a formula which included secrets seen, heard, or understood.[9] The physician who removes a fresh three months' placenta from the patulous cervix of a woman infers that she has recently aborted. He may not have seen her abort, and may not have been told anything, but he understands it and the secret is classed among the *arcana intellecta*. Whether true or not it is the property of the patient, and save for some sufficient overruling reason it may not be divulged without her consent. If the patient suspects that the doctor is about to betray her confidence she may stop him by injunction; and if she finds that the betrayal has already taken place she has her remedy by an action of slander and libel, and the amount of damages awarded is sometimes enormous.

A lady was brought by her medical attendant to a well-known London gynæcologist, to whom she chanced to be related by marriage. Together the physicians removed under chloroform what appeared to be the fresh placenta of a three months' ovum. Knowing that her husband had been in Australia for more than a year, the consultant told her that unless she could state that her husband had been in England within three months he should be compelled to ask his wife to drop her acquaintance. She hesitated, but ultimately made the statement which she afterwards admitted to be untrue. But before she had done so the consultant, forgetting the maxim about *arcana intellecta*, had already spoken to his wife and her brother. In the witness-box he swore that in his opinion she had recently been pregnant, but by advice of counsel he did not plead justification. It was contended that the communications made to his wife and her brother were privileged, being made without malice, and purely from a sense of the social duty he owed to his wife, daughters, and nieces. The jury held that his imputations on the chastity of the lady were not proved, and that the communications made were neither privileged nor without malice. They raised the damages claimed from £5,000 to £12,000.

As in France professional secrecy has reached a higher development than in any other country, a brief sketch of its

evolution and operation there may serve to show what are the practical advantages and disadvantages of the doctrine of absolute secrecy, and we may thus be able to select what is useful and to avoid what is undesirable when we come to make any change in our own law.

By Article 378 of the Penal Code physicians, surgeons, chemists, midwives, and others, who by reason of their profession or calling have had secrets confided to them are punished by fine and imprisonment if they reveal those secrets, except when they are obliged by law to become informers. Besides these penalties they are liable under the Civil Code[10] to make compensation to the aggrieved person. Just as it was in the case of attorneys the real meaning of the article was not at first understood. For eighty years the courts held the view that revelation to be culpable must be made with intent to injure,[11] since by common law criminal intention is the fundamental element of all misdemeanours, and they declared that this view was supported by the fact that the article was placed in the Code under the heading "Calumnies and Injuries."[12] This of itself showed that it was directed against indiscreet revelations inspired by spite or the wish to defame or injure.[13] But in 1885 the Cour de Cassation declared that intention need not be proved, that the offence has been committed when the revelation has been wilfully made, independently of any intention to injure. In the case then before the court it was quite clear that there had been no intention to offend.

A journalist in an obituary notice of M. Bastien-Lepage said his death had been accelerated by a voyage to Algiers undertaken by Dr. Watelet's advice. Dr. Watelet wrote indignantly to *Le Matin* that the voyage had nothing to do with his patient's death, which was caused by a malignant tumour of the testicle. An operation had been performed two years before, but the patient was left feeble and rheumatic, and had been sent to pass the spring in a milder climate. The patient was dead, and his sensibilities could not have been wounded, but the Public Prosecutor instituted proceedings against Dr. Watelet, under Article 378, for having wilfully published a letter in a newspaper on the cause of the death of one of his patients, which contained facts secret in their nature, with which he became acquainted in his professional capacity. He was fined £4.

Let us see how this interpretation of the law affects everyday medical practice in France. I will take a parallel case to that with which we began.

Madame Rémusat in a suit for judicial separation sought to prove that she had suffered from a disease communicated to her by her husband. She called Dr. Fournier, whom she had consulted at the time, but he declined to give evidence. As it was she who had employed Dr. Fournier, and as she now released him from the obligation of secrecy, the Judge of First Instance ordered him to testify. But on appeal this order was reversed, the court ruling "that the husband participates in the confidences reposed by the wife in the doctor, and the secrets of the wife must also be the secrets of the husband. The law makes no exception of any kind, and professional secrets must remain impenetrable."[14]

In another case all the parties interested joined in releasing the doctor, and requested him to say what he knew.

A man married a widow with two daughters, one of whom had since married and was found to be syphilitic. She then accused her stepfather of having communicated the disease to her. He said it was untrue, and declared that the doctor had warned him that she was a girl of loose habits. The mother also said the doctor had cautioned her in the same way. The doctor refused to answer any questions although released by the father, mother, and daughter.

The Medico-legal Society of Paris held he was right to refuse to testify.

Two brothers called on a specialist in nervous diseases in Paris. The elder asked the doctor to examine the younger carefully, for although he looked in perfect health, he was altered in his manner of late. After the consultation the doctor told the elder that it was a case of incipient general paralysis, and that it would probably end fatally in three or four years. The elder at once insured the life of the younger for £4,000. The company came to know the facts, but could prove nothing, and when the claim was made three years later they had to pay.[15]

The Court of Besançon tried recently another case.

A man entered into a contract, giving as security an annuity on his life. He died three weeks afterwards. An attempt was made to set aside the contract on the ground of want of *bona fides*: he knew that his death was imminent and that the annuity was consequently of no commercial value. The plaintiff produced a medical certificate, and desired to call the doctor and produce the prescriptions, but the Court decided that the certificate produced was a violation of professional secrecy and the doctor could not be examined. The fraudulent contract was sustained, the Court holding that the secret of a patient's disease was his exclusive property, which he had a right to carry with him to the grave, and nothing could free those to whom the secret had been entrusted from the obligation of keeping it; his heirs have no power to do so.

A baker in Havre insured his life for £400, which was claimed by the guardian of his three young children. By the conditions of the policy the company required a certificate from the doctor in attendance stating the nature and duration of the last illness; the doctor had scruples about certifying and refused. The guardians sought by *mandamus* to compel him, but the Court decided that he could not be compelled. The Medical Association of Havre thereupon passed a resolution that it was always improper to give certificates indicating the nature of the illness from which a deceased patient suffered. It was contended in this case that the deceased had consented to this condition of the policy, but it was answered that even if he had consented for himself the secret also affects his children and must be respected.

In 1892 a gentleman in Marseilles was insured by a third party in May and died of phthisis in November, as appeared from the certificate of Dr. X. which accompanied the demand for payment. The company disputed the claim on the ground that the deceased suffered from a fistula which had not been disclosed in his proposal. The Court authorised the company to prove concealment. But before Dr. X. was examined his evidence was objected to as a violation of Article 378. The Court of First Instance held that it was no violation of the Article, and that it had a right to demand such evidence as was necessary to discover the truth of the issue it was trying. But the Court of Appeal[16] reversed this ruling and decided that the verdict could not be founded on the deposition of Dr. X., whose evidence was a violation of Article 378, the facts revealed being secret in their nature and known only to Dr. X. in his professional capacity.

The general feeling in France seems to be that the family attendant should never make an insurance report, and even the company's referee should merely recommend the case for acceptance or rejection. But as the report is always largely based on the proposer's answers, there can be no way of testing the truthfulness of the answers unless they be recorded and can be referred to afterwards; then come the scruples again. The answers contain secret facts about the health of the proposer's father and mother, or brothers and sisters. "Such answers affect and compromise the graver interests of others, and ought not to be given." M. Legroux[17] gives another reason why we should not make a full report even if our patient wished it: we might mention some malady only known to ourselves; by an indiscretion of the company's officers our patient might read our report, and learning that he had, say, an aneurysm or tendency to apoplexy he might die suddenly. Thus scruples of conscience go on multiplying until the ordinary business of life becomes impossible; and you will see how far this has already gone when it is now ruled that club certificates must never mention the disease. A surgeon at Lille was fined 16 francs for having revealed to the president of a friendly society the nature of the illness from which one of its members suffered—"such diseases as epilepsy often affect injuriously his relations as well as the member himself"—and, again, the scruples appear. "Nothing can authorise us to reveal a secret a portion of which belongs to another."

The theory of a man's disease being a secret belonging to himself, and which he may will away or have buried with him is wholly opposed to public policy. If carried to its logical conclusion it would make life insecure, and the detection of crime impossible; the nature of a man's last illness ought to be, and usually is, known and acknowledged. If there is any doubt about it the coroner very properly clears it up. If such checks on imposture as the usual club certificate were not used, then the members' contributions would have to be doubled, and the innocent would be fined for the guilty.

Such scrupulous honesty about the visionary property in secrets strikes English readers as somewhat remarkable when contrasted with the apparent approbation with which the very questionable material results that flow from this law are received.

A patient asks you if he may safely consent to his daughter's marriage to a man whom you know to be suffering from uncured syphilis. Tardieu and Gaide very emphatically say their conscience must be heard above the law.

Rather than allow a pure girl, the joy of her family, to be given to a man who would pollute her at the first touch, and as her only consolation would leave her with children infected with their father's disease, without hesitation say, "No, do not give your daughter to that man."

Professor Brouardel, in his very admirable monograph,[18] says they are wrong; they are acting contrary to the law. They forget that they would not have known of the existence of syphilis if their patient had thought they would betray him; the patient did not come to them because of their moral qualities, but sought their medical aid knowing that the law and tradition alike secured their silence. The physician may warn the young man against the consequences of the marriage, and point out the exposure that is likely to follow. If this fails he may advise the father to insist on life insurance, trusting to his being rejected. He must, however, be silent even if the father brings a written release from the young man. Dr. Placzek also supports this view.[19] I should like, however, to compare the advice to be silent which Professor Brouardel gives in this case with that which he gives in another. Suppose you are called to a patient whom you find

being slowly poisoned, are you to speak? The Society of Medical Jurists of Paris said unanimously that such a crime "discovered in the course of practice is a professional secret which the law and the decisions of the Supreme Court oblige us to observe." Professor Brouardel very properly dissents from this view. He says, "You must cure your patient if possible, but at least you must protect him, and in this case revelation seems to me obligatory on the doctor's conscience." He also admits that it is obligatory in cases of epidemic diseases; but he says the law of silence must especially be applied in venereal diseases and diseases said to be hereditary. His advice then amounts to this, that if your patient is being given small doses of a chemical poison you must protect her and you must also protect her from anyone who is still infectious where it is a quick-growing microbe like that of diphtheria, small-pox, or yellow fever; but when the microbe grows slowly like the bacillus of syphilis or tubercle you must allow her to become infected, although you know that syphilis will kill as certainly as small-pox, and for a greater number of generations. It would require a very skilled casuist to say why we ought to do so; we must protect our patients without indiscreet or unprivileged disclosure.

The rule with regard to denouncing crimes seems to be, that although you are not bound to inform the police of a crime that has been committed, and you are not guilty of misprision if you are silent, yet when a crime is about to be committed it is the duty of the doctor to inform the authorities, since by keeping silence he may make himself an accessory to the crime.

A very difficult question arises when the doctor knows that an innocent person is wrongfully accused, and stands in grave peril. In France he must not reveal. He may appeal to the judges. Says M. Hémar:

> An upright man offering himself for the defence and proclaiming the innocence of the accused, in spite of the silence enforced by his professional calling, would make a profound impression on the judges.

Professor Brouardel says:

> We ought by every means short of betraying our secret to try to bring about the safety of an innocent man, but under no pretext may we betray our confidant, even though guilty.

I am afraid that English judges are not very impressionable, and they would probably desire to find out by cross-examination whether the "upright man" had not possibly been imposed upon by a confederate. There seems to be very little difference between allowing a man to commit a crime and allowing him to get another man falsely condemned. If in the first case we are accessory before the fact, in the second we are not quite innocent. It is our duty to prevent Balbus from being killed by poison; but, when he is falsely accused of murder, should a dramatic appeal to the judges fail to save him, you must let him be hanged though you know him to be innocent. You may console Balbus by telling him that in each case you are doing your duty; but the distinction is fine, and Balbus only knows he is being killed in either case.

Questions often arise as to whether we are right in suing for a bill which would reveal professional secrets. I believe in England the practice is to forego the fee rather than in any way to betray the patient. Cicero says:

> Doctors, who are admitted into marriage chambers and under strange roofs, have to keep many things secret, even when they are wronged, albeit it is difficult to hold your tongue when you are made to suffer.[20]

In France such cases are severely punished when there appears to be an intention to extort.

> A surgeon sued a patient for 300 francs, the amount of a bill in which he set forth with unnecessary particularity attendances during two serious attacks of syphilis contracted at different times in 1862 and 1863; also attendances on the wife while treating her for disorders (all minutely described) communicated to her by him. He was sentenced to one year's imprisonment, five years' police supervision, a fine of £20, and £40 civil damages.

In considering probable changes in the law of professional secrecy, we must bear in mind that the tendency of modern legislation in this country is to extend the admission of evidence and remove rather than create incapacities—in short, to exclude no one who can throw light on the question before the court. "Evidence," says Bentham, "is the basis of Justice; to exclude evidence is to exclude justice; let in the light of evidence."

In Scotland a curious attempt has recently been made to remove the duty of silence from its place, and give it an intermediate position between moral duties and legal obligations. The Court of Session has decided—[21]

> that secrecy is an essential condition of the contract between a medical man and his employers, and breach of secrecy affords a relevant ground for an action of damages.

This decision requires confirmation before it becomes a ruling case. To say that a surgeon enters into a nude pact with every patient that crowds the casualty room of a hospital is a pure legal fiction. No such contract exists, and saying so is simply begging the whole question. It is much better to leave the matter on the old ground of delinquency and reparation when motive would form an important element. The effect of this decision is to raise silence to be a quasi-jural instead of a moral obligation, so that motive or intention need not be considered but merely breach of a conventional contract, with a clause of secrecy implicit in it.

In the penal code of almost every country articles of a similar kind to article 397 of the French code exist[22], and I need only point out one or two variations. In Germany "all those who are employed to assist the doctor" are embraced in the article: and revelation may be made with the patient's consent[23]. In Belgium[24]

> the revelation of secrets ceases to be punishable when the law requires that such secrets should be made known or when the doctor is examined in a court of law; then he may declare the whole truth and state things secret in their nature if he considers it right to do so, but he has it in his discretion to be silent.

In Italy there is a similar article, but the surgeon is bound to notify to the police within 24 hours all cases of poisoning, wounds or bodily injuries of any kind which he has been called upon to treat. In the United States secrecy is secured by the civil codes of New York, Missouri, and other States. A doctor must maintain secrecy and cannot be examined in a civil action without the consent of his patient. In insurance cases the insurance law enabled a doctor to report on the physical condition of his patient, but quite recently Governor Roosevelt has signed an amendment which absolutely prohibits a doctor from divulging any information concerning his patients either before or after their death. How the courts may interpret this amendment remains yet to be seen, but the tendency in the United States seems to be to follow the lines of the French Penal Code.

In England silence is a duty, and its transgression really hinges on the question of privilege. It seems better that the judge should decide each case on its merits than that any attempt should be made to lay down a hard and fast rule.[25] It has been said that in the Court of Equity the Imperial standard varies with the length of the Lord Chancellor's foot. That may be so; but, even allowing for that personal equation, justice is meted out by a very acceptable rule. At present it lies with the judge to refuse to allow unnecessary and useless disclosures to be made, while at the same time he sees that no material facts which can assist the Court in arriving at the truth are withheld. It must always be doubtful what is and what is not a privileged communication or a privileged occasion; but that appears to be a lesser evil, and conflicts less with justice than the strict rule of secrecy that holds good in France. Every act which is a proper object of ethics is not necessarily a proper subject for legislation and punishment. It is not desirable to raise what is a harm to the technical rank of a wrong; and, speaking generally, punishments ought not to be inflicted on acts which may be otherwise prevented, especially where the punishment produces greater mischief than the act itself.[26] In this country it has been found that indiscretion has been sufficiently controlled by the sense of honour that exists in the profession, leaving the law of slander and libel to deal with cases in which damage or positive wrong has resulted. This admits of ordinary information being given which is not intended to be, and need not be, injurious to anyone, but which is useful in the ordinary business of life, and often a solace to the sick man's friends. In the case of those great ones who live in the hearts of the people, the facts of their condition are eagerly looked for as the wave of life ebbs and flows, and it would be cruel to hide them uselessly behind a penal statute or say they must be buried with them when they die.

There are many duties which we are called on to perform which must often conflict with other duties equally important. In France the duty of observing secrecy has been raised to the rank of an obligation in the interests, it is said, of public order. But the supreme law has other principles besides order which ought to be considered in questions of this kind: humanity, justice, truth, and purity, are also cardinal virtues.

How does Article 387 support those other moral principles which underlie our actions? Is it in the interest of justice and truth that the only evidence on material facts which can enable the Court to arrive at the truth should be technically excluded? To give a very modest piece to the doctor is a way of getting rid of all the essential evidence in a cause, and the doctor's gambit is already a very favourite opening in the swindler's game. Is it in the interests of humanity and purity that a woman to whom a loathsome disease has been communicated by a dissolute husband should find herself chained to him for life, and unable to gain the ordinary means of redress because the only witness who can prove this material medical fact has scruples of conscience, or is technically excluded from testifying?

When moral principles urge us in different directions, order pointing one way, justice or humanity in another, our conscience alone must shape our course. The stars in their courses do not move in rigid circles, but, by the law of universal gravitation, the forms of their ellipses are moulded by every orb in their system; and although in questions of conflicting duty we have no Newtonian law by which we can solve our difficulties, yet our path must not be influenced wholly by one principle nor by another, but it must lie in the resultant of these forces.

Twice in the last few weeks I have read in the newspapers of cases in which medical men found themselves face to face with conflicting duties of this kind. A medical man at Nottingham refused to give evidence in a court of justice because he had conscientious scruples about breaking the academical promise to avoid gossip which he had made to his Alma Mater. It is needless to say that no society, whether it be a university or a suicide club, is permitted to make private rules for its members that can override the law of the land. Lord Mansfield puts it very clearly:[27]

> If a surgeon was voluntarily to reveal secrets to be sure he would be guilty of a breach of honour, but to give that information in a court of justice which by the law of the land he is bound to do, will never be imputed to him as any indiscretion whatever.

Here we have a medical man in the presence of two conflicting duties, the desire to be silent and the desire to co-operate with justice urging him in opposite directions.

The other case was that of a surgeon appointed by the Court of Quarter Sessions to examine police constables applying for superannuation. He also had scruples about giving that medical information which it was his public duty to give, and which was necessary to enable the magistrates to do their duty. It was a conflict between the desire to be silent and the desire to perform the duty of his official appointment.

It is when we are assailed by conscientious scruples of this kind that the difficulty of finding the resultant of the forces that impel us is likely to be felt. Any advice of mine would be of little value, but let me rather give you that of the late Master of Balliol, who was not only a great moralist, but preeminently a man of the world:

> In daily life cases often occur in which we must do as other men do, and act upon a general understanding, even though unable to reconcile a particular practice to the letter of truthfulness or even to our individual conscience. It is hard in such cases to lay down a definite rule, but in general we should be suspicious of any conscientious scruples in which other good men do not share. We shall do right to make a large allowance for the perplexities and entanglements of human things; we shall observe that persons of strong Mind and Will brush away our scruples: the man whom we emphatically call "honest," "able," "upright," who is a religious as well as a sensible man, seems to have no room for them .... Strange as it may appear, it is nevertheless true, that scruples about lesser matters almost always involve some dereliction of duty in greater and more obvious ones. No one can fix his mind intently on a trifling scruple, or become absorbed in an eccentric fancy, without finding the great principles of truth and justice insensibly depart from him. He has been looking through a microscope at life, and cannot take in its general scope; the moral proportions of things are lost to him.[28]

Let us endeavour to preserve the moral proportions of things. Our own law may be uncertain and difficult to understand, while foreign codes are simple and have an attractive semblance of being in the interest of public order and higher morality. But I would sound a note of warning before we drift into the doctrine of absolute secrecy, and would ask you to consider carefully the safeguards we ought to adopt to prevent ourselves from being made the passive agents of injustice and wrong.

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SOUTHERN BRANCH: ISLE OF WIGHT DISTRICT.

THIRTY-FIVE YEARS' RETROSPECT IN THE PROFESSION.

INCLUDING SOME EXPERIENCES, CHIEFLY SURGICAL.

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To those of us who from advancing years are unfortunately able to do so, it is interesting to recall some of the conditions under which surgery was practised in the early Sixties, when I entered the profession.

THE DAY OF "LAUDABLE PUS."

In those not very remote days nearly all wounds, including those made by the surgeon, healed with suppuration: indeed terms were in vogue such as "healthy" and "laudable" pus, expressing in a measure the surgeon's approval, and although "healing by first intention" was spoken of, nothing was known or taught by which to attain this desirable end. It was known that wounds of the face commonly healed in this manner, and to the free blood supply of this region was credited such result, which was true in part. What I wish to lay stress upon, is that nothing was taught by which on the surgeon's part the primary healing of wounds could be assured. Surgeons used to wash their hands after an operation, but usually not before, unless they were obviously dirty, and the assistants never troubled to carry out such a process preceding operations. If a wound healed by primary union, it was shown as something out of the common; indeed to my recollection it seemed a sort of freak of Nature. No self-retaining pressure forceps had been invented, so all vessels had to be tied at once in a wound, each being held by one pair of forceps whilst someone else tied it: the delay and inconvenience in a large operation were considerable. The only dressings available were lint, cotton wool, and plaster; the modern packages of well-made dressings, pads, sheets of tissue gauze, etc., had not been thought of.

All ligatures were left long, and to the silks proceeding from the chief arteries one or more knots were tied that they might be recognised; the dozen or so of strands hanging from the stump after operation formed a set of setons which poured forth pus until they separated and came away on gentle traction two and three weeks afterwards. To cut off a ligature close in a wound, and close it in, was quite outside our experience; indeed, we were taught that such would inevitably form an abscess, and work its way out. All wounds were dressed wet, usually with strips of lint wrung out of water, and then covered with oiled silk. Drainage as such, deliberately carried out, was not practised. No systematic washing or bathing of patients admitted to hospital took place; I am not prepared to state that an occasional "catlick" sort of a wash was not carried out now and then by some energetic nurse, but this was not the rule, and I well remember when I was quite an advanced student going round with Dr.—now Sir Samuel—Wilks, who clinically descanted upon the curious fact that the patients were never washed, demonstrating the fact to us from a peculiarly nasty pair of dirty legs.

ADMINISTRATION OF ANAESTHETICS.

Nothing as to this was taught in my time, nor indeed for many years after. The student picked up what he

could from a few pages in the books on surgery aided by his own observation. I myself, being elected house-surgeon to Guy's, the first man of my year, was suddenly called upon at 21 to administer chloroform to most of the cases of operation. That I had not a fatal case was more the result of good luck than good management, for it was many years before I began to get even moderate confidence in myself. There were no teachers of anæsthetics in those days. Chloroform was the only anæsthetic I saw administered at Guy's in my student days. The use of ether, A.C.E., and nitrous oxide gas was acquired subsequently by me. I may here remark that in my experience no anæsthetic is absolutely safe; certainly no single one is best adapted for all cases; here and there we meet a subject who cannot be got under with safety with ether or with chloroform, as the case may be.

A PRECEPT OF HILTON.

[After considering in detail the methods of administration to be used in the case of the different anæsthetics and the dangers to be guarded against, Mr. Buck proceeded:]

When at Guy's I had the great advantage of being dresser to the late John Hilton, who was one of the most thorough men I have known. His devotion to surgery was most intense, almost reverential; he considered everything secondary to the study of his profession for a student; he always wanted to know why such and such was done; and had a large following of men on going round the wards. It was not unusual for some students to wear smart gloves, and I remember once, Hilton was examining a man *per rectum*—a case of fistula or malignant disease may be, and withdrawing his finger, he with studied courtesy invited these elegantly gloved "dandies to examine the case. As they one by one withdrew to the rear of the crowd, he said, "Gentlemen, never miss any opportunity of examining the rectum you get; if you do, you will surely live to regret it." These words impressed me greatly and I always acted up to them. Shortly after I was newly qualified they stood me in good stead, while acting as *locum tenens* I was sent for to an old gentleman very irascible and impatient, whose case I could not readily diagnose. He complained of constant tenesmus and pain in defæcation, which had come on suddenly and recently. Nothing was to be seen externally—such as piles, fissures, etc. Suddenly Hilton's words crossed my mind, "Never miss an opportunity," etc. I passed my finger, and found about 2 inches up a large fish bone jammed transversely across the gut, the removal of which cured the case.

In the course of my life I have frequently been surprised to find how examination *per rectum* has been neglected by surgeons who have called me in to cases of intestinal obstruction, etc., and I have not infrequently earned a little cheap "kudos" by discovering some simple thing by this means, which anyone might have done had he only taken the trouble to do so; at the same time, I think the examination *per rectum* requires at least as much education as that *per vaginam*.

OPERATIONS ON THE RECTUM.

I always require the rectum empty; this can only be attained after three or four days' preparation by aperients and enemata. For piles, fissure, and fistula I commence by widely stretching the sphincter ani with my two thumbs, until all power is gone from the muscle and several fingers can be inserted without any feeling of constriction. Simple fissure will be cured by such rupture of the sphincter ani. Piles I always crush with an Allingham's or Pollock's clamp, and cut them off flush with the jaws of the instrument by means of scissors, rasping down the stumps on to the clamp face; the piles should be retained for at least two minutes under the strongest pressure. I never use ligature or cautery, and disapprove of both as leaving sloughs to separate, and I consider application of nitric acid and injection of carbolic acid as only temporising, making not such good cure with equal risk and pain. After rectal operations I keep the bowels loose, beginning two days after. Operations for piles have been among the most successful in my experience; rarely have I had to operate more than once, and then only because I was cautious and did not complete at my first sitting. This non-recurrence has always seemed inexplicable to me, seeing that the original causes of production—for example, constipation, free living, sedentary occupations, etc.—commonly continue. As the operation I advise for piles is tolerably thorough, the hæmorrhage is often severe, and is best arrested by picking out any spouting artery with pressure forceps and ligaturing it; but this is rarely necessary, the complete dilatation of the sphincter ani allowing the parts to be extruded. Plugging the rectum is futile, and only provokes tenesmus on return of consciousness; the rectum will not tolerate anything in it, and plugs only aggravate the hæmorrhage they are intended to arrest.

[Mr. Buck here related two illustrative cases.]

RUPTURED PERINEUM.

The operation for ruptured perineum is one which has given me great satisfaction. In this I follow the instruction of Lawson Tait closely. Not a particle of tissue is removed: I use silkworm gut for sutures, tied in the ordinary way (no shot and coil sutures or quill sutures). I leave the sutures in about three weeks, and I keep the bowels open and loose daily, beginning the second day after operation, and syringe out both the vagina and rectum with at least a pint of warm water every day. My object is never to let a solid motion pass the rectum and to keep that gut empty. The patient is allowed to pass urine *sponte suâ* from the first—that means "no catheter." The new perineum is thick and stands the strain of subsequent labour well.

In recent lacerations of the perineum I do not advocate insertion of sutures, my plan being to keep the legs together for a fortnight to three weeks, to syringe the vagina daily, to keep the bowels loose and rectum empty. With this treatment I have repeatedly had lacerations of all degrees of severity up to and including those through the sphincter ani, healed soundly at the end of the puerperal month.

THREE MASTERS.

The name of Lawson Tait reminds me how greatly I personally feel indebted to three men, none of whom I ever saw, but whose principles have had great weight in my practice during many years past—I allude to Lord Lister, Tait, and the late Mr. Gamgee, of Birmingham. I have watched Listerism from the beginning, through its initial stage of antiseptic putty and sheet lead, the rise and fall of the spray, to the present day, and what I have admired as to Lord Lister has been the readiness he has changed his detail as any method has proved non-essential or superseded by a better. This absence of bigotry is very unusual, and only seen in men of truly great intellect.

Tait's fearlessness has, I am sure, had great influence on the surgery of the abdomen, greater than is generally admitted in the profession. He was not a popular man, but at the time he was at his best I doubt if he had an equal; and I am sure many have followed his lead and will not admit having done so. It is not, of course, fair to contrast what is done to-day with work of ten years ago, for it is partly the result of that bygone experience that the success of to-day occurs. The aphorism attributed to Tait, "that he would as readily put his hand into the peritoneum as into his trousers pocket," is almost literally true, and has, I believe, encouraged many a man to undertake what he would not have otherwise ventured to do.

From Gamgee I learned the invaluable lesson of dry absorbent dressing, which is merely another name for the most perfect drainage by means of capillary action. I adopted the system many years ago with most successful results in all my cases. Now, when speaking of the subject of drainage in such eulogistic terms when carried out as above, I must disclaim any leaning to the ordinary rubber drainage tube, which performs its duty in a very unsatisfactory manner, and too often degenerates into a seton. I use drainage tubes as little as possible, preferring, whenever I can, a gauze drain or strands of silkworm gut or horsehair.

ABDOMINAL SURGERY.

Abdominal surgery was non-existent five-and-thirty years years ago; the very term is of later date. Nevertheless, at that time a few surgeons were attempting ovariotomy, generally with disastrous results.

It used to be considered almost essential for diagnosis that an ovarian tumour should first be tapped, and generally several times, and only when the cyst was found to refill again and again was ovariotomy attempted. Apart from the injurious influence of repeated tappings,

which caused adhesions, the long delay before operation was most adverse in the same manner; which delay had its origin in the universal timidity surgeons entertained with regard to tampering with the peritoneum. For this reason the smallest incision possible, from 2 to 4 inches, was in vogue in ovariotomy, necessitating greater violence in extraction, and precluding examination of the abdominal contents. Extraperitoneal treatment of the pedicle by clamp retarded year after year all progress in this branch of surgery. Nothing was known as to the method of dealing with adhesions, which it was the custom to strip off the surface of the tumour before evacuating the contents, so conducing to hæmorrhage. It was not known how many layers of the abdominal wall to suture, and in fact it was quite haphazard as to this. Not that surgeons were careless in those days, for according to their lights they took as much pains as men do at the present day. Thus the temperature of the operating room was scrupulously regulated, being made very warm with steam kettles going, and the patient was kept in strict privacy before, during, and after the operation; those attending it were limited in number, and care was taken that no one present had been in attendance on any contagious or infectious disorder. We now know that many of these precautions are unnecessary, some of our best results being obtained in the general operating theatre and wards of our hospitals.

For myself, I can say that I have become imbued with certain broad principles in the surgery of the abdomen, chiefly through the writing and practice of others. In the first place the incisions should be sufficiently large; of course, no one would make them unnecessarily so, but if the purpose require there is no reason why the incision should not extend from pubes to ensiform cartilage, and for the same reason the abdominal walls may be cut through, transversely as well as longitudinally. I have several patients, alive and in good health, in whom this has been done extensively. I always observe the greatest care not to disturb the relation of the peritoneum to the inner surface of the abdominal wall, so that the sutures in closing the wound may traverse all the layers, including the peritoneum, the two surfaces of which are thus brought into apposition. In the event of distended intestines being extruded it may be impossible to return them before sewing up; in this case it is better to make a clean longitudinal cut in the most distended portion, and catch the contents in a bowl, protecting the other bowels from contamination by means of aseptic towels, wrung out of hot 1 per cent. lysol solution. When by this means the distension has sufficiently subsided, the incision is carefully sewn up by means of a Lembert suture and returned into the cavity of the abdomen. This plan is much better than trying to force guts back into an almost impossible space. Of course, the incision of the bowel must be most carefully sewn with a fine ordinary sewing needle and finest silk. Irrigation of the cavity of the peritoneum is much adopted by me, but in one way only—namely, by pouring hot water into a large glass funnel, having adapted to its lower end from 2 to 3 feet of rubber tubing fitted with a Keith's glass drainage tube on its extremity; the Keith's tube is passed to the back of the abdominal cavity and into the depths of the pelvis and loins; by elevating the funnel the stream wells up from the depths and floats extraneous matter, as lymph, pus, and blood, to the surface; this is continued until the water flows off quite clean. I often use many gallons—say seven or eight. The water is used as hot (not warm) as is comfortable to the hand, and acts as an immediate stimulant. No sponging out or attempts to remove the superfluous water are made, and practically the peritoneal cavity is left full of hot water and sewn up. The hot water arrests hæmorrhage from torn adhesions, prevents adhesions taking place between abraded surfaces of peritoneum or to the ends of cut pedicles, obviates shock and prevents the sense of thirst so frequent after extensive abdominal operations, the fluid being freely absorbed into the circulation from the peritoneum. As to drainage, I closely follow the aphorism "When in doubt, drain." I have never regretted doing so, but sometimes have the neglect to do so. I always use glass drainage tubes, generally Keith's, and insert a twisted strip of gauze to the bottom and hanging well out of the open extremity, to serve as a capillary siphonage. I consider to wash out the peritoneal cavity by pouring in water out of a jug a very inefficient method, as only the surface water runs off. *Apropos* of drains in the peritoneum, I have occasionally left them in too long—say a week—the patient doing well with them *in situ*, and with the result that sometimes I have experienced difficulty in removal; this especially applies to gauze drains, which of course one is not so likely to leave in as glass tubes. In any extensive search over the intestines, say to find a wound or hole, I think it better to allow them to be extruded into warm wet aseptic towels than to endeavour to keep them inside the abdomen; indeed, I have little fear of bowels extruded during operation, provided they are gently handled, with clean hands, and kept warm in aseptic towels or sponges.

It has happened to me on several occasions to open the abdominal cavity, in the sure conviction that I was about to remove a cyst or tumour, to find there was nothing of the kind; most of such cases have been tuberculous peritonitis, matting together intestines and contents, so as to simulate a defined tumour, but separation of the intestines, omentum, etc., as far as seems safe, and flushing out with hot water, are most successful; indeed, one cannot explain the marvellous effect of operation or tuberculous peritonitis, except by supposing the operation excites unusual active absorption of inflammatory products by the lymphatics of the peritoneum. Repeatedly have I sewn up cases feeling that I had failed entirely in what was my intention, and that nothing but death remained for the patient, to find the most surprising benefit result; and even in cases eventually proving fatal, the inevitable had obviously been delayed by the operation.

TRANSFUSION OF SALINE FLUIDS.

A few words may be said as to the intravenous injection of saline fluids into the circulation to combat shock, and the excessive loss of blood in any operation. I have the greatest opinion of its efficacy; it is easy to perform, and the results most striking: from four to eight pints are usually required, and ordinary hot water, agreeable to the hand, with a small teaspoonful of salt to each pint is quite efficacious.

In a recent case of mine of amputation through the hip-joint for old tuberculous disease, which had been put off far too long, the patient being extremely collapsed on the table, although the loss of blood had not been excessive, the injection of six pints of warm saline fluid into his median basilic vein produced at once a flush over the face, warmth throughout the body, and a full pulse. In this case the disease had advanced far in the ilium, the acetabulum being perforated; profuse suppuration continued, and the patient succumbed to exhaustion three weeks afterwards; but on the eighteenth day, when the man was lying in a hopeless condition, being absolutely unconscious, with eyes glazed and half open lids, quite insensible to any external impressions, with cold, clammy skin, *facies Hippocratica*, and no pulse to be felt, I again injected over six pints of warm saline solution into the vein of his arm, with this result, that a feeble pulse returned at the wrist, his aspect improved, the conjunctival reflex returned, and the man spoke a few incoherent words; but, of course, there was no hope for him, or any permanent improvement, and in a few hours he relapsed into his former moribund condition.

There was not, however, the slightest doubt as to the marvellous effect of the transfusion. I am not aware that it has hitherto been used except to combat shock, the immediate result of operation, or hæmorrhage. The above shows that death, imminent from diminished intravascular pressure from any cause, may be delayed by filling the blood vessels with saline fluid.

AFTER-TREATMENT OF CASES OF ABDOMINAL OPERATION.

In the after-treatment of cases of abdominal operation, my aim is to give nothing by the mouth for the first twenty-four or forty-eight hours, except occasional sips of water, and not this unless thirst be present, which it seldom is if fluid has been left in the peritoneal cavity; to give small (4 ozs.) nutrient enemata of beef-tea every six or four hours. If a catheter be necessary the patient should not be bothered with it too often, as is frequently done by officious nurses. I never give ice to suck under any conditions; it only accumulates iced water in the stomach and causes depression, and never give morphine in any form unless absolutely obliged for pain, and then it must be given subcutaneously and as little as possible. I give aperients early and as required, and especially if there are any signs of commencing peritonitis or distension, my favourite form being calomel in tenth of a grain doses every quarter of an hour. I am convinced that morphine is the "last straw that breaks the camel's back" in many cases of abdominal disease and operations where there is any tendency to stasis of the peristaltic action of the intestines or distension. I have seen patients who were in my judgment killed by a moderately big dose of morphine given to allay pain from distension, say in tuberculous peritonitis, or dilatation of the stomach.

SOUTH WESTERN BRANCH.

THE PRELIMINARY EDUCATION OF MEDICAL STUDENTS.

By PAUL Q. KARKEEK, M.R.C.S. and L.S.A.
President of the Branch.

I PROPOSE to bring under your notice the important question of the education of the intending medical student prior to beginning his professional studies. I venture to propound this

question: Is the present standard of scholarship a sufficient indication of the candidates having received the education of a gentleman, or, in other words, ought we to be satisfied that our successors show by the preliminary examination now passed that they have obtained an amount of scholarship and culture which should entitle them to enter a so-called learned profession? I am of opinion that the question should be answered distinctly in the negative.

This matter can of course be looked upon from various points. The happy father of half-a-dozen boys may think that the less fuss made about preliminary examinations the better, and the more cheaply he can get his boys off his hands the more he is pleased. But if this father were suddenly presented with the requisite funds I feel very sure, if he chanced to be a member of our profession, that the young hopeful's steps would be directed towards Oxford or Cambridge, and afterwards to London. That the son should enjoy advantages the father has often sighed for is but the natural ambition of every man. But we cannot all send our boys to Oxford and Cambridge, and must consider what is the next best course to follow.

1.—WHAT IS BEST FOR THE STUDENT?

At present by far the majority of students qualify by obtaining the second-class certificate of the College of Preceptors. This is indeed a very poor affair, and I am strongly of opinion that such a test is a disgrace to a learned profession. What is more, the students know it is not creditable, for I never met a colleague who boasted of entering the profession by this gate, although many have acknowledged as much with apologies of one sort or another.

"Education," said a well known head-master recently, "means the drawing out a boy's faculties; and it is only when his faculties are drawn out into energy that he will be able to play his part properly in life." The question therefore arises, Which is the best mode of developing a boy's faculties by education, and how shall it be applied? To begin with, the future medico should be well grounded in those subjects which become an Englishman of any profession—the ordinary school training of all middle-class English boys, no matter what their future careers may be. After that there are three roads recommended—classics, mathematics, and science. I must acknowledge a great predilection for a classical education as a means for training the brain and developing powers of observation, but there are many who prefer mathematics. My own "small Latin and less Greek" have long since gone away, and I may say as much of my Euclid and algebra. But it is a great mistake to suppose that because a man has forgotten his school work therefore it was of no service to him. He has been able to do what he has done in the battle of life by means of the mental training he went through in his youth. It is but too often the custom with men who have distinguished themselves—say at the Bar or in the Senate—to ridicule the labours of their boyish years, forgetful that without those labours their careers would have been very different. Thackeray, one of the greatest satirists since Rabelais, had a high opinion of a classical education; and when on one occasion he heard "Eothen" Kinglake laughing at the five or six years' enforced composition in Latin to which he had been subjected at Eton, said to him: "It has made you what you are." Huxley disbelieved in the benefits supposed to be derived from a classical education, and insisted, in his usual trenchant style, on the merits of science as a brain developer; but even Huxley could not be always right. A learned member of our own profession, Dr. Alex Hill, Master of Downing College, Cambridge, whose whole life is passed in training medical students, and who has a practical acquaintance with this subject, which certainly seems of greater value than Huxley's theoretical assumptions, is of the contrary opinion. Dr. Hill says:

> How to make a competent biologist—how to maintain that proper balance between the development of observation, the cultivation of memory, and the attainment of the ability to correlate and to compare observations, to draw inferences, and to base hypotheses. "Surely," it will be urged, "an early training in science is the surest guarantee of eventual proficiency." To this my experience gives an emphatic denial. Science scholars often cause their tutors the greatest disappointment. Their appearance in the examination room before they are 19 years old—the limit of age for an "entrance scholarship"—means too often that they are the boys who at the earliest possible age have deserted what we may call the proper work of the school for the sake of preparing for a science scholarship. They are not "lads of parts," but boys who have been crammed with scientific facts by clever teachers, and taught how to show them off in the most impressive way. Their knowledge is often extraordinarily accurate and extensive. They have a magnificent test-tube acquaintance with chemistry, they have thoroughly mastered the elementary formulæ of physics, they have acquired the elements of botany and zoology—but they have no mental training. Let them work never so hard during their three years' course at Cambridge, they are quickly overhauled by the honest boys from the big public schools, who, when they came up, did not know a test tube from a barometer. "The science scholar, as turned out by schools with a successful modern side," is a prodigy of information and difficult to beat on the earlier levels of his subject; but as soon as he reaches a region where solid facts are left behind, a region in which is needed a nice appreciation of the relative cogency of arguments, the close following of a train of inference, he is like a clod-hopper on a glacier, without feet to grip or heart to dare.

This comment of Dr. Hill is severe, but it is evidently founded on an extensive personal experience. But this question is not debated in England alone. In at least one of the Colonies, in Prussia, and in France, those who are engaged in the higher branches of education hold the same view. Professor McGregor, in his inaugural address to Dalhousie College, Nova Scotia, last September, showed that he was strongly in favour of a classical education, but would apply it in such a way as to make boys work out the difficulties for themselves like the scholars of the Middle Ages, when grammars and lexicons were not to be had. In this paper he relates some German experiences which are exceedingly interesting. In Prussia there are two kinds of school—the Gymnasium, where classics are mostly favoured, and the Real Schule, where a scientific course is the rule. A few years ago the University of Berlin discussed the propriety of continuing to allow the pupils of the Real Schule to attend certain of its courses, and the scientific professors testified that for the work of their departments the men nurtured in the Gymnasium had been found better qualified than those who had come up from the Real Schule.

In an address given by Dr. Robert Saundby at Nottingham in October, 1899, he quotes Professor Jebb as summarising the reasons given by the Berlin Philosophical Faculty for retaining classical education as a training for professional studies.

1. Ignorance of Latin and Greek is a positive obstruction to the pursuit of many branches of study.
2. The ideality of the scientific sense is cultivated by studies which have not an immediate bearing upon daily life.
3. An interest in knowledge for its own sake is promoted by them.
4. The power of thinking receives a varied general exercise in these studies.
5. They are of historical value as illustrating the foundations on which so much of modern thought and life has been built.

If the English boy is at all desirous of emulating his German contemporary, I would recommend him to procure the syllabus of subjects for matriculation in a German University, or the equivalent for such an examination. It is much more than the Pass Examination in Arts at Oxford or Cambridge, yet no one, I think, will assert that our German colleagues are insufficiently educated, or that they are not well trained professionally.

In France, when M. Bourgeois was Minister of Public Instruction, the science professors made representations to the effect that their best pupils were those who had not devoted themselves to scientific studies until they had undergone a thorough grounding in literary subjects, after which their minds were better formed and more capable of comprehending the exact sciences.

The most singular fact in this collection of opinions is the unanimity of the scientific professors in recommending, for the sake of the student's scientific and professional career, that his boyhood should be devoted largely to classical studies. Thus, by the recommendation of those best qualified to advise us, we are brought to the conclusion that classics and mathematics are the best food on which to feed the minds of those whose future careers are to be devoted to observation, and drawing inferences therefrom. Dr. Hill goes farther, and recommends classics for medical students and mathematics for future lawyers.

The next question is, How much classics? And here my view is that there should be a good stiff dose of Latin and Greek. According to the regulations in force for the second class College of Preceptors (I am quoting from the syllabus dated September, 1899), it would appear that the student must take up English language, Latin, arithmetic, algebra, Euclid, and either Greek, or a modern foreign language. He can escape in Latin with one book of Cæsar, and should he be venturesome and dabble in Greek, he will have to undergo

the stupendous labour of reading one book of Xenophon's *Anabasis*. Under the head "Euclid" is this significant statement:

For candidates for registration as medical or dental students, and for intending veterinary students and intending students of the Institute of Chemistry, Books I, II, III, etc.

The doctor, the dentist, the veterinary surgeon, and the chemist are all measured by the same standard, which is so low that before long we shall have to seek for traces of the future student's scholarship with a microscope and a test tube. Instead of raising the standard and keeping well ahead we have gone back and other callings have come up to us. I honour them all the more for it; but at the same time this is a state of affairs which is disgraceful to us, and one which needs a speedy remedy. As an indication of the class of medical students who try to get in by the tempting doorway of the College of Preceptors, I may quote from a table of figures recently published by the General Medical Council, which gives the numbers of "Rejected" and "Passed" of the various examining bodies. No less than 71.5 per cent. are rejected at the "Special Medical Examination," and this is by far the highest of all the list.

If students go to the hospital at about 19, I assume that they will have left school about twelve months earlier. Then I want to know what these Admirable Crichtons have been doing since they were 12 years old. What have they to show for five or six years of school life? Surely it were better to let the boy know when he goes to school that certain careers would be closed to him if he could not show more results than this miserable programme! Tell a boy that he has only to get up ordinary subjects, a little French and Euclid, and one book of Cæsar, and, unless he is fond of literary work, no power will make him do more. But if, on the other hand, he were told that he would have to do so much more Euclid and algebra, so much Latin and so much Greek, he would buckle to accordingly. To say that this extra mental exertion would do him no good, that these acquirements would be thrown away, and that other boys who had not done so much would be as well qualified to begin professional studies as he, is to talk sheer nonsense. I contend that he would be better equipped for future work, and, what is more, that these same brain developers would stand him in good stead in after-life. I unhesitatingly say that, among my fellow students, those who have taken the best professional position were those most highly cultured. And among those members of the profession whom I have known during the past thirty-five years in practice, the most respected by the laity and the profession have been those with most evidence of scholarly attainments. I do not say that these men have all made the largest incomes; that is another matter. Success in practice depends on many things, some quite independent of intellectual and professional attainments. The public has not always the discernment to distinguish gems from paste; but, so long as it gets what it likes, it is satisfied and there is an end of it. But the esteem of one's colleagues is, after all, that which the honourable man will strive to gain, and no amount of claptrap will obtain that. Among the reasons which I have noticed my professional friends assign as being in a certain man's favour is his culture and scholarship—"So-and-So is a well-read man."

II.—What is Best for the Profession?

Perhaps by raising the standard of the preliminary examination we may possibly exclude some few candidates, a very desirable result, for we are everywhere much too thick upon the ground. I often tell my colleagues that thirty years ago there was in Torquay one doctor to every 970 of the population, now there is one to every 750. And I understand that other towns are in the same happy condition. A writer in the BRITISH MEDICAL JOURNAL not long since said:

Four years ago there were four "doctors" in a small manufacturing town. The population has not increased but now they are eight. A few weeks since three children of one of the newcomers were passed as half timers for the factory.

It is only on account of the competition due to there being so many of us that the so-called medical aid system prospers. This has come into existence during the past few years and there is no need for it. The working classes never received so much pay as they do now, nor spent so much in luxuries, and they can very well afford to pay reasonably small sums for medical attendance.

Let me draw your attention to the relative positions of the medical and clerical professions. Let us assume that two young men enter a small country town at the same time. One shall be an M.B. of London, M.R.C.S. and L.R.C.P., and he has come to see practice as an assistant, or even as a junior partner. The other shall have been a student at a theological college for a couple of years, previous to which he may have been an ironmonger's assistant if you like; he has just been ordained and is now a full-blown curate. The first shall have cost his parents from eight to twelve hundred pounds, and the second just two or three hundred. Which of these men, as strangers in the town, will receive most attention and hospitality; which will be received on terms of intimacy and equality in the best families in the neighbourhood? Will it be the young medico? No, it will be the curate. And why? In bygone times only those were admitted to orders who held a university degree, and these for the most part from Oxford or Cambridge. This stamped the owners as having had the education of a gentleman, and the public have continued to ascribe to the clergy the same reputation; and hence our young friend, so recently let loose after the superficial training of the Theological College, knew quite well what he was about when he calculated that by getting ordained he should make a short cut to social advancement. I grant that the after-career of these two young men depends to a large extent on their own individual merits, and he who has most culture, he who is most the gentleman, will receive most esteem. But at first going off, the curate's success was due to his having joined a profession which in former days had the reputation of consisting almost entirely of men of high education. All I have said here about clerical and medical will apply with equal force to clerical and legal.

The higher we raise our intellectual shibboleth the better, for by improving the tone of the individual members we must also elevate the tone of the profession as a whole. The more the medical profession seeks to earn the reputation for consisting of men of high culture, the better for everyone. There are those who argue that the object of education should be to make as much of a gentleman out of the student as possible; and the more we reduce it to mean the worship of the almighty dollar, the less its elevating influences will be felt; and the higher the standard arrived at, the loftier and purer will be the aspirations incited.

I do not propose to raise a financial barrier to prevent poor boys from entering the profession. All I ask is that the money now spent by parents in schooling shall be properly expended, and that the time at school shall be devoted to legitimate objects. I am well aware that the General Medical Council is endeavouring to make a move in this direction, and I wish it every success. It is not a novelty that I ask for: it is simply a return to the old regulations, such as were in force when I was a boy. If the boys of my day could take up two books of Greek and two books of Latin, in addition to Euclid, algebra, etc., why not the boys of to-day? It may lead to searching of hearts among schoolmasters; if so, the sooner the better. Those who can get the boys to do the work will soon earn the reputation for having this power, and the rest will follow. We now admit almost everybody by a very wide door, and immediately pull them up short at the next examination by a very narrow one. This is hardly fair to the student, because his mind has not had the necessary preliminary training to enable him to alter what has been his mental jog-trot into a racing pace. It would be kinder to the parents and the boys if many who now scramble through the modern "preliminary" were promptly rejected, and advised to devote their talents to any end other than medical.

Someone has said that "The object of life is not merely to live, but to live well." This can be read in two ways. Some of us do not live well from an intellectual point of view, and many of us do not live well financially. We can afford to neglect neither aspect of the case. For the sake of those who are to succeed us we must see that they have the best education our money can procure, and let us choke off the lazy or stupid schoolboy. The boy who has got a mind can learn anything that he is obliged to learn: though, boylike, if not compelled, he will prefer to do as little as possible, or to learn such things as may take his fancy.

As a simple provincial practitioner I have frequently seen the necessity for a new departure in respect of the scholar-

ship, learning, or culture of the profession at large. Doubtless there are many in this room who have detected the same need for an improvement in this respect. I have noticed with pleasure the position taken by friends who have done well at Oxford or Cambridge, and I should like to see the social attainments they enjoy much more common among us. We should strive to effect such changes which would enable the medical practitioner of the future to stand on an equal footing with the well-educated gentlemen of all professions. It ought to be the rule and not the exception. The preliminary examination I ask for will keep out of the profession no one candidate we should be sorry to miss; and those who can pass an examination of a higher standard will be all the better students of medicine and all the better practitioners for so doing.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

ON SOME MEDICAL QUESTIONS OF THE DAY.

By MILNER MOORE, M.D.Durh.,
Coventry; President of the Branch.

[ABSTRACT.]

NERVOUS AFFECTIONS.

AFTER suitably acknowledging his election, Dr. Milner Moore referred to the subject of nervous affections. He said: In no disorder or disease to which the human frame is liable does heredity play so important a part as in neurotic affections. The first case of nervous affection that occurs to my mind is the infant "muling and puking in his nurse's arms," whom, if the offspring of neurotic parents, we often find fretful, restless, twitching, and convulsed under the irritating influence of first dentition; and when we pursue the history of the case in after years, as in general practice we often have the opportunity of doing, we see the nervous child of 6 or 7, worried by its lessons, self-conscious, with night terrors, grimaces, and some of the numerous forms of torticollis.

Dr. Milner Moore emphasised a class of nervous cases that he had watched for years: These are for the most part women varying in age from 32 to 55; thin, anxious looking, full of complaints of pain here, there, and everywhere, noises in the head, backache, headache, dyspepsia, and generally constipation, always accompanied by violent pulsation of the abdominal aorta. The cure would seem a rare event, for they wander from dispensary to hospital, and from doctor to doctor with advertised quackeries interspersed until either the disease or the patient is worn out; but they seldom die early in the struggle.....Can these troublesome symptoms be in any way traced to gout is a question which cannot fail to obtrude itself in an age when that old-fashioned complaint is credited with producing nearly every form of discomfort.

ALCOHOL: HEALTH AND DISEASE.

Upon the question of the influence of alcohol in health and disease, Dr. Milner Moore observed: After many years of careful observation, I have definitely made up my mind upon the subject, and am distinctly of opinion that health is better maintained in all periods of life without the use of alcohol, that the pleasure of living is greatly enhanced by a moderate indulgence; and that a moderate indulgence is most difficult to attain under the conditions of social life which prevail among a prosperous and wealthy section such as ours. The question therefore arises, which of the two suggested conditions is the better—perfect health without alcohol or imperfect health with indulgence, and the fact that upwards of £160,000,000 are annually spent on drink goes far to prove which is the favoured course.

There are doubtless, he said, very many occasions when it is a bounden duty to order alcohol. In tiding us over the difficulties of acute diseases, or giving aid in certain maladies where for a time at least food is taken or digested with difficulty, and in extreme age where again the assimilative powers are weak, alcohol does yeoman service, and sustains the flickering life. Then, again, it has its "moral effects," when by narcotising the over-sensitiveness engendered by worry or anxiety alcohol acts as a sedative, and carries the irritated brain over the troublous period, giving a sort of devil-may-care feeling to the man or woman who thus indulges; and if not too frequently had resort to no harm results.

THE COVENTRY DISPENSARY.

Dr. Milner Moore, after having alluded to the diseases of old age, proceeded to give a history, dating from December 2nd, 1892, of the controversy between the medical men of Coventry in regard to the dispensary. He said: The breach thus made has never been repaired, and the members of the profession in Coventry belong, with one or two exceptions, to two camps, the adherents of each never meeting either in consultation or otherwise to discuss matters in a friendly way. This position of professional feeling, which cannot fail to have a bad effect in our dealings with the public in showing them how ununited we are, appears to me to have arisen from the conduct of the dispensary staff, who, feeling the effect upon themselves of joining the Reform Committee, while agreeing that the rules of the dispensary as to the admission of patients are contrary to those laid down by its founders, and that many persons now members ought not to partake of its benefits, had not the courage to assist their medical brethren in controlling this abuse. Had the dispensary staff joined heart and soul with the reform party, the impression made upon the Dispensary Committee would have been immeasurable, and would have had far-reaching effects in all cities where contract medical work has been for many years inadequately remunerated.

HOSPITAL ABUSE.

Dr. Milner Moore afterwards touched upon hospital abuse. The interests of the various grades are so diverse that it is a difficult matter to arouse the energies of those whose position entitles them to every consideration and respect, and make them sufficiently anxious for the welfare of the rank and file. Hence it is that hospital abuse continues. It does not affect any member of the staff of the metropolitan or large provincial hospitals if unworthy persons receive advice gratis, but it does affect the practitioner in a small way of business if the small fees are diverted from him by the easy method of a well-to-do artisan who pays a penny a week in his workshop towards the local hospital, and then considers himself entitled to hospital treatment. All actions to stay hospital abuse should begin at the great centres of medical knowledge and skill; for what, may I ask, would be the advantage of denying gratuitous advice at the Coventry, Wolverhampton, or Leamington Hospitals when the applicant could without difficulty receive it at Birmingham, Leicester, or London? It is clearly to the interest of every physician or surgeon to a hospital to see and benefit as many applicants as he can give his time to, for this procedure increases his reputation, and in time brings him wealth; but it must not be forgotten that the greater the number thus gratuitously treated the greater is the loss to the poorer members of the profession.

PROFESSIONAL ETIQUETTE.

The concluding portion of the address was devoted to professional etiquette. On the subject of consultations he said: Such an association as that which has been established in Birmingham, where a medical man of excellent degrees and qualifications has accepted the position of consultant for a certain salary from a lay committee, well knowing that he is acting in opposition to the best traditions of the profession, can scarcely, one would hope, be a financial success, but its aim must be to attempt a breakdown of that custom which has been handed down for many generations—of charging an adequate fee for consultations to those who can afford it, and of giving a valuable opinion for love when the applicant is poor.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of directors was held on July 11th, the Acting Treasurer, Dr. Potter, in the chair. One new member was elected, and it was reported that 3 had died, and 3 had ceased to be members in April last. The death of a widow who had received £35 a year since 1886 was announced. An application for grants for herself and 7 children was read from a widow, and grants at the rate of £100 a year were made. The husband who died from an accident in Australia had only been elected a member in 1891, and had paid 18 guineas subscriptions. A sum of £1,197 was voted for distribution among 48 widows, 14 orphans, and 6 recipients from the Copeland Fund. The expenses of the quarter were £44 12s.

READING AND UPPER THAMES AND OXFORD AND DISTRICT BRANCHES.

THE ALLEGED INCREASE IN INSANITY.

By REGINALD H. NOOTT, M.B., C.M.Edin.,
Senior Assistant Medical Officer Broadmoor Asylum; President of Reading and Upper Thames Branch.

FROM time to time during the last ten years there have appeared in the daily press most alarming assumptions as to the terrible increase in insanity. These statements have for the most part been the result of a false method of statistical investigations.

In dealing with statistics relating to this subject we must be very careful to distinguish between figures referring to "existing" lunatics, that is, the total number of registered lunatics, and those referring to "occurring" lunatics, that is, the number of new cases registered. The absolute increase in the number of lunatics in the official cognisance of the Commisioners in Lunacy during the last thirty or forty years, which at first sight appears to be so appalling, has been explained to be due to the accumulation which has necessarily resulted from various causes to be afterwards referred to.

In the early part of 1890 Mr. Noel Humphreys read a paper on this subject before the Royal Statistical Society, in which he came to the conclusion that at that time there was no evidence of any appreciable increase in "occurring" insanity. From time to time since that date various writers have dealt with the subject. The late Dr. Hack Tuke contributed exhaustive articles on The Alleged Increase of Insanity in the *Journal of Mental Science* for October, 1893, and April, 1894, in both of which he came to the same conclusion as Mr. Humphreys. So lately as February, 1897, the Commissioners in Lunacy issued a special report on the subject, and after dealing in detail with the causes which led to any apparent increase, they conclude by saying that they "have been unable to satisfy themselves that there has been any important increase of 'occurring,' or fresh insanity."

The number of registered lunatics, however, goes on steadily increasing, and it would seem that the explanations so often put forward to account for such increase now scarcely suffice; that, indeed, there is an increase in the number of fresh cases of lunacy out of proportion to the increase in population.

STATISTICAL FALLACIES.

An enthusiastic, but not very discreet, statistician has quite recently published a calculation, based on one of the tables in the annual report of the Commissioners in Lunacy, from which we gather that in the year 2301 every one will be mad. Truly an appalling prospect!

From the accompanying table it will be seen that, whereas the average annual increase in the total number of lunatics for the three preceding decennial periods had been 1,641, 1,671, and 1,445 respectively the average annual increase for the ten years ending 1898 had risen to 2,075.

Year.	No. of Lunatics of all Classes.	Increase.
1859	36,762	—
1869	53,177	*1,641
1879	69,885	*1,671
1889	84,340	*1,445
1890	86,067	1,727
1891	86,795	728
1892	87,848	1,053
1893	89,822	1,974
1894	92,667	2,245
1895	94,081	2,614
1896	96,446	2,365
1897	99,365	2,919
1898	101,972	2,607
1899	105,086	3,114

Average annual increase for ten years 1890-1899=2,075.
* Average annual.

All that we can gather from these figures is (1) that there has been a gradual accumulation of registered lunatics during the last forty years, and (2) that the accumulation has been distinctly more rapid during the last ten years.

The suggested causes which conduce to this accumulation are:

1. *A Gradually Diminishing Death rate.*—The average annual rate per cent. of deaths to daily average number resident for quinquennial period 1873 to 1877 was 10.26. Whereas for the quinquennium ending 1897 it had fallen to 9.50.

2. *A Diminished Recovery-rate.*—This means fewer discharges. The average rate per cent. of recoveries to daily average number resident was 11.54 for quinquennium ending 1877, whereas it had fallen to 9.09 per cent. for quinquennium ending 1897. This diminished recovery-rate is partly due to the fact that in recent years there has been a much larger number of senile and incurable cases admitted into asylums than formerly.

3. *More Complete Registration.*

4. *A Wider View of what Constitutes Insanity Requiring Care in an Asylum.*

5. *The transfer to asylums of a large number* of lunatics who had previously been accommodated in workhouses. This is due to the assistance derived from the 4s. Government grant.

6. *Greater confidence on part of the general public in asylums* and asylum management, combined with less aversion on the part of the relatives of insane persons to send them to asylums for care and treatment.

7. *A gradual transfer of lunatics* from the unregistered list, compiled from the census returns, to the registered list, that is, those known to the Lunacy Commissioners.

RATIO OF REGISTERED LUNATICS.

It will be seen at once that although all these causes affect the number of "existing" lunatics only some of them influence the number of "occurring" lunatics. The following table shows the ratio of registered lunatics, etc., to every 10,000 population:

Year. January 1st.	Ratio of Lunatics to every 10,000 Population.
1859	18.67
1869	23.93
1879	27.54
1889	29.65
1894	30.64
1899	31.11

Although this gives us a more correct idea of any increase in insanity, if such exists, the fallacy due to accumulation is still present.

Critics of this table have from time to time suggested that it would be erroneous to draw any conclusion from it as to increase of insanity, because it deals only with the number of lnnatics in the official cognisance of the Lunacy Commissioners, and not with the total number of persons of unsound mind as returned by the census enumerators, which at the last census, 1891, exceeded the former number by 10,588. They point out that the apparent increase as shown in this table can be explained by the transfer of lunatics from the unregistered to the registered list.

It seems doubtful whether this explanation is of such value as it at first sight appears to be. Undoubtedly there are, and always have been, a certain number of individuals returned as of unsound mind to the census enumerators whose mental condition may afterwards render it necessary to confine them in an institution for the care of the insane, and who would then become officially known to the Lunacy Commissioners; but it is also certain that there are a large number of "borderland" cases, and cases of imbecility, senile enfeeblement, epilepsy, and idiocy which would be enumerated in the census returns but would never be officially certified. At any rate, this source of supply of officially-known lunatics cannot be, like the widow's cruse of oil, inexhaustible.

PAUPER LUNATICS.

However, we can proceed a point further towards accuracy in statistical deduction if we refer to the table in the Commissioners' Annual Report showing the percentage of pauper lunatics to total pauper population. In preface to this table, and as indicating its greater statistical value, I may say that it is noteworthy (1) that the steady increase in the number of registered lunatics during the last ten years has been almost entirely among the pauper class; and (2) the ratio of paupers to the total population has remained practically the same.

Year. January 1st.	Ratio, per Cent., of total Pauper Lunatics to total Paupers.
1890	9.74
1891	9.98
1892	10.35
1893	10.32
1894	10.10
1895	10.28
1896	10.40
1897	10.71
1898	11.08
1899	11.64

This table shows that whereas in 1890 the ratio per cent. of pauper lunatics to pauper population was 9.74, it had risen in 1899 to 11.64, which is 1.18 above the average percentage for the ten years.

Number of "Occurring" Lunatics.

So far the figures I have quoted deal with statistics regarding "existing" lunatics. We can gather some information concerning the numbers of "occurring" lunatics from the following table, which gives the ratio of admissions to every 10,000 population.

Ratio (per 1000) of admissions to population (excluding transfers, admissions due to lapsed reception orders, and those admitted into Idiot Establishments).

Year.	Private.	Pauper.	Criminal.	Total.
1889	0.70	4.53	0.06	5.29
1890	0.69	4.87	0.07	5.63
1891	0.67	5.00	0.07	6.74
1892	0.67	5.10	0.06	5.83
1893	0.65	5.29	0.06	6.00
1894	0.63	5.19	0.06	5.88
1895	0.67	5.35	0.07	6.09
1896	0.64	5.36	0.07	6.07
1897	0.66	5.34	0.07	6.07
1898	0.66	5.42	0.07	6.15

We observe from these figures (1) that any increase in the ratio referred to is entirely due to an increase in the number of admissions in the pauper class; and (2) that although there are occasional fluctuations, the increase in the ratio is fairly steady. The possible fallacies in this table are, (1) the figures include readmissions due to relapses, and are not confined to absolutely new cases; and (2) some of the increase may be due to the transfer of lunatics from the unregistered (census) list to the registered (Commissioners') list; although, as has been already pointed out, it is scarcely justifiable any longer to give the latter explanation much weight.

Unfortunately, the Commissioners in Lunacy give no figures concerning absolutely "new cases," which would give us the most reliable indication with regard to increase in insanity.

Insanity is Increasing.

After a consideration of all the statistics I have referred to, and giving due weight to possible fallacies affecting the deductions which may be made, it seems to me that we are compelled to honestly face the conclusion that insanity is increasing.

Can any reasons be put forward which would help to account in any way for this increase? I think that we may say there are—some general, some special.

Among all classes life goes on at a much higher pressure than it used to do. England has become over-populated. In all professions, commercial businesses, trades, and forms of manual labour there is an ever-increasing competition. The "almighty dollar" has more attractions now than it ever had. The increased strain involved in increasing competition carries with it a greater desire, indeed a greater necessity for recreation. In times of plenty that recreation is accompanied by indulgence—it may be by over-indulgence and vice. There is an increased desire for excitement, and with all this there is apparently a loss of inhibition—of self-control—a want of strength in meeting reverses and adversity, which has shown itself conspicuously the last few years in the steadily-increasing number of suicides.

Etiology.

Of the alleged causes of insanity tabulated by the Commissioners in Lunacy, the "physical" bear to the "moral" the proportion of 3 to 1; and of the physical causes by far the most frequent are hereditary influence, previous attack, and intemperance.

In their last report the Lunacy Commissioners state that hereditary history of insanity had been ascertained in an average of 23.1 per cent. of all cases admitted during the previous five years. Taking into consideration (1) the fact that the relatives of patients are extremely reluctant to give information on this point, and (2) that hereditary history of insanity is sometimes obtained some time after the admission of the patient under care, and is consequently not included in the Commissioners' returns, we may fairly assume that the percentage given is far less than what actually exists. Indeed, we must look upon hereditary influence as the most potent as well as the most frequent cause of insanity.

In agricultural districts, where small communities are considerably isolated, intermarriage going on through several generations is an important cause of inherited weakness. In the county of Wiltshire, for example, I believe I am correct in stating that there is a higher percentage of insanity due to hereditary influence than in any other county in England and Wales. In Wiltshire, according to the census of 1891, there was 1 lunatic to every 290 population, and in one of the unions of Wiltshire—namely, Calne—where intermarriage is extremely prevalent, the rate was 1 to 189.

In relation to the subject of increase of insanity, the incidence of previous attacks is intimately connected with that of hereditary taint. A person who has once had an attack of insanity is liable to relapse, and the greater the number of relapses the less hope there is of recovery. Too often the patient's relatives remove him, or her, from the asylum too soon after signs of recovery have shown themselves and before they have been confirmed, whereas a slightly longer time under proper care would have rendered the patient more able to bear the worries and anxieties of everyday life, and less liable to relapse. Of all lunatics admitted into institutions for the care of the insane during 1898, no less than 20 per cent. had had a previous attack of insanity. In some counties, taken separately, the percentage was greatly in excess of this rate; for example, in Norfolk it was 28 8 per cent., and in Wiltshire it was 32.27 per cent. Now what does this mean? That of all lunatics admitted into asylums, etc., during that year, at least 20 per cent. had had a previous attack of insanity, had subsequently resumed their social position, and had possibly assisted in increasing the population, and handed down the taint of insanity to generations to come. To give you examples I will quote from the annual reports of one or two asylums. In the Suffolk County Asylum report for 1894, Dr. Eager writes:

> J. W., a woman admitted in a state of mania on February 18th 1893, gave birth to a male child on May 19th, and was discharged on September 26th, having regained her reason: and J. L., who was pregnant on admission on March 26th, and who was delivered on September 11th, remains under treatment, there being no evidence of any mental improvement being likely to take place. The former of these cases had been treated here on two occasions previous to her marriage, and the latter also, on two occasions, suffering from puerperal mania.

In the annual report of the Wilts County Asylum for 1889 Dr. Bowes writes:

> Five women were admitted in a state of pregnancy and subsequently safely confined. The babies all did well, and were in due time removed by their respective fathers, but the mothers were less fortunate: only 1 recovered her mental faculties and 1 remains under treatment, the other 3 dying from general paralysis, phthisis, and exhaustion from maniacal excitement.

Truly these babies started in this life very heavily handicapped!

Intemperance.

It is not for me here to enter into the question whether intemperance is on the increase generally or not. I have only to deal with intemperance as a cause of insanity. Although we must recognise that in the returns from which the Commissioners compile their statistics the "personal equation" has to be considered, as also has the relative amount of care with which the information is obtained, we are obliged, I think, to accept the fact that intemperance as a cause of insanity is steadily on the increase, chiefly as an exciting cause, in some cases as a predisposing one. To take only the last ten years; we find that in 1887 intemperance was returned as

	Wilts.	Dorset.	Norfolk.	Yorkshire (Wakefield).	Lancashire (Rainhill).	London.	Durham.	Glamorgan.
Degree of General Intemperance	1	2	2	4	5	5	6	6
	*	*	*	*	*	*	*	*
1888:	Ratio per cent.	Ratio per cent.	Ratio per cent.	Ratio per cent.	Ratio per cent.	Ratio per cent.	Ratio per cent.	Ratio per cent.
Intemperance	—	—	—	—	—	—	12.27	28.01
General paralysis	—	—	—	—	—	—	15.20	12.06
1889:								
Intemperance	5.55	—	7.82	19.01	19.60	—	—	—
General paralysis	3.96	—	3.30	13.80	11.20	—	—	—
1893:								
Intemperance	—	—	—	—	—	12.49	18.54	28.22
General paralysis	—	—	—	—	—	7.90	10.70	13.50
1894:								
Intemperance	6.66	9.57	7.72	18.54	34.54	—	—	—
General paralysis	6.66	6.30	5.70	10.70	15.20	—	—	—
1898:								
Intemperance	8.22	7.05	3.60	—	—	14.73	18.28	18.45
General paralysis	3.70	5.60	3.09	—	—	0.50	5.80	11.60

* Proportion of admissions in which intemperance was returned as cause of insanity, and proportion of general paralysis to admissions.

NOTE.—The figures indicating the degree of general intemperance in the counties referred to are taken from the criminal statistics published in Blue Books.

a causal factor in the case of 13.4 per cent. of all lunatics admitted during the year. The average-rate for the five years ending 1892 was 14.3 per cent., while for the five years ending 1897 the average-rate had risen to 15.5 per cent.

Time will not allow of a detailed analysis of the relation of intemperance to insanity, but several somewhat interesting points appear in the table given above, in which are arranged the relative proportion to population of charges of drunkenness in some of the agricultural, manufacturing, and mining counties for the quinquennial period 1894-98 side by side with the relative percentage, for the admissions into the asylums of these counties in specified years—of cases of general paralysis, and cases in which intemperance was returned as a cause of insanity.

I have introduced general paralysis into this table because the figures concerning it are decidedly suggestive. Great difference of opinion prevails, both in England and on the Continent, as to its etiology. It is the fashion just now to refer all cases of general paralysis to syphilis, either inherited or acquired, but while fully recognising the fact that syphilis is a very frequent and important cause of the disease, it seems probable that a large number of cases are due to a generally fast life combined with intemperance. In this connection it may be noted that although syphilis is extremely prevalent in Cairo and parts of China, general paralysis of the insane is scarcely known there.

This table gives the following indications:

1. That intemperance exists as a cause of insanity in a relative degree to the general intemperance in the districts referred to.
2. That it exists, as such a cause, to a much less extent in agricultural than in manufacturing and mining districts.
3. That apparently the percentage of general paralysis to occurring lunatics bears some relation to it.

The sudden fall, in some years, in the percentage of cases in which intemperance was returned as a cause of insanity is interesting, as it can be referred to times of depression in the districts where it occurs. This is very noticeable in the returns of the Glamorgan Asylum for the year 1898, at which time the miners' strike was going on; and in those for the Norfolk Asylum for the same year, when there was great agricultural depression in the county.

So much for the past; but what of the future? While almost every other branch of medical science has been, and is, making such progress in the prevention and cure of diseases related to them, have we to acknowledge that the branch of Psychological Medicine is being left behind? I think not; though it would seem that something ought to be done that something could be done—to stay this steady increase in the number of lunatics.

PREVENTION AND CURE.

When the history of the present century comes to be written one of the darkest of its earlier pages will refer to the time when those who were afflicted with insanity were looked upon as being "possessed by devils or evil spirits," when lunatics were treated almost as wild beasts, beaten and chained, when those afflicted with the more violent forms of insanity were regarded with extreme horror and loathing, and the vagaries and extravagances of the quieter ones formed a source of amusement. How different it is now! We have our large asylums, comprising in the buildings the most modern sanitary improvements, furnished and decorated with every homely comfort. The inmates are well supplied with food, clothing, recreation, and amusement, and everything in the way of moral and physical treatment, which is conducive to the recovery of their reason, is carried out. Much has been done during recent years to develop our knowledge of physiological psychology and brain pathology, and the labours of the pathologists who are working in the laboratories attached to some of our public asylums should bear good fruit.

The remedy to the present condition of affairs is to be sought both in the line of prevention and cure. In both these directions the most important factor, and one without which the efforts of the medical profession are useless, is the education of the general public on the subject.

In prevention, the all-important aim is to discourage the marriage of those who come of insane stock. These marriages will never be prohibited by law, but it is to be hoped that people will in the course of time be persuaded that such marriages are cruelly selfish, that it means the risk of an insane inheritance and all the miseries attached thereto, for their children and their children's children.

It is the general practitioner who has the best opportunities of imparting this knowledge and of emphasising it. It is he who is, perhaps more than anyone else, the confidant and adviser in family matters. It is he who so often holds the key of the cupboard that hides the skeleton. It is he also who would probably have most influence in restraining any habit of excess—in advising parents regarding the education of children who are mentally weak and in drawing attention to any eccentricity that may manifest itself.

As to cure it is impossible to lay too much stress on the importance of early treatment. It is no exaggeration to say that many hundreds of patients are annually admitted into institutions for the care of the insane, whose chance of ultimate recovery has been lost because their relations hesitate so long before they make up their mind to "put them away," as they express it.

Though much has been done to remove the popular prejudice against asylums, and to relegate the mystical and superstitious view of insanity to past history, it will probably be a considerable time before the general public can be made to understand that insanity is as much a physical disease as phthisis is.

We know that in giving a prognosis with regard to the chance of recovery in the case of a phthisical patient who has been ordered to Davos, St. Moritz, or any of the Alpine sanatoria, we are guided almost entirely by the length of time the disease has existed, that unless it is in its early stage we cannot hope for cure, and only possibly for relief. So it is with insanity. The chance of recovery diminishes in propor-

tion to the time that elapses between the earliest manifestation of the disease, and the time the patient is brought under appropriate treatment.

In this connection it is impossible to avoid reference to the unsatisfactory state of the law as it affects medical practitioners and the signing of lunacy certificates. In theory, in their action in such cases—*in bonâ fide*—they are safeguarded against loss or injury resulting from legal proceedings. In practice it is not so. The present state of affairs is very largely responsible for the difficulty that exists in bringing many cases of insanity under treatment in the early stages of the disease.

THE FUTURE OF THE PROFESSION AND OF THE ASSOCIATION.*

BY SYDNEY WILSON MACILWAINE, L.R.C.P., M.R.C.S.
Redhill, Surrey.

THE future of our profession, like its present and its past, divides itself sharply into two parts, which must be considered from quite different standpoints. The investigation of disease—the tracing of diseases to their causes—is part of the study of Nature; the knowledge gained is science in precisely the same sense as the knowledge gained by the astronomer and the geologist in science. When we come to the application of this science to the relief of humanity, and put the art of medicine into practice, we find ourselves in very deep water; we no longer breathe the pure air of science. It is in connection with the turbid waters of practice that I wish to refer to the future of our profession.

When a practically unlimited number of men are turned out to gain a living by the practice of medicine amongst a public who are bent on obtaining what they think they require, often at the lowest possible price, it is evident that mercantile principles will be applied by the public, and that competition in the ranks of the profession may not always be conducted on strictly ethical lines. That the arrangements existing between the public and the profession are in many ways unsatisfactory is probably recognised by all of us; that they will automatically improve is the belief of every good optimist.

The question of immediate interest is whether these relations can be promptly improved by anything that it is within our power to do. Legislation, including revision of the Medical Acts, is advocated by many, and, while it is undeniable that it might do good, it is equally certain that it might also do harm. Legislation means agitation, and to plunge a profession, necessarily disunited in their plan of campaign, into a struggle of the kind would certainly be a rash experiment.

It is always open to the members of the medical profession to raise themselves to a high scientific standard; the thing is in their own hands. They may rely on the support of the enlightened minority of the public, as witness, for example, the recent history of the hospitals and of the Jenner Institute; they will not be helped or hindered by the great ignorant mass of the public. On the other hand, if legislation were pressed for on matters in which the whole public as well as the profession are personally concerned, we should immediately come into forcible collision with people in a way that must lower our status whether any material profit resulted or not.

What then is open to us in the field of medical politics? We probably all honestly believe that the abolition by law of quackery would be for the benefit of the public; it is certainly also desirable from our own point of view. It does not, however, by any means follow that it would be wise for the profession to take up arms against this hydra-headed monster. What we mean by quackery and what the law and the public mean are absolutely different things. Unfortunately even registered practitioners are not by any means unanimous on the point. This, probably the largest field of possible operations, is therefore, hopelessly out of our reach.

Prescribing and advertising druggists do an enormous amount of medical practice; they make fortunes at it. Here again effective legislation would practically have to include the prohibition of the sale of drugs to the public except by registered practitioners. The thing is impossible. There is a very obvious course open here, that is, to leave as far as possible the dispensing of drugs to the druggist, and so separate ourselves from him. The public, in learning to pay for our advice, might perhaps learn to put a somewhat higher value on it than they do at present.

Midwives stand in much the same relation to us as do the druggists; their abolition is impossible except at the will of the public. Many, I may say most, medical men are honestly convinced that it would be for the good of the public, quite as much as for our own good, if every parturient woman were to be attended by a registered medical practitioner. On the other hand, physiological labour belongs no more than any other physiological act to the domain of medicine proper: it is outside the realm of disease. The public have settled the midwifery question for themselves centuries ago. They have employed, they still employ, and they will continue to employ "mere midwives." It is not for us to bid against them. As opponents of midwives our position, however honest our convictions, can always be made to appear undignified and self-seeking. It is an untenable position, and one, therefore, to be avoided.

Other more drastic measures are sometimes advocated, such as the placing of the General Medical Council in the hands of a majority of general practitioners. This is at first sight an attractive method for righting some of our wrongs but it does not bear investigation. The idea is based on the belief that general practitioners are agreed on the subject, that they know what they want, or rather what is best for them, and that, given the power of the General Medical Council, they could obtain it.

Both the agreement as to what is desired and the supposed power to obtain it are mere illusions. We do not prescribe for ourselves in case of illness. In the same way in questions of legislation affecting us, in matters of education, discipline, and so on, it is my conviction that these gentlemen of the General Medical Council, whom we ourselves have helped to raise to their present position in our profession, know better than we do what is good for us. They can approach the powers of the State and the public in a way and with results that it is quite improbable a body ruled by a majority of general practitioners should ever do.

Then there is the question of our treatment, some would say of our neglect, at the hands of corporations, such as the colleges. The man who adopts medicine as a profession enters a corporate body. There must be examinations, regulations, degrees of magnitude and altitude; and there must be enviable positions occupied by the few; this applies to all corporate bodies. Human nature is not yet perfect, and we must not demand perfection of our corporations, they are but human. At the same time it may be questioned whether any other profession—the church, the diplomatic service, the navy, the army, or the law—is guided by a more sympathetic or approachable body of seniors than ours; for myself I do not believe that it is; let us be content as we are in this respect.

Latterly there has even been a tendency to throw stones at ourselves, so to speak; the British Medical Association has been roundly accused of "giving away" the medical profession. One can almost imagine after this that someone will be found to assert that the British Constitution is in need of mending. But, seriously, if any one can devise a plan to make the British Medical Association more democratic than it is, by all means let us have it. In the meantime the Association, with its 18,000 members, stands as the representative of union in our profession. If it is not perfect, if it does not fully perform its functions, whose fault is it but our own? There it is for us to do with as we please, and the day is long past when anyone can think of starting a rival society.

So far I have been speaking chiefly of things in the region of medical politics that in my opinion ought not to be done. I would sum up all that is to be said as to what ought to be done by urging the general practitioner to make the British Medical Association more of a living reality. The thing is so plain that one wonders only that it has not been done long ago. Why, for instance, to give but one example, are we victimised by the sweater disguised in the cloak of philanthropy and thrift? Simply and solely because we are not

* Read before the East Surrey District of the South-Eastern Branch of the British Medical Association.

united. The means of union is ready to our hands. When it shall be a slur on a medical man not to be a *bonâ-fide* member of his Branch, and when he shall be ashamed of not meeting his colleagues occasionally for the discussion and furtherance of their common interests, professional and material, then the medical profession will speak with an audible and authoritative voice. Let us realise that in unobtrusive local combination, not in any way unbecoming a body of educated gentlemen, lies the best prospect of our future. Agitation, which always ends in the creation of the paid agitator, is a thing to be shunned. Not only the scientific but also the political elevation of our profession is a question for our own solution; we must work out our own salvation in both directions, otherwise we shall surely never find it.

Having said so much of what may be termed the theoretical order, I would like to venture on one practical suggestion. The weakness—the unreality, if I may say so—of the Association lies in the Branches; even their membership, as compared with our total number of members, is far from satisfactory. The numerical attendance at Branch meetings takes us another step in the wrong direction, towards lethargy. The man who merely takes the BRITISH MEDICAL JOURNAL is not a really active member of the Association. He neither controls, nor is he controlled by, his colleagues to any appreciable extent; and it is in this mutual help and influence that our best prospects in every direction lie. There is an urgent demand, a just demand, for the doing of something for the amelioration of the lot of the general practitioner. What shall be done, and who shall do it? Here it is that, to my mind, the future of the profession is, or ought to be, indissolubly bound up with the future of the Association. The Gods help those who help themselves. I suggest the formation of local societies by members of the Association, subsections of our present Branches to correspond with boroughs and other naturally marked areas in order that the profession may deal with medical politics locally, quietly, and unitedly. After a good many years' experience and a good deal of thought and consultation, this is, to my mind, the right way to face these questions. The accumulated influence of such societies would infuse new life into the Association and give the profession a power—a legitimate power—we little dream of. Although occupying themselves perhaps primarily with medical politics, it is not suggested that these local societies should not concern themselves with professional subjects. On the contrary, they would help to remedy a grave flaw in our professional life. At present, so far as the body of his colleagues are concerned, the experience of the general practitioner practically dies with him. This is certainly not as it should be, and the whole profession is thereby much the poorer.

There is a tide in the affairs of corporations as well as in those of individuals. Is our Association, in not more fully recognising and in some way meeting the present unrest, neglecting an opportunity whose passing may be followed by the undesirable results that come with an ebbing tide? I would submit the suggestion for the consideration of those who know much more of the working of the Association, both centrally and locally than I do.

At the suggestion of our Secretary, to focus the discussion so to speak, I beg to move the following resolution:

That it is desirable that the British Medical Association should authorise and encourage the formation of local societies among its members.

OBSERVATIONS ON THE ORGANISATION OF THE BRANCHES OF THE BRITISH MEDICAL ASSOCIATION.

By W. GORDON, M.D.,

Late Secretary of the South-Western Branch; Representative of Exeter on the South-Western Branch Council.

THE present unsatisfactory position of the medical profession may probably be traced to three chief primary causes—namely:

1. Want of union.
2. Want of organisation.
3. Overcrowding.

Of these the second seems the most immediately important, for it is partly responsible for the first, and until it is remedied it is doubtful if we can deal with the third.

The British Medical Association will in time be synonymous with the British medical profession, and therefore the best way to attempt the organisation of the profession is to perfect the organisation of the Association. There is no part of the organisation of the Association so defective as the organisation of its Branches; and it is with regard to Branch organisation that I would make a few remarks.

DRAWBACKS OF AN UNORGANISED BRANCH.

When Secretary of the South-Western Branch under its old rules (which were much the same as those of most Branches) I found the following difficulties dependent on Branch constitution:

A.—*Difficulty of Getting New Members.*

This difficulty was apparently due to want of personal acquaintance with those whom I wished to secure. Men whom I knew personally rarely refused to join. Men whom I did not know rarely consented unless they were approached through a mutual acquaintance. But I found that a mutual acquaintance often failed, chiefly, it seemed, because he had no official right to secure members. This last statement sounds fanciful, but it coincides with the view of a very shrewd and active member of the Branch who stated it as a matter of personal observation.

This difficulty of getting new members hinders, to what seems a serious extent, the growth of a Branch. So long as a considerable part of the profession in a Branch district holds aloof from the Branch, the Branch's influence is considerably weakened. Consequently it seemed necessary to divide our district into smaller areas, and to appoint an official in each area to carry on the work of securing fresh members for the Branch. It seemed also desirable that these areas should not be too large, so that each official might have a personal acquaintance with, at all events, most of the medical men in his area.

B.—*Difficulty of Effectively Approaching Members of Parliament.*

When I wrote on Association business to the members of Parliament who represent Devon and Cornwall, although my letters were politely acknowledged in most instances, I could not but feel that a Branch Secretary is at a great disadvantage in writing to a member of Parliament whom he does not know and whose constituent he is not, especially when the member of Parliament is unaware whether the Secretary is speaking for more than only one or two medical men in the member's division.

Again, when it was desirable to obtain all, or nearly all, the signatures in the Branch to such a document as a Parliamentary petition, one came face to face with a practical impossibility.

It seemed, therefore, necessary that one member of the Branch in each Parliamentary division should be officially placed in charge of that division, so as to approach his own member of Parliament solely on behalf of that member of Parliament's own constituents. It appeared also comparatively easy with such an arrangement to obtain all the signatures of the Branch to any important document, each division being looked after by the member of the Branch in charge of it.

In short, it was felt that the Branch ought to be:

1. *Subdivided into areas with a sort of secretary or representative in charge of each area.*
2. *That the unit of area for this purpose should be the Parliamentary division.*

An arrangement which would remove simultaneously both difficulties, A. and B.

A Subcommittee consisting of the then Secretary and the three past Secretaries of the Branch was accordingly appointed to work out a scheme embodying the changes, and its recommendations were adopted nearly two years ago. We have, therefore, nearly two years' experience of the working of this system.

The result on the Branch of the change of rules seems to me to be:

1. *Greater Ease of Securing New Members.*—The first year of its working was a year of unprecedented growth. The present year is still uncompleted.

2. *A More Active Branch Life.*—There seems to me no

doubt that the interest in Branch work has become more general. Some of our new officials are showing great interest and activity, and the change has been pronounced by the Branch Council "an unqualified success."

As regards Parliamentary business nothing can be said, for no general order from the government of the Association has yet been received to test our capacity.

In our new constitution the official in charge of each division is elected by the Branch members resident in that division, and he serves on the Branch Council as a "representative member" for his division. (Perhaps a better name might be "divisional secretary").

There are other advantages which should result from an organisation of this kind, namely:

1. The Branch can be polled more easily on any subject.

2. Every part of the Branch is permanently represented on the Branch Council by the representative members.

3. Medical men are more closely and frequently thrown together in comparatively small areas.

4. Medical men are enabled to educate themselves (*a*) to undertake responsibility for their fellows; (*b*) to consider more responsibly the large questions coming before the profession; (*c*) to undertake higher Branch office as they show their capacity for it.

But I do not think we need stop at the primary divisions. Personally I have found two drawbacks in working my own division: (*a*) The difficulty of working rapidly—of getting the views or signatures of every Branch member in the division within a short time; (*b*) the want of official (that is, responsible) advisers. And these drawbacks must be more felt in a country division than in a city. It seems to me therefore that it might be desirable to subdivide the primary or Parliamentary Divisions into secondary areas corresponding either to parish council districts or multiples of such, each secondary area having a member representing it on an advisory Divisional Committee, which the divisional representative member could summon when necessary. At the same time I imagine that such a secondary subdivision would be better postponed until the primary Parliamentary Divisions had been at work long enough to feel the need of it.

If a scheme such as I have sketched were generally adopted throughout the Association, it seems reasonable to suppose that it would produce in time very far-reaching results. It might not be possible at once in all Branches to put the divisions quite into the most active hands, but in time, as men generally came to realise the importance of the system, the divisional representatives would be chosen with greater and greater care, medical men outside the Association would more and more rapidly be drawn into its membership, and the Parliamentary influence of the system would become more and more pronounced, so that the question arises now, "Given a machine of such magnitude, what are we going to do with it?" If we discuss the subject of organisation at all, we ought to be prepared to answer this question.

Do we Propose to Erect a Gigantic Trades Union? It is Idle to Imagine It.—For the very soul of trades-unionism is compulsion for selfish ends, and it is absurd to suppose that a profession of gentlemen would tolerate such a system for a moment. Organisation for trade purposes may be possible or desirable for associations which have no proved influence, social or political. For the British Medical Association it would never do, but would strike a blow at its prestige, at its very real and growing social and political influence.

Government in a community (it has been well said) can be carried on in only two ways—by force or by public opinion. Government of the medical profession by force is out of the question. Our endeavour in uniting the profession should be to establish a powerful public opinion amongst ourselves. Our endeavour in organising the profession should be to bring that public opinion to bear as effectively as possible both within and without our Association. Our endeavour in reducing the present overcrowding—as by the establishment of a higher standard of preliminary general education—should be to remove a huge obstacle to healthy thinking and acting. It is simply impossible for men who, after long, arduous, and costly professional study, are expected to work harder than an artisan in order to save little more money than a skilled artisan can save, at the same time keeping up the appearances of a gentleman and the proficiency of an expert—it is impossible for such men to spend much thought on the niceties of an elevated standard of public opinion.

The labourer is worthy of his hire, and the financial, social, and official position of the whole medical profession must be made very different indeed from what it is. But if we start on trades-union lines—purely selfish lines—we shall make, it seems to me, a dismal failure of what may otherwise be made a magnificent success.

The more one thinks over our policy the more convinced one becomes that, even to secure our own interests, we must aim not merely at selfish acquisition but at public efficiency. Let anyone consider carefully the effect which would be produced upon the profession if the public-health service, the Poor-law service, the staffs of hospitals, and, in fact, all medical men in their various public relations, were to be placed in *the position where they could best serve the public.* It will be seen that the effect on the profession must be profound, and immensely to its advantage as well as to the advantage of the public.

That such a policy is practical is shown by the result of the work of the Association on behalf of the Army Medical Service. For forty years the profession struggled, on almost purely selfish grounds, to place that service on a proper footing, on the footing it deserved—far more than deserved—and in vain. In two years the same struggle, carried on by a Subcommittee of the Association, in concert with Mr. Macnamara and Mr. Hart's confidential adviser, on lines of public utility, ended in absolute victory. The policy which succeeded once may well be expected to succeed again.

The true policy for the profession would be, perhaps, more obvious to us all if the profession only grasped the magnitude of its own importance, of its own responsibility. Never, perhaps, at any time in the history of this country has the need for the rapid growth of a healthy population seemed a matter of such vital need, and it is to the medical profession that the country must look for the means of attaining this.

I believe that if the profession, uniting itself, organising itself, training itself in every way, will only set before it, *not the aims of a trades union, but the ambition of an Imperial service*, the discomforts we have at present such good reason to complain of will gradually cease, that financial and social matters will right themselves. It has not been by trades-unionism that the British Church, the British navy, the British army, and British law have taken their great places in the world. It will not be by trades-unionism that British medicine, as a whole, will take the place that is waiting for it when it sees fit to occupy it.

I have ventured to write on the subject of Branch organisation because one whom I have no right to refuse has asked me to do so; and I have ventured to write so much beyond my subject because the matter added is, to my thinking, inseparable from the construction of the powerful engine which organised union must make of our Association.

HOUSING OF THE WORKING CLASSES.—The conference on the housing of the working classes arranged by the Sanitary Institute will take place on July 30th and 31st, at the rooms of the Royal Medical and Chirurgical Society, 20, Hanover Square, London. On Monday, July 30th, at 10 A.M., the chair will be taken by Mr. R. Melville Beachcroft, L.C.C., and a discussion will take place on Unhealthy Areas and Displacement of Town Populations. In the afternoon a visit will be paid to the London County Council Dwellings, Millbank Estate, Westminster, and the Boundary Street area, Bethnal Green. On Tuesday, July 31st, the chair will be taken at 10 A.M. by Sir Sydney H. Waterlow, Bart., and discussions will take place on (1) Improved Houses for Town Dwellers; and (2) Improved Means of Communications. In the afternoon a visit will be paid to the Artisans' Dwellings erected by the Richmond Town Council. During the conference there will be an exhibition of plans at the Parkes Museum.

FEMALE STUDENTS AT BERLIN.—The German women are said to be eagerly taking advantage of the opening of all the faculties in the University of Berlin to female students. Nearly 300 have been admitted for the present summer term. Of the whole number, 26 are studying medicine.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETINGS.

MEETINGS of the Council will be held in the Magistrates Room, Town Hall, Ipswich, on Tuesday, July 31st, Wednesday, August 1st, and Thursday, August 2nd next, at 9.30 o'clock in the forenoon of each day.

FRANCIS FOWKE, *General Secretary.*

July, 1900.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1900.

A MEETING of the Council will be held on October 10th, 1900. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before that meeting—namely, September 27th, 1900.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

NORTH OF ENGLAND BRANCH.—The annual meeting of this Branch will be held at the Grand Hotel, Tynemouth, on Wednesday, July 25th, at 4 P.M. Members desirous of reading papers, showing cases or specimens, bringing forward any communication, or of proposing new members should communicate at once with THOMAS BEATTIE, 3, Ellison Place, Newcastle-upon-Tyne, Honorary Secretary.

ABSTRACT OF PROCEEDINGS OF COUNCIL:

Dr. ROBERTS THOMSON, President of Council, in the Chair.

AT a numerously attended meeting of the Council, held in the Council Room at the offices of the Association, 429, Strand, W.C., on Wednesday, July 18th, 1900, it was

Resolved: That the Report of the Council be received, approved, and published in the JOURNAL for presentation to the annual meeting in Ipswich on July 31st. (See next col.)

Resolved: That the Report of the Parliamentary Bills Committee be received, approved, and published in the JOURNAL for presentation to the annual meeting in Ipswich on July 31st. (See p. 159).

Resolved: That the Report of the Scientific Grants Committee be received, approved, and published in the JOURNAL for presentation to the annual meeting in Ipswich on July 31st. (See p. 160).

Resolved: That the Report of the Committee on Legislation for Inebriates be received, approved, and published in the JOURNAL for presentation to the annual meeting in Ipswich on July 31st. (See p. 165).

Resolved: That the Report of the Anæsthetics Committee be received, approved, and published in the JOURNAL for presentation to the annual meeting in Ipswich on July 31st. (See p. 165).

Resolved: That the Report of the Therapeutic Committee be received, approved, and published in the JOURNAL for presentation to the annual meeting in Ipswich on July 31st. (See p. 166).

Resolved: That the Report of the General Practitioners and Ethical Committee be received, approved, and published in the JOURNAL for presentation to the annual meeting in Ipswich on July 31st. (See p. 166).

Resolved: That the Report of the Decay of Teeth Committee be received, approved, and published in the JOURNAL for presentation to the annual meeting in Ipswich on July 31st. (See p. 166).

[*The remainder of the Proceedings of Council will be published in a future number of the* BRITISH MEDICAL JOURNAL.]

[*The following Reports of the Council and of the Committees will be presented at the Annual Meeting to be held at Ipswich, on July 31st, August 1st, 2nd, and 3rd, and are published in accordance with the regulations for the conduct of Annual Meetings, which require that all Reports of the Committees of the Association shall be printed in the* JOURNAL *before the Annual Meeting.*]

REPORT OF COUNCIL, 1900.

IN meeting you for the third time in the confines of the East Anglian Branch—the oldest Branch of the Association—though for the first time at the ancient and historical Borough of Ipswich, your Council has pleasure in reporting the progressive advance of the Association.

ATTACK ON THE PRINCE OF WALES.

At the meeting of the Council held in April last, a resolution was unanimously passed, congratulating the Prince of Wales upon his providential deliverance from a dastardly assault. This was telegraphed to His Royal Highness, who was then at Copenhagen, and His Royal Highness was graciously pleased to telegraph a reply of thanks.

At the same meeting it was resolved to ask His Royal Highness the Prince of Wales if he would become an honorary member of the Association. A most gracious reply has been received from His Royal Highness, stating his willingness to accede to the Council's request.

DEATHS OF MEMBERS OF THE COUNCIL.

Your Council has to deplore the deaths of Sir Thomas Grainger Stewart, M.D., Professor James Cuming, and Mr. Joseph White, all Vice-Presidents of the Association. The following resolutions have been passed:

Resolved: That the Council desires to record its sense of the great loss sustained by the profession, the Medical School in Edinburgh, and by this Association, in the death of Sir Thomas Grainger Stewart. As President of the Annual Meeting in Edinburgh in 1898 the Council recalls the ability with which he carried out the responsible duties of the office, and recognises that the great success of that meeting was in no small measure due to the energy and zeal which he showed throughout the proceedings, and his genial and courteous bearing to all. The Council desires to convey to Lady Grainger Stewart and to the family of the late Sir Thomas, its sincere sympathy with them in their bereavement.

Resolved: That the Council desires to express its sorrow at the death of its distinguished Vice-President, Professor James Cuming, and to record its sympathy with the family in their bereavement. Professor Cuming presided over the Annual Meeting of the Association held at Belfast in 1884 with marked ability, dignity, and tact. His many excellent qualities, and the charm and courtesy of his manner will cause him to be long remembered by his colleagues.

Resolved: That the Council deeply regrets to learn of the death of Mr. Joseph White, who presided so ably over the meeting of the Association held at Nottingham in 1892, and desires to offer its sincere sympathy with the family in their bereavement. His kindness and geniality endeared him to all with whom he came in contact, and his loss is deeply mourned by his colleagues on the Council.

The Council has to deplore the death of Dr. D. J. Leech, who for many years was a member of the Council. His distinguished position in Medicine, his courtesy and genial manner, his services to the Association as Honorary Secretary to the Branch, and subsequently to the annual meeting when it was held at Manchester in 1877 all tend to render his memory one which will be always esteemed by his colleagues.

The number of members last year was 18,185: during the year 957 new members have been elected, 231 have died, and 529 have resigned or been taken off for arrears, leaving on the books 18,382.

REVENUE AND EXPENDITURE.

The total revenue for the year ending December 31st, 1899, amounted to £43,263. The expenditure—including £500

written off for depreciation of plant, £995 interest on mortgage, and £644 losses on subscription by death and resignations—was £36,981, leaving a surplus of £6,272. £6,000 have been paid towards the reduction of the mortgage debt, making a total of £10,000 paid off the sum of £38,000. The excess of assets over liabilities was at the end of 1899 £75,994.

BRANCHES.

The home Branches, of which there are 38, show signs of a healthy increase of members and of active work. The Colonial Branches cause some anxiety to the Council. Some of them, the formation and recognition of which your Council reported with so much pleasure, have now ceased activity, principally in consequence of the enormous distances members have to travel to the place or town of meeting. The Council would urge the Honorary Secretaries of the Colonial Branches to assist in keeping these Branches intact, as not only does the Association regard them with pride and pleasure, but the members assist each other in comparing and studying the various diseases peculiar to their respective countries. The distance from the Mother Country requires a long time for the passage of communications. Three months, for instance, must elapse before a reply can be received to any communication to the Branch in New Zealand.

The Council would also point out that distance renders it difficult to urge the payment of subscriptions, consequently while the loss on non-payment of subscriptions in the United Kingdom is only 3 per cent., on the Colonial Branches the loss is more than 7 per cent. The total due from Colonial members for arrears of subscription at the end of the year was upwards of £2,000.

A complaint having been received from the Jamaica Branch as to the action of the Government in the summary dismissal of nearly one-third of the subsidised medical officers, with a view of effecting a reduction in the cost of establishment of the Colony, the President of the Council was requested to communicate with the Secretary for the Colonies upon this matter, who replied that financial depression in these Colonies compelled their Governments to effect economies by reducing the staff of the medical as well as of other departments. Mr. Chamberlain regretted that these economies should have caused hardship to any member of the Government Medical Service, but promised to consider on its merits any individual case. A letter was subsequently received thanking the Council for the action taken, and reporting that this action, combined with the energetic efforts of the local Branch, had had the desired effect, and the scheme was abandoned.

The Secretary of State for the Colonies forwarded in August last copy of a law which had been received from the Governor of Jamaica on the subject of infectious diseases in which, amongst other regulations, was one enacting that a fee shall be paid to every medical practitioner for each certificate. It will be remembered that the complaint of the Jamaica Branch was that under the proposed law, while any medical practitioner was fined for not giving a certificate, there was no fee allowed for giving one. Your thanks are due to the Secretary of State for the Colonies for his action in the matter.

This is the second time the Association has been able to help the Jamaica Branch.

A complaint having been received from the practitioners in Bulawayo with reference to a new Medical Ordinance which the Administrative Government of Southern Rhodesia had passed, the President of Council was again requested to communicate with the Secretary of State for the Colonies, and again Mr. Chamberlain was good enough to intervene and prevent the ordinance passing into law.

A very agreeable letter has been received from Dr. Herbert Horrocks, Honorary Secretary to the Western Australian Branch, who reports the continued prosperity and activity of the Branch, and gives many instances in which the Branch had successfully controlled medical legislation in that Colony. For example, the Branch has had considerable controlling power in respect to the new Health Bill, and in regard to the assisted hospitals on the goldfields. The Branch consists of 60 members, who have been brought together by the exertions of Dr. Horrocks in the short space of two years. When it is remembered how extensive the Colony is, and how sparsely populated it is, the thanks of the Association are due to Dr. Horrocks for his successful efforts.

THE JOURNAL.

The Council has every reason to believe that the JOURNAL has proved increasingly useful to members. The publication of the proceedings of the last annual meeting and of its Sections was commenced immediately after the conclusion of the meeting, and was completed before the end of November.

A large number of lectures, papers, and reports on clinical subjects has since been published, together with many articles recording the progress of medicine, surgery, obstetrics, and public health both at home and abroad.

At the outbreak of the war in South Africa it was seen to be probable that the great changes which had been made in modern arms of precision would lead to many modifications in the current doctrines of military surgery, and arrangements were made to obtain reports from trustworthy and experienced correspondents. The letters and reports contributed to the JOURNAL by Mr. Frederick Treves, Consulting Surgeon with the Field Forces; by Mr. Clinton Dent, Surgeon to St. George's Hospital, who spent three months in South Africa as Special Correspondent of the JOURNAL; by Sir William Thomson, Chief Surgeon of the Irish Hospital in South Africa, as well as those of other correspondents, not only form a medical history of the war, but have brought out clearly its chief medical and surgical lessons.

A great deal of the space of the JOURNAL has necessarily been devoted to the publication of information with regard to the Midwives Bill. The text of the Bill was published at an early date, and its defects were at once pointed out. Full reports of the proceedings of the Standing Committee on Law, and of the important interview which a deputation appointed by the Council had with Sir Robert Finlay, Q.C., M.P. (then Solicitor-General, now Attorney-General) were published, as was also the memorandum subsequently addressed to him at his request. In this way members of the Association were kept fully acquainted with the progress of events, and it was possible for the representations made to the Government and to members of Parliament by the Council and by the Branches to deal in a complete and unanimous way with the objectionable features of the Bill.

THE LIBRARY.

In this department there have been 4,619 attendances during the year, and the steady growth of the library has necessitated a further extension of shelf accommodation. The books presented to the library during the year, together with the serials which are filed, number 554 volumes, besides which there has also been a large number of papers and *Thèses* received. In order to meet the requirements of members it has lately been decided to add certain other English and Continental journals to the list of those already filed. The series which, perhaps, tend to make the library unique are the French *Thèses*, also the reports of English Medical Officers of Health, both of which are being perpetuated; in each case the number received up to the present has exceeded that of any previous year. Members are also reminded that the library now possesses complete sets of some of the best indices to the medical literature of the world, including the "Index Medicus, 1879 to 1899," the "Index Catalogue of the Library of the Surgeon-General" at Washington, comprising sixteen volumes of about 1,000 pages each, and four volumes of the second series to the letter E.

CONTAGIOUS DISEASES.

In May last a memorial was addressed to the Premier on behalf of the Council of the Association asking for the appointment of a Departmental Committee to inquire into the prevalence of venereal disease among the civil population of this country. The reply from Lord Salisbury was that the memorial would receive consideration on the part of Her Majesty's Government. The Committee appointed by the Council to consider the question of contagious diseases has, in view of the pressure on the Government caused by the South African war, considered it advisable to suspend further action for the time being. In the meantime, the then President of Council (Dr. Saundby) was appointed a delegate and representative of the Association, and attended the International Congress on Syphilis in Brussels. Dr. Saundby subsequently reported to the Council that he had attended the International Conference on the Prophylaxis of Syphilis and Venereal

Diseases which was held at Brussels on September 4th and four following days, and had proposed on behalf of the British Medical Association the following resolutions, which were adopted:

That the Conference requests the various Governments to constitute in each country a commission charged:

(*a*) To determine the frequency of venereal diseases among the civil population apart from temporary variations.

(*b*) To inquire into the institutions actually in existence for the treatment of venereal diseases, the distribution of hospitals, the number of beds available in different places, and to propose the most efficacious measures for the treatment of these diseases.

(*c*) To collect opinions as to the best means for preventing and limiting the spread of venereal diseases among the civil population, and to formulate conclusions upon this subject.

Other resolutions were adopted by the Conference and have appeared in the JOURNAL.

REVACCINATION.

In March last all the Home Branches of the Association were communicated with upon the subject of revaccination contained in a letter drawn up by Dr. J. C. McVail, asking the Branches to exercise their influence with local members of Parliament and others, to have the subject pressed upon the attention of the Government.

This action was taken by the Council in order to carry out the resolution of last annual meeting adopting the annual reports of the Council and Parliamentary Bills Committee, though the Council is aware that, under present circumstances, Parliament can hardly be expected to deal with the matter.

SMALL-POX AND VACCINATION.

The pamphlets and leaflets on "Facts about Small-pox and Vaccination" have had much success, and large numbers have been sold. Recently the Public Health Department of Victoria applied for permission to print 5,000 copies for distribution to the Municipal Councils throughout the Colony. This permission was at once granted upon the understanding that it was described as the pamphlet of the British Medical Association.

TUBERCULOSIS CONGRESS.

Arrangements having been made for holding a British Congress on the Prevention of Tuberculosis in 1901, the Association was asked to appoint delegates. The President for the time being, the President of Council, Dr. James Barr, Dr. Handford, and Dr. Markham Skerritt were appointed. A grant of £100 has also been made towards the expenses of the Congress.

MIDWIVES BILL.

A Bill on the Registration of Midwives having been read a second time in the House of Commons, a special meeting of the Council was held to consider and frame amendments to the Bill in order to place it more in accord with the draft Bill drawn by the Parliamentary Bills Committee. Subsequently the Duke of Devonshire and Sir John Gorst were asked to receive a deputation on the subject, but they declined to do so, mainly upon the point that the Bill was not a Government measure. Sir Robert Finlay, Q.C., M.P., the then Solicitor-General, consented to receive a deputation, and the President of Council, Dr. Woodcock and Dr. Helme, of Manchester, Mr. Victor Horsley, F.R.S., and Dr. Dawson Williams, of London, Mr. Langley Browne of West Bromwich, and Mr. C. H. W. Parkinson of Wimborne Minster, attended. The deputation was introduced by Dr. Farquharson, M.P., and was most courteously received and heard by Sir Robert Finlay, who asked that copies of the Association Bill, and of the proposed amendments to the Bill, then in the report stage in the House of Commons, should be sent to him with the reasons in their favour.

The Council forwarded a resolution in February last to the General Medical Council, namely:

That in view of the great advance in the science and art of midwifery and diseases of women during the last few years, this Council urges the General Medical Council to insist that wherever possible medical students should learn practical midwifery in a lying-in hospital, or in the extern midwifery department of a general hospital, and failing this, that every case of labour attended by them shall be under the supervision of a duly qualified practitioner.

To this the General Medical Council has replied by forwarding the following resolution, which they passed upon the consideration of the foregoing resolution:

That the attention of the Council of the British Medical Association be called to the existing recommendation of the Medical Council of June 9th, 1896, in regard to the teaching of midwifery to medical students, from which it will be seen that the wishes expressed in the above resolution of January 7th, 1900, have been anticipated.

Resolution of the General Medical Council of June 9th, 1896, above referred to:

That in regard to the midwifery practice to be required of candidates for licences to practise, it is desirable that the alternative to three months' attendance on the indoor practice of a lying-in hospital be in future defined as follows:

"Or to have been present at not less than twenty labours, at least five of which shall have been conducted throughout under the direct supervision of a registered practitioner."

STUDY OF TROPICAL DISEASES.

An application was received from the Liverpool School of Tropical Diseases asking the Council to contribute towards equipping a scientific expedition to Sierra Leone for the purpose of investigating the causes of malaria and other tropical diseases. A sum of £100 was granted to Major Ronald Ross, the lecturer on tropical diseases to the Liverpool School, who superintended the expedition, which resulted in important additions to our knowledge of the relation of the malarial parasite to a particular species of mosquito (*Anopheles*).

STEWART PRIZE.

The Stewart Prize, which was founded by the late Dr. Alexander Patrick Stewart, "for the recognition of important work already done, or of researches instituted and promising good results regarding the origin, spread, and prevention of epidemic disease, with a view to encourage the continuance of the same," was last awarded to Surgeon Frederick James Abercrombie Dalton, R.N., for his researches into the etiology of beri-beri.

FEES TO MEDICAL WITNESSES.

The Joint Committee of the British Medical Association and the Police Surgeons' Association memorialised the Home Secretary, Sir Matthew White Ridley, Bart., on the subject of the inadequacy of the fees allowed to medical witnesses in courts of law. To this application a curt reply was received to the effect that the Home Secretary did not see his way to accede to the request, nor did he think any useful purpose would be served by receiving a deputation. The Association has received such consideration and courtesy from the Premier and other Ministers, especially from the Secretary for the Colonies, that it is difficult to believe that the matter had the personal consideration of Sir Matthew White Ridley. A letter from the Chairman of the Committee, Mr. Andrew Clark, enclosing a copy of the memorial, was subsequently published in the *Times* and the principal London and provincial papers. The fees asked for in the memorial were £2 2s. a day and first-class railway fares.

DEPARTMENTAL COMMITTEE ON THE USE OF PRESERVATIVES IN FOODS.

A communication from the Local Government Board was received, asking whether the Association would desire to nominate two witnesses to tender evidence before the Departmental Committee to inquire into the use of preservatives and colouring matters in food. Dr. Spottiswoode Cameron and Dr. H. Handford were appointed and gave evidence on behalf of the Association.

COVENTRY PROVIDENT DISPENSARY.

It will be remembered that at the last annual meeting the Council was requested to ascertain whether any of the present medical officers of the Coventry Provident Dispensary were members of the Association, and if so that they should be called upon to explain why they still continued to give their services to that institution. In their report these gentlemen claimed to have obtained several reforms in the last few years, and hoped to obtain more, and that, further, many of the statements made with regard to the institution were inaccurate.

The following resolution was passed:

Resolved: That the Council are glad that the medical officers of the Coventry Provident Dispensary are still endeavouring to get the rules altered, and strongly recommends them to continue their efforts to obtain a wage limit as expressed in their letter of October 8th.

NEW ARTICLES OF ASSOCIATION.

Certain difficulties and legal questions on the Articles of Association, as adopted when the Association was first incorporated in 1874, which articles had been mainly drawn on the

basis of the regulations of the unincorporated Association, having arisen, the Council consulted eminent counsel on the matter, and was advised to adopt amended regulations, as the Association had outgrown the old constitution. New regulations and articles were prepared by your Council and submitted to a special meeting of the Association held in London on July 18th, but the resolution was not carried by the requisite majority.

Inebriates Legislation Committee.

Sir Charles Cameron, Bart., M.D., M.P., has acted as Chairman of this Committee in the place of the late Dr. Norman Kerr. The Committee has drafted a Bill to amend the present Inebriates Acts, which Sir Charles Cameron trusts to introduce into the House of Commons next session.

General Practitioners and Ethical Committee.

The General Practitioners and Ethical Committee has held three meetings during the past year and has considered many subjects of a medico-ethical nature.

Special Committees.

The Medical Charities Committee has not been engaged in any active work during the past year, but recognising that there is still much work for it to accomplish, asks to be reappointed. Dr. Bridgwater has intimated that in the event of its reappointment he will be pleased to undertake the Chairmanship.

The Scientific Grants Committee has allowed £350 for scientific grants and £450 for research scholarships, though one of the research scholars has since resigned, and the Committee presents a report. In addition, £200 has been voted and given as a separate scholarship, and known as the Ernest Hart Memorial Scholarship. The total amount which has been spent in scientific research through this Committee since its institution in 1874 is £14,998, and this is independently of £1,550 granted to societies and bodies outside the Association.

The Anæsthetics Committee appointed by the Council of the British Medical Association in 1891 has now completed its labours, which have been exceedingly heavy. The report is very voluminous, and contains information upon the action of anæsthetics, together with valuable tables.

During the past year the Therapeutic Committee has continued its investigations connected with the pharmacological and therapeutic actions of Senecio Jacobœa.

The Railway Servants' and Mariners' Eyesight Committee has completed its useful work, and returned the grant made to it, as it does not propose to ask for re-election. It will be remembered that the Committee made an able report on the efficient control of railway servants' eyesight, which has been in very great request by the railway companies and other bodies.

Obituary.

Your Council regrets to have to report the deaths, among other members, of Surgeon-Major Robert Moir, Mr. John Terry, Dr. Patrick Jamieson, Mr. George Hewlett Bailey, Dr. James E. Graham, who was Vice-President of the Section of Medicine and Vice-President of the Section of Dermatology, 1897; Dr. Thomas Cargitt Nesham, the Secretary of the Section of Physiology, 1870; Mr. J. C. Whaley, Mr. J. Wright Baker, Mr. Walter Leaf, Brigade Surgeon-Lieutenant-Colonel Charles J. W. Meadows, Mr. Lauriston Winterbotham, Lieutenant Colonel John Joseph Greene, Major Frederick Thomas Skerrett, Dr. James Cuming, who was President of the Association in 1884 and gave the address in medicine in 1892; Dr. George Burn, Dr. Thomas Stainthorpe, Dr. John Duncan, who was President of the Surgical Section of the annual meeting held in Edinburgh in 1898: Deputy-Surgeon-General John Low Erskine, Mr. Henry John Rope, F.R.C.S., Mr. Samuel Punnett Budd, Surgeon-Major-General Lithgow, Mr. Robert D. Keighley, Dr. David Collingwood, Dr. Edgar Hogben, Mr. Joseph White, D.C.L., F.R.C.S., President of the Association at Nottingham in 1892: Deputy-Surgeon-General Charles Moore Jessop, M.B., Mr. William T. Clindening, the third President of the Adelaide and South Australian Branch; Dr. Edward Lawford, J.P., Mr. Thomas Iredale, Mr. John Wickham Barnes, F.R.C.S., who was formerly a member of the Parliamentary Bills Committee of the British Medical Association; Dr. John Thomas Arlidge, the well-known authority upon diseases of workmen, and the President of the Section of Public Medicine in 1878: Mr. Frederick H. Lewis, Dr. E. C. Palmer, Dr. William Menzies Hutton, Mr. H. C. Hopkins, Dr. Robert Blane Erskine, Dr. W. C. Arnison, who was President of the Section of Surgery in 1893; Mr. Frederick Morley, Dr. W. T. Nicholson, Mr. F. H. Walker, Dr. William J. de C. Wheeler, F.R.C.S.I., Mr. William Lewis Morgan, formerly Secretary of the Oxford Branch and at one time Representative of the Oxford Branch on the Council of the Association; Mr. Frederic William Skrimshire, Dr. Henry Hicks, F.R.S., Dr. Edward Hamilton, F.R.C.S.I., who was at one time President of the Dublin Branch, and gave the Address in Surgery at the Dublin meeting in 1887; Dr. Samuel Johnson, Dr. Thomas Jackson, Sir Richard Thorne Thorne, K.C.B., M.D., F.R.S., who was Vice-President of the Section of Public Medicine in 1887; Mr. Richard Henry Meade, F.R.C.S., J.P.; Dr. J. Ewan Brodie, Dr. Waring, who was a member of the Council of the South-Eastern Branch of the Association; Surgeon-General John Ogilvy, M.D., Sir James Paget, Bart., F.R.C.S., F.R.S., the President of the Section of Surgery in 1868 and 1874; Mr. Henry Thompson, at one time the President of the East York and North Lincoln Branch; Major Thomas Dorman, Dr. William Nealor Thursfield, Dr. T. Bonnici, Dr. Robert Robertson, Dr. George Elder, the Vice-President of the Section of Obstetric Medicine in 1892; Deputy-Surgeon-General David Cullen, Dr. Frederick William Lewis, Deputy-Inspector-General Robert Hay, Dr. Samuel Roberts Mason, Dr. John Gardner Dudley, Dr. T. W. Grimshaw, C.B., Registrar-General for Ireland, who was President of the Dublin Branch and President of the Section of Public Medicine in 1879, and who rendered valuable assistance as a member of the Council for many years: Dr. Henry Hannotte Vernon, President of the Lancashire and Cheshire Branch; Dr. Burger, Mr. Thomas S. Gimson, Sir William Miller, M.D., the Vice-President of the Section of Obstetric Medicine in 1884; Surgeon-Lieutenant-Colonel William Cameron Grant, M.B.; Sir Thomas Grainger Stewart, M.D., F.R.S.E., who was the President of the Association at the annual meeting held at Edinburgh in 1898; Dr. Francis Charlewood Turner, Dr. George A. Turner, Mr. Thomas Scattergood, President of the Section of Diseases of Children, 1889; Dr. George R. Cundell, J.P.; Mr. Bernard E. Brodhurst, F.R.C.S.; Dr. Thomas Purcell, Dr. David Millar King, Mr. J. W. H. Lavies, Dr. William Marcet, F.R.S.; Dr. George Mitchinson, Mr. J. W. Orr, Dr. A. Buist, Mr. E. H. Monk Senior, Dr. S. Hyde, Dr. Lawrence S. Mackenzie, Mr. James McAlister, Sir Andrew Douglas Maclagan, M.D., Sir William Overend Priestley, M.D., M.P., one of the late Presidents of the Metropolitan Counties Branch; Dr. John Patterson, Mr. R. Glasgow Patteson, Mr. John Richards, Dr. James Macull, Dr. John Underwood, Dr. George Bailey Silke, Mr. J. N. C. Davies-Colley, Dr. William Stewart, Dr. George Bird, Dr. George Apostoli, Dr. N. Tyacke, Mr. Webster Adams, Mr. A. O. Francis, Deputy-Surgeon-General William Center, Mr. James Grosvenor Mackinlay, F.R.C.S.Ed., Lieutenant-Colonel A. E. Hayes, D.S.O., Dr. A. J. Adair, Dr. Robert Irvine, Mr. Claude Clarke Claremont, Mr. Daniel Ainby, Mr. Richard Parker Jeffreys, M.R.C.S., Mr. G. E. Williamson, the President of the Section of Ophthalmology, 1893, and representative of the North of England Branch on the Council; Mr. G. Cordy Edwards, who was a great friend of the Association, and who took part in some of the earliest meetings of the East Anglian Branch; Dr. D. J. Leech, of Manchester, who for several years was a member of the Council of the Association, President of the Section of Pharmacology at the meeting in Montreal, and at one time Honorary Secretary to the Lancashire and Cheshire Branch; and Dr. Dennis C. Embleton.

Captain M. L. Hughes, R.A.M.C., killed in action on the Tugela River in the South African Campaign, was Secretary of the Section of Tropical Diseases in 1898.

Captain Robert H. E. G. Holt, R.A.M.C., was killed in the South African Campaign.

Dr. W. H. Chapman Grigg (for many years Secretary of the Metropolitan Counties Branch), the Vice-President of the Section of Obstetric Medicine, 1885, died of enteric fever at the Military Hospital, Wynberg.

Lieutenant A. W. Hall, of the Volunteer Medical Service Corps, died of enteric fever and pneumonia contracted while on service at the Military Hospital at Frere.

Major E. Wolfenden Grey, M.B., F.R.C.S.I., was killed near Ladysmith.

Major Charles Pope Walker, R.A.M.C., died from dysentery at Ladysmith.

Captain William Fleming Hopkins died of enteric fever at Rensburg.

Captain Henry Esmond Dowse, R.A.M.C., died of remittent fever at Bloemfontein.

Captain Rupert Fawssett died of dysentery at Bloemfontein.

Major Alfred Thomas Perry Marsh died from enteric fever at Deelfontein.

Major Walter Kiddle, M.D., was murdered by the Frontier tribes at Mongkaw, Upper Burmah, on February 9th, 1900.

Professor Thomas Jones, M.B., F.R.C.S., Senior Surgeon to the Welsh Hospital, South Africa, died of enteric fever at Springfontein.

J. Roberts Thomson, M.D., President of Council.

REPORT OF THE PARLIAMENTARY BILLS COMMITTEE.

The Parliamentary Bills Committee has had four meetings during the past year, and presents the following reports upon the various subjects:

Medical Acts Amendment Bill.

The Subcommittee appointed to consider the amendments of the Medical Acts is still carrying on its work.

Medical Officer of Health Tenure of Office and Superannuation Bill.

The peculiarly anomalous condition under which the position of medical officer of health in England and Wales outside the metropolitan area is held, and the consequent grave disabilities suffered by a large body of medical men, occupied the serious consideration of the Committee.

The appointment is made conjointly by the local sanitary authority and the Local Government Board—who pay half the salary of the post from Imperial taxation, and who strictly define its duties in the orders issued by them—for a definite period of one or more years, at the end of which it ceases. One of the parties to the contract alone—the local authority—may decline to reappoint, and the medical officer of health has no redress. It seemed to the Committee that the holder of an office, the exercise of which requires skilled knowledge of special character and demands independent obedience to the orders of the Local Government Board, that the sanitary well-being of the community may be adequately secured, should not be thus penalised. They, therefore, recommended the Council to take action in the matter, and by their direction the Committee caused a Bill to be drafted, which provides that the appointment of medical officer of health shall be a permanent one, dismissal from which may only take place with the consent of the other partner in the appointment, the Local Government Board. And, having regard to the fact that the salaries attached to the post do not admit for the most part of provision being made for old age or permanent disablement, they added to the Bill a scheme for enabling medical officers of health to provide a fund by deductions from their salaries, out of which superannuation allowances would be made.

The Committee is indebted to their Chairman (Dr. Farquharson) for introducing the Bill into the House of Commons, which was done on May 17th.

The Midwives Bill.

A Bill to secure the Better Training of Midwives and to regulate their practice was introduced into the House of Commons by Mr. Tatton Egerton and others on February 2nd, 1900, and read a second time on March 19th, when it was referred to the Standing Committee on Law.

A special meeting of the Council of the British Medical Association was held on March 21st, when, having regard to the position in which the Bill then was, a number of amendments were drafted and were taken charge of by Sir George Pilkington, M.P., and Mr. Lloyd-George, M.P., who were members of the Standing Committee on Law. In face of the strong opposition offered in the Committee these gentlemen were not successful in obtaining the acceptance of any of the more important amendments desired. The Council at its meeting on April 11th appointed a deputation which waited upon Sir Robert Finlay, then Solicitor-General, and the objections to the Bill, the amendments desired, and the reasons for them were very fully stated to Sir Robert Finlay by Dr. Woodcock, the Chairman of the Subcommittee, Dr. Helme, and Mr. Victor Horsley. At the request of Sir Robert Finlay a memorandum was subsequently forwarded to him setting out the objections to the Bill as amended by the Standing Committee on Law, and specifying the nature of the amendments desired. These amendments were put down by Dr. Farquharson, Sir George Pilkington, and Mr. Lloyd-George for the report stage of the Bill.

The points upon which the Council has particularly insisted are that a midwife should be prohibited under penalty from attending abnormal cases; that the practice of midwives should be brought under effective medical control by requiring that the local supervising authorities should consist of registered medical practitioners; that a midwife should be defined as a woman who undertakes for gain to attend women during natural labour and the lying-in period; that a certified midwife should not employ an uncertified substitute; that lying-in homes should be subject to inspection by County Councils; and that the Central Midwives Board should be made representative of the medical practitioners in different parts of the country. The Council also called attention to the great importance of retaining in the Bill the provision forbidding any woman habitually and for gain to attend any women in childbirth unless certified, and it was pointed out that the whole object of the Bill, which is stated to be to bring under control the attendance of women in childbirth by women other than registered medical practitioners, would otherwise be frustrated.

The Bill upon being brought up on the Report stage was talked out by Mr. Heywood Johnstone, and the question has therefore ceased for this session.

Fees to Medical Witnesses.

The Joint Committee appointed by our Association and the Police Surgeons' Association has held two meetings, at the first of which it was agreed that a Subcommittee, consisting of the Chairman (Mr. Andrew Clark) and Mr. Nelson Hardy, should draft a letter for insertion in the *Times* and several provincial papers, drawing attention to the subject. This letter appeared in the *Times* of October 20th, 1899, and was sent to the following provincial papers: *Birmingham Daily Gazette*, *Birmingham Daily Mail*, *Birmingham Post*, *Western Daily Press*, *Bristol Mercury*, *Leeds Mercury*, *Yorkshire Post*, *Liverpool Daily Courier*, *Liverpool Daily Post*, *Liverpool Mercury*, *Manchester Courier*, *Manchester Guardian*, *Newcastle Daily Chronicle*, *Newcastle Daily Journal*, *Newcastle Daily Leader*, *Mona's Herald*, Douglas, Isle of Man (in some of which it was published), and pointed out that, while a substantial grievance was acknowledged by the Home Office to exist in the inadequate payments made to medical witnesses in England, which does not exist in either Scotland or Ireland, the Home Office had not only taken no steps to remedy this injustice, but had refused to receive a deputation on the subject either from your Council or from the Police Surgeons' Association.

The South African war having for the time engrossed public attention to the exclusion of almost every other subject, the Joint Committee considered the time inappropriate for taking further steps, and they therefore suggest that they should be reappointed for another year.

Lunacy Bill.

A Subcommittee was appointed to confer with a Subcommittee of the Medico-Psychological Association on the Lunacy Bill. The Joint Committee reviewed the opinions formed by a similar body in 1899, and resolved to adhere to all the objections then raised, the following being the more important points:

1. The shortening from seven to four days of the period during which an urgency order is valid. This proposal, while it affords no security against alleged abuse, is certain to entail frequent and serious inconvenience, and possibly danger.

2. The omission to provide for a scheme of assured pensions

for the staff of public asylums. Such a certainty of pension in all other services of a public nature leads employees to enter them rather than that of the asylums, where, in addition, the work is hazardous and wearing.

The Joint Committee expressed its complete approval of the clause in the Bill which allows the Committees of Asylums to combine for the purpose of providing and carrying on pathological laboratories for use in common by contributing authorities.

The Joint Committee delegated authority to some of its members to seek a conference with Dr. Farquharson, M.P., with a view to adopting the best methods of forwarding its views. Dr. Farquharson was good enough to attend such conference, and undertook to move a clause to secure an adequate minimum of pension.

The Bill has been abandoned for this session.

Vaccination Subcommittee.

The Vaccination Subcommittee has had under consideration during the year the want of security of tenure of office by public vaccinators. They prepared a memorial on this subject, which was presented to and accepted by the Parliamentary Bills Committee and the Council, and was forwarded to the President of the Local Government Board. Only a formal acknowledgment has been received. The Subcommittee is of opinion that the matter should be pressed on the attention of the Board.

Local Government (Scotland) Act (1894) Amendment.

A Bill was prepared and presented by the Association in favour of amending the Local Government (Scotland) Act, 1894, enacting that medical officers shall be removable from office only by or with the consent of the Board, as under the Poor Law (Scotland) Act, 1845, medical officers of poorhouses cannot be removed from office without the consent of the Local Government Board (Scotland), while outdoor medical officers may be dismissed at short notice by their respective parish councils without reason assigned. This Bill, like many others, has had to be dropped this session.

J. Roberts Thomson, M.D., Chairman.

REPORT OF THE SCIENTIFIC GRANTS COMMITTEE.

The Scientific Grants Committee begs to report that during the past year 1899-1900 the sum of £1,000 allotted by the Council for the promotion of scientific investigation by means of scholarships and separate grants was distributed as follows:—

Three Scholarships,

(each of the value of £150 a year; tenable for two years) and one Ernest Hart Memorial Scholarship of the value of £200 a year (tenable for two years).

No.	Scholar's Name.	Subject of Investigation.
1.	J. L. Bunch, M.D.	Investigation on the Innervation of the Intestine.
2.	G. Elliot Smith, M.D. (since resigned).	
3.	J. S. Macdonald, L.R.C.P.	Electrical Phenomena in Arteries in relation to Blood Pressure.
4.	John Eyre, M.D. ... ... (Ernest Hart Memorial Scholar.)	Investigation into the Bacteriological Flora of Normal Milk and of Retail Milk, and into the conveyance of Pathogenic Organisms by this Article of Food.

	£	s.	d.
Barratt, J. O. Wakelin, M.D., Pathological Laboratory, West Riding Asylum, Wakefield.—An experimental investigation into phloridzin diabetes, with the object of studying still further the alterations which this glucoside produces in the amount of sugar in the blood, and of ascertaining whether the glycosuria is really due to changes in the kidney differing from those occurring in ordinary forms of diabetes from other causes, and whether in reality the amount of sugar in the blood is increased, since it is now supposed that in phloridzin diabetes there is no such increase of glucose in the blood	10	0	0
Brought forward	10	0	0
Boyd, F. D., M.D., 6, Atholl Place, Edinburgh.—The investigations of the potash, soda, and magnesia metabolism and excretion in nephritis (in dogs), with its bearing on the question of uræmia	10	0	0
Bradshaw, Thos R., M.D., Rodney Street, Liverpool.—To investigate the chemical and other characters of the proteids in the urine, more especially of those present in myelopathic albumosuria	5	0	0
Chipman, Walter W., F.R.C.S.Edin., 37, Castle Terrace, Edinburgh.—The placenta of the rabbit—the first appearance in it of the following: Glycogen, iron salts, etc.; continued transference of such materials, if it occur, through the placenta, so bearing upon the nutrition of the fœtus	5	0	0
Clarkson, Arthur, M.B., 22, Polwarth Crescent, Edinburgh.—Investigation into the feasibility of tendon and nerve grafting generally, with special reference to the introduction and suture in position of a piece of the tissue to take the place of a loss of continuity (1) when the new piece is entirely withdrawn from its own circulation before introduction; (2) when for some little time (till primary union is started) it remains in connection with its own circulation. The experiments would be on dogs or other suitable animals	5	0	0
Collier, James Stansfield, M.D., National Hospital, Queen Square, W.C.—(1) The effect of experimental lesions of the central nervous system in monkeys upon the superficial and deep reflexes. (This investigation has been commenced and four experiments performed with important results). (2) The connections of the hypoglossal nucleus in monkeys, dogs, and cats	10	0	0
Corlette, C. E., M.D., Laboratory of Pathological Chemistry, University College, London.—On secretion and excretion in the intestine. An effort to determine whether the products formed in and by the intestine represent to any extent a true vital excretion, the result of general metabolism, or whether they are otherwise to be accounted for. The question bears on the nature and formation of fæces, and incidentally on inferences derived from their analysis, etc.	20	0	0
Dodgson, R. W., M.D., St. Mary's Hospital, W.—For prosecuting a research on the determination of the amount and distribution of chloroform in the body after anæsthesia ...	20	0	0
Goadby, Kenneth W., L.D.S., Bacteriological Laboratory, Guy's Hospital, S.E.—Etiology and especially bacteriology of pyorrhœa alveolaris	10	0	0
Goodrody, Francis W., M.D.—Pathological Chemical Department, University College, London. —To investigate the changes in the blood after removal of the kidneys, or after ligature of both ureters, especially as regards hæmoglobin, corpuscles, leucocytes, specific gravity, as well as the alterations in the proteids, salts, and nitrogenous constituents. Also what changes are produced under the same conditions in the composition of the contents of the alimentary canal. To increase the knowledge of the functions of the kidneys, and possibly to throw some light on the question of uræmia	30	0	0
Harley, Vaughan, M.D., 25, Harley Street, London, W.—Influence of different diets on gastric secretion and motility. The more scientific treatment of dyspepsia	20	0	0
Harman, N. Bishop, B.A., M.B., St. John's College, Cambridge.—An examination into the outflow of visceral nerves in man. Published: (1) Lumbar rami communicantes. (2) Pelvic splanchnics. (3) Cervico-thoracic rami	4	0	0
Hutchison, R., M.D., London Hospital Medical College, Mile End, E.—Chemistry of red bone marrow and its influence on blood formation	5	0	0
Leney, Lydia, M.D., 93, Gower Street, W.C.—The value of subcutaneous feeding. A research to investigate how substances such as fat, proteid, or carbohydrates can be used when given either (1) when subcutaneously injected; (2) when intravenously injected; (3) when intraperitoneally injected. The substances will be administered to see if there is any sparing of the proteid or fat metabolism which can be demonstrated by this method	10	0	0
Levy, Alfred G., M.D., 124, Barons Court Road, West Kensington, W.—The motor cerebral cortex and other points of the motor tract of the central nervous system to be electrically stimulated until fatigue sets in. The outgoing nerve current to be recorded through the medium of an unfatigued muscle. To measure and compare the resulting curves	25	0	0
Manners-Smith, Thomas, M.B., 5, Surrey Terrace, Longsight, Manchester.—Morphology of mammalian arterial systems ...	5	0	0
Monsarrat, Keith, M.B., 77, Mount Pleasant, Liverpool.—Investigation into the presence of organisms in carcinoma, and the results of their inoculation into animals, including dogs	10	0	0
Pembrey, M. S., M.D., Physiological Laboratory, Charing Cross Hospital Medical School.—Further research upon Cheyne-Stokes respiration in animals and man, and further experiments upon the regulation of temperature in man and animals	15	0	0
Poynton, Frederick John, M.D., 8, Queen Anne Street, Cavendish Square.—For a research into the action of toxins upon cardiac muscle	5	0	0
Ransome, Arthur, M.D., F.R.S., etc., Sunnyhurst, Bournemouth.—In collaboration with Mr. Foulerton, Bacteriologist to the Middlesex Hospital, and Lecturer on Public Health in the Medical School (who possesses the necessary licence), to determine the question whether the bacillus of tubercle can retain its virulence when grown upon certain common organic media, and also certain subsidiary questions ...	5	0	0
Total	£229	0	0

	£	s.	d.
Brought forward	229	0	0
REID, E. WAYMOUTH, M.B., F.R.S., University College, Dundee, N.B.—Continuation of researches of the last four years upon intestinal absorption	10	0	0
RUDOLPH, ROBERT DAWSON, M.D.Edin., 413, Sherbourne Street, Toronto, Canada.—The effects of atropine, hydrocyanic acid, and other drugs on the circulation and respiration. The aim is to possibly find an antidote for chloloform especially ...	10	0	0
SHAW, CECIL E., M.D., 14, College Square E., Belfast.—Continuation of research on structure and functions of vocal cords ...	5	0	0
SHERRINGTON, CHARLES S., M.D., F.R.S., Physiological Laboratory, University College, Liverpool.—To examine in animals other deep reflexes than the knee-jerk, especially in regard to their time relations, in order to judge whether they are really of the same nature as the knee-jerk	10	0	0
STARLING, E. H., M.D., F.R.S., 8, Park Square W., Regent's Park, W.—Innervation and contraction of large intestine in mammals. Movements and innervation of muscular tubes (visceral) in various types of vertebrates	20	0	0
STODDART, W. H. B., M.D., Bethlem Royal Hospital, London, S.E.—The influence of the cortex cerebri on the movements of the iris (continued)	5	0	0
TENNANT, JOHN, M.B., 2, Claremont Street, University Road, Belfast.—Bacteriological investigation. Attempt to clear up the significance of secondary serum reactions in typhoid fever (in second series of cases these have been found in 100 per cent.) and the variability of the reactions following inoculations of animals with a given microbe	15	0	0
WARRINGTON, W. B., M.D., 82, Rodney Street, Liverpool.—(1) General investigation of neurological subjects from material of necropsy room; (2) further investigations on the relation between structure of nerve cells and their function, and on the connections existing between fibres and cells. The work to be a continuation of that already done	10	0	0
WASHBOURN, JOHN W., M.D., 6, Cavendish Place, London, W.—Further investigation of infective sarcomata in dogs ...	10	0	0
WATSON, JAMES, M.B., 118, Goldsmith Street, Nottingham.—The blood in arthritis deformans, especially in the cachetic stage. Its histological characters—the estimation of the corpuscles (red and white), and the proportion of oxyphil and basophil leucocytes. The object being (1) to determine whether there is anæmia, and of what nature it is; (2) whether there is other abnormal blood conditions	5	0	0
WHITE, ARTHUR H., L.R.C.P.I., Royal College of Surgeons, Dublin.—Research into the regeneration of the cellular and other constituents of the blood after hæmorrhage, with especial reference to the parts played in such regeneration by hæmopoietic organs	16	0	0
YOUNG, ROBERT ARTHUR, M.D., 1, Delamere Terrace, Paddington, W.—To investigate the action of the bile and the bile salts on the circulatory system	5	0	0
Total ...	£350	0	0

Of the foregoing grants the following sums have been returned as unused:

Dr. F. Goodbody	30	0	0
Mr. T. Manners-Smith	5	0	0
Dr. F. J. Poynton	5	0	0
Dr. A. Ransome	5	0	0
Dr. W. H. B. Stoddart	5	0	0
Mr. A. H. White	16	0	0
Dr. R. A. Young	5	0	0
Dr. R. W. Dodgson (promised) ...	£13	0	0
Total ...	£71	0	0

NOTES RESPECTING RETURNED GRANTS.

Dr. F. GOODBODY regrets extremely that owing to pressure of other work he has been unable to commence the research up to the present.

Mr. T. MANNERS-SMITH returned his grant soon after its receipt in the autumn of 1899, without comment.

Dr. F. J. POYNTON has returned his grant without any reference to his not carrying out his research.

Dr. A. RANSOME (with Mr. A. G. R. FOULERTON) has returned grant, as it has proved quite inadequate for the extensive research in which they find themselves engaged, and the results of which may perhaps be better bestowed elsewhere.

Dr. W. H. B. STODDART regrets he has not had time to continue his research.

Dr. A. H. WHITE only found time to commence his research a few weeks ago, and as animals must be kept under observation for five to eight weeks before full results can be obtained, he is quite unable to furnish the required report to the Scientific Grants Committee. Under the circumstances he has returned the amount granted, and applied for a re-grant for this year.

Dr. R. A. YOUNG has been unable to make any progress with his research owing to the pressure of other work.

MISCELLANEOUS NOTES.

Dr. J. W. WASHBOURN, Dr. F. D. BOYD, Dr. N. BISHOP HARMAN, and Dr. R. W. DODGSON, are engaged in the war in South Africa

Dr. ARTHUR CLARKSON has gone away and his address is unknown.

Mr. W. W. CHIPMAN has gone to Canada and his address is also unknown.

The Scientific Grants Committee has received the following interim reports from the investigators to whom grants were made according to the foregoing lists.

The reports are grouped together under the following arrangement:

I. PHYSIOLOGICAL AND PATHOLOGICAL INVESTIGATIONS.
- (*a*) Nervous System.
- (*b*) Alimentary Canal.
- (*c*) General and Special Metabolism.
- (*d*) Respiratory System.
- (*e*) Vascular System.
- (*f*) Anatomy.
- (*g*) General Physiology.

II. BACTERIOLOGICAL INVESTIGATIONS.

III. THERAPEUTICAL INVESTIGATIONS.

I. (*a*) NERVOUS SYSTEM.

Dr. J. L. BUNCH (Research Scholar) has carried out an investigation on the Vasomotor Nerves of the Intestine, and also on the Innervation of the Longitudinal Coat of the Intestine, the results of both investigations being published in the *Journal of Physiology*. The vessels of the small intestines are found to be supplied both by vaso-constrictor and vaso-dilator fibres, which reach the intestine chiefly, if not entirely, by the splanchnic nerves. Stimulation of the peripheral end of the cut splanchnic causes vaso-constriction of the intestinal area, which is followed by more or less well-defined dilatation. When excited by weak and slowly-repeated stimuli, dilatation only may be produced. The splanchnic, therefore, contains both vaso-constrictor and vaso-dilator fibres for the small intestine, the vaso-constrictor fibres being probably the more numerous. Stimulation of the peripheral end of the cut vagus, whether in the cut thorax without atropine, or in the neck after the administration of small doses of atropine, causes no vasomotor effect on the vessels of the small intestine. This is true for the dog, cat, and rabbit. Vasomotor fibres for the small intestine of the dog leave the spinal cord by the anterior roots of the second to the sixteenth post-cervical nerves. The higher roots contain more dilator, the lower more constrictor fibres. The vasomotor fibres passing to the small intestine have a cell station between the ganglia of the sympathetic chain and the mesenteric nerves. The splanchnic nerves have been previously shown by the author to contain both motor and inhibitory fibres for the circular coat of the intestine, and this is also the case for the longitudinal coat. The effects of vagus stimulation were recorded graphically after exposing the nerves in the thorax as they lie on the œsophagus. In a few cases the nerves were stimulated in the neck, both before and after the administration of atropine. When both splanchnics had been previously divided stimulation of the peripheral end of either vagus in the thorax with a strong current produced an effect on the longitudinal coat very similar to that observed in the case of the circular coat, a preliminary inhibition being followed by well-marked augmentation. This is best seen after repeated stimulations. Some experiments were performed in order to determine how far previous stimulation of one nerve affected the results which were normally obtained on stimulation of another. It was found that such stimulation affected the latent period, but not the character of the contraction.

Dr. J. S. COLLIER has operated on six monkeys and eleven cats. Results: (1) Extirpation of the foot centre in the cerebral hemisphere produces total abolition of the natural plantar reflex on the opposite side, and this loss is permanent (nine months and six months). (2) If after such extirpation the spinal cord be hemisected on the side opposite to the cerebral lesion the plantar reflex returns, but in a totally different form. (3) When the cord is totally transected the normal plantar reflex is lost for so long as it has been possible to keep the animals alive, whereas the knee-jerk is sometimes lost and sometimes retained in monkeys and always retained in cats. (4) When the cord in either animal is totally transected it would appear that a slow change of deterioration occurs all through the distal segment, and is accompanied by

marked microscopic changes in the cells of Clarke's column, marked degeneration in the muscles with lowering of faradic excitability, and some degeneration of the peripheral nerves (he proposes to fully investigate this "isolation alteration.") Conclusions: It is probable that the normal superficial reflexes depend upon the integrity of the pyramidal system for their production, and that the knee-jerk and other deep reflexes in man and the higher apes depend for their production upon the long path efferent fibres of the cord.

Dr. A. G. Levy's research was originally instituted to investigate more thoroughly the phenomenon of cortical fatigue through stimulation of the cerebral cortex, as originally observed by F. Franck and Pitres. The fatigue of nerve centres being a matter of such considerable interest he was led to further extend these researches, for purposes of comparison, to stimulations of other points of the motor tract, more especially considering the corona radiata and the lateral columns of the spinal cord. The method of registering the motor nervous impulse was the employment of muscle contraction as an index, in all cases the anterior crural muscular group being used. The experiments were performed mostly upon cats under morphine narcosis. A consideration of the whole series of experiments points to a preponderance of evidence in favour of the graphic curves registered on a moving surface as a result of continuous stimulation of the motor cortex being indications of a true fatigue of the motor cells, uncomplicated by muscle fatigue or by inhibitory influences. These curves show marked variations with increasing strengths of stimulations, not only the height of the contractions increasing, and hence the area of the curve, but generally also the duration, further increasing the area. It is thus evident that the cortex cells are fatigued according to the special stimulation employed. Inhibitory influences are frequently induced and as such are readily recognised when the stimulation is raised beyond a somewhat uncertain limit of strength. In view of the fact that the cortical centres are somewhat diffusely distributed, contain association fibres, and are physically amenable to the influence of surface diffusion of the electric current, these observations cannot be considered as unreservedly applying to the fatigue of nerve cell tissue in general. When stimulating the fibres of the corona radiata these disabilities are favourably modified, and the result may be regarded as a discharge from a more compact spinal centre, correlated with the cortical cells, and which is excited to discharge in a more physiological fashion, that is, through its afferent nerve fibres. Although the curves resulting sometimes strictly conform to those of the cortex, yet equally frequently whilst mild stimulations produce prolonged curves of low intensity of contraction, stronger stimulation results in curves of shorter duration and higher intensity, the total area in the latter case being actually diminished. Were the high and low tension of curves of equal area these experiments might be taken as supporting a theory of fatigue produced by the complete discharge of a centre of definite dynamic capacity, whatever the degree of excitation acting upon it. Even under these circumstances such a view is not untenable, for the disabilities of muscular contraction as an agent for recording degrees of nerve impulse must be taken into consideration. However, these results are not constant, and the complication of inhibitory influences cannot be excluded without a more carefully graduated series of experimental stimulations than he has hitherto been able to employ. There is considerable evidence that the total energy evoked by stimulation of the corona exceeds that obtainable from the cortex, but not so greatly that the fatigue of the lower centre can be excluded from influencing the cortex curves. The fatigue of the anterior cornua of the spinal cord was investigated by means of stimulation applied to a lateral column at about the mid-dorsal region, the cord being divided at a higher level. The experiments were controlled by stimulation applied to the motor nerve exposed in its course through the psoas muscle. The amount of energy evoked from stimulation of the lateral column is very large, and the process of fatigue is a very slow one, in marked contrast to the comparatively rapid progress of fatigue in the case of the cortex. Cord fatigue is, however, antecedent in incidence to the fatigue of muscle when excited through its motor nerve. Further, muscle when thus fatigued is inexcitable to impulses from the motor cells of the cord, thus discountenancing Mosso's assertion that voluntary impulse is potent to excite fatigued muscle to contract when faradic nerve stimulation fails. The spinal cord recovers rapidly after fatigue, but it is difficult to ascertain how complete this recovery may be, owing to the complication of fatigue of recording muscle. After being fatigued by a mild stimulation, the cord readily reacts to one somewhat stronger; and thus it is seen that spinal fatigue presents some analogy to that of the cortex, in that it is conditioned by the strength of the excitation, and is not necessarily equivalent to dynamic exhaustion.

Professor C. S. Sherrington, F.R.S., begs to report regarding the researches he has been able by the help of the grant generously allowed by the Committee to prosecute as follows: The researches carried on have dealt concurrently with four themes. (1) The investigation of spinal vasomotor centres; (2) spinal visceral reflexes; (3) the physiological mechanism of emotion; (4) paths of conduction in the spinal cord. (1) The existence of vasomotor centres in the spinal cord subsidiary to the great bulbar vasomotor centre has been postulated on the ground of the rise of blood pressure that ensues on the exhibition of strychnine after spinal transection close behind the bulb. The research now carried out confirms this supposition and proves that without the exhibition of any convulsant drug it is possible to demonstrate spinal vasomotor centres of great reflex potency. It also shows that the general arterial pressure may be well maintained after the whole system of vasomotor nerves has been cut from the bulbar vasomotor centre altogether. It also shows that chloroform, if pushed, paralyses the spinal vasomotor centres just as it does the bulbar. (2) Experimental evidence of the afferent channels of the visceral vasal centres has long been wanting. The research now undertaken shows that if stimuli approximating in character to those occurring under disease be employed the existence of afferent channels is easily proved, violent vasomotor reactions resulting. The viscera dealt with thus at present have been the bladder, ureter, and liver. (3) A current theory of wide acceptance regarding the production of the "animal emotions," for example, anger, fear, disgust, affection, etc., is that of William James, of Harvard, and Carl Large, of Copenhagen. The theory attributes the genesis of emotion to certain visceral and vascular reflexes excited by peculiar mental perceptions. So far there has been no attempt to put this theory to the touchstone of experiment. In the research undertaken dogs were deprived of all vascular and visceral sensations and in large extent also of muscular and cutaneous sensation. Abundant evidence was obtained that they nevertheless displayed emotions of anger, fear, disgust, and affection in as lively a manner it appeared as they ever had shown previously. (4) An undescribed descending path is demonstrated in the spinal cord; also an ascending uncrossed path is shown to exist in greater measure than has been usually accepted. This section of work has been carried out in collaboration with Dr. E. E. Laslett, formerly Holt Fellow in Physiology in the University, Liverpool. The investigation (No. 3) has been communicated to the Royal Society. A copy of the communication in proof has been sent to the British Medical Journal. The other researches will be reported at the annual meeting of the Association at Ipswich.

Professor Starling, F.R.S., has during the past year (in conjunction with Mr. W. M. Baylis) continued the investigation of the movements and innervation of the intestine in various animals. The law of the intestine, according to which excitation at any one spot produces excitation above and inhibition below the excited spot, which was worked out only on the small intestine of the dog, has been found to hold good also in the case of the cat. In this animal, however, the local nervous mechanism of the gut is much less active (under experimental conditions) than is the case with the dog. In the rabbit, although the ascending excitation is well marked, the descending inhibition extends only a very short distance down the gut, and may apparently in many cases be absent. Owing to this fact one may see several descending waves of constriction slowly passing down a piece of intestine at the same time. The predominance of the excitatory reflex in rabbits seems to be connected with the greater length, and therefore necessary activity, of the gut in herbivora. In all animals investigated the splanchnic nerves act as purely inhibitory nerves, while the vagi convey the motor fibres to the walls of the intestine. The investigation of the large

intestine is not yet completed, and further study of the local nervous mechanism is necessary. With regard to the extrinsic innervation, the sympathetic nerve (colonic nerves) is again purely inhibitory to both layers of muscular fibre, while the pelvic visceral nerves (nervi erigentes) are purely motor to both sets of muscle fibres.

Dr. W. B. WARRINGTON has contributed his observations on the relation existing between the structure and function of nerve cells. By means of dividing the posterior roots in puppies, *extradurally*, he has confirmed and extended his previous observations showing the influence of the afferent tracts on motor nerve cells. He has also found that Clarke's cell column may be affected similarly by section of afferent roots. This group of cells also shows chromatolysis after division of the dorsal cerebellar tract of the spinal cord, and at a later stage entirely disappears. On the other hand, the large cells of the anterior cornua were not affected by division of the spinal cord, even though they had been cut off from the brain for over 150 days. (Shortly ready for publication.) Dr. Warrington has also published the following articles: (1) On the Ascending Tracts in the Human Spinal Cord (*Brain*, 1900) with Dr. Laslett. (2) The Anatomy of Myelopathic Albumosuria (*Med. Chir. Trans.* with Dr. Bradshaw). (3) Observations on the Course of the Optic Fibres, with Dr. Dutton (ready for publication).

I. (*b*) ALIMENTARY CANAL.

Dr. T. R. BRADSHAW has made an inquiry into the chemistry of the proteids occurring in the urine. Owing to several circumstances the inquiry is very far from being complete, but he hopes to continue it. The following are the conclusions to which his experiments have so far led him: (1) When albumin is present in solution in water in the proportion of one or two parts per thousand it is not coagulated by heat unless the solution has an acid reaction and also contains salts. (2) Albumin which has been coagulated by heat dissolves readily in a cold weak solution of caustic soda (1 per 1,000) without being changed into albuminate (alkali albumin). It is not thrown down by neutralising, and it can be coagulated again by heat in the presence of a slight excess of acid. Alkali albumin is only formed when the alkaline solution is warmed. (3) The biuret reaction gives no indication by which albumins and globulins can be distinguished from albumoses and peptones. If only a trace of copper sulphate be employed albumins give a rose colour indistinguishable from that met with in the case of albumoses and peptones.

Dr. VAUGHAN HARLEY: With regard to the experiments on the influence of different diets on gastric mobility it has been endeavoured to find out in what space of time, and in what manner, the pylorus acts when different diets are placed in the stomach. For this purpose dogs have been employed, in which a duodenal fistula has been established. It was found, as pointed out by Hirsch, von Mering, and Marbaix, that it was impossible to keep cannulas in a fistula thus established since it continually enlarged and the cannulas escaped. It has been found, so far, that a very small stimulus of the intestine is sufficient to cause a spasm of the pylorus, which retains the food in the stomach. In some cases this spasm is so great that it is easier for the dog to expel the gastric contents by the cardiac orifice than by the pyloric. The experiments so far, in consequence of various difficulties which have to be overcome, have not yielded sufficient regular results to allow him to form any opinion on the manner in which different foods influence the motility of the stomach, the research therefore is still in progress.

Dr. ROBERT HUTCHISON has now succeeded in isolating the principal proteids contained in bone marrow in a comparatively pure form, and is now proceeding to investigate (1) their chemical composition, (2) their influence in promoting blood formation. He hopes to be able to report some of the chief results of these researches at an early date.

Professor WAYMOUTH REID, F.R.S.: The work undertaken during the past winter has been related to the investigation of the absorption in the dog's intestine of chemically related substances of different physical diffusibility, with a view to deciding whether there is evidence of epithelial action, in cases where a simple physical explanation might suffice to explain the phenomena of absorption. The experiments are not complete, and at least another year's work will be required before any definite statement upon the point can be made.

I. (*c*) GENERAL AND SPECIAL METABOLISM.

Dr. J. O. WAKELIN BARRATT: These experiments were performed in conjunction with Professor Vaughan Harley in the Department of Pathological Chemistry, University College, London. The experiments were conducted to ascertain what effect the subcutaneous injection of phloridzin would have on the quantity of sugar in the blood of dogs in three classes of conditions: (1) When simple injection of phloridzin was practised, the urine being at the same time collected, it was found that within fifteen minutes of the injection there was no constant increase of sugar in the blood, but that after thirty minutes there was a rise, with a tendency to fall again at the end of one to two hours. Sugar appeared in the urine, however, during the first half hour, the maximum percentage corresponding to the minimum increase of sugar in the blood, as compared with the quantity found in samples of the normal blood taken immediately before injection. (2) A second series of experiments was performed after the removal of both kidneys. In these experiments the increase of sugar in the blood showed the same variations which were observed when elimination of sugar by the kidneys was occurring. (3) In the third series of experiments the ureters were ligatured, so that the kidneys remained *in situ*, and any internal secretion from them that might possibly influence the breaking-up of phloridzin would not, as in the second series, be interfered with. In these experiments it was found in one case that in fifteen minutes after the injection there was an increase in the quantity of sugar in the blood, while in another experiment such an increase did not occur. The greatest increase, however, was after the expiration of thirty minutes, as in the previous experiments. So far the results have not been sufficiently marked to admit of any conclusions being drawn as to the part played by the kidneys in this increase in the quantity of sugar in the blood which occurs after phloridzin has been subcutaneously injected.

Dr. C. E. CORLETTE: The research on the function of the small intestine in excretory metabolism, which was carried out in the Laboratory of Pathological Chemistry, University College, London, has now been brought to a close, and a valuable amount of information on many obscure points has been collected thereby. The research was carried out by forming loops of intestine closed at each end, so as to constitute an empty sac, and observing and analysing the material which had accumulated within them after the lapse of some weeks. It was found that a mass accumulated which could in some cases be very large indeed. This represented a normal physiological process, not an abnormal one, though there was reason to believe that the amount varied proportionally, to some extent with the amount of stimulation to which the mucous membrane was subjected. It seemed probable that in such loops there is a progressive accumulation of nucleinic substances. There was no evidence to show that the excretion of nitrogen from the bowel wall bore any such relation to general metabolism as occurs in the case of the kidneys, and the results of ordinary methods of measuring nitrogenous metabolism do not seem to be affected with serious fallacy, though the statement of the apparent level of nitrogenous equilibrium would appear to be to show results somewhat lower than the actual. Further, in the course of the research it was shown that a certain amount of the colouring matter of the fæces was manufactured and derived from the epithelium of the intestine, and had nothing to do with the bile. And it also appears certain that iron, which is excreted from the body chiefly by the bowel, is so excreted more or less largely through the medium of shed epithelial cells. There are also indications leading one to suspect that calcium phosphate may be excreted by the same means. It was also found that there is a local production of soaps in the intestine, quite apart from the formation of the same from ingested fats. The amount locally produced is not capable of estimation, but it must play a certain part, small perhaps, but hitherto unrecognised, in the absorption of fats. In addition to the above, some very interesting sidelights have been cast on questions concerning putrefaction in the intestine, and also on the pathology of intestinal obstruction.

Dr. LYDIA LENEY: Research into the value of subcutaneous feeding with a view to investigate how substances such as fat, proteid, and carbohydrate can be used when given by either of the following methods: (1) Subcutaneous injection; (2) intravenous injection; (3) intraperitoneal injection. In the first place dogs were put on a definite diet, so that their metabolism remained constant so far as the carbohydrates, the nitrogen, and the fats were concerned. During this period the urine was daily analysed for the nitrogen and urea, and the fæces for nitrogen fat, and water. During subsequent periods the animals, in addition to the diet, received a certain quantity of cod-liver oil, either by mouth or subcutaneously. It has been found that when a dog is given an insufficient diet and an addition of cod-liver oil is made, there is a sparing of the nitrogen metabolism when the oil is given by the mouth but apparently no such effect when subcutaneously injected. The results, however, so far, have not been finally verified, and the research is proceeding. The research was carried on in the Pathological Chemistry Laboratory, University College, London, by Dr. Leney under Professor Vaughan Harley.

I. (*d*) RESPIRATORY SYSTEM.

Dr. M. S. PEMBREY reports that he has continued his experiments upon the regulation of temperature and upon Cheyne-Stokes respiration and other forms of intermittent breathing. At the annual meeting of the Association last year a short paper on "Some Observations upon Cheyne-Stokes Respiration" was given and was published in the JOURNAL of September 30th, 1899. Further work upon the possible relation between periodic breathing and the condition of gases in the blood has been done, and preliminary communications have been made to the Physiological Society at its meetings at the London Hospital, 1899, and Charing Cross Hospital, 1900.

I. (*e*) VASCULAR SYSTEM.

Dr. R. D. RUDOLF: In this research the effects on the arterial blood pressure of different postures of the body were in the first place investigated. In the vertical position the carotid pressure usually falls considerably and stays down, although generally somewhat compensated for after a few seconds. In the vertical feet-up posture the pressure rises slightly. If a vaso-dilator be given, for example, chloroform, then the effect is much more marked. If in the vertical feet-down posture the spinal cord be divided at any level, even as low as opposite to the lowest dorsal vertebra, then a further fall of pressure occurs. Stimulation of the distal end of the cut cord produces a considerable rise in the carotid pressure, showing that the vasomotor tone of the vessels in parts of the body below the level of the splanchnic area have to do with the keeping up of the arterial pressure in the vertical posture. The effects of many drugs, including chloroform, ether, strychnine, nitrite of amyl, atropine, hydrocyanic acid, and chloretine, upon the blood pressure were studied, and will be fully published elsewhere. Briefly speaking, atropine proved to be the most powerful raiser of the pressure, and chloroform the most powerful depressor. Strychnine, even in doses amounting to one-fifth grain hypodermically, produced no immediate rise in pressure in the feet-down posture.

Dr. JAMES WATSON reports that his research into the blood condition of patients suffering from rheumatoid arthritis is under way, but is not yet sufficiently advanced for report to be of value.

I. (*f*) ANATOMY.

Dr. C. E. SHAW has continued his research work during the past year as circumstances permitted, and has obtained and examined microscopically a considerable number of larynges. He hopes to send the Committee a report early in the autumn with some observations on the muscles and glands in man and several animals.

I. (*g*) GENERAL PHYSIOLOGY.

Dr. J. S. MACDONALD (Research Scholar): The observations made form a continuation to some reported to the Association in 1899 (more fully to the British Association, 1899). An explanation was sought for the changes found to occur in the demarcation current of ligatured and divided vagi nerves (cardiac end), and found to be connected with and proportional to changes of blood pressure. The close anatomical relation of the nerve to large trunk vessels, and the discovery of somewhat similar changes in the blood vessels themselves, made it necessary to separate the two phenomena as far as possible. The attempt was therefore made to determine the causation of such changes in the blood vessels, and the degree to which they were likely to affect nerves prepared with circulation maintained. The inquiry has proceeded on the following lines: (*a*) Examination of the possible electromotive force developed either by local changes in the muscular wall of arteries, or by the friction of flow through capillary areas; (*b*) determination or the alteration of electrical resistance of arteries resulting from changes of blood pressure; (*c*) an extensive examination of the demarcation current and the electrical resistance of various excised nerves (vagus, phrenic, and sciatic of dog, cat, and rabbit, and the sciatic of frog). The research is incomplete, but the amount of experiment has been fairly extensive, carried out with good apparatus, and as far as possible accurate, and it is believed has already resulted in the accumulation of interesting data.

II. BACTERIOLOGICAL INVESTIGATIONS.

Dr. JOHN EYRE (Ernest Hart Memorial Research Scholar).—His investigations into the bacteriological flora of normal milk and of retail milk, and into the conveyance of pathogenic organisms by this article of food, are not yet in a sufficiently advanced state to enable him to put forward definite results, although they have yielded a vast mass of details. By the end of July he will have completed a full account of some portions of his work, which, although in the nature of a report upon his work, he proposes (with the permission of the Committee), to present to either the Section of State Medicine, or that of Pathology, at the annual meeting of the Association. In the present preliminary report he can only outline the general scope of the work he has been engaged upon during the past months. In the first place, he has been much hampered in his work, in consequence of the lack of a good centrifugal machine, one capable of being worked at a high rate of speed, and of dealing with fairly large quantities of milk, for he is distinctly of opinion that in order to obtain reliable results in the examination of samples for the presence of pathogenic organisms it is necessary to treat quantities of at least 50 c.cm. in each tube of the centrifugalising machine, and to maintain a speed of 2,500 to 3,000 revolutions per minute for some five to ten minutes. At the present moment there is not a machine capable of fulfilling these requirements upon the market, either in this country or in Germany. Consequently he has had to devote considerable time to this subject, with the result that the constructional difficulties have been overcome, final plans prepared, and the machine is now in course of building. In the meantime, he has directed his attention to the elaboration of technique as applied to the examination of milk and milk products, and to the minute study of the organisms commonly present therein, including their comparative rates of growth; to the investigation of the various media utilised in the "enumeration of organisms" present in any given sample, and the endeavour to prepare a "standard" medium for this purpose. He has also been experimenting with a view to shorten the time necessary for the determination of the presence of the tubercle bacillus in samples of milk by means of inoculations; and he is investigating the factors determining the vitality and virulence of various pathogenic organisms when introduced into milk or its products. In conclusion, he ventures to hope that the Committee will honour him by reappointing him to this important Scholarship, and that the results of his work will fully justify his election.

Mr. KENNETH W. GOADBY, L.D.S.: During his investigations into the etiology and pathology of pyorrhœa alveolaris 52 mouths have been examined as follows: Pyorrhœa alveolaris, 9; gingivitis marginalis, 20; general illness, 6; healthy, 17. At present it is impossible to report definitely as to the causal relation of any one organism; the investigation is, however, still proceeding. It is, moreover, difficult to obtain material, as though many cases of gingival inflammation present themselves, they are out of all proportion to the cases of true pyorrhœa. Under the circumstances a provisional report only can be made. From his investigations he has come to the following conclusions: (1) That gingivitis (or marginal inflammation of the gums) is a predisposing cause to pyorrhœa, and that it appears to stand midway between

pyorrhœa and a healthy condition of the gum margin. (2) That the process of pyorrhœa is due not to a single organism, but to a mixed infection. (3) That the vibrios already described do not exist in a normal mouth; that they are present in a fairly large number of cases of gingivitis; whilst in pyorrhœa they are often the chief organisms present. (4) That in mouths which give an acid reaction the number of organisms present is less than in alkaline conditions of the saliva. In each of the 52 cases all the organisms which would grow on the ordinary media were planted out and determined: The results obtained show: (1) That healthy gums adjoining the teeth are inhabited by at least one constant species—that is, streptococcus brevis. (2) That in fever the organisms present, though increased, were increased in numbers rather than in species, within certain limits. (3) That gingivitis occasionally followed febrile conditions. (4) That pyorrhœa occasionally followed the gingivitis remaining in convalescence from febrile disease (scarlet fever and enteric).

Dr. KEITH MONSARRAT has made a research on the presence of a parasite in carcinoma. *Culture:* Further experiments have confirmed the difficulty of isolating by culture methods the organism which has been described by himself and others. Nor has he been able to decide upon any method of culture medium of choice. Twenty-seven carcinomata mammæ have been systematically examined by incisions and scraping in the outlying parts, or by removing thin slices. In only one case has there been a positive result, excluding a growth of bacillus coli from a specimen examined twenty-four hours after removal and a few coccus growths which have been looked upon as contaminations. The one positive result was obtained on April 5th, and the organism isolated has the same general characters as the specimen obtained some sixteen months ago. The culture grew in glucose broth aërobically incubated at 37° C. In the course of the year more than thirty different media have been tried, including all those recommended by others who have been successful in obtaining cultures. Both successful results spoken of here were obtained on glucose media. He is of opinion that the freshness of the tumour and careful incubation are of first importance, and secondly that carbohydrate-containing media are the most suitable. In one case he obtained a definite growth in glucose broth, but the test tubes were inadvertently left out of the incubator for twenty-four hours and no subcultures could be obtained. In six cases he has examined the blood of patients cachectic from carcinoma with negative results, either by culture or by examining fresh specimens microscopically; the observation of Bra is thus still unconfirmed. *Histology:* All the tumours have been histologically examined, and in the outlying parts there has never been any difficulty in finding the "cancer bodies" in greater or lesser numbers by the method of staining these which he has advocated elsewhere, and by which the nuclei of the tissue cells are stained carmine, the plasma yellow with picric acid and the chromatin of the "cancer bodies." Violet is, unfortunately, not uniformly satisfactory, as although the latter are much more retentive of the methyl violet than the nuclei, yet when the process of decolorisation with clove oil has to be prolonged for one reason or another, the violet is discharged from many of the "cancer bodies" as well as from the nuclei. If care be taken, however, to thoroughly dry the sections before placing them in clove oil a good result can generally be obtained, and then the differentiation and definition leave nothing to be desired. Further details of structure and variety will be included in a paper shortly to be published; the range of variety is considerable both as to size and arrangement and subdivision of the protoplasm. *Experimental Work:* This has been limited by the fact that the specimen of the organism which was available a year ago gradually lost all virulence and became inert; a second culture has only recently been obtained. Attempt was made to sustain or increase the virulence of the first obtained specimen by successive passage through guinea-pigs in whom endotheliomatous new growth is produced by intraperitoneal injection; in spite of this the vitality of the organism was not sustained. In the case of dogs and in rabbits no results followed inoculation. The culture obtained on April 5th has up to the present been injected into guinea-pigs alone with results similar to those obtained with the earlier culture, that is to say, growths in the omentum and in mesenteric, retroperitoneal and mediastinal glands, also in liver, spleen and lungs. The research is to be continued.

Dr. JOHN TENNANT: Investigations have been pursued in these directions: (1) Observations have been made on serum reactions in typhoid fever in continuance of those published in the BRITISH MEDICAL JOURNAL of June 28th, 1898. We have carried out repeated serum tests on a limited number of cases of typhoid fever and found that the sera of them all acquired at some stage of the disease the property of agglutinating cultures of one or other variety of B. coli communis, and that this property may appear before, coincidentally with, or later than that of agglutinating the Eberth bacillus, and may disappear either before or after the latter. (2) Bacteriological investigation has been made of the intestinal flora of a large number of animals, chiefly dogs and rabbits. A paper on this subject is in preparation. (3) Observations have also been made on the reaction of bacilli of the coli-typhoid group with sera taken by Dr. Lorrain Smith from animals which he had experimentally inoculated with cultures of bacilli of their group. These observations are not yet complete.

III. THERAPEUTICAL INVESTIGATIONS.

Dr. R. W. DODGSON is engaged on special service in South Africa investigating the epidemics of typhoid amongst the troops, so therefore has been unable to complete his research on the dosage of chloroform. Up to the present he has made upwards of 300 experiments upon rats, and the results so far are most promising. He will continue his research on his return to England, when he will furnish his report to the Committee.

JOHN ROBERTS THOMSON, M.D.,
President of Council.

REPORT OF THE INEBRIATES LEGISLATION COMMITTEE.

THE Inebriates Legislation Committee has held three meetings during the past year. Sir Charles Cameron, Bart., M.D., M.P., has been elected Chairman in the place of the late Dr. Norman Kerr. The Committee has had a Bill drafted—namely, "An Act to amend the Inebriates Acts, 1879 to 1899, and to make further provision for the Control and Cure of Habitual Inebriates." The Bill is drawn principally upon the lines of Lord Herschell's Bill of 1895, and provides (1) for the committal of well-to-do inebriates to a retreat; (2) the reception and treatment of persons committed; (3) recommittal of inebriates; and (4) powers of licensee and officers of a retreat and arrest. The Bill, however, was drawn too late to be effectively introduced into the House of Commons this session, and it now awaits the sanction of the Council of the British Medical Association. The Committee has also approved of the provisions of the Inebriates Amendment (Scotland) Bill, and Sir Charles Cameron has presented a petition to the House of Commons in its favour. On the recommendation of the Committee, the Council appointed Dr. Fletcher Beach a member of the Committee, in the place of Dr. G. E. Shuttleworth, resigned.

CHARLES CAMERON, Chairman.

REPORT OF THE ANÆSTHETICS COMMITTEE.

DURING the past year the General Committee has met twice and the Analysis Subcommittee forty-one (41) times. The Report of the Analysis Subcommittee is now in the hands of the Council. It is hoped that the Council may agree to print it in order that it may be circulated amongst the members of the General Committee for their approval, criticism, or dissent, with a view to its ultimate publication in book form. The report contains an account in statistical form of the various data recorded of the cases which were reported to the Committee. It also gives abstracts of upwards of eight hundred (800) interesting cases. Conclusions based on the clinical evidence, which has been obtained where these are justifiable, are appended.

JONATHAN HUTCHINSON,
Chairman.
CHRISTOPHER CHILDS,
Honorary Secretary.
GEORGE ROWELL,
Honorary Assistant Secretary.

REPORT OF THE THERAPEUTIC COMMITTEE.

DURING the past year the Therapeutic Committee have continued their investigations connected with the pharmacological and therapeutic actions of Senecio Jacobœa. The physiological actions have been examined by Dr. Bunch, at the request of the Committee, and he has furnished the following abstract of his results, together with a detailed account of his experiments:

The entire plant contains two substance with distinct physiological actions, one of which causes a rise, the other a fall of general blood pressure. In moderate doses of the alcoholic extract the former substance produces its physiological effect, but if large doses be given this action is overpowered and the blood pressure falls, the vessels of the intestinal area dilating, and the muscular contractions of the intestinal walls being inhibited. The drug also causes some cardiac inhibition, due to its action on the nerve terminations in the heart.

Dr. Murrell has continued the therapeutic investigations with senecio, and Dr. C. D. F. Phillips has further prosecuted his researches upon the actions of hydrastis, and his results are nearly ready for publication.

Among the subjects at present engaging the attention of the Committee the following may be mentioned: Formic aldehyde, resorcin, and salicylic acid.

NESTOR TIRARD, M.D., F.R.C.P., Hon. Sec.

REPORT OF THE GENERAL PRACTITIONERS AND ETHICAL COMMITTEE.

YOUR Committee has held three meetings during the year, and has had some important matters under consideration. The question of making reprints of original articles from the JOURNAL for the purpose of advertising new pharmaceutical preparations (all articles which appear in the JOURNAL being copyright) was brought before the Council by an important firm of manufacturing chemists. The Committee passed the following resolution, which was adopted by the Council:

That as the publication of extracts from the JOURNAL may easily grow into an abuse, this Committee recommends that no article, or extract of an article, should be published without the positive sanction of the writer and the special permission of the Council.

This decision has been forwarded to many who have made use of abstracts from the JOURNAL for advertising purposes, and the Committee trusts that it will put a stop to this objectionable practice.

In accordance with a resolution of the last annual meeting, the medical staff of the Coventry Provident Dispensary were asked to explain why they continued to give their services to the institution. The reply from the medical staff was to the effect that:

(1) No canvassing or advertising has ever been allowed by the institution, and no single instance of it can be shown.

(2) Every half year, after the working expenses of the institution have been deducted, the whole of the remaining money is divided amongst the medical officers.

(3) There is no wage limit. The staff states that it has tried to induce the committee to make one, but has not at present succeeded, as the committee alleges it is impossible to apply a wage limit to a man who may earn £3 or £4 a week half the year and be out of work the other half.

The Council, upon the recommendation of this Committee, expressed its approval of the desire of the medical officers of the Coventry Provident Dispensary to get the rules altered, and strongly urged them to continue their efforts to obtain a wage limit.

A communication was received from a member complaining that paying out-patients were admitted at a London skin hospital on one day of the week. The Committee expressed the following opinion, which was adopted by the Council:

That in the opinion of the Council the admission of patients who are able to pay for advice and medicine as out-patients of any hospital is in every sense injurious to the best interests of the public and also to those of the profession.

The attention of the Committee having been drawn to the practice of the publication of portraits and biographical notices in non-medical newspapers, the following resolution was passed, namely

That the publication in non-medical newspapers of biographical notices of medical practitioners (accompanied or not by photographs) partaking more or less of the nature of advertisements is undesirable and improper, and this Committee condemns the practice.

A similar resolution was also passed upon the consideration of a pamphlet describing the virtues of certain mineral springs and accompanied by a portrait of a medical practitioner.

J. WARD COUSINS, M.D., Chairman.

REPORT OF THE DECAY OF TEETH COMMITTEE.

Statistics Referring to Dental Caries among Children.—The British Dental Association in 1890 appointed a Committee to conduct investigations as to the condition of the teeth of school children, and, since then, this Committee has issued several reports containing valuable statistics. The majority of schools examined were reformatories, orphanages, etc., but a fewer higher class schools are also included in the reports.

In order to arrive at a definite basis with regard to the relative conditions of the children's teeth, the following standard was adopted:—

By the term "sound dentition" is meant a condition in which no permanent tooth has been lost or attacked by caries at any time. By "fair" is meant a condition in which 1 to 4 permanent teeth have been lost or attacked by caries. By "bad" is meant 5 to 8 permanent teeth lost or carious, and by "very bad" is meant 8 or more permanent teeth lost or carious.

In the first report relative to 4,062 children (2,661 males, 1,401 females), ranging from 5 to 19 years of age, the number of teeth affected with caries amounted to 10,330 (males 7,032, females 3,298), thus showing an average of 261.2 unsound teeth for the males, and 235.3 for the females, for every hundred children. Of sound dentitions there were males 164, females 51, which is respectively a percentage of 11.1 and 10.3.

Of irregularities (undoubtedly a predisposing cause of caries) amenable to treatment there were 470 cases (male 307, females 163), representing a percentage of 11.5 and 11.6. Cases of crowding, which would be improved by extraction, were 3 per cent.

There were 22 cases of supernumerary teeth, and of honeycombed teeth 212 (males 118, females 94). Syphilitic teeth were remarked in 20 cases (10 males, 10 females). Of fistulæ, the result of alveolar abscess there were 82 cases, but doubtless many of this class remained untabulated.

With reference to the use of the toothbrush, in the majority of cases it was entirely neglected. Indeed, only a few schools possessed them, and in these they were seldom, if ever, used. Naturally under these conditions very few teeth were classified as clean, the majority being marked dirty or fairly clean, and some foul. In a few schools some children's teeth were described as being remarkably clean, the brush never having been used. This certainly shows that efficient mastication is an undoubted factor in keeping the mouth and teeth in a healthy condition. It is possible that the toughness of the meat supplied in these establishments might afford some explanation of the last noted results.

In the second report comment is made upon the condition of the teeth in the training ship *Exmouth*. Although everything as regards the general cleanliness and hygienic condition of the boys was satisfactory, yet in no one case did a boy possess a toothbrush. The state of the teeth was 13 per cent. clean, 60 per cent. fairly clean, 27 per cent. dirty, and only 3 in 131 were returned as foul. Again, the suggestion of a cause for such a moderately good condition is offered in the fact that "hard tack" in the shape of ship biscuits was included in the boys' diet. In this school a percentage of 24.6 of sound dentitions is reported, which is very high.

An examination of Hanwell Industrial School, where the children lead a country life in an extremely favourable situation, showed that, out of 903 cases (age 3 to 16)—

1,119 temporary teeth required filling,
745 ,, ,, ,, extracting,
1,222 permanent ,, ,, filling,
271 ,, ,, ,, extracting,

83 dentures required regulating, and there were only 137 sound dentitions, or a little over 13 per cent.

The percentage ratio of carious permanent teeth was shown to rise from 53 at 6 years, to 271 at 12 years, and to 300 at 14 years.

In the fifth report further examination bears out the statement that the teeth of the children of the well-to-do class seem more prone to decay than the teeth of poor children. It also brings out an indication of an important factor in the causation of caries. An analysis of the water supply of a school was given in the medical report, which stated that "The water was acid to litmus paper, the acidity amounting to 0.28 gr. per gallon, if estimated as sulphuric acid. The water contains lead, no doubt taken up by the acid present, the amount being 0.09 grain per gallon." The teeth of these children (poor), from the ages of 10 to 15 years, are shown to be as bad as those of the richer class, and much worse than the average of their own class.

In the seventh report it is stated that examinations have been made in Germany of 7,835 children, in Switzerland of 1,000, Hungary 1,000, and Sweden 1,617, and the results agree in the main with those of the British Dental Association Committee. In some cases, however, caries seem even more prevalent among them than among British children. An examination of 1,500 Stockholm children showed a percentage of 10.87 with sound dentition between the ages of 6 and 16. Foreign statistics also agree with the statement that the teeth of the poorer classes are less liable to caries than those of the better classes.

As regards nationality affecting the predisposition to caries, statistics are published in the first report, comparing the results of the examination of English and Scottish schools.

The number of eruptive (that is, in a state of transition between temporary and permanent) perfect dentures in the English schools examined was 72 out of 1,423 children, giving a percentage of 5. Of 438 Scottish children, 32 were possessed of eruptive perfect dentures, a percentage of 7.3.

Again, out of 1,125 English children over 11 years of age, 99 possessed perfect permanent dentures, and of 836 Scottish children 116, which respectively gives percentages of 8.8 and 13.8.

Mr. C. M. Cunningham examined 54 school children of the Island of Aran, on the west coast of Ireland; he found 33 possessed of perfect dentures, and 21 required treatment.

In order to compare the teeth of the island children with those of town-bred children, he examined 30 cases in the Short Strand National School in Belfast, ranging from 11 to 18 years of age. There he found only one perfect set. He remarked that the majority of the town children had some idea of cleaning their teeth, but the country children had none. But it is a very prevalent habit with the Aran children frequently to chew dulse, etc., gathered fresh from the seashore. To this he ascribed the comparative cleanliness of their teeth.

The diet of the island children consisted chiefly of tea and bread, only occasionally varied with milk, fish, and potatoes. The town children had the usual mixed diet.

This investigation, although limited in extent, seems to indicate an advantage possessed by country-bred children over those living in towns with regard to comparative immunity from dental caries.

Statistics referring to Dental Caries among Adults. — Few statistics are available as regards the condition of the teeth in adults.

Mr. George Cunningham, of Cambridge, in a paper read before the British Dental Association in 1887, gave statistics of an examination of the teeth of candidates at a London Recruiting Station.

These statistics showed that each individual, on the average, had lost or should lose 3.36 teeth, and had 4.09 carious teeth capable of preservation, making a total of 7.45 defective teeth per man; 64 per cent. required scaling; 70 per cent. suffered from inflamed and ulcerated gums; 27 per cent. had one or more chronic abscess in the mouth. A calculation of 8 per cent. was made, representing those beyond the limits of remedial treatment, and of those accepted as fit for service 98 per cent. would have benefited by treatment.

A report of the Army Medical Department for 1890 states that of 55,073 recruits examined 506 (or rather less than 1 per cent.) were rejected on account of "loss and decay of many teeth."

Dr. Chervin, in the *Revue Scientifique*, 1884, published a paper in which he drew attention to a very considerable number of rejections amongst conscripts for military service in Normandy. In the department of the Seine Inférieure 50 per cent of the conscripts were rejected. To account for this he found that, next to general debility, the most frequent cause of rejection was due to dental caries, which in the whole department accounted for 15 per cent.; but if the different cantons were taken separately, a very wide difference, ranging from 80 to 229 per 1,000, was discovered between them. Dr. Chervin concluded that this difference was due to race. The department is inhabited by two different races, one of short stature in the West, and the other taller in the East. Amongst the latter caries was very prevalent, but much less so in the West. The fact seems to have been overlooked that in Normandy an immense quantity of cider is consumed, which in England has the reputation of causing caries, and may therefore have been a predisposing cause. The late Dr. Magitot believed that he had established that the teeth of French cider-drinking populations were more generally carious than those of wine-drinking populations, but the division thus indicated corresponds somewhat with racial differences.

It has been frequently asserted that the teeth of highly civilised European races are to a very much greater extent affected by dental caries than were those of our ancestors, and that the same disadvantage exists, in comparison, with the peoples of savage tribes at the present time.

Ancient Races.

That these statements are only partially true may be gathered from the following information, which is a summary of the authoritative communication delivered by Mr. Mummery before the Odontological Society in 1869:

With regard to the condition of the teeth in Britain in early times, it was thought that dental caries was almost unknown. Mr. J. R. Mummery examined all available skulls in the museum of the Royal College of Surgeons of England, as well as those of many private collections, in all numbering 3,000. He tabulated 1,658 of them, as the authenticity of the remainder was doubtful, or too many teeth were absent from them.

The ancient British graves in Wiltshire best illustrate the conditions of the teeth of the early Britons.

They were a pastoral, not an agricultural people, and lived by the chase. Their customs appear to have been barbarous, not unlike those of the Australians and New Zealanders of to-day.

Of 68 Wiltshire skulls examined, one case of decay on the approximal surface, and one on the grinding surface were noted. There were 11 cases of abrasion of the teeth, but these only appeared in old people. There was no instance of irregularity of position of the teeth. Among 44 skulls of apparently the same race, inhabiting the northern part of England, there were 5 cases of approximal caries and 4 on the grinding surfaces, while the teeth were more worn down than those in the Wiltshire skulls.

He next considered a more civilised race in the agricultural districts near the seaport towns of Britain. Change in diet and habit appears to have weakened their teeth, as among 32 skulls 6 cases of approximal caries and 1 on the grinding surfaces, and 2 cases of irregularity were noted. Their food was more of a vegetable character.

Of 60 Yorkshire skulls examined, 26 exhibited disease: some of the teeth were much worn, and evidences of abscess were frequent.

On the decline of the Roman empire, the enervated British could not withstand the invasion of the Picts and Scots, and called in Teutonic allies (Jutes, Angles, and Saxons), who ultimately settled in England. They were of rude and barbarous habits, and their teeth showed evidence of a vigorous constitution. They and the Britons intermarried, and the race gradually became more civilised. Their range of food consisted of wheat, barley, and beans, cattle, sheep, and pigs, with beer and imported wine. The wealthy Saxon lived as well as the modern Englishman.

Seventy-six Anglo-Saxon skulls were examined; caries was found in 12 of these, and in 7 cases the molars had become much worn down. In most of these skulls the teeth and jaws were strong and well developed. The proportion of caries was

less than in the Roman and British skulls. This was probably due to their more simple mode of life.

It has been frequently asserted that the Romans had gold stoppings and artificial teeth, but Mr. Mummery had never seen any, although he examined all the ashes in the cinerary urns in the British Museum. Several eminent antiquaries, consulted on this point, have never seen either filling or artificial teeth. Martial (54 A.D. to 98 A.D.), in his epigrams, makes, however, frequent allusion to artificial teeth. "Ægle sees herself furnished with teeth of bought bones and Indian ivory." And, *apropos* of a dentifrice, "What am I to you? The young girl needs me: I am not accustomed to polish false teeth." And some half dozen other references could be cited from the same poet. Of 38 skulls of Egyptian mummies examined, 11 presented caries. In nearly all of these skulls the teeth were quite worn down by attrition, and presented a truncated form.

Existing Primitive Races.

The Esquimaux are a littoral people, nomadic in habits. Their food chiefly consists of seals, and the usual daily allowance is from 10 to 14 lbs. for each person. They seldom eat vegetable food.

Sixty-nine skulls of this race were examined. The jaws were found to be well developed and the teeth regular in position; they were frequently much worn down on the grinding surfaces, often extending to the pulp cavity, which had become obliterated, due to the formation of secondary dentine.

In one case caries had attacked a molar tooth, in another two molar teeth had been removed.

The Indians inhabiting the north-west coast of America live mostly on salmon and the dried flesh of deer; 51 of these skulls were examined, and only two cases of caries were noted. In one instance two teeth were affected, in the other, one. The various tribes of North American Indians living further south use animal food, sometimes varied by roots. The dental arch is well developed. Among 21 skulls of these various tribes only two cases of caries occurred, there being two teeth attacked in each case. In the Argentine Republic there is a mixed race of Indian and Spanish blood known as "Gauchos." They are employed on ranches, and spend most of their lives on horseback. Their food consists almost entirely of roast beef. They seldom use any form of vegetable food, and their sole beverage is maté or Paraguay tea—without sugar. Cases of toothache are practically unknown among them.

Indians of the same race living in towns use a much more artificial diet, confectionery and cheap wines. Caries of the teeth among these is common.

The food of the Arabs inhabiting the Nubian desert consists of the milk and flesh of camels; but they occasionally eat wheat boiled into a kind of frumenty, which, however, is only indulged in as a luxury. Their teeth are said to be regular and sound, and they are very particular as to cleaning them before and after each meal.

The Fans of Western Africa, the inhabitants of Tierra del Fuego, the aborigines of Australia, Fiji, and New Zealand, all flesh-eating, and frequently cannibal races, have well-developed dental arches and good and regular teeth as a rule.

The inhabitants of Eastern Polynesia use a diet consisting largely of popoe, composed of plantains and cocoanut milk beaten into a paste, and also fish. Of this race, 70 skulls were examined, and eight cases of caries noted, a large proportion being extensive.

The inhabitants of the Sandwich Islands have for their staple food the root of an arum called "taro," which they roast before eating; also sugar cane, sweet potato, and yams; 21 skulls were examined. Four cases of caries—two extensive, and one case of honeycombed teeth, were noted.

The natives of Chili are, like the Gauchos, of Indian and Spanish blood. Of these, 19 skulls were examined. Two cases of slight disease were found, one with five teeth affected: but the dental arch was well developed.

The Australian races have skulls of low type. They live chiefly on geese, turkeys, and swans; and when these cannot be got, on lizards, snakes, ants, grubs, etc. Driven by hunger, they resort to cannibalism. Their jawbones are well developed, but in many cases their teeth are much worn, exposing the pulp cavity, and causing alveolar abscess. Irregularity of the teeth is frequent, and caries of approximate surfaces often occur. In 132 Australian skulls examined, 27 cases of caries were found, often extensive.

Of the Tasmanian race, extinct for a considerable number of years, 33 skulls were examined. Nine cases of caries were found, most of them of an extensive nature.

Of the African races, 438 cases were tabulated. The Ashantees, Dahomeans, and neighbouring tribes on the west coast are a well-nourished and well-developed people, subsisting on both animal and vegetable food. Their jaws are very expanded in form, while supplemental teeth are found to be common. Three Dahomean Amazon skulls were examined and slight caries were found in one.

The Zulu Caffres are a powerful race, living largely on vegetable food, and only use flesh when training for a fight. In 49 skulls examined, 7 cases of caries were noted, 5 of these having been limited in extent.

The more feeble tribes from which the slave markets are supplied exhibit great deterioration in the condition of their teeth, especially among those inhabiting the western parts of Africa where the country is very marshy, the general tone of health is low, and the tribes frequently suffer from fever, rheumatism, and neuralgia. In examining 268 skulls of natives who had been brought to the coast as slaves, and who had died from exhaustion, 66 cases of caries were found. In 35 of these it had attacked the approximal surface, this result being evidently due to insufficient expansion of the maxillary arch, a possible result of defective nutrition. In 16 cases all bicupsids and molars were attacked, while incisors and canines were also frequently involved, an unusual circumstance among savage tribes. Their chief food is plantains, but they also use flesh occasionally.

The Bushmen are a race of dwarfs living in the deserts of South Africa, and are nomadic in habit. Their chief food consists of antelope and other game, but sometimes when that supply fails they eat locusts, caterpillars, wild berries, and roots. Twenty-nine skulls were examined; 6 with carious teeth were found, most of them extensively decayed.

The native tribes inhabiting the southern parts of India are chiefly Hindus and Mussulmans. The diet of the Hindus consists mostly of rice, but they also take milk, vegetables, and fruit. The inferior castes are far less cleanly in their habits, and, in addition to rice, consume beans, lentils, etc., and sometimes fish in a semiputrid condition. Mussulmans eat every kind of meat except pork. In addition to fruit and fresh vegetables they indulge largely in hot condiments in their curries. All classes are fond of sweets. Of 71 skulls examined in Southern India, 10 cases of caries were noted, in 3 of which six teeth were involved.

In Northern India a simpler diet is the rule. It consists largely of oatmeal cakes, eaten with salt and butter; these, with milk and cheese, sweetmeats, and boiled lentils, form the chief food. Of 152 skulls examined from Northern India there were only 9 cases of caries, and in no case were more than two teeth affected. These people, as a rule, only eat once during the twenty-four hours, and after their meals invariably wash out their mouths with water, and clean their teeth with the end of a soft piece of stick which has been frayed out into a brush. Their teeth are excellent, and last well until old age.

The Malays of the Indian Archipelago live chiefly on bananas, cocoanuts, and other fruits, also birds and fish. They are a vigorous, healthy race. Twenty-four of their skulls were examined, and showed two cases of teeth with caries; in one the disease was extensive.

Among the Chinese the staple food is rice. They also eat cabbages in a half putrid condition; and fowls, ducks, pork, etc. All classes take their food in a hot condition, and drink tea at all their meals as well as at odd times. Their teeth are weak, the incisors being often carious in youth. They pay little regard to keeping their mouths clean.

In order to prove that a predisposition to dental caries is dependent largely on general hygienic conditions, the inhabitants of the Italian Alps and the Canton Valais in Switzerland were examined. In these districts a custom obtains that after bodies have been buried for three years their skulls are removed and placed in the mortuary chapel of the village. Many of these skulls were examined, and caries was only slightly in evidence. The jaws were well expanded. These

peasants are a vigorous, healthy people, and they are seldom troubled with dental disease. Their food consists of milk and its products, porridge of wholemeal, grapes, figs, and chestnuts.

DENTAL CARIES IN LOWER ANIMALS.

The teeth of animals are in many respects similar to those of man, at least in so far as the points of attack in the teeth are concerned. Deep sulci, fissures, and pits on the surfaces of the teeth occur, especially in monkeys, dogs, horses, etc.; yet although alveolar abscess is not uncommon, true dental caries is very rare, if it ever occurs. The reason for this immunity in animals is still to be discovered, as their mouths often teem with streptococci and other bacteria. It is undoubted that caries more frequently occurs in domesticated animals, whose food, habits, and mode of living have become partially artificial.

Leon Williams has shown that though monkeys are practically immune from caries, the same defects of structure which are supposed in man to predispose to it are often found.

GENERAL CONCLUSIONS.

Dental caries is therefore not exclusively a result of civilisation, as it prevails among the feebler savage tribes, while rare among their powerful neighbours. It is rarer still, though not absolutely unknown, amongst the lower animals.

THE CAUSATION OF DENTAL CARIES.

Dental caries may be described as a progressive molecular disintegration of tooth substance (the lime salts of which are first dissolved by lactic acid, the product of micro-organisms), thus exposing the organic matrix of the dentine to the action of saprophytic fungi.

The essential features of the pathology of dental caries were first demonstrated by Dr. W. D. Miller, of Berlin, in 1882. Before that time, however, Mr. W. Robertson, of Birmingham, had opened up the way for a scientific explanation. In 1835 he published a work in which he set forth that dental caries was not of central inflammatory origin, but was due to external agencies.

Since that date investigations have been prosecuted by Leber and Rottenstein, Coleman, Underwood and Milles, and Magitot, until Professor Miller, of Berlin, succeeded in producing artificial caries in sound teeth.

Professor Miller placed teeth in a mixture of saliva and starch kept at a constant temperature. This mixture invariably became acid in from four to five hours. The starch heated alone to 150° before mixing became sour, therefore the ferment existed in the saliva alone. Cultures from deeply-infected dentine showed a growth of organisms identical in form with bacillus acidi lactici. He noticed that the reaction of the bacteria varied according to the food stuff. With proteids the bacteria caused decomposition, giving an alkaline reaction. With hydrocarbons the reaction was practically *nil*. With carbohydrates the micro-organisms formed acids, the chief one concerned in the production of dental caries being lactic acid. In the light of these and other researches the actual cause of caries may be clearly followed. The main points very briefly are these:

The exposed portion of the tooth is coated with enamel, which consists entirely of calcified matter, with no trace of organic substance entering into its composition. It is therefore beyond the pale of nutrition. This enamel is constantly bathed by the oral secretions, and subjected to all fluids and substances taken into the mouth.

The mouth itself forms an excellent incubator for micro-organisms—the constant temperature, *débris* of food and dead tissue are all very favourable to the growth of germs, practically every species having been identified in the oral cavity.

Given the germs and the food *débris*, etc., proliferation and fermentation occur, and lactic acid is produced. The effect of this acid upon the enamel is to cause its decalcification. This decalcification of enamel is the first visible sign of caries. These infected areas invariably commence in protected situations which form favourable positions for the lodgment of fermentable materials positions which are difficult to thoroughly cleanse, since necessarily to effect decalcification of enamel a more or less continuous action of the lactic acid is required. The enamel of the tooth having been dissolved, the dentine, with its 19 per cent. of organic material, generally offers but little resistance. The lactic acid abstracts its mineral matters, and the bacteria complete the dissolution of the matrix, advancing along the dentinal tubules. The presence of this ferment may, therefore, be said to be the cause of the dental caries.[1]

The causes of dental caries may be divided into two groups:

I. Exciting.

II. Predisposing.

I. *Exciting.*—As has been mentioned, the direct cause is lactic acid. The production of lactic fermentation in the human mouth is brought about by (*a*) substances identical with, or which by the action of the mouth are converted into, glucose from which is formed the lactic acid: and by (*b*) the germs which cause the transformation. The action of the acid must be sufficiently prolonged in order to effect decalcification. The effects of carbohydrate in the mouth may be most fully observed by examining the teeth of confectioners, millers, and others, who invariably present extensive decalcification of enamel and dentine—not confined to pits, fissures, etc.

Dr. G. V. Black (Chicago) in a recent paper says: "Caries of teeth has its beginning only when the conditions of the oral secretions are such that the micro-organisms causing caries form gelatinous plaques, by which they are glued to the surfaces of the teeth."

The mouth being so favourable to germ life, the inference is that in mouths practically free from caries conditions exist which destroy the growth of the lactic ferments.

The association of general disease with increased rapidity of dental caries has frequently been noticed. The explanation suggested is that the general disturbance affects the oral secretions, rendering them favourable for the production of the lactic acid ferment.

II. *Predisposing Causes.*—The predisposing causes may be subdivided into general and local. Among the general causes may be mentioned the condition of pregnancy, probably accompanied by some change of diet, with disorders of digestion, and perhaps lack of usual cleanliness of the teeth, which all set up conditions favourable for the formation of lactic acid. Caries is said to prevail in anæmic and leukæmic conditions, and in typhoid fever and in tuberculosis. Concerning these, of which we know next to nothing, authoritative evidence is required.

Among the local predisposing causes may be included all those conditions which would in any way be favourable to caries. They may be classed as variations in the structure (macroscopic and microscopic), arrangement, and forms of teeth, and also any other local peculiarity, anatomical or physiological. Pits, ribs, depressions, fissures in teeth, all favour the lodgment of fermentable material, and the microscopical structure, such as many interglobular spaces in the denture, affect the rapidity of caries when it has started.

Insufficient calcification of the teeth was formerly thought to be a potent predisposing cause. Black, however, made many analyses of human teeth, and found that the proportion of lime salts in specially good and in extensively carious teeth, of which the sound portions were examined, varied so very slightly as entirely to discount that as a reason for any difference of decalcification during caries. As he believes, the hardness or softness of the teeth, the amount of calcareous salts present, or even anatomical conditions cannot prevent the advent or progress of dental caries, although they do modify its character and rate. "If the active causes of dental caries do not assert themselves the predisposing causes are of little signifi-

[1] In the *Lancet* of May 10th, 1900, it was stated that "M. J. Choquet has recently made some experiments on the propagation of dental caries by direct inoculation of healthy teeth with the carious microbe, and the results of his observations were read before the Academy of Sciences in Paris at the meeting held on April 2nd. From three stopped teeth, the stopping of which had remained intact for periods varying from three to seven years, he succeeded in isolating five species of microbes. Of one of these he was able to obtain pure cultures, and he made a small cavity on the labial side of the incisor of a sheep, not so deep, however, as to penetrate the pulp cavity. A platinum sterilised cup, charged with the culture, was introduced into the cavity so that the culture was in contact with the dentine, and the hole in the tooth was plugged. Nine months afterwards the tooth was examined. The bottom of the cavity was of yellowish colour, due to the dentine being softened by the action of the microbe. Cultures made from the carious portion of the tooth gave a bacillus of the same form as that which had been used in the experiment. The same results were obtained in two other cases.

cance." Dr. Black's experiments, confirmed as to this point by Tomes, show that it is not in the degree of calcification that differences exist. But his inference that no chemical differences exist is not justified by the comparatively rough analyses made. Thus the lime salts, though in the aggregate amount similar, may differ in their proportions of carbonates and phosphates, and in the amount of combined water, or the organic collagen basis may not be quite the same. Hence his inference that the nature of the tooth counts for nothing may be true, but it is far from being proved. All that his researches prove is that the ash after ignition bears nearly the same proportion to the dried dentine in most teeth, while he did not investigate the first line of defence—the enamel.

The variation in forms of teeth, and arrangement of the dental arch, or the loss of antagonising teeth, are all conditions which favour the accumulation of food, etc., and so predispose to fermentation. Other local predisposing causes are those anatomical peculiarities which check the natural cleansing of the surfaces of the teeth, such as the frænum of the tongue limiting its movement, and any alteration in the saliva and oral secretions.

Increase of Dental Caries in the Race.

Heredity must be regarded as a predisposing cause of dental caries. In practice many cases are noticed in favour of this opinion, the tendency being increased through means of similarity of environment, including the food, habits, and degree of personal cleanliness.

Artificial feeding during infancy is suggested as a cause. Mr. Cantlie, in a paper read before the British Medical Association in August, 1899, referred to the increasing prevalence of artificial feeding of infants, of adenoid growths, and of dental decay. He argued that the feeding bottle, of inconstant temperature, instead of the mother's breast, irritated the oral mucous membrane and retarded digestion. Later, the "comforter" is used, and the infant, unable to obtain the desired nourishment, sucks harder and harder, and so overexercises the buccal muscles. This, argued Mr. Cantlie, causes pressure laterally on the palate, forcing it upwards in the middle line, which therefore encroaches on the nasal passages, and so induces mouth breathing, with its attendant evils, congestion of mucous membrane, vitiated oral secretions, and susceptibility to dental caries as well as nasopharyngeal vegetations.

Dr. G. V. Black, in the paper previously referred to, read before the National Dental Association of America, controverted the idea that immunity from dental caries is due to any superior quality of the teeth themselves, but regards the environment of the teeth to be the most important factor. He looks upon heredity, age, fluctuations of bodily conditions as chiefly affecting the predisposition or susceptibility to caries.

As regards age, caries is invariably associated with the young. The effects—such as loss, pain, abscesses—may occur later, but the disease has its beginning in youth, and the effect of treatment, by early periodical filling, is to render the patient immune at the time of life when the ravages of caries would be felt most, that is, from 20 to 30 years.

As seen in the summary of Mr. Mummery's paper, civilisation has been blamed largely for dental caries. He regards the influence of food habits among civilised races as somewhat accounting for the far greater prevalence of dental caries among them.

Diet.—From data collected among barbarous and semi-civilised nations, it has been observed that the races which suffer most from caries are those whose food includes cooked starches. In races where proteids form the staple article of diet, the conditions of the teeth seem remarkably good, as in the Esquimaux. Besides the reaction of proteid diet during fermentation being alkaline, the very process of its mastication must at the same time cleanse the teeth by the mechanical action of its fibrous constituents. Comparing the condition of the mouth after a meal of flesh, and one of some form of carbohydrates: in the one case the mouth is comparatively clean, a few fibres perhaps remaining between the teeth which may be easily removed; in the other case the interstices between the teeth and the fissures of the teeth are packed with soft masses of fermentable material, difficult and indeed impossible to remove entirely, and thus presenting all the conditions most favourable for the production of lactic acid.

Civilisation entails such a preparation of food as permits of its being swallowed with a minimum of mastication. Therefore a proteid diet may be used with comparative inaction of the muscles of mastication. This must, to some extent, affect the oral secretions, and probably predisposes to the formation of lactic acid. The muscles do not have that exercise which is necessary, the self-cleansing of the teeth is thereby retarded, the jaw may become atrophied, and thus crowding of the teeth is induced.

The treatment of dental caries among the poorer class of children has been followed by results apparently showing that their teeth can be better preserved than those of the well-to-do. This may be correlated with the coarse and plain food they use; but more statistics are required before a definite statement is made in regard to this point.

The following questions have been drawn up by the Committee, with the object of eliciting information from the profession regarding the causes which lead to "The Early Decay of Teeth among the Inhabitants of Britain":

A.—Questions Specially Applicable in the Case of Young Children.

1. Can you supply any returns as to the prevalence of dental caries in "breast-fed" and "bottle-fed" children of the same family?
2. Have you observed differences between the teeth of "breast-fed" and "bottle-fed" children generally?
3. What is the approximate proportion between "bottle-fed" and "breast-fed" children in your district?
4. Have you observed differences in the extent of caries of the teeth in children of the same family who have enjoyed good health and those who have suffered from disordered health? If so, what have been the forms of disordered health (with especial attention to disorders of the digestive system)?
5. Have you observed differences between (*a*) well-fed and well-nourished children and those under-fed and poorly-developed, and between (*b*) children brought up on a highly nitrogenous diet and those on a farinaceous diet?
6. Is the prevalence of dental caries among young persons connected with the vast increase in the proportion of our population born and bred within cities and large towns during the past century?
7. Is it your belief that nasal obstruction, pharyngeal growths, etc., are actually more prevalent of late years, or that they are merely more often recognised? If the former, can you trace any connection between their occurrence and the constant action of sucking provoked by the frequent presence of the "comforter," and are they associated with bad teeth?
8. Are there any observations you desire to make on antenatal conditions in connection with the teeth?

B.—Questions Equally Applicable to Adolescents and Adults.

9. Can you trace any connection between general health and the prevalence of caries in the individual?
10. Have you noticed the sudden onset of considerable caries in a previously healthy mouth? If so, in connection with any change of general health? or following upon any acute disease?
11. Have you observed severe caries in persons for a length of time placed upon a milk diet? If so, for what disorders?
12. What has been the state of the tongue and of the oral secretions (for example, has the saliva been abundant and liquid, or has there been much stringy mucus) in cases of notably extensive caries?
13. Do you connect the incidence of caries with the so-called "temperaments" of the individuals?
14. Have you any observation to make upon the prevalence of dental caries in persons subsisting chiefly upon (*a*) highly nitrogenous diets, (*b*) upon wheat flour, (*c*) upon oatmeal, (*d*) upon potatoes, in the same district and of the same race?

15. Can you say anything as to the teeth of strict vegetarians?
16. Is there any apparent influence from the habitual consumption of (*a*) beer, (*b*) whisky, (*c*) cider, (*d*) or abstinence from alcohol?
17. Do you attribute any influence to climatic conditions or to water supply? (N.B.—Water supply is frequently derived from gathering grounds of different geological formation from that of the area supplied.)
18. Do you know of any materlal conditions or disease which predispose to the early decay of teeth?
19. Do you know of any drugs administered to either the mother or infant which are calculated to cause either failure in the development or early decay of the teeth?
20. Do you consider heredity a cause of dental caries? If so, can you give instances in your personal experience?
21. Have you noticed that during pregnancy teeth are more liable to decay?
22. Have you any observation to make as to the result of (*a*) careful attention to and (*b*) neglect of, personal oral hygiene (use of toothbrush, toothpick, floss silk, etc.)?

N. C. MACNAMARA, Chairman.

REVIEWS.

ON THE OPERATIVE SURGERY OF MALIGNANT DISEASE. By HENRY T. BUTLIN, F.R.C.S., D.C.L., Surgeon to St. Bartholomew's Hospital, late Erasmus Wilson Professor of Pathology, and Hunterian Professor of Surgery and Pathology to the Royal College of Surgeons. London: J. and A. Churchill. 1900. (Demy 8vo, pp. 426. Figs. 12. 14s.)

THIS work of Mr. BUTLIN, nominally a second edition, is in reality almost a new work. The attitude of surgeons towards malignant disease has altered very decidedly since the first edition was published 13 years ago. Many operations, before hardly justified by their results, are now performed with reasonable safety; many more have been so altered that arguments based upon them at that time are now no longer valid. We know of no book, which has been so persistingly and provokingly misquoted, of none which has been so inaptly referred to, as the former edition of Mr. Butlin's work, and in sheer self-defence a new publication must have been necessary.

In the making of this book the author has received help from many who are known for their intimate acquaintance with the literature or the practice of the subjects with which they deal. Thus Mr. Berry writes of the thyroid, Mr. Bruce Clarke of the kidney, Mr. Alban Doran contributes the chapters on the ovary and uterus, Mr. Furnivall those on the stomach, intestines, and rectum, Mr. Walter Jessop that on the eye, and Mr. Waring that on the liver and gall bladder. A definite plan in the arrangement is adhered to throughout the book. There is first a general consideration of the whole subject, a discussion as to the various forms of sarcoma and carcinoma and of the special microscopic characters of each, their relative frequency, signs and symptoms. This is followed by a brief mention of the methods of operation, which is elaborated only in certain particular instances, such as Berger's amputation and Halsted's operation for the removal of the mamma. The results of the operations are then considered and the ultimate issue of the treatment is analysed under the headings: (1) Cures due to the operation, and (2) Are patients who are not cured relieved by operation? Finally, the whole section is summarised in a paragraph of "conclusions." We do not think that the matter could be more adequately or more justly considered.

It is hardly possible, in a review of even generous length, to convey an adequate idea of the enormous wealth of labour that has been expended upon the collection and analysing of the material upon which this work is based. That material is drawn from a variety of sources, in England, America, and the Continent. Indeed, the first criticism that can be offered is that the personal element, naturally not pronounced, is far less than is desirable. When the individual experience of the author is emphasised, as in those sections dealing with the larynx and the breast, for example, the gain is felt to be considerable. Throughout the volume the custom, frequent in similar works, of reducing figures to percentages is followed. If out of 10 cases operated upon 3 die of the operation, that cannot justly be said to be equivalent to "a percentage of 30." To assume a percentage mortality even when only 100 cases are operated upon is not strictly accurate. With fewer than 100 cases it is liable to produce an erroneous impression. It is, moreover, unnecessary, for the exact figures are always sufficiently clear and comprehensible. These points are, perhaps, trivial; they certainly do not affect the real and the permanent value of the book.

The chapter dealing with diseases of the breast is that which has undergone, on the whole, the most radical change. Mr. Butlin has in other publications given token of his wholehearted acceptance of the most modern teaching, which dates, let it be freely acknowledged, from the papers of Mitchell Banks. The conclusions expressed on this subject are briefly as follows: The entire breast, a wide area of integument and circummammary fat, the pectoral fascia, and a great part, if not the entire thickness, of the pectoral muscle, with the entire contents of the axilla up to the clavicle, should be removed in one mass. If the highest infraclavicular glands are cancerous, those in the posterior triangle should be removed, not otherwise. Recurrent disease should be removed as soon as it appears.

As contrasting with this in its modernity, we may select the chapter on the tongue. Mr. Butlin considers that the operation for excision of the tongue may be performed through the mouth "in the large majority of instances," but "when the disease deeply affects the floor of the mouth, especially when it is associated with enlargement of the lymphatic glands, it will be best removed by an external operation." Elsewhere the author remarks, and in face of this teaching the observation is pertinent: "In spite of the local character of the disease, which is theoretically limited to the affected part of the tongue and the adjoining parts of the mouth with the associated lymphatic glands, I have no hope that we shall ever attain such great success against cancer of the tongue as we are likely to do against the much less local disease, cancer of the breast." May not the difference in the attitude of the surgeon towards the two diseases explain the apparent anomaly?

We do not suppose that all surgeons will agree with Mr. Butlin in every one of his arguments, or his deductions therefrom; indeed, that is neither possible nor desirable. But even when a surgeon is compelled to differ, and differ even strenuously and on vital points, from the author, he cannot but admire his fine temperate spirit, the clear insight, and the unvarying sincerity he displays. The tone of the book is (one can find no apter word) chivalrous. The dedication is to Sir J. Paget, and it is certain that he would have felt delight in a work with the manner and the substance of which he would have been equally and wholly charmed.

A MANUAL OF SURGICAL TREATMENT. By W. WATSON CHEYNE, M.B., F.R.C.S., F.R.S., Professor of Surgery in King's College London, Surgeon to King's College Hospital, etc., and F. F. BURGHARD, M.B. and M.S.Lond., F.R.C.S., Teacher of Practical Surgery in King's College, London, Surgeon to King's College Hospital, etc. In Six Parts. Part III. London: Longmans, Green and Co. 1900. (Royal 8vo., pp. 305. 100 illustrations. 12s.)

THE issue of another part of this *Manual*, completing, we may assume, the first half of the book during Mr. WATSON CHEYNE'S absence in South Africa as one of the Consulting Surgeons with the Field Force, will be welcomed as an indication that now that he has returned the rest of an important and very useful work on surgical therapeutics will be issued without undue delay. This part deals with the treatment of the surgical affections of the bones and with the subject of amputations; special fractures such as those of the skull and spine, and also the injuries and diseases of joints being relegated to the next instalment of the work. A little more than one-half of

this part is given up to the subject of fractures, and about one-fourth to general considerations and detailed instructions concerning amputations.

The section on fractures is clearly written, very suggestive, and full of useful instructions on matters of detail. Although, as the authors acknowledge, no mention is made of many well-recognised methods of treating various fractures, the reader will not fail to find sufficient information on the best means of dealing with the different forms of this class of injuries. Much importance will, we have no doubt, be attached to the opinions expressed concerning the scope and utility of certain new developments in treatment which, if carried to the extent proposed by their respective advocates, must effect a radical change in this branch of practical surgery. With regard to the substitution of massage for the use of splints, attention is directed to the great care and special training that are necessary conditions for the success of the first of these methods; and though such method is regarded as very beneficial, it is held advisable to curtail rather than to discontinue altogether the use of splints, and thus to strike a mean between a somewhat rash disregard of these appliances advocated in some quarters on the one hand, and the undoubtedly unsatisfactory method of their prolonged use on the other. A conservative view is taken on the free application of the open method of treating simple fracture, as the authors, though strongly advocating such treatment in fractures of the patella and olecranon, seem disposed to restrict very much the indications for operative interference and mechanical fixation of the fragments in fractures of other bones.

The chapters dealing with amputations suffer to some extent through the authors' self-imposed conditions of describing only such operative methods as they believe to be best, although the selection will in itself be helpful. Still the descriptions of some amputations, such for instance as the oval method of exarticulation at the hip, might with advantage have been fuller, and such widely-recognised and approved operations as Pirogoff's amputation at the ankle and the Stokes-Gritti operation above the knee the authors decline altogether to describe.

L'HYPOTHYROÏDIE BÉNIGNE CHRONIQUE, OU MYXŒDÈME FRUSTE. [Chronic Benign Hypothyroidism, or Larval Myxœdema.] Par Le Dr. E. HERTOGHE. Paris: 1899. Printed privately. (Demy 8vo, pp. 52.)

IN the course of their evolution, diseases are first of all isolated and described as separate entities, and it is only after their existence has become thoroughly recognised and familiar that their surroundings and affinities become clear. When a disease is first described, it is no doubt necessary to insist on the fact that it is a definite and distinct collection of symptoms, or, in other words, that it is a symptom-complex, and not a merely accidental collection of signs and symptoms. Later on transitional forms become apparent, and the spaces between the fixed types of classical disease become filled up with intermediate forms, or what Dr. Goodhart happily called the "fringes of disease." Dr. E. HERTOGHE, in his essay on what he calls "chronic benign hypothyroidism, or larval myxœdema," deals with the manifestations of thyroid insufficiency, which might be described as larval or incomplete forms of myxœdema, but the author prefers the term "chronic benign hypothyroidism," as it does not, like the more familiar title, imply the idea œdema. Though these incomplete forms have not attracted much general attention, Brissaud, Thibierge, and in this country G. R. Murray, have recognised their existence. Brissaud, indeed, made the interesting suggestion that some forms are due to parathyroid insufficiency, and others to insufficiency of the remainder of the thyroid gland. The incomplete forms of myxœdema are, like the fully developed disease, more often seen in women, and are distinctly hereditary. The symptoms due to thyroid inadequacy are numerous, and are considered as they occur in adult life and in childhood. In the first place, a woman thus affected looks older than she really is, tends to get grey early and to lose her hair prematurely, while the teeth, especially the molars, and the gums undergo degenerative changes. The tonsils are enlarged, and there is a tendency to catch cold, to suffer from headache, backache, and arthritic and muscular pains, often referred to rheumatism. Menorrhagia and retroflexion of the uterus, due to a want of development of the posterior wall of the uterus, are common, while flooding is likely to follow delivery. Varicose veins, gall stones, obstinate constipation, lassitude, shivering, a subnormal temperature, and free perspiration are other manifestations of incipient myxœdema. The proof that these familiar symptoms are due to incipient myxœdema is that thyroid treatment removes them. It is rather startling to find so much put down to insufficient thyroid secretion, but the author sustains his thesis with ability, and the reader cannot but be impressed with the desire to test and see for himself whether in practice thyroid treatment, like the bicycle, may not do great things for the invalidism and numerous pains that female flesh is heir to. In children, again, thyroid insufficiency is responsible for a number of symptoms of which the most important is retardation of growth. The author holds strong views, which Thibierge has characterised as excessive, as to the dependence of all the forms of infantilism on dysthyroidism. Nocturnal incontinence is regarded as due to hypothyroidism, while abnormal conditions of the sexual organs such as monorchidism or retained testis are referred to the same factor.

This monograph is well written, and is copiously illustrated by excellent photographs, showing the state of the patients before and after the thyroid treatment. Its thesis is important, for if incipient myxœdema is more often recognised and these early stages more generally treated, a distinct step in advance will be attained, namely, the prophylactic treatment. The easiest method of diagnosing these incomplete or larval forms is their reaction to thyroid medication. In conclusion, this suggestive and original pamphlet should be read by every active physician.

CHIRURGIE DE FOIE ET DES VOIES BILIAIRES. [Surgery of the Liver and Biliary Passages.] Par J. PANTALONI (de Marseille). Paris: Institut de Bibliographie Scientifique. 1899. (Roy. 8vo, pp. 624. Figs. 348.)

THIS work, dedicated to Professor Terrier, is based very largely upon the method followed by that distinguished and prolific author. All the operations usually practised upon the liver or the gall bladder and bile ducts, and not a few of those already obsolete are described under the headings: Definition; Synonyms; Etymology; History; Varieties; Method; Sequelæ and Complications; Indications.

A work of this kind leaves little or nothing to the ingenuity of the writer, and calls for no manifestation of powers of original research. It is merely a recital of work done by others. The discrimination exercised in this volume as to the relative merits of the various operations described is however of a high order. The perspective is excellent and nothing of any real value is omitted. To the student of this branch of surgery interested in the history and the varying fashions of his craft it makes fascinating reading, and is therefore welcome.

The volume is divided into four parts. The first is concerned with operations upon the liver itself; including the treatment of ruptures and wounds of the liver. The wound which caused the death of President Carnot is depicted from a drawing by Poncet. The second treats of those rare operations practised upon the annexes of the liver, the vessels, suspensory ligaments, capsule, etc. The third and fourth deal with the "general" and "special" procedures carried out upon the gall bladder and the bile ducts.

A careful reading of the book has shown that the omissions are few and unimportant. The illustrations, however, are generally very poor and quite unworthy of the text. The incision parallel to the costal margin, frequently depicted, is quite ridiculous in its length.

THE French Academy of Moral Sciences has awarded the Audiffred prize of 15,000 francs to Dr. Yersin for the discovery of his antiplague serum.

THE Board of Health of Boston, U.S.A., has decided that henceforth pulmonary and laryngeal tuberculosis are to be included in the list of diseases of which compulsory notification is required.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

SUBSCRIPTIONS to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, JULY 21ST, 1900.

THE EXTRAORDINARY GENERAL MEETING.

THE result of the special meeting of the Association which was held on Wednesday last is not likely to have surprised anyone who has been watching the course of events. It is never very difficult at any general meeting of the Association to get an expression of disapproval of the action of the Council. Some of the reasons for this are obvious enough. Ardent reformers never get the Council to travel at a pace to please them, and so they are ever ready to express dissatisfaction; a general meeting always must have attractions for those who have grievances, which, when unredressed, cause the aggrieved to join in any vote against the powers that be; and there is a feeling against the Council always to be reckoned with, which has its origin we believe in the peculiar relations of the Council to the members of the Association in general meeting. The Association in general meeting elects only a very small part of the Council—those who sit thereon, in virtue of being Vice-Presidents—and so, as the representative members are not placed on the Council by the general meeting, and are not removable therefrom by any vote of a general meeting, there is an instinctive impulse to "go against them."

When all this has been allowed for, however, there is no getting away from the fact that the meeting revealed a large amount of opposition to the proposals of the Council. What the results of this will be, time alone will show. When the danger was pointed out at the meeting of leaving the power in the hands of so small a quorum, the retort was: "Trust the common sense of the members." Unfortunately a large proportion of members attending the annual gatherings of the Association fail to put in appearance when business matters are under discussion. It is to be hoped that the interest now aroused may result in better attendances at Ipswich.

Already a large number of notices of motion of all sorts have been sent in, and will be found in another part of our issue. It will be interesting to see how far the common sense of the members will rally to the side of order and of good government when these motions come to be considered.

On the result of the annual meeting at Ipswich much will depend as to what shape the constitution of the Association will assume in the future; and we hope that one result will be the reference of the whole question to the Branches for the expression of their opinion. The position is one of surpassing interest not unmixed with danger and anxiety.

The Association is beginning to realise, more than it has done perhaps in the past, what a power it may be in influencing the general policy of the profession, its status, and its welfare. That it may become more and more an influence for good must be the wish of all thoughtful men within its ranks. In order that this work may go on it is evident that some changes must be made in the organisation of the Association itself.

In working out these changes it must be hoped that, on the one hand, changes will not be mistaken for reforms, nor, on the other hand, reforms opposed because they are changes.

With the administrative experience of the older members of the Association on the box, helped perhaps by some of that common sense on which the Association was asked to rely, we may hope that neither the fiery enthusiasm of the "leaders" will be allowed to take the coach into a position of danger, nor the caution of the "wheelers" prevent that progress which is necessary to satisfy the aspirations of the general body of members.

PRELIMINARY EDUCATION.

FOR the last few years the preliminary education of medical students has engaged the attention of the General Medical Council. Examiners and teachers have both declared that the failures in anatomy and physiology, which at the examination of the Conjoint Board in England amounted to nearly 50 per cent., were attributable to the lack of true education—that is, of the power to learn; instances were also occasionally reported by examiners for the public services of gross ignorance in English, which reflected much discredit on the efficiency of preliminary examinations.

The subject was therefore referred by the Council to the Education Committee in June, 1896, and special attention was directed to one examination, the second-class certificate of the College of Preceptors, the reference being subsequently extended to the whole subject of preliminary education. On the Committee's report in November, 1897, the Council resolved to recognise no standard lower than that of the junior local examinations of the universities. In November, 1898, a second report recommending the exclusion of the second-class certificate of the College of Preceptors was adopted, but it further stated that it was not practicable to raise the standard above that of the junior local examinations. This point was referred back for further consideration. In June, 1899, the Committee asked for expert assistance. The three experts to whom the question was referred reported as follows: "We suppose that in our inquiry we should have regard to two points in particular: (1) The securing of a fair amount of well-digested knowledge in regard to the elements of each of the principal subjects which constitute a liberal education; (2) power of applying that knowledge towards the further training of the faculties." As regards the latter, they expressed disappointment, and added that the candidates who had only just obtained the pass mark did not

appear to have acquired this power, but had been merely passive recipients of knowledge during their school life without imbibing any desire or power of attacking a fresh subject. As regards the knowledge actually acquired, they expressed the opinion that generally this was adequate in the subjects required, which subjects might be regarded for the present as sufficient.

The General Medical Council was, however, unwilling to give up its desire to raise the standard of preliminary education upon a report which for the most part gave conclusions without much information as to the data upon which they were based, and which, by the way, was not expressed in very elegant English. The Council, therefore, asked for more detailed information. In their final report, which came before the Council during its last session, the experts adhered to their first expressed opinions, and submitted further suggestions as to the modifications which in their opinion should be made in those examinations which are "specially drawn up for the purposes of a medical preliminary."

As in their opinion some of the junior examinations are thoroughly inadequate, they urge that the General Medical Council should direct its efforts to raising the standard of such as are inefficient to the level of the best. They have drawn up a set of recommendations for the General Medical Council to circulate amongst examining bodies in the hope that the latter may be incited to improve the character of their examinations.

All medical men will probably agree that that the questions "should be such as to test not merely knowledge but a power of intelligent application of knowledge; that in English the paper should include an essay and a paraphrase; in the classics and modern languages at least one passage of some length from an unprescribed book for translation into English; and, similarly, an English passage and short English sentences for translation into other languages. Again, it is recommended that in arithmetic and algebra most of the questions and problems should involve some thought and intelligent knowledge of the principles underlying the rules. In geometry most, if not all, questions should include a simple rider as an essential part."

But the difficulty of the whole position is that a large number of examinations are recognised, but most of these are designed for quite other purposes than the preliminary examination of intending medical students, who form but a small proportion of their candidates. Thus the report while acknowledging that the examinations recognised are not all that could be desired, proposes a remedy that in all probability cannot be applied; in other words, it is tantamount to the perpetuation of that which is avowedly not satisfactory. For it is hardly to be expected that the various authorities will consider the requirements of the medical students as paramount, and will alter the whole style of their papers at the suggestion of the General Medical Council and its advisers.

The experts go on to say that they have considered the question whether senior and higher grade examinations should be substituted for junior. Taking into account the present state of secondary education in the country, they do not consider it possible to enforce such a requirement in the near future. A demand of this kind might result in a fiasco, either by diminishing to an indefinite extent the number of candidates entering the profession, or by compelling the examiners to a laxity of marking and a depreciation of the character of questioning which would merely have the effect of lowering the senior papers to the level of the junior papers.

However unwilling we may be to endorse these opinions, the report of the experts cannot be read without recognising its sincerity and its weight. They think that the Council has been led astray by the names "senior" and "junior," and, they hold that some of the senior examinations are of less value as tests of education than some of the junior. Merely, therefore, to abolish the junior examinations would not necessarily raise the standard: but they think it would be impossible to compel medical students to pass the best types of the senior examinations before entering upon their special studies. The senior examinations are calculated for persons between 17 and 18 years of age, whereas many medical students begin their special studies before 17. The difference between the senior and junior standards, if the best types be thus taken, lies not only in the questions asked, but also in the character of the answers required. It is impossible, the experts say, to expect boys of 16 to answer questions in the way which is required one or two years later. The words "senior" and "junior" have a real meaning, and if medical students are of the junior age it is unreasonable to expect the senior standard.

They add the following observation: "We are convinced that, as a general rule, a high pass mark in a paper aiming at a somewhat lower grade is a more efficient test of a good school education than a low pass mark in a paper aiming at a higher grade. It is advisable that an examination should bear upon the face of its printed paper of questions the relative difficulty of its standard. It is therefore suggested that in those examinations which are specially drawn up for the purposes of a medical preliminary, the pass mark should be fixed at not lower than 40 per cent."

Here, again, we are faced by the assumption that a number of very diverse bodies will comply with outside recommendations, for the would-be medical student is in no way ear-marked at this stage of his career; at the best it involves a revision of the list of examinations and the expunging of those which do not choose to conform to the standard set down.

Our own profession, above all others, knows the value of expert knowledge, and it would be foolish to disregard the advice of men as keen as ourselves to raise the standard of general education, who, both by their vocation and by the facilities which have been freely afforded to them in almost every case to investigate the examinations in question, are in a position to judge. Whatever be our disappointment that junior examinations are still recommended, we can hardly expect that medical students, allowed to enter at the junior age, shall be a selected class, who have risen above the average standard of education of the country. It is some consolation to learn that the standard is slowly rising, and if any considerable number of examining bodies, over whom the General Medical Council can exercise no influence save that of advice, should view with favour the alterations suggested, one

fundamental defect observed in medical students, namely, the inability to learn with due economy of labour, will be in some degree remedied.

THE OPERATIVE TREATMENT OF MALIGNANT DISEASE.

THERE are few recent books more important, there are none more interesting, to the surgeon and the general practitioner than Mr. Butlin's new edition of his work on the *Operative Treatment of Malignant Disease*, reviewed elsewhere in this issue. Probably few surgical subjects have been more frequently discussed than this, and in surgery as in finance, much paper and much poverty may coexist. Much that is written is, almost avowedly, the work of those who are not in immediate contact with recent surgical developments, but the influence of such writings is unfortunately far greater than is conceived at the present time. It may be said emphatically that no work dealing with the subject of malignant disease in its surgical aspects has ever been written in so temperate a spirit, with such a fine and discriminating sense of proportion, with such a manifest honesty of thought and purpose as this book of Mr. Butlin. Every practitioner in the country should consider it his duty (one can answer for it that it will certainly be his pleasure) to read, to study, to remember, to act upon, the teaching conveyed in this work. It is in no small measure to the general practitioner that we must look for the improvement in the treatment of "cancer" in the future.

The increase in our capacity for dealing effectively with the diseases, sarcoma and carcinoma, has been the result of work in two absolutely different directions. In the first place, we owe what is probably the large measure of success to the pathologists. They have shown us the different forms of malignant disease which may attack each organ in the body, the channels by which they spread, the glands that we may expect to find affected earliest. To instance specific examples we may quote the work of Heidenhain, Stiles, and Rotter on the breast, and of Kuttner on the tongue. But their work is still incomplete. We have much to learn of the intimate nature of malignant or supposed malignant growths, and of endotheliomata in particular. In the parotid gland, to mention but one example, the endotheliomata have been recognised as a separate class of growths, distinct on the one hand from sarcoma and on the other from carcinoma, but liable to be mistaken, even by competent pathologists, for the one or the other. When this class is strictly limited and accurately defined we shall be able to speak with greater assurance of the clinical aspects of the treatment and prognosis of the growths which affect each individual organ.

In the second place, of almost equal importance—from some points of view perhaps of even greater—is the early recognition of malignant growths; and for advance in this matter we can only look to the general practitioner. The early forms of malignant disease are often obscure, are constantly of such a kind that the most cunning expert cannot, with even approximate accuracy, distinguish them: but, on the other hand, we have learnt by careful, patient clinical observation that some of the early cancerous or "precancerous" conditions are capable of certain recognition. Paget's disease of the nipple, the similar condition on the glans penis, and, far more rarely, on the tongue; the compound wart of the tongue, and the leucoma of the vulva mentioned by Butlin, are all conditions which are the earliest known local manifestations of malignant disease. It is hardly likely that they are isolated examples. To enlarge this group, to extend it conceivably to every accessible organ in the body, must be the constant endeavour. To these two classes of investigators—the pathologist and the general practitioner—has been given the opportunity of improving our position in this matter in the past, and there can be no question the future is also with them.

The work of the surgeon has been in the last decade as satisfactory as could be desired. Though operations have grown more and more extensive, and correspondingly more severe, the mortality has steadily diminished. Few surgeons are now content with the mere removal of the primary growth. The glands, either at the same time or at a subsequent operation, are removed as widely as is thought necessary. Our information as to the desirability of removing intervening lymph channels is at present incomplete. Heidenhain believes that in squamous epithelioma the lymphatics remain uninfected, and need not therefore be removed; but further and more ample investigation is yet required to confirm this. The manipulative dexterity of the surgeon and his scrupulous adherence to cleanliness, or antisepticism, can hardly achieve better results than Mr. Butlin now records. The success of the treatment of cancer in the future depends then, inevitably, surely upon the early recognition and the more precise knowledge of the intimate home life of each variety of malignant growth. For the last decade Mr. Butlin has recorded a quite wonderful advance, but there is, we confidently hope and predict, a far greater hope for the future.

THE SOUTH AFRICAN COMMISSION.

THE Commission appointed "to report on the arrangements for the care and treatment of the sick and wounded during the South African campaign" has been completed by the addition of Sir David Richmond, an ex-Provost of Glasgow, and Mr. Frederick Harrison, the general manager of the London and North Western Railway. The other members of the Commission are, it will be remembered, Lord Justice Romer, Dr. W. S. Church (President of the Royal College of Physicians of London), and Dr. D. J. Cunningham, Professor of Anatomy in the University of Dublin. Exception has been taken by Mr. Burdett-Coutts and others to the inclusion of Professor Cunningham on the ground that he is one of the examiners for the Army Medical Department. We cannot believe, however, that the occupancy of this temporary appointment will in any way warp the judgment of Professor Cunningham, who, we may observe, is a graduate of the University of Edinburgh, and has always been conspicuous for sound judgment and impartiality. It is understood that the Commission will take evidence in this country as to the medical provision sent out to South Africa at various times; in fact, almost continuously since the commencement of the war. It is probable also that the evidence of the consulting surgeons and of officers who have returned to this country will also be taken before the Commission proceeds to South Africa. The reference to the Commission is sufficiently wide to allow it to enquire into the question whether the medical *personnel* has been sufficiently numerous, and in

this connection we would draw attention to an article at page 202 showing the medical arrangements for the German Expeditionary Corps for China. As will be seen, they are on a scale considerably more liberal than those for a corresponding section of the British force sent to South Africa.

MEDICAL VICTIMS OF THE PEKING MASSACRE.

AMONG the victims of the Peking massacre are several members of the medical profession. In Dr. Wordsworth Poole, the physician to the British Legation, the country has lost an officer who had already done good service and who seemed destined to a future of the greatest usefulness. He was a Bachelor of Medicine and Surgery of Cambridge, receiving his medical education at that University and at Guy's Hospital. He took his degree in 1894. His professional career, though brief, has been both adventurous and distinguished. He was Principal Medical Officer of the West African Frontier Force on the Niger and for his services in that capacity received the honour of C.M.G. at the New Year. In recommending him for special notice Colonel Lugard took occasion to point out that Dr. Poole's "previous record of service in Nyassaland constitutes additional claims on the Government." Dr. Poole afterwards served as Principal Medical Officer at Zomba, British Central Africa. He had been only a few months at Peking. Mr. Robert Edward Bredon, Deputy-Inspector-General of the Imperial Maritime Customs of China, began life as a medical officer in the army. He was born in 1846, took his degree of M.B. at the University of Dublin, and entered the medical department of the army in 1867, passing out of Netley at the top of the list. He was gazetted to the 97th Regiment. He retired from the army in 1873 and in the same year joined the Chinese Customs Service. He was appointed Deputy-Inspector under Sir Robert Hart. Dr. George Ernest Morrison, who as Peking correspondent of the *Times* had won for himself the highest reputation, was a medical graduate of Edinburgh. He was born at Geelong, Victoria, in 1862 and began the study of medicine at the University of Melbourne. His career at that seat of learning came to an untimely end, as he himself recorded in his most interesting book, *An Australian in China:* "In the examination for the Second-year Medicine, hoping the more to impress the Professors, I entered my name for honours—and they rejected me in the preliminary pass. It seems that in the examination in Materia Medica, I had, among other trifling lapses, prescribed a dose of oleum crotonis of 'one-half to two drachms carefully increased.' I confess that I had never heard of the wretched stuff; the question was taken from far on in the textbook, and, unfortunately, my reading had not extended quite so far. When a deputation from my family waited upon the examiner to ascertain the cause of my misadventure, the only satisfaction we got was the obliging assurance 'that you might as well let a mad dog loose in Collins Street' as allow me to become a doctor. And then the examiner produced my prescription. But I thought I saw a faint chance of escape. I pointed a nervous finger to the two words 'carefully increased,' and pleaded that that indication of caution ought to save me. 'Save you it might,' he shouted with unnecessary vehemence; 'but, God bless my soul, man, it would not save your patient.' The examiner was a man intemperate of speech; so I left the University. It was a severe blow to the University, but the University survived it." He was more fortunate at Edinburgh, where he graduated M.B., C.M., in 1887. In the meantime he had crossed Australia on foot from the Gulf of Carpentaria to Melbourne, and been speared in New Guinea. He carried the spear-head in his body for nine months, when it was cut out in Edinburgh. After graduation he tried practice in Spain, Morocco (where he was physician to the Shereef of Wazan), and Ballarat. But he heard the East a'callin', and could not rest. He wandered for some time in China, Japan, and the Philippines, and then walked across China from Shanghai to Rangoon—an adventurous journey, which he recorded in the book already mentioned, which was published in 1895, and is dedicated to Professor John Chiene, who, as the author gratefully acknowledges, gave him back the power of locomotion. As correspondent for the *Times* he travelled extensively in China, Siam, and Siberia. Other British members of the medical profession who are supposed to have been in Peking at the time of the massacre and to have shared the fate of the foreigners, are Dr. John Dudgeon, who graduated M.D., C.M., at Glasgow in 1862; and Miss Lillie E. V. Saville, L.S.A., M.D.Brux., of the London Missionary Society. It may be added that M. Stephen Pichon, the French Minister, before he adopted diplomacy as a career, was a student of medicine in Paris. He was an *externe* at the Hôpital Saint-Antoine, but having, it is said, come to grief at the examination table, drifted into journalism and politics, and thence into diplomacy. He had been two years at Peking.

THE JUBILEE OF THE EPIDEMIOLOGICAL SOCIETY.

THE fiftieth anniversary of the foundation of the Epidemiological Society was celebrated on July 13th. In the evening the Society entertained a large number of guests at dinner. After the toast of "The Queen," given by the President, Dr. Franklin Parsons, had been duly honoured, the toast of "The Navy, Army, and Auxiliary Forces" was given by Sir Archibald Geikie, who referred to the criticisms recently made as to the medical arrangements in South Africa, and expressed the opinion that the officers of the Royal Army Medical Corps had shown so much enthusiasm, capacity, and self-sacrifice that whatever record leapt to light they never would be shamed. The toast was acknowledged by Sir Henry Norbury, Director-General of the Royal Navy Medical Service, who referred to the new laboratory at Haslar and the instruction given in bacteriology. It was also acknowledged by Surgeon-General Jameson, Director-General of the Army Medical Service, who referred to the praise which Sir William MacCormac, Mr. Treves, Sir Redvers Buller, and Lord Roberts had given to the medical arrangements in South Africa, and to the dispraise of Mr. Burdett-Coutts. There were, he said, 200,000 men in South Africa, and he had provided 20,000 beds with a *personnel* of 8,000 men and women, and he had been informed by telegram that no more base hospitals were wanted. War was full of unexpected chances; no one could have foreseen that the water supply of Bloemfontein would be cut off, or that a convoy containing a great quantity of stores would be captured, nor that the railway, a thousand miles long, would be broken in many places. Not only did the men in hospital suffer, but also the men out of hospital. As Lord Roberts had said, to preserve his army it was necessary to supply them with food, and hospital supplies were deliberately excluded. The Commission would, he believed, bring out the truth, and that was what was wanted. Sir Joseph Fayrer then proposed "The Founders of the Epidemiological Society," and sketched its history, laying special stress on the reports of its committees, especially on that of the committee on small-pox and vaccination, which had had an important influence on legislation. As an indication of the estimation in which the Society was held abroad, he recalled the fact that Hirsch had dedicated the first edition of his classical handbook of geographical and historical pathology to the Society. The toast was coupled with the names of two original members o fthe Society—Sir John Simon and Sir Edward Sieveking. Neither was able to be present, but a telegram was sent giving them a hearty greeting. Dr. Farquharson, M.P., proposed the toast of "The Public Health Service," and referred particularly to the work of Sir George Buchanan and Sir Richard Thorne. Dr. Farquharson expressed the opinion that public health

deserved a greater measure of recognition, and pointed out that while the Home Secretary received a salary of £5,000 a year, the Chairman of the Local Government Board, who had to deal with larger and more important interests, received only £2,000 a year. This was an index of the relative importance attached to these offices by politicians, and revealed an evil which ought to be remedied. Mr. T. W. Russell, M.P., who responded, said that no department was better served by its permanent officials than the Local Government Board, who were ready to give not only their days but their nights to its service. He referred at some length to the operation of the Vaccination Act, 1898. He had always believed that the conscientious objector was a humbug, and that the real difficulty was with the careless people. He was glad to say that the correctness of this anticipation had been proved by the fact that the amount of vaccination had gone on increasing, until the country was now better vaccinated than it had been for many a long year. The toast of "The Visitors" was given by Dr. Patrick Manson, C.M.G., President-elect of the Society, and acknowledged by the President of the Royal College of Physicians, who said that in accepting the appointment to the Commission on the medical arrangements in South Africa he believed he could bring to his duties impartiality and a certain modicum of that quality which Lord Roberts said was particularly required—common sense. The toast was also acknowledged by Sir J. Crichton-Browne in an eloquent speech. The toast of "The President and Officers of the Society," proposed by Sir William Broadbent, and suitably acknowledged by the President and Dr. H. D. Balstrode, Honorary Secretary, brought the proceedings to an end.

THE ASYLUMS COMMITTEE OF THE LONDON COUNTY COUNCIL.

As bearing upon the manner in which persons of unsound mind are sent to private asylums rather than to county asylums, of which so much has been heard recently at St. Pancras, the following interesting story, reported to the London County Council on Tuesday last, is instructive. It was stated that on June 5th an application was received from a relieving officer at Bethnal Green for a bed at one of the London County asylums for a male patient. The same day a communication was directed to the officer notifying that the patient could be received at the Heath Asylum, Bexley. The next day the relieving officer wrote saying that the patient in question had been removed by justices' order to Bethnall House Asylum, the removal having been effected on the 5th inst., the day of the application. The County Council decided to invite the attention of the Local Government Board to this case, in which, although there was room at the public asylum, a patient was despatched summarily to a private asylum. At the same meeting the proposal of the Asylums Committee in reference to a deputation to visit foreign and American asylums was again under consideration, owing to the ruling of the Chairman to the effect that members for the City having inadvertently voted when a "tie" occurred on the motion to refer back the report, the matter was still before the Council. After some discussion, however, the Chairman of the Committee asked leave, under the circumstances, to withdraw the report.

ÆSTHETIC VACCINATION.

Il faut souffrir pour être belle: hence fair maidens who wish to escape the scars which so often marred the beauty of their great-grandmothers must not kick against the pricks of the vaccinating lancet. There are many, however, who not unnaturally object to having their arms disfigured with vaccination marks. For a similar reason mothers are anxious to have their babies marked as little as possible. Possibly a little more attention to the æsthetics of vaccination than is generally given would diminish the number of conscientious objectors to the "Jennerian rite." Some ardent apostles of vaccination are perhaps rather exacting in the matter of marks. Thus Professor Huguenin, of Zürich, in a recently-published work, affirms that from ten to twelve pustules are required for the marks to remain for a considerable number of years. Other authorities put the number at six, but, taking the lowest number of four, it is obvious that well-marked scars on the upper part of the arm do not add to the attractiveness of a young lady in a ball dress. The point is what other part of the body to choose. This question has lately been discussed by Dr. Jeanneret in the *Revue Médicale de la Suisse Romande*. The hip and thigh have been suggested, but for obvious reasons they are unacceptable. Some years ago there was an outcry in New York when doctors were vaccinating people by force, and part of the public indignation was due to the fact that in young ladies' schools the vaccinators had chosen the leg as the site of inoculation. It was explained that this was done in deference to the wishes of the young ladies themselves, but it would be well to avoid any ground for complaint of this nature. Dr. Jeanneret has carefully considered the advantages and disadvantages of the armpit, the popliteal space, and other possible situations, and has come to the conclusion that the sole of the foot is the seat of election. Imagine, he says, one of your fellow creatures naked and in a vertical position, and you will note that the only part of the outer skin entirely out of sight is the sole of the foot. He sets forth the advantages of the site as follows: (1) It is the easiest thing in the world to put a child on its back, seize one foot after the other, disinfect them, and then make as many insertions as may be thought advisable, the surface being large enough to take five or six on each side; (2) convenience for applying the dressing and keeping it in place; hence (3) prevention of complications such as erysipelas, phlegmon, enlargement of glands, etc.; (4) the possibility of bathing the child during the early period of the evolution of vaccinia; this can easily be done by keeping the child's feet outside the bath; lastly, (5) complete concealment of the scars. There are two obvious objections to this proposal. In the first place the method can only be applied to very young children before they begin to walk. This he dismisses as a matter of no importance. Another objection is that the method is inapplicable in the case of revaccination. There, however, the patient can use his own judgment. If he or she will submit to remain recumbent for two or three weeks, the sole of the foot can be used without inconvenience. Dr. Jeanneret has used this method with satisfaction to himself and to parents for four years, and he confidently believes that the patients, when they are old enough to appreciate what he has done for them, will be grateful to him for having placed their vaccination scars in a part of the body where they are not likely to be seen unless expressly looked for

ELECTROCUTION.

OPINIONS are divided as to the desirability of capital punishment, but most humane persons agree in desiring that the judicial death penalty should be carried out in the most rapid and merciful manner possible. A good many conflicting reports reach this country as to the efficacy of the electrical method of executing criminals adopted in America, and it is interesting, therefore, to read the detailed account of it given in the *American X-Ray Journal*, by Mr. Homer Bennett. The current generally used is the alternating dynamic, with a tension of 1,700 to 2,000 volts; amperage of 7½ amperes, and alternations of 16,000 per minute. The condemned person is seated in an oak chair, about 3 feet wide and 2½ feet deep. The seat is made of perforated wood, and there is an adjustable head-rest, with iron bands to securely fix the front of the head. The

criminal is fastened to the chair by means of straps and buckles, and the face is covered by a headpiece which serves also to still further ensure the immovable fixation of the head. The contacts are made by means of two electrodes, one of which is applied to the outer side of the right leg, at the junction of the upper and middle third, and held in place by a strap round the calf; the other is applied to the top of the head. The electrodes are wetted with a solution of chloride of ammonium. When the current is turned on and the tension is adjusted according to the physique of the criminal, a sudden tetanic contraction of every muscle in the body occurs, and every strap is strained to breaking point. The contraction of the diaphragm causes a short spasmodic gasp—quite involuntary—which is the only sound heard. The current is then turned off, and the muscles relax. The first shock is sufficient to ensure death, but the current is passed through the body three times as a precautionary measure. The muscular contractions which accompany the second and third shocks are *post mortem*. The only external signs after death are slight blisters on the legs at the point of contact of the electrode, and heat of the skin and hair under the acephalic terminal. Doubtless death ensues painlessly and instantaneously by this method, but the same may certainly be said of our simpler though less scientific hanging. The chief suffering connected with any mode of execution must consist in anticipation and apprehension, and the more elaborate and unnerving preliminaries necessary for electrocution would appear to make it less merciful than hanging in this respect.

THE NEW POOR-LAW INFIRMARY AT ISLINGTON.

Their Royal Highnesses the Duke and Duchess of York visited Islington on July 16th, and the Duke opened the spacious infirmary which the guardians have lately erected for the reception of their sick poor. Accomodation of this kind has been wanted for this particular parish for a long time past, and much controversy and delay occurred before the final acquisition of the splendid site on Highgate Hill was decided upon by the local authorities. The cost of the site, which is not of great extent, was £53,000. It is situated within the boundaries of the parish, and a very commodious range of buildings has been erected, which supply accomodation for 800 patients, together with the usual offices and annexes. Special attention has been paid to the requirements of the large nursing staff which will be necessary to deal with the large agglomeration of sick persons. Every nurse will be provided with a separate bedroom in a spacious building detached altogether from the wards of the infirmary. Airy recreation rooms are also at the disposal of the nurses when off duty. The infirmary proper consists of four large blocks running from north to south, and connected not only by a wide central corridor, but also by open iron bridges at the further extremities of the blocks. The wards terminate in day rooms, which to the south command an extensive panorama of the metropolis. Excellent kitchens, food and clothing stores, and separation wards are also attached to each of the wards. The administrative offices are collected together in a central position, and in the upper floors of this part of the building are placed the apartments connected with the medical work of the institution. There is an operating room, and communicating directly with it is a smaller room in which the patient may be anæsthetised preparatory to operation. There is a laboratory for purposes of clinical research, and an excellent dispensary and drug store. The lighting of the entire building is by electricity, and the number of illuminating points seem quite lavish. The cooking arrangements appear to be good. There are doubtless various particulars in which the modern conceptions of hospital construction have been lost sight of, nevertheless, the extensive accommodation so long and urgently needed cannot fail to confer a boon on the persons for whom the infirmary is intended. The building and furnishing of the institution will cost the guardians the large sum of £220,000.

JUBILEE OF PROFESSOR RUBIO.

Dr. Federico Rubio y Gali, on whom the Royal College of Surgeons will bestow its Honorary Fellowship on July 26th, has for many years been the leading surgeon of Spain. The fiftieth anniversary of his graduation was celebrated on June 28th in Madrid with an enthusiasm which proves the extraordinary respect in which he is held by his professional brethren and by his countrymen in general. In honour of the occasion two beds were endowed by decree of the Queen Regent and the Government in the Surgical Institute of which Dr. Rubio is the head. Another bed was endowed by the professors and students of the Institute, and a fourth by a philanthropic lady, Señora de Trelles. Congratulatory telegrams and messages were received from the Royal Academies, Faculties of Medicine, and medical colleges in other parts of Spain. A large and handsome steel plate bearing more than a hundred signatures of distinguished professors picked out in gold letters was presented by an executive committee composed of Drs. Nieto Serrano (Marquis of Guadalerzas), Calleja, Fernandez Caro, Gutierrez, Bravo Coronado and Pudilo, representing the Faculties and Academies of Spain. The students of the Institute presented a medal with a bust of the illustrious surgeon in bas-relief, with the dates of his qualifications and of his jubilee. Another interesting souvenir was an album inscribed with the most notable dates of the professional and teaching life of Dr. Rubio, and ornamented with drawings and coloured sketches by distinguished artists. Many ladies of the Spanish aristocracy sent baskets of flowers, and the people of Madrid joined in doing honour to the eminent surgeon who is one of the glories of Spain.

PLAGUE IN SYDNEY.

Dr. Frank Tidswell read a most interesting and exhaustive paper on Plague and its Dissemination before the New South Wales Branch of the British Medical Association on April 27th last. Tracing shortly the history of plague since its recrudescence in China, he described the clinical characters and pathology of the disease, and discussed its etiology. In rats suffering from the disease all the tissues were congested, their dusky colour being in marked contrast to the clear whites in certain parts of the normal rat. There was a marked excess of fluid, but not actual dropsy, in the serous cavities, and the viscera generally had a "soppy" appearance. One or more groups of lymphatic glands (inguino-femoral or axillary) were enlarged, and sometimes there was periadenitic œdema and hæmorrhage. Generally, but not always, the lungs showed more or less pneumonia. The liver was always enlarged, the spleen was usually swollen, and petechial hæmorrhages were very common in the lungs, heart, liver, kidneys, and under the parietal pleura and peritoneum. Dr. Tidswell supports the view that owing to the apparent ease with which the bacillus can be destroyed in Nature, plague most likely finds the best mode of dissemination in hosts such as the rat and the flea. He draws attention to the curious fact that though plague as an epidemic presents such clearly-marked characteristics, yet there has nearly always been a tendency to deny its epidemic existence at its first appearance in any particular place. In the older days people asserted that the disease was a "transmutation of malarial fever" or "typhus genus epidemicus," whilst more recently it has been referred to as "malignant typhoid" or "continued fever with buboes," in fact anything but plague. Evidently in Sydney the community have been greatly exercised by the prevalence of plague, for Dr. Tidswell, in concluding his paper, quotes as appropriate the words of a writer upon the outbreak at Alexan-

dria: "The attitude taken up by the press is not to be admired. At one moment it denies that the disease is plague at all, jeering at the sanitary authorities for excessive zeal, and demanding a close time for the *chasse aux bubons*; at another moment, under the influence of hysterical excitement caused by the occurrence of a fresh case, it proclaims loudly that nothing is being done, and demands the burning down of infected houses, the absolute isolation of medical officers and all who have seen a plague case, the establishment of special commissions of intelligent citizens, etc.

POST-MORTEM CÆSAREAN SECTION.

IF a woman die in a late stage of pregnancy, and if the unborn infant is not dead, should it not be saved if possible? Experience has shown that *post-mortem* Cæsarean section as a rule is unsuccessful, and it may naturally shock relatives who are not likely to demand or sanction a surgical procedure naturally repulsive, and believed on good grounds to be bootless. Yet a father may seek to save his infant, and the moribund mother may express the same desire. Taking sanction for granted, Cæsarean section after death appears humane and reasonable. Failure must be the rule, for the malady which kills the parent usually kills the child, whilst the physiological changes in the mother during death put it to absolute peril, which ensures its own decease within a very short period. A rescued infant is likely, considering its antecedents, to be very feeble. Nevertheless, infant lives have been saved. Dr. Weinberg of Stuttgart operated on a woman so as to deliver the fœtus within five minutes after her death from tuberculous meningitis. The moment after death the fœtal heart sounds were still audible. The child was saved, and according to the report in a recent number of the *Würtemburger medicinische Wochenblatt* it would seem that it was reared. Theoretically 1 or 2 per cent. of success would justify *post-mortem* Cæsarean section. In accidents the rescue of a single life amidst one hundred, or indeed amidst an indefinite number, is better than the loss of all, including that unit. The only qualification is that many lives may under some conditions be risked in the rescue of one. In operative surgery indefinite risks are run at the will of patients and friends. In *post-mortem* Cæsarean section there is really no risk, but quite the reverse, as the death of the fœtus within a very few minutes is certain, and the operation at least cannot kill it.

SNAKE VENOM.

THE Madras Government has passed an order sanctioning the excess expenditure over the original grant of Rs.600 incurred by Captain R. H. Elliott, I.M.S., in connection with the prosecution of his researches into the properties of snake venom, and has made him an additional grant of Rs.200 to cover the cost of further experiments. It has also requested the Surgeon-General to report if Captain Elliott's services will be available for special duty at the end of September when his tour of service terminates.

MR. JOHN H. MORGAN, on resigning the position of Senior Surgeon to the Hospital for Sick Children, Great Ormond Street, has been unanimously elected Consulting Surgeon.

DR. M. ARMAND RUFFER, President of the Sanitary, Maritime, and Quarantine Board of Egypt, has received from His Majesty the Sultan of Turkey the Order and Insignia of the Medjidjieh of the Second Class.

ON the recommendation of the Council of the Edinburgh Obstetrical Society, Professor Sänger, of Prague, and Professor Fehling, of Halle, were, after a ballot of the Fellows, unanimously elected Honorary Fellows.

AT the forthcoming International Medical Congress in Paris the Honourable Alan Herbert, M.D., Physician to the Hertford British Hospital, will be presented with an address by the former and present medical officers of the hospital, numbering 20. The date of presentation is not fixed.

DR. GEORGE OGILVIE has been appointed full Physician to the French Hospital in the room of Dr. Keser, who has resigned owing to ill-health. Dr. Ogilvie has done the work of Dr. Keser at the hospital for more than a year. It may be mentioned that a necessary condition for tenure of the post is a colloquial mastery of the French language.

THE subject of the "physical equivalents of candidates for commissions in the army is being considered by a scientific committee, and the results may shortly be expected. Much controversy regarding physical equivalents has arisen in the past, and it is hoped that the causes for dissatisfaction may be removed. With the physical equivalents the subjects of the sight test, loss of teeth, etc., have also been considered.

THE Heath Scholarship founded under the will of Dr. G. Y. Heath, for many years Professor of Surgery in the University of Durham, and President of the Durham College of Medicine, has been awarded to Dr. Nathan Raw (Liverpool) and Major J. R. Dodd, R.A.M.C. The subject prescribed was "The Urinary Tract: Its Injuries and Surgical Diseases, their Pathology, Diagnosis, and Treatment." The scholarship, which is of the value of £200, is awarded every second year, and is open to all graduates in medicine or surgery of the University of Durham.

MEDICAL NOTES IN PARLIAMENT.

[FROM OUR LOBBY CORRESPONDENT.]

The Medical Acts Amendment Bill was introduced on Friday by Sir Richard Jebb, and read a first time. The bill is backed by its introducer, Sir William Anson, Mr. J. A. Campbell, Sir Michael Foster, Mr. Lecky, Mr. Talbot, and Sir John Tuke, that is to say, by all the University members except Mr. Carson and Sir John Gorst, who are precluded from backing a private Bill as holding office in the Government.

Lead Poisoning.—On the Home Office Vote Sir Charles Dilke opened a very interesting discussion on the dangers of the pottery trades. He said the official figures of 1896-98 showed not a steady diminution, but an increase, in spite of the special rules. In 1899 the practice of suspending persons from work was introduced, and this made it difficult to deal with the figures of the last year. On the whole, taking into account the lock-out, the figures were not satisfactory, and really showed an increase as regards lead poisoning among women. Suspension from work was not a permanent remedy, and they ought to make the work innocuous if possible. Leadless glazes, described by Dr. Thorpe as perfectly practicable, ought to be adopted. Moreover, young persons and children should be excluded from the dangerous branches of the trade. Mr. Tennant also spoke on dangerous trades generally, and suggested that instead of factory surgeons selected from the practitioners of the districts, there should be, in the in the interests of uniformity of practice, a medical branch of the Home Office, and certifying surgeons acting under instructions from the chief medical inspector. Mr. Coghill defended the pottery trades, and argued that great improvement was being made: while Mr. John Burns, quoting from Dr. Prendergast, insisted on the prevalence of lead poisoning to an excessive degree, and urged that it was the duty of the House to devise means to lessen it.

Phosphorus Poisoning.—As the debate proceeded Captain Norton called attention to the matchmaking industry, and

said that of late the dangers of phossy jaw had been overlooked in consequence of two great firms having introduced the use of amorphous phosphorus. The danger, however, still existed in the trade, and he said the new rules as regards lucifer matchmaking were certainly unsatisfactory as regards the working of arbitration. He complained that the surgeon had been placed below the dentist, as no case came before the surgeon unless the dentist passed it on. He said better rules prevailed in Switzerland and elsewhere, and advised the Home Secretary to try and bring about an international agreement as regards regulating the trade.

The Two Home Secretaries.—The late Home Secretary, Mr. Asquith, spoke in strong terms of the necessity for further action. The figures quoted represented, even after allowing for any amelioration produced by changes in the law, an appalling problem in the existence of what they now knew, on medical and scientific authority, to be preventable evils. The existing rules were not sufficiently stringent, and they ought to be strengthened. He also dwelt on the advantage to be derived from a permanent female inspector in the Potteries. Such an officer would be most valuable in a trade in which so many women and young children were engaged. The Home Secretary, in his reply, admitted that the improvement in the pottery trades had not been all he desired; the fact remained that lead poisoning in the Potteries was a fearful thing, and far more serious than phosphorus poisoning. The rules were not sufficient, although they had done good, and a new code of rules would shortly be published, which he hoped would carry out everything recommended by Drs. Thorpe and Oliver, with the exception that there would be no absolute prohibition of the use of raw lead in every case. He hoped the rules would be accepted, but he should go to arbitration, if necessary, to get them accepted. He promised to consider the points raised as to the female inspector, and with reference to the rules for the matchmaking trade he could not admit that they were weak, and he did not see how it was possible to prohibit the use of a particular kind of phosphorus, and he thought there was no hope of an international arrangement. There had been only one case of phosphorus necrosis reported during the last six months, and he thought the department had to a large extent got hold of the disease. Sir Charles Dilke pressed for a division on his motion to reduce the Home Secretary's salary, even after what he considered a satisfactory statement in many respects, in order to express dissatisfaction with the administration of the Home Office in the past. The motion was defeated by a majority of 34.

Retired Army Medical Officers.—In answer to a question by Mr. Swift MacNeill last Friday, Mr. Wyndham stated that there are 93 medical officers liable to recall; of these 18 are holding permanent appointments for officers on retired pay. The services of 25 others who volunteered to return to the service have been accepted, and they have been employed at home and abroad; none have been recalled by compulsion. Four officers are employed in South Africa on hospital ships. Mr. MacNeill interpolated, "out of 98 officers on the retired list only 4 are employed in South Africa," and Mr. Wyndham replied, "Yes, but 25 others are employed elsewhere. The 18 who are holding permanent appointments are officers of high rank, and it is thought better to employ in South Africa young civilian doctors who have more recent experience of hospital work."

The Massacre of the Innocents came off on Monday last, and will no doubt be followed later on by a second slaughter of Bills which the Government cannot carry. On Monday Mr. Balfour announced that the Factory and Workshops Bill, the Lunacy Bill, the Youthful Offenders Bill, the Dogs Regulation Bill, the Sea Fisheries Bill, and the Palatine Court of Durham Bill, would be at once dropped. He said he still hoped to pass the Companies Bill and the Money-lending Bill. The former is a Bill of great public importance, and as also of great interest to the medical profession, but it will not be through Committee till the end of this week, and if there is much opposition in the House its chances are not very favourable. There was a spirited appeal made by Mr. Pickersgill in favour of the Lunacy Bill, but without avail. It does certainly seem hard that a Bill like this which has repeatedly passed the Lords, and which is greatly needed, should be dropped session after session, when two, or at the most three, sittings would amply suffice for its full consideration. At the same meeting of the House Mr. Balfour suspended the 12 o'clock rule for the remainder of the session, and took the whole time for Government business. This disposes of all private Bills except two or three which have passed all their stages and have been considered in the Lords. The Midwives Bill is not in this position, and so once again has joined the big cohorts of the lost.

Typhoid at Ladysmith.—In answer to Sir Walter Foster, Mr. Wyndham said he had complete returns for the Ladysmith garrison only up to May 18th. The cases of enteric at Ladysmith from the date of the relief to the week ending May 18th amounted to 799. Including the above, the total admissions for all the forces in Natal during the twelve weeks ending May 25th were 2,380, and the deaths 550. This would give a mortality of over 23 per cent.

The Hospitals in South Africa.—Mr. Wyndham has told the House that the services of 385 civil surgeons have been accepted, principally for base hospitals and general duty; of these, 363 are now in South Africa. This does not include those locally employed or attached to private hospitals, or to the Yeomanry or the Rhodesian Field Force; 117 R.A.M.C. officers under two years' service have been sent out. Of the 98 officers liable to recall 18 hold permanent appointments at home, and very few volunteered for service in South Africa.

The South African Hospitals Inquiry.—On Tuesday Mr. Balfour was able to announce the names of the two additional members of the Committee. Lord Roberts's two men of sound common sense have been found in Sir David Richmond, ex-Lord Provost of Glasgow, and Mr. Harrison, General Manager of the London and North-Western Railway. Mr. Burdett-Coutts essayed to move the adjournment of the House on the announcement, with a view to questioning the appointment of Dr. Cunningham. He pointed out that Mr. Balfour, when he announced the names of Lord Justice Romer, Dr. Church, and Professor Cunningham, had said that neither of the two medical men had any connection with the Army Medical Department. Subsequently it became known that one of them held a paid appointment in connection with the Department. The Speaker, however, ruled firmly that discussion could only take place on the names last added, and so the adjournment was not moved.

THE INTERNATIONAL CONGRESS OF MEDICAL ETHICS AT PARIS.—The official programme of proceedings of this Congress has now been issued. The opening meeting will be held in the Exhibition building on Monday, July 23rd, at the Palace of Congresses and of Social Economy, Place de l'Alma, when addresses will be delivered by Dr. Lereboullet (President), and Dr. Théophile Roussel (Honorary President). Subsequent meetings will be held at the School of Medicine, 12, Rue de l'École de Médecine, when reports and papers are promised on the various relations of medical men to the State and to one another, hospital abuse, medical attendance on club patients, the illegal practice of medicine, massage, hypnotism, medical defence, and assurance against sickness. On Tuesday members of the Congress will be photographed in groups at the School of Medicine. A separate programme will be issued of entertainments and receptions offered to members. The general secretary of the Congress is Dr. J. Glover, 23, Rue de la Bienfaisance, Paris, and the treasurer, to whom subscriptions (12s. each) should be sent without delay by those intending to take part, is M. P. Masson, 120, Boulevard Saint-Germain, Paris.

A COLONIAL CONGRESS IN PORTUGAL.—The Portuguese Geographical Society is organising a Colonial Congress to be held in Lisbon at the end of the present year. Among the subcommittees appointed for the purpose is one on climatology, medical geography, and ethnology. The Secretary is Dr. Silva Telles.

THE WAR IN SOUTH AFRICA.

FROM BLOEMFONTEIN TO PRETORIA.

By SIR WILLIAM THOMSON,
Surgeon-in-Chief, Irish Hospital, South African Field Force.

FROM BLOEMFONTEIN TO KROONSTADT.

BLOEMFONTEIN was a vast improvement upon Naauwpoort, but I was glad to leave it, if only for a change. The position of the Irish Hospital, camped on the gentle slope of the principal kopje of the town, was all that was desirable. It commanded a view of a great plain, and of hills whose names are well-known at home—Leenberg, Bushman's Kop, Springfield and the great towering Thaba Nchu, round which fights soon began to wage, and we could hear the booming of guns and occasionally see the column of smoke of a burning farm. But for all that we were afflicted by a special curse in the shape of flies. The wintry chill of the evenings drove them into the tents, where they ranged themselves in armies and battalions to the number of hundreds of thousands. At lunch time, when the sun had given them a new fillip, they descended upon us from the tent ceiling, and assailed everything that was eatable. They challenged the right of anyone to food, and impudently wrestled with the morsel on its way to your mouth; rushed headlong into soup, or milk, or tea, and generally did their best to make the life of the invading stranger as miserable as possible. So, when the order came on Wednesday, May 9th, to move the ambulance portion of the hospital to the front, I had at least one joy to oppose to some regrets.

The equipment of our hospital included 15 ambulance waggons, and 10 large tortoise tents, with about 25 small square bell tents. I determined to take 10 ambulances, 6 small tents, and 4 large. These last were arranged so that the top bar of the waggon served as the central support, the sides being rolled up, and a little drill enabled us to pitch a tent to contain 14 patients in about eight minutes. I took with me Dr. Coleman, Dr. Pounden, Mr. Percy Stewart, and Mr. Douglas Thomson, with orderlies and drivers, leaving behind 60 occupied beds in charge of Dr. George Stoker, Dr. Friel, Mr. MacIlwaine, and Mr. Edwardes.

We left Bloemfontein on Thursday afternoon, May 10th, with 14 waggons and carts, and made our first halt about six miles out. Thence we passed through Glen, Karee Siding, Brandfort, Vet River, Smaldeel, Welgelegen, Zand River, Geneva Siding, on to Kroonstadt. For a day we were advised to march with a large column, as the enemy was reported to be ahead of us in force; but he did not appear, and as our progress was slow, we slipped away in the early morning, and made our own way thereafter, reaching the headquarters at Kroonstadt at 1 o'clock on Thursday, May 17th.

The country through which we passed, and over which the advancing army had already preceded us, was very different from Cape Colony or the Great Karoo. For a day or two the kopjes had been diminishing in numbers. Now and again we could trace the banks of some intermittent stream by the presence of thorn bushes. The plain was no longer sparsely grassed, but there was gradually increasing fodder as we got north. At last, at Theron, we left the last kopje behind us, and although we saw it for a long time, we saw no semblance of another in the three days that elapsed before our arrival at Kroonstadt. The plains seemed endless. Far as one could see there was nothing but grass. Day after day we went along meeting not more than two or three people, and seeing no signs of habitation but an occasional house or Kaffir's kraal, sometimes miles away from our track. The farms uniformly displayed a white flag. Some of them I visited, but the only occupants were women and children or very old men. The young men were in some commando, but their mothers and sisters at home only wished that the war was at an end. They asked anxiously if more troops were coming, for they had seen column after column pass in long streams, and the only answer was that they were coming like waves of the sea.

To those who see the veld in this region, and trek across it for the first time, there must be, I think, a powerful fascination. I had never seen plains so vast, so silent, and so void of human life. What we looked upon were called "farms," but they were really great cattle ranches. No hedgerow or wall broke the landscape. The immense plain, often flat as a cricket field for miles, sometimes rolling away in far-stretching undulations, was only marked at great distances by the well-known barbed wire fences, which marked out the limits of the property. As to tillage, there was practically none, except a few patches of Kaffir corn or mealies; perhaps they were almost swallowed in the surrounding vastness of grass land, and were really more extensive than I thought.

Life from this week was a delight. Up at 4 o'clock, we breakfasted in the moonlight at 5, and were well on our way at 6 just as the day began to break. The mornings were very sharp—I have seen ice an inch thick here—but by 9 o'clock the greatcoat was abandoned, and for the rest of the day we had a really hot sun. Walking, riding, driving followed in turn, and then dinner at 6 in the moonlight again. The sense of freedom in this great solitude; the exhilarating air; the brisk, bracing cool of the evening were unspeakably attractive; and the unbroken sleep that followed such a day, even on the floor of a waggon, made me often declare that this was the real cure for insomnia.

On arriving at Kroonstadt I was informed by Colonel Stevenson, the P.M.O. in the field, that we were to be attached to the Guards Brigade in the Eleventh Division, under General Pole-Carew; but subsequently this was changed, and we were ordered to act as field hospital to the Royal Artillery, the Naval Brigade, the Royal Engineers, and generally to the divisional troops.

FROM KROONSTADT TO JOHANNESBURG.

The now famous march of Lord Roberts's army from Kroonstadt to Johannesburg, ending in the surrender of the latter town, began on Tuesday, May 22nd, and ended on the following Tuesday, when we reached Elandsfontein, a suburb, and seized the railway junction. It was a novel thing to have a civil hospital and ambulances in the field, and every man of us was proud to take a part in this great historical event. No other civilian hospital was thus honoured, but they were all doing their share of work at Bloemfontein and other places in the rear.

Each day we expected to fight. On Wednesday the news was that 6,000 Boers were entrenched across our path; but General French and Colonel Hutton, who were operating with cavalry and mounted infantry a long way in front, turned their flank and they fled. This was the daily course of events. We could hear the big guns thundering ahead of us for an hour or two; then followed silence, and we knew that the enemy had again retired. The interest of the day for us was in part centred in crossing fearful drifts or discussing the probabilities of what would happen at Johannesburg. We were without news of the outside world. We had no letters or newspapers; we did not know what was happening on our right or left, save through vague rumours, which always took the most exaggerated shape; and we rather envied the people at home who knew all about the stirring events that were happening.

The destruction of the railway line was remarkable. Splendid bridges at Kroonstadt and other places had been utterly ruined. There appeared to be a special malice in reducing high piers and buttresses to stone-heaps. Every culvert was gone, and as we approached the Vaal the line itself had been more frequently attacked. The plan was to place dynamite under the joinings of the rails, and blow them up. Freed from its holdings the steel sprang up in great curves, and as you looked along for miles you saw these weird arms extended into the air. It seemed impossible that the repairs could be quickly effected, but the Royal Engineers and the Railway Pioneers struggled with the wreck night and day, and the railhead was only two days behind us at some points.

The supply of a great army in the field with food is a difficulty which perhaps does not present itself to the average mind. In Europe there are plenty of railways; here there is one, and that a single line. The food for this army—a thousand miles up into Africa—had to be carried by ox waggons. Each of these uses about sixteen or twenty animals, and this may give an idea of what a huge cavalcade followed the troops. The supply of food has been a triumph of management, and Colonel Ward, C.B., and his staff have done marvels. A German officer who knows the country told me that even to Africanders it was astonishing, and that no other

nation could have done what he had seen accomplished during this campaign.

We arrived at the Vaal River on Sunday, May 27th, and looked for the first time upon the Transvaal. We expected a stand here; but as usual the Boers were driven out on the day before, and we were free to cross. We rode through the river, and then we realised that we had already conquered one country and were entering upon the conquest of another.

On Monday, May 28th, we marched twenty-two miles to Klip River, and encamped, and next morning started at 6 for Johannesburg. It was a day to be remembered. We had not gone a mile before we learned that one of the big 7-ton 4.7 naval guns had gone through the bridge. I went on to see what had happened. I found a deep, sluggish stream about 20 feet wide, and over this a structure of tree trunks, the only road bridge I had seen since I left Capetown. The huge gun was lying on its side, one wheel touching the water, the other in the air. Fortunately the light guns and the infantry had got over, but for everything else in the shape of wheeled vehicles passage was impossible. The engineers put up a trestle bridge, but it broke down under a big telegraph waggon and then another had to be got up. In four hours by the aid of men and eighty oxen the gun was extricated. Then a drift had to be made, and finally after a delay of eight hours we were able to cross. We had still to march seventeen miles, and there remained only a couple of hours of daylight, but we hurried on. As the sun went down I saw on the left a ridge of low-lying hills, and there in the twilight half-a-dozen tall chimneys—one smoking—that told me I was looking upon Johannesburg. After this the journey was intricate and very tiring. The column made its way over stony hills full of ruts, littered with small boulders. The night was very dark and there was a piercing wind. Kaffirs shouted at their teams, mules gave out, oxen bellowed, and the waggons rumbled along, colliding with stones, rolling into waterways, until one wondered how long the fore carriages would stand. For hours we went on, looking eagerly for a camp fire, and then at 9 we reached our destination. We were at Elandsfontein and were overlooking Johannesburg. We had done a record march with really very little loss. For six days our ambulance waggons had carried on the sick and wounded because they could not be sent back by convoy, and although many were very ill we had lost none.

Next day we moved to a pleasant field sheltered by trees and pitched all our big tents, to accommodate 50 patients, beside the Guards' Hospital. Here more sick and several wounded were received. On Thursday morning, May 31st, at 10.30, in the middle of dressing work, I had orders from Colonel Magill, of the Guards, P.M.O. of the division—whose unfailing courtesy and zeal I wish to acknowledge—that we were to pack up at once and carry all our patients to Johannesburg, for the surrender had been made. In an hour and a half we were ready—all our sick and wounded packed into the waggons and tents struck. We joined a long convoy and started, passing through the overground works of gold mines whose names are famous—Simmer and Jack, Geldenhuis Deep, and others—along coal-dust roads, and under a sun that blistered one's face and lips. The line of waggons and troops extended for miles, and marked its advance by clouds of dust. The inevitable blocks occurred, but at last we came upon scattered residences, then into tree-lined suburbs, then gradually into streets of brick-built houses and shops. We were in Johannesburg.

It stirred my heart as I rode along to realise that I was taking part in this great triumphal procession. It was something new to enter a town prepared for siege. We had passed scores of skilfully laid trenches, on the outlying slopes, that had never been occupied. We were now looking upon the preparations of the town itself for an investment that never came. The streets were practically deserted by white people. The British had been turned out long ago; the burghers were off to the war; those that remained were in the main of other nations, with perhaps indifferent feelings; at least they were stolid as they gazed. The Kaffirs, scantily dressed, sat at the corners and stared eagerly at the "locust" army. Here and there some men and women looked from a balcony; and a few good Samaritans gave water or tea to the sick or the marching men. But there was no sound save the tramp of men and the rattle of wheels and arms. I do not know what happened when the great chief himself entered at the head of his splendid troops; but at our part of the column there were no sounds of welcome. On the part of the soldiers there was apparently only aroused interest; there were no cheers or jibes; the men moved on in steady stream, only silently exultant that they were victors after long and fearful hardships.

The houses of business, almost without exception, were closed. Huge barricades of wood or corrugated iron covered the windows and doors. All showed what the stress of war can bring to a civil community.

I rode ahead along the long streets in order to reach the hospital. The Union Jack was flying in the great square opposite the public buildings, and half a dozen fluttered from as many houses. That was all the bunting I saw. The people whose sympathies were with the victors had been appealed to by the late official paper to curb any feeling of rejoicing in the hour of triumph, and they certainly did not offend.

I got to the hospital at 5 o'clock, and found the resident medical officer to be a Dublin man, Dr. Pearce. The building is really palatial, and splendidly equipped in every department. Nothing could be better than the operating theatre. There are 400 beds, and the income is about £40,000 a year. The patients were received and refreshed with great promptness. One of ours did not survive the tiresome march. The nuns were most kind, and the celerity with which the hundreds of sick and wounded were got into their comfortable beds was admirable. For ourselves, we had eaten nothing for nine hours, and even our needs were attended to.

We left at 8 o'clock for the camp. Our authority told us that the distance was two miles. I have noticed many times that distance is very elastic in South Africa. You are told that you have to go two miles; you march four and become bewildered; then you are told—this time truly—that you have still five miles to go. So it was now. We struggled on in the dark after others on the same errand as ourselves; but at 12 o'clock we could not find any sign of the division. We were told it was five miles off, so we outspanned till morning. We were all thoroughly tired out. We found next day that hundreds were in the same plight as ourselves, and the brigade hospitals were still behind us.

In this march we have admitted to hospital 159 patients, and many of these were sent back by convoy, but we carried 30 for several days. Most of the cases were enteric, and the wounded did not present any special feature to which I need allude. They all did well. We only lost one case of fever on the last day's march.

Of my 3 dressers, 2—Dr. Pounden and Mr. Percy Stewart—are in the town hospital with enteric. They, as well as nearly all the staff, had been inoculated. This makes 7 who have been attacked, but in no instance was the disease severe.

We have had two days' rest in a beautifully-wooded country, and we are ready for another march.

The Engagement outside Pretoria.

We left our camp on Sunday morning, June 3rd, and marched towards the six mile drift. The enemy were strongly entrenched there to contest the crossing. On Monday, June 4th, we were early afoot, but we reached the drift without opposition and got safely across. We heard that the Boers had been forced out by the mounted infantry brigade early in the morning. The road onwards led through sharply undulating country with steep ascents and descents, all the roads being exposed to commanding positions. But our flanks were widely extended. The small patches of trees were searched and we went on unmolested. About 11 o'clock I heard the boom of the first gun. It was just ahead of our line. Then came more firing, and we knew we were at last engaged seriously. A long climb brought us to the crest of a hill. Right in front about a mile away I saw a battery of our guns on the side of a hill. They were shelling a kopje about 2,000 yards in front of them, and the shells fell in showers upon it. The Guards moved off to the right; while the 18th Brigade moved in advance and to their left. Our road here turned sharp to the right, and the waggons moved steadily on. On

the sky line, a mile and a-half away, were the naval guns, and the 18th Brigade had moved in front of these and lain down on the burnt veld. Our orders were to bring the hospital on to the rear of the naval guard, but on the near side of the brow of the slope.

Accordingly we pitched one large tent in a few minutes, the others being drawn up at hand. The firing had now become very heavy. There was a chorus of pom-poms from both sides, punctuated by the loud booming of the naval and field guns, and we looked with intense interest at the tragic work that was going on before us. There was little smoke, and that only from the big guns and bursting shells, but the noise was deafening. All I could see at this time was the flash of cannon, a little smoke, our own troops, but no enemy. They were hidden behind stone breastworks, which had been prepared with deliberation for what was expected to be a fierce resistance.

The Hospital under Fire.

An ambulance returned bringing Commander de Horsey, of the *Monarch*, who had been hit on the left malleolus by a shell splinter while bringing his 4.7 gun into action. I was engaged in examining his wound when I heard the crackling shriek of a shell passing over the tent. I looked up and saw another burst forty yards away. Dr. Kendal Franks came in just then, and kindly assisted us in hurrying on the work. A shell now fell between our mules and our tent waggon. They were raining freely among the transport, and I saw the drivers turn and lash their mules and oxen in retreat. All over the place there were spurting columns of dust sent up by the bursting shells. Someone had given the order for the convoy to retire. Still the shells came. They were being fired at the naval guns, and missing these came plopping amongst us. Once I saw a shell drop behind one of our own waggons which was moving away. The mules jibbed and the waggon rolled and heaved. I was sure it had been struck, and I expected to see it fall to pieces, but it was only rolling through a watercourse, and it got away safely. Then a soldier was brought in wounded in the face by a shell. He had been standing outside the operation tent talking to one of our men, when a shell burst, and a fragment struck him badly in the face. There was a big rectangular wound penetrating to the mouth, and I stitched this up with Dr. Frank's assistance. Then Colonel Magill came in and ordered us to retire for a mile. The tent was taken down and packed, and we hurried back to a new position where we received other wounded.

It was a hot quarter of an hour altogether, but the only damage done was to the soldier. At the naval guns themselves only one officer was wounded, and two mules were killed.

The firing went on all day until night came. The big guns fired at the forts at Pretoria, and planted the shells unerringly. Then the railway station was assailed, and also the artillery barracks. Once or twice the guns turned upon a near kopje, and pounded it at 2,000 yards to keep down the rifle fire. Gradually the firing slowed, and as evening fell silence followed.

The casualties were slight, about 50 altogether. Our hospital received the Duke of Norfolk, who early in the day had his right hip dislocated by reason of his horse putting his foot in a hole. The reduction was effected on the field under chloroform, and he is doing very well.

A soldier was hit in the abdomen just below the last rib on the right side, the bullet emerging at the left side of the last lumbar vertebra. I had the advantage of consulting with Dr. Franks and Dr. Lowe, a civil surgeon, and we were unanimous in thinking that operation was not desirable. He died next day. In another case a man was wounded through the right knee-joint, the bullet coming out just below the patella. Beyond some effusion he has no trouble and the wound is healed.

In another case a bullet entered at the edge of Poupart's ligament 1½ inch from the anterior superior spine. I removed it from the right buttock, 2 inches from the anus. There were no symptoms. In the case of a West Australian the bullet entered the outer margin of the right sterno-mastoid. I removed it from a point just below the occipital protuberance. There were other cases of no special interest.

We remained by order on the field until Wednesday, the troops having left on Tuesday. The only excitement was the arrival of a party of Boers on their way to surrender. One was a member of King's Inns. We gave them some lunch, and soon after we followed them into Pretoria with our sick and wounded.

Pretoria, June 8th.

THE COLONIAL DIVISION UNDER BRIGADIER-GENERAL BRABANT, C.M.G.

By Surgeon-Lieutenant-Colonel Hartley, V.C.,
P.M.O. Cape Colonial Forces.

In the month of January it was considered advisable to form a division composed of mounted men, presumably accustomed to South African manners and customs, and led by Colonial officers. It is not my purpose to discuss questions outside the medical bearings of the work done by this particular body of troops which was massed at Queenstown, Cape Colony, and numbered some 3,000 mounted men.

Organisation of the Medical Service.

The Imperial authorities having taken over the three volunteer bearer companies of the Cape Medical Staff Corps, one surgeon of the Cape Mounted Riflemen, and the majority of the rank and file of the Medical Staff (regulars) of that regiment there only remained a nucleus consisting of myself and one sergeant-major to develop a medical service for this Colonial Division. Kind friends had already subscribed a substantial sum for the purchase of ambulance wagons, medicines, and medical comforts, and it only remained to get them together and arrange them in some sort of order. The general officer commanding also took the liveliest interest in the arrangements for the comfort of the sick and wounded of his division, and was so good as to order his principal medical officer to spare no reasonable effort and expense towards the attainment of a happy result. It was considered advisable to depart from the established custom of a distinct bearer company and field hospital and to combine the two. It was thought from actual experience in the earlier months of the present war that much valuable time and material is wasted through men of the bearer companies being idle excepting when an action is taking place, or at times when patients are required to be moved from field hospitals to hospital trains or ambulance wagons. This is a subject which deserves the most earnest consideration of the War Office for future campaigns.

Recruits for Brabant's Ambulance were advertised for in various colonial towns. Some 80 men were collected in this way, and an extraordinary medley they were—refugees from Johannesburg, Germans, French, English, Americans, Jews, etc.—few, if any of them having any knowledge of ambulance work, drill, or discipline. But whatever their nationality or creed, they have done admirable work both under fire, in the field, and in the hospitals. There have naturally been some exceptions, but the bad ones were soon found out and discharged.

Then a more serious question arose. South Africa is a very free country, or, to be absolutely correct, considers itself so, and the medical profession is not behindhand in the estimation of its well-deserved freedom and resourcefulness in times of difficulty and emergency. Finally, a staff of 15 regularly qualified medical men were engaged, only one of them having seen active service previously, but all had been engaged in private practice in the Cape Colony, and were conversant with the general run of diseases of the country.

Action at Dordrecht.

The first engagements took place on February 16th and 17th close to the town of Dordrecht, 7 being killed and 9 wounded. A temporary hospital was formed at a deserted farmhouse some five miles from the town. So soon as the troops took possession the patients were moved into it, including one Boer wounded in the thigh, who had been deserted by his fellow patriots and left on the field to whatever fate might befall him. It was only necessary to perform two amputations, one through the upper third of the thigh, and the other through the humerus, both of which recovered without a bad symptom.

On the second day of the fight the ambulance waggons were moved three times in consequence of shells and bullets fall-

ing in close proximity. I am bound to affirm this did not appear to be intentional on the part of the enemy, but to be due rather to the fact that they were drawn up behind the guns, which naturally attracted much attention from the opposite side. The public school buildings afforded an excellent impromptu hospital, it being possible from the numerous classrooms to keep the medical and surgical cases quite distinct. Over one hundred patients were treated in this hospital until it was closed on March 14th, when they were transferred by rail, a distance of some sixty miles, to the civil hospital at Queenstown.

ACTIONS AT LABUSCHANE'S NEK AND THE ORANGE RIVER.

The next fight occurred at Labuschane's Nek, five miles from Dordrecht, with 14 killed and 26 wounded. The division next marched to Aliwal North without opposition, and a sharp engagement took place on March 11th on the banks of the Orange River, within a mile of the town; 5 killed and 18 wounded. Fortunately for all concerned there are very elaborate and extensive public school buildings in the town, and within two hours of the fight these were converted into an admirable hospital with the ready assistance and self-sacrificing aid of the ladies of the town. They not only placed beds and bedding at the disposal of the medical officers, but readily undertook the nursing day and night regardless of personal fatigue and inconvenience to themselves. The Colonial Division should ever feel grateful to these self-denying ladies, whose kindness and attention were most valuable.

About this time heavy rains took place, causing a good deal of fever, diarrhœa, and dysentery among the troops. The resources of hospital accommodation were, however, not unduly strained, communication by rail to the Colony being re-established, thus making it easy to send suitable cases to the civil hospital at Queenstown.

An interesting little episode occurred at Aliwal North Hospital, showing that the Boer is perhaps after all not so bad as he is usually painted. A Dutchman shot through the head causing hemiplegia was treated by us for some weeks, and finally his friends were allowed to take him home. Before leaving his father presented the hospital with twenty shillings and sixpence as a mark of gratitude for the son's treatment, which amount he wished expended for the benefit of our sick and wounded.

WEPENER.

In the early part of April some 1,700 men of the Colonial division marched to Wepener, where they were immediately surrounded by three or four times their number of the Boer army, who relentlessly plied them with shot and shell day and night for seventeen days. Our men made a most gallant defence, until they were relieved by Generals Brabant and Hart on April 25th. As might be expected, our losses were serious, 33 men being killed and 133 wounded. Six medical officers and a few rank and file of the ambulance corps under command of Surgeon-Major Faskally, Cape Mounted Riflemen, were with the beleaguered force, and worked fearlessly and well during the whole siege. A large private house (which was unfortunately in the direct line of fire, one wounded patient being killed in bed and another shot dead whilst sitting in the hospital verandah), and a farmhouse about a mile distant, formed admirable hospitals. The shutting in of this portion of the Colonial division being totally unexpected, the supply of dressings was wellnigh exhausted, and there was no possibility of replenishing them until the arrival of the relief column. The best endeavours were made to overcome deficiencies, and no particular harm occurred, as events turned out. I was with the relief column, which had two engagements during the march, 3 men being killed and 27 wounded, the principal sufferers being the infantry of H.M. Border Regiment, who with a battery of Royal Artillery and the Somersetshire Light Infantry had reinforced us. As the whole of the Orange Free State was at war with the British Government, our lines of communication with the Cape Colony were in an uncertain condition, and the railway some sixty miles distant, through country known to be occupied by the enemy, it was difficult to know how to dispose of our considerable number of wounded. The Resident Commissioner of Basutoland, Sir Godfrey Lagden, in the most handsome and generous manner, permitted them to be moved to Mafeteng and Maseru, placing churches, schools, dwelling-houses, medical officers, medical stores in these villages at the disposal of the General Officer Commanding Colonial Division, and the wounded have found a veritable haven of rest in this hospitable highland territory of Basutoland.

TEMPORARY HOSPITALS AT THABANCHU, POUXVILLE, AND FICKSBURG.

Since that time this division has been marching along the extreme eastern border of the Orange Free State, one or two affairs of picquets having taken place, in which 3 men have been killed and 8 wounded. I have formed small Colonial hospitals as occasion demanded at ThabaNchu, Rouxville, and Ficksburg. These, however, will be abandoned as soon as possible, being so far removed from railway communication with the colony and sea coast.

RELATIVE IMMUNITY FROM TYPHOID FEVER.

Very little disease has arisen among the Colonial troops, only four or five deaths from enteric having taken place. This is the more remarkable, as, with the exception of the permanent regiment of Cape Mounted Riflemen, the South African soldier troubles himself but little about clean camps, latrines, refuse pits, tidy tents, or general sanitation. It is not wise to hazard explanations of their remarkable immunity from disease at this stage of the war. Perhaps it is they have been well fed and clothed, have generally been under canvas, and are constantly moving from one camp to another. Others factors may be the Colonial man is mounted, and does not suffer so much from thirst and fatigue as does the foot soldier, who madly rushes to drink all and any kind of water, however muddy and uncertain it may look to wiser and more experienced eyes. The last, and perhaps best, explanation may be that the Colonial division is composed of men who have become inured to the climate through long residence in the country, or have been rovers in America, Australia, and other Colonies. Before closing these hasty notes it is interesting to remark that the irregular forces are singularly fond of taking medicines; some 70 or 80 of the division roll up daily when the "sick call" sounds. It may be to show their confidence in their medical officers, but more probably because they can get their attendance and medicine for nothing.

Camp of Colonial Division, Klip River Drift,
Orange Free State, June 11th.

RELIEF FOR SICK AND WOUNDED SOLDIERS, THEIR WIDOWS AND ORPHANS.

LIEUTENANT-COLONEL T. TULLY, Honorary Secretary of the Imperial War Fund, 20, Bucklersbury, E.C, in giving notice that the grants from this fund are compulsorily suspended from want of funds, states that over £8,000 has been paid to widows, orphans, and dependent relatives of men who have lost their lives in South Africa. The fund has received £5,000 from various sources, but has been compelled to sell out £3,000 of its original capital stock of £4,681.

Lieutenant-Colonel Tully adds the following information, which may be of use to our readers:

Widows, orphans, or relatives of deceased, sick, or wounded officers, may write with perfect confidence and privacy to the Marchioness of Lansdowne, Lansdowne House, London, W.

Applications on behalf of widows and orphans of soldiers or Colonial or Home Volunteers should be made to the Royal Commissioners of the Patriotic Fund, 53, Charing Cross, London, S.W., who will also receive applications from dependent relatives of soldiers who have lost their lives in the war. Immediate grant, £5 for widow and £1 for each child, and pension follows.

Applications on behalf of widows and orphans should also be made to the Manager, Widows' and Orphans' Fund, *Daily Telegraph*, Fleet Street, London, E.C. Immediate grant, £20, and £3 for each child.

Relatives of living soldiers, should apply to the nearest branch of the Soldiers' and Sailors' Families Association, to the mayors of boroughs, or the Officer Commanding the Regimental District to which the soldier belongs.

Disabled soldiers should apply to Secretary, Lloyds' Patriotic Fund, Brook House, Walbrook, London, E.C.; also to Royal Commissioners, Chelsea Hospital, London, S.W.

"Soldiers on sick furlough who require medical aid shall apply for it to the nearest military station. When this is impracticable they may apply to a civil practitioner, to whom they will show their furlough paper, and who will be allowed to charge for attendance at the rate laid down on Army Form O, 1667."

Cases which are urgent and in need of special help, and which are not

strictly inside regulations, should be referred to Manager, Kipling Fund, *Daily Mail* Office, Tallis Street, London, E.C.

* Next-of-kin to dead soldiers should write direct to the Under-Secretary of State for War, War Office, London, S.W., for information as to any pay or effects, the property of the deceased.

PURIFICATION OF SEWAGE AT LEICESTER.

APPARENT FAILURE OF THE "SEPTIC SYSTEM."

IN a long, fully-illustrated, and highly-instructive report, Mr. Mawbey, M.I.C.E., Borough Engineer and Surveyor of Leicester, describes the difficulties and defects which exist in the sewage disposal of that city, and gives a detailed account of a very interesting series of experiments in the bacteriological purification of sewage, which were carried on from September 2nd, 1898, to October 13th, 1899.

EXISTING SYSTEM: BROAD IRRIGATION.

Hitherto the sewage of nearly the whole of the city has been treated, after passing through a settling tank of about 126,000 cubic feet capacity, by broad irrigation on about 1,355 acres of stiff clay land. Owing to the increase of population and other causes this land has become greatly overtaxed, and it has become imperative either to purchase a much larger quantity of land for the sewage farm, or to adopt some method of purification of the sewage before applying it to the land.

NATURE OF EXPERIMENTS.

It was decided to carry out a series of experiments in order to form a scheme by which the sewage might be sufficiently clarified before irrigation, with the minimum formation of sludge and the maximum clarification, and purification as gauged by the albuminoid ammonia and "oxygen absorbed" in the final effluent. The experimental works comprised:

A. A channel and weir chamber (20 feet by 4 feet) for delivering and measuring the crude sewage.

B. A detritus tank (18,681 gallons water capacity).

C. A large settling tank (125,962 gallons water capacity; used as a closed "septic tank" during the last four and a half-months of the experiments).

D. Four clarifying coarse "first contact" bacteria beds (total area, about 450 square yards; average working depth of material about 4½ feet).

E. Second and third contact fine bacteria beds.

F. Irrigation area of old pasture and rye grass (1,355 acres).

These experiments were "conducted on a large and thoroughly practical scale, about 62,000 to 429,000 gallons of fair average crude Leicester sewage per day, over a period of 13½ months, having been dealt with."

The processes of experiment were varied in seventeen different ways, the chief object being to test the relative efficacy (after passage through the detritus tank) of

(*a*) The coarse bacteria beds alone (single contact); (*b*) the coarse bacteria beds preceded by the large open settling tank; and (*c*) the coarse bacteria beds preceded by the large closed "septic tank" before applying the respective effluents obtained by these methods to the land; and (*d*) the coarse bacteria beds followed by fine bacteria beds (double and treble contact) without any application to the land.

These experiments distinctly show that the Leicester sewage when passed from the detritus tank through the coarse bacteria bed and finally over one plot of pasture land (that is, without any preliminary anaërobic treatment) produces a final effluent which compares favourably with all the effluents obtained by the other processes employed in the course of the investigation.

RESULTS AND CONCLUSIONS.

This process was carried on for about 7½ months. The analyses of the crude sewage and final effluent from the land during this period show the following averages in grains per gallon:

	Suspended Matter.	Albuminoid Ammonia.	Oxygen Absorbed at 80° F. in 4 hours.
Crude sewage	43.700	1.1823	7.4410
Final effluent	0.385	0.1565	0.6634
Percentage of purification...	99.12	86.76	91.08

This final effluent from the pasture land was perfectly bright, clear, and free from smell, producing no discoloration or fouling of the grass and dykes through which it passed, and developing no after-putrefaction.

From a study of Mr. Mawbey's report it is evident that he is justified in forming the following conclusions:

1. That the process of purification of the Leicester sewage by bacteria beds previous to land irrigation would be far more efficient than large extension (at great cost) of the sewaging area.

2. That the "septic system" is not adapted "for clarification before direct application to old pasture land or rye grass."

The final effluent obtained by this process was not greatly inferior to the best; but the foulness of the effluent from the septic tank itself and the pollution of the land, grass, etc., which it caused was most offensive and intolerable. We are not aware, however, that the direct application of a septic tank effluent to land by irrigation has ever been advocated by the promoters of the "septic system."

3. That "the most efficient clarification combined with the greatest percentage purification in albuminoid ammonia and oxygen absorbed, and with the least production of sludge, has been achieved by a detritus tank and clarifying bacteria beds, and the effluent from this process has been found to be in a more ripe condition for rapid final nitrification than the more anaërobic preliminary processes included in the experiments."

So far as the Leicester sewage is concerned the "septic system" appears to have proved a failure. It is true that the effluent from the septic tank showed a very considerable reduction in the albuminoid ammonia and the "oxygen absorbed." (from about 40 up to more than 60 per cent.), but the effluent from the bacteria bed without the aid of any septic tank was practically as good as when the septic tank was used in addition.

Moreover, the amount of sludge deposited in the tank was excessive. It amounted to no less than 149.24 tons after 125 days use of the tank and was intolerably offensive. (This amount, according to calculation, is equivalent to 7.04 tons of sludge, with 90 per cent. of water, per million gallons of sewage.)

These results produced by the "septic system" at Leicester are of great interest and call for careful consideration. It will be well to compare them with results produced elsewhere under apparently similar conditions.

RESULTS OF EXPERIMENTS AT MANCHESTER.

In the report on the treatment of Manchester sewage issued at the end of last year, the experts, after their prolonged and careful experiments stated that the results obtained by the bacterial system of sewage purification exceeded their anticipations, and also that in order that a bacterial contact bed may exercise its full powers of purification a preliminary anaërobic or septic process is necessary.

They found that by the "septic system," constructed on the well-known Exeter model (closed septic tank followed by single contact bacteria beds), a highly satisfactory effluent was obtained, and a still purer effluent by the open septic tank, followed by double contact beds. No mention is made in their report of offensive effluvia; whilst great reduction in the amount of sludge by the septic tanks is recorded.

CAUSE OF APPARENT FAILURE OF "SEPTIC SYSTEM" AT LEICESTER.

The question of chief interest is why a system which has succeeded elsewhere has apparently failed at Leicester. The Leicester sewage, according to the analyses reported, is not an excessively strong one. It is not complicated by such a quantity of strong trade effluents as the Manchester sewage. For these reasons it might have been expected that the septic system would have answered as well at Leicester as at Manchester.

The explanation of this question is possibly to be found in the fact that at Leicester the "crude sewage" has undergone excessive anaërobic action before it reaches the septic tank. Scott Moncrieff has demonstrated that "excessive septic change" may be highly detrimental to the aërobic organisms and entirely prohibit the final oxidation of the organic ingredients of sewage.

In the present state of our very limited knowledge of the complicated processes which take place in the decomposition and ultimate oxidation of sewage, it is premature to dogmatise with regard to all the details of these processes; but from what is known with regard to the life-history of bacteria, it is plainly indicated that excessive anaërobic action may greatly modify and inhibit the work of anaërobic as well as of aërobic bacteria; that septic tanks and contact beds may become "sewage sick" as well as the land used for sewage purification.

It is conceivable, therefore, that in cases in which the flow of sewage to the septic tank is hindered and delayed by low gradients, or faulty conditions of the sewers, or other causes, the interposition of a septic tank previous to treatment by bacteria beds may give rise to deposit of much foul sludge, and interfere with the final nitrification. Conversely, if the flow of the sewage be expedited by improved sewerage, and the removal of all causes which impede the steady and rapid flow of the sewage, the interposition of a septic tank before the treatment by bacterial beds may become an absolute necessity. It has been definitely shown that such a sewage as that of Manchester, complicated as it is by large quantities of trade effluents having an antiseptic action, may be purified by septic tank and double contact bacteria beds to such an extent that no land is required for its further purification.

Under the conditions which obtain at Leicester, however, the prolonged and careful experiments reported by Mr. Mawbey demonstrate that the septic tank is not required, and that, although the Leicester sewage might be sufficiently purified by bacterial treatment only—(as was indicated by a short series of experiments in which three contact beds were employed in succession), in the land, prepared at great cost for irrigation purposes, Leicester "possesses a well-proved system which should not be lightly abandoned."

THE CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

LIST OF HONORARY FELLOWS.

THE festival celebrating the centenary of the Royal College of Surgeons, as already announced, commences on Wednesday next. Mr. Linley Sambourne has made a design for the front page of the general programme of the proceedings of the three days. It represents the goddess Hygeia standing in front of an altar. In her raised left hand she holds a cup which may contain some antiseptic solution, though its shape suggests that it may be intended to receive a sparkling beverage, and thus have a reference to the festivities by which the demonstrations in the museums and laboratories are to be varied. In her right hand she holds a staff wreathed with flowers, and bearing at its upper end a disc which the irreverent might suggest to be a representation of a spade guinea. Laurel wreaths lie at her feet, and the snake coils up a tripod at her side.

The chief day will be Thursday, when the centenary meeting will be held in the theatre of the University of London, Burlington Gardens, at 2.30 P.M. The Prince of Wales, who was elected an Honorary Fellow of the College on June 14th, will be present. A deputation will have previously waited upon the Prince (on Tuesday) to present him with the diploma. The Marquess of Salisbury and the Earl of Rosebery, who were elected Honorary Fellows on July 12th, will also be present at the meeting, and will then receive their diplomas. The following distinguished foreign and colonial surgeons are also expected to be present, and in that case will receive the Honorary Fellowship:—

Eduard Albert, Professor of Clinical Surgery, University of Vienna; Charles Bent Ball, M.D., M.Ch., Regius Professor of Surgery, University of Dublin; Edoardo Bassini, Professor of Clinical Surgery, Royal University of Padua; Edward Hallaran Bennett, M.D., M.Ch., Professor of Surgery, Trinity College, Dublin; John Wilhelm Berg, Professor of Surgery, Royal Caroline Institute of Medicine and Surgery, Stockholm: S. Exc. Professor Dr. Ernst von Bergmann, Geh. Med. Rath., Berlin; Oscar Bloch, Professor of Surgery, University of Copenhagen; Enrico Bottini, Professor of Clinical Surgery, Royal University of Pavia; I. H. Cameron, Professor of Clinical Surgery, University of Toronto: Dr. Salvador Cardenal Fernandez, Vice-President Royal Academy of Medicine and Surgery, Barcelona: Antonino D'Antona, Professor of Surgery, Royal University of Naples: Francesco Durante, Professor of Clinical Surgery, Royal University of Rome; S. Exc. Professor Dr. Friedrich von Esmarch, Wirkl. Geh. Rath., Kiel; William Stewart Halsted, M.D., Professor of Surgery, Johns Hopkins University, Baltimore; Hon. Sir William Hales Hingston, M.D., LL.D., D.C.L., Professor of Clinical Surgery, University of Laval; Surgeon-General James Jameson, C.B., M.D., LL.D., Director-General, Army Medical Service; William Williams Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; Theodor Kocher, Professor of Surgery, University of Bern; Professor Dr. Franz König Geh. Med. Rath, Berlin; Professor Dr. Ernst Georg Ferdinand Küster, Geh. Med. Rath, Marburg: Elie Lambotte, Brussels; Odilon Marc Lannelongue, Professor of Surgical Pathology, Faculty of Medicine of Paris; Karl Gustaf Lennander, M.D., Professor of Surgery and Obstetrics, University of Upsala; William Macewen, M.D., LL.D., F.R.S., Regius Professor of Surgery, University of Glasgow; Colonel Kenneth MacLeod, M.D., LL.D., I.M.S., Professor of Clinical and Military Medicine, Army Medical School, Netley; Julius Nicolaysen, Professor of Surgery, Royal University of Christiania; Sir Henry Frederick Norbury, K.C.B., Director-General, Medical Department of the Royal Navy; Leopold Ollier, Professor of Clinical Surgery, University of Lyons; Victor Pachoutine, President, Imperial Military Academy of Medicine, St. Petersburg; Samuel Pozzi, Professor, Faculty of Medicine of Paris; Colonel Daniel Charles O'Connell Raye, M.D., Indian Medical Service; Thomas G. Roddick, M.D., C.M., Professor of Surgery, McGill University, Montreal; Federico Rubio y Gali, Member of the Royal Academy of Medicine of Madrid; Nicolas Wassilievitch Sklifossovsky, Director and Emeritus Professor, Imperial Clinical Institute of the Grand Duchess Helena Pavlovna, St. Petersburg; Paul Tillaux, Professor of Clinical Surgery, Faculty of Medicine of Paris; Nicolas Veliaminoff, Professor of Surgery, Imperial Military Academy of Medicine, St. Petersburg; John Collins Warren, M.D., Professor of Surgery, Harvard University; Robert Fulton Weir, M.D., Professor of Clinical Surgery, Columbia University, New York.

Before conferring the Honorary Fellowships, the President, Sir William Mac Cormac, will deliver an address of welcome.

The festival dinner, at which the Prince of Wales and the other Honorary Fellows are expected to be present, will be held in the Hall of the Honourable Society of Lincoln's Inn on the same evening at 8 P.M. *Conversaziones* will be given by the College on Thursday evening and by the Lord Mayor on Friday evening.

THE INSPECTION OF FACTORIES AND WORKSHOPS.

(Continued from page 104.)

INDIA-RUBBER WORKS.

THE annual report of the Chief Inspector of Factories and Workshops for 1899, to which reference has already been made in the JOURNAL, shows that within the last few years there has been in several of the dangerous trades a disuse of several of the harmful ingredients employed in the industries. This has been very noticeable in the enamelling of iron plates and in the use of carbon bisulphide in india-rubber works. During the year reported upon there occurred in india-rubber works two serious explosions, owing to stoppage of the fans. Although carbon bisulphide is highly inflammable, it is not of itself an explosive, but when mixed with fifteen volumes of air (three volumes of oxygen) the mixture becomes highly explosive. As the amount of air is increased, the violence of the explosion correspondingly diminishes. It is therefore very desirable that fans should be in working order, so as to secure not only through ventilation, but also that weakening of the explosive compound which more air induces. A spark from a feed roller in the india-rubber works in question was supposed to have ignited the carbon bisulphide.

ANTHRAX.

Notwithstanding the special rules, cases of anthrax from handling hides and skins were still numerous. As the greatest amount of illness was traced to the importation into this country of hides from China, several of the large firms have voluntarily discarded them. The use of horsehair, especially Siberian manes, was also a prolific cause of anthrax. Disinfection by steam has greatly reduced the dangerous character of the industry, but evidently something more is yet required. Arrangements have now been made by the Home Office for the bacteriological verification of all doubtful cases of anthrax.

EARTHENWARE AND CHINA TRADES.

The earthenware and china trade is dealt with at considerable length by the Chief Inspector of Factories. The number of cases of lead poisoning has already been much reduced by the amended Special Rules of 1898. Dr. Thorpe and Dr. Oliver in their report upon "the use of lead compounds in pottery," recommended that raw lead should be abolished, that only fritted compounds should be used, and that under certain circumstances leadless glazes should be substituted.

The Under-Secretary of State, in dealing with this subject, maintains that the subject of leadless glazes has now passed beyond the experimental stage, and that in the case of manufacturers who will dip their ware in a leadless glaze he is prepared to relax the Special Rules, and to propose modifications of existing rules. During 1898, of the total number of cases of plumbism, females formed 55 per cent., whereas in 1899 the proportion fell to 48. As this result was believed to be largely the outcome of the periodic medical examination of women and young persons, the Secretary of State thinks that the time has come when all workers in lead processes should be medically examined, and he looks forward on this point to the hearty co-operation of the manufacturers. The analytical work on fritted lead compounds by Dr. Thorpe has been extremely valuable, and must have been of the greatest assistance to the Home Office. It is well for manufacturers to know when it is required of them that frits should conform to a suggested standard of insolubility, that the proportion of lead yielded to solution in dilute acid depends less upon the amount of lead present than upon the ratio of the basic to the acid components. A very large percentage of lead is therefore found to be consistent with the proposed standard of insolubility provided the sum of the basic oxides, calculated as lead monoxide, is not more than double the sum of the acid components, calculated as silica.

Mercurial Poisoning.

Mercurial poisoning is now added to the official list of maladies of industrial origin. Owing to the occurrence of hydrargyrism among furriers and philosophical instrument makers, it was found necessary to secure notification on the same footing as anthrax and lead poisoning. The Secretary of State has power to do this under Section XXIX of the Factory and Workshop Act, 1895, so that it is now, and has been since May 1st, 1899, incumbent upon medical practitioners to report to Dr. Whitelegge all cases of mercurial poisoning occurring in any factory or workshop. The principal centres for the manufacture of philosophical instruments are West London, Birmingham, and Glasgow, and for furriers' workshops London, Glasgow, Newcastle, Manchester, and Northampton. In the manufacture of the instruments referred to not more than 150 men use the metal, and in furriers' shops probably not more than 50 men and 100 women are employed. Of these 300 workers, 10 were known to have suffered.

Mercury gives off vapour at a very low temperature. Dr. Morison Legge, the Medical Inspector, gives a full account of the symptoms observed among the workers. It would appear that the symptoms are slowly developed. They are increasing anæmia, with some gastric derangement, slight increase of the salivary secretion, with inflammation and tenderness of the gums, followed later on by tremor affecting the muscles of the face, hands, and arms; the tremor is never so severe in the early stages as to prevent the individual following his employment. Ultimately a degree of paralysis is associated with the tremor. As is the case with lead poisoning, some people are more susceptible than others. It does not appear that children are specially liable. Where the worker is exposed to the fumes of the nitrate of mercury, as in the furrier's shop, the injurious effects are mostly observed in the teeth; they become black and rapidly loosen, while the gums exhibit very marked recession.

Water Gas Poisoning.

Water gas poisoning is fully considered. The poisonous ingredient is carbonic oxide. In ordinary coal gas there is not more than from 4 to 12 per cent. of carbonic oxide, in carburetted water gas 30 per cent., and in uncarburetted water gas the amount of carbonic oxide may rise to 50 per cent. In what is known as Dowson's gas there is 25 per cent. of carbonic oxide. It is to the researches of Dr. Haldane that we are indebted for knowledge of the fact that deaths in colliery explosions are chiefly due to carbonic oxide poisoning. From the report it would appear that there are dangers from carbonic oxide other than inhalation of the gas when introduced into houses as an illuminant. Fatal accidents have occurred in factories during the cleaning out of Dowson's tanks, during the repairing of a tar still in Dublin, and we know that it is this gas which lingers in coke ovens. Owing to the insidious manner in which the symptoms develop, the individual is so slowly overcome that he is often unable to make good his escape from the poisoned atmosphere. The appropriate remedies are fresh air, artificial respiration, the administration of oxygen, and the application of warmth.

Children's Labour.

The ages at which children and young persons first commenced work in Stockport during 1899 is made the subject of some interesting remarks by Dr. Rayner, of Stockport. The youngest age is 11. In the period between 13 years and 13 years 1 month there is a sudden increase in the number of children seeking employment. The amended Elementary Education Act (known as Robson's Act), passed in 1899, came into force in January, 1900. It raises from 11 to 12 years the minimum age at which a child may be allowed to obtain a total or partial exemption from obligation to attend school. In factories and workshops in England and Wales it is now unlawful for the occupier to take into employment any child below the age of 12 in such a manner as to prevent the child from full-time attendance at school. At present the change does does not extend to Scotland or Ireland.

Medical Inspector's Report.

Dr. Morison Legge, in giving an analysis of 1,030 certifying factory surgeons' reports on lead poisoning, etc., remarks that there is little doubt that the duty to notify cases of industrial plumbism is still unknown to many medical practitioners. We again draw the attention of the profession to this requirement. The particular symptom that led to the notification of 1,258 cases in 1899 was colic. The various industries in which lead or lead compounds are used are dealt with, and although house painters and plumbers at present do not come within the Act, the subject of notification of these trades is considered. There were 32 fatal cases of lead poisoning in the various lead industries, and among house painters and plumbers lead was in addition directly or indirectly the cause of death in 18 persons.

Reports of the Lady Inspectors.

The reports of the principal lady inspector, Miss Anderson, and of her colleagues are a record of hard work carefully performed. If for no other reason, the women and girls employed in factories ought to be grateful to the lady inspectors for the manner in which the subject of sanitary accommodation has been attended to.

Conclusion.

Space does not permit of our dealing at further length with this part of the report, or with the statistics of accidents in 1899, nor with the reports on Bessemer converters and basic slag by Commander H. P. Smith, and the reports by Messrs. Maitland and Eraut on the accidents that occur among the 74,343 persons who find employment in dockyards and wharves. Neither can we now discuss many interesting points relating to the irregularities under the Truck Acts and infringements of the law.

Altogether the annual report of 1899 is a monument of work done, and reflects the greatest credit upon Dr. Whitelegge and his overworked officials who are trying to grapple with industrial problems that keep increasing with the interest taken in the various subjects by the Legislature and the public generally.

THE PLAGUE.

Prevalence of the Disease.

India.

The number of deaths from plague in India for the week ending June 16th amounted to 282. In the cities of Bombay and Calcutta the deaths were 108 and 106 respectively. In the districts outside these cities 68 deaths only occurred. The general health of Bombay has also improved considerably. The setting in of the rains may account for the improved health returns, as the absence of rainfall, except in small quantity during 1899, deprived the city of its annual cleansing. Aden is reported free of plague.

In Karachi the plague committee has resolved that after July 16th the services of the plague emergency staff should be dispensed with.

Hong Kong.

During the week ending July 14th 57 cases of plague were reported and 48 deaths from the disease. Although there is no report from South China and Macao, the fact that plague prevails in Hong Kong is positive evidence that the disease exists in these localities. The report that in Tientsin and Peking plague had broken out is not confirmed.

LITERARY NOTES.

A WORK, entitled *The Child: A Study in the Evolution of Man*, by an American physician, Dr. Alexander Francis Chamberlain, is to be published in Mr. Walter Scott's Contemporary Science Series. It will contain an account of investigations on the anthropology of childhood, a subject to which Dr. Chamberlain has given much attention for several years.

Mr. John Murray has in the press a volume edited by Dr. T. Oliver, entitled *Dangerous Trades: The Historical, Social, and Legal Aspects of Industrial Occupations as Affecting Public Health*. In order to give the work the greatest possible authority the co-operation of experts on the numerous subjects with which the work deals has been obtained.

Mr. Murray further announces *A Treatise on Medical Jurisprudence*, by Dr. Vivian Poore. The work is based on lectures delivered by the author at University College, London.

Mr. Murray will also publish a work, entitled *The Locust Plague and its Suppression*, by Dr. Æneas Munro. Locusts have ruined thousands of well-to-do colonists in Argentina, and in Algeria, Egypt, and North Africa generally. The amount lost in one year in the United States from this plague is put down at £40,000,000.

According to the *Athenæum*, Miss Lillias Hamilton, who was the Ameer's medical adviser, has written a story of Afghan life, under the title of *A Vizier's Daughter*.

An autobiography (Miss Hamilton writes) of my sojourn in the capital of Afghanistan would necessarily entail many explanations that for obvious reasons it is better not to enter into. To get over this difficulty I have written *A Vizier's Daughter*, every character in which is drawn from a model, and should therefore, as far as it goes, give an accurate description of one phase, at any rate, of Afghan life .....I write of what I saw and heard, and of persons whom I knew as intimately as one can ever know a people so far removed from us in thought and education. Gul Begum told me much, the Hakim a good deal, but far more is what actually passed before my own eyes. I have, in fact, transposed some incidents and have drawn pictures of events which took place years before I went to Cabul from scenes which occurred while I was there.

A Vizier's Daughter will be published by Mr. Murray.

Mr. W. R. B. Prideux, assistant in the Library of the Royal College of Physicians, writes concerning an old work entitled *The Regiment of Life* in the *Athenæum* of July 14th, as follows:

The earliest described edition of this little book is in the Bodleian Library, and is dated 1546. Herbert, however, says that it was first published in 1544, and it seems to me very probable that it is this earlier edition which is in the Library of the Royal College of Physicians. The title page runs: "A new booke entyteled the Regiment of Lyfe: wyth a synguler Treatise of the Pestilence. The other side of the title-page is as follows:—

"Thyz booke is made by the ryght famous and hye learned doctour in Phisyke, master John Bourot cheife phisician to the Frenche kynge that nowe is, at the specyall instannce of the kynges mother and other of the nobles of the sayde Realme, to the greate commodities, succour, and comforte of all the co'mune weale. Lately translated out of Frenche, by Thomas Phayer studyouse in Surgerye wyth dyuers goodlye additions for the better understandynge of the same.

"Item an other excellent worke treatynge of the Pestylence, and the perfyte cure thereof, as wel by phisicke as by surgerye marueylous effectuall and as briefe as is possyble."

Phayer's additions consist of "A goodlye bryefe treatyse of the pestilence" and "A declaration of the Veynes in Mannes bodye;" but "A Book of Children" which is mentioned as being in the Bodleian edition, is not included in this one. The Colophon runs:—

"Imprynted at London by Edwarde Whytchurch Cum privilegio ad imprimendum solum, per septennium."

"These bokes be to sell at the weste dore of poules, by Wylliam Tilletson." No date is given. The leaves are numbered, the last one before the table being fo. 1.

Dr. H. E. Handerson, of Cleveland, Ohio, writing in *Janus* for October-November, 1899, states that the earliest contribution to medical literature in the United States was a popular guide to the treatment of small-pox and measles by Thomas Thacher, which was printed at Boston in 1677. This opuscule (if we may use a word which has the authority of the *Times*, and which stirred the wrath of Thackeray) is described as being only a compendious English translation of a portion of the writings of Sydenham. The author, however, expressly disclaimed all pretension to originality, and indeed is conscientious enough to inform the reader that he is "no Physitian." Thacher, who was born in England in 1620, was the son of the Rev. Peter Thacher, a minister of Sarum, and was intended by his father for one of the English Universities. For some reason the boy did not like the prospect, and at the age of 15 migrated to Massachusetts. Soon after his arrival he became a pupil of Dr. Charles Chauncey, an M.D. of Cambridge, and pastor of the church of Scituate. Chauncey was probably the most learned man at that time in the New England Colonies, and in 1654 was chosen the second President of Harvard College. Under his instruction young Thacher acquired not only the ordinary branches of a liberal education but a considerable knowledge of Hebrew and Arabic. According to Mather he was also a great logician, and had considerable mechanical genius. He was ordained a minister in 1644, and was the first pastor of the Old South Church in Boston. Like many of the Puritan pastors he combined the cure of bodies with that of souls, and he is said to have been looked upon by his fellow colonists as one of the most eminent physicians of Boston. His medical practice, indeed, was the cause of his death, for he died in 1678 of a fever contracted during his attendance on a patient. The first book published in the Colonies, *The Bay Psalms Book*, was issued "for the comfort and edification of the saints" in 1640. A press had been set up the previous year in Cambridge, but seems to have been regarded with suspicion, for in 1664 a law was passed prohibiting the establishment of any printing press in the colony of Massachusetts except in Cambridge. In 1774 this law was suspended, and permission was given to John Foster to set up a press in Boston, then a town of some 5,000 inhabitants. Thacher's *Guide*, which is a broadside, printed only on one side of the paper, appears to have been intended for a poster or a circular, like those now issued to medical officers of health in times of epidemics. It is described by the author as a "Brief Rule to guide the people of New England how to order themselves and theirs in the small pocks or measels." Thacher concludes with the following sensible remarks:

These things have I written, Candid Reader, not to inform the Learned Physitian, that hath much more cause to understand what pertains to this disease than I, but to give some light to those that have not such advantages, leaving the difficulty of this disease to the Physitian's Art, Wisdome, and Faithfulness: for the right managing of them in the whole Course of the disease tends both to the Patient's safety and the Physitian's desired success in his Administrations: For in vain is the Physitian's Art imployed if they are not under a Regular Regiment. I am, though no Physitian, yet a well wisher to the sick: And therefore intreating the Lord to turn our hearts and stay his hand, I am A Friend, Reader, to thy Welfare.

Dr. Henry Hoole's book, *The Science and Art of Training*, has been translated into German under the title of *Das Trainieren zum Sport*. The translator, C. A. Neufeld of Munich, Doctor in Philosophy, has adapted the work to German conditions. The publisher is J. F. Bergmann of Wiesbaden.

In a work which has just appeared (*La Superiorité Intellectuelle et la Névrose*) Professor Grasset of Montpellier comes forward as an upholder of the theory now generally associated with the name of Lombroso, though it is as old as Dryden and doubtless much older, that "great wits are sure to madness near allied." He illustrates his thesis by numerous modern instances. Among them is Auguste Comte, the founder of the Positivist religion, who, as the world knows, had more than one *crise cérébrale*, and had, in fact, to be placed under restraint in an asylum. Jean Jacques Rousseau, also, is said to have shown frequent signs of mental aberration. Schopenhauer was eccentric beyond the large bounds allowed to "great wits." He would assault messengers who brought him letters in which his name was misspelt; he used to write his notes in Greek, Latin, and Sanscrit, lest his ideas should be stolen, and he left his dog his residuary legatee. Maupassant died in a madhouse, and his master Flaubert was subject to fits of nervous disturbance akin to mental derangement. Professor Grasset adduces many other cases in proof of his thesis that neurosis is often the penalty of intellectual superiority. But his examples are mostly taken from the lower planes of intellectual greatness; at the topmost heights, where dwell the great creative spirits, there reigns the serene calm of perfect mental balance.

MIDWIVES IN ITALY.—In the midwifery department attached to the various universities of Italy there are 1,242 regular students and 6 casual students. The regular students are distributed in the several universities as follows: Naples 248, Turin 167, Bologna 108, Palermo 93, Rome 88, Padua 85, Parvia 81, Catania 61, Messina 60, Genoa 55, Parma 53, Modena 28, Pisa 26, Urbino 26, Perugia 23, Ferrari 19, Siena 18, Cagliari 2, Sassari 1. In addition to these there are 50 pupils in the School of Midwifery at Venice, 25 are at Aquila, 27 at Bari, and 7 at Catanzaro.

BRITISH MEDICAL ASSOCIATION.

EXTRAORDINARY GENERAL MEETING.

AN extraordinaryy general meeting of the British Medical Association was held at Exeter Hall, on Wednesday, July 18th, for the purpose of considering the proposed new Articles of Association.

The President, Dr. J. WARD COUSINS, was in the chair.

The following members of the Association registered their names as being present:

Alexander, S., L.R.C.P.Edin., Bromley
Anderson, Mrs. Garrett, M.D., London
Anderson, R. B., F.R.C.S., London
Andrews, Chas., M.R.C.S., London
Armstrong, John T., L.R.C.P., London
Atkinson, R., M.R.C.S., London

Bagley, S., L.R.C.P., Manchester
Baker, A. de W., L.R.C.P., London
Baker, Surgeon-Major Benjamin, M.R.C.S., London
Baker, J. Hopper, M.D., London
Bantock, G. G., M.D., London
Barnes, E. C., M.R.C.S., Hammersmith
Barnes, Edgar G., M.D., Eye
Barr, James, M.D. Liverpool
Barrington, N. W., M.D., London
Batten, R. W., M.D., Gloucester
Batteson, John, L.R.C.P., Chiswick
Beale, Alfred G., L.R.C.P., London
Beattie, Thomas, M.D., Newcastle-on-Tyne
Becker, G. T. D., L.R.C.P., London
Bell, J. V., F.R.C.S., Rochester
Bennett, C. H., M.R.C.S., Hammersmith
Berkeley, C., M.B., London
Beverley, Michael, M.D., Norwich
Bigger, W. Grimshaw, M.B., Streatham
Bingham, S., M.R.C.S., London
Blumer, F. M., M.B., Stafford
Blundell, Hight, M.D., London
Booth, W. G., L.R.C.P.I., Manchester
Bowlan, M. M., M.B., London
Bowles, Robert L., M.R.C.S., London
Boyd, Campbell, L.R.C.S.I., Denmark Hill
Bridgwater, Thomas, M.B., Harrow
Brierley, J. Brassey, M.D., Manchester
Broadbent, G. H., M.R.C.S., Manchester
Broadbent, Sir W. H., Bt., M.D., F.R.S., London
Brown, George, M.R.C.S., London
Brown, R. C., M.B., Preston
Browne, H. Langley, F.R.C.S., West Bromwich
Browne, C. Milner, M.B., Sydenham
Brunton, Sir T. Lauder, M.D., F.R.S., London
Bryant, Thomas, F.R.C.S., London
Burgess, W. M., M.R.C.S., Harlesden
Butlin, Henry T., F.R.C.S., London

Campbell, Colin, M.R.C.S., Saddleworth
Campbell, W. Macfie, M.D., Liverpool
Cantlie, James, F.R.C.S., London
Capes, Robert, M.R.C.S., London
Carline, W. A., M.D., Lincoln
Carr, John Walter, M.D., London
Carter, Alfred, M.D., Birmingham
Carter, G. R., M.R.C.S., London
Charnley, Wm., M.D., Shrewsbury
Cheatle, T. H., M.R.C.S., Oxford
Clark, Andrew, F.R.C.S., London
Cleghorn, George, M.D., London
Clutton, H. H., F.R.C.S., London
Cock, Miss Julia, M.D., London
Cousins, J. Ward, M.D., Portsmouth
Cox, Alfred, M.D., Gateshead
Crawshaw, Samuel, M.B., Ashton-under-Lyne
Creasy, L. Eliot, M.R.C.S., London
Crocker, H. Radcliffe, M.D., London
Coutts, John Alfred, M.B., London

Daniel, W. Clement, M.D., Epsom
Davison, James, M.D., Bournemouth
Deas, P. Maury, M.B., Exeter
Denning, J. V. C., L.R.C.S.I., London
Dillon, R. W., L.R.C.P., London
Douglas, W., M.D., London
Dowse, T. S., M.D., London
Dunn, H. Percy, F.R.C.S., London
Durham, F., M.B., London
Dutton, Thomas, M.D., London
Dyson, Wm., M.D., Sheffield

Eastes, George, M.B., London
Eccles, W. McAdam, F.R.C.S., London
Elliston, W. A., M.D., Ipswich
Emson, A., L.R.C.P., Dorchester
Esler, Robert, M.D., London
Evans, R. Powell, L.R.C.P., Wimbledon
Evans, J. A. M., M.B., London
Eyre, J. W. H., M.D., London

Finlay, Professor D. W., M.D., Aberdeen
Forman, E. B., M.D., London
Fletcher, John, M.B., London
Fowler, R. S., F.R.C.S., Bath
Freeland, E. H., F.R.C.S., London
Freyer, P. J., M.D., London

Gabe, J. R., M.D., London
Gardner, H. G., M.B., London
Gallie, W. M. D., M.B., London
Galton, J. H., Norwood
Gayton, W., M.D., London
Gibson, James Albert, M.D., London
Godson, A., M.B., Cheadle
Gorham, James J., M.D., London
Gosse, William, L.R.C.P., Sittingbourne
Grant, Dundas, M.D., London
Grant, Hope, F.R.C.S.Edin., London
Grant, Ogilvie, M.B., Inverness
Graves, F. G., M.D., London
Greenwood, E. Climson, M.R.C.S., London
Greet, Charles H., L.S.A., London
Grosvenor, Alfred Octavius, M.D., London
Groves, Joseph, M.B., Carisbrooke

Hamilton, Surgeon-General J. B., M.D., London
Handford, Henry, M.D., Nottingham
Harman, W. Morton, Surgeon-Major (ret.), M.D., Winchester
Harper, James, M.D., London
Hardy, H. Nelson, F.R.C.S.Edin., London
Harries, J. D., M.R.C.S., Shrewsbury
Harrison, Alfred James, M.D., Clifton
Harrison, R. C., M.R.C.S., London
Hart, F. Lorimer, M.B., Sydenham
Henry, John Patrick, M.D., London
Heron, G. A., M.D., London
Hill, J. H., M.D., London
Hill, G. William, M.D., London
Hills, A. Phillips, M.R.C.S., London
Holder, W., M.R.C.S., Hull
Holman, C., M.D., London
Hockridge, Thomas Granville, M.D., London
Horder, T. Garrett, M.R.C.S., Cardiff
Horsley, Victor, F.R.S., London
Hossack, J., F.R.C.S.Edin., Ipswich
Howell, R. E., M.B., Middlesboro'
Hudson, John Samuel, M.D., London
Hutchinson, Samuel John, M.R.C.S., London
Hutton, Henry R., M.B., Manchester

Ince, John, Surgeon-Major, M.D., Swanley

Jaffe, Charles S., M.D., London
James, J. Brindley, L.R.C.P.I., London
Jeffcoat, Dep.-Surg.-Gen. James H., (ret. A.M.S.), M.R.C.S., Surbiton
Jessop, T. R., F.R.C.S., Leeds
Jessop, W. H. H., F.R.C.S., London
Joll, Boyd B., M.B., London
Jones, Evan, M.R.C.S., Aberdare
Jones, Robert, M.D., Claybury
Jones, Rees T., L.R.C.P., Harlesden

Keay, J. H., M.D., Greenwich
Ker, Hugh R., F.R.C.S.Edin., London
Kershaw, Wm. Henry, L.S.A., London
Kiallmark, Harry W., M.R.C.S., London
Kinsey, R. H., M.R.C.S., Bedford
Knott, William, M.D., Middlesboro'

Lamb, William Henry, M.B., London
Langdon-Down, R. L., M.B., London
Langston, Thos., M.D., London
Lawrenson, Harman F., M.D., London.
Lawson, Henry A., L.R.C.P.Edin., Stratford
Leftwich, Ralph W., M.D., London
Lindow, Albert, M.R.C.S., Plumstead
Little, Ernest M., F.R.C.S., London
Lord, Frederick, L.R.C.P., Southsea
Lord, Richard, M.D., London
Lubbock, M., M.D., London
Lucey, Wm. Cubitt, M.D., Hampstead
Lyster, C. R. C., M.R.C.S., London

McCaw, J. Dysart, M.D., London
Macfie, Charles, M.D., Bolton
Mackenzie, Stephen, M.D., London
Mackintosh, G. D., L.R.C.P., London
Macleod, W. A., M.B., London
Macnamara, N. C., F.R.C.S., London
McVail, J. C., M.D., Glasgow
Manning, H. J., M.R.C.S., Salisbury
Masters, J. A., M.D., London
Maude, Arthur, M.R.C.S., Westerham
Maxwell, Theodore, M.D., Woolwich
Muswald, O. S., M.R.C.S., London
Merrick, H. T., M.B., Surbiton
Mickle, W. J., M.D., London
Milburn, C. H., M.B., Hull
Miller, J. D., M.B., London
Milsom, R. H., M.D., London
Monti, P., L.S.A., London
Moore, Sir John William, M.D., Dublin
Morier, C. G. D., L.R.C.S.I., London
Morris, W. Jones, M.R.C.S., Portmadoc
Mullick, S. K., M.B., London
McDougall, W. S., M.B., Wallington
Murphy, James, M.D., Sunderland

Newton, R. C., M.R.C.S., Newcastle-on-Tyne

O'Bryan, J. W., M.D., Sydenham
O'Callaghan, R., F.R.C.S.I., London
O'Connor, B., M.D., London
Oswald, J. W. J., M.D., London
O'Dwyer, Surgeon-General T. F., M.D., Aldershot

Parker, James, M.D., London
Parkinson, C. H. W., M.R.C.S., Wimborne
Parsons, C., M.D.Edin., Dover
Pasteur, William, M.D., London
Penny, Deputy-Surgeon J. C., M.D., (ret. A.M.S.), London
Philip, R. W., M.D., Edinburgh
Pope, Frank M., M.B., Leicester

Rayner, Edwin, M.D., Stockport
Rentoul, R. R., M.D., Liverpool
Rigden, Walter, M.D., London
Ritchie, Alexander Brown, M.B., Manchester
Roberts, Frederick Thomas, M.D., London
Robinson, H. Botham, M.S.Lond., F.R.C.S., London
Robinson, Surgeon-Major Mark, M.R.C.S., I.M.D., London
Roe, A. D., M.B., London
Rolston, John, M.D., Devonport
Rowell, George, F.R.C.S., London
Russell, William, M.D., Edinburgh

Sangster, Charles, M.R.C.S., London
Saundby, Robert, M.D., Birmingham
Scharlieb, Mrs. Mary, M.D., London
Seaton, Edward C., M.D., London
Sedgwick, Leonard W., M.D., London
Sheen, A., M.D., Cardiff
Shuttleworth, G. E., M.D., Richmond Hill
Sibley, W. K., M.D., London
Simpson, W. G., M.D., London
Skerritt, Edward Markham, M.D., Clifton
Slyman, William D., M.R.C.S., London
Smith, Heywood, M.D., London
Smith, Joseph, M.R.C.S., London
Smith, John Charles, M.R.C.S., London
Smith, Solomon C., M.D., Walton
Smith, Noble, F.R.C.S.Edin., London
Smith, William Muir, M.B., Eastbourne
Snape, Ernest, M.D., London
Snow, Herbert, M.D., London
Somerville, Robert, M.D., Galashiels
Staniland, John H., M.R.C.S., London
Stear, H., M.R.C.S., Saffron Walden
Stephens, John Edmund Hutchings, M.R.C.S., London
Stewart, James, F.R.C.P.Edin., Clifton, Bristol
Stowers, J. H., M.D.Brux., London
Swan, R. Jocelyn, M.R.C.S., London
Sutcliffe, Joseph, L.R.C.P., London

Thomas, Richard Weddall, L.R.C.P., London
Thompson, Charles Herbert, M.D., London
Thomson, G. C., M.D., London
Thomson, John Roberts, M.D., Bournemouth
Thorne, Mrs. Mary, M.D.Brux., London
Thornhill, Lieutenant-Colonel W. H., M.D., I.M.D., London
Tirard, Nestor, M.D., London
Tomes, Charles S., F.R.C.S., London
Tomlin, R. F., M.R.C.S., London
Trewby, H. W., M.R.C.S., London
Tuke, Thomas Seymour, M.B., Chiswick
Turner, J. S., M.R.C.S., London

Verrall, T. Jenner, M.R.C.S., Brighton
Vivrace, Dennis, M.D., London

Walker, Basil Woodd, M.D., London
Wallace, Frederick, L.R.C.P., London
Wallace, Lewis A. R., M.B., London
Walsh, David, M.D., London
Watt, A. Mitchell, M.B., London
Wells, A. Primrose, L.R.C.P., Beckenham
West, Samuel, M.B., London
Weston, Thomas Brodribb, L.R.C.P., London
Wilkinson, Robert, M.R.C.S., London
Williams, G. Chisholm, F.R.C.S.Ed., London
Williams, Dawson, M.D., London
Willson, Alfred Rivers, L.S.A., Oxford
Wilmot, Philip, M.B., London
Winterbotham, W. L., M.B., Bridgwater
Wolstenholme, Richard Hanson, M.R.C.S., Salford
Woodcock, S., M.D., Manchester
Woods, Hugh, M.D., London
Worrall, E. S., M.R.C.S., London

Young, E. Parker, M.R.C.S., London

On the motion of Mr. VICTOR HORSLEY, seconded by Dr. BRASSEY BRIERLEY, it was resolved that the Solicitor to the Association should not be present during the discussion.

At the request of Mr. GEORGE BROWN, the GENERAL

SECRETARY read the opinion of Mr. Beaufort Palmer on the Articles of Association.

Replying to Mr. R. B. ANDERSON, who stated he had given notice of various amendments, the PRESIDENT stated that counsel had advised that no amendments could be proposed to the resolution of the Council which he was about to move; he ruled it must either be accepted or rejected as it stood.

The PRESIDENT moved:

That the draft new Regulations submitted to this meeting be and the same are hereby approved, and that such new Regulations be and they are hereby adopted as the Regulations of the Association; that they be adopted to the exclusion of and in substitution for all the existing Regulations of the Association; and that such last-mentioned Regulations, and also all By-laws which have been made pursuant thereto, be and the same are hereby repealed and abrogated.

He reminded the members that up to 1874 the Association was a voluntary one, which afterwards became a limited liability company with Articles of Association. Since that time it had greatly developed, and its members had increased up to 19,000. In 1883 the principle of representation of the Branches was adopted. The reason the Council asked the members to approve of the new Articles was simply to give stability and firmness to the Association, and to bring about a closer contact with all the Branches throughout the organisation, because it was in the Branches that the strength of the Association lay. The necessity for the new Articles had come up because it was found, as regards the interpretation of some of the Articles and by-laws, that there were apparent discrepancies. Eminent counsel had been consulted, who had recommended the adoption of the proposed new Articles in consequence of the difficulty of interpreting the Articles as they stood. If the old Articles were compared with the new it would be found that there was really very little difference between the two, and the duties and powers of the annual meeting under the new Articles would be practically the same as they had been for the last 25 years. He reminded members that since they had adopted the representative principle the voice of the Association was a voice which affected the whole medical world. He was perfectly certain that the purposes and objects of the Council were broadly liberal, and they desired the voice of the Association to go to the extreme circumference of the Association and then be reflected back again upon the vital centre. If they adopted the Articles it would be nothing more nor less than a fair and even balance between all parts of the organisation and would contribute towards its stability. He did not think it right that 25 gentlemen should be able, as at present, to introduce topics at the annual meeting to revolutionise the Association when probably 99 per cent. of the members would be opposed to their recommendations. This was one of the evils aimed at in the new Articles.

Dr. ROBERTS THOMSON, in seconding the resolution, said the sole object of the change in the Articles was to bring them into line with what had been the practice of the Association. There were, of course, those who thought that the annual meeting should be paramount, but it never had been so far as the practice hitherto was concerned. He felt sure that those who wished to maintain that proposition had not thought out what it meant. The quorum of the annual meeting was 25, but assuming that 30 members attended, which was a very good average, then 16 was a majority. Were the members content that 16 gentlemen, however earnest and sincere, should express the feelings and voice the sentiments of the Association? He gave one or two illustrations as showing how absurd such a position was, and also mentioned the fact that notice of motion had been given for the next annual meeting that for the purpose of improving the status of the profession the Council should spend £10,000 and also that the Association should send paid secretaries to all the Branches for its own purposes, which would mean an expenditure of £5,000 a year, and yet if 16 gentlemen voted for it that would go forth as the opinion of the Association. He asked were they prepared to submit to such a condition of affairs? The annual meeting could not be the parliament of a great Association like this. There would be no difficulty whatever in airing any professional grievance at the annual meeting, but any resolution from the annual meeting would be only a recommendation and not an instruction to the Council, which he thought was the right way. The object of the new Articles was to throw all the work back on the Branches; let the discussion of everything which tends to raise the profession be done in the Branches, and then the representatives of the Branches, coming up fresh from those discussions, would advise the Council, which would then carry out the wish of the Association thus properly expressed; but they should not be placed at the mercy of a snatch vote at an annual meeting which they would be if the resolution before them was opposed. He had heard of doubts existing in certain minds as to what would happen if this resolution was passed, and that it would be necessary to obtain an Act of Parliament or an Order in Council to alter them; but if it was found that these new Articles did not work it would only be necessary by a three-fourths majority to upset them and bring in fresh Articles. Seeing, however, that they were the result of the mature judgment of the leading legal authority of this country, and that they were pressed upon their notice by the Council after full consideration, he appealed even to those who held the contrary opinion, to let the new Articles have a trial. If they could show a year hence that they had failed, he would be the first to help sweep them away and set up a further set of Articles in their place; he could not say anything fairer on the part of the Council, and begged formally to second the resolution.

Dr. BERNARD O'CONNOR observed that he was well acquainted with the drafting of documents, and it was a well-known fact that counsel endeavours to express in the document he produces the wish of the person who consults him; and if he (Dr. Bernard O'Connor) had been asked to draft these Articles he would have done so diametrically opposite to those which they had before them. He reminded them that the same thing occurred at Liverpool some years ago on a similar occasion, when they were told they had been drafted by eminent legal authority, and now they were found to be defective. The proposed Articles, as far as they went, were to a certain extent models, but they did not go far enough. He had read them carefully, but nowhere could he find any wording, or suggestion of any interpretation, which conveyed or left to the whole body of this Association the management of its affairs. By a process of verbal subtlety there was no power left to the Association as an Association. It might be said that it came filtered through from the Branches; but he asked, what was it? Was it what was left on the filter, or what went through the filter, that they had to recognise? It was a matter for serious consideration, and he only asked for information. In conclusion, he proposed that the meeting should stand adjourned for the purpose of affording the Council the opportunity of submitting to their drafting counsel a notice of motion which would enable the members to propose amendments and alterations to the proposed Articles of Association.

The PRESIDENT: Is there any seconder to Dr. O'Connor's motion? If there is no seconder, I will put the motion for the adjournment. If the meeting is in favour of the adjournment, I shall take the vote at once. Kindly hold up the right hand in favour of the adjournment. The contrary, if any. I declare the motion is lost.

Dr. RENTOUL said he would have liked to have seconded Dr. O'Connor's motion, but it appeared that he was too late in rising to do so. He was strongly opposed to the proposals of the Council in their present form.

Dr. DOUGLAS said that the proposals were premature because he thought the Branches and the Council wanted alteration and reorganisation, and because he considered that the matter had been hurried through in a way which it ought not to have been, the fact being that many thousands of the members of the Association knew nothing about the meeting that day.

Mr. VICTOR HORSLEY said that it was with mixed feelings that he came upon that platform, because it had fallen to his unhappy lot to be ruled out of order by Dr. Ward Cousins on a previous occasion in a manner which they now discovered to have been wholly illicit. He used the expression "wholly illicit," because now they had the opinion of eminent counsel that Dr. Ward Cousins was quite wrong. He had not observed any sign of apology on the part of the Council for having misled the Association for so many years; but what he did discover in reading the proposed new Articles was that the Council proposed to arrogate to themselves the whole of the power of the Association. It seemed to him to be a very curious application of the doctrine of rewards and punish-

ments that they who had suffered were to be worse punished than they were before. He could not believe that that great meeting was going to do anything else than reject with contempt the proposals of the Council—proposals which, he was sorry to say, had been put forward by many of his best friends. He could not understand how, in the name of common sense in the year 1900 any set of English gentlemen could propose to arrogate to themselves duties and functions which were already in the hands of a great Association like that. To his mind it was perfectly incomprehensible; but there they were, and it was their duty to vote. But there was a fundamental reason that he knew had actuated many of the members of the Council—a reason which he believed every member in that room felt to-day. It was that their Association was in need of reorganisation. They did not quite know what they wanted, but how were they at a fortnight's notice to make up their minds? Let them get rid of those absurd proposals that day by voting against them. Let them come to the annual meeting at Ipswich, where, under a most genial President—a man who had taken the deepest interest in the Association as a real association for the interests of the profession—they might discuss that matter, and where they could have schemes proposed, not merely one scheme, but several schemes. They could think over these schemes when they had a year to do it in, and they could, if necessary, expedite the business by appointing a committee to draft schemes to put before the Association, so that everybody might think about them. But here they were being asked to vote actually without having the points before them, and actually without being able in the least to alter them. He ventured to think that the Council were doubly to blame for the way in which that business had been brought forward that afternoon, as also in asking them at that hour to express their confidence in the Council, which had done what he contended was an unbusinesslike act. He could only say he hoped those present would go to Ipswich; and that they would be allowed to put forward their views untrammelled and unhindered; and he hoped that that expression of views would result in the reorganisation of their great Association.

Dr. BROWN RITCHIE spoke against the adoption of the proposals of the Council as a member of the Council, and as a member who had opposed them in Council. He rose to oppose them on various grounds, first of all on general principles—on general principles because he thought it was an unparalleled thing that an Association like that should never have an opportunity of airing grievances or giving a general opinion in general meeting. It might be said with regard to those proposals of the Council that they would not be prevented from doing such things, but there was a great difference between a right and a thing which was only given as a favour, and it was proposed that a very great number of rights and privileges, in spite of what the President of the Council had said, should be withdrawn from them by those new Articles. Then, again, there was a bugbear brought forward with regard to those resolutions at the annual meeting. A good deal had been said about trusting the Council. He would like to know how much the Council were trusting the common sense of the members of the Association. The Council calmly told them, "You must trust us; the whole wisdom of the Association is concentrated in us, and we do not trust you (the members) to throw out a resolution if it is a foolish one." He did not think that that was fair towards the members. Then another point that came forward was that the Council would make it appear that those proposals which they brought forward were without alternatives. No such thing; there were other alternatives brought forward in Council which safeguarded the possibility of any scratch vote, but the Council did not think proper to adopt any of them. Then, again, he should reject the scheme, because, in the first place, it absolutely ignored something like 40 per cent. of the members of the Association—the unattached members—whose only chance of having a voice in the affairs of the Association at all was at the annual meeting. A proposal was brought forward in Council by which the unattached members might be attached to the Branches, but even that was not taken up, and therefore by the present scheme they had somewhere about 40 per cent. of the Association disfranchised and ignored. Four years ago the Branches were consulted with regard to the reorganisation of the Association, and a report was drawn up. Not one of the findings of the report had been adopted in this report of the Council. The unattached members were dealt with, the executive was dealt with and other matters were dealt with, but they were all ignored in that report. Then to say that they as sensible men should be told that those were fair proposals and that they were in their interests, and yet that they should not have an opportunity, except with the permission and favour of the Council, of even airing a grievance or making a proposal in general meeting was to his mind nonsense. Further, it was said that it would be an easy matter to alter those Articles again, but it was to be remembered that if those Articles were passed a three-quarters majority would be necessary to alter them.

Dr. POPE moved that the question be now put.

Dr. MURPHY seconded the motion, which was carried.

The PRESIDENT then put the original resolution for the adoption of the new Articles to the meeting, and a show of hands being taken declared it lost, the requisite three-fourths majority not having been obtained.

The proceedings then terminated.

SIXTY-EIGHTH ANNUAL MEETING.

THE sixty-eighth annual meeting of the British Medical Association will be held at Ipswich on Tuesday, Wednesday, Thursday, and Friday, July 31st, August 1st, 2nd, and 3rd, 1900.

President: JOHN WARD COUSINS, M.D.Lond., F.R.C.S.Eng., Senior Surgeon Royal Portsmouth Hospital.

President-Elect: WILLIAM ALFRED ELLISTON, M.D. Senior Surgeon East Suffolk and Ipswich Hospital.

President of the Council: JOHN ROBERTS THOMSON, M.D., F.R.C.P.Lond., Consulting Physician to the Royal Victoria Hospital and to the National Sanatorium for Diseases of the Chest, Bournemouth.

Treasurer: ANDREW CLARK, F.R.C.S., Surgeon to the Middlesex Hospital and Lecturer on the Principles and Practice of Surgery.

An Address in Medicine will be delivered by PHILIP HENRY PYE-SMITH, M.D., F.R.S., Consulting Physician, Guy's Hospital.

An Address in Surgery will be delivered by FREDERICK TREVES, F.R.C.S., Surgeon Extraordinary to H.M. the Queen.

An Address in Obstetrics will be delivered by WILLIAM J. SMYLY, M.D., F.R.C.P.I., Examiner in Midwifery, Royal College of Physicians, Ireland.

The Scientific Business of the Meeting will be conducted in Thirteen Sections, as follows, namely:

A. MEDICINE.

Art Gallery.

President: THOMAS BUZZARD, M.D. *Vice-Presidents:* MRS. E. GARRETT ANDERSON, M.D.; SAMUEL J. BARTON, M.D. *Honorary Secretaries:* FREDERICK WILLIAM BURTON-FANNING, M.D., 1 St. Faith's Lane, Norwich; THOMAS WARNER, M.D., 12, Museum Street, Ipswich.

The following discussions have been arranged:

Wednesday, August 1st.—Influenza as it affects the Nervous System. Dr. Judson S. Bury will open this discussion, and it is hoped that the following will take part in it: Sir Wm. Broadbent, Bart., M.D., F.R.S., Sir Peter Eade, M.D., Dr. Joseph Collins, Professor J. B. Bradbury, M.D., Dr. S. H. Habershon, Dr. James Taylor, Dr. J. S. Risien Russell, Dr. H. Handford, Dr. T. D. Savill, Dr. J. MacCormac, and Dr. F. M. Pope.

Thursday, August 2nd.—The Problem of Gastric Ulcer. This will be opened by Dr. J. F. Payne, and it is hoped that the following will take part in the discussion: Professor T. Clifford Allbutt, M.D., F.R.S., Dr. S. Martin, F.R.S., Dr. S. H. Habershon, Dr. Soltau Fenwick, Dr. R. Saundby, Dr. H. Handford, Dr. W. Gordon, Dr. G. Herschell, Dr. W. Calwell, Dr. H. Walsham, Miss Julia Cock, M.D., Dr. J. A. Lindsay, and W. Stuart Low, F.R.C.S.

The following papers have been offered:

CALWELL, William, M.D. The Early Stages of Gastroptosis and Gastrectasia.

CUSHING, Professor. On Intermittent Pulse.
DAVIES, Chas. A., M.D. Consanguinity as a Factor in the Etiology of Tuberculosis.
EWART, W., M.D., and PERCIVAL, Beaumont, M.B. Subcutaneous Saline Infusions in Pneumonia.
EWART, W., M.D. A Case of Fatal Malignant Endocarditis and Right Embolic Hemiplegia apparently due to Injection from Dental Caries and Stomatitis, treated by Antistreptococcus Serum and by Saline Infusions.
GORE, W. R., M.B., B.Ch. A Toxin Theory of the Causation of Gout.
MARSHALL, Professor C. R. Demonstration of Sphygmographs.
MCKEOWN, David, M.D. Explanation of so-called Imperfect Aëration Symptoms of Post-nasal Adenoids.
MULLICK, Sarat K., M.B. Post-influenzal Neuroses.
PRUEN, S. T., M.D. Some Practical Points in the Construction of Open-air Sanatoria.
WALKER, Jane, M.D. Progress of Sanatorium Treatment of Consumption in England.
WILSON, T. Stacey, M.D. The Diastolic Expansion Movement of the Ventricles as a Factor in Compensation for Disease of the Mitral Valve.

B. SURGERY.

Masonic Hall, Ground Floor.

President: HOWARD MARSH, F.R.C.S. *Vice-Presidents:* SAMUEL HERBERT BURTON, F.R.C.S.; THOMAS HERBERT MORSE, F.R.C.S. *Honorary Secretaries:* WALTER GEORGE SPENCER, M.S., 35, Brook Street, W.; HERBERT HENRY BROWN, M.D., F.R.C.S., 3, Museum Street, Ipswich.

Proposed Order of Proceedings.

Wednesday, August 1st.—Discussion on Subdiaphragmatic Abscess. Introduced by Mr. Rickman J. Godlee, M.S., F.R.C.S. The following gentlemen will take part: Messrs. Bruce Clarke, Charters Symonds, Musgrave, Jordan Lloyd, and Bidwell.

BIDWELL, Leonard, F.R.C.S. Pyloroplasty.
ROBINSON, H. Betham, M.S. A Case of Obstructive Jaundice in which Cholecystocolostomy was performed with Complete Success.
WALLIS, F. C., M.B., B.C. Non-malignant Stricture of the Rectum: its Causes and Radical Cure.
BOYD, Stanley, M.B., B.S. Oöphorectomy in Cancer of the Breast, with Results to Date.
HERMAN, G. E., M.B., F.R.C.P. Four Cases of Recurrent Mammary Cancer treated by Oöphorectomy and Thyroid Extract.
ECCLES, W. McAdam, M.S. Hernia of the Large Intestine.

Thursday, August 2nd.—Discussion on the Methods at present available for the Treatment of Simple (Subcutaneous) Fractures. Introduced by Mr. William H. Bennett, F.R.C.S. The following gentlemen will take part: Messrs. Keetley, Robert Jones, Eve, J. Hutchinson, jun., F. F. Burghard, Jordan Lloyd, Wm. Thomas, and Langley Browne.

BURTON, S. H., B.S. On the Removal of Large Stones from the Bladder, with notes of a case. (Messrs. Reginald Harrison and Keegan will take part in the discussion.)
FREYER, P. J., M.Ch. Fifty-Three Operations for Stone in the Bladder of Two Ounces and Upwards, from the Author's Practice.
CLARKE, W. Bruce, M.B. Prostatectomy in Two Stages, with an Account of Seven Cases.
THOMAS, W. Thewall, F.R.C.S. An Operation for the Cure of Frontal Sinus Suppuration.

Friday, August 3rd.

DAVIDSON, J. Mackenzie, M.B., C.M. Recent Progress in the Use of Roentgen Ray Methods in Surgery. After the paper Mr. Mackenzie Davidson will give a Demonstration in the dark room: members are invited to attend two or three at a time.
PHELPS, A. M., M.D. The Open Incision for Club Foot; its Indications and Abuses. (The following gentlemen will take part in the discussion: Messrs. Jackson Clarke, Wm. Thomas, and Tubby.)
HUTCHINSON, Jonathan, jun., F.R.C.S. The Substitution (when practicable) of Subastragalar for Syme's Amputation.
GRIFFITHS, Joseph, F.R.C.S. Observations upon Injuries to the Internal Lateral Ligament and to the Internal Semilunar Cartilage of the Knee-Joint.
BURGHARD, F. F., M.S. Three Cases in which the Superior Cervical Ganglia were Excised, with Remarks on the Operation.

In order to allow sufficient time for the discussions on the above subjects, no more papers can be accepted. Members proposing to take part in the discussions are requested to send their names, at their earliest convenience, to the Honorary Secretaries.

C. OBSTETRICS AND GYNÆCOLOGY.

High School for Girls, Ground Floor.

President: WALTER SPENCER ANDERSON GRIFFITH, M.D. *Vice-Presidents:* MICHAEL BEVERLEY, M.D.; MRS. MARY ANN DACOMB SCHARLIEB, M.D. *Honorary Secretaries:* JOHN DAVID MALCOLM, M.B., F.R.C.S.Edin., 13, Portman Street, Portman Square, W.; SAMUEL OLIVER EADES, L.R.C.P., L.R.C.S.Edin., Manor House, St. Peters, Ipswich.

The following discussions have been arranged:

Wednesday, August 1st.—Puerperal Fever in Relation to Notification. To be opened by Dr. Berry Hart.

Thursday, August 2nd.—The Natural History of Fibroids and Recent Improvements in their Treatment. To be opened by Mr. Alban Doran, F.R.C.S.

Friday, August 3rd.—*Post-Partum* Hæmorrhage, its Prevention and Treatment. To be opened by Dr. Dakin.

The following gentlemen have signified their intention of joining in the discussions: Dr. Herman, Dr. Boxall, Mr. Stanmore Bishop, Dr. More Madden, Dr. Purslow, Dr. George Elder, Dr. Byers, Dr. John Campbell (Belfast), and Messrs. Harrison Cripps, Skene Keith, and W. H. C. Newnham.

The following papers have been proposed:

CRIPPS, Harrison, F.R.C.S. The Surgical Treatment of Uterine Fibroids.
MADDEN, Thomas More, F.R.C.S.Edin. On the Modern Treatment and Prevention of *Post-Partum* Hæmorrhage.
NEWNHAM, W. H. C., M.A., M.B., M.R.C.S. Successful Removal of Fibroid; 13 lbs. 11 ozs., by Intraperitoneal Hysterectomy.
PURSLOW, C. E., M.D. An Account of a Case of Complete Inversion of the Uterus of Three Years' Duration.
SCHARLIEB, Mrs., M.D., M.S. The Method Used and the Results Obtained in 40 Cases of Abdominal Hysterectomy for Fibroids at the New Hospital for Women.
WILLIAMS, Wm. Roger, F.R.C.S. When are Radical Operations for Myoma of the Uterus Necessary?

D. STATE MEDICINE.

Library, Town Hall.

President: JOHN CLOUGH THRESH, M.D., D.Sc., D.P.H. *Vice-Presidents:* HENRY HANDFORD, M.D., D.P.H.; HARRY COOPER PATTIN, M.D., D.P.H. *Honorary Secretaries:* GEORGE VINCENT, M.D., D.P.H., North Lodge, Anglesea Road, Ipswich; EDWARD PETRONELL MANBY, M.D., D.P.H., Local Government Board, Whitehall, S.W.

The following discussions have been arranged:

1. Can Modern Systems of Sewage Treatment be depended upon to Remove the Bacillus Typhosus and Allied Organisms? To be opened by Dr. Houston, and illustrated by lantern slides. The following will take part in the discussion: Professor Boyce, Dr. Grünbaum, Dr. Kaye, and Dr. Kenwood.

2. The Provision of Cottages in Rural Districts, and its bearing upon Public Health. To be opened by Dr. Tew.

3. What Action can be taken by Sanitary Authorities for the Prevention of Tuberculous Disease, apart from the Control of Milk and Meat Supplies? To be opened by Dr. H. R. Kenwood. The following will take part in the discussion: Dr. J. Spottiswoode Cameron, Dr. Drysdale, and Dr. W. Brown.

4. Should Municipalities provide Common Lodging-houses and Workmen's Dwellings? To be opened by Dr. Cooper Pattin. The following will take part in the discussion: Dr. W. Permewan, Dr. Herbert Manley, and Dr. J. Spottiswoode Cameron.

The following papers have been proposed:

BEEVOR, Sir H. R., Bart. Rural Phthisis and the Insignificance of Case-to-Case Infection.
BERRY, William, F.R.C.S.I., D.P.H. Housing of the Working Classes.
BOYCE, Professor R. W., M.B. (Liverpool). The Construction of Sanatoria for Phthisis. (Illustrations by Lantern Slides.)
GRÜNBAUM, A. S., M.D. (Liverpool). Food Preservatives.
DRYSDALE, C. R., M.D. On the Notification of Venereal Diseases in Christiania, Norway, since 1879.
HARRIS, F. Drew, M.B. (M.O.H., St. Helens). Municipal Sterilisation of Milk: An Account of the Installation and Working of the System at St. Helens. (Illustrated by Lantern Slides.)
JONES, H. R., M.D., D.P.H. The Causes of Typhoid.
MCWALTER, J. C., D.P.H. The Hygienic Aspect of the Use of Water Gas.
MARSDEN, R. Sydney, M.B., D.P.H. What is the Mode of Action of Bacteria in Disease?
RAW, Nathan, M.D., D.P.H. (Medical Superintendent, Mill Road Infirmary, Liverpool). Rate-supported Sanatoria.
SCOTT, G. M., M.D. Cancer Mortality in East Anglia.
THRESH, J. C., M.D., D.Sc. (M.O.H., Essex County Council). Rural Water Supplies.
WALFORD, E., M.D. (M.O.H., Cardiff). The Etiology of Diphtheria.
WILLIAMS, W. Roger, F.R.C.S. The Prevalence of Cancer in different Countries and its Increase.

Dr. R. R. RENTOUL gives notice that he will move the following resolution:

That in order that the suggestion of the Registrar General of Births and Deaths relating to childbirth mortality be more fully carried out, and more accurate statistics relating to such mortality be secured, this Section of State Medicine earnestly requests the Council of the Association to use its best efforts to induce all practitioners to carry out the above "suggestion."

The "suggestion" is as follows: "No. 7.—Whenever childbirth has occurred within one month before death, this fact should invariably be certified, even though it may be believed that the childbirth has no connection with the cause of death."

E. PSYCHOLOGY.

Class Room No. 9, First Floor, Higher Grade School.

President: R. PERCY SMITH, M.D. *Vice-Presidents:* EDMUND LEWIS ROWE, L.R.C.P.; WILLIAM ALDREN TURNER, M.D. *Honorary Secretaries:* CECIL ANTHONY PERRIER OSBURNE, F.R.C.S.Edin., The Grove, Old Catton, Norwich; JAMES RICHARD WHITWELL, M.B., County Asylum, Melton, Suffolk.

The following discussions have been arranged:

Wednesday, August 1st.—The Bearing of Sexual Function and Disease of the Sexual Organs on Insanity and Crime. Introduced by Dr. Macnaughton-Jones.

Thursday, August 2nd.—The Colony Treatment of Epileptics. Introduced by Dr. Aldren Turner.

Friday, August 3rd.—Organotherapeutics in Mental Disease. Introduced by Dr. Easterbrook.

The following gentlemen have intimated their intention to take part in the discussion: Dr. Crochley Clapham, Dr. Rayner, Dr. Robert Jones, Dr. E. M. Corner, Dr. Soutar, Dr. Lewis Bruce, Dr. G. E. Mould.

The following papers have been proposed:

CRAIG, Maurice, M.D. On Blood Pressure in Mental Disease.
JONES, Robert, M.D. Saturnine Encephalitis.
MACCORMACK, J. M., M.D. The Relation of the Lunacy Laws to Neuro-psychological Diseases.
NORMAN, Conolly, F.R.C.P.I. The Method of Keeping Clinical Records in Asylums.
PASMORE, E., M.D. Epileptic Insanity.
SMITH, Percy, M.D. Peripheral Neuritis and Insanity.
TURNER, John, M.B. The Pathological Histology of Acute Delirious Insanity. (With Lantern Demonstration.)
WHITE, Ernest, M.B. The Treatment of the more Acute Forms of Melancholia.

F. PHYSIOLOGY.

Class Room No. 1, Ground Floor, Higher Grade School.

President: Professor WILLIAM DOBINSON HALLIBURTON, M.D., F.R.S. *Vice-Presidents:* EDWARD WILLIAM WACE CARLIER, M.D.; Professor CHARLES S. SHERRINGTON, M.D., F.R.S. *Honorary Secretaries:* W. H. THOMPSON, M.D., Queen's College, Belfast; WILLIAM LEGGE SYMES, M.R.C.S., Physiological Department, St. Mary's Hospital Medical School, W.

The following discussions have been arranged:

1. The Formation and Excretion of Uric Acid in Health and Disease. To be opened by the President. Professor Vaughan Harley, M.D., F.R.C.P., F. G. Hopkins, B.Sc., A. Haig, M.D., T. H. Milroy, M.D., W. J. Smith Jerome, M.D., William Bain, M.D., etc., will take part in the discussion.

2. Muscular Tonus in Relation to Affections of the Nervous System. To be opened by F. W. Mott, M.D., F.R.C.P., F.R.S. Professor Victor Horsley, F.R.S., Professor C. S. Sherrington, F.R.S., L. J. J. Muskens, M.D., etc., will take part in the discussion.

The proceedings will also include papers and demonstrations on other branches of physiology and histology, among others the following:

ANDERSON, Professor R. J. A Note on Respiration.
BUXTON, Dudley W., M.D., and LEVY, A. G., M.D. The Influence of Some Anæsthetics upon the Kidney.
CARLIER, Professor E. Wace. (1) Changes occurring in the Cell of the Newt's Stomach during and after Secretion. (2) Presence of the Ciliated Cells in Convoluted Tubules of Human and Mammalian Kidney.
COFFEY, Professor D. J. Histology of the Œsophageal Mucous Membrane.
GOODBODY, F. W., M.D. Influence of Sodium Salicylate on General Metabolism.
HARRIS, D. F., M.D. The Inertia of Protoplasm.
HUNTER, W., M.D. Demonstration of Histological Specimens of the Nervous System, stained by the Methods of Ehrlich and Golgi.
LEVY, A. G., M.D. Notes on Fatigue of the Cerebral Cortex.
MACDONALD, J. S., M.D. Demarcation Current of the Vagus.
MANN, Gustav, M.D. 1. Points of Homology in Cord, Hind, and Middle Brain. 2. Arrangement of Nuclei in Cord of Macacus Sinensis. 3. Demonstration of Photographs and Charts of Monkeys' Cord. 4. Demonstration of Different Types of Nerve Cells seen in the Cord and Higher Centres.
MILROY, T. H., M.D. The *Rôle* of the Liver in the Metabolism of Nucleins.
PARSONS, J. Herbert, M.B., B.Sc. Dilatation of the Pupil from Stimulation of the Cortex.
SHERRINGTON, Professor C. S., F.R.S. Spinal Vascular Reflexes.
SYMES, W. Legge, M.R.C.S. An Embedding Bath.
THOMPSON, Professor W. H. Anæsthetics and Urinary Secretion.
WALLER, A. D., F.R.S. The Retinal Response to Light. Dr. Waller will give a Sphygmograph Demonstration.

G. PATHOLOGY.

Chemical Lecture Room, Second Floor, Higher Grade School.

President: EDWARD E. KLEIN, M.D., F.R.S. *Vice-Presidents:* WILLIAM MILLER CROWFOOT, M.B.; Professor ROBERT MUIR, M.D. *Honorary Secretaries:* ALEX. GRANT RUSSELL FOULERTON, F.R.C.S., Dunsdale, Mulgrave Road, Sutton, Surrey; SYDNEY HERBERT LONG, M.B., 37, St. Giles Street, Norwich.

The following discussions have been arranged:

Wednesday, August 1st.—The Pathological Distribution of B. Diphtheriæ, and the Bacteriological Diagnosis of Diphtherial Infection. Introduced by Dr. F. W. Andrewes.

Thursday, August 2nd.—The Pathology of Cirrhosis of the Liver in Adults and Young Children. Introduced by Dr. Arthur Voelcker. The following gentlemen will take part in this discussion: Dr. Lazarus-Barlow, Dr. Poynton, Professor Simon Flexner, Dr. Wakelin Barratt, Professor Ludvig Hecktoen, and Dr. Lister.

The following papers have been proposed:

BUNCH, J. Lemare, M.D., D.Sc. Ringworm Infection in Man and Animals.
FLEXNER, Professor Simon. The Bacteriology of Acute Tropical Dysentery.
HARRIS, Wilfred J., M.D. On the Pathology and Significance of the Argyll-Robertson Pupil.
LAZARUS-BARLOW, W. S., M.D. On Lipomata of the Kidney.
WALSHAM, Hugh, M.D. The Muscular Atrophy of Pulmonary Tuberculosis.
WILLIAMS, William Roger, F.R.C.S. The Pathogenesis of Myoma of the Uterus.

Members proposing to take part in the discussions or desirous of reading papers are requested to send their names at their earliest convenience to the Honorary Secretaries.

H. OPHTHALMOLOGY.

Class Room No 6, Ground Floor, Higher Grade School.

President: WILLIAM ARTHUR BRAILEY, M.D. *Vice-Presidents*: HAYNES SPARROW ROBINSON, M.R.C.S.; HENRY WORK DODD, F.R.C.S. *Honorary Secretaries:* CHARLES DEVEREUX MARSHALL, F.R.C.S., 112, Harley Street, W.; WALTER WILLIAM SINCLAIR, M.B., 16, Museum Street, Ipswich.

The following discussions have been arranged:

1. The Treatment of Chronic Glaucoma. Introduced by F. Richardson Cross, F.R.C.S. Messrs. T. H. Bickerton, K. A. Grossmann, G. Foggin, and John Hern will take part in the discussion.

2. The Treatment of Lachrymal Obstructions. Introduced by George A. Berry, M.B., F.R.C.S.E. Messrs. T. H. Bickerton, K. A. Grossmann, G. Foggin, John Hern, Kenneth Scott, and Ernest H. Cartwright, will take part in the discussion.

The following papers have been proposed:

BUCHANAN, Leslie, M.B. On a Case of Congenital Microphthalmos with Cyst.
FERGUS, A. Freeland, M.D. Some Forms of Optic Nerve Disease Probably of Sympathetic Origin.
FOGGIN, George, L.R.C.P. On Epicanthus.
GRIFFIN, W. Watson, M.B. A Case of Leucosarcoma of the Iris showing Fibro-hyaline Changes.
GROSSMANN, Karl, M.D. Quantitative Colour Tests.
SCOTT, Kenneth, M.B. Dacryocystitis Aggravans resembling Tumour of Face.
STEPHENSON, Sydney, F.R.C.S.E. The Etiology and Associations of Phlyctenular Affections of the Eye.

I. DISEASES OF CHILDREN.

Class Room No. 14, First Floor, Higher Grade School.

President: FREDERICK TAYLOR, M.D. *Vice-Presidents:* RICHARD WILLIAM BROGDEN, M.B.; JOHN THOMSON, M.D. *Honorary Secretaries:* WILLIAM SOLTAU FENWICK, M.D., 8, Devonshire Street, Portland Place, W.; ALFRED M. GOSSAGE, M.B., 54, Upper Berkeley Street, W.

Wednesday, August 1st.—The Nature and Varieties of Pneumonia in Children. Introduced by Nestor Tirard, M.D. It is hoped that the following will take part in the discussion: More Madden, M.D.

Thursday, August 2nd.—On Lateral Curvature, Flat-foot and Knock-knee. Introduced by Arbuthnot Lane, F.R.C.S. It is hoped that the following will take part in the discussion: A. H. Tubby, M.S., J. Jackson Clarke, F.R.C.S., W. Thomas, F.R.C.S., Chisholm Williams, F.R.C.S.E., and Noble Smith, F.R.C.S.Edin.

Friday, August 3rd.—Enlargements of the Spleen in Children. Introduced by Samuel West, M.D.

The following papers have been proposed:

Fenwick, Soltau, M.D. Hypertrophy and Dilatation of the Colon in Infancy.
Little, Muirhead, F.R.C.S. An Analysis of a Series of Cases of Infantile Paralysis, with some notes on treatment.
Nicoll, J. H., M.B. (Glasgow). Congenital Hypertrophic Stenosis of the Pylorus, with an account of a case successfully treated by operation.
Overend, W., M.D. (Clacton-on-Sea). The Caloric Values of Certain Artificial Infant Foods.
Parkinson, Porter, M.D. Some Abnormal Empyemata in Children.
Smith, Noble, F.R.C.S.Edin. Ambidexterity as a Method of Teaching Children.
Thomson, J., M.D., and Logan Turner, M.D. The Causation of Congenital Stridor.
Williams, Chisholm, F.R.C.S.E. Analysis of 500 Consecutive Cases of Lateral Curvature of the Spine and Treatment.

J. Pharmacology and Therapeutics.

Class Room No. 12, First Floor, Higher Grade School.

President: Professor Walter George Smith, M.D. *Vice-Presidents:* Edward Liveing Fenn, M.D.; Charles Robertshaw Marshall, M.D. *Honorary Secretaries:* Alan Reeve Manby, M.D., East Rudham, Norfolk; Walter Essex Wynter, M.D., 30, Upper Berkeley Street, W.

The following discussions have been arranged:

1. The Treatment of Internal Hæmorrhage. Professor J. B. Bradbury, M.D., Lindley Scott, M.D., James A. Lindsay, M.D., Walter G. Smith, M.D., and Walter E. Dixon, M.D.

2. Serumtherapy. T. J. Bokenham, M.D.

3. Diet in the Treatment of Disease. Professor J. B. Bradbury, M.D., G. King Martyn, M.D., Thomas Dutton, M.D., Arthur P. Luff, M.D., Lindley Scott, M.D., James A. Lindsay, M.D., David Sommerville, M.D., William Bain, M.D., Harry Campbell, M.D., Sarat K. Mullick, M.B., George Herschell, M.D., Wm. Calwell, M.D.

4. The Therapeutics of Open Air. F. W. Burton-Fanning, M.D., Lindley Scott, M.D., James A. Lindsay, M.D., C. Muthu, M.D., Ernest Kingscote, M.B., Wm. Calwell, M.D.

The following papers have been proposed:

Dixon, Walter E., M.D., The Influence of Certain Drugs on the Vascular Mechanism of the Testis.
Ewart, William, M.D. The Subcutaneous Administration of Oxygen.
Herschell, George, M.D. Demonstration of the Apparatus for Administering the Intragastric Shampoo.
James, J. Brindley, L.R.C.P. Dietary in Rheumatism.
Jowett, H. A. D., D.Sc. The Chemistry of the Jaborandi Alkaloids.
Jowett, H. A. D., D.Sc., and Marshall, Professor C. R., M.D. Remarks on Extractum Jaborandi Liquidum (*B.P.*).
Kingscote, Ernest, M.B. On Treatment of Asthma.
McWalter, J. C., L.R.C.P.I. On some Organotherapeutic Preparations.
Marshall, Professor C. R., M.D. The Pharmacology of the Jaborandi Alkaloids.
Martyn, G. J. King, M.D. The Treatment of Gouty Eczema.
Ross, F. W. Forbes, M.D. Medicinal and Dietetic Treatment of Heart Failure in the Aged.
Scott, Lindley, M.D. The Preventive Treatment of Oxalate of Lime Gravel and Calculus.
Sinclair, F. Howard, M.D. Open-air Treatment in Ireland.
Tunnicliffe, F. W., M.D. The Nutritive Value of Casein (Plasmon).

K. Laryngology and Otology.

Class Room No. 10, First Floor, Higher Grade School.

President: Scanes Spicer, M.D. *Vice-Presidents:* Herbert Tilley, M.D.; William Milligan, M.D. *Honorary Secretaries:* Harry Lambert Lack, M.D., 48, Harley Street, Cavendish Square, W.; Arthur Young Pringle, L.R.C.P., 64, St. Matthew Street, Ipswich.

Wednesday, August 1st.—A discussion on Intranasal Treatment in Ear Disease will be opened by Dr. P. McBride, Mr. Cresswell Baber, and Dr. Dundas Grant. The following gentlemen have promised to take part in the discussion: Mr. Ernest Waggett, Dr. StClair Thomson, Dr. Jobson Horne, and Dr. Logan Turner.

Thursday, August 2nd.—A discussion on the Pathology and Treatment of Toxic Paralyses of the Larynx will be opened by Dr. Watson Williams, Dr. Permewan, and Dr. Jobson Horne. The following gentlemen will take part in the discussion: Dr. Logan Turner, Dr. Samuel Lodge, Dr. StClair Thomson, and Mr. Ernest Waggett.

The following papers have been proposed:

Aikin, W. A., M.D. The Resonators of the Voice.
Campbell, Harry, M.D. The Causation of Adenoids.
McKeown, David, M.D. Auditory Results of Removal of Post-nasal Adenoids. (Modified Operation.)
Pegler, Hemington, M.D. On the Surgical Treatment of Some Forms of Nasal Insufficiency.
Waggett, Ernest, M.B. Bezold's Complication of Mastoiditis.
Yonge, Eugene, M.D. The Treatment of Ozæna.

L. Tropical Diseases.

Art Room, Second Floor, Higher Grade School.

President: Colonel Kenneth Macleod, M.D. (ret. I.M.S.). *Vice-Presidents:* Surgeon-Lieutenant-Colonel Oswald Baker, M.D., I.M.S.; Major Ronald Ross, I.M.S. *Honorary Secretaries:* Andrew Duncan, M.D., M.R.C.P., School of Tropical Diseases, Albert Dock, E.; Guthrie Rankin, M.D., M.R.C.P., 4, Chesham Street, Belgrave Square, S.W.

On Wednesday the business will be introduced by a short address from the President, Colonel Kenneth Macleod.

The following subjects have been arranged for discussion:

Wednesday, August 1st.—Quinine: its Action and Modes of Employment in Malaria. The discussion on this subject will be opened by Dr. Andrew Duncan, M.R.C.P.

Thursday, August 2nd.—Ankylostomiasis. The discussion on this subject will be opened by Major G. M. Giles, M.B., F.R.C.S.

Friday, August 3rd.—The Etiological and Pathological Relationships of Yaws. The discussion on this subject will be opened by Mr. Jonathan Hutchinson, F.R.S., LL.D.

The following gentlemen have intimated their intention to take part in the discussions: Dr. Patrick Manson, Mr. James Cantlie, Colonel Kenneth Macleod, Deputy Inspector-General John Tyndall, Mr. Malcolm Morris, Surgeon-Lieutenant-Colonel Oswald Baker, Sir Wm. Kynsey, Major Wilson, Dr. Fielding-Ould, Dr. Alfred Hillier, Dr. James Watson, Dr. Sandwith (Cairo), Dr. Thin, Major W. J. Buchanan, I.M.S., Major F. P. Maynard, I.M.S., Lieutenant-Colonel Maitland, I.M.S., Lieutenant-Colonel Stewart, I.M.S., Major Ronald Ross, I.M.S., Mr. Sarat K. Mullick, M.B.

The following papers have been proposed:

Bassett-Smith, Percy W., Staff-Surgeon, R.N. Abscess of Left Lobe of Liver, with Remarks, particularly referring to the Amœbic Causation.
Buchanan, Major W. J., M.B. Hot Weather Diarrhœa in India.
Cantlie, James, F.R.C.S. Subhepatic Abscess.
Duncan, Andrew, M.D. The Diseases of Ghoorkhas.
James, Captain S. P., I.M.S. (Travancore). Observations on the Metamorphosis of the Filaria Nocturna in Mosquitos, especially in Mosquitos of the *Anopheles* Genus.
Macleod, Colonel Kenneth, M.D. The Management of Lung Lesions consequent on Liver Abscess.
Mullick, Sarat K., M.B. Plague and its Prophylaxis.
Ross, Ronald, Major, I.M.S. A List of Suggestions for the Improvement of Medical and Sanitary Practice in the Tropics.
Sambon, Louis, M.D. The Geographical Distribution and Natural History of Plague.
Smith, W. Johnson, F.R.C.S. The Surgical Treatment of Hepatic Abscess.
Thin, George, M.D. A note on a case of Blackwater Fever, with Specimens.
Williamson, George A., M.D. The Cyprus Sphalangi and its Connection with Anthrax.

Members proposing to take part in the discussions or desirous of reading papers should communicate, without delay, with the Honorary Secretaries.

M. Navy, Army, and Ambulance.

Gainsborough Hall, opposite St. Margaret's Church, Bolton Lane.

President: Inspector-General Belgrave Ninnis, M.D., R.N. *Vice-Presidents:* Surgeon-General Henry Skey Muir, C.B., M.D., A.M.S.; Brigade-Surgeon-Lieutenant-Colonel G. S. Elliston, V.D., V.M.S. *Honorary Secretaries:* James Harper, M.D., Surgeon-Captain V.M.S.C., 25, Rosary Gardens, South Kensington, S.W.; Francis Augustus Brooks, M.D., Surgeon-Captain 1st Suffolk and Harwich V.A., St. Felix, Felixstowe, Suffolk.

It is proposed to hold discussions as follows:

Wednesday, August 1st.—The Medical Service of the Army, Militia, Yeomanry and Volunteers.

Thursday, August 2nd.—The First Aid and Transport of Sick and Injured in Civil Life in Large Towns.

Friday, August 3rd.—On Modern Small-bore Rifle Wounds, and other Medical and Sanitary Matters of which the War in South Africa has Increased our Knowledge.

The following papers have been proposed:

Cantlie, Surgeon-Captain J. How to Link the Militia, Yeomanry and Volunteer Medical Services with the Royal Army Medical Corps.
Caverhill, Surgeon-Major T. F. S. On Cavalry Ambulance Service.
Colborne, Staff-Surgeon W. J., R.N. On Infectious Disease on Board Ship.
Birch, Surgeon-Captain De Burgh, V.M.S.C. On the Organisation of the Medical Department of the Volunteer Forces.
Dent, Clinton, F.R.C.S. On Modern Small-bore Rifle Wounds.
Elliston, Brigade-Surgeon-Lieutenant-Colonel G. S. On Brigade Bearer Companies.
Giles, Brigade-Surgeon-Lieutenant-Colonel, V.D. On Volunteer Medical Organisation.

HALL-EDWARDS, J., M.D. (Surgeon-Radiographer to the Imperial Yeomanry Hospital). 1. On the Practical Application of the *X*-Rays to Military Surgery. 2. Notes on the Localisation of Bullets by means of the *X*-Rays. Illustrated by lantern slides.
HAMILTON, Surgeon-General J. B., R.A.M.C. On the Past, Present, and Future of the R.A.M.C.
HUTTON, Surgeon-Major C. A., On First Aid and Transport of Sick and Injured in Civil Life in Large Towns.
JAMES, Major H. E. R., R.A.M.C. On Camp Sanitation.
MATTHEWS, Surgeon-Major Valentine, V.M.S.C. On Cavalry Ambulance Service.
MARSHALL, Surgeon-Major de Zouche, V.M.S.C. On First Aid in Civil Life.
STEPHENSON, Surgeon-Captain F. L., V.M.S.C. On the Cycle in the Field for Medical Service.
RANKINE, Lieutenant-Colonel G. S., I.M.S. On Cavalry Field Ambulance.
SQUIRE, Surgeon Lieutenant-Colonel J. E., V.D. On the Augmentation of the R.A.M.C. for War.
WRIGHT, Professor A. E., M.D. On Anti-enteric Inoculation.

The following, amongst others, are expected to take part in the discussions: Surgeon-General Sternberg, Director-General U.S. Army; Surgeons-General O'Dwyer, Skey Muir, C.B., and Evatt, A.M.S.; Lord Knutsford, Lieutenant-Colonels C. B. Maitland, I.M.S., and Trimble; Majors James and Treherne, R.A.M.C.; Brigade-Surgeon-Lieutenant-Colonels Hopson, V.D., and Owens; Captain Milburn, Messrs. Frederick Treves, Edmund Owen, M. K. Hargreaves, etc.

A Loan Collection of objects of special interest to the Section will be formed in the anteroom off the Section meeting room, and on the lawn outside a tortoise tent of the Military Equipment Company will be pitched, in which many specialities for the field will be seen.

PROGRAMME OF PROCEEDINGS.

MONDAY, JULY 30TH, 1900.

9 P.M.—Mrs. Elliston "At Home," Stoke Hall.

TUESDAY, JULY 31ST, 1900.

9.30 A.M.—Meeting of 1899-1900 Council. Magistrates' Room, Town Hall.
11 A.M.—Church Service. St. Mary-le-Tower Church. Sermon by the Right Reverend John Sheepshanks, Lord Bishop of Norwich.
2 P.M.—First General Meeting. Report of Council. Reports of Committees; and other business. Central Hall, Higher Grade School.
4 P.M.—Garden Party by Mr. D. Ford Goddard, M.P.
8.30 P.M.—Adjourned General Meeting from 2 P.M. President's Address. Lyceum Theatre.

WEDNESDAY, AUGUST 1ST, 1900.

9.30 A.M.—Meeting of 1900-1901 Council. Magistrates' Room, Town Hall.
10 A.M. to 1 P.M.—Sectional Meetings.
2.30 P.M.—Second General Meeting. Address in Medicine by Philip Henry Pye-Smith, M.D., F.R.S. Presentation of Middlemore Prize. Central Hall, Higher Grade School.
4 P.M.—Garden Party at Felixstowe by Mr. Felix Cobbold.
9 P.M.—Reception and Garden Fête at Christchurch Park by His Worship the Mayor of Ipswich.

THURSDAY, AUGUST 2ND, 1900.

9.30 A.M.—Meeting of Council. Magistrates' Room, Town Hall.
10 A.M. to 1 P.M.—Sectional Meetings.
2.30 P.M.—Third General Meeting. Address in Surgery by Frederick Treves, F.R.C.S. Central Hall, Higher Grade School.
4 to 7 P.M.—Garden Party at Orwell Park by Captain Pretyman, M.P., and Lady Beatrice Pretyman.
7.30 P.M.—Public Dinner of the Association. Council Chamber, Town Hall.
9 P.M.—Reception by Ladies of the East Anglian Branch at the Ipswich Museum.

FRIDAY, AUGUST 3RD, 1900.

10 A.M. to 1 P.M.—Sectional Meetings.
2.30 P.M.—Concluding General Meeting. Address in Obstetrics by William J. Smyly, M.D., F.R.C.P.I. Central Hall, Higher Grade School.
4.30 P.M.—River Trip by special steamer on rivers Orwell and Stour and round Harwich Harbour.
9 P.M.—Soirée (with dancing) in Christchurch Mansion and Park by the Members of the East Anglian Branch.

SATURDAY, AUGUST 4th, 1900
Excursions.

ANNUAL MUSEUM.

THE Annual Museum in connection with the sixty-eighth meeting of the British Medical Association will be arranged in the following Sections:

SECTION A.—Food and drugs, including prepared foods, chemical and pharmaceutical preparations, etc.

SECTION B.—Instruments, comprising medical and surgical instruments and appliances, electrical instruments, microscopes, etc.

SECTION C.—Books, including diagrams, charts, etc.

SECTION D.—Sanitary appliances and ambulances.

Two very good halls, practically adjoining each other, have been obtained for the Museum.

SECTIONS A and D will be held in the Public Hall, Westgate Street, a fine well-lighted and ventilated room. Length 119 feet, width 49 feet.

SECTIONS B and C will be held in the Old Museum Rooms, on the first floor, close to the Public Hall. Length of room, 71 feet, width 25 feet.

Both halls are very central.

PATHOLOGICAL MUSEUM.

SPECIMENS of interest for the Museum should be forwarded, addressed to the Secretary of the Pathological Museum, British Medical Association, Board Schools, Ipswich, during the last week in July.

Intending exhibitors are requested to communicate with the Secretary of the Pathological Museum, Sydney H. Long, M.B.Cantab., 37, St. Giles Street, Norwich, who will send a card to each exhibitor for a written description of his specimens. All specimens must be mounted ready for exhibition.

RECEPTION ROOMS.

The Lecture Hall, Tower Street, Ipswich, will be open on Monday, July 30th, from 3 P.M. to 8 P.M., and during the remaining days of the meeting from 9 A.M. to 6 P.M. The Ladies' Reception Rooms are at the High School for Girls, Northgate Street—first floor. Reading and writing rooms will be found at the Ipswich Institute (entrance from Reception Room), and on the staircases at either end of the Higher Grade School. Also for Ladies, at the Ladies' Reception Rooms, High School for Girls, Northgate Street. These rooms will be amply supplied with daily and other newspapers.

FOREIGN GUESTS.

Guests of the Association and visitors from abroad should apply for all information at the Reception Room, the Lecture Hall, Tower Street, Ipswich, where all letters and telegrams should be addressed. Visitors will notice that the membership ticket will admit them to meetings of the Association and to the various addresses, but tickets for entertainments and excursions should be applied for in the Reception Room.

ANNUAL DINNER.

The annual dinner of the Association will be held in the Town Hall, Ipswich, on Thursday, August 2nd, 1900, at 7.30 o'clock. The accommodation for members and guests being limited, early application should be made for tickets. It has been decided to allot half the number of tickets in priority of application, and in case of there being more applications than seats available, the remaining half will be allocated by ballot.

CLUBS.

Members of the British Medical Association will be made honorary members of the following clubs for the week of the meeting, namely, Ipswich and Suffolk Club, Northgate Street; Ipswich Institute; and Ipswich Golf Club.

The Ipswich and East Suffolk Cricket Club invites an eleven from the British Medical Association to play a match on a day to be fixed during the meeting. Members wishing to play are requested to send their names to Dr. S. S. Hoyland, Museum Street, Ipswich.

GOLF MATCH.

Ipswich Golf Club *v.* British Medical Association, on Thursday, August 2nd. Luncheon 1.30 P.M. Play to commence 2.45 P.M. Members of the Association desirous of playing in the above-named match are requested to communicate with Dr. Francis Ward, 22, Museum Street, Ipswich,

stating their handicaps. The team selected will be posted in the Club House and also in the Reception Room, British Medical Association.

Railway Arrangements.

Arrangements have been made by which the railway companies of Great Britain and Ireland will issue to members and their friends attending the annual meeting at Ipswich *return tickets* at a *single fare and a-quarter*. These reduced tickets will be available from July 28th up to August 6th, both dates inclusive.

Those members and their friends desirous of taking advantage of this concession must produce, for the information of the railway booking clerk, a certificate signed by the General Secretary of the British Medical Association. A separate certificate will be necessary for each ticket required, and these certificates can be had on application to the General Secretary, 429, Strand, London, W.C. When more than one certificate is required the applicant should be careful to state the names for whom the extra certificates are intended.

Those members and their friends intending to travel from places where it is not likely that there will be through bookings to Ipswich, should give notice at the railway booking office a few days in advance, in order that the necessary application may be made to the head offices of the railway companies for the issue of through fares. It should be borne in mind that a separate certificate is necessary for every ticket required at the reduced rate.

When once at Ipswich members can obtain from the Great Eastern Railway return tickets to all places within a radius of fifty miles at a single fare on production of card of membership only. Members, therefore, residing within a radius of fifty miles of Ipswich intending to go to and from their homes daily should use the special railway certificate at a fare and a-quarter for the initial and final journeys, while for the intermediate journeys they can obtain the return tickets at a single fare on production of card of membership.

NOTICES OF MOTION.

Dr. S. K. Mullick gives notice that he will move:

(1) The present system of filling professional chairs in the medical colleges in India, more by virtue of grade rank in the Indian (Military) Medical Service than by special professional ability of the candidates in that particular branch, and of pitchforking them, as they very often have been, from one chair to another, is prejudicial to the interest of medical education and sanitation, and is a sinister bar to the advancement of medical science in India. This meeting is of opinion that some change is necessary, and hereby appoints a subcommittee to consider the matter and report to the Council such action as it may think it proper to take.

(2) That having regard to the fact that persons possessing no knowledge of medicine are by law allowed the same right to practise in India as fully-qualified practitioners, this Association considers it advisable that there should be a system of registration to protect the public from the mischievous machinations of charlatans; it further undertakes to do all it can to carry this resolution into effect.

Dr. James Brassey Brierley gives notice that he will move the following suggested alteration of and additions to the By-laws of the British Medical Association at the annual meeting at Ipswich:

First.—Proposed that this meeting determines that no alteration in the Memorandum, or Articles, or By-laws of the Association, which does not recognise the paramount power of the annual meeting shall be entertained.

Election of Members.

(1) The members shall be admitted through the Branches. Any qualified medical practitioner not disqualified by any by-laws of the Association, who shall be recommended as eligible by three members of the district Branch in which he resides, or in which he has a consulting room, shall be (subject as hereinafter mentioned) elected a member of the Association by the Branch Council, provided always that he shall receive a majority of three-fourths of the votes actually recorded by the members present at the meeting at which he is proposed for election, and must agree in writing to become a member and to pay his subscription for the current year.

(2) Should a member be rejected his sponsors shall have power to bring the question before a general meeting, and if this general meeting is satisfied that the proposed member has a grievance the meeting may proceed at once to take another vote, and the same majority, namely three-fourths, shall be required to secure his or her election.

(3) Any member whose conduct shall have been brought before the Branch to which he belongs, and shall be deemed unworthy to remain a member of the Association, may be expelled by a resolution of the Central Council if carried by a three-fourths majority of the members present who actually record their votes.

The decision of the Council must be confirmed at the next general meeting of the Association, and he shall thereupon cease to be a member and not be eligible for re-election.

One month's notice shall be given him by the Secretary of the Branch to which he belongs of the intention to bring his conduct before it.

Subscriptions.

(4) The subscription for the Association shall be £1 4s. 6d. per annum, which shall entitle each member to a vote at the annual and all general meetings, the Journal of the Association for the current year, and all other privileges of the Association and of the Branch through which he joins. The Treasurer shall hand over a capitation fee of 2s. 6d. to every Branch Treasurer for the purpose of Branch expenses.

(5A) There shall be three Vice-Presidents, who shall hold office for two years.

Annual Meeting.

(7) The date of the annual meeting shall be fixed by the Council, and the place shall be determined each year prospectively by the vote of the Association.

All resolutions at this and other general meetings, of which due notice has been given, and are duly passed by a majority present at the meeting, shall forthwith be carried into effect. (See 25th Article of Association), and proxy voting shall be allowed.

The agenda for the annual meeting, including proposed resolutions, shall be published in the Journal at least twice before the date of the meeting.

(9) Delete the whole after "years" on the 5th line.

(10) Delete everything after "Council" on the 3rd line.

(22) Substitute "6" for "4" on the 1st line, and "21" for "7" on the 5th line.

Journal and Finance Committee. Delete "28." (Or "General Purposes Committee.")

(29) This Committee shall be elected at the annual meeting, and shall consist of 21 elected members; 7 shall be members of and elected by the Central Council, 14 shall not be members of the Central Council and shall be elected at the annual meeting. The President, President-Elect, President of Council, and President of Association shall be *ex-officio* members of this Committee. The elected members shall hold office for three years, seven members retiring annually, and shall not be eligible for re-election for one year.

The Committee shall meet on the first Tuesday in every month alternately in London and a provincial town, and no member shall retire from the meeting until the business is over without the express permission of the Chairman. No Branch of the Association shall have more than two representatives on this Committee, one of whom must be a general practitioner. Nine elected members must be present to form a quorum of the Journal and Finance Committee or (General Purposes Committee).

The report of the proceedings shall be published in the Journal on the Saturday following each meeting.

Expenses.

The members of the Journal and Finance Committee shall have their first-class railway fare and five guineas for each day their services are required.

Each member of the Council, other than those on the Journal and Finance Committee, shall receive first-class railway fare, and three guineas a day for attendance if he reside more than 100 miles from the place of meeting, and two guineas a day if less than that distance for attendance on any Council meeting, Committee meeting, or Subcommittee meeting.

The President of Council shall receive an honorarium of £300 a year.

"An abstract of the Agenda for every Council meeting shall be published in the British Medical Journal at least one week before such meeting is held, and a full report of the proceedings of the Council at the earliest date possible after the meeting."

Dr. Alfred Cox gives notice that he will move:

That since it is obvious that this Association as at present constituted fails to provide for the "maintainence of the honour and interests of the profession" as distinguished from its scientific needs, the Association in annual meeting proceeds to appoint a committee whose instructions shall be to take into consideration and report on the best method of forming and maintaining a separate medico-ethical and medico-political department of the Association, having its own officers, paid secretary, and annual conference of delegates. The members of this committee shall be paid their expenses of attendance on the same scale as members of Council, and out of the central fund of the Association.

Dr. E. Jepson gives notice that he will propose at the annual meeting of the British Medical Association at Ipswich, July 31st, 1900:

1. That a special department be formed called the Ethical and Political Department of the British Medical Association.

2. That the Council of the British Medical Association forthwith appoint a salaried secretary for each of its Branches, for the purpose of organising the profession and forming district or extra Branches of the Association for ethical and political purposes, and that each such secretary receive a salary of not less than £100 per annum and expenses.

3. That the Council of the British Medical Association set apart a sum of £10,000 towards the organisation and improving the status of the medical profession.

Dr. Brown Ritchie gives notice that he will move:

That the Council is hereby instructed to provide for the holding of an annual Conference, on the delegate principle, of representatives of the members of the British Medical Association residing in the various electoral divisions of the United Kingdom, the Conference to be limited

in its discussions to medico-political and medico-ethical subjects, and its findings to be duly recognised and acted upon by the Council unless negatived by a plebiscite of the members of the Association.

Dr. R. R. RENTOUL gives notice that he will move at the annual meeting:

THE GRANTING OF UNAUTHORISED DIPLOMAS.

The members of the British Medical Association, recognising that the Legislature has, by the Medical Act, 1886, authorised some sixteen medical bodies in the United Kingdom to examine and grant licences which lawfully empower a practitioner to practise medicine, or surgery, or midwifery; and having seen that certain unauthorised practitioners, in contravention of the above Act, grant documents which profess to entitle the holder to practise midwifery, earnestly instructs the Council of this Association to bring strong pressure to bear upon the Council and individual Fellows of the Obstetrical Society of London, and other similar unauthorised supplying societies, so that the granting of such documents shall cease.

Mr. R. B. ANDERSON gives notice that he will move:

That whereas the Council, as now constituted, has systematically repudiated, contrary to the Articles of Association and by-laws, its subordination to the Association in general meeting, it has become necessary to make provisions whereby its responsibility to the Association will be secured; and that the Council be instructed to prepare, and submit to an early extraordinary general meeting, articles or by-laws providing for the election by the annual meeting of 20 elective members, not being officials; and for the constitution of an executive committee, to consist of four *ex-officio* members, and of one vice-president, five elective members, and five representatives of Branches, to be elected by the Council.

Dr. LORIMER HART gives notice that he will move:

1. That, under the 25th Article of Association, which is as follows:

(25) The business of the Association shall be managed by the Council, and the constitution, duties, powers, and mode of procedure of the Council shall be determined on from time to time by the Association in general meeting,

it is the duty of the Council to carry out the determinations of general meetings.

2. That the Council be, and is hereby, instructed to take steps to obtain the sanction of the High Court to the special resolutions of 1896, which have been for four years permitted to be a dead letter.

3. That a sum of be appropriated from the accumulated funds of this Association for the legal expenses of such application to the High Court, or of carrying into effect the resolution requiring the Council to make such application.

4. That the Council be instructed to prepare and submit to an early extraordinary general meeting Articles or by-laws providing for the rights of unattached members to vote equally with members of Branches on the affairs of the Association and in elections of members of Council and Committees of the Association; and otherwise for the right of unattached members to retire on equitable terms from the Association.

Dr. JAMES BRASSEY BRIERLEY gives notice that he will move:

1. Proposed that this meeting determines that no alteration in the Memorandum or Articles or By-laws of the Association which does not recognise the paramount power of the Association in annual or other general meeting shall be entertained.

2. That this meeting instructs the General Secretary to make immediate application for the sanction of a judge of the High Court to the present Memorandum of Association.

3. That this meeting deprecates the action of the Council of the Association in suppressing counsel's opinion which was given in December, 1899, and presented to the January, 1900, meeting, which opinion declared, and on being referred back to counsel for a more definite expression of opinion affirmed, that resolutions passed at annual and other general meetings are binding on the directors (councillors).

4. Seeing that the Council has neglected to fulfil the duties imposed upon it by the Memorandum, Articles, and By-laws of the Association, by failing to carry into effect certain resolutions passed at the Portsmouth meeting, this annual general meeting of the British Medical Association proceeds to appoint a committee to carry into effect a system of individual and collective medical defence as determined by resolution passed at Portsmouth.

The committee shall consist of thirteen elected members, five only of whom may be representatives on the Central Council, and not more than two members of any one Branch.

A sum of not more than £2,000 a year out of the funds of the Association shall be placed at the disposal of the committee for the purpose of carrying on the work.

Dr. A. BROWN RITCHIE gives notice that he will move:

That in the opinion of this meeting the time has now come when there ought to be one form of membership of the Association and one subscription which shall entitle to membership of the Association and ordinary privileges of membership of the Branch in which a member resides, and this meeting requests that steps be taken to bring about this result.

MEDICAL STUDENTS IN GERMAN UNIVERSITIES.—The number of students of medicine in the various universities of Germany in the current summer semester are as follows: Munich, 1,184; Berlin, 1,067; Leipzig, 523; Kiel, 485; Würzburg, 482; Freiburg, 437; Strassburg, 315; Bonn, 306; Heidelberg, 301; Tübingen, 279; Halle, 275; Erlangen, 265; Breslau, 249; Königsberg, 246; Marburg, 239; Göttingen, 213; Jena, 164; Giessen, 149; Rostock, 124.

SPECIAL CORRESPONDENCE.

SYDNEY.

Plague Precautions.—Isolation and Quarantine.—Destruction of Rats.—Citizen's Vigilance Committees.—Indiscriminate Quarantining of "Contacts."

"THE total number of cases of plague up to date is 216, of whom 73 have died; 1,242 contacts have been isolated, of whom 153 still remain in quarantine. Seven cases have occurred amongst contacts." Such is the official report for the week ending May 12th, and though Dr. Ashburton Thompson says he sees signs of the approaching end of this present outbreak, from 3 to 5 new cases are reported every day, and this rate has been maintained for several weeks past.

The various means which have been taken to prevent the spread of the disease have not as yet apparently had much effect. As soon as a case is notified to the Board of Health a medical officer is despatched, and if he confirms the diagnosis the patient is at once removed to the quarantine hospital as well as all the other residents in the house. The house is then thoroughly disinfected under the supervision of the Board of Health officials. The contacts are kept in quarantine for five days, and if no suspicious cases occur among them they are then allowed to return to their home. Large areas of the city have been quarantined in succession, all the residents are kept inside the barriers and not allowed to go to their business. Each house is then cleaned and disinfected; all sanitary fittings and drains attended to, and all rubbish removed and burnt. This process has now been gone through in a large part of the city, so that it is probably cleaner than it has been for a very long time.

There has also been an organised crusade against rats, and a capitation grant of 6d. is now made for all rats brought to the incinerator. This has resulted in a very large number of these animals being destroyed. The Government have decided to resume a large part of the wharfage in Darling Harbour and practically rebuild it with stone facings.

Citizens' Vigilance Committees have also been organised in the various electoral districts of the city and suburbs, with the object of assisting the Board of Health and the local municipal councils in cleaning and disinfecting.

Hitherto in every case all the contacts have been removed to quarantine ground, but it is now recognised that this is not necessary in every case, and at a special meeting of the New South Wales Branch of the British Medical Association it was resolved to appoint a deputation to wait upon the Premier to point out that in the opinion of the members of the Branch the indiscriminate quarantining of contacts is unnecessary.

INDIA.

The Plague Riots in Cawnpore.—The Famine.—The Surgeon-General's Report.

IN my last letter I gave an account of the plague riots in Cawnpore, but as the official report has been published, it will be well to recur to the subject. In a lengthy resolution the Lieutenant-Governor reviews all the evidence available, and comes to the conclusion that the riots were deliberately organised by a secret junta of well-to-do natives, who succeeded in uniting the Hindus and Mohammedans in opposition to the plague measures as a whole, although they were fully aware that they had been all sanctioned by the leaders of both communities three years before, and had been known all that time. Further, the native officials failed to give any warning of the dangerous state of public feeling—an omission which led to the plague camp not being more strongly guarded. It also appears that a boy was seized, and not by the police as was first reported, but by the organisers of the riot, who dragged him away and then gave out that he had been seized as a case of plague, and taken away to be burnt by the authorities, and that this was the incident which enabled the agitators to inflame the mob into the outrage on the plague camp. The state of affairs now revealed is most serious, and the only satisfactory feature is that some important arrests have been made; and it is hoped that the crime will be brought home to the real originators, in which case

more will be heard of the matter. During the end of April and the early part of May there occurred the steady decline in plague throughout the greater part of India which experience has shown to be associated with the hot weather season, although as usual in some place the disease is at its height—in the present instance in Karachi—showing that heat is not the only factor in its general reduction. The total figures of the deaths from plague in India have fallen below 1,000, a lower rate than has been recorded for many months; but in view of past painful disappointments it will be well to await the height of the next recrudescence of the disease before deriving any comfort from this fact. It is, however, satisfactory to note that only 156 deaths were returned from the whole of the Bombay Presidency last week, so that it appears to be probable that the balance will soon be transferred to the Bengal side, where it is feared that the next outbreak may be very severe.

The famine may now be said to have reached its height, and news of the monsoon is eagerly awaited. Nearly 6,000,000 people are now on the relief works, but the figures have been nearly stationary during the last three weeks, some decrease having occurred in Bombay owing to the flight of the people from camps in which the dreaded cholera has broken out with terrible effects on the debilitated workers, leading to the spread of the disease by the terror-stricken crowd. This is the saddest of all famine pictures. Harrowing descriptions still come to hand from some of the Native States, which, being without the power of organisation that the British-ruled provinces possess in their trained British officers, and being dependent on native officials trained under purely Asiatic ideals, find it exceedingly difficult to bring aid to all their starving subjects in spite of the strenuous efforts and great private generosity of the native princes. That this famine is by far the most severe that has occurred within living memory is beyond question, while the very generous gifts from all parts of the world which are still coming in, are as yet inadequate to the occasion, while they should be prompt if they are to be in time to place the ryot in the best position to make the most of the coming rainy season.

The annual report of Surgeon-General Harvey has recently appeared, and more than sustains the high level which has recently been attained. A great deal of information on plague is given in continuation of the very full reports in the last volumes, while the valuable summaries of recent knowledge on subjects of primary importance in this country are very full. It is satisfactory to note that the invaliding-rate, and number of days in hospital for venereal diseases have fallen, together with the admission-rate per mille, as was prophesied would be the case in a recent article, but the reports of various medical officers show that there is still room for very great improvement in the measures now in force for the suppression of these preventable diseases, a subject which I shall hope to recur to in an early letter.

PHILADELPHIA.

American Medical Association.—Reception by the College of Physicians.—Medical Preparatory Course.

DURING the meeting in June of the American Medical Association at Atlantic City (which is but one hour and a-half away by train) Philadelphia was the central point of interest for most of the visitors from the Middle and Western States. To enable the visiting members to get the most out of the fifty hospitals and dispensaries of Philadelphia, the Philadelphia County Medical Society had organised a bureau of information. The work was directed by a Committee of the Society, who engaged a medical man to be present all the time at the College of Physicians to answer questions and furnish information as to the work at the different hospitals and how to best reach them, with the result of saving in time and friction to the visitor.

Ever since Dr. Weir Mitchell established an "entertainment" fund for the College of Physicians there has been an evening for its members once in three or four years. Usually they have taken the form of dinners at which the attendance, numbering about 400, has been limited to the membership. This year the bars were let down and 500 extra invitations went out to the trustees and other dignitaries of all allied institutions in the city (such as the various medical colleges and the different hospitals), also to all our judges, prominent lawyers, and business men. Advantage was taken of this opportune time to show the laymen how we fight off the forces of disease and death. To this end the Mutter Museum was freely called on. Dr. W. W. Keen, President of the College, received the guests, who were then shown upstairs by Dr. De Schweinitz to the Museum, where they were taken in charge by the Committee, who conducted the visitors about and explained how the numerous instruments of precision and therapeutic appliances were made use of in combating disease. The interest shown by the laymen in these matters was more than an ample return for the great trouble taken by the College authorities in arranging the evening. Retrospectively, the lesson of the whole matter is that by such methods the lay people can be brought to a much readier and more wholesome appreciation of the aims of the medical profession.

The recent ruling by the Medical Council of Pennsylvania absolutely requiring four years' study of medicine in a medical college lends no little interest to the meeting of the Philadelphia County Medical Society just held. On invitation of the Society there were present at the meeting the following College Presidents: Stahr, of Franklin and Marshall College; Sharpless, of Haverford College; Warfield, of Lafayette College; Birdsall, of Swarthmore College; all of whom took part in the discussion. The law requires four years of medical study for candidates for the degree of M.D., of which three must be spent in a medical college. The fourth (or preparatory) year may be spent either in a medical school or in any general college that gives a preparatory year in chemistry and biology to prospective students in medicine. The Medical Council has taken unto itself much authority in thus overruling the law of the State. It was the sense of the meeting that the relations between literary and medical colleges should be better defined by the Medical Act of the State, so that a college graduate may be given due credit in the medical school for previous work in chemistry, physics, and biology. Among the medical men who spoke on the question were Dr. Henry Beates, President of the State Medical Council, and Drs. W. W. Keen, John B. Roberts, James Tyson, and H. C. Wood, all of whom felt that the well-prepared graduate of a literary college is certainly deserving of some advancement over the student who enters upon the study of medicine without such equipment. "Surely," it was said, "such credit should be given: the more so in view of the fact that many of the minor medical colleges accept as students persons whose early training has been entirely inadequate—not even insisting upon an ordinary high school certificate."

CORRESPONDENCE.

PROPOSED ALTERATION OF BY-LAWS.

SIR,—Whatever be the result of to-day's vote, it is pretty clear that the Association will not thereby reach finality in the matter of government. In a limited liability company, such as ours, it will always be within the power of a compact minority, however small, to keep the pot boiling, or at least simmering. It would be well if this active minority understood that whatever the result of a certain vote on any particular day, whether at an annual meeting or elsewhere, the majority of members will never consent to have the destinies of the Association and the fate of its funds at the mercy of a few scores or even hundreds of members who happen to have time to attend annual meetings here, there, and everywhere.

The Association is guided by men who are elected by the votes of those members who take any real interest in the Association. Those who merely take the JOURNAL and will not take the trouble to join their Branch and have a voice in the other affairs of the Association must be supposed to make a good bargain from their own point of view. They have an excellent medical journal—very cheap at the price—and more they do not appear to want. But there is a large, I hope an increasing, body of members who look to the Association for something much more vital than the mere production of a journal. Apart from the Association what is there to represent that union in the profession of which we hear so much and see so little?

These more or less public agitations in medical politics, however well meant, cannot conceivably add to the dignity of the profession; that they will add to our comfort or our revenues seems to me equally improbable. But one good effect they may and ought to have: They ought to rouse the general practitioner to the fact that it is his duty to take his share in making the Association in reality what it is in theory intended to be. The central idea of the British Medical Association is, unless I totally misunderstand it, to teach medical men the uses, and to bring within their reach the advantages of *bonâ fide* combination. Annual meetings are quite right, and all very well for those who can attend them, but the reality or unreality of the Association will always ultimately be tested by the vitality of its Branches. The less the general practitioner has to do with questions of legislation and consequent agitation the better for himself and his profession. In following these and neglecting the really effective method to meet his troubles by local combination, he is grasping at the shadow and letting slip the substance.

When the Association consists of local societies—subsections of Branches—designed to suit local requirements, and when all, or practically all, members belong to these local bodies, and thereby gain a voice and take their share in the management of the Association, such agitations as we are now troubled with will be equally futile and unnecessary.—I am, etc.,

Redhill, July 18th. S. W. MACILWAINE.

THE PROPOSED MEETING OF THE INTERNATIONAL CONGRESS OF OBSTETRICS AND GYNÆCOLOGY IN LONDON IN 1902.

SIR,—Allow me to correct the last two paragraphs of my letter as printed in the BRITISH MEDICAL JOURNAL of July 14th, which are unintelligible as they stand. The error is doubtless due to my own bad writing. What I meant to suggest was that it would be better for the London and Provincial teachers of Obstetrics and Gynæcology to meet and select a representative committee for carrying out the details of the proposed Congress, and that no societies should have anything to do with the matter.—I am, etc.,

Grosvenor Street, W., July 14th. W. S. PLAYFAIR.

THE MEDICAL PROFESSION AND PARLIAMENT.

SIR,—We have just had another illustration of the high respect in which the medical profession is held by the first Assembly in the world, and one has to acknowledge with regret that the gigantic progress which has been made during the present reign in almost every branch of medical science has not been accompanied by a corresponding advance in the social status of the profession. What can be thought of a body of men to whom the House of Commons in effect says, "You cannot be trusted to give a true report of matters which concern yourselves," having said which the members (on both sides of the House, be it marked) complacently indulge in the usual drivel about common sense which every cultured person knows is a euphemism for the deification of ignorance.

What strikes me as not a little remarkable is the readiness with which both political parties, the public, and the *Times* have accepted Mr. Burdett-Coutts's indictment of medical affairs in South Africa at its own value; and yet it is very questionable if any non-medical (that is, inexperienced) man—and *a fortiori* if he thinks himself an expert in hospital construction—is capable of accurately observing and criticising the means employed to cope with an almost unprecedented epidemic of enteric fever. *Ne sutor ultra* is a good rule, even for members of the House of Commons.

The melodramatic appearance of the report was itself a circumstance which should have caused it to be regarded with suspicion; not less so its publication by the *Times*. If the member for Westminster thought he possessed such valuable information he ought in the first place at least to have placed it at the disposal of the proper authorities in a quiet and gentlemanly manner, and I think he would have done so had he realised the gravity of his statements, instead of indulging in hysterical shrieks *coram populo*.

For the slight esteem in which the profession is obviously held the profession has itself to blame. Too many of its members give occasion in private life and in the law courts to those jests which are so dear to legal and other witlings. Good manners and a good general education must underlie professional attainments if the individual will be held in respect, and men must be taught to realise that when they become members of the medical profession they voluntarily take upon themselves a great many new moral obligations, and one of the most important of these is towards the profession itself. The social status of the profession will be determined by greater or less degree of perfection with which those moral obligations are discharged, and they can only be adequately discharged by a very much closer and more intimate union of all members of the profession than at present exists.

The British Medical Association provides the common rallying point, but members must do something more than pay their subscriptions. They must join and attend the meetings of the local Branches, which would do much to destroy the loathsome spirit of jealousy (always a sign of ignorance) and rivalry which more than anything else degrades the profession in public estimation. They must take a keen interest in all matters of public and political moment bearing directly or indirectly on the profession, and the Branches must send suitable representatives to London. By these means the profession will be able to confront the world as a united body with some fair prospect of securing the recognition and social status which it deserves.—I am, etc.,

July 13th. FIAT JUSTITIA.

HOSPITAL REVENUES AND THE WAR EMERGENCY.

SIR,—On reading Sir H. Burdett's letter in the BRITISH MEDICAL JOURNAL for July 14th, and referring to his great work on hospitals, I now understand that in speaking of "the department" of the house officers he meant the dieting of the patients. I cannot so regard it. The dieting of his patients is the duty—and a most important duty—of the physician or surgeon. If he allows himself to be superseded in this by his house officer he appears to me to neglect his duty, and I should not wish to see any system introduced which would give any colour to the theory that the dieting of patients is the department of the house officers any more than the rest of their treatment is. Our hospital system is, however, under such deep obligations to Sir H. Burdett's experience and vigour, that I am always reluctant to differ with him, however slightly. But no one knows better than he that economy is, after all, less important than efficiency, and I fear that his view of regarding the house officer, and not the visiting doctor, responsible for the dieting of the patients might tend to the diminution of the latter's responsibility, and thus to a loss of efficiency. But the question how to secure the greatest practicable economy in this respect is well worth discussion amongst our hospitals.—I am, etc.,

Sussex Place, W., July 16th. T. HOLMES.

A VIGOROUS VESTRY.

SIR,—I did not till to-day see your article in the BRITISH MEDICAL JOURNAL of June 23rd, referring to the action of the Vestry of St. George-the-Martyr, and its failure to secure the demolition of certain old property in Tabard Street, but as I am the "medical man who had been for some years a medical officer of health" alluded to in your article, I may perhaps be allowed to state briefly my view of the question.

I may state that I was asked to act merely as a friend of the magistrate, without fee, and that my mind was entirely open to act without fear, favour, or partiality. I believe that "the practical surveyor of large experience in London" acted in an exactly similar capacity.

The Vestry was represented by its officers when we visited the locality.

We found the remains of four or five small two-roomed cottages completely shut off from the public by a high unclimbable fence, and with a good air space in front and back. The drains, with the sole exception of a small surface drain, had been taken up and removed as far as the limit of the property, as we could plainly see. These cottages were hardly more than shells, a few rafters, joists, and a little wood work was left here and there: they were only about 10 feet high, had not been inhabited for many years, but had been open to wind and rain in every direction for years, and the walls being plaster did not carry 6 square yards of old paper in the whole row.

Personally I could not see that there was anything injurious

to people living in the adjoining property, say, 15 or 20 yards off, while they had the advantage of rather more air space than usual. My friends concurred in my view. That the ruins were unsightly was beyond question, but to my mind they were as harmless as the rubbish one often sees in a builder's yard, being simply bricks, mortar, and old timber, and unoccupied.—I am, etc.,

Finchley Road, July 17th. WALTER G. WALFORD.

THE WOUNDED IN NATAL.

SIR,—In his interesting lecture on Small-bore Rifle Bullet Wounds and the Humanity of the Present War, published in the BRITISH MEDICAL JOURNAL of May 19th, Mr. Clinton Dent says, speaking of army medical organisation, "Efficient it is—that much I will say—more efficient beyond all question than any army medical organisation that has ever been in any campaign of any magnitude yet." And further on he states that "this is really the very first war of any magnitude in which the antiseptic system has been used on a large scale." From these statements it is clear that Mr. Dent has overlooked the India Frontier campaign of 1897 98, and the Khartoum expedition of 1898. As some 70,000 troops and followers were engaged in the former, and quite half that number in the latter, both must be looked upon as campaigns of some magnitude.

In both antiseptic surgery was practised as fully as it ever can be in the field, where medical officers must always remain heavily handicapped by the exigencies of field service, by difficulties of transports, by the absence of pure water, etc.

I speak from memory, but I think I am absolutely correct in saying that during the Indian Frontier and Khartoum campaigns not a single case of any septic disease or of tetanus occurred, and that the general results will compare not unfavourably with those obtained in the present campaign, exceptionally good as these have been.

When we call to mind the fact that in both the Indian Frontier and Khartoum expeditions the troops were operating long distances from the nearest railway, and under conditions of climate and locality as opposed to those of South Africa as it is possible to imagine, and that oftentimes, at least on the Indian Frontier, the hospital tents had to be pitched as close as they could fit on ground which was wholly unsuitable, but which was the only site available, it will be seen that the results cannot in any way be attributed to climate or other accidental conditions, and must have been due alone to the care and skill exercised in the treatment of the wounded.

On the Indian Frontier the wounded had oftentimes to be carried along with the troops as they moved from place to place, as it was unsafe to send them through the enemy's country to the base; a fact which renders the results still more remarkable.

Mr. Dent lays stress on the fact that wounds are now somewhat slower in healing than they were during the earlier phases of the present campaign. This is accounted for by the fact that our troops are daily advancing further and further into the enemy's territory, so that the wounded have now longer and rougher journeys to undergo before reaching the base than they had after the earlier battles.

In speaking of the Natal Volunteer Ambulance Corps, Mr. Dent says: "It would be very seldom that the ordinary stretcher-bearer companies could be got to show the courage under fire that these men did on many occasions." It is to be regretted that Mr. Dent should have been led to publish a statement of this kind, especially as he could not have spoken from personal observation, never having been at the front. I happen to have been present at each of Sir Redvers Buller's battles prior to the relief of Ladysmith, and I can assure Mr. Dent that the men of the R.A.M.C. bearer companies showed a devotion and courage as conspicuous as those of any other soldiers of the Queen.

Had Mr. Dent spent some time at the front, and had he witnessed the work done by the bearer companies and field hospitals there, as well as at the base, he would perhaps have understood, and might even have joined in, what he terms the "fulsome eulogy" of the Royal Army Medical Corps.—I am, etc.,

G. H. YOUNGE, F.R.C.S.I.,
Bloemfontein, June 24th. Major R.A.M.C.

THE NATURE AND PREVENTION OF "HORSE SICKNESS."

SIR,—At a recent meeting of the Grahamstown and Eastern Province Branch of the British Medical Association Dr. Edington, the Director of the Colonial Bacteriological Institute, made a most elaborate communication on the subject of horse sickness, and described his method of protective inoculation. He showed, *inter alia*, that:

1. Horse sickness was of a malarial nature.
2. That "salted" or recovered horses are liable to "secondary fever" at irregular intervals after "salting."
3. That he has been able to transmit the disease to other species of animals, as oxen, goats, and sheep.
4. That the susceptibility to the disease is of the most varying order.
5. While in the horse virulent blood almost invariably kills, when the virus is attenuated (by methods which he devised) its effect varies greatly in different horses; in some few it may kill, in others cause reaction with "salting," while in others no effect may be produced.

In regard to serum derived from recovered animals he has shown that, whether simple or fortified,

1. It possesses no degree of curative action which in practice would be of the slightest use.
2. Fortified serum—that is, that derived from recovered animals which subsequent to recovery have received progressively increasing doses of virulent blood up to 1,000 c.cm.—is toxic if the animal is bled within a month after the last inoculation, but this toxicity wears off in the animal. Such toxic action is only brought into play when this serum is used to inoculate already infected animals, and then sets up most interesting and important changes, which are followed by death.
3. Such serum, when inoculated, even in large doses, produces no serious results.
4. Serum has practically no effect in producing passive immunity, indeed, we believe that no true immunity is ever produced at all; salted horses are protected, but are not possessed of true immunity.
5. Dr. Edington has devised a method of protecting horses by the use of a combination of prepared serum and preserved virus. This method, which is the only one I have found to be of real practical value, necessitates a series of four inoculations, of which the dose of serum, used with a "constant" dose of virus, is gradually decreased until virulent blood by itself is used.

As showing the enormous difficulty in protecting animals, I might say that where no reaction has been produced, and the animal has even completely resisted, thereafter, a small dose of virulent blood, the inoculation of the same dose of virulent blood fourteen days later may set up the disease, and death in some instances may follow.

I anticipate that Dr. Edington's report, now in the press, will very shortly be published.—I am, etc.,

GEO. W. ROBERTSON, M.R.C.S., L.R.C.P.,
Senior Assistant, Bacteriological Institute,
June 23rd. Grahamstown.

ARSENIC AS AN IMPURITY OF SODIUM PHOSPHATE.

SIR,—In the course of my practice this week I have attended a case of acute arsenical poisoning induced by taking a teaspoonful of contaminated effervescing phosphate of sodium. The usual symptoms of sickness, diarrhœa, and cramps were alone noted. On examination of some of the salt from which the dose had been taken, I found on analysis that the arsenic existed as an arseniate. The percentage amount I have not estimated, but hope to do so in the course of a day or two.—I am, etc.,

Upper Street, N., July 17th. R. H. NORMAN, M.D., B.S.Lond.

*** Sodium phosphate, according to the *British Pharmacopœia*, may be obtained by the interaction of sodium carbonate and the solution of acid calcium phosphate produced on mixing bone ash and sulphuric acid. The presence of arsenic in commercial sulphuric acid is well known, as it is usually prepared from pyrites containing arsenic. It follows, therefore, that a product obtained by the action of sulphuric acid might possibly contain arsenic. This fact has, however, never been considered by anyone in the examination of sodium phosphate for impurities. The *British Pharmacopœia* gives no warning of possible arsenical contamination—probably it has been assumed that pure sulphuric acid would always be employed by the chemical manufacturer. That such an impurity exists in sodium phosphate and its effervescent form was brought to notice by a recent prosecution for the sale of effervescent sodium phosphate containing arsenic. At the trial it was given in evidence by Mr. Otto Hehner, public analyst, that he had examined 21 samples of effervescent sodium phosphate, and found that there was not one quite free from arsenic. Some of these samples were obtained from chemists scattered all over London, and others from wholesale dealers. Arsenical sodium phosphate being in use, it is absolutely necessary that every dispensing chemist should ex-

amine his stock for this dangerous impurity. The pure salt is made and can be obtained in London, for we have received a sample of sodium phosphate free from arsenic made by Messrs. May and Baker, Limited, chemical manufacturers, Garden Wharf, Church Road, Battersea, S.W.

ST. THOMAS'S HOSPITAL.

SIR,—On April 28th last you were good enough to insert a letter from me referring to certain irregularities that had occurred at the above hospital; the sequel is interesting. The Treasurer and his advisers, although they refused to admit the soundness of my criticisms, nevertheless thought it expedient that the rules of the hospital should be altered in such a way as to prevent similar questions from being again raised. The existing rules were therefore laid before counsel and revised from beginning to end.

The method adopted for obtaining the sanction of the Governors to the proposed new rules was as follows: The notice convening the General Court held on June 20th last contained as one item among a quantity of miscellaneous business the following: "To approve certain alterations in the rules for the government of the hospital." No intimation was given as to the nature or extent of the proposed alterations, and not only was the draft of the new rules not circulated or offered for inspection, but the governors were not even informed that any such draft existed. The result was that the usual limited number of governors attended the Court, and the new rules were purported to be passed without discussion.

This mode of conducting business appeared to me so unsatisfactory that I again consulted counsel, and have been advised that no proper notice of the proposed alterations of the rules was given, and that consequently the new rules have not been validly passed.

I enclose a copy of the opinion, and have also sent a copy to the Treasurer of the hospital.—I am, etc.,

Lambeth Palace Road, July 7th. WALTER EDMUNDS.

DIACHYLON AS AN ABORTIFACIENT.

SIR,—With reference to my paper on this subject in the BRITISH MEDICAL JOURNAL of June 30th, I should like to say that I have to-day seen another case of poisoning from lead taken to procure abortion.

The patient, a married woman, aged 39, the mother of two children, went a week beyond her period in May last. She therefore bought a box of pills from a chemist "to bring the period on," and in about a week had a discharge of blood with clots, and more pain than usual. Ever since she has had severe colicky pains in the abdomen, with constipation and some retching. She has had no signs or symptoms of disturbance of the central or peripheral nervous system, but has a distinct blue line on her gums. She has had two menstrual discharges since the passage of clots at the beginning of June, whereas usually she has a full month's interval. The uterus is normal to examination, as are the thoracic and other abdominal viscera. There is no optic neuritis, the knee-jerks are normal, and there is no wrist-drop.

Chance brought this case my way, and has given further evidence of the frequency of this practice.—I am, etc.,

Nottingham, July 16th. W. B. RANSOM.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

FIRST EXAMINATION FOR THE DEGREE OF M.B.—The following have passed this examination in the subjects undernoted:

Organic Chemistry.—G. B. D. Adams, Ch. Ch.; O. A. R. Berkeley-Hill, Trin.; G. H. Crosfield, Univ.; T. Henderson, Univ.; R. Jamieson, Trin.; W. H. Lee, Balliol; C. T. Raikes, Trin.; C. J. Singer, Magd.

Materia Medica and Pharmacy.—L. T. Burra, Univ.; E. Burstal, Trin.; H. R. Dean, New Coll.; G. E. Friend, Keble; R. C. Jewesbury, Ch. Ch.; J. E. Rutherford, Corpus Christi; A. Shelley, Keble; C. J. Singer, Magd.; C. A. Smallhorn, Wadham.

Human Anatomy and Physiology.—P. E. H. Adams, Exeter; E. F. Beaumont, Wadh.; J. M. Bickerton, Merton; W. B. Billinghurst, St. John's; W. E. Blackall, non-coll.; W. L. M. Day, Exeter, H. Frankish, Worcester; A. F. Hertz, Magd. Coll; D. W. C. Jones, Corpus Christi; H. W. Kave, Magd.; H. L. Laws, Wadh.; R. E. H. Leach, Merton; D. R. Pike, Jesus; J. E. Rutherford, Corpus; R. H. Sankey, Ch. Ch.

FINAL EXAMINATION FOR THE DEGREE OF M.B.—The following have passed this examination in the subjects undernoted:

Pathology.—A. E. Boycott, Oriel; L. H. Carr-Birkbeck, Trin.; W. M. G. Glanville, Ch. Ch; E. H. Hunt, Balliol; A. E. A. Loosely, Pembroke; R. C. Mullins, Keble; L. J. Picton, Merton; C. E. West, Balliol.

All Other Subjects.—E. D. Bond, Keble, R. C. Mullins, Keble; J. D. Rolleston, B.N.C.; A. E. Thomas, Merton; R. Warren, New.

Mr. J. H. Evans, B.A., M.B. (non-coll.) has passed the examination for the Mastership in Surgery.

UNIVERSITY OF LONDON.

THE Clerk of Convocation on July 19th issued a notice to members of Convocation, stating that the 16 representatives to be appointed by Convocation to the new Senate will be elected at the meeting of Convocation on October 9th, and intimating that the following rules will regulate the procedure:

(*a*) No one can be a candidate unless a written nomination, signed by ten members of Convocation, and stating by what Faculty he or she is proposed to be elected, has been transmitted to the Clerk at least twenty-one days previously.

(*b*) The nominating members of Convocation need not be members of the Faculty by which the candidate is proposed to be elected.

(*c*) There is no restriction on the choice of candidates.

(*d*) The election will be by signed voting papers as heretofore.

(*e*) Graduates will vote in their respective Faculties, but graduates who are members of two or more Faculties will have a vote in each.

(*f*) The Clerk will send to each member of Convocation, not less than seven days prior to the meeting of Convocation, a circular containing a list of all the candidates who have been duly nominated; and a certified list of the ten persons whose names first appear on the paper nominating each of the candidates; and also a voting paper or voting papers stating the names of the candidates in the Faculty or Faculties in which such member of Convocation is entitled to vote.

Nominations will accordingly be receivable by the Clerk up to Monday, September 17th.

We understand that four members of the present Senate will be invited to stand as candidates on behalf of the University of London Graduates' Association—namely, Sir Philip Magnus, Sir Albert Rollit, Mr. Fletcher Moulton, and Dr. Napier. Dr. Ward Cousins and Dr. S. Coupland have been approached as candidates in the Medical Faculty. Mr. Joseph Walton, Q.C., is not improbably the nominee who will be put forward in Laws. Dr. Mears, Dr. Beason, Mr. McClure, Sir W. Thiselton Dyer, Dr. Kimmins, Dr. Clowes Dr. Russell Wells, and Mrs. Bryant are mentioned as the other candidates.

UNIVERSITY OF GLASGOW.

FIRST PROFESSIONAL EXAMINATION IN MEDICINE.—The following candidates have passed this examination, those marked S. with distinction in Surgery and clinical surgery, those marked P. with distinction in medicine and clinical medicine, and those marked M. with distinction in midwifery.

M.B., C.M.—J. Lunn, A. M'D. Nevin, J. J. Robertson, J. W. Shane (old reg.), A. Stephenson.

M.B., Ch.B.—M. Aikman, M.A., G. Arthur, G. Barbour, T. T. Bathgate, J. F. Bennett (M.), A. Binning, A. Birch, H. E. Brown, J. D. Brownlie, T. Carruthers, M.A., A. H. Cassells, E. P. Cathcart (M.), Daisy Annabella Murdoch Clark, B.Sc., J. T. Clark (M.), R. Clark, C. C. Cuthbert, M.A. (P.), A. W. W. Davidson (M.), F. L. Dickson, D. C. Douglas, J. P. Duncan, B.Sc. (P.), L. Finlay (S.P.), A. Fraser, M.A., Lizzie Thomson Fraser, G. Garrey, D. G. S. Gartshore, W. Gibson, E. Gillespie, W. Girvan, Helen Mary Gordon, C. A. Gourlay, M.A. (M.), J. Gracie, C. H. Gunson, A. W. Harrington (M.), I. M. Huey, T. Inglis, P. Jones, W. B. Kerr, J. D. Laidlaw, (S.), J. F. Lambie, N. M. Leys (M.), J. D. Lickley (M.), Mary Forbes Liston, J. Lockhart, A. Logan, D. Longwill, A. G. M'Kendrick (M.), J. Mackinnon (M.), G. T. Maclean, M.A., A. R. Macluskin (M.), B. M'Phee, (M.), A. Mair, R. MacN. Marshall (M.), A. Martin, M.A., B.Sc. (M.), J. Millar, M.A., E. W. Milne, A. R. Moir, A. Munro, W. B. I. Pollock, R. Rennie, J. D. Richmond, Margaret Mitchell Ritchie, D. Russell, J. Scott, M.A., E. W. Sharp, J. Shearer, D. A. Simon, C. C. W. Smith, J. J. Smith, J. S. Smith, A. Stewart, Gertrude F. F. Taylor, R. Taylor, T. B. Tierney, J. C. Turnbull, (P.), W. D. Walker, G. White, M. W. Williams, A. Wilson, (S., M.), T. W. Wilson, H. P. Wright (M.)

ROYAL UNIVERSITY OF IRELAND.

FIRST EXAMINATION IN MEDICINE.—The Examiners have recommended that the undermentioned candidates be adjudged to have passed this examination:

C. Armstrong, Queen's College, Belfast; T. Barry, University College, Dublin; H. J. Burke, Queen's College, Galway; J. Byrne, Queen's College, Galway; R. J. Cahill, University College, Dublin; T. Cronin, University College, Dublin; W. J. Deighan, University College, Dublin; W. Egan, Queen's College, Cork; W. P. Farrell, University College, Dublin; R. C. S. P. Flood, University College, Dublin; A. S. Gardiner, Queen's College, Belfast; H. Gill, Queen's College, Belfast; W. Godfrey, Queen's College, Cork; J. C. Hart, Queen's College, Cork; Eva J. Jollett, Royal College of Science and Catholic University School of Medicine; R. Johnston, Queen's College, Belfast; D. J. Keane, University College, Dublin; T. Laverty, University College, Dublin; F. A. McCammon, Queen's College, Belfast; J. McCausland, [illegible]; M. [illegible], University College, [illegible]; W. [illegible], University College, Dublin; J. A. [illegible], [illegible]; J. [illegible], University College, Dublin; S. [illegible], Isabella C. A. [illegible], A. [illegible], University School of Medicine; T. McC. [illegible], Belfast; J. H. Power, B.A., Queen's College, Cork; R. [illegible], University College; J. G. Shanklin, Queen's College, [illegible]; Sims, Queen's College, Cork; R. J. Spence, Queen's College, Belfast; W. G. Stewart, Queen's College, Belfast; G. [illegible], Queen's College, [illegible]; J. K. Thot[illegible], [illegible]; J. College of S[illegible], [illegible]; M. Warnock, Queen's College, Belfast; L. Welply, [illegible] College,

Cork: J. L. West, University College, Dublin; G. P. White, University College, Dublin; M. O. Wilson, Queen's College, Belfast; W. J. Wilson, Queen's College, Belfast; J. Wright, Queen's College, Belfast.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia of the Fellows was held on July 12th, the President, Dr. W. S. Church, in the chair.

The Centenary of the Royal College of Surgeons of England.—Upon the proposal of the President it was unanimously resolved that a congratulatory address be presented by the College to the Royal College of Surgeons on the occasion of their forthcoming centenary meeting.

The South African Commission.—A letter dated July 3rd was read from the Secretary of State for War to the President of the College, asking him to serve upon a Commission to be appointed by Her Majesty's Government to inquire into and report upon the arrangements made for the sick and wounded during the South African campaign. The President informed the Fellows that he had unreservedly placed his services at the disposal of Her Majesty's Government; and the Senior Censor assured the President of the deep sense of appreciation with which the Fellows regarded his patriotic act.

Appointment of Vicarius.—The President announced that he nominated Dr. F. W. Pavy, F.R.S., to act as his Vicarius during the time of his absence.

Laboratories.—The quarterly report of the Laboratories Committee dated June 8th, was received and adopted as follows: It is stated that eleven of those who have been working have applied for permission to continue their researches, and permission has been granted to all. In addition, three gentlemen have received permission to begin work in the laboratories. The Committee have awarded the sum of £25 to Dr. T. G. Brodie from the Goldsmiths' Research Grant as a recognition of his work on the methods for the separation of diphtherial antitoxins. The superintendent of the bacteriological department has reported that during the quarter 7,297 doses of diphtheria antitoxin, each containing 3,000 units, had been supplied to the hospitals of the Metropolitan Asylums Board, making a total of 21,891,000 units. Under the grant from the Goldsmiths' Company 87 doses of antitoxin containing 3,000 units and 412 doses of 2,000 units had been supplied to the general and children's hospitals in or near London since December 8th, 1899. During the quarter further batches of antitoxin supplied by Messrs. Parke, Davis and Co. had been tested in the laboratory, and a certificate granted showing their strength, sterility, and freedom from excess of antiseptic.

Alterations of By-laws.—The Registrar moved that alterations in the by-laws provided for the election of representatives of the College on the Senate of the University of London should be re-enacted for the second time, and that By-law CXXXIII should be amended to make it conformable to the Conjoint Regulations as follows (the alteration is shown in italics, the period is now six months): "A candidate shall not be admitted to the Second Examination until the expiration of two winter sessions and one summer session (or fifteen months during the ordinary sessions) from the date of registration as a medical student, nor until *one year* after passing Parts I and III of the First Examination." This was enacted for the first time. The Registrar further proposed the enactment for the first time of the following by-law: "That Dr. Fleming Mant Sandwith, resident in Egypt, be admitted a Fellow of the College *in absentiâ*, any by-law to the contrary notwithstanding."

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT the quarterly council on July 12th, the chair was occupied by Sir William Mac Cormac, Bart., K.C.V.O., President, and the recently-elected members of Council, Mr. Tweedy, Mr. Cooper, Mr. Ward Cousins, and Mr. Gould were introduced, to make declarations in the terms of the oath prescribed by the charter of 1800, and to take their seats as members of the Council.

Honorary Fellows.—The Most Honourable the Marquis of Salisbury, K.G., and the Right Honourable the Earl of Rosebery, K.G., K.T., were elected by the Council Honorary Fellows of the College.

Election of Officers and Lecturers.—Sir William Mac Cormac, Bart., K.C.V.O., was re-elected President of the College, and Mr. Langton and Mr. Morris Vice-Presidents. Professor Charles Stewart, Mr. Percy Furnivall, and Professor Christopher Addison were elected Hunterian Professors. Dr. T. G. Brodie, Arris and Gale Lecturer, and Dr. Walter Edmunds, Erasmus Wilson Lecturer.

Board of Examiners in Dental Surgery.—Mr. Storer Bennett was elected, and Mr. Frederick Canton re-elected to the Board of Examiners in Dental Surgery.

CONJOINT BOARD IN IRELAND.

FIRST PROFESSIONAL EXAMINATION.—Candidates have passed this examination as undernoted:

Honours in Order of Merit.—J. J. Connolly, Miss A. M. Barry, F. O'D. Fawcett; B. N. Peters, J. S. Sheath, equal; J. Pratt, M. Power.

In all Subjects.—A. J. Bracken, F. J. Cairnes, Miss G. W. Clarke, A. N. Crawford, C. A. Cusock, P. E. Harrison, G. A. D. Harvey, J. C. Heelan, M. Keane, R. W. D. Leslie, E. C. Mulligan, J. C. Murphy, S. H. Robinson, D. L. Rogers.

Completed the Examination.—W. F. B Loughnan, R. Martin, R. McElroy, V. H. MacSwiney, F. G. O'Brien, E. Walsh.

SECOND PROFESSIONAL EXAMINATION.—Candidates have passed this examination as undernoted:

In all Subjects.—Honours: J. S. Ashe. Pass: W. Cremin, A. T. Mulhall, W. Ormsby.

Completed the Examination.—L. C. E. Murphy, P. McDermott, R. C. Nicholl, O. F. M. Ormsby, S. H. Raverty, M. C. Sage, P. M. Sheridan, J. P. Ziervogel.

AN official chair of hydrotherapy is about to be established at Berlin. A hydrotherapeutic department in the Charité Hospital will be opened in the autumn under the direction of Professor Brieger.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

GERMAN AND BRITISH MILITARY MEDICAL ARRANGEMENTS.

THE East Asiatic Expeditionary Corps now being organised in Germany for service in China will consist of two infantry brigades, a cavalry regiment of three squadrons, field artillery (four batteries), a light ammunition column, a pioneer battalion of two companies, a telegraph corps, a railway company, a sanitary company, ammunition column and train, four field hospitals, base depôts, one general hospital, and one hospital ship. Each infantry brigade will consist of two regiments, and each regiment of two battalions; the strength of each infantry battalion is stated to be 800 men, and each cavalry squadron 200 men. The infantry will therefore number 6,400 and the cavalry 600. This is exclusive of artillery, engineers, service corps, sanitary company, hospitals, communications, and base depôts.

The following is a comparison of the medical staff detailed for this German expeditionary force with the medical staff of the first infantry division and first cavalry brigade ordered to South Africa last year. The particulars as to the German expeditionary force are taken from the official list in the *Militär Wochenblatt*, those for the British force from the official list published by the War Office on October 31st, 1899.

GERMAN (*China, 1900*).	BRITISH (*South Africa, 1899*).
East Asiatic Expeditionary Corps—	First Infantry Division—
Staff:	Staff:
1 Surgeon-General.	1 P.M.O.
2 other Medical Officers.	1 Medical Officer.
First Infantry Brigade—	First Brigade—
First Regiment, 4 Medical Officers.	4 Medical Officers.
Second Regiment, 4 Medical Officers.	
Second Infantry Brigade—	Second Brigade—
Third Regiment, 4 Medical Officers.	4 Medical Officers.
Fourth Regiment, 4 Medical Officers.	
Cavalry Regiment (3 squadrons)—	First Cavalry Brigade (3 Regiments,
2 Medical Officers.	1 Batt. R.H.A.)—
	4 Medical Officers.
Field Artillery (4 batteries)—	Royal Field Artillery (3 Batteries)—
4 Medical Officers.	1 Medical Officer.
Pioneer Battalion (2 companies)—	Engineers (1 Company)—
2 Medical Officers.	1 Medical Officer.
Telegraph Corps—	Telegraph Corps.
1 Medical Officer.	
Railway Company—	Railway Company.
1 Medical Officer.	
Sanitary Company—	3 Bearer Companies.
8 Medical Officers.	9 Medical Officers.
Ammunition Column—	Ammunition Column.
1 Medical Officer.	
Field Hospital—	Field Hospital—
(1) Six Medical Officers.	(1) Four Medical Officers.
(2) Six Medical Officers.	(2) Four Medical Officers.
(3) Six Medical Officers.	(3) Four Medical Officers.
(4) Six Medical Officers.	(4) Four Medical Officers.
General Hospital—	General Hospital—
19 Medical Officers.	7 Medical Officers.
	11 Civil Surgeons.
Hospital Ship—	Hospital Ship (*Spartan*)—
10 Medical Officers.	1 Medical Officer.
	2 Civil Surgeons.

It is believed that the fighting strength of the two forces may fairly be compared, although the cavalry in the British force was more numerous. On the other hand, the German Corps for China has two Engineer companies, and is furnished with base depôts which are not reckoned in the above table of the British Force.

The gross result is that the German Expeditionary Corps for China has 91 medical officers, whereas a British force of corresponding strength had 49 medical officers and 13 civil surgeons, a total of 62.

The four German field hospitals each have 6 medical officers, or 24 altogether, the four British field hospitals each had 4 medical officers, or 16 altogether. The German General (Base) Hospital has 19 medical officers, the British (No. 1) General (Base) Hospital 18 medical officers, of whom 11 were civil surgeons. The German hospital ship has 10 medical officers, the British hospital ship (*Spartan*) had 3 medical officers, of whom 2 were civil surgeons.

THE UNDERMANNING OF THE ARMY MEDICAL SERVICE.

THE following is the distribution of the active list of the Army Medical Service and Royal Army Medical Corps, according to the monthly Army List for July, 1900:

Distribution in the July Army List, 1900.

Ranks.	Home.	South Africa.	Other Foreign Stations.	Not Posted.	Total.	Remarks: Seconded.
Surgeon-Generals ..	5	1	4	—	10	—
Colonels	7	8	12	—	27	3
Lieutenant-Colonels...	16	32	60	1	109	3
Majors	23	192	165	1	381	3
Captains	13	77	90	1	181	3
Lieutenants	26	118	34	3	181	6
Total	90	428	365	6	889	18

It thus appears the total strength increased during the month from 882 to 889, through the gazetting of 7 lieutenants on May 30th.

The home strength has decreased by 10, or including the 7 gazetted, by 17, which represents the increase of the South African establishment from 411 to 428.

The numbers at other foreign stations show a decrease of 4, namely, from 369 to 365, the difference being transferred to the non-posted list, which has increased from 2 to 6. The seconded contains one name less.

There are 120 retired officers employed, of whom 5 are in South Africa. Sixteen retired quartermasters of the Royal Army Medical Corps are temporarily employed, and large additions have lately been made to the active list of this rank.

OUTFIT ALLOWANCE.

THE outfit allowance question has at last been settled in favour of medical officers re-employed after retirement. Those officers who have provided themselves with uniforms for their duties are entitled, on producing the necessary certificate, to draw the sum allowed through the agents.

The officers owe their success in this matter to the persistent support given to them in their claim by the Director-General.

ROYAL NAVY MEDICAL SERVICE.

DEPUTY-INSPECTOR-GENERAL HENRY T. COX has been appointed to Plymouth Hospital, from April 1st.

ROYAL ARMY MEDICAL CORPS.

MAJOR F. M. BAKER, from half-pay, is reappointed Major, with precedence next below Major S. C. B. Robinson, *vice* J. Minnice, deceased, June 26th. Major Baker was placed on half-pay on account of ill-health, December 18th, 1899.

Major RICHARD H. PENTON, D.S.O., has been granted by the Khedive of Egypt the Order of the Medjidieh of the Third Class, in recognition of his services in the Soudan during the year 1899.

Lieutenant-Colonel S. J. FLOOD, F.R.C.S.Edin., retired on retired pay on account of ill-health, July 18th. He was appointed Surgeon, March 6th, 1880; Surgeon-Major, March 6th, 1892, and Lieutenant-Colonel, March 6th, 1900. He was with the Bikaneer Field Force in 1883-84 in medical charge of British troops; with the Zhob Valley Expedition under Sir O. V. Tanner in 1884 in medical charge of the 2nd Battalion of the North Staffordshire Regiment, which on its return suffered from a severe outbreak of cholera in the Bolan Pass, for his conduct during which he received the thanks of his commanding officer and of the Director-General of the Army Medical Staff; in the Soudan Expedition under Sir Gerald Graham in 1884 (medal and Khedive's star); and in the operations in the Hinterland of Sierra Leone in 1898-99 as Senior Medical Officer (medal with clasp).

Temporary Lieutenant G. BLACK, M.B., Surgeon-Lieutenant, 2nd Volunteer Battalion the Royal Sussex Regiment, is granted the temporary rank of Captain while employed in South Africa, July 18th.

The following officers are returned from South Africa invalided: Major WHAITE, Captain DALTON, Lieutenant CUDDON FLETCHER, Lieutenant SEEDS, Lieutenant-Colonel KENNY, Major TUKE, Major BLENKINSOP, Major HATHAWAY.

The following have been discharged from hospital to duty: Civil-Surgeons FITCHETT and C. G. WATSON.

INDIAN MEDICAL SERVICE.

THE promotion to be Colonel of Lieutenant-Colonel J. T. B. BOOKEY, which has been already announced in the BRITISH MEDICAL JOURNAL, has received the approval of the Queen.

Lieutenant-Colonel C. J. MCCARTIE, M.D., Bengal Establishment, has retired from the service, June 25th. He was appointed Assistant-Surgeon, September 30th, 1874, and Surgeon-Lieutenant-Colonel, September 30th, 1894. He was in the Afghan war in 1879-80, and was in the engagements at Saif-u-deen and Shahjui, where he was wounded; he was mentioned in dispatches and received the medal granted for the campaign.

The retirement from the service of Lieutenant-Colonels D. W. D. COMINS, M.D., and J. F. TUOHY, M.D., of the Bengal Establishment, which was announced in the BRITISH MEDICAL JOURNAL of July 14th, has been sanctioned by the Queen.

MILITIA MEDICAL STAFF CORPS.

SURGEON-LIEUTENANT-COLONEL W. W. LAKE, officer in charge of No. 10 General Hospital, died at Bloemfontein on July 15th from Bright's disease.

THE VOLUNTEERS.

MESSRS. JOHN D. WILLIAMS, M.D., and JOHN F. CHRISTIE, M.B., are appointed Surgeon-Lieutenants in the Severn Division Submarine Miners Royal Engineers (Volunteers) and the 1st Volunteer Battalion the Gordon Highlanders respectively, dated July 18th.

Captain R. J. MORRIS, 1st Volunteer Battalion the King's Own (Royal Lancaster Regiment), resigns his commission, and is appointed Surgeon-Lieutenant, July 18th.

Surgeon-Lieutenants W. ROXBURGH, M.B., 2nd Volunteer Battalion the Royal Scots Fusiliers, and B. H. MUMBY, M.D., 3rd (Duke of Connaught's Own) Volunteer Battalion the Hampshire Regiment, are promoted to be Surgeon-Captains, July 18th.

Surgeon-Captain E. P. DICKIN, M.D., 1st Volunteer Battalion the Northamptonshire Regiment, and Surgeon-Lieutenant J. H. C. FEGAN, 2nd Volunteer Battalion the Queen's Own (Royal West Kent Regiment), resign their commissions, July 18th.

Surgeon-Captain J. D. GRANT, M.D., 24th Middlesex Rifles, is promoted to be Surgeon-Major, July 18th.

VOLUNTEER MEDICAL COMMANDS.

WE believe that if a corps is in camp for a month, and one medical officer attends for the first fourteen days, and another for the next fourteen days, both will receive pay so long as they do not overlap. We also believe that a medical officer would be allowed to each battalion of a regiment. In any matter of doubt application might be made to the Inspector-General of Auxiliary Forces, Major-General Turner, War Office.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From	To
Lieut.-Colonel J. Watson, M.D.	South Africa ...	Bengal.
,, O. Todd, M.B.	Bengal	South Africa.
Major J. McM. Bolster	Half-pay ...	Belfast.
,, W. L. Reade	— ...	South Africa.
,, S. Butterworth	— ...	.
,, W. T. Swan, M.B.	Aldershot ...	.
Lieutenant T. Biggam, M.B.	— ...	.
,, H. Richardson, M.B.	— ...	.
,, W. L. Baker	— ...	.
,, F. W. Cotton	— ...	.
,, F. M. Parry, M.B.	— ...	.
,, B. R. Dinnis, M.B.	— ...	.
,, J. S. Twigg, M.B.	— ...	.
,, W. J. P. Adye Curran	— ...	.
,, J. Powell, M.B.	— ...	.
,, R. L. Argles	— ...	.
,, J. G. Foster, M.B.	— ...	.
,, E. G. Ford, M.B.	— ...	.
,, F. S. Walker	— ...	.
,, L. M. Purser, M.B.	— ...	.
,, W. Bennett, M.B.	— ...	.
,, P. J. Stock	— ...	.
,, H. B. Fawcus, M.B.	— ...	.
,, T. E. Fielding, M.B.	— ...	.
,, A. D. Waring, M.B.	Salisbury Plain.	Aldershot.
,, A. F. Weston	— ...	.
,, C. H. Furnivall	— ...	.
,, J. H. Robinson	— ...	.
,, F. G. Fitzgerald	— ...	.
,, C. H. Carr, M.D	— ...	.
,, E. Bennett	— ...	.
,, F. P. Lander	— ...	.
,, A. C. Adderley	— ...	.
,, J. Tobin	— ...	.
,, G. E. Leary	— ...	.
,, H. E. Weston	— ...	Dublin.
Quartermaster G. A. Benson ...	— ...	South Africa.
,, T. J. Jacomb	— ...	.
,, H. P. Wakefield	— ...	.
,, A. Wheeler	— ...	.

The following officers, on retired pay, have relinquished the medical charge of troops at the stations mentioned: Lieutenant-Colonel T. Boyd Armagh; Lieut.-Colonel A. A. Lyle, Aldershot; and Lieutenant-Colonel H. Jagoe, M.B., Dublin.

A BOUNTIFUL BENEFACTOR. M. [illegible] of Fontainebleau, who recently died, has bequeathed £20,000 to the Pasteur Institute of Paris, £16,000 to the Œuvre des Enfants Tuberculeaux of Ormesson, £16,000 to the Society for the [illegible] of Children, £16,000 to the town of Fontainebleau for the enlargement of its hospital accommodation, besides large sums for many other charitable purposes connected with Fontainebleau.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

VITAL STATISTICS OF LONDON SANITARY DISTRICTS DURING THE SECOND QUARTER OF 1900.

IN the accompanying table will be found summarised the vital statistics of the forty-three sanitary areas of the metropolis based upon the Registrar-General's returns for the second, or spring, quarter of the current year. The mortality figures in the table relate to the deaths of persons actually belonging to the various sanitary areas, and are the result of a complete system of distribution of deaths occurring in the public institutions of London among the various sanitary areas in which the patients had previously resided.

The 32,892 births registered in London during the three months ending June last were equal to an annual rate of 28.7 per 1,000 of the population, estimated at 4,589,129 persons in the middle of the year; this rate was 0.9 per 1,000 below that recorded in the corresponding period of last year, and was 1.6 per 1,000 below the average rate in the second quarters of the ten preceding years, 1890-1899. The birth-rates in the various sanitary areas showed, as usual, wide variations, owing principally to the differences in the age and sex distribution of the populations. In St. James Westminster, St. George Hanover Square, Westminster, Stoke Newington, St. Martin-in-the-Fields, and City of London the birth-rates were considerably below the average; while they showed the largest excess in St. Luke, Whitechapel, St. George-in-the-East, Mile End Old Town, St. George Southwark, and St. Olave Southwark.

The 19,615 deaths of persons belonging to London registered during the three months ending June last were equal to an annual rate of 17.1 per 1,000, against 15.1, 16.0, and 16.2 in the second quarters of the three preceding years; the death-rate in London in the corresponding periods of the ten preceding years averaged 17.7 per 1,000. The lowest death-rates in the various sanitary areas were 10.4 in Hampstead, 13.0 in Stoke Newington, 13.5 in Lee, 13.6 in Hackney, 13.9 in St. George Hanover Square, and 14.2 in Wandsworth; the highest rates were 22.1 in City of London, 24.6 in St. Saviour Southwark, 25.0 in St. Luke, 25.2 in St. George Southwark, 27.9 in Holborn, and 28.8 in Limehouse. During the quarter under notice 2,029 deaths resulted from the principal zymotic diseases in London; of these, 2 were referred to small-pox, 755 to measles, 97 to scarlet fever, 317 to diphtheria, 594 to whooping-cough, 113 to enteric fever, 2 to simple continued fever, and 142 to diarrhœa. These 2,022 deaths were equal to an annual rate of 1.76 per 1,000, against an average rate of 2.45 per 1,000 in the corresponding periods of the ten preceding years, 1890-1899. In the second quarters of the three preceding years the zymotic death-rates were 1.45, 2.24, and 1.64 per 1,000 respectively. The lowest zymotic death-rates last quarter were 0.34 in St. Martin-in-the-Fields, 0.74 in Hampstead, 0.75 in St. George Hanover Square, 0.90 in Lee, 1.05 in City of London, and 1.11 in St. Olave Southwark; the highest rates were 2.48 in Shoreditch, 2.51 in Bethnal Green, 2.85 in Clerkenwell, 3.12 in Rotherhithe, 3.37 in Holborn, and 4.68 in Limehouse. Measles showed the highest proportional fatality in Kensington, Hammersmith, Holborn, Clerkenwell, Limehouse, and Rotherhithe; scarlet fever in Fulham, City of London, Shoreditch, St. George Southwark, Rotherhithe, and Woolwich; diphtheria in St. James Westminster, Shoreditch, Bethnal Green, St. Saviour Southwark, Newington, and Bermondsey; whooping-cough in Clerkenwell, Limehouse, St. George Southwark, Bermondsey, Greenwich, and Lewisham; "fever" in Chelsea, Westminster, St. Martin-in-the-Fields, Strand, Bermondsey, and Lee; and diarrhœa in Chelsea, St. Giles, Strand, Holborn, St. Luke, and St. George-in-the-East. Both the fatal cases of small-pox belonged to Marylebone sanitary area.

During the second quarter of this year 1,952 deaths from phthisis were registered in London, equal to an annual rate of 1.71 per 1,000, against 1.61, 1.65, and 1.70 in the corresponding periods of the three preceding

Analysis of the Vital and Mortal Statistics of the Sanitary Districts of the Metropolis, after Distribution of Deaths occurring in Public Institutions during the Second Quarter of 1900.

SANITARY AREAS.	Estimated Population middle of 1900.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Zymotic Diseases.	Deaths from Principal Zymotic Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Typhus.	Enteric Fever.	Simple and Undefined Fever.	Diarrhœa.	Phthisis.	Deaths of Children under 1 year of age to 1,000 Births.
LONDON	4,589,129	32,892	19,615	28.7	17.1	1.76	2,022	2	755	97	317	594	—	113	2	142	1,952	124
West Districts.																		
Paddington	130,104	705	523	21.7	16.1	2.00	65	—	37	—	5	18	—	—	—	5	35	142
Kensington	173,603	923	651	21.3	15.0	1.73	75	—	56	—	7	5	—	1	—	6	47	132
Hammersmith	110,203	737	494	26.8	18.0	2.45	67	—	51	2	3	4	—	3	—	4	54	152
Fulham	136,383	1,129	519	33.2	15.3	1.22	41	—	8	7	8	9	—	5	—	4	48	104
Chelsea	96,715	559	420	23.2	17.4	1.25	30	—	9	—	5	6	—	4	—	6	42	113
St. George Hanover Sq.	81,133	334	282	16.5	13.9	0.75	15	—	3	4	1	3	—	2	—	—	35	111
Westminster	51,057	243	227	18.9	17.6	1.79	23	—	13	—	2	5	—	3	—	—	32	144
St. James Westminster	21,457	111	83	20.7	15.5	1.12	6	—	2	—	3	—	—	—	—	1	7	99
North Districts.																		
Marylebone	139,777	991	673	28.4	19.3	1.85	64	2	25	3	8	17	—	—	1	8	73	111
Hampstead	81,766	430	212	21.1	10.4	0.74	15	—	12	—	1	—	—	2	—	—	15	65
St. Pancras	245,651	1,629	1,058	26.6	17.3	2.13	131	—	67	3	18	26	—	10	—	7	122	117
Islington	351,541	2,297	1,390	26.2	15.9	2.02	177	—	75	10	30	43	—	11	—	8	144	127
Stoke Newington	35,718	185	116	20.8	13.0	1.11	10	—	—	1	1	6	—	1	—	1	8	97
Hackney	225,519	1,610	764	28.6	13.6	1.42	80	—	6	6	16	45	—	4	—	3	67	98
Central Districts.																		
St. Giles	36,870	251	176	27.3	19.1	1.85	17	—	7	—	2	5	—	1	—	2	29	104
St. Martin-in-the-Fields	11,365	37	64	12.5	21.6	0.34	1	—	—	—	—	—	—	1	—	—	8	135
Strand	22,748	123	121	21.7	21.3	1.94	11	—	3	—	2	3	—	1	—	2	16	138
Holborn	29,188	172	266	23.3	27.9	3.27	24	—	12	1	1	6	—	1	—	3	23	279
Clerkenwell	66,007	490	334	29.8	20.3	2.85	47	—	22	3	5	16	—	—	—	1	51	139
St. Luke	40,655	457	253	45.1	25.0	2.37	24	—	13	1	1	6	—	—	—	3	34	94
London City	26,922	89	148	13.3	22.1	1.05	7	—	1	3	1	2	—	—	—	—	20	146
East Districts.																		
Shoreditch	120,641	985	613	32.8	20.4	2.48	75	—	23	7	16	19	—	2	1	7	50	150
Bethnal Green	128,831	1,114	606	34.7	18.9	2.51	81	—	26	2	21	29	—	1	—	2	66	131
Whitechapel	82,220	850	420	41.5	20.5	1.53	31	—	7	4	3	12	—	1	—	4	46	101
St. George-in-the-East	48,875	559	258	45.9	21.2	1.72	21	—	6	1	4	5	—	2	—	3	28	116
Limehouse	58,944	495	423	33.7	28.8	4.68	69	—	30	3	4	29	—	—	—	3	44	220
Mile End Old Town	113,731	1,100	527	38.8	18.6	1.97	56	—	29	2	4	17	—	—	—	4	48	121
Poplar	170,968	1,471	863	34.5	20.2	1.94	83	—	32	1	7	31	—	5	—	7	69	150
South Districts.																		
St. Saviour Southwark	23,854	183	146	30.8	24.6	2.02	12	—	1	—	7	3	—	—	—	1	13	153
St. George Southwark	60,597	531	380	35.2	25.2	1.92	29	—	5	4	3	14	—	—	—	3	49	168
Newington	125,138	992	605	31.8	19.4	1.98	62	—	22	2	16	11	—	1	—	6	61	133
St. Olave Southwark	10,909	100	55	36.8	20.2	1.11	3	—	1	—	—	2	—	—	—	—	6	80
Bermondsey	85,920	702	437	32.8	20.4	2.38	51	—	3	1	12	23	—	11	—	1	36	125
Rotherhithe	41,246	275	194	26.8	18.9	3.12	32	—	15	3	4	8	—	1	—	1	10	149
Lambeth	312,152	2,329	1,207	29.9	15.5	1.19	94	—	22	5	29	21	—	12	—	5	127	110
Battersea	178,120	1,331	665	30.0	15.0	1.54	68	—	16	3	6	32	—	6	—	5	62	119
Wandsworth	217,024	1,416	766	26.7	14.2	1.31	71	—	44	4	6	5	—	3	—	9	72	110
Camberwell	268,457	1,781	955	26.6	14.3	1.05	71	—	9	1	20	28	—	6	—	7	91	125
Greenwich	184,532	1,386	784	30.1	17.0	1.83	84	—	19	2	13	44	—	3	—	3	72	133
Lee	40,722	268	137	26.4	13.5	0.90	9	—	1	—	2	3	—	2	—	1	7	126
Lewisham	93,548	705	342	30.2	14.7	1.76	41	—	1	2	10	24	—	1	—	3	25	95
Woolwich	41,600	304	228	29.3	22.0	1.45	15	—	6	3	2	3	—	1	—	—	37	135
Plumstead	65,558	482	260	29.5	15.9	2.08	34	—	15	3	8	6	—	1	—	1	23	98

years. Among the various sanitary areas the lowest phthisis death-rates last quarter were recorded in Paddington, Hampstead, Stoke Newington, Rotherhithe, Lee, and Lewisham; and the highest rates in St Giles, Holborn, Clerkenwell, St. Luke, St. George Southwark, and Woolwich.

Infant mortality measured by the proportion of deaths under 1 year of age to registered births, was equal to 124 per 1,000 last quarter, against 126 and 113 in the corresponding periods of the two preceding years. Among the various sanitary areas the rates of infant mortality were lowest in Hampstead, Stoke Newington, Hackney, St. Luke, St. Olave Southwark, Lewisham, and Plumstead; while they showed the largest excess in Hammersmith, Holborn, Shoreditch, Limehouse, Poplar, St. Saviour Southwark, and St. George Southwark.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,470 births and 3,476 deaths were registered during the week ending Saturday last, July 14th. The annual rate of mortality in these towns, which had been 15.1 and 14.5 per 1,000 in the two preceding weeks, rose again to 15.6 last week. The rates in the several towns ranged from 9.6 in Portsmouth, 11.1 in West Ham, 11.3 in Brighton, and 11.5 in Croydon to 19.7 in Oldham, 19.8 in Newcastle, 20.0 in Manchester and in Gateshead, and 20.9 in Liverpool. In the thirty-two large provincial towns the mean death-rate was 16 5 per 1,000, and exceeded by 2.3 per 1,000 the rate recorded in London, which was 14.2 per 1,000. The zymotic death-rate in the thirty-three towns was 1.9 per 1,000; in London this death-rate was equal to 1.8 per 1,000, while it averaged 2.0 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.5 in Cardiff, 3.8 in Gateshead, 3.9 in Derby, and 4.1 in Sheffield. Measles caused a death-rate of 1.4 in Oldham, 1.8 in Newcastle, 2.5 in Sunderland, and 2.4 in Derby; whooping-cough of 1.0 in Derby and in Sheffield, 1.3 in Burnley, and 2.4 in Gateshead; "fever" of 1.0 in Huddersfield and 1.2 in Wolverhampton; and diarrhœa of 1.1 in Blackburn, 1.3 in Sheffield, and 1.4 in Gateshead. The mortality from scarlet fever showed no marked excess in any of the large towns. The 72 deaths from diphtheria included 26 in London, 9 in Leicester, 5 in Cardiff, 5 in Salford and 5 in Sheffield One fatal case of small-pox was registered in Liverpool and 1 in Oldham, but not one in any other of the thirty-three large towns. There were 17 small-pox patients under treatment in the Metropolitan Asylum Hospitals on Saturday last, July 14th, against 13, 16, and 17 in the three preceding weeks; 4 new cases were admitted during the week, against 8 and 4 in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had risen from 1,754 to 1,843 at the end of the five preceding weeks, had further risen to 1,861 on Saturday last; 208 new cases were admitted during the week, against 219, 210, and 229 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, July 14th, 958 births and 533 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.9 and 17.7 per 1,000 in the two preceding weeks, further declined last week to 17.2, but exceeded by 1.6 per 1,000 the mean death-rate during the same period in the thirty-three large English towns. Among these towns the death-rates ranged from 10.6 in Leith and 15.1 in Aberdeen to 18.1 in Edinburgh and 20.5 in Dundee. The zymotic death-rate in these towns averaged 2.4 per 1,000, the highest rates being recorded in Paisley and Greenock. The 249 deaths registered in Glasgow included 1 from small-pox, 0 from measles, 5 from scarlet fever, 3 from diphtheria, 12 from whooping-cough, and 9 from diarrhœa. Six fatal cases of measles were recorded in Edinburgh, 2 of whooping-cough in Dundee, 2 of measles and 2 of whooping-cough in Paisley, and 5 of diarrhœa in Greenock.

THE ST. PANCRAS LUNACY INQUIRY.

BY direction of the Local Government Board, Mr. H. Lockwood, one of the general inspectors, and Dr. A. H. Downes, Senior Medical Inspector for Poor-law purposes, held a sworn inquiry on July 11th and following days with regard to the charge that relieving officers have been in the habit of receiving a certain proportion of the fees paid to medical officers for the examination of alleged lunatics, and also certain sums of money and other considerations from the owners of private lunatic asylums to which cases were sent. Mr. Lockwood stated that the inquiry was the outcome of a similar inquiry held at Bethnal Green, which had led the Chairman of the Out-relief Committee to make some investigation. The following notes of the evidence are founded on the full report published by the *St. Pancras Guardian*.

Dr. S. L. Smith said that he had been Medical Officer for Ward 8 since 1876, the amount of the fee he received for examining an alleged lunatic varied; he generally received it in full from the relieving officer, to whom he made a present. He heard of the custom from a medical colleague, who told him that the amount to give was five shillings for every guinea received. The relieving officer had all the danger, risk, and anxiety of moving the case, and the witness's view was that the fee having been paid to the medical officer the money was his to do with as he pleased.

Dr. Goodchild, appointed to Ward 1 in March, 1900, said that he was told of the custom of giving a present to the relieving officer; the amount mentioned was 5s. in each guinea. He had not made a present to any relieving officer since his appointment.

Dr. Beaton said that he had been Medical Officer in Ward 1 for nine and a-half years. Six months after he was appointed one of the relieving officers explained to him that he was not asked to certify lunatics because he did not pay the 5s. He had stated publicly in the *St. Pancras Guardian* his opinion that because he did not give the present he was not called in.

Dr. J. Wigg, appointed to Ward 2 on November 3rd, 1899, said that he was aware of the practice of giving presents to relieving officers many years before his appointment. On one occasion he had given the relieving officer 10s. out of a fee of 2 guineas.

Dr. Walter Smith, who had served in several wards, said that he had never paid any portion of his fee to the relieving officer, although many years ago he knew that the practice to which he objected existed.

Dr. John Thomson, who said he had been medical officer since 1865, stated that he had paid a fee to the relieving officer since his appointment; he had found it the custom when he first took office.

Dr. Andrew Brown, appointed in 1870, said that for twenty years he had given the relieving officers a portion of the fees. Ten years after he was appointed a relieving officer said to him, "You might as well pay the usual portion," and though he disapproved of the practice he had submitted. He had given the relieving officers presents at Christmas and attended their families gratuitously. In reply to Dr. Downes, he said that he found that when he did not give fees the number of cases was less, and that they increased when he resumed the payments.

Dr Tom Sayer said that he was appointed Medical Officer in 1879; he had always paid a portion of the fee to the relieving officer, usually 5s. in the guinea.

Dr. W. J. Corbett, partner and deputy of Dr. Sayer, said that he examined a lunatic for the first time in May, 1898, and the relieving officer told him that it was the custom to pay 5s., and he had always paid 5s. until this year, when he received a cheque.

Dr. Claremont, District Medical Officer from 1884 to 1899, said that he had conformed to the general practice of giving a portion of the fee to the relieving officer.

Dr. Walter Dunlop said he had been Medical Officer at the workhouse since 1877. The relieving officers paid him a guinea for each case, and he gave back 1s., in accordance with the custom which obtained in the coroners' court and in the Central Criminal Court. His impression was that the officers indicated by word or action that they expected some portion of the payment. He had written to Lord Russell of Killowen, and mentioned the matter in connection with the Corrupt Practices Bill. He had been asked to certify that some of the cases when not able to travel as far as the county asylum. The relieving officer had told him either that there was no room in the county asylum, or that he had no time to take a case there. Witness thought that this information was given as a matter of courtesy. He had no suspicion that the relieving officer had a financial interest in taking the case to any particular place. There had been for years a preference shown by the relieving officers for Hoxton House The certificate he gave would be to the effect that in his opinion the patient was not fit to travel; that would be affixed to an order for the reception of a patient previously signed by a justice, and the effect had been that the patient would be sent to Hoxton House instead of a county asylum. He would not give a certificate unless he had personally examined the case and was convinced of the truth of his certificate.

Mr. John Wright, Relieving Officer for Ward 8 since 1867 was examined at great length. In the course of his evidence he said that as soon as a magistrate made an order he inquired as to vacancies in county asylums; if there were no probability of getting a place within the limit of the certificate he would first try Fisherton House, Salisbury, according to the instructions given by the guardians in 1895. He would then ask Ipswich, Plymouth, and Exeter, and failing these Hoxton House and Bethnal House. He had received payments from proprietors of licensed houses. From Hoxton House he had had 10s., £2, and £2 2s. in cash, the smaller amount more often. Bethnal House began to give presents of £2 2s. in 1895, when they began to take private cases.

Other relieving officers were also examined.

The inquiry occupied three days, and at its conclusion Mr. Lockwood said that the evidence would be reported to the Local Government Board, who would consider what further steps should be taken in the matter.

MEDICO-LEGAL AND MEDICO-ETHICAL.

MEDICAL ADVERTISING.

K. C. states that he has received a card from a specialist in skin diseases notifying his change of address and giving his hours of consultation. He complains that he has never met him privately or in consultation, or even heard of him before.

*** We quite agree that such broadcast distribution of notices of change of address is advertising. Conduct of this kind could be efficiently dealt with by a local Ethical Committee.

MEDICAL ADVERTISING.

PURITAN.—Two correspondents send us complaints of the advertising of Dr. John O'Malley, 158, Brick Lane, London, E. One sends us a copy of a handbill, which we print below:

DR. JOHN O'MALLEY
has taken over Dr. MOORE'S practice at
158, BRICK LANE
(near the Brewery),
and he will reside on the
premises, and attend
Confinements, Children,
etc.

Surgery hours:
Morning 9 to 11, evening
after

The fly-sheet of the advertisement is in Hebrew. This is a flagrant specimen of advertising, but neither the General Medical Council nor the licensing bodies seem desirous of taking any steps to check it.

PERSONAL CANVASSING FOR PATIENTS

W. L. W.—We think there is some little misconception on the part of our correspondent. The General Medical Council has warned medical practitioners employed by [illegible] against [illegible] of canvassing by these institutions, but it has [illegible] canvassing by medical practitioners who are not [illegible]. Moreover, canvassing is generally understood to mean [illegible] a paid agent to go round to get members for a club or medical [illegible] society

We think A.'s conduct as described is highly improper, and we should advise B. to write to him politely and request him to alter his behaviour. If he takes no notice a complaint might be made to the Council or Ethical Committee of the local Branch. We deplore the fact that men are to be found to undersell their brethren by offering to do their work at lower rates. We do not think it probable, however, that the medical authorities would take any steps to prevent it; the remedy lies in union among the local practitioners.

OBITUARY.

SURGEON-LIEUTENANT-COLONEL JAMES STEVENSON FORRESTER.

SURGEON-LIEUTENANT-COLONEL JAMES STEVENSON FORRESTER, who died on board the steamer *Dunera* on June 18th, went out to South Africa on January 20th to take charge of the Princess Christian Hospital Train for Natal.

Surgeon-Lieutenant-Colonel Forrester was the only child of the late Surgeon-Major William Forrester, of the Madras Artillery, and was born in Edinburgh on October 14th, 1852. He received his medical education at the University of Edinburgh and at the Royal College of Surgeons there. He obtained the diplomas of L.R.C.P. and L.R.C.S.Edin. in 1873, and was for some time house-surgeon of the Chalmers Hospital. He entered the Army Medical Service in September, 1874. He took part in the Egyptian campaign of 1882, was present at the engagement of Tel-el-Mahuta, the two actions at Kassassin and the battle of Tel-el-Kebir; for these services he received the medal with clasps and the Khedive's Bronze Star. He became a Fellow of the Royal College of Surgeons of Edinburgh in 1883, and in February, 1885, was gazetted to the Royal Horse Guards (Blue) as Surgeon. He was promoted Surgeon-Major and Surgeon-Lieutenant-Colonel in October, 1894, and became Senior Medical Officer of the Royal Horse Guards in October, 1897. He earned golden opinions in this office, and his death is felt as an irreparable loss by the regiment.

He took great interest in his work as commanding officer of the Princess Christian Hospital Train, which had been brought to a great state of perfection under his direction when he contracted the disease which brought his useful life to an end. He was buried at Woodstock Cemetery, Capetown, on June 21st.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Mougeot, sometime member of the French Chamber of Deputies for the Haute-Maine Department; Dr. T. Beco, President of the Belgian Medical Commission, Knight of the Order of Leopold; and Dr. James T. Whittaker, Professor of the Theory and Practice of Medicine in Ohio Medical College.

MEDICAL NEWS.

MEDICAL MAGISTRATE.—Dr. W. J. Munro, of Sydney, New South Wales, has been appointed a Justice of the Peace within the colony of New South Wales.

EDINBURGH OBSTETRICAL SOCIETY.—After the discussion on The Treatment of Dysmenorrhœa on Wednesday afternoon, July 11th, the Fellows of the Society dined together in the Royal Hotel, under the presidency of Dr. Milne Murray. The toast list was "The Queen, the Prince and Princess of Wales, and other members of the Royal Family," "The Navy, Army, and Reserve Forces," "The Country Fellows," and "*Floreat Lucina*."

FACTORY GIRLS' COUNTRY HOLIDAY FUND.—An appeal signed by, among others, the Bishops of London, Rochester, and Bristol, the Chief Rabbi, and Mrs. Garrett Anderson, M.D., has been issued for contributions towards this fund, which gives a country holiday of a week or more to working girls and women employed in factories and workshops in London. Last year 2,200 were given a holiday, and themselves provided towards the expenses £515. The girls, many of whom are little more than children, are sent to the seaside and to country villages, and care is taken in making all arrangements. The fund, which has already done much good, appears to us to be deserving of all support. Contributions may be sent to Miss Margaret A. Wyatt, the Honorary Treasurer, St. Peter's Rectory, Saffron Hill, E.C.

MEDICAL VACANCIES.

The following vacancies are announced:

BANBURY, HORTON INFIRMARY.—House-Surgeon and Dispenser. Salary, £80 per annum, with board and lodging. Applications to the Hon. Secretary.

BIRMINGHAM CORPORATION.—Second Assistant Medical Officer to the City Hospital, Ledge Road, Salary, £120, with board, residence, etc. Applications to the Medical Superintendent.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary, £150 per annum, with allowance of £30 for cab hire, and furnished rooms, etc. Applications to the Secretary by August 13th.

BIRMINGHAM GENERAL HOSPITAL.—House-Surgeon. Appointment for six months. No salary, but board, residence, and washing provided. Applications to the House Governor by July 28th.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary, £25 for six months, with board, lodging, and washing. Applications to the Secretary by July 26th.

BOURNEMOUTH ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £80 per annum, with board. Applications to the Chairman of the Committee by September 6th.

BRADFORD ROYAL INFIRMARY.—House-Physician, unmarried. Salary, £100 per annum, with board and residence. Applications, endorsed "House-Physician," to the Secretary by July 25th.

BRECON INFIRMARY.—Resident House-Surgeon, unmarried. Salary, £100 per annum, with furnished apartments, board, etc. Applications to the Secretary, 6, Bulwark, Brecon.

BUXTON: DEVONSHIRE HOSPITAL.—(1) House-Surgeon. Salary, £100 per annum. (2) Assistant House-Surgeon. Salary, £50 per annum. Furnished apartments, board, and washing provided in each case. Applications to the Secretary by July 24th.

CARDIFF: UNIVERSITY COLLEGE.—(1) Demonstrator and Assistant Lecturer in Anatomy; (2) Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120. Applications to the Secretary by September 8th.

CARLISLE DISPENSARY.—House-Surgeon. Salary, £150 per annum, with apartments. Applications to the Hon. Secretary, 25, Lowther Street, Carlisle.

CHESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £60 per annum, with residence and maintenance. Applications to the Chairman of the Board of Management, 20, Eastgate Row North, Chester, by July 24th.

CHORLEY HOSPITAL—House-Surgeon. Salary, £100 per annum, with board and lodging. Applications to the Honorary Secretary.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary, £100 per annum, with board, etc. Applications to the Secretary by September 8th.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer. Salary £120, rising to £150, with board, furnished apartments, etc. Applications to the Medical Superintendent by August 11th.

DUBLIN: MERCER'S HOSPITAL.—Resident Medical Officer. Application to the Registrar by July 23rd.

DUNDEE COMBINATION POORHOUSES AND HOSPITAL.—Resident Medical Officer, Salary, £100 per annum, with board and furnished apartments. Applications to the Clerk of Council, Parish Council Chambers, Dundee, by July 31st.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary, £140, rising to £160, per annum, with board, laundry, and attendance. Applications to the Medical Superintendent.

GENERAL LYING-IN HOSPITAL, York Road, Lambeth.—House-Physician. Salary at the rate of £50 per annum, with board and residence. Appointment for four months, subject to extension. Applications to the Secretary by July 23rd.

GLASGOW: ST. MUNGO'S COLLEGE.—Bellahouston Chair of Anatomy. Emoluments, £300 per annum. Applications to the Secretary, 93, West Regent Street, Glasgow, by August 7th.

GOSFORTH: CITY ASYLUM.—Assistant Medical Officer, unmarried and under 30 years of age. Salary, £130, increasing to £150, with furnished apartments and board. Applications to the Clerk.

HALIFAX ROYAL INFIRMARY.—(1) Senior House-Surgeon. (2) Third House-Surgeon. Salary, £90 and £50 per annum respectively, with residence, board, and washing. Applications to the Secretary by July 25th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Physician, unmarried. Salary, £20, with board and residence. Appointment for six months. Applications to the Secretary by July 25th.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House-Surgeon. Salary, £75 per annum, with residence, board, and washing. Applicatons to Mr. J. R. Wheldon, 74, King Street, South Shields.

ITALIAN HOSPITAL, Queen Square, W.C.—House-Surgeon. Salary, £60 per annum, with board and residence. Applications, marked "House-Surgeon," to the Secretary by July 25th.

JENNER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea.—Assistant Bacteriologist in the Anti-toxin Department at Sudbury, Harrow. Salary, £200 per annum, with rooms. Applications to Dr. Allen Macfadyen, Secretary, immediately.

LEEDS: BECKETT STREET FEVER HOSPITAL.—Resident Medical Officer. Salary, £130 per annum, rising to £150, with board, lodging, and washing. Applications to the Medical Superintendent, Manston Hospital, Seacroft, near Leeds, by July 26th.

LIVERPOOL DISPENSARIES.—Four Assistant House-Surgeons, unmarried. Salary, £100 per annum, with board and apartments. Applications to the Secretary, 34, Moorfields, Liverpool, by July 26th.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee by August 1st.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer for the Out-Patient Department. Honorarium, £40 per annum. Applications to the Secretary before August 2nd.

NEWCASTLE-UPON-TYNE ROYAL INFIRMARY.—Honorary Assistant-Surgeon. Applications to the Secretary by July 25th.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House-Surgeon, not under 22 years of age. Salary, £75 per annum, with furnished apartments, board, etc. Applications to the Secretary by August 1st.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—House-Surgeon. Salary, £120 per annum, increasing £10 yearly, with furnished apartments, board, and washing. Applications to the Secretary and House Governor by July 28th.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Unmarried. Salary, £140 per annum, with all found except board. Applications to the Secretary.

OLDHAM INFIRMARY.—Junior House-Surgeon. Salary, £75 per annum, with board, residence, and washing. Applications to the Honorary Secretary by August 6th.

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Resident Physician. Salary, £70 per annum, with board, washing, and attendance. Applications to the Clerk to the Local Authority, Municipal Buildings, Paisley, by July 30th.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary, £125, increasing to £175 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant Medical Officer," to Dr. W. H. Bowes, Medical Superintendent, Plymouth Borough Asylum, Blockadon, Ivybridge, Devon, by July 30th.

RAINHILL COUNTY ASYLUM.—Assistant Medical Officer, unmarried, and not more than 30 years of age. Salary, commencing £125 per annum, with prospect of increase to £250, with furnished apartments, board, attendance, and washing. Applications to the Medical Superintendent by July 24th.

SHEFFIELD UNION.—Junior Assistant Medical Officer for the Workhouse Infirmary, Fir Vale. Salary, £50 per annum, with furnished apartments, board, and washing. Applications to the Clerk to the Guardians, Union Offices, Westbar, Sheffield, by July 28th.

SHREWSBURY: SALOP INFIRMARY.—Assistant House-Surgeon. Appointment for six months, but renewable. Salary at the rate of £60 per annum, with board and washing. Applications to the Secretary.

TEIGNMOUTH HOSPITAL.—House-Surgeon. Salary, £70 a year, with board, lodging and washing, and allowance. Application to the House Committee.

TUNBRIDGE WELLS EYE AND EAR HOSPITAL.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Honorary Secretary by July 24th.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Clinical Assistant. Salary, £40, with board and residence. Applications to the Secretary, London Office, 34, Craven Street, Strand, W.C.

WEST HAM HOSPITAL, Stratford, E.—Junior House-Surgeon. Salary, £75 per annum, with board, residence, etc. Appointment for one year, but eligible for re-election as Senior, salary £100. Applications, marked "Junior House Surgeon," to the Secretary by July 25th.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary, £130 a year, rising to £160, with board, residence, attendance, and washing. Applications to the Medical Superintendent by August 14th.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Physician. Appointment for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing. Applications to the Secretary by August 2nd.

MEDICAL APPOINTMENTS.

BUCHANAN, R. J. M., M.D. Vict., appointed Honorary Physician to the Liverpool Stanley Hospital, *vice* C. J. Macalister, M.D.Edin., resigned.

EMANUEL, J. G., M.B., B.Sc.Lond., appointed Pathologist to the General Hospital, Birmingham.

GRIFFITHS, Cornelius A., F.R.C.S., appointed Honorary Assistant Surgeon to the Cardiff Infirmary, *vice* Dr. W. Sheen, appointed Surgeon.

HALL, D. G., M.B., B.C.Cantab., appointed House-Surgeon to the Edinburgh Royal Maternity and Simpson Memorial Hospital.

HAWTHORNE, C. O., M.D., M.R.C.P., appointed Physician to the Central London Ophthalmic Hospital.

MACKENZIE, T. C., M.B., Ch.B., appointed House-Surgeon to the Edinburgh Royal Maternity and Simpson Memorial Hospital.

MORGAN, J. H., F.R.C.S.Eng., appointed Consulting Surgeon to the Hospital for Sick Children, Great Ormond Street, W.C.

MORICE, C. G. F., F.R.C.S.Edin., appointed Sanitary Commissioner for Westland and Buller, New Zealand.

PECK, Herbert, M.D., D.P.H., appointed Medical Officer of Health to the Borough of Chesterfield, *vice* H. Meredith Richards, M.D., appointed Medical Officer of Health for Croydon.

PORTER, William, M.B., B.S., B.A.O. R.U.I., appointed Medical Officer to the Portrush Dispensary District, and Medical Officer of Health for Portrush Urban District, *vice* J. C. Martin, M.D.Dub.Univ., resigned.

PRANCE, C. H. G., M.R.C.S., L.R.C.P., appointed Medical Officer to the Workhouse, Plympton, and No. 1 District, and Public Vaccinator.

WADE, Charles Henry, L.R.C.P., M.R.C.S., appointed Certifying Factory Surgeon for Southend-on-Sea.

WILSON, H. C., L.R.C.P.I., L.F.P.S.Glasg., appointed Medical Officer for the South District of the Poplar Union, *vice* W. M. Leslie, M.D., resigned.

DIARY FOR NEXT WEEK.

MONDAY.

London Throat Hospital, 204, Great Portland Street, W., 4.30 P.M.—Dr. Cathcart: Miscellaneous Cases.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. A. Whitfield: Consultation (Skin).

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Mr. Bidwell: The Preparation of Patients before, and the Treatment after, Operations.

TUESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. J. E. Squire: Consultation. (Medical.)

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Alfred Hillier: Consultation (Medical).

THURSDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Marcus Gunn: Consultation. (Eye.)

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

MASSIAH.—On July 11th, at West Didsbury, Manchester, the wife of B. J. Massiah, M.D., of a son.

MATHWIN.—On July 2nd, at Nathalia, Victoria, Australia, the wife of Frank S. Mathwin, M.B., Ch.B.Edin., of a son. (By cable).

O'MEARA.—On July 4th, at Skibbereen, the wife of T. J. O'Meara, A.B., M.B., etc., R.U.I., of a son.

SHAW.—At 32, New Cavendish Street, Cavendish Square, W., on July 11th, the wife of John Shaw, M.D.Lond., M.R.C.P.Lond., of a son.

MARRIAGES.

HENTSCH—PETHERIN.—On Thursday, July 12th, at St. Stephen's, Paddington, by the Rev. W. E. Burkitt, B.A., Rector of Buttermere, Wilts, George Frederick Hentsch, L.R.C.P.Lond., M.R.C.S., younger son of the late George Hentsch, of Chancery Lane and Barnsbury, to Beatrice M., youngest daughter of William Peterkin, of Clitheroe, Lancashire.

REES—MILNER.—On June 28th, at the New Church, Argyle Square, by the Rev. James Hyde, Rhys B. Rees, second son of William Rees, Esq., of Hampstead, to Edith Maud Milner, fifth daughter of late William Milner, Esq., and Mrs. Milner, of Parkhill Road, Hampstead.

SINNETT—DARLEY-HARTLEY.—June 11th, at St. Barnabas Church, Capetown, Percy Edenaor Sinnett, of the Suffolk Regiment, son of A. P. Sinnett, Esq., of 27, Leinster Gardens, Hyde Park, to Gwendoline Gladys, daughter of W. Darley-Hartley, M.D., M.R.C.P., Kloof Street, Capetown.

WALDO—EXTON.—On July 14th, at the Parish Church, Hampstead, by the father of the bride, Frederick Joseph Waldo, M.D., Barrister-at-Law, to Marion, daughter of the Rev. R. B. L. Exton, formerly Vicar of Strood, Kent.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

R. O. desires to hear of a quiet place in the Black Forest where "mild treatment for acidity could be combined with some trout fishing."

GASTRIC asks: What is the best treatment, or at least the best intestinal antiseptic (with dose), for chronic gastro-intestinal catarrh where the fæces have a very bad odour, as in children, especially in those reared on the bottle?

MEDICAL ATTENDANCE ON INEBRIATE HOME.

ABSTAINER asks: What is the usual salary for a visiting medical officer to a female home for inebriates licensed for twenty beds (lower class), in the event of such a home being opened with a smaller number of patients? What should be the minimum salary?

*** We are not in a position to say what would be the usual salary, but we are advised that the charges might be based upon the following scale. A medical officer should under any circumstances pay at least one visit a week whether sent for or not. If he resides fairly close—that is, about a mile—he should be paid £13 a year, with a capitation fee of 10s. 6d. a head for all patients (dipsomaniacs) admitted, these fees to include all treatment for breaking off dipsomaniacs, and the treatment of minor ailments, for which, of course, special visits would be paid, but not of serious illness or epidemics. In the case of drug patients there should be special charges. If the distance is much over a mile there should be a corresponding increase in the retaining fee of £13.

AMMONIUM CHLORIDE IN CHRONIC DYSPEPSIA.

MR. A. H. CRESWELL, L.S.A.Lond. (Cinderford, R.S.O.), writes: With reference to Dr. A. B. Henchley's letter on ammonium chloride in chronic dyspepsia, and the editorial comment thereon that the prescription should be dispensed with distilled water to avoid precipitation of the mercury, I wish to ask (1) if the object of the prescription would not be answered as well by the substitution of the biniodide for the perchloride; and, if so, (2) is it then necessary to use distilled water, as I find no deposit at any time in my solution of the biniodide which is made with ordinary water drawn from a limestone district?

HYPNOTISM.

SUI-MATE asks for the following information: (1) What is the most reliable and scientific work on hypnotism, especially from a therapeutic point of view? (2) Is there any special authoritative work on the treatment of "fixed idea" (obsession) by hypnotism, with results? (3) Where can the subject be best studied by a medical man, with a view to practical work?

*** (1) Moll's *Hypnotism* is, we believe, the best general book on the subject. Bernheim's *Suggestive Therapeutics* is the best from a medical point of view. We understand that a work on the subject by Dr. Milne Bramwell will appear next year. (2) The only work on the subject of obsessions and their treatment by suggestion that we are acquainted with is a paper by Dr. Milne Bramwell, entitled *Imperative Ideas*, which was published in *Brain*, Parts LXX and LXXI, and reprinted separately in 1896. (3) Hypnotism can be best studied in (*a*) Paris, where Bérillon and others give lectures and demonstrations; (*b*) at Amsterdam, in Van Reuterghem's clinic; (*c*) Nancy, General Hospital, Bernheim's demonstrations; (*d*) Stockholm, Wetterstrand's clinic. The medical men at these and other places on the Continent are, we are informed, very accessible and ready to give information. No introduction is necessary.

ANSWERS.

D. M.—The paper by the late Sir William Gull on Anorexia Nervosa was published in vol. vii of the *Transactions* of the Clinical Society of London (London: Longmans, Green, and Co. 1874.).

C. M. K.—We are not aware that the Local Government Board has made any reports on the subject. The report by the Committee of the British Medical Association on Tuberculosis was published in the BRITISH MEDICAL JOURNAL of January 28th, 1899, p. 242, and copies may be obtained on application to the General Secretary, price 1d. each, post free 1½d.

NOTIFICATION OF CASES OF PLUMBISM.

PLUMBISM.—All cases of industrial lead poisoning must be reported to the Chief Inspector of Factories, Home Office. A fee of 2s. 6d. is given to the notifier of the case of plumbism. A simple notification is all that is required. Copper poisoning is not yet required to be notified, but if there has been a large number of cases of industrial copper poisoning coming under our correspondent's notice, it would be well to draw the attention of the Home Office to the circumstance.

NURSING INSTRUCTION FOR SHORT PERIODS.

R. W.—Lady pupils or special probationers are received at all the London hospitals (St. George's and Great Northern excepted) for periods of three months to one year. The fee is generally one guinea a week for the short period; all personal expenses are borne by the pupil. At St. Mary's Hospital £30 is paid for the year, and no shorter period is contemplated in the regulations. Certificates are not given for any training less than one year, and these certificates are not of sufficient value to secure a matron's post. The training given is only intended to enable ladies to obtain an insight into nursing for charitable work in the homes of the poor.

THE INTERNATIONAL MEDICAL CONGRESS IN PARIS.

N. W.—The matter of the French railway concession referred to by our correspondent was brought under the notice of the various English railway companies in May, and they agree in stating that it is of little, if any, value to British travellers. The excursion fares to Paris are so small that the price of a single ticket to Paris added to the single fare from the frontier town back to England amounts to the same, if not to a larger sum of money than the cheap ticket. There are the additional inconveniences of being unable to register the luggage through and of having to take separate tickets. The German railways are mostly owned by the State, and are consequently somewhat less enterprising in the matter of cheap tickets than our own.

NOTES, LETTERS, Etc.

REBMAN LIMITED have been appointed agents for Dr. Lustig's antiplague serum for this country and the Colonies.

ERRATUM.—In the note on the Prevention of Tuberculosis, in the BRITISH MEDICAL JOURNAL of July 7th, p. 44, the County of Durham Sanatorium should have been described as situated at Horn "Hall," and the initiator thereof as Dr. William "Robinson."

ACADEMIC COSTUME.

M.D. writes: In the BRITISH MEDICAL JOURNAL of July 14th "H." writes, referring to the Ipswich meeting this year, that men should bring their gowns, "so that the parade or procession to church may be impressive as well as picturesque." It might be picturesque, but I fail to see how a lot of medical men walking through the streets dressed up in gaudy costumes is impressive—rather, I should say, laughable or most regretable, according in which light you regard it. "H." goes on to say: "St. Luke's Guild at St. Paul's is crowded with men in various gowns and hoods, and is a complete success." I beg to differ from him, as it is very far from being a "complete" success; there are many, like myself, who never attend the service, thinking the way in which the medical men are marshalled is very objectionable, the most gaudily attired, namely, those with M.D. gowns being put first, and made to march up the aisle lined by men wearing M.S. gowns, F.R.C.S. gowns, etc., as though they were something vastly superior. For the Church Service at St. Paul's to be a "complete" success all medical men should come in ordinary attire and to my mind the same applies to the Ipswich meeting.

FELLOW AND DOCTOR writes: At a certain medical school on prize-giving day, the public, including many medical men, are invited to the ceremony, at which the teachers of the school appear in gowns and hoods to which they are entitled. Would it be etiquette for the medical guests to appear in the gorgeous costumes they are entitled to, or are the school officials to have the sole advertisement? Although not deeply interested in the matter, I think all medical men entitled to special costumes should wear them at functions where uniforms, etc., are worn; it would give them a better *locus standi*, and add to the brightness of the ceremonies.

ANTIHUMBUG writes with regard to "H's" letter: I think it an excellent idea. Gowns certainly add greatly to the dignity of the wearer, and I think the public would respect us far more, and credit us with a greater amount of knowledge, if, like the clergy, we wore a special garb. For some time past I have been in the habit, when attending an infectious case, of borrowing a night gown from the patient, and this I have put on over my ordinary clothes. I have found, without exception, that my entrance thus attired has made a great impression on the patient, and has in addition the great advantage of not even entailing the expense of a "few shillings a day," which "H." informs us is the charge for the hiring of the regulation academic costume. For the public to see us, even once a year, properly attired, were it only in a cap and bells, would, I feel sure, greatly redound to our credit.

EPIDEMIC DIARRHŒA.

DR. ALFRED ASHBY, M.O.H. (Reading), writes: In reply to Dr. C. Stuart Vines, I should like to draw his attention to the work which is being done by the Home Counties Branch of the Incorporated Society of Medical Officers of Health in endeavouring to promote uniformity in certification and classification of "diarrhœa" deaths, which have hitherto been in a state of utter and hopeless confusion. If he will refer to *Public Health* for June, 1898, p. 293, May, 1899, and June, 1900, he will see that the matter is being energetically dealt with, and that the Royal College of Physicians, while insisting upon the specificity of the disease, have now authorised the use of the term "epidemic enteritis" (or, if preferred by the practitioner, "zymotic enteritis") as a synonym for epidemic diarrhœa (*Nomenclature of Diseases*, p. 9, ed. 1896), and that they urge the entire disuse, as synonyms of epidemic diarrhœa in medical certificates of death, of such terms as "gastro-enteritis," "muco-enteritis," "gastric catarrh," etc. In future the only authorised names to be used in certifying deaths from this disease are: epidemic enteritis, zymotic enteritis, or epidemic diarrhœa, whilst all other synonyms are to be entirely discarded. It is most desirable that all medical men should strictly adhere to this authoritative decision of the College. The late Dr. Ballard showed that this is a specific disease which occurs in persons of all ages, and that it may happen in other other than epidemic seasons, under which circumstances the employment of the alternative term zymotic enteritis would appear desirable.

*** The report of the Royal College of Physicians of London was published in the BRITISH MEDICAL JOURNAL, February 3rd, 1900, p. 269, and the action of the Society of Medical Officers of Health was explained in a leading article in the JOURNAL of April 21st, p. 977.

THE PRINCIPLES AFFECTING THE CONDUCTION OF SOUND BY THE BONES OF THE HEAD.

DR. W. COLQUHOUN (Glasgow) writes: In his mathematical investigation Dr. Gray makes the following assumptions: (1) That the curve of a horizontal section of the normal half membrane is an arc of a circle; (2) that the centre of this arc is on a line representing a section of the meatus wall; (3) that the curve of the section of the altered membrane is also an arc of a circle; (4) that the two arcs touch one another. One has the impression that so many assumptions make a rigorous investigation out of place, and that it would have been of equal scientific value and of more value to the non-mathematical reader to have asserted: (1) An arc is longer than its chord; (2) an arc of greater curvature on a longer chord is longer than an arc of less curvature on a shorter chord. The discussion of the other points raised by his letter would require a small volume, and I will content myself with the statement that I do not agree with him that the membrane can be of much importance in the transmission of molecular vibrations to the chain of ossicles from the bones of the skull, and that when I meet exceptions to the rule that increased bone conduction is accompanied by increased rigidity of the chain of ossicles I think it more philosophic to examine the other conditions which make for better bone conduction than to disbelieve my rule. I will merely indicate the conditions: (1) The condition of the bones of the skull; (2) the position of the stapes; (3) the pressure within the labyrinthine fluid; (4) the condition of nerve supply; (5) the probable action of the stapedius and tensor tympani muscles; (6) the nature of the increased rigidity of the chain of ossicles, and whether they have a *point d'appui* corresponding to the probe in Dr. Gray's experiments.

INFANT FEEDING.

DR. T. D. COOK (Torquay) writes: It seems to me desirable that a law should be passed that when an infant is registered the registrar shall give the person registering the child a pamphlet on the feeding and care of infants. This would bring desirable knowledge into every child's home, and make the plea of ignorance a thing of the past.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Messrs. Arnold and Sons, London; Another M.D.; M.S.; Antihumbug; Mr. W. I Addison, Glasgow; A. Ashby, M.B., Reading. **B** Messrs. C. Barker and Sons, London; Messrs. R. Boyle and Son, London; J. M. Barbour, M.B., Swanage; J. A. Balck, M.B., Winchester; J. J. Buchan, M.B., Motherwell; Dr. T. C. Booth, Manchester; Mr. J. B. Blackett, London. **C** Mr. W. B. Colquhoun, Sandhurst; J. Culross, M.B., Newton Abbot; Mr. A. Craske, Torquay; Mr. A. H. Cresswell, Cinderford; Cinchona; Mr. S. Cowell, London. **D** D. S.; Dr. A. Duke, Cheltenham; R. Daniel, M.B., London. **E** E. N.; Dr. A. Eddowes, London; Epigenesis. **F** Fellow and Doctor; Fiat Justitia; Mr. W. Fingland, Liverpool; Mr. J. E. FitzGerald, Grahamstown; Dr. T. Fisher, Clifton. **G** Messrs. R. W. Greeff and Co., London; Dr. H. Gervis, London; T. E. Gordon, M.B., Dublin; D. A. W. Gilchrist, La Bourboule. **H** Mr. D. Hume, London; Dr. F. T. Hall, London; Dr. J. Highet, Workington; Dr. J. Haddon, Denholme. **I** Messrs. Isenthal and Co., London. **J** J. T. S.; Justemente; Mr. F. F. Jones, Bath; Mr. G. Jackson, Plymouth; Dr. C. E. Jennings, London; Dr. Mary D. Jones, New York; Jupiter. **K** Dr. E. Klein, London; Mr. W. G. King, London; Dr. W. W. Keen, Philadelphia; Mr. C. M. Kempe, New Shoreham. **L** G. R. Leighton, M.B., Pontrilas; Dr. H. L. Lack, London; Mr. C. S. Leadbetter, Manchester; H. W. Lyle, M.B., London; Mr. H. Liston, Sunderland. **M** Mr. J. J. de Z. Marshall, Teddington; Dr. C. G. Morice, Greymouth, N.Z.; Dr. A. MacGregor, London; Messrs. May and Baker, London; Mr. G. D. Mackintosh, London; Mr. D. J. McVeagh, Coventry; Miss Maule, London; J. R. MacMahon, M.B., London; W. J. Munro, M.B., Sydney; Dr. J. W. Martin, Dumfries; Mr. J. Marsh, Shanklin, I.W.; M.B.; Mr. J. H. Morgan, London. **N** North Cambs. Hospital, Secretary of, Wisbech; Mr. E. Nicholson, Liverpool. **O** Dr. J. F. O'Carroll, Dublin. **P** Plain Hat; Dr. J. E. Platt, Manchester; Dr. W. S. Playfair, London; Dr. G. S. Perkins, London; Dr. G. C. Purvis, Grahamstown; Mr. G. Pernet, London; Dr. C. B. Plowright, King's Lynn. **R** R.A.M.C.; Mr. G. W. Robertson, Grahamstown; Mr. F. J. Roberts-Dudley, Stalybridge; Dr. W. B. Ransom, Nottingham. **S** Messrs. Street and Co., London; Mr. R. B. Smith, Hinckley; Surgeon; W. G. Spencer, M.B., London; Mr. G. F. Sydenham, Dulverton. **T** Dr. F. S. Toogood, London; Dr. J. C. Thresh, Chelmsford; Mr. E. Trimmer, London; Dr. F. Taylor, London; Dr. J. L. W. Thudichum, London. **V** Victim; Mr. W. Van Praagh, London. **W** W. D. J.; W. L. W.; Wimbledon; Miss M. Wyatt, London; Dr. R. Wilson, Alloa; Mr. H. Waite, Armley; Mr. W. Wijekesakene, Kotagala; Dr. W. G. Walford, London. **Z** Zephyr; etc.

BOOKS, ETC., RECEIVED.

Functionelle und organische Nervenkrankheiten. Von Professor Dr. H. Oberssteiner. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1900. 1s. 3d.

Verhandlungen der sechszehnten Versammlung der Gesellschaft für Kinderheilkunde in München. 1899. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1900. 8s.

Die therapeutischen Leistungen des Jahres, 1899. Bearbeitet und herausgeben von Dr. Arnold Pollatschek. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1900. 8s.

Der Pemphigus und die essentielle Schrumpfung der Bindehaut des Auges. Von Dr. E. Franke. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1900. 3s. 9d.

Ueber Entartung. Von Dr. P. J. Möbius. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1900. 1s. 3d.

Schädel und Auge. Von Dr. Fritz Danziger. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1900. 3s.

Die anorganischen Salze im menschlichen Organismus. Von Dr. R. Brasch. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1900. 2s. 6d.

Die operative Beseitigung der durchsichtigen Linse. Von Prof. Ernst Pflüger. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1900. 7s. 9d.

Die Aetiologie der geburtshülflichen Dammverletzung und der Dammschutz. Von Dr. med. M. Krantz. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1900. 3s.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

THE CENTENARY FESTIVAL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN

ADDRESS OF WELCOME

DELIVERED BY THE PRESIDENT

SIR WILLIAM MACCORMAC, BART., K.C.V.O.,

Surgeon-in-Ordinary to His Royal Highness the Prince of Wales; Consulting Surgeon and Emeritus Lecturer on Clinical Surgery, St. Thomas's Hospital; Hon. Member of the Academies of Medicine of Paris, Brussels and Rome, and of the Imperial Academy of Military Medicine, St. Petersburg; etc.

MY LORDS AND GENTLEMEN,—One hundred years have passed since the charter granted by King George III incorporated the Surgeons of England into a Royal College, whereby the art and science of surgery might be the better cultivated and the commonweal of the people of this kingdom benefited.

We meet to-day in order to celebrate the centenary of our incorporation, and the occasion compels us to reflect how far the College has fulfilled its high mission and merited the public consideration and confidence it enjoys, and, as we believe, deserves to enjoy, through unselfish service to the State.

My first and most pleasant duty is to welcome our illustrious guests who have come from many and distant countries to do honour to our College. Amongst them are great surgeons from almost all nations, men who not only hold the highest professional position in their respective countries, but whose public record has made their name familiar to us all, while many of them are dear personal friends.

We have guests, too, our own countrymen, whom we delight to honour: dignitaries of the Church and of the Law, and heads of our ancient seats of learning. Although I cannot enumerate all, I can and do extend to each and every one the most cordial welcome, and would wish to express our grateful appreciation of their presence amongst us.

An occasion like this possesses historic interest. We contrast our present position with that of our predecessors, and rightly congratulate ourselves on our greater knowledge and opportunities, on the facilities we enjoy for investigating the mystery of disease, and for its more effective treatment.

The comparison enables us to realise, as only such a comparison can, the extent of our gains and our increased opportunities for doing good. It leads us at the same time to recognise, as we ought, how large a debt we owe to the workers who have preceded us for so many of those happy results which are now matters of daily accomplishment.

The progress of surgery has been greater during the present century, more especially in the latter portion of it, than in all the preceding centuries combined, and it is of especial interest to us to note that this period of rapid advancement exactly corresponds with the life-history of our College, whose Centenary we are assembled to commemorate.

If we look back—and it is well to look back sometimes—we find in the labours of the old masters of surgery much to enlighten, to widen, and to confirm our views. A knowledge of the history of our art and science tends to make us juster judges both of our own work and that of others.

When we search the history of the development of scientific truth we learn that no new fact or achievement ever stands by itself, no new discovery ever leaps forth in perfect panoply, as Minerva did from the brow of Jove.

Absolute originality does not exist, and a new discovery is largely the product of what has gone before.

We may be confident that each forward step is not ordered by one individual alone, but is also the outcome in a large measure of the labours of others. The history of scientific effort tells us that the past is not something to look back upon with regret—something lost, never to be recalled—but rather as an abiding influence helping us to accomplish yet greater successes.[1]

Again and again we may read in the words of some half-forgotten worthy the outlines of an idea which has shone forth in later days as an acknowledged truth.

We see numerous instances of this in the history of surgery. Some fellow-worker in years long past has discovered a new fact or indicated the path leading to a fresh truth. It is forgotten, and a century later something nearly the same, or mayhap a little better, is discovered afresh. The psychological moment has arrived, and the discoverer reaps the reward, not only of his own labours but of those of his predecessors as well.

The countless trials and experiments which ended in the general use of ether and chloroform in surgery, that trebly-blessed discovery of a sure relief from pain, were guided by the experience of previous trials, half successful, half failures.

The patient labour of our distinguished Fellow, Lord Lister, now President of the Royal Society, has been rewarded by a success to which all the world does homage, and which will crown his head with imperishable laurels. Yet none will be readier than Lord Lister to acknowledge how much the antiseptic methods of wound treatment owe to the researches and discoveries of Pasteur.

If we examine the old books we may find again and again something very near to what is the accepted doctrine of the present time.[2] History, it is said, repeats itself, and so very certainly does surgery. The difficulty of discovering anything really new is as great in surgery as in other branches of knowledge. Hippocrates (460 B.C.), the Father of Medicine, classified injuries of the skull in much the same way as that adopted in our modern textbooks. He spoke of contusions of the cranium without fracture or depression, of simple fractures, depressed fractures, indented fractures involving the outer table alone, and fractures at a distance from the seat of injury which we now style fractures by *contre-coup*, a classification which leaves but a small margin for improvement.

Many of the surgical instruments found in Pompeii are precisely similar in principle, if not quite equal in workmanship, to those now in use, and Pompeii was destroyed 1,800 years ago (A.D. 79).

Heliodorus, who lived at the beginning of the second century A.D., in the time of the Emperor Trajan, was a surgeon of much originality, and appears to have been familiar with some of our modern methods and discoveries. He knew, for instance, of the ligature of arteries, of the radical cure of hernia by extirpation of the sac, and of the excision of a rebellious stricture of the urethra.

Oribasius, who flourished in the middle of the fourth century A.D., was the friend and physician of the Emperor Julian. He has preserved for us the work of Antyllus, whose treatment of aneurysm by ligature of the vessel above and below the sac, with subsequent incision and evacuation of its contents, has of late years been revived with success, and is still considered by many of our surgeons as the best method of treatment in certain cases. One might cite other examples of old methods consciously or unconsciously revived, but these may perhaps suffice.

The modern specialist finds his prototype in very ancient times, and what we are apt to regard as a recent development is in reality a survival. Herodotus tells us that in Egypt there were as many branches of the profession as there are parts of the human body.[3]

In Europe, until the rise of the Italian Universities, surgery was mainly in the hands of peripatetic charlatans who cut for stone and operated on hernia. They travelled from town to town, kept their methods secret, and handed them down as family property to their descendants.

The Hippocratic oath restricted the performance of lithotomy to those who had specially devoted their whole energies to the cultivation of this operation, and may partly serve to explain this remarkable survival. Some of these "cutters" were skilful men, but all were of necessity very ignorant.

A very famous "cutter," whose name we do not know, died in Genoa in 1510, and Senerega, the Genoese historian, tells us that his method was to introduce an iron rod along the urethra into the bladder until it touched the stone, which he then extracted through a perineal wound. It has been suggested that this Genoese taught his method to John of Cremona, who is credited with the invention of the grooved staff.

One of the most celebrated "cutters" was Pierre Franco, who was born in Provence about 1500 A.D. He used a staff, and cut on the gripe as well, and employed instruments for the purpose of crushing large stones. He was a man of

determination and resource, for he relates a case of a boy in whom having failed to remove a stone by way of the perineum, he successfully performed the suprapubic operation. The stone was the size of a hen's egg, and the patient subsequently made a good recovery.

Colot was appointed lithotomist to the Hôtel Dieu of Paris in 1556. He had learnt what is known as the "Marian operation" from an itinerant quack, and he practised the method with, it is said, much success. The office and its secret descended to his son and to his grandson.

In the great metropolitan hospitals—in St. Bartholomew's and St. Thomas's, for instance—persons were at one time specially appointed for the purpose of cutting for stone.

John Bamber, who lived during the reigns of William III, Queen Anne, George I and George II, was the last of the special lithotomists at St. Bartholomew's. He resigned his office in 1730 and his duties were transferred to the surgeons of the hospital, who were specially paid a small stipend each year as lithotomists until 1868. Bamber's portrait by Verelst may be seen at Hatfield House, and Lord Salisbury inherits some portion of his property through an heiress of this line who married a Marquess of Salisbury.

At St. Thomas's Hospital certain of the surgeons were specially appointed to cut for stone, but before the year 1730 there appears to have been a special "surgeon for the stone," and the first of these was James Molins, who held a similar office at St Bartholomew's. There is, indeed, no end to the matters of interest in the history of our art.

The great French surgeon, Guy de Chauliac, who was born about 1300 A.D., studied at the three most famous centres of learning of that time—Bologna for anatomy, Paris for its surgery, and Montpelier for medicine. He travelled much, but finally settled at Avignon, where he became physician in succession to Pope Clement VI, and afterwards to Pope Innocent and Urban. It was in Avignon he wrote his *Great Surgery*, and in a special chapter of this work he records opinions which have an application even in the circumstances of our own times. "Formerly," he says, "all medical writers were both physicians and surgeons—that is to say, well educated men; but since then surgery has become a separate branch and fallen into the hands of mechanics."

It is interesting to find from Guy that there were in his day exponents of that modern foolishness call "Christian Science." These Guy describes as "consisting of women and many fools." They refer the sick of all diseases to the saints, saying:

Le Seigneur me l'a donné ainsi qu'il Lui a plu. Le Seigneur me l'ostera quand il Lui plaira, le nom du Seigneur soit benit. Amen.

As a striking instance of my thesis I may take the great French military surgeon, Ambroise Paré We know his title to fame in substituting the ligature of arteries for the use of the hot iron in the arrest of hæmorrhage. We know also the story of how he forbade the barbarous practice of pouring boiling oil into gunshot wounds, due to the then prevailing belief that these wounds were poisoned, a belief revived with almost every war, even the latest one in South Africa.

Paré had been apprenticed to a provincial barber at the age of 9 Soon afterwards he came to Paris, attended lectures at the Faculty of Medicine, and gained admission to the Hôtel Dieu. He lived there as a dresser for three years, "seeing and knowing a great variety of diseases constantly being brought there." He was only 19 when he accompanied the King, François I, into Provence to meet the army of Charles V He was attached to the Courts of four Kings of France, and, although a Huguenot, was spared at the Massacre of St. Bartholomew by the direct intervention of Charles IX.

It is interesting to learn that Dionis, more than one hundred years after Paré's time, was urging at the Hôtel Dieu the adoption of arterial ligature in place of the caustic even then in vogue. Dionis, too, although he advised the Marian operation for stone, considered that the risks of the suprapubic method had been overestimated, an opinion revived and insisted on by Sir Henry Thompson in our own time.

We all remember J. L. Petit (1674-1750), who invented the tourniquet known by his name in the early part of the last century, and Anel, who tied the brachial artery for traumatic aneurysm at the bend of the elbow, upon which procedure a claim was based for priority over Hunter, though Hunter's operation is wholly distinct in the principle involved.

Towards the end of the eighteenth century, Desault, who nearly lost his life in the Revolution, was the leading French surgeon. He was accused of poisoning the wounds of some of his revolutionary patients in the Hôtel Dieu, and to be accused was in those times almost the same thing as being condemned. Desault, whose fame has been eclipsed by the brilliance of his pupil Bichat, was the first surgeon to teach surgical anatomy after the modern manner, although the great French hospital where he practised was described at that time as "the oldest, largest, richest, and worst hospital in Europe." I need not refer to more recent and greatly honoured names—Dupuytren, Velpeau, Nélaton, and many others.

In Germany, even so recently as 100 years ago, surgery was at a low ebb. George Fischer[1] tells us that quacks of all kinds, "cutters" for stone and hernia, cataract operators, and bonesetters, flourished in the land. The public executioner, whose business it was to fracture bones and dislocate joints on the rack, was supposed thereby to have acquired a knowledge of disorders of these parts, and was consulted freely about them—so much so that Frederick the Great in 1744 published a decree limiting the powers of these men, and while permitting them to treat fractures, wounds and ulcers, forbade them to practise medicine. Hildanus (1560-1634), who lived in Germany at the end of the sixteenth and beginning of the seventeenth century, has been called the Father of German surgery. He was a voluminous writer, a bold operator, and his *Opera Omnia* was a work of reference for many years. Heister (1683-1758), a surgeon of much note in the eighteenth century, wrote a *General Surgery*, which enjoyed much repute, and was translated into English. Bilguer (1720 1796), a surgeon-general in the German army, was noted for opposing the indiscriminate amputation of limbs then in vogue for gunshot fracture of the extremities, which his predecessor Schmucker had warmly advocated and practised to an inordinate extent.

Towards the end of the eighteenth century Von Siebold (1736-1807), a famous surgeon, who enjoyed great repute as a clinical teacher and operator, taught anatomy at Würzburg, and about the same time Richter (1742-1812) was Professor of Surgery at Göttingen. Richter had travelled much, was familiar with the work done in England and France, and was the best writer and teacher of his day. He was the first to place surgery in Germany on a truly scientific basis. Of those German surgeons whose names still fill our ears with their fame, and whose loss we have recently deplored—Stromeyer, Langenbeck, Billroth, Volkmann, Thiersch, Nussbaum and others—I could only repeat what all of you know as well as or better than I.

The first English surgeon of whom we possess any definite knowledge, and whose writings are still in existence, is John of Arderne. He was born in 1307. He must have been an accurate and close observer, to judge by the graphic description he furnishes of cancer of the rectum. He says:

It breeds within the fundament with great hardness, but with little pain. After a time it is ulcerat, oftentimes all the circumference, and the excrement goeth out continuallie.

He gives a true and telling description of how the condition is to be diagnosed, and of the progress and termination of the disease.

It is noteworthy how many of the older surgeons who attained eminence spent part of their career in the army or navy. William Clowes (1540-1604), who was Surgeon to St. Bartholomew's, had been surgeon in the navy, and wrote *A Proved Practice for all Young Chirurgeons concerning Burnings with Gunpowder and Wounds made with Gunshot*, and he refers to Ambroise Paré in terms of admiration.

The greatest English surgeon of the seventeenth century was Richard Wiseman (1622-1676). He served in the Dutch navy till 1644, and then entered the army of Charles I. Afterwards he spent three or four years in the Spanish navy, and on the Restoration joined the forces of Charles II, by whom he was appointed one of his surgeons. He published many treatises, which exercised a considerable influence on English surgery, but were little known abroad.

William Cheselden (1688-1752) was a surgeon of great renown in England in the early part of the eighteenth century. He was Surgeon and Lecturer at St. Thomas's Hospital. In 1723 he published a treatise on the high operation for stone, but he soon abandoned this for the lateral method,

which he so much perfected and improved that the operation remains at the present time much as he left it.

Percivall Pott (1714 1788) was the famous English surgeon of the middle portion of the last century. He was Surgeon to St. Bartholomew's Hospital, and made many and most important contributions to surgery, especially on hernia and on injuries to the head. His name remains attached to many surgical disorders.

Of John Hunter (1728-1793) no detailed mention is required here. His memory and his methods continue a living influence amongst us. He made our surgery a science, and has given to us in our Museum an imperishable memorial of his industry. In it are illustrated those marvellous powers of observation which had never before been equalled, and will never in all probability be surpassed. So long as surgery continues, Hunter's influence must be felt. It is witnessed in the creation of so many distinguished disciples imbued with his principles and able to expound his doctrines. He embodies and represents the glory of our science, our College, and our country.

The historical summary I have attempted would not be complete without some account of the connection existing between the Surgeons and the City of London, which appears to have continued quite without interruption since the middle of the fourteenth century until the foundation of the Surgeons' Company in 1745.[5] There are many entries in the City records of the admission by the Lord Mayor of surgeons and master surgeons to practise in the City of London, and the licence thus granted exacted a promise "that they should well and truly serve the people in their cures, and report to the Lord Mayor and Aldermen any surgeon neglecting his patients."

In 1416 the Craft of Barbers practising surgery petitioned the Lord Mayor and Aldermen "to provide a sure remedy against unskilful persons who indiscreetly pretend to be wiser than the Masters of Surgery, and who expose the sick to the greatest danger of death or maim by their presumption." The City took immediate and, as we learn, successful action on this petition.

The City recognised the distinction between barbers and surgeons, for they appointed masters of surgery to control those practising surgery only, and other masters were annually selected to supervise those practising barbery. Early in the fifteenth century the surgeons appear as a distinct body, and in 1423 a College of Physicians and Surgeons, which had been founded chiefly through the influence of John Morstede, a surgeon who accompanied Henry V to Agincourt, was formally sanctioned by the Lord Mayor, and powers granted to it to examine and control persons practising medicine and surgery in the City of London. The Livery Company of Barber-Surgeons was founded in 1540, and its Hall in Monkswell Street is still standing, as it escaped destruction in the Great Fire of London. The famous picture by Hans Holbein of Henry VIII delivering the Charter of the Company to the assembled barber-surgeons is still there, where until recently one might see the old theatre, where lessons in anatomy were read upon the bodies of executed malefactors.

Thomas Vicary (149(?)-1561), Sergeant-Surgeon to the King, the first Master of this Company, was a wise and honest gentleman. He held a unique position at St. Bartholomew's, and there is in Holbein's picture at the Barber Surgeons' Hall a characteristic portrait of him. Vicary was succeeded by Thomas Gale (1507-1587), who had served with the army of Henry VIII in France in 1544, and under Philip II of Spain in 1577. In his *Institutions of Chirurgeons* there is an account of wounds made by gunshot. He opposed the view that they are poisoned, and gives cases to prove that bullets may be left for long in the body without danger.

The Barber-Surgeons appear to have borne their due share in the City pageants. At one given at the Restoration, the Lord Mayor and aldermen appointed that the Company should provide "twelve of the most grave and comlyest personages, appareled with velvet coats, sleeves of the same, and chaynes of gold, to attend the Lord Mayor, on horseback."

Mr. Edward Arris, an Alderman and Barber-Surgeon, had a great desire to increase the knowledge of chirurgery, and to this intent bequeathed to the Company a sum to found lectures, in 1645, on anatomy, on condition that a "humane" body should once in every year be publicly dissected. The Gale Lecture was founded by John Gale a little later, in 1655, and Havers, well known for his description of the canals in bone, since called Haversian, was appointed the first reader. The Arris and Gale Lectures are still annually delivered in this College, for when the Surgeons finally separated from the Barbers in 1745 they carried nothing with them but the Arris and Gale bequests. The hall, library, and plate remained the property of the Barbers, and the new Company of Surgeons had to make a fresh start in the world.

The Act of Parliament separating the Surgeons from the Barbers became law in 1745, and a Corporation was established consisting of a master, governors, and Commonalty of the Art and Science of Surgery in London.

John Ranby, one of the prime movers in effecting the change, became the first Master. He was Sergeant-Surgeon to George II, and accompanied that monarch to the battle of Dettingen in 1743. The other active mover was Cheselden, Surgeon to Queen Charlotte's, to Chelsea, and St. Thomas's Hospitals. The first meeting of the new Company was held in the Stationers' Hall on July 1st, 1745. Mr. Ranby, as Master, occupied the chair, and Mr. Cheselden and Mr. Sandford were his wardens.

Ten examiners were appointed to conduct the examinations of those seeking the diploma of the newly-constituted Company, and this number is continued in the present Court of Examiners. Part of their duty was to examine surgeons for His Majesty's army and navy, and the examination of surgeons for those services, which had been instituted in the reign of Henry VIII, was continued for a long time by the Court of Examiners until other arrangements were made at a comparatively recent date. It was for this examination, I may note in passing, that Oliver Goldsmith presented himself in order to qualify as a naval surgeon's mate on December 21st, 1758. He was unsuccessful, and it was well perhaps, since he could scarcely have written *The Vicar of Wakefield* in the cockpit of a man-of-war. In *Roderick Random* we possess a graphic and probably fairly correct description of one of these examinations, derived, doubtless, from Smollett's personal experience, as he obtained the Company's diploma for the post of surgeon in His Majesty's navy.

The Surgeons established themselves in the Old Bailey, and there they built a theatre. In 1753 Percivall Pott and John Hunter were chosen as the first Masters in Anatomy, and no more brilliant choice could have been made. It is recorded that immediately after this election the Court proceeded to discuss how they should dispose of the bodies of three persons who were to be executed a few days afterwards for "murther," and then sent to the College theatre to be dissected. Amongst these brought in this way was that of Lord Ferrers, executed in 1760 for killing his steward. It was not, however, dissected, but buried in Old St. Pancras Churchyard at the intercession of Lady Huntington.

On July 7th, 1796, Henry Cline the elder was elected a member of the Court, but, as it subsequently turned out, the meeting at which this occurred was irregular, and its proceedings illegal, a properly constituted quorum not being present. Although only a technical illegality had taken place, this incident led to the final extinction of the Company of Surgeons, for a Bill shortly afterwards introduced into Parliament to legalise the proceeding was thrown out, and the Company was thereupon dissolved. The Bill had passed the Commons, but was rejected in the Lords, mainly through the influence of Lord Thurlow, who was bitterly opposed to Mr. Gunning, a very distinguished surgeon, and at the time Master. "There is no more science in surgery," Lord Thurlow is reported to have said, "than there is in butchery." "Then," replied Gunning, "I heartily pray your lordship may break your leg and have only a butcher to set it, and my lord will then find out the difference between butchery and surgery."

In 1796 the Surgeons migrated from the Old Bailey to Lincoln's Inn Fields. In that year a new Bill they sought for was rejected in the Lords on the ground that the College premises were too far removed from the place of execution, and that it would be indecent and improper to carry the bodies of deceased criminals so long a distance through the streets of London. Finally, the Court in 1797 decided to apply to the Crown, and not to Parliament, for a new charter, and, although opposition was again offered, it proved unsuccessful, and on March 22nd, 1800, the Royal College of Surgeons in

London was established by charter of King George III. This charter gave the College its former rights on condition of resigning its municipal privileges. The titles of Master and Governors were retained for a time, but a supplementary charter from King George IV. in 1821 replaced these by those of President and Vice-Presidents. In 1843 another charter, granted by Her Majesty Queen Victoria, changed the title to that of "Royal College of Surgeons of England," with a President, two Vice-Presidents, Council, Fellows, and Members, as they exist at the present time. Thus it was that the Royal College of Surgeons of England was created.

During the century of its existence this College has witnessed discoveries which have profoundly changed the character of surgical practice and the scope of surgical aspirations. An immense development has been effected in the operative surgery of every region of the body, and the victories of the surgeon over disease and death are without end.

John Hunter, and many of the older surgeons, regarded operations as somewhat of an opprobrium to surgery, and as a confession of failure. How far otherwise it is now! Intracranial, intrathoracic, and intra-abdominal operations are successfully carried out, many of them by proceedings which had never previously been imagined, even by the boldest amongst us. A great impetus has been given to conservative methods in surgery, and the preservation of life and limb is now attainable in cases innumerable, and of the most different description, where conservation was previously regarded as impossible.

How largely also have physicians and surgeons alike developed and cultivated that highest form of conservation, the conservation of the race in the happiness and vigour which are associated with physical health!

Plastic methods have been perfected in an extraordinary degree. I would only mention as a striking although common example the union of the ends of an accidentally divided nerve and the re-establishment of its function.

Although the number and variety of operations have multiplied a hundredfold, the skill and fertility of resource exhibited in their performance have equally increased, and the measure of success which has been realised, whilst it rewards and gratifies the surgeon, will appear even to the educated layman as little short of miraculous. In the early part of the century the surgeon knew of but a limited number of operations, and for the most part those only were performed which appeared to be inevitable. He knew by sad experience how generally fatal important operations and cases of severe injury were when treated in hospital wards. His patients were more than decimated by infective diseases—pyæmia, septicæmia, erysipelas, tetanus, and by suppuration, hectic and gangrene. He recognised and could to some extent control these scourges, but of any effective manner of dealing with them he knew nothing. Now we possess an intimate knowledge of the essential causes of many of these diseases, and if we cannot always cure them we can do much to prevent them. Some things have hitherto baffled our efforts. The cause and the cure of cancer are as yet unknown. We possess some crude ideas about the exciting causes of the disease, and attempt with indifferent success to cure it by timely extirpation. Let us hope that the new century will still be young when some surer means of dealing with this terrible and increasing malady is discovered.

A notable feature of our time is the development of the museums which are now attached to most of our public institutions. Those which more immediately concern ourselves illustrate everything within the range of biological science, and foremost amongst them all is our own great collection.

Much more might one say—and much certainly there is to say—but I will only repeat that our welcome to you all is sincere and heartfelt, and most especially so to our foreign colleagues. Our science knows no narrow national boundary. It is the common property of us all. We desire to sympathise with our fellow-workers abroad, and to appreciate their work, as we trust and believe that they appreciate ours.

In this address I have ventured to urge that we are much beholden to those who have gone before. In but a few years all who are now present will also belong to the past. Let us hope that, as we have not altogether forgotten those who preceded us, we too may be remembered a little by those who are to follow.

On great occasions like the present, the older seats of learning and other public institutions had power to grant honorary distinctions. Formerly we possessed no such faculty, but by the act of Her Gracious Majesty we, too, have recently obtained permission to grant a certain number of Honorary Fellowships of this College. The Fellowship is the greatest distinction it is in our power to bestow, and we regard it as the highest purely surgical qualification obtainable in this country. It is, therefore, a great privilege and pleasure for me to present, on behalf of this College, this high honour to those distinguished men who are about to receive it.

I am sure also all present will be gratified to learn that His Royal Highness the Prince of Wales has graciously consented to become the first of our Honorary Fellows. His Royal Highness has always shown his interest in the College, and has evinced a special care for the success of its Centenary. It is quite fitting, therefore, that His Royal Highness, who is the patron of so many learned and scientific societies, should add the lustre of his name to the Royal College of Surgeons of England.

NOTES AND REFERENCES.

[1] Presidential Address, British Association, Dover, 1899, by Sir Michael Foster, K.C.B. [2] For many of the details which follow I am indebted to an interesting history of Surgery by Dr. Billings, which is to be found in the *System of Surgery* by Dr. Dennis, F.R.C.S., of New York. [3] "The medical profession," he says, "is distributed among them (the Egyptians) in this wise: each physician is for a single disease and not for more. The whole land swarms with physicians; some are appointed for the eye, some for the head, some for the teeth, others for the region of the belly, others again for unseen (internal) diseases."—*Herodotus*, ii, 84. [4] *Chirurgie vor 100 Jahren. historische Studien.* George Fischer. [5] South's *Memorials of the Craft of Surgery.*

ON THE PHYSIOLOGICAL ACTION OF SENECIO JACOBŒA.*

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IN these experiments preparations made from the entire plant were employed. Two alkaloids have been obtained from the underground parts of many species of senecio by A. Grandval and H. Lajoux,[1] but in extremely small quantities, the amount ranging from 0.006 to 0.42 gram per 1,000 grams. The effect of the drug upon the heart was recorded by means of Professor Schäfer's heart-levers, connected with the auricle and ventricle respectively, tracings being taken on smoked paper. The carotid pressure was recorded at the same time, the anæsthetic being varied in different experiments.

Intravenous injection of small quantities of an alcoholic solution prepared from the entire plant caused a slight rise of general blood pressure, accompanied by some diminution in the magnitude of both auricular and ventricular contractions, the diminution being, however, somewhat more marked in the case of the auricle (Fig. 1). Such effects are not produced by alcohol alone of the same strength.

After several injections, or after one large dose, further injection of the alcoholic extract caused a fall of general blood pressure with slowing of the contractions of the heart, and consequent increase in the excursions of the kymograph (Fig. 2). This effect was repeated unless a considerable interval was allowed to elapse before any more of the drug was injected, when a further small injection again caused some rise of general blood pressure. It appears, therefore, that there are contained in the entire plant two substances with distinct physiological actions, but how far these substances correspond with the alkaloids previously mentioned I am not in a position to state.

Intravenous injection of a watery extract of the residue obtained by evaporating down the alcoholic solution, driving off all the alcohol, taking up in water and filtering, caused a marked fall of blood-pressure, with slowing both of the auricular and ventricular contractions, and sometimes irregularity, especially of the auricle (Fig. 3). This fall of blood-

* An investigation undertaken for the Therapeutic Committee of the British Medical Association.

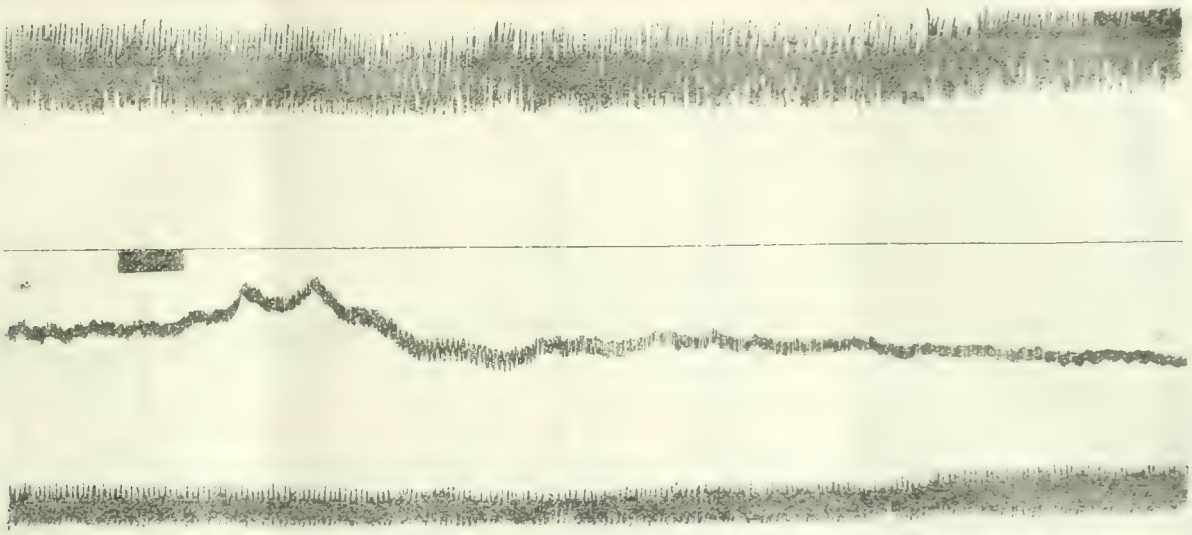


Fig. 1.—Dog 11 kilos. The upper tracing is that of the ventricular contractions, the lower that of the auricular contractions, the intermediate one that of carotid blood pressure. Intravenous injection of 0.15 gram.

pressure was followed by a slight rise due to constriction of peripheral vessels, cardiac inhibition still causing some slowing of the heart beats. This effect on the heart was not abolished by division of the vagi, but after the previous injection of a small dose of atropine (0.004 gram for a dog of 7 kilos.), either in the same dog after a considerable interval, or in another dog, cardiac inhibition was not produced by further administration of the watery extract. Inasmuch as the action of atropine is on the cardiac nerve endings, these experiments tend to show that the cardiac action of the drug is directed to the nerve terminations in the heart, and is not due to direct action on the muscular fibres of that organ.

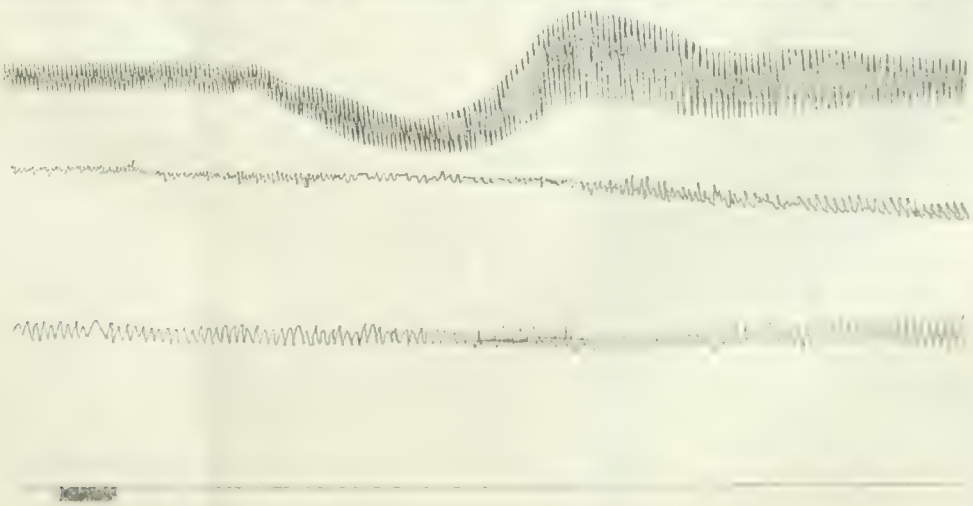
Fig. 4 is a tracing taken by means of an intestinal plethysmograph in order to show the effect of intravenous injection of the drug upon the intestinal circulation. A segment of small intestine was enclosed in a gutta-percha box made tight by means of vaseline without injury to its nervous and vascular supply, and connected by means of a tube with a recording tambour. Intravenous injection of 0 2 gram into a dog weighing 6 kilos. caused a small rise of carotid pressure accompanied by constriction of the intestinal vessels, which passed off after a short time. Injection of a somewhat larger dose (0.8 to 1.0 gram) caused vasomotor dilatation of the small intestine (Fig. 5). In this last experiment a simultaneous record was obtained of the contractions of the circular coat of the intestine by means of an indiarubber bag filled with fluid, which was inserted through a small incision on the free border of the intestine. Both splanchnics and both vagi were divided. Intravenous injection of the drug caused diastolic tone of the intestine, with cessation of the rhythmic contractions, synchronous with the dilatation of the intestinal vessels. It appears, therefore, that injection of the drug in doses of 1.0 gram, for a dog of 7.5 kilos, causes inhibition of involuntary muscle, whether of the blood vessels or of the intestine.

CONCLUSIONS.

1. Injection of an alcoholic extract of the entire plant of senecio jacobœa into the circulation of a dog in small doses causes a rise of general blood pressure, with constriction of peripheral vessels and of vessels of the intestinal area. This effect is accompanied by a diminution in the magnitude of the contractions both of the auricle and of the ventricle.

2. Large doses (0.8 to 1 0 gram for a dog of 7 kilos) of the drug cause a fall of general blood pressure, with dilatation of the intestinal vessels and inhibition of the contractions of the intestinal coat.

3. After several injections of small doses, or after one large dose of the alcoholic extract, further injections produce a fall of blood pressure, with slowing of the heart, and this effect is repeated unless a considerable interval is allowed to elapse



Injection

Fig. 2.—Dog 8.5 kilos. The lowest tracing is that of the ventricular contractions, the highest that of carotid blood pressure.

Injection

Fig. 2.—Dog 7 kilos. The highest tracing is that of carotid pressure; below this are recorded the contractions of the auricle and ventricle respectively.

Injection

Fig. 3.—Dog 7.5 kilos. The upper tracing is that of the intestinal plethysmograph; below this is the record of the contractions of the circular coat of the intestine at a point 2 feet below the pylorus.

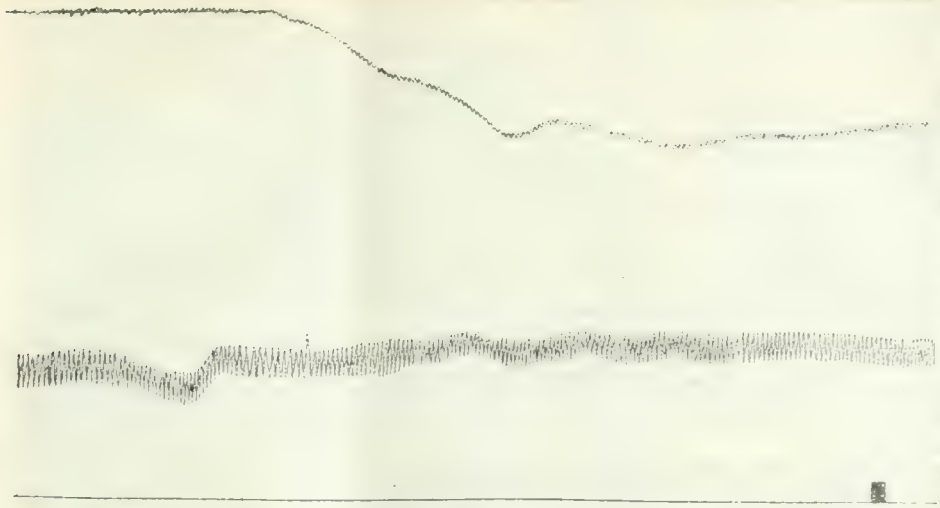


Fig. 4.—Dog. The lowest tracin is that of the intestinal plethysmograph; the upper one that of carotid blood pressure.

before any further injection of the drug, which then again causes some rise of general blood pressure.

4. The entire plant, therefore, contains two substances with distinct physiological actions; but I have not up to the present been successful in isolating them.

5. Watery extracts of the residue obtained by evaporating the alcoholic solution produce a fall of blood pressure and cardiac inhibition, due to the action of the drug on the nerve terminations in the heart, and not to direct action on the muscular fibres of that organ.

6. The substance which causes a rise of blood pressure is not contained in such watery extracts, or, if present, only in small quantities.

REFERENCE.

[1] *Pharm Journ.*, vol. i, 1895, p. 1105; vol. ii, 1895, p. 535; also *Compt. Rend.*, cxx, p. 1120.

ORAL SEPSIS AS A CAUSE OF DISEASE.

BY WILLIAM HUNTER, M.D., F.R.C.P.,

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I AM interested to see that the subject of oral sepsis in certain of its relations was brought under discussion at the meeting of the Royal Medical and Chirurgical Society on June 12th by a paper from Mr. Rickman Godlee.

My excuse for commenting on the discussion must be that the whole subject of oral sepsis as a cause of disease has been one of special interest to me for many years; that I have dealt with it at some length in published papers during the past year and a-half[1]; and that the more I study it the more impressed I am, at once with its importance, and with the extraordinary neglect with which it is treated alike by physicians and surgeons.

I have described cases identical with some of those referred to by Mr. Godlee; and shown—a point not even referred to by any, even the most recent, writers on diseases of the stomach—that not only is the constant swallowing of pus a most potent and prevalent cause of gastric trouble, but that the catarrh set up is not simply irritant but actually infective, and may lead in time to other more permanent effects—namely, atrophy of glands and chronic gastritis, and in certain cases even to suppurative gastritis.

This result is, however, by no means confined to and associated with any one mouth condition, such as pyorrhœa alveolaris. And I specially desire to draw attention to this point, since I note that several of the speakers desired information as to what degree of pyorrhœa alveolaris was necessary to produce the various ill-effects referred to.

I have to point out that for every case of gastric or other affection traceable to pyorrhœa alveolaris a hundred cases equally well marked are daily to be found associated with other dental and oral conditions of sepsis. In short, I deprecate this subject of oral sepsis and its effects being brought under discussion in connection with any one pathological condition of the mouth. The list of such conditions might be increased almost indefinitely. In my own experience they include not only pyorrhœa alveolaris, but stomatitis and gingivitis of every degree of severity—"erythematosa," "pustulosa," "ulcerosa," "gangrænosa," and indeed every other form of trouble, dental and oral, producible by septic infection for which an appropriate adjective can be found. The list, moreover, includes in my experience others for which a suitable qualifying adjective cannot so readily be found, and which I may describe as "foul septic toothplate" stomatitis, "bridge" stomatitis, and "gold cap" stomatitis; this latter group, I venture to think, considerably on the increase in this era of conservative dentistry and high professional mechanical skill.

The important fact to be recognised is that one and all of these various conditions are septic in their nature, and produced by pus organisms; that these organisms are invariably associated with every case of dental caries, however slight; and that the question of effect in any one case is a matter of individual resistance.

The cause underlying them is oral sepsis of the most marked character. This sepsis, moreover, is of a particularly virulent character. For it is connected with disease of bone (that is, of teeth); and a somewhat extensive pathological experience has satisfied me that no pus organisms are so virulent as those grown in connection with necrosing bone.

No physician or surgeon would tolerate for a moment that a patient with a foul septic ulcer, say in his forearm, should from time to time apply his lips to the ulcer to clean it. Yet this is—pathologically—precisely what happens in the case of patients with necrosed teeth and stomatitis. Moreover, the swallowing is constant, and goes on for years, unheeded both by patient and doctor.

I recently saw a patient, a lady, who for twenty-five years had suffered at intervals of every three or four weeks from most inexplicable salivation and subsequent intestinal trouble, so severe in character as to confine her to bed. She had worn for the same period of time a toothplate, which she only removed irregularly, and only cleaned with a toothbrush. She displayed a condition of stomatitis connected with necrosed stumps that was quite remarkable, overlooked as it had been all that time.

I saw recently another patient, also a lady (it is among ladies that the best examples of conservative and artistic dentistry are to be found), who for several years suffered periodically from severe nervous attacks, complicated by gastritis and curious rashes, the whole symptom-complex being regarded as gouty manifestations. I was asked to see her in one of her rashes: and found it a typical blotchy septic rash. Only a month or two before, her dentist on the strength of the first of the papers below referred to, had insisted on removing a toothplate which had partially grown into her jaw, and which had been there for several years. In relation to gastritis and gastric catarrh, such cases could be multiplied indefinitely.

The matter is important, however, not only in relation to gastritis, but in relation to the whole group of infections caused by pus organisms—*local*, for example, as tonsillitis, glandular swellings, middle ear suppurations, maxillary abscesses; *general*, for example, ulcerative endocarditis, empyemata, meningitis, nephritis, osteomyelitis, and other septic conditions. Whence do they gain entrance into the system? They are not ubiquitous, as was formerly thought,

Nor are they necessarily disease-producing from their mere presence; for example, on skin, in the mouth, or in the intestinal canal.

But, given the suitable conditions, namely, diminished resistance on the part of the tissues, or increase of dose on the side of the organisms, they are disease-producing. These are precisely the conditions brought about in long-continued necrotic and septic conditions of the mouth.

It is probably impossible to keep pus organisms out of the mouth, just as it is impossible to prevent occasional access of tubercle, typhoid, and other infective organisms. But that fact does not deter us from taking the most exhaustive precautions to keep typhoid contamination out of our water and getting into our houses; or from initiating—as is at last happily the case—measures for preventing access of tubercle bacilli, whether through air or through milk.

I confess I think it urgent, in the interests of the many sufferers from gastritis as well as in the interests of those suffering from pyogenic conditions generally, that some similar steps be taken with regard to the mouth—the chief channel of access, in my judgment, of all pyogenic infections.

We may not be able to prevent their access into the mouth any more than we can prevent them adhering to the skin. But, knowing as we now do their potential qualities, there is not the slightest reason why the mouth, so easily accessible as it is to local measures, should be made into a perfect hotbed for their development and propagation.

In relation to the whole group of internal conditions caused by pyogenic organisms, I consider there is a wide field of preventive medicine open by the exercise of oral antisepsis, a field that can be worked in, with the most surprisingly satisfactory results, alike by the physician, surgeon, dental surgeon, and patient. And by oral antisepsis I mean no mere rinsing of the mouth with mildly astringent and antiseptic mouth washes, but (1) the direct application to the diseased tooth or inflamed gum of carbolic acid (1 in 20), repeated daily for just so long a period as the patient will persist in keeping his necrosed tooth or fang, still better (2) the removal of all diseased useless stumps (3) the most scrupulous daily sterilising by boiling of every tooth plate worn, and (4) on the part of dentists the avoidance of too much conservative dentistry and the use of contrivances like "bridges" which cannot possibly be kept aseptic.

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[1] Dental Diseases in Relation to General Diseases, especially to Infective Gastritis, *Odont. Soc. Trans.*, January, 1899. [2] Oral and Gastric Infection in Anæmia, *Lancet*, February 3rd, 1900.

A CASE OF ANEURYSM OF THE ABDOMINAL AORTA POINTING POSTERIORLY IN WHICH THE INITIAL SYMPTOMS WERE THOSE OF CHRONIC COLITIS.

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THE following case, which I will first give the history of before passing any comments upon it, was a peculiarly interesting and puzzling one. The patient was under the care of Dr. Shiels, of Glasgow, to whom he had been sent for special treatment, more particularly of a dietary kind, it being supposed that he was suffering from some irritative or inflammatory disorder of the alimentary canal. Dr. Shiels, however, finding that no permanent improvement seemed to follow purely medical treatment and careful attention to diet, asked me to see him with a view to some possible surgical treatment. Our attention was drawn one morning to the appearance of a marked pulsating swelling in the back close to the spine. It was apparently quite sudden in its appearance, and a very cursory examination on our part left no doubt as to its true nature. Sudden death a few hours later, with immediate collapse of the tumour, equally left no doubt in our minds as to what had taken place.

History of Illness.—Mr. D., aged 35, an engineer by profession, had for the last eighteen months suffered from a troublesome bowel complaint. He was unable to ascribe the commencement of his illness to any particular cause. He believed he once suffered from dysentery when in Egypt. His trouble had consisted mostly in obstinate constipation, with the occasional passage of mucus in the motions. It was stated that on one occasion a mucous cast of the bowel had been passed. The small flakes of lymph that passed were on more than one occasion submitted to microscopical examination. They were found to consist of merely mucous shreds in which were entangled *débris* of granular material; neither blood nor pus cells were ever observed. Pain became in the later stages of his illness a very trying symptom. He stated that he suffered most pain in his bowels prior to the passage of accumulated masses of lymph. The administration of an enema always produced a sense of considerable soreness in the left lumbar region, if the amount introduced exceeded two pints. He further complained of more or less constant "nipping, burning pain" about the eleventh and twelfth ribs in the left axillary line, with tenderness when digital pressure was exercised over this area. His most severe pain, however, was in the region of the epigastrium, which at night so distressed him that morphine had to be given. He always felt pain if he attempted to move or sit up, and selected the almost complete prone position as that which afforded him most ease and comfort.

About twelve days after he had been under my observation, my attention was directed by Dr. Shiels to a pulsating swelling which had more or less suddenly appeared in the left lowest dorsal region close to the spine. It was about $\frac{1}{4}$ inches in length and $\frac{1}{2}$ inches in breadth, occupying a position in the region of the vertebral ends of the ninth, tenth, and eleventh ribs. The pulsation was as marked as if the aorta itself were exposed. The patient complained of a throbbing sensation in the swelling, and also of much discomfort from flatulence. The "wind," he said, collected on the left side and bulged his abdomen there. This was quite evident on inspection; palpation elicited an unduly flaccid condition of the abdominal parietes, and percussion a highly tympanitic state of the bowel beneath. He now complained of pains radiating from the region of the swelling round to the front of the abdomen, and of a loss of tactile sensation. He remained in much the same condition for about twenty-four hours, when, on the nurse returning to his room after an absence for about ten minutes, she found him dead, in the same position as she left him.

The condition of the bowel supposed originally to be present was one of chronic ulceration or membranous colitis, and the surgical treatment under consideration the performance of right inguinal colostomy in order to give temporary rest to the bowel. I had, however, advised against operation on the ground that for some inexplicable reason in the contents of the bowel as removed by the daily use of water enemata no signs of bowel casts, or, indeed, of any inflammatory exudates were present.

A flood of light seemed at once to fall upon the whole history of the case when the aneurysmal swelling appeared in the back. To read the symptoms in the light of this new revelation was to make perfectly clear what had been previously most puzzling. His varied pains and complaints so mystifying to us, and sufficiently delusive to cause some of his previous medical attendants to believe he was unduly complaining, became now all perfectly explicable, as the probable results of the pressure of the aneurysm upon the various nerves, sympathetic and spinal. His obscure bowel condition, also, now seemed to receive its explanation. Pressure had been exercised by the aneurysm upon the mesenteric vessels, and so led to a chronically congested condition of the mucous membrane. When at a later stage, that is to say about the time he was under my observation, this internal pressure was beginning to be lessened by the gradual extension of the aneurysm backwards, some of the more prominent symptoms, such as the passage of flakes of lymph and mucous casts, disappeared.

The case doubtless has an interest from the point of view of an aneurysm of the abdominal aorta presenting posteriorly. Sir William Gairdner, a recognised authority on the subject of aneurysm, in reply to a question of mine on the subject, was kind enough to inform me that he could only recall one case, and that very many years ago, at all presenting features similar to the above. Let alone, therefore, the very puzzling and almost misleading character of the early symptoms, the case seems well worthy of record. It is to be regretted that there was no *post-mortem* examination, but neither Dr. Shiels nor I could persuade the friends into giving their consent. An investigation might have settled more definitely the relation of the aneurysm to the bowel and mesenteric vessels, and also the actual seat and nature of it. There was but one explanation of the sudden death, and that the internal rupture of the aneurysm. Whether this occurred into the bowel or into the general peritoneal cavity it is not possible to say.

DR. PIETRO GROCCO, Professor of Clinical Medicine in the Reale Istituto di Studi Superiori of Florence, has given 5,000 lire (£200) towards the establishment of a provincial sanatorium for poor consumptive patients belonging to Florence.

AN ACCOUNT OF SOME RESEARCHES INTO THE NATURE AND ACTION OF SNAKE VENOM.*

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III.

ON ACQUIRED IMMUNITY AGAINST SNAKE VENOM POSSESSED BY INDIAN SNAKE CHARMERS, BY MONGOOSES, AND BY CERTAIN OTHER ANIMALS.

IN February, 1899, I was deputed by the Government of India to meet Professor Fraser in Bombay, and to confer with him on the best lines for the prosecution of snake venom research in India. The work which forms the subject of the present paper was then suggested to me by the Edinburgh pioneer of venom research, and I desire to preface my article with an acknowledgment of the timely help I received from him. The first step was to ascertain the extent of the reputed immunity enjoyed by the Indian mongoose and by certain other animals. The appended tables will show this portion of the work at length. Thanks to the courteous co-operation of the collector of Coimbatore, a number of mongooses were obtained, and several series of experiments were undertaken with a view to discover how much cobra venom per kilo. of body weight could be injected without causing death. The venom was in nearly every case dissolved at such a strength that 1 c.cm. of solution contained 1 mg. of the poison. The injections were made into the animals' thighs with all antiseptic precautions. The results obtained are set forth in Tables A and B. In the former are massed together several series of experiments, conducted in the hills, and, therefore, in a climate which was colder than that to which the animals are accustomed, they were, with but few exceptions, in good health when operated on.



Snake charmer at work.

Table B sets forth the results of a set of experiments conducted in the plains, but the reliability of the results is marred by two factors, namely: (1) That the animals had been some time in captivity before I used them; and (2) that on my return to the hills I was obliged to take them up with me from a hot dry climate into cold driving rain; such a change is most trying to any constitution, and these little animals feel it acutely. I do not hesitate to attribute the deaths of the third and fourth animals in Table B to climatic influences, for I have little doubt that they would have survived had it been possible to leave them in their natural climate. I am also persuaded that the lower lethal doses which proved fatal to the animals in this table as compared with those in the previous one are to be explained by the fact that captivity had told on the health of the whole batch.

Bearing the above considerations in mind, we may now review the whole mass of experiments included in the two tables. From such a survey it would appear that a dose of 0.006 gram. of cobra venom per kilo of body weight is likely to prove fatal to a mongoose, but that, given a healthy, active animal, much larger doses than this can be borne. It is indeed remarkable that animals should have survived doses of 0.01 gram, and 0.015 gram per kilo. of body weight. If we compare these results with those obtained by using the same stock of venom on rabbits, we find that the mongoose takes from 10 to 25 times as much cobra venom per kilo. of body weight to kill him as the rodent does. M. Calmette gives a somewhat lower estimate than mine in his most interesting work *Le Venin des Serpents*. He performed only three experimenis, and found that while four times the lethal dose per kilo. of rabbit failed to make a mongoose sick, six times that dose caused two days' illness, and eight times the dose killed in twelve hours. I would particularly invite attention to the rapidity with which death ensued in this case as compared with my own results.

A very important point to remember is that the mongooses with which Professor Calmette experimented had been obtained by him from Guadeloupe, where he states that venomous snakes are unknown; they had been imported into that island 25 years before from Barbados, with a view to the destruction of the rats there.

If immunity against venom is to any extent an inherited characteristic of these foes of the snake, it seems likely that the above-mentioned fact has a very important and interesting bearing on the question of our relative estimates of the immunity the mongoose possesses, for my specimens came from Coimbatore (a district in the Madras Presidency), which is well known as a happy hunting ground for venomous snakes of several kinds, and especially of the cobra.

Now, the mongoose was introduced into Barbados from India subsequently to the year 1882,[1] in order that it might destroy the rats, which had proved a dangerous pest to the sugar-cane industry; assuming Professor Calmette's statement to be correct, the importation of the mongoose into Guadeloupe must have followed very close on its advent into the Barbados, so that for practical purposes we may assume that the Indian mongoose was imported direct into the former island. It must now be clear that the specimens of this little carnivore, with which M. Calmette experimented, had not been away from contact with poisonous snakes much more than 25 years. We are thus led to the interesting conclusion that the introduction of the mongoose into a country in which venomous snakes are unknown has resulted, within so short a period as a quarter of a century, in a very appreciable reduction of the animal's resistance to snake venom. This fact points strongly to the further conclusion that the immunity is an acquired one, and inasmuch as the acquired characteristic has been so rapidly and easily diminished, it would appear likely that it must be maintained from generation to generation. Be it remembered that a quarter of a century probably means about 50 generations.

An important factor in discussing the protection enjoyed by the mongoose is the nature of its diet, for it is almost exclusively carnivorous in the wild state, though in captivity it will eat fruit and vegetables readily. Professor Fraser has shown reason to believe that the habitual ingestion of animal food increases the resistance of even a herbivorous animal to

* This paper is in continuation of papers published in the BRITISH MEDICAL JOURNAL of February 10th, and May 12th, 1900.

snake venom; it therefore seems advisable to compare the mongoose with a carnivorous animal, and a ready type is found in the dog. According to M. Calmette, it takes 0·006 gram of cobra venom to kill a dog weighing 7 kilos. in twelve hours, while the same quantity of venom will kill 12 kilos. of rabbit in three hours; roughly, we may say that, according to this estimate, the resistance of the dog is double that of the rabbit. A reference to Table C will show my results with Indian pariah dogs; these, compared with my previously published results with rabbits, confirm the relative resistances of the two animals as laid down by the French savant. It will be noticed that, while our relative results agree, the absolute amount of venom used by me was higher than that used by Professor Calmette; this is doubtless due to my poison being from a weaker stock than his, it being well known that the strength of cobra venom varies according to the time of year in which it is collected, and according to other influences which it would be beside the point to discuss here.

Taking the rabbit as a unit, we are now in a position to draw up a table of the relative resistances to cobra venom exhibited by the dog and mongoose. We may state these roughly thus: Rabbit 1, dog about 2, mongoose from 10 to 25. It is not contended that these figures are mathematically correct, but they are believed to be as close approximations to the truth as it is possible to attain, when dealing with calculations into which that very variable factor "the personal equation" enters. One thing at least is quite clear, that we must look beyond the mongoose's food if we wish to find an adequate explanation of the source of its partial immunity to snake poison.

In order to obtain light on the subject, I have closely watched fights between wild mongooses and untamed cobras, and have also been at pains to collect reliable information on the subject from others who have witnessed similar combats. The first thing that strikes a spectator in these contests is the absolute indifference the mongoose exhibits in the presence of a snake, even after it has had one or two scrimmages with the reptile; the cobra, on the contrary, is "all there;" it raises its hood, follows every movement of the mammal, and hisses almost without interruption. As a rule, both animals evince a strong desire to avoid a fight, but there is the greatest difference between the casual conduct of the mongoose and the lively terror exhibited by the cobra. It would, however, be a great mistake to suppose that the former animal for a moment forgets the presence of a dangerous foe, for it will dart out of the way of a sudden stroke with a combined agility and *aplomb* that are astonishing. When the little carnivore finds that it cannot get away, it seems suddenly to catch sight of the reptile; it then approaches slowly and stealthily, watching every movement its adversary makes, and never allowing its eyes to leave the snake's head; now begins the "open phase" of the fight, in which the cobra's lunges are either evaded by swift backward springs, or "countered" by a sudden dash forward which results in the mongoose seizing the snake's head in its open jaws. The rapidity of this latter manœuvre is almost incredible, unless one has witnessed it.

A very noticeable point is that the mongoose always makes for the snake's head; I have never seen it attempt any other grip, and very often one finds the jaws of the two animals interlocked. It then looks as if the mongoose must certainly be severely bitten; but that this is not the case is often shown by the result of the fight. There is something in the grip which prevents the cobra from injecting any great amount of venom. In one case I found that the snake's fangs had been snapped off short by the carnivore's teeth, and in several instances I satisfied myself that these bladed teeth had transfixed the venom sacs, doubtless giving free exit to their contents, and rendering them useless, thus putting the poison apparatus *hors de combat*. There would seem to be but little doubt that under such circumstances venom must have found its way into the mongoose's mouth and so down its throat. This is an important point to which I shall revert later on. Such a grip as I have described may be only momentarily held, in which case open sparring is resumed, or the mongoose may hold on, bull-dog fashion, till the snake succumbs. It is a gruesome sight to see the two animals rolling over and over in a merciless death grip, the snake writhing with pain while it enfolds the little mammal in its coils, the mongoose maintaining its hold with a courage that only death can damp.



Snake charmer at work.

There is one point I have passed over and to which I desire to return. It is the question of the frequency with which the cobra "gets home" in the earlier stages of the fight. To a casual onlooker the snake often appears to get its blow in; but a careful watch will show that as a rule it misses stroke after stroke. Even when it does succeed in striking its little foe, the agility of the latter is such that it bounds out of the way before any appreciable amount of venom can have been injected. To my mind the only chance the snake gets of injecting a full dose of poison is in the interlocking grip, when for some reason the mongoose has not succeeded in catching its adversary's head with its accustomed knack. At the same time, I do not mean to assert that the mongoose never gets a fatal bite whilst skirmishing, though I think that such an event must be uncommon.

The mongoose possesses a weapon of defence that deserves especial mention, in its long bristly hair; when attacking a cobra every hair stands on end, so that the little animal appears to be double its real size, or more; the natural result of this is that the snake is largely misled as to the true size of target available, and many a desperate lunge is wasted on the harmless "outer" of the mammal's thick coat, instead of scoring a "bull's-eye" on the lithe spare body. Many observers have laid stress on the idea that the mongoose's coat is too thick for the cobra to be able to get through it, and they have also called attention to the toughness of its skin. I attach no importance to either of these factors, which at the very most are only subsidiary items; no one who has watched the force of a cobra's lunge can seriously think them anything more; as for the skin of the mongoose it is no tougher than that of a dog, indeed it is not so tough, and one speaks after having used a hypodermic needle many times on both species of animals. The real functions of the outstanding hair are in my opinion (1) to mislead the snake as to the available size of target; and (2) to terrify its foe by means very comparable to those it itself uses in erecting its hood.

After watching a number of such fights as have been described above I feel justified in drawing the following conclusions: (*a*) That during the open phase of a fight a mongoose is likely occasionally to receive incomplete bites, in which only very small quantities of venom are injected into its body; (*b*) that when the mammal seizes the snake's head in its mouth and drives its bladed teeth through the poison sacs the escaping poison must often pass down its throat and be swallowed; (*c*) that in both of these ways it is likely that a gradual immunising process takes place, a process which is kept up through successive generations so long as the animals are in constant contact with poisonous snakes, but whose effect dies away should the mongoose be transported to a country in which the *Thanatophidia* are distinguished by their absence. The question that will naturally be asked is, "On what evidence do you base your view that the consumption of venom by the mouth leads to the establishment of immunity or of partial immunity?" My reply to this is that though I am not prepared at the present moment to bring forward positive proof in favour of the view that some degree of immunity can be established by feeding animals on venom, a view which is associated with no less a name than Professor Fraser's, yet I hope before long to publish some evidence tending in that direction. It is a matter which requires both time and patience, as the immunity cannot be produced in a short time. It would be previous to say more at present.

That the mongoose owes its many narrow escapes to its agility as much as to its partial immunity may be gathered from the fact that many Anglo-Indians possess dogs which make a point of killing every snake they see. A case in point may be quoted: A gentleman recently retired from the Madras Railway gave me the following description of two dogs he owned for many years: "These dogs never lost a chance of attacking a snake either singly or the pair together; if they spied a snake on the verandah chicks they would whine and dance about till it was shaken down to them; they would never attack a cobra or any other snake as long as it stood up to face them, but the moment the serpent lowered its head and endeavoured to escape they would rush in, seize it by the back, and shake it so violently that the reptile had not a chance of retaliating, and was dead before one could have believed it possible; if the first grip was not a good one they would fling the snake away and again follow it up when it tried once more to escape; between them they killed very many dozens of snakes of all kinds, including many cobras; one of them at last ventured once too often, and met his death from the bite of a cobra he was worrying." Such instances are not uncommon, and they go far to prove that a quick resolute animal, unendowed with any peculiar resistance to snake venom, can hold its own with even as deadly a foe as the cobra, though the risks must always be very great.

Nor is the dog the only domestic animal which goes out of its way to attack snakes. Mr. Gray of Coonoor, an ardent naturalist and a most trustworthy and careful observer, informs me that he knew of a cat which used often to bring in specimens of the poisonous hill vipers. Another gentleman, on whose word I can rely, told me that he had a cat which used to tackle cobras; on one occasion, hearing his child shrieking with laughter, he went into a bathroom, and there discovered the cat engaging a cobra; she was sitting in front of the reptile in a boxing attitude; every time the snake lunged the cat struck the blow to one side with her paw; when the cobra made an effort to escape, and lowered its head for the purpose, the cat seized the opportunity to rush in with a bite that brought the unfortunate reptile to the defensive again, and so on till the snake was wearied out. Other trustworthy persons have confirmed the accuracy of the above statements from their own experience.

Guineafowl and peafowl have the reputation of keeping a compound free of snakes, though with what amount of truth I am unable to say. A native who has given me much assistance in my work on snake venom assures me that he has seen a peacock kill a large cobra, and that on opening peafowl he has often found snakes in the alimentary canal. He adds that he has also seen guineafowl catch and eat young cobras or other young snakes. He is a reliable man, and he asserts that such facts are well known to natives, being matters of common experience. I cannot confirm his statements by any personal or other European evidence, but I am inclined to believe him. In this connection the following contribution from a correspondent stationed at Munzerabad is interesting: "February 7th, 1900.—Three weeks ago I saw a common grey kite attack and slaughter a Russel viper, which it afterwards carried away. The bird hovered and fluttered around, half in the air, half on the ground, striking the snake with beak and wing. I do not think the bird was touched."

TABLE A.—*Experiments Undertaken to Ascertain the Lethal Dose of Cobra Venom for the Mongoose (Herpestes Mungo).*

Serial No.	Weight in Kilos.	Dose per Kilo.	Remarks.
*VII	1.274	0.0025 gram	Never seemed unwell beyond what the cold in the hills would account for. Recovered.
*VIII	0.821	0.0050 ,,	Did not seem to feel the injection, and apparently recovered; it died four days later, 6/10/99, at 2 P.M. It was very doubtful whether the venom caused death.
*IX	0.743	0.0075 ,,	Died in 5 hours 45 minutes. This animal had been sent up from the plains in the same cage as a female and another large male, and it was noticed before injection that he had been badly bitten. The test was scarcely a fair one.
*X	0.5667	0.0100 ,,	A lively and vicious young female; never seemed any the worse for the injection.
LXIX	1.1477	0.0100 ,,	Seemed to feel it but little for the first 3 days, but died on the fifth day. Death possibly due to chill.
LXX	1.1902	0.0125 ,,	Died in 21 hours 55 minutes.
LXV	0.7467	0.0150 ,,	Recovered with but little disturbance.
LXXI	1.105	0.0130 ,,	Seemed to feel it but little the day of injection, sickened on the next, and died 31½ hours after injection.
LXXII	1.24687	0.0175 ,,	Seemed all right for some hours after the injection, but was dead in 21½ hours.
XXIV	0.65173	0.0200 ,,	Died in about 12 to 15 hours; found dead and cold in the early morning.
LXXIII	0.73677	0.0200 ,,	Did not sicken the same evening, but was dead in 23 hours.
LXXIV	0.5667	0.0225 ,,	Did not sicken that evening, but was dead in 22 hours 55 minutes.

N.B.—In the experiments marked with an asterisk (*) the poison was dissolved at such a strength that there was 0.0001 gram of poison in each c.cm. of solution. In all the other experiments the strength was such that in each c.cm. of solution there was 0.001 gram of poison

TABLE B.—*A Further Series of Experiments Designed to Ascertain the Lethal Dose of Cobra Poison for the Mongoose, undertaken on November 11th, 1899.*

Weight in Kilos.	Dose per Kilo.	Remarks.
1.389	0.002 gram	Recovered.
1.8143	0.003 ,,	Recovered.
1.4174	0.004 ,,	Died on the sixth day, and 2 days after removal from the dry heat of the plains to the severe cold damp of the hills; death is attributable to this change of climate, which mongooses feel severely.
1.417	0.005 ,,	Died on the eighth day; here again there was little doubt that death was due to the change of climate.
[illegible]	[illegible] ,,	Died 67 hours after the injection, but had seemed quite well for the first 24 hours.
0.907	0.007 ,,	Sickened in a few hours and died in 29 hours.
0.822	0.008 ,,	Seemed well the morning after injection, but died in a little under 44 hours.
0.652	0.009 ,,	Seemed well the morning after injection, but died in 60 hours.
0.8788	0.010 ,,	Died in 40 hours.
0.8505	0.011 ,,	Sickened soon and was dead in 22 hours.
0.6237	0.012 ,,	Sickened speedily and was dead in 19½ hours.

There is a common belief amongst natives that Indian pigs eat snakes and that they are to some extent protected from cobra bites. Lieutenant-Colonel O'Hara informs me that he has watched a sounder of wild pig trample a cobra to death with the greatest deliberation. Professor Calmette, too, evidently believed that pigs possess some measure of protection, though he was unable to work the matter out. A reference to Table D will show that the idea is not altogether devoid of foundation,

TABLE C.—*Series of Experiments Designed to Ascertain the Lethal Dose of Cobra Venom for Pariah Dogs.*

Weight of Dog in Kilos.	Dose of Venom per Kilo.	Result.
9.5	0.00075 gr'm	Very ill, for 2 days, then slowly recovered.
14.5	0.00100 ,,	Died in 27 hours.
9.5	0.00125 ,,	Died in 7¼ hours.
11.78	0.00150 ,,	Died in 4¾ hours.

TABLE D.—*Series of Experiments Designed to Ascertain the Lethal Dose of Cobra Venom for Indian Pigs.*

Weight in Kilos.	Dose of Venom per Kilo.	Result.
15.4	0.00075 gr'm	Seemed a little ill for 2 days and then recovered.
20.4	0.00100 ,,	Died in four days.
25.84	0.00125 ,,	Died in 40 hours.
19.72	0.00150 ,,	Died in between 12 and 17 hours.

The pigs used were the common village pigs, well known as the scavengers of Indian hamlets.

TABLE E.—*An Extract from a Series of Experiments showing the Lethal Dose of Cobra Venom for Fowls.*

Weight of Fowl in Kilos.	Dose of Venom per Kilo.	Result.
0.836	0.0010 gram	Sick for one day; recovered.
0.878	0.0015 ,,	Died in 50½ hours.
0.836	0.0020 ,,	Died in under 15 hours.

TABLE F.—*Two Experiments designed to Ascertain the Lethal Dose of Cobra Venom for Guinea-fowls.*

Weight of Fowl in Kilos.	Dose of Venom per Kilo.	Result.
1.353	0.0015 gram	The bird hardly seemed to suffer at all, and was certainly quite well a few days later, except for a threatening of sloughing at the seat of injection.
1.289	0.0020 ,,	Was very sick on the third day, with paralysis of the legs and wings; died 80 hours after the injection; wound sloughing at time of death.

NOTE.—Though the series is very incomplete, it seems clear that these birds do not present any well-marked resistance to the venom of the cobra. A common fowl to which I gave 0.003 gram of cobra venom died in six hours and a half. Captain Gabbett has kindly undertaken to work this matter out more in detail later on.

TABLE G.—*Two Experiments with Peafowl, designed to Ascertain whether these Birds are to any extent Protected against the Venom of the Cobra.*

Weight of Fowl in Kilos.	Dose of Venom per Kilo.	Result.
2.0757	0.0025 gram	Died in 5 hours.
2.1400	0.0035 ,,	Died in 2 hours.

These experiments were kindly performed for me by Captain Gabbett, I.M.S., of Salem, with a carefully-weighed specimen of venom sent him by me. Captain Gabbett calls attention to the fact that the usual method of weighing a fowl with its feathers is unfair to the peafowl, owing to the fact that the relatively large amount of plumage it possesses increases its apparent weight, and therefore raises its dose of venom.

for although a dose of 0.001 gram per kilo of body weight proved fatal to both pigs and dogs, whilst 0.00075 gram per kilo failed to kill either animal, yet the duration of life was distinctly greater in the pig. The same evidence of increased resistance may be traced where higher doses of venom were given. I incline therefore to the view that the pig possesses a slightly greater degree of resistance to venom than the dog does, even when the dose is graded according to kilos of body weight, and to this one must add that the former animal is much larger and possesses a very much tougher skin; indeed, it is a difficult matter to force a hypodermic needle through a pig's skin, even after selecting its softest spot.

Before closing this subject I would invite attention to Tables E and F. From the former we learn that the guinea-fowl possesses a slightly greater degree of protection than the common fowl. Calmette has explained the resistance of the latter to venom as being due to its reserve air-sacs.

Comments on Table F will be found in a footnote to it.

DOES THE INDIAN SNAKE CHARMER POSSESS ANY DEGREE OF IMMUNITY FROM THE EFFECTS OF THE BITES OF POISONOUS SNAKES?

In order to answer the above question, I have been at considerable pains to collect information from a variety of different sources. As the outcome of these inquiries, I have been led to the following conclusions:

1. The snakemen of Southern India trust as a rule to valueless vegetable drugs or mixtures of drugs. With but few exceptions, they know absolutely nothing of prophylactic inoculations, or of any other measures beneath which a substratum of scientific reasoning can be traced.

2. A few exceptional charmers, here and there, swallow venom or rub it into their limbs, but without any definite ideas as to why they do so. All that one can elicit by inquiry is the reply "It is a custom," and to the Eastern mind this explanation is all-satisfying. It is possible, but I think very unlikely, that these men conceal their knowledge. On this point the evidence of my assistant, Dr. Pinto, is most valuable, as he knows the caste well, and speaks their language fluently. He expresses himself as convinced that the men he deals with for snakes are really ignorant of any method of protection against snakebite. Captain Giffard, who has devoted a good deal of his consideration to such subjects, gives me the following interesting information in a recent letter: "The head snakeman" of Chingleput, "who died of a cobra bite as he was bringing a snake to me, was well known to eat cobra poison whenever he killed a cobra; he was employed killing snakes, was supposed to be invulnerable, and had a reputation for snakebite curing, by means of medicines administered to his patients by the mouth (some sort of vegetable medicines). The other men hereabout do not eat poison, but rub it on their arms."

3. A surprisingly large number of snakemen appear to lose their lives in the pursuit of their vocation. Within the last year Captain Giffard and Dr. Pinto have each reported a death among the men they employ to assist them in collecting venom with a view to help me in my experiment. It would be easy to multiply instances, but space does not permit this being done; suffice it to say that a number of the fatal cases among these men occur while the victim is under the influence of liquor, and that no room can be left for doubt that the South Indian snake charmer is not highly immunised against venom. On the other hand, it is but fair to quote an extract from a letter received by the writer from Major Lloyd, of the 19th Madras Infantry, a gentleman who spends much of his spare time in studying the ways of venomous snakes. He writes: "Colonel Watson and I saw a snake charmer bitten by a cobra in Behrampore. The cobra was a fresh one he had recently caught, and its poison bag was intact; he was bitten on the forefinger knuckle, where it joins the hand, and I saw blood on the wound.....The man laughed, and at once produced several pills, of which he swallowed two, rubbed in another over the bite, and went on with his performance." Major Lloyd describes how he kept a close watch on the cobra, and as soon as the performance was over made the charmer close the snake's jaws on a fowl's leg, with fatal results to the bird in ten minutes. It seems possible that this man had succeeded in attaining some measure of immunity. I have met with snakemen who showed me scars

which they asserted were the results of bites by cobras; there was no proof forthcoming as to the correctness of their statements.

4. Many of the men who deal in poisonous snakes undoubtedly take early means to secure themselves against a bite by breaking off the poison fangs. There are two well recognised means of doing this: one is to seize the snake close behind the head, and force open the jaws with a bit of stick, which is then passed behind the fangs and drawn forcibly forwards; the other is to throw a piece of rag tied on to a string to the cobra, and when it bites to twitch the rag with the impaled teeth out of the animal's mouth with a jerk. Lieutenant-Colonel O'Hara, I.M.S., tells me of a third protective method—namely, the production of an artificial internal fistula by tapping the poison sac through the mouth and far back with a sharp instrument. I have no experience of this practice. Professor Calmette, in his most interesting work *Le Venin des Serpents*, commits himself to a statement which lies outside my experience, when he says on p. 48, "Certains jongleurs exhibent des serpents auxquels ils ont pris soin d'arracher les croquets ou *d'extirper les glandes*....." The italics are my own, and refer to the statement to which I take exception; speaking from a large experience of Indian snakemen and their ways, I have never met with a case in which there was any evidence that the glands had been extirpated, nor do I believe that these ignorant men would be capable of performing such an operation. On the other hand, one can unhesitatingly endorse Professor Calmette's assertion that many of the snakemen carry on their performances with cobras whose venom apparatus is intact. This leads us naturally to our next conclusion, which we cannot do better than put in Professor Calmette's own words, which deserve a hearty endorsement.

5. "C'est grace à une connaissance parfaite des habitudes et des mouvements du reptile qu'ils (the snakemen) évitent presque toujours d'être mordus." This was the conclusion I had arrived at before I had the pleasure of seeing Dr. Calmette's paper, but I cannot go so far as to say with the French observer: "Il ne paraît donc pas qu'ils sachent se donner l'immunité contre le venin par un procédé quelconque." The comparative immunity amongst snake charmers is undoubtedly due to the fact that these men understand the cobra well, and are, therefore, seldom bitten. You will never see a snakeman make a sudden movement when dealing with a cobra; every action is slow and deliberate, and often pervaded with a sense of rhythm; there is a consciousness of power over the reptile that appears to mesmerise it. I have seen a charmer sit on the ground in the characteristic position of the East, within easy striking distance of a cobra, and, without touching the animal, mesmerise it till it followed mechanically every movement of his swaying knee the while that the man's attention was drawn elsewhere. The photographs on p. 217 and p. 218, taken by the writer and unfortunately damaged by climate, illustrate, better than any words can, to one who has not watched a charmer at work the extraordinary power these men exercise. It will be observed that in both cases the man's eyes have left the cobras and are fixed in rapt attention on the camera.

A gentleman who handles poisonous snakes freely, and who does not hesitate to thrust his naked hand into a box containing a number of cobras, gives this advice to those who wish to follow his hazardous example: "Never be afraid of the snakes, never make a sudden move, and you are quite safe." It is, however, quite a different matter when one comes to deal with Russel vipers; they are sluggish, uncertain-tempered snakes, which do not rise to strike but spring out from their coil with a suddenness and rapidity which are appalling. I had a very narrow escape whilst experimenting some years ago with a Russel viper, with a view to ascertain its maximum height of strike; the viper, which was lying on the ground, suddenly shot out, like the crack of a whip, aiming its blow not at the guinea-pig tied to a stick which I was offering it as a bait, but at my leg. Now remembering the character of this viper, it is noteworthy that one never sees the ordinary snake charmer with one in his possession; indeed one has the greatest difficulty in persuading snakemen to catch and bring specimens of the daboia; they know well that their blandishments are thrown away on this snake, charm they never so wisely.

We may sum up our conclusions in a very few words:

1. The snakemen of South India are certainly ignorant of any method of producing in themselves a highly-developed condition of immunity.

2. Some few of them appear to practise the swallowing of venom, or the inunction of venom into their limbs, but it is doubtful if they do so with any well-defined object. It is possible that they thus obtain some degree of immunisation.

3. They confine themselves almost exclusively to the cobra, and escape harm by their intimate knowledge of the methods of handling this snake.

It only remains for me to express my sense of indebtedness to the many who have helped me in this work. Though they are too numerous to mention individually, there are three names I must not omit, namely, those of Captain Giffard and Captain Gabbett, of the I.M.S., and of Mr. Charles Gray of Coonoor.

REFERENCE.

1 *Vide* Lydekker's *Royal Natural History.*

A CASE BEARING UPON THE PATHOLOGY OF ACROMEGALY.

BY PERCY G. LODGE, L.S.A.,
Surgeon to the Bradford Woman's Home and Shelter.

E. M., a man, aged 22 years, complained about January, 1898, of stiffness of the right knee when going out to work. At first this wore off during the day, but shortly became constant. The case was placed in my hands in May. At this time the knee was much swollen, the cutaneous veins were enlarged on the inner side and front, the limb was held in the position of slight flexion, and could only be moved with considerable pain. The great degree of enlargement was due to the tibia in the popliteal space. About this time he was seen by Mr. Teale, of Leeds. From the earliest appearance of symptoms to this time about twelve months had elapsed.

At the beginning of June, 1898, I explored by means of a trephining operation the medullary tissue of the head of the tibia. This proceeding established the presence of considerable subperiosteal thickening. No pus or signs of abscess could be found. Mr. Teale, after mature consideration of all the points of the case, advised amputation. His father thought that he would like further advice before so severe a measure was carried out. Mr. Mayo Robson saw him a day or two after, and confirmed Mr. Teale's opinion.

On July 21st we performed amputation by Mr. Teale's method at the Eldon Mount Nursing Home. We began by making a preliminary incision into one of the nodular masses around the hamstrings. Mr. Teale at once decided that the mischief was malignant: indeed, the tissues were semi-fluid from degeneration, softening, and hæmorrhage. It was thought that the form was probably round-celled sarcoma arising from the periosteum an opinion, which was afterwards confirmed by means of the microscope, and by a careful examination of the removed limb. The course of the case after operation was quite uneventful, the flaps healed by first intention, and caused me no serious anxiety.

He returned home three weeks later, and from that date began rapidly to improve in health and strength. Two months after he could get about the farm by the aid of a crutch, and seemed to all appearance quite recovered; indeed, he obtained an artificial limb and was beginning to use it. Although the amputation was through the lower third of the femur, a good square flap was formed from the tissues in front of the knee-joint, the excellent result of the Teale's amputation quite justified the procedure. About nine months after his return home his hands began to enlarge, and there was a similar enlargement in the other knee to that from which he had first suffered. He was under the care of his local doctor at this time. I saw him about the middle of June, 1899; his hands were then enormous, symmetrical, and possessed very little mobility. The fingers were sausage-like; the nails were unaltered, but the skin presented a moist bluish appearance. His mind also was clouded towards the end. His weight, too, had much diminished, and from this time he became steadily worse, and died on August 28th, 1899.

His mother died, aged 52 years, from some form of malignant disease, which was said to have "run into consumption." One sister died of consumption at the age of 21, the other has suffered for twenty years from what is most likely disseminated sclerosis. The father is living, and is quite robust.

No *post-mortem* examination was obtainable unfortunately, neither were any special observations made respecting cranial or jaw enlargement; the thyroid body was unaltered. I have no observations of anything abnormal connected with the thyroid body, of the presence of homonymous hemianopia, nor of optic neuritis. The important feature of this case seems to be its bearing on the causation of the acute malignant form of acromegaly, the duration of which—three to four years—is nevertheless longer than in this case. It may fairly be assumed that there were secondary deposits involving the pituitary body which gave rise to enlargement of the hands. In the case of Caton and Paul, Hansemann, Mosse and Daunic, Pincles, Uhthoff, and Wolf the clinical aspects were somewhat similar, and in all sarcoma involved the hypophysis.

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Sternberg, New Sydenham Society, 1899. Ueber Akromegalie *Berl. klin. Woch.*, 1897, s 417. *Bull de la Soc. Anatom. de Paris*, 1895, p. 633. *Wien. Med. Club*, June 12th, 1895, etc.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

CASE OF INVERSIO UTERI.

ON June 26th I was summoned by a midwife to visit Mrs. L., just confined of her sixth child, as "something very unusual had come away." On arrival I found the woman pale and collapsed, with a large bleeding substance lying in a pool of blood between the legs. I first injected about a drachm of ether hypodermically, and made her swallow two tablespoonfuls of brandy in cold water. On examining the "substance" I found the uterus with the placenta adherent all over its inverted surface. Knowing that the peeling off of the after-birth has been strongly condemned by some high authorities, I tried first to reduce the organ *en masse*, but found it impossible so to do. I then separated the secundines completely (hæmorrhage ceasing immediately), grasped the cervical end of the womb. Kneading the organ gradually and firmly up until I was satisfied that it was well above the brim, I then screwed up my fingers, and pressed persistently on the inverted fundus, when in about three minutes I was rewarded by its reduction with an unmistakable flap.

I bound the legs firmly together, applied a binder and pad, and gave a large dose of ergot. The woman's recovery has been in every way satisfactory; the temperature never rose above 101°, and that only on the eighth day. On July 13th she was quite convalescent. I have attended some 2,000 cases of midwifery, but never experienced so untoward an accident before. I am satisfied that no blame whatever attached to the midwife, who is a most capable woman.

Coventry. D. M. MCVEAGH, M.K.Q C.P., etc.

DARK SCLEROTICS AND FRAGILITAS OSSIUM.

At the last annual meeting of the Dermatological Society of Great Britain and Ireland I showed a young woman suffering from eczema who had remarkably dark sclerotics. When she first consulted me on account of her eczema, a fortnight before the meeting of the Society took place, my attention was arrested by the extraordinary transparency of the whites of her eyes, which allowed one to see the dark pigmentation of the choroid underneath. I asked her if she had ever had any bones broken, and she told me she had had several times, on one occasion when she had merely fallen on the bed. She also told me that her father's eyes were like hers, and that he had several times broken his bones, and that only recently he had broken an arm by putting his coat on.

My reason for putting the questions to the girl was that when in general practice twenty years ago I met with a little boy who during the two years that I was his medical attendant suffered from no fewer than nine independent fractures. He fractured his arms four times and thighs and legs five times, in addition to a slight green-stick fracture of the tibia which his mother treated herself by binding the limb at the seat of the fracture with a necktie. This child had the darkest sclerotics which I ever remember to have seen. From inquiries that I have made from several well-known surgeons this association of dark sclerotics and fragility of bones has not been recognised. Treves, in his well-known work on *Surgery* (1895) says that we had better admit that we know nothing about the cause of this condition in bones. This being the present state of our knowledge I think my observation is worth publishing. I would suggest that the transparency of the sclerotics indicates a want of quantity or quality of the fibrous tissue forming the framework of the various organs of the body, and probably explains the want of spring or toughness in the bones of these peculiar individuals.

Wimpole Street, W. ALFRED EDDOWES, M.D.

HYSTERIA IN A MALE.

F. H., a chairmaker, a stout, strong-looking young man, aged 26, usually in good health, had, however, an ingrowing toenail on the left great toe, but, as a rule, suffered little inconvenience from it. On July 14th he had walked more than usual, and complained of shooting pains from the toe, which he said, affected his heart, so that he begged an acquaintance to pluck it (the heart) out, as he could not stand the pain of it any longer. Soon afterwards he was seen to slide from the chair on which he was sitting to the ground, and then began to throw himself about in violent paroxysms, striking the back of his head against the ground, and snapping with his teeth at the friends who were trying to hold him down. The spasms, which at first were extremely violent, appeared to come from the affected toe, and he soon became unconscious, but not to the same extent as an epileptic, for he occasionally sat up, stared at his friends, and called one or two of them by name; his face was red, not pallid; nor did he void urine or fæces. He acted exactly like a woman in a fit of hysteria. One peculiar feature of the case was the violent action of the abdominal muscles, which moved up and down rapidly for at least a minute, while all the other muscles of the body were still, and there were also severe spasms of the diaphragm, during which the patient would exclaim, "My heart! my heart!" but neither palpation nor the stethoscope gave any confirmatory evidence of cardiac disturbance.

I had him carried indoors and laid on a mattress on the floor, where the paroxysms continued as before until a morphine powder I had shaken dry into his mouth overpowered him and he fell asleep, to wake up next morning very stiff and sore from his unusual muscular exertions, but without any pain in his toe which appeared to be the hysterogenic spot. During the paroxysms the patient moaned a good deal and gnashed his teeth, but his tongue was not bitten, though he caught the neck of his shirt in his mouth and tore it. On recovery he had no recollection of what had taken place.

I may add that the man is very muscular, especially in the upper part of the body, that he weighs 11 stone 7 lbs., and is 5 feet 7 inches in height. He had never been affected in the same way before, so that his attack may be put down to nervous exhaustion arising from the pain caused by the ingrowing toenail, which was unduly irritated by a long walk in very hot weather, in a pair of brown leather tightly-fitting boots.

High Wycombe, Bucks. W. T. GREENE, M.D.

FIBROMYOMA OF THE VAGINA.

G., aged 40, multipara, a Rajputin, came under my care at the Raghoraj Singh Hospital, Sutna, Central India, in the end of 1899, complaining of what she described as a prolapsed womb.

Outside the vulvar cleft was a tumour the size of a large cocoanut, which further examination proved to be a sessile tumour originating from the upper part of the anterior vaginal wall. On emerging from the vulva, which event was dated about a year before the patient consulted me, the tumour brought down with it the urethra, part of the bladder, and the anterior vaginal wall, and the os uteri could be felt behind the tumour just inside the vulvar opening. The tumour was readily enucleated, and, redundant capsule having been

removed, the cavity left was stuffed with iodoform and the edges brought together. The uterus having been replaced in its normal position, iodoform-glycerine plugs were used as a vaginal dressing, and the wound rapidly healed. The patient was discharged cured on the eighth day after operation. The case is of interest on account of its rarity.[1]

PAT. A. WEIR, M.A., M.B., C.M.,
Lieutenant-Colonel, I.M.S.
Sutna, Central India.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

CHICHESTER INFIRMARY.

CASE OF IDIOPATHIC TETANUS: DEATH IN THIRTY-SIX HOURS FROM ONSET OF SYMPTOMS.

(Under the care of A. E. BUCKELL, M.D.Lond., Honorary Physician to the Hospital.)

[Reported by DAVID EWART, M.B., Ch.B.Ed., House-Surgeon.]

THE patient, a boy, aged 12, was in his usual health on April 23rd last, and attended school, but about 1 A.M. on April 24th he complained of "face ache." At 7 A.M. he found he could not get out of bed on account of stiffness and pain in the neck and back. Solid food was offered to him, but he could not take it on account of difficulty in mastication; he, however, swallowed fluids fairly well. During the morning the symptoms became more marked, and a medical man was sent for. Dr. A. E. Buckell saw the case in the afternoon and advised immediate removal to this infirmary, where he was admitted at 6 P.M. His temperature was then 98°, his pulse 96, and his respirations 22. There was no history of any injury, nor was there any evidence of a wound old or recent. The muscles of the neck and back were quite rigid. The head was retracted and there was opisthotonos; the jaws could be separated about a quarter of an inch only. Risus sardonicus was well marked. The muscles of the extremities were not involved in the rigidity. The superficial and deep reflexes were much increased. His intellectual faculties were unimpaired, but he spoke only in monosyllables. There was profuse perspiration. Crepitations were audible all over the chest.

The rigidity of the muscles of the face, neck, and back was continuous until death. From the first paroxysms of increased rigidity of these muscles were frequent. Whilst the patient was in the infirmary seventy-five paroxysms were noted. Most of them were only momentary, especially in the earlier part of the illness. The more severe, which became increasingly frequent, lasted from one to two minutes. During them the patient groaned, the head became more retracted, the back more arched, and the "risus" more marked. Usually the fingers of one or both hands were clenched. The lower limbs were sometimes extended, whilst at others one knee was drawn up. Such contractions of the muscles of the extremities seemed to be rather an expression of pain due to the spasm than a part of the rigidity. The pulse-rate and respirations also became much more rapid during the spasms, and perspiration was profuse. It was only during the later paroxysms that the respiratory movements were absolutely checked for any appreciable length of time.

During the night the patient had occasional short periods of sleep. Even then slight contractions of the facial muscles occasionally occurred. The temperature kept steadily rising; at 2 A.M. on April 25th it was 100°, at 6 A.M. 100°, at 10 A.M. 100.6°, and shortly before death, which occurred at 1 P.M., it was 103°.

In regard to treatment the patient was put on full doses of potassium bromide and chloral hydrate. On the evening of admission 20 c.cm. of antitetanus serum were injected subcutaneously, this being all that was then available. An attempt was made to control the more severe paroxysms by chloroform, but they returned shortly after its withdrawal. None of these measures seemed to have any favourable influence whatever on the course of the disease. Rectal feeding was resorted to, as it was found impossible to administer nourishment by the mouth. A *post-mortem* examination was made when a further search was made for any wound or abrasion of surface, but none was found. In regard to the internal organs no naked-eye pathological change was found except considerable congestion of both lungs.

[1] BRITISH MEDICAL JOURNAL, February 4th, 1899, paper by Dr. Phillpps

REPORTS OF SOCIETIES.

EDINBURGH OBSTETRICAL SOCIETY.

R. MILNE MURRAY, M.D., F.R.C.P.E., F.R.S.E., President, in the Chair.

Wednesday, July 11th, 1900.

THE TREATMENT OF DYSMENORRHŒA.

DR. HAULTAIN, in opening a discussion on this subject, defined dysmenorrhœa as "pain associated with and dependent upon menstruation of such severity as to interfere materially with the sufferer's performance of her usual duties." As a rule the pain was local and pelvic. Pain of the character defined was to be considered at all times pathological, and was usually due to local abnormal conditions. The causes of dysmenorrhœa were inflammatory and obstructive, alone or combined. The inflammatory variety embraced congestive and inflammatory conditions of the uterus and its appendages. The "obstructive" variety was necessarily confined to morbid states of the uterus alone. A rational explanation of the pain in the latter was that the blood which escaped from the capillaries of the uterine mucosa was impeded in its escape from the uterus. This might be by a temporary state of spasm, or by a permanent blocking of the uterine canal through flexions, new growths, or developmental stenosis. The obstructed flow naturally caused distension of the uterus from retention of blood, which might or might not coagulate in the uterine cavity, and which stimulated forcible contraction of the organ for its expulsion. As the result of uterine distension and contraction pain was complained of. When the pain was inflammatory it was due to the vascularity which occurred before menstruation still further congesting the already inflamed tissues. The discomfort was necessarily diminished after the depletion which occurred during the flow. From a clinical standpoint dysmenorrhœa might be considered as of two main types—menstrual and premenstrual. Both might be present. When obstruction alone existed the pain occurred at the time of, or immediately before, the flow; while in the inflammatory variety the pain would be most pronounced during the period of congestion before the actual flow occurred. If the inflamed organs were only the appendages, the depletion acquired by the flow occurring necessarily gave considerable relief: thus the so-called ovarian or tubal dysmenorrhœa was mainly premenstrual in its character. On the other hand, in uterine inflammation, such as endometritis, the pain, though premenstrual, might be continued through the period by the contractions of the tender uterus, or by the thickened and swollen diseased mucosa offering a block to the easy exit of the menstrual blood. In the same way congested or inflamed ovaries, with endometritis, gave rise to the combined types of premenstrual and menstrual dysmenorrhœa. The obstructive or menstrual variety greatly preponderated as the initial type in the proportion of quite 10 to 1. The primarily purely obstructive tended in due course to become associated with the premenstrual or inflammatory, the latter being a secondary result of the former—primary obstruction, secondary endometritis, and perhaps ovaritis. As to treatment: (1) Was it possible to cure or ameliorate the condition? If so, how? (2) Was it justifiable to adopt local treatment with the methods at our disposal? The former inquiry might be answered in the affirmative. The different causes of the symptom had to be inquired into, and action taken accordingly. Stenosis and flexions were the most common causes, congenital anteflexion with stenosis. To remedy this dilatation might be forcible or gradual. Dr. Haultain had found the use of the tent, or the forcible dilatation by bougies up to 15 French or 10 Hegar most efficacious. In the majority of aggravated cases there was a coincident endometritis, which curettage with subsequent hot vaginal douching materially assisted in effecting a more rapid and permanent cure. Incision of the

cervix was not so frequent, but it was of much value in establishing a permanent dilatation of the cervical canal. After incision the wound should be kept open for forty-eight hours by a strip of iodoform gauze. The treatment of the menstrual variety of dysmenorrhœa by means of drugs had, in Dr. Haultain's hands, been most discouraging, a result natural to expect if we assumed the cause to be a mechanical obstruction. This explanation of dysmenorrhœa, as shown by the beneficial effects derived from dilatation, he upheld as the only practical explanation of the cause of the pain. Drugs could only give a temporary alleviation of the symptoms. Unfortunately the medicinal treatment resolved itself into the exhibition of stimulants and anodynes, both objectionable from their deleterious effect on the general health and morals of the individual. The alcohol and morphine habit often dated from the comfort given by them during painful menstruation. In the inflammatory and congestive forms—particularly those due to ovarian causes—sedatives, such as bromides, gelsemium, camphor, and hydrastis found most favour, combined with hot applications, hip-baths, and counter-irritants. When primarily ovarian in origin such means were alone at our disposal. Primary ovarian mischief, however, was the exception. In discussing the justification of the local treatment of dysmenorrhœa, patients had to be divided into married and unmarried. With the former, local examination—and, if need be, treatment—should in all cases be carried out. The unmarried had to be classed in two groups: (1) Those who required by their own exertions to maintain themselves, and (2) those who did not require to work. Those in the first group could not afford to be laid up a day or two monthly; relief must be obtained, sentiment could not be considered. The second group formed the main theme for discussion. Were they, for merely sentimental reasons, to allow these young women to suffer if they desired to be cured? His line of treatment was to examine them locally under an anæsthetic, and at the same time be prepared, should dilatation, uterine reposition, or curettage be indicated, to perform the necessary manipulation there and then. Among the many sentimental objections, the most common was that local manipulation directed attention to the sexual organs. Did not being *hors de combat* every month during the sexual function exercise an even more potent influence in the same direction? In the majority of cases menstrual pain tended to become aggravated and to set up ovaritis, which was most intractable and often incurable. The great bulk of primarily sterile women were the subjects of dysmenorrhœa, and in those in whom the sterility had been cured it had only been when local treatment had been adopted and the dysmenorrhœa removed.

Professor KYNOCH urged that the pain was indicative of disease, uterine, extrauterine, or both. Constitutional treatment ought first to be given a prolonged trial in young girls, and many cases were thus cured. If they failed, then local measures should be resorted to. Rapid dilatation, in his experience, had not been satisfactory. He now left in a tupelo tent for twelve hours, replacing it again for two subsequent days, and plugging the uterus meantime with sterilised gauze. The cases associated with extrauterine affections, most frequent in married women who had been pregnant, and generally dependent on pelvic adhesions and ovaritis, were much helped by the continued use of the hot douche given in an effective way. Where the returning hot water caused inconvenience, Stratz's instrument could be used. If this failed, opening the abdomen by the vaginal route might be necessary. Removal of the ovaries and abdominal section he would reserve for cases of defective development of the uterus, associated with atresic conditions and painful monthly periods in the absence of menstruation.

Dr. CHURCH thought prevention was better than cure. Treatment ought to begin at the very onset of menstruation in care and avoidance of whatever might end in dysmenorrhœa. He spoke of the present day high school-pressure, carried on at the expense of the bodily health. The present system of education among the cultured and educated classes made too severe a strain on the nervous system. There was more or less continuous excitement. Greater attention should be paid to rest for a day or two during menstruation, or complete rest in bed if there were pain. Local inflammation might arise from any lowered state of the health; it might be autotoxic (from intestinal or other mucous surface) in origin, might follow the exanthemata, or might be due to rheumatism. The rheumatic process might lead to antiflexion and stricture, causing pain and spasm. When all due precautions had been taken to avert trouble, and there was yet painful menstruation, exercise on a cycle or on horseback between periods was sometimes helpful.

Dr. FOULIS agreed with Dr. Haultain in his advocacy of local measures to alleviate the pain, if he were sure that the uterine condition produced it. The causes of dysmenorrhœa ran into hundreds—a large swollen uterus, tender ovaries, constipation, stenosis of the os, inflammatory conditions of the vagina, masturbation, and so on. In every case he thought it necessary to find the cause before beginning treatment. Careful and prolonged constitutional treatment cured many; marriage cured no end of patients. When all ordinary means failed it was necessary to proceed to discover if there was any remediable local condition. Dilatation of a stenosed os gave relief in some cases. Dysmenorrhœa for years in married ladies, where no pregnancy occurred, gave fit cases for local treatment. He differed from Dr. Haultain in the matter of drugs. He had seen wonderfully satisfactory results from their administration—for example, potassium iodide. No doubt mere anodynes or other strong nerve drugs were a danger. Still greater was the danger when alcohol was the anodyne. Removal of the ovaries was constantly advocated. Yet the other day there was an ovariotomy done for two large ovarian tumours, and the patient had never had the least pain during menstruation. The ovaries had not produced an egg during the last thirty years, yet the patient had regular and painless periods all her life. The unnecessary removal of ovaries during the last twenty years was something to be deplored. Premature local examination was to be strongly deprecated.

Dr. CONNELL (Peebles), as a general practitioner of thirty-three years' experience in a healthy country district, had seen many cases of dysmenorrhœa. In the case of dysmenorrhœa with sterility no time should be lost. Removal of the ovaries should not be lightly thought of in the unmarried. Cervical dilatation in the married should be used at once. He thought the introduction of the bicycle had had more to do with the removal of painful menstruation than any other measure of late years. Mothers ought to be taught to look after the health of their daughters—for example, in the matter of constipation. As to drugs, he liked sodium salicylate, if only for its antispasmodic properties. That and potassium iodide he would certainly try before cannabis indica. He objected to alcohol in any form.

Dr. KERR found, on looking over his record of 64 cases of dysmennorrhœa recently under his care either in the Western Infirmary or in private practice in Glasgow, that excessive menstrual pain was associated with inflammatory conditions of the tubes, ovaries, or uterus, with tumours of the uterus or ovaries, or with displacements of the uterus. A discussion of the treatment of dysmenorrhœa then would involve a consideration of all the diseases of the female genital system. He presumed that the present discussion was aimed at those cases where the lesion was so obscure that the symptom came to be looked on as the disease. He hoped this class of case would gradually disappear. Even now membranous dysmenorrhœa should be removed from the group. For practical purposes the dysmenorrhœas might be divided into three groups—(1) Those in which the disease or lesion was quite apparent, (2) those where one was in doubt as to whether the lesion could account for the excess of pain, (3) those cases where, as far as one could find, there was absolutely no lesion. Under the second group he had found three classes of cases: first, an abnormally small uterus, 3 out of 60 cases; secondly, stenosis of the cervix, 6 out of 60 cases; and pathological conditions of anteflexion accounted for 16 out of 60. Under his third group he had only 3 cases out of 60 where there was no lesion, though in 1 case there was an abnormally nervous temperament, and in another great anæmia. Probably temperament in these last two cases was a strong factor in the pain production. He approved of dilatation of the cervix by the gradual method, but the dilatation required to be repeated. Electricity too he had found beneficial. He did not believe much in either bleeding or drugs. Antipyrin and phenacetin were the only drugs he had found of any use. The bicycle improved the

general tone of the individual, and made her less subject to the discomfort.

Dr. FREELAND BARBOUR said it was very difficult precisely to estimate the amount of the patient's suffering, and yet on this hinged the question of the necessity for operative treatment. There were two factors to guide one in estimating the significance of the pains: (1) The stimulus to the peripheral end of the nerve, and (2) the irritability of the sensory nerve centres. Dr. Weir Mitchell had done gynæcology the largest benefit. Those who followed his line would greatly help their patients. He believed strongly in medical treatment and in attention to the general condition of the patient. He cited two cases in support of his attitude.

Dr. JAMES RITCHIE thought the difficulties met with were more in connection with those cases in which really no organic change could be found, though it might be said that the changes found depended on the ability of the examiner to some extent. He did not believe that flexion *per se* was a frequent cause of dysmenorrhœa. He thought something must be superadded to flexion, and they had to treat that something. It was in a large number of cases an inflammation, which must be treated. Even where the ovaries were tender, the uterus enlarged, and menorrhagia present, he believed in patient and prolonged treatment by douching and the use of ichthyol. Anæmia and rheumatism were causes of dysmenorrhœa, and when these were fitly treated the symptom disappeared. Potassium iodide and salophen he had found helpful. He had not found so much benefit from dilatation of the os and cervix. The general health and education had much to do with the amount of suffering. The pathology of the condition had not been sufficiently studied. The monthly flushing of the pelvic organs, the influence of the nervous system and vasomotor nerves on this, the question of excessive flushing causing pain had all to be considered.

Dr. HOLMES (Chicago) objected to the "mechanical theory" of the production of dysmenorrhœa. Where there was clotting of blood within the uterine cavity, he thought the obstructive theory obtained. Was pain due to excessive innervation, and the absence of pain to faulty innervation, of the uterus? In treatment every case was a law to itself. Dilatation he thought should seldom be used. The bicycle had diminished gynæcological practice in the United States. In the congestive form prolonged douching was very helpful.

Dr. BALLANTYNE made three generalisations: (1) We must treat the dysmenorrhœa, and go on treating it; (2) the more correctly the physician diagnosed the case, the more certainly he marched to success in treatment: (3) the Higginson syringe was one of the best methods for treating every case.

The PRESIDENT was perfectly certain that more appalling results than sometimes arose from the administration of alcohol to young women suffering from painful menstruation could hardly be conceived. The majority of the alcoholic cases they had to deal with in daily practice arose through young women being treated by their mothers with alcohol during their menstrual periods. Local examination should be deferred till one was definitely certain that it was absolutely necessary. After that it was the worst possible practice to defer it. He did not believe that any damage could be done to a girl by an examination under an anæsthetic at all comparable to the constant dread and anxiety with which she looked forward to these monthly recurring attacks.

In reply, Dr. HAULTAIN said he believed that in the vast majority of cases dysmenorrhœa was due to local causes: he did not believe very much in constitutional conditions, though these might set up local inflammation. He adhered to his belief in the mechanical theory. When dysmenorrhœa could be cured by dilating the cervix, he was convinced that the pain had been due to some obstruction in that cervix. Of course some patients had to return for a second dilatation, but the majority were cured by one dilatation.

LARYNGOLOGICAL SOCIETY OF LONDON.—At a meeting on June 1st, Dr. de HAVILLAND HALL, President, in the Chair, Dr. W. A. AIKIN read a paper on the resonators of the voice.—Dr. WALKER DOWNIE showed a specimen of sarcoma of the tonsil removed from a woman aged 58. The tonsil was enucleated nine months ago, and there was at present no sign of recurrence.—Mr. BUTLIN showed a case of primary dilatation of the œsophagus in a man aged 34. Perichondritis of the larynx had been caused apparently by wearing an œsophageal tube, and had necessitated tracheotomy for dyspnœa.—Mr. C. A. PARKER exhibited a patient showing the result of the radical operation for nasal polypi. Recurrences having followed numerous operations with the snare, the operation was performed nine months ago with complete success.—Mr. WAGGETT showed a case of laryngeal occlusion after typhoid fever.—Dr. DUNDAS GRANT showed (1) a woman from whom the entire larynx had been removed for sarcoma; (2) an elderly man with a tuberculous growth in the larynx, and (3) a middle-aged woman with primary and secondary syphilis of the tonsils and fauces.—Mr. BERGIN showed two preparations of tuberculous disease of the larynx.—Mr. WAGGETT showed (1) a man, aged 60, with carcinoma of the larynx, and a man, aged 20, in whom the ostium of the sphenoidal sinus could be plainly seen.—Dr. BURT showed a case of tuberculous laryngitis.—Dr. FITZGERALD POWELL showed a child with a cyst at the back of the tongue, probably connected with the thyroglossal duct.—Dr. LAMBERT LACK showed a man with distension of the maxillary antrum, due to the presence of ordinary mucous polypi. The cavity was quite clear on transillumination.—Dr. HERBERT TILLEY showed (1) a case of chronic frontal sinus suppuration cured in a month by means of the external operation: (2) a case of double frontal ethmoidal, and antral suppuration; (3) a curious pedunculated tonsil.—Dr. EDWARD LAW showed a case of extensive lupus of the nose, and Dr. MACKINTOSH a case of probable epithelioma of the hard palate and maxillary antrum.

BRITISH GYNÆCOLOGICAL SOCIETY.

W. J. SMYLY, M.D., President, in the Chair.

Friday, July 13th, 1900.

THE July meeting of the Society was held in Buxton, where a number of the Fellows of the Society and their lady friends were hospitably entertained. The scientific work of the meeting took place in the Town Hall, where Mr. J. E. HARRISON, Vice-Chairman of the Buxton Urban District Council, delivered an address of welcome, which was acknowledged by the President.

UNTOWARD RESULTS FOLLOWING ABDOMINAL SURGERY.

Mr. E. STANMORE BISHOP (Manchester) introduced a discussion on untoward results following abdominal and pelvic surgery and the means to prevent them. He arranged his subject under the following heads:—Defective results after abdominal or pelvic work reacted upon future cases to the detriment of the reputation of the operation, and deterred other patients from resort to operation in time to receive effective treatment. Type of operation selected, hysterectomy for fibromyoma. Such defective results were—*Fatality:* Due most often to delay, next to sepsis; advisability of early purgation; reasons for this and *rationale* of its action; methods of operation. *Ventral hernia:* Percentage of occurrence; explanations offered; reasons for adopting suture in layers; use of celloidin. *Intestinal and omental adhesions:* Need for perfect reformation of peritoneal potential cavity. *Vaginal prolapse:* Reasons for closure of pelvic peritoneum; dangers of non-closure. *Persistent sinuses:* Preparation of ligatures; use of drainage tube. *Other defective results.*

Dr. HEYWOOD SMITH thought subperitoneal hysterectomy was safer than panhysterectomy. The risk of ventral hernia could be minimised by making the incision, not through the linea alba, but an inch to one or the other side.

Mr. CHRISTOPHER MARTIN, in contrasting the various methods of hysterectomy, failed to see what good the cervix could do after the rest of the uterus had been removed. The objection that the removal of the cervix weakened the vaginal vault and predisposed to prolapse was, he believed, a purely theoretical one; he had never seen such a result after panhysterectomy. Referring to the question of ventral hernia, he said he was at one time much opposed to the use of buried sutures; but since adopting the late Mr. Greig Smith's suggestion of boiling chromicised catgut in xylol or absolute alcohol he had not had any stitch abscesses, and he thought that the plan of sewing up in three layers was the best.

Dr. MACNAUGHTON-JONES agreed with Mr. Bishop that cases requiring operation should be done as soon as possible. He

was quite satisfied with the three-layer method of sewing up; he never had any trouble with buried sutures, and he had had only 2 cases of hernia following operation. The form of operation for hysterectomy that he preferred was the supravaginal.

Dr. E. T. DAVIES (Liverpool) said that in cases of fibroids where there were no symptoms it was very difficult to know whether to advise operation or not. He had had one case under observation for six or seven years; she had no inconvenience from the tumour except from the æsthetic point of view. His preference was for Baer's operation; but he did not think that the stump of the cervix was of any importance in maintaining the vaginal vault, for no inconvenience was observed in cases where the uterus was completely removed by the vagina for cancer. Malignant degeneration of the stump appeared to him somewhat of a bugbear: he had read of the occurrence but had never seen a case.

Mr. CHARLES RYALL observed that hernia was due in some cases to the use of drainage through the abdominal wall, and he had never adopted this plan without regretting it. The best way to drain was through the pouch of Douglas or by Muscatello's plan. Stitch abscesses were in some cases unavoidable, when the intestine had been opened, for the fingers were then liable to become infected, and similarly the abdominal wound might become infected with malignant disease if such a growth were allowed to come in contact with the abdominal wall during removal.

After some remarks by Dr. ROBERT BELL (Glasgow),

Mr. J. W. DRAPER (Huddersfield) said the cases of fibroid that had been under his observation in general practice—about 15 cases—had not been subjected to myomectomy. In one, the ovaries had been removed; in another, a case of small pedunculated fibroid producing pressure symptoms, the tumour had been removed. Of these cases, none had died of their disease, most had passed the menopause. On the whole he believed that they had enjoyed a better life, in spite of the lumps they carried about inside them, than they would have done if they had been operated upon. But they required watching.

The PRESIDENT said that his experience had been very different from that of the previous speaker. He had seen a large myoma forced down into the vagina, and suppurating there; he had seen malignant degeneration, sloughing, and hæmorrhages threatening life, as the result of not operating in cases of myoma. It was noticeable that in speaking of the risk of hernia, every one seemed best satisfied with the particular method of suture that he had last adopted; also, most operators found hernias in the practice of other men, but not in their own. This was because, naturally, the patient did not come back to the man who had given her a hernia. His own plan was to be careful to secure the fascia, using boiled catgut. It did not seem to him that a strong case had been made out for celloidin; if a wound were aseptic, it would heal whatever the dressing, and if it were not aseptic, it seemed to him that celloidin would be a disadvantage.

Mr. STANMORE BISHOP briefly replied.

SPECIMENS.

The following were shown: Mr. CHRISTOPHER MARTIN (Birmingham): A specimen of ruptured cornual pregnancy.—Mr. CHARLES RYALL: A specimen of necrosis of the cervical stump following supravaginal hysterectomy.

INFECTIOUS DISEASES IN CUBA.—It is stated in the *Boston Medical and Surgical Journal* that a Board of Medical Officers has been appointed to meet at Camp Columbia, Quemados, Cuba, for the purpose of pursuing scientific investigations with reference to the infectious diseases prevalent on the Island of Cuba. The Board will act under instructions from the Surgeon-General of the Army. The members of the Board are Major Walter Reid, Surgeon U.S.A., and Acting Assistant Surgeons James Carroll, Aristides Agramonte, and Jesse W. Lazear. It is understood that the Board will devote attention chiefly to the investigation of yellow fever. Dr. Agramonte has been studying this disease in Havana for the past eighteen months, while Major Reid and Dr. Carroll, at the Army Medical Museum in Washington, have been engaged in an exhaustive study of Sanarelli's bacillus and serum, the results of which have already been made public. The work of the Board will be done in the army laboratory at Quemados.

REVIEWS.

SEWAGE AND THE BACTERIAL PURIFICATION OF SEWAGE. By SAMUEL RIDEAL, D.Sc.Lond. London: Robert Ingram. 1900. (Demy 8vo, pp. 282, 4 plates, 47 figures and diagrams. 14s.)

IF Dr. RIDEAL is able to keep in touch with the future developments of the sewage problem and to do as much justice to them as he has done to those he deals with in the first edition of this masterly textbook, he will hold the foremost place as an authority on the subject of sewage treatment. He has been fortunate in having had intimate professional connections with the leading exponents of the bacterial system which is now very generally regarded as the only one at all likely to prove the final solution of difficulties which have been baffling the ingenuity of chemists and engineers for nearly half a century. He is to be congratulated upon having grasped his opportunities.

It is as a textbook, a *vade mecum*, for the every-day and pressing requirements of practical men that the present volume will be chiefly welcome. The greater part of its contents, at any rate in substance, already exists in a scattered form, through the essays of a host of writers, including Dr. Rideal's own lectures to the Society of Acts and those which he delivered recently at the instance of the London County Council, but his successful embodiment of these contributions, which are fully acknowledged, in a consecutive form, is in itself an achievement of the greatest merit. A well-arranged index is a prominent feature of his book, and a reference to this shows almost at a glance what a wide range of information has been included in his work.

The whole story of the earlier attempts to solve the sewage problem, the sewage farms, the chemical processes, with their underlying theories and their endless failures, and the more primitive forms of treatment, which involved the action of bacteria of which their authors were wholly or greatly ignorant, is told, with the running commentaries of a pungent and capable critic.

It may safely be said that any practical reader who makes himself thoroughly familiar with these portions of Dr. Rideal's book will have at his command a knowledge of the subject which will give him a title to have his opinions treated with respect.

The method adopted gives a natural and logical importance to those processes which appear in the light of survivals of what is most fitted to attain the end in view. While this feature of the work, which is one to its chief merits, will no no doubt be generally recognised, it emphasises the difficulty of taking up any isolated portion for special remark, and it may be well, therefore, to put oneself in the position of an intelligent student of the volume, and to try to realise what may be spoken of as his residual attitude when he has completed his reading and is looking for a conclusion that is satisfactory from a thoroughly practical standpoint. In other words, it may be of more interest to consider the question of where we stand after Dr. Rideal has done his part of our education than to attempt any analysis of how he has communicated his information.

Though Dr. Rideal does not say it in so many words, several sentences contain statements equivalent to the opinion that the bacterial treatment of sewage is not only a satisfactory method, but the only method by which a final and absolute solution of the problem is to be attained. We are by no means prepared to oppose this position; in fact we are quite ready to accept it. The operations of Nature in keeping the world clean through the life processes that break down organic matter to the point of its being again available for the nourishment of the living organism from its lowest to its highest form, are not so occult that we need be diffident about recognising their beneficence. We know quite well that the bacterial methods of sewage treatment dealt with by Dr. Rideal invoke these processes, but the point of greatest interest is as to where the average man stands after reading the book, more especially the man whose business it may be to advise a community that is polluting a neighbouring stream. If we had to give an answer we should say that he is left on the high road, but not at the end of his journey; as

regards theory he is on the high way, but in practice he may easily fall into a ditch. It is not difficult to explain this apparent anomaly. The fact is that there are few cases that are absolutely alike, and it is the discrepancy between different sets of conditions that is responsible for repeated failures. Success in once instance with a weak sewage is positively misleading when used as an argument for adopting an identical plant in dealing with a strong one. It follows from this that until some means are arrived at for standardising the factors in every case, mistakes will recur. These will not only be a cause of failure, but will have the effect of disparaging the reputation of the system itself.

Dr. Rideal fully recognises the importance of standards in estimating the safety of any particular effluent, and has already done excellent work in connection with the British Association Committee appointed in 1898. The recommendations of the Committee issued in 1899 (p. 25) are excellent so far as they go, but they leave unsolved the question as to how a community polluting a stream are going to realise the required standard. At first sight it would appear that no amount of standardising could contribute to the solution of how to purify any particular sewage, but this is only because no attempt has yet been made to produce the necessary standards. At the present stage of development, standards quite apart from those that deal with the quality of an effluent are an absolute necessity if any satisfactory progress is to be made at all. These necessary standards are not even suggested in Dr. Rideal's book, and have not apparently occurred to others as a prime factor in the solution of the problem.

The following cases taken almost at random will suffice to make the points at issue perfectly clear. At Exeter an elaborate investigation of the "septic tank" system was carried out by Professor Sims Woodhead, Dr. Rideal, and others in 1897. This was certainly the most elaborate attempt to put the subject on a scientific basis that had ever been made, at any rate in England; and yet because the stages of the process in relation to the actual sewage dealt with were never referred to any standard, we find Dr. Kenwood, at the Sanitary Congress in Birmingham in the following year, deliberately stating that the Exeter sewage dealt with was so weak that the investigation was practically worthless as a guide to the treatment of stronger, or in other words average, sewage. In the face of such a responsible judgment, where was the average practical man? Scientifically speaking he might be on the high road; but certainly not at the end of his journey. Again, there is the recent report from Leicester, to which we referred last week. From it we gather that the interposition of a septic tank made no appreciable difference in the results obtained from filters that were designed with a view to the development of bacterial action. This case, again, is referable to no standard, and the average practical man on reading the report cannot be blamed if he begins seriously to doubt if he is on the high road at all.

Yet another case came under our notice quite recently, in which a strong "residential" sewage was treated to an anaërobic fermentation of about two hours in what was described as a detritus chamber, but no evidence was forthcoming as to whether this fermentation made any difference or not. In the face of such evidence, the ablest expert who is called upon to advise in any particular case and to argue from one to the other among such incongruities, may be paid his fees. Can he be said to have earned them? If any particular sewage can be standardised in terms of susceptibility to treatment in a standardised apparatus, all the difficulties that are now so much in evidence will disappear, and the expert who can give advice upon lines that can be justly spoken of as scientific will no doubt do a very thriving business.

It is not for us to teach experts their work; they would probably resent it if we attempted to do so; but we are certainly within our own province when we speak plainly upon a matter in which the pressing needs of the community are so deeply involved. The case may really be almost put in a single sentence. We know, and our knowledge may be now taken as approaching to certainty, what are the conditions necessary to the successful purification of sewage bacterially. These conditions may be spoken of as the necessary factors in the solution of the problem, and it differs in no way from other problems in this respect that to meet all cases the factors singly and collectively must be under control. There is no secret as to what the factors in the cases of bacterial treatment really are. Anaërobic fermentation of some sort, for breaking down the organic impurities into simpler forms, is now generally accepted as necessary. This factor in no way differs from other fermentations in so far that it is to be measured by the period of time during which it is carried out. The optimum period is the one which gives the highest susceptibility to further mineralisation in a standard apparatus of some sort. If the sewage has been overhydrolysed it will appear in the analysis, and if it has not been hydrolysed sufficiently, chemical evidence should be forthcoming to prove it. It ought to be common knowledge, set forth in a tabulated form, what the proper period of fermentation ought to be for a particular strength of sewage, even if nine-tenths of the anaërobic change has already occurred in the sewers themselves, as appears to have been the case at Leicester. In any event, a standardising apparatus should be available for dealing with every sewage which it is difficult to treat. There can be no doubt whatever that the anaërobic factor is under control; it is measured by the size of the apparatus and the rate of flow. If a chemist can tell an engineer that the sewage he is dealing with requires a ten-hour fermentation, it is absolutely all the engineer requires to know.

The nitrifying changes are equally intelligible. We do not wish to dogmatise upon the standard apparatus to be used; there may be many available, almost anything in the shape of well aërated filters would serve the purpose. Standard tanks filled with standard material, and used in series with standard periods of rest and rate of flow, would be better than nothing, so long as the expert could tell his client that he is dealing with a sewage requiring a ten-hour fermentation, and that the hydrolysed liquid reaches the proper standard of purity at the fourth tank in the series, or whatever his report might be. What the standard apparatus generally accepted will be remains to be seen. Meanwhile the sooner a beginning is made the better; and we are glad to be able to report that Professor Sims Woodhead has already broken the ice at Cambridge, and is getting an apparatus to work on the lines of the Ashstead experiments. It is not improbable that some exceedingly simple standard may be reached in terms of hours of rest in an anaërobic tank and nitrification in standard superimposed filters at a standard rate of flow, the whole being made comparable in tables to nitrification in other forms of apparatus, such as so-called "contact beds." Until ordinary sewage can be advised upon in the way of a positive statement as to what the necessary apparatus must be, the expert is necessarily in a position which is far too empirical to justify any claim to authority.

It may well be that the first standards and methods may be superseded by improvements, but this is no argument against their being adopted. The history of heat engines and applied electricity are cases in point. If no start had been made in standardising the different forms of apparatus required, it is safe to say that no progress could have been made.

These remarks are no disparagement to the excellence of Dr. Rideal's book; and we do not think that he would have been justified in delaying its publication until some standard of perfection had been reached, which is not likely to be attained for some time to come. On the contrary, what is not in the book is in some ways as important as its actual contents. It shows clearly where the blanks occur. He has brought everything so well up to date that all who have studied the subject will be able to see much more clearly what is wanted than if they had to wade through the mass of literature which Dr. Rideal has focussed so admirably. As the latest and best textbook upon sewage we can speak of it as absolutely necessary to everyone who wishes to be up to date in his knowledge of the theory and practice of its purification.

SOME RECENT WORKS ON PATHOLOGY.

AT the present time there are few subjects which present such difficulties to pathologists as mixed tumours, especially those of the kidney and testis, and the diversity of views held as to their nature and origin is very confusing. Dr. WILMS's work[1] on the subject appears at an opportune moment. Two parts have appeared. The first is devoted to mixed tumours

[1] *Die Mischgeschwülste* (Mixed Tumours). Von Dr. W. Wilms. Heft I und II. Leipzig: Arthur Georgi, 1899. (Roy. 8vo. Pp. 90 and 76. M. 4 each.)

of the kidney. In the brief introductory chapter the author draws attention to the confusion which exists in the nomenclature of such tumours, and rightly points out the importance of serial sections in their investigations, as without this precaution elements which enter into their composition may easily be overlooked. Birch-Hirschfeld's view that these tumours are derived from the Wolffian body the author does not accept, except as regards the glandular elements found therein; to the muscle fibres, connective tissue elements, including fat and cartilage, he assigns a different origin. A complete list of cases of mixed renal tumours published since 1872 inclusive is given, and the general features of each is well discussed. To these cases the author adds seven investigated by himself, the histological characters of which are fully described and illustrated with drawings. The different varieties of tissue found in such tumours are considered in separate sections. Dr. Wilms entirely disagrees with the view, once so strongly advocated, that the smooth muscle fibres found in them are derived from the capsule, pelvis, or blood vessels of the kidney. He shows that their situation bears no relation to these structures. He believes them to be derived from the connective tissue elements as stated by Ribert. The relation between the epithelial cells and the connective tissue elements has always been obscure. Birch-Hirschfeld regarded the masses of round cells which are usually present as derived by proliferation from the adenomatous structures. Wilms looks upon these round sarcomatous-like cells which are most abundant in the growing parts of the tumour as the precursors of the definite epithelial cells which may eventually form tubular structures, and traces the various stages in their development. On this point, as on others, the views of other writers are amply discussed. Perhaps the most important chapter in this interesting work is that in which the author gives his own views as to the embryological derivation of these mixed growths of the kidney. He gives a clear and concise summary of the development of the mesoderm and the Wolffian body. He agrees with Birch-Hirschfeld that the glandular elements in the tumours are derived from the Wolffian body, but goes further in that he regards their connective tissue elements as derived from the myotome and its mesenchyme. He would therefore prefer to call them mesodermal growths. In the first pages of the second part, which is concerned mainly with mixed tumours of the vagina and cervix uteri, Wilms returns to the subject of renal tumours and comments upon a very rare and interesting case published by Muns, in which squamous epithelium and cell nests were present. The subject of congenital mixed tumours of the vagina is well and clearly dealt with. A collection of cases is given, with a full account of their histology, and it is pointed out that after an apparently quiescent period the tumour takes on rapid growth, and ends fatally in one to two years at the latest. From his own observations he regards the striped muscle fibres, which are often present in these tumours, not as derived from the muscle normally present in the vagina, but from embryonal tissue; and further, that these fibres and other connective tissue elements probably originate in the remains of the Wolffian duct. The mixed tumours of the cervix uteri possess considerable clinical importance, as they are apt to be mistaken for simple polypoid growths, and removed superficially, with the result that recurrence and subsequent infiltration usually occur. These tumours are almost invariably polypoid, and may resemble a hydatidiform mole. Microscopically they contain myxomatous tissue, fat, cartilage, and striped muscle fibres. The embryological origin of these elements is admirably discussed. He regards them as derived from the remains of the Wolffian duct, which persists in the female as Gärtner's duct. This is supported by the fact that they are situated on the anterior wall of the vagina or cervix. The absence of epithelial structures would show that the Wolffian body plays no part in their formation. He points out that these tumours of the cervix uteri and of the vagina are similar embryologically to the rare mixed tumours of the bladder in the male which are situated near the orifices of the ureters, and probably also owe their origin to remains of the Wolffian duct. The same embryological origin is also ascribed to the mixed tumours of the vas deferens, a short account of which is given in the concluding pages of this highly interesting and suggestive work.

Perhaps the most comprehensive work on aspergillus mycosis has, till recently, been Rénon's *Etude sur l'Aspergillose*. We welcome in Dr. SAXER'S[2] work one equal in completeness and in clearness of diction, and superior in judgment and criticism. The first twenty pages are devoted to such cases of aspergillus mycosis in man as have come under the author's personal notice. In the next four chapters previous publications by other writers are epitomised and critically reviewed; though of some length, these chapters are by no means weary reading, for the subject matter is dealt with in an interesting manner, and the style is smooth. The last eighty pages are given to the author's own experiments, forty in number, the results of which are summarised in the six concluding pages of the work. These last six pages, and certain explanatory paragraphs after each group of experiments, printed in large type, will probably suffice for the reader seeking general information; but for him who intends to follow up the subject a careful perusal of the details is indispensable; for the last word has not yet been written.....The author is of opinion that the aspergillus fumigatus does not play the part of a saprophyte when introduced into the lung of man, but gives rise to distinct changes of a characteristic type. Experiments were conducted to prove this, but the results were very various. That aspergillus fumigatus is *pathogenic* could be proved to the hilt. In some dogs the author was able to produce results practically identical with those found in man—that is, a peculiar form of coagulation-necrosis extending beyond the actual area in which the growth of the fungus is manifest; but in many cases the manifestations of its virulence varied widely both in degree and in kind, even when the method of introducing the fungus into the body was the same in each. Why should these differences be? This problem, and many others, are left for subsequent investigators to solve. It is to be hoped that Dr. Saxer's work will stimulate workers in this country to devote further attention to an interesting disease which, possibly less rare than hitherto believed, has been more extensively studied in other lands than our own.

From the pen of JÖRGENSEN one expects something worth reading, and the book before us on *Micro-Organisms and Fermentation*[3] is not disappointing. All the important agents which take part in fermentative processes are described. The yeasts and their characteristics, the production of beer, wine, spirits, koumiss and the like are given in a clear and concise form. In addition to this the various mould fungi and bacteria which produce alcohol, and the similar organisms which aid or hinder the proper production of alcohol and aroma are dealt with. The last chapter in the book is of great interest and, to all who are producers of alcoholic beverages, of the greatest possible use. Since Hansen's work the manufacture of these beverages has undergone radical changes, and on the Continent brewing and distilling have become both a science and an art. In our own country, as usual, we are behind the times, but it is pleasing to learn from Jörgensen that we are beginning to wake up to the new era, and it is satisfactory to know that some of our brewers (for example, W. R. Wilson) are really trying to provide the drinkers with beer brewed under the best hygienic conditions, and with pure cultivated yeasts. It is not generally known that it was Jörgensen who did for English brewing what Hansen did for Continental brewing. It was he who did most of the early experimental work upon high fermentation yeasts, and it was through him that it became possible to pitch with pure top yeasts by adopting a modification of Hansen's method for pure bottom yeasts. There is a very full bibliography at the end of the book, but unfortunately there is no index. Excellent as the work is, this omission detracts greatly from its value. There is much valuable information concerning many of the moulds and bacteria which is almost inaccessible to anyone who has not the time to read the book page by page. We sincerely hope that the author or translators will add an index to the next edition.

[2] *Pneumonomykosis Aspergillina: anatomische und experimentelle Untersuchungen* (Aspergillus Mycosis of the Lungs: Anatomical and Experimental Investigations). Von Fr. Saxer. Jena: Gustav Fischer. 1900. (Roy. 8vo, pp. 160, 4 plates, partially coloured. M. 11.)

[3] *Micro-organisms and Fermentation.* By Alfred Jörgensen. Translated by Alex. K. Miller, Ph.D., F.I.C., and A. E. Lennholm. Third edition, completely revised. London: Macmillan and Co. 1900. (Demy 8vo, pp. 318. 83 illustrations. 10s.)

A general survey of the science of bacteriology, its position at the present day, its problems, and the principles already adduced from the study thereof is given by Dr. GAMALEIA of Odessa in his work on the elements of bacteriology.[4] It consists of sixteen lectures, each dealing with one special subject connected with bacteriology; those to whom the original lectures were delivered were medical men, presumably ignorant of the principles and technique of the science, and the subjects are therefore treated as far as possible in non-technical language. Of many good lectures, perhaps the best is that upon serumtherapy, which traces the history from the beginning to the present day, and in a clear, concise, and logical way gives each step in the progress and the reason for and result of that step. Following the text are five lectures in the form of appendices, upon the history of Pasteur's discoveries, a new aim in pathology, the pleomorphism of bacteria under the influence of lithium salts, the comparative toxicology of caffeine and antiphlogistic therapy. For those for whom the book is intended, it is most excellently adapted, and it will no doubt attain the success it deserves.

The fact that the *Manual of Pathology*[5] by the late Professor COATS of Glasgow has now reached its fourth edition is in itself evidence of its worth. As a textbook on pathology for university students it stands almost alone. Dr. Sutherland, to whom, owing to the lamented death of the author, the task of revising the text for the fourth edition has fallen, has not altered the form of the work; this for two reasons, first, it was revised by the author almost up to the time of his death; and secondly the present editor is one of his old pupils. The science of pathology has within recent years undergone many and rapid changes. This is particularly the case in that portion which is connected with bacteriology. Unfortunately much of the recent work has been omitted. It is very difficult to publish a textbook of such a size and upon such a subject which shall contain the most recent advances, but one would expect that a book published in 1900 would contain an account of work later than 1896. This, however, is not the case with the portion of the book which deals with immunity. Induced and acquired immunity are spoken of, and the terms active and passive immunity which are now orthodox are not used. Further it is stated that "there is reason to believe that the antitoxins do not neutralise in a chemical sense the toxins." There are also many other small mistakes or omissions that we should not have expected to find in a book which has, and has deserved, such a high reputation. The new illustrations—like the old—are excellent, and in spite of the criticisms which we have felt compelled to make, the *Manual* is one which should not only be in the hands of, but read by every student of pathology.

For the series of medical atlases which are being issued by Herr Lehmann of Munich, Dr. HERMANN DÜRCK has prepared a volume on the respiratory, circulatory, and digestive organs.[6] The letterpress is short, and is mainly devoted to describing the plates, which form the chief feature of the book. These are somewhat highly coloured, but are on the whole well executed and well selected to illustrate typical pathological conditions. Such atlases bear evidence of the industry of the author, and have a certain amount of utility. The principal danger attaching to them is that students are apt to imagine that their own microscopical specimens must look exactly like the drawings, whereas it is almost superfluous to point out that pathological effects are so various in different cases that it is almost impossible to state what is typical and what is not. A much more valuable atlas would be that which each student should construct for himself, and, although his drawings may not be so pretty as those in his books, they will teach him much more.

[4] *Elemente der allgemeine Bakteriologie* [Elements of General Bacteriology]. Von Dr. N. Gamaleia, Odessa. Berlin: August Hirschwald. 1900. (Roy. 8vo, p. 234. M. 7).

[5] *A Manual of Pathology*. By the late Joseph Coats, M.D. Fourth edition. Revised throughout by Lewis R. Sutherland, M.B. London: Longmans, Green and Co. 1900. (Demy 8vo, pp. 1132; 490 illustrations. 31s. 6d.)

[6] *Atlas und Grundriss der speziellen pathologischen Histologie*. [Atlas and Elements of Special Pathological Histology.] Von Dr. Hermann Dürck. Vol. i. Munich: J. F. Lehmann. 1900. (Crown 8vo, pp. 150, 60 coloured plates. M. 11.

NOTES ON BOOKS.

THE WAR IN SOUTH AFRICA.

MR. ERNEST N. BENNETT, who is not only a Fellow of Hertford College, Oxford, but has seen war in Egypt, has written a short account of his experiences as an ambulance orderly *With Methuen's Column on an Ambulance Train* (London: Swan Sonnenschein and Co. 1900. Small 8vo, pp. 130. 2s. 6d.). The book, which is published for the benefit of Lady Lansdowne's Fund for the Widows and Families of Officers, is slight, but it contains some interesting passages. Thus, speaking of the first aid rendered on the field, he says:

> In the non-combatant, who has none of the excitement bred of actual fighting to sustain him, it requires a high degree of courage to kneel or stoop when everyone else is lying down, and in this exposed position first to find the tiny bullet puncture and then bandage the wound satisfactorily. Many and many a life has been saved by this conduct on the part of our medical staff.

He points out that those who advance during an engagement to render assistance to the wounded do so at their own risk, as,

> Strictly speaking, stretcher bearers ought not to move forward to the aid of the wounded *during the battle*. The proper period for this work is two hours after the cessation of hostilities.

In common with all observers, he speaks in the highest terms of the rank and file. Thus,

> Many little acts of unostentatious heroism are casually spoken of—noble deeds done by humble soldiers who live without a history and often perish without a memorial—as, for instance, the devotion of a private at Modder River, who applied digital pressure to the severed artery of a comrade for hours under fire and so saved his life.

Mr. Bennett was impressed by the enormous difficulties of transport, even when a railway was not distant. And with reference to the risks run by those who drank unboiled water, he writes:

> It is very provoking, when the thermometer stands at 90° in the shade, to wait until the boiled water cools, and as it is impossible to boil a whole river, a few thousand bacilli may quite well get into our food through "washing up."

The book, though it does not contain so much about the actual working of an ambulance train as we had hoped to find, is worth reading.

The Bishop of Natal in *My Diocese during the War* (London: George Bell. 1900. Small 8vo, pp. 284. 6s.) gives an account of the expectations with which the war was commenced, the hopes and fears during its progress, and the prospects of a final settlement after the war is over. The greater part of the book is a transcript of a diary kept almost day by day from October 14th, 1899, to March 27th, 1900. We see the Bishop active in the organisation of temporary hospitals in Pietermaritzburg: we go with his expedition to the front to act as chaplain to one of the brigades on the march from Frere to Spearman's Hill; we stand with him on that historic summit and watch the operations which led up to the disastrous fight on Spion Kop, and finally we accompany him and Mr. Clinton Dent on an expedition from Capetown to Kimberley, including a visit to the Boer trenches at Magersfontein. He describes the first steps taken to organise at Maritzburg the ambulance brigade, which afterwards carried the wounded by hand from Spearman's Hill to Chieveley, as described by Mr. Treves in our columns. "They are," we are told, "a very mixed lot, some of them looking like well-to-do business men, and others a very rough set from the Transvaal." They received 5s. a day, and there was one officer, who got 10s. a day, to every 24 men. The book gives, of course, only one man's impressions, and does not pretend to be a history of the war in Natal; but it is pleasant reading, and is agreeably illustrated by the drawings by the Bishop, and photographs by Mr. Clinton Dent.

THE "HAIR SLOPE" AND WEISMANNISM.—At the meeting of the Zoological Society of London on June 19th, 1900, Dr. Walter Kidd, F.Z.S., read a paper on the Significance of the Hair Slope in certain Mammals, in which reference was made to previous investigations into the hair slope on the extensor surface of the human forearm, and its bearing upon Weismann's doctrine of the non-inheritance of acquired characters. Details were given of further observations as to the hair slope on the nasal and frontal regions of certain mammals. The ordinary type and the exceptional type of slope were described, and lists of animals conforming to the two types were given. These results were held to be opposed to the doctrines of Weismann, and to be attributable to the habits of the animals in question.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETINGS.

MEETINGS of the Council will be held in the Magistrates Room, Town Hall, Ipswich, on Tuesday, July 31st, Wednesday, August 1st, and Thursday, August 2nd next, at 9.30 o'clock in the forenoon of each day.

FRANCIS FOWKE, *General Secretary.*

July, 1900.

PROCEEDINGS OF COUNCIL.

AT a meeting of the Council, held in the Council Room at the office of the Association, 429, Strand, London, W.C., on Wednesday, July 18th, 1900.

Present:

Dr. JOHN ROBERTS THOMSON, President of the Council, in the Chair.
Dr. JOHN WARD COUSINS, President.
Dr. WILLIAM ALFRED ELLISTON, President-elect.
Mr. ANDREW CLARK, Treasurer.

Dr. EDGAR G. BARNES, Eye.
Dr. JAMES BARR, Liverpool.
Dr. T. BEATTIE, Newcastle-on-Tyne.
Dr. MICHAEL BEVERLEY, Norwich.
Dr. J. BRASSEY BRIERLEY, Old Trafford.
Mr. LANGLEY BROWNE, West Bromwich
Dr. ALFRED H. CARTER, Birmingham.
Mr. THOMAS H. CHEATLE, Burford.
Dr P. MAURY DEAS, Exeter.
Dr. WILLIAM DYSON, Sheffield.
Mr. GEORGE EASTES, M.B., London.
Professor DAVID W. FINLAY, Aberdeen.
Mr. R. S. FOWLER, Bath.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. ALFRED GODSON, Cheadle.
Dr. OGILVIE GRANT, Inverness.
Dr. JOSEPH GROVES, Carisbrooke.
Dr. HENRY HANDFORD, Nottingham.
Mr. JOHN D. HARRIES, Shrewsbury.
Dr. HOLMAN, London.
Mr. T. R. JESSOP, Leeds.
Mr. EVAN JONES, Aberdare.
Mr. R. H. KINSEY, Bedford.
Mr. N. C. MACNAMARA, London.
Dr. JOHN C. MCVAIL, Glasgow.
Mr. H. J. MANNING, Salisbury.
Dr. C. H. MILBURN, Hull.
Sir JOHN WILLIAM MOORE, M.D., Dublin.
Dr. JAMES MURPHY, Sunderland.
Surgeon-General T. F. O'DWYER, Aldershot.
Mr. C. H. WATTS PARKINSON, Wimborne Minster.
Dr. CHARLES PARSONS, Dover.
Dr. ROBERT W. PHILIP, Edinburgh.
Dr. FRANK M. POPE, Leicester.
Dr. A. BROWN RITCHIE, Hulme.
Mr. H. BETHAM ROBINSON, M.S., London.
Dr. JOHN ROLSTON, Devonport.
Dr. WILLIAM RUSSELL, Edinburgh.
Dr. ROBERT SAUNDBY, LL.D., Birmingham.
Dr. ALFRED SHEEN, Cardiff.
Dr. E. MARKHAM SKERRITT, Clifton.
Dr. R. SOMERVILLE, Galashiels.
Mr. HENRY STEAR, Saffron Walden.
Mr. C. S. TOMES, F.R.S., London.
Mr. T. JENNER VERRALL, Brighton.
Dr. W. L. WINTERBOTHAM, Bridgwater.
Dr. S. WOODCOCK, Old Trafford.

The minutes of the last quarterly meeting and special meeting of July 4th having been printed and circulated were taken as read and signed as correct.

Read letters of apology for non-attendance from Sir George H Philipson, M.D., Dr. Henry Barnes, Dr. R. W. Batten, Dr. Dolan, Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, Dr. Bruce Goff, Mr. T. Vincent Jackson, Mr. Jordan Lloyd, Dr. R. Maclaren, Dr. Isambard Owen, Dr. H. H. Phillips-Conn, Dr. Sedgwick, and Mr. C. G. Wheelhouse.

Read reply from Lady Grainger Stewart to resolution of Council 4854 passed upon the death of Sir T. Grainger Stewart, M.D.:

19, Charlotte Square, Edinburgh,
May 12th, 1900.

Dear Dr. Roberts Thomson,—I thank you for your letter of April 30th conveying the copy of the resolution passed by the Council of the British Medical Association on the death of my dear husband.

Will you please thank the members of Council for the resolution and for their sympathy with me and my family in our great sorrow.

I am, yours faithfully,
JESSIE D. GRAINGER STEWART.

Resolved: That the same be received and entered on the minutes.

Read reply from Mrs. Grimshaw to resolution of Council 4855 passed upon the death of Dr. T. W. Grimshaw, C.B.:

Eastbourne,
May 5th, 1900.

Dear Sir,—Will you kindly convey to the Council of the British Medical Association the sincere thanks of my family and self for kind resolution passed by them in reference to my husband, Dr. Grimshaw? We are happy in thinking he was valued by so many, and knowing as we do the work he did in various ways for the public service, we feel what his loss really is to all. Again thanking you,

Yours truly,
SARAH E. GRIMSHAW.

The President of Council reported that he had communicated a letter of congratulation to Sir George Hare Philipson, M.D., and Sir John William Moore, M.D., in accordance with the wish of the last meeting of the Council, and that the following replies had been received:

7, Eldon Square, Newcastle-on-Tyne,
July 14th, 1900.

Dear President of Council,—I have the honour to acknowledge the receipt of your letter conveying to me the congratulations of the Council of the British Medical Association on the distinction Her Majesty the Queen has been graciously pleased to confer upon me.

I appreciate very highly the kind reference of the Council to the honour I have received, and desire to express to them my sincere thanks for their kind and much valued remembrance.

I thank you also for your personal congratulations.

I have the honour to be, yours faithfully,
GEORGE HARE PHILIPSON.

J. Roberts Thomson, M.D., F.R.C.P.,
President of Council, British Medical Association.

40, Fitzwilliam Square, West, Dublin,
July 14th, 1900.

Dear Dr. Roberts Thomson,—I desire, through you as President of Council, to convey to the Council of the British Medical Association my most grateful thanks for their hearty congratulations on the occasion of the conferring upon me of a Birthday Honour by Her Majesty the Queen.

I can assure the Council that I treasure most highly the kind words in which their unanimous resolution of congratulation was couched.

To yourself I desire also to convey my warm thanks for the very friendly and flattering terms in which you were good enough to forward the resolution of the Council.

I remain, yours very sincerely,
JOHN WILLIAM MOORE.

J. Roberts Thomson, Esq., M.D.,
President of Council, British Medical Association.

Resolved: That the same be received and entered on the minutes.

The President of Council reported that the following telegram had been sent to H.R.H. the Prince of Wales, in accordance with minute of Council 4852:

To His Royal Highness the Prince of Wales,
The Palace, Copenhagen.

British Medical Association offers most sincere and loyal congratulations on providential escape from dastardly attack.

PRESIDENT OF COUNCIL,
British Medical Association.

April 18th, 1900.

Reply:—

O.H.M.S.

Handed in at St. James Street. April 23rd, 1900.

To President of the Council
British Medical Association, 429, Strand.

I sincerely thank British Medical Association for kind congratulations on escape in recent attempt at Brussels.

ALBERT EDWARD.

Copy of petition of the members of the Council of the British Medical Association to His Royal Highness the Prince of Wales:—

May it please Your Royal Highness,—We, the President and Council of the British Medical Association, with deep and loyal respect humbly approach you to beg that Your Royal Highness may be graciously pleased to accept the Honorary Membership of our Association, which consists of upwards of 18,000 registered and duly-qualified medical practitioners, whose object is promotion of medical and the allied sciences, and the maintenance of the honour and interest of the medical profession. The work of the Association is carried on by Branches not only in Great Britain but in all parts of Her Majesty's dominions.

We venture to ask this favour as Your Royal Highness has already evinced so great an interest in our profession as to become yourself a medical man by condescending to receive the Fellowship of the Royal College of Physicians, and, moreover, because Your Royal Highness has already most greatly honoured the British Medical Association by hospitably entertaining the members of its oldest Branch at your East Anglian home on June 18th, 1896.

If Your Royal Highness should favourably consider our petition we respectfully submit that not only will the Association itself and the whole medical profession be honoured thereby, but that a very especial honour will be conferred on East Anglia, because the annual meeting of the whole British Medical Association is to be held at Ipswich from July 31st to August 4th this year.

We have the honour to subscribe ourselves,
Your Royal Highness's
Most respectful and dutiful servants,
J. WARD COUSINS, President.
W. A. ELLISTON, President elect.
J. ROBERTS THOMSON, President of Council.

Reply from Sir Dighton Probyn:

Marlborough House, Pall Mall, S.W.,
May 19th, 1900.

Sir,—I have laid before the Prince of Wales the petition forwarded with your letter of to-day's date, and I am now desired to ask you to be good enough to assure the President, the President-elect, the President of Council, and the members of the British Medical Association how glad His Royal Highness is to accede to the prayer of the petition that he should accept the honorary membership of the Association.

I am, Sir,
Your obedient Servant,
D. M. PROBYN, General,
Comptroller and Treasurer.

Francis Fowke, Esq.,
General Secretary,
British Medical Association.

Resolved: That it be a recommendation from this Council to

the general meeting of the Association that the honorary membership of this Association be conferred upon His Royal Highness the Prince of Wales.

Read reply from the General Medical Council to resolution of Council, 4,826, a copy of which is as follows:

That in view of the great advance in the science and art of midwifery and disease of women during the last few years, this Council urges the General Medical Council to insist that wherever possible medical students should learn practical midwifery in a lying-in hospital or in the extern midwifery department of a general hospital; and, failing this, that every case of labour shall be attended by them under the supervision of a duly qualified medical practitioner.

299, Oxford Street, London, W.,
May 23rd, 1900.

Dear Sir,—I have to inform you that your letter of February 22nd, transmitting a copy of a resolution passed by the Council of the British Medical Aseociation on January 17th, was considered by the Executive Committee of this Council on 21st instant, and that the following resolution was adopted:

"That the attention of the Council of the British Medical Association be called to the existing recommendation of the Medical Council of June 9th, 1896, in regard to the teaching of midwifery to medical students, from which it will be seen that the wishes expressed in the above resolution of January 17th, 1900, have not been anticipated."—Yours faithfully,

H. E. ALLEN, Registrar.

The General Secretary,
British Medical Association.

Abstract from resolutions of General Medical Council respecting requirements in regard to professional education:

Certificate to be produced by every candidate before admission to the Final Examination is to the following effect:

"I hereby certify that
has personally attended [ ] cases of labour under my supervision, of which [ ] were conducted by him in my presence Also that he attended under my supervision the women in question during the puerperal period.

Registered Medical Practitioner."

Recommendation in regard to Professional Education:

Due time should be set aside for Practical Work in the various subjects. By a Practical Course is understood one in which work is done by the student himself, under the direction of a duly qualified teacher.

The President of Council reported that in reference to minute of Council 4869 appointing Dr. Eyre of Rome, Dr. Gairdner of Naples, and Dr. Allan Sturge of Nice, to act as representatives of the British Medical Association at the forthcoming Congress on Tuberculosis at Naples, that Dr. Eyre and Dr. Sturge were unable to attend, but Dr. Gairdner of Naples promised to attend the Congress to represent the Association.

Read letters from the Hon. Secretary to the Manchester Conference on Medical Organisation, asking that a deputation of the Committee to wait upon the Council to lay before it certain resolutions.

Resolved: That the thanks of the Council be given to Mr. N. C. Macnamara, Mr. Henry Power, and Dr. Argyll Robertson for acting as adjudicators of the Middlemore Prize.

Read resolution from the Nottingham Medico-Chirurgical Society respecting the internal use of diachylon.

Resolved: That the communication be referred to the Parliamentary Bills Committee.

Read communication from the Royal Institute of Public Health requesting the appointment of delegates to their Congress to be held in Aberdeen.

Resolved: That Dr. R. Farquharson, M.P., and Dr. J. C. McVail be appointed representatives of the Association at the forthcoming Congress of the Royal Institute of Public Health.

Read communication from Dr. Edgar Barnes, asking that the Section of the Navy, Army, and Ambulance be open to the public.

It was moved: That the request of the Reception Committee be agreed to on the understanding that they send out invitation cards to those of the public who wish to attend.

Whereupon an amendment was moved and seconded:

That the Navy, Army, and Ambulance Section be thrown open to the public subject to the arrangements made by the Local Committee.

The amendment having been put from the Chair the same was declared to be lost—8 voting for and 11 against.

The original motion was then put and declared to be carried.

Read communication with resolutions on Venereal Diseases passed by a Committee.

Resolved: That in the circumstances no further steps be taken at present, and the Committee on Venereal Diseases be not reappointed.

Read communication and resolution from the Coroners' Society of England and Wales *re* Midwives Bill:

20, Lupus Street, London, S.W.
June 15th, 1900.

Sir,—I beg to inform you that at the last annual general meeting of this Society (which numbers 263 members), held on the 31st ultimo, a discussion arose on the Midwives Bill, and eventually the following resolution was passed unanimously, namely:

"That this Society, although approving of the principle of the licensing of midwives, is of opinion that the Bill now before Parliament does not provide for the adequate control and supervision of midwives."

I am, Sir,
Yours faithfully,
A. BRAXTON HICKS,
Hon. Sec.

The Secretary,
British Medical Association.

Resolved: That the same be received and entered on the minutes.

Read communication from Dr. J. C. McWalter respecting the examinations of the Institute of Chemistry.

Resolved: That the communication be referred to the Parliamentary Bills Committee.

Read communication from the British Guiana Branch of the British Medical Association respecting an alteration in the Branch By-laws.

Resolved: That the General Secretary be instructed to inform Sir D. Palmer Ross that the Council has not yet received any intimation from the British Guiana Branch respecting the deletion of By-law 18, and also communicate with the Branch that the Council would be glad to know whether any alteration to their By-laws has been made.

Read communications from the Jamaica Branch respecting the complaint of a member from the Government Medical Service.

Resolved: That the Jamaica Branch be informed that the Council regrets no further steps can be taken in this matter.

Read resolutions passed by the Edinburgh Branch on June 6th, 1900, respecting (1) midwives legislation and (2) vaccination.

Resolved: That the same be received and entered on the minutes.

Read resolution from the North of England Branch respecting the discussion of ethical topics.

Resolved: That the North of England Branch be informed that the Council regrets that it cannot entertain the proposal, as all the arrangements of the annual meeting are now made.

Read suggestions to the proposed new Articles of Association from Dr. Ince:

Read letter from Dr. Barling respecting the formation of a new Branch of the Association in the district of the Lancashire and Cheshire Branch:

Resolved: That the communication from Dr. Barling be referred to the Council of the Lancashire and Cheshire Branch.

Resolved: That the 107 candidates whose names appear on the circular convening the meeting be and they are hereby elected members of the British Medical Association.

Resolved: That permission be granted to the Irish Graduates' Association and New Sydenham Society to hold meeting during the annual meeting.

Resolved: That the minutes of the special meeting of the Journal and Finance Committee of June 20th and July 17th be received, approved, and the recommendations contained therein carried into effect.

The minutes of the Journal and Finance Committee contain the accounts for the quarter amounting to £9,032 10s. 5d., Auditors' report, and an instruction to print 1,000 copies of the report of the Anæsthetics Committee.

Resolved: That the minutes of the Inebriates Legislation Committee of May 17th last be received, approved, and the recommendations contained therein carried into effect.

Resolved, That the minutes of the Medical Charities Committee of July 17th be received, approved, and the recommendations contained therein carried into effect.

The Medical Charities' Committee has not been engaged in any active work during the past year, but recognising that there is still much work for it to accomplish asks the Council to be reappointed.

Resolved: That the minutes of the Scientific Grants Committee of July 4th be received, approved, and the recommendations contained therein carried into effect.

The minutes of the Scientific Grants Committee contain applications for the two vacant Research Scholarships. The Committee recommended the appointment of Dr. J. H. Parsons and Dr. Stuart McDonald as Research Scholars; Dr. J. S. Macdonald was reappointed Scholar for one year. Dr. J. W. H. Eyre was reappointed Ernest Hart Memorial Scholar for a further period of one year. The sum of £350 was voted for scientific grants.

Resolved: That the minutes of the Premises and Library Committee of July 17th be received, approved, and the recommendations therein carried into effect.

The minutes of the Premises and Library Committee contain Librarian's report, library accounts for the quarter amounting to £28 14s. 10d., and an instruction for the purchase of certain books.

It was moved: That the minutes of the Conciliation Board Committee be received.

The minutes of the Conciliation Board Committee contain a recommendation to the Council to appoint five members who are familiar with the working and conditions of contract practice from certain districts, who, together with five representatives of the Great Friendly Societies, shall form the first Conciliation Board to remain in office for two years, etc.

Whereupon an amendment was moved and seconded:

That after the word "That" all the words be left out, and the following words be inserted: "The Council appoint a Committee to confer with representatives of the Friendly Societies with the view to drawing up a scheme for the formation of regulations regarding the powers and duties of the proposed Conciliation Board."

The amendment having been put from the Chair, the same was declared to be carried.

Resolved: That the Committee consist of the following: Dr. J. Corns (Oldham), Dr. James Craig (Dublin), Dr. J. W. J. Oswald (London), Dr. J. W. Miller (Dundee), and Dr. C. H. Milburn (Hull).

Resolved: That the minutes of the General Practitioners and Ethical Committee of the 17th instant be received, approved, and the recommendations contained therein carried into effect.

The minutes of the General Practitioners and Ethical Committee contain resolutions on various medico-ethical questions and the adoption of the annual report.

Resolved: That the minutes of the Parliamentary Bills Committee of the 17th instant be received, approved, and the recommendations contained therein carried into effect.

Resolved: That the report of the Committee on the Early Decay of Teeth among the Inhabitants of Britain be laid before the Council and that copies of it be forwarded to the Secretaries of the Branches of the Association for distribution among such of their members as are likely to take an interest in the subject.

Resolved: That the thanks of the Council of the British Medical Association be forwarded to Dr. Graham Campbell for his valuable and interesting report on the Early Decay of Teeth among the Inhabitants of Britain.

Resolved: That Dr. Saundby and Dr. Shuttleworth be requested to represent the Council at the forthcoming International Medical Congress.

PARLIAMENTARY BILLS COMMITTEE.

At a meeting of the Parliamentary Bills Committee, held at the office of the Association, 429, Strand, W.C., on Tuesday, July 17th, 1900. Present:

Dr. J. Roberts Thomson, President of Council, in the Chair.
Dr. J. Ward Cousins, President.
Dr. W. A. Elliston, President-elect.
Mr. Andrew Clark, Treasurer.

Mr. D. B. Balding, Royston.
Dr. T. Bridgwater, Harrow-on-the-Hill.
Mr. George Brown, London.
Mr. Colin Campbell, Saddleworth.
Dr. W. A. Carline, Lincoln.
Dr. Alfred Cox, Gateshead.
Dr. W. Douglas, London.
Dr. R. Esler, London.
Dr. J. Groves, Carisbrooke.
Dr. A. J. Harrison, Clifton.
Mr. Victor Horsley, F.R.S., London.
Mr. Evan Jones, Aberdare.
Dr. C. H. Milburn, Hull.
Sir John William Moore, Dublin.
Dr. W. Newman, Stamford.
Mr. C. H. W. Parkinson, Wimborne Minster.
Dr. F. M. Pope, Leicester.
Dr. A. Brown Ritchie, Hulme.
Dr. John Rolston, Exeter.
Dr. William Russell, Edinburgh.
Mr. C. R. Straton, Wilton.
Insp.-Genl. Alex. Turnbull, R.N., Emsworth.
Mr. T. J. Verrall, Brighton.
Dr. Dawson Williams, London.
Dr. W. L. Winterbotham, Bridgwater.
Dr. S. Woodcock, Old Trafford.

On the motion of Dr. Ward Cousins, the President of Council was requested to take the chair in the absence of the Chairman.

Letters of apology for non-attendance were read from Dr. R. W. Batten, Dr. R. L. Bowles, Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, Dr. R. Farquharson, M.P., Dr. Bruce Goff, Surgeon-General T. F. O'Dwyer, and Dr. G. E. Shuttleworth.

The President in the name of the Committee congratulated Sir John Wm. Moore upon the honour which the Queen had bestowed upon him. Sir John Wm. Moore briefly acknowledged the congratulations.

Representation of the Profession on the General Medical Council.

A resolution passed by the County of Durham Medical Union, stating that the medical profession was not sufficiently or properly represented on the General Medical Council, which had been referred by the Council to the Parliamentary Bills Committee, was read and referred to the Medical Acts Amendment Bill Subcommittee.

Public Vaccinators and Boards of Guardians.

The President of Council reported with reference to the memorial to Mr. Chaplin, President of the Local Government Board, respecting the payment of fees to public vaccinators by Boards of Guardians and the tenure of office, that no further reply than the formal acknowledgment, which was placed before the Committee on April 10th, 1900, had been received.

Mr. George Brown said that such an important matter should not be allowed to rest in that way. He moved:

That the matter be referred to the Vaccination Subcommittee to take further steps.

Mr. Colin Campbell, in seconding the resolution, said the discontent arose from the absolute disregard paid by certain Boards of Guardians to the rulings of the Local Government Board. The guardians of his Board had passed a resolution ordering their clerk to publish a list of all those children and others who had been vaccinated at the public expense, so as to bring odium on the Vaccination Act. This had not been done yet, as it was only passed a week ago. If the Local Government Board allowed this kind of thing, and allowed Boards of Guardians to refuse to pay the scale of vaccination fees fixed by the Local Government Board, the machinery of the Vaccination Act must fall into ridicule. He would like to ask the Subcommittee to approach Mr. Chaplin personally, or through a memorial, and call his attention to the great abuses which existed and were increasing.

The resolution was carried.

The Royal Army Medical Corps.

A communication from a Major of the R.A.M.C. calling attention to certain grievances and suggesting reforms, was submitted.

Dr. Milburn said that at a recent meeting of the Committee he proposed that a small subcommittee should be appointed to watch the direction in which improvement might be brought about in the Royal Army Medical Corps, and so bring the Corps up to the efficiency they all wished should attend it. He would propose:

That a Watching Committee be appointed to consider matters relating to the Royal Army Medical Corps, consisting of Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, Inspector-General Turnbull, R.N., Mr. George Eastes, Dr. Farquharson, M.P., Dr. Groves, and Dr. Milburn.

Dr. Ward Cousins, in seconding the motion, said that one reason why the Corps was so short at the present time was that the abolition of the unqualified assistant had made a great call upon the qualified men, whose value had greatly increased.

Inspector-General Turnbull pointed out that the present rates of pay for the navy and army were fixed twenty years ago, and agreed with Dr Ward Cousins that the value of the qualified man had doubled.

Mr. George Brown hoped the Committee would take the matter up and impress upon the Government the necessity of reorganising the Army Medical Department.

The resolution was carried unanimously.

Certifying Factory Surgeons.

A communication from the Association of Certifying Factory

Surgeons on the Home Secretary's Factories and Workshops Bill, 1900, was considered.

On the motion of Dr. GROVES, seconded by Dr. DOUGLAS, it was resolved:

That the matter be referred to the Public Health Subcommittee.

DRAFT ANNUAL REPORT.

The draft annual report of the Committee was considered paragraph by paragraph, and it was resolved:

That the report of the Parliamentary Bills Committee be received, approved, and published in the JOURNAL for presentation to the annual meeting at Ipswich.

The report was published in the BRITISH MEDICAL JOURNAL of July 21st, p. 159.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.

A GENERAL meeting of this Branch was held at the Cardiff Infirmary on July 13th, Mr. W. W. LEIGH, and subsequently Dr. A. GARROD THOMAS, President, in the chair. There were present Drs. A. G. Thomas, R. Prichard, W. B. Gratte, W. J. Thomas, E. P. Evans, F. W. S. Davies, E. Lancaster, R. C. Joyce, Herbert Jones, W. M. Stevens, R. J. Paton, W. W. Leigh, W. Bassett, C. Downing, C. C. McCall, T. Wallace, W. G. Greer, J. M. Rees, J. Williams, T. G. Horder, W. J. Corrigan, B. M. Lewis, T. H. Redwood, Tatham Thompson, W. F. Brook, W. E. Thomas, J. L. W. Ward, L. D. Gamble, J. A. Jones, T. H. Morris, T. J. Webster, C. A. Griffiths, P. R. Griffiths, S. G. Floyd, D. A. Davies, De V. Hunt, C. Pegge, D. R. Paterson, A. Sheen, P. R. Cresswell, R. G. Price, C. T. Vachell, A. P. Fiddian, W. B. C. Treasure, H. B. Seddon, H. H. Tidswell.

Vote of Thanks to the Retiring President.—The President having resigned the chair to the President-elect, a hearty vote of thanks was unanimously passed to the retiring President for his conduct in the chair during the past year.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Report of Council and Statement of Accounts.—The Report of Council with statement of accounts, which showed that the Branch consisted of 252 members and the Treasurer's balance was £58 6s. 4d., was read and adopted. It was proposed by Mr. HORDER, seconded by Mr. BROOK, and carried:

That it be recommendation to the Council to consider the desirability of printing the report of Council and statement of accounts and circulating the same to members before the annual meeting.

Revision of Rules.—The following resolution was passed:

That the following be a committee to revise the rules as suggested in the report of Council, namely: Messrs. Brook, Webster, Ward, Wallace, Horder, Bassett, T. W. Parry, President, President-Elect, Ex-President, reasurer and two Secretaries.

Election of Officers.—President-elect: Dr. A. P. Fiddian (Cardiff). *Treasurer:* Dr. A. Sheen. *Honorary Secretaries:* Dr. Paterson (Cardiff), Dr. Lancaster (Swansea). *Representatives on General Council:* Dr. A. Sheen, Mr. Evan Jones. *Representative on Parliamentary Bills Committee:* Mr. Evan Jones. *Members of Council* (four in place of those retiring, and one in place of Dr. Paterson, appointed Honorary Secretary): Messrs. W. F. Brook, Thomas Wallace, D. A. Davies, E. P. Evans, and Garrett Horder. Mr. Horder takes the place of Dr. Paterson for two years' term.

President's Address.—The President then gave an interesting address, On Some Mistakes and their Lessons.

Dinner.—Twenty-three members subsequently dined together at the Park Hotel.

BORDER COUNTIES BRANCH: SECTION FOR THE COUNTIES OF ROXBURGH, BERWICK, SELKIRK, AND PEEBLES.

THE annual meeting was held at Melrose on July 12th, Dr. BLAIR, of Jedburgh, presiding.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

Vote of Thanks.—The CHAIRMAN moved a vote of thanks to Dr. Carlyle Johnstone, the Medical Superintendent of the Roxburgh District Asylum, for his great kindness in inviting the Section to the Asylum, and in showing them over the new hospital for female patients. This was unanimously carried.

Election of Office-Bearers.—Dr. Blair was re-elected Chairman for another year. The former members of Committee, Drs. Young, Tyrell, Fleming, and Cameron were re-elected. It was afterwards moved that the Committee be increased by one, and that Dr. Mair, of Hawick, be added to it. This was unanimously agreed to. Dr. Calvert was re-elected as Secretary.

Institution of an Annual Dinner.—Dr. JOHNSTONE read a letter from Dr. Hamilton, late President of the Branch, suggesting that the Section ought to institute an annual dinner. After discussion an instruction was passed to the Committee and Dr. Hamilton to arrange for an annual dinner this year, to be held at Melrose in October.

Treatment of the Insane Poor.—Dr. CARLYLE JOHNSTONE introduced a discussion on what to do with the insane poor man. When called to a case of supposed insanity, the first question to be asked was, Is this person insane? One had to distinguish between insanity and eccentricity. The next point to be settled was, Is the insanity of such a quality and degree as to require restriction of liberty? Is he a case for treatment in a private dwelling or in an asylum? Cases were mentioned which might be properly treated at home—melancholics without suicidal tendency, mild attacks of mania of brief duration, puerperal insanity, lactational insanity, insanity during pregnancy, all, if possible, treated at home; all very old cases of senile insanity, mild imbeciles and harmless idiots, cases of harmless mental enfeeblement after acute attacks, curable alcoholism, as asylums were not the places for delirium tremens. The cases requiring to be placed in asylums were: Those who were suicidal, those dangerous to others (comparatively few), those whose habits were offensive to the public—such as obscenity and bad language—men incapable of taking care of themselves or of managing their own affairs, all acute mania and melancholia. A discussion followed in which Drs. HADDON, SOMERVILLE, YOUNG, TYRELL, STURROCK, and the CHAIRMAN took part, the latter thanking the author for the valuable paper which he had read.

BRITISH MEDICAL ASSOCIATION.

SIXTY-EIGHTH ANNUAL MEETING.

THE sixty-eighth annual meeting of the British Medical Association will be held at Ipswich on Tuesday, Wednesday, Thursday, and Friday, July 31st, August 1st, 2nd, and 3rd, 1900.

President: JOHN WARD COUSINS, M.D.Lond., F.R.C.S.Eng., Senior Surgeon Royal Portsmouth Hospital.

President-Elect: WILLIAM ALFRED ELLISTON, M.D. Senior Surgeon East Suffolk and Ipswich Hospital.

President of the Council: JOHN ROBERTS THOMSON, M.D., F.R.C.P.Lond., Consulting Physician to the Royal Victoria Hospital and to the National Sanatorium for Diseases of the Chest, Bournemouth.

Treasurer: ANDREW CLARK, F.R.C.S., Surgeon to the Middlesex Hospital and Lecturer on the Principles and Practice of Surgery.

An Address in Medicine will be delivered by PHILIP HENRY PYE-SMITH, M.D., F.R.S., Consulting Physician, Guy's Hospital.

An Address in Surgery will be delivered by FREDERICK TREVES, F.R.C.S., Surgeon Extraordinary to H.M. the Queen.

An Address in Obstetrics will be delivered by WILLIAM J. SMYLY, M.D., F.R.C.P.I., Examiner in Midwifery, Royal College of Physicians, Ireland.

The Scientific Business of the Meeting will be conducted in Thirteen Sections, as follows, namely:

A. MEDICINE.

Art Gallery.

President: THOMAS BUZZARD, M.D. *Vice-Presidents:* MRS. E. GARRETT ANDERSON, M.D.; SAMUEL J. BARTON, M.D. *Honorary Secretaries:* FREDERICK WILLIAM BURTON-FANNING, M.D., 1 St. Faith's Lane, Norwich; THOMAS WARNER, M.D., 12, Museum Street, Ipswich.

The following discussions have been arranged:

Wednesday, August 1st.—Influenza as it affects the Nervous System. Dr. Judson S. Bury will open this discussion, and it is hoped that the following will take part in it: Sir Wm.

Broadbent, Bart., M.D., F.R.S., Sir Peter Eade, M.D., Dr. Joseph Collins, Dr. S. H. Habershon, Dr. James Taylor, Dr. J. S. Risien Russell, Dr. H. Handford, Dr. T. D. Savill, Dr. J. MacCormac, Dr. G. Newton Pitt, Dr. F. M. Pope, and Dr. Sarat K. Mullick.

Thursday, August 2nd.—The Problem of Gastric Ulcer. This will be opened by Dr. J. F. Payne, and it is hoped that the following will take part in the discussion: Professor T. Clifford Allbutt, M.D., F.R.S., Dr. S. Martin, F.R.S., Dr. S. H. Habershon, Dr. Soltau Fenwick, Dr. R. Saundby, Dr. H. Handford, Dr. W. Gordon, Dr. G. Herschell, Dr. W. Calwell, Dr. H. Walsham, Miss Julia Cock, M.D., Dr. J. A. Lindsay, Dr. G. Newton Pitt, and W. Stuart Low, F.R.C.S.

The following papers have been offered:

CUSHING, Professor. On Intermittent Pulse.
DAVIES, Chas. A., M.D. Consanguinity as a Factor in the Etiology of Tuberculosis.
EWART, W., M.D., and PERCIVAL, Beaumont, M.B. Subcutaneous Saline Infusions in Pneumonia.
EWART, W., M.D. A Case of Fatal Malignant Endocarditis and Right Embolic Hemiplegia apparently due to Infection from Dental Caries and Stomatitis, treated by Antistreptococcus Serum and by Saline Infusions.
GORE, W. R., M.B., B.Ch. A Toxin Theory of the Causation of Gout.
MARSHALL, Professor C. R. Demonstration of Sphygmographs.
MCKEOWN, David, M.D. Explanation of so-called Imperfect Aëration Symptoms of Post-nasal Adenoids.
PRUEN, S. T., M.D. Some Practical Points in the Construction of Open-air Sanatoria.
WALKER, Jane, M.D. Progress of Sanatorium Treatment of Consumption in England.
WILSON, T. Stacey, M.D. The Diastolic Expansion Movement of the Ventricles as a Factor in Compensation for Disease of the Mitral Valve.

B. SURGERY.

Masonic Hall, Ground Floor.

President: HOWARD MARSH, F.R.C.S. *Vice-Presidents:* SAMUEL HERBERT BURTON, F.R.C.S.; THOMAS HERBERT MORSE, F.R.C.S. *Honorary Secretaries:* WALTER GEORGE SPENCER, M.S., 35, Brook Street, W.; HERBERT HENRY BROWN, M.D., F.R.C.S., 3, Museum Street, Ipswich.

The following discussions have been arranged:

Wednesday, August 1st.—Discussion on Subdiaphragmatic Abscess. Introduced by Mr. Rickman J. Godlee, M.S., F.R.C.S. The following gentlemen will take part: Messrs. Bruce Clarke, Charters Symonds, Musgrave, Jordan Lloyd, and Bidwell.

Thursday, August 2nd.—Discussion on the Methods at present available for the Treatment of Simple (Subcutaneous) Fractures. Introduced by Mr. William H. Bennett, F.R.C.S.

The following gentlemen will take part: Messrs. Keetley, Robert Jones, Eve, J. Hutchinson, jun., F. F. Burghard, Jordan Lloyd, Wm. Thomas, and Langley Browne.

BIDWELL, Leonard, F.R.C.S. Pyloroplasty.
BOYD, Stanley, M.B., B.S. Oöphorectomy in Cancer of the Breast, with Results to Date.
BURGHARD, F. F., M.S. Three Cases in which the Superior Cervical Ganglia were Excised, with Remarks on the Operation.
BURTON, S. H., B.S. On the Removal of Large Stones from the Bladder, with notes of a case (Messrs. Reginald Harrison and Keegan will take part in the discussion.)
CLARKE, W. Bruce, M.B. Prostatectomy in Two Stages, with an Account of Seven Cases.
DAVIDSON, J. Mackenzie, M.B., C.M. Recent Progress in the Use of Roentgen Ray Methods in Surgery. After the paper Mr. Mackenzie Davidson will give a Demonstration in the dark room: members are invited to attend two or three at a time.
ECCLES, W. McAdam, M.S. Hernia of the Large Intestine.
FREYER, P. J., M.Ch. Fifty-Three Operations for Stone in the Bladder of Two Ounces and Upwards, from the Author's Practice.
GRIFFITHS, Joseph, F.R.C.S. Observations upon Injuries to the Internal Lateral Ligament and to the Internal Semilunar Cartilage of the Knee-Joint.
HERMAN, G. E., M.B., F.R.C.P. Four Cases of Recurrent Mammary Cancer treated by Oöphorectomy and Thyroid Extract.
HUTCHINSON, Jonathan, jun., F.R.C.S. The Substitution (when practicable) of Subastragalar for Syme's Amputation.
PHELPS, A. M., M.D. The Open Incision for Club Foot; its Indications and Abuses. (The following gentlemen will take part in the discussion: Messrs. Jackson Clarke, Wm. Thomas, and Tubby.)
ROBINSON, H. Betham, M.S. A Case of Obstructive Jaundice in which Cholecystocolostomy was performed with Complete Success.
THOMAS, W. Thewall, F.R.C.S. An Operation for the Cure of Frontal Sinus Suppuration.
WALLIS, F. C., M.B., B.C. Non-malignant Stricture of the Rectum: its Causes and Radical Cure.

In order to allow sufficient time for the discussions on the above subjects, no more papers can be accepted. Members proposing to take part in the discussions are requested to send their names, at their earliest convenience, to the Honorary Secretaries.

C. OBSTETRICS AND GYNÆCOLOGY.

High School for Girls, Ground Floor.

President: WALTER SPENCER ANDERSON GRIFFITH, M.D. *Vice-Presidents:* MICHAEL BEVERLEY, M.D.; MRS. MARY ANN DACOMB SCHARLIEB, M.D. *Honorary Secretaries:* JOHN DAVID MALCOLM, M.B., F.R.C.S.Edin., 13, Portman Street, Portman Square, W.; SAMUEL OLIVER EADES, L.R.C.P., L.R.C.S.Edin., Manor House, St. Peters, Ipswich.

The following discussions have been arranged:

Wednesday, August 1st.—Puerperal Fever in Relation to Notification. To be opened by Dr. Berry Hart.

Thursday, August 2nd.—The Natural History of Fibroids and Recent Improvements in their Treatment. To be opened by Mr. Alban Doran, F.R.C.S.

Friday, August 3rd.—*Post-Partum* Hæmorrhage, its Prevention and Treatment. To be opened by Dr. Dakin.

The following gentlemen have signified their intention of joining in the discussions: Dr. Herman, Dr. Boxall, Mr. Stanmore Bishop, Dr. More Madden, Dr. Purslow, Dr. George Elder, Dr. Byers, Dr. John Campbell (Belfast), and Messrs. Harrison Cripps, Skene Keith, and W. H. C. Newnham.

The following papers have been proposed:

BOYD, Mrs. Stanley, M.D. On the Conservative Surgery of the Tubes and Ovaries.
BRIGGS, Henry, F.R.C.S. On Vaginal Enucleation *versus* Vaginal Hysterectomy in the Treatment of some Fibroids of the Uterus, with Notes of Cases.
BUTLER-SMYTHE, A. C., F.R.C.S. An Extreme Hydroperitoneum associated with Uterine Fibroids.
MADDEN, Thomas More, F.R.C.S.Edin. On the Modern Treatment and Prevention of *Post-Partum* Hæmorrhage.
NEWNHAM, W. H. C., M.A., M.B., M.R.C.S. Successful Removal of Fibroid, 13 lbs. 11 ozs., by Intraperitoneal Hysterectomy.
PURSLOW, C. E., M.D. An Account of a Case of Complete Inversion of the Uterus of Three Years' Duration.
SCHARLIEB, Mrs., M.D., M.S. Vaginal Hysterectomy, its Immediate and Remote Results.
TARGETT, J. H., B.S. Cephalotripsy for the After-coming Head.
VAN TUSSENBROCK, Catherine, M.D. A Human Placentation in its Second Stage.
WILLIAMS, Wm. Roger, F.R.C.S. When are Radical Operations for Myoma of the Uterus Necessary?

D. STATE MEDICINE.

Library, Town Hall.

President: JOHN CLOUGH THRESH, M.D., D.Sc., D.P.H. *Vice-Presidents:* HENRY HANDFORD, M.D., D.P.H.; HARRY COOPER PATTIN, M.D., D.P.H. *Honorary Secretaries:* GEORGE VINCENT, M.D., D.P.H., North Lodge, Anglesea Road, Ipswich; EDWARD PETRONELL MANBY, M.D., D.P.H., Local Government Board, Whitehall, S.W.

The following discussions have been arranged:

1. Can Modern Systems of Sewage Treatment be depended upon to Remove the Bacillus Typhosus and Allied Organisms? To be opened by Dr. Houston, and illustrated by lantern slides. The following will take part in the discussion: Professor Boyce, Dr. Grünbaum, Dr. Kaye, and Dr. Kenwood.

2. The Provision of Cottages in Rural Districts, and its bearing upon Public Health. To be opened by Dr. Tew.

3. What Action can be taken by Sanitary Authorities for the Prevention of Tuberculous Disease, apart from the Control of Milk and Meat Supplies? To be opened by Dr. H. R. Kenwood. The following will take part in the discussion: Dr. J. Spottiswoode Cameron, Dr. Drysdale, and Dr. W. Brown.

4. Should Municipalities provide Common Lodging-houses and Workmen's Dwellings? To be opened by Dr. Cooper Pattin. The following will take part in the discussion: Dr. W. Permewan, Dr. Herbert Manley, and Dr. J. Spottiswoode Cameron.

The following papers have been proposed:

BEEVOR, Sir H. R., Bart. Rural Phthisis and the Insignificance of Case-to-Case Infection.
BERRY, William, F.R.C.S.I., D.P.H. Housing of the Working Classes.
BOYCE, Professor R. W., M.B. (Liverpool). The Construction of Sanatoria for Phthisis. (Illustrations by Lantern Slides.)
GRÜNBAUM, A. S., M.D. (Liverpool). Food Preservatives.
DRYSDALE, C. R., M.D. On the Notification of Venereal Diseases in Christiania, Norway, since 1879.
HARRIS, F. Drew, M.B. (M.O.H., St. Helens). Municipal Sterilisation of Milk: An Account of the Installation and Working of the System at St. Helens. (Illustrated by Lantern Slides.)
MCWALTER J. C., D.P.H. The Hygienic Aspect of the Use of Water Gas.
RAW, Nathan, M.D., D.P.H. (Medical Superintendent, Mill Road Infirmary, Liverpool). Rate-supported Sanatoria.
SCOTT, G. M., M.D. Cancer Mortality in East Anglia.

THRESH, J. C., M.D., D.Sc. (M.O.H., Essex County Council). Rural Water Supplies.
WILLIAMS, W. Roger, F.R.C.S. The Prevalence of Cancer in different Countries and its Increase.

Dr. R. R. RENTOUL gives notice that he will move the following resolution:

That in order that the suggestion of the Registrar General of Births and Deaths relating to childbirth mortality be more fully carried out, and more accurate statistics relating to such mortality be secured, this Section of State Medicine earnestly requests the Council of the Association to use its best efforts to induce all practitioners to carry out the above "suggestion."

The "suggestion" is as follows: "No. 7.—Whenever childbirth has occurred within one month before death, this fact should invariably be certified, even though it may be believed that the childbirth has no connection with the cause of death."

E. PSYCHOLOGY.

Class Room No. 9, First Floor, Higher Grade School.

President: R. PERCY SMITH, M.D. *Vice-Presidents:* EDMUND LEWIS ROWE, L.R.C.P.; WILLIAM ALDREN TURNER, M.D. *Honorary Secretaries:* CECIL ANTHONY PERRIER OSBURNE, F.R.C.S.Edin., The Grove, Old Catton, Norwich; JAMES RICHARD WHITWELL, M.B., County Asylum, Melton, Suffolk.

The following discussions have been arranged:

Wednesday, August 1st.—The Bearing of Sexual Function and Disease of the Sexual Organs on Insanity and Crime. Introduced by Dr. Macnaughton-Jones. The following gentlemen will take part in the discussion: Drs. Urquhart, Soutar, and Mullick.

Thursday, August 2nd.—The Colony Treatment of Epileptics. Introduced by Dr. Aldren Turner. The following gentlemen will take part in the discussion: Drs. Shuttleworth, Crochley Clapham, Corner, Rayner, and Robert Jones.

Friday, August 3rd.—Organotherapeutics in Mental Disease. Introduced by Dr. Easterbrook. The following gentlemen will take part in the discussion: Drs. Bruce, Crochley Clapham, and others.

The following papers have been proposed:

CRAIG, Maurice, M.D. On Blood Pressure in Mental Disease.
JONES, Robert, M.D. Insanity in Male Lead Workers.
MACCORMACK, J. M., M.D. The Relation of the Lunacy Laws to Neuropsychological Diseases.
NORMAN, Conolly, F.R.C.P.I. The Method of Keeping Clinical Records in Asylums.
PASMORE, E., M.D. Epileptic Insanity.
SMITH, Percy, M.D. Peripheral Neuritis and Insanity.
TURNER, John, M.B. The Pathological Histology of Acute Delirious Insanity. (With Lantern Demonstration.)
URQUHART, A. R., M.D. The Beneficial Effects of Transfer from one Asylum to Another.
WHITE, Ernest, M.B. The Treatment of the more Acute Forms of Melancholia.
WHITWELL, J. R., M.B. Some Cardiopsychical Relationships.

F. PHYSIOLOGY.

Class Room No. 1, Ground Floor, Higher Grade School.

President: Professor WILLIAM DOBINSON HALLIBURTON, M.D., F.R.S. *Vice-Presidents:* EDWARD WILLIAM WACE CARLIER, M.D.; Professor CHARLES S. SHERRINGTON, M.A., M.D., F.R.S. *Honorary Secretaries:* W. H. THOMPSON, M.D., Queen's College, Belfast; WILLIAM LEGGE SYMES, M.R.C.S., Physiological Department, St. Mary's Hospital Medical School, W.

The following discussions have been arranged:

1. The Formation and Excretion of Uric Acid in Health and Disease. To be opened by the President. Professor Vaughan Harley, M.D., M.R.C.P., F. G. Hopkins, M.D., B.Sc., A. Haig, M.D., T. H. Milroy, M.D., W. J. Smith Jerome, M.D., William Bain, M.D., etc., will take part in the discussion.

2. Muscular Tonus in Relation to Affections of the Nervous System. To be opened by F. W. Mott, M.D., F.R.C.P., F.R.S. Professor Victor Horsley, F.R.S., Professor C. S. Sherrington, M.A., M.D., F.R.S., L. J. J. Muskens, M.D., etc., will take part in the discussion.

The proceedings will also include papers and demonstrations on other branches of physiology and histology, among others the following:

ANDERSON, Professor R. J. A Note on Respiration.
BUNCH, J. L., M.D., D.Sc. Some Changes in Volume of the Submaxillary Gland accompanying Secretion.
BUXTON, Dudley W., M.D., and LEVY, A. G., M.D. The Influence of Some Anæsthetics upon the Kidney.
CARLIER, Professor E. Wace. (1) Changes occurring in the Cell of the Newt's Stomach during and after Secretion. (2) Presence of Ciliated Cells in Convoluted Tubules of Human and Mammalian Kidney.
COFFEY, Professor D. J. Histology of the Œsophageal Mucous Membrane.
GOODBODY, F. W., M.D. Influence of Sodium Salicylate on General Metabolism.
HARRIS, D. F., M.D. The Inertia of Protoplasm.
HUNTER, W., M.D. Demonstration of Histological Specimens of the Nervous System, stained by the Methods of Ehrlich and Golgi.
LEVY, A. G., M.D. Notes on Fatigue of the Cerebral Cortex.
MACDONALD, J. S., M.D. Demarcation Current of the Vagus.
MANN, Gustav, M.D. 1. Points of Homology in Cord, Hind- and Midbrain. 2. Arrangement of Nuclei in Cord of Macacus Sinicus. 3. Demonstration of Photographs and Charts of Monkeys' Cord. 4. Demonstration of Different Types of Nerve Cells seen in the Cord and Higher Centres.
MILROY, T. H., M.D. The *Rôle* of the Liver in the Metabolism of Nucleins.
PARSONS, J. Herbert, M.B., B.Sc. Dilatation of the Pupil from Stimulation of the Cortex.
PEMBREY, M. S., M.D., PASSMORE, W. H., and CLAYTON, E. T. Observations on the Temperature of Man after so-called "Heat Stroke."
SHERRINGTON, Professor C. S., F.R.S. Spinal Vascular Reflexes.
SYMES, W. Legge, M.R.C.S. An Embedding Bath.
THOMPSON, Professor W. H. Anæsthetics and Urinary Secretion.
WALLER, A. D., F.R.S. 1. The Retinal Response to Light. 2. The Digital Sphygmograph.

G. PATHOLOGY.

Chemical Lecture Room, Second Floor, Higher Grade School.

President: EDWARD E. KLEIN, M.D., F.R.S. *Vice-Presidents:* WILLIAM MILLER CROWFOOT, M.B.; Professor ROBERT MUIR, M.D. *Honorary Secretaries:* ALEX. GRANT RUSSELL FOULERTON, F.R.C.S., Dunsdale, Mulgrave Road, Sutton, Surrey; SYDNEY HERBERT LONG, M.B., 37, St. Giles Street, Norwich.

The following discussions have been arranged:

Wednesday, August 1st.—The Pathological Distribution of B. Diphtheriæ, and the Bacteriological Diagnosis of Diphtherial Infection. Introduced by Dr. F. W. Andrewes.

Thursday, August 2nd.—The Pathology of Cirrhosis of the Liver in Adults and Young Children. Introduced by Dr. Arthur Voelcker. The following gentlemen will take part in this discussion: Dr. Lazarus-Barlow, Dr. Poynton, Professor Simon Flexner, Dr. Wakelin Barratt, Professor Ludvig Hecktoen, and Dr. Lister.

The following papers have been proposed:

BUNCH, J. Lemare, M.D., D.Sc. Ringworm Infection in Man and Animals.
EYRE, J. W., M.D. Nutrient Media of Standard Reaction.
FLEXNER, Professor Simon. The Bacteriology of Acute Tropical Dysentery.
FOULERTON, Alex. G. R., F.R.C.S. Primary Pneumococcic Meningitis.
HARRIS, Wilfred J., M.D. On the Pathology and Significance of the Argyll-Robertson Pupil.
LAZARUS-BARLOW, W. S., M.D. On Lipomata of the Kidney.
MCDONALD, Stuart, M.B. A Case of Cirrhosis of the Liver in a Girl, aged 15, with Fatal Hæmatemesis.
MANN, Gustav, M.D. The Histology of Variola and Vaccinia.
MUIR, Professor Robert. A Case of Serious Anæmia and Purpura associated with Great Deficiency in the Red Bone Marrow.
WALSHAM, Hugh, M.D. The Muscular Atrophy of Pulmonary Tuberculosis.
WILLIAMS, William Roger, F.R.C.S. The Pathogenesis of Myoma of the Uterus.

Members proposing to take part in the discussions or desirous of reading papers are requested to send their names at their earliest convenience to the Honorary Secretaries.

H. OPHTHALMOLOGY.

Class Room No 6, Ground Floor, Higher Grade School.

President: WILLIAM ARTHUR BRAILEY, M.D. *Vice-Presidents:* HAYNES SPARROW ROBINSON, M.R.C.S.; HENRY WORK DODD, F.R.C.S. *Honorary Secretaries:* CHARLES DEVEREUX MARSHALL, F.R.C.S., 112, Harley Street, W.; WALTER WILLIAM SINCLAIR, M.B., 16, Museum Street, Ipswich.

The following discussions have been arranged:

1. The Treatment of Chronic Glaucoma. Introduced by F. Richardson Cross, F.R.C.S. Messrs. T. H. Bickerton, K. A. Grossmann, G. Foggin, and John Hern will take part in the discussion.

2. The Treatment of Lachrymal Obstructions. Introduced by George A. Berry, M.B., F.R.C.S.E. Messrs. T. H. Bickerton, K. A. Grossmann, G. Foggin, John Hern, Kenneth Scott, and Ernest H. Cartwright, will take part in the discussion.

The following papers have been proposed:

BUCHANAN, Leslie, M.B. On a Case of Congenital Microphthalmos with Cyst.

Clarke, Ernest, F.R.C.S. A Case of Tumour of the Cerebrum with Optic Neuritis.
Ferges, A. Freeland, M.D. Some Forms of Optic Nerve Disease Probably of Sympathetic Origin.
Foggin, George, L.R.C.P. On Epicanthus.
Griffin, W. Watson, M.B. A Case of Leucosarcoma of the Iris showing Fibro-hyaline Changes.
Grossmann, Karl, M.D. Quantitative Colour Tests.
Scott, Kenneth, M.B. Dacryocystitis Aggravans resembling Tumour of Face.
Stephenson, Sydney, F.R.C.S.E. The Etiology and Associations of Phlyctenular Affections of the Eye.

I. Diseases of Children.

Class Room No. 14, First Floor, Higher Grade School.

President: Frederick Taylor, M.D. *Vice-Presidents:* Richard William Brogden, M.B.; John Thomson, M.D. *Honorary Secretaries:* William Soltau Fenwick, M.D., 8, Devonshire Street, Portland Place, W.; Alfred M. Gossage, M.B., 54, Upper Berkeley Street, W.

Wednesday, August 1st.—The Nature and Varieties of Pneumonia in Children. Introduced by Nestor Tirard, M.D. It is hoped that the following will take part in the discussion: More Madden, M.D.

Thursday, August 2nd.—On Lateral Curvature, Flat-foot and Knock-knee. Introduced by J. Jackson Clarke, F.R.C.S., It is hoped that the following will take part in the discussion: A. H. Tubby, M.S., W. Thomas, F.R.C.S., Chisholm Williams, F.R.C.S.E., and Noble Smith, F.R.C.S.Edin.

Friday, August 3rd.—Enlargements of the Spleen in Children. Introduced by Samuel West, M.D.

The following papers have been proposed:

Corlette, C. C., M.D. The Causation of Infantile Scurvy.
Fenwick, Soltau, M.D. Hypertrophy and Dilatation of the Colon in Infancy.
Little, Muirhead, F.R.C.S. An Analysis of a Series of Cases of Infantile Paralysis, with some notes on treatment.
Nicoll, J. H., M.B. (Glasgow). Congenital Hypertrophic Stenosis of the Pylorus, with an account of a case successfully treated by operation.
Overend, W., M.D. (Clacton-on-Sea). The Caloric Values of Certain Artificial Infant Foods.
Parkinson, Porter, M.D. Some Abnormal Empyemata in Children.
Smith, Noble, F.R.C.S.Edin. Ambidexterity as a Method of Teaching Children.
Thomson, J., M.D., and Logan Turner, M.D. The Causation of Congenital Stridor.
Williams, Chisholm, F.R.C.S.E. Analysis of 500 Consecutive Cases of Lateral Curvature of the Spine and Treatment.

J. Pharmacology and Therapeutics.

Class Room No. 12, First Floor, Higher Grade School.

President: Professor Walter George Smith, M.D. *Vice-Presidents:* Edward Liveing Fenn, M.D.; Charles Robertshaw Marshall, M.D. *Honorary Secretaries:* Alan Reeve Manby, M.D., East Rudham, Norfolk; Walter Essex Wynter, M.D., 30, Upper Berkeley Street, W.

The following discussions have been arranged:

1. The Treatment of Internal Hæmorrhage. Professor J. B. Bradbury, M.D., Lindley Scott, M.D., James A. Lindsay, M.D., Walter G. Smith, M.D., and Walter E. Dixon, M.D.

2. Serumtherapy. T. J. Bokenham, M.D.

3. Diet in the Treatment of Disease. Professor J. B. Bradbury, M.D., G. King Martyn, M.D., Thomas Dutton, M.D., Arthur P. Luff, M.D., Lindley Scott, M.D., James A. Lindsay, M.D., David Sommerville, M.D., William Bain, M.D., Harry Campbell, M.D., Sarat K. Mullick, M.B., George Herschell, M.D., Wm. Calwell, M.D.

4. The Therapeutics of Open Air. F. W. Burton-Fanning, M.D., Lindley Scott, M.D., James A. Lindsay, M.D., C. Muthu, M.D., Ernest Kingscote, M.B., Wm. Calwell, M.D.

The following papers have been proposed:

Dixon, Walter E., M.D., The Influence of Certain Drugs on the Vascular Mechanism of the Testis.
Ewart, William, M.D. The Subcutaneous Administration of Oxygen.
Herschell, George, M.D. Demonstration of the Apparatus for Administering the Intragastric Shampoo.
James, J. Brindley, L.R.C.P. Dietary in Rheumatism.
Jowett, H. A. D., D.Sc. The Chemistry of the Jaborandi Alkaloids.
Jowett, H. A. D., D.Sc., and Marshall, Professor C. R., M.D. Remarks on Extractum Jaborandi Liquidum (*B.P.*).
Kingscote, Ernest, M.B. On Treatment of Asthma.
McWalter, J. C., L.R.C.S.I. On some Organotherapeutic Preparations.
Marshall, Professor C. R., M.D. The Pharmacology of the Jaborandi Alkaloids.
Martyn, G. J. King, M.D. The Treatment of Gouty Eczema.
Ross, F. W. Forbes, M.D. Medicinal and Dietetic Treatment of Heart Failure in the Aged.
Scott, Lindley, M.D. The Preventive Treatment of Oxalate of Lime Gravel and Calculus.
Sinclair, F. Howard, M.D. Open-air Treatment in Ireland.
Tunnicliffe, F. W., M.D. The Nutritive Value of Casein (Plasmon).

K. Laryngology and Otology.

Class Room No. 10, First Floor, Higher Grade School.

President: Scanes Spicer, M.D. *Vice-Presidents:* Herbert Tilley, M.D.; William Milligan, M.D. *Honorary Secretaries:* Harry Lambert Lack, M.D., 48, Harley Street, Cavendish Square, W.; Arthur Young Pringle, L.R.C.P., 64, St. Matthew Street, Ipswich.

Wednesday, August 1st.—A discussion on Intranasal Treatment in Ear Disease will be opened by Dr. P. McBride, Mr. Cresswell Baber, and Dr. Dundas Grant. The following gentlemen have promised to take part in the discussion: Mr. Ernest Waggett, Dr. StClair Thomson, Dr. Jobson Horne, and Dr. Logan Turner.

Thursday, August 2nd.—A discussion on the Pathology and Treatment of Toxic Paralyses of the Larynx will be opened by Dr. Watson Williams, Dr. Permewan, and Dr. Jobson Horne. The following gentlemen will take part in the discussion: Dr. Logan Turner, Dr. Samuel Lodge, Dr. StClair Thomson, and Mr. Ernest Waggett.

The following papers have been proposed:

Aikin, W. A., M.D. The Resonators of the Voice.
Campbell, Harry, M.D. The Causation of Adenoids.
Horne, Jobson, M.D. Some Points bearing on the Pathology and Prevention of Loss of Voice in Singers (with lantern illustrations).
Lodge, Samuel, junr., M.D. Two Cases of Thrombosis of the Lateral Sinus in one of which the Etiology and Pathology were Obscure.
McKeown, David, M.D. Auditory Results of Removal of Post-nasal Adenoids. (Modified Operation.)
Pegler, Hemington, M.D. On the Surgical Treatment of Some Forms of Nasal Insufficiency.
Tilley, Herbert, F.R.C.S. Three Cases of Chronic Frontal Sinus Empyema presenting Features of Interest.
Waggett, Ernest, M.B. Bezold's Complication of Mastoiditis.
Yonge, Eugene, M.D. The Treatment of Ozæna.

L. Tropical Diseases.

Art Room, Second Floor, Higher Grade School.

President: Colonel Kenneth Macleod, M.D. (ret. I.M.S.). *Vice-Presidents:* Surgeon-Lieutenant-Colonel Oswald Baker, M.D., I.M.S.; Major Ronald Ross, I.M.S. *Honorary Secretaries:* Andrew Duncan, M.D., M.R.C.P., School of Tropical Diseases, Albert Dock, E.; Guthrie Rankin, M.D., M.R.C.P., 4, Chesham Street, Belgrave Square, S.W.

On Wednesday the business will be introduced by a short address from the President, Colonel Kenneth Macleod.

The following subjects have been arranged for discussion:

Wednesday, August 1st.—Quinine: its Action and Modes of Employment in Malaria. The discussion on this subject will be opened by Dr. Andrew Duncan, M.R.C.P.

Thursday, August 2nd.—Ankylostomiasis. The discussion on this subject will be opened by Major G. M. Giles, M.B., F.R.C.S.

Friday, August 3rd.—The Etiological and Pathological Relationships of Yaws. The discussion on this subject will be opened by Mr. Jonathan Hutchinson, F.R.S., LL.D.

The following gentlemen have intimated their intention to take part in the discussions: Dr. Patrick Manson, Mr. James Cantlie, Colonel Kenneth Macleod, Deputy Inspector-General John Tyndall, Mr. Malcolm Morris, Surgeon-Lieutenant-Colonel Oswald Baker, Sir Wm. Kynsey, Major Wilson, Dr. Fielding-Ould, Dr. Alfred Hillier, Dr. James Watson, Dr. Sandwith (Cairo), Dr. Thin, Major W. J. Buchanan, I.M.S., Major F. P. Maynard, I.M.S., Lieutenant-Colonel Maitland, I.M.S., Lieutenant-Colonel Stewart, I.M.S., Major Ronald Ross, I.M.S., Mr. Sarat K. Mullick, M.B.

The following papers have been proposed:

Bassett-Smith, Percy W., Staff-Surgeon, R.N. Abscess of Left Lobe of Liver, with Remarks, particularly referring to the Amœbic Causation.
Buchanan, Major W. J., M.B. Hot Weather Diarrhœa in India.
Cantlie, James, F.R.C.S. Subhepatic Abscess.
Duncan, Andrew, M.D. The Diseases of Ghoorkhas.
James, Captain S. P., I.M.S. (Travancore). Observations on the Metamorphosis of the Filaria Nocturna in Mosquitos, especially in Mosquitos of the *Anopheles* Genus.
Macleod, Colonel Kenneth, M.D. The Management of Lung Lesions consequent on Liver Abscess.
Mullick, Sarat K., M.B. Plague and its Prophylaxis.
Ross, Ronald, Major, I.M.S. A List of Suggestions for the Improvement of Medical and Sanitary Practice in the Tropics.
Sambon, Louis, M.D. The Geographical Distribution and Natural History of Plague.
Smith, W. Johnson, F.R.C.S. The Surgical Treatment of Hepatic Abscess.
Thin, George, M.D. A note on a case of Blackwater Fever, with Specimens

WILLIAMSON, George A., M.D. The Cyprus Sphalangi and its Connection with Anthrax.

Members proposing to take part in the discussions or desirous of reading papers should communicate, without delay, with the Honorary Secretaries.

M. NAVY, ARMY, AND AMBULANCE.

Gainsborough Hall, opposite St. Margaret's Church, Bolton Lane.

President: Inspector-General BELGRAVE NINNIS, M.D., R.N. *Vice-Presidents:* Surgeon-General HENRY SKEY MUIR, C.B., M.D., A.M.S.; Brigade-Surgeon-Lieutenant-Colonel G. S. ELLISTON, V.D., V.M.S. *Honorary Secretaries:* JAMES HARPER, M.D., Surgeon-Captain V.M.S.C., 25, Rosary Gardens, South Kensington, S.W.; FRANCIS AUGUSTUS BROOKS, M.D., Surgeon-Captain 1st Suffolk and Harwich V.A., St. Felix, Felixstowe, Suffolk.

It is proposed to hold discussions as follows:

Wednesday, August 1st.—The Medical Service of the Army, Militia, Yeomanry and Volunteers.

Thursday, August 2nd.—The First Aid and Transport of Sick and Injured in Civil Life in Large Towns.

Friday, August 3rd.—On Modern Small-bore Rifle Wounds, and other Medical and Sanitary Matters of which the War in South Africa has Increased our Knowledge.

The following papers have been proposed:

CANTLIE, Surgeon-Captain J. How to Link the Militia, Yeomanry and Volunteer Medical Services with the Royal Army Medical Corps.
CAVERHILL, Surgeon-Major T. F. S. On Cavalry Ambulance Service.
COLBORNE, Staff Surgeon W. J., R.N. On Infectious Disease on Board Ship.
BIRCH, Surgeon-Captain De Burgh, V.M.S.C. On the Organisation of the Medical Department of the Volunteer Forces.
DENT, Clinton, F.R.C.S. On Modern Small-bore Rifle Wounds.
ELLISTON, Brigade-Surgeon-Lieutenant-Colonel G. S. On Brigade Bearer Companies.
GILES, Brigade-Surgeon-Lieutenant-Colonel, V.D. On Volunteer Medical Organisation.
HALL-EDWARDS, J., M.D. (Surgeon-Radiographer to the Imperial Yeomanry Hospital). 1. On the Practical Application of the *X*-Rays to Military Surgery. 2. Notes on the Localisation of Bullets by means of the *X*-Rays. Illustrated by lantern slides.
HAMILTON, Surgeon-General J. B., R.A.M.C. On the Past, Present, and Future of the R.A.M.C.
HUTTON, Surgeon-Major C. A., On First Aid and Transport of Sick and Injured in Civil Life in Large Towns.
JAMES, Major H. E. R., R.A.M.C. On Camp Sanitation.
MATTHEWS, Surgeon-Major Valentine, V.M.S.C. On Cavalry Ambulance Service.
MARSHALL, Surgeon-Major de Zouche, V.M.S.C. On First Aid in Civil Life.
STEPHENSON, Surgeon-Captain F. L., V.M.S.C. On the Cycle in the Field for Medical Service.
RANKINE, Lieutenant-Colonel G. S., I.M.S. On Cavalry Field Ambulance.
SQUIRE, Surgeon Lieutenant-Colonel J. E., V.D. On the Augmentation of the R.A.M.C. for War.
WRIGHT, Professor A. E., M.D. On Anti-enteric Inoculation.

The following, amongst others, are expected to take part in the discussions: Surgeon-General Sternberg, Director-General U.S. Army; Surgeons-General O'Dwyer, Skey Muir, C.B., and Evatt, A.M.S.; Lord Knutsford, Lieutenant-Colonels C. B. Maitland, I.M.S., and Trimble; Majors James and Treherne, R.A.M.C.; Brigade-Surgeon-Lieutenant-Colonels Hopson, V.D., and Owens; Captain Milburn, Messrs. Frederick Treves, Edmund Owen, M. K. Hargreaves, etc.

A Loan Collection of objects of special interest to the Section will be formed in the anteroom off the Section meeting room, and on the lawn outside a tortoise tent of the Military Equipment Company will be pitched, in which many specialities for the field will be seen.

PROGRAMME OF PROCEEDINGS.

MONDAY, JULY 30TH, 1900.

9 P.M.—Mrs. Elliston "At Home," Stoke Hall.

TUESDAY, JULY 31ST, 1900.

9.30 A.M.—Meeting of 1899-1900 Council. Magistrates' Room, Town Hall.
11 A.M.—Church Service. St. Mary-le-Tower Church. Sermon by the Right Reverend John Sheepshanks, Lord Bishop of Norwich.
2 P.M.—First General Meeting. Report of Council. Reports of Committees; and other business. Central Hall, Higher Grade School.
4 P.M.—Garden Party by Mr. D. Ford Goddard, M.P.
8.30 P.M.—Adjourned General Meeting from 2 P.M. President's Address. Lyceum Theatre.

WEDNESDAY, AUGUST 1ST, 1900.

9.30 A.M.—Meeting of 1900-1901 Council. Magistrates' Room, Town Hall.
10 A.M. to 1 P.M.—Sectional Meetings.
2.30 P.M.—Second General Meeting. Address in Medicine by Philip Henry Pye-Smith, M.D., F.R.S. Presentation of Middlemore Prize. Central Hall, Higher Grade School.
4 P.M.—Garden Party at Felixstowe by Mr. Felix Cobbold.
9 P.M.—Reception and Garden Fête at Christchurch Park by His Worship the Mayor of Ipswich.

THURSDAY, AUGUST 2ND, 1900.

9.30 A.M.—Meeting of Council. Magistrates' Room, Town Hall.
10 A.M. to 1 P.M.—Sectional Meetings.
2.30 P.M.—Third General Meeting. Address in Surgery by Frederick Treves, F.R.C.S. Central Hall, Higher Grade School.
4 to 7 P.M.—Garden Party at Orwell Park by Captain Pretyman, M.P., and Lady Beatrice Pretyman.
7.30 P.M.—Public Dinner of the Association. Council Chamber, Town Hall.
9 P.M.—Reception by Ladies of the East Anglian Branch at the Ipswich Museum.

FRIDAY, AUGUST 3RD, 1900.

10 A.M. to 1 P.M.—Sectional Meetings.
2.30 P.M.—Concluding General Meeting. Address in Obstetrics by William J. Smyly, M.D., F.R.C.P.I. Central Hall, Higher Grade School.
4.30 P.M.—River Trip by special steamer on rivers Orwell and Stour and round Harwich Harbour.
9 P.M.—Soirée (with dancing) in Christchurch Mansion and Park by the Members of the East Anglian Branch.

SATURDAY, AUGUST 4th, 1900

Excursions.

ANNUAL MUSEUM.

THE Annual Museum in connection with the sixty-eighth meeting of the British Medical Association will be arranged in the following Sections:

SECTION A.—Food and drugs, including prepared foods, chemical and pharmaceutical preparations, etc.

SECTION B.—Instruments, comprising medical and surgical instruments and appliances, electrical instruments, microscopes, etc.

SECTION C.—Books, including diagrams, charts, etc.

SECTION D.—Sanitary appliances and ambulances.

Two very good halls, practically adjoining each other, have been obtained for the Museum.

SECTIONS A and D will be held in the Public Hall, Westgate Street, a fine well-lighted and ventilated room. Length 119 feet, width 49 feet.

SECTIONS B and C will be held in the Old Museum Rooms, on the first floor, close to the Public Hall. Length of room, 72 feet, width 25 feet.

Both halls are very central.

PATHOLOGICAL MUSEUM.

SPECIMENS of interest for the Museum should be forwarded, addressed to the Secretary of the Pathological Museum, British Medical Association, Board Schools, Ipswich, during the last week in July.

Intending exhibitors are requested to communicate with the Secretary of the Pathological Museum, Sydney H. Long, M.B.Cantab., 37, St. Giles Street, Norwich, who will send a card to each exhibitor for a written description of his specimens. All specimens must be mounted ready for exhibition.

RECEPTION ROOMS.

The Lecture Hall, Tower Street, Ipswich, will be open on Monday, July 30th, from 3 P.M. to 8 P.M., and during the remaining days of the meeting from 9 A.M. to 6 P.M. The Ladies' Reception Rooms are at the High School for Girls, Northgate Street—first floor. Reading and writing rooms will be found at the Ipswich Institute (entrance from Reception Room), and on the staircases at either end of the Higher Grade School. Also for Ladies, at the Ladies' Reception Rooms, High School for Girls, Northgate Street. These rooms will be amply supplied with daily and other newspapers.

FOREIGN GUESTS.

Guests of the Association and visitors from abroad should

apply for all information at the Reception Room, the Lecture Hall, Tower Street, Ipswich, where all letters and telegrams should be addressed. Visitors will notice that the membership ticket will admit them to meetings of the Association and to the various addresses, but tickets for entertainments and excursions should be applied for in the Reception Room.

ANNUAL DINNER.

The annual dinner of the Association will be held in the Town Hall, Ipswich, on Thursday, August 2nd, 1900, at 7.30 o'clock. The accommodation for members and guests being limited, early application should be made for tickets. It has been decided to allot half the number of tickets in priority of application, and in case of there being more applications than seats available, the remaining half will be allocated by ballot.

CLUBS.

Members of the British Medical Association will be made honorary members of the following clubs for the week of the meeting, namely, Ipswich and Suffolk Club, Northgate Street; Ipswich Institute; and Ipswich Golf Club.

The Ipswich and East Suffolk Cricket Club invites an eleven from the British Medical Association to play a match on a day to be fixed during the meeting. Members wishing to play are requested to send their names to Dr. S. S. Hoyland, Museum Street, Ipswich.

GOLF MATCH.

Ipswich Golf Club *v.* British Medical Association, on Thursday, August 2nd. Luncheon 1.30 P.M. Play to commence 2.45 P.M. Members of the Association desirous of playing in the above-named match are requested to communicate with Dr. Francis Ward, 22, Museum Street, Ipswich, stating their handicaps. The team selected will be posted in the Club House and also in the Reception Room, British Medical Association.

RAILWAY ARRANGEMENTS.

ARRANGEMENTS have been made by which the railway companies of Great Britain and Ireland will issue to members and their friends attending the annual meeting at Ipswich *return tickets* at a *single fare and a-quarter*. These reduced tickets will be available from July 28th up to August 6th, both dates inclusive.

Those members and their friends desirous of taking advantage of this concession must produce, for the information of the railway booking clerk, a certificate signed by the General Secretary of the British Medical Association. A separate certificate will be necessary for each ticket required, and these certificates can be had on application to the General Secretary, 429, Strand, London, W.C. When more than one certificate is required the applicant should be careful to state the names for whom the extra certificates are intended.

Those members and their friends intending to travel from places where it is not likely that there will be through bookings to Ipswich, should give notice at the railway booking office a few days in advance, in order that the necessary application may be made to the head offices of the railway companies for the issue of through fares. It should be borne in mind that a separate certificate is necessary for every ticket required at the reduced rate.

When once at Ipswich members can obtain from the Great Eastern Railway return tickets to all places within a radius of fifty miles at a single fare on production of card of membership only. Members, therefore, residing within a radius of fifty miles of Ipswich intending to go to and from their homes daily should use the special railway certificate at a fare and a-quarter for the initial and final journeys, while for the intermediate journeys they can obtain the return tickets at a single fare on production of card of membership.

EXCURSIONS.

Excursion to the East Anglian Sanatorium for Consumption, Nayland.—The members of this excursion will leave Ipswich by the 1.20 P.M. train on Friday, August 3rd. They will be met at Colchester Station by carriages, and driven to Nayland. After visiting the hospital and grounds, the visitors will be entertained to tea by the Directors of the sanatorium, and return to Colchester Station. The drive from Nayland to Colchester is through one of the prettiest parts of Essex, and it was in this district that Constable painted some of his most famous pictures.

NOTICES OF MOTION.

Dr. R. R. RENTOUL gives notice that he will move:

That it be a recommendation from this meeting to the Council of the Association that the following be included in the Regulations and By-laws of the Association:

1. LIMITED PROXY VOTING.

At any General or Special General Meeting of the Association, or of a Branch, votes may be given either personally or by proxy. No member shall be appointed a proxy who is not a member of the Association, and the form appointing him a proxy shall be sent by the member signing it, by post, to the office of the General Secretary (or to the Branch Secretary, as the case may be), and such shall be received by him at least 72 hours before the holding of the meeting at which the member proposes to vote. No one member shall be appointed to act as a proxy for more than 50 members, and he shall reside within the city, town, or Branch area in which the members appointing him as their proxy practise. But no voting by proxy shall be allowed upon any motion unless at least 14 days' notice of motion or amendment to be voted upon shall have been given in the BRITISH MEDICAL JOURNAL or in the notice summoning a Branch meeting.

2. AD REFERENDUM.

The Council may, and upon the written request of 300 members shall, forward by post to every member of the Association a voting paper upon which each member shall be entitled to record his vote upon any question concerning the welfare of the Association, and of which not less than six weeks' notice shall have been given in the JOURNAL.

3. MODE OF ELECTION OF CENTRAL COUNCIL OF ASSOCIATION AND OF PARLIAMENTARY BILLS COMMITTEE.

For the purpose of electing a representative of a Branch to the Central Council and to the Parliamentary Bills Committee each Branch which has 200 attached members shall elect one representative, and an additional representative for every complete additional 200 attached members.

A Branch which has not 200 attached members shall—for the purpose of such election—combine with one or more Branches until such combined Branches shall amount to 200 or more. Such combined Branches shall elect one representative for every complete 200 members, and an additional representative for every additional 200 members.

Provided that when the Central Council shall number 50 representatives of Branches, the number "300" shall be substituted in this article for the number "200."

The election of all Branch representatives to the Central Council, or to a Branch Council, shall be by means only of voting papers sent through the post. No member shall have more than one vote: and no representative shall represent more than one Branch, or combined Branches. The voting paper shall not contain any device, colour, or names to show who has nominated any candidate.

4. PAYMENT TO CENTRAL COUNCIL.

There shall be paid out of the funds of the Association to each Branch representative who attends any meeting of the Central Council, the Parliamentary Bills Committee, the Journal and Finance Committee, and such other committees as to the Central Council may seem fit, reasonable fees for attendance, travelling and hotel expenses. Provided that such fees for attendance shall be three guineas per diem: and that the travelling expenses shall be first-class return travelling expenses. Providing that when any member attending a Council meeting resides more than fifty miles from the place in which the Council meets, he shall, in addition to the above, receive one guinea for the day of going to and one guinea for the day of returning from such meeting. Attendance upon the same day of two or more Council or Committee meetings shall not entitle any representative to any payment other than the above.

When a representative of any Branch situated outside the United Kingdom attends any of the above Council or Committee meetings, he shall receive the above allowances; but with this exception, that no payment for any travelling expenses *outside* the United Kingdom shall be paid to such representative out of the funds of the Association.

5. PRIZES UPON MEDICO-ETHICAL SUBJECTS.

Every third year the Council shall offer two prizes of £200 and £150 for the best essays by members upon a medico-political or medico-ethical subjects; the exact subject to be fixed by the Council.

6. WIDOWS AND ORPHANS FUND.

A fund for the benefit of the widows and orphans of medical practitioners shall be established and administered by the Council, or a committee appointed by the Council.

Mr. VICTOR HORSLEY gives notice that he will move:

1. That a Committee be appointed to consider and report upon the best means of reorganising the constitution of the British Medical Association, such Committee to furnish a provisional report to the Branches by March 1st, 1901.

2. That the Council be and hereby is instructed to allot the sum of £300 for the travelling and hotel expenses of the provincial members of the Committee mentioned in the foregoing motion.

3. That the salary of the Editor of the JOURNAL be reduced by £100.

NOVA ET VETERA.

THE PLAGUE IN CUMBERLAND AND WESTMORLAND.

DR. HENRY BARNES, whose interest and proficiency in antiquarian studies were conspicuously manifested in his presidential address at the annual meeting of the British Medical Association held at Carlisle, some years ago communicated to the Cumberland and Westmorland Antiquarian and Archæological Society the results of his researches on the visitations of the plague in those counties. The paper, which was afterwards reprinted in pamphlet, and published by T. Wilson, of Kendal, contains much matter of interest not only to antiquarians but to epidemiologists. Many readers of the BRITISH MEDICAL JOURNAL will, therefore, probably be glad to have a summary of Dr. Barnes's conclusions.

The earliest record of a local pestilence which he has been able to find goes back to the time when St. Cuthbert visited Carlisle. In Chancellor Ferguson's *History of the Diocese of Carlisle* an account of this visitation is given. St. Cuthbert arrived at Carlisle about the time of the battle of Nechtansmere, A.D. 685. He preached on the Sunday after his arrival, and the burden of his discourse was "Watch and pray, watch and pray," which his hearers misapplied to the expected recurrence of a plague that had recently ravaged the district. A few days afterwards a solitary fugitive announced the result of the battle. In the *Chronicle of Lanercost* there is an account of a "pestis" which caused great havoc among cattle:

At that time—A.D. 1319—the plague and murrain among the beasts, which had raged for the two preceding years in the south, visited the north, and it attacked both oxen and cattle And thus did it work that after a slight sickness they would die on a sudden and all together. Few beasts of that kind were left, and so for that year men had to plough with horses. Still men would eat of the beasts which died of the aforesaid sickness, and by the grace of God they felt no harm. At the same time, too, the fish of the sea were found dead on the shore in great numbers, but not a man did eat of them, nor any other animal or bird. And, furthermore, in the South of England, the birds fought with each other most fiercely with one consent, and were found dead in great numbers. All these three wonders seemed to have happened for the punishment of sinners, or as an omen of things to come.

THE BLACK DEATH.

The omen, however, was not fulfilled for a quarter of a century, but the fulfilment made up in completeness what it may appear to lack in punctuality, for it came in the awful form of the Black Death.

Dr. Barnes thinks there can be little doubt that Cumberland and Westmorland shared the same fate as the rest of England, but the local histories contain no reference to the visitation. He quotes the following extract from Guthrie's *History of Scotland* (vol. iii, p. 49), as showing that he has good grounds for the belief that the Black Death epidemic visited the district, as the Scottish army on emerging from the forest of Selkirk would more probably enter England by the western route, rather than by the road by Berwick.

The hand of heaven was so severe upon the Scots during the year 1349 and 1350 that they furnish little of historical matter. A most dreadful plague had passed from the Continent of Europe to England, and the Scots wantonly indulged the innate hatred they bore their enemies by enjoying their calamities, and even endeavouring to render them subservient to their revenge. This ferocity, though unjustifiable, was natural to a people so provoked and opprest, as the Scots had long been by the English, but it proved fatal at the same time. They had appointed a rendezvous in the forest of Selkirk to avail themselves of the mortality which was then desolating England. Scarcely had they passed the borders when they were seized by the pestilence; 5,000 of them dropt down dead, and many were cut off by the enemy, who had found means to draw a considerable body to the field. This barbarous invasion furnished Edward with new matter of complaint, and his subjects, in their turn, made fresh irruptions into Scotland, where they reinforced their garrisons. The few Scots who returned from the invasion communicated the pestilence to their countrymen, one-third of whom, according to Fordun, perished. The patient's flesh swelled excessively, and he died in two days' illness, but the same author tells that the mortality chiefly affected the middle and lower ranks of the people.

A RAID AVENGED BY PLAGUE.

Thirty years later the plague was again in Cumberland. It is recorded that in 1380 the Scots, unmindful of their experience during the Black Death epidemic, made an inroad into Cumberland under the Earl of Douglas. They surprised Penrith during a fair, and gathered a heavy booty; but among their plunder they also took home with them the seeds of the plague, which they doubtless got in the town which they had sacked. Dr. Barnes says there is no local record of the ravages of this pestilence in Penrith, but most of the local histories which mention the outbreak refer to the severity with which it overtook the raiders. Holinshed says in his *Historie of Scotland*:

William Earle of Douglas came with twentie thousand man to the faire of Pennire within England, and spoiled all the goods found as then in the same faire and so returned with great riches into Scotland; but the Scotishmen smallie rejoised at this gains, for with such cloth and other wares as they brought awaie with them from the foresaid faire, they drew into the countrie such a violent and sore pestilence that the third part of all the people (where it came) died thereof. This was the third time that the pestilence was knowne to have doone anie great hurt in Scotland, being the yeere after the incarnation, 1380.

From the date of this invasion until the year 1554, when plague broke out at Penrith and Kendal, Dr. Barnes has not been able to find any local record of plague visitations. Several, however, are known to have occurred in the country and some of them reached the Border district.

FIRST GREAT EPIDEMIC.

The first great local epidemic of which there is a full record began in 1597-98, and was a part of the series of outbreaks of plague which occurred in different parts of the country in the latter half of the sixteenth and early part of the seventeenth centuries culminating in the terrible pestilence of 1665. It probably reached Cumberland from Newcastle, where it had been a pretty regular visitor for a number of years. Lord Hunsdon, writing to Cecil from Berwick on August 8th, 1570, says:—"The plague is very sorry at Newcastle." In 1576 it was again at Newcastle. In 1588-89 the sick poor were sent out of the town and encamped on the waste grounds on account of it. At Newcastle, again, 1,727 persons died from May, 1588 to 1st January, 1589 90, and the business of the town was at a standstill. In 1587 it raged at Durham. In 1593 and again in 1596 it is still heard of in Newcastle. From about the 19th August in the latter year the deaths gradually increased in numbers, and the people died in the streets. In the autumn of the following year it was so prevalent that the judges adjourned the assizes from Durham to Northumberland.

The *Transactions* of the Cumberland and Westmorland Antiquarian and Archæological Society contain references to an unusual mortality at this period at Carlisle, Penrith, Kendal, Gosforth, Crosthwaite, Great Orton, Holme Cultram, and St. Bees, and, in some instances, extracts from parish registers are given which show the extent of the pestilence. It broke out at Penrith on the 22nd September, 1597, and continued until December 13th, 1598. William Wallis, who was then Vicar of Penrith, notes the beginning of the visitation in the Parish Register in the following entry:

1597 22nd day of September Andrew Hodgson a foreigner was buried. Here begonne the plague (God's punishment in Penrith) All those that are noted with the P dyed of the infection, and those noted with F were buried on the fell.

On December 13th, 1598, the Vicar records:

Here endeth the Visitation.

The evil seed sown by the poor "foreigner" soon ripened to a rich harvest of death, and in October burials came thick and fast. The following series of entries tells a terrible tale of how families were swept away:

1597. The 14th day of October Elizabeth daughter of John Railton buried.
The 24th day John Railton miller buried.
The 1st day of November Mabel the wife of John Railton buried.
The 5th day Elizabeth Railton buried.
The 10th day son of Thomas Hewer buried.
The 12th day Margaret daughter of Thomas Hewer was buried.
On the 23rd day Catherine daughter of Thomas Hewer was buried.

On May 27th in the following year thirteen burials are entered; on August 11th there were seventeen, and on September 2nd twenty-two. An interesting record of this epidemic is found in an inscription on the wall of the chancel of Penrith Church, and the same inscription is repeated on a modern brass plate. It is as follows:

A.D. MDCVIII.
Ex gravi posto, quad regionibus hisce incubuit, obierunt apud
Penrith 2260
Kendal 2500
Richmond 2200
Carlisle 1196
Posteri
Avertite vos et vivite.—Ezek. xviii. 32.

There is no date to the inscription, and no name to show by whom it was placed there. In Chancellor Ferguson's *History of the Diocese of Carlisle*, it is stated that Penrith Church was rebuilt in the last century, and Dr. Barnes thinks that probably the inscription was drawn up at the time of the rebuilding, and the figures taken from an older inscription, which, according to Bishop Nicolson, was on the church in his day. In the *Miscellany Accounts of the Diocese of Carlisle* (p. 154) there is the following passage:

On the outside of the North Wall of the Vestry, in a rude and slovenly character:

Pestis fuit, A° 1598 unde moriebantur apud Kendal 2500, Richmond 2200, Penrith 2266, Karliol 1196.

In this older inscription it will be noted that the order of the places is changed, and Penrith is credited with six more deaths.

There has, says Dr. Barnes, been much speculation as to the numbers on this inscription. Only 583 deaths are recorded in the Penrith register. The greater number of those who perished during the pestilence were buried in a common trench or grave on the fell; some were buried in the churchyard, some in the schoolhouse yard, and some in their own gardens. Whellan in his *History of Cumberland and Westmorland* (p. 596) suggests that the numbers on the register represent only such as were buried in the churchyard or schoolhouse yard. Walker, in his *History of Penrith*, thinks the numbers on the inscription may be taken as the aggregate of other parishes in the neighbourhood, and the same idea is put forward in a footnote in Hutchinson's *History of Cumberland* (vol. i, p. 326). The Rev. H. Whitehead, who has devoted much attention to parish registers, has suggested what seems a very reasonable explanation of this difficulty. He believes that the names mean the rural deaneries, not the parishes.

Dr. Barnes has examined the parish registers of Kirkoswald, Appleby, Edenhall, and Langwathby, for the period in question, which show how widespread was the pestilence in Cumberland and Westmorland. Except the inscription on the Penrith stone, there are no records of the numbers who were smitten with the plague in Carlisle, and none of the local registers go so far back.

PLAGUE STONES.

Dr. Barnes gives some interesting examples of the shifts which were adopted to avoid infection. Nicholson, in his *Annals of Kendal*, in describing Coneybeds, a fort situated on Hay Fell, says:

In the time of the plague which desolated the kingdom in 1597 98, provisions were brought to this spot by the country people and deposited for the inhabitants of Kendal, which was their only intercourse during that destructive period.

At Penrith the usual markets were suspended, and places without the town (now called Meal Cross, Cross Green) were appointed for the purchase of provisions brought by the country people. There still remains a large block of stone called the plague stone. It is a block of freestone, hollowed in the centre as a trough about 12 inches square and 10 inches deep, which was intended to hold some disinfecting liquid, most probably vinegar. In this trough the money from the hands of the townspeople was laid, and only when thus disinfected would the farmers receive it in payment for their goods. In Keswick there is a tradition that when the plague raged, as no markets were held for fear of the infection, the people of the dales carried their webs and yarns to a large stone, which is very conspicuous on one of the lower elevations of Armboth Fell, and there periodically met and did business with the trades. The stone still goes by the name of the "web stone." Mr. J. Fisher Crosthwaite informed Dr. Barnes that he had heard all people say that when the plague was in Keswick the country people came to "Cuddy Beck," but did not cross the little stream. The money was placed in the water and then taken, and the produce was laid on the ground for the Keswickians to take back.

THE LAST EPIDEMIC.

Dr. Barnes has found records of another epidemic of plague which caused a heavy mortality in most parts of Cumberland and Westmorland in 1623. The parish register of Camerton shows that in that year two and three deaths were common in a house. There are but few marriages or christenings recorded, a fact of grim significance.

The plague of 1623 seems to have been the last epidemic of plague in Cumberland and Westmorland. A few later instances are recorded, but the disease does not seem to have attained any wide prevalence. Henry Lord Clifford, writing to Secretary Conway from Appleby Castle on September 10th, 1625, says:

The plague is gotten unto my Lord William Howarde's house, and the first that dyed of it was Sir Francis Howarde's lady, whoe tocke the infection from a new gowne she had from London, soe as she dyed the same day she tooke it, whereupon they all dispersed most miserably, with the greatest terror in the worlde, since they had all beene with the lady, and all in danger by that meanes.

In West Cumberland two families seem to have been destroyed by the plague in 1647, being entered as *peste mortui*, and the destruction of another family by the same disease is recorded as having taken place in 1648. This is the last local entry of the plague that Dr. Barnes has been able to find.

QUARTER SESSIONS ORDERS RELATING TO THE PLAGUE.

By 1st Jac. I, c. 31 (*vide Statutes of the Realm*, vol. iv, p. 1060), entitled "An Acte for the charitable Reliefe and orderinge of psons infected with the Plague," powers were given to mayors and justices of the peace not merely to assess the inhabitants for the relief of infected persons, but to compel infected persons by force to keep within their houses. It is ordered that anyone who "shall contrarie to such Comandment wilfullie and contemptuously goe abroade, and shall converse in companie, havinge any infectious sore upon hym uncured, that then such person and persons shall be taken deemed and adjudged as a Felon, and to suffer Paines of Death as in case of Felonie." Powers were also given by the Act to appoint searchers, watchmen, examiners, keepers, and buriers.

Dr. Barnes has collected some original notices of such orders issued by the Justices assembled in Quarter Sessions for the county of Durham. In addition to stringent regulations as to the keeping of watch and ward and the exclusion of persons from infected places, they contain clauses to the following effect:

6thly. That all the Inhabitants keepe their severall dwellinghouses stables and all other places about there dwellinghouses clean and sweet and their fronts swept and cleansed from all filth and other noysom rubbish and Excreements. And the Constables to enter into the severall houses and places to see this performed.

7thly. That the Maior for the Citie of Durham take care for to see the bridges and streets within the said City cleansed and that noe Butchers be suffered to kill any meat in the streete or in their shopps but upon their backsides, and that noe Tallow Chanlers doe rend or melt any tallow in any place within the said Citie.

Dr. Barnes is to be congratulated on having made an interesting addition to our knowledge of the history of one of the great scourges of the past, which after so long a respite is again threatening to invade Europe.

DR. AND MRS. PRIOR PURVIS, of Blackheath Hill, celebrated the sixtieth anniversary of their wedding on June 25th, when they received numerous congratulatory letters and telegrams.

BELPER ISOLATION HOSPITAL.—At a meeting of the committee of the Belper Union Isolation Hospital representative of the contributing districts, some very extraordinary statements were made with regard to the management. The hospital was opened for the reception of patients in March, 1899. It is stated that the medical superintendent resigned in November and that the new superintendent then appointed resigned after a short period. Another medical superintendent, Dr. R. G. Allen, was then appointed, and the meeting to which we have referred had before it a letter from him making various complaints as to the general administration of the hospital by the matron; among other allegations made by him is that a stuff dress worn by the housemaid—a mere child—was sent by the matron to be altered or repaired by a convalescent patient, that the dress was given back without disinfection to the housemaid, and that at the time the letter was written this girl had come under treatment for the disease. Letters of complaint were also read from nurses employed in the hospital, one of whom stated that she had to employ a ball syringe used for giving nutrient enemata for syringing the throat also. These statements are, of course, *ex parte*, but medical men will recognise that they are of a serious character, and will hope that the matron will be able to give some satisfactory explanations at the adjourned meeting of the committee.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

SUBSCRIPTIONS to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, JULY 28TH, 1900.

THE CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THOUGH the Royal College of Surgeons can trace a history of more than a century in one form or another, it was appropriate that the centenary of the granting of the Royal Charter of Incorporation in the last year of the eighteenth century should be made the occasion of a formal celebration to which some of the leading men in the State and many of the most distinguished surgeons in the colonies and dependencies of the British Empire, and in foreign countries should be invited. The centenary festival is to extend over three days, and is not complete as we go to press, but of the chief function, which occurred on Thursday afternoon, we publish a brief account elsewhere, together with the text of the address delivered by the President of the College, Sir William Mac Cormac.

The address was worthy of the occasion and of the audience. It began appropriately with a hearty welcome to the illustrious surgeons who have come from many and distant countries to do honour to the College, for Surgery knows nothing of frontiers, and its British representatives desire to sympathise with their fellow-workers abroad, and to appreciate their work as we trust and believe that they appreciate the work done in these islands.

Sir William then turned at once to the historical side of his subject, "for," as he wisely said, "if we look back we find in the labours of the old masters of surgery much to enlighten, to widen, and to confirm our views. A knowledge of the history of our art and science tends to make us juster judges both of our own work and that of others. When we search the history of the development of scientific truth we learn that no new fact or achievement ever stands by itself. . . . . Absolute originality does not exist, and a new discovery is largely the product of what has gone before." Quite recently Sir Michael Foster advanced the same thesis when he said that "We may be confident that each forward step is not ordered by one individual alone, but is also the outcome in a large measure of the labours of others. The history of scientific effort tells us that the past is not something to look back upon with regret, something lost, never to be recalled, but rather that it is an abiding influence helping us to accomplish yet greater successes." Again and again we may read in the words of some half-forgotten worthy the outlines of an idea which has shone forth in later days as an acknowledged truth. We see numerous instances of this in the history of surgery. Some fellow-worker in years long past has discovered a new fact, or indicated the path leading to a fresh truth. It is forgotten, and a century later something nearly the same, or mayhap a little better, is discovered afresh. The psychological moment has arrived, and the discoverer reaps the reward not only of his own labours, but of those of his predecessors.

Briefly but effectively Sir William Mac Cormac sketched the story of the surgical art, from the time of Heliodorus, who lived under the Emperor Trajan at the end of the second century A.D.—a man so original that he knew how to stop bleeding by tying the vessels, who had extirpated the sac for the cure of hernia, and had even cut out a rebellious stricture of the urethra. The work of the great surgeons of France, Germany and Britain, was then passed in review, and finally a short account was given of the corporate bodies connected with surgery in London, and of the manner in which they had paved the way for the establishment of the present College of Surgeons of England just 100 years ago.

Sir William went on to allude to the power of granting honorary distinctions recently acquired by the College. The power was exercised to grant the Honorary Fellowship to the Prince of Wales, to the Prime Minister, to his predecessor in that high office, and to a number of distinguished surgeons who had come from foreign countries and British Colonies to do honour to British surgery by attending the centenary.

The address is printed at page 209, and we understand it to be the author's intention to issue it in a separate volume, with the addition of short biographical notices of the sixty-one Masters and Presidents of the College who have presided over its fortunes during the last hundred years. In the preparation of these short biographies the President of the College has had the assistance of Mr. Victor G. Plarr, the present Librarian. The facts will no doubt be found authentic, but in many cases they are few, not from want of diligence in collection, but because full details are no longer available. Some of the earlier Masters and Presidents were persons of no great distinction, who succeeded to their high office in virtue of their longevity, and it is probable therefore that there is little or nothing to record about them. Nevertheless, the biographies will be found valuable in every case, and in some amusing. They will form an excellent commentary upon Mr. Plarr's collection of personal relics which has been on view in the Library during the week, and of which we give an account elsewhere. As Sir William Mac Cormac said at the conclusion of his address: "We are much beholden to those who have gone before. In but a few years all who are now present will also belong to the past. Let us hope that as we have not altogether forgotten those who preceded us, we too may be remembered a little by those who are to follow." Certainly the address of welcome and the biographical notices will do much to keep green the memory of the President in the centenary year, for it will live as a part of the literature of British Surgery.

SIGHT AND HEARING OF SCHOOL CHILDREN.—At the recent meeting of the American Medical Association a resolution was passed in the Section of Neurology recommending "for the benefit of the physical condition and the mental development of American school children" the annual and systematic examination of the sight and hearing of all school children.

CANCER MORTALITY IN ESSEX.[1]

DR. MELMOTH SCOTT has published a valuable study of the statistics of cancer mortality in the Chelmsford and Maldon districts of East Essex, which appears to us to be a model of what such local investigations should be. We agree with Dr. Thresh, who writes a short preface to the pamphlet, that if we could have similar thorough researches conducted with reference to the distribution, etc., of cancer in other parts of the country, "they could not help but throw some light on this very obscure subject."

The gradually increasing accuracy of death certification is the first point that calls for attention. Thus, while in the decade 1871-80 in 26.6 per cent. of the cases the organ affected was not specified, in 1891-1900 this was only true of 11.2 per cent. of the certificates. The next point is that the increase of cancer mortality is much greater among males than among females, the number of males to every 100 females dying of the disease having increased from 51 in the first to 83 in the third decade. Dr. Scott's figures show that this increase in the male death-rate is chiefly due to cancer affecting the more inaccessible parts of the body, thus "partly bearing out the results obtained by King and Newsholme from a study of the statistics of the city of Frankfort." In Eastern Essex, however, it would appear that "while cancer in females has only slightly increased in the 'accessible' parts, yet there is a small though decided increase in the male 'accessible' parts, and a very marked increase in the number of cases affecting parts where it is difficult to diagnose."

Perhaps the most interesting part of Dr. Scott's research is that in which he tests the applicability of Mr. Haviland's theory of the geographical distribution of cancer. Parts of the district conform to the conditions of high cancer mortality according to this theory—namely, tributaries of rivers rising from soft marshes or easily-disintegrated rocks, these falling into sheltered valleys, and the rivers flooding the adjacent districts during the rainy season. The districts of high cancer mortality are characterised by clays and other retentive soils, according to the same theory. When death-rates are calculated to standard population, and errors due to variations in age composition of the population are thus eliminated, it is found that, although the county of Essex consists almost exclusively of clay, and is bounded on the south by the muddy and marshy bank of the Thames and on the north by the river Stour and its large estuary, yet the cancer mortality is decidedly below that which obtains in England as a whole. When the special area investigated by Dr. Scott is taken—which includes a larger proportion of muddy foreshore, creek, and marsh than can be found, probably, in any area of similar size within the county—yet the mortality here is less than in the county of Essex as a whole.

When the special area is divided into eight districts, and the figures for the period 1871-98 taken in order to have as large a basis of calculation as possible, the facts come out that a low cancer mortality may coexist under most diverse physical conditions. It is lowest in Tollesbury, in which the conditions are specially favourable, according to Haviland's theory, to a high cancer mortality, with the one possible exception, that the water which covers a large share of this parish is not fresh, but salt. On the other hand, a high cancer mortality occurs in Southminster with a heavy clay soil, constantly wet, and in the town of Chelmsford under somewhat similar conditions, the river being dammed back and the ground water in the lower parts of the town coming very near to the surface. Here, again, the exceptions are numerous. A high cancer death-rate occurs at Great Waltham and four other districts, where no such conditions as those named above exist. Dr. Scott's summary of his conclusions as to the relation of soil to cancer is as follows: "Whatever truth may underlie Haviland's theory, it is insufficient to explain the distribution of cancer in Eastern Essex; for (1) the disease is less common within the county of Essex, with its clay soil and numerous estuaries, than it is in England as a whole; (2) although the unions of Chelmsford and Maldon contain an excessive proportion of marshy land and estuary, yet their death-rate is below that of the county; (3) those parts of the two unions which include the greatest extent of muddy foreshore, creek, and saltings, have a mortality below that of the two unions taken together; and (4) the disease is not especially prevalent in those places which are situated on the banks of the fresh-water rivers."

Dr. Scott has worked out his materials carefully and judiciously, and has avoided the glaring fallacies associated with neglect of varying ages of populations. We sincerely hope that his careful study of the local incidence of cancer mortality in Essex will be the forerunner of similar studies for other districts.

[1] *Cancer Mortality in the Chelmsford and Maldon Districts (East Essex).* By G. M. Scott, M.D. (Bailliere, Tindall, and Cox.)

THE MEDICAL SERVICE AND THE WAR.

THE completion of the South African Hospitals Commission by the addition of two well-known public men ought to satisfy those who so greatly desiderated a "business" element in its composition. Nevertheless, Mr. Burdett-Coutts is still far from satisfied, either with the constitution or terms of reference of the Commission. In a letter which has appeared in many newspapers he boldly assumes the part of judge as well as accuser. He would have shown more taste as well as discretion had he kept silence at present, for to insinuate that certain members of the Commission cannot be impartial, or that official efforts will be made to whitewash officers or hush up shortcomings, is suggestive of personal animus rather than public spirit. By such ill-timed interference he is indeed, by implication already discounting his own reliability—as, for instance, in his statement that the civil surgeons employed in the army hospitals at the seat of war were bound down not to disclose hospital secrets or scandals, a charge which Mr. Wyndham, in answer to Dr. Farquharson, showed had no real foundation.

The facts are that civil surgeons, not being provided for in army warrants or acts, had to sign such a business contract as any employer, public or private, would as a matter of course exact: and, in the peculiar nature of the employment, they had also to subscribe towards certain military obligations in regard to obedience of orders and conformity to discipline, such as is primarily necessary in all soldiers, or even camp followers. That any person, civil or military, employed in the field could be allowed

unlimited power to criticise current operations would, of course, be entirely subversive of discipline.

Even more regrettable, and, we believe, equally without solid foundation, is the suggestion of Mr. Burdett-Coutts, that, unless the Commission is armed with penal and protective powers, the real truth about army mismanagement will not be got at; because of the system of vindictive intimidation and subsequent persecution towards informers or complainers practised by military superiors towards inferiors. This is little short of a libel upon the independence of our officers and men, and on the honour of those in high military authority. Grumblers are of course disliked in any sphere of life; and such men in the Army are no doubt ready to pour complaints privately into sympathetic ears, but they are usually very unwilling to have their complaints sifted by cross-examination in public. Evidence as to genuine complaints concerning military mismanagement can always be got through voluntary and truthful witnesses without compulsion.

We have no desire to minimise failure or imperfection in the Army Medical Service; on the contrary we have for years endeavoured to show up its defects in military status, numbers, and autonomous organisation; we ought, therefore, rather to welcome than deprecate the present agitation in the hope of good resulting.

We hope and believe that the Commissioners appointed to report on the arrangements for the care and treatment of the sick and wounded during the South African campaign, will "push," as Mr. Burdett-Coutts asks, "their inquiry back into the real seed ground" of what he terms "the disaster," namely, "the insufficiency and unpreparedness of the Army Medical Department."

The "insufficiency" or undermanned condition of the Army Medical Service for the vast duties imposed on it, is as notorious as it is lamentable and inexcusable; but we cannot assent to the statement that the Service was "unprepared" for the war, because we feel assured that it has not failed to make the best use of its resources so far as its strength in *personnel* and autonomous organisation allowed.

The consensus of opinion has been as remarkable as undeniable that, broadly speaking, the Medical Service has been worked with splendid devotion and very great success during the war; therefore, while we do not, of course, question the accuracy of what Mr. Burdett-Coutts actually saw at Bloemfontein on a certain date, we cannot on such limited evidence accept his inferences as to the general inefficiency of the Medical Service.

We can only repeat the hope that the Commission will give its serious attention to three defects in the Army Medical Service—its dangerously undermanned condition, its imperfect autonomy in the field, particularly in the matter of transport, and its want of proper representation on the headquarter staff. If the Commission can cause these defects to be remedied, the Medical Service will ultimately have no cause to complain of Mr. Burdett-Coutts's methods.

THE Treasurer of St. Thomas's Hospital has received a donation of £1,000 from Mrs. O'Stuart Andreae and Miss Mary F. South for the endowment in perpetuity of the "South Bed," in memory of the late Mr. John Flint South, F.R.C.S., some time Surgeon to the hospital. By the will of the late Mr. Augustus Matthew Goddard the same institution receives a legacy of £1,000 for the endowment of a bed to be called "The Matthew and Patience Goddard Bed."

THE ANNUAL MEETING.

As inquiries have been received from members purposing to attend the annual meeting of the British Medical Association, which begins on Tuesday next at Ipswich, as to whether the threatened strike of the employees of the Great Eastern Railway is likely to cause inconvenience, we are asked to state that the Local Committee are given to understand that the directors will take every step to prevent any such inconvenience arising. It is added that should a strike take place the directors are of opinion that there is very little risk of the traffic on the main lines to Ipswich being interrupted. Mr. Whitfield King, of Morpeth House, Ipswich, who is a well-known authority on postage stamps, has kindly consented to show his collection to any member of the Association visiting Ipswich during the annual meeting who may be a stamp collector. In addition to his own large collection he will be enabled, through the kindness of a brother collector, to show twelve of the rarest stamps known, three of which are worth over £1,000 apiece. The only other collection which contains all these twelve stamps is in Paris. Mr. Whitfield King will show his collection at any time between 10 A.M. and 5 P.M. from Monday, July 30th, to Monday, August 6th.

THE MEDICAL CLAUSE IN THE COMPANIES BILL.

AFTER being drafted under the direction of the Lord Chancellor and introduced as a one-clause Bill, then incorporated by a Select Committee of the House of Lords in the Companies Bill, which was introduced unaltered as a Government measure by the President of the Board of Trade, it might have been expected that some effort would have been made to pass the Medical Clause of the Companies Bill. On the introduction of the Bill, however, Mr. Ritchie, though expressing himself as in general agreement with its purpose, stated that he did not consider the clause germane to the Bill, and showed clearly that he would like to drop it. When the Bill, after second reading, came for consideration before the Standing Committee on Trade, Mr. Ritchie took the more decided step of urging that it, together with the Pharmacy Clause, should be omitted from the Bill, but the Committee by a large majority decided to retain the clauses. Mr. Ritchie, who, in urging the dropping of the clauses, expressed yet more strongly than before the opinion that legislation in this direction was called for, did not loyally accept the verdict of the Committee, and it was understood that he intended to persevere in his endeavour to get rid of them. This has now been accomplished. At the report stage on July 24th, amendments to omit both this and the pharmacy clauses, presumably by arrangement, were accepted by Mr. Ritchie, in spite of emphatic protests from Sir Walter Foster and Colonel Long. The peculiarity of the position is that nothing has been heard against the Medical Clause, but a good deal has been said in its favour both in the House and in the Committee. The practical effect is that legislation, which appears to be admitted on all sides to be required, is delayed for a year. Is it too much to expect the Government will take care that the House shall have at some early date the opportunity of judging of the question upon its merits? The Medical Clause was unfortunate in being placed after the Pharmacy Clause, to which we understand the more serious opposition had been offered, and in its omission being taken as a foregone conclusion if the Pharmacy Clause were dropped. All that is now known as to the clauses being germane or not to the rest of the Bill was known long ago, and as was pointed out by Sir Henry Fowler in Committee, it is a strange, perhaps unique, thing for a Government to introduce clauses and then drop them without other reason than they should never have been there. Mr. Ritchie's explanation that they were kept in in courtesy to the Lords' Committee is

singularly lame. We do not see where the courtesy comes in; to have accorded the clauses a hearing would have been a more practical form of courtesy.

THE PRINCIPAL MEDICAL OFFICERS IN SOUTH AFRICA.

WE learn from unofficial but trustworthy sources that Colonel Stevenson has been given the local rank of Surgeon-General, the promotion to date from May 4th. We have reason to believe that Colonel Gallwey, C.B., Colonel Townsend, C.B., and one or two other officers, have been given a similar step; as we have not yet received any confirmation of this, however, we mention it with reserve. But we have no hesitation in saying that if the report is not correct it ought to be. We have already more than once pointed out the anomalous and invidious position in which the Principal Medical Officers of the Army Corps now in South Africa were placed by the refusal of the authorities to grant them temporary and local rank corresponding to the duties which they were called upon to discharge. We may mention that the question is not merely one of an empty title, for the higher rank, local and temporary as it is, carries with it not only a larger rate of pay, but a considerably higher pension to the widow of the officer holding such rank in case of his death on active service.

SICKNESS IN THE SOUTH AFRICAN FIELD FORCE.

THE most recent official return as to the invaliding and as to the number of deaths from disease in the South African field force shows a notable diminution in the number of deaths from disease, although there is no very obvious decline in the number of officers and men invalided home. The weekly average number of deaths from disease was in April 188, in May 270, in June 235, and in July (three weeks to July 21st) 146. The epidemic of enteric fever appears to be decreasing generally in all the districts from which information on the subject has been received. Upon this point Mr. A. D. Fripp, Chief Surgeon of the Imperial Yeomanry Hospital at Deelfontein, writes as follows under date, July 2nd:—I am thankful to say that the epidemic of enteric is rapidly diminishing both in the number of its victims and also in the virulence of the type of the disease. This is what we have been hoping for ever since the cold weather set in. The result upon the work in the various hospitals is immediate and very marked. The report from Bloemfontein is that already the hospitals there are half empty, and certainly the authorities show nothing like the anxiety they did even two or three weeks ago to fill up our vacant beds as soon as we return them. Indeed we have not taken in a trainload since the Mafeking sick and wounded arrived a fortnight ago, though small parties of Yeomanry still drop in with great regularity every day, almost one might say by every train. In spite of this we have been quite busy with surgery up to the middle of last week. The various hospitals which for some weeks past Surgeon-General Wilson has had ready packed in trucks to be shot up to the stations north of Bloemfontein have not all of them got through even yet. The difficulty is not one of deficient medical resources, but of deficiency of transport, for what with the repeated interruptions inflicted by De Wet upon the railway service, the worn-out condition and the small number of engines, the delays at the deviations where a bridge has been blown up, and the scarcity of fuel and water, it requires the entire energy of the railway staff to keep the army fed.

THE REPORT OF THE INDIAN PLAGUE COMMISSION.

WE gather from the telegram of the correspondent of the *Times* of July 23rd that the Government of India has issued new regulations founded on the report of the Plague Commission. The examination of corpses, which is always unpopular, will not be permitted. House-to-house visitation is to be justifiable only where the plague is confined to a small well-defined area, and compulsory removal of patients to hospital is only to be permissible in places and in circumstances where it can be an effectual precaution. The removal of moribund patients is forbidden altogether. The segregation of persons who have been in contact with plague-stricken patients is abandoned as ineffective and harassing. Disinfecting stations on the railway will be closed, but a limited number of inspecting stations will be maintained so as to intercept persons travelling actually with the disease upon them. The cordon system is abolished except where it prevents people from returning too soon to places which have been evacuated. Complete evacuation of small towns and villages is considered the best method of checking local outbreaks. Disinfection in a scientific systematic manner is advocated. The precautions regarding pilgrims to Mecca will be continued, also the stoppage of railway booking from infected areas in the case of pilgrims desiring to travel to non-infected towns. Various other points are stated to be dealt with, the whole policy being to cause the least harassment to the people, while still every step will be taken which experience has shown likely to stamp out or decrease the disease. The Government acknowledge the careful and sympathetic manner in which the Commission has examined the difficult problem and presented its valuable suggestions.

THE RATING OF HOSPITALS.

THE Select Committee appointed by the House of Commons on May 22nd, 1900, to consider the operation of the law by which hospitals and other institutions for the care and treatment of the sick, or of those afflicted in mind or body are liable to local rates, and to report whether under any and what conditions it is for the public interest that such hospitals and institutions, or any of them, should be exempted wholly or in part from such liability in future, has presented its report. The Chairman of the Committee was Mr. T. W. Russell, Parliamentary Secretary of the Local Government Board, and among the members were Dr. Farquharson and Sir Cameron Gull. The evidence taken by the Committee has been reported. The report points out that exemption was the rule until 1865, when a decision of the House of Lords as to the rating of the Mersey Docks was found to apply also to hospitals. Since then the practice has differed. In Ireland all hospitals and other charitable institutions are exempt from local rates; and in some places in England the rating authorities have left hospitals off the rating books entirely. The London Hospital and the Edinburgh Royal Infirmary are exempt by statute, as are also the hospitals in certain localities, such as Birmingham, Shrewsbury, and Hereford. The report of the Committee states that there can be no doubt as to the force of the claim for exemption set up by the hospital authorities when viewed from a philanthropic standpoint, since they are generally poor, are doing valuable work, and to a great extent relieve the rates. The Committee believes that voluntary medical hospitals may be distinguished from other charitable institutions, because "they are absolutely necessary everywhere, they assist all classes, they are generally open at all hours for the admission of the suffering without inquiry or recommendation; they prevent the spread of disease, they advance the cause of education and science. Where it can be shown that a hospital relieves the rates by taking charge of and treating the sick poor, it is equitably entitled to be credited against its assessment with the amount represented by the relief thus afforded. To collect the whole rate without regard to the services thus rendered is to cast upon an institution dispensing charity to the poor a large burden in relief of the poor than that imposed upon the rest of the community. It

pays in services and in rates as well. The Committee recommends "that the principle of exemption from rates should be applied to all medical hospitals, infirmaries, or other institutions for the care and treatment of persons suffering from sickness or injury, or afflicted in mind or body, not carried on for profit or gain, and supported wholly or in part by voluntary contributions or endowments, and directly benefiting the rates in the county or district in which they are located, to a greater extent than they pay rates."

SUMMER DIARRHŒA.

THE hot weather of the last two weeks has, as was to be expected, led to a very notable increase in the number of deaths from diarrhœa, although the numbers for London, at least, are notably below the averages of the corresponding weeks of previous years. In London a sudden increase in the number of deaths among infants occurred in the week ending July 21st. It is interesting to observe that the statistics this year bear out the theory that, so far as temperature is a determining cause of epidemic diarrhœa (and there is no doubt that it is most important), it is the temperature of the earth which governs the prevalence of diarrhœa rather than that of the air. Though there were high temperatures and a high mean daily value in more than one week in June, the deaths from diarrhœa in London, although they rose in number, did not increase to any very notable extent, and were very much below the average. Since then there have been very great fluctuations in the weekly maxima, and in the minima, and in the mean daily value of the temperature of the air, but the temperature of the earth at 3 feet recorded at Greenwich has crept up slowly and almost continuously from 52.08° F. in the week ending June 2nd to 62.51° F. in the week ending July 21st. In the week ending July 14th the temperature of the earth at 3 feet had risen to 59.34° F., but the number of deaths from diarrhœa in infants in London was only 23. In the following week it was 74. The mortality caused every year by diarrhœa is very great, and were it to be brought about by some exotic disease, and more particularly if the mortality occurred in adults instead of in children, something like a panic would arise. A good deal has been learnt with regard to the chief causes of this annual outbreak, and no doubt much good may be done by attention to the milk supply and to the domestic sterilisation of milk used for infants; but we may recall the opinion expressed by Dr. Waldo in his Milroy Lectures before the Royal College of Physicians of London this year that one of the contributory causes of epidemic diarrhœa, in London at least, is the scandalously inefficient scavenging of streets. The matter is one to which the attention of the President of the Local Government Board might profitably be directed with the view of instituting a systematic inquiry upon a scientific basis into the relation between the fouling of the air and soil and the prevalence of epidemic diarrhœa, especially in infancy.

OPEN-AIR TREATMENT OF PHTHISIS.

THE subject of the open-air treatment of phthisis has for some time been under the consideration of the Poplar and Stepney Sick Asylum District. After making various inquiries, during the course of which it was ascertained that on a recent occasion there were 65 patients suffering from phthisis in the Poplar and Stepney District Sick Asylum, a conference was held with representatives of the Boards of Guardians and the medical officers and clerks of the unions comprising the district. As a result a deputation of the managers had an interview with the Local Government Board. At this interview the Board objected to the managers taking individual action in the matter on the ground that the question was one for the metropolis as a whole, and that any provision made for the open-air treatment should be under the management and control of a metropolitan authority. Acting on a suggestion made by the Local Government Board, Mr. Robert Foskett, clerk to the managers of the Poplar and Stepney Sick Asylum District, has issued a circular letter to the guardians of every district in London inviting them to a conference to consider the advisability of providing the proposed accommodation. We are glad to see that this question, which has already been considered in many large provincial towns, is to be seriously discussed in London. In Liverpool a joint tuberculosis committee of the several unions has been formed, and with the sanction of the Local Government Board a site has been acquired at an elevation of 650 feet, and easily accessible from Liverpool. The sanatorium which is now in course of erection will be reserved for early cases. Dr. Nathan Raw, the medical superintendent of the Mill Road Infirmary, Liverpool, to whose exertions the decision to adopt the scheme is largely due, will read a paper on the subject of rate-supported sanatoria for consumptives in the Section of State Medicine at the annual meeting of the British Medical Association at Ipswich next week.

SUICIDE IN PRUSSIA.

IN the *Monatsschrift für Psychiatrie und Neurologie* for June an analysis is given of the statistics relating to suicide in the year 1897 contained in the report of the Prussian Royal Statistical Bureau of 1899. The total number of suicides in that year in Prussia was 6,496, of whom 5,117 were men and 1,379 women. This gives a proportion of 3 men to 1 woman, which corresponds with the figures for mid-Europe generally. Of the several provinces of Prussia, Silesia heads the list with 1,078 cases, Posen standing last with 141, with the exception of Hohenzollern, which has only 14. As regards the modes of self-destruction, hanging was chosen by 3,184 men and 610 women. Next came shooting, by means of which 806 men shuffled of this mortal coil. Drowning found favour with 521 women, while poison claimed 244 victims (141 men, 103 women). It is noteworthy that neither throat-cutting nor any other method of using the razor or the knife is mentioned. Suicide is more common in summer than in winter, the number from April to September having been 3,719, against 2,720 from October to March. Among the causes of suicide mental diseases took the first place, 1,881 persons (1,300 men and 581 women) being recognised lunatics. It is probable also that among the remainder there may have been many cases of latent mental disease. As regards religious creed, the Evangelicals head the list with 5,105, the Catholics come next *longo intervallo* with 1,078, the Jews standing lowest in the list with 102. As regards age, in four cases the self-destroyers were under the age of 10, all boys; and 61 were over the age of 80. In both sexes the average age was between 40 and 50. This is somewhat different from the common experience as regards women, which is that in them the greatest tendency to suicide is between 20 and 30. In the Prussian army, including the marines, the number of suicides was 197. In most cases the mode of death was by shooting: next came hanging; and, thirdly, drowning. In the army, as opposed to the general experience of civil life, suicide is more common in the winter than in the summer. As regards motive, fear of punishment was assigned as the cause in 65 cases and mental disease in 31.

LOSS OF HAIR: A CLINICAL STUDY.

DR. GEORGE T. JACKSON, of New York, has published an interesting paper on loss of hair,[1] based on the study of 300 cases, 158 of which occurred in men and 142 in women. In a previous publication Dr. Jackson had upheld the view that a disease of the scalp "variously called seborrhœa, dandruff, seborrhœal eczema, or dermatitis," was the cause

[1] *Medical Record*, May 26th, 1900.

of loss of hair in the great majority of cases. The term "loss of hair" rather than alopecia has been adopted, as it should be understood that baldness was not present in every case. Taking the above 300 cases it was noticed that 51 persons—27 males and 24 females—began to suffer from loss of hair in the second decade of life; 147 persons, namely, 97 men and 50 women, in the third decade; and 67 persons, namely, 31 men and 36 women, in the fourth decade of life. In the fifth decade there were 20 cases, namely, 3 men and 17 women; while those over 50 years of age amounted to 19, and were all women. Twelve cases began under 16 years of age. Neither the married nor the single state had any special influence in the production of baldness. "An intellectual indoor life, coupled with worry and nerve strain is a predisposing if not a determining cause of baldness." The majority of the cases of loss of hair (66 per cent.) began before the thirtieth year, and more cases began in the third than in any other decade of life. "It would seem that if we passed the thirtieth year of life without showing signs of incipient baldness, the chances of keeping the hair are very much increased, and this would apply specially to men." The loss of hair in women most often took the form of a general thinning, while in men the whole crown of the head was most often affected. Thinning of the hair about the temples was very common in men, but exceptional in women. Apart from heredity, which was the most potent cause, all diseases attended with lowering of bodily nutrition, for example, anæmia, dyspepsia, malaria, neurasthenia, tended to increase the loss of hair. Dandruff was the most powerful local exciting cause, having been met with in 73 per cent. of all cases. Under this term Dr. Jackson would include both seborrhœa sicca and pityriasis, both being forms of seborrhœal dermatitis. As regards remedies positive results in checking the loss of hair were obtained by the use of precipitated sulphur (10 per cent.) in cold cream. Sometimes the addition of 3 to 5 per cent. of salicylic acid, or of 1 drachm of the extract of jaborandi to 1 ounce of the sulphur cream was advantageous, and in a few cases resorcin in solutions of increasing strength proved a helpful remedy. On the other hand both naphthol and cantharides failed. Relapses were natural and common, as the disease is of parasitic nature, and the scalp once having been infected was all the more liable to reinfection. For stimulating the growth of the hair massage skilfully applied to the scalp night and morning was the best treatment. It should be practised for five minutes at a time, but not until the dandruff is checked. The prognosis is bad when calvities is already present.

THE TREATMENT OF SYPHILIS AND LOCOMOTOR ATAXY.

PROFESSOR TSCHIRIEW, of the Clinic for Diseases of the Nerves, Military Hospital, Kiew, states that his seventeen years' experience of organic diseases of the central nervous system, especially among officers, leads him to believe that most cases are due to syphilis which, when not thoroughly treated, leads in the course of twenty to thirty years to disease of the circulatory or central nervous system, which is not amenable to other than specific treatment. He insists on the importance of impressing upon patients the necessity of undergoing treatment at intervals of at least three years for ten to fifteen years. They should also be specially warned of the dangers of chills, abuse of alcohol, and so forth. He considers that much depends on the way specific treatment is carried out. From actual experiment on two subjects of as nearly as possible the same weight and build, he found that when mercury was administered alone—by inunction, for instance—an exceedingly small quantity was eliminated by the urine. When given combined with iodide, it was rapidly eliminated in quantity by the urine. The treatment by simultaneous mercury and iodide is followed by relapses, especially in the case of specific disease of the central nervous system: the simultaneous exhibition of mercury and iodide, especially in the form of biniodide of mercury ought, therefore, to be given up. Tschiriew has not given mercury in pill by the mouth, but recommends inunction, or rather, rubbing in of a mercurial soap. He considers baths of great assistance. His method is as follows: Daily a warm bath at 35° C. (about 96° F.), of twenty to thirty minutes' duration, to be followed in a-half to one hour by the inunction. This to be done for six consecutive days. On the seventh day the bath only. This course should be pursued for a period of five to six weeks. At the same time he orders a mouth wash of potassium chlorate, and attention to the teeth and tongue and to the bowels. Mercury injected subcutaneously (no doubt he really means intramuscular injections) is, he says, eliminated more rapidly and in larger quantities by the urine than when the drug is administered by inunction. At the end of the five to six weeks' course the patient has a rest for one or two weeks, taking baths at 38° C. for twenty to thirty minutes, three times a week, and iodides internally in milk or seltzer water. If the heart is weak, a little light wine, diluted with an equal quantity of seltzer water, is given, with, if necessary, a small dose of caffeine benzoate once or twice a day. The whole course occupies at least three months. Where sulphur waters are obtainable he orders one or two glasses a day. Tschiriew has never seen locomotor ataxy occur in any single case in officers who had not previously suffered from syphilis. He believes it to be the result of inadequate treatment of syphilis, combined with certain climatic conditions and the abuse of alcohol. The only thing which can be expected from specific treatment is the involution of the syphilitic changes which precede the sclerosis, and which lead to aggravation of the tabetic condition. He recommends douches varying from 22° C. to 12° C. for one to one and a half minute at a time daily; electrisation of the spinal cord and medulla by means of the constant current; cauterisation over the vertebral column every ten to fourteen days with a Paquelin, usually in ten places, on either side of the median line. Where the centres for micturition, defæcation, and erection are especially involved he gives strychnine nitrate in pills in doses of 0.002 gram twice a day. For the shooting pains he has found subcutaneous injections of atropine and morphine combined with a small quantity of sterilised solution of mercury perchloride useful. He has observed the return of the knee-jerks, disappearance of Romberg's symptom and recovery of bladder in only two cases, other symptoms being still present showing that the sclerosis of the cord had not disappeared.

THE *ROLE* OF THE STREPTOCOCCUS IN PHTHISIS.

IT is a remarkable fact that as the distressing throat inflammation of diphtheria is in no strict sense due to the specific bacillus, but rather to the symbiotic streptococci, so the bulk of the distressing and dangerous features of phthisis pulmonalis are not due to the tubercle bacilli, but to the streptococci and other pyogenic organisms. The fever, the excavation, and the expectoration, the waxy degeneration of the viscera, and in great part the diarrhœa, are all to a greater or less extent due to streptococcus influence. It may be said, indeed, in a general way that the risk of phthisis *quoad vitam* is not a matter of tubercle bacilli. The tendency of the bacilli of tuberculosis to lie quiet in the tissues, provoking little or no reaction, is seen every day in parts of the body other than the lungs, and the tendency of tuberculous processes to become quiescent both in the lungs and elsewhere as soon as the inflammatory action produced by the adventitious organisms has subsided is a matter of every-day experience. Whereas, in the case of diphtheria, the risk in regard to life is, in the majority of cases, from the

absorbed diphtheria toxins, there is very little evidence as to the nature and effects of the toxin of tuberculosis. It would appear to many that the constitutional symptoms of a case of phthisis might well be treated on the lines of a case of septicæmia by the injection of antistreptococcus serum. It is a canon in the management of phthisis pulmonalis to avoid as far as possible the chances of mixed infection, whether by the influenza organisms or others. The "cure" for phthisis seems to be slowly resolving itself into an attack on the symbiotic micro-organisms; in the more recent past this has chiefly been in a passive way by increasing the resistance of the tissues; but in the future it may possibly be more in the way of active defence, when the rest follow by way of the natural fibrosis and obsolescence of the tuberculous lesions. It is probable that the more favourable cases for treatment with antistreptococcus serum are the pyrexial—those, in fact, which are less suitable for the open-air method.

AN INSTITUTE OF PSYCHICAL SCIENCE IN PARIS.

A Society has recently been formed for the scientific and experimental study of "psychical phenomena" in France, and as an outcome of this an Institute of Psychical Science has just been established in Paris. The objects of the Institute are stated to be: (1) The installation of laboratories equipped with suitable apparatus (biometers, magnetometers, spectroscopes, registering instruments, photographic apparatus, etc.); (2) the finding and payment of "subjects"; (3) the creation of a periodical which shall publish accounts of the experiments made in the laboratories, and their results, and the writings of collaborators interested in psychical studies. The General Secretary of the new Institute is Dr. Emile Legrand, 14, Rue d'Amsterdam, Paris.

THE INTERNATIONAL CONGRESS OF THE MEDICAL PRESS.

The International Congress of the Medical Press, which is being held in Paris this week under the presidency of Professor Cornil, has an interesting programme of work before it. Drs. Posner (Berlin), Laborde (Paris), and Rubino (Naples) are to report on a proposal to found an international association of the medical press. The question of copyright in regard to medical literature will be discussed by MM. de Maurans and Rocher (Paris) and Dr. Fasset (United States). Among other subjects to be considered is the condition of the medical press in different countries; reports will be presented by secretaries of associations and journalists representing various countries. These reports ought to supply some interesting information. M. Alcan, the well-known Paris publisher, is to deal with the question of the reproduction of figures and plates which appear in medical journals. M. Blondel (Paris) will have something to say on a matter of very serious importance to most medical journals, namely, the space to be given to reports of societies. In regard to this we are tempted to apply to this particular kind of literary matter the famous resolution concerning the royal prerogative in the last century: that it has increased, is increasing, and should be diminished. On another question to be discussed in Paris—to wit, the part to be played by the medical press in organising medical congresses—we have nothing to say, except that in this matter every journal must be allowed to take its own course. An especially ticklish question is to be introduced by M. Jayle; this is Personal Controversies and the Right to Reply. It may be said of personal controversies, as of scandals, that it is inevitable that they should come; but woe to them—in a Pickwickian sense—through whom they do come. In general terms it may be said that controversialists should remember that an angry man is pretty sure to make a fool of himself if he rushes into print; violence of language is usually in inverse ratio to strength of argument. Most of the other subjects that are on the programme of the Congress are of merely technical interest.

SMALL-POX IN GLASGOW.

There is a considerable number of cases of small-pox in Glasgow at the present time. At the end of last week there were 52 cases of the disease in the city hospitals, of which number 16 had been admitted during the week. The *Glasgow Daily Record* published an account of the way in which infected bedding from one of the city hospitals is dealt with, which must cause great astonishment to those who have been accustomed to look upon Glasgow rather as a pioneer in sanitary matters. We gather that for some years at least it has been the custom of conveying infected bedding for disinfection or destruction from the hospital through the public thoroughfares to a washhouse at some little distance. Dr. Chalmers, the medical officer of health for the city, having ascertained that the bedding was carried on a barrow, whether covered or not by a tarpaulin is not quite clear, gave instructions that the transfer should in future be made in a van suitable for the purpose, and provided with waterproof hangings. In view of what is known as to the ease with which the infection of small-pox may be carried, this would seem to be only a reasonable precaution, and one which would have been generally approved in the interests of the public health. It would appear, however, that the order was countermanded by the chief sanitary inspector, and that his action has been approved by the Subcommittee on Hospitals. This very surprising decision to set aside expert medical opinion upon a matter which is peculiarly within the province of medicine has led to a somewhat heated discussion in the Corporation, and a Special Committee of Inquiry has been appointed. This Committee will no doubt bring out all the facts, although it is difficult to conceive what grounds there can be for rejecting the deliberate opinion of so competent and distinguished an officer as Dr. Chalmers.

THE LIGHT TREATMENT IN RUSSIA.

The Dowager Empress of Russia, who, like her sister the Princess of Wales, as the result of personal inspection, takes the greatest interest in Professor Finsen's method of treating lupus by means of light, has founded an institute in St. Petersburg on the lines of the one in Copenhagen. Dr. Sarapin, a Russian physician, who at the instance of the Empress has studied the method under Professor Finsen, is placed in medical charge of the new institute, and a Danish lady has been engaged as superintendent.

CONDITIONS OF PRACTICE IN BRITISH COLONIES.

In the address by Mr. George Eastes, published in the British Medical Journal on July 21st, it was stated that the documents containing information as to the condition of medical practice in British Colonies recently furnished to the Council of the British Medical Association at the request of Mr. Chamberlain could be inspected at the central office. We are asked to state that the documents are not at the present time available in this way, as they are in the hands of a member of the Public Health Subcommittee of the Parliamentary Bills Committee for analysis.

The Duke and Duchess of York visited Wolverhampton on July 23rd to open the new infirmary of the Wolverhampton Orphanage. They received a cordial welcome and the usual municipal courtesies were extended to them, but we notice with astonishment that in the ceremony no representative of the medical profession was assigned any part. This was no doubt due to an oversight on the part of some local official, but it is unfortunate that such a blunder should have been made.

Professor Camillo Golgi, of Pavia, whose name is familiar to students of the morbid anatomy of the nervous system throughout the world, has been named by the King of Italy a Senator of the Kingdom.

The Tuberculosis Committee of the Association of German Naturalists and Physicians has decided, owing to the numerous congresses that are being held this year, to rescind their resolution to meet at Aix la Chapelle in September.

MEDICAL NOTES IN PARLIAMENT.

[From our Lobby Correspondent.]

The Companies Bill got through the Grand Committee on Friday, July 20th, and by an accident in the shape of the postponement of the Colonial vote, came on in the House on Tuesday last. For some day or two the opposition to Clauses 2 and 3 had been growing, but there seemed some hope for them till Mr. Ritchie again declared that they were not germane to the Bill. When the report stage came on early on Tuesday, the new clauses, which had priority, were rapidly disposed of, and in a few minutes Clause 2 was reached. Its omission was moved, and the Government by the mouth of Mr. Ritchie agreed to let it go. Mr. Bryce from the front Opposition bench supported this action, and it was evident the House took the same view. Sir Walter Foster uttered a strong protest, more in the interest of Clause 3 than Clause 2, for if one went the other must of necessity go too. He urged the plea that these clauses represented a great amount of careful consideration, that for two years the Lord Chancellor had approved of them and had put them in the Bill as the easiest method of obtaining the legislation demanded in the interests of the public. It was all of no avail. Sir John Tuke said a few words in the same sense, but the House would have none of the clause, and so Clause 2 was omitted without a division and Clause 3 met the same fate immediately after. The Bill then went on its way steadily through the rest of the sitting, and will probably be reported for third reading next week. The lost clauses are not likely to be replaced in the House of Lords, and will require to be introduced in a separate Bill at the next session or in the next Parliament.

Invalids of the War.—Last week Mr. Wyndham stated that 20,658 officers and men have been invalided home from South Africa; of these 63 died on the passage and 60 in military hospitals. There is no record of any having died in their own homes; 430 have been incapacitated from further service by wounds and disease.

The Army Hospitals in South Africa.—Dr. Farquharson last week asked the Under-Secretary of State for War whether, as had been stated, civil surgeons employed in military hospitals in South Africa had been required by the Army Medical Department to sign a contract not to divulge in any way what their impressions may be on hospital matters. Mr. Wyndham replied: Civil surgeons have to sign a contract—not being entitled to enrolment under pay warrant or amenable to discipline under the army—accepting the terms offered and the obligation of discipline therein set out. I have in my hand a copy of the contract. The only paragraphs that bear upon discipline are as follows: "During the said period I will devote my whole time and professional skill to my service hereunder, and will obey all orders given to me by commissioned military or naval officers or by the permanent medical officers of either of those services." And the next paragraph runs: "In case I shall complete my service hereunder to your satisfaction in all respects, I shall receive at the end of the said period a gratuity of two months' full pay at the rate hereinbefore specified, but in case I shall in any manner misconduct myself, or shall be (otherwise than through illness or unavoidable accident) unfit in any respect for service hereunder, of which misconduct or unfitness you shall be sole judge, you shall be at liberty from and immediately after such misconduct or unfitness to discharge me from further service hereunder, and thereupon all pay and allowances hereunder shall cease, and I shall not be entitled to any free passage home or gratuity." That is the only contract civil surgeons have to sign, and for my part I cannot discover any foundation for the statement in question. Mr. Burdett-Coutts thereupon asked whether it was not the case that after some letters had been published from doctors in South African hospitals, they had to sign a declaration to the effect that they were not to communicate their impressions of hospital matters to the public, or that they were to take the consequences? Mr. Wyndham said he had no knowledge of any such effect, and then Sir Henry Campbell-Bannerman suggested that he should inquire by telegraph; and the Under-Secretary agreed to do so.

Medical Attendance at the Indian Famine Camps.—There has been a good deal of concern manifested in some quarters as to the adequacy of the medical attendants and nurses in the famine camps in view of the excessive prevalence of cholera. Lord George Hamilton, questioned on this matter, said he had not received details of the distribution of the medical officers and subordinates at the camps and relief houses, but said the Famine Codes contained full directions for strengthening the medical staff and for providing hospital accommodation. He said there were also full and clear instructions for engaging additional medical aid when required.

The South African Hospitals Inquiry still excites great interest in the House. On Tuesday Mr. Balfour was again heckled on the point of giving full protection to witnesses, and making arrangements whereby the Commissioners might have powers to take evidence on oath and compel witnesses to attend. Mr. Balfour, who showed unusual irritation over the matter, said the Commission would have no power to take evidence on oath, and that the Chairman had already made public the very elaborate precautions proposed for the protection of witnesses. These he regarded as sufficient, and the Commission would be made a Royal Commission. Mr. Burdett-Coutts specially pressed for compulsory powers and for protection being made absolute for all witnesses. Mr. Balfour said the suggestion conveyed an unmerited insult upon persons who did not deserve it, and said the hon. member would see the precautions taken by the Commission. The matter then closed.

Surgeons and Nurses for South Africa.—Dr. Tanner elicited from Mr. Wyndham on Tuesday last that eight nurses have died in South Africa, and that quite recently Lord Roberts has asked for twenty more surgeons and fifty nurses. These are being sent. In reference to the inquiry as to the stacking of stores at Capetown, it was stated that it was usual for stores to be stacked at the base, and sent up as required.

Inoculation for Typhoid.—Mr. Channing called attention to the speech of the Director-General of the Army Medical Department, in which it was stated that the result of inoculation, while it afforded some protection against contracting the disease, rather increased the risk of death when contracted: but that this only applied to the men, as both incidence and case-mortality among officers appeared to be increased by inoculation. Mr. Channing further asked whether the recent statistics of Professor Wright, which showed that both attacks and deaths from typhoid are seven times less in the inoculated than in the uninoculated, applied equally to officers and men. Mr. Wyndham, in reply, said that he had no knowledge of the statement attributed to the Director-General, and, as he had already explained to the House more than once, the statistics at present available were not sufficient to enable him to give a satisfactory reply to the question. When the full statistics are to hand, they will be published with such conclusions as they may suggest.

THE WAR IN SOUTH AFRICA.

IN PRETORIA.

By Sir William Thomson,
Surgeon-in-Chief, Irish Hospital, Field Force, South Africa.

The Town, the Camp, and Enteric Fever.

Pretoria, June 24th.

The difficulty of "getting through" any letter to or from Pretoria suggests that we are in a degree invested by the enemy. True, he is a good way from us in the south, and in the north Botha has been driven off 40 miles after two sharp engagements. But De Wet has adopted the course which was obvious; he did not need the prompting of our generous Continental friends, and has assailed telegraph and railway lines in our rear with some success. Letters and telegrams do reach home we believe, but only by using messengers to carry them to a place of safety. Letters for us, however, do not come. I have had none of later date than April 20th, and anxiety is naturally great. We believe that somewhere south 1,200 mail bags are awaiting safe conveyance to the front—but rumour now has it that they have been captured and burnt by De Wet.

Pretoria is full of interest to us all. Our entry to it was through suburban brickfields and inches deep of red powder that shaped into clouds at the smallest breath. But as we advanced we entered long straight, wide roads, always running at right angles to each other, edged with houses of varying architecture and size. Some were pretty houses, many elaborate villa residences of red brick and stucco, faced and planted by trees, among which the fruit-laden orange was conspicuous. As we neared the central square we entered the limited region of shops. Many of them were really immense stores like those at home, most of them well fitted, and all of them lighted by electricity. The square itself is made impressive by the two great buildings—the Raadzaal or Parliament House, facing the new but unoccupied Palace of Justice. They are both worthy of the home metropolis, and the Boer officials certainly know how to make offices splendid and luxurious. In the middle of the square, and therefore spoiling the effect, stands an old Dutch Reformed church, but it was purchased by the late Government for removal. At one end of this stands the beautiful pedestal for the Kruger monument, the scaffolding still around it, but the effigy, although finished, absent; and already the vacant space has been assigned to a statue of Her Majesty. It is also suggested that Lord Roberts's statue should occupy the opposite end. Banks and insurance offices or hotels, more or less handsome, make the sides, and give a certain European air to the place. Then in the daytime the whirling dust is controlled by watering carts. At night the streets blaze with electric lights. But the ordinary civil population is absent. Many shops are closed altogether, but not one is barricaded as they were at Johannesburg. Tommy walks abroad unarmed as if he were in a garrison town at home; officers throng into the hotels to get a square meal after a biscuit ration. The only Boers to be seen are in the crowd at the Raadzaal, where they push in like a mob at an "early door" to deliver up their rifles and take the oath of neutrality. Sometimes this has been varied by fifty or sixty prisoners taken at some fight. These do not go free; but for the rest, when they have got their pass they join the ordinary street passengers, and lose any special identity for us as fighting men. Only a week ago they were firing on us; now the bandolier and rifle are put aside, and the Boers are ordinary people, fraternising with us, discussing the campaign, telling their adventures, criticising their own Generals and ours, but always expressing admiration of the splendid bravery of the British soldier.

Such is Pretoria to-day under a second British occupation. Just nineteen years ago, when we retired from it, the square over which two palaces now hold guard was covered with waving veld grass and the paved pathways were represented by a couple of foot tracks.

We camped on Wednesday, June 6th, with the 11th Division near the famous racecourse where our prisoners were confined, and the next night we knew of the release of about 3,000 of them at Waterval. Many of them looked ill and worn, but their delight at hearing our guns and seeing their old comrades may be imagined. Of their hardships in illness and in health they speak openly. Stories flit about which may take form later on, but it would be unjust to mention names until there is substantial proof of charges. On Friday we moved out with the troops for about nine miles, and on Saturday returned to our ground nearer town. The ambulances carried back thirty patients, and later in the afternoon we received seventy more. But the field equipment which we had brought was adapted to fifty only. All we could do was to give up six small living tents provided for the company, and thus we were able to give cover to the second fifty; but these men had to lie on the ground wrapped in blankets. Nearly half were enteric cases, and it is easy to realise what this meant. There was no provision for them in the town. The Volks Hospital was full, and a model school was already crammed; other hospitals on the field were as we were, except that all their patients had to lie without stretcher, and on mattresses, while we were able to give these small comforts to fifty. As always happens, once the troops sat down, sickness made itself manifest, and there were 1,000 cases or more demanding treatment and proper housing.

The Evolution of the Irish Field Hospital.

I had looked for some days at the stately exterior of the Palace of Justice, and wondered what was inside. I learned that it had just been finished at a cost of £180,000, but that it had never been occupied. A casual conversation with Major the Hon. R. White led to an introduction to General Maxwell, the Military Governor, who had visited the place. Next day the Pretoria Medical Commission was formed, consisting of Mr. Murray Guthrie, M.P., Mr. Leigh Wood, distinguished for his splendid services in helping our sick prisoners at Waterval, Mr. Heys, and Mr. Loveday, member of the Raad. The Governor asked me to act as adviser and to be a member of the Commission, of which Mr. Wood was made chairman. We became a local Red Cross Society, and by the energy of Mr. Wood and Mr. Guthrie an enormous quantity of material was collected in twenty-four hours, and we at once began to distribute bedding, etc., to the various hospitals, and we took over the Palace on Friday, June 15th, as a perfectly bare building. A hospital committee was formed, and I was asked to undertake the medical direction, with the usual proviso as to recognition of military supervision and control, a proposal which was at once sanctioned by Lord Roberts. Mr. Rupert Guinness was also appointed a member. On Tuesday, June 19th, I moved in with 80 patients, who were provided with wire-woven beds, white sheets, and the little luxuries that were so keenly appreciated by men whose only bed for six months has been the hard veld, and whose only tenting was the sky. Electric lighting had to be introduced, kitchens and latrines constructed, and stores laid in. It was downright hard work, for I had as helpers only Dr. Coleman, Mr. Douglas Thomson (dresser), Mr. Lurring (apothecary), and five orderlies, survivors of the march, and these, with Mr. Murray Guthrie and Mr. Wood, worked with untiring energy. To them I owe more thanks than words can convey.

To-day we have 260 patients in the hospital, the only addition to my staff being some untrained orderlies. The greater number of the cases are enteric fever, and several of these have died within a few hours of admission. They have been in field hospitals under conditions that were inimical to their recovery.

The Palace of Justice is a building of fine proportions, and would be quite worthy of a place in any metropolis. It has a frontage of about 200 feet, and a depth of nearly 250. The central hall is 145 feet by 45, floored with encaustic tiles and surrounded by a balcony supported by 60 massive stone pillars, the bases and cornices of polished metal. The central dome is lofty and ornate. The sides and front of the building are three storeys high, and the rooms number about 100. Beneath, in the basement, there is excellent storage.

Four of the principal wards have been named after Lord Roberts, the Military Governor (General Maxwell), Lord Kitchener, and Lord Iveagh—whose staff for the Irish Hospital has been for the time domiciled in the Palace of Justice.

The difficulty which was the first to be dealt with was the disposal of excreta. The method here is to have night-soil

removed by carts and buried. I determined to have it burned. For this purpose it is mixed with coal ashes and sawdust, removed, and fed into a furnace, so that with a preliminary free treatment with disinfectants, the best is done under the circumstances.

The remainder of my staff at Bloemfontein has been telegraphed for by the Commander-in-Chief, and when it arrives we shall be able to deal with 400 or 500 patients. But transit at present is very uncertain. Trains are still being fired into and contents blown up. An officer whom I met yesterday had been seven days on the journey. To-day, however, things look better.

THE ALLEGATIONS AGAINST THE MEDICAL ARRANGEMENTS.

[FROM OUR SPECIAL CORRESPONDENT AT CAPETOWN.]

July 3rd, 1900.

THE OPENING OF THE CAMPAIGN.

THE main topic of interest at present is, of course, the sweeping attacks on army medical administration, which, under the leadership of Mrs. Dick Chamberlain, have been made on this side, concurrently with Mr. Burdett-Coutts's campaign in England. The first move here was a contributed article from an irregular from one of the Colonies, who is stated to be a man of education and of high position in his own country, published by the *Cape Times*, far and away the most influential of South African newspapers. For this article, by not inserting it in the correspondence columns, the *Cape Times*, of course, assumed a measure of responsibility, and it necessarily attracted much attention. It evoked a whole shoal of letters, nearly all in defence of the department.

Closely following upon this, the Archbishop of Capetown, a very highly respected prelate, distinguished for the moderation of his views in most matters, made a speech at the Good Hope Society, roundly accusing the medical authorities, not only of general neglect, but of keeping back from patients comforts sent by the Society. In particular he mentioned the camp at Rosebank, where there is some sort of a "hospital" devoid of the simplest comforts, and he went so far as to say that the medical officer there was unfit for his office. The Rev. G. G. McLure, a Presbyterian minister, substantiated the general charge of neglect, and went on to say that what had been said of Rosebank was equally true of Green Point and Maitland. Some further complainants have extended the attack to Wynberg and Rondebosch, but Woodstock was not specifically mentioned until yesterday, when Mrs. Dick Chamberlain, who is, I know, the prime organiser of the whole criticism, wrote to the *Cape Times* a very trenchant letter indeed, in which she designates both No. 1 and Woodstock as "dirty and insanitary," "swarming with filthy insects," and "destitute even of necessities, except those contributed by the public." The same issue contains a letter signed by 33 convalescents at Rosebank, protesting against the reflections on their medical officer, stating that their wants had now been attended to, and then going on to state that their real grievance lies in the direction of not being able to get their pay, a matter with which the medical world has, of course, no concern. It should be mentioned that the Archbishop has written to Dr. Klein (the Rosebank Medical Officer), apologising unreservedly for his aspersions upon him, and that this letter has been published. The Archbishop, however, still maintains that someone has been to blame in connection with Rosebank. Two correspondents write defending Naauwpoort and Deelfontein respectively, and the *Cape Times* prints a half-hearted subleader admitting that the complaints may represent an exceptional experience, but still damning the military medical officer with faint praise by insisting that heroism in the field does not make up for roughness or unsympathetic treatment of patients elsewhere.

THE ALLEGATIONS EXAMINED.

Now, I purposely abstained from writing to you on this painful subject last week from the fear of being led into an *ex parte* statement, without the opportunity of personal inquiry. I have now carefully looked into the matter from all sides, and shall endeavour to give the result of my conclusions for what they are worth. These conclusions are arrived at from the point of view of a civilian medical practitioner, holding no brief for the Army Medical Service, but who can add to twenty years' practice in the Colony the experience of an old campaigner, that of an administrator of a civil hospital, and that of a correspondent whose duty has brought him into daily contact with the hospitals at the base since the beginning of the war.

ALLEGED DEFICIENCIES IN DIETS.

Briefly then, my humble opinion is that, whilst the medical machinery has failed in some places to save the men from discomfort, and perhaps in a few, has involved them in a measure of injury, the gross allegation of wilful neglect, of *mala fides* and of culpable incompetency, can easily be disproved. Some of them, indeed, disprove themselves. Take the worst allegation of them all, contained in the Colonial Volunteer's "Seamy Side" article, that a sergeant in charge of his field hospital, and other orderlies, systematically refused to supply actually routine articles of diet without payment at an exorbitant rate, and that this was allowed to go on systematically. Common sense alone is sufficient utterly to pulverise such a statement as this. There were, according to the complainant, 26 men in the tent. To assume that every single man of those 26 was prepared to keep silence under treatment of this kind, especially when accentuated by such trifles as the kicking of a patient with dysentery, is to assume the absurd. Tommy is not given to possessing his soul in peace when he has a grievance, and your average free and independent Colonial even less so. Complaint is all the easier from the fact that it is of a nature so easily substantiated. The diet sheet can be read by every patient, so that he knows what he is entitled to, and a failure to supply the items therein named is a common grievance to which the whole tent would certify. I have invariably found that the soldier scrutinises his diet sheet most carefully, and never fails to bring to the notice of his medical officer the slightest discrepancy between it and his supplies. But it is alleged that complaint can be stifled by the simple process of a sergeant bending over the bed of a man who is beginning a disclosure to his medical officer, and terrorising him into silence by "insulting and obscene" threats. This suggestion is grotesque, seeing that medical officers, R.A.M.C. and civil alike, have the usual allowance of perceptive faculty. Then, again, as to the stifling of legitimate complaint, what becomes of the orderly M.O., of the camp or garrison orderly officer, of the P.M.O., of the chaplain, and all the other heterogeneous mass of visitors, official and non-official? Could none of them listen? The experience of everyone of our civil surgeons is that the slightest defect, quantitative and qualitative, is promptly brought to the notice of the orderly M.O., whose special province it is to elicit complaints. Further, the men's own medical officers are by no means always accompanied by wardmasters or orderlies. Apart from their ordinary rounds, they constantly look into the wards at odd times, and on such occasion a private complaint is always possible. And there is this further consideration, that by far the major share of the actual attendance upon the sick is in the hands of civil surgeons, both at the base and at the front. These gentlemen are neither better nor worse than the generality of practitioners; indeed, the Volunteer admits that they are "shining lights of the service" (if so, the service is so permeated by them that its darkness cannot be so great), and they at least are not trammelled by the assumed baleful service traditions of brutality and incompetence. Consequently, if brutality and neglect are so rampant as we are told, the profession as a whole must plead guilty to charges not often levelled against it. But are the R.A.M.C. officers so easily persuaded to leave behind them the traditions of the most humane of callings? I do not think so. The most careful investigation has only brought to my notice one instance of harsh language or action on the part of an officer in that corps during this war. This was indefensible, I admit, but occasional black sheep may be found in any body of men. The point of the critics, on this side at least, is that the whole system is honeycombed with the faults complained of. No one can deny that the best of systems has its weak points, nor that individual evildoers are found everywhere. Unfairness consists in holding up the black sheep as types of the flock. What I maintain is that the military hospital system, with

its never-ending checks and counter-checks, often complained of as wearisome, is as perfect a human machine for checking peculation and neglect as one can at present devise. Your average civil surgeon complains that it is only too minute.

AT ROSEBANK CAMP.

Now as to the more specific charges. The pity of it is that they are so few. The Archbishop had heard this and had been told that, but he only nailed one charge to the counter, namely, that convalescents at Rosebank had neither had blankets nor beds. What are the facts? At Rosebank Camp there is no hospital whatever nor is one intended. This camp is the base depôt of the South African Irregular Forces, such as the South Africa Light Horse, Roberts's Horse, etc. These forces were in the first instance raised and equipped by private effort, mostly by a few wealthy Johannesburgers. A committee of these gentlemen did all the recruiting, made all the arrangements, and, subject of course to the approval of the Imperial military authorities, appointed the officers, amongst others Dr. Klein, the present medical officer at the camp, a German practitioner well known for his kindliness and ability. The committee secured the Agricultural Show ground as a base depôt, at which recruits were and are kept until fit for the front. Later on of course it received men about to be discharged, men temporarily sent down to Capetown with prisoners or the like, and men discharged from hospital pending their rejoining their squadrons or being discharged from them. To examine recruits and to attend to medical needs of the depôt Dr. Klein was kept, but it must be distinctly understood that he was merely to render temporary aid as a regimental surgeon, everything beyond the slightest ailment being sent to a general hospital after being examined by him. Consequently no hospital accommodation was provided nor needed. Except as regards the actual *personnel* of Dr. Klein the place did not come, apart from sanitation, under the purview of the R.A.M.C. at all. But quite recently, owing mainly to the delay of the pay people at Rosebank in settling with and discharging the men, the number of "convalescents" has increased, and as some of them were still weakly, Dr. Klein felt that they needed something better in the way of bedding than the ordinary trooper fit for service, and he repeatedly requisitioned the Commanding Officer of the depôt to that effect. After a time, nothing being done, or apparently likely to be done, he appealed to his medical chiefs, not because they were responsible for the supplies (for they were not) but simply to back him up. Colonel Mc'Namara promptly inspected and concurred with Dr. Klein in considering beds, etc., necessary, and requested the Commanding Officer to provide them, resting satisfied with the expectation that this would be done. Dr. Klein was equally satisfied, but the Commanding Officer did nothing, and thus the state of things undoubtedly wrong came about, and it was only remedied eventually by the Medical Department supplying the things required, clothing and bedding, for which it was not responsible. Surely it is too much to expect the R.A.M.C. to follow men up to their own units and perform the functions of a regimental commissariat.

CHARGES OF "CALLOUSNESS."

Then Mr. McClure and others have roundly said that the citizens of Capetown are sending waggon loads of comforts for the sick, and that the medical officers, or someone else, prevent their getting them. Mrs. Dick Chamberlain is even more emphatic. According to her, "So determined are the doctors not to allow the outside public, so callous are they to the sufferings of the unfortunate patients," that men have to lie on the floor and suffer all kinds of things. Now, again, for the facts. The P.M.O.'s of the hospitals have again and again appealed for various things, constantly gratefully acknowledge them, to the minutest detail, in the papers, and, what is of the most importance, forthwith hand everything received to the Superintendent Nursing Sister, who keeps them under lock and key, and distributes them entirely at her own discretion, subject only, of course, to the dietetic direction of the medical officers in charge of the cases. Surely no one can assert that any better almoners than our devoted nursing sisters could be found.

MAITLAND YEOMANRY CAMP.

Now as to the charges of neglect at the Maitland Yeomanry Camp. The explanation I gave as to the position of Rosebank apply in great measure to this. It is not recognised as a "hospital" or "convalescent home." In order to meet ordinary every-day requirements and for sanitary purposes, the Yeomanry Hospital was asked to detail a medical officer to do duty at the McKenzie's Farm Yeomanry Base Camp, but it was distinctly ordered by the Surgeon-General that every case of illness in the least serious should be sent to a general hospital. The Surgeon-General has from the beginning been opposed to small subsidiary hospitals, and, I think, rightly. Unfortunately, it appears that the medical officer at McKenzie's Farm took upon himself to treat some cases of enteric fever there, and two died. It is certainly not proved that these men died from any neglect; indeed, the utmost that an indignant lady critic whom I interviewed on the subject could urge was that there was no nursing sister there. They were housed in a comfortable hut, and received quite as good attention as nine out of ten enteric patients get in civil life; but still, it is unfortunate that they were dealt with at a place never destined for the purpose, but for this the P.M.O. can hardly be held responsible. There is a little difficulty in getting at the exact position of the medical officer at McKenzie's—that is, as to whether the P.M.O. of the Base or the Yeomanry Hospital people are his immediate superiors. Of course, in the broad sense, all medical arrangements are under the Surgeon-General, but there is no going behind the fact that in the case of all the outside hospitals there is a certain delegation of responsibility to the bodies forming them. Indeed, if it were not so, the benevolent organisers would be the first to kick. It is only fair to mention that the Yeomanry people distinctly state that they disclaimed from the first any responsibility for the management of the Maitland Hospital. Be this as it may, it is rather unfair to expect the military authorities to exercise the same constant supervision over an institution distinctly instructed to regard itself as a mere "detention hospital" as over a recognised place for the continuous treatment of the sick. This consideration carries still more weight when the institution has some sort of an individuality apart from the military system properly so called, for reasons which I have just mentioned. I have very good reason to believe that this individuality was at the bottom of the retention of the enteric patients at Maitland. Whether the *esprit de corps* dwelt in the medical officer in charge or in the yeomen patients I am not prepared to say, but I do know that from the adjoining cavalry camp at Maitland proper even very slight cases are very promptly despatched to Woodstock or Wynberg.

FOOD SUPPLIES.

Another assertion made by the Volunteer contributor of the *Cape Times* is that even at Wynberg a man cannot get sufficient food without paying for it, that instead of the dietary pound of meat they only get 8 ozs., and that the allowance of butter is absolutely insufficient. Now, these assertions I am in a position to deny categorically, both from my own intimate acquaintance with Wynberg, Rondebosch, and Woodstock, and from the testimony of several men, Colonial friends, one or two relations of my own who have been in these institutions and can be relied upon to speak quite unreservedly. I am quite certain that the meat supply is absolutely up to weight, except on rare occasions, which without peculation must happen when large quantities have to be hurriedly divided. I know of several instances in which complaints have been made of short weight, and in all these cases, except one, the complaint was shown by actual weighing to be groundless. So far from wardmasters or orderlies being inclined to aid and abet the cooks in peculation, I have always found that these people are rather inclined to regard one another as natural enemies, and that the average wardmaster rejoices in catching the cookhouse people tripping. Again, as to the butter. It must be admitted that in some of the diets the ounce allowed is not quite sufficient, but practically whenever asked for an additional ounce, very often two, come in as extras. I have before me notes of 48 diet sheets taken from four wards and an annex without any selection. From these I have eliminated 14 cases in which for strictly medical reasons the diet is limited. The remaining 34 are on roast, varied, stewed steak, roast chop, stewed chicken, and minced chicken. In every sheet, except one, either stout, whisky, or port wine appears.

in six of them two bottles of stout daily. The one exception is a professed total abstainer who earnestly pleaded not to be given stimulants.

In all the cases but 6 (and 4 of these are on "varied") an additional ounce of butter is ordered, and in 17 of them 2 ounces. In addition, on all of these sheets, except the "varied" diets, some other "extra" appears—eggs, porridge, jelly, custard, rice pudding, or the like. I have no hesitation in saying that your middle-class patient in Capetown, say the average shopkeeper, bank official, civil servant, or the like, the man with an income of £300 to £500 per annum, literally cannot afford to give himself during convalescence so liberal a diet as Tommy Atkins is ordered in hospital. This may seem a strong assertion to make, but it is the result of a consensus of opinion from myself and two civil practitioners who have large good-class practices in this city. It may, of course, be said that the patient does not get what is ordered. To that I can only repeat that unless a patient is a helpless idiot and his medical officer hopelessly incompetent, a continued and systematic course of tampering with diets is impossible.

HOSPITALS AT WYNBERG.

Mrs. Dick Chamberlain's letter is written in a spirit widely different from the criticisms of the Archbishop, Mrs. Hanbury Williams, and some others. The former reaches the hardships of the sick and wounded by way of a personal grievance —always a bad introduction to an indictment. *Apropos* of that personal grievance, I may relate a little anecdote. In the early days of the campaign, I happened to be in a ward in one of the base hospitals. A lady, whom I did not then know, was talking to a patient whom I was anxious to see. After a respectful wait on my part, she passed on. The first words of the patient were, "I hopes you frightened her away, sir: I dessay she's an orful good lady in her way; but if she and all the other women would send us books, and stop away themselves, we chaps would have a bit o' peace. Sister is good enough for us." This incident explains why the military authorities thought fit to put an embargo on the unrestricted walking of hospitals by society ladies.

Now, a word as to two of Mrs. Chamberlain's definite charges, the "swarming with filthy insects," and the "lying of sick and wounded men on the dirty floors of No. 1 Hospital." It cannot be denied that in the old permanent wards of No. 5, and to some extent in those of No. 1, these objectionable denizens are at times in evidence, but that they are a general plague I distinctly deny, or that their occasional presence is due to any neglect of cleanliness. Mrs. Chamberlain shows her ignorance of South African conditions when she argues the presence of dirt from the presence of "Norfolk Howards" or lice. In many of the best houses and hotels in Capetown they may be found, but I have not yet discovered the means that will permanently eradicate them. Nothing short of pulling down the whole place would accomplish that end at Woodstock; but every possible effort is made, by cleanliness and odoriferous antiseptics, and these succeed in keeping them so far in check as to prevent any very notable annoyance. And the facts of the "dirty floor" indictment are there. To begin with, the floors are not "dirty," but as clean as scrubbing can make them. Secondly, the patients in question were not "sick," but convalescents on their way to England, who arrived when the hospital was full, and were detained two or three days pending the departure of a transport. They were placed on mattresses, were perfectly comfortable, and were not in the faintest degree injured by the arrangement.

DEFECTS REMEDIABLE AND IRREMEDIABLE.

Finally, let me indicate a few points about which, with a show of reason, complaints have been made. They appear to me to be there:

A. That kits and their contents have often disappeared.

B. That the conveniences and nursing in the field hospitals were sometimes deficient.

C. That there was for a time a scarcity of beds and some foods at Bloemfontein and elsewhere at the front.

D. That in some cases patients brought from the fighting lines have had to lie for some hours on the ground till tents were put up.

E. That the cooking, especially of "fancy" articles such as puddings, is at times bad.

Under A I have heard of scarcely any instances at the base, although of a fair number higher up. Pressure of work upon a small number of R.A.M.C. men goes far to excuse this, but possibly in some instances actual dishonesty is the cause. But this does not condemn the system adopted, as is proved by the fact that where the official system is thoroughly carried out, as it is at the base, very few articles disappear. My informants at the front mostly attribute their losses to dishonesty of ordinary soldiers and by carelessness or lack of time for proper supervision on the part of clerks and orderlies.

B. To any sensible man's mind this is easily explained by the enormous transport difficulties; so is C.

D. Marquees cannot be erected by a wave of the hand, and necessarily a hospital very often has very short notice of the arrival of patients.

E. This trouble is inseparable from any large institution in which cooking has to be done on a large and systematic scale, unless an enormous staff is kept. Precisely the same thing is complained of in the largest London hospitals.

The sum of the whole matter is that if "perfect" attendance of the sick and wounded, even at the base, is to be a *sine quâ non*, the British taxpayer must keep a permanently-trained medical staff of at least six times the present number for a national emergency that may never occur again, and that, as for perfection at the fighting front, no money and no organisation will secure it. But I do maintain that the R.A.M.C. people, officers and men, have done all that human foresight and energy could accomplish.

THE WELSH HOSPITAL.

WE are indebted to Mr. R. H. Mills-Roberts, F.R.C.S.Edin., one of the surgeons to the Welsh Hospital, for the following account of its work down to July 1st:

The Welsh Hospital with its staff left Southampton by H.M. transport *Canada* on April 14th. There were also on board several companies of the Imperial Yeomanry, including the "rough riders," together with various drafts—in all about 1,500. The voyage was uneventful. The weather was good and the sea calm. Our journey out was only broken by a stay of two hours at Las Palmas. We reached Capetown on May 3rd, and were met by our colleague, Mr. Lynn Thomas, who had preceded us to South Africa. We disembarked on May 5th, and soon discovered that our headquarters would be at Springfontein.

VISIT TO BLOEMFONTEIN.

While our hospital was being prepared we (the staff) placed our services at the disposal of the Surgeon-General. Our nursing sisters were temporarily sent to the hospitals at Wynberg and Woodstock, which hospitals the surgical staff had also the pleasure of visiting and inspecting.

On May 8th we received orders to proceed to Bloemfontein, and accordingly left Capetown by the mail at 9 P.M., reaching Bloemfontein on the morning of May 11th. Having reported ourselves to the Principal Medical Officer, we were told off as follows:

Professor Jones and Dr. Davies, with 3 dressers, to No. 8 General Hospital.

Mr. Lynn Thomas and Mr. Mills-Roberts, with Dr. Laming Evans and 2 dressers, to No. 9 Hospital.

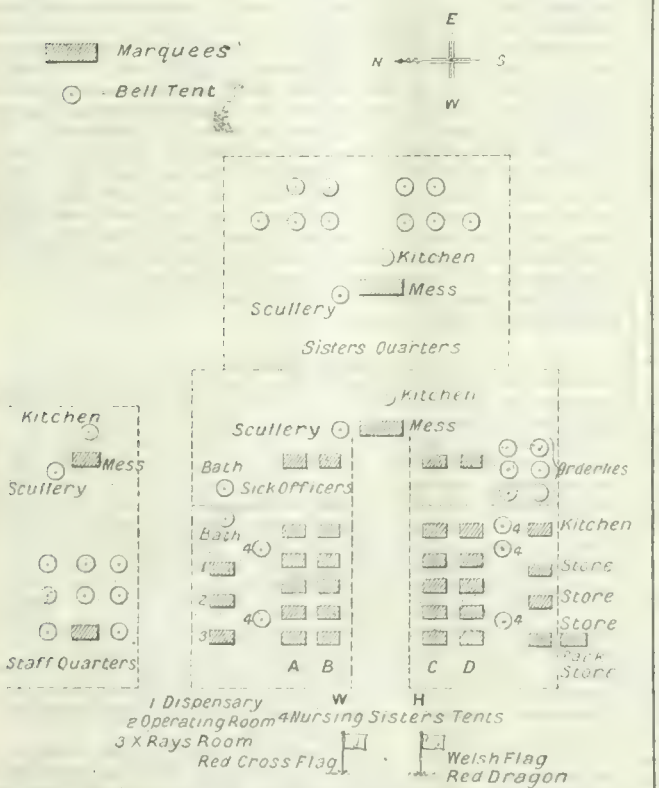
And 2 dressers to No. 10 General Hospital.

Bloemfontein on our arrival was crowded with cases of enteric fever and dysentery; there were said to be about 5,000 cases. No. 9 General Hospital, which normally consisted of 520 beds, contained nearly 1,700 (medical and surgical) cases. The surgical cases presented the usual characteristics described over and over again during this war, so that I need not now enlarge on the extraordinary achievements of the Mauser bullet.

Our visit to Bloemfontein was very disastrous; we all became more or less ill with "Modders." One of our dressers, Mr. Eames, who was attached to No. 8 Hospital, contracted dysentery. Of our nursing sisters who had joined us, two were told off as night and day specials to look after him. In spite of the greatest care and attention he died on May 27th. We were considerably depressed by the death of Mr. Eames, and were glad to leave Bloemfontein for our own hospital at Springfontein, where we were all installed on May 31st.

The Site of the Hospital at Springfontein.

The Welsh Hospital is admirably situated on sloping ground 5,000 feet above the sea, about half a mile east of Springfontein Station. The frontage is due west, with an extensive view of undulating veld and distant kopjes. On our right flank is No. 3 General Hospital, under the able supervision of our kind and courteous friend, Colonel Keogh, R.A.M.C. Our left flank is protected by a series of low kopjes, on which are mounted some 4·7 inch guns, and to our rear are several other kopjes surrounded by carefully laid mines. We had been looking forward to a happy time at Springfontein; but misfortune after misfortune dogged our footsteps. One of our sisters, Miss Sage, who nursed Mr. Eames at Bloemfontein, became ill with dysentery; a few days later Dr. Davies developed the same disease, he was at No. 8 Hospital with Mr. Eames. Miss Sage died on June 12th and Dr. Davies died on June 15th.



A.B.C.D. Four rows of Marquees (five in each row)

Rough plan of Welsh Hospital, Springfontein, July 1st, 1900.

Death of Professor Thomas Jones.

These misfortunes cast a heavy gloom over our little camp. We were all very depressed, and things looked very black on June 18th when our beloved chief, Professor Thomas Jones, also died. The circumstances surrounding the death of Professor Jones were very sad and tragic. He was greatly upset by the deaths among our staff. Dr. Davies was an old house-surgeon of his and Mr. Eames an old dresser. He suffered from insomnia; he lost his appetite; his pulse became irregular and intermittent. We were all anxious to get him away, but feared that he was not strong enough to travel.

For some days there had been rumours of a possible attack on Springfontein. On the evening of June 18th some shots were fired on the kopjes behind our camp. These were followed by volley firing and cries of "lights out." It was thought that there was a night attack and preparations were accordingly made. It was discovered afterwards that the firing was due to a false alarm. Poor Professor Jones died that night of a broken heart brought on by grief and sorrow at the deaths among our staff and the worry and anxiety inseparable from a hospital like ours. He was one of the kindest and most conscientious of men, but his nature was far too sensitive and tender for a rough campaign. His virtues were so many and so well known that it is quite unnecessary for me to enumerate them here. I will only say, with all that knew him, that to know Tom Jones was to love him.

The Hospital.

We are hoping that our misfortunes are now at an end. In spite of all our troubles I am glad to say that our little hospital—of which we are all so proud—is in a very flourishing condition. We are attached to No. 3 General Hospital, and therefore have the advantage of the advice and guidance of that most able administrator, Lieutenant-Colonel Keogh, R.A.M.C.

Our hospital originally consisted of 100 beds, of which 78 are endowed, including one—the "Albert Edward"—given by H.R.H. the Prince of Wales. We can now accommodate 128 patients—16 officers and 112 men.

The hospital proper consists of 20 marquees; 4 for officers, containing 4 beds each; and 16 for men, containing 7 beds each. We are now preparing an additional block, 4 marquees, 7 beds each, for enterics only.

In my next letter I hope to give short notes of some of our cases. I am enclosing a rough plan of the hospital.

THE R.A.M.C. SOUTH AFRICA FUND.

Subscribers and donors to this fund will be glad to read the following extract from a letter written by Mr. A. D. Fripp, F.R.C.S., the Senior Surgeon of the Imperial Yeomanry Hospital at Deelfontein, dated July 2nd. After referring to the fact that he was writing in midwinter, though the sun was warm by day, he writes:

During the week there has arrived from the R.A.M.C. Fund in London a welcome present of pipes, tobacco, and clothes for each of the non-commissioned officers and men on our staff. It gave them great pleasure, for it showed them that they were not forgotten, and indeed I do not think that Her Majesty's forces contain any harder or more devoted workers than the hospital orderlies. Their position is one of considerable danger—I know one hospital which has lost over 30 from enteric fever out of less than 200—and their work in the wards is exacting and continuous. For them there is no such thing as a halt, unless indeed they get sick themselves, from the beginning of the war to the end, and they deserve all the kindness and recognition which friends at home can secure for them.

The Half-Crown Subscription List.

The following additional subscriptions to the Half-Crown Fund have been received down to and including July 25th, since our last list:

	Half-Crowns
Dr. C. Wakefield (London) ...	1
Mrs. J. F. Allan (London) ...	4
Per Mrs. Milne Murray (Edinburgh):	
Mr. Cathcart	4
Per Dr. J. M. H. Martin (Blackburn):	
Captain Rawlinson	4
Per Mrs. G. H. Davies:	
Mrs. George Lewis	4
Per Dr. T. A. Helme (Manchester):	
Dr. J. T. Rogerson (Heaton Norris)	1
Dr. R. T. Williamson (Manchester)	1
Per Dr. H. Lucas (Huntingdon):	
Dr. Hill	1
Dr. Buckenham	1
Dr. Edwards	1
Dr. A. J. Balding	1
Dr. Bradbury	1
Dr. Griffiths	1
Dr. Deighton	1
Dr. Walker	[illegible]
Mrs. Walker	[illegible]
Dr. D. B. Balding	[illegible]
Dr. J. J. Balding ...	1
Dr. Pearson	[illegible]
Dr. Clinch	[illegible]
Dr. Roper	[illegible]
Dr. Gray	1
Dr. Lucas	[illegible]
Dr. E. L. Jones	1
Dr. J. Giles	[illegible]
Dr. Webb	[illegible]
Dr. Penberthy	1
Dr. Grove	1
Dr. Woodcorde	1
Dr. Hudson	1
Dr. Archer	1
Dr. Donald McRitchie ...	1
Dr. David McRitchie ...	1
Dr. Wood	1
Per Dr. R. Anderson (Gateshead-on-Tyne):	
Dr. Smith (Gateshead) ...	1
Dr. Ridley	1
Dr. Kimpster	1
Mr. L. H. Armour (Gateshead)	1
Dr. Davis (Gateshead) ...	[illegible]
Dr. Gilbert	[illegible]
Dr. Galloway (Low Fell) ...	1
Dr. J. Anderson (Seaton Delaval)	[illegible]
Mr. Robert Tait (Seaton Delaval)	1
Mr. Jno. Stephenson (Seaton Delaval)	1
Per Dr. D. G. Pearce Thomson (Penrith):	
Dr. Altham	[illegible]
[illegible]	[illegible]
Dr. Crerar	[illegible]
Dr. Biden	[illegible]
Dr. Edlington	[illegible]
Dr. Livingstone ...	[illegible]
Dr. Wilson	[illegible]
Dr. Thomson	1
Per Dr. Ogilvie Grant (Inverness):	
A. L.	[illegible]
A. S.	[illegible]
Dr. Grant	[illegible]

	Half-Crowns.
Per Mr. H. J. Blakesley (Leicester):	
Dr. A. T. Bremner (Leicester)	1
Dr. J. H. Davies (Leicester)	1
Dr. T. Dodd	1
Dr. A. W. Emms ,,	1
Dr. Harrison ,,	1
Dr. Hutchinson ,,	1
Dr. J. M. Lithgow	1
Dr. C. A. Moore ,,	1
Dr. Melbourne-West	1
Dr. Potter ,,	1
Dr. R. Stewart ,,	1
Dr. T. N. Thomas ,,	1
Dr. R. W. Wallace Henry (Leicester)	1
Dr. Whitehouse (Leicester)	1
Dr. R. R. Young	1
Dr. E. H. Hicks (Wymerswold)	1
Dr. E. Williams (Bellesdon)	1
Per Dr. Drew Harris (St. Helens):	
Dr. Hayward	4
Dr. Handyside	4
Dr. H. W. Knowles	4
Dr. F. Knowles	4
Dr. R. Jackson	4
Dr. J. H. Dow	4
Dr. Masson	4
Dr. Reid	4
Dr. Barlow	4
Dr. Cotton	4
Dr. Henderson	1
Dr Twyford	4
Dr. Gaskell	1
Dr. Unsworth	4
Dr. Gray	4
Dr. Gilleran	4
Dr. Drew Harris	4
Per Miss B. Macfie (Bolton):	
Anonymous	1
Miss Haddock	½
Mr. C. Woods	1
Mr. and Mrs. Roberts	½
Mr. G. Woodhead	1
Mr. R. Holdsworth	4
Mr. J. Kewan	1
Mr. A. Holdsworth	4
Per Dr. H. Peck (Chesterfield):	
Dr. Rooth (Dronfield)	1
Dr. Buckley (Hasland)	1
Dr. McClure (Whittington)	1
Dr. Harcourt (Stonebroom)	1
Dr. Walford ,,	1
Dr. A. M. Pilcher (Eckington)	1
Dr. Goodfellow (Brampton)	1
Dr. Chawner (Clay Cross)	1
Per Dr. H. Gervis (London):	
Dr. H. Gervis	2
R. H. Fletcher, Esq	1
H. Stear, Esq.	1
Per Dr. Flitcroft (Bolton):	
Mr. Rule	1
Mr. John Simpson	1
Mr. John Thompson	1
Mr. J. C. Jackson	1
Mr. F. Thompson	1
Mr. H. Chalmers	1
Mr. Fearnhead	2
Mr. Entwistle	1
Mrs. Entwistle	2
Dr. Mawson	1
Mr. Morgan	1
Dr. Johnston	1
Dr. Fayers	1
Dr. Mothersole	2
Dr. Panton	2
Dr. Robertson	1
Dr. Wright	2
Mr. Barnes	1
Mr. Lancaster	1
Mr. Rees	1
Leila Jefferies	2
Dr. Patrick	2
Dr. Patchett	1
Dr. Kilpatrick	1
Dr. Flitcroft	2
Dr. Hopkinson	1

We have also received per Dr. R. M. Miller (London) £5 5s. from the Sydenham District Medical Society; per Mrs. G. H. Davies, 10s. 6d. from Mrs. Eastwood; and 5s. 7d. from Dr. J. M. H. Martin (Blackburn), interest on amount already sent.

The amount received for the Half-Crown Fund, down to and including Wednesday, July 25th, by the Editor, is £698 9s. 6d. The Fund is now closed.

INFECTIOUS DISEASES IN HOTELS AT HOME AND ABROAD.

Though the annual migration of British subjects to Switzerland may this year be on a somewhat smaller scale than for some years past, yet it is certain that the number will be very considerable. Mountain hotels are already becoming full, and will undoubtedly be crowded during the next six weeks. Years ago when the numbers were much smaller, the well-known risks of the dissemination of infectious disease which must attend the bringing together under one roof of persons coming from various countries whose antecedents are of course utterly unknown to the innkeepers were minimised by two circumstances. In the first place, the mountain hotels were small, and in the second place the people who frequented them were mostly adults. In recent years, however, great changes have been made in both these respects. Some of the mountain hotels are large establishments making up as many as 300 beds, while there are very many more which make up from 100 to 200 beds. Again many people—English people perhaps more particularly—take their children with them to these hotels, where they spend a month or even two months continuously. The risk of the introduction of measles, scarlet fever, or diphtheria into such large hotels is, of course, greater than in the case of small inns; and owing to the fact that so many of the visitors are children, the risk of the dissemination of the infection once introduced is proportionally increased.

There can, we think, be no doubt that every proprietor of one of these large summer hotels would be consulting his own interests as well as those of his guests were he to provide a small detached house in which cases of suspicious illness could be isolated and treated. The cost of erecting such a building would be trifling and it would prevent the panic which on many occasions, and notably in one instance last year, has emptied an hotel in a few hours. For while it is comparatively easy to prevent the spread of infection if the facts are boldly recognised, to allay the fears of other guests may be next to impossible. Once the news gets abroad that "Mr. A. B. in No. 40 is suffering from scarlet fever," the hotel is sure to be evacuated with marvellous rapidity. The sudden departure of all his guests may cause great loss to the proprietor, who will probably be unable to regain the public confidence during the rest of a short season. He is, therefore, tempted to conceal the outbreak of any infectious disorder, and to evade the laws as to the notification. If the attempt to conceal fails he may seek to saddle the unfortunate sufferer (or his friends) with as much liability as can lawfully or unlawfully be placed upon his shoulders.

The larger the establishment the greater the loss to its owner, and cases have been known where tourists have paid sums amounting to hundreds of pounds demanded from them in the exercise of alleged right by the angry proprietor of a deserted hotel. Only last summer some English visitors at a hotel in Switzerland had unpleasant experience of a case in point. After every endeavour had been made for about a fortnight to conceal the matter, it eventually became known that one or more cases of scarlet fever had occurred. The hotel, which was both large and well-filled, was immediately deserted by all save the unfortunate patient and his friends. It is only right to add that in this instance the hotel proprietor behaved with the utmost courtesy and consideration, and was ready to make certain improvements which would enable him in future to secure the complete isolation of any person suffering from infectious disease. How far the existence of such precautionary measures would prevent other guests from flying is another matter.

Great Britain.

Before proceeding to discuss the liability and rights of innkeepers in other countries, it will be convenient to draw attention to the state of British law upon the subject.

Generally speaking, it may be stated that there is no implied contract on the part of a guest at an inn that he is not suffering from an infectious disease, or that, if he should fall ill during his stay, he will defray all the cost and make good all the damage sustained by the landlord in his business. This is founded upon the principle that sickness is in the nature of inevitable accident, and is one of the risks which the manager or proprietor of an hotel takes upon himself when he throws open his establishment to the public. While therefore, the common law afforded but little protection to an innkeeper, it was thought proper, by Section cxxvi of the Public Health Act, 1875, to make regulations which impose penalties upon persons who, when suffering from dangerous infectious disorders, expose themselves in any public place—including, of course, any inn or hotel.

It is difficult to speak with authority upon the legal responsibility of a guest for the damage, whether proximate or remote, occasioned by his illness in an hotel, as there are hardly any cases recorded in the books which touch the subject.

In an anonymous case reported in the *Law Times* (1899, vol. 107, p. 101), an innkeeper sued in the county court to recover the cost of disinfecting rooms which had been occupied by a guest who had died from consumption while in the inn. It was held by the county court judge: (1) That the cost could be recovered on the ground that the law would imply a contract on the part of the guest to pay for any extra expense properly incurred by the innkeeper as a consequence of the reception of the guest. (2) That the cost of disinfection, whether made compulsory by Section cxxviii of the Public Health Act, 1875, or not, could be recovered on the ground stated. (3) That on the evidence of the medical officer of health, the judge was of opinion that consumption was an infectious disease, and that it would be dangerous to let the rooms again without disinfection.

A claim for damages for the loss of use of rooms during the time of disinfection was not successful.

Upon the authority of this judgment it would seem that in this country no guest in a hotel can be held responsible for the loss occasioned by the suspicion of infection hanging round the hotel, although he may be compelled to defray the cost of disinfection.

In Best *v.* Stapp or Staff (2 C. P. D. 191 n.), a person knowingly took a child recovering from small-pox to a lodging at the seaside, without communicating this fact, and the children of the lodginghouse keeper caught the infection and two of them died. It was held that an action for damages at the suit of the lodginghouse keeper was maintainable. Whether, if there had been no knowledge on the part of the lodger the action could have been maintained does not seem to have been decided.

Certain other important duties and liabilities attach to those under whose roof infectious disease makes its appearance. By Section CXXVI of the Public Health Act, 1875, a guest is exposed to penalties if he omits to inform the occupier of the inn that he is suffering from an infectious disorder, while it imposes a penalty upon the occupier of the inn if he lends any bedding, etc., which has not been disinfected. Further liabilities are imposed upon an occupier of an inn or a hotel by Section CXXVIII, which provides that

Any person who knowingly lets for hire any house, room, or part of a house in which any person has been suffering from any dangerous infectious disorder, without having such house, room, or part of a house and all articles therein liable to retain infection disinfected to the satisfaction of a legally qualified medical practitioner, as testified by a certificate signed by him, shall be liable to a penalty not exceeding twenty pounds.

According to the Infectious Diseases (Notification) Act, 1889, which now applies to all parts of the country, it is the duty of the following persons to notify the existence of infectious disease to the medical officer of health of the district—namely:

(1) The head of the family to which the patient belongs, and on his default (2) the nearest relatives of the patient present in the building or in attendance on the patient, and on their default (3) every person in charge of or in attendance on the patient, and on their default (4) the occupier of the building.

With regard to the inmates of a hotel, it is clear that the first person to give notice of infectious disease are the relatives of the patient. In case of their absence or default, or that of persons in charge of the patient, the duty would fall upon the occupier or landlord. Concealment of disease in this country is therefore punishable by a fine.

FRANCE.

If it is difficult, owing to lack of reliable authority, to make a decisive statement of the law in this country, it is well-nigh impossible to indicate in any general way the attitude of foreign courts of law when asked to define the liability of a guest whose illness involves loss of custom and other damage to the proprietor of a hotel. One authority, however, would seem to show that so far as France is concerned the law is very similar to our own.

In the *Lancet* for March 16th, 1895, at p. 714, a case is mentioned in which the liability of a traveller in France, affected with an infectious disease, came before the Paris Cour d'Appel. In the judgment delivered it was expressly laid down that damages cannot be claimed from a visitor for the trouble and possible loss caused by the presence in the hotel of a member of that visitor's family affected with an infectious disease, provided that the medical attendant delivers a certificate to the effect that risk to life would attend removal to another house. It was held that illness is an accident beyond the sufferer's control, and, further, that such an unfortunate occurrence forms part and parcel of the obvious risks attending hotel keeping. It was ruled, however, that the visitor is responsible for the expenses incurred for the cleansing and disinfection of the premises occupied by him.

We have been unable to find any cases which serve to indicate the law in other Continental countries with regard to this point. Nevertheless the fact that the rules applied in France are in accord with the principles which obtain in this country may be taken to indicate that other Continental nations take the same view of law.

The laws enacted by most foreign States for the better preservation of the public health are similar to those of our own country. Switzerland being the country of greatest importance to the traveller, it will be convenient to deal with it somewhat fully.

SWITZERLAND.

It seems that statutes are from time to time passed in the *Conseil Fedéral Suisse*, to be subsequently applied and put in force by the *Conseil Exécutif* of each province. Consequently the public health laws are not administered with absolute uniformity throughout the country. The following notes will serve to show the general nature of such laws in so far as they relate to the notification of infectious diseases.

The first Federal law of importance appears to be that of July 4th, 1884, which prescribes certain protective measures to be taken by the police against the transmission of cholera. Certain measures were prescribed in the Federal Assembly of the Swiss Confederation on July 2nd, 1886, to be taken against epidemics causing general danger, and it is upon these that most of the cantonal laws were subsequently founded.

Geneva.

The regulations at present in force in the Canton of Geneva are to be found in a number of documents issued from time to time by the *Bureau de Salubrité Publique*, which was organised on October 27th, 1884. By Art. 4 of the regulations the following places, *inter alia*, are put under the control of the *Bureau*: "Habitations, logis, agglomérations, fabriques, écoles, asiles, hôpitaux, maisons de santé, cliniques, casernes, prisons et autres établissements publics."

By the Federal law which was passed on July 2nd, 1886, it was enacted in Art. 3 that every case of varicla, Asiatic cholera, petechial typhus and plague should be notified by the occupier of the house without delay to the local authorities of the district in which the disease breaks out.

Among the rules made in 1889 in pursuance of this Federal law, Art. 2 provides that the master of the house in which either small-pox, Asiatic cholera, petechial typhus or plague show themselves, is bound to give notice without delay to the Board of Health, which is empowered to enter the premises for the purpose of inspection. By Art. 5 no one is allowed to enter the infected house unless he goes there officially or is a dweller in the house or is the medical attendant of the patient. A notice stating the nature of the disease must be placed on the door. Stringent regulations are also made with regard to vaccination. Thus the family of a patient suffering from small-pox and all persons residing in the same house must be vaccinated or revaccinated unless they have been successfully vaccinated within the previous seven years.

In January, 1891, a further notice was published relating to every infectious disease, special attention being directed to measles, scarlatina, diphtheria, croup, whooping-cough, infantile cholera, dysentery, typhoid, erysipelas, puerperal fever, and glanders. All cases of these diseases must, according to that notice, be notified to the Board of Health, the duty of making such notification being imposed in the first place upon the medical practitioner in attendance upon the patient, in his absence by the midwives, directors of hospitals, sanatoria, asylums, and other public or private institutions, the managers of hotels, and the heads of families. By another set of rules, dated February 17th, 1891, the medical man in attendance upon any case must send every Saturday evening to the Office of Health a bulletin showing the number (1) of patients who have come under treatment since the last bulletin, (2) of new cases, (3) of recovered cases, (4) of deaths. And it seems that, although the officers of health do not demand the names of the patients, they nevertheless obtain their addresses from private medical practitioners. By Art. 5 stringent regulations as to the disinfection of bedding, etc., are made; while Art. 9 provides that everyone neglecting to take precautionary measures, or who shall disobey the Orders of the Department of Justice and Police, or the Board of Health, shall be liable to fine.

Berne.

By an Ordinance issued on July 2nd, 1886, in accordance with the Federal law of the same date, to which allusion has been made above, certain rules and regulations were issued in order to secure the notification of diseases.

By a second Ordinance issued on November 4th, 1898, by the Executive Council, the following rules as to notification, etc., were made: Medical men practising in Berne are compelled to give notice of all the following epidemic diseases: (1) Diphtheria, croup, scarlatina, abdominal typhoid, epidemic dysentery, puerperal fever; (2) measles, *rubeole*, whooping-cough, chicken-pox, swine-pox, mumps, and epidemic mumps. In the event of other diseases, such as influenza, ophthalmia, etc., becoming prevalent, the sanitary authorities are empowered to extend the application of these rules to such diseases.

Although the rules in this province are somewhat more stringent and apply to a greater number of diseases than those in force in Geneva, there does not seem to be any provision which casts upon the householder a duty to notify infectious disease on his premises.

Valais.

According to an ordinance which came into force on February 3rd, 1897 (Tit. II, cap. iv, art. 18), all medical men practising in the province of Valais are directed to inform the sanitary authority of every case of cholera, plague, small-pox, typhus fever, or enteric fever which comes under their notice, in addition to cases of every other epidemic or in-

fectious illness which may be specified in any by-law. Nothing in these regulations appears to impose any duty upon householders to notify cases of infectious disease.

From the above it will be seen that it is only in the province of Geneva that householders are bound to notify disease. The duty is, however, imposed upon medical men in each province.

To examine the laws of all European countries would be impossible within the scope of this article. In any event, the sick tourist will do well to see that his own condition is made known. Bearing in mind what was said in an earlier part of this article with regard to the liability for infecting large hotels, and the probability that the landlord could make no legal claim against him, the tourist's wisest course will be to inquire whether any notification is necessary, and, if so, to notify with all possible despatch.

INTERNATIONAL CONGRESS OF MEDICAL DEONTOLOGY.

[FROM OUR SPECIAL COMMISSIONER.]

THE inaugural meeting of the First International Congress of Professional Medicine and Deontology took place on July 23rd in the Paris Exhibition Building under most favourable circumstances. The attendance, consisting chiefly of French, Italian, German, and other Continental practitioners, including a goodly sprinkling of ladies, was large and enthusiastic. For reasons which need not be dwelt upon here, but which have already been referred to in the BRITISH MEDICAL JOURNAL, British practitioners have not responded as fully as was expected to the invitations addressed to them to take part in the Congress, and on the opening day they were conspicuous chiefly by their absence.

MEDICAL DEONTOLOGY: ITS NATURE AND SCOPE.

It may be useful to your readers to know what the promoters of the Congress understand by the term "Deontology," a term unfamiliar to English ears, though originally used by Bentham in a non-medical sense, and what subjects they propose should be included within the scope of this Congress. Max Simon in 1845 applied the word to medicine, and wrote a pamphlet on *Déontologie Médicale*, or the duties and rights of doctors in the actual state of civilisation, and this is the sense in which it is employed by the promoters of the Congress. It is especially desired to deal with the fundamental principles underlying the duties of doctors to each other, since it is held that ignorance of deontology, and as a natural consequence, want of united action among them, causes doctors to be discredited and the medical profession to be undervalued. At the present moment, it is maintained, deontology is nowhere defined. It awaits its code of law, which exists neither in civil law nor even in the ordinary moral law; and though there are certain points upon which all are agreed, and which it would be useless to discuss, there are others which must at present be regarded as doubtful points on which it is desirable to establish a general rule which should be accepted by all. Such, for instance, are the questions as to where advertisement begins and ends; cheap medicine; unfairness in competition; the question of doctors being shareholders in a mineral water establishment, in a sanatorium, or a drug manufactory; the conditions under which a patient being still ill, can change his doctor; the question of *médecins ambulants:* the question whether all doctors should be accepted as consultants; the question of dichotomy, or sharing the fee; the question of gratuitous consultations in the consulting-room, in a policlinic, or at the hospital outpatient room. It will be seen at once that there is room for wide difference of opinion on these various points, and that even if the majority of medical men were agreed upon certain of them, their opinion would have no force of law.

THE NEED FOR AN AUTHORITATIVE CODE OF ETHICS.

It is urged that a code of medical deontology should be drawn up, and in order that this code should have all the authority needed, it must not be the work of an individual, of a locality or district, or of any corporation or association, but must be the product of the whole medical profession. It is urged, also, that there should be a power, jurisdiction, and authority (purely moral, but accepted by all) having the duty of interpreting the code and of applying it in difficult cases. It is proposed, therefore, to create a Superior Council of the medical profession, which, by reason of its wide basis of election, should truly represent the whole profession. In case it is decided to hold periodical sessions of an International Congress every three years, this Superior Council of the medical profession would there give an account of its labours during the three years. The duty of the first Council elected would be to draw up a code of deontological law, capable of being modified, but which should have all the form of moral law; and it is suggested that at the head of this code should be inscribed as a motto the saying of Marcus Aurelius, "That which is not useful to the hive is not useful to the bee." This explanation will enable readers to follow the report.

SECRETARY-GENERAL'S REPORT.

The report of Dr. Jules Glover, the Secretary-General of the Congress, which was read at the opening meeting, was as little like the cut-and-dried documents one is accustomed to in England as could possibly be. Dr. Glover began by excusing himself for having taken the initiative in bringing about the calling of the Congress, which, however, had been so well taken up, and so cordially responded to by almost every country that he could not but rejoice at the prospect before the Congress, not only of placing the first landmarks for the development and extension of the study of professional ethics, but also and above all putting in practice the idea of duty attached to all human collectivities. In inviting them to group themselves around a programme so complex in its apparent simplicity, his only wish was one day to see regulated the professional morality which was graven in each of their consciences. He desired to see the grand idea of duty inscribed prominently on their temple of professional ethics. Having been to the last moment engaged in the work of organisation, he as general secretary presented only a short sketch of the origin of this first Congress and a summary of the work done by the Preliminary Committee. The result they had before them that day, met together to consider in union and concord the grave economic questions affecting medicine in their various countries, of which they might justly be looked upon as forming the medical corps.

PRESIDENT'S ADDRESS.

The address of the President, Dr. Lereboullet, which was very cordially received, commenced by thanking Dr. Roussel for accepting the Honorary Presidency, complimenting him alike as a medical practitioner, a hygienist, and a legislator and a philanthropist. He also thanked the visitors from abroad and the municipality of Paris. The President went on to congratulate the members of Congress on their desire to discuss professional questions without any thought but that of the public good, and continued: Long-honoured and prosperous, the profession of medicine finds itself in almost all countries at the present time in the midst of a crisis of which it is impossible to deny the gravity. At the same time that the number of doctors increases, their prestige and social influence diminish. It is for them to try to find out the causes of this crisis and the appropriate remedy, and this would be the object of several excellent papers to be read before the Congress; and it was desirable that after full discussion some practical conclusions should be arrived at. It should be remembered, however, that in order to have their views listened to they should take into consideration all points of the problems which to-day pressed upon their attention. From all time the profession of medicine has been that which gives the most and receives the least. Always and everywhere, before the tribunals, in the councils or committees of hygiene, in hospitals and asylums, in charity offices and clubs an appeal is made to the disinterestedness of the doctor, who often gives his intelligence, his force of character, his life itself to the service of his fellow-citizens. But the State which demands from the doctor guarantees, not to be obtained gratuitously by the way, of his capacity and knowledge, does not always judge fairly of the services rendered to society, and, far from defending him against attack, hesitates often to afford him the protection of its laws. The illegal exercise of medicine is carried on openly everywhere, under all sorts of forms. Magnetisers,

masseurs, and charlatans of various kinds secure a large *clientèle* in our days, and are allowed to cover the walls and fill the advertisement sheets of journals, giving themselves titles to which they have no right. Dr. Lereboullet declared himself favourable to the formation of a deontological society and disciplinary chambers, but he feared that any appeal to public powers would only result in restrictive legislation, directed against the liberty of the profession itself.

(To be continued.)

MEDICAL AND SANITARY ARRANGEMENTS AT THE CAPE.

THE following correspondence between Sir Walter Foster, M.P. for Ilkeston, and the War Department in relation to medical and sanitary arrangements at the Cape, has been issued as a Parliamentary paper:

(I.)

30, Grosvenor Road, Westminster, S.W., October 31st, 1899.

Dear Wyndham,—I am sure you will excuse me for troubling you at a busy time, as I have a suggestion to make which seems to me of importance as regards the medical aspects of the South African campaign. I think you have done admirably in sending out Sir Wm. MacCormac, Mr. Treves, and Mr. Makins. They will be splendid help from a surgical point of view. There remains, however, the medical and sanitary side. In all human probability there will be great loss of life from fever and other maladies more or less preventable by careful sanitary work. To meet this prospect it would be wise to send out a small Sanitary Commission, or a Commissioner with assistants. Such aid would be invaluable to the army medical officers in assisting them to prevent the loss of life to which I have referred. I thought of going out myself for the purpose of lending any aid I could, as I have had, as you may know, lifelong experience as a physician, and during the last cholera invasion, as Secretary to the Local Government Board, I had the main responsibility of the health defence of the kingdom. I fear, however, that as a private individual I could do little or nothing. I therefore write to you to say that, if you decide to do anything in the direction I have indicated, I will gladly place my services at the disposal of the War Office. I am willing to resign my seat in the House of Commons, and so I should wish to go out in an unpaid capacity.

Yours very truly,
WALTER FOSTER.

P.S.—I send this letter to you, as I have spoken to you of army medical matters in the House of Commons. If you would like to see me I could call on Saturday or next week.

(II.)

War Office, November 1st, 1899.

Dear Foster,—I have to thank you for your letter of yesterday. I will show it to Lord Lansdowne, and let you know as soon as I can whether he agrees with your suggestion of a Sanitary Commission, and if so, whether he will be able to accept your very kind offer of service.—Yours sincerely,
GEORGE WYNDHAM.

Sir B. Walter Foster, M.P., etc.

(III.)

War Office, November 9th, 1899.

My dear Foster,—I put your scheme of a Sanitary Commission for South Africa before the Secretary of State, and it was carefully considered by the medical authorities here. They think that the need of special assistance is not the same in sanitary matters as in surgical operations. The general practice of an army doctor must necessarily make him inferior as an operator to skilled specialists; but sanitary investigations are among the most important of his daily duties, and he is constantly accumulating experience with regard to them. The Director-General therefore does not regard as necessary the establishment of such a commission as you recommend. Lord Lansdowne concurs in this view, and desires me to express to you, when communicating the decision, his sense of the patriotic feeling which inspired your suggestion and your offer of personal service.—Yours very truly,
GEORGE WYNDHAM.

Sir Walter Foster, M.P. (IV.)

30, Grosvenor Road, Westminster, November 14th, 1899.

Dear Wyndham,—Thank you for your letter conveying to me Lord Lansdowne's decision. I am very sorry the Secretary of State has not been able to accept my offer or my suggestion.—Yours very truly,
WALTER FOSTER.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

THE number of plague deaths for all India during the week ending June 30th amounted to 227 as compared with 282 during the previous week. In Calcutta alone 107 of the deaths from this cause occurred, and in the city of Bombay 62. In the Bengal and Bombay Presidencies, outside the two cities named, the number of deaths from plague during the same period were 28 and 11 respectively. In the Mysore State 15 deaths from plague occurred, in Madras 2, in Karachi 1, and in Aden 1, during the last week in June.

HONG KONG.

During the week ending July 23rd, 43 cases of plague occurred in Hong Kong, and 44 deaths from the disease.

FORMOSA.

At Tai-Nan, in Formosa, during June plague was prevalent.

SYDNEY, AUSTRALIA.

Up to July 14th 300 cases of plague had occurred in Sydney, of which number 101 died, 51 remained under treatment; 10 of the patients were Chinese, of whom 8 died. The percentage of recoveries from plague amongst Europeans in Sydney is very satisfactory, more than half of the number attacked having recovered. As in China, however, the mortality from plague amongst the Chinese in Australia is very high.

SENEGAL.

According to French reports plague prevails at Senegal, on the West African coast. At Dukar and Coree, situated near Cape Verde, 7 deaths occurred on July 21st. This is the first official report of the prevalence of plague on this coast; but it would appear, according to French accounts, to have existed there for some time.

ASSOCIATION FOR PROMOTING COMPULSORY REGISTRATION OF MIDWIVES.

THE annual meeting of the Association for Promoting Compulsory Registration of Midwives was held by permission of Lady Lucy Hicks-Beach at No. 11, Downing Street, on July 19th. Mr. HEYWOOD JOHNSTONE, M.P., who was in the Chair, said that real and substantial progress had been made during the last twelve months in spite of disappointment. He considered that the views of their opponents even concerning plain statements of facts were hopelessly irreconcilable. Three of the principal medical members in the House of Commons were in favour of legislation dealing with the subject. They could not expect the Government to take up their Bill at a late period of the session, and those in favour of registration must try continually to bring to the attention of the Government how much was to be done while leaving details to the objectors to the Bill who contradicted each other. The two principles were training and supervision, and efforts must be continued, remembering the words in the annual report that the Bill was one which there was no way of getting rid of but by passing it. The adoption of the report was moved by Mrs. PERCY BOULNOIS and seconded by Dr. HUMPHREYS. After some discussion the report was adopted.

Mr. ALBAN DORAN, President of the Obstetrical Society, moved the appointment of the General and Executive Committees, and pointed out that the Obstetrical Society was the first in the field to institute examinations for midwives. For speaking of the document issued to successful candidates as a diploma the Society became liable to legal penalties, so it now issued a smaller piece of paper without a stamp on it.

The motion was seconded by Lady LUCY HICKS-BEACH, and carried.

Dr. PERCY BOULTON, Chairman of the Board for the Examination of Midwives (Obstetrical Society), moved that the meeting should respectfully draw the attention of the Duke of Devonshire to the fact that the Government having taken the whole time of the remainder of the session, the Midwives Bill could not be further proceeded with, though it had passed through the Grand Committee in a form substantially acceptable to the General Medical Council. Having regard to the admitted need for legislation on this subject, and to the opinions expressed by members representing the medical profession in the debate on June 27th, that meeting should appeal to the Duke of Devonshire to bring the matter before the Cabinet, with a view to its being included in the Government legislation of the next session. The speaker informed the audience that the Obstetrical Society passed about 1,000 midwives a year, and that the candidates were educated, decent, and very superior women, many of them passing the examination quite as well as an average medical student.

The resolution was seconded by Dr. BOXALL, and carried.

A vote of thanks to the Chairman was moved by Mrs. WALLACE BRUCE, seconded by Miss ROSALIND PAGET, and carried.

CONGRESS OF SPANISH SURGEONS.—The Congress of Spanish Surgeons was to have held its second meeting in Barcelona in September, but in view of the disturbing influence which the Paris Exhibition and the International Medical Congress are likely to have, the Organising Committee has decided to postpone the meeting until the summer or autumn of 1901.

THE Congress of Scandinavian Ophthalmologists, which has been organised on the model of the Ophthalmological Congress annually held at Heidelberg, recently held its first meeting at Stockholm. The meetings are to be held every two years; the next will be held in Copenhagen in 1902.

SOUTH AFRICAN HOSPITALS COMMISSION.

THE first meeting of the Commission appointed to inquire into the treatment of the sick and wounded in South Africa, was held at Burlington House on July 24th. Lord Justice Romer presided, and all the members were present, namely: Dr. Church (President of the College of Physicians), Professor Cunningham (Trinity College, Dublin), Mr. Frederick Harrison (General Manager L. and N.W.R.), Sir David Richmond (ex-Lord Provost of Glasgow), and Major Tennant (Secretary). At the beginning of the sitting the following statement was made by the President:

We are by the authority appointing us directed to inquire into and report upon the arrangements for the care and treatment of the sick and wounded during the South African campaign, the warrant being issued by the Prime Minister. Under this warrant no compulsory or special powers are conferred upon us; but on consideration we hope and believe that practically we shall not be hampered in our work by not having such powers. In the first place, we feel assured that we can rely on the general willingness of those who have special information to render every assistance in their power; and we do not think, as at present advised, that this inquiry is one where the administration of an oath will be essential in order to elicit the truth. But no doubt it is possible that certain witnesses may be hampered in giving their evidence, and we have considered that possibility. In the first place, some of the witnesses in Government offices might be prevented from disclosing facts by reason of the obligation cast upon them of keeping secret information only obtained by them in an official capacity. But as to this we have ascertained by inquiry that all such witnesses either already have been or shortly will be freed from any such obligation. Then it has occurred to us that there might be witnesses, official or otherwise, who might be deterred by various personal reasons from giving evidence for fear of consequences. As to these, we have determined that by taking their evidence before ourselves only, and not in public, and by not allowing their names to appear, we shall ensure their communicating their knowledge to us without any fear. We have every hope that by taking such steps as are above indicated, and such others as may from time to time appear advisable, we shall be able to obtain all the information necessary to enable us to report in answer to our commission. We propose first of all to take the necessary departmental evidence and then to obtain from unofficial witnesses in England as much information as possible bearing on the subject of the inquiry. We propose to leave for South Africa on Saturday, August 4th, and we shall therefore in all probability not be able to complete the evidence in England before we leave. We propose to take such further evidence in England as may be necessary on our return. I further desire to state that, should we find that our anticipations are not realised, and that we are substantially hindered from ascertaining the facts by the absence of compulsory powers, we shall not hesitate to so report to the Prime Minister, and to ask his assistance in procuring for us the necessary powers.

A number of departmental officials, including Surgeon-General J. Jameson (Director-General Army Medical Service), Lieutenant-Colonel Johnston (Assistant-Director A.M.S.), Major W. G. Macpherson (Deputy-Assistant-General A.M.S.), and Lieutenant-Colonel J. S. Cowans (Deputy-Assistant-Quartermaster-General), Sir Henry Brackenbury (Director-General of Ordnance), Colonel J. Steevens, C.B. (Principal Ordnance Officer), Sir Ralph Knox (Permanent Under-Secretary for War) were first called, and described the routine followed in equipping army hospitals.

Amongst the other witnesses examined on the first and second days of the sitting were Lieutenant-Colonel G. Sterling Ryerson, of Toronto (Canadian Army Medical Staff), the Rev. W. H. Oxford, Sir Howard Vincent, M.P., Mr. Watson Cheyne, and Mr. Morgan, a trooper of the City Imperial Volunteer Mounted Infantry, lately returned from South Africa. A summary of the evidence of all these witnesses will be published in later issues of the BRITISH MEDICAL JOURNAL.

At the conclusion of the second sitting (on July 25th) the Chairman announced that the Commission would not sit again in London till Monday, July 30th, though they intended to visit Netley on Friday, the 27th.

A MATERNITY HOSPITAL FOR ATHENS.—The Queen of Greece has taken the initiative in promoting the establishment of a maternity hospital in Athens, which has hitherto had only a small institution of the kind lodged in a private house ill-adapted for the purpose. The new hospital is to be built on the model of the best hospitals of the same kind in Europe. It will be under the patronage of the Queen.

AN ORTHOPÆDIC HOSPITAL FOR NAPLES.—The Duchess Teresa Ravaschieri, who is the foundress of a children's hospital at Naples, and who recently gave her splendid villa at Pozzuoli to be used as a sanatorium for consumptives, has now presented an orthopædic hospital to the city of Naples. The new hospital, which is said to be the only institution of the kind in Southern Italy, is fitted up in the most elaborate way, both for purposes of treatment and of clinical study.

THE CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND. MDCCC—MCM.

THE Charter of Incorporation of the Royal College of Surgeons of England was granted on March 22nd, 1800, the fortieth year of the reign of George III. The Charter contains a recital of the letters patent granted by Edward IV to the "Freemen of the Mystery of Barbers of the City of London using the Mystery or Faculty of Surgery," and of the Act of Henry VIII, by which the two companies of Barbers of London and Surgeons of London were united, and of the letters patent granted by Charles I, confirming the privileges of the United Kingdom, and finally of the Act of George II "for making the Surgeons of London and the Barbers of London two separate and distinct Corporations." Yet the Charter of 1800 really constituted the College more or less as we now know it. It was, therefore, appropriate that the centenary of the granting of this Charter should be celebrated, and the celebration is in progress as we go to press.

Before the actual commencement of the celebration an interesting ceremony took place.

ADMISSION OF THE PRINCE OF WALES TO THE HONORARY FELLOWSHIP.

A deputation consisting of Sir William MacCormac, Bart., K.C.V.O., President of the College; Mr. John Langton and Mr. Henry Morris, Vice-Presidents; Mr. Thomas Bryant, Past President and Senior Member of the Council; Mr. Edward Trimmer, M.A., Secretary; and Mr. Sibert Cowell, B.A., Assistant Secretary, attended at Marlborough House on July 24th, for the purpose of presenting to the Prince of Wales the diploma of the Honorary Fellowship of the College, to which His Royal Highness was elected on June 14th, 1900.

Sir WILLIAM MACCORMAC, after introducing the members of the deputation, addressed his Royal Highness as follows:

Your Royal Highness,—It is my great pleasure and privilege to-day, as President of the Royal College of Surgeons of England, to confer upon your Royal Highness the title and distinction of Honorary Fellow of our College. When this question was first mooted, nearly three years ago, we discovered that we did not possess the power to confer any honorary degree. Since then a new Charter has been procured, and your Royal Highness having graciously acceded to our wishes that you should become associated with our Corporation, I now, in the name and by the authority of the Royal College of Surgeons of England, admit you an Honorary Fellow of the College. And now, Sir, that you have become a Fellow of our College, permit me to tender to you our most respectful congratulations. You have on many occasions shown your interest and sympathy with our work, and what has happened to-day is not likely to diminish that interest. We are sure that the intimate association of your illustrious name with our College is an event in its history of the greatest importance, and cannot fail to be an encouragement in the future to all those who are connected with it.

Sir William MacCormac then handed to the Prince a diploma on vellum, engraved with the College Arms, impressed with the College Seal, and inscribed in the following terms:

Know all Men by these Presents that
WE
THE ROYAL COLLEGE OF SURGEONS OF ENGLAND
Do hereby admit
HIS ROYAL HIGHNESS, ALBERT EDWARD, PRINCE OF WALES,
DUKE OF CORNWALL, K.G.,
Etc., etc., etc., etc.,
AN
HONORARY FELLOW
OF THE COLLEGE.
As Witness our Common Seal this Fourteenth Day of June, 1900,
WILLIAM MACCORMAC, President.
(L.S.) HENRY G. HOWSE } Vice-Presidents.
JOHN TWEEDY }
Enrolled by EDWARD TRIMMER, Secretary.

The PRINCE, having accepted the diploma, expressed in courteous terms the pleasure it gave him to become an Honorary Fellow of the Royal College of Surgeons, whose centenary was about to be celebrated.

His Royal Highness, as the first Honorary Fellow of the College, having signed his name on the "Roll of Honorary Fellows," afterwards took leave of the President and officers, and the deputation withdrew.

CONVERSAZIONE.

On Wednesday a *conversazione*, which was numerously attended, was given in the College. The guests were received by the President, Sir William Mac Cormac, and the Vice-Presidents, Mr. John Langton and Mr. Henry Morris, and the museum and library were open to inspection. In the library and adjoining rooms was an exhibition of portraits and relics illustrative of the history of the College and its former Presidents. The idea of the collection was conceived by Mr. Victor G. Plarr, M.A., the librarian of the College, who executed his plan with such tact and assiduity that he gathered a very remarkable assortment of objects, some of intrinsic value, some merely personal. The most valuable portraits from an artistic standpoint were those of Percivall Pott, by Sir Joshua Reynolds; of John Abernethy and Sir William Lawrence, by Sir Thomas Lawrence; of Sir Benjamin Brodie, by G. F. Watts; and of Sir James Paget and Luther Holden, by Sir John Everett Millais; whilst Chantrey's bust of John Flint South was worthy of especial notice. Amongst the miscellaneous relics were the loving cup presented to John Abernethy by his pupils in 1816, lent by Mr. Alfred Willett, and the loving cup given to George James Guthrie by the officers of the navy, the army, and the ordnance at the end of his first course of lectures in 1816-17, lent by Mr. Henry Power, who received it from Miss Guthrie. The personal relics were of peculiar interest. William Cheselden's instruments were lent by St. Thomas's Hospital; Abernethy's gold repeater watch, his Pope-Joan box, his instruments and trephines, and, more curious than all, his holograph certificate that "Dr. Peter Mere Latham is an intelligent physician." There was the surgical knife formerly used by Sir William Blizard, the favourite amputating knife of Henry Cline the elder, a bistoury of Sir William Fergusson, and the clinical thermometer of Sir Astley Cooper. The ceremonial gold snuffbox presented to Sir William Lawrence by Sir William Blizard on his restoration to sight at the age of 92 was a pleasing reminiscence of a service rendered by one great surgeon to another, whilst the snuffbox, once the property of John Flint South, to whom it was a constant companion and trusty friend, was employed in a very different way to standing idle under a glass case, for it was the joy of himself and his colleagues in the height of the snuff-taking days. The original Ross microscope which Huxley had with him on the *Rattlesnake* Expedition, and with which practically all his work was done, was an interesting exhibit lent by Mr. Henry Huxley, his son; whilst filial affection prompted the Rev. Sir Borradaile Savory, Bart., M.A., to lend the microscope constantly used by his father, Sir William Scovell Savory. The Middlesex Hospital lent the skeletons of "Dignity" and "Impudence," the two dogs belonging to Sir Charles Bell, immortalised by Sir Edwin Landseer's picture. Mr. Plarr is to be congratulated upon his collection, and though the various objects are again dispersed, the annotated catalogue remains as evidence of a most successful exhibition illustrative of the history of the College and of many of its Masters and Presidents during the years 1800 to 1900.

DEMONSTRATIONS.

On Wednesday morning Dr. T. G. Brodie, Director of the Laboratories of the Royal Colleges, began a series of lantern demonstrations illustrating the work done in the laboratories. The first demonstration had reference to a research conducted by Dr. Brodie and Dr. W. E. Dixon as to the muscular and vascular mechanisms of the lungs. The investigation, in which an oncometric method was employed, studied the waves of constriction and relaxation of the bronchi, and the action of nerves and drugs on the bronchial musculature. Muscarine caused what was practically an attack of asthma, an effect produced to a greater or less extent by certain other drugs. Atropine produced an opposite effect. With regard to the effect of drugs on the vascular system of the lungs, it was found that any drug which sent up the systemic pressure by producing vasoconstriction caused congestion of the lung. Drugs which acted on the heart to produce a falling pressure relieved the circulation in the lungs if given in small doses, but in larger doses caused congestion.

The second investigation illustrated was one by Dr. Brodie and Mr. A. W. Cadman as to the distribution of the fibres in the rootlets of the ninth, tenth, and eleventh cranial nerves as they leave the medulla. The arrangements in groups at this point do not correspond to the nerves as they leave the cranium. At the point of issue from the medulla there are three groups of rootlets: an upper group of two rootlets, a middle group of five to ten small rootlets, and a lower group of two large rootlets. By studying reflexly the cardiac inhibitory and afferent respiratory fibres it was shown that all the former leave the medulla in the lower of the two rootlets of the third group, while the latter run into the medulla in the lower of the two rootlets of the upper group.

On Thursday a demonstration was given on the action of serum on animals with relation to the action of antitoxic serum. Dr. Brodie observed that it has long been known that the intravascular or subcutaneous injection of serum was by no means a process unattended by risk. Thus an injection of 10 c.cm. of the serum of the dog, cat, ox, or rabbit leads to the death of a rabbit within forty-eight hours. In studying the physiological action of serum upon the cat, Dr. Brodie found that if an animal were injected with any form of serum, including that of the animal experimented upon, a marked fall in blood pressure, accompanied by inhibition of the heart and arrest of respiration, occurred. These results follow the injection of about 2 c.cm. of serum into a vein. The effect was quite absent in an animal in which the vagi were divided in the neck. The result is due to a stimulation of afferent fibres in the vagus acting upon the respiration, cardiac, and vasomotor centres in the medulla, and causing arrest of respiration, inhibition of the heart, and vasodilatation. Experiments showed that the pulmonary fibres of the vagus were those chiefly affected. The cardiac fibres are excited, but to a much less extent. In the next series of experiments it was found that the active substance in the serum was a proteid of the albumin class and not the globulin. It was coagulated by heating to 72° C. Further research showed that the serum was active only when the plasma was clotted in the presence of the corpuscles. It was clear therefore that during coagulation under usual conditions some part was played by the corpuscles. A demonstration was also made of the results of experiments carried out by Dr. Brodie and Dr. A. E. Russell, upon the origin of the fibres in the vagus which cause when excited a reflex inhibition of the heart. It was found that these fibres are not present in the vagus below the origin of the pulmonary fibres; that they are only present in quite small numbers in the cardiac fibres of the vagus, but that they are present in considerable numbers in the pulmonary branches. This was found to be true also for the superior laryngeal nerve, but not for the inferior. Their action was further illustrated by the effect of the inhalation of irritant vapour. Practically any irritant vapour acting upon the lung caused reflexly inhibition of the heart and arrest of respiration. This was found to be the case for ammonia, hydrochloric acid vapour, and chloroform, but the best effects were obtained by bromine or formic aldehyde. Section of the pulmonary branches of the lung completely abolished the effect.

The Conservator, Professor Stewart, conducted each morning a party of visitors round the Museum, and gave demonstrations upon some of the chief objects of anatomical and general interest.

PRESENTATION OF HONORARY DIPLOMAS.

On Thursday afternoon in the theatre of the old buildings of the University of London the President presented the diploma of Honorary Fellow to the Marquess of Salisbury, the Earl of Rosebery, and to distinguished foreign and colonial surgeons whose names appeared in the list published last week, and in addition to Professor Kosinskij, Professor of Surgery in the University of Warsaw, and Dr. Lambotte, of Brussels. The several recipients were received with applause by the large and distinguished audience which had assembled. Before this ceremony Sir William Mac Cormac delivered the address, which is printed at page 209, and Mr. Trimmer, the Secretary of the College, announced that congratulatory addresses had been received from the Imperial Academy of Medicine, St. Petersburg, the Royal College of Physicians of London, and the Royal College of Surgeons of

Edinburgh. After the presentation brief addresses of thanks were delivered by Professor v. Bergmann of Berlin, in the the name of the German surgeons; by Professor Durante, of Rome, in the name of Italian surgeons; by Dr. W. W. Keen, of Philadelphia, in the name of the American surgeons; by Professor Lannelongue, in the name of the French surgeons, and by Dr. T. G. Roddick, of Montreal, in the name of the Canadian surgeons.

LITERARY NOTES.

THE *Zeitschrift für Tuberkulose und Heilstättenwesen*, edited by Professor C. Gerhardt, B. Frankel, and E. v. Leyden, the first number of which we received not long ago, is a very important publication. Professor von Leyden contributes an introductory paper. Dr. A. Ransome writes (in English) on infection by tubercle. Professor Arloing and Dr. Paul Courmont write (in French) on the agglutination of Koch's bacillus and the application of the serum diagnosis of tuberculosis. Professor von Schrötter, of Vienna, maintains the curability of tuberculosis. Dr. Rahts, of Berlin, in a paper bristling with statistics, deals with tuberculosis as the cause of premature death among the adult inhabitants of the German population. Professor Cornet, of Berlin, traces some of the lines of future investigation on tuberculosis. Other original articles are contributed by Dr. Turban (of Davos), Herr A. Lebhard, Drs. Bogaert and Klynens. Dr. Kuthy, of Buda-Pesth, reports on recent developments of the movement for the establishment of sanatoria in Hungary, and Dr. Schroeder on new medicaments and foods in the treatment of tuberculosis. Dr. Arthur Würzburg, Librarian of the Imperial Health Office, gives a review of books and publications grouped under the heading of diffusion, etiology, prophylaxis, diagnosis, treatment, and sanatoria. There is a section devoted to new sanatoria, and a short biographical notice of Sir Thomas Grainger Stewart, illustrated by a photograph. The new *Zeitschrift*, which is published by Johann Ambrosius Barth, of Leipzig, is beautifully printed on excellent paper, and altogether, like Dogberry, may be said to have everything handsome about it. We are bound to say that the contrast between this German publication and its British analogue is somewhat painful to our patriotic feeling.

In his history of the old College of Physicians of Rouen M. Avenel gives some curious examples of the questions asked of candidates presenting themselves for examination in the sixteenth and seventeenth centuries. Any doctor who wished to practise in Rouen or its vicinity had to get the licence of the College. For this purpose he had first of all to present a formal request for incorporation; the Royal authority to do so; a certificate setting forth the number of years which he had passed in the university at which he had graduated, which had to be either Paris, Montpellier, or Caen; the diplomas of Bachelor of Arts, of Licentiate and Doctor of Medicine, a "certificate of philosophy," and another showing that he had practised medicine for at least two years elsewhere than at Rouen. To this formidable array of documents another had to be added after 1674—namely, a certificate of religion. The documents were examined by a committee appointed for the purpose, and if they were pronounced to be satisfactory, the candidates had in the first place to show their knowledge by their handling of such questions as: Does not mercury administered during an attack of bilious fever occasion an incomplete paralysis? or should purgatives be employed in injuries of the head, complicated with fracture and inflammation of the liver? Then came the public thesis, notice of which was placarded all about the town for a week beforehand. A large audience comprising the chief notabilities of the city assembled to witness the candidates undergoing the ordeal before the members of the College in cap and scarlet gown. The candidate had to find such answer as he could to medical conundrums like the following: A man of 60 attacked by difficulty in passing water gets some relief by expelling intestinal gases: What is the cause of the dysuria? It is on record that a candidate who was bold enough to maintain the thesis that the cure of scrofula by a Royal hand is natural was considered too dangerous a person by the loyal and orthodox members of the College for admission to their learned body.

SPECIAL CORRESPONDENCE.

PARIS.

The International Exhibition.—Sections of Hygiene and Public Charitable Relief.—Exhibits of Great Britain, United States, Germany, Austria, Russia.—Evening Fêtes during the International Medical Congress.—The Continental Anglo-American Medical Society.

ENTERING the Exhibition by Door 22, opposite the Swiss Village, we ascend the stairway to the first floor, where we find the foreign exhibitors in Classes 111, 112, Hygiene and Public Charitable Relief.

The British Section is on the right, at the head of the stairs; here the Metropolitan Asylums Board exhibits statistical tables of case mortality from infectious disease and models of the Fulham Ambulance Station, a brougham-shaped ambulance carriage, the floating small-pox hospital acquired in 1884, the ambulance steamboats to take patients to the hospital moored 17 miles down the Thames, the model of the North-Eastern Temporary Fever Hospital, and a model of the Brook Hospital, a permanent building for 488 patients; also models of internal arrangements of the wards in a temporary and permanent fever hospital.

In the United States Section are models of the wards in the St. Mary's Children Hospital and the Presbyterian Hospital in New York, with reports of the numerous Boards of Health in the country.

Germany is a large exhibitor. In the first room on the left of the corridor, Professor Behring exhibits a model of the Laboratory of Experimental Pathology at Marburg, also chemical preparations of the tetanus and diphtheria test toxin and test antitoxin, etc. Here also are vaccination tables and statistics, with the machines of Pfeiffer and Chalybrius for triturating the lymph. In the second room on the left are models of the sanatoria for open air treatment of consumption at Hohenhonnef, and at Oderberg in the Harz Mountains, of the Asylum at Zchadrasz in Saxony for 600 patients of both sexes, and of the new municipal hospital at Nürnberg. On the right-hand side of the corridor in the first room is the exhibition of the town of Hamburg, with models of the filter beds, the apparatus for cleansing the surface of the filter bed when the water surface is frozen over, model of the refuse-destructor. Here also is a model of the Berlin broad irrigation scheme and models of waggons for removing household refuse. In the second room Frankfort-on-the-Maine exhibits a model of the public swimming baths; Cologne plans and models of the slaughterhouses for cattle and pigs, and the mechanism for the transport of the meat to the freezing-house; in the centre of the room the Hamburg-American line exhibits a model of the emigrants' home at Hamburg. The next room is a completely-equipped bacteriological laboratory, being the collective exhibit of Leitz, Schanze, Zeiss, Jung, Becker, Enslin and Lautenschlaeger.

In the Austrian section the Vaccine Institute of Vienna has a very interesting exhibit. Here we see the apparatus used for the preparation of the lymph, with the sterilisable glass wheels moved by a turbine for pounding the crude lymph, the blow-pipe for sealing the tubes of vaccine, the apparatus for automatically filling the tubes, etc. The Institute also shows a life-sized model of a calf immediately before the vaccine is collected, the protecting layer of tegmine being partially withdrawn. Tegmine is an emulsion sterilised by vapour composed of wax, gum arabic, glycerine, water, and zinc oxide; after inoculating the calf this is spread over the whole region inoculated, and while still moist on it are placed bands of sterilised wool, forming a protecting pellicle, which can be removed and renewed in forty-eight hours. By this method the pustules are found to develop splendidly without forming crusts and without being damaged when the tegmine is taken off to collect the lymph. Tegmine is also applied to the arms of children after vaccination, then covered with a small circular pledget of cotton wool. If the pustules break and exude, in order to hasten desiccation a small cachet containing a powder of dermatol, zinc oxide, starch, and talc is given to the parents to dust on locally.

At the angle of the gallery is placed the Russian exhibit. The first-aid museum shows life-sized models by Professor Turner of the means of arresting hæmorrhage; here is an exhibition of models of sound and diseased meat, fish, and fruit. The Central Committee of the Russian Red Cross Society exports the outfit for a field hospital, with the ambulance waggon of Prince Lvow. In a room apart, in the centre of which is a bust of Jenner, with an autograph letter written in 1802 to the Empress Marie Feodorowna, thanking her for a diamond ring, are exposed models of the regular course of vaccination seen day by day on the arm and on the leg of a child of one to eight months, also models of the eruption of small-pox in vaccinated and unvaccinated persons. Dr. Hubert, of St. Petersburg, has made the following experiments to determine the commencement of immunity after vaccination: The vaccine was inoculated on the supernumerary finger in children born polydactylous. This finger was amputated on the fifth, sixth, seventh, eighth, and to the fifteenth day after inoculation. Eleven such experiments were made on eleven children. Immediately after amputation of the supernumerary finger the children were re-vaccinated at the usual place. The following results were obtained: Partial immunity began to be apparent after the seventh day, and immunity was complete the fifteenth day after the vaccination. Holland, Hungary, and Italy are also exhibitors in this portion of the exhibition.

The President of the Republic having expressed a wish to be present at the close of the International Medical Congress, the programme of the evening *fêtes* has been modified as follows:

August 2nd.—*Fête* given by the President of the Council in the name of the French Government.

August 3rd.—Reception (by invitation) by the President of the Congress.

August 5th.—*Fête* given by the Congress Organisation Committee in the Palace and Gardens of the Luxembourg.

August 7th.—*Fête* given by the Municipal Council at the Hotel de Ville.

August 9th.—*Fête* by the President of the Republic at the Palace of the Elysée.

Arrangements are being made by the Continental Anglo-American Medical Society to have a dinner during the Congress, so that members from distant places may have an opportunity of meeting each other. Members who intend to be in Paris should communicate with the Hon. Secretary, Dr. Bull, of rue de la Paix.

BIRMINGHAM.

Gift of a Site for the Scientific Department of the University.—Donation to the Endowment Fund.—Total of Fund.—Bequest to Hospitals.

Two most welcome and generous additions to the endowment of the new University have been announced. On July 14th Mr. Joseph Chamberlain, as Chancellor of the University, was able to make public the offer from Lord Calthorpe of the free gift of 25 acres of land as a site for the new scientific department of the University. The site is almost an ideal one for its purpose. It lies on the Bournbrook side of the Edgbaston Estate belonging to Lord Calthorpe, and is within two miles from the very centre of the city. The land will be set out so as to be of a convenient shape and will have a frontage of about 420 yards. It is at the same time within easy access either by railway or by tramway service from the centre of the city.

A few days later Mr. Chamberlain announced a most generous donation of £50,000 from Sir James Chance towards the funds of the University. Sir James Chance is the head of a well-known family of Birmingham citizens who has done much for Birmingham, and who only a few years ago gave and endowed a park for the inhabitants of Smethurst at a cost of £30,000.

The total amount now promised in land and money amounts to £400,000, and it is interesting to observe that half of this large sum has been contributed by six donors. It is confidently hoped and expected that more than half a million will eventually be raised.

The Birmingham charitable institutions have lately had a windfall. Under the will of the late Mr. W. H. Wood, a pawnbroker of High Street and New Street, the sum of £10,000 is to be immediately divided between the principal hospitals of the city. They will also benefit to the extent of a further £11,000 upon the decease of certain legatees, and in the event of certain other beneficiaries dying without issue a still further sum of £15,000 is to be divided amongst them.

CORRESPONDENCE.

THE ORGANISATION OF THE BRANCHES OF THE BRITISH MEDICAL ASSOCIATION.

SIR,—One cannot but feel that we have at last arrived at a crisis in the history of our Association which if taken advantage of in a right spirit by both the "leaders" and "wheelers" will end in a solution of the formidable difficulty which all must admit has arisen over the question of the government of the Association.

Although much of what is contained in Dr. MacIlwaine's paper is of a contentious nature, both he and Dr. Gordon, in their articles published in the BRITISH MEDICAL JOURNAL of July 21st, make admirable proposals in the direction of the better organisatisn of the Branches and the extension and greater localisation of their work by the formation of subsections corresponding with boroughs and other naturally-marked areas. Before, however, these suggestions can be successfully carried out there is one preliminary condition at least which we should all be prepared to agree to institute, namely, that unattached members of the Association shall have equal rights with "attached" members in having a voice in all questions dealing with the general affairs of the Association, including the election of the Branch representatives on the Council and Committees.

There can be little doubt that the error of having ever distinguished between "attached" and "unattached" members of the Association, and the practical disenfranchisement of a section now amounting to nearly half the membership, is responsible for much of the present dissatisfaction. It is not enough to say that members should join Branches. As a matter of fact, so long as the joining is optional a very large proportion of members, owing to various reasons, remain "unattached." I understand it is possible for a Branch to exclude from its benefits any one in the Association who may apply, and that this has been done—an incongruity and an unjust encroachment on the rights of a member.

This state of confusion has been brought about by the original mistake in instituting Branches without making them an absolutely essential part of the organisation of the Association, and until membership of the Association and Branch are coincident, so long will the Branches remain unrepresentative and general discontent be perpetuated. It appears to me that if one or other of the various motions sent in for discussion at the annual meeting at Ipswich bearing on this subject were adopted this open sore would be healed. Having accomplished so much, then the excellent propositions of Drs. MacIlwaine and Gordon would still further extend great benefits to the Association and the profession.

One word regarding Dr. MacIlwaine's strictures on the reform proposals, and his appeal in favour of the present government of our profession. He seems to forget that the much-condemned reform "agitation" is created by the presence of continued resistance from within the governing bodies to reasonable proposals to secure much-needed reforms. Remove this resistance, and the agitation will cease. The "rabid reformer" is the direct product of the dogged deformer. After all, we are only working for that franchise in our profession which has already been granted by Parliament—in general politics—to the public, and to which we feel we have, for obvious reasons, even a greater title.

It is too late in this country's history to attempt to successfully resist for long any honest efforts to secure for an institution a representative and constitutional government in place of an autocratic and usurping rule. I am, etc.,

Sydenham, July 22nd. F. LORIMER HART.

SIR,—At this juncture it is very desirable for every member of the Association to carefully consider what reforms in its constitution are needed, and to thoroughly examine any proposals for this purpose that may be put forward.

There is little disposition, I think, to question the necessity for reform; the consideration of what the nature of this reform shall be is the rock on which opinions will split. One

thing is certain, and that is that the members of the Association will not tolerate such changes (and in my opinion they were changes which could not by any stretch of the imagination be classed as reforms) as were contemplated in the proposals of the Council which were rejected at the recent extraordinary meeting. In moving the adoption of the proposed new Articles, the President said they were designed to "give stability to the Association." The President of Council in seconding them said they were designed "to legalise and give permanence to the past practice of the Council." As it has been the past practice of the Council to ignore the resolutions and recommendations of the annual meeting we can only conclude that in the opinion of that body the stability of the Association can only be secured by the members resigning all their rights and powers into the hands of the Council. I cannot think that the members of the Council thoroughly realised what their proposals meant, but after the recent meeting they can have little excuse for ignorance as to what the members in general thought of them.

However, they are done with; and now it becomes every member to cease recrimination, and to consider honestly what changes are best for the Association, and, more important still, best for the profession. The welfare of the profession must ultimately be the touchstone by which its success is tested. Whatever reforms are made, they must be such as will increase the esteem in which the Association is held by the profession, by the general public, and particularly by the Government. Of the three it is most urgent that it should be thoroughly respected by the profession, then the respect of the public and the Government will quickly follow.

The primary object of any reform, therefore, should be to make it more thoroughly representative of the profession—that is, of its members—for when once it succeeds in that there will be no difficulty in getting 90 to 95 per cent. of the profession enrolled. The question is, How is this thoroughly representative character to be secured?

The simple raising of the quorum at the annual meeting will not do it. My own opinion is that some process of decentralisation is required. More power must be put in the hands of the members; they must be made to feel that they have a share in the shaping of the policy of the Association, and a voice in its government. It must be made easier for them to discuss, with some chance of their opinions being recognised, questions affecting "the honour and the interests of the profession." It is absurd to expect members to leave their practices for days together to discuss questions, and then for "the past practice of the Council" to set their conclusions aside. One object, I presume, in forming Branches was to effect a change in this direction; but here again men cannot attend the meetings without leaving their work for a day at least, and so incurring loss. The only way to alter this is to carry the principle of division still further. The Association must recognise a smaller unit than a county or half a principality. Every town of any pretensions has its local medical society to protect the honour and interests of the profession in that town. Why should it be necessary for these to be formed? Here is a large Association which ought to do his work in every village and town in the country, and could do it far more effectively than these independent local societies can. I venture to assert that until it has Branches in every town and district of the country it will never have the respect of the profession, and never be the power for good both to the profession and to the community that it ought to be. Practitioners could then attend the meetings of such Branches after their day's work was done with a minimum of loss and discomfort, and, given a proper federation of such Branches, with the certainty that their opinions would be duly reflected at headquarters and in the policy of the profession.

The next point is the method of federating these Branches. It must be such as to make their members feel that they are a part, and an essential part, of the national organisation. I may say at this point that I agree perfectly with the Council that the annual meeting is not suitable to be the paramount authority of the Association, that is, as at present organised. At best it is a haphazard concourse of members, who are often called upon to decide questions which they have never previously discussed. It is necessary to modify either the constitution or the powers of the annual meeting, and, in my opinion, so far as medico-ethical work is concerned, it is the constitution that should be altered. Either a special meeting at a different time and place from the scientific meeting must be held, or a special medico-ethical section must be made at the annual meeting. In either case, it should consist of members specially chosen by the Branches (not the existing Branches, but the small Branches I have suggested) to represent them—of delegates, in fact. No resolution should be adopted at such meeting except on subjects that have been previously discussed by the Branches, have been brought up in the form of a resolution by one of them or by the Council, and have been published in the agenda. Every Branch as well as the Council should have the right to put upon the agenda any resolution it pleases, and the agenda should be in the hands of the Branches at least a month before the date of the meeting. This will give ample opportunity to the Branches for discussion, and they would have plenty of time to properly instruct their representative. The policy of the Association would be defined in broad outline by the resolutions adopted at the meeting. Such a meeting would in all probability consist of 400 or 500 duly-accredited representatives, and could not enter into minute details. This would be left to the Council, which would very largely become the executive of such a meeting, but at the same time with very great liberty of action as to the exact methods to be adopted, and even on occasion of altering the policy accepted at the meeting. The Council would also become a centre to which the Branches could turn for advice and guidance in the conduct of local affairs, and from which information of anything important to the profession could be disseminated. The members of the Council should be nominated and elected by the Branches, which for this purpose should be grouped into electoral districts, each of which should return a certain number of members. There should be no form of co-option.

To sum up, the changes necessary appear to me to be as follows:

1. Make the unit of organisation smaller.
2. Make all members of the Association members of their respective Branches, and let no member be a member of more than one Branch.
3. Let the annual meeting for medico-ethical purposes consist of properly chosen representatives of the Branches, and let each representative have as many votes as there are members in his Branch.
4. Let the Council be nominated and elected by the Branches in the manner indicated above.
5. Let no matters be discussed at the annual meeting except those which have been before the Branches.
6. Representatives of the Branches at the annual meeting to be paid their out-of-pocket expenses from the Branch funds; and members of the Council theirs out of the central funds of the Association.

This scheme refers entirely to the medico-ethical work of the Association, and could, I am confident, be carried out without interfering in the slightest with the Association's scientific work. It is necessary, however, that this should be carefully considered in all its details before being put into practice, and I would strongly urge every member to support the resolution which Dr. Cox has notified his intention to move at the annual meeting at Ipswich.[1] The only point about it that one needs lay stress upon is that the Committee appointed under it should comprise general practitioners and consultants, members of the Council, members of Branches, and unattached members. In this way all shades of opinion in the Association will be represented on it, and its findings be more likely to meet with the acceptance of members.—I am, etc.,

Ashton-under-Lyne, July 23rd. SAML. CRAWSHAW, M.B.Vict.

SIR,—I have read Dr. Gordon's article on the "Organisation of the Branches of the British Medical Association" with very great pleasure. So far as it goes it is entirely satisfactory. But after the subdivision and organisation of the Branches something more is wanted, namely, some means of ascertaining and giving expression to the views and opinions not only of the Branches separately but of the profession as a whole. The best way of doing this, in my opinion, is to hold an annual conference of delegates, somewhat on the lines of the Conference held in Manchester in May last.

The subjects for discussion would have been previously selected by the various Branches, and afterwards submitted to the whole of the Branches or sub-Branches for an expression of their opinion. The delegates appointed would be expected to express by speech and vote the opinion of their Branches.

[1] BRITISH MEDICAL JOURNAL, July 21st, p. 196.

After a clear expression of opinion by the votes of the delegates the only thing to be done would be to see that it was made effective throughout the Association.

An opportunity will be afforded at the Ipswich meeting for the members to consider the reorganisation of the Association, and it is to be sincerely hoped that the principle of delegation will be fully discussed and unanimously adopted.—I am, etc.,

Salford, July 23rd. R. HANSON WOLSTENHOLME.

A WIDOWS' FUND.

SIR,—The present seems an opportune time to bring forward for the consideration of members at the forthcoming meeting of the Association a scheme whereby the widows of members of the medical profession who have been left in impecunious circumstances would be benefited. I am aware that there are already benevolent societies for the relief of medical men and their families, but though they do a great amount of good, they are frequently quite unable to respond to the appeals made to them as they would wish, very great numbers of deserving and distressing cases having to be denied assistance for the lack of means, and in most cases candidates must be over 60 before they may apply.

It seems extraordinary that a huge Association like ours, where the great majority of the members are dependent on their profession for their livelihood, should not follow the excellent example of so many other professions, and have an adequate Widows' Fund.

It is humiliating to see the number of distressing cases that are so often brought to our notice in the BRITISH MEDICAL JOURNAL, having to depend for their living on voluntary charity, when, if every member of the Association would only subscribe, say £3 3s. yearly, a sum of over £50,000 would be the result, which would insure a substantial yearly allowance to all who have had the great misfortune of losing their bread-winners. There are, no doubt, very many men who are weighed down with the knowledge of their inability to save sufficient to maintain their families in the event of death, and who cannot afford to insure their lives heavily enough, but who could readily afford to subscribe a few guineas to a fund. Perhaps with such a large sum as the Association has accumulated, some of it might be devoted to assist. I hope the subject, which should really appeal to every member of the medical profession, will be earnestly taken up, and I would suggest that a committee be appointed to formulate a scheme.—I am, etc.,

Ecclefechan, N.B., July 24th. GEORGE D. LOGAN.

THE GRIEVANCES OF THE GENERAL PRACTITIONER.

SIR,—Mr. George Eastes has well described the grievances of the general practitioner; but I, for one, cannot agree with him in regarding the restricting of the number of those who enter the medical profession as the chief or only remedy. Dr. Milner Moore is, I think, nearer the mark when he sets down the grievances of medical men as entirely due to themselves, and states that reform is only possible in the provinces, when the metropolis, in which is found the most flagrant hospital abuse and other conditions injuriously affecting the general practitioner, takes the initiative.

It is a well-known fact that many London practitioners, though well qualified in surgery, and having been themselves house-surgeons, have no surgical practice, unless connected with a hospital. In my own neighbourhood this is notably the case. It is my duty to report on accidents in a population of about a quarter of a million, where there are large engineering works and many accidents, and yet, during the past twelve months I have not known a single case treated by a private practitioner.

The general public are not to be blamed for the fact that men in ordinary practice in London have now no surgical cases; the disappearance of surgery from the ordinary field of private practice is entirely due to the action of medical men themselves. Midwifery is also vanishing, and if precaution be not taken there will soon be little or nothing left.

1. We have hospitals taking every means to swell their list of patients, clamouring for more money when already they have enough for legitimate purposes, and surgeons straining every nerve to secure hospital appointments. This increasing competition for hospital appointments is probably due in some cases to righteous motives, but in other cases it is doubtless also due to a knowledge of the fact that a surgeon's income and private and consulting practice depend largely on the number of patients he sees at the hospitals.

2. Nor is the general practitioner who has clubs, or is connected with provident dispensaries or medical aid societies less to blame. I have been told by several holding contract appointments that it would simply be impossible to go on were it not that they sent all cases requiring prolonged or expensive treatment to hospitals. A large employer told me the other day that he would prefer to send the majority of his accident cases to a private practitioner, and asked me to whom he should send them. A reply was not easy, as I knew that if the injured man went to his club doctor, he would be referred to the hospital, and this would also be the case if he went to a fourpenny or sixpenny doctor, who would at once see that his fee would probably not cover the expense of the dressing, or to a general practitioner who might be so little accustomed to see surgical cases that he would probably not have at hand the required surgical appliances. Many men holding contract appointments doubtless regard the present rush to hospitals as extremely satisfactory. It is doubtful whether the general public will long regard it in that light, and already working men are discovering that it is more in their interests to pay a small sum to a hospital supported by private subscriptions, and get attendance not only in minor illnesses at home or in hospital, but in serious emergencies, rather than longer pay a private practitioner, who, if the case is serious, will refer him to a hospital.

Enough has been said as to the way the general practitioner has been deprived of a considerable portion of his practice, and as to the further consequences to which it may lead. When the cause is clearly recognised it is not always impossible to find a remedy. The remedy, I hold, is in the hands of the general practitioner. There is already friction enough, and it would be a pity if there were more friction between the consultant and general practitioner, but it is surely time the general practitioner gave the consultant distinctly to understand that he objects to free attendance on patients who can afford to pay. Let the contract doctor mend his ways, shake himself clear of a shortsighted policy, and cease crowding the out-patient rooms of hospitals, and then perhaps it will be found it is not yet too late for a millennium to dawn on many a striving London practitioner.—I am, etc.,

July 23rd. DUNS SCOTUS.

MAGNA EST NICOTINA.

SIR,—In a recent number of the BRITISH MEDICAL JOURNAL you contrasted the character and behaviour of smokers and non-smokers, decidedly to the advantage of the former. Will you permit me to have my say on the subject from a different point of view?

I dare say you, Sir, smoke your modest pipe in your own sanctum, with possible benefit, or at any rate little harm, to yourself, and none to other people. But what of your fellow devotees of Nicotina, that great goddess who did not fall down from Jupiter, but apparently came up from somebody else?

These are they who occasionally burn down cathedrals (for example, that of Salamanca not long ago), who set fire, usually with castaway matches, to our old family mansions, our hayricks, our daughters' petticoats; who sit on the front bench of an omnibus and let blow their cigar ashes into the eyes of folk behind. By pressure on the railway companies they got the three classes of seats multiplied to six, to afford them smoking room, with the result that the Midland and some other companies abolished the second class, much to the inconvenience of the respectable middle class. Nevertheless, when they see a chance, they invade a non-smoking carriage and pollute its linings with the smell of smoke. In Germany and Switzerland the smoking compartment is always placed in front of the "nicht-rauchender," lest any part of the train should be free from the, to some, obnoxious fumes. It is they, too, whose bad example puts cigarettes into the mouths of our boys and girls, thereby dwarfing their physical and intellectual development, as has been proved statistically in France and America. Apparently tobacco lowers vital tenacity as well as vital action; the high rate of mortality among tobacconists at early ages is a fact of some significance.

Such, Sir, are the deeds of the smoker—selfish, rampant,

aggressive, tyrannical. As for the non-smoker, much as he may long for a breath of air pure and undefiled, he is called a churl if he says aught but "Oh, no, I don't object; pray please yourself."—I am, etc.,

Bradford-on-Avon, July 7th. JOHN BEDDOE.

THE JOINT COMMITTEE TO OPPOSE MIDWIVES' REGISTRATION.

SIR,—I would suggest to any who may propose to themselves to contribute to the funds of the Joint Committee to Oppose Midwives' Registration that they should first apply to the Honorary Secretaries for copies of the documents for the distribution of which to the public under professional auspices they would thus become directly responsible. These consist of a Report and Measures in Progress, dated April 26th, 1900; a Memorial by Constituents, the last three foolscap pages of which are occupied with Considerations of Public Safety and Public Faith opposed to the Registration of Midwives; attached to the last, instructions as to the use of the memorial, addressed "To the Constituent who kindly takes charge of this Memorial;" and a Copy of Parliamentary Whip referred to in accompanying Address, upon which is printed an abstract of the Considerations above mentioned.

If intending supporters decide, upon perusal of these documents, that the Committee's "literature" merits to the full my criticism of it in the BRITISH MEDICAL JOURNAL of July 7th—of which the Committee have deemed it wiser to take no notice, and there at least I am inclined to agree with them—then I trust they will save the profession from being more widely discredited by the same means.—I am, etc.,

Barrow-on-Humber, July 18th. THOS. M. WATT.

CO-OPERATION AS APPLIED TO MEDICAL AND SURGICAL REQUIREMENTS.

SIR,—I notice that in the BRITISH MEDICAL JOURNAL of July 14th a correspondent signing himself "Birmingham," controverts a statement of mine in a letter I sent on the above subject a few weeks ago.

Your correspondent is quite correct in his assertion that a traveller representing the Surgical Supply Association may have called on him last year. I find from the office that the Association gave up all their travellers last year, and my statement referred to the present time. For the first two years the Association, I suppose, found it necessary to employ these agents to initiate and establish the business on a sound footing, but I am now informed by the secretary that to save expense and to carry out the aims of the Association, the Board, who are all medical men (with the exception of the managing director) and general practitioners, decided during last year to dispense with all travellers, and to ask all members and customers to send their orders direct to the head office. If "Birmingham" sends his to 35, Market Street in future, instead of waiting for someone to call and solicit him, he will find that they will be promptly attended to as mine have been.

I notice that "Birmingham" holds the same views as I do as to the annoyance and loss of time that travellers occasion to medical men, because he says in his last sentence that "he gave the traveller an order to get rid of him." I have often done the same thing with the same object, and occasionally have written afterwards to rescind the order. The Secretary of the Surgical Supply Association has told me that very often (during their employment of travellers) medical men have afterwards repudiated either the items or the amount of the order which the traveller has handed in. This unpleasantness is avoided by the course I suggest.—I am, etc.,

July 16th. ANOTHER M.D., M.S.

*** We shall not be able to insert further letters on this subject.

A MEMORIAL TO THE MILITARY AND CIVIL MEMBERS OF THE MEDICAL PROFESSION WHO HAVE LOST THEIR LIVES IN THE SOUTH AFRICAN WAR.

SIR,—The Princess Christian Convalescent Homes for Soldiers and Sailors, now in course of erection at Bisley, will soon be available for use. Many of the beds have already been endowed. The Queen has given two, the Duke and Duchess of York one bed for a soldier or sailor, the Princess Christian one for the King's Royal Rifles, and Princess Victoria of Schleswig-Holstein and Princess Aribert of Anhalt one bed for a "greenjacket," etc.

Princess Christian has suggested to me her wish that a bed should be endowed for the sole use of the non-commissioned officers and men of the Royal Army Medical Corps. I proposed that the bed should be endowed as a memorial to the members of the medical profession, both military and civil, who have lost their lives in the war in South Africa. The ready response which I have received from a few friends to whom I applied privately encourages me to hope that the scheme will commend itself to the medical profession generally. The amount required for the permanent endowment of a bed is £600, and towards this the Committee of the R.A.M.C. South Africa Fund has voted £200. From other sources I have received £125, and I now venture to appeal to the medical profession to make up the amount required (£275). I append a first list of subscriptions. Cheques or postal orders should be made out to Mrs. Meredith, and crossed "Barclay and Co. Princess Christian Bed." The fund, when completed, will be handed over to the trustees appointed for all the endowed beds.—I am, etc.,

21, Manchester Square, W., July 23rd. CAROLINE S. MEREDITH.

LIST OF SUBSCRIPTIONS.

	£	s.	d.
R.A.M.C. South Africa Africa Fund...	200	0	0
Sir William Broadbent ...	20	0	0
Sir R. Douglas Powell ...	10	10	0
Dr. Church	10	10	0
Dr. Buzzard	10	10	0
Mr. Alfred Cooper, F.R.C.S.	10	10	0
Mr. Somerset Beaumont ...	10	0	0
Sir Lauder Brunton ...	5	5	0
Dr. Barlow	5	5	0
Mr. H. T. Butlin, F.R.C.S...	5	0	0
Dr. Playfair	5	0	0
Lady Broadbent	5	0	0
Lady Vaughan Williams ...	5	0	0
Mrs. Lang Elder	5	5	0
Mrs. Charters Symonds ...	3	3	0
Mrs. W. Marshall Webb ...	3	3	0
Mrs. Wickham Flower ...	2	2	0
Mrs. Barlow	2	2	0
A Friend	2	2	0
Mr. Alfred Willett, F.R.C.S.	2	0	0
Miss Ewart	2	0	0
Mrs. Johnson...	1	0	0
Mrs. Fletcher...	1	0	0
	£326	7	0

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

INTERMEDIATE EXAMINATION IN MEDICINE (HONOURS).—The following candidates have satisfied the Examiners in the subjects undernoted.

Anatomy.—First Class: J. E. Adams, St. Thomas's Hospital; M. A. M. Fitzmaurice-Kelly, St. Mary's Hospital; C. W. Forsyth, Owens College; H. A. Lyth (Exhibition and Gold Medal), University College; R. P. Rowlands (Gold Medal), Guy's Hospital; A. R. Short, B.Sc., University College, Bristol. Third Class: A. Hamilton, St. Bartholomew's Hospital; Constance Brodribb Slater, London School of Medicine and Royal Free Hospital; J. H. Watson, University College of Liverpool and King's College.

Physiology and Histology.—First Class: P. R. Bolus (Gold Medal), Guy's Hospital; E. H. B. Milsom, Guy's Hospital; A. R. Short, B.Sc. (Exhibition and Gold Medal), University College, Bristol. Second Class: Helen Chambers, London School of Medicine and Royal Free Hospital; H. E. Corbin, B.Sc., St. Mary's Hospital; M. A. M. Fitzmaurice-Kelly, St. Mary's Hospital; E. G. Goldie, Guy's Hospital; H. A. Lyth, University College; Constance Brodribb Slater, London School of Medicine and Royal Free Hospital. Third Class: D. H. De Souza, B.Sc., University College; H. R. Kidner, St. Bartholomew's Hospital; C. E. W. Lyth, University College, Sheffield; N. I. Spriggs, Guy's Hospital.

Organic Chemistry.—First Class: H. E. Corbin, B.Sc. (Exhibition and Gold Medal), St. Mary's Hospital; *M. Culpin, London Hospital. Third Class: P. R. Bolus, Guy's Hospital; E. H. B. Milsom, Guy's Hospital.

Materia Medica and Pharmaceutical Chemistry.—First Class: R. P. Rowland, Guy's Hospital; A. R. Short, B.Sc. (Exhibition and Gold Medal), University College, Bristol; †Constance Brodribb Slater, London School of Medicine and Royal Free Hospital. Second Class: T. P. Baldwin, St. Bartholomew's Hospital; H. S. Brown, Guy's Hospital; M. A. M. Fitzmaurice-Kelly, St. Mary's Hospital; C. C. Robinson, St. Bartholomew's Hospital. Third Class: S. B. Atkinson, B.Sc., St. Bartholomew's Hospital; H. E. Corbin, St. Mary's Hospital; D. H. De Souza, University College.

*Obtained number of marks qualifying for the Exhibition.

†Obtained number of marks qualifying for the Medal.

INTERMEDIATE EXAMINATION IN MEDICINE: PASS LIST.—The following candidates have satisfied the Examiners:

Entire Examination.—First Division: J. Brainwaite, Guy's Hospital; W. A. Brend, B.Sc., King's College; G. H. Brown, Owens College; H. B. Day, King's College; J. A. Drake, King's College; H. C. Lees, St. Mary's Hospital; Agnes Agatha Parson, London School of Medicine for Women; R. Phillips, Middlesex Hospital; D. L. Sewell, Owens College. Second Division: J. B. Albury, St. Mary's Hospital; F. H. Alexander, University College; O. F. H. Atkey, King's College; G. E. Aubrey, St. Bartholomew's Hospital; Anne Thompson Barnard, London School of Medicine and Birkbeck Institute; Mary Cecilia Bell, London School of Medicine for Women; Ruth Levy

Bensusan, London School of Medicine for Women; G. A. Bosson, University College; W. F. Box, Guy's Hospital; S. A. Boyd, Charing Cross Hospital; W. Briggs, Owens College; Agnes Maud Brown, Queen Margaret College, Glasgow, and London School of Medicine; G. L. Bunting, Westminster Hospital and Birkbeck Institute; J. Burfield, St. Bartholomew's Hospital; J. H. Burgess, St. Mary's Hospital; H. J. De Brent, St. Thomas's Hospital; H. De Vine, University College, Bristol; J. T. D'Ewart, Owens College; A. D. Edwards, University College, Cardiff; F. W. Fawssett, Guy's Hospital; A. F. Forster, St. Bartholomew's Hospital; J. G. French, St. Mary's Hospital; W. Gillitt, Middlesex Hospital; L. S. H. Glanville, Guy's Hospital; P. W. Hamond, Guy's Hospital; T. H. Harker, St. Bartholomew's Hospital; Elizabeth Hill, London School of Medicine for Women; Ethel Florence Iredell, B.A., London School of Medicine and Royal Free Hospital; S. Johnson, St. Mary's Hospital; I. D. Jones, Middlesex Hospital; W. R. Kirkness, King's College; R. Larkin, Guy's Hospital; A. Lewthwaite, University College; G. B. McKean, University College; L. H. Moiser, Guy's Hospital; G. P. Mosscrop, London Hospital and Alwyne Institute; A. C. Motta, St. Mary's Hospital; F. C. Robinson, Guy's Hospital; D. Smith, Middlesex Hospital; Mary Townsend, London School of Medicine for Women; Laura Sobey Veale, London School of Medicine and Royal Free Hospital; Edith Waine Turner Watts, London School of Medicine and Royal Free Hospital; B. H. Wedd, Guy's Hospital; E. C. Whitehead, Westminster Hospital; Hilda Kate Whittingham, London School of Medicine for Women; Ivy Evelyn Woodward, London School of Medicine for Women.

Excluding Physiology.—First Division: G. C. Adeney, St. Thomas's Hospital; C. D. Pye-Smith, Guy's Hospital; E. W. Strange, Guy's Hospital. Second Division: E. W. C. Bradfield, St. Mary's Hospital; D. Brodie, St. George's Hospital; G. B. F. Churchill, Guy's Hospital; Ruby Ellen Glanville, London School of Medicine for Women; H. M. Goldstein, Guy's Hospital; Ida Margaret Guillaume, London School of Medicine for Women; V. Hetherington, St. George's Hospital; Beatrice Mary Kidd, London School of Medicine and Alwyne Institute; A. Manuel, St. George's Hospital; W. O. Meek, Owens College; H. R. Minkley, St. Mary's Hospital; J. N. Sergeant, St. Thomas's Hospital; H. B. Simpson, University College; M. W. S. Smith, University College; J. B. Stephens, St. Mary's Hospital; R. A. S. Sunderland, St. Bartholomew's Hospital; Louisa Graham Thacker, London School of Medicine for Women; Henrietta Leila D. Williams, London School of Medicine for Women; Agnes Williamson, London School of Medicine and Royal Free Hospital; F. R. E. Wright, St. Thomas's Hospital; W. P. Yetts, St. Bartholomew's Hospital and University of Edinburgh.

Physiology only.—Second Division: H. E. Barnes, St. Mary's Hospital; F. A. Beattie, Guy's Hospital; A. H. Bradley, Mason University College; J. D. Bridger, Guy's Hospital and Alwyne Institute; A. Cameron, Middlesex Hospital; D. C. Evans, St. Bartholomew's Hospital; J. Evans, Guy's Hospital; J. W. Fox, London Hospital; D. S. Graves, Guy's Hospital; Helen Moore, London School of Medicine and King's College; Marie Louise Pethick, London School of Medicine and Royal Free Hospital; G. S. Robertson, Guy's Hospital; A. R. Schofield, London Hospital; W. B. Vaile, London Hospital.

UNIVERSITY OF EDINBURGH.

FIRST PROFESSIONAL EXAMINATION FOR THE DEGREES OF M.B., CH.B.—The following candidates have passed this examination in the subjects undernoted:

Physics.—T. Addis, F. Aitken, M. I. Ali Khan, J. Allan, W. Anderson, M. Ashruff, C. T. Ayana, E. A. Aylward, J. W. H. Babbington, C. R. M. Baker, J. M. Barkley, J. R. Bartholomew, W. J. E. Bell, I. W. Brebner, D. Bremner, T. Campbell, T. F. Campbell, T. E. Carlyle, V. T. Carruthers, D. M. C. Church, J. Clarke, M. L. Cohen, J. G. Craig, P. Donald, E. J. Elliot, W. H. Forsyth, O. M. Gericke, H. V. Goldstein, Eleanor A. Gorrie, W. Grant, J. Green, C. O. Griffith, E. J. C. Groves, J. T. Gunn, G. Hadden, F. A. Hanan, J. D. Harmer, P. A. Harry, G. W. Harty, K. U. A. Inniss, J. P. S. Jamieson, J. Jardine, R. L. Jones, H. H. Joubert, G. P. Joy, A. G. Leitch, J. Lindsay, S. M. Livesey, W. L. Locke, W. Lumsden, S. A. M'Clintock, J. S. MacDonald, H. J. M'Grath, J. Mackenzie (Westhall), J. Mackenzie (Lochrin), W. MacLaren, A. C. M'Master, H. G. Marshall, W. Martin, L. S. Milne, C. E. S. Mitchell, J. S. Mitchell, P. R. S. Muir, Anna M. Mulholland, W. M. Mumby, A. W. Neill, G. P. Norman, H. J. Norman, R. G. S. Orbell, A. Pampellonne, J. S. Peebles, A. C. Pickering, Florence M. S. Price, D. S. Rao, J. W. N. Roberts, T. Robertson, J. Robinson, T. Scoresby-Jackson, J. Scott, A. I. Shepheard-Walwyn, D. W. Sibbald, E. M. Simmers, W. H. Simpson, F. R. Sinton, E. H. Smith, S. A. Smith, R. A. I. van Someren, G. Stewart, H. G. Sutherland, F. J. G. Tocher, Rose C. Townsend, G. H. Ussher, R. W. I. Wallace, T. Walsh, H. E. A. Washbourn, J. D. Wells, W. H. Welsh, R. M. Wishart, T. Wright, and J. T. D. Young.

Botany.—T. Addis, F. Aitken, M. I. Ali Khan, J. C. D. Allan, D. I. Anderson, D. W. Anderson, W. Anderson, M. Ashruff, C. T. Ayana, E. A. Aylward, J. W. H. Babington, F. Baillie, C. F. Bainbridge, C. R. M. Baker, J. M. Barkley, R. B. Barnetson, J. R. Bartholomew, W. J. Basson, B. Baty, W. P. Beattie, M. M. Sujjad Beg, D. Boll, W. J. E. Bell, G. Blair, F. T. Bowerbank, I. W. Brebner, D. Bremner, F. R. Bremner, D. Brown, J. W. Cairns, J. S. Caldwell, Mary T. Cameron, T. Campbell, T. E. Carlyle, V. T. Carruthers, Mildred M. L. Cathels, R. A. Chapman, J. Chisholm, D. M. C. Church, Lizzie M. S. Clark, J. Clarke, L. M. Cohen, H. P. Cook, T. E. Coulson, Agnes M. Cowan, J. G. Craig, J. Craw, J. A. Cruikshank, G. A. Davies, E. G. Deverell, P. Donald, R. Donaldson, G. T. Drummond, Marjorie Drake-Cohen, C. E. Dumanoire, E. J. Elliot, H. Ferguson, F. E. Field, J. M. R. Flament, W. J. Fraser, N. J. H. Gavin, H. V. Golfstein, V. R. Gorakshakar, Eleanor A. Gorrie, P. Gosnold, J. M. Graham, J. M. Grant, T. Grant, W. Grant, J. Green, W. W. Greer, C. O. Griffith, E. J. Griffiths, Elizabeth C. Gunn, T. M. Guthrie, G. Hadden, J. R. Hall, F. A. Hanan, J. D. Harmer, P. A. Harry, G. W. Harty, Ada Hatchard, A. W. Hogg, Jane S. Hogg, J. Ings, K. U. A. Inniss, D. S. M. Izatt, Ada Jackson, Annie Jackson, J. P. S. Jamieson, J. Jardine, W. Jarvis, W. W. Johns, R. L. Jones, J. H. H. Joubert, G. P. Joy, S. F. Jung, J. S. Kinross, G. F. S. Landen, F. E. Larkins, S. W. S. Leary, A. J. Lewis, C. W. Lewis, J. Lindsay, A. A. Little, W. L. Locke, W. Lumsden, D. H. C. M'Arthur, A. D. M'Cullum, S. A. M'Lintock, W. M'Conaghy, J. W. M'Ewan, P. M'Ewan, J. P. M'Gowan, H. R. M'Intyre, J. Mackenzie, J. Mackenzie, Amy M. Mackintosh, N. M'Leod, A. C. M'Master, C. M'Neil, A. MacRae, N. N. G. C. M'Vean, W. Magill, A. Malseed, M. M. Mamourian, Ada E. Miller, L. S. Milne, J. S. Mitchell, K. A. Moody-Stuart, H. B. Morris, D. L. Morrison, W. M. Munby, D. S. Murray, J. K. Murray, R. E. U. Newman, G. P. Norman, H. J. Norman, C. D. O'Neal, R. G. S. Orbell, Ethel A. Orchard, G. Ormrod, W. Patton, D. H. Paul, A. C. Pickering, A. M. Pirrie, Agnes E. Porter, D. S. Rao, W. E. Reynolds, C. S. U. Rippon, H. D. Robb, T. E. Roberts, Margaret H. Robertson, T. Robertson, J. Robinson, S. C. Roy, C. S. Ryles, W. K. Sanderson, Elsie B. Saunders, H. M. Sauzier, T. Scoresby-Jackson, J. Scott, J. G. B. Shand, E. Sharpe, A. I. Shepheard-Walwyn, D. W. Sibbald, E. M. Simmers, W. H. Simpson, F. R. Sinton, L. H. Skene, C. J. Smith, E. H. Smith, G. M. Smith, S. A. Smith, W. T. Smith, D. M. Y. Sommerville, P. Steele, G. Stewart, H. G. Sutherland, H. M. Thompson, F. J. G. Tocher, Rose C. Townend, Nettie B. Turnbull, Caroline Twigge, G. H. Ussher, F. L. de Verteuil, W. Waddell, Frances M. Wakefield, R. C. Walker, F. E. Wall, T. Walsh, D. R. P. Waither, H. E. A. Washbourn, B. H. Watt, R. H. Watt, J. S. R. Weir, H. M. Whittell, A. Wight, Elsie B. Wilkie, T. Wright, J. T. D. Young.

Chemistry.—J. R. Bartholomew, D. Bell, D. W. Boswell, F. R. Bremner, M.A., C. Campbell, V. T. Carruthers, Mildred M. Cathels, A. G. Coullie, P. Donald, S. E. Douglas, J. J. M. Falconer, G. H. Fitzwilliams, V. R. Gorakshakar, T. Gowans, T. Grant, W. Grant, E. J. C. Groves, Elizabeth C. Gunn, Jane S. Hogg, J. H. Hume, J. M. Johnston, G. P. Joy, F. J. Luck, J. Mackenzie, Amy M. Mackintosh, W. Magill, V. Moralejo, H. L. Morrow, G. O. Norrie, G. Ormrod, J. S. Peebles, B. Pickering, D. S. R. Rao, H. S. Reid, S. C. Roy, L. H. Skene, G. H. Usher, W. Waddell, D. W. Wilton, W. B. Wishart, Margaret C. W. Young, M.A.

Zoology.—J. C. D. Allan, M. Ashruff, F. Baillie, R. B. Barnetson, J. R. Bartholomew, D. Bell, D. Brown, W. S. M. Brown, L. G. Bruce, G. L. Brunton, Mary T. Cameron, Mildred M. L. Cathels, J. Chisholm, W. P. Chrystall, T. E. Coulson, J. Craw, J. A. Cruikshank, R. Doldson, M.A., G. T. Drummond, Marjorie Duake-Cohen, E. J. Elliot, J. J. M. Falconer, F. E. Field, J. M. R. Flament, W. H. Forsyth, W. J. Fraser, Eleanor A. Gorrie, J. M. Graham, J. M. Grant, O. C. Greenidge, W. W. Greer, T. A. Gregg, J. T. Gunn, G. W. Harty, Ada Hatchard, M. A. Huk, M. M. Huk, J. H. Hume, Ada Jackson, Annie Jackson, J. Jardine, W. Jarvis, G. P. Joy, S. F. Jung, G. F. S. Landon, Olive T. Leonard, A. J. Lewis, W. L. Locke, F. J. Luck, A. M. Macarthur, D. H. C. Macarthur, J. W. M'Ewan, P. M'Ewan, C. I. M'Farlane, H. R. M'Intyre, H. G. M'Kay, J. Mackenzie, J. B. Mackenzie, Amy M. Mackintosh, N. M'Leod, C. M'Neil, N. N. G. C. M'Vean, M. M. Mamourian, Ada E. Miller, C. E. S. Mitchell, K. A. Moody-Stuart, H. B. Morris, P. R. S. Muir, D. S. Murray, J. K. Murray, C. D. O'Neal, W. J. Patterson, A. M. Pirrie, Agnes E. Porter, F. P. Powles, J. W. N. Roberts, T. E. Roberts, J. R. Robertson, Margaret H. Robertson, C. S. Ryles, H. M. Sauzier, Edmund Sharpe, J. O. Shircore, W. H. Simpson, C. J. Smith, G. M. Smith, W. T. Smith, R. A. Spence, P. Steele, H. M. Thompson, Archibald Todrick, G. W. Ussher, W. Waddell, Frances M. Wakefield, R. C. Walker, A. P. Wall, R. W. L. Wallace, R. H. Watt, J. D. Wells, W. H. Welsh, H. M. Whittell, J. A. von W. Wiene, A. Wight, Elsie B. Wilkie.

Captain Hugh Bennet, M.B., C.M., G. Dick, M.B., Ch.B., O. St. John Moses, M.D., and P. Murison, M.B., C.M., have passed the final examination for the degree of the B.Sc. in the Department of Public Health.

UNIVERSITY OF GLASGOW.

SUMMER GRADUATION CEREMONY.

THE Graduation in Medicine, which marks the close of the summer session, took place in the Bute Hall on July 19th. Principal Story presided, and there was a large attendance of the friends of the successful students. The Dean of the Faculty of Medicine, Professor McCall Anderson, presented the graduates, seven of whom were ladies, who were received with loud cheering. Professor Robert Muir, of the Chair of Pathology, gave the usual graduation address, in the course of which he offered some words of advice to those who were leaving the University. He impressed on them the importance of thoroughness, patience, and honesty in all their work. In no profession was the element of honesty more outstanding than in that of medicine, and he urged all to be worthy of the trust put in them. He referred also to the importance of cultivating habits of careful and systematic observation, and recording the results, whether they happened to be engaged in practice or in original research. Their work would be worth doing, and it was worth while to do it well.

The following degrees were conferred:

Doctors of Medicine (M.D.).—*J. F. Gemmill, M.A., M.B., C.M. (Thesis—A Teratological Study); †J. Adam, M.A., M.B., C.M. (Thesis—Remarks on the Nature and Treatment of Asthma); †W. C. Allan, M.B., C.M. (Thesis—Extrauterine Pregnancy); †J. L. Yuill, M.B., C.M. (Thesis—On the Mental Deterioration in Epilepsy and Hemiplegia); B. Buttercase, M.B., C.M. (Thesis—Appendicitis, with Cases).

Bachelors of Medicine and Masters in Surgery (M.B., C.M.).—J. Lunn, A. M'D. Novin, J. J. Robertson, J. W. Semple, A. Stevenson.

Bachelors of Medicine and Bachelors of Surgery (M.B., Ch.B.).—*C. C. Cuthbert, M.A., †A. M'Kendrick, †L. Findlay, †A. Wilson, †E. W. Sharp, †A. R. Macfurkin, †J. F. Bennett, †A. Mair, †W. B. I. Pollock, M. Aikman, M.A., G. Arthur, G. Barbour, T. T. Bathgate, A. Binning, A. Birch, H. E. Brown, J. E. Brownlie, T. Carruthers, M.A., A. H. Cassells, E. P. Cathcart, Daisy

Annabella Murdoch Clark, B.Sc., J. T. Clark, R. Clark, A. W. W. Davidson, F. L. Dickson, D. C. Douglas, J. P. Duncan, B.Sc.; A. Fraser, M.A., Lizzie Thomson Fraser, G. Garrey, W. Gibson, E. Gillespie, W. Girvan, Helen Mary Gordon, C. A. Gourlay, M.A., J. Gracie, C. H. Gunson, A. W. Harrington, I. M. Huey, T. Inglis, P. Jones, W. B. Kerr, J. D. Laidlaw, J. F. Lambie, N. M. Leys, Mary Forbes Liston, J. Lockhart, A. Logan, D. Longwill, J. Mackinnon, G. T. Maclean, M.A., B. M'Phee, R. MacN. Marshall, A. Martin, M.A., B.Sc., J. Millar, M.A., E. W. Milne, A. R. Moir, A. Munro, R. Rennie, J. D. Richmond, Margaret Mitchell Ritchie, D. Russell, J. Scott, M.A., J. Shearer, D. Ap Simon, C. C. W. Smith, J. J. Smith, J. S. Smith, A. Stewart, Gertrude Florence Fleetwood Taylor, R. Taylor, T. R. Tierney, J. C. Turnbull, W. D. Walker, G. White, M. W. Williams, T. W. Wilson, H. P. Wright.

* With Honours, † With Commendation.
‡ Gains the Brunton Memorial Prize.

UNIVERSITY OF ABERDEEN.

THE following degrees and diplomas were conferred at the graduation ceremony on Wednesday, July 18th:

Degree of Doctor of Laws (LL.D.).—Major David Prain, M.A., M.D., I.M.S., Director of the Botanic Gardens, Calcutta (*honoris causâ, in absentiâ*).

Degree of Doctor of Medicine (M.D.).—C. G. Cowie, M.A., M.B., C.M. (Thesis—Movable Kidney); W. S. Geddie, M.B., C.M. (Thesis—The Apparently Notable Increase in the Number of Cases of Cancer in Queensland and the Probable Causes); A. B. Lyon, M.B., C.M. (Thesis—The Theory and Practice of Counter-irritation); * A. H. Mackie, M.A., M.B., C.M.; (Thesis—A Macroscopic and Microscopic Comparison of the Vertebrate Brain, with Cases of Brain Lesion in the Human Subject.)

* Worthy of "Commendation."

Degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.) (Old Ordinances).—A. A. Hingston, B.A.

Degree of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) (New Ordinances).—A. Bisset, W. F. Bisset, A. J. Craigen, W. F. Croll, M.A., A. Davidson, J. A. S. Grant, M.A., H. Johnstone, J. Macfarlane, Myra Mackenzie, C. F. Marr, H. P. Sheppard, H. W. M. Strover, F. H. Wessels, B.A., J. Wilson, C. M. Young.

Diploma in Public Health.—D. H. Ainslie, M.B.Aberd., A. V. Anderson, M.B.Aberd., †T.Fraser, M.A., M.B.Aberd., N. J. Sinclair, M.B.Aberd., D. Sivewright, M.A., M.B.Aberd.

† With credit.

The John Murray Medal and Scholarship and the Alexander Anderson Scholarship have been awarded to Mr. H. Fraser, M.B., Ch.B.

A distinguishing feature of the graduation ceremony lay in the conferring of the degree of M.B., Ch.B. on Miss Mackenzie, the first lady medical graduate of Aberdeen University.

UNIVERSITY COLLEGE, CARDIFF.

AT the recent examinations in the University of Wales, A. D. Edwards completed the examination for the B.Sc. degree in Physiology, Anatomy, and Organic Chemistry.

CONJOINT BOARD IN IRELAND.

THIRD PROFESSIONAL EXAMINATION.—Candidates have passed this Examination as undernoted:

Honours, in Order of Merit.—J. P. Byrne, A. H. B. Hartford, J. M. S. Levis, J. F. L. Keegan.

In All Subjects.—P. L. Crosbie, A. Ellenbogen, E. Glenny, P. J. Hanafin, M. J. Johnston, Cecil R. Millar, C. J. O'Connell, W. H. M'M. Phelan, R. A. Ross, Mary J. Shire, R. C. Vernon, J. White, T. J. Wright.

Completed the Examination.—R. Allison, S. W. Cumming, J. R. Magee, J. F. Peart.

FINAL EXAMINATION.—Candidates have passed this examination as undernoted:

In All Subjects.—*†Miss A. M. Treasury Wala, *‡A. La Touche Darley, ‡M. Ballasby, ‡W. N. L. Cherry, ‡S. W. Cumming, ‡W. Davis, ‡H. Graff, ‡C. W. Holden, ‡J. J. O'Halloran, ‡C. J. Sullivan, ‡H. H. Swanzy.

Completed the Examination.—†L. A. Hare, R. G. Mostyn, ‡J. L. Gilmartin, ‡R. A Johnston, ‡D. J. F. O'Donoghue, ‡D. Power, ‡A. B. Stephenson.

* With Honours. † Four Years' Scheme. ‡ Five Years' Scheme.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, JULY, 1900.—The following candidates passed in:—

Surgery.—H. C. Cooper, St. George's Hospital; H. S. A. Davies (Section II), Michigan; C. J. E. Edmonds (Section I), St. Thomas's Hospital; E. Evans (Sections I and II), Royal Free Hospital; J. S. Goodall (Sections I and II), Middlesex Hospital; T. B. Haig (Section II), St. Bartholomew's Hospital; S. K. K. Haslam (Section I), Royal Free Hospital; H. N. Horton (Section I), Middlesex Hospital; J. Klein (Sections I and II), St. Mary's Hospital; R. Lamort, Bordeaux; R. A. Lyster, Birmingham; C. J. Marsh, University College Hospital; W. T. Meagher, Cork; R. E. Roberts (Sections I and II), St. Thomas's Hospital; F. Robinson (Sections I and II), Royal Free Hospital; E. F. Rose (Section I), St. Bartholomew's Hospital; W. C. Stanham, London Hospital; M. H. Style (Sections I and II), Royal Free Hospital; C. H. St. M. W. Toke, St. George's Hospital; E. Tyson, St. Bartholomew's Hospital.

Medicine.—P. J. R. Bucknill (Section I), Manchester; F. P. Bush, Guy's Hospital; C. W. Gibson, Guy's Hospital; J. S. Goodall (Section II), Middlesex Hospital; T. B. Haig (Sections I and II), St. Bartholomew's Hospital; S. K. K. Haslam (Section I), Royal Free Hospital; D. E. Lockwood (Section I), Royal Free Hospital; R. E. Roberts (Sections I and II), St. Thomas's Hospital; F. Robinson (Sections I and II), Royal Free Hospital; J. Waters (Sections I and II), Middlesex Hospital; A. J. Watson (Section I), St. Mary's Hospital; H. F. Willington, Manchester.

Forensic Medicine.—F. P. Bush, Guy's Hospital; C. W. Gibson, Guy's Hospital; T. B. Haig, St. Bartholomew's Hospital; R. E. Roberts, St. Thomas's Hospital; F. Robinson, Royal Free Hospital; J. Waters, Middlesex Hospital; A. J. Watson, St. Mary's Hospital.

Midwifery.—C. H. G. Atkyns, Birmingham; R. V. Cowey, Edinburgh and St. Mary's Hospital; A. McC. Dallas, Guy's Hospital; H. F. Willington, Manchester.

The diploma of the Society was granted to F. P. Bush, H. C. Cooper, A. McC. Dallas, H. S. A. Davies, E. Evans, J. S. Goodall, T. B. Haig, J. Klein, R. A. Lyster, W. T. Meagher, W. C. Stanham, M. H. Style, C. H. St. M. W. Toke, and E. Tyson.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE BRITISH-INDIAN CHINA FIELD FORCE.

We are informed that the medical officers detailed for the field force despatched from India for service in China is as follows:—

P.M.O., Colonel Bookey, I.M.S.
1st Madras Pioneers: Lieutenant-Colonel Esmond White, I.M.S.
1st Bengal Lancers: Major Mould, I.M.S.
24th Punjab Infantry: Captain Whitchurch, I.M.S.
1st Sikhs: Captain Henrick, I.M.S.
7th Rajputs: Captain Walton, I.M.S
22nd Bombay Infantry: Captain Price, I.M.S.
No. 39 Native Field Hospital: Major W. W. White, I.M.S. (in charge), Captain Hamilton, I.M.S., Lieutenant McCay, I.M.S., Lieutenant Stewart, I.M.S.
No. 42 Native Field Hospital: Major Marshall, I.M.S. (in charge), Captain Harris, I.M.S., Captain Moorhead, I.M.S., Lieutenant Gidney, I.M.S.
No. 43 Native Field Hospital: Major Wyville Thomas, I.M.S. (in charge), Captain Carr, I.M.S., Lieutenant Meakin, I.M.S, Lieutenant Willmore, I.M.S.
No. 47 Native Field Hospital: Major Fooks, I.M.S. (in charge), Captain Jenney, I.M.S., Lieutenant Condon, I.M.S., Lieutenant Stewart, I.M.S.
Native General Hospital of 400 beds: Lieutenant-Colonel Waddell, I.M.S. (in charge), Major Burton, I.M.S., Lieutenant Fenton, I.M.S., Lieutenant Megaw, I.M.S.
One section No. 22 British Field Hospital: Lieutenant-Colonel Rainsford, R.A.M.C. (in charge), Major Cree, R.A.M.C.

Lord George Hamilton stated in the House of Commons on July 23rd that there is a good hospital at Wei-Hai-Wei, and good stone barracks which could be converted to hospital use if required. The Government of India, which has already provided a hospital ship, is prepared to supplement it by converting three transports into hospital ships. The American ship *Maine* has been placed at the disposal of the British Government to be used at one of the Chinese ports, and the Maharajah Scindhia of Gwalior has offered a fully-equipped hospital ship, upon which he is willing to spend 20 lakhs of rupees.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty:—SAMUEL W. VASEY, Fleet Surgeon to the *Centurion*, July 20th; JAMES MCC. MARTIN, Staff-Surgeon, to the *Barfleur*, July 20th.

Deputy-Inspector-General RINSO R. SICCAMA died at Weymouth on the 19th inst. He was appointed Surgeon, September 22nd, 1859; Staff-Surgeon, July 6th, 1868; Fleet-Surgeon, July 8th, 1878; and Deputy-Inspector-General, June 1st, 1886, and retired from the service September 30th, 1890. He was Staff-Surgeon of the *Modeste* during the operations in the Malay Peninsula in 1875-6, receiving the medal. He was Fleet-Surgeon of the *Northumberland* during the Egyptian war of 1882, and landed in medical charge of the Suez Canal Guard (medal and Khedive's bronze star). He was Fleet-Surgeon in charge of the Royal Naval Hospital at Haulbowline from July, 1883 to June, 1886, and Deputy Inspector-General in charge of the Royal Naval Hospital at Chatham from February, 1888, to October, 1890.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL J. MCNAMARA, now at Malta, has been appointed Principal Medical Officer at Cork, *vice* Colonel W. E. Riordan, who has retired.

Brigade-Surgeon THOMAS WRIGHT died at Vanbrugh Park, Blackheath, on July 20th, at the age of 68. He entered the service as Assistant Surgeon, April 21st, 1854; became Surgeon, June 20th, 1865; Surgeon-Major, March 1st, 1873; and Honorary Brigade-Surgeon on retirement, May 7th, 1884. He served in the Eastern campaign in 1854-5 with the 20th Regiment, and was at the battles of Alma and Inkerman, and at the siege of Sebastopol (medal with three clasps, and Turkish medal); in the Indian Mutiny campaign from November, 1857, with the 38th Regiment, including the capture of Meangunge and the siege and capture of Lucknow (medal with clasp), and in the Afghan war in 1878-80 (medal).

Surgeon-Major ARTHUR CROKER died at Seaford, Sussex, on July 18th, in his 60th year. He was first appointed to the Army Medical Department, June 26th, 1854, but resigned December 26th, 1856, and was reappointed May 7th, 1858; he became Surgeon-Major, April 1st, 1873, and retired from the service, November 17th, 1877.

The following are returning from South Africa invalided: Majors GREIG and ANDERSON, R.A.M.C., Surgeon-Captain MORRIS, Militia Medical Staff.

Civil Surgeon D. M. ADAMS is reported dangerously ill at Bloemfontein.

Major C. G. WOODS, Lieutenant J. W. H. HOUGHTON, and Lieutenant R. D. JEPHSON have been discharged from hospital to duty.

ARMY MEDICAL RESERVE.

SURGEON-LIEUTENANT EDMUND E. DYER, M.B., 7th Volunteer Battalion Princess Louise's Argyll and Sutherland Highlanders, to be Surgeon-Lieutenant, July 21st.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL CHARLES J. H. WARDEN, Bengal Establishment, died at Highbury, London, on July 18th, quite suddenly. He was appointed Assistant-Surgeon, March 31st, 1874, and became Surgeon-Lieutenant-Colonel, March 31st, 1894. He retired from the service on June 4th of the present year.

HINTS ON HEALTH FOR VOLUNTEERS IN CAMP.

SURGEON-LIEUTENANT H. WAITE, 2nd West York Royal Engineers (Volunteers) of Whingate, Armley, Leeds, has issued to the men of his corps a very handy collection of hints on hygiene entitled "How to Keep 'Efficient' from a Health Point of View." He points out that unless he maintains his health the soldier becomes useless, however efficient he may be in drill and shooting. He gives, therefore, short useful hints on the prevention of sore feet, chafing, chills, and diarrhœa; directions as to the best liquid to fill the water-bottle for a march or field day, when to drink and when to smoke. The importance of fresh air, of cleanliness of the camp, cooking pots, and person, of gymnastics and training are insisted on, and the first-aid treatment of some of the minor accidents which may occur in camp is explained. The eight pages of print, enclosed in a card cover, makes a small book suitable for the pocket. The idea of issuing such a code of health rules to volunteers is an excellent one, and might with advantage be followed in most corps. We recommend the idea to volunteer medical officers, especially at this time when so many corps are going into camp. Surgeon-Lieutenant Waite generously offers to send a copy of his directions to any volunteer surgeon who may wish to see it.

THE RELIEF OF KUMASSI.

COLONEL WILLCOCKS, in concluding his telegraphic report dated July 20th, on the operations which led to the relief of Kumassi, states that the services of Dr. McDowell, Principal Medical Officer, had been invaluable.

MEDICO-LEGAL AND MEDICO-ETHICAL.

Replies in this column are limited to questions affecting the legal interests and privileges of the medical profession at large. The column is not to be used as a medium for affording legal advice in private or personal matters as to which the applicant ought to consult his own solicitor.

From communications which we have received recently it appears to be necessary to repeat that we cannot undertake to express any opinion upon medico-ethical cases submitted to us unless we have before us statements by both parties to the controversy.

FALSE ASSUMPTION OF TITLE.

At the Garstang Petty Sessions, on July 5th, John Cubbin, of Precall-with-Yackensall, was summoned on information laid by Dr. Day, of Stalmine-with-Staynall, for that he, not being a registered medical practitioner within the Medical Acts, did wilfully and falsely pretend to be, and take and use the name and title of physician and surgeon, thereby implying that he was registered under the Act of 1858. It was also specifically charged against him that he had falsely adopted the titles of Doctor of Medicine and Master of Surgery. The prosecution was instituted by the Medical Defence Union.

According to a report which appeared in the *Preston Herald* of July 7th, it was stated in opening the case that the defendant had been appointed medical adviser to the following societies: the Oddfellows, Hambledon; the Salt Miners' Medical Club, Pressall; the Mechanics' Club, Stalmine; and the Pool of Bethesda Society, Pilling. The Secretary to the Mechanics' Club proved that the defendant had been appointed medical officer because he represented himself to be a physician and surgeon. It was also proved that he signed himself "Dr. Cubbin," and that he had a brass plate on his door representing him to be a physician and surgeon. Several persons who had been attended by the defendant were then called, one of whom proved that the defendant had represented himself to be a doctor, but had admitted that he was not registered.

The Bench found that the offences were proved, and fined the defendant £5, including costs, or a month's imprisonment with hard labour, in default of a distress. The fine was paid.

LANDLORD AND TENANT.

SURGEON writes: I would like to know if there is any book published defining the duties of landlord and tenant, regarding what each is expected to do to the inside and outside of a house.

*** It would be difficult, if not impossible, to find a book dealing specifically with the questions put by our correspondent. So much depends upon the repairing clauses, etc., which are inserted in a lease, that nothing short of a work dealing with the whole subject of landlord and tenant could be relied upon as a safe guide. The very best work on the subject is *The Law of Landlord and Tenant*, by Edgar Foa (2nd ed., 1895). On pp. 171-186 of this book there is an exposition of the liabilities of both landlord and tenant with regard to repairs. Repairs to "inside and outside" are dealt with on page 178. The work is an expensive one, but might be found in a public library!

ASSISTANTS AND HOLIDAYS.

JUSTEMENT asks the following questions: (1) To what holidays is an assistant entitled, his salary being paid as usual? (2) If during the principal's absence the assistant takes sole charge, should he have extra remuneration during the former's absence, or should the holiday granted to the latter be regarded as a *quid pro quo*?

*** (1) An assistant is entitled to a reasonable holiday, during which his salary must be paid by the principal. (2) If left in sole charge by his principal, he is entitled to increased remuneration during that period, which is usually settled by arrangement. His right to this extra remuneration is altogether independent of his claim to a reasonable holiday.

MEDICAL ADVERTISING.

DR. J. F. O'MALLEY (158, Brick Lane, London, E.), writes: My attention has been called to a letter signed "Puritan" in the BRITISH MEDICAL JOURNAL of July 21st. It gives a copy of a circular purporting to come from me, which is absolutely untrue. This circular was printed and issued without my knowledge or consent, and during my absence on my holidays in Ireland, by a secretary of a new provident Hebrew club for which I had agreed to act as surgeon. As soon as it came to my knowledge I forbade any further circulation, took measures to have all remaining copies destroyed, and declined to have any further connection with the club.

In a subsequent communication Dr. O'Malley has forwarded the following copy of a letter which he has received from the Secretary of the Club:

The Sir Edward Sassoon Lodge No. 5, Hebrew Order of Druids
(Held at "The Swan," 13, Bethnal Green Road).
M. Sawyer, Secretary,
39, Cookham Buildings,
Mount Street, Shoreditch. July 25th, 1900.

DEAR DR. O'MALLEY,—In reply to your letter of the 21st inst., I am very sorry indeed that you intend ceasing to have anything to do with the above-mentioned society, on account of me, as secretary to the above society, having had the billheads printed whilst you were away on your holidays in Ireland. I can assure you that what I did was done in the interests of the society, thinking thereby to increase the membership, and as you were the medical adviser *pro tem.*, I did not think I was doing wrong.

The responsibility of having these billheads printed rests wholly with myself. I give you full permission to make use of this letter to any advantage you may deem fit, as I do not like to think that I have in any way been instrumental in causing you any inconvenience.

Yours faithfully,
M. SAWYER, Secretary.

Dr. J. O'Malley, 26, Calvert Avenue, Shoreditch, N.E.

SECRET COMMISSIONS.

A MEMBER has forwarded us a copy of a polygraphed circular he has received from a maker of invalids' chairs at Coventry, in which it is stated that "The price of a chair is £22, and should you care to recommend it I will allow you £3 on each order you secure." We trust that no member of the medical profession will allow himself to be seduced by this offer.

THE DUTIES OF DISPENSING CHEMISTS.

D. S.—(1) We know of no legal machinery for compelling a chemist to get out of bed to make up medicine. (2) A bottle of the medicine purporting to be made up by the chemist in question according to the prescription might be sent for analysis, and it proved to be deficient in important particulars he could be prosecuted. (3) The only obvious remedy would appear to be for our correspondent to dispense his own medicines.

PARTNERSHIP AGREEMENTS.

X.Y.Z.—It is impossible to answer this question without accurate knowledge of the terms of the partnership agreement. Our correspondent should therefore consult his solicitor.

THE OBLIGATIONS OF A *LOCUM TENENS*.

D.—It would have been better had our correspondent informed his late principal of his intention to set up in practice in the district before instead of after acting for him as *locum tenens*. By acting as *locum tenens* he incurred an obligation which should prevent his accepting as patients any persons seen by him previously as his late principal's representative. The communication referred to does not [illegible] correspondent "to write a letter," but merely to make a statement which we understand he is asked to give an assurance that he will do that which we have said he is ethically and in honour bound not to do, namely, not to accept as patients any of those whom he had previously attended as the substitute for Dr. R.

OBITUARY.

JAMES RODGER, M.D.,

Consulting Physician, Aberdeen Royal Infirmary

WE regret to announce the death of Dr. James Rodger, of Aberdeen, which occurred on July 23rd. Dr. Rodger graduated as M.B., C.M., with highest honours, in 1865, and studied medicine later in Paris, Vienna, and Berlin.

His work as a surgeon in the Franco-German war, both on the field and in the organisation of hospital arrangements for

the wounded, was highly valued. In Aberdeen Dr. Rodger held the post of Demonstrator of Anatomy under the late Professor Struthers, and for some seventeen years was Pathologist to the Royal Infirmary. In 1897 he retired from the active staff of that institution, becoming Honorary Consulting Physician. Besides his work at the Infirmary, Dr. Rodger was for several years Physician to the General Dispensary, and was appointed by the University Court to the post of Examiner in Anatomy, Pathology, and Medicine for medical degrees.

Taking an active part, as he did for many years, in the medical societies in Aberdeen, and keenly interesting himself in the medical side of the Volunteer movement, Dr. Rodger was known to a large circle, not only as a physician of wide knowledge, but as a man of much sound judgment and common sense. His loss will be much felt.

MR. W. C. STORER BENNETT, F.R.C.S., L.R.C.P., L.D.S., who died quite suddenly on July 19th, at the early age of 48, had always taken an active part in the advancement of dental surgery. At the time of his death he was President of the Representative Board of the British Dental Association; his presidency of the Odontological Society had only lately expired, and he had been very recently appointed Examiner in Dental Surgery by the Royal College of Surgeons of England. Always fond of teaching, he devoted to it a great deal of time and pains, and occupied for a considerable period of years the posts of dental surgeon and lecturer on dental surgery both at the Middlesex Hospital and the Dental Hospital. As time went on, his abilities and his personal qualities had won for him a steadily growing appreciation at the hands of his professional brethren, by whom his loss will be much felt. In the direction of scientific work his communications were not very numerous, but the painstaking care which he devoted to such matters rendered what he wrote or said always deserving of careful consideration. For some time past he had suffered from severe attacks of cardiac distress, and he was fully cognisant that his hold upon life was very precarious. He accepted the position with quiet courage, and, although living carefully and compelled to give up active exercise, was unwilling to dissociate himself from his interests outside actual practice, preferring to continue to hold offices more or less of a public nature, so long as he might be able to do so. Mr. Bennett was not married, but he had adopted two cousins, whose home was with him.

WE regret to record the death at Bloemfontein of urgeo n Lieutenant-Colonel WILLIAM WELLINGTON LAKE, Militia Medical Staff Corps. He was educated at St. Thomas's Hospital. He took the diplomas of L.S.A. in 1876, and of M.R.C.S. in 1877. He was formerly Obstetric House-Physician at St. Thomas's Hospital and House-Physician at the City of London Hospital for Diseases of the Chest. In later years he devoted himself to sanitary science, took the Diploma of Public Health at Cambridge, and was elected a Fellow of he Society of Medical Officers of Health and a member of the Sanitary Institute. He contributed several articles on sanitary science to the *St. Thomas's Hospital Reports*, to the *Public Health Journal*, and to our own columns. He was highly popular in Guildford, where he was Medical Officer of Health, Medical Officer of the Isolation Hospital, and Deputy-Coroner for West Surrey. The present war was not his first experience of active service, for during the Russo-Turkish war in 1878 he served as Surgeon in the Ottoman army, and was awarded the medal and the Fourth Class of the Mejidjieh. He was appointed Surgeon-Major in the Militia Medical Staff Corps in 1898. Early in the present year he volunteered for service in South Africa. He was gazetted Surgeon-Lieutenant-Colonel on February 14th, and was appointed Officer in charge of No. 10 General Hospital, which was stationed at Bloemfontein, where his death occurred on July 13th from Bright's disease.

THE death has been announced of Dr. DENNIS BARRY O'FLYNN, M.A., who after a very promising career as a student, discharged for nearly half a century with much energy and devotion the duties of a medical practitioner in Carrignavar and Glanmire, county Cork. Dr. O'Flynn was an energetic man, and though he worked in a quiet and unostentatious way, giving much time and labour to his patients, he was ever ready to take part in any movement for the relief of the poor, and for the improvement of their social and sanitary condition. He will be long remembered in Glanmire for deeds of charity to the poor, and acts of self-abnegation in their interests, and his successful efforts to overcome the prevalence of enteric fever in his district by obtaining a proper water supply were much appreciated in the county of Cork. He was President of the Poor-law Medical Officers' Association of Cork, and Certifying Factory Surgeon.

The news has just been received in England of the death, last May, of Miss ALICE MARSTON, L.R.C.P.I., and L.M. She had only just left Pekin, and was on her way home on furlough. The cause of her death was cerebral hæmorrhage, brought on apparently by sea-sickness, which she had much dreaded, knowing that she was the subject of Bright's disease. She was taken on shore at Nagasaki, and died in the Bishop's house there. Miss Marston was in charge of an important mission hospital in Pekin, where she had done excellent work in connection with the Society for the Propagation of the Gospel and the North China Mission. She qualified in 1881, and has worked in Pekin ever since.

DR. ASHHURST, jun., who died at Philadelphia on July 7th, was born in Philadelphia in 1839, and took his degree in the University of Pennsylvania in 1860. After serving as an assistant surgeon throughout the Civil War, he became a member of the staffs of several hospitals in Philadelphia. In 1877 he was appointed Professor of Clinical Surgery in the University of Pennsylvania, and in 1888 he was elected to the John Rhea Barton Chair of Surgery. This position he resigned a few months ago. Dr. Ashhurst was the author of numerous contributions to professional literature, and his name was well known as the editor of the *International Encyclopædia of Surgery*. He was also prominent in charitable and Church work.

AMONG the medical victims of the Pekin massacre it is probable that Dr. J. J. MATIGNON, Physician to the French Legation, must be included. He was well-known for his writings on Chinese medicine and similar subjects. He was born in Eyenesse in the Gironde in 1866, and took the degree of doctor of medicine at Bordeaux in 1892. He then entered the service of the French army, attaining the rank of Médecin-Major de 2me classe in 1899. He had been attached to the French Legation since 1894. Dr. Matignon's wide scientific knowledge and professional skill and his personal character had gained for him the esteem and confidence of the whole European colony. He was about to be made Knight of the Legion of Honour, for which distinction he had been recommended no fewer than four different times.

DR. J. J. SKENE of Brooklyn, who died recently, was a native of Scotland, having been born at Fyvie in Aberdeenshire in 1838. At the age of 19 he went to the United States, and soon after his arrival there he entered the University of Michigan as a student of medicine. After a time he migrated to the Long Island College Hospital in Brooklyn, where he graduated in 1863. He served as a surgeon in the Civil War, after which he returned to Brooklyn, when he became Adjunct Professor at the Long Island Medical College. Later he became Professor of Gynæcology in the College, and for a long time he filled the office of Dean. He resigned his appointments about a year ago. Dr. Skene had been President of the New York Obstetrical Society and of the American Gynæcological Society. He was the author of numerous contributions to medical literature, and his book on diseases of women made his name well known on both sides of the Atlantic. He was a lover of art, and was himself a sculptor of no mean skill.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Professor Gustav Born, of Breslau, distinguished as an anatomist and embryologist; and Dr. W. W. Sutugin, member of the Medical Council of the Russian Ministry of the Interior, formerly lecturer on gynæcology at the Military Medical Academy, and physician to the St. Petersburg Maternity, aged 60.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,486 births and 3,662 deaths were registered during the week ending Saturday last, July 21st. The annual rate of mortality in these towns, which had been 14.5 and 15.6 per 1,000 in the two preceding weeks, further rose to 16.4 last week. The rates in the several towns ranged from 10.0 in Huddersfield, 10.7 in Cardiff, 11.6 in Burnley, and 11.7 in Bristol to 21.0 in Manchester, 22.2 in Salford, 23.0 in Sunderland, and 23.6 in Liverpool. In the thirty-two provincial towns the mean death-rate was 16.7 per 1,000, and exceeded by 0.6 per 1,000 the rate recorded in London, which was 16.1 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2.5 per 1,000; in London this death-rate was equal to 2.6 per 1,000, while it averaged 2.4 in the thirty-two provincial towns, among which the highest zymotic death-rates were 4.2 in Leeds, 4.3 in Salford, 4.4 in Sheffield, and 4.8 in Derby. Measles caused a death-rate of 1.0 in Huddersfield, 1.4 in Oldham, 1.8 in Sunderland, and 2.9 in Derby; scarlet fever of 1.5 in Blackburn; whooping-cough of 1.0 in Liverpool and in Bolton, and 1.1 in Blackburn; and diarrhœa of 1.7 in West Ham, in Salford, and in Sheffield, 1.8 in Leeds, 1.9 in Liverpool, and 2.7 in Birkenhead. The mortality from "fever" showed no marked excess in any of the large towns. The 69 deaths from diphtheria in the thirty-three towns included 21 in London, 10 in Sheffield, 6 in Leicester, 5 in Leeds, 4 in Cardiff, and 4 in Liverpool. No fatal case of small-pox was registered either in London or in any of the thirty-two provincial towns. There were 14 small-pox patients under treatment in the Metropolitan Asylum Hospitals on Saturday last, July 21st, against 17 at the end of each of the two preceding weeks; one new case was admitted during the week, against 4 in each of the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 1,754 to 1,861 at the end of the six preceding weeks, had further risen to 1,877 on Saturday last; 222 new cases were admitted during the week, against 210, 229, and 208 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, July 21st, 1,012 births and 588 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had declined from 17.9 to 17.2 per 1,000 in the three preceding weeks, rose again to 19.0 last week, and was 2.6 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 13.5 in Perth and 14.3 in Dundee to 19.7 in Greenock and 22.2 in Glasgow. The zymotic death-rate in these towns averaged 3.3 per 1,000, the highest rates being recorded in Glasgow and Paisley. The 317 deaths registered in Glasgow included 2 from small-pox, 10 from measles, 2 from scarlet fever, 3 from diphtheria, 16 from whooping-cough, 10 from "fever," and 23 from diarrhœa. Six fatal cases of measles, 2 of scarlet fever, 3 of diphtheria, and 4 of diarrhœa were recorded in Edinburgh. Four deaths from diarrhœa occurred in Dundee; 2 from whooping-cough and 3 from diarrhœa in Aberdeen; and 2 from whooping-cough and 2 from diarrhœa in Paisley.

CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.

SINCE the laboratory commenced its regular work last winter, on the election of Dr. Savage as bacteriologist, the various local authorities, as well as the medical men in the district, have availed themselves to such an extent of the advantages offered, that it has been found necessary to appoint Mr. John H. Sugden, B.Sc.Vict., Public Analyst for Leeds and North Riding, Yorks, assistant to the Bacteriologist. The work of the assistant will be chiefly chemical.

INFECTIOUS DISEASES IN EDINBURGH.

DURING the month of June 940 cases of infectious disease were reported—typhus fever 4, enteric fever 28, diphtheria 69, scarlet fever 79, measles, 760. During June, 1899, the number reported was 503.

THE LINCOLN WORKHOUSE MEDICAL APPOINTMENT.

THE difficulty which the Lincoln guardians have had in filling up the vacant appointment of medical officer to the workhouse appears to be settled for the present. For this appointment the salary for years past has been £45, which after experience Dr. McFarland, the late holder of the appointment, found to be quite unremunerative, and declined to continue in office for less than £80 per annum. This salary the guardians declined to give, and since Dr. McFarland's resignation they have offered £60 and £70 as salary. Even for the latter sum no local doctor applied for the appointment, but there was one application from Edinburgh, and so it was Hobson's choice, as admitted by one of the members of the Board, and Dr. Dunlop was appointed. This gentleman soon found that the appointment was not worth holding, and retired without giving any formal notice, and by so doing left the guardians in a serious fix. The fact then became apparent to them that they could not obtain a medical officer on their own terms, and as they did not wish to incur the responsibility of being without one, for which they could have had no possible excuse, they have decided to make the reappointment on the terms asked for by Dr. McFarland when he decided to resign.

We gather from a local paper that several members of the Board consider £80 as only a reasonable salary, and one member spoke of the Lincoln guardians as having been thoroughly well beaten in the recent contract. It is with great satisfaction we note this result. The raising of the salary from £45 to £80 per annum will perhaps indicate to other Boards of Guardians that they may have the same difficulties as have occurred at Lincoln in case of medical appointments being vacated solely on account of non-remunerative stipends, and to the probability that even young doctors after a medical curriculum of five years will not be anxious to serve as Poor-law medical officers unless they are fairly paid for the services they are called on to perform.

PUBLIC VACCINATION.

DR. A. S. UNDERHILL, M.D., D.P.H., Co. Public Vaccinator, Tipton U.S.A. (West Bromwich), writes: I have found when mentioning the subject to public vaccinators that considerable differences of opinion are expressed as to what method should be adopted to meet the requirements of the Local Government Board inspectors of vaccination. I venture, therefore, to record a method suggested to me by an inspector which I have found to be most efficacious and most simple in execution. The armamentarium should be a bottle of rectified spirit, an aluminium-pointed vaccinator (Messrs. Down Brothers), a small bundle of "provac" (Messrs. Harris, Birmingham), cotton wool, an aseptic vaccination pad, and an ejector (Down Brothers). A piece of cotton wool is broken off, some spirit is poured upon it; the arm is well rubbed with this, which cleanses the arm, and renders it aseptic: the wool is then set on fire, and the vaccinating instrument held in the flame to render it aseptic. The vaccination tube is now unsealed, placed in the ejector, and the lymph deposited upon the arm in four places. The arm is now scarified, the lymph well rubbed in, and allowed to dry for a short time, the "provac" (a kind of goldbeater's skin) is now moistened around the edges, and placed over the scarified arm. It should remain there for some days, when the nurse should cover the resulting vesicles with the aseptic pad.

With this treatment my results have been uniformly good. I had formerly a great difficulty in procuring an antiseptic sufficiently efficacious which did not render the vaccine useless. The spirit quickly evaporates and leaves the arm dry and prepared for scarification.

POSTPONEMENT OF VACCINATION.

J. C.—The 4th Schedule of the Vaccination Order, 1898—Instructions to Vaccination Officers—paragraph 8 provides that "When certificates of postponement are delivered to him on the form attached, to the 'Notice of the Requirement of Vaccination,' he shall see that the parent or other person having the custody of the child is supplied with a new form of this notice, with the required particulars duly filled in. Copies of the form of 'Notice of Requirement of Vaccination' can be obtained by the vaccination officer on his applying to the Registrar."

Many vaccination officers have a slip printed, about 7 or 8 inches by 1½ or 2, gummed at the left-hand narrow margin for affixing to the face of the duplicate notice to this effect:—

"The certificate postponing the vaccination of your child to
has been duly received.

If by that date the child is still unfit for vaccination, another certificate of postponement should at once be sent in; or, if fit, the certificate of successful vaccination.

The necessary forms are forwarded herewith."

This is forwarded by return of post to the parent of the child whose vaccination is postponed. Where this course is adopted, there is always a certificate form waiting for the vaccinator when he visits after postponement. Otherwise certificate forms can be obtained by application to the vaccination officer, who receives them from the registrar of births and deaths. We do not know of any special register for postponement cases, but should advise the use of an ordinary scribbling diary, jotting down the name and any required particulars under the date to which the vaccination is postponed.

HOSPITAL AND DISPENSARY MANAGEMENT.

THE LONDON HOSPITAL.
NEW GYNÆCOLOGICAL THEATRE.

THE operating theatre in connection with Victor Ward at the London Hospital has been entirely renewed and refitted. The former small windows have been removed, and a large shallow three-light bay window has been substituted, having hopper lights at the top, which open inwards for ventilation. In addition to these ventilating lights, a powerful electric fan is provided as an extract ventilator. The old flooring has been removed, and a new floor of polished terrazzo or marble mosaic has been laid. All corners and angles of this floor have been rounded to facilitate cleansing. The plastering has been entirely stripped from the walls, which have been rendered water-tight with Portland cement, and covered with Griffiths's "opalite," the upper part being dead white, and the lower part electric blue, with a brown dado line. All angles are rounded. The ceiling is covered with "Emdeca," a very thin metal sheeting, with coloured enamelled decoration burnt on. The fireplace is an ordinary slow-combustion Teale's fireplace, with marble hood and glazed brick jambs.

Electric lighting is used when required. The lamps are arranged in one long pendant of eight lamps in the centre, with a hanging light of three lamps at each corner of the operating table. Gas brackets are also provided to be used in case of need. The nurses' fittings in the theatre comprise a Tylor's large oval washhand basin worked with foot treadles for hot, cold, and waste; marble slabs, a Cliff's enamelled [illegible] sink supplied with hot and cold water, the taps having patent [illegible] nozzles. An enamelled flushing-rim slop sink is also provided, with marble draining board. In another corner of the room is provided a marble washhand stand with two tip up basins for the use of the medical staff. There are also slabs and brackets for the sterilising apparatus. The operating table is that designed by Dr. Boldt of New York, and is made of enamelled iron and glass. The various tables for drugs, basins and apparatus, the instrument case, and the stand for solutions are also made of enamelled iron and glass. The woodwork is painted white and varnished. The pipes to all taps have secondary stopcocks, so that they can be repaired without interfering with the service to other fittings.

The building was carried out by the resident surveyor, Mr. J. A. Thornhill, from the specification of the architect to the hospital, Mr. Rowland Plumbe, F.R.I.B.A.

MEDICAL NEWS.

SUCCESSFUL VACCINATION.—Dr. Brand, public vaccinator for the Driffield district of the Driffield Union, has been awarded the extra Government grant for efficient vaccination for the sixth time. Dr. W. H. Gregory has received the grant for efficient vaccination in the second division of the Beverley Union, and Dr. J. Chesnutt, of Howden, East Yorkshire, has received the grant for the satisfactory state of vaccination in his district.

HOUSING OF THE WORKING CLASSES.—About 400 delegates have been appointed by local authorities to attend the conference on the Housing of the Working Classes organised by the Sanitary Institute. As stated last week the meetings of the conference will take place at the house of Royal Medical and Chirurgical Society on Monday and Tuesday next, beginning on each day at 10 A.M. Further particulars can be obtained from the Secretary of the Institute, Margaret Street, Regent Street, W.

THE MEDICAL CHARITABLE SOCIETY FOR THE WEST RIDING OF YORKSHIRE.—The seventy-second annual meeting of the Society was held at Harrogate. Dr. J. H. Bell, of Bradford, was in the chair, and, after the election of forty-three new members and other formal business, the sum of £1,230 was voted to disabled practitioners, widows, and orphans. It was decided to hold the next annual meeting at Bradford. Since the commencement of the charity the sum of £34,303 has been given away, and the average annual expenses of management have been under £20. The members subsequently dined together at the new Hotel Majestic.

MEDICAL VACANCIES.

The following vacancies are announced:

BIRMINGHAM CORPORATION.—Second Assistant Medical Officer to the City Hospital, Lodge Road. Salary, £120, with board, residence, etc. Applications to the Medical Superintendent.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary, £150 per annum, with allowance of £50 for cab hire, and furnished rooms, etc. Applications to the Secretary by August 13th.

BOURNEMOUTH: BOSCOMBE HOSPITAL.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Secretary by August 13th.

BIRMINGHAM WORKHOUSE.—Medical Officer for three weeks. Board, apartments, and laundry found. Applications, stating terms, to the Clerk to the Guardians.

BOURNEMOUTH ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £80 per annum, with board. Applications to the Chairman of the Committee by September 6th.

BRECON INFIRMARY.—Resident House-Surgeon, unmarried. Salary, £100 per annum, with furnished apartments, board, etc. Applications to the Secretary, 6, Bulwark, Brecon.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon. Applications to the Secretary by September 10th.

CARDIFF: UNIVERSITY COLLEGE.—(1) Demonstrator and Assistant Lecturer in Anatomy; (2) Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120. Applications to the Secretary by September 8th.

CARLISLE: CUMBERLAND INFIRMARY.—(1) House-Surgeon. Appointment for one year. Salary, £70. (2) Assistant House-Surgeon for seven months. Salary at the rate of £40 per annum. Board, lodging, and washing provided in each case. Applications to the Secretary by August 22nd.

CHORLEY HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board and lodging. Applications to the Honorary Secretary.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary, £100 per annum, with board, etc. Applications to the Secretary by September 8th.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer. Salary £120, rising to £150, with board, furnished apartments, etc. Applications to the Medical Superintendent by August 11th.

DUNDEE COMBINATION POORHOUSES AND HOSPITAL.—Resident Medical Officer, Salary, £100 per annum, with board and furnished apartments. Applications to the Clerk of Council, Parish Council Chambers, Dundee, by July 31st.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary, £140, rising to £160, per annum, with board, laundry, and attendance. Applications to the Medical Superintendent.

GLASGOW: ST. MUNGO'S COLLEGE.—Bellahouston Chair of Anatomy. Emoluments, £300 per annum. Applications to the Secretary, 93, West Regent Street, Glasgow, by August 7th.

GLASGOW UNIVERSITY.—Professor of Clinical Medicine. Salary about £112 and share in fees. Applications to the Secretary of the Glasgow University Court, 91, West Regent Street, Glasgow, by September 12th.

GOSFORTH: CITY ASYLUM.—Assistant Medical Officer, unmarried and under 30 years of age. Salary, £130, increasing to £150, with furnished apartments and board. Applications to the Clerk.

HAMPSTEAD HOSPITAL, N.W.—Resident Medical Officer. Salary at the rate of £120 per annum, with rooms, coals, and gas. Applications to the Honorary Secretary by September 10th.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House-Surgeon. Salary, £75 per annum, with residence, board, and washing. Applications to Mr. J. R. Wheldon, 74, King Street, South Shields.

LONDONDERRY COUNTY BOROUGH.—Medical Superintending Officer of Health and Medical Attendant at Foyle Hill Infectious Disease Hospital. Salary, £350 per annum. Applications to the Town Clerk, Guildhall, Londonderry, by August 14th.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee by August 1st.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship. Appointment for six months. Honorarium, £10 10s. Applications to the Secretary by August 14th.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer for the Out-Patient Department. Honorarium, £40 per annum. Applications to the Secretary before August 2nd.

MANCHESTER: HULME DISPENSARY, Dale Street.—Honorary Surgeon. Applications to the Honorary Secretary, Medical Committee, by August 13th.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House-Surgeon, not under 22 years of age. Salary, £75 per annum, with furnished apartments, board, etc. Applications to the Secretary by August 1st.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—Resident Medical Officer. Salary, £120 per annum, with board, residence, and washing. Applications to the Secretary at the City Office, 27, Clement's Lane, E.C., by August 18th.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Unmarried. Salary, £140 per annum, with all found except board. Applications to the Secretary.

OLDHAM INFIRMARY.—Junior House-Surgeon. Salary, £75 per annum, with board, residence, and washing. Applications to the Honorary Secretary by August 6th.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—House-Surgeon. Salary at the rate of 50 guineas a year, with board and residence. Applications to the Secretary by August 18th.

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Resident Physician. Salary, £70 per annum, with board, washing, and attendance. Applications to the Clerk to the Local Authority, Municipal Buildings, Paisley, by July 30th.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary, £125, increasing to £175 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant Medical Officer," to Dr. W. H. Bowes, Medical Superintendent, Plymouth Borough Asylum, Blockadon, Ivybridge, Devon, by July 30th.

ROCHESTER: ST. BARTHOLOMEW'S HOSPITAL.—Assistant House-Surgeon. Salary, £100 per annum, with board, apartments, etc. Applications, marked "Application for Assistant House-Surgeon," to the Clerk to the Trustees by August 7th.

SHEFFIELD INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer. Salary, £120 per annum, with board, lodging, and attendance. Applications, endorsed "Assistant Medical Officer," to the Town Clerk, Town Hall, Sheffield, by August 9th.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House-Surgeon. Salary, £70 per annum, with board, lodging, and washing. Applications, addressed to the Medical Staff of the Royal Infirmary, care of the Secretary, by August 13th.

SOUTHPORT INFIRMARY.—Resident Junior House-Surgeon and Visiting Surgeon. Appointment for six months, but renewable. Honorarium at the rate of £50 per annum, with residence, board and washing. Applications to Mr. Joseph Worrall, Infirmary Office, 24, King Street, Southport, by August 11th.

STIRLING ROYAL INFIRMARY.—Resident House-Surgeon. Salary, £80 per annum and board. Applications to Secretaries by July 31st.

TOTTENHAM HOSPITAL.—House-Surgeon. Honorarium at the rate of £20 per annum, with board, residence and laundry. Applications to the Chairman of the Joint Committee by July 30th.

WEST HAM HOSPITAL, Stratford, E.—Junior House-Surgeon. Salary, £75 per annum, with board, residence, etc. Appointment for one year, but eligible as Senior. Salary, £100. Applications, marked "Junior House-Surgeon," to the Secretary by August 1st.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary, £130 a year, rising to £160, with board, residence, attendance, and washing. Applications to the Medical Superintendent by August 18th.

WISBECH: NORTH CAMBS. HOSPITAL.—Resident House-Surgeon. Salary, £130 per annum, with furnished house. Applications to the Honorary Secretary by August 9th.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Physician. Appointment for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing. Applications to the Secretary by August 2nd.

MEDICAL APPOINTMENTS.

BENNETT, H. P., M.B., C.M.Edin., appointed Honorary Surgeon to the Northumberland, Durham, and Newcastle Eye Infirmary.

CHADBORN, C. N., appointed House-Surgeon to the Sussex County Hospital, Brighton.

CHENERY, Arthur, M.R.C.S.Eng., appointed Medical Officer at Port Augusta and to the Port Augusta Hospital, South Australia.

CHISHOLM, W., M.D.Lond., appointed Honorary Consulting Surgeon to the Children's Hospital, Glebe, Sydney.

CHITTENDEN, T. Hillier, appointed one of the Honorary Physicians on the staff of the Western General Dispensary, Marylebone Road.

COLLEN, Henry Ensor, M.R.C.S., appointed Ophthalmic Surgeon to the Cardiff Provident Dispensary and to the Cardiff Infirmary.

DEANE, E. W., M.B., appointed Health Officer for the Shire of Walhalla, Victoria.

FORSTER, Lucinde, M.B., B.S.Lond., appointed House-Surgeon to the Bristol Royal Hospital for Sick Children and Women.

GOTT, J., L.S.A., appointed Medical Officer for the Ringwood Union.

HIRSCH, Charles T. W., M.R.C.S.Eng., L.R.C.P.Lond., L.S.A., appointed Public Vaccinator for Woolwich.

HOWELL, Walter Salmon, M.A.Oxon., L.R.C.P., M.R.C.S., L.D.S.Eng., appointed Assistant Dental Surgeon to the Middlesex Hospital.

LITCHFIELD, W. F., M.B., appointed Honorary Medical Officer to Out-patients at the Children's Hospital, Glebe, Sydney.

NEECH, Jas. Thos., L.R.C.P.Edin., L.F.P.S.Glasg., D.P.H.Vict., appointed Medical Officer of Health for Halifax, *vice* D. Ainley, L.R.C.P.Edin., M.R.C.S.Eng., deceased.

THOMAS, David, L.R.C.P., M.R.C.S., appointed Government Medical Officer and Vaccinator at Manly, New South Wales, *vice* Dr. S. C. Watkins, resigned.

WARDALE, J. D., appointed Honorary Ophthalmic Surgeon to the Royal Infirmary, Newcastle-upon-Tyne, *vice* G. E. Williamson, F.R.C.S., deceased.

WHITE, P. S., M.R.C.S., L.R.C.P., appointed Medical Officer for the Bugbrooke Division of the Northampton Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

WORBOYS.—On July 13th, at Winterton, Lincs., the wife of T. Sanders Worboys, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

EDEN—BAIN.—On July 18th, at St. Mary Abbots, Kensington, by the vicar the Rev. Canon Pennefather, assisted by the Rev Canon Harvey of Navenby, Thomas Watts Eden, M.D., M.R.C.P., to May, only daughter of Mrs. Bain, and granddaughter of the late Sir James Bain of Glasgow.

TANNOCK—SUTTON.—At Sutterheim, Cape Colony, on June 25th, by the Rev. J. Weaver, M.A., rector, John Porter Tannock, M.B., C.M., D.P.H., F.P.S.G., of East London, to Margaret Helen Sutton, daughter of the late W. E. Sutton, Esq., of Thame, Oxon.

DEATHS.

SHEWEN.—On July 18th, at Lindenhurst, Sevenoaks, Kent, Alfred Shewen, M.D.Lond., of Sydney, N.S.W., Senior Consulting Hon. Physician to Prince Alfred's Hospital of that city, in his 57th year.

SICCAMA.—On July 19th, at 2, Westerhall, Weymouth, Rinso B. Siccama, R.N. Deputy-Inspector-General of Hospitals and Fleets.

WHITEHOUSE.—At Taragarh, Ajmere, Rajputana, on June 18th, 1900, of cholera Jo Whitehouse, M.B., C.M., United Presbyterian Church of Scotland Mission.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.
CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.
CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.
CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30: Skin, M. Th., 1: Dental, M. Th., 8.45: Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Rontgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.
CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.
CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations,*—M., 4.
EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.
GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.; Dental, W., 2.30. *Operations.*—M. W. Th. F.
GUY'S. *Attendances.*—Medical, 1.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.
HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Tu., 2; Th. S., 9.30.
KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.
LONDON. *Attendances.*—Medical, daily, 1.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.
LONDON TEMPERANCE. *Attendances.*—Medical, 1.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, 1.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.
LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.
METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.
MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.
NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.
NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.
NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.
ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.
ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.
ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.
ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.
ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; 1.-p., Tu. Th., 2.30.
ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.
ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.
ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; 1.p., 1; o.p., 12; Obstetric, 1.p., Tu. F. 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.
ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.
ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th. 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30. Tu. W. F., 2; Th., 2.30; S., 10; (Opthalmic), F., 10.
ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.
ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30 Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M. 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.
SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.
THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily, exc. M., 10.
UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th. 2.
WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 8.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily about 2.30; F., 10.
WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

CINCHONA asks for information as to what fee is necessary for registration and licence to practise in the South African and Australian Colonies respectively.

DR. HERBERT HART, Medical Superintendent (The Salvation Army, 101, Queen Victoria Street), asks to be referred to reports of experiments as to the absorption of iron by the blood vessels of the duodenal villi. Quincke, he adds, has fed mice with cheese containing iron, and has traced its course as far as the duodenum, where he found it was absorbed.

W. D. J. asks the titles of recent works on (1) chronic rheumatic arthritis and its treatment, and (2) on sewage purification or disposal.

*** (1) *Rheumatoid Arthritis*, by G. A. Bannatyne, M.D., M.R.C.P. Second Edition (Bristol: John Wright and Co. 1898. 7s. 6d.); *The Causes and Treatment of Rheumatoid Arthritis*, by S. Hyde, M.D. (London: John Bale and Sons. 1896. 3s. 6d.). (2) *Sewage and the Bacterial Purification of Sewage*, by S. Rideal, D.Sc. (London: Robert Ingram. 1900. 14s.)

COTTAGE HOSPITAL.

RURAL would be glad to hear from any member who has had experience in the erection of a cottage hospital of about six to ten beds, with room for further extension if necessary, giving particulars as to cost of erection, estimated amount for upkeep, construction, and any other particulars. He would be glad to see sketches or plans.

ANSWERS.

"THE FIDGETS."

H. C. M. writes: "T. M. W." (BRITISH MEDICAL JOURNAL, July 14th, 1900) may perhaps be referred to some observations by Dr. Clement Dukes on *The Restlessness of Old Age and its Treatment*, in the BRITISH MEDICAL JOURNAL of December 2nd, 1899, page 1542.

AMMONIUM CHLORIDE IN CHRONIC DYSPEPSIA.

DR. H. R. HENCHLEY (Blagdon, R.S.O., Somerset) writes: With reference to Mr. Cresswell's queries in the BRITISH MEDICAL JOURNAL of July 21st, I should like to say my own experience has been that biniodide of mercury did not act so satisfactorily, generally speaking, as the perchloride, although theoretically it should be the reverse. As regards (2) my experience has been the same to this extent, that if the medicine made with the biniodide be kept, say, 14 days, there seems to be a slowly increasing precipitation then.

NOTES, LETTERS, Etc.

THE PRESIDENTIAL ADDRESSES TO THE BRANCHES.

MR. EBENEZER SHAW, M.B. (Wigtown, N.B.) writes: Will you allow me to refer to one or two matters touched upon in the admirable addresses by the Presidents to the Branches published last week? (1) Preliminary Education. Dr. Karkeek says that the standard at present in force in the medical profession is "a disgrace to a learned profession." Since he means by a "learned" or "scholarly" person one with a competent knowledge of Latin or Greek his statement may very well be correct. But will he name a profession that at present has a higher standard? Latin and Greek are much more necessary to clergymen and lawyers than to medical men; yet have they a higher standard? Perhaps we are not so badly off, even for Latin and Greek, after all. "Scholarly" attainments are probably due much more to "scholarly" taste and to leisure in after life than to any special school standard. (2) The Present Constitution of the Medical Council and of the Medical Corporations. Dr. MacIlwaine thinks these bodies are as nearly perfect as poor human nature will allow. Most medical men have just about the contrary opinion. But then Dr. MacIlwaine has a very bad opinion of medical men where their own interests are concerned. We shall therefore say no more as Dr. MacIlwaine is himself a medical man! (3) Trades-unionism. Dr Gordon, like Dr. Bruce and many others, thinks he has annihilated his opponents when he has reiterated the blessed word "trades-unionism." This, it seems, in spite of all political economists have said to the contrary, means "pure selfishness." Such a (question-begging) definition might have suggested to Dr. Gordon that he had misunderstood either the nature of trades-unionism or of the medical proposals he denounces by anticipation. Nothing is to be gained by throwing about nicknames, or appealing to class prejudices. Let each question be considered on its own merits. But if Dr. Gordon or Dr Bruce must refer to unions for "terrible examples" let him in future direct his attention to the most "selfish" of all unions, which strangely enough happens to be a professional one, that of the lawyers. Yet this does not seem to have ruined its members, whatever may have happened to the public!

THE NEW PERIL OF THE STREETS OF EDINBURGH.

SCOTUS writes: The *Scotsman* of July 9th stated that on the previous Saturday a boy, 6 years of age, was run over by a cable car and received injuries of such a serious nature that he did not long survive admission to the Royal Infirmary. In face of the facts that cable cars are allowed to run at a high rate of speed in far too many streets, in streets that have a constant and heavy traffic, and in streets which are too narrow for safety, it is to be hoped that the authorities will thoroughly investigate this case. The law allows these cars to run at a high rate of speed, but undoubtedly they are not infrequently run at a greater rate. At all crossings, and when cars are about to and are passing one another, warning bells ought to be rung. But this is certainly not always done. A recent judgment in the law courts set forth that the roadway was "the king's highway," that it was meant primarily for foot

passengers, and that it was not enough for a driver in charge of a horse or a horse and vehicle merely to shout and then to proceed to ride down some unfortunate foot passenger. So also it is not enough for drivers of cable cars to ring their bells and then proceed to run over someone, to his injury or death. They must pull up in sufficient time to avoid injury to life or limb. With all due care some few accidents will occur, but they must be reduced to a reasonable minimum.

Another grave objection to these cable cars in the streets of Edinburgh is the perfectly reckless way in which elderly people, women, and children are allowed by the conductors—nay, even are encouraged by the conductors—to step off moving cars, and are allowed to step in such a way as to court mishap. And it is not unusual to find the conductor, after a passenger has been tossed on the ground, calmly remarking: "That's not the way to jump off a car." To those who, like medical men, have to spend their days in driving, the six iron or steel rails are a very real danger, especially in rain or frost.

The whole subject deserves the urgent attention of the municipal authorities. He would be rendering a public service to the community if one of the members of Parliament for the city or university would in the House of Commons move for a return giving the number of accidents, the number of deaths, the number of cases where compensation has been made, the total amount of compensation made since the cable-car system was inaugurated in the City of Edinburgh.

SALARY OF LOCUM TENENS.

M.B. writes: In the BRITISH MEDICAL JOURNAL of July 14th I see that you have been advised that 3 guineas is the usual salary of a *locum* during August and September. I do not think you will find any agent of repute sending out reliable men, at any rate for August and September, at less than 4 guineas. In August he should command 4½ to 5 guineas a week. Assistants just now can get £120 to £150 per annum indoors. If a *locum* of two years' experience will go to a good agent he will not have the slightest difficulty in getting 4 to 5 guineas a week for the months mentioned.

THE GENERAL CAUSES OF RUPTURED PERINEUM.

DR. W. L'HEUREUX BLENKARNE (Worthing) writes: I was very much interested in reading Dr. Crichton's letter on the above question (in the BRITISH MEDICAL JOURNAL, June 16th, page 1515) in which he says that "very often the rupture is due not to the head, but to the shoulders." This only bears out what I stated some years ago (*Lancet*, May 25th, 1895): "It must be remembered, too (which I do not recollect to have seen stated in any textbook on midwifery) that when a perineum is ruptured, it is not so often from the passage of the head, but from the shoulders." I am more and more convinced, too, that the timely and scientific use of the forceps is rather a preventive than a cause of ruptured perineum. *Cæteris paribus*, it is only when delivery is effected too rapidly, without giving due time for the proper dilatation of the perineum, that a rupture takes place; and in either case it is the *vis medicatrix naturæ* or the obstetrician which (or who) is in fault. *Non cito sed tuto* (Help, but do not hurry) should be our motto.

THE PREVENTION OF LACERATION OF THE PERINEUM.

T. Y. G. P. writes: Although I have long discontinued obstetric practice I cannot forbear citing a little "dodge" which was suggested, I believe, in the BRITISH MEDICAL JOURNAL some 30 years since. Its author hailed from Liverpool, but I cannot recollect his name. The point was that just at the crucial moment when the head was about to be expelled the woman should completely abandon the ordinary obstetric position, should stretch out her legs as far as possible, at the same time turning over partially on her face. I used to push her well forwards into this prone attitude with my left hand, at the same time impelling onwards the child's cranium by the fingers applied below her coccyx. The right hand grasped the occiput, while its index finger, in contact with the posterior commissure of the vulva, marked any liability to tear. After adopting this simple manœuvre I never had the smallest laceration. The old-fashioned plan of making dead pressure against the perineum with a towel is irrational and useless.

HEREDITY AND DISEASE.

EPIGENESIS writes: Lest it should be assumed that Dr. Archdall Reid has all the biologists with him in his denial of the transmission of acquired characters, permit me to refer to an article in *Nature* of July 5th. Under the heading Protoplasm, Professor H. Marshall Ward there gives a very interesting and highly appreciative review of Professor Kassowitz's *Allegemeine Biologie*, of which two volumes have been published. On the subject in question, according to the reviewer, the author concludes that variation is always due to the action of the environment, and that Weismann's contention against the transmission of acquired characters cannot be upheld.

THE BITTER CRY OF THE EXAMINEE.

A VICTIM writes: I wish to bring to your notice a case which I think is rather hard on myself, the victim. I was up for the midwifery examination at the R.C.S. the other day, and an examiner asked me to put forceps on an occipito-posterior skull. This I did, as I had been taught to do, by placing the forceps so that the pelvic curve was in front, to anticipate rotation. The examiner made me repeat the manœuvre three times, and then asked in a sarcastic tone where I had learned that. On my naming my hospital, he shook his head disbelievingly. Galabin, in his *Midwifery*, on page 647, says: "A plan, however, is recommended for indirectly effecting rotations of the head by means of long curved forceps. The forceps are applied with their pelvic curve reversed, so that its concavity looks towards the sacrum." Surely some work should be recognised as a standard book on the subject, as at present, unless one knows the examiner's fads, the examination is a pure lottery. I enclose my card.

THE COCKADE.

"PLAIN HAT" writes: Your correspondent "On Two Commissions" does not quite do justice to Mr. Fox-Davies. It is true that this greatest of authorities on such things says of the use of the cockade: "There are no laws in existence; but the custom which has regulated their usage is much more emphatic and pronounced than in the case of liveries;" and he further states that those entitled to the cockade are officers in the Army, Navy, Militia and Volunteers, Lord-Lieutenants, and Deputy Lieutenants, and High Sheriffs during their year of office. Justices of the Peace, then, as such have no right to the cockade. The mere fact of its usurpation being common by Justices of the Peace does not justify it (although I do not think it is so common as your correspondent believes); and it can no more be defended than can the assumption of arms by the twenty-two peers, over thirty baronets, and fifty knights known to Mr. Fox-Davies. These hundred names would form an interesting list, but it need not be added to by medical J.P.'s with cockades they have no right to.

ACADEMIC COSTUME.

AN M.D. OF ONE OF THE OLDEST UNIVERSITIES IN THE UNITED KINGDOM writes: "M.D." must know that a Doctor of any faculty of a university is allowed precedence of either a Master or a Bachelor, whatever gown he may wear, especially as the hood is an indication of his academical rank quite as much as the gown. I have no silly prejudice against academical dress, which I think should be worn on all public and suitable occasions when a man is entitled to wear it. In fact I consider that by not taking advantage of an undoubted right, we educate the public to think that we are socially, in an academical sense, inferior to the clerical profession, although we have as many graduates in our ranks. But uniform, clerical robes, and academical dress seem to act like a red rag to a bull with some people. I have travelled through Europe, and have been a student at some of the Continental universities, and have no prejudices, but intend to maintain my right to wear my robes on all suitable occasions.

LETTERS, COMMUNICATIONS, ETC., have been received from

A A C S.; H. B. Angus, M.B., Newcastle-on-Tyne; Dr. F. J. Allan, London; Professor J. Attfield, London; Asylum Medical Officer; Dr. J. A. Armitage, Wolverhampton; Messrs. Arnold and Sons, London. **B** Dr. A. T. Brand, Driffield; Dr. J. Beddoe, Bradford-on-Avon; Dr. S. Barwise, Derby. **C** Dr. E. Crossman, Hambrook; Mr J. Chestnutt, Howden; Dr. D. J. Cunningham, London; Dr W. H. Calvert, Melrose; Dr. F. H. Collins, Didsbury; S. Crawshaw, M.B., Ashton-under-Lyne; Curious. **D** Commander W. Dawson, London; Mr. R. W. Dillon, London; A. F. Dixon, M.B., Cardiff; D.F.B.; Mr E. R. Dall, Salisbury; J. Dunbar-Brunton, M.B., Leatherhead; Duns Scotus. **E** Enquirer, Mosman. **F** Mr. R. Foskett, London; Mr. E. E. Fawley, London; Festina Lente. **G** Dr. A. E. Giles, London; Sir W. R. Gowers, London; Dr. W. T. Greene, High Wycombe; Dr. W. H. Gregory, Beverley. **H** A. C. Houston, M.B., London; Miss E. Hurlblatt, London; Mr. D de V. Hunt, Cardiff; Dr. W. W. Hardwicke, East Molesey; G. E. Herman, M.B., London; F. L. Hart, M.B., London; Hoodless; Mr J. H. Heap, London; Dr. A. H. Hart, London; Mr. A. B. Hendbley, Blagdon; H. C. M. J. Jackdaw. **L** G. D. Logan, M.B., Ecclefechan; P. R. Lowe, M.B., Mooi River; S. T. Lord, M.B., Manchester; H. E. Littledale, M.B., Dublin: Dr H. L. Lack, London; Mr H. Lucas, Huntingdown; Lex. **M** Dr D. W. K. Moody, Birmingham; Mr A. Macdonald, Washington; Mr. R. H. Mills-Roberts, Springfontein; Dr. C. F. Marshall, London; Member of B.M.A.; M.D.; J. MacRury, M.B., Shotts; J. D. Malcolm, M.B., London; M.O.H.; Mr. W. Mair, Edinburgh; Mr. E. R. Mogan, Morriston; M.D., M.S. **N** R. H. Norman, M.B., London. **O** O'Connor Extension Co., Manager of, London; Dr H. Openheimer, London; Mr. J. F. O'Malley, London; Mr. W. F. Offord, Cambridge. **P** Practitioner; Pax; Mr. R. E. F. Pearse, Jagersfontein; Mr. G. H. Pearce, Barnsley; Dr. H. Peck, Chesterfield. **R** Dr. M. A. Ruffer, Alexandria; Mr. G. H. Rowe, Leeds; R. D. C. **S** Dr. J. F. Sutherland, Edinburgh; Mr. P. M. Short, Liverpool; Dr. W. J. Smyly, Dublin; E. Shaw, M.B., Wigtown; Dr. A. W. Stirling, Atlanta. **T** Mr. H. Thompson, Sevenoaks; Dr. J. C. Thresh, Chelmsford. **U** Dr. J. B. Unwin, Dunchurch; Dr. S. Underhill, West Bromwich; Union. **V** Mr. C. S. Vines, Newport, Monmouth. **W** W. H.; Messrs. J. Weiss and Son, London; Mr. R. H. Wolstenholme, Salford; Mr. A. H. Ward, London; Mr. A. Watts, London; Messrs. R. Walker and Co., Liverpool. **Y** Yet Another M.D. **Z** F. S. Zaytown, M.B., Otterburn; etc.

BOOKS, ETC., RECEIVED.

The Structure and Functions of Bacteria. By A. Fischer. Translated into English by A. C. Jones. Oxford: Clarendon Press. 1900. 8s 6d.

A Treatise on Appendicitis. By J. B. Deaver, M.D. Second edition. London: Rebman Ltd. 1900. 16s.

Electricity in Gynæcology. By R. J. Cowen, L.R.C.S.I., L.R.C.P.I. London: Bailliere, Tindal, and Cox. 1900. 3s 6d.

For Britain's Soldiers. Edited by C. J. C. Hyne. London: Methuen and Co. 1900. 6s.

Encyklopädie der Haut- und Geschlechtskrankheiten. Herausgegeben von Dr. E. Lesser. Leipzig: F. C. W. Vogel. 1900. M. 30.

L'Année Chirurgicale. Publiée sous la Direction du Dr. A. Lepage. Premier Fascicule. Brussels: H. Lamertin. 1900.

Tropical Diseases. By Patrick Manson, C.M.G., M.D., LL.D. Second edition. London: Cassell and Co. 1900. 10s 6d.

Surgical Anatomy. By J. B. Deaver, M.D. Vol. II. London: Rebman Ltd., 1900.

*** In forwarding books the publishers are requested to state the selling price.

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PRESIDENT'S ADDRESS

DELIVERED AT THE

SIXTY-EIGHTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION

BY

WILLIAM ALFRED ELLISTON, M.D.,

Senior Surgeon, East Suffolk and Ipswich Hospital.

SOME INCIDENTS IN THE EVOLUTION OF THE MODERN PHYSICIAN.

I BEG to welcome you most heartily to East Anglia, and to assure you that we highly appreciate the honour conferred upon us by your selection to hold your sixty-eighth annual meeting in this town.

It is twenty-six years ago since this great Association met in East Anglia, in the city of Norwich, and it speaks for its ever-growing importance and utility that on that occasion there were some 6,000 members only, and the scientific business of the meeting was conducted in four sections. On this occasion the first meeting of the nineteen hundreds, the members have increased to over 18,000, of whom 4,000 are members of our Colonial Branches, and the scientific work needs thirteen sections.

The many important subjects that have been laboriously and carefully arranged for discussion by the secretaries of the various Sections will, I feel sure, result in the acquirement of information of most valuable material for future observation. It is a matter of great congratulation that the Committees who are responsible for the organisation of this meeting have succeeded in obtaining the assistance of so brilliant a staff of officers of Sections, embracing distinguished names of world-wide reputation, and that they are promised also the assistance of many of the more celebrated of the seniors of the profession.

The town in which we are assembled is one of much commercial importance. Manufacturers and merchants do a considerable business with many of our colonies. It is an ancient town, and there are many beautiful specimens of old houses, gateways, and corner posts. To those who desire a better acquaintance with its history I would refer them to *Round About Ipswich*, by the late Dr J. E. Taylor; *Annals of Ipswich*, by Nathaniel Bacon; and *Old Corner Posts*, by Mr. J. S. Corder, recently published. Great Englishmen have been associated with Ipswich in the past. Nicholas Bacon, the Lord Keeper, was a Freeman of Ipswich; his younger son, Lord Bacon, represented Ipswich in two Parliaments, and in more recent times Lord Nelson was High Steward. Thomas Gainsborough lived and painted here. Charles Dickens found Ipswich to be worthy of many scenes for his fertile pen; but the personal association which throws lustre upon Ipswich is the fact that the famous Cardinal Wolsey was born here. It is still, I think, a standing reproach to Ipswich that there is no monument to his memory, except one that he built himself, and which is the sole remains of the great College he intended to have raised at Ipswich.

Among the illustrious medical names associated with East Anglia are William Gilbert, Sir Thomas Browne, Edward Rigby, J. G. Crosse, Sir Astley Cooper, the Brothers Paget, Sir Thomas Watson (educated at Bury St. Edmunds), Jeaffreson (ovariotomist), Sir William Gull, John Hilton, Sir George Humphry, and many others, while among those yet living are some of the foremost names in the science of medicine.

Since the last annual meeting this Association has lost two members of great distinction, one full of years, "who had laboured well far into the evening of life"; and the other cut short in his career, but yet with a record of great distinction. All who were present at the Edinburgh meeting in 1898 will remember the cordial hospitality of the President, Sir Thomas Grainger Stewart, and the conspicuous ability with which he conducted the business of that large gathering. In the death of Sir James Paget the profession has lost one of the greatest and most philosophic surgeons of the age, and East Anglia one of her most illustrious sons. His high character and great learning alike endeared him to the whole profession. His early scientific contributions, and particularly his discovery of the trichina spiralis in muscle while yet a student at St. Bartholomew's, gave promise of a career which has been fully realised.

The task of selecting a subject upon which to crave your indulgence, and not to unduly tax your patience, has been to me one of some anxiety. It is a matter of satisfaction that these troubles are not confined to Presidents of this Association. For instance, it is recorded of a very distinguished surgeon, who was appointed to deliver the Hunterian oration at the Royal College of Surgeons, that anxious possibly to go upon fresh lines he commenced with a historical prelude so long that he never once mentioned the great surgeon he was desired to laudate, nor had he in the prescribed time arrived at the century in which he lived.

Development of British Medicine.

Reflecting with mixed feeling upon this experience, I propose to-night briefly to touch upon some incidents in the developments of the science of British medicine and the evolution of the modern physician. I use the term physician in its broadest sense of the type now considered an ideal one, as illustrated in literature by the rare delineature of Dr. Lydgate by George Eliot in *Middlemarch* and of Dr. Maclure by Ian Maclaren in *Beside the Bonnie Brier Bush*, and as admirably pourtrayed in art by Mr. Luke Fildes in his strikingly pathetic picture of "The Doctor."

The early history of medical science in this country is concurrent with the advance of all scientific knowledge. During the Dark Ages, men of learning had spent their time in translating and repeating what the Greeks had taught, until at last they had come to believe that Ptolemy, Galen, and Aristotle had settled most of the scientific questions, and that no one had any right to doubt their decisions.

In the annals of British science, there was one exception to the apathy of Englishmen—Roger Bacon, the Franciscan friar, who is stated to have been the first man in Europe to make gunpowder. Green speaks of him as living before his time, but the probability is that travelling and studying natural science, and particularly alchemy in Italy, he became imbued with ideas of scientific progress that were absolutely dormant in this country until 250 years later. This remarkable man, whose reputation suffers by confusion with the great lawyer and scientist Francis Bacon, published as early as 1240 his *Opus Majus*; in this he predicts that "One day ships will go on the waters without sails, and carriages run on the roads without horses, and that people will make machines to fly in the air." He seems to have known the theory of a telescope. He says, "We can place transparent bodies (that is, glasses) in such a position between the eyes and other objects, that the rays shall be refracted and bent towards any place we please, so that we shall see the object near at hand or at a distance under any angle we please, and thus from an incredible distance we may read the smallest letter, and may number the smallest particles of sand, by reason of the greatness of the angle under which they appear."

While, therefore, down to the period of the commencement of the sixteenth century England had taken no share in the scientific advancement of the Continent, and for almost a hundred years later no discovery of any importance was due to English research, the profession was busy as a whole in acquiring protection for their rights and privileges.

Science and the New Learning.

The continuous progress of British science commenced with the return of Thomas Linacre to Oxford from the Italian universities, whence he came imbued with what was termed the "new learning," then recently introduced by the Greek professors, who had been attracted to Italy. At this time the learned of all countries were profoundly impressed by the recent discovery of America, by the scientific discoveries of such men as Copernicus and Paracelsus. The printing press was changing the conditions of life, and literature became the common property of all.

Green, the historian, says: "The sudden contact with new earths and new races of men quickened the slumbering intelligence of Europe into a strange curiosity. Books of voyage were greatly sought for, and among other works published at

this time perhaps none had a more remarkable effect than the *Utopia* of the famous Lord Chancellor Sir Thomas More, which in its wide range of speculation on every subject of human thought and action tells us how roughly and utterly the narrowness and limitation of human life had been broken up." As a sanitary reformer he dwells upon the necessity for pure water, the structure and ventilation of the house, the garden at the back, the width of the street, the cleanliness of the house, the necessity of removing the infected sick to isolated hospitals, the food of the people, the necessary exercise, the care of the children, the necessity of abattoirs, and the well appointment of the hospitals, with all things necessary to health, and the continual presence there of "cunning phisitians;" and in short he points out that public morality and health spring from light, air, comfort, and cleanliness. At the time this book appeared it was markedly appropriate to the conditions then existing in this country—the houses of the poor were mere hovels and scarcely fit for human habitation, the farmhouses and better class dwellings were mostly built of rough and wattled walls, while none but the largest houses possessed even the comfort of a chimney.

Medical Corporations.

The great event in the sixteenth century, so far as medicine is concerned, was the success of Thomas Linacre in persuading the King to grant a charter to a small body of medical graduates, who were thenceforth called the Royal College of Physicians. He succeeded, it is said, principally through the great and powerful help of Cardinal Wolsey. The charter of the Royal College of Physicians was granted September 23rd, 1518. It gave them the sole power to license to practise physic in London or within seven miles radius, with other privileges, which were confirmed by a statute of Henry VIII, and extended to the whole of England. Linacre was the first President, and he held office to the end of his life.

In 1540 the Barbers and Surgeons were united by Act of Parliament 38 Henry VIII, cap. 42. They were incorporated as the "Maisters or Governors of the Mysterie and Commonalitie of Barbers and Surgeons of London." Thomas Vicary, Sergeant Surgeon to Henry VIII, who had been previously Master of the Barbers' Company, was the first Master of the combined companies. The company employed Holbein to paint a picture in which the King on his throne, with his two physicians, Sir William Butts and Dr. John Chambre, with his apothecary kneeling on his right, presents the Act, which is painted with a seal as if it were a charter, to Vicary, who, with 14 other Barbers and Surgeons, is on his knees. In 1543 the irregular practitioners of London were protected by Act, and became one of the corporations of that city, and both by royal charters and by Acts of Parliament exercised the power of granting licences to practise medicine. In 1505 the Royal College of Surgeons of Edinburgh was founded, and in 1599 the Faculty of Physicians and Surgeons of Glasgow.

Scientific Anatomy.

Soon after the birth of the new learning, the work of Vesalius, the brilliant young Belgian, aided by his contemporaries Fallopius and Eustachius, raised anatomy to a science based upon the dissection of the human body itself, in addition to that of animals.

That such real scientific advance was some time before it exercised its influence may be observed in the records of highly-esteemed practitioners of the day. Dr. Butler was a typical physician. He was born in Ipswich in 1537, and lived well into the seventeenth century. He was a Fellow of Clare College, Cambridge. He acquired an extraordinary reputation, and became in due course a Royal physician. He attended the Prince of Wales in his death illness, and was on one occasion summoned to Newmarket to attend upon the King. He is stated to have been the first Englishman who quickened Galenical physic with a touch of Paracelsus, trading in chemical receipts with great success.

About the same time Mr. George Bacon practised as a surgeon. He was Master of the Barber Surgeons' Company in 1597. His contemporaries prophesied the lasting fame of his works. His great work is called *The Composition of Making the Most Excellent and Precious Oil called Oleum Magistrale, and the third book of Galen, a method of Curing Wounds and of the Errors of Surgeons.* He subsequently published *The Jewel of Health*, "wherein is contained the most excellent secretes of physic and philosophie, divided into foure bookes." He condemns the writing a book in the vulgar tone. "I would not have," he says, "every ignorant asse to be made a chirurgeon by my booke, for they would do more harm with it than good."

In the sixteenth century there were already established physicians, surgeons, and apothecaries. The surgeons were associated in their Guild with the barbers, and the apothecaries with the grocers. While the physicians were men of education, cultured according to the education of the time, the surgeons and apothecaries were not a very highly-educated class, and they remained so, with few exceptions, until the rise of the nineteenth century.

Gilbert and Harvey.

It was at the very commencement of the seventeenth century that the original research of two great English physicians, Gilbert and Harvey, completely altered the position of our country in scientific advance. Hitherto there had been no contribution of importance; from this time, however, a complete change came over the scene; and from that day to this our countrymen have taken a conspicuous part in the solution of the many scientific problems and discoveries of the last three centuries. Our East Anglian county of Essex has the honour to be the birthplace of one of these illustrious physicians and the resting place of both. William Gilbert was born and buried at Colchester. At Holy Trinity Church there is a monument to his memory. He died unmarried, at the early age of 57, in 1603. William Harvey died in 1657, and was buried at Hempstead, in the same county, in his 80th year.

William Gilbert—or Gilberd, as it is spelt upon his mural tablet—was born at Colchester in the same year that Vesalius was appointed Professor of Anatomy at Padua—in 1546. He was educated at Cambridge, and became a Fellow of St. John's in 1561. In 1573 he settled in London, and became subsequently physician to Queen Elizabeth and President of the Royal College of Physicians. His leisure hours were given to chemistry and magnetism. In 1600 he published his *De Magnete.* He established the magnetic nature of the earth, and he conjectured that terrestial magnetism and electricity were two allied emanations of a single force. He was the first to use the terms "electric force" and "electric attraction," and to point out that amber is not the only substance which when rubbed attracts light objects, and he described how to measure the excited electricity by means of an iron needle moving freely on a point. He described the properties of the magnet and its attraction and its direction in the relation of the poles of the earth. In relation to the fame of Gilbert and his researches, the poet Dryden wrote:

> Gilbert shall live till lodestones cease to draw.

At the time of Gilbert's death there were three men living, all in the prime of life, who profoundly stirred the scientific world. Francis Bacon, afterwards Lord Bacon, was 42 years of age, and was representing Ipswich in Parliament; Galileo, 39 years of age, and had recently brought distant worlds into view with the telescope; and William Harvey, the discoverer of the circulation of the blood, was 25 years of age. He was born at Folkestone, graduated at Cambridge, subsequently travelling through Germany and France, and enrolled himself as a student of the University of Padua. His name heads the list of what was called the Jurist University for the years 1600-02. There he studied under the celebrated surgeon and anatomist, Fabricius. Upon his return to London he joined the College of Physicians, and was shortly after his commencement of practice appointed Physician to St. Bartholomew's Hospital. In 1615 he was appointed Lumleian Lecturer, which he held with more or less interruption, due to the political disturbances of the times, until 1656. He was Physician to James I and Charles I.

There are many evidences that his eminence was appreciated by his contemporaries. In 1620, for instance, he attended a conference with representatives of the College of Physicians to protest against the proceedings of the surgeons, who were moving Parliament in their own interests, but he failed to induce his own university to co-operate with the College of Physicians. During the Civil War he was in

attendance upon the King, and while quartered with him at Oxford he was elected Master of Merton.

The work of William Harvey, which has immortalised his name in the annals of medicine, was published in the year 1621 at Frankfort as *An Anatomical Treatise on the Movement of the Heart and Blood in Animals*. Mr. D'Arcy Power, in his admirable contribution to the *Masters of Medicine*, says: "Harvey chose Frankfort as the place for the publication of his book because the annual book fair, held in the town, enabled a knowledge of his work to be more rapidly spread than if it had been issued in England."

His researches upon this subject had long occupied his attention, and had been referred to from time to time in his Lumleian Lectures from the year 1606 onwards. The bent of his mind, and his method of departure is explained in his book, when he says, "I profess both to learn and to teach anatomy not from books, but from dissections; not from the position of philosopher, but from the fabric of Nature." The results of Harvey's observations are the more remarkable when we consider the scanty instruments and appliances then available, contrasted with our own time, when the senses, the arts, and the sciences are all brought into requisition for the discovery and analysis of objective symptoms.

The microscope was as yet undiscovered. The number of pulse beats was not measured by a watch until nearly a century after Harvey's time. In his day, according to Dr. Norman Moore, physicians contented themselves with estimating the character of the pulse rather than its precise rate. Specialism as now understood did not exist, and Harvey was a surgeon as well as a physician. He performed surgical operations to which he frequently refers. The brilliant work of Galileo, Gilbert, and Harvey, the awakening philosophy of Francis Bacon in this country and Descartes in France, gave an impetus to original research and the investigation of causes that was remarkable in upsetting ancient traditions, and little by little real observation and experiment took the place of mere authority.

The Royal Society.

It was about this time that a small body of students assembled at Oxford in 1645, who were later, in 1662, to be known as the Royal Society. It was established as an association of men interested in the development of mathematical and physical science. It is the oldest scientific society in Great Britain, and one of the oldest in Europe. Italy had already established two societies in the time of Galileo and Torricelli. In Germany the Imperial Academy of the Curious in Nature was founded in 1662. The famous French Academy of Science in 1666 was legally established by the French Government. All these societies greatly influenced scientific research, and many men who were hitherto unable to publish, now read papers at their meetings.

Of our own Royal Society it is recorded in the first journal book of the Society, that these persons met together on November 28th, 1660, to hear Mr. Wren (afterwards Sir Christopher) lecture at Gresham College, London, mentioning twelve names, including three physicians, and that after the lecture they returned to converse and pass resolutions for future guidance. At one of their early meetings fifty-two was fixed as the number of the Society, persons of the rank of Baron, Fellows of the Royal College of Physicians, public professors of mathematics, physics, and natural philosophy of both Universities being supernumeraries. In October, 1660, the King offered to be entered one of the Society, and next year the Society was incorporated under the name of Royal Society, the charter of incorporation passing the Great Seal July 15th, 1662. Soon after incorporation the Royal Society published papers by Malpighi, who by the microscope revealed the minute infinite particles of living bodies.

Somewhat earlier than this two of our countrymen—Boyle, son of Lord Cork, and John Mayow—did much for progressive research, and anticipated some of the great discoveries in chemistry and physiology of a century later. Boyle proved that a candle could not burn nor an animal breathe without what was afterwards proved to be oxygen gas. These observations were said to have been attentively listened to at the early Oxford meetings of Wilkins and his friends by a young physician, John Mayow, who died at the early age of 34, but not before he had proved that air was made up of two portions, the one heavy, which supports flame and light, which he called fire air, and which was subsequently discovered to be oxygen; the other light, useless for living and breathing, and this was the larger portion, which we now call nitrogen.

Practical Medicine.

Practical medicine in Great Britain was developing in this century; a *Pharmacopœia* had been issued; cinchona bark was introduced; botanical gardens were established. The teachings of Francis Lord Bacon, and subsequently John Locke, influenced the direction of thought, while the great learning and superb common sense of that great physician, Sydenham, gave effect to the general advance of this period.

In surgery the growth was slow, principally through the general want of knowledge of anatomy acquired by dissection; but two Englishmen had distinguished themselves in this branch—Nathaniel Highmore and Thomas Wharton—the former discovering the cavity in the superior maxillary bone, still known by his name; and Thomas Wharton, who discovered the duct of the maxillary gland, which is still recognised as Wharton's duct. The diary of Mr. Samuel Pepys illustrates the primitive method of procedure at that time; he says that "on February 27th, 1663, he walked with Commissioner Pett to Chirurgeon's Hall, we being all invited thither and promised to dine there, where we were led into the theatre, and by-and-bye came the reader, Dr. Tearne, with the Master and Company, in a very handsome manner, and, all being settled, he commenced his lecture, and his discourse being ended, we had a fine dinner and good learned company, many doctors of physic, and we used with extraordinary great respect." He also speaks of the gilt cup the gift of Henry VIII., with bells hanging at it, which every man has to ring by shaking after he had drunk up the whole cup. There is also a very excellent piece of the King, by Holbein, that stands up in the Hall, with the officer of the Court kneeling to him to receive the charter.

In medical politics a warm contest arose between the physicians and apothecaries, the former accusing the apothecaries of usurping their province, the latter continuing and justifying the usurpation, until the matter was formally settled by the House of Lords in 1703, when it was decided that the duty of the apothecary not only consisted in compounding and dispensing, but also in directing and ordering the remedies employed in the treatment of disease.

Boerhaave and Hales.

The man who of all others at the early part of the eighteenth century gave an impetus to medical education was the illustrious Boerhaave, who at the University of Leyden attracted students from all parts, and particularly from this country. He was elected Lecturer in 1701, and a few years later occupied the Chair of Chemistry. He shares with Dr. Hales, the great English chemist, the honour of founding the science of organic chemistry. So highly was Boerhaave esteemed by his fellow-countrymen that upon his recovery from a serious illness in 1722 there was a general illumination of the town of Leyden.

At this time there was practically no systematic medical training in the British Isles, but there were isolated attempts at special instruction. A refugee surgeon, Brussière, settled in England in the time of Queen Anne, and for the first time gave lectures in anatomy in England. In 1711 Dr. Richard Mead lectured and continued his lectures for four years to the Barber Surgeons. In the same year Cheselden commenced a series of lectures which continued for twenty years. The first Munro opened a similar course at Edinburgh. John Rutherford settled in the same city in 1721. Speaking of him, his grandson, Sir Walter Scott, says, "he was one of those pupils of Boerhaave to whom the school of medicine in our Northern metropolis owes its rise." Together with Sinclair, Purvis, and Innes he established a laboratory and taught the rudiments of chemistry and other branches of physics. In 1766 Rutherford was appointed Lecturer in Medicine, and until 1785 he delivered them in Latin. He founded clinical teaching in Edinburgh. The success was so great that the Manager of the Royal Infirmary appointed a special ward to the exclusive use of Rutherford. This laid the foundation of that form of teaching in which Edinburgh has held proud pre-eminence.

INCREASED STUDY OF ANATOMY.

Speaking of the history of medicine at this period Lecky says, "a still more important fact in the history of medicine was the increased study of anatomy. The popular prejudice against dissection, which had for centuries paralysed and almost prevented this study, still ran so high in England that in spite of the number of capital punishments it was only with great difficulty the civil power could accommodate surgeons with proper subjects, and all publicity was studiously avoided. With such a state of feeling it is not surprising that the English Medical School in the beginning of the eighteenth century should have been far inferior to that which gathered round the chair of Boerhaave at Leyden."

In London there was no concrete medical school until quite late in the century. William Hunter came to London and commenced to lecture in 1747, he became a member of the Corporation of Surgeons, was appointed Obstetric Physician to the Middlesex Hospital in 1742. He is stated to have been an early riser and a man of untiring energies. He was undoubtedly the first great teacher of anatomy in London, and we owe his selection and advance to Dr. James Douglas, an anatomist and obstetrician whose name is associated with to this day, by modern anatomists, as the discoverer of Douglas's pouch.

The advancement of medicine and the allied sciences in the eighteenth century commenced with the contributions of Boerhaave and Hales to organic chemistry, while Buffon taught natural history, and the Swede Linnæus patiently worked out the minute characters of animals and plants. In physics the Scotch physician Black proved the amount of heat dormant in water and steam, which Watt afterwards applied to the steam engine. Electricity was greatly advanced by Benjamin Franklin, the American, who attracted lightning from the sky and worked with it in his own laboratory. Galvani found the wonderful power hidden in the nerves of the frog, and Volta showed how powerful electricity could be produced by two metals placed in acid and water, and this could be carried along a wire of any length which touches the battery at both ends. In physiology great advances were made by Haller, Bonnet, and Spallanzani. John Hunter, by his untiring energy, industry, and perseverance founded the science of comparative anatomy, and as an anatomist and as a practical surgeon built himself an everlasting fame.

BIRTH OF CHEMISTRY.

The most remarkable scientific advance was undoubtedly in the science of chemistry. Almost to the last quarter of the century the theory of "phlogiston" had confused and mystified the researches of the many great and distinguished scientists who had worked in this direction. It is highly satisfactory to note the important part played by our countrymen in the elucidation of truth. The discovery of the gases which enter into the combination of air, water, and fire transferred the alchemy of old into the modern science of chemistry. It was due to the discovery of Black, Priestley and Cavendish, and the independent work on similar lines of the great Swedish chemist, Scheele—himself a practising apothecary—that enabled Lavoisier to recognise the value of their discoveries and proclaim their effects upon science in his *Elements of Chemistry*. At the early age of 51 this philosophical chemist was guillotined by his countrymen in 1794, during the French Revolution.

Black discovered carbonic acid in 1756, Cavendish hydrogen in 1766, Rutherford nitrogen in 1772; and it was not until 1774 that Priestley—a Nonconformist minister at Leeds—discovered oxygen. It was also independently discovered by Scheele in 1775. They both deserve credit. Priestley's discovery was made with red oxide of mercury; he heated it, and found that a gas came off, which he collected and he experimented with two mice, and he found that they breathed it and lived much longer than in ordinary air; then he breathed it himself, and found he felt singularly light and easy for some time after. "Who can tell," he writes, "whether this pure air may not become a fashionable luxury? As yet, only two mice and myself have had the privilege of breathing it." It is only of recent years that the great value of the inhalation of oxygen gas has been recognised and utilised in the treatment of certain diseases of the heart and lungs. I think many of us could bear testimony to its life-saving properties in cases which appeared hopeless.

PROGRESSIVE MEDICINE.

Practical medicine was greatly advanced. As early as 1703 Dr. Richard Mead communicated to the Royal Society an account of Borrows's discovery of the acarus scabiei, up to that time considered to be a constitutional disorder. It was then disbelieved in England, though recognised in Italy as early as 1687. This distinguished physician, of whom Dr. Johnson said, "Mead lived more in the broad sunshine of life than almost any man," was accustomed to drive six horses to Windsor and he held consultations at coffee houses. Other physicians of whom Dr. Johnson spoke in terms of warm approbation, were the elder Heberden, and of his great friend Dr. Robert James, who did not think it beneath his dignity to take out letters patent for his famous powder in 1746. Dr. Lettsom, one of the most successful of the long roll of Quaker physicians, lived well into the nineteenth century. It is recorded of him that he occupied himself with carefully studying and taking note of the cases at St. Thomas's Hospital, at that time an unusual practice, and not pursued by any other pupil of the hospital.

Dr. James Lind was one of the thinkers of the century, and deserves to be remembered. He was a surgeon in the Navy in 1739, and took his M.D. in Edinburgh in 1742. He published a treatise on scurvy in 1754. More men died of scurvy in the naval wars preceding its publication than were killed in all the engagements of the French and Spanish fleets. The book attracted great attention at home and abroad. He suggested the use of fruit and vegetables and lemon juice. It was not, however, until some forty years later that an order was issued by the Admiralty for its use. In 1761 he discovered that the steam of salt water was fresh, and gave a demonstration of the fact before the Portsmouth Academy in 1761, and subsequently before the Royal Society. Dr. Lind's views as to the treatment and prevention of scurvy have held until the present day, although the experiences of Nansen and the Jackson-Harmsworth Expedition suggest the necessity of some modification of his views.

The ravages of small-pox were attempted to be arrested by the introduction of grafting the disease itself, and, as far as the individual was concerned, the mortality was enormously reduced; but unfortunately those persons having the disease so mildly were a great source of danger to the community. Towards the end of the century Dr. Edward Jenner, one of the most distinguished of the pupils of John Hunter, completed his observations upon the prophylactic power of cow-pox against the virulence of small-pox, and, in the opinion of the great majority of the medical profession of all countries, his discovery deserves the gratitude of the human race. I recently attended a nonagenarian lady who was born at Berkeley, and who well remembered Dr. Jenner as the medical attendant and friend of her mother, the Lady Berkeley of that day.

It was quite at the end of the century that Dr. Matthew Baillie, whose labours extended through the first quarter of the century now rapidly drawing to a close, published his *Morbid Anatomy* of some of the most important parts of the human body. It was the first book on the subject in English, and excelled any of the previous Latin treatises in lucidity. It was the first book in which morbid anatomy was treated by itself. In this work he described ulcers of the stomach and of typhoid. He defined the change of the liver in cirrhosis. He described and differentiated various abdominal cysts and other important pathological observations. He was a distinguished member of a distinguished family, his mother being a sister of William and John Hunter. He was appointed physician to St. George's Hospital in 1787.

The development of practical surgery was carried on on less distinct lines in Great Britain than elsewhere, and particularly in Paris, where the Academy of Surgery in 1731 set up a very high standard from the first. However, the brilliant ability of many individual surgeons—such as Cheselden; of John Freke of Bartholomew's, first to treat empyema by incision; Dale Ingram, the first surgeon to treat abdominal wounds on modern lines; the eminence and ability of Percival Pott, who published his works after a severe accident when 43 years of age; the transcendent genius of his pupil John Hunter, who was also the same age before he published his first book; and the sound and scientific work of

Cline. All these distinguished surgeons of the metropolis, as well as many provincial surgeons—such as White of Manchester, Gooch of Norwich, Hey of Leeds, and Parks of Liverpool, helped to establish surgery as a scientific branch of medicine.

Disappearance of the Barber Surgeons.

It is not surpising, therefore, that in 1745 the Barber Surgeons were dissolved, and were incorporated as distinct societies, 18 George II, c. 15. To us it is inconceivable it could have lasted so long.

The barber's shop was a favourite resort for idle persons, and, in addition to its attraction as a focus of news, a lute, viol, or some such musical instrument, was usually kept for the entertainment of waiting customers. The barber's sign consisted of a striped pole, from which was suspended a basin symbolic the use of which is still preserved. The filter round the pole indicated the ribbon for bandaging the arm in bleeding, and the basin the vessel to receive the blood.

In 1753 Pott, who had been Surgeon to Bartholomew's for four years, and John Hunter, were elected by the Court of Assistants the first Master of, or Lecturers in Anatomy. Pott was then 39 years of age and John Hunter 25.

The surgeons of the eighteenth century, like the physicians, were accustomed to give advice at taverns. Sir William Blizard, who was President of the Corporation of Surgeons in 1787, was one of the last survivors of this line of practice. For many years he is stated to have attended regularly at Batson's Coffee House in Cornhill at a certain time in the day to hold consultations.

Of the apothecaries of the eighteenth century there was nothing eventful after the great decision in their favour by the House of Lords. Nevertheless they were active in their requests, and obtained further concessions. In 1722 an Act was obtained empowering the Apothecaries' Company to visit the shops of all apothecaries practising in London, and destroying such drugs as they thought unfit for use. In 1748 additional powers were given to the Company by an Act authorising them to appoint a Board of ten examiners, without whose licence no person should be allowed to dispense drugs in London or within a radius of seven miles.

Eighteenth-Century Apothecaries.

Of the apothecaries of the eighteenth century little has been written. To this, however, there is an exception in Robert Levett, who owes it probably to his having made the acquaintance of the great Samuel Johnson in 1746 that we have a record of him. In 1763 he became an inmate of Johnson's house. Bosworth called him awkward and uncouth, but Johnson found him useful and companionable. "Levett, Madam," he said to Mrs. Thrale, "is a brutal fellow, but I have a good regard for him, for his brutality is in his manners, not in his mind." After making tea for Johnson on the latter's rising about 11 o'clock, Levett usually went round among his patients, and did not return until late at night. His chief failure was insobriety, but this, Johnson observed, was mainly the result of extreme prudence.

The scanty means of education possible in London and the absence of medical societies is remarkable. Until the last quarter of the century there was no means or possibility of obtaining a complete medical education in London. Surgeons and apothecaries were supposed to be able to pick up a sufficient smattering of their work by attending a hospital for a few months, and physicians were educated elsewhere. Some half a dozen took a degree at Oxford or Cambridge, and these alone could become Fellows of the Royal College of Physicians; others, a much larger number, went to Edinburgh and the Scotch Universities, Dublin or abroad.

Medical Societies.

The education of Edinburgh was far ahead of London; medical societies and periodicals flourished there before coming south. There were medical societies in Edinburgh as far back as 1720. In London there were societies of 1753 and 1764; they were both small societies, and disappeared after Hunter's death. The only medical society in England, outside London, was the Medical Society of Colchester, founded in 1774. The absence of societies was much felt by earnest practitioners desirous of progress. Dr. Edward Jenner belonged to a medical society which met at the Fleece Inn, Rodburgh. Papers were read on medical subjects, and the members afterwards dined together. At these meetings Jenner read papers on various subjects. He also belonged to another society, which met at the Ship Inn, Alveston.

In London in 1783 there were five lecturers in anatomy, three lecturers on surgery, and three lecturers on the practice of medicine. The great medical schools of London and of the provinces have almost all been established since this period, and indeed most of them in the present century, as well as many of the useful universities now existing in the United Kingdom. Learned societies in medicine from this time became established, and they now exist in all parts of the kingdom.

The eighteenth century closed with an immense advance all round in general science, and particularly in chemistry and electricity. The last two years were distinguishable by remarkable observations in physics upon the nature of heat; when Count Rumford boiled water, and Davy melted ice by friction. The nineteenth century opened with a galaxy of talent devoted to scientific investigation in almost every department, which has resulted in great benefits to all knowledge. At the commencement of the century there was no illumination by gas or electricity, no ignition by lucifer matches; there was no railway or steamboat communication by land or sea; there was no electrical communication by telegraph or telephone, no electric light, no anæsthetics, no sun pictures, no knowledge of the intimate connection between electricity and chemical change. The century had but just turned when Sir Humphry Davy, then a very young man, gave brilliantly in rapid succession the discovery of nitrous oxide gas, electrolysis, the discovery of the metals potassium and sodium, the safety lamp, and with Wedgwood the possibility of sun pictures. Dalton gave his atomic theory to chemistry, Malus the polarisation of light, Ritter the chemical rays, Sir W. Herschell his dark heat rays, Young his valuable contribution to light, Oersted and Faraday their observation on electric magnetism. The French school, with Cuvier, Lamarck and St. Hilaire, greatly advanced physiological science; while a little later, in the year 1832, Liebig discovered chloral and chloroform, and among his other herculean labours in various directions he added to our knowledge of organic chemistry by tracing the changes which food undergoes in our bodies, and studied which kinds are converted into fats, muscle, blood, or sugar in our system.

Notable Practitioners.

Of the physicians and surgeons in active practice, there were many of great distinction: Lettsom, Matthew Baillie, Edward Jenner, James Gregory the younger, Edward Rigby, Cline, Abernethy, Sir A. Cooper, Sir Charles Bell, and many others of scarcely less eminence. Auscultation was then unknown in this country; Auenbrugger, of Vienna, had in 1761 published his work recognising diseases of the chest by percussion; his ideas were ridiculed until 1808, the year preceding his death, when Corvisart translated it into French, and it rapidly attained a European reputation. Quickly following in 1816 Laennec, a French army doctor, when chief physician to the Necker hospital invented the stethoscope, and published his *Traité de l'Auscultation Médiate*. Edward Rigby, Sheriff of Norwich in 1802, had recently published his work *On Uterine Hæmorrhage*, which made him famous at home and abroad. Bancroft, who left England to settle in Jamaica in 1811, published his *Essays on Yellow Fever*: and of these Murchison says in his *Continued Fevers*, "No work ever effected a greater revolution in professional opinion in this country." The spontaneous or autochthonous origin of pestilential disease was then the generally-accepted one, though the doctrine now prevalent of the continuous reproduction of a virus existing *ab externo* had been stated in the most precise terms by Eggerden, a Prussian physician, as early as 1720.

The ever-growing importance of surgery as a special science is recognised to the full at the present day. The long roll of eminent surgeons of later days commenced with several distinguished pupils of John Hunter. In the early part of the century there were three surgeons then practising who exercised an enormous influence at the time—Abernethy, Astley Cooper, and Charles Bell. Abernethy was four years senior to Cooper, and Charles Bell six years younger. Of them both

Abernethy and Cooper had great fame as lecturers and bold and philosophic surgeons. The former was the founder of the distinguished school of St. Bartholomew's, while the latter was the surgical hero of the Borough United Hospitals until his secession to the school of Guy's Hospital, which thenceforth became a separate and distinct school from that of St. Thomas's.

Charles Bell, to whom we owe anatomical and physiological discoveries of the highest importance in connection with the nervous system, became a Fellow of the Royal College of Surgeons in Edinburgh in 1799. At that time the Fellows were in rotation surgeon to the Royal Infirmary. In this position Bell soon gave evidence of great ability. In 1804 a new arrangement was made regarding the attendance of surgeons at the Royal Infirmary, and Bell, probably as being junior, was excluded from the hospital. He proposed to the managers to pay £100 per annum, and to transfer to them for the use of the students the museum he had collected on condition that he should be allowed to stand by the bodies when dissected in the theatre of the infirmary, and make notes and drawings of the deceased's appearances. This enthusiastic proposal was rejected, and the consequence was that Bell was lost to Edinburgh for many years, and went to London in November, 1804. In June, 1812, he was appointed surgeon to the Middlesex. In 1836 he returned to Edinburgh to the Chair of Surgery in the University.

Medical Legislation.

The important legislation of the nineteenth century was the Apothecaries Act of 1815. This Act has been proved to be one of the greatest boons ever conferred upon the medical profession, and whatever may be the sentimental objection to a learned profession being connected with traders, we are bound to remember that to those who sought the Act of 1815 we are indebted for a reform which has been far-reaching in its results. Previous to this Act the education of the medical practitioners of England and Wales was entirely optional on their part, and although many of them possessed degrees or licences of the Universities or Colleges, the greater number possessed no such qualification, and many of them were wholly illiterate or uneducated. About the year 1850, a preliminary examination in arts was instituted as a necessary and independent requirement before proceeding to the medical curriculum. In 1858 the Medical Act became law, and by this Act the L.S.A. of London was permitted to practise through Scotland or Ireland. The Apothecaries Amended Act passed into law in 1872. Women were admitted to practice in 1876. In 1878 the pharmaceutical chemists were licensed by Act.

It is worthy of observation that the State has hitherto not interfered to prescribe the subject matter, or the minimum standard of medical examination, although there has been at least one attempt by the Government of the day to establish a uniform minimum. Under the beneficent legislation of the century, and particularly by the establishment of the General Medical Council, jealousies between the different branches of the profession have mainly disappeared. It is difficult now to realise that at the commencement of the present century it was far otherwise; then we find a young physician advanced by his college in 1808 as a reward for a pamphlet against the growing pretensions of army surgeons.

The use of wise legislative enactments in the social influence and status of the profession soon became apparent, but, of course, its full effects were not evident until many years had elapsed. It is quite within my memory that the only qualification recorded in many instances in the annual *Medical Directory* was "in practice prior to 1815." It is not a little singular that the Apothecaries Act has gradually extinguished the apothecary, as then understood. I can remember an apothecary's shop in this town. That has now become a thing of the past, as will soon, I trust, what is called the open surgery of to-day. With the better education required and the institution of examinations, a different class of students were attracted to medicine, and they were rarely satisfied with the apothecary's licence, but sought further a surgeon's diploma.

Private Medical Schools.

This increased desire for knowledge of anatomy and surgery had a remarkable effect at the time. At the early part of the century, with some few exceptions, very few surgeons, even of large hospitals, had personally dissected the human body; and the demand then for subjects became so great that a disreputable association had to be entered into between the teachers of anatomy and a class of men who were termed "Resurrectionists," to supply them with subjects. The sums paid to these body-snatchers were frequently exorbitant, and a scandal arose which at the time created a great sensation, as, in addition to the many indecencies undoubtedly committed, it was alleged that murders were incited. The excitement was happily allayed by the passing of the Anatomy Act of 1832, which, by affording facilities for the practical study of anatomy, gave a great impetus to study in this country.

One of the curious features at the early part of this century was the continuance of the system of private medical teaching. Some of these schools attained a great degree of prosperity. Grainger's School in the Borough was founded by Edward Grainger, a dresser of Sir Astley Cooper at the United Borough Hospitals. Grainger failed to get an appointment when Aston Key was appointed Demonstrator and started a school of his own in Webb Street, near Guy's Hospital. He built a theatre, and by securing the services of the resurrection men assembled a class of 300 students. Edward Grainger died in 1824, but the school continued under his brother, R. D. Grainger, until 1842, when it was closed, St. Thomas's Hospital securing his services as Lecturer on general anatomy and physiology. The Hunterian School of Medicine in Great Windmill Street and the Aldersgate School were other schools of great importance. The latter was closed in 1849.

It was at Grainger's School that the body of the English philosopher, Jeremy Bentham, was dissected and lectured upon, in accordance with his will, by his friend, Dr. Southwood Smith; after the examination his body was embalmed and dressed in his clothes and is still preserved at University College, London. Southwood Smith, previous to the passing of the Anatomy Act, had published an article in the *Westminster Review* on the use of the dead to the living, advocating facilities for dissection. At the ceremony Southwood Smith gave a sketch of Bentham's philosophy and an account of his last moments. During the ceremony a violent thunderstorm shook the building, but Smith proceeded with a clear unfailing voice, with a face as white as the dead philosopher's before him. Brougham, Grote and Mill were present at the examination of their dead friend.

The Medical Press.

The growth of the medical press and the influence it had upon the medical profession commenced with the efforts of William Sharman, M.D., who was born at Harwich in 1767. He commenced in 1810 to edit a periodical, which was styled the *New Medical Physical Journal or Annalls of Medicine, Natural History, and Chemistry*. It was in existence in 1815.

In 1815 Thomas Wakley was a student of the Borough Hospitals; the greater part of his medical education was acquired at the Grainger School. In 1817 he became a M.R.C.S., and commenced practice. Fortunately, perhaps, he did not altogether succeed, and his great talents were turned in the direction of journalism. He founded the *Lancet* in 1823, with the primary object of disseminating much-needed information hitherto regarded as the exclusive property of members of the London Hospitals, and also with a view of exposing the family intrigues that influenced the appointments in the London hospitals and the medical corporations. For the first ten years of its existence the *Lancet* provoked a succession of fierce encounters between the editor and the members of the privileged class in medicine. In the first number Wakley made a daring departure in commencing a series of shorthand reports of hospital lectures. On December 10th, 1824, Mr. Abernethy applied to the Court of Chancery for an injunction to restrain the *Lancet* from publishing his lectures. The injunction was refused by Lord Eldon, on the ground that official lectures in a public place for the public good had no copyright vested in them. He then commenced a regular issue of hospital reports of cases and notable operations. The irritation at them was so great that his exclusion was ordered at St. Thomas's Hospital. He also carried on a campaign against the Royal College of Surgeons. Mr. Wakley and his successors have done work which has advanced the general interest of the profession by

leaps and bounds, and during the long period of its usefulness it has always availed itself of the best talent, and many of those who have achieved success in other departments have given their early work to the advancement of medical journalism. At the present time the influence of the press is enormous. Our own JOURNAL, reflecting the opinions of this Association, shares with the *Lancet* and many other medical periodicals in guiding the profession upon every question to the direct issues constantly occurring.

Physicians and Surgeons of the Century.

It is of course impossible to give anything more than quite a brief enumeration of the brilliant work of the physicians and surgeons of this century, but there are some incidents that deserve notice—take, for instance, the remarkable advance in practical medicine by the physicians of Guy's Hospital. Richard Bright's discoveries in the pathology of kidney dissase, which results were published to the world in 1872; Hodgkin, pathologist of the hospital, who published his observations on some morbid appearance of the lymphatic glands and of the spleen; and Thomas Addison, who from 1849 to 1855 was directing attention to the relationship between anæmia and disease of the suprarenal capsules. These diseases are now known all over the world as Bright's disease, Hodgkin's disease, and Addison's disease. In 1873 another Guy's physician, Sir William Gull, described to the Clinical Society of London a cretinoid state supervening in adult life in women.

In 1837 Gerhard, a young American physician, clearly laid down the difference of the two diseases of typhus and typhoid fever. After much doubt and discussion the question was finally settled in England by Sir W. Jenner in 1849-50.

The credit of recognising the connection between the acceleration and violent actions of the heart and the enlargement of the thyroid gland, two of the great cardinal symptoms of exophthalmic goitre, undoubtedly belongs to the great Dublin physician Graves, who in 1835 pointed out in a published lecture that the disturbances of the heart's action is not necessarily associated with organic disease of the heart. Five years later a German physician, Basedow, published a more complete and elaborate account of the clinical features.

Hughes Bennett first described leucocythæmia in 1845. A few weeks afterwards Virchow published a case which had been independently observed by him previous to the publication of Bennett's first communication on the subject, and pointed out that the white corpuscles found in the blood were not pure cells; he termed the disease leukæmia. A violent controversy sprang up between those two celebrated men and other supporters. Of this Byrom Bramwell says "that while Bennett was the first to observe and publish a detailed case of the pathological appearances and blood changes, Virchow was the first to give an intelligent explanation of the peculiar alteration of the blood which is the essential characteristic of the disease."

Among other great contributions to the advance of scientific medicine, one can but enumerate the works of Marshall Hall, Elliotson, Stokes, Alison, Sir Thomas Watson, the Farrs, Sir W. Jenner, Sir J. Simpson, Tyler Smith, the Budds, and Sir James Paget. In connection with the name of Dr. Elliotson, who aroused such a famous controversy in relation to his association with mesmerism, it is interesting to note that he was the first in 1826 to discard the style of dress then prevalent with physicians—namely, knee-breeches and silk stockings. He was also one of the earliest in England to adopt the practice of auscultation.

Specialisation in Surgery.

In surgery, more perhaps than in medicine, the tendency has been to specialise. Some of them inevitable and most desirable, others quite unnecessary. Dentistry is now practised as a special branch of surgery. The earnest work of Sanders, Sir W. Lawrance, and later of Sir W. Bowman, Critchett, and many others, has established ophthalmic practices in this country. In aural surgery, George Pilcher, Toynbee, Yearsley, Harvey, Hinton, and many still living have raised aural surgery from a neglected condition to a recognised position as a legitimate branch of surgery.

In all the domains of surgery there has been no more brilliant advance than in abdominal surgery. Operations that scarcely more than forty years ago were deemed unjustifiable—so great was the mortality at that time—are now performed with success in every hospital. For this our thanks are due to Sir Spencer Wells, Keith, Clay, Greig Smith, and many of those still living, but to none more than he to whom all surgery is indebted for antiseptic precautions in treatment.

It is not, perhaps, so generally known as it deserves to be, that William Jeaffreson, of Framlingham, in the county of Suffolk, an East Anglian surgeon, was the first surgeon in England to perform the modern operation of ovariotomy by a small central incision. The circumstance, as recorded in the *Transactions* of the Provincial Medical Association of 1837 are as follows: "Mr. Jeaffreson in 1833 lost a patient suffering from an abdominal tumour. She died from tuberculous disease of the lungs, and, obtaining the consent of the friends, he made a *post-mortem* examination, which satisfied him that the tumour could have been removed, and but for the disease of her lungs her life might have been spared."

In November of the same year Jeaffreson and his friend King attended together a lady in her confinement with a small tumour. They subsequently advised an operation, and in May, 1836, a central incision was made, about 1½ inch, the cyst tapped, withdrawn, the pedicle secured by ligature, and the ends cut off short. The wound was adjusted by two sutures, and napkins wrung out in the coldest water were constantly applied to the wound. Sulphate of magnesia was administered every four hours, and all went well until the tenth day, when he was called to his patient at 3 A.M., to find her pulseless, with incessant vomiting and hiccough, with griping pains in her body. A stimulating enema, with 2 grs. of opium, gave her speedy relief, and she recovered.

His friend and neighbour King at Saxmundham, Suffolk, about ten miles away, operated a few weeks later, with complete success, his incision being somewhat longer—about 3 inches. Two years subsequently a third East Anglian surgeon, Crisp, of Harleston, who lived about twenty miles from Jeaffreson, was also successful, with an incision of 2 inches. These three cases, which were performed by three surgeons in general practice in this county, were the first in England, in response to the doctrines of William and John Hunter, and are the more remarkable when we consider that no operation of the kind was attempted in London until four years later, and no ovariotomy was performed in a London hospital until ten years after Jeaffreson's case.

Of another special branch of practice, the treatment of mental affections has greatly improved, and the provision of suitable institutions has generally extended. Among many others to whom we are indebted are William Tuke, 1732-1822, and other members of the same family; Sir John Bucknill, and many other physicians at home and abroad. A provincial physician, Dr. Robert Gardner Hill, who was Mayor of Lincoln in 1851, deserves to be specially remembered. In 1839 he published lectures on the management of asylums and the treatment of the insane. He argued that in a properly-constituted building, with a sufficient number of suitable attendants, restraint is never necessary, never justifiable, and always injurious to all cases of lunacy whatever.

Of the further practical results in surgery the results are so well known that it goes without saying that the advance has been enormous, thanks to our countrymen Sir B. Brodie, Aston Key, Sir W. Lawrence, Robert Liston, Sir James Paget, Syme, and the Edinburgh surgeons, Sir W. Ferguson, John Hilton, the Dublin surgeons, Sir George Humphry and many still living, as well as by the brilliant achievements of surgery in all parts of the world.

Antiseptics and Anæsthetics.

The two great discoveries of the nineteenth century in connection with both medicine and surgery are the antiseptic treatment (for which we are indebted to the genius of a living surgeon, Lord Lister), and the use of anæsthetics. Those now in general use are nitrous oxide gas, discovered by Sir Humphry Davy in 1800; of sulphuric ether, by Faraday; and chloroform, by Liebig. I shall not detain you by a history of the introduction of anæsthetics into surgical practice, but as we have still living in East Anglia a most distinguished surgeon (Mr. William Cadge), who was present on the occasion of the first operation in London under the influence of ether, I thought it would be interesting to hear his record of the

circumstances. Mr. Cadge says: "Robert Liston was the first surgeon in this country to use ether, and those who were present at University College Hospital on December 21st, 1846, and witnessed the complete and perfect success of that first venture, will not easily forget the dramatic character of that scene. I was present and assisted at the operation—amputation of the thigh by the double flap method. Someone present timed the operation; it took 30 seconds; the few arteries were tied, and all signs of blood cleared away. A towel was then thrown over the stump, and we watched anxiously for the patient to show that he was not dead; he presently woke up, and when asked once or twice if he could stand the pain of the operation, he accused us of cruelly trifling with his feelings, and when the towel was removed and he saw the naked stump, he burst into tears, and I thought Liston would do the same."

Many fresh fields of inquiry and separate study have been instituted. In 1831 Alfred Swaine Taylor, the famous chemist and medical jurist, was appointed Lecturer on Medical Jurisprudence at Guy's Hospital. His inaugural course was the first delivered in this country, and was attended by many leading counsel and some judges.

PUBLIC HEALTH.

In 1842 Parkes was Assistant Surgeon to the 84th Regiment, when he retired and became physician to University College Hospital. He was the founder and first teacher of military hygiene, and was a great factor in, if not the founder of, the science of modern hygiene.

The elaborate directions in the Mosaic laws for the preservation of health, through scrupulous attention to cleanliness and the isolation of the sick and extreme care in the use of wholesome articles of food and drink, are well known to Biblical students.

The subject has in later years been studied to considerable advantage. In 1801 Heberden wrote: "The cause of so great an alteration in the health of the people of England—for it is not confined to the metropolis—I have no hesitation in attributing to the improvements which have gradually taken place, not only in London but in all the great towns, and in the manner of living throughout the kingdom, particularly in respect to cleanliness and ventilation. Two centuries ago the mortality of London is stated to have been 80 per 1,000: at the present day it is under 20. A century ago ships could barely keep the sea for scurvy, whilst gaols and hospitals were in many cases the hotbeds of fatal disease. Now these conditions are rectified, or at least the means of rectifying them are known."

The special departments which concern the surroundings of man—his personal health, food, drink, clothing, hours of labour, and certain other points, such as the management of infancy, the prevention of disease, the hygiene of the sick chamber, and the disposal of the dead—have been the subjects of legislation during the present century.

State medicine, as an organised department of administration, is entirely of modern growth. The first Act in this direction was the Towns Improvement Act of 1847; but it was not until the following year, 1848, that a general Public Health Act, embracing the whole of England (except the metropolis), was passed.

The Local Government Board was created in 1871, and finally in 1875 the existing laws were digested into the Public Health Act of 1875 (38 and 39 Vict.).

These Acts were the result of the labour and agitations of many sanitary reformers and associations, such as the Health of Towns Association, the British Association for Improving the Dwellings of the Industrial Classes, which built the first model dwellings.

Such are some of the incidents of the past that have helped to make us what we are. I am deeply sensible of the imperfect and fragmentary sketches I have recorded, but they show, I hope, a record of progress in the physician of to-day in education, in social status, and in all that goes to make professional life more pleasant. Questions are constantly arising affecting the interests of the profession, and many at this moment require combined as well as personal action. It is the consideration of these matters, in addition to our scientific work, which justifies the existence of the British Medical Association.

EXPENSES OF MODERN MEDICAL EDUCATION.

In conclusion, may I briefly refer to the growing expense of medical education? It is certainly the most costly of all the learned professions. This is due to the long period of time required for the medical curriculum, and to the multiplication of qualifications, which I regard as a fashionable absurdity. I am not unmindful of the up-to-date requirements of general culture—of an accurate knowledge of anatomy, chemistry, physiology, biology, bacteriology, pathology, physics, optics, mechanics, electricity, and photography, which are all essential to the well-educated physician; they are daily called into requisition in order to diagnose and to direct the eye and hand in the treatment of disease. The necessity for the highest education for this mental training is obvious, and it rests with the General Medical Council to see that this can be obtained without undue restrictions. What I venture to think is wanted is early qualification, and if the elements of science were more generally taught in school life that would be easily possible. After obtaining a diploma or licence to practise it would be well if the General Medical Council could see their way to institute the requirement of practical experience.

In passing the milestone of life in the year A.D. 1900 I have thought it might be well to take a retrospect of our advance to our present position, and to express the hope that as time goes on our profession may continue to uphold its regard in the estimation and affection of all, and its usefulness may continue unchecked for the advantage of humanity.

[I am indebted to the following books (as I have consulted them at large I have not in many instances given detailed references): Green's *History of the English People*, Lecky's *History of England*, *Encyclopædia Britannica*, *Dictionary of National Biography*, *Short History of Natural Science* (Buckley), *Masters of Medicine*, *Chambers's Biographical Dictionary*, and other classical authorities.]

ADDRESS IN MEDICINE

BY

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At the Annual Meeting of the British Medical Association at Ipswich, July-August, 1900.

MEDICINE AS A SCIENCE AND MEDICINE AS AN ART.

MR. PRESIDENT AND GENTLEMEN,—It has sometimes been disputed whether medicine should be regarded as a science or an art; but there is no doubt that the original meaning of medicine, and of the corresponding terms in other languages, is the art of healing. Medicine is so defined by Aristotle, and the art of curing, to which we may add the art of preventing disease, has all the characters of an art. It depends upon experience and skill; it deals with individual cases; and the perfection it aims at is practical, not speculative—the knowledge how to do something, not the knowledge how things happen. Nevertheless, as practical navigation is founded on astronomy, meteorology, and physics; as the art of agriculture rests on botany, geology, and vegetable physiology, so the art of medicine depends on the science of pathology, the practice of physic on the principles of physic.

On the one hand, then, we must never forget that we practise an art; we must never allow theories, or even what appears to be logical deduction, or explanations however ingenious, or statistics however apparently conclusive, or authority however venerable, to take the place of the only safe rule of practical medicine—observation and experience. We must never treat the disease without considering the patient, for the art of healing is the art of healing individually. Nor need we wonder if vast knowledge, profound learning, and the best scientific training sometimes fail to make a successful practitioner; for beside adequate knowledge, to save us from gross blunders, and a strenuous endeavour to do our best for each individual patient, however uninteresting the case or however irksome and thankless our toil; beside

these first requisites for our art, there is ample room for those personal qualities which ensure success in every department of life—power of observation and insight, the personal influence by which a strong character will secure obedience and inspire hope, the judgment which divines what kind of remedies are suited to each patient, what kind and of what strength, and the sympathy which puts one in the patient's place, and not only meets, but anticipates, his wants.

If, however, medical science without art is inefficient, medical art without science is not only unprogressive, but almost inevitably becomes quackery. As soon as we treat our patients by rule of thumb, by tradition, by dogmas, or by metaphysical axioms, we do injury to ourselves as well as to them. The bonesetter who is ignorant of anatomy, the wise woman who cures by charms, are not more irrational or less successful than was the physician of the seventeenth century who, in obedience to the doctrine of signatures, advised an infusion of roses for hæmorrhage, and saffron for jaundice, and lung-wort for consumption; or the astrologer who prescribed salts of silver, iron, lead, or mercury in accordance with the horoscope of the patient and the planet under which he was born. Not less mischievous, and in the true sense of the word unscientific, were the systems of medicine known as the iatro-mechanical and the iatro-chemical, which in their turn had their vogue. The Brunonian system, explaining all diseases as due to laxity of fibre, was no better; for indiscriminate use of "corroborants," or, as they would now be called, tonics, is as irrational as that of hydropathy, of alcoholic stimulation, or of electricity. There is no such thing as a tonic or strengthening medicine: the sole source of strength is oxydisable food, and bitter medicines can only give strength by improving the appetite. The last of the systems of medicine founded on a dogma is homœopathy, of which the theoretical absurdity is somewhat concealed by the more obvious nonsense of infinitesimal doses. It, like the other systems which preceded it, is not a rival to rational medicine; they are not mistaken answers to a legitimate question, but attempted solutions of a problem which does not exist, attempted answers to a riddle which has none.

Apart from these exploded systems of treatment, our profession has often suffered from lack of the scientific, inquiring, sceptical spirit, and has often been led too easily by authority, by tradition, and by fashion. The reckless abuse of venesection in the last century and the former half of this led to almost complete disuse of a valuable means of treatment; the misuse of mercury in the treatment of syphilis led to denial of its unquestionable efficacy. Have we not seen the value of stimulants in a contest with fever lead to their indiscriminate use in almost every ailment? Has not the immense value of careful and thorough nursing sometimes ended in its exaltation to an independent place, as if good nursing was anything more than an intelligent carrying-out of the physician's directions? Have not the remarkable powers of electrical stimuli led to a blind, unscientific, and mischievous employment of this remedy, as if it had some mystic efficacy apart from its demonstrable physiological effects? May we not say the same of hydropathy, of massage, and of hypnotism?

It is significant that the irrational exaltation of any of these particular modes of treatment into a panacea, while it begins in want of scientific intelligence invariably ends in imposture and deceit. Our only safeguard against the spirit of quackery and the deserved loss of public confidence in the profession which it brings with it is continued recurrence to the scientific basis on which the practice of medicine rests. Our art is most satisfactory and efficient when most closely resting on science. The surgeon is continually guided by anatomy and mechanics in dealing with injuries or deformities. The physician is often able to apply his knowledge of chemistry and natural history to the direct and satisfactory treatment of disease. Generally, we can appeal to the same test as that which proves astronomy or chemistry to be a true science; we can predict and our predictions are borne out by the event. But to take examples, the detection and treatment of plumbism, the diagnosis and cure of scabies and ringworm, the treatment of poisons by chemical antidotes, and of specific diseases by attenuated inoculations are all instances of strictly scientific medicine. Nor can I refrain from citing the most recent and one of the most remarkable advances of our science in the discovery of the origin of malaria. This heavy tax upon national as well as individual vigour and happiness has been known and treated from the dawn of medicine; but although by a happy accident its efficient treatment was discovered, it is only lately that by the combined labours of scientific physicians, Frenchmen, Italians, and our own countrymen, that the origin of the disease has been discovered, the mode of its transmission traced, and the diagnosis of its several forms established.

We know that treatment of symptoms without a diagnosis is always unsatisfactory and frequently worse; but we know also that diagnosis must rest upon accurate knowledge of morbid anatomy and of the natural history of the disease. Scientific medicine based on observation and experiment is always practical as well; but empirical medicine, whether based upon fanciful speculation or working by rule of thumb, is the most unpractical thing that can be.

Etiology and Preventive Medicine.

That important and constantly growing branch of medicine, which deals with the prevention rather than the cure of disease, depends no less upon science, for tracking the dependence of one event upon another is the essence of inductive science. All efficient measures for the preservation of health, whether by individuals or communities, rest upon exact knowledge of the natural course of diseases. In fact, disease may be defined as the reaction of the human organism under conditions which make for its destruction. We must never forget that no irritant will cause inflammation in a lifeless skin; that no bacteria can produce fever without a nervous system to play upon; that no meal, however Gargantuan, and no potations, however deep, can produce their wonted effect without a stomach to react. The infection of small-pox, of diphtheria, or of tubercle exerts a very different influence upon vaccinated or unvaccinated subjects, upon one who has received and one who has not received the prophylactic serum, upon an organism which is predisposed to or refractory against the invasion of the enemy.

How closely natural science is related to preventive medicine is shown by the history of Jenner, who was a naturalist, and Pasteur, who was a chemist. How dependent we are upon science is well illustrated by the history of myxœdema. The cretinoid condition in adults which was discovered by the clinical acumen of Sir William Gull, unintentionally produced by the surgical skill of Professor Kocher, and reproduced in animals by Mr. Horsley, is now cured by the eminently scientific method due to Dr. Murray of Newcastle, and to Dr. Hector Mackenzie of St. Thomas's Hospital.

Such examples of accurate tracing of causation by observation and experiment admonish us to give up the perfunctory explanations which so often do duty for investigation. If we ascribe every inflammation to cold, and every doubtful symptom to gout; if we acquiesce in the popular ascription of disease to overwork, mental strain, and the nervous tension of modern life, we shall make no progress in true etiology. I see many patients suffering from idleness, few, or none, from hard work. "Nerve prostration" from "worry" and "brain tension" generally proves to be a decent veil to the effects of gambling and drink. Contrary to popular belief, I hold that modern life is easier, safer, and smoother than it was a hundred years ago, that our young men and maidens are healthier, stronger, better grown, less emotional, less hysterical, and sounder in mind and body than their great-grandparents; and I hold that the duty of a physician is not to flatter the selfishness of neurotic patients, but to inspire fortitude, and to prescribe regular and steady work, as the best cure for a thousand nervous ailments.

As another point in scientific etiology, allow me to warn against the temptation to assume that because many diseases are now proved to depend upon the presence of bacteria, this must be true of all. Science does not anticipate but waits for proof. We have complete scientific evidence, according to the criteria so well formulated by Koch, of the absolute and constant cause of anthrax, of relapsing fever, of tubercle, and of several other diseases in both men and animals; but we must not forget the preliminary difficulty of identifying the specific bacillus, as in the case of enteric fever and diphtheria; nor the difficulty of finding one of the lower animals which is susceptible to the disease, as again in the case of typhoid fever and of cholera; nor the difficulty of the

same anatomical and clinical conditions being produced by different organisms, as is the case with pneumonia and ulcerative endocarditis. Moreover, while in some diseases, which are undoubtedly infective and specific, no constant pathogenic microbe has yet been determined, as in typhus, measles, small-pox, and syphilis; we have on the other hand in the case of leprosy and of lupus examples of disease unquestionably specific and bacterial in origin, but very unlike other infective maladies in clinical course and natural history. At present it is surely undesirable to speak of "the undiscovered microbe of rheumatism." Science has to do with proved facts, and our language should never outrun our knowledge.

PROGNOSIS AND STATISTICS.

Another important branch of medicine—prognosis—depends as an art upon experience and insight. In making an individual prognosis, shrewd powers of observations are needful; and in this, of all branches of our art, it is true that:

> Old experience doth attain
> To something like prophetic strain.

Yet here also rational prognosis rests on the science of statistics.

It is to Louis and the French school of the second quarter of this century that we owe the application of this important method for learning the natural history of disease, a method which not only supplies a foundation for prognosis but also a criterion of treatment. We know, however, how many pitfalls there are in deducing conclusions from statistics. The morbidity or incidence of a particular disease upon the whole community is often confused with the mortality or the fatal cases of it compared with the population, and this last confused again with the case-mortality. The return of deaths from a certain disease in a town or kingdom has been applied to the population which existed eight or nine years before. The success of treatment of a disease occurring in barracks, that is to say, among picked subjects, all in early manhood, under strict discipline, and sent to hospital as soon as they are unwell, has been compared with that of other measures carried out in totally different circumstances. As examples of statistical misuse take these facts: the numerical returns of the lying-in charity of a London hospital led to the conclusion that more women are delivered of a second child than of a first. A physician, to inspire confidence in an anxious patient, assured him that the mortality of the complaint from which he was suffering was only 1 per cent.; and in answer to the further inquiry whether he had seen many cases, said: "Yes; I have looked at my note books and find I have seen 99 and they all recovered."

But, apart from the corrections and limitations of statistical science, we are sometimes in danger of forgetting that to be of any value statistics must be based upon cases which are both numerous and accurate. A small number of cases is useless. It led to the conclusion that myxœdema was peculiar to women, and that insular sclerosis was rare in men. It was only after hundreds of cases had been observed that we learnt that infantile paralysis sometimes befalls adults, and that osteo-arthritis may occur in children. This defect may be remedied by time, but the defect of inaccuracy is without remedy. If diagnosis is perfunctory or careless and nomenclature arbitrary and inconstant, the more cases observed the less do they teach. It is disappointing, after the immense labour, time, and trouble devoted to the compilation of the official *Nomenclature of Diseases* of the Royal College of Physicians, that, although adopted in the navy and army and by the Registrar-General, it is constantly neglected, not only in conversation but in systematic treatises. How can statistics be anything but misleading when made up of cases of one and the same disease under such different titles as chronic rheumatism, rheumatic gout, rheumatoid arthritis, arthritis deformans, and osteo-arthritis? Of what value are statistics when such different diseases as acute lobar pneumonia, broncho-pneumonia of children after measles, pulmonary tuberculosis, cirrhosis, and septic suppuration of the lung are all labelled "pneumonia?" One difficulty is put in the way of the practitioner in making an accurate return by the well-meant but, I think in practice, unfortunate provision for returning a primary and a secondary cause of death. Sometimes this corresponds to facts and gets over a difficulty, but if a patient dies of enteric fever there is nothing gained by adding exhaustion as the secondary cause still less do we learn from a return of primary cause a chill, secondary cause debility; or primary cause an accident, secondary cause dropsy. As a matter of fact, in looking through hundreds of death certificates, one arrives at the valuable conclusion that a frequent cause of death is "cardiac failure."

Another and opposite mistake is often made by attempting too great precision in diagnosis. To say that a man died of apoplexy or of paraplegia is to state a fact within any competent practitioner's knowledge, but, in the absence of a *post-mortem* inspection, to say that he died of cerebral hæmorrhage or of myelitis is not a fact, but a more or less doubtful inference. It is surely better to be satisfied with a statement that there was ascites and enlargement of the liver when the cause of enlargement is altogether uncertain, than to be more exact and less true. I have again and again seen diseases the existence of which no experienced physician would assert without a necropsy returned as if they were common and easily recognised conditions—pernicious anæmia, syringomyelia, cancer of the lung. It would, I venture to submit, be a great improvement if the return of one cause of death only were demanded; if certainty and definite statements were aimed at rather than speculative minuteness or vague generalities; if a query were allowed to qualify deductions as distinct from observations; if the fact of a necropsy were always stated; and, lastly, if the authorised nomenclature were always used.

SCIENTIFIC MEDICINE AND EXPERIMENTS.

There is one aspect of scientific medicine so important that it must not be wholly omitted: the necessity of experiments for the progress of pathology, and through it for the prevention and cure of disease. It requires no argument to convince anyone who is the least acquainted with the principles of inductive science that experiment is no less necessary than observation. In physics and in chemistry this is obvious and universally acted on. The same method is indispensable for the progress of animal and vegetable physiology, and to such practical applications of science as engineering, agriculture, and medicine. Nor can experiments be restricted to rare, occasional, and solemn occasions; they must be carried on in large numbers by many different experimenters and under every variety of conditions. Any attempt to abolish, to check, or to limit this experimental work is, in the degree that it is successful, fatal to progress. Happily it can never be successful, for the impulse to increased knowledge of the works of creation is too deeply implanted in man. Investigation must and will go on by the only path which it can follow. The method which was preached by Bacon and followed out by his great contemporary William Harvey, which was continued by Lower, Hooke, and Mayow, in the early days of the Royal Society by Aselli, Malpighi, and Haller, by Hunter and Hewson, by Hales, by Edward Jenner, by Sir Charles Bell, by Johannes Müller, by Claude Bernard, by Ludwig, and by the many eminent physiologists and pathologists in Germany, in France, and throughout the civilised world—this method of investigation must and will continue. As its objects and methods are better understood, it will secure the enlightened patronage of all who desire the improvement of human knowledge and the increase of human happiness. Fortunately this very progress of science has brought with it the removal of the one drawback which every right-thinking man must have felt as a grave disadvantage to these experiments upon living animals. Inflicting pain upon the humblest of God's creatures is repugnant to our feelings, though no one, unless maintaining a thesis, would contend that it would be wrong to exact the most painful efforts, or even the death from exhaustion, of a horse, in order to carry help to a human being. The discovery of ether, chloroform, and other anæsthetics, and the improved methods that we owe to the genius of Lister, have not only relieved the surgeon of the most repulsive part of his duties, but have relieved the experimenter also. Except in the investigation of the action of new remedies or in the inoculation of infective diseases—both of which inflict discomfort of a limited degree and duration rather than anything that can be described as pain—the experiments of the laboratory, whether physiological, pathological, or therapeutical, are conducted without inflicting

suffering. The opposition to them has not succeeded, and is sure to diminish. However mistaken our opponents, we are glad to find there is exaggerated jealousy to avoid anything approaching to cruelty. This legitimate object our more candid critics may be assured is already amply provided for.

Therapeutics and Science.

Lastly, how far is the final end of our art—the cure of disease—immediately and directly dependent upon science? It rests, we know, on that sure basis; but even in its practical carrying out we are bound to take with us a scientific spirit. The administration of digitalis for cardiac dropsy, of mercury for syphilis, and of thyroid extract for myxœdema is as truly scientific as prescribing a chemical antidote for poison, or nitroglycerine for angina pectoris, for it rests on a sure basis of observation and experience. But because in many cases we cannot as yet explain how remedies act, we should never prescribe them without watching the effects of the experiment. The foolish cry against hospitals as places where they experiment on patients is meaningless just because it is true. Every prescription we give either to rich or poor is an experiment, and ought to be watched with critical and scientific eyes. And here let me say that our practice is often ineffectual, not for want of adequate means of treatment, but merely for want of the needful treatment being thoroughly carried out—a want which inevitably prevents success, and therefore leads by a vicious circle to scepticism and the same half-hearted treatment on the next occasion. A man who believes everything he is told of the action of remedies not only in the serious treatises of Garrod or Wood or Binz, but in the partial assertions of advertising druggists, is sure to be unsuccessful; and, beginning with credulity, is apt to end in unbelief of such remedies as colchicum, salicin, and opium. Such a man will prescribe and will never see that his prescription is carried out; by the habit of giving multifarious mixtures of drugs in ineffectual doses he allows what he has prescribed three times a day for a fortnight to be really taken twice or once a day for a week. He will prescribe exercise or lying down, abstinence or feeding, and never trouble himself to see that his directions are carried out. Who shall blame the patient if he ceases to believe in remedies to which the physician obviously attaches no importance? If we would sometimes prescribe no drug at all, but insist on abstinence from certain articles of food or drink, upon more frequent or less frequent meals, upon regular exercise or absolute rest, should we not secure more obedience from our patients when we prescribed really necessary drugs—just as a clergyman who desires to get a liberal collection would do wisely to begin by insisting on the sin of giving to charities which one believes to do more harm than good? How can we expect success in treating an obscure nervous affection if we apply galvanism to the spine without making sure of any physiological effect, nay, sometimes without making sure that a current is passing through the electrodes; or if we send a patient to drink the waters of such and such a fashionable watering-place without remembering that there are two or perhaps three springs, one of them inert and the other very possibly injurious? What success can be anticipated if we order ointment for a weeping eczematous patch, where it floats on the secretion and never reaches the inflamed tissue; or if we prescribe a lotion to be applied twice a day to skin well protected by its sebaceous secretion? We all know this half-hearted, ineffectual mode of action in everyday life; the man who wipes his shoes as a ceremony and never looks to see if he had got rid of the mud; the groom who feeds his horse but never sees whether the oats are eaten; the nurse who washes the child and still leaves wet places. Now much of this weak and therefore useless treatment is only the indolence to which we are all prone, and against which we must struggle as a temptation; but much of it, I am sure, is the offspring of incredulity, and this again springs from half belief in quackery and imposture. Much of our ineffectual treatment again depends upon want of belief in our diagnosis. Until we make up our minds whether a certain eruption is psoriasis or a scaly syphilide, we shall never deal with it successfully. If we only suspect syphilis, we shall give our remedies in inadequate doses, and relinquish them if we do not see immediate benefit; whereas if our diagnosis is real and thorough, we shall use our remedies with confidence, increasing the doses, varying the form, but always persevering until we obtain their physiological effect—then we may reasonably hope to cure our patient.

Another source of failure in therapeutics is the legion of new remedies, the eulogium of which fills our waste-paper baskets and lights our fires. It is astonishing to find apparently rational men forsaking the drugs which have been proved effectual by the experience of long-past time and of all civilised nations to take up with remedies the composition of which is often unknown, the use of which they have never learned, and of which the value rests upon the interested or credulous assertions of those who try to sell them. It takes a man long years of practice to learn how to prescribe opium. Why throw away this priceless knowledge to dabble in quack cures of which the very praises inspire distrust? New remedies are no doubt discovered from time to time—in this generation we have had several—and all probable claimants should be tested in pharmacological laboratories and in hospital wards. But I am speaking of drugs which have never passed either of these tests. Surely in this age of advertisements which disfigure and defile the beauties of land and sea, of town and country, of literature and art, the most credulous must be convinced that costly and pertinacious advertisement is evidence of the lack, rather than the possession, of genuine worth. No, sir, so far from our profession being carried away by this noxious habit, let us hope that we may not only stamp it out from among ourselves, but spread our own standard of conduct to other pursuits, until some day an honest tradesman shall be ashamed to push his sales by self-laudation and the wealthy manufacturer shrink from offending the eyes and deafening the ears of his fellow-creatures by scribbling his name on blank walls and screaming it in every street.

In another popular branch of treatment it seems very desirable that the scientific spirit should be somewhat more freely admitted—I refer to treatment by baths and waters. That both are valuable modes of treatment no one will deny, but who will be so bold as to assert that it makes any difference whether patients take a bath of water heated as it comes from the soil or heated to the same degree in a kettle? Who will pretend that so many grains of laxative or alkaline salts will act differently when occurring in natural solution and when dissolved in the same proportion in the druggist's shop? That benefit is obtained by change of air and scene, by early hours, regulated rest and exercise, and copious draughts of water is beyond dispute; but it is surely a pity when, instead of rational explanation of a "cure," we suffer our patients to be deceived by unscientific and more or less untruthful statements.

Is it not a mistake for so many of us to prescribe the made-up drugs offered us by wholesale manufacturers instead of our own combinations? It leads our patients to ascribe their recovery not to our skill, but to this or that pill or tablet. It would be an excellent task for this great Association to set some of our skilled analytical chemists to strip the veil from mysterious remedies and tell us the exact composition of the many patent medicines, some of which are inert and some injurious.

Rational Medicine and its Wages.

Do we ask whether scientific medicine obtains the recognition that is due at the hands of the public? I believe that on the whole it does, or if in any degree it fails, that the failure is due to ourselves. We cannot expect that any but the most educated and enlightened should look at our science or our art from a rational point of view. The popular notion of a doctor among out-patients is a man who has got some wonderful cure in a bottle, which will make them well. The more educated patients suppose that, knowing what is the matter with them, or as we say, having made their diagnosis for themselves, their next business is to choose the doctor who has devoted his exclusive attention to the malady of which they suppose they are the subjects, or if they chance to suffer from what they call a complication of diseases they will consult a heart-specialist to cure palpitation, a throat-doctor to cure hoarseness, and a rising young surgeon to "a special hospital for diseases of the knee," to cure weakness in that joint. If they should find no relief after these consultations

—*Flectere si nequeo superos, Acheronta movebo*—they denounce legitimate medicine as useless and go to the lowest impostor, and will afterwards tell their friends that after being "given up by the faculty" they found instant and miraculous relief in a single box of wind-pills, a galvanic belt, or a pad of "oriental herbs" worn on the pit of the stomach.

The fact is that we cannot expect our patients should understand the scientific basis of medicine, the meaning of etiology, or the possible degree of efficiency of treatment. What they frequently ask of us is to allow them to continue the very course of life to which we have laboriously traced their symptoms, and to give them some medicine which, as if by a charm, will break the inevitable sequence of cause and effect. They are slow to understand that this world gives nothing for nothing, and that we can only subdue Nature by obeying her laws.

There is, in fact, but one way in which we can obtain what we call our just recognition. Our services, however great, are services to the individual, not to the community. It is therefore absurd for us to expect the honorific or the more solid rewards justly assigned to statesmen, to generals, or to judges; but from individuals we may expect—and I venture to say that as a rule we receive—the trust, the honour, and the gratitude which we have earned. Few of our patients will ever understand our principles or our methods, the reason for our successes, or the explanation of our failures; what they do understand is personal character, honesty and sense, kindness and sympathy, liberality and benevolence to rich and poor. These are the qualities which have always gained and still gain the respect of our fellow-men; and I venture to say there is not a town in the three kingdoms where such respect is not widely and deservedly earned by our profession. In every cathedral, in almost every parish church, we see tablets bearing witness to the esteem in which the local practitioner lived and died. He spent his life in the constant exercise of his best faculties, intellectual and benevolent—a sure path to happiness; every day brought fresh interest and left no time for melancholy; he earned not only money but money's worth, in respect and influence; and when the practitioner became the patient—as we all must one day be—he had pleasant memories of a life spent in the service of God and man, and he still lives in the hearts of his grateful patients.

> And there sepulcred in such pomp doth lie
> That kings for such a tomb might wish to die.

ITALIAN LARYNGOLOGICAL SOCIETY.—The Italian Society of Laryngology, Otology, and Rhinology held its fifth Congress at Naples, contemporaneously with the Tuberculosis Congress, under the presidency of Professor Masini. Among the communications presented were reports on tuberculosis of the regions of the body with which the Society specially concerns itself. Professor Massei dealt with the disease as it affects the upper respiratory passages, and Professor Gradenigo with tuberculosis of the ear. The morbid anatomy and bacteriology of such cases were discussed by Professor Martuscelli; Dr. Cozzolino treated of sanatoria in relation to laryngeal phthisis, and Drs. Ferreri and Rosati submitted suggestions for prophylaxis. Professor De Rossi reported the results of his investigations as to the testing of the hearing in railway servants, and a resolution was passed approving the step taken by the Sicilian Company in having the hearing of the men in their employ regularly tested, and expressing the wish that its example might be followed by the other railway companies of Italy.

AN INTERNATIONAL SPIRITUALIST CONGRESS.—Like the rest of the world the Spiritualists are taking advantage of the Paris Exhibition to hold an international congress. Their Congress comprises five sections: Spiritual, Magnetic, Hermetic, Theosophic, and Individual Spiritualism. In the Magnetic Section such questions will be discussed as the impropriety of classing human magnetism with hypnotism; human magnetism, magnetic procedures, passing of the hands, etc., action of the eyes and of the look; healing mediums, the *rôle* of suggestion; application of massage in acute or chronic affections; the appreciation of magnetism and massage in different countries; the facilities or obstacles which they met with in different countries; the divining rod; the exterioration of sensibility, etc.

ADDRESS IN SURGERY

BY

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At the Annual Meeting of the British Medical Association at Ipswich, August, 1900.

THE SURGEON IN THE NINETEENTH CENTURY.

MR. PRESIDENT, LADIES AND GENTLEMEN,—The honour of being selected to address an association which represents not only in numbers but also in dignity and repute the medical profession of this country is an honour of such a kind that I feel it can only be belittled by any expressions of gratitude I am able to command. I will do no more therefore than sincerely thank you for bestowing upon me a great distinction, and at the same time remind myself of the words of Goethe that "it is easier to bind a wreath than to find a head worthy to wear it."

I am fortunate also in the circumstance that the occasion for the giving of this address should coincide with the concluding year of the nineteenth century. This century has been without a parallel in the history of human culture, and so far as the art of surgery is concerned has embodied an advance in principle and in practice which has been no other than revolutionary. I do not propose to attempt a review of the progress of surgery during the last hundred years. That work has been already done by abler hands. I would venture rather to deal with the progress of the surgeon himself during this period, and with the advancement of the individual as an exponent of a grave profession.

There is little difficulty in fashioning a picture of England as it was one hundred years ago. A sympathetic literature has left us with ample records of the men and women of the time and of the scenes they moved among. These records are rich with the littleness of personal affairs and are made living by the very gossip and petty commentaries of those who constituted society when the century was young. The life in England then was largely life spent in the country, in sleepy villages, and in sober self-esteeming county towns. The conditions were yet immature which led men to herd together in ever-extending cities and to swarm around oases of blackened chimneys and restless furnaces.

Travelling was a luxury limited to the few. The many were content to live and die within sight of fields and spires which had been familiar from babyhood. They were apparently content to keep to their own stations in life, to take their notions of dignity from the squire and their conceptions of religion from the vicar, and to be satisfied with such excitement as was afforded by harvests and market days, by the movements of the locally great and by the achievements and misdoings of their neighbours. In many a town it was no little event when the coach from London lumbered through the cobbled streets or when a gang of pressed men marched by on their way to the sea or when some soldier home from the wars made the little ale house lurid with tales of arms and tragic lands. These simple folk were comparatively free from the fever of social ambition, from the almost savage conflict of modern commerce, and from the bewildering hurry of events which compass the peace of later times.

London was then not one-fourth of its present size; the great city ended, towards the west, at Sloane Street and beyond were quiet field and meadows intersected by footpaths, certain of which led to the hamlet of Kensington and the little riverside village of Chelsea. The lover of solitude would have found seclusion in the wide open country through which ran the Edgware Road. Paddington was still in the fields. Game could be shot about Westbourne Green and around the isolated farm house which marked the present settlement of St. John's Wood. Few would have cared to venture after dark across the bare fields of Battersea or to traverse the expanse of open land which stretched to the north of Tottenham Court.

No railway terminus flaunted its hideous structure in the city's midst, and neither omnibus nor cab nor tram car invaded the narrow streets. There was no telegraph and no

telephone. The postal system was without form and void. The gayest streets were lit by oil lamps, and the gloom by night was only equalled by the dirt by day. It was not until 1829 that the omnipotent policeman appeared upon the scene, and his early experience of the city's traffic was concerned with sedan chairs and cabriolets, with gaudy coaches and creeping wains, with link boys and running footmen. It was not until 1821 that the English Channel was crossed by steamboats and that the picturesque hoys and coasting sloops, the dignified frigates and the stately East Indiamen, began to vanish from the sea.

Education among the mass of the people was a matter of little account, and was to a great extent actually non-existing. The average man of the middle class was quite content with a degree of learning which would do little more than satisfy the demands of a modern School Board.

As to the surgeon in those days, he was but a sorry element in social life. In the great towns and cities there were esteemed practitioners of surgery who were eminent by reason of their scientific work and their successful practice, but their numbers were few. At the commencement of the period under notice London was the centre of surgical activity, and the prominent exponents of the art at that time were John Abernethy, Henry Cline, Sir William Blizard, Sir Everard Home, Sir Astley Cooper, William Lawrence, and Charles Aston Key. The great John Hunter had died in 1793, having accomplished a work which marks an epoch in British surgery. In the provinces the most conspicuous surgeons were Edward Alanson of Liverpool and William Hey of Leeds, while in Edinburgh the position of the leading operator was held for many years by John Bell. A little later in the century we find among the names of prominent men in England those of Sir Charles Bell, Sir Benjamin Brodie, and the ingenious and learned Benjamin Travers.

At the beginning of the century surgery on the Continent was represented by such men as Sabatier, Deschamps, Boyer, and Larrey in France, Scarpa in Italy, Langenbeck, Chelius, and Diffenbach in Germany, and Warren and Physick in America.

The surgeon or common practitioner in the village and town in these early days has been depicted by many writers. Possibly the most precise of these was Smollett, who was himself in turn an apprentice, an assistant, a surgeon's mate, a practitioner, and a graduate in medicine. Smollett died in 1771. The account he has furnished of the leech of his time is tolerably discouraging. We find him an ignorant, illiterate, sordid creature, not above the allurements of money-grubbing, and not without suspicion of dishonest practices and of a leaning towards the bottle. He was to a large extent a mere retailer of physic, and in the public eye he ranked with the quacks and nostrum-sellers with whom he competed. There was probably some excuse for a writer who, in a discourse in the *New Monthly Magazine* for 1828, speaks of the general body of surgeons as a "cringing pulse feeling race." Smollett's description could not have been true of all his brethren, and there is no doubt he wrote with the bitterness of an unfortunate experience. Still, there can be little question that Launcelot Crab represented a type not yet extinct when the century began, and he must be taken as a forerunner of the cultured and esteemed general practitioner of the present day.

1.—*The Surgeon as an Adviser.*

In noting the advances made by the surgeon during the century, the first matter which may be dealt with concerns his position as an adviser to his patient. In reviewing this subject, one cannot fail to be immediately impressed by the paramount influence which exact knowledge—or *a fortiori* the want of exact knowledge—has had upon the attitude of the medical profession.

It is obvious that the progress of any science is to be measured by the amount of absolute truths which may have been accumulated at a given time. The lack of knowledge, the mass of things unknown, represent merely a void to be filled. In the development of the science of medicine the element of the unknown has not remained so negative a factor, but has on the contrary, proved to be a stimulus for a very luxuriant invention, the products of which have been tabulated as facts.

There is no science outside our own in which there has been, during the stages of development, such an extreme disproportion between the amount of knowledge professed and the amount proved ultimately to be exact and sound. As an example of this may be cited the "humoral" system of pathology which, in spite of its ancient origin and its more or less obvious foolishness, held a position in medicine for centuries, and struggled on, as a distorted and dying creed, even into modern times. This system, in its barest features, asserted that four cardinal humours occupied the human body, and that practically all diseases, and certainly all tumours, were due to disorders of certain of these fluids. The pathology of this system was precise, dogmatic, elaborately classified, and full of detail. Upon it all treatment was founded, and yet the whole of this precious system was a mere daring fiction, an ingenious fancy, the product of an impudent and unscrupulous imagery.

The reason for all this lies more with the sick man than with the man of medicine. The sick man requires absolute and exact knowledge from his doctor. He will accept neither possibilities nor doubts nor confessions of ignorance. He will accept such from his lawyer and from his man of business but not from the man who attends him in illness.

It is no matter of wonder that in the past the physician has made good by fiction what he lacked in fact. The demands of the patient have been hopelessly beyond any powers of supply, and the deficiency has been furnished by the products of invention. It would seem that the less the man of medicine knew the more he invented, and the more diligently he hid his little light under the bushel of a ceremonious and mystery-making treatment. The judicial wig, the academic ruffle, the gold-headed cane, the reflective snuff-box, and the Socratic air all made an effective covering for the few poor bones which formed the skeleton of his knowledge.

It thus happens that a good deal of the pretence and humbug with which medical practice has been associated in the past has been forced upon the practitioner by the demands of unreasoning people. With such people the surgeon, in the early part of the century, had more largely to deal than he has to do at the present day, and yet his stock of knowledge could seldom meet the demands even of the reasonable. Hereby it came to pass that the puzzled man of medicine had to repudiate his ignorance, had to concoct such explanations and to construct such pathologies as could meet the sick man's inquisitiveness, and at the same time give a semblance of reason to an empirical and tawdry system of therapeutics. His utterances were tangled and confused by conceits of his own invention. A false attitude towards his patient was unconsciously forced upon him, and the folly of his pretence to an unattainable learning was apparent to all but the simplest. As an adviser, therefore, he spoke not as one having authority, and his position intellectually is well illustrated by the endless lampoons and caricatures to which he was publicly subjected.

The surgeon of the present day, as an adviser, is in a position which is so greatly improved that it could hardly have been imagined by his forbears of one hundred years ago. He has in the first place to deal with a more enlightened public, with patients whose education to a large extent enables them to appreciate the nature of scientific problems, and with whom it is possible to discuss difficulties, and to own to lapses of information.

In the second place, the additions made to surgical lore have been so substantial that in many departments surgery has reached to the status of an exact science. The surgeon need no longer need to call upon invention to supply such gaps as still indicate the unknown. An intelligent patient is satisfied with the assurance that practically nothing at present is known of the nature and causes of cancer. Such assurance is at least as valuable as the information provided at the beginning of the century, when the inquirer would have been told that cancer was "a diseased hardness,"[1] or a "scirrhous degeneration."[2]

We have perhaps not quite shaken off the poor vestments of mummery with which ignorance was clad, nor rid ourselves of forms of speech which still pass current for sense, but which are little more than sounding brass and tinkling cymbal. We speak assuredly of the "constitution" and of "states of the system" and of the "supporting of the system." We sanction such terms as "poverty of blood," "diminished vitality,"

and "sympathetic inflammation." We profess to believe in "tonics," in medicines the swallowing of which will give strength, in "galactagogues," in "alteratives," in "astringents," and in "cooling physic." We profess moreover to "strengthen the lungs" and give "tone to the stomach."

The modern surgeon can well afford to dispense with all this empty verbiage, since he can base his opinion upon demonstrated facts and can express it in plain words, free from any of the embellishments of a literary masquerade. For many reasons this is well.

2.—The Surgeon as a Man of Learning.

The surgeon at the commencement of the century appears to have lacked most of what we now consider to be the essentials of the art, and we can only view with amazement the scantiness of his learning and the poverty of his equipment. He knew little more of inflammation than that it was represented by swelling, heat, redness, and pain. His knowledge of the causes of inflammation and of those dangers which follow upon open wounds was scarcely in advance of that professed in the days of Hippocrates. He had no glimmer of the possibilities of asepsis. He had no anæsthetic, no hypodermic syringe, no clinical thermometer and no practical means of investigation in clinical chemistry. The very name bacteriology did not exist, and the treatment of disease by prepared serums would have appeared to him as wild as the wildest therapeutic dream of ancient days. Although vaccination had been introduced in the last year of the eighteenth century, the magnitude and nature of the principle it involved had not been appreciated.

The microscope as an aid to diagnosis played no part in the equipment of the surgeon. He had neither laryngoscope nor ophthalmoscope, and his acquaintance with otology, skin affections, and the diseases of women was at the best rudimentary and indistinct. He had only rude mediæval orthopædic appliances, and he knew nothing of the lithotrite nor of the array of instruments which are now in daily use in connection with ophthalmic, laryngeal, cranial, and abdominal surgery. It would seem indeed that there was little for him to do but to open abscesses and sow the seeds of chronic septicæmia, to excise tumours of the structure of which he talked much and knew little, to amputate limbs for diseases he could not mend, and to draw blood whenever doubt existed as to what was best to be done.

Conservative surgery was not understood, and was certainly not practised, and plastic methods of operation had no place in treatment.

Lord Thurlow, in speaking against the Surgeons Bill in the House of Lords in 1797, declared, with some basis of truth, that "surgeons in this country are not respectable men, their pretensions are unjust and illegal because they are not a scientific body."

In 1800 a man could practise as a doctor without passing an examination of any kind. Indeed one itinerant practitioner is reported to have assumed the title of assistant surgeon on the ground that he had served an apprenticeship to the crutch-maker of a hospital. The examination for the diploma of the Royal College of Surgeons was by *vivâ voce* only. There was no examination of patients, and no dissection of the subject. Candidates were required to produce evidences of apprenticeship, of attendance upon anatomical and chirurgical lectures, of having performed dissections, and of having attended the practice of a recognised hospital for a period of six months.

In 1813 the period of compulsory attendance at a hospital was raised to one year. The standard of knowledge, however, does not appear to have risen in corresponding proportion, for in 1822 the then President, Sir William Blizard, felt called upon to address the Court of Examiners on certain "tokens of remissness in teachers, and of inattention in students," which had been forced upon his notice. He regrets that candidates are commonly ignorant of the situation of nerves and blood vessels, of the disposition of the muscular fibres of the heart, gullet, and stomach, and of the diameters of the intestine. He further adds that "the deficiency of candidates in physiological information is far more remarkable," and enters into such detail as the following: "Often do we find them," says the President, "ignorant of the reasons why the ribs in inspiration are, from their figure and muscular connection, moved upwards and outwards, of the systole and diastole of the heart, of the process and intention of respiration, of the nature and distinction of the pulse, of the distinct offices of divers muscles, of the figure of the lens and uses of the humours of the eye in vision."

He concludes by deploring that there is a "correspondent darkness of mind relating to the symptoms, seat, causes, and rational treatment of diseases and injuries," and furnishes a catalogue of items with which candidates do not appear to have been commonly conversant, although the list presents such matters as the signs of fractures and dislocations, the symptoms of compression and of inflammation of the brain, the consequences of fractured rib, and the *rationale* of the symptoms of hernia.

At the commencement of the century there was, indeed, no systematised medical education. The training of the surgeon was paltry, casual, and inefficient. His preliminary education was miserably meagre. It was necessary that he should be able to read and write and pretend to some smattering of Latin. He became an apprentice, and, in that menial capacity, gleaned what he might from his master and from attendance upon sundry lectures. So far as hospital practice was concerned, his attitude as a learner was well expressed by the phrase, "He walked the Hospital." The institutions which he thus attended for a period of six months were in a state of rude squalor as regards administration, sanitary arrangements, and nursing, and well deserved the abuse which was lavished upon them.

3.—The Surgeon as an Operator.

During the nineteenth century the surgeon, as an operator, passed through a rapid metamorphosis, and has now reached at least the level of the unexpected. It may have been supposed that there is little to be learnt in the way of using a knife which had not been learnt during a period of over eighteen hundred years, for there were surgeons before the Christian era. Yet time has shown that even in 1800 there was a technic in operating which was as little like the technic of to-day as are the slashes of a cutlass when compared with the studied movements of a foil. It may have been surmised that twenty centuries would have exhausted the methods by which a limb could be cut off. Yet in 1800 modes of amputation were in vogue which are now regarded as uncouth. It cannot even be said that the commencement of the century saw in use a ready and efficient means of checking bleeding, although that measure represents the most elementary of the surgeon's duties.

The operator of olden times certainly possessed many qualities which are now falling into abeyance, and which cannot pass away quite unregretted. The success of his craft depended largely upon his daring, upon the alertness of his eye, the steadiness of his nerve, and the rapidity of his movements. He stepped into the arena of the operating theatre as a matador strides into the ring. Around him was a gaping audience and before him a conscious victim, quivering, terror-stricken, and palsied with expectation. His knife was thrust through living flesh and acutely-feeling tissues, and the sole kindness of his mission was to be quick. In spite of moans for mercy from gagged lips the knife had to move on its way steadily, and, undeterred by struggles and bursts of hæmorrhage, the blade must needs pass without faltering or sign of hesitancy.

There is less need for such qualities now. The dramatic element in surgery has gone with the men who unconsciously fostered it. The operating theatre of the present day has lost its horrors, and has changed from a shambles to a chamber of sleep. The surgeon's hand can move with leisurely precision, and theatrical passes of the knife are favoured only by those who have not yet learnt that mere brilliancy is no measure of success.

It may be that the present-day surgeon is a loser in that he has less need for those dashing qualities which were essential to the operator before the days of anæsthetics; but, on the other hand, he has gained much in the direction of the sympathetic handling of his patient and in the culture of gentleness.

It is little wonder if the older surgeon became rough and stern, if his sense of feeling became dulled, and if the sympathetic side of his nature suffered some suppression. Indeed,

contemporary accounts are apt to represent the operator of preanæsthetic times as rough almost to brutality, and as coarse both in his conduct and in his utterances. His language, it would appear, savoured of the cockpit, and the hasty flourishing of his knife led occasionally to unintended mutilations.

Within the compass of some thirty years the whole state of affairs has changed. Consideration for the patient and for the patient's sensibilities have become a matter of the first moment, and the operator has learnt that his work is best done if done with gentleness and tact, and that haste and bluster, coarseness and coarse handling are out of place around the operating table. A striving after effect at any cost has ceased to be an element in the surgeon's work. Success is no longer to be measured by the number of minutes occupied in the amputation of a limb, but by the state of the patient many days after the measure has been completed. The triumph of the older surgeon was immediate and scarcely reached beyond the arena of the theatre. The triumph of the modern surgeon is deferred, and is found in the operation ward and in the convalescent home.

Still, the fact remains that it is easier to be a surgeon of some degree at the end of the century than it was at the commencement, since in the earlier days the qualities needed for success in operating were rare and of a kind not readily to be acquired.

On passing more into detail, one notices that beyond these general changes in the attitude of the operator there have been others which owe their existence to special advances in the surgeon's art. Prominent among these may be named: (1) An improved knowledge of anatomy; (2) a readier method of arresting hæmorrhage; (3) the employment of anæsthetics; and (4) the introduction of antiseptic measures.

1. *An Improved Knowledge of Anatomy.*—Among the surgeons of the early part of the century there were many competent anatomists, and not a few who could lay claim to be deeply versed in that science. Among the latter were such men as Astley Cooper and William Lawrence. Still, in the education of the average surgeon the study of anatomy did not play a prominent part. Anatomy was largely taught by means of public demonstrations. The teacher dissected and the student looked on, much as he did in the days when Rembrandt's great picture of Nicolaus Tulp and his pupils was painted. The knowledge required was scant and superficial and had little practical basis, and no methods of teaching existed which can in any way compare with those in vogue at the present day. The science of anatomy was well advanced at the commencement of the century, but it was not taught to the common student. *Quain's Anatomy*, first published in 1828, contained a very sound account of the human body, although the whole work was then represented by a single small volume of 700 pages which was without illustrations.

The facilities for acquiring a practical knowledge of anatomy were not only few, but were hampered by many sordid difficulties. Anatomical schools were regarded with disfavour and were actively discouraged. They were viewed with unconcealed suspicion by the public, and were surrounded by a ghoulish romance in which rifled graves and unseemly dealings with the hangman played a pungent part. Indeed, the teacher in an anatomical school found himself involved in a squalid and disreputable traffic, very uncongenial to any earnest man of science.

Among the many qualifications needed for success in operating, a practical knowledge of anatomy as acquired by repeated dissection, is conspicuous. Such knowledge as the surgeon needs is to be learnt not from books but from the patient use of the scalpel and forceps. The dissecting room is the surgeon's nursery. The tissues of the body are the material with which he works, and he must needs know them as the sculptor knows the marble he chisels and the potter the clay he moulds.

It is no matter of surprise that the older surgeon often lacked confidence in operating, that he failed in initiative, and clung only to formulated methods, and that a departure from accepted lines was attended with fear and hesitancy. Ignorance encouraged in the rash heroic passages of the knife and in the timid an over-cautious and dangerous fumbling. And as to this it is probable that in preantiseptic days as much ill attended the nervous fingers which were creeping clumsily into the unknown as followed the reckless operator who essayed to draw his bow at a venture.

2. *A Readier Method of Arresting Hæmorrhage.*—At the commencement of the century the means employed for the control of bleeding were numerous, and were represented by such familiar measures as the ligature, the suture, styptics of many kinds, and the actual cautery. In applying the ligature the vessel was picked up by forceps and tied as at the present day. The instruments used were those of Dieffenbach, Assilini, and Liston. The older types of instruments were not readily applied, or at least required time in their adjustment. The bleeding from the vessel was not necessarily controlled by the forceps when in position. The general rule in amputation was to apply a tourniquet and to ligature the individual arteries after the limb had been removed. In the excision of tumours the practice was recommended of securing each vessel as it was divided.

When it is remembered that operations were carried out without anæsthetics, it will be understood that the older surgeon had an absolute terror of bleeding, and was driven to undesirable shifts to avoid the need of facing it. He was indeed a coward where hæmorrhage was concerned, and there was reason for alarm when a conscious patient was struggling and showing signs of exhaustion, and when the means for staying the stream of blood were slow of application.

We find, then, that hæmorrhage was expected, and that a liberal loss of blood was considered to be a necessary adjunct to every major operation. Tourniquets were employed freely and with considerable harshness. Raw surfaces were bathed with styptic solutions which were often destructive in their action or at least opposed to primary healing. The actual cautery with which to sear the bleeding area was in some request, and every well-equipped operating theatre kept its stove and its cautery irons in constant readiness.

The least pleasant evidence of the surgeon's dread of hæmorrhage and of his inability to deal with it was afforded by the treatment of certain nævi in infants and children. These growths were strangled by ligatures which slowly cut their way through the skin and the neoplasm, assisted by a benevolent process of suppuration. A painful ingenuity was expended upon amplifications of this measure, the cruelty of which was but little mitigated by the introduction of chloroform.

Allied to this procedure was the *écraseur* of later date. Its invention was due to Chassaignac, and it was freely used in England until quite recent times. It was employed for the removal of growths of various kinds, but its most baneful employment was as a means for excising the tongue. It is scarcely to be believed that within the period of the introduction of anæsthetics the tongue has been torn out of the mouth by means of a loop of hemp or wire which strangled it at its root.

The *écraseur* will remain in the archives of surgery as the insignium of the incompetent and the timorous, and will stand out as a blot in an otherwise bright period of progress and enlightenment. The shadow of this mediæval instrument has been slow to fade, and as the ovarian clamp and the *sérre-nœud*, it clung about the confines of reasonable surgery and hindered the development of the operations of ovariotomy and excision of the uterus.

At the present day the surgeon has little dread of hæmorrhage, and the confidence he possesses is based upon good grounds.

In the first place, he makes larger use of the precautionary ligature of vessels. It has become a commoner practice to apply a temporary or permanent ligature to a main artery before a part supplied by that vessel is excised. This is carried out frequently in dealing with large and vascular tumours. In removal of the tongue, moreover, an excellent method is that in which a preliminary ligature of both linguals in the neck is carried out. In removing the uterus through an abdominal incision the question of hæmorrhage is disposed of by an early ligature of the ovarian and uterine vessels. A further example of this mode of anticipating bleeding is afforded by that method of hip amputation which is known as the anterior racket. Here the main vessels and even the main branches are secured before the flaps are cut, whereas by the older plan the vessels were severed with the flaps and were tied after the limb had been removed.

In the second place, the latter-day surgeon is operating upon an anæsthetised patient and can proceed with slowness and deliberation. The importance of this fact in connection with the present subject cannot be over-stated. In the instances which have been just cited an excision of the tongue in a conscious patient would be greatly extended by the twofold operation in the neck, and whereas the amputation of the hip by transfixion occupied in able hands but a minute or so, the operation by the anterior racket is tedious and involves relatively much expenditure of time.

Thirdly, the treatment of hæmorrhage has been to a remarkable extent simplified, if not indeed rendered complete, by the introduction of the pressure forceps of Sir Spencer Wells. These little instruments represent the most valuable addition which has ever been made to the surgeon's appliances. It is not uncommon in operations of a certain type to have twenty or more pairs of pressure forceps applied to the surface of the wound at one time. This represents a degree of possible bleeding which in the old days, when every vessel had to be separately tied, would have been replaced by actual bleeding of a fatal type. No instrument has brought with it so great an assurance of security or has done more to extend the area of safe operation.

3. *The Employment of Anæsthetics.*—The value of the anæsthetic and the radical and beneficent transformation it has effected in surgical practice call for no comment in this place. The changes that the discovery has wrought in the personality of the surgeon, in his bearing, in his methods, and in his capabilities are as wondrous as the discovery itself. The operator is undisturbed by the harass of alarms and the misery of giving pain. He can afford to be leisurely without fear of being regarded as timorous. To the older surgeon every tick of the clock upon the wall was a mandate for haste, every groan of the patient a call for hurried action, and he alone did best who had the quickest fingers and the hardest heart. Time now counts for little, and success is no longer to be measured by the beatings of a watch. The mask of the anæsthetist has blotted out the anguished face of the patient, and the horror of a vivisection on a fellow-man has passed away. Thus it happens that the surgeon has gained dignity, calmness, confidence, and, not least of all, the gentle hand.

Anæsthetics have, moreover, greatly extended the domain of surgery by rendering possible operations which before could have been only dreamt about, and by allowing elaborate measures to be carried out step by step.

The introduction of anæsthetics has not only developed surgery, but it has engendered surgeons. It has opened up the craft to the many, for in the preanæsthetic days the qualities required for success in operating were qualities to be expected only in the few.

In the technique of established operations chloroform and its allies have led to advantageous changes. This is well seen in the case of amputations. In the olden days that method of removing a limb was best which was the most speedy. A prominent position was, on this account, given to the cutting of flaps by transfixion, a long narrow blade being used for the purpose. This rapier-like instrument required great skill in handling, and in the grasp of the feeble it was a fearsome weapon. Muscles were sliced through in such a way that the widest possible section of their substance was often made. Vessels and nerves were, in like manner, cut almost in the direction of their long axes, and the resulting incision gave the maximum area of wounding. At the present day transfixion is abandoned, and the murderous amputating knife has found its way into the museums of the curious. Muscles can now be severed at right angles to their length, or in such a way as to secure the smallest possible surface of section. Vessels and nerves are cleanly divided in the same manner, and the resulting area of the wound is reduced to a minimum. This difference in methods is vividly illustrated by amputation at the hip-joint.

4. *The Introduction of Antiseptic Measures.*—Of the great work of Lister, and of the introducing of the antiseptic treatment, there is no call to speak at this time. When the century was young the touch of the operator was the touch of a tainted hand; the balm he poured into the wound was poisoned, and he himself undid the good his science strained to effect. It is sad to think that behind the earnest man with the ready knife there stood a shadow which rendered hopeless his kindliest effort, and which only too often proved to be the veritable shadow of death.

The change has been great, and its greatness lies in its littleness, for it is bound up with no more than this: that the surgeon has learnt to be clean.

The operator of days gone by would have turned with some petulance from the grand simplicity of the counsel to be clean. He ever sought some means of mighty bearing to rid him of the incubus of failure, and, like Naaman of old, he would have hesitated to dip in the Jordan of antisepticism to be free of his leprosy.

The surgeon has not only learnt to be clean, but he has become aware of the potency of little things. The demands of the antiseptic treatment have made him minutely careful, distrustful of any aid that he cannot control, and suspicious of any semblance of error.

It is possible that the abandonment of the old easy order of things has been followed by a too slavish devotion to mere ceremonial. The remarkable and extravagant preparations with which some surgeons now approach an operation, the cleansings and the washings which precede the laying on of hands, smack a little of fetish worship, and foster the cult of the surgical Pharisee. On the other hand these performances, this "making clean of the outside of the cup and platter," seem to give assurance, and to render the devotee thankful that he is not as other men.

The Surgeon in the Future.

Circumstances in the tendencies of to-day foreshadow to some extent what may lie buried in the future. The changes which have swept over the world of surgery have extended the possibilities of the art, and have, at the same time, added a host to the ranks of those who practise it. Some thirty years ago the roll of such as could claim to be accomplished operators was very small. The greater deeds of surgery were limited to cities and the larger towns. The general practitioner seldom took up the scalpel except in minor necessities. Even in London the list of consulting surgeons was meagre. In the hospitals of the metropolis the number of operations performed in the year would be less than is now the quotum for a month.

But here at the close of the century the disposition of affairs is wholly altered. Where there was one surgeon there are now ten, and throughout the breadth of the land and to its utmost limits the work of the operator has extended. The more ambitious performances of surgery are no longer restricted to great centres, but are carried out in the little town, in the cottage hospital, and even in the cottage itself. The general practitioner is laying claim to operate upon his own patients, and is carrying out his intention in no hesitating manner. The days of the great operator, of the one man to whom all came who could, are rapidly passing away. Indeed, the practice of pure surgery, which was at one time limited to the prominent few, is now becoming common to the many. The man who excels conspicuously as an operator will always attain such eminence as his ability deserves, but the exclusiveness of the practice of operative surgery is quietly vanishing with the century. This change is well. It is a change that is inevitable. The democratic movement is the active power of the day, and that an oligarchy in the community of surgeons should be replaced by an earnest democracy is precisely in accord with the spirit of the times.

In every great change there must—at first at least—be some undesirable developments, and it is impossible to deny that the wider distribution of the practice of operative surgery may lead to the occasional performance of major operations by men who are not justified, either by experience or by training, in undertaking them. Furthermore, there is, among the signs of the times, some evidence that the reaction in the matter of operative surgery is to some degree extreme, and that we are in danger of passing from the policy of doing too little to the policy of doing too much. Operations we know were too few in the past, but there is some foundation for the impression that they are occasionally too frequent in the present.

One other matter which looms out of the future will suffice to bring this subject to a close. So many have been the artificial aids to clinical investigation which recent science has introduced that it comes to be a question whether the

natural acumen of the surgeon will not deteriorate in proportion as he fails to encourage that particular learning which clings to the finger tips of all great diagnosticians. That there will be such a decadence is beyond doubt. The loss is to be deplored, for if there be one point of excellence which stands before all in the qualifications of the perfect surgeon, it is bound up in that refined sensibility, that critical perception, that inestimable cunning, which lies in the surgeon's touch.

Examples of the directions in which this loss will be felt come readily to mind. A considerable amount of skill, for example, is demanded in the examination of complex fractures, of lesions of deep-seated bones, and of injuries about joints. What was to be learnt of these troubles had to be acquired by a tedious manipulation demanding considerable refinement. The surgeon who has now to deal with such conditions can afford to dispense with a prolix examination, and can submit the inquiry to a demonstrator of the Roentgen rays. The skiagraph, although its value is much exaggerated, embodies a substantial gain, but it is to be discounted by the loss of the great element in education which it is slowly replacing.

An obscure tumour—to take another instance—presents itself, and no longer is the surgeon compelled to trust to the acuteness of his inquiry and his patient review of all the physical details of the mass. For what his ready fingers may have learnt can be substituted the findings of the exploratory incision, the trochar, and the aspirator. Here once more an advantage is minimised by a loss.

Or, again, an abdominal swelling is brought under notice. Its features are obscure, but much of the uncertainty of outline can be dissipated by a cultured hand which, with infinite patience and repetition, has learnt to construct a reality out of a shadow. It may be said that it is needless to persist in bringing this much elaborated means of inquiry to further perfection since the problem is at once to be solved by an exploratory laparotomy. By such little operation a great advantage is gained but an opportunity to add to one of the most refined forms of learning is lost. The value of the exploratory incision is beyond question, but among the signs of the times it is impossible not to notice a tendency to resort too readily to this means of solution. The Gordian knot, according to the legend, was ultimately cut, and it is a question whether the sum of human ingenuity would not have been substantially increased if attempts to untie the noose had been more diligently persisted in.

In another example, let it be supposed that a suspicious ulcer presents itself for diagnosis. In such case is it well to devote time to a precise and tedious inspection of its edges and to a careful tactile examination of its base, and to check what is discovered by results laboriously gained from like inquiries? Is it not simpler to take a scraping of the affected surface and to submit it to a microscopist, and thus to be spared a method of examination which, although it may not give final results, yet represents an opportunity of furthering a priceless accomplishment?

Finally, there are cases which present symptoms hard to interpret at any superficial inquiry. Is it worth while in such to undertake an exhaustive critical research and to submit the whole to a trained judgment? The quest would no doubt develop habits of observation and powers of weighing evidence; but the process is slow, and an inquiry carried out in a bacteriological laboratory will clear up all doubts, and at the same time dispense with the efforts of a cultured sense.

Those, therefore, who are concerned with the education of the surgeon of the future would do well to still cherish this ancient power, and to foster a memory of the fact that surgery is, in its very essence, a handicraft, and that in all that he does the surgeon's great endeavour should be to make his own hands self-sufficing.

It is sad to think that this hardly-acquired faculty dies with the possessor of it, and never was this more vividly presented than it has been by the loss which surgery has sustained in the death of Sir James Paget. One can picture the great surgeon composed in his last sleep, and can see the once busy fingers lying lifeless on the white sheet, and then comes the wonder at the wealth of learning, at the exquisite cunning, at the refined sense which lay dead in the dead hand. No written book can hold a tithe of the dainty knowledge which had been mastered by those subtle fingers, and no record, however laboured or however loving, can tell of the power which once rested in that magic touch.

An individual loss does not, however, hinder the general tide of progress. Advance in such a work as ours depends upon the uneventful work of the whole body and is only accentuated by the achievements of the prominent few. The movement is the movement of a multitude in which individuality is, at a distance of time, little to be distinguished and in which personal eminence contributes a smaller factor than the present is ready to acknowledge. Those who stand forth as the leaders of the advance are merely the elect of the common body and the representatives of a wide intellectual franchise. Even he who startles the world as a discoverer has often done little more than give expression to what was already nascent in the multitude. So as one great surgeon after another drops out of the ranks his place is rapidly and imperceptibly filled, and the advancing line moves on with still the same solid and unbroken front.

The continuity of progress is undisturbed by the uncertainties of human life, and, as one writer has well expressed it—

"No work begun shall ever pause for death."

REFERENCES.
1 Samuel Cooper's *First Lines*, London, 1807. 2 South's *Chelius*, 1826-46.

INTRODUCTORY REMARKS

DELIVERED AT THE OPENING OF THE

SECTION OF SURGERY.

At the Annual Meeting of the British Medical Association at Ipswich, July-August, 1900.

BY HOWARD MARSH, F.R.C.S.,

Surgeon and Lecturer on Surgery, St. Bartholomew's Hospital; President of the Section.

IT has been agreed that there shall be no formal addresses at the opening of the various sections. I think members will endorse this arrangement. It may be possible to make such addresses interesting and perhaps even instructive; but they are in no way a necessary part of your proceedings, and they would encroach materially on the very limited time which is at your disposal for the proper business of the meeting—the reading and adequate discussion of clinical papers.

A very few remarks, however, which have a direct reference to the work of the Section may be really useful. On some previous occasions so many papers have been accepted for reading that many valuable contributions could only be hurried through in abstract, and no discussion was possible. This was unsatisfactory to all concerned. On the present occasion the object has been to cut the garment according to the cloth; in other words, to adjust the number of papers to the time that is available, so that each may have a fair hearing, and be fully discussed. I anticipate that all who are present will regard this as the proper method. Two set discussions have been arranged on subjects both of which I feel certain members will regard as well worthy of their attention; subdiaphragmatic abscess is no doubt a somewhat rare condition, yet it may occur in the practice of anyone. It is highly dangerous to life, and both in regard to diagnosis and treatment it presents difficulties of a very grave and embarrassing order. As the subject will be introduced by Mr. Godlee, and discussed by those whose names are a guarantee of their knowledge and sound judgment, I am sure that valuable information will be forthcoming.

The subject of fractures belongs to a different order. It is so old and familiar that it may appear at first sight too hackneyed and barren to be worthy of your notice. On second thoughts, however, I believe it will be felt that the opposite is really the case. Long a mere matter of routine the treatment of fractures has lately felt the influence of modern advance in other departments of surgery. The Roentgen process secures an accuracy of diagnosis which formerly was often impossible. The aseptic method makes operative interference safe, so that when necessary it can be adopted with

out hesitation, and it has become obvious that to secure the best results treatment must be applied not only to the fractured bone itself, but to the neighbouring joint and the muscles and other structures of the limb. All these are points that present themselves, and I feel certain that Mr. Bennett's paper, on which I know he has expended considerable time and labour, and the ensuing discussion will be attended with practical results of very material value which will establish and disseminate methods of treatment which will largely promote the welfare of patients and the credit of this department of surgery.

As to papers to be read I will merely venture upon one or two brief, and, as I may term them, official remarks. The time allowed to each paper is fifteen minutes, and to the discussion ten minutes for each speaker. We must, as I have said before, cut our garment according to our cloth, and if one member of the Section takes up more than his share of the cloth, those who follow him must go short, so that a conciseness, which must not of course impair clearness of statement and completeness of argument, will be a blessing which we shall all thoroughly appreciate and greatly applaud, while as your humble servant I shall be spared the distress of curtailing remarks which, however weighty and to the point, are materially overstepping the allotted time.

INTRODUCTORY REMARKS

DELIVERED AT THE OPENING OF

THE SECTION OF STATE MEDICINE.

At the Annual Meeting of the British Medical Association at Ipswich, July-August, 1900.

BY JOHN C. THRESH, M.D., D.Sc., ETC,

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SOME PROBLEMS IN RURAL SANITATION.

ONE of the most interesting problems which has engaged the attention of scientists during recent years is that of the period for which man will continue to live upon this earth. There is a general consensus of opinion that a time will come when the earth will cease to be habitable, but there is a wide divergency with reference to the length of the period which will elapse before the human race disappears. There are those who think that some great catastrophe may terminate our existence at an early period, others calculate that we are using up the available oxygen in the atmosphere so rapidly that in the course of two or three centuries there will not be sufficient left to support life. At the opposite extreme we have those who teach that man may continue to inhabit the earth for the millions of years which will elapse before the cooling process solidifies all the water on the globe. These speculations however interesting have little bearing upon public health, but there are other questions somewhat analogous in character which sanitarians will have seriously to consider. One of the most important is the continued increase of population, an increase almost exclusively confined to towns and cities. The effect of over-population is well exemplified in the two countries in which the population has attained its maximum density, India and China. The result is periodic famines, generally associated with pestilence in some form, affecting wide areas and millions of people.

The earth's population is increasing steadily, and in certain countries with great and continuously increasing rapidity. The production of food cannot for any very lengthened period keep pace with the increase of population, and it may be that famine and disease will more and more frequently occur and keep down the population within the limit of the available food supply. The growth of large manufacturing centres with the influx of rural labourers into towns, and the general neglect of purely agricultural pursuits, must in this country produce some marked effect. That this effect will neither conduce to increased health nor longevity can scarcely be denied; hence it is a result which we must deplore. The country has already reached a condition in which the population far exceeds that which can be fed by its produce, and the condition is being aggravated year by year by the increasing population and continuous neglect of agriculture, and I am afraid will continue until we receive a rude awakening, an awakening which in all probability will stagger humanity.

Our purely rural population is slowly decreasing, our urban population is rapidly increasing; therefore year by year the feeding problem becomes more serious. This is a fact so well recognised that its very familiarity is producing contempt. It is well, however, that we should from time to time be reminded of the fate upon which we appear to be almost blindly rushing. Sanitary improvements, unfortunately tend only to aggravate the evil and hasten on the day of reckoning. So much attention has been devoted to urban sanitation that the town dweller enjoys now many advantages not possessed by those who remain in the country, advantages which tend to prolong life, increase health, and, generally speaking, make life better worth living. For example, in most of our towns every house is efficiently drained and abundantly supplied with pure water, rendering it possible, with the minimum of trouble, to keep a house and its surroundings sweet and clean, and therefore healthy. In our villages and rural districts nuisances from the improper disposal of filth abound on every side, and the water supplies too often are unsatisfactory in quality as well as in quantity.

Land is going out of cultivation and decreasing in value, yet it is often impossible to obtain a small quantity to effect sanitary improvements. Let a plot be required in order to provide cottages with ground upon which to dispose of the slops and house refuse, or for the erection of better houses for the labourer, or for the erection of an isolation hospital, and it is often almost impossible to obtain it. Landowners refuse to sell small areas for such purposes, yet, in my county at least, farms are sold at ridiculously low prices, and the speculator who purchases, recognising the demand for small plots, promptly cuts up the farms and sells the land at an enormous profit. The dog-in-the-manger policy so common amongst landowners and their agents I cannot account for, but it is a fact which is well recognised and deplored.

How to bring back people to the land is one of the greatest problems of the age. It is far too large a subject for me to dwell upon, but I am convinced that one of the chief requirements for restoring prosperity to our rural districts is increased facilities for acquiring small areas of land for sanitary improvements. Some years ago one of my sanitary authorities succeeded in acquiring a small amount of land behind a group of rural cottages which had no gardens. A portion was allotted to each cottage, the conveniences, which had been near the back doors, were removed to a safe distance, and there was sufficient ground to permit of the slops, house refuse, etc., being disposed of without causing any nuisance, and the old defective drains with their accompanying ditch nuisances were abolished. Twice since the same authority has made repeated efforts to carry out similar improvements in other places, but the necessary land could not be obtained. With a sufficiency of land adjoining or near each house, the necessity for sewers in most of our rural districts would be avoided.

In compact villages, urban in character, drains and sewers will, I am afraid, still remain a necessity. The expense of such drains and sewers would in most cases be willingly borne, but the cost of obtaining sufficient land upon which to dispose of the sewage is one of the most frequent excuses for not carrying out such improvements. Land not worth £5 per acre suddenly acquires a value of £100 or more per acre, and this, together with the trouble and worry consequent upon the adoption of any scheme of sewage disposal prevents the adoption of such schemes. If the numerous experiments now being made on bacteriological lines result in the discovery of some simple process, requiring but little land for disposing of sewage, a great advance will be rendered possible in rural sanitation.

The supply of water to our cottages is even a greater difficulty. Sanitary authorities are not only averse to the expenditure necessary to provide a public supply, but too often also averse to causing landlords to provide such a supply when it can be done at what is defined by Act of Parliament as a reasonable rate. The effect of such a policy has been well exemplified recently in a rural district in which I am interested. A group of cottages derived water from a brook, one of the tributaries of which, at a higher point, received a certain proportion of the slops from the drains of a

village. A case of typhoid fever occurred in the village, and about a month later an outbreak of typhoid occurred in the group of cottages, and resulted in several deaths. Some five years before I had endeavoured to get a proper water supply for these cottages, but an influential member of the council opposed this as being unnecessary. Notwithstanding my predictions of future trouble, the resolution to call upon the owner to provide a proper supply was lost. I only hope the lesson taught by this epidemic will not soon be forgotten. The cost to which the sanitary authority and others have been put is far greater than would have been required to provide a supply of good water. The multiplication of dairy farms also is increasing the necessity for an abundant supply of pure water in rural districts; but as I shall have again to refer to this subject, I will not further enlarge upon it now. I regard it as one of the most important requirements of our villages, and one which is imperatively necessary if we hope to get back any considerable portion of the population from the towns.

Another very important requirement, I might almost say the vitally important requirement, is decent cottages for our rural labourers. Many Acts of Parliament have been passed having for their object the better housing of the working classes. Their utility in rural districts has been practically *nil*. Those who had the drafting of them worked upon an utterly erroneous assumption. They evidently were of opinion that unless carefully restrained sanitary authorities would be infected with a mania for building, and that cottages would spring up like mushrooms in places where they were not required as well as in those in which they were really needed. A sanitary authority, therefore, can do nothing until it has obtained the consent of the County Council. No facilities are given for acquiring suitable land at a reasonable cost and with little trouble. The Local Government Board must next be satisfied with every detail, etc. The result is that sanitary authorities wishing to provide cottages are only too glad to let the matter drop when their clerks point out the amount of circumlocution entailed and the trouble and expense involved. What is wanted is an Act which will encourage sanitary authorities to build and offer them every possible facility for providing decent accommodation for the labourer with the least possible trouble and at the lowest possible cost.

One great difficulty in the way of providing cottage accommodation by sanitary authorities was well stated by certain gentlemen appointed recently by the Essex County Council to hold a local inquiry under the Housing of the Working Classes Act. They stated that many cottages were let with the farms, and quoted an instance in which cottages worth 4s. 6d. per week were let by the farmer to his men at 1s. per week. In other words, they say: "The men's real wages were 3s. 6d. per week higher than their nominal figure, and he (the farmer) succeeded in retaining his men without appearing to break the local wages rate. If the farmers would charge a rent representing the real value, and pay a proportionately higher wage, there might be some chance of private enterprise stepping in to provide the necessary cottages, but the present system destroys private enterprise, and if it be persisted in the housing conditions in such districts must continue to grow worse, and the tendency towards the depopulation of the rural districts be increased." On the other hand, the Commissioners point out, if sanitary authorities provide cottages and let them at such low rents, the farm labourer is being subsidised out of the rates. This fact alone is sufficient to retard necessary action, and certainly prevents any rash action on the part of a sanitary authority. The whole problem bristles with difficulties, but that is no reason why it should not be attacked. It is a reason, however, for suggesting that before any new Bill is presented those who draft it should know something about the subject. We shall welcome the discussion on this subject, which will be opened by my friend, Dr. Tew, at one of the meetings of this Section. The effect of the present defective accommodation upon the mental, physical, and moral well-being of the inhabitants is too well known to need repetition. The housing problem is of importance not only to the rural labourer but to the whole country, and should be treated as a national problem.

My apology, if any is needed, for touching upon these questions relating to rural sanitation in my opening address is that we are meeting in a large agricultural centre, in the centre of a group of rural counties, in which these subjects are of the deepest interest, and that I, as medical officer of health to one of these counties, am myself more particularly interested in their study, and am desirous of doing what little I can towards improving their sanitary condition, and bringing about a new era of prosperity.

INTRODUCTORY REMARKS

MADE AT THE OPENING OF THE

SECTION OF PATHOLOGY,

At the Annual Meeting of the British Medical Association at Ipswich, July-August, 1900.

By E. E. KLEIN, M.D., F.R.S.,

Lecturer on General Anatomy and Physiology, Medical School, St. Bartholomew's Hospital; President of the Section.

BACTERIOLOGY IN RELATION TO PATHOLOGY.

Pathology, in its analysis of the nature of the tissue changes, has been influenced, it is admitted, to a not inconsiderable degree by the progress made in bacteriology within the last two or three decades.

Pathology, no less than, and in no way different from, other biological sciences, intent on answering the "what," as also the "why," asks not merely what is the intimate nature of a particular change and aberration of a tissue or organ from its normal or physiological state, but also, and in a higher degree, why this change, and what its cause? Why a particular alteration in one, another in another instance?

Microscopic and experimental analysis have both been active in discovering some fundamental facts, but have left numerous gaps in this study, and it is by the aid of bacteriology—since it became, thanks to the foundations laid by Koch, an exact science—that these gaps are being closed up, or at any rate that the manner and method are indicated by which these gaps may, and probably will, be filled up.

The time at my disposal does not permit of more than illustrating these propositions by a few of the more striking examples.

1. *Inflammation.*—For more than a century inflammation, by the aid of the improved microscope and by experimental work which had occupied a host of active minds and of great experimentalists, was being analysed in all its elements: the part that the vascular system, that the tissues, that the nervous mechanism play in establishing the peculiar alterations constituting the phenomena of inflammation, suppuration, and their sequelæ; thereby an enormous number of facts were brought to light, by which the understanding of these particular aberrations from and return to the normal conditions became clearer, or were believed to have become well understood.[1] It is now admitted, however, that with the exception of traumatic, thermic, and chemical agencies, the chief, if not the sole, cause of the changes of the vascular apparatus and the surrounding tissues constituting inflammation, inclusive, of course, of suppuration, are micro-organisms, which, either by their chemical activity—producing substances which exert a toxic action on the vascular system or the tissues, or both—or by the toxic nature of the protoplasm of the microbes themselves, lead to the abnormal interaction between the vessels and the tissues, manifesting itself in the exudation of fluid and formed elements of the blood and the progressive or retrogressive changes of the tissue elements themselves.

It is one of the best-proved acquisitions in bacteriology that many microbes, either when growing and multiplying outside or within the tissues, produce toxins which in the tissues set up the phenomena of inflammation either locally or generally. This applies not only to those microbes which are specially and in the narrower sense connected with suppuration and abscess—for example, various species of pyogenic staphylococci, streptococci, and bacilli—but also to other specific pathogenic microbes like the diphtheria bacillus, the tubercle bacillus, tetanus bacillus, typhoid bacillus. Koch's tuberculin, the diphtheria toxin, the toxins of many other microbes produced in the test tube, and then injected into the tissues produce typical inflammation. The same has been shown of the dead protoplasm of many microbes—for example, tubercle bacillus, cholera vibrio, bacillus pestis, and others, as also of

some ordinary saprophytes, namely, that the dead bodies of these microbes contain pyrogenic and pyogenic substances capable of producing typical inflammation.

Another set of phenomena of which an explanation is supplied by bacteriology is one well known in the study of inflammation, that is, the greater or lesser number of leucocytes in some inflammatory foci. It is well known that while some inflammations are characterised by copious transudations with few leucocytes, others on the other hand are associated with copious accumulation of leucocytes, as in suppuration. The phenomenon of chemotaxis seems to offer a good explanation for these differences, that is to say, while some microbes or their toxins powerfully attract leucocytes from the blood and connective tissues, others have no such effect or possess even the reverse, namely, negative chemotaxis. In a similar manner Pfeiffer first classified the effects of chemical substances on lower organisms.

2. *Necrosis.*—The most valuable and earliest observations were those of Roux and Yersin, showing that the toxin produced by the diphtheria bacilli has a powerful necrotic action on the tissues. The further demonstration of the actual presence of the toxin in the diphtheritic membrane supplied at once the simplest and most feasible explanation of the necrotic condition of the mucous membrane in diphtheria, namely, the multiplication of the diphtheria bacilli at a particular locality—be it the fauces or larynx, or trachea or bronchi, or any other membrane—causes the production of the toxin, which in its turn causes the inflammation and further the necrosis of the membrane. But this action, namely, localised inflammations leading to gradually progressive necrosis of the tissue elements is not peculiar to the diphtheria bacilli and their toxins, for it is almost a common character of many if not most pathogenic microbes; it is observed in connection with almost all hitherto known pathogenic bacteria, tubercle, glanders, leprosy, pseudo-tubercle, pathogenic cocci, and bacilli of various kinds. It is this progressive necrosis of the tissue following the typical symptoms of inflammation: congestion, stasis, diapedesis, and emigration of leucocytes which is observed, granted the necessary number and virulence, as the effect of the action of many pathogenic microbes, inasmuch as at a particular locality—primary as well as secondary foci—so long as their multiplication proceeds and their toxins are being produced in increasing amounts the necrosis of the tissue spreads into larger and larger areas. In non-microbic inflammations, on the other hand, this necrosis is local and circumscribed, being due to the direct action of the noxious agent—thermic, chemical, or traumatic—and its action is limited to the part actually attacked or its immediate surroundings. The necrosis itself appears in both series, however, of the same essential character, namely, coagulation of the protoplasm of the tissue cells, inclusive of the vessels themselves, and a gradual disintegration and destruction of the cells as also of the intercellular ground substance. These phenomena have been well observed in the case of a number of pathogenic microbes. Another not less important set of appearances associated with the necrotic change caused by bacteria is the secondary leucocytosis and suppuration; and for this the chemotactic action that the necrosed tissue exerts on leucocytes, attracting these for one reason or another, probably as scavengers and removers, offers a ready explanation.

3. *Specificity of Cell Secretions.*—Until recent years it was generally considered that a specificity of cell secretions is one of the fundamental phenomena of the physiological or normal tissues. Behring, Kitasato, Brieger Roux, Ehrlich, and many others have, however, shown that under the activity of many pathogenic bacteria and their toxins in an affected body a curious and important series of secretions on the part of the cells of the tissues takes place which is as specific as those others associated with the normal life, I mean, the production of specific antitoxins and the production of specific agglutinins. It was further shown that not only under the stimulation of the cells by bacteria and their toxins are those specific antitoxins secreted, but that organic substances like abrin, ricin, venin, are capable of stimulating the cells to a like production of specific antitoxin. Moreover, quite recently a further highly interesting series of facts have been brought to light, namely, that particular tissue taken from one animal body and introduced into another causes a specific reaction, showing itself in this that the living cells of the latter produce under the particular stimulation substances specifically acting on the particular tissue that has caused the stimulation. Illustrations:

a. Injection of ciliated epithelium of the trachea of the ox into the peritoneal cavity of guinea-pigs produces a definite change, inasmuch as in a second injection of similar epithelium the ciliary movement is stopped and the cells destroyed in a markedly shorter space of time than in a normal animal; the same action takes place *in vitro:* here the same difference between normal serum and specific serum is demonstrable.

b. Metchnikoff shows that rat's spleen injected into guinea-pigs produces serum which is capable of agglutinating and dissolving leucocytes of the rat.

c. Funck shows that repeated intraperitoneal injections of rabbit's spleen into guinea-pigs in ascending doses produces a serum which *in vitro* has specific cell-destroying—cytolitic—action on both lymphocytes and polynuclear leucocytes of the rabbit, whereas red bone marrow of rabbit produces when administered in the same way a serum which has a greater action on polynuclear leucocytes than on lymphocytes.

From these experiments it is clear that by certain pathological processes the tissue cells are capable of being so altered that their secretions assume a specific action not possessed by them before.

NOTE.

[1] For an excellent review and summary, see Professor Ponfick's paper in the *Berl. klin. Woch.*, Nos. 11, 12, and 13.

INTRODUCTORY REMARKS

DELIVERED AT THE OPENING OF THE

SECTION OF PHARMACOLOGY AND THERAPEUTICS.

At the Annual Meeting of the British Medical Association at Ipswich, July-August, 1900.

BY WALTER G. SMITH, M.D.,

President of the Section.

THE TEACHING OF PHARMACOLOGY.

IN bidding you a hearty welcome to the meetings of this Section I desire at the same time to express my grateful acknowledgement of the honour done me by the Council of the British Medical Association in inviting me to act as your President. It is 25 years since the Association has held its annual meeting in East Anglia, and I confidently expect that this meeting convened in the closing year of the nineteenth century will be productive of much pleasure and profit to all who take part in it.

The title of our section is pharmacology and therapeutics. When we consider that therapeutics date from the beginning of medicine and that the ultimate aim and meaning of all our medical education and scientific culture is the alleviation of suffering and the cure of disease, does it not seem surprising that it was not until the year 1884 that, at the suggestion of Dr. Whitla, a separate section of therapeutics was instituted at the Belfast meeting? And I have to note not only the tardy official recognition of therapeutics, but also the fact that it has not enjoyed fixity of tenure. For, in 1890, at the Birmingham meeting, with its 12 sections, an address on therapeutics was, it is true, delivered by Sir W. Broadbent, but no separate section was allotted to therapeutics which was tacked on to medicine. Likewise, neither at Newcastle-on-Tyne in 1893; at Bristol, in 1894; nor, at Carlisle, in 1896, did therapeutics find a home for itself.

Dr. T. J. Maclagan presided over the new section of therapeutics at the Belfast meeting in 1884, and took as the subject of his address the Methods of Therapeutic Research. In this address he clearly enunciated the limits and utility of the three lines of enquiry which have been followed in the past and must be pursued in the future, namely:—

1. Experiments on lower animals.
2. Statistical observations of the results of treatment, and
3. Individual observations at the bedside.

Teaching of Materia Medica.

The rise and growth of the science of pharmacology, which was founded by Bichat and Magendie early in the century, has made it plain that all correct appreciation of the mode of action of drugs must be based upon physiology and pathology. The new departure has gradually leavened our conceptions of therapeutics, and renders the teaching of this branch alike more intelligible to the student and more satisfactory to the teacher.

I well remember the time when attendance upon materia medica lectures was a dreary enough obligation, and the course was to students perhaps the least popular in the entire curriculum. Comparing the teaching of materia medica and therapeutics thirty years ago with the present time, three features stand out prominently:

1. The retrogression of descriptive materia medica in its restricted meaning.

2. The establishment of special courses in practical pharmacy at the medical schools, conducted in suitable laboratories.

3. The development of pharmacology in its present acceptation—that is, the scientific investigation of the modes of action of drugs.

In regard to the place of pharmacology in the medical curriculum, and the best mode of teaching medical students, I heartily join with Dr. Bradbury (Address to Section of Pharmacology and Therapeutics, Portsmouth, 1899) in protesting against undue neglect of what may be termed old-fashioned materia medica—that is, description of the *essential* properties and chemical nature of drugs, so far as these elucidate the action of the remedy or its relations to prescribing.

A modern course of lectures on materia medica should most certainly be founded on the bed-rock of pharmacology, that is, physiology; but there is still room—nay, I think, necessity—for practical demonstration of the physico-chemical properties of drugs, and we need not even be ashamed of inculcating the utility of some familiarity at least with the pages of the *British Pharmacopœia*, which it is the fashion of some to despise or decry.

Thanks to the labours of physiologists and pharmacologists on the one hand, and of organic chemists on the other hand, it is now possible, and even comparatively easy, to give an interesting and practically useful course of lectures on materia medica and therapeutics to medical students, but not earlier than their third year. I venture to affirm that it is entirely the fault of the lecturer and not of his subject if he does not succeed in quickening the dry bones of materia medica and in awakening and maintaining the lively attention of his class.

With a little thought and trouble numerous simple experiments, chiefly chemical, can be shown in illustration of the more important physiological and therapeutical properties of drugs.

General principles can be laid down, alliances pointed out, and broad features sketched, which connect together large numbers of drugs, into the individual details of which it would be wearisome and a waste of time to enter.

Take, for example, antipyretics and their mode of action; or the local action of astringents and caustics, experimentally illustrated by the reactions of various acids, and metallic salts upon solution of albumen. Or, again, the group of "aromatic compounds" where it is possible to give a brief but comprehensive survey of the general chemical and physiological relations of the subdivisions of this great group—namely, hydrocarbons, phenolic compounds, acids, and nitrogen derivates (alkaloids, etc.). And in this aromatic group, which includes the antipyretic drugs, there is abundant opportunity for drawing attention to many interesting points in illustration of the connection between physiological action and chemical constitution.

Physiological Action and Chemical Constitution.

Since the properties and motions of molecules which determine physical properties depend upon the motions and properties of atoms which determine chemical reactions, the same common laws must govern both physical and chemical phenomena. And no one can doubt that the properties of the most complex compounds depend upon, and are intimately correlated with, the properties and configurations of the atoms and molecules of which the aggregates are built up.

This fascinating subject, which received its impetus in Great Britain from the labours of Crum Brown and Fraser, has not escaped the attention of former speakers at meetings of this Association. For at the Brighton meeting of 1886 Sir T. Lauder Brunton delivered an attractive address on the Connection between Chemical Constitution and Physiological Action; and Sir W. Broadbent upon more than one occasion (in 1890 and again in 1895) has likewise referred to this topic, which he rightly esteems as one of fundamental significance.

Bit by bit—here a little, there a little—we are gathering the kind of material which can best help us to gain insight into the principles of therapeutics.

True, we may have to wait a good while before a stately edifice can be built up, but none the less does it hold true that the problems of therapeutics, and for that matter of all biology, are, at the root of things, essentially chemical or physico-chemical, in so far as we are at all able to interpret them or refer them to general laws.

To give an example or two:

Some of the fatty hydrocarbons are, in themselves, tasteless; but let us introduce the radicals, OH (hydroxyl); NH_2(amidogen); or, NO_2, and lo! we get colour, odour, or taste conferred upon the molecules. For a compound to have a sweet taste it must contain at least two oxygen atoms, and every electropositive group must be united to an electronegative group. Thus, all polyatomic alcohols are sweet—that is, glycol, glycerine, etc.—and aromatic sugars; for example, phenyl-triose have a bitter taste.[1]

Again, look at the group $C_6H_4\begin{smallmatrix}CO\\NH\end{smallmatrix}$; namely, ortho-benzoyl-imide. As including it we have these compounds:

1. Anthranilic acid—$C_6H_4\begin{smallmatrix}CO.OH.\\N.H.\end{smallmatrix}$; and its methyl-ester $C_6H_4\begin{smallmatrix}CO.OCH_3\\NH.H.\end{smallmatrix}$ has a *smell* of orange blossom oil.

2. Indigotin $\begin{smallmatrix}C_{16}H_{10}N_2O_2\\C_6H_4\begin{smallmatrix}CO\\NH\end{smallmatrix}C\\C_6H_4\begin{smallmatrix}CO\\NH\end{smallmatrix}C\end{smallmatrix}$ has an intense *blue colour*.

3. Saccharin $C_6H_4\begin{smallmatrix}CO\\SO_2\end{smallmatrix}NH$, is an intensely *sweet* substance; and lastly,

4. Ox-indole $C_8H_7NO=C_6H_4\begin{smallmatrix}CO\\NH\end{smallmatrix}CH_2$ is a constituent of essential oil of jasmine flowers, associated with anthranilic methyl-ester.

So we find that different effects produced upon the senses of smell, taste, and sight are coincident with differences of arrangement in the molecules of the respective compounds which are all built around a common nucleus (Watson Smith).

Innumerable difficulties still await an answer, for example, Why should saccharin, which is an "ortho" compound be so sweet, while the "para" compounds is devoid of sweetness? Still we can assert that great progress has been made in expressing the laws of mixture, combination, solution, dissociation, and chemical transformation on a generalised basis, and chemistry and chemical physics are gradually being brought under the sway of dynamical laws.

Physical Chemistry and Therapeutics.

Within the last fifteen years the remarkable and daring theories of Van't Hoff and his followers, upon the nature of dilute solutions, based upon certain physical data (namely, osmotic pressure, alterations of the boiling point, and freezing point) together with Arrhenius's hypothesis of ionic dissociation have largely engaged the attention of physicists and chemists. Nor have they failed to make their impress upon pharmacological investigations.

The earliest reference I have noted in pharmacological work to Van't Hoff's important researches is contained in a paper by Hofmeister.[2] In the same journal[3] is a suggestive paper by Dreser, Ueber Diurese u. ihre Beeinflussung durch pharmakologische Mittel.

In this connection I may specially refer to Dr. C. R. Marshall's excellent summary of the "Ion" question, published in the *Practitioner*, February, 1898. In this paper, which broached the subject for the first time in an English medical journal, he gave an abstract of Krönig and Paul's theory of the action of antiseptics in the light of the electrolytic dissociation theory, and also of Loeb's views on the physiological effect of various radicals.

But, furthermore, we have to take into account not only the number and kind of atoms in the molecule, and their interior arrangement and grouping (constitution), but certain physical properties of compounds previously inexplicable have found their explanation in another development of chemical theory which has proved extraordinarily fertile. I refer to stereochemistry—that is, the doctrine of the spatial configuration of the molecule. This theory has done much to elucidate the difficult problems of isomerism in organic chemistry, and we cannot doubt that it will shed light upon chemical transformations occurring in the organism. Dr. Emil Fischer has published in the *Zeitsch. f. Physiolog. Chem.*, 1899, an important paper in which he seeks, in conjunction with Thierfelder, to explain the selective action exhibited by the enzymes, either in effecting fermentation or in producing hydrolysis.

It is well known, for example, that a glucoside—for example, salicin—may be attacked by one enzyme (emulsin) and not by another (yeast enzyme), and accordingly Fischer and Theirfelder conceive the hypothesis that between the enzymes and those substances which they attack there must exist a correspondence in molecular configuration which they compare to that of a lock and its key.

And, again, of two isomeric sugars closely allied—for example, glucose and xylose—one (glucose) may be oxidised in the body or converted into glycogen, whereas the other (xylose) may pass unaltered through the system.

All such methods of investigation are to be welcomed by us as tending to aid in the unravelling of pharmacological problems. Yet, although we shall ever strive to combine science with practice, we need not run away with the notion that pharmacology will surely inaugurate the golden era of therapeutics, and enable us to give a satisfactory reason for each medicine we prescribe.

In the future, as at present, it will probable always hold true that in order to meet the complex and shifting needs of the daily practice of our profession, pharmacology must be wedded to careful and well-balanced clinical observation, and practical therapeutics not infrequently outruns pharmacology. For, as Dr. Cuming well remarked in his scholarly Presidential Address at the Belfast meeting in 1884, "The true dignity as well as the great attraction of our studies lies in their practical usefulness."

And Bacon has said: "They be the best physicians, which being learned incline to the traditions of experience, or, being empirics, incline to the methods of learning."

But here we are constantly made to feel our difficulties and limitations, and the wise doctor is not addicted to boasting of his therapeutic successes. In therapeutics, as in theology, opposite conclusions can be drawn from the same text.

What are we to say to such a fact as this?

In the *Practitioner* some months ago there appeared a highly interesting series of papers upon pneumonia and its treatment. Yet upon a definite and apparently simple point, namely, the administration of opium in acute pneumonia, two men whose powers of observation have been developed to the highest possible degree by constant exercise for more than half a century, expressed diametrically opposite opinions. While Sir Samuel Wilks announced his firm belief in opium, Sir William Gairdner was of opinion that, in most cases, opium in pneumonia is a remedy to be entirely distrusted, and even severely proscribed.

A Protest.

One word in conclusion. The flood tide of discovery of new synthetic chemical remedies has, together with a few treasures which have risen on its crest, also washed on shore much rubbish of a pseudo-scientific sort.

Are we not daily worried with samples, and with advertisements and circulars from eagerly competing firms, announcing new drugs or novel combinations, which I fancy are used chiefly by those who do not know how to employ the old ones? Scarcely are they advertised once before they are elbowed away by importunate new-comers.

The advertisement is headed with an enigmatical name, standing over an appalling chemical formula, and probably ornamented with a structural or graphic diagram. All this is backed up by a plausible show of original experimental work, and ends with a "full literature." In a pamphlet lately issued about some new-fangled preparations of iron, 62 literary references were appended, and a well-known and reputable drug firm advertised in a recent number of the British Medical Journal more than twenty of its special preparations, some of which probably most of us never heard of. And not only are we plagued with innumerable circulars which choke our waste-paper baskets, but we are tormented during our consulting hours at home by the visits of smooth-tongued touting agents of many of the large firms.

This most objectionable practice is on the increase. It should, in my humble opinion, be stamped out by the medical profession, and I avail myself of this public opportunity to protest against it.

For some time past I have made it an invariable rule, and given directions accordingly, that I will not receive or interview the agent or representative of any drug firm, no matter how famous. If by chance or sheer audacity one of these gentry does find his way into my consulting room he very speedily finds his way out again.

I entirely sympathise with the writer of the indignant letter, headed "Chemists' Travellers," and signed "M.D., M.S.," in the British Medical Journal (May 19th, 1900, page 1263).

With such thoughts in our mind, ought we not to hearken to the admonition of St. Paul, and "henceforth be no more children, tossed to and fro, and carried about with every wind of doctrine"?

References.

[1] Sternberg *Chem. Centralbl.*, 1899. [2] Zur Lehre von der Wirkung der Salze. *Arch. f. exper. Pathol. u. Pharmakol.*, Bd. xxv, 1889. [3] Bd. xxix, 1892.

INTRODUCTORY REMARKS

DELIVERED AT THE OPENING OF THE

SECTION OF TROPICAL DISEASES.

At the Annual Meeting of the British Medical Association at Ipswich, July-August, 1900.

By Colonel KENNETH MACLEOD, M.D. (Ret. I.M.S.),
President of the Section.

THE SCOPE AND AIM OF THE SECTION'S WORK.

Since the last meeting of this Section events have occurred which have emphasised the significance and enhanced the importance of its work. The war in South Africa has stimulated into vivid reality the unity and solidarity of the British Empire. The imperial idea implies not only a community of interests—social, commercial, and political—between the mother country and her colonies and dependencies, but also a community of suffering; and as tropical conditions and tropical diseases prevail in Greater Britain to such a large extent, the study of these as they affect both the governing and the governed has come to be recognised as a matter of vital and cardinal necessity. This has been fully acknowledged by the able minister who presides over the Colonies, and who has realised more clearly than any of his predecessors the immense importance of inquiry and education as regards tropical pathology and hygiene. The Government of India has also awakened from its torpor, and taken thought and action in the same direction by encouraging research, training men in bacteriological methods, establishing laboratories, appointing commissions, and promoting special investigations.

A knowledge of the pathology and pathogenesis of disease must obviously precede and guide preventive and curative effort; and it cannot be too loudly proclaimed that this knowledge can only be obtained by systematic scientific research. The days of casual and statistical observations and dissertations have gone, and it is now universally understood that nothing will avail for the solution of pathological problems

except the undistracted work of trained agents provided with ample opportunities, facilities, and appliances. The recent history of malariology—to employ a new and expressive term—is a signal illustration of the dependence of sanitary and therapeutical endeavour on pathological discovery. Laveran in 1880 furnished the key to the morbid processes which in malarious disease take place within the body by the discovery of the plasmodium malariæ. Manson and Ross pioneered the brilliant investigations which have revealed one, if not the one, means by which this organism leaves the infected subject, lives and breeds in outer nature, thus compassing the communication of what must now be admitted to be an infective disease. It is interesting to observe how this knowledge is being at the present time turned to practical account, and how it explains and gives precision to methods of prevention and cure which had previously been resorted to empirically. Koch in the Dutch Indies and German New Guinea has been attacking the plasmodium within the human host, and claims, by destroying it in that phase or stage of its existence, not only to cure the individual, but to reduce greatly, or altogether abolish, the prevalence of malarious disease in the community. Sambon and Low in Italy are addressing themselves to the extrasomatic life of the parasite, and endeavouring by special contrivances and precautions to cut the morbific circuit outside the body. Koch's labours have an intimate bearing upon the subject which has been selected for discussion at this meeting, and will, no doubt, be noticed and criticised by those who take part in it. The results of the proceedings of Drs. Sambon and Low will be eagerly watched, as they will contribute an important aid to the solution of the question whether the *Anopheles* is the only medium of malarious infection, and, if so, whether this occurs invariably by inoculation.

The South African war has forced into prominent and painful attention two diseases which, although they cannot be called tropical diseases, manifest themselves with special severity as regards incidence and fatality under tropical conditions—namely, enteric fever and dysentery. The theatre of the war—the uplands of South Africa—cannot be classed, either as regards position or physical characters, as tropical. Malarious disease, the special and predominant product and index of tropical countries, is conspicuous by its absence among the causes of disability and death occurring in the British army of South Africa. But the meteorological conditions which obtained during the early months of the campaign were most aptly described by the term "tropical." Sunstroke and sun fever were very common. I have endeavoured to ascertain whether these cases were all or mostly cases of heat shock, and whether any considerable number of them presented the phenomena of heat fever—so-called "siriasis"—and, if so, whether these occurred in epidemics or appeared to be communicable. I regret to say that I have not succeeded in obtaining any information on these points. The cases which I have met with at Netley have presented a similar history and similar sequelæ to those received from India. Perhaps, when the medical history of the campaign comes to be compiled, some facts bearing on these questions may be forthcoming. I allude to the matter here and now in the hope of eliciting information.

That enteric fever existed in South Africa and was apt to prevail in South African towns and cantonments during the summer months was well known, and its appearance among the troops engaged in this war was fully anticipated; but the excessive prevalence of the disease in a country and climate with a reputation for exceptional healthiness has come as an unpleasant surprise. No doubt the circumstances and exigencies of warfare are mainly responsible for the heavy tribute of sickness and death which enteric fever has levied. War shares with famine the malignant power of enhancing the susceptibility to whatever infection happens to be present at the place and time.

Enteric fever has been in grim evidence during recent wars on the Indian Frontier and in the Egyptian Soudan; but malaria, cholera, yellow fever, and dysentery have on other occasions been stimulated into disastrous activity by war. So with famine: malarious disease, small-pox, diarrhœa, dysentery, and relapsing fever have attended or followed it, and at the present time cholera and plague are raging among the famine stricken in India. The infection of enteric fever seems to be ubiquitous, portable, and peculiarly facile and subtle; and perhaps the most urgent question of the hour is how to mitigate its prevalence in the British army, in which in times of peace it causes one-third of the total mortality.

It is important to note that a very marked contrast exists between the ordinary incidence and mortality of the disease in temperate and tropical or subtropical countries—in England and Canada on the one hand, and in India and Egypt on the other. A similar contrast appears in the French army stationed in France and in Northern Africa. How much of this great excess is due to tropical conditions, topical and climatic, and how much to remediable sanitary defects it is not easy to say.

But, side by side with the excessive suffering of the army in India we are confronted with the remarkable fact of the immunity of the native population. Whether a similar immunity exists among indigenous races and habitual residents in South Africa is an interesting question. Evidence seems to indicate that it is so. The native immunity in India, though not absolute, is undoubted; its cause has not been satisfactorily ascertained. It has been attributed to habituation to minute dosage of the contagium, to protection conferred by attack during infancy and childhood, and to racial resistance acquired in the course of generations through both these influences. Some experiments by Freyer and others indicate that natives give positive reactions to Widal's test; but more extended and exact investigations on this point are desirable. It is quite certain that the immunity of natives is not due to superior sanitary conditions. Whether a similar immunity—temporary or permanent—can be engendered in European subjects by a process of inoculation such as has been devised by Professor Wright, of Netley, and practised on a large scale among soldiers proceeding to the seat of war, is a question, the reply to which is awaited with eager anxiety. Some figures obtained from Ladysmith have been published by Professor Wright, which seem to show that some immunity is conferred by these inoculations, but though encouraging, they are by no means demonstrative. Similar procedures for creating an immunity against cholera and plague initiated by Professor Haffkine, have in India been attended with satisfactory results. But although a certain measure of preventive success has been obtained by these inoculations, the employment of them appears at present to be practicable and useful only as an emergent expedient in the presence of a serious outbreak; and the prevention of cholera, plague, and enteric fever on a large scale must apparently be essayed on other lines and by other methods.

Dysentery has been very rife in the South African army, but the disease has exhibited mostly a mild type and been amenable to treatment. In some camps it has presented the aspect of an epidemic or infectious disease; but whether the infectiousness is apparent or real—due to common exposure to certain noxious conditions or to communication from man to man of some specific contagium—it is impossible in the absence of knowledge regarding the nature of the contagium or contagia of dysentery to say. The dysentery of war and famine is believed to be infectious, but notwithstanding much able and laborious research we have yet much to learn concerning the pathology and causation of dysentery. Imperfect conservancy, foul water, alternations of temperature, exposure, fatigue, and bad food, which are undoubtedly adjuvants if not factors of dysentery have been in baneful operation in this war, and a new disease resembling dysentery has been described under the name of "dust colic." This seems to be a muco-enteritis caused by the swallowing with water and food of irritating particles of grit blown about by dust storms. The presence of the grit in the evacuations does not seem to have been sought for or found.

The persistence of plague in India and the appearance of the disease for the first time south of the equator—in Mauritius, South Africa, South America, and Australia—are events deserving of special notice. The disease has during its present prevalence confined itself mostly to warm and hot countries, and, though not exclusively a tropical disease, nor apt in the tropics to be at its worst when conditions are most typically tropical, it appears to find in tropical countries and circumstances the most favouring environment. It is curious to remark that, while in India natives appear to be readily

susceptible to the infection of plague, Europeans, though not absolutely insusceptible, exhibit a comparative immunity—the reverse of what happens as regards enteric fever. This immunity is doubtless what I venture to call a sanitary immunity, due to a purer personal domestic and social life, and perhaps to circumstances and habits rendering admission of infection less easy. This kind of immunity is also observable in some places—in Calcutta, for example—as regards cholera. How far an immunity of this sort is capable of being achieved as regards the infection of enteric fever, it is not easy to say. Certainly it has not been accomplished as yet in India or Egypt. The Bermudas used to render the highest ratios of enteric prevalence and mortality, but within recent years considerable reduction of these rates has occurred through sanitary reforms in the matter specially of water conservancy and sewage disposal. Similar causes have reduced the burden of enteric suffering in the French army of Algeria, and the power of sanitation has also obtained signal illustration in the banishment of beri-beri from the Japanese navy. Great Britain appears also to have acquired an immunity against cholera through sanitary reform and effort. These experiences are full of encouragement and hope.

I trust that I have succeeded by these discursive observations in showing that recent events have expanded the scope and aim of our work in this Section; and it seems to me fitting that we should at the commencement of our sectional labours remind ourselves of what these are. Our concern is not only with exclusively tropical diseases, many of them strangely named and imperfectly investigated and understood, which may be encountered and contracted in hot places where Europeans are compelled to reside for purposes of protection, administration, or commerce, and are not as a rule met with outside of the tropics. More important are those diseases, originally or essentially tropical, which may be disseminated by intercourse with the tropics, and may prevail for a time in extratropical localities in which they are not habitually present. And, finally, there are the diseases which are not specially tropical, but which are liable to be aggravated in prevalence or severity by tropical conditions. These three classes represent a wide field of research, and, in addition, interesting questions arise as regards diseases which, common elsewhere, are rare or unknown in tropical countries.

The field of study thus presented has its scientific and humanitarian aspects, and its cultivation has become an essential part of the business of imperial administration. It embraces not only acute infections and the sequelæ or constitutional incapacities resulting therefrom, but includes also those conditions affecting health and life which are vaguely designated as climatic, remediable only by adaptation, or which arise from sanitary defects or neglects capable of more easy amelioration. Hygienic improvements, personal, domestic, and social, have undoubtedly raised the standard of health and the value of life in the tropics, and residence and service in hot countries offer fewer and less formidable risks than they did in times past. But behind the question of individual impunity looms the question of colonisation or the continued vigour and vitality of the race when transplanted from temperate to torrid zones. The solution of these weighty problems constitutes the reason and purpose of our distinct sectional existence.

INTRODUCTORY REMARKS

DELIVERED AT THE OPENING OF THE

SECTION OF THE NAVY, ARMY, AND AMBULANCE.

At the Annual Meeting of the British Medical Association at Ipswich, July-August, 1900,

BY INSPECTOR-GENERAL BELGRAVE NINNIS, M.D., R.N.
President of the Section.

THE TREATMENT OF WOUNDED AT SEA.

IT appears to me a happy omen that the inauguration of the Navy, Army, and Ambulance Section should take place at a time like the present, when the great war—now we trust nearly at an end—has directed special attention to its three subdivisions, namely, medicine and surgery, in relation to the services, and ambulance in connection with both, and likewise with civil life, particularly in large towns. A goodly supply of papers on these and kindred subjects will claim your attention, but I notice with regret the absence of one on a subject which I consider would be well worth the trouble of writing—namely, on the means at the disposal of the naval medical officer for the treatment of the injured on board a man-of-war, more especially during an action.

Now, before I enter upon this subject, I should like to make a few remarks on the light in which the naval medical officer is regarded by his fellows in civil life.

Experience of the medical press, extending over a somewhat lengthened period, has left the impression on my mind that there is a belief amongst our brethren in civil life that the naval medical officers, taken as a class, are either behind the times professionally, or are credited (from lack of zeal) with neglecting to avail themselves of modern discoveries, both in medicine and surgery, and that this is due in great measure to absence for lengthened periods from the schools.

If I have rightly interpreted the meaning conveyed in the medical press, I trust you will believe me when I state that you do us an injustice. It is true that from the very nature of his calling the naval medical officer is away at times for a period of three or four years; but, on the other hand, it should be borne in mind that there are sick in other countries besides Great Britain, and studying familiar diseases under different climatic conditions, or cholera, yellow fever, plague, and other diseases in countries where they are endemic, with the methods of treatment adopted by those who have lived the whole of their professional life in their midst, modifications in some ordinary operations and substitution of new ones amongst the profession abroad is surely worth something.

Operations at foreign hospitals can always be attended, and practitioners and hospital surgeons are, in my experience, ever willing to answer questions, and to show you their cases where possible. I have not said anything about his own patients, which, if his ship is a large one, supply him with a heterogeneous practice, in addition to a capital operation occasionally.

From what I have said it should be seen that the naval medical officer need not of necessity get rusty. I have not mentioned that in addition he has the medical press, foreign as well as English, nor that on his return home provision has been made for seniors and juniors alike to pass through a post-graduate course at the metropolitan hospitals of Great Britain and Ireland.

Now let us return to the question of the means at the disposal of the naval medical officer for the treatment of the injured on board a man-of-war, more especially during an action. To grasp the situation fully it must be borne in mind that the essentials of a fighting ship may be said to comprise the largest percentage of armament, offensive and defensive, combined with capability of rapid motion and a steady platform. So far as our present knowledge goes, these conditions can only be obtained at the expense of space; or, in other words, the more effective a fighting machine the ship is, the less space is available for quarters and accommodation for the sick.

Now, necessary as light and fresh air are to all of us, in the case of the sick on board ship it will easily be understood that this necessity is more urgent. But light and fresh air can only be obtained in sufficient quantity above the water-line, and to place the sick quarters above the water-line, amidst the hurly-burly of a sea fight, traversed by projectiles and wrecked by exploding shells, is of course out of the question, even supposing that sufficient space could be spared.

The alternative is treating the sick and injured below, which means a limited amount of fresh air, and that almost invariably supplied by mechanical means, artificial light, rapidly deteriorating atmosphere, and the by no means unlikely intrusion of a torpedo or of the ram of a neighbouring ship.

It will doubtless be said that this condition exists only during war time, and that, under ordinary circumstances, plenty of space could be found on deck. Sufficient accommodation is, as a matter of fact, already set apart for the treatment of the sick, with ample light and fresh air, cots, and other fittings of recent and constantly improving designs, and

in some cases electric light; but it must be remembered that for the reasons previously mentioned these peace arrangements must be vacated in war time.

Now, as permanent quarters for the sick on board a fighting ship, situated in such a position as to be freely supplied with fresh air and light, are practically an impossibility, it follows that the fitting up of apparatus, and the means of utilising modern inventions are likewise practically impossible, and therefore the naval medical officer cannot avail himself of their use.

In fact the naval medical officer is not to be judged by the ordinary standard. He works under great disadvantages. Take an ordinary operation. A moving patient on a moving table, a moving operator standing on a floor changing its slope laterally and fore and aft, assistants automatically altering their positions in relation to the patient, in retaining the upright position or their equilibrium; tracheotomy by the light of a candle or lamp, the patient being in a cot, or possibly in a hammock; hernia to be operated on, possibly during bad weather, for it is in the nature of things that on board ship accidents should most frequently occur when there is most motion, and the decks are wet and slippery; fractures to be retained in position under the same adverse circumstances.

As for lack of zeal, a collection of the novel splints and appliances to be found on board ships on return from out-of-the-way foreign stations would testify not only to the zeal of the naval medical officer, but also to his resourcefulness, for, be it remembered, he cannot send into the next street for a second opinion, nor to the instrument maker for special appliances.

Before I bring these remarks to an end, I may add that it is, I believe, intended in the future to supplement fleets and squadrons in war time with hospital cruisers, not merely transports for the injured, but veritable floating hospitals with steam power, and fittings and appliances up-to-date. During an action these ships would keep out of range but sufficiently close to collect the wounded when the fight was over, and sailing under the regulations of the Geneva Convention would be free from molestation or capture.

CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The Banquet.

A banquet was held in the Hall of Lincoln's Inn on Thursday, July 26th. Sir William Mac Cormac presided, and there were also present the Honorary Fellows of the College, including the Prince of Wales, Lord Salisbury, and Lord Rosebery; the Duke of Cambridge, the Portuguese Minister, the Earl of Kimberley, the Lord Chancellor, the Duke of Northumberland, Earl Spencer, the Bishop of London, Lord Lister, Lord Kelvin, Lord Rothschild, Lord Strathcona, the Lord Mayor, the President of the Royal College of Physicians, Lord Davey, Lord Alverstone, the Hon. Walter Rothschild, Sir H. Roscoe, the Solicitor-General, the members of the Council of the College, a large number of the Fellows of the College, and others in such numbers that the whole company exceeded 300. The Master of the Society of Apothecaries was unavoidably prevented by illness from accepting the invitation.

The scene in the Grand Hall was very striking. The band of the Coldstream Guards, under Mr. J. M. Rogan (Bandmaster) contributed during the evening a charming programme of music. The banquet was served by Messrs. Ring and Brymer in their best style.

The Chairman, in proposing "The Health of the Queen," said he knew of nothing more touching or soul stirring than to hear, as he recently had heard them in some distant and lonely land, perhaps in front of the enemy, the strains of our National Anthem. He asked them to drink with all enthusiasm the health of the best of women and the greatest of Queens.

The toast was enthusiastically drunk, the band playing the National Anthem.

The Chairman then gave "The Prince and Princess of Wales and the other members of the Royal Family." A large part had been taken in the public life of this country by His Royal Highness the Prince of Wales, and he had earned the cordial goodwill, respect, and affection of all his fellow-countrymen. This was not only due to the fact that His Royal Highness was the Prince of Wales, but because his incessant labour for the public good had earned for him profound respect and esteem. As for his beloved Princess, every Englishman and every Englishwoman entertained for her the deepest admiration. Her charitable impulses carried her into all good things, and this country had been great because of them. They had there present among them the Duke of Cambridge. At this moment especially those present would like to honour him, for there was not in the whole wide scope of Her Majesty's dominions a man more whole-hearted and true and more deserving of the respect and admiration which His Royal Highness universally commanded.

The toast was duly honoured, the band playing "God Bless the Prince of Wales."

The Prince of Wales, who was received with loud cheers, said in reply: Mr. President, my Lords, and Gentlemen,—I rise to respond to the toast which has been so kindly and cordially put from the chair. In my own name, as well as in that of the Princess of Wales, and also of my illustrious relative, I beg to tender to you our warmest thanks for the way in which it has been accepted by this large and distinguished company. I appear before you to-night in a totally new capacity. I have received the high honour and privilege of having been admitted into this great and distinguished society as an Honorary Fellow of the Royal College of Surgeons of England. I had already received that privilege from the Royal College of Physicians, and I am glad to think that I may now be considered as one of you all, and belonging to the two professions which give way to none in value and in the good they do to mankind; but I fear that I shall never be allowed to practise as a surgeon, as the result, I am afraid, would not be satisfactory. I might be guilty of manslaughter, if not of murder, and I do not think that even my learned friend the Lord Chancellor could help me out of the difficulty; but I appreciate the honour greatly. There is no profession in this world I admire more than that of surgery. The progress made in that profession has been enormous, and greater, perhaps, than that of the sister profession. My old and valued friend, Sir William Mac Cormac, to whom I am indebted for his great care two years ago when I met with an accident, has just returned from South Africa. I am sure all of us appreciate his having given up his duties here to go through the hardships of that great campaign, from which he has brought back much information, and in which he has given great assistance; nor can I forget the name of my friend Mr. Treves, who rendered great service. All of us have been desirous of doing our best to alleviate the sufferings out there and of those who have returned home, and no more noble work has been done than that of the surgeons, military and civil. It is not for me to criticise anything that may have been said of the great profession which did its best in this campaign, but I am sure that it did do its best. It had difficulties to contend with, and the way in which the hospitals were managed out there, and have been managed since the return of the sick and wounded home, does the greatest credit and honour to the profession. I thank you for the high compliment you have paid me in inviting me to be present at the hundredth anniversary of the society, and electing me an Honorary Fellow of it.

The Chairman next proposed "The Honorary Fellows of the College." He said: This is the first time this toast has been proposed, as it is only quite recently that we obtained the necessary authority to grant these honorary distinctions. We attach great value to them, and it was our wish to bestow the highest honour in our power on the distinguished persons who have just been made Honorary Fellows of our College. There can be no doubt that the importance and success of this Centenary have been greatly enhanced by the exercise of these powers. We are greatly gratified at being able to bestow these honours, and there can be no question that the position of the College is strengthened by the inclusion in its ranks of so many distinguished persons. The Prince of Wales, who stood first upon their roll of honour, had been already received with enthusiastic acclaim. All knew his generous sympathy and interest in the affairs of the College, and his desire that the Centenary celebration should prove worthy of the College and the occasion. He trusted it had been so. Their great countryman, Lord Salisbury, had spared time from the urgent affairs of State to come and do them honour. They were deeply grateful to him, and had tried to

make what return was in their power not only to that great statesman, but to that altogether admirable chemist, a branch of science of such great importance to medicine. Lord Rosebery's great gifts were known to them all. He was lately asked by an eminent physician to tell him the principle which had guided the Council in their selection, as Honorary Fellows, of Lord Salisbury and Lord Rosebery, and his reply was that Lord Salisbury was an eminent man of science, and that Lord Rosebery was eminent in everything else. All the other Honorary Fellows were surgeons, the elect of their profession, the glory of their several countries and the pride of this College. He congratulated them on their newly-acquired distinction, and he congratulated the College on the distinction they bestowed upon it. He proposed that they should drink to the health long life and happiness of the Honorary Fellows of the Royal College of Surgeons, and he coupled with the toast the name of one of them, the Earl of Rosebery.

The EARL OF ROSEBERY, who was received with cheers, said: May it please your Royal Highnesses, Mr. President, my Lords and Gentlemen,—I have filled many positions in my life, all equally embarrassing, but I never knew what embarrassment was until this instant, when I have been asked to reply for the eminent men who have been elected Honorary Fellows of your College to-day. It is sufficient to say that they comprise almost all the first members of the profession throughout Europe, and that their names occupy three closely printed pages, being in themselves a sort of Homeric catalogue with which it would require far more eloquence and knowledge than I possess to deal adequately. Fortunately, some of these eminent men replied for themselves in the theatre this afternoon, and after the pregnant and admirable speeches they then delivered it would be an insult for me to attempt any reply on their behalf, or on behalf of any one who has any acquaintance even with the elements of surgery. I am then reduced to three Honorary Fellows. The Prince of Wales has already returned his thanks, so by a process of exhaustion I am left with two honorary Fellows, whom none will accuse of any knowledge of the science and art of surgery. I need hardly say that I allude to the Prime Minister and myself. I hear a faint cry of "No." I trust no one will ever attempt to fathom our surgical knowledge. In your speech, Mr. President, you suggested a question which has more than once occurred to myself. You said that an eminent man had asked you why Lord Salisbury and myself were made Honorary Fellows. Your reply as regards the Prime Minister was, I thought, adequate and satisfactory—that he was a man of science. Your answer as regards myself did not, I am sure, satisfy your hearers. It did not satisfy me. I am still left in the nebulous region of inquiry. At any rate, I trust that no one will under any circumstances be deluded into allowing Lord Salisbury or myself, who have by a not unnatural vanity been induced to append the letters F.R.C.S. to our names, to put our practice to the test. I at any rate have no skill in surgical operation. There is one indeed which is said to be performed at times on my fellow countrymen—the introduction of a sense of humour into their heads—but in that respect I am a patient, a subject, and not a performer. Therefore I see no surgical career for myself that I could conduct without serious danger to the life and limb of my fellow-countrymen. I think the Prime Minister is in a more fortunate position. One of his predecessors in office was said to have enough courage to perform the operation for stone, or, if required, to take up the command of the Channel Fleet. That race of heroes, I fear, has died out, and I do not anticipate any such moral courage from my honorary colleague to-night or in the future. But, my lords and gentlemen, he is credited with the intention of performing a surgical operation, the most important that can be performed by any living being in this country, on a subject which is the most interesting and almost the most illustrious we know—I mean the venerable Mother of all Parliaments—an operation which, though constantly recurring, is as old as the days of Medea, and which consists in giving the sufferer a new lease of life by first destroying that which exists, and then plunging her into an exhilarating cauldron which is to restore her to life. I do not know if his scalpel or his knife is likely to be shortly applied in any such way as that, but that is the only surgical operation which I can ascribe safely to him; and all in this hall, whether Britons or distinguished representatives of foreign nations, have only one interest in that operation, which is to see that the venerable Mother may come with renewed health and strength and fortitude from that operation, bearing in her arms a Government strong, patriotic, and equal to the grave exigencies in which we live. Mr. President, when seated in the theatre this afternoon, I saw pass the procession of all that is most eminent in the world of surgery, I heard the representatives of the United States acclaimed. The plaudits of all Britons were accorded to them. I could not help feeling that, after all, if all men were like men of science, peace in this world should not be difficult to promote. We saw no feeling of antipathy, of rivalry, of hostility; nothing but cordiality, friendship, unanimous approval. I could not help thinking that if the world were left for a little to the men of science we might after all not be so far from the reign of peace we all desire. Statesmen have been trying, or professing to try, for centuries past to promote the reign of peace and goodwill among men, and it is no reproach to my illustrious colleague when I say that they have signally failed. I am not sure that it might not be well to give the men of science a chance, and after the lifelong and historical failure of statesmanship to procure the peace of the world, to see whether some other class cannot promote the cause as well as they promote their own. After all, what cause is nobler than your own? Your victories inspire no rivalries, no jealousies, no animosities, your defeats inspire nothing but sympathy in the world, because they are the defeats of humanity itself.

Mr. THOMAS BRYANT proposed "The Guests," who were, he might honestly say, the choicest representatives of every learned, scientific, artistic, and useful branch of human endeavour that this metropolis could supply. The Council had been led to make this selection under the conviction that the distinguished Honorary Fellows of the College whom they had been invited to meet were men of equal calibre. For the three professional, but not practical, Fellows who headed the list were men whom all the world delighted to honour, and who honoured the College by becoming Fellows, and thus partaking of its interests, whilst the remaining Fellows were the leading practical surgeons of the European and American States, and of our own much-beloved Colonies. In fact, they represented, with the Fellows of this College, the working bees of the surgical profession, which utilised to the full every science and art which the visitors so ably cultivated and culled from all branches of human industry—everything and anything that could possibly help towards the investigation, prevention, and cure of disease, or the relief of pain. Indeed, he liked to think of them as the representatives of applied science for the benefit of mankind. They recognised no rivalry, but only friendly competition, which, it was to be hoped, under the banner of the Fellowship of the Royal College, would be encouraged for the benefit of all the world. The name that he had to couple with the toast was the representative of all that was good and all that was great in this highly-favoured Island State, the Lord High Chancellor of England, Lord Halsbury.

The LORD CHANCELLOR said he was the feeble mouthpiece of the feeling which pervaded all his fellow guests for the magnificent banquet to which they had been bidden that evening. He did not know what the results might be, and he felt some regret that they could not look for assistance in their possible infirmities from any of the persons who had been newly endowed with the imprimatur of that society, but he hoped that if their exuberant hospitality put any of the guests in difficulties the sister society would help them.

The MARQUIS OF SALISBURY, who was received with cheers, said: May it please your Royal Highnesses, Mr. President, My Lords, and Gentlemen,—I have the duty of proposing to you the toast of the evening—namely, "The Prosperity of the College of Surgeons," together with our homage to the able man who is now its President. But I cannot depart from the precedent of former speakers, who have expressed their embarrassment under the new condition of affairs. I never as a surgeon had to propose the health of other surgeons, and it reminds me of the story of the Doge of Venice, who, after admiring all the charming things he saw in Paris, said he was surprised to find himself in that society. You will be pleased to observe that my distinguished colleague in this honour had

a very great advantage over me. He has used this opportunity for the purpose, as he thinks, of eliciting a secret. He seems to think that I know when a dissolution will take place, and believes that in this society he may extract some suggestion. I do not know anything about it, and I cannot convey to him any knowledge, and therefore I cannot look with any hope to this occasion as one in which the uncertainty of this subject may be dissipated. But the noble Earl has not sufficiently noticed that our aims in supporting this society and the President of the society are largely the effect of what we have seen and heard to-day. I do not for a moment believe that his action as a great surgeon will be looked on as the result of the tribute which has been given to his powers. The time will come when he will wield the knife, and he will know how to execute an amputation; and I have no doubt that large bodies of his fellow-countrymen will support and sustain him for his skill in doing all those things on the body politic of England which you expect from a distinguished surgeon. But I should say that I have had no such ideas in accepting the distinguished position in which I now find myself. When I was told that I was to be a surgeon I thought that I should inhabit some happy Utopia, where there were no women, no flies, and no men of genius; and no doubt if that were so there would be a tremendous competition to become a member of this society. But surgeons have come from all parts of the world to do homage to this great body. I was struck, as we were receiving men who have come from other lands, that we had a distinguished Professor from Padua whose college was distinguished for its work four hundred years ago, when no one dreamt of this College. Yet the College of Padua has pressed forward to this day, and has some justifiable vanity, some hope of special benefit for the future. But there were also professors who were submitted to the judgment of this College at the same time who came from the younger communities of America, some of them only in existence for the last 30 or 40 years. It is impossible to avoid the reflection whether the same co-ordinate causes which produced the gradual failure of power in Padua might not show themselves on the other side, and whether the gradual increase of the scientific organisation of the new world and the corresponding loss of power in this country will not occur. It is a thought full of melancholy and of anxiety. These things are running on parallel lines. All we know is that power is constantly going forward, that the race of science never ceases. It may end in the entire conquest by the newer forces of the old forces which we have cherished for so long, or it may be that they will give the stimulus of their example to those who by their side are trying to exist. It may be that modern surgery, that the modern physical and mental force may press forward so as to get the supremacy for themselves. There is no fixed superiority for one kind of power over another. Everything depends on the forces which each organisation disposes of. Well, gentlemen, I have to propose to you what is the greatest security for the continued existence of your great College—its continued government by wise men—and with that toast I give the health of your President for the fifth time, Sir William MacCormac.

Sir William MacCormac replied to the toast in graceful terms.

The company shortly afterwards separated. To each guest were presented two volumes. One is a souvenir of the College of Surgeons, and contains an account of the first incorporation, and a brief history of the College from 1800 to 1900. It describes the College building, the incomparable museum and its various departments; mentions the conservators who have presided over the museum; and describes the examinations of the College, its trust funds, lectures, and the portraits and busts which are found within its walls. The value of the volume is much enhanced by the many excellent engravings with which it is illustrated. The second volume contains the address of welcome delivered by Sir W. MacCormac at the presentation of honorary diplomas in the theatre of the old buildings of the University of London, Burlington Gardens,[1] and a particularly valuable collection of appreciative biographical notices of the Masters and Presidents of the College since its foundation in 1800 to the present time. Both volumes are splendid specimens of printing, and are handsomely bound; and their distribution was a glad surprise to the recipients.

[1] British Medical Journal, July 28th, 1900, p. 259.

Reception at the Mansion House.

The Centenary Festival ended on Friday evening, when a reception was held by the Lord Mayor and Lady Mayoress at the Mansion House, to meet the President and Council of the Royal College of Surgeons and their guests. Among those present were the President of the College and Lady Mac Cormac, most of the newly-elected Honorary Fellows, Lord Lister, Mr. John Langton, and Mr. Henry Morris (Vice-Presidents of the College), Sir Joseph Fayrer, the Rev. Sir Borradaile Savory, Sir William and Lady Broadbent, Admiral Sir J. Dalrymple Hay, Sir R. Craven, Sir W. C. Roberts-Austen, Mr. Jonathan Hutchinson, Mr. Thomas Bryant, Mr. F. Treves, Surgeon-General Jameson, Mr. Howse, Mr. Alfred and Lady Agnes Cooper, the Rajah Jugga Rao, and Mr. Trimmer. Herr Wurm's Viennese White Band played a selection of music during the evening, and Herr S. Wurm himself was much applauded for his violin solos. The Lord Mayor and Lady Mayoress, accompanied by Alderman and Sheriff Sir W. P. Treloar, and the Corporation officers received their guests in the entry hall. The Egyptian Hall, where the Corporation gold plate was displayed, and other rooms were well filled with a distinguished company.

One of the chief features of the various functions of the Centenary Celebration was the presence of so many of the foremost surgeons of Europe, the United States, and Canada. Two Australian surgeons also would have been present but for the exigencies of the war in South Africa. Altogether the Festival was a great success, and may be expected to bear good fruit for the profession both of a national and international character. Its excellent organisation throughout reflects the greatest credit on all who arranged its several details.

The Honorary Fellows.

As stated in the British Medical Journal of July 28th, the Honorary Fellowship of the College was on July 26th conferred on thirty-four eminent surgeons representing Scotland, Ireland, Canada, the United States, Austria, Belgium, Denmark, France, Germany, Italy, Norway, Russia, Spain, Sweden, Switzerland, and the Naval and Military Medical Services. Five of the Surgeons so distinguished acknowledged the honour in the following speeches:

Professor Ernst von Bergmann, speaking in German, said: Mr. President, I beg to be allowed to thank you in the language of my country for the high distinction which has just been conferred upon us, the German-speaking surgeons. The language of one's native land comes direct from the heart, and it is in the language of our mother that we address our dearest on earth. The German-speaking surgeons have always sought their dearest and most cherished model in the constitution, organisation, and achievements of the Royal College of Surgeons of England. Just as John Hunter by his own power founded the greatest and most beautiful anatomical and surgical museum, so have also his successors independently, and relying on their own resources, understood how to increase their rich inheritance in a wonderful manner, to accomplish great things brilliantly and always to march with the times. To be received by such men into such a Fellowship is an honour than which no higher can be conceived. We all wish to express to you, Mr. President, our warmest and most cordial thanks.

Professor Durante, speaking in Italian, said: In the name of my Italian colleagues and my own, I thank you, Mr. President, and the illustrious College which has invited us to this memorable festival. Our gratitude for the high honour which you have deigned to confer upon us this day is as deep as the traditions of the Royal College of Surgeons of England are noble, and as profound as its merits in the progress of science and surgical art are great. From this temple consecrated to science, of which the priests are always brothers and devoid of all unwholesome political bias, may I be allowed to proffer a respectful salutation to glorious and mighty Britain?

Professor W. W. Keen, of Philadelphia, said: Mr. President, my Lords, Ladies and Gentlemen,—On behalf of my American colleagues and myself, it gives me great pleasure to

return our very hearty thanks for the honour just conferred upon us. We regard it as the highest surgical honour we could receive, for "Praise from Sir Hubert is praise indeed." Though the Royal College of Surgeons of England has attained a venerable age, it is far from decrepitude. No better evidence of this could be found than the many members and Fellows who at the call of duty so cheerfully went to the front in South Africa. Foremost among them was your distinguished President, who, though he has reached an age when most men seek repose in slippered ease, responded to his country's call with his customary energy and alacrity. Happily the war is now nearing its end. Apart from any political results in South Africa, it has had two results in which we may well rejoice. It has bound together Great Britain and her Colonies in one solid empire, and through the wise statesmanship of the most noble Marquess of Salisbury and His Excellency the American Ambassador has now joined Great Britain and America in a firm moral union, in which Her Majesty, if not monarch of our persons, is surely Queen of our hearts. We come to you as representatives of four of our great institutions of learning—from Harvard, hoary with the snows of nearly three centuries, to Johns Hopkins, in the lusty youth of less than three decades. As President of the College of Physicians of Philadelphia, I represent also the oldest institution in America at all similar to your own, a corporation which includes surgeons as well as physicians, and which was already in its teens when the Royal College of Surgeons was founded. On behalf of these and of all our medical institutions, we bring you our heartiest greetings on this festal occasion in the name of sound learning and accurate scholarship. It has been my pleasure in Philadelphia to welcome many of your Fellows, including three of your most distinguished Presidents. Some of you have even swept across the Continent in luxurious palace cars in but little over a hundred hours. To show how swift has been our progress and yet how young we are, I need but recall the fact that this College was nearly forty years old before the name of Chicago, now a city of nearly two million people even appeared upon the map; and when you were founded, beyond the fringe of civilisation on the Atlantic coast, the only inhabitants of the vast region from the Alleghanies to the Golden Gate were the buffalo, the bear, and the savage Indian. But though so young, we come not empty handed. Three great medical advances mark the past hundred years—vaccination, anæsthesia, and antisepsis. The first and third of these are yours, but the second—anæsthesia—is the gift, better than Magian gold and frankincense and myrrh, which to-day America lays on the altar of Science. Before that historic date, October 16, 1846, the poor victims of the knife were bound hand and foot, and held in the grasp of sturdy men, but hand and cord could not repress the fearful outcries which filled the air. But at Warren's touch the thongs fell off; he spoke, and the stormy billows of this Gennesaret of pain were stilled; the peaceful blessed sleep of ether hushed every cry of pain. Then first was modern surgery made possible, and what was made possible by our Warren was made safe and successful by your Lister—no, not your Lister, but our Lister, for his name belongs to no age and no country, but to humanity. It is therefore with a special fitness that to-day you have conferred your honorary Fellowship upon the distinguished grandson of him who first demonstrated the blessings of ether to a suffering world. At the very time when this College was founded he was a student at Guy's Hospital, and his certificate of attendance, signed by Mr. Cline and Sir Astley Cooper, is in the possession of his grandson. Again, Mr. President, I beg you to accept our sincere thanks for the distinguished honour you have conferred upon us.

Professor Lannelongue, who spoke in French, said: To praise the Royal College of Surgeons of England, with which we have just become connected, and the Centenary of which you are at present celebrating, would be to exalt one's own merits. The duty of a foreigner on whom such a great honour has been conferred, should be that of merely expressing his gratitude. However, there are in your past history as a surgical body during this century such achievements to be chronicled, that the very mention of which in a few words may not be displeasing to you. A journey fraught with interesting consequences which was made to England by a famous French surgeon, Roux, showed what you were in 1814. He returned from this voyage with the friendship of a number of the followers of Hunter's methods, such men as A. Cooper, Ch. Bell, Brodie, Travers, Lawrence, and with a knowledge of the secret of the ligature of great vessels, the resections, which were not practised anywhere else, flap amputations, finally the reunion by intention, facts which were forced upon them. Roux returned in a state of mind divided between admiration of your audacity and mistrust of it. He proclaimed the brilliant features of your practice in surgery, but also did not conceal its imperfections. Such was the origin of a scientific interchange of ideas and discoveries, which has never slackened between you and us. The proof of this was illustrated when on March 8th, 1847, Flourens discovered the anæsthetic action of chloroform, and a few months later, on November 10th, 1847, Simpson of Edinburgh employed this agent on man with admirable results. As early as 1852 Clover praised ischæmia, which does not in any way detract from the merits of Esmarch. And did not ovariotomy flourish in England when there was nothing but failure elsewhere? Another journey was necessary—that of Jules Worms and Nélaton in 1860 to impel convictions. In short, you have had a man at the right moment who was able to understand the work of a Pasteur and to appropriate his principles, and thus to establish modern surgical antisepsis. Gentlemen, to be associated with you is one of the most enviable honours, and we thank you.

Professor V. Pachoutine, of St. Petersburg, who spoke in English, said: I observe amongst the number of illustrious surgeons of many nations elected Honorary Fellows of the Royal College of Surgeons the names of some of the surgeons of Russia. This is a great honour to Russian surgical science, which, although in its youth, has already on its roll of glory the great name of Pirogoff. I take this opportunity to express to this greatly-esteemed College in the name of all Russian surgeons their very sincere gratitude for the distinction conferred upon their countrymen, and on their behalf further to express the wish that the Royal College of Surgeons of England may continue to flourish and to give to the world illustrious men, who like their predecessors will be shining lights to the surgical science, ever opening new roads for surgical practice to the benefit of the human race.

Demonstration at Examination Hall.

On Friday Dr. Brodie first referred to some experiments in which separation of bodies of different molecular complexity had been effected by C. J. Martin's method of filtration through gelatine. Among carbohydrates the sugars could be at once separated from dextrins or starches by the method, and by choosing a proper strength of gelatine starch can be separated from dextrin. Glycogen does not pass through such a filter, and the method was therefore one which enabled an easy separation of dextrin from glycogen. By it, too, dextrin could be shown to be produced from glycogen on digestion. Martin showed that albumins and globulins could be kept back from a solution, but that albumoses could pass through. It was now shown that by employing strong gelatine and a high pressure albumoses could be kept back. Thus the whole question was simply one of the size of pore in the filter. Among the ferments pepsin and papain could be kept back by the filter, trypsin only partially. An application of this view was its adaptation to the theory of the action of the glomeruli of the kidney. It was found that if the fresh kidney is rapidly fixed by injecting into its vessels alcohol or dilute formalin under high pressure this washing out all the blood that subsequent perfusion of fluids through such a hardened kidney gave results quite resembling those obtained in gelatine filtration. Thus the glomeruli walls acted simply as a membrane growing pores of such a size that albumins and globulins cannot pass through, whereas salts, water, sugar, and albumoses can. In some instances hæmoglobin passes through, and in still less perfect experiments some of the serum proteids, and here it was important to find that albumin passed through in greater quantities than globulin. These are conditions constantly occurring in cases of albuminuria, and we can therefore consider them in some cases as due to variations in the permeability of the glomerular membrane.

Other experiments referred to were those of Mr. H. Crouch upon the action of chloroform. Stress was laid on the fact that the really serious symptom in threatened death by chloroform was cardiac failure, not respiratory failure. The great fall in blood pressure caused by the inhalation of chloroform was shown by plethysmographic records to be due chiefly to cardiac enfeeblement. A further point, which may prove of great value, was that amyl nitrite appeared to act in some respects as an antidote to the cardiac action of chloroform. In an animal to which amyl nitrite had been previously administered, chloroform no longer gave the great fall in blood pressure.

SOUTH AFRICAN HOSPITALS COMMISSION.

At the first meeting of the Commission, held on July 24th, after the opening statement by the Chairman, Lord Justice Romer, which was published in the British Medical Journal of July 28th, the first evidence taken was that of the Director-General of the Army Medical Service, who gave particulars of the working of his department, and the arrangements made in time of peace for future wars. He said that every demand made for South Africa up to date had been met. There had been ample supplies of doctors, nurses, beds, and medical appliances; but he could not say whether the doctors and appliances sent out had been properly distributed. He had not in his official capacity received any complaints of any special hospital. Next came the Assistant-Director of the Army Medical Service, who stated that the medical service was in respect of transport at the mercy of the Army Service Corps, or rather of the General. After some further evidence from departmental officials, Lieutenant-Colonel G. Sterling Ryerson, of the Canadian Army Medical Staff, expressed the firm conviction that the best that was possible in the circumstances was done for the sick and wounded.

At the second sitting, on July 25th, the Rev. W. H. Orford, who was attached to a hospital in Bloemfontein, said there was no overcrowding. The nursing was all done by orderlies, who worked splendidly. He had never heard any complaint from the men, either at the hospital where he was for two months or at two others in which he was. With regard to vermin he said that if a new brick building was put up even upon new ground in South Africa it was immediately infested. Sir Howard Vincent, M.P., who visited several hospitals, said the arrangements were beyond all praise. He heard no complaints even from the men of his own regiment, who would have spoken freely to him. Mr. Watson Cheyne also spoke well of the medical arrangements. He was inclined to think the epidemic was not typhoid, or at least that a great deal of camp fever had been mixed up with typhoid. No neglect of the sick or wounded came under his notice. An immense amount of the energies of the medical staff was wasted in administrative and clerical work. Next came a trooper of the C.I.V. who had himself been in hospital, and who said that as far as he knew there was no want of attention either at Bloemfontein or at Wynberg. A full report of the evidence is given below.

Surgeon-General J. J. Jameson, Director-General of the Army Medical Service, said that with regard to the constitution of the department in reference to preparing for the care of sick and wounded, there was a *personnel* of officers and men for two army corps and a cavalry brigade. In case of war being threatened the Adjutant-General communicated with witness, stating where the war was to be and the strength likely to be engaged. He was then desired to submit a proposal, which would afterwards be discussed by the Army Board, as to the medical requirements, including the percentage of beds required. In unhealthy climates the estimate ranged from 10 per cent. to 25 per cent. of the total strength. Then he prepared a memorandum showing the probable diseases likely to be encountered, the kind of supplies and provisions to be obtained, and everything connected with the sanitary part of the campaign. He also furnished all the medical officers engaged with a memorandum showing them what diseases they would have to contend with and how to obviate them, and the necessary sanitary precautions. The memorandum which had been prepared for the present war dealt with temperature, rainfall, winds, precautions required on account of climate, and the following prevailing diseases: Enteric fever, dysentery, diarrhœa, malarial fevers, parasitic diseases, ophthalmia, and pneumonia. Immediately the war broke out it was found that the medical *personnel* for two army corps and a cavalry brigade were exhausted. The number of medical officers in South Africa on September 1st, 1899, was 32. During September 19 were sent out, in October 128, in November 102, in December 38, in January, 1900, 44, in February 48, in March 50, in April 10, in May 8, and in June 19, making a total of 508. This month 20 more were being sent out. The figures did not include the medical officers of colonial contingents. Every demand for South Africa up to date had been met. There had been ample supplies for the sick and wounded, of doctors, nurses, beds, and medical appliances. He could not say whether the doctors and appliances sent out were rightly distributed in South Africa. He then read the following note on the state of the sick and wounded at Bloemfontein on April 27th: "Mr. Burdett-Coutts described the condition of a field hospital at Bloemfontein, which he considers should have been equipped as a stationary hospital. His description relates to April 28th On April 27th there were at Bloemfontein the following fully equipped hospitals—Nos. 8, 9, and 10 General Hospitals, the Langman, the Portland, the Irish, and No 5 Stationary—about 2,000 beds in all, with considerable capacity for extension. There were altogether 2,291 patients in military hospitals at that date, 873 being cases of enteric. There were about six field hospitals, of which all but one had to be prepared for war at any time..... None of the returns describe any want of satisfaction with the arrangements." He had not received, in his official capacity, any complaints of any special hospital, and only an unofficial complaint with regard to the Woodstock Hospital.

Lieutenant Colonel Johnson, Assistant Director of the A.M.S., gave details as to sending out of hospitals and nurses, and pointed out the great distinction between military hospitals and civil hospitals. He added that the medical service had not its own transport, which was, perhaps, a weak point in its organisation. They were at the mercy of the Army Service Corps, or rather of the General.

Major W. G. Macpherson, Deputy Assistant Director A.M.S., gave statistics and returns with regard to sanitary matters, and also dealt with the actual extent of the outbreak of enteric and other diseases in the army and the preventive measures adopted in the present war. He said it was intended to supply Berkefeld filters in the proportion of 1 to every 100 men, but that had not been completely carried out, because the manufacturers were unable to fulfil their contract. The hospital system depended on its ability to constantly remove patients from the field hospitals to the base hospitals, and thence to the transports. There had been no delay in emptying the base hospitals. As many as 2,000 men a week had been landed in this country. Up to July 17th, 26,758 men had been invalided home. The deaths reported from enteric were now going back to the normal point. The deaths for the week ended July 14th would represent 3.8 per cent. per annum. The deaths reached their maximum on May 26th. The medical officer in charge of No. 9 General Hospital at Bloemfontein drew attention to 1,000 cases of enteric fever up to the date on which he wrote with a case-mortality of 12 per cent.

Lieutenant-Colonel J. S. Cowans, Deputy-Assistant-Quartermaster-General, gave details as to transport, and said every requisition for extra medical men had been complied with.

General Sir Henry Brackenbury, Director-General of Ordnance, stated that he was charged with supplying all arms and armaments necessary for the conduct of war, together with hospital equipment, including tents, beds, bedding, stretchers, and waggons, but not medical or surgical stores. He was not aware of any complaint having been received from South Africa as to either insufficiency or quality of the hospital equipment. In his opinion the reserve of hospital equipment previous to the outbreak of the war was totally inadequate. There was to his mind a great lesson to be learned at home as to the necessity of having in hand a very large reserve, so as to be able to meet all demands during the first six months of a campaign, so as to be independent of the "trades." He did not think, however, that the slightest suffering had been caused to the troops by such delays as had occurred. The witness then gave particulars as to the hospital arrangements prevailing at home in peace time. The army was organised into certain units, and each had its stores and hospital equipment at the centre of mobilisation. In addition there was the question of reserves; and, as a matter of fact, just before the war broke out they had a reserve of only one base hospital of 520 beds and two stationary hospitals of 110 beds each. That was on September 29th, when the Government gave orders for preparations to be made to send out additional equipment. There were at that time sufficient stores for field hospitals for three army corps, but they had no reserve equipment for stationary hospitals or base hospitals except those already mentioned.

Colonel J. Steevens, C.B., Principal Ordnance Officer, who was next called, said that he did not receive orders to proceed with the preparations until October 4th. Directly the order was given he set men to work day and night filling beds with horsehair that had to be purchased hurriedly, and in that way they were able to send the equipment by the transport on the date fixed. There was one delay in sending out base hospitals, from December 9th to January 6th. That was owing to their having sent out all the ambulance waggons they possessed. They received during March a message to send out 300 beds and bedding, and while that order was being carried out the War Office ordered 2,000 beds to be despatched to South Africa; both requests were complied with as quickly as possible. Delay had arisen in a case in which 500 beds of a particular pattern were requested; and it was found necessary to import them, which in his opinion was a mistake.

Sir Ralph Knox, Permanent Under-Secretary for War, said the Army Medical Department had no executive authority, but according to what was required in the field, had to go to one of the four high military officers of the War Office—either the Adjutant-General, the Quartermaster-General, the Inspector General of Fortifications, or the Director General of Ordnance; and while, speaking generally, all its applications were granted, they were usually referred to the Army Board. The preparations of all the responsible departments were based on the assumption that for a war of attack or of defence it was necessary to send out two army corps and a cavalry division giving an aggregate of about 60,000 men. At the same time, their preparations were framed in respect of a third army corps at home, but they were on a more moderate scale. Replying to a question respecting the delay in getting the base hospitals ready, the witness said that as a matter of fact the Government had not in July, or even in August, made up its mind as to what would have to be done. As to suggestions or complaints of delay, or insufficiency of hospital equipment and transport for hospital purposes, the fact was that the Army Medical Department desired that all medical matters in the field should be under their direct control, and in a large measure that was so in the present campaign. Of course the difficulties of transport had to be taken into account, and the main transport had to be maintained, even though the medical transport suf-

fered in consequence. So far as he was aware, the War Office had not received any complaints respecting the management of the hospitals beyond those contained in Mr. Burdett-Coutts's letters.

Lieutenant-Colonel G. Sterling Ryerson, Canadian Army Medical Staff (Toronto) stated that he was in South Africa from February 15th to July 4th, in the capacity of Red Cross Commissioner, and his services ranged over a wide area, first commencing at the Orange River, and then including work in the hospitals at Kimberley, Bloemfontein, and Kroonstadt. At the first place, on February 20th, he found between 500 and 700 sick and wounded, chiefly in adjustable huts, but some were in tents. All appeared extremely comfortable as regards beds, bedding, and medical and general stores. There were 47 Canadians in the hospital, and if they had had anything to complain of they would have told him. From Orange River he went on to Kimberley, and remained three or four weeks, visiting the hospitals daily. The Modder Bridge had been destroyed, and it was therefore difficult to get supplies up, owing to the convoys having to traverse steep declivities which really resembled toboggan slides or shutes, and a whole day was occupied in covering the forty miles from Orange River. On one day 523 sick and wounded arrived at Kimberley. With so large a number of men suddenly thrown upon them it was impossible to provide them with such luxury as was obtainable at, say, the Hotel Cecil; but they had all that was necessary to render them as comfortable as was possible in the circumstances. He himself furnished 90 cots from the Red Cross funds, the cots being made by the De Beers Company. There was abundant medical and nursing strength, and the hospital stores were well supplied except in respect of fresh milk, which was very scarce. He next proceeded to Bloemfontein and Kroonstadt. At the former place there were between 3,000 and 4,000 sick, and nothing could have surpassed the arrangements made in Parliament Buildings for the comfort of the men after the first week or two, while in the Roman Catholic Convent and St. Michael's Home everything was perfection and the nuns made splendid nurses. It should be borne in mind that the communications had been cut, and that there was only a single line of railway to convey supplies for about 50,000 men, and that three days and three nights were occupied in the journeys, which were usually covered in forty hours. Notwithstanding all these difficulties, he saw nothing to complain of. There were plenty of stores, and the hospitals were at liberty to draw upon the Red Cross without restraint. The number of men arriving was extraordinary; one afternoon 564 arrived, and the next morning another 354. What would the London hospitals do if 10,000 patients were suddenly thrown upon them? He was firmly convinced that the best that was possible in the circumstances was done for the sick and wounded, although he had not read the letters referred to, he remembered seeing Mr. Burdett-Coutts in Bloemfontein, but did not hear of any complaints being made to him.

At the second sitting of the Commission held on July 25th, the Rev. W. H. Orford said he was born in South Africa, and was in Bloemfontein from the entrance of the British troops until Lord Roberts went north. He was mainly attached to the hospital which was established in his old college of St. Andrews. It was undoubtedly one of the worst in the district, because it was an old building and was one of those chiefly criticised. It was quite true that patients were lying on stretchers and mattresses, and in some cases it was impossible to undress them for a fortnight. There was no overcrowding. There were about 60 patients in the hospital, but there were no nurses. The nursing work was all done by orderlies, who did their work splendidly. The greatest difficulty they had was in getting fresh milk. The food was of good quality. They had sufficient blankets. He had never heard a word of complaint from the men, though he had constantly asked them if there was anything they wanted.

In reply to the Chairman, the witness said there was only one particular in which they missed the nurses, and that was that the men did not obey the orderlies so well as they did the nurses. He was nearly two months in the hospital but the condition of things he had described lasted only about a fortnight; within that time they got everything they wanted. He was in two other hospitals. There was very little difference between these two hospitals and the one he first mentioned. He had never heard any complaint about these two hospitals. He was not connected officially with any hospital but he was acting chaplain, and in that capacity was a person the men were likely to confide in. He had never seen any men lying in the mud, and had no reason to believe that soldiers refrained from complaining lest they should get into trouble. In reply to Mr. Frederick Harrison, the witness said the wounded came crowding in from Paardeberg. He did not see men lying about when they first came in, though he heard that men were lying about for thirty-six hours up the Glen, but fighting was actually going on. He believed the removal could not be managed for military reasons. He had often slept on the ground himself without a mattress. In answer to further questions the witness referred to the question of vermin and insects in South Africa, and said that if a new brick building was put up even upon new ground it might immediately be infested. He went on to point out that the Bloemfontein Waterworks had never yet been completed. The filter beds had never been finished, and they did not depend upon them for their water supply. In a very short time after the occupation the engineers had bored all round the town, and good water was found at a depth of 50 feet and taken to the hospitals.

Sir Howard Vincent, M.P., who was the next witness, stated that he arrived in South Africa on January 23rd, and visited in the first place the Portland Hospital, in the suburbs of Capetown, on the 25th. He thought it was admirably arranged in every way. He passed on to No. 3 General Hospital, one of the large general hospitals, which had accommodation for about 500 or 600 patients. He went thoroughly through that hospital and saw the cooking operations, and conversed with many of the patients. In no hospital marquee were there more than 16 patients. As to the general cleanliness, order, and comfort of the hospital, it was beyond all praise, and he heard absolutely of no complaints. He subsequently made a full examination of No. 1 General Hospital at Wynberg. He saw the reception of the patients. He was struck with the extraordinary method Colonel Grier had established in order to trace out not only the medical but the private history of each man. Although he might seem to speak in terms of exaggeration, he could only say that the arrangements were beyond all praise. He did not hesitate to say that from the layman's point of view overcrowding was much less than he had seen in any London hospital. He went into the Boer hospital ward, and there he received the only complaint made, and that was Commandant Pretorius. He also visited No. 2 Hospital close by on the same day, and again on March 5th when he was quite alone. He said there were two men of his own regiment in the hospital, and he conversed with them, and they would no doubt have spoken to him if they had had complaints to make. On February 14th he had an opportunity of going round the whole of Sir Redvers Buller's army, and seeing the provision made for taking away the wounded from the fighting line. Everything was done that could possibly be done, and it was remarkable to see with what skill the medical department took up their dressing stations. There was, however, always a tendency on the part of bearers to linger a little when they got tired. As to the red cross on the waggons he did not think it was sufficient indication, as it was difficult to see it at a long range. The Boers painted their ambulance trains white. He was at Chieveley the best part of a week, and he went amongst the officers and men, and it would be impossible on anything he heard to found any substantial complaint. Then he visited Sir William Gatacre's column at Sterkstroom. There typhoid was very prevalent, and there were three or four wards of bad enteric cases. He did not ascertain that there was any real cause of complaint that could be avoided. He arrived at Paardeberg on February 27th. He was able to see the hospitals there, and also the arrangements for carrying the wounded from Paardeberg to Modder River, and he was bound to say that it was to be regretted that the number of ambulances in the bearer company were reduced in order to obtain extra mobility. The complement of the bearer company was ten ambulances, and these were reduced by the exigencies of the moment to two. That was a very bad time, because a convoy had just been captured by the Boers, and there was great pressure. He visited the general hospital at Kimberley, and it was as good as any hospital in London. After leaving Kimberley he again visited the hospitals in Capetown, and he heard no complaints from any of the men in his own regiment or the members of the C.I.V., who all perfectly well knew that he went out to see if he could do anything to improve their condition. Taking all the exigencies of the case into consideration he could not speak too highly as to the general arrangements.

Mr. Watson Cheyne said that he had visited several military hospitals in South Africa. There was no real trouble about the sick and wounded. Of course there was overcrowding in the field hospitals, and they were short of equipment. The sick were attended to, and were being sent back to the base hospital. Being out in the open did not affect the patients a bit, for it was a beautiful time of the year. They ran rather short of dressings, but the medical comforts were all right. The only hardship was the long distance the men had to be sent back in ox waggons. They could not expect a large proportion of army medical men to be good surgeons any more than among civilian surgeons. As to the orderlies, it was generally remarked that the St. John Ambulance men were not good owing to their want of training, but the surgeons and non-commissioned officers were very good. The witness went on to say that at Drietfontein they had proof that the ambulances were insufficient in numbers. Ambulances had been left behind partly in consequence of the exigencies of the advance and partly in the hope that they would not be required. He was at Bloemfontein till April 20th or 21st. During the greater part of that time the enteric epidemic was at its worst, but he believed there were more cases in May. Within five days of reaching Bloemfontein Colonel Stevenson had arranged accommodation for 500 or 600 sick. He called in once or twice to see cases in the tents. They were as crowded as they could be. About April 20th they had had over 300 deaths in a 50-bed hospital. He went away then for a few weeks, and when he returned there had been 400. There was a point which he thought the medical members of the Commission might consider, and that was how far this epidemic was one of typhoid fever. The great majority of cases recovered in ten days or a fortnight, and there were other characteristics which made him think it was not typhoid. As soon as Bloemfontein was left there were hardly any cases, but at Kroonstadt it broke out again. The great bulk of the cases occurred about ten days after Paardeberg, but he thought a great deal of camp fever had been mixed up with typhoid. There were two or three nights when it poured with rain, with the result that tents were flooded. The Portland Hospital was certainly flooded, but he did not think there were any men in it at the time. He had seen men lying on the ground, but never in the mud. He had never heard of a man who did not get the rations prescribed for him. He had heard the story of orderlies selling the food to the patients, but no soldier had ever complained to him of such a thing. He thought they would certainly have complained if they had such a grievance. He thought all the men knew who he was. He started without a uniform, but he found it was very inconvenient, as he was constantly being arrested for going to places where it was thought he ought not to have gone. The soldiers out there all understood the difficulties of the situation, and he did not think anything was left undone. He thought everyone tried to do his best; in fact, they were very enthusiastic in their endeavours to maintain the reputation which they believed the Army Medical Service had acquired. The orderlies did their best. Many of them were untrained men, and if their best was not good that was another matter. There was a great deal of sickness among the orderlies themselves. No neglect of the sick and wounded came under his notice in any way. In answer to Dr. Church the witness added that in his opinion an unnecessary amount of the time of the medical staff was taken up in administrative and clerical work which clerks ought to be employed to do. It took something like two hours every day to clear off the medical reports and returns. An immense amount of energy was wasted in this way.

Mr. Morgan, a trooper of the City Imperial Volunteer Mounted Infantry, lately returned from South Africa, said he fell sick at Sanna's Post. He was treated with every possible kindness at Bloemfontein. The medical staff did the best they could for the men when they got into No. 9 General Hospital. So far as he knew there was no want of attention. During the eight days he was there the doctor visited him twice a day and there were nurses and orderlies. He was also in hospital at Wynberg about four or five days. He was very much astonished at the amount of attention given to them. He never heard anyone complaining out there. Everyone had spoken well of the medical men who attended them, and he had heard no complaint of the want of medical comforts.

INTERNATIONAL [CONGRESS OF MEDICAL] DEONTOLOGY.

[By Our] Special Commissioner.

(*Continued from page 257.*)

Medical Men, Trades-Unions, and Clubs.

At the morning sitting on July 24th Dr. Cuylitz of Brussels reported on the relations of medical men to trades-unions and clubs. To show the importance of the "mutualist" movement, he cited statistics as to the progress of co-operative societies in Belgium. In 1895 there were 756 mutualist societies there; in 1899 the number had increased to 2,928; at the beginning of the present year it was more than 3,000. The co-operatives also, the other form of *mutualité*, who claim or will claim medical service, were 394 in number in 1895, and in December, 1899, there were 1,297. The 2,928 mutualities recognised in 1895 represent 350,000 members. The doctors have to attend the families as well, and calculating at the rate of 5 to a family, this makes the number needing medical succour 1,750,000 individuals out of a total population of 6,670 000. Dr. Cuylitz's conclusions are: (1) That every regularly-organised club has a right to a minimum medical tariff of fees, which under other circumstances would be incompatible with our professional dignity; (2) the societies should not benefit by these tariffs unless they undertake they shall only be for persons not able to pay ordinary fees; (3) the tariff may be different and adapted to the circumstances of the club or the locality; (4) the tariffs should be established by mutual agreement between the industrial societies and medical associations. The mode of working should be explained in a circular sent to every doctor in the neighbourhood, leaving him free to accept or not; (5) the system of annual subscription (as in club practice) should not be authorised in any shape or form, and the choice of his surgeon should be left open to each mutualist or co-operative; (6) there should be a chief or controller surgeon to each society, whose visits would be directed to seeing that the system works properly both in the interests of the sick and of the society itself.

Hospital Abuse.

In the afternoon the principal topic was the abuse of hospitals. M. Thiéry, Professor in the Paris Faculty of Medicine, opened the ball with a paper on The Abuse of Hospitals and of Gratuitous Advice in the Paris Hospitals. He first gave a number of examples of abuse of hospitals by the well-to do; to this he added the admissions of the well-to-do sick in the hospitals, especially in the Dubois Hospital, and mentioned the results of inquiries he had made in the provinces and other countries about the rules in force in order to exclude well-to-do patients from hospitals. He had found that for the most part such regulations were mostly theoretical, and that in too many towns the Assistance Publique transforms a part of its hospitals into veritable *maisons de santé* or private hospitals, where it tries to have paying patients treated at the expense of the local practitioners. Much less free when it is asked to supply necessary drugs, the Assistance Publique gives freely medical consultations, and as a result encumbers its consultation rooms and halls with those whose presence is most prejudicial to the really indigent patients, who are often crushed out by those who should not be at hospital at all. Pushing his researches as to the best way of remedying this evil, M. Thiéry declared that no paying patient should be admitted to hospital treatment until the Assistance Publique is assured that all the really indigent patients have received treatment. As conclusions to a somewhat lengthy report, he proposed the following: (1) An understanding should be come to between the medical men of a city or town, the hospital staffs, the administration of the Assistance Publique, and the public authorities, in order to prevent well-to do patients abusing the system of gratuitous consultations at hospitals; (2) a Bill should be laid before the Legislative Assembly to regulate gratuitous assistance, conformably with certain French laws mentioned; (3) considering that it is the duty of the governing bodies of hospitals to take steps to stop abuse, it is recommended that notice should be placed both outside and inside hospitals, restricting hospital consultations to the sick poor, and requiring certain formalities to be gone through in order to obtain admittance to them. It was also recommended that inspectors should be appointed who would make inquiry into the circumstances of all applicants for hospital relief. A written engagement was also recommended to be obtained from each well-to-do applicant, promising to reimburse the hospital the value of the consultation or of the attention paid to him and the cost of his keep as an inpatient, if on inquiry any fraud or deception was found to have occurred in his declaration as to his means. In case of an old offender it was recommended that it should be made possible to impose a fine, or even to commit to prison. (4) The suppression of paying beds, except in cases where the sick person can justify his admission to them, either on the ground of urgency or of insufficiency of means. The suppression of the municipal *maison de santé*. (5) A strict application of rules already in existence, and their more careful supervision by hospital authorities.

Dr. Variot, Physician to the Hospital for Sick Children, Paris, having read a paper on the same subject, Mr. Adolphe Smith, of London, complained that the meeting was having rather too much of Paris.

In the absence of Colonel Montefiore (of London) Mr. Smith read a summary of that gentleman's paper, in which, after going over much familiar ground as to the extent, character, and evils attendant on hospital abuse in London, and giving statistics both as to hospital and Poor-law medical relief, and referring to the great friendly societies and provident dispensaries, Colonel Montefiore traced the history of the movement for reform of hospitals from Sir William Fergusson's Committee in 1870 down to the present time, referring to the large petition presented to the Council of the British Medical Association in 1875, to the Select Committee of the House of Lords, and to the various schemes and recommendations for the formation of a Central Hospital Board in London. He also described the action taken by the Charity Organisation Society in reference to the Prince of Wales's Hospital Fund, and the formation of a sort of counter hospital board by the twelve London hospitals having schools attached, and, in conclusion, said that the following might be Utopian ideas, but they represented what he desired to see done: (1) The three hospital funds, namely, the Prince of Wales's Fund, the Hospital Sunday and Hospital Saturday Funds should be joined into one, of which H.R.H. might be asked to be President. (2) An efficient inquiry officer should be appointed at each hospital, and by efficient inquiry officer Colonel Montefiore means a male or female properly trained in charitable methods, and with tact and a love of humanity. The duties of such an officer would be to see every patient after the physician or surgeon has examined him, with the exception of cases requiring special treatment or those of special interest for teaching purposes. After investigation of the other minor cases, those found able to pay ordinary fees should be referred to a local practitioner, or advised to join a provident dispensary or sick club, or else referred to the doctor who previously attended them, or to the Poor Law. (3) A careful register should be kept of all applicants. Colonel Montefiore concluded by stating that what was desired was some organised method which shall prevent the harm being done at present in lowering the robust independence of the people, and which shall improve the well-being of our medical charities and prevent their becoming State-aided or rate-supported; and to this end he would welcome the establishment of a properly constituted and thoroughly representative Central Hospital Board for all London.

Registration of Plumbers.—Fourteen master and operative plumbers applying for registration under the National Registration of Plumbers attended at King's College on July 28th for examination by the Worshipful Company of Plumbers. The candidates were from various parts of London, and also from Barnet, Guildford, Leicester, and Northampton. The practical test included lead bossing and the making of large and small joints, and the examination in sanitary plumbing included the subjects of contamination of drinking water from faulty connections, roof covering, arrangement of bath, sink, and closet wastes, drainage of town houses, and disconnection with sewers. Four candidates succeeded in passing the practical examination.

MEDICAL NOTES IN PARLIAMENT.

[FROM OUR LOBBY CORRESPONDENT.]

The Army Supplementary Estimate for 11½ millions was brought before the House on Friday, July 27th, and produced a very interesting debate. The estimate was for both South Africa and China, and included a large sum for the medical service. In connection with this part of the vote there were several speeches on the R.A.M.C., and the changes most likely to prove useful in the future. Sir Walter Foster specially laid stress on the undermanning of the medical staff, and pointed out that even now the numbers were perilously low, and that the War Office ought not to rely on civil surgeons being always at hand to make up the deficiencies of the Department. He quoted figures from the BRITISH MEDICAL JOURNAL to show the smaller number of medical men and staff provided for a British force as compared with a German corps of the same strength, and argued that the country wanted more attention to be paid to the efficiency of medical aid. He suggests that if a well-manned Army Medical Corps could not be constantly maintained, the War Office should enrol a reserve medical force by allowing each medical school to supply a number of young medical men willing to accept the responsibility of being called upon to act in case of national need. He further pressed on the attention of the Under-Secretary the importance of sending out in a campaign like that in South Africa consulting physicians and sanitary experts, as well as operating surgeons. The need for such had been shown to be great in South Africa and in China. Where plague was endemic it was desirable that the precautions, which had been hitherto neglected, should be deliberately taken in order to lessen the losses from preventable diseases. Mr. Burdett-Coutts spoke with much force on the need for a special transport service for the R.A.M.C., and spoke of the excellence of the service of the Irish Hospital and the New South Wales Field Hospital, which had their own transport. He regarded the Army Medical Department as undermanned in officers, orderlies, and nurses, and specially urged the employment of more female nurses. Dr. Farquharson also supported the suggestion of a special medical transport service. He called attention to the excellent work done by the Indian Bearer Corps, and expressed his satisfaction that the mortality from wounds and sickness had not been greater. Mr. Wyndham, in his reply, asked what was the good of thundering against the Secretary of State because the R.A.M.C. was undermanned. They had proposed a higher establishment, but they could not get the men, although they had granted the concessions asked as to rank. He said the subject required the most careful consideration at the end of the war. In his opinion no rewards could be given sufficient to attract young medical men in time of peace, for they wanted practice and experience which the army did not afford; and he thought it would be best to have a highly-trained and highly-paid Army Medical Corps in time of peace, and to get each of the medical schools to have a list of men ready to serve in case of war or whenever any great concentration of troops required their services. It was not now the time to submit such conclusion, but some such idea must prevail, he thought, in the future. "You must secure doctors and chaplains by a retaining honorarium, and claim their services in time of Imperial crises." The debate lasted the whole evening, and the estimate was finally voted by a great majority.

Specialists in Military Hospitals.—Mr. Bainbridge asked whether an invalided officer from the seat of war, who required the assistance of a specialist while in a military hospital in England, would be provided with such help, and if it had to be paid for by himself or his relatives. Mr. Wyndham replied that if the medical officer in charge considered such assistance was required, it would be provided at the cost of the War Department funds.

South African Hospitals Commission.—Sir Walter Foster asked the First Lord of the Treasury last week whether the Commission would be able to inquire into the sanitary conditions which led to the outbreaks of typhoid fever and the consequent overcrowding of the hospitals at Bloemfontein. Mr. Balfour, in reply, said that the Commission would have full liberty to interpret their reference, and would no doubt be guided by the consideration whether such matters were under the control of the Army Medical Department or not.

The General Register Office.—Mr. Bryn Roberts asked the Secretary of the Treasury on Tuesday why the old custom had been altered which allowed on payment of a fee of one shilling the perusal of any entry of birth, marriage, or death, and if the old rule which existed up to 1898 could be restored. Mr. Hanbury said the 1s. fee only really gave a right to peruse the index and not the volumes of certified copies. This was abused by insurance offices and others, who sent agents to inspect certificates under the idea that the 1s. fee included this. The Statutes required that a fee of 2s. 6d. in addition should be paid for a certified copy.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

THE annual summer meeting of this Association was held at the Higher Grade School, Ipswich, on Wednesday, August 1st. In the absence of the President (Inspector-General Lloyd, M.D., R.N.) the chair was taken by Dr. Macnaughton-Jones, ex President. There was a large attendance of members, including Sir John W. Moore, President R.C.P.I., Dr. P. S. Abraham, Professor W. H. Thompson, M.D. (Belfast), Dr. Esler, Professor R. J. Anderson (Galway), Dr. T. M. Dolan (Halifax), Dr. Cecil Osburne (Norwich), Dr. J. J. Macan, Dr. W. J. Smyly (Dublin), Dr. Douglas, and the Provincial Honorary Secretary, Dr. J. Stewart (Clifton).

The Council reported the completion of the arrangements in reference to the Arnott Gold Medal, which has been given by Mr. David Arnott in memory of his late father, Sir John Arnott, Bart., and which is to be awarded annually to such Irish medical graduates or diplomates as shall be decreed by the Council to have pre-eminently distinguished themselves by some act of heroism in civil, naval, or military life, or by some achievement in medicine, surgery, or medical research.

The CHAIRMAN, in referring to this generous gift, stated that Mr. David Arnott had most courteously complied with all the requests of the Council in reference to the legal details of the deed by which the medal had now been permanently endowed. He (the Chairman) wished to emphasise the fact that those qualified for the distinction were not to be confined to members of their Association, and that the medal might be awarded to any Irish medical graduate or diplomate whom their Council might adjudge worthy. The first award would probably be made before the next festival dinner.

Sir JOHN W. MOORE having remarked on the warm liberality and patriotism displayed by the son of the late much esteemed Irishman, Sir John Arnott, in this matter, and above all on the evidence it afforded of the high estimation in which the donor held the medical profession generally, and especially the *alumni* of the Irish schools of medicine, concluded by moving:

That the heartiest thanks of the Association be and are hereby accorded to Mr. David Arnott for his generous gift of the gold medal endowed by him in memory of his late father, Sir John Arnott, Bart.

Dr. DOLAN seconded the resolution, which was carried with acclamation.

Dr. JAMES STEWART (the Provincial Honorary Secretary) having stated the views of the Council on the question of restriction of honorary appointments in certain English hospitals to the diplomates of two specially favoured colleges, and having given a summary of what had been done in the way of abolishing a monopoly so antagonistic to the "open door" spirit of the times,

Dr. DOUGLAS proposed, Dr. ESLER seconded, and it was carried unanimously:

That this meeting hopes that the Council will as soon as possible proceed actively with their efforts to reduce the number of English public hospitals in which the Fellows (by examination) of Irish Colleges are not now eligible for honorary appointments on the staff.

It was announced that the Association had determined to entertain Field-Marshal Lord Roberts on his return from South Africa at a special banquet to be held in London, the date to be probably in the last week of November.

A vote of thanks to the Chairman terminated the proceedings.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, AUGUST 4TH, 1900.

THE ANNUAL MEETING AT IPSWICH.

The sixty-eighth annual meeting of the British Medical Association, which opened at Ipswich on Tuesday, July 31st, and is in progress at the time we go to press, will probably prove a turning-point in the history of the Association, and mark another milestone in that march towards the wider usefulness and the greater prosperity which every member must wish for it.

It is only just, in the first place, that some recognition, however brief, should be expressed of the excellence of the arrangements made by the local committee for the comfort and convenience of members attending the meeting, and we are sure that we shall only voice their unanimous feeling by offering grateful thanks to the East Anglian Branch for the admirable manner in which it carried out the obligations which it undertook when it invited the Association to hold its annual meeting in Ipswich.

East Anglia is a section of England which possesses to a marked degree the sense of local patriotism, and this has inspired the hosts of the Association to spare no pains to ensure the success of the meeting. Indeed it is not, we think, too much to say that the social opportunities afforded for renewing old friendships and making new acquaintances, and for informal discussions, while worshipping at that shrine which Dr. Beddoes regards with so much aversion, had contributed not a little to remove or diminish some of those asperities which are apt to arise when men who earnestly hold different opinions find themselves face to face at a public meeting.

To the address with which the President, Dr. Elliston, delivered on the evening of the first day reference is made below. It was a comprehensive and erudite oration which will be read with interest by those who were not privileged to listen to it. The address in medicine by Dr. Pye-Smith and that in surgery by Mr. Treves were so far complementary to it that the three formed together a conspectus of the position of medicine and surgery at the present moment.

The first general meeting was held on Tuesday afternoon, when, on the motion of the retiring President, a resolution of condolence with the Queen and the Duchess of Edinburgh on the death of the Duke of Edinburgh and Saxe-Coburg-Gotha was unanimously adopted. Afterwards Dr. Ward Cousins made a genial little speech, in which he referred particularly to the medical aspects of the war in South Africa, and concluded by wishing a prosperous year of office to the new President, who was then formally inducted into the chair. Dr. Elliston began his presidential duties by moving that the Prince of Wales, who is already a Honorary Fellow both of the Royal College of Physicians of London and the Royal College of Surgeons of England, should complete his inception as a member of the medical profesion by being elected an Honorary Member of the British Medical Association. The resolution was seconded by Dr. T. G. Roddick, who was President of the Association when it met in Montreal. Both speeches were much applauded, and the resolution was carried unanimously.

A resolution of thanks to Dr. Ward Cousins for his services as President was then moved by Sir Walter Foster, M.P., seconded by Dr. Holman, and cordially adopted by the meeting, which then settled down to business, and spent a long afternoon in discussing the report of the Council. This discussion was somewhat confused, owing largely to the fact that the various topics of the report were not taken in any definite sequence. The listener was carried abruptly from dispensaries without wage limit to the Midwives Bill, from that to the vote at the extraordinary general meeting last month, and finally to the conduct of the Journal. On the last named subject we do not propose to make any observations, as by desire of the meeting a full report of Mr. Victor Horsley's speech and of the reply made by the Editor of the Journal is printed in the report of the meeting.

A number of notices of motion to provide for the reorganisation of the Association were on the agenda paper. But an inspection of the notices showed that they really involved only two main matters of principle, though some dealt with a great number of details. It was therefore found possible very much to simplify the business of the second general meeting, and Mr. Victor Horsley's proposal to refer the whole matter of the changes desirable in the organisation of the Association to a Committee was adopted unanimously. This Constitution Committee, as finally arranged, is to consist of 24 members, elected by the annual meeting on August 2nd, of whom half are to be nominated by the Council.

The two matters of principle which emerged were the question of the creation of machinery for the reference to a body of delegates (elected by members of the Association voting in small areas) of medico-political and medico-ethical questions previously discussed by the members in these areas. The other matter of principle was the desirability of the absorption of the unattached members into the Branches. Upon the principle of delegation the meeting did not arrive at any definite decision, but the Constitution Committee was instructed to consider and report upon the principle as applied to the settlement by the Association of questions of a medico-ethical and medico-political character. The meeting at which the decision was reached was prolonged, and the discussion of the steps to be taken with regard to unattached members was deferred until the general meeting on Thursday.

During the early part of the meeting it was impossible not to perceive that the members present felt a certain amount of distrust of the Council. The discussion has, however, gone far to clear the air, and as the meeting wore on there was an evident intention on all sides to appoint a Committee which shall fairly represent the different

currents of opinion. The outcome of the deliberations of this Committee will, it may reasonably be hoped, go far to remove those anomalies of constitution and administration which at present tend to limit the usefulness and disturb the harmony of the Association.

MEDICINE AND SURGERY IN THE NINETEENTH CENTURY.

THE address delivered by the President at the opening of the annual meeting at Ipswich on Tuesday, and the address in Surgery were to a large extent complementary the one to the other. Dr. Elliston took as his text "Some incidents in the evolution of the modern physician," and traced out with much curious lore the history of medicine in this country, with especial reference to the medical worthies of East Anglia. He placed the results of his researches in a literary setting that made his address very pleasant to his hearers, and will, we are sure, make it most interesting to the larger circle who will read it in the JOURNAL. Mr. Treves spoke of the surgeon in the nineteenth century, dealing with the progress of surgery during the last hundred years, and with the advancement of the individual as an exponent of our great profession. He ended his remarks with a sketch of the surgeon's place in the future, and expressed the hope that surgery might remain a handicraft, and that before all things the surgeon would strive to render his own hands self-sufficing, and not trust too much to diagnoses made for him in the laboratory. Both addresses, therefore, as befitted the occasion, were mainly retrospective; and it is hardly to be wondered at, considering the circumstances of the time and the fact that vague shapes of gloom and uneasiness are, as it were, darkening the deathbed of the century, that both were pitched in the minor key. We may hope before the next annual meeting of the Association that time will have somewhat soothed the public and personal sorrows under which so many are now suffering, and that the dawn of a new century will give us brighter and more hopeful themes.

Both addresses invite us to remember how much the present century has taught us, and lead us to feel that we can hardly hope to make a proportionate advance in the next hundred years. Yet almost the same might have been said by an orator in the year 1800. He would have pointed with pride to the great expansion in the teaching of medicine between 1760 and 1800, to the noble work done by the Hunters, to the birth of Pathology, and to the establishment of a new College of Surgeons in London. He could have shown that the social position of the profession had improved in every way, that not only were physicians held in higher esteem than they had ever been before, but that it was even possible to admit surgeons to the ranks of the lesser nobility. But it would have been impossible for him to predict the enormous increase which has taken place in the population, the rise of the middle class, the great democratic movement of the last fifty years, or the advances in applied science which have rendered possible those improvements in medicine which have aided its conversion from a speculative into an exact branch of knowledge, though in many of its parts the exactitude is still embryonic.

Somewhat too much has been made of the lowly position held by members of the medical profession in former times. Such a position was not peculiar to ourselves, but was common to the members of all professions, at any rate in their lower grades. The domestic chaplain, who was often the perpetual curate of the parish, used to say his grace and meekly leave his place at his lord's table when the pudding was brought in, and he was sometimes successful in marrying his lady's maid. The ensign in a marching regiment as often as not lived and died an ensign, and was held in no esteem by anyone when promotion went by purchase and hardly ever by merit. The terms "pettifogging lawyer" and "low attorney" are not even yet quite banished from the lips of angry and unthinking people; whilst it is notorious that the unthrifty and Bohemian ways of artists and authors were largely due to their uncertain remuneration under the degrading system of patronage. In truth, the growth of population and the rise of the middle class have been the golden opportunity of the professions, and we have not been the last to take advantage of it. Our numbers, too, have fortunately been recruited from the upper rather than from the lower middle class, and in each generation our position in the social scale has undergone a marked improvement, though it has not improved to the same extent as has happened in the Church.

The great and increasing advantage which medical students are gaining at the present time is a thorough training in laboratories equipped and officered by those who are masters in the art of scientific research. But this laboratory work is no more final than were the careful dissections and wearisome lectures on classificatory botany compulsory upon our forefathers. It is only a means to an end and a very valuable training in the art of observation. Those who are taught in this way learn details, but details do not necessarily advance knowledge as a whole. We hope that from the ranks of those who are trained in this manner there may arise in due course some one who is pre-eminent in the power of generalisation. Our century boasts a Darwin, a Huxley, and a Herbert Spencer, and we trust that at the end of another hundred years it may be possible to celebrate some great exponent of abstract medicine, whose master mind will have correlated the myriad facts of pathology in all its branches, and will thus explain the cause of disease and the means best adapted for its cure or prevention. No one dare prophesy where such a man may appear, for genius of the highest order is essentially sporadic, and appears in the most unlikely places. It might chance to occur in the modern civilisation of the Western hemisphere, or it might be that in the great upheaval which is threatening the older culture of the far East a single brain amongst the teeming millions which will necessarily be affected may be found capable of making the necessary combinations, and of thus unlocking stores of knowledge about which we cannot even dream at present. Aristotle, Haller, Boerhaave, Hunter, and Virchow must always be looked upon as precursors of the apotheosis, but the Messiah of medicine is still to come. We expect his advent as fervently as did the Jews of old, but when he arrives we shall probably be quite as unwilling to receive him or accept his teaching.

THE ADDRESS IN MEDICINE.

Dr. Pye-Smith's address, which will be found elsewhere, was marked by the combination of philosophic breadth of view with a firm grasp of practical realities which we have grown accustomed to look for in the utterances of this accomplished physician. His theme was happily chosen and effectively handled.

It is not without reason that Dr. Pye-Smith reminds us that medicine is the art of curing or preventing disease, and that he urges us never to allow theories, or deductions, or statistics to take the place of the observation and experience which furnish the only safe rule of practical medicine. It must, we think, be admitted that at the present day there is a certain tendency more and more to base not only diagnosis and prognosis but treatment on the results of laboratory research and information obtained by means of instruments rather than on the knowledge gained of specially-trained senses and clinical judgment ripened by experience. There is a danger that the very abundance and efficiency of the therapeutic agencies which we have at our disposal may make us forgetful of the fact that the personal qualities of character and insight and sympathy go almost as much as purely scientific knowledge to the making of a successful physician. A human being suffering from disease is something more than a concrete example of pathological processes, and tact will often enable us to be helpful when the culture tube fails. Probably nothing has more helped to discredit medicine in the eyes of practical-minded men than the pretensions of a crude science, which may be described as knowledge that is not power, to usurp the place of the art of healing. Science of the kind referred to is too often as little serviceable at the bedside as the medicine of the ancient Greeks, which was described by Asclepiades as a meditation on death.

But as Dr. Pye-Smith most truly says, if medical science without art is inefficient, medical art without science is not only unprogressive, but tends fatally to quackery. The only safeguard against the spirit of quackery and the loss of public confidence in the profession to which this leads is to build our art on the solid rock of science. As Dr. Pye-Smith well puts it, scientific medicine based on observation and experiment is always practical as well; but empirical medicine, whether based upon fanciful speculation or working by rule of thumb is the most unpractical thing that can be.

In his remarks on the readiness with which perfunctory explanations of the origin of diseased conditions are too often made to do duty for investigation, Dr. Pye-Smith indicates one of the greatest hindrances to medical progress. But is he not himself, perhaps, a little perfunctory in explaining away "nerve prostration," "worry," and "brain tension" as the effects of drink and gambling? We are rather inclined, too, to demur to his description of modern life as easier and smoother than that of a hundred years ago. We rather believe, with Mr. Treves, that the simple folk who were comparatively free from the fever of social ambition, from the almost savage conflict of modern commerce, and from the bewildering hurry of events in which the lot of modern man is cast, were also comparatively free from the manifold forms of nervous disorder which are the portion of the present generation. Our maidens are probably better grown than their grandmothers, but we take leave to doubt whether our young men are stronger or less emotional than those of the early years of the century. It is difficult to read the memoirs of General Crawford, General Marbot, and other personal records of the Napoleonic wars without feeling that the men who fought in them were of hardier mould, though no braver, than those of the present day. Nowadays we make as much fuss about a small success as our ancestors did about Waterloo. Surely this is a symptom of national neurosis. We fully agree with Dr. Pye-Smith that the duty of a physician is not to flatter the selfishness of neurotic patients, but to inspire fortitude. It must not, however, be forgotten that a neurosis is after all a disease, and that it can no more be charmed away by an assurance that there is nothing the matter than the pain of a fracture can be eased by the declaration of a Christian Scientist that it is purely imaginary. The art of the really scientific physician is shown in the ability to distinguish the victims of laziness and luxurious living who can be cured by work from the real neurotics who need medical treatment.

We have no space to dwell on Dr. Pye-Smith's wise and pithy remarks on the "undiscovered microbes" of various diseases, the fallacies of statistics, and inaccuracy in nomenclature; nor on his effective vindication of the need for experiment in pathological and therapeutical research. Nor can we do more than echo, in passing, his vigorous protest against that steadily-growing nuisance, the broadcast and reckless advertisement of new untried drugs. If he is somewhat too pessimistic in his view of the attitude of the public towards rational medicine, he has a just conception of the debt which it owes to the medical profession. His picture of the practitioner who spends his life in the constant exercise of his best faculties, intellectual and benevolent; who earns not only money but respect and influence, and to whom the end comes brightened with pleasant memories of a life spent in the service of God and man, is more pregnant with encouragement to follow the right path than a volume of homilies.

As a companion picture we may be allowed to quote the portrait of a good physician drawn by another master hand eighteen centuries ago. "My physician," says Seneca," "has shown more anxiety about me than his profession obliged him to do. It was for me, not for the honour of his art, that he trembled. He was not content with prescribing remedies: he applied them with his own hand. Always solicitous about my condition, constantly assiduous in his attention, he hurried to my bedside at critical moments. The most painful, the most repulsive services cost him nothing. He did not hear my groans without emotion. . . . He is not merely a physician; he is a friend. Although I may pay his fees, he will always remain my creditor. The debt of the heart cannot be wiped out. *Pretium operæ solvitur, animi debetur.* This is, after all, the highest reward of the medical practitioner: that whether his way of professional life lies in the dwellings of the great and powerful, or, like Weelum Maclure, in the cottages of the poor, he may earn the respect which is more than titles and honours, and the gratitude and love which are more than riches.

ANNUAL MEETING

THE church service took place on Tuesday at 11 A.M. at the Church of St. Mary-le-Tower, and was attended by a large congregation. The Corporation of Ipswich, represented by the Mayor (Mr. W. A. Churchman) and several Aldermen and Councillors, were present in state, attended by the Town Sergeant and Sword and Mace-bearers, and were joined at the entrance to the church by the President of the British Medical Association, Dr. Ward Cousins, and President-Elect, Dr. W. Elliston, and several members of the Council, whilst a large body of members and visitors was already seated in the church. "God Save the Queen" was played as the Mayor entered. The choir and clergy marched in procession to the chancel, whilst the Old Hundredth hymn ("All people that on earth do dwell") was sung; the Rev. R. Johnstone Coyle (curate) carried the episcopal crozier, and acted as chaplain to the Bishop of Norwich, who was accompanied by many other clergymen. Prayers were intoned by the Rev. R. J. Coyle. Psalms xv and xix were selected for the service; the first lesson from Ecclesiasticus xxxviii, verses 1 to 15, was read by the vicar (the Rev. Y. A. Barrington), and the second lesson from St. Matthew viii, verses 1 to 8, by Canon Tompson. Mr. B. H. Burton presided at the organ, and the musical portion of the service was fairly rendered, especially the anthem, "The wilderness and the Solitary Place shall be Glad for Them," by Goss. The sermon, which was preceded by the hymn, "Thou to Whom the sick and dying," was preached by the Lord Bishop of Norwich, who chose for his text a portion of the first lesson from Ecclesiasticus xxxviii, namely: "Honour the physician with the honour due unto him, for the use ye may have of him; for the Lord hath created him. For of the Most High cometh healing, and he shall receive honour of the king. The skill of the physician shall lift up his head, and in the sight of great men he shall be in admiration. The Lord hath created medicines out of the earth, and he that is wise shall not abhor them." Man has two parts, the perishable body and the immortal spirit, and the latter should occupy much of the consideration of every thinking man. Our Lord Jesus, whilst on earth, constantly directed his disciples to think of their souls, as by the familiar texts: "What shall a man give in exchange for his soul?" "Fear him that is able to destroy both body and soul—hell." Jesus came into the world not because man's body was sick and suffering, but because of man's spiritual diseases. He nevertheless had a tender care for the bodies of those amongst whom He dwelt; in fact, the Great Physician "walked the hospital" of the world in which he lived, doing good. His Church also devotes herself not only to the saving of souls, but also labours for the welfare of men's bodies, and has covered Christendom with numerous institutions for the relief of human bodily sickness and pain. God has created the physician; but, although human agencies were to be used, God Himself gave the blessing. Were it not for the future life, the consideration of man and his sufferings here would present appalling difficulties, as they must do to the Deist. But how beneficial is the healing art! What a glorious history is that of medicine and surgery! How glorious, too, is the human body, with its various parts all combined in one comely whole. It soon, however, exhibits the signs of decay, though its suffering has of late been greatly alleviated and life prolonged by medical research. Formerly, pain was thought to be the greatest curse of mankind; now pain is the physician's ally: the site of the pain is his clue to the seat of the disease. The empiric strives to suppress symptoms; but the true doctor is thankful for the guidance which he gains from pain, as it enables him to strike at the root of the disease. Just so in the moral world. The Great Physician does not trouble about the minor details, but strikes at the root of all moral disease, which is sin. The human physician cures pain and removes disease; similarly the Creator has given antidotes to mitigate sin and the infraction of His own moral laws. Human effort, and the need for God's blessing on that effort, are constantly associated in His word; though some are slow to recognise the working of God in everything. It is asserted that doctors are so habituated to seeing the same infraction of the laws of health constantly followed by the same result that they are tempted to leave God out of their thoughts so far as their patients and themselves are concerned. But, the laws of Nature, so-called, are simply the plans by which the great Creator uniformly acts. Nevertheless, mind volition constantly affects these laws of Nature. The patient, for example, is subject to the alternations of light and darkness; but though the physician cannot prevent the sun from rising, he can darken the window and keep the sunlight out. The progress of science is constantly extending the power of the mind over the laws of Nature; and the human mind and will are themselves the creations of the Creator. A child is being carried down a stream to apparently certain destruction, but a human swimmer has the free will to determine whether or not he will plunge into the water and save that child. The Almighty can dispose and direct the working of his laws, and supersede the lower laws by the higher ones, some of which are probably not yet known to us. In all ages of the world men have been struck by the association of natural phenomena. "There's a Divinity that shapes our ends, Rough-hew them how we will." In medical work there is a region of uncertainty, impossible to penetrate; thus, there is that great region of accidents during health and illness, both unfortunate and fortunate, of which one can give no account. There is, for example, the influence of the mind over the body; and all recognised that a tranquil mind is of immense importance to the patient. Here at any rate is a region for the working of the good spirit of God. In a case of illness almost abandoned as hopeless a happy thought occurred to the doctor after leaving the house; he returned, tried a new remedy, and was successful. Whence came that happy thought? Doubtless from God; and it was an instance of the influence of God's providence upon the laws by which men work. "There is a time when in their hands there is good success." Up to a certain point the infraction of God's laws, natural and moral, as in youth, is capable of cure; but after a time the constant infraction causes permanent disease. It is said that clergymen see the better side of life, doctors the worse. But, if the doctor witnesses the sordid side of existence, he also sees some glorious examples of human virtue and patience amongst patients and attendants, such as are found only in the kingdom of God. He might, for instance, see the face of the dying irradiated with a heavenly smile by the thought of the sufferings of Christ for man. And in these higher spheres they seemed to be getting into a region above that operated by natural laws, a region in which God works out his highest plans for the government of the world. And hereafter in a better sphere we may be permitted to see that in our life here and in us and through us the Almighty Father has been working out the problem of his love! Amen. The hymn "O Worship the King All-glorious above" was sung during the collection of the offertory, which realised twenty guineas, and was devoted to the Royal Medical College, Epsom, and to the British Medical Benevolent Fund. The Bishop gave the blessing, and the hymn "Now Thank we all our God" having been sung, the congregation dispersed. The concluding voluntary, "Phantaisie," by Joseph Rhenberger, was played by Mr. James Price.

ON Monday evening, before the commencement of the annual meeting at Ipswich, the President-elect, Dr. W. A. Elliston, entertained at dinner at the Town Hall a number

of members of the Council of the Association and officers of Sections. He had also invited several distinguished guests, including the Lord-Lieutenant of Suffolk (the Marquis of Bristol), the High Sheriff of Suffolk, the Bishop of Norwich, and the Mayor of Ipswich. The dinner was an informal gathering, but after Dr. Elliston had given the toast of "The Queen," Sir Walter Foster, M.P., in a short but happy speech, proposed "Prosperity to the Colonies," coupling the toast with the name of Dr. T. G. Roddick, the President of the Association when it met in Montreal in 1897. Dr. Roddick, in responding, expressed the hope that on some future occasion the Association might again meet within the borders of the Dominion of Canada.

After the President's dinner an At-Home was given by Mrs. Elliston at Stoke Hall, and was attended by a number of members of the Association and many local guests. The grounds of the house, which are extensive and well-timbered, were illuminated with fairy lamps and Chinese lanterns, and a string band supplied music.

On Tuesday afternoon, which happily was fine, Mr. D. Ford Goddard, M.P., gave a garden party in the grounds of his residence, Oak Hall, which overlooks the river Orwell and affords a beautiful view of the characteristic sylvan scenery of Southern Suffolk. Over five hundred guests accepted the invitation, and had the opportunity of meeting many of the leading residents in Ipswich. The rooms provided for the use of the Sections have been found very convenient. Accommodation in most instances has been found in the Higher Grade Schools, a new building of spacious proportions.

The Pathological Museum was held in the Chemical Laboratory of the Higher Grade School, which lent itself most admirably to the display of the interesting specimens exhibited. Dr. Astley Clarke, of Leicester, exhibited a number of skiagraphs illustrating the value of *x* ray work in general practice. A series of microphotographs and lantern slides, the work of Dr. E. S. Worral, as used for the illustration of pathological lectures, was shown. From the Cambridge Pathological Museum a series of diseased bones was brought by Dr. Griffiths, and several diseased organs were shown by Dr. T. Strangeways Pigg. Dr. H. H. Brown, of the East Suffolk and Ipswich Hospital, sent several interesting specimens of pathological organs. Dr. Gustav Mann had some excellent photographs illustrating the structure of nerve tissue, and the sensory and motor decussations. Among various specimens sent by Dr. Sidney Long from the Norfolk and Norwich Hospital were a melanotic sarcoma of the mesentery, and a string of tuberculous glands from the neck, showing the enormous size to which these sometimes grow. He also showed what is supposed to be the largest renal calculus in existence, composed of ammonio-magnesium phosphate. Miss FitzGerald exhibited a large series of coloured drawings of the grey matter of the cord of the bonnet monkey, showing the various cell nuclei. Mr. T. H. Morse showed, among other specimens, five cases of tubal pregnancy. Dr. Ethel M. Vaughan, of the Royal Free Hospital, sent a large number of interesting specimens. Dr. Phineas Abraham lent a set of photographs illustrating leprosy, yaws, and bubonic plague. A number of old lithotomy and other instruments used at some time or other in the Norfolk and Norwich Hospital were displayed. The work for which these instruments have been used was illustrated by the ponderous calculi—for which Norfolk is notorious—in a neighbouring case. Dr. D. C. Rees, of the London School of Tropical Medicine, exhibited diagrams and photographs illustrating the life-history and development of the *Culicidæ* and *Anopheles*. A large number of *Anopheles* and *Culicidæ* mounted in Canada balsam, after the method of Dr. G. D. Freer, were also exhibited. The method as explained by Dr. Rees is very simple, and the effect was excellent. The exhibit, which was new, was one of the features of chief interest in the museum. In addition, microscope slides showing filariæ in human blood and in the mosquito, and hæmatozoa in man, and halteridium in birds, and their alternative forms in the mosquito, were exhibited.

The Honorary Secretaries of the Section of Navy, Army, and Ambulance, Drs. James Harper and F. A. Brooks, had arranged a small but interesting loan collection of objects of special interest to the Section in the anteroom of the meeting room, and two tents were pitched on the lawn. Among the objects exhibited were the surgical haversack of the R.A.M.C. and of the St. John Ambulance Association, the "Congo" medicine chest made by Burroughs, Wellcome, and Co., and packed with a large collection of tabloids; the field medical companion R.A.M.C., and the ambulance hamper of the St. John Ambulance Association; field surgical panniers and a field reserve medical pannier lent by Messrs. S. Maw, Son, and Thompson, Aldersgate Street, E.C., and regulation fracture and antiseptic dressing boxes. Models of various hammocks and stretchers were shown, and also a pair of surgical saddle bags. The carrying sheet stretcher invented by Mr. J. C. Derham, Chief Constable of Blackpool, and now in use by the Imperial Yeomanry Hospital, was exhibited, and also the "Ashford" wheel litter and a St. John Ambulance wheel litter. A tortoise hospital tent, with accommodation for twelve men on stretchers raised from the ground, was erected by the Military Equipment Company, and also a "Minson" hospital tent, as used by the United States army. The special feature of the "Minson" tent is that the tent proper has free ventilation at the top, and that over this tent is stretched and pegged out a second canvas roof, which is held taut, free from the inner tent. This allows free ventilation at the top, while making the tent cooler in hot climates. Mr. Mackenzie Davidson's *x*-ray localising apparatus and couch and stereoscope for viewing skiagrams were shown, and Mr. Noble Smith exhibited some specimens of soldiers' boots, showing the defects most commonly met with and the manner in which they may be remedied. Two plans showing the medical arrangements for an army corps at home and abroad drawn by Captain Rory Fletcher were exhibited, and there was also a small collection of Mauser bullets, shrapnel, fragments of shells and other objects from the war in South Africa.

THE CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The significance and the interest of the celebration last week in London of the centenary of the granting of the first charter of the Royal College of Surgeons of England will not be missed. The social success of the occasion, due in large measure to the tact and personal popularity of the distinguished President of the College was conspicuous, but it cannot for a moment be doubted that the Prince of Wales, the Prime Minister, and the ex-Prime Minister, as well as the many eminent foreign surgeons who attended the celebration intended and desired to show their admiration for the achievements of British surgery as a whole, rather than to any single corporation or institution. The Colonial and foreign surgeons elected Honorary Fellows have expressed themselves as profoundly impressed by their reception at the ceremony, and all the guests must have felt that no social element was wanting to give distinction to the formal banquet in the Hall of Lincoln's Inn. That hall, ample as are its proportions, was filled, and it is a noteworthy fact that some forty of the foremost surgeons of the world were among those who had come to do honour to the College and to be honoured by it. The

Prince of Wales made a very happy speech, and the humour which illuminated it showed that he felt himself in congenial company and that he was glad to do honour to British surgery, to the College, and to Sir William Mac Cormac, to whose professional services the Prince made a graceful allusion. A correspondent reminds us that "In Holbein's picture the Barber-Surgeons and their Master, Thomas Vicary, are on their knees to receive the Charter from Henry VIII. On July 24th the President and Vice-Presidents of the Royal College of Surgeons, the descendants of the Barber-Surgeens, went by invitation of the Heir to the Throne to confer on him the Honorary Fellowship of their College. The contrast is striking enough. *Autres temps autres mœurs.*"

THE UNIVERSITY OF LONDON.

THE remaking of the University of London is proceeding slowly. It was on June 29th that the Queen, at a Council held at Windsor, declared her approval of the statutes. The only hitch in the procedure up to that date appears to have been a petition against the constitution of a Faculty in Theology. This, we gather from the terms of the royal warrant was "withdrawn." Speculation is still rife as to the names of those who will compose the new Senate. In addition to the names already mentioned in the BRITISH MEDICAL JOURNAL, those of Sir Henry Roscoe and Sir Michael Foster, and of Professor Vines and Professor Carey Foster, have been put forward. The latter is mentioned as the new Principal of University College. Mr. Hertzberg is likely to be nominated by the graduates in the Faculty of Music. Dr. Macaulay, D.Sc., and Dr. Clowes, D.Sc., have, we understand, come forward in the Science Faculty as representatives of the University of London Graduates' Association. We observe with satisfaction that the road in which the new University buildings are situated is no longer to be called after the Imperial Institute, but is to take its name from the University.

THE REGENT'S CANAL.

AT the last meeting of the London County Council, the Chairman of the Public Health Committee was interrogated as to the filthy condition of the Regent's Canal. Whether from the drought, or the withdrawal of water to quench the recent conflagration at Camden Wharf, or from the entrance of sewage into its sluggish waters, or from these causes in combination, certain it is that within the last week numerous well-founded complaints have been made by those resident in its neighbourhood. The water is unusually black in appearance, and the stench during the recent hot weather has been unmistakably that of sewage. Until a few years ago the canal received the effluent from the Zoological Gardens, but since this was diverted into a sewer specially constructed to receive it little occasion of nuisance from the canal has arisen. We understand that one of the Council's medical officers has inspected the banks to ascertain if pollution is going on, and has taken samples of the water for analysis. A more efficient and a more frequent removal of the black mud, and a more copious supply of water from the upper reaches so as to scour the metropolitan portion of the canal, would appear well worthy the company's prompt consideration.

SIR WILLIAM TURNER ON THE R.A.M.C.

IN proposing the toast of "The Imperial Forces" at the annual dinner of the Edinburgh Merchant Company on the evening of Friday, July 27th, Professor Sir William Turner, after reference to the growth of the Imperial idea and to the necessity of having adequate forces for the conservation of the Empire, went on to speak of the Royal Army Medical Corps—a branch of the service which of late had been the object of very considerable criticism. Was that criticism altogether just? Let them consider for one moment what the circumstances were. They had carried out to South Africa an army of 200,000 men. They had that army subjected not only to all the perils of war, but to the attacks of disease. Let them conceive what would have happened in Edinburgh, that great medical centre, if five or six thousand people had been prostrated with enteric fever—say in the course of two or three weeks. He thought that in that case even the energetic Convener of the Public Health Committee would have found himself in some difficulty in providing proper accommodation for all these sick people and proper nursing for them. Much more would these difficulties arise on the African veld, hundreds of miles away from great centres of population. Some consideration ought to be given to these matters. He did not think enough had been given to them. He thought there had been too much fault found and too little recognition of the extremely difficult circumstances under which our Army Medical Service had been placed. He felt that this inquiry, which had begun and which would have to go on for some weeks, if not months, although it might show defects here and there—for what system of human device was perfect?—would, on the whole, show that the medical administration of the British army was one that they might be proud of.

SMALL-POX IN GLASGOW.

WE are pleased to learn that the unsatisfactory state of matters referred to in a paragraph under this heading, which appeared in the BRITISH MEDICAL JOURNAL of July 28th, has now been corrected, and an undoubted source of infection to the neighbourhood has thus as far as possible been removed. The Small-pox Hospital in Glasgow is in the same grounds as Belvidere Fever Hospital, but it is carefully isolated from the rest of the fever hospital. It is, in fact, surrounded by a high wall, and within its compass, besides the hospital, there is accommodation for the doctor and a special staff of nurses and attendants, and also separate kitchen and washhouses. With all this special isolation, however, there is for the small-pox hospital no destructor, and when a patient dies or is discharged from hospital the bedding has to be taken out of the hospital grounds and along a public thoroughfare for about 250 yards to the destructor for the whole hospital. It was in the conveyance of this infected bedding that carelessness was detected by the medical officer of health, Dr. Chalmers; but it appears that his orders regarding this matter were countermanded by the sanitary inspector and also by the Committees of the Corporation on Health and on Hospitals. It is satisfactory, however, to learn that the special Committee of Inquiry appointed by the Corporation lost no time in getting to work, and at once put the matter right by having the medical officer's instructions carried out, and publicly assuring the community that every possible care would be taken in the future in the way in which Dr. Chalmers had advised. It seems, however, as if it would be wise in this particular instance to go further and to provide in the Small-pox Hospital itself for the destruction of all infected materials. Though there is still a considerable number of cases of small-pox in hospital, the numbers are gradually diminishing week by week.

THE DISINFECTION OF ROOMS.

DISINFECTION of rooms and of articles which have been in rooms occupied by persons suffering from infectious disease, though more frequently practised than formerly, appears to be carried out in divers ways and with varying degrees of efficiency in various districts by officials of sanitary authorities. In some cases there is much display of activity with but little effective procedure upon scientific lines. Researches conducted by bacteriologists have taught us to distrust the potency of some of the agencies most consecrated by habitual usage. Formalin appears to be displacing sulphur dioxide in popular favour. The London County

Council decided before rising for the recess at half-past eleven last Tuesday night to institute a fresh series of researches with a view to ascertain the best method of disinfection for sanitary officials to employ. £350 were voted for the purpose, and Drs. Klein, Houston, and Gordon were appointed to make the researches. In the absence of undeniable evidence of the *vera causa* of the commoner infectious diseases of man, such research must necessarily be of a somewhat tentative character.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

The Society for the Study of Disease in Children was formally incorporated at a meeting held on July 24th at at the house of the Royal Medical and Chirurgical Society in Hanover Square. Dr. Arthur E. Sansom was in the chair, and there was a fair attendance of those interested in the movement. The rules, as drafted by the provisional committee, were adopted with some slight alterations. The officers and council of the new society are as follows: Hon. Treasurer: Mr. Clement Lucas. Council: Mr. H. G. Armstrong (Wellington College); Dr. Henry Ashby (Manchester); Dr. Fletcher Beach; Dr. George Carpenter; Dr. Edmund Cautley; Dr. Wayland C. Chaffey (Brighton); Dr. Arthur Downes (Local Government Board); Mr. Walter Edmunds; Dr. Theodor Fisher (Bristol); Dr. Leonard Guthrie; Mr. Robert Jones (Liverpool); Dr. David B. Lees; Dr. Lewis Marshall (Nottingham); Dr. John McCaw (Belfast); Mr. D'Arcy Power; Dr. Humphry D. Rolleston; Dr. A. E. Sansom; Dr. George E. Shuttleworth (Richmond); Mr. Harold J. Stiles (Edinburgh); Dr. George A. Sutherland; Dr. James Taylor; Mr. Alfred H. Tubby; Mr. William H. Vickery (Newcastle-on-Tyne); Dr. Dawson Williams. Honorary Secretaries: Mr. Sydney Stephenson (London), and Dr. Charles H. Willey (Provincial). The new society already numbers upwards of eighty original members.

HINDU TEETH.

Pessimistic prophets declare that future generations of humanity will be toothless. There can certainly be no doubt that civilisation has brought with it, from one cause or another, a great increase in dental troubles, and that the number of people nowadays whose teeth are either lost or diseased at an early age is very large. To a great extent this must be ascribed to neglect. Some observations on the teeth of the Hindus by Dr. Egbert, which are interesting in this connection, were recently quoted in the *British Journal of Dental Science*. In his experience natives of all castes, from the Brahmin to the pariah, have uniformly large, strong, and exceptionally well-developed teeth, with the third molars and lateral incisors developed proportionately to the other teeth. In the hundreds of dentures which he has examined among Indian natives, he has never seen a single malformed molar or lateral incisor, and these teeth were always present. The Indian people are remarkably exempt from caries, and do not often lose their teeth from this cause. There can be little doubt that this immunity is largely due to the fact that careful and regular cleaning of the teeth is a universal habit in India. It is strictly observed, because it is laid down as an important part of religious ritual. Very exact rules for its performance are given in the great book of Brahmin ritual, called *Nitia-Karma*. To clean his teeth the Hindu uses a small twig, one end of which he softens out into the form of a painter's brush. Squatting on his heels, and always facing either east or north, he scrubs all his teeth well with this brush, after which he rinses his mouth out with fresh water. There is, indeed, much in the personal habits of the Indian races which might with advantage be imitated by Western peoples. All Hindus, for instance, strictly observe the custom of washing with water after answering a call of Nature, and the European habit of using paper is looked upon by them as an utter abomination, of which they never speak except with horror. They object just as strongly, also, to our use of a handkerchief which is afterwards put in the pocket. The general neglect of the teeth in this country is certainly deplorable. Even among the richer classes it is quite uncommon to meet with people who make a regular practice of cleaning the teeth after each meal—a most desirable habit on hygienic grounds—and large numbers of the lower orders never use a toothbrush at all. The vegetable nature of the Hindu's food probably has its influence in rendering him less prone to caries than the meat eater, but there can be no doubt that he owes immunity from much pain and ill-health to the salutary habit which his religion has wisely enjoined.

ROYAL NAVY HOSPITAL, HASLAR.

We understand that the erection, in the spacious grounds of this, the chief naval hospital, of a new building for the accommodation and treatment of sick officers from the fleet and the marine divisions at Portsmouth is now under the consideration of the Admiralty. Hitherto such accommodation at Haslar has been in rooms or cubicles, termed "cabins" in the navy, in various parts of the general hospital. The success of the sick officers' quarters recently built at the Royal Hospital, Plymouth, and the demand for further hospital accommodation for sick seamen and marines at all our naval ports, owing to the great recent increase of the fleet, which will be secured at Haslar by the removal of the sick officers from the general hospital building, combine to recommend this proposal to the favourable consideration of the Lords of the Admiralty, and we trust of the Lords of the Treasury also. Should the idea be carried out, the new quarters will add greatly to the comfort of the officer patients and to the convenience of their medical officers, nursing sisters and attendants.

THE MECHANISM OF LIFE.

Professor Armaud Gautier, in the *Revue Générale des Sciences*, has recently been passing under review present-day conceptions of the mechanism of life. He points out that the attention of the first physicians or natural philosophers in prebiologic days was occupied with wheels and springs, weights and balances; these are the physicists of to-day. A little later the physicians of the day discovered a heart, vessels, muscles, glands, a stomach, a brain, and these survive as anatomists. Later still the function and interdependence of organs were investigated by early physiologists. In the seventeenth century the heart was no longer considered the organ of emotion, but came to be recognised as the force-pump of the circulating blood; this was the work of Harvey. In 1630 the application of the microscope evolved the more refined anatomy of the histologists. But, when all was done, the observation of phenomena fell short of the discovery of original causes. In 1775 Lavoisier developed his ideas of oxidation in the animal body leading up to the subject of animal heat. And then a great stride was made when, between 1856 and 1860, Pasteur discovered the agents of lactic and butyric fermentation, followed later by the discovery of the specific cause of anthrax by Davaine. In due time Pasteur exploded the old idea of spontaneous generation, and laid the foundations of modern bacteriology, with its zymins, ferments, and toxins. M. Gautier suggests that the cells of animal tissues contain different specific ferments, on each of which devolves the accomplishment of one of the elementary acts of each structural element. From the white blood corpuscles, for example, might be obtained an inverting ferment which could hydrate cane sugar, a ferment which could peptonise albumen in an alkaline medium, one that could change the fibrinogen into fibrin, and another the myosinogen into myosin—an oxidising ferment without which the oxygen of the blood is powerless to attack the oxidisable substances of the body—and zymins acting inversely to the ferments—their combined action

leading up to the mystery of assimilation. The secret of life, then, as he would have us believe, is reduced to two problems, one being the nature of a zymin, and the other the cause of all the fermentations which tend to the preservation of the individual. He maintains that the activity of each specific zymin pertains to its physico-chemical molecular structure, that the cell co-ordinates all these molecular acts, and that the nerve centre combines and harmonises them. It must, however, be admitted that the ultimate cause of life is still to seek; but he ventures to hope, although it may be that the wish is the father of the thought, that the darkness is less dark and dawn perhaps not far off.

HEREDITY.

AN interesting communication from Professor Pearson appears in the *Proceedings* of the Royal Society for April upon the subject of the inheritance of characters which can hardly be imagined to be controlled by selection, and may therefore be taken to be the unfettered working of some law of inheritance which is as yet but imperfectly known. He has investigated by mathematical analysis, so far as the nature of the subject allows, the inheritance of colour in horses, and of eye colour in man, and finds that in both the results do not conform with what would be expected from a blending of the characters of the ancestors in a direct line—are not in fact what would be expected under Weismann's theory of the continuity of the germ plasm and its subdivision. On the contrary the offspring tends to take the character of the one parent to the exclusion of the other, and more frequently follows the male than the female ancestors: in other words a prepotency of the male germinal material is often manifested. The persistence of family likeness handed down for several generations on the male side, in spite of the introduction of various strains upon the female side, seems to bear out these conclusions, which have an obvious and interesting bearing upon the inheritance of disease. It is the opinion of Dr. Savage that where a strong taint of insanity exists, no progressive dilution of the taint by intermarriage can be traced in successive generations, but that the individual either escapes altogether or experiences the full weight of the neurosis in some form or other. But it is rarely, if ever, possible to obtain the records of eight generations, as Professor Pearson has done with colour, as such families die out long before these have been attained. Professor Pearson strongly deprecates speculations, such as that of Weismann, which have for their purpose to explain the phenomena of inheritance of which our knowledge is at present very inexact; the patient accumulation of facts must precede any attempt to formulate great generalisations.

THE DEFENCE OF THE SKIN AGAINST MICROBES.

SABOURAUD,[1] in an interesting article on the methods by which the skin resists the invasion of microbes, has pointed out that the skin has two lines of defence—the epidermis and the dermis. The epithelial cells act by keratosis, the fibrous cells by fibrosis, the leucocyte by phagocytosis. These functions are clinically represented by exfoliation, deep induration, and suppuration respectively. These simple phenomena are the essential means by which the skin defends itself, and are the result of hyperactivity of the normal functions of each element concerned: (1) The defence of the epidermis by itself is effected by the Malpighian cell, which gives birth to a series of similar cells which are subsequently converted into horny cells; examples of this reaction are seen in pityriasis and dry eczema; (2) the defence of the epidermis by the leucocyte is effected in three situations: (*a*) in the superficial horny layer, (*b*) in the mucous layer, (*c*) in the dermis. The earliest lesion of psoriasis is an example of the first situation. This lesion, according to Munro (whose paper may be found in the *British Journal of Dermatology* for February), consists of a minute collection of leucocytes between the layers of the horny epithelium; this is followed by hyperkeratosis, and the scale so found is thrown off with the minute abscess. This process continues till a section shows many of these microscopic abscesses, reduced to dried nuclei of leucocytes, between the layers of horny epithelium. Although no micro-organism has, so far, been discovered for psoriasis, there is little doubt that this process is one of reactionary defence caused by microbes in the horny epithelium. The vesicle of eczema is an example of microbes situated in the deeper layers of epidermis. Here the microbes can multiply more easily, and around them gathers a great afflux of leucocytes (chemiotaxis); serum is exuded, and a vesicle formed. The struggle between the leucocyte and the microbes goes on in and around the vesicle and the deeper layers of the mucosa form a new epidermis beneath. The vesicle dries up, and leucocytes and microbes are cast off together. When the microbes reach the derma, by injury or through the hair follicles, the defence is almost solely by the leucocytes. Acute dermal abscesses and boils are examples of this, the third degree. The defence of the connective tissue by itself is effected by proliferation of the fixed connective tissue cells so as to form a fibrous sheath around the microbic focus. The wandering connective tissue cells line this fibrous capsule, and form the so-called "epithelioid cells" of the "pyogenic membrane." Within the nodule the leucocytic defence goes on, but in a chronic affection of the skin differs from the process in acute affections in the tendency to the formation of giant cells, the replacement of the polynuclear cells of the primary suppuration by mononuclear fibroid cells, the final fibrous organisation of the nodule. These changes are probably due to degeneration of the migratory cells owing to their altered conditions of existence, being cut off from their surroundings by the fibrous capsule. This process of fibrosis destroys the microbes and leucocytes together. When skin lesions are regarded simply as the result of destruction of tissues by microbes, their histo-pathology is incomprehensible, but if regarded as a cellular reaction of the organism against invasion the phenomena are easy of comprehension. Such skin lesions may be more easily systematised by an understanding of the morbid reactions of the structures involved.

[1] *Ann les de Dermatologie et de Syphiligraphie*, vol. , Nos. 8 and 9, 1899.

WE are requested to state that the Library of the Royal Medical and Chirurgical Society is now closed for cleaning, and will be reopened on Monday, September 3rd, at 11 A.M.

MR. J. WARRINGTON HAWARD, having retired from the position of surgeon to St. George's Hospital, on the completion of twenty years' service on the full staff, Mr. A. Marmaduke Sheild has been elected by the Governors to succeed him.

IT is with much regret that we announce the death of Dr. William Charnley, of Shrewsbury, which occurred on July 30th from pneumonia. Dr. Charnley, who was in the prime of life, held the degrees of M.A., M.D., and M.C. of the University of Cambridge. He had for the last fourteen years been Honorary Surgeon to the Shropshire Eye, Ear, and Throat Hospital. He had formerly been Surgeon to the Central London and the West London Ophthalmic Hospitals, and was the author of several valuable contributions to the literature of his speciality. He was a former President of the Shropshire Branch of the British Medical Association. He was a man of considerable intellectual gifts and of wide attainments, devoted to his profession, and highly respected by all who had the privilege of his personal acquaintance.

SIXTY-EIGHTH ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION.

Held at Ipswich, July 31st, August 1st, 2nd, and 3rd.

First General Meeting.

The first general meeting of members was held in the Higher Grade School, Ipswich, on Tuesday, July 31st, 1900, the President (Dr. Ward Cousins) in the Chair.

The minutes of the last meeting were adopted and signed as correct.

The late Duke of Saxe-Coburg.

The President announced that his first duty was a very sad one. They had no doubt heard of the sudden death of His Royal Highness the Duke of Edinburgh and Saxe-Coburg-Gotha, and he was sure they would all join with him in the resolution which he proposed:

That this meeting of the members of the British Medical Association assembled at Ipswich desire to express their deep sympathy with Her Most Gracious Majesty the Queen and with Her Royal Highness the Duchess of Edinburgh, and with the members of the Royal Family on the sad and sudden death of His Royal Highness the Duke of Edinburgh and Saxe-Coburg-Gotha.

The President of Council seconded the resolution, which was carried unanimously.

Induction of President.

The President congratulated the Association most warmly on the fact that during the past year the number of members had very considerably increased until now, as appeared by the report, there were 18,382 members of the Association scattered all over the world. The remarkable vitality of the Association had often puzzled many old members, but he assured them that there was no difficulty in discovering the centre of their vital force. There was scattered throughout the world and the British Colonies Branches of the Association, and it was the vitality of the Branches which was the mainstay, the strength, and vigour of their Association. He hoped, and he felt sure they would agree with him, that their Association had not completed its evolution. A large number of members of the profession were still outstanding, and although their voice was strong he hoped that in a few years the voice of the British Medical Association would be practically the voice of the profession. During the past year, unfortunately, they had had very many losses, including Sir Grainger Stewart, who preceded him in the chair, besides many of their brave comrades in South Africa. During the past twelve months the country had been passing through a series of great national anxieties, and their hearts had turned towards their brave soldiers and sailors who had been fighting their battles in South Africa with enthusiasm, and they had been following them in their trials and victories throughout the campaign. But it was a fact that the conditions of warfare were more serious than the actual fighting. Although it was true that many of our brave troops at Ladysmith, Kimberley, and Mafeking fell by the bullets and shells of the enemy, still a large number of them were killed by physical exertion and privation. All wars showed it, and it was a fact that death from disease was greater than it was in battle. He also thought that, notwithstanding all the criticism which had been passed upon their colleagues, when the inquiries which were being made were complete, there would be no reflection upon the skill and devotion of the members of the Army Medical Corps. In the present campaign exceptional services had been rendered to the wounded both by civil and military surgeons of the very best ability, and he was sure that the members of the Army Medical Corps would be crowned with laurels for the work they had done. What he wanted to see was the division of labour in the medical corps; they wanted skilled physicians to attend the sick, and sanitary officers to prevent disease in the field; there was work for the surgical department and work for the medical department and for the sanitary department. He was quite confident of the ability and efficiency of the Royal Army Medical Corps. The British Medical Association had done much for years for the development of this corps, and success had come at last. His duties, in conclusion, were exceedingly simple. He thanked them sincerely for the honour they conferred upon him by electing him President of the Association. He now had the pleasure of introducing to them his and their friend, a hard worker of the Association and fellow physician and surgeon, Dr. Elliston, of Ipswich, to whom he wished a most prosperous and pleasant year of office. He wished the Association every prosperity under his guidance.

Election of the Prince of Wales.

Dr. William Alfred Elliston then took the chair amid great cheering, and in reply said he begged to thank their late President for the very kind way in which he had introduced his name to the members. He should have a special opportunity that night of thanking them for the very great honour they had conferred upon him by placing him in that chair. The first duty he had to discharge in his new office was to move a resolution that H.R.H. the Prince of Wales, K.G., F.R.C.P., F.R.C.S., be and he is hereby elected an honorary member of the British Medical Association. The Council recommended the members of the Association to confer upon H.R.H. the highest honour it was in their power to confer. He thought it was singularly opportune, His Royal Highness being a resident in East Anglia, that they should take that opportunity of recording their high appreciation of the great work the Prince had done in the many questions in which the medical profession were deeply interested. The Prince was now a doubly-qualified man (to use professional phraseology), and the next thing for him to do was to become a member of their great medical Association. They could not confer this distinguished honour on any individual more worthy to receive it. When they remembered the work the Prince of Wales had done in the management of hospitals, in every sanitary cause, in the housing of the poor, and particularly in that great movement for stamping out the ravages of tuberculosis, he thought that alone would justify them in making the Prince a member of this great Association. His Royal Highness had been graciously pleased to intimate that the honour would be acceptable to him, and he now asked the members to confer it upon him.

Professor Roddick had great pleasure indeed in seconding the resolution. His Royal Highness was dear to Canadians, and he spoke for Colonists generally. They had watched with pleasure the interest which he had taken in sanitary matters specially. They felt that, as the future occupant of the throne, he should, being a physician and surgeon already, be a member of the British Medical Association and be allowed to practise in any part of the kingdom. This honour his Royal Highness shared with one who was very highly esteemed in Canada, namely, Lord Strathcona, who had just presented to the empire one of the best equipped bodies and probably the body best able to defend the empire—Strathcona's Horse. Lord Strathcona was a member of the British Medical Association, and he had declared that there was no honour of which he thought more highly than that of being a member of their great Association. In conclusion he hoped his Royal Highness would live long to enjoy what he considered the honour of being a member of the British Medical Association, and that at some future meeting of the Association they would have his Royal Highness present, which he also hoped would be in Canada.

The resolution was carried unanimously.

Vote of Thanks to Retiring President.

Sir Walter Foster, in moving

That the warmest thanks of the Association be given to Dr. John Ward Cousins, F.R.C.S.Eng., for so ably presiding over the Association during the past twelve months,

said that he had peculiar pleasure in submitting the motion to the meeting, because he thought he was one of Dr. Ward Cousins's oldest friends. He remembered his advent to the Council, and the strenuous work that he had done in troublous times, when they were reforming its constitution, and when at the memorable meeting in Birmingham he invented that picturesque phrase of which he was so fond—namely, the "vital centre" of the Association. Dr. Ward Cousins had himself for the past year been the "vital centre" of the Association, and he had endeared himself to the members by his earnest work and his devotion for the good of the Association. He had always displayed a most genial disposition, and he

thoroughly deserved the best thanks of the Association for his labours during his year of office; and although some might have differed from him on some points, yet he never knew any President pass through his year of office without occasionally having a difference with his colleagues, and the very fact of there being such a difference was a tribute to the manliness of the person who held that difference. He hoped that the Association would always have such a President, and if they had the prosperity of the Association would be secured for the future.

Dr. HOLMAN seconded the resolution, which was carried unanimously.

Dr. WARD COUSINS was very much indebted to Sir Walter Foster for the very kind words he had used in regard to him. He had thoroughly enjoyed his long association with the British Medical Association, and, so far as he knew, he had no enemies. He hoped he had discharged his duties to their satisfaction, and he could assure them that the kindness of the members to him would always be remembered by him as long as he lived.

REPORT OF COUNCIL.

The PRESIDENT OF COUNCIL, in moving the adoption of the report, said he was afraid it was too much to hope that the resolution he was going to propose would be passed by such a unanimous vote as the previous ones. He proposed:

That the report of Council and financial statement for the year ending December 31st, 1899, be received and adopted.

It was not necessary for him to detain them long, because the report had been published in the JOURNAL. He was pleased to say that the Association had continued to make progressive increase, and there were when the report was made nearly 19,000 members upon the books. Regret was expressed in the report that some Colonial Branches had rather ceased their activity, and were not working quite so hard as they did. They hoped that the pointing out of this fact might lead to more activity being displayed, and that in subsequent years they would be able to point to increased action on the part of their Colonial Branches. With regard to the JOURNAL, he thought that the publication of the proceedings of the last annual meeting with the rapidity attained last year would commend itself to all. Instead of the reports drifting on for an interminable number of weeks, and so losing touch, as it were, altogether with the meeting at which the papers had been read, the whole of it was got through before the end of November. That was a change in the work which he was sure the Association would recognise as an improvement. The report referred to the very interesting letters and reports which had been contributed to the JOURNAL by Mr. Frederick Treves, Sir William Thomson, Mr. Clinton Dent, and others, from the seat of war. He was sure that the members had recognised the great value of these contributions, and had found them intensely interesting. With regard to the Midwives Bill, the Council held a special meeting when the Bill was before the Grand Committee in the House of Commons, with the view of arranging and pressing forward those amendments which they felt were necessary to press upon the attention of the Standing Committee of the House of Commons while the Bill was under consideration. To their satisfaction that session the Bill was talked out, and it was not at the present moment before the House or before the Council. As to the extraordinary general meeting which was held in London on July 18th, it was suggested that as soon as the report was dealt with, a resolution which stood in the name of Mr. Victor Horsley should come up for discussion, and therefore he thought it was not necessary for him at that stage to make any further remarks on that question. If that resolution were passed he thought it would be unnecessary for them to deal with some of the resolutions of which notice had been given.

The TREASURER, in seconding the resolution, stated that he was glad to be able to say that while there had been a considerable increase in the receipts during the present year, at the same time the expenses had been considerably less.

Surgeon-Colonel INCE said that it had been his lot in former years to criticise the management of the JOURNAL in a manner which was not always favourable to it. In those days the editorship was different to what it was at the present time, and the contents of the JOURNAL were not always of a highly professional character. But the manner and the matter of the JOURNAL had very much improved of late. He thought it was a subject of congratulation that the Association had at the present time so good a JOURNAL. Referring to the meeting at Exeter Hall, he said the fate of the resolution then proposed was one that would excite a great deal of anxiety in the minds of members generally. When he first saw the proposed code he did not like it exactly, and he thought it was susceptible of improvement; but at the same time he looked upon it as an unfinished model. His impression was that the members would have had an opportunity of going through the propositions in a general way, and that the Council would have been only too glad to have accepted the suggestion of the members. He hoped that the Council would reconsider the matter entirely, and that the code would be submitted to a body of representative members of the Associotian as well as members of the Council.

The Coventry Dispensary.

Mr. GEORGE BROWN called attention to the paragraph which dealt with the Coventry Provident Dispensary. At former meetings they had passed resolutions respecting the conduct of the officers of that dispensary, and without actually coming to a definite resolution they had called upon them either to mend their ways or to resign their membership of the Association. The dispensary was not conducted on proper lines, for members were admitted to it without regard to their earnings or their social position, and there was no wage limit. He hoped the Council would tell these gentlemen that they would have to do what other provident dispensaries did, namely, have a wage limit.

Dr. SAUNDBY said that the knowledge he had acquired of this subject was when sitting on a committee by which the question had been discussed. In his opinion it was not a fair thing to represent that the Coventry Dispensary was worse than others. The great charge against these dispensaries was that there was no wage limit. The great Friendly Societies of England had no wage limit, and those who worked for friendly societies were working for societies that had no wage limit. The members of the staff of the Coventry Dispensary were equal in professional status to the members of other dispensaries. The question of a wage limit was a burning question in connection with clubs and similar societies throughout the country, but there was no reason why the Coventry Dispensary should be singled out as being so much worse than its neighbours, because it was in the same position as all the other benefit societies throughout the kingdom.

Dr. PHILLIPS said that, as a resident in Coventry, he desired to point out that in 1892 that dispensary had been condemned. It had then half the population of Coventry on its books—something like 25,00 people. It had been condemned by the medical papers, and no advertisements for that dispensary were allowed to be put in those papers. The previous speaker had said that these men were equal in education to others in a similar position; but that had nothing to do with the matter. There was no wage limit in 1892, and at the present moment that dispensary was in the same position.

Dr. POPE pointed out that the last part of the resolution passed on the subject "recommended the medical officers of the Coventry Dispensary to continue their efforts to obtain a wage limit as expressed in the resolution of the Council of October 8th." Did the members wish them to bring up those gentlemen before a special general meeting, or at the next annual meeting of the Association on a motion for expulsion? He thought that that would be exceedingly undesirable.

The Midwives Bill.

Mr. R. B. ANDERSON wished to call attention to the paragraph in the report which dealt with the Midwives Bill. He had no complaint to make of the paragraph except that it was incomplete. It left the members of the Association uninformed as to new and material aspects of the situation, and it was with regard to these that he wished to ask the Council to accept, and the meeting to adopt, some modification of this paragraph. He therefore wished to suggest the following rider, because he thought it would make the report of the Association more complete:

Amendments in detail of the Midwives Bill, 1900, were uncompromisingly opposed and defeated by the promoters of the Bill in Standing Committee

on Law, and amendments set down for the report stage were not reached as the Bill was otherwise disposed of. Mr. Griffith Boscawen, M.P. (Tunbridge), at the instance of his medical constituents, co-operating with the Joint Committee to oppose midwives' registration, moved the rejection of the Bill, that is, that it be considered upon that day three months, and the fact that Mr. Heywood Johnstone talked his own Bill out, indicates that there is in the House of Commons no strong or general conviction of its necessity. Your Council therefore reports that there appears no ground for the suggestion that the Bill on its present or similar lines is nevitable and will accept invitations received to co-operate with your Branches and other societies in resisting any Bill to recognise persons without medical education as competent to render medical services in labour, including particularly the diagnosis of presentations and of normal from abnormal conditions; and will refer the draft Bill of the Association to the Parliamentary Bills Committee to be redrafted on these lines, requiring also of the midwife efficient nursing of the lying in woman and young infant during the puerperal period.

Dr. Haddon remarked that he had had considerable experience in his early days with provident dispensaries, and he sympathised with much that had been said on the subject. He could assure the members that no good would ever be done until the profession combined, and as one man said they would not attend any provident dispensary except under a strict wage limit. He thought there had been a great deal of very unwise opposition to the Midwives Bill, and he was in favour of midwives being so educated as to know the proper time at which to send for a medical man. With regard to their financial position, he was, he thought, the only individual who opposed the purchase of their present property in London. It was supposed to be a good "spec.", but he could see nothing in the rules and constitution of the Association which enabled them to make "specs." out of the money they saved from the members. He then proceeded to point out various items on which he desired information, and referred to the subject of office salaries. Their General Secretary, Mr. Fowke, had done, so far as he knew, up till recently the secretarial work of the Association. Some years ago an Assistant Secretary was appointed, and then he was made Financial Secretary. Then another Secretary was appointed. He thought the Financial Secretary and the Assistant Secretary ought to be the same man. In regard to the expenses of the scientific grants up to 1897 they had spent a large sum of money, and he did not think they got an adequate return. He hoped it would be possible for each item to be put down separately, so that they might know how the money was being distributed.

Dr. O'Sullivan, as a member of the Lancashire and Cheshire Branch, which had taken such an active interest in the subject of the Midwives Bill, expressed surprise that Dr. Haddon repudiated the suggestion of the education of the women who might be called upon at any time to attend midwifery cases. His Branch had never objected to their attending midwifery cases; they simply demanded, in the interest of the public and of the medical profession, that they should possess such a modicum of education as would safeguard the patients and safeguard the interests of the medical men who were accustomed in the country to attend midwifery cases.

Dr. Alfred Cox did not agree with the historical account of how the Midwives Bill was defeated, but he did agree with the policy suggested in the rider, namely, that the Council should not, as they had done in the past, attempt to tinker with the Bill, but should address themselves to the principle of the subject. The clause in the report which stated that the resolution for the new Articles of Association "was not carried by the requisite majority" was not accurate; and he would like to move that that be struck out, and that they should substitute the words "it was rejected by a large majority."

Dr. Woodcock hoped they would not pass the rider, because to do so would be going back to the beginning again. This question had been threshed out, and although the Council had not hitherto carried out the resolutions of the annual meeting—

A Member: Why?

Dr. Woodcock replied that he was one of those who thought it was unsafe and undesirable that a resolution of a small majority—which might be only thirteen—at an annual meeting should be binding upon the Council: that was his view. Reverting to the question of the Midwives Bill, he said that in the Lancashire and Cheshire Branch opinion was fairly equally divided on the subject, and it was only by a very small majority that a resolution in favour of the subject was carried. The matter caused a good deal of feeling in the Branches of the Association, and a compromise was effected. His Branch appointed a committee consisting of those in favour of legislation on the subject and those against it, and they drafted a Bill which the Branch accepted, and that Bill became the basis on which the Bill was drafted for the British Medical Association. The Branches throughout the country were then consulted on the matter, and in overwhelming numbers they were in favour of it. That was a short history of the matter, and he thought that by adopting the rider they would be doing that which was diametrically opposed to the large majority of the members of the British Medical Association.

Dr. Lorimer Hart said he would second Dr. Alfred Cox's amendment of the report as to the resolution in reference to the new Articles not being carried by the requisite majority.

Some discussion took place as to its admissibility, and the President ruled that the rider was really an amendment, and must be disposed of first before any other amendment could be taken.

Mr. Victor Horsley thereupon said the rider had been placed before the meeting in such terms as to make it appear that it referred to Mr. Heywood Johnstone's Bill, whereas it referred to the Bill of the Parliamentary Bills Committee, which was a totally different thing, and they had no right to use the arguments on one subject and apply them to a totally different one; for that reason the rider was inaccurate, and he hoped it would not be passed. In it, too, no reference was made to the great services of Sir George Pilkington, M.P., and it was not correct to say there were a large number of members not in favour of the Bill: on the contrary, they were in favour of some Bill. What had happened was the Bill was in the hands of the Privy Council, and the Duke of Devonshire said he would listen to and abide by safeguards put forward by way of amendments. Then in the report stage of the Bill the Home Office put forward propositions which entirely swept away the safeguards necessary in the interests of the profession and of the public. This was recognised and pointed out to the Home Office by the General Medical Council; it was a condition of affairs which meant a complete disruption of the whole matter, and such was the confusion it had got into that Mr. Heywood Johnstone talked his own Bill out. That was what had occurred, and to pass the rider as an amendment was therefore too inaccurate to be permitted.

Mr. Anderson, with the consent of his seconder, withdrew his amendment.

Dr. Bernard O'Connor thought the observations of Dr. Saundby with regard to the Coventry Dispensary had made the condition of affairs represented on page 34 of the Report much worse, because any institution found fault with in any part of the country had only to send back this reply, "We will endeavour to get the rules altered," and send back that reply year after year and nothing more would be said.

Procedure.

Dr. Brassey Brierley then proceeded to discuss the report, when the President ruled that as he had spoken once he could not do so; the question before the meeting was the rejection or adoption of the report, but it was competent for him to move an amendment.

Some discussion ensued as to the procedure to be adopted, and eventually Dr. Douglas proposed and Dr. O'Connor seconded as an amendment "That the report of the Council be discussed paragraph by paragraph."

Twelve voted for, 41 against, and it was declared lost.

Dr. Saundby on a point of order as to procedure thought it would probably meet the views of the meeting if one point at a time was discussed and speeches not allowed to alternate as they had done.

The Extraordinary General Meeting.

Dr. Wolstenholme thought that the clause dealing with the new articles should be changed and that it should read "The resolution was rejected by an overwhelming majority."

Dr. Ward Cousins, who occupied the chair at the extraordinary meeting, said he distinctly stated the resolution

was lost because it was necessary to have a three-fourths majority.

Dr. O'SULLIVAN wished to know how they were to be sure that a judicious censorship had not been exercised in the reports and that they were sent out in a manner which did not convey the entire truth.

Dr. HADDON was of opinion on such a question as this that it would be well for the Council whose conduct was being discussed to withhold their right of voting and let the members alone decide as to whether they would discuss its report paragraph by paragraph.

Mr. VERRALL had no mandate from the Council, but it seemed to him that the speeches had focussed the question at a point where it was bound to arrive before long—that was to say, they had to face, what was perfectly well known, a certain amount of dissatisfaction throughout the Association with what the Council had or had not done.

Mr. GEORGE BROWN rose to a point of order, as this subject would be more properly discussed on Mr. Victor Horsley's motion.

Mr. VERRALL agreed with Mr. Brown, and said he would reserve his further remarks on the subject.

Replying to Dr. POPE, the PRESIDENT said the numbers voting at the extraordinary meeting were not in existence.

Dr. O'CONNOR observed that the words in the report were misleading. The resolution was not carried by the requisite majority; but it would be much nearer the truth to say the proposition of the Council was rejected by an overwhelming majority.

Sir JOHN MOORE asked them not to substitute a still more inaccurate statement for what he admitted was an inaccurate statement. If they put "by a large majority," they had no evidence as to the amount of the majority. He suggested the omission of the last few words and the insertion of "the resolution was not carried."

The amendment was then put and declared lost.

Dr. BRASSEY BRIERLEY asked for the numbers, when it appeared 30 voted for and 30 against, and the President gave his casting vote against the amendment.

Mr. GEORGE BROWN said that, after Sir John Moore's admission, he proposed that no reference to a majority should be made.

Dr. SAUNDBY, in order that there should be no dispute, thought it would be better to accept Mr. Brown's suggestion, which he accordingly seconded.

Mr. ANDERSON said it was a matter of principle, and had occurred time after time in the reports.

Dr. LORIMER HART demanded a poll; but the PRESIDENT pointed out that the requisition for a poll must be signed by at least twelve members.

Dr. HADDON had been misled on the matter by the JOURNAL, but he was quite satisfied with Mr. Brown's suggestion, which he hoped would be adopted.

Dr. RITCHIE pointed out that Mr. Brown's amendment left them where they were before. He had been told by three different officials of the Association that the voting was three to two.

Dr. WARD COUSINS informed the meeting that he put the resolution in the usual way, as he was anxious to see how many were opposed to it, and he thought they were about even in number. Replying to Dr. BRASSEY BRIERLEY, he said he did not count the votes because the resolution was lost.

Dr. ROBERTS THOMSON wished to point out that the President's words were: "The resolution is lost;" that was his official declaration at the meeting, and one could not go beyond the words of the President.

Mr. Brown's amendment was unanimously agreed to.

The Journal.

Mr. VICTOR HORSLEY: I wish to move an amendment to the report on very much the same matter as has just been discussed. I gave notice of motion to reduce the salary of the Editor by £100. It has been pointed out to me by the President of Council that the Council holds Mr. Beaufort Palmer's opinion to the effect that it is not competent for a general meeting to pass a resolution of that kind. I bow, of course, to that opinion, and I take the next step which is open to me, namely, to move an amendment to that part of the report which deals with the JOURNAL. The Council say this of the JOURNAL: "The Council has every reason to believe that the JOURNAL has proved increasingly useful to members." I differ from that; I go a great deal further, and I will say not only it is not useful to us on a particular line—which I shall direct your attention to directly—but that it is positively and deliberately misleading by that figure of speech which is known as the *suppressio veri;* and in one leading article I shall prove that it is worse than that; I shall show it is not merely a case of *suppressio veri* but *suggestio falsi*, and I will proceed to prove my words. I will only take the one matter of this recent meeting as regards the *suppressio veri*. On July 7th the Editor published this article, "The Constitution of the British Medical Association;" then he proceeded to inform the members that a meeting would be held to consider a new set of regulations by which a number of men understood they were to come up and discuss by way of amendment various proposals of the Council, and he deceived, I know, various members of the Association by that statement. Now we will proceed further. The Editor said "The new Articles are designed to codify ..... certain additions." I contend that that sentence contains both *suppressio veri* and *suggestio falsi*. *Suppressio veri* in this way, that these new Articles did not "amalgamate, codify, and make simple;" the machinery of the Association would not have worked the least degree easier than it did before. The *suggestio falsi* is this. To make a simple article is one thing, but to totally change the nature of that article, so that you rob the members of the Association of the power that they had, and you give it to the Council, is quite another thing. Why was not that stated? I hold that our Editor has not borne good faith towards us in writing that article. I greatly regret having to use such expressions, especially to an old fellow student of mine; but if I think these things I am going to say them.

Dr. HADDON asked if the Editor wrote the articles in question or whether he merely published an article written by somebody else?

Mr. VICTOR HORSLEY: That is a pertinent question. I have looked into the question, because at Portsmouth, when precisely the same thing occurred, the meeting was told by a member of the Council, or understood so by a letter written by Dr. Saundby, that the Council had ordered certain things. Well, gentlemen, the coast is a little clearer, and I am not aware that the Council are going to come forward and condemn the Editor with regard to these articles. Then there is another matter; that is, as to the report of that meeting. I have been asked by a number of members this sort of question: "What on earth did you move that the solicitor should be turned out of the room for?" and when I told them that it was because a member of the Council had risen in that meeting and complained to the meeting that the solicitor had had the hardihood, not to use a milder term, to threaten him through the President of Council with a libel action if he persisted with a certain motion at Ipswich.

The PRESIDENT OF COUNCIL: I think it is important I should correct that. The solicitor never threatened Dr. Brassey Brierley. What happened was this: that Dr. Brassey Brierley gave notice of a motion, and I said to him that the publication of such motions might expose him to an action for libel.

Mr. VICTOR HORSLEY: If that is so, why was this explanation not given to the meeting at Exeter Hall?

The PRESIDENT OF COUNCIL: There was no allegation until this moment that Mr. Upton had made it.

Mr. VICTOR HORSLEY: Evidently the hearing of the members of the Council is not so good as the hearing of the members at the meeting. Accepting the President of Council's statement, as of course we must, I should say that if anybody hinted to me as President of Council, and perhaps he will in the future, that the Solicitor of the Association thought it possible that a libel action, etc., would rest against me, I should take that as what we call a reasonable hint or something like a threat personally; at any rate, a complaint was made to the meeting at Exeter Hall to that effect. Members at the meeting cried out "Shame, shame," which I suppose members of the Council never heard, and thereupon I rose and pointed out that if this was what was going on on the part of our Solicitor—*our Solicitor* remember; that is the humour of the matter—it was just as well that that Solicitor should go out of the

room, because he might have similar ideas with regard to others who wished to speak. Perhaps the President of Council did not hear Mr. Smith rise and say if the members of the Council had done that he would have brought his solicitor too; and I would have done so too. But what becomes of our protection of speech? There is not a syllable of that in the report. It might have been done in three lines; so exigencies of space and exigencies of time are not the reason. And this Association has a right to demand of the Editor through its Council, because that is the way to get at him, as to why he does these things. Attention has been drawn to the fact, and the Council admit it, that their report as to the general result of that meeting is not correct. Their annual report is bad enough, but it is nothing to the report of the JOURNAL. Nobody reading that report would have the slightest idea of what occurred at Exeter Hall. There is no indication of the feeling of the meeting. The same false suggestion was made at the end, that the requisite majority was not obtained; but I was one of those present, and had the numbers been counted I contend there was a large majority against the proposal of the Council. I think I have said enough to show you that in certain proved instances in point the Editor has been guilty of a *suppressio veri* and a *suggestio falsi*. I have also a larger complaint to make. With regard to our JOURNAL I have nothing to say against its scientific character; that is thoroughly maintained, and I think the Editor is to be congratulated for having published the proceedings of our last meeting so quickly. But it is only half the Editor's work. The JOURNAL is to promote the interests of the members of the Association, and to say that it does that is to say something very sanguine. That is what the report says. I ask the members of this Association, Does this JOURNAL carry out all that we desire? I will give you one simple instance. The General Medical Council deals with questions of vital importance to the profession. The meetings of the General Medical Council are not heralded by articles for several weeks as they ought to be to indicate to members of the Council what are to be their duties on the various points and what the profession expects them to do. The Council meets and a few comments are made, and that is all. That is only one instance, but there are other instances in which it fails to come up to our expectations.

Mr. ANDERSON seconded the resolution.

The PRESIDENT, replying to a question, said Dr. Dawson Williams was present.

Dr. DAWSON WILLIAMS: Mr. President and Gentlemen,—This is the first time that I have ventured to address the general meeting of the Association, and I am sorry that it has not fallen to my lot to speak to it under more agreeable circumstances to myself; but, of course, I recognise that the Editor stands to be shot at, and if he does not do all that the Association thinks he ought to do he is very justly criticised at this meeting. I do not wish in the least to shelter myself behind the Council. If I commit faults—and we are none of us infallible—I will take the blame on my shoulders so far as I think I ought to do so. Mr. Victor Horsley has been kind enough to say that he thinks the JOURNAL in certain respects is doing what is wanted; but he says that in certain directions it is not doing what is wanted. In particular he has settled upon this last business of the proposed change in the constitution of the Association. He says the articles of the JOURNAL had been positively and deliberately misleading. That is a rather hard thing to say. I can assure you that there has not been any intention on my part to mislead in the JOURNAL. Now the first specific point to which he calls attention is in the leader of the 7th of July, in which it was said there would be a meeting at Exeter Hall to consider, and, if approved, to adopt the proposed Articles. I have said I am not going to shelter myself behind the Council. When I wrote that I certainly had no idea that the new Articles of Association were not to be discussed; that had never entered into my head at the time, and it came to me as a piece of information long subsequent to that. I do not wish to miss any point which Mr. Victor Horsley made, but the next note I have is the observation in the same leading article to the effect that the design of the new Articles was to codify, amalgamate, and make simple the articles, and the charge of *suggestio falsi* is made with regard to that. I do not know that that was an inaccurate statement of what the intentions of the new articles were. The intention was that the by-laws should be amalgamated with the articles; the intention was that the articles and by-laws should be codified; for, if you look at the articles, you will find that there are special resolutions amending articles, and the intention was to make certain additions. I am inclined to admit that we did not in the article referred to say sufficiently clearly what it was these additions were. I want to be quite frank with you; that is a fault which I am prepared to admit. Then with regard to the report of the meeting. Mr. Victor Horsley is dissatisfied as to that. It was a short report; it was made by the shorthand writers. It was not a verbatim report; a verbatim report would be perhaps twice or three times as long.

Dr. LORIMER HART: Why was not it given in full?

Dr. DAWSON WILLIAMS: We had to publish it next day; we considered it our duty to publish it next day, having regard to this meeting coming so shortly afterwards. I entered the room at Exeter Hall after the incident with regard to Mr. Upton; I was outside struggling to get a ticket to go in while that was taking place, and I was quite unaware of the circumstances which led up to Mr. Upton's withdrawal. The report was published as we received it, and, as far as I know until we come to the end, it is an accurate report although it is not a full report. The point with regard to the majority I do not think I need labour. This meeting has spent an hour or more in trying to make up its mind as to the phraseology to use. As far as I know the statement as to the result of the meeting is an accurate report of what was announced from the chair. The Chairman said, "The amendment is lost," and I understand that that has now been adopted by this meeting as the best phraseology. Then there remains the general charge which Mr. Victor Horsley has made against the JOURNAL, that it does not do all it should do to promote the interests of the profession. That is a charge which is easy to make but exceedingly difficult to meet. All I can say is it is my one consideration to try and serve this Association faithfully, and that I should personally—Mr. Victor Horsley has referred to our old friendship—value suggestions from him as I would from any other member of the Association on matters to be dealt with in the JOURNAL. We do receive such suggestions on a large proportion of politico-ethical topics of interest to the Association. Mr. Victor Horsley's observations as to the reporting of the General Medical Council and the discussion of its business is an old matter. He criticised the reports of the General Medical Council in the JOURNAL some time ago, but I thought we had improved them. We have published longer reports and leading articles and explanatory notes; but as to writing leading articles before the General Medical Council meets that is a very difficult thing to do, because one cannot find out what the Council is going to do. How do I know now what they are going to do next November? I can go back to the reports of the May meeting and see what matters were left over, but I can only conjecture in that way what the General Medical Council is going to do. Even the programme from day to day is marked "Private and confidential," and that is refused to me. I have applied for it again and again and it has been refused to me again and again.

Dr. LORIMER HART said there was little doubt the policy of the JOURNAL was the policy of the Council, and it was too bad of the Council to put up a man, who was bound to carry out its orders, to take the blame.

Dr. BRASSEY BRIERLEY reminded the President of Council with regard to the exclusion of Mr. Upton, that his words were, "We are advised that if that resolution goes before the general meeting we lay ourselves open to an action for libel."

Surgeon-General HAMILTON considered there was a great deal of unnecessary friction between the general meeting and the Council on what, he could not help feeling, were very trifling points.

Mr. GEORGE BROWN thought Dr. Dawson Williams's explanation to a certain extent satisfactory, although he had hardly met the charge which had been made against the JOURNAL. It was all very well to say the General Medical Council's programme was marked "Confidential," but that did not prevent

the Journal discussing questions before the General Medical Council met.

Dr. Saundby suggested to Mr. Victor Horsley the desirability after this discussion of withdrawing the amendment.

Mr. Victor Horsley would withdraw his amendment if a verbatim report of his remarks and Dr. Dawson Williams's reply were published in the Journal.

Dr. Dawson Williams was not sure whether the shorthand writers had taken a verbatim note. As far as he was concerned he raised no objection to Mr. Victor Horsley's condition, but wished to guard himself on that point.

Dr. Barr objected strongly to a verbatim report of Mr. Victor Horsley's speech being published in the Journal. He was a gentleman for whom he (Dr. Barr) had worked in the past, and he was never more pained than to hear the language Mr. Victor Horsley used with regard to their Editor. *Suppressio veri* and *suggestio falsi* were not expressions which should have been used

Mr. Victor Horsley, in reply, said Dr. Barr had been a good friend of his, and he hoped he would be so still, and that when he had had time for a little Celtic effervescence to boil off he would be all right, but he had quite misunderstood his (Mr. Victor Horsley's) position in the matter. He thought he had made it clear that it was impossible for him (Mr. Victor Horsley) to bring a personal attack against a fellow-student. Dr. Barr had assumed, because he had referred to an official of the Association in certain terms, he (Mr. Victor Horsley) was making an attack against a person which ought not to be made in public meeting; that was because Dr. Barr did not understand the conduct of public business. He took it that the whole of Dr. Barr's would-be correction was that he (Mr. Victor Horsley) was wrong in using the word "deliberately," but did Dr Barr mean to say that the Editor did not write the articles deliberately—with deliberation, with thought, and with consideration? if so, they might as well have no Editor at all. That was the logical consequence of Dr. Barr's remarks, which he knew were made in error, and he hoped they would forget them altogether. If his suggestion was adopted he would withdraw his amendment, because he had merely brought it forward *pro formâ* in order that he might air the subject, and he had done so.

The President then put the question that Mr. Victor Horsley be allowed to withdraw his amendment on the condition stated, when 37 voted for, 20 against, and it was declared carried.

The report of the Council was then adopted unanimously, and the meeting adjourned.

Adjourned General Meeting.

The proceedings of the adjourned general meeting were continued in the Lyceum Theatre at 8.30 P.M., the Mayor of Ipswich being in the Chair.

The Mayor, who was received with applause, said: Ladies and Gentlemen,—Before I perform the very simple task which has been allotted to me, I should like to refer briefly to two very sad items of news which we have heard during the last twenty-four hours. First of all, we heard yesterday that the King of Italy, the friend of Queen Victoria, the ally of England, had fallen by the hand of an assassin. Our hearts go out in sympathy to the widowed Queen and to the country which has lost a devoted sovereign. But the hand of death has since fallen on one nearer to us than King Humbert. It has fallen on a member of our own Royal Family. The second son of our Queen has passed away, and the Duchess of Edinburgh who but a few months ago was mourning the loss of her only son, now mourns the loss of her husband. We hope and trust that our aged Queen may be able to bear this new affliction. She knows that she has the sympathy of all her subjects, whose sorrows she always shares. I beg to move—

That the President and members of the British Medical Association, assembled at their annual meeting, together with the townspeople of Ipswich, desire respectfully to express to Her Most Gracious Majesty their deep sorrow and sympathy at the severe loss Her Majesty has sustained in the sudden decease of the Duke of Saxe-Coburg-Gotha, and trusts the Almighty may sustain and afford to Her Majesty and the members of the Royal Family abundant consolation.

Dr. Saundby seconded the resolution, which was carried.

The Mayor: Ladies and gentlemen, my next duty to-night is a very pleasant one; it is to offer a hearty welcome to the members of the British Medical Association who have honoured this ancient borough by a visit this year. We are glad to see such a number of distinguished men amongst us, and we hope they may carry away with them most agreeable recollections of their visit to Ipswich. I believe they do a good deal of work on these occasions, and we hope the work which they do in this town will be of great use to science; but I also notice that there are several entertainments, and I hope the members will enjoy them as well. We know that medical men are often consulted by patients as to the best place of residence, and if ever any of the gentlemen now present are asked for advice upon that subject in the future, I feel sure they will recommend Ipswich. In the name of the inhabitants of this county borough, I wish to congratulate our distinguished townsman, Dr. Elliston, upon his attainment of the proud position that he now occupies. We feel it a great honour that the President of this Association should have been selected from this town, and I hope that Dr. Elliston will have health and strength to carry out his duties. [Applause.]

The President, who was very cordially received, said: I beg to thank his Worship the Mayor of Ipswich for the kind words that he has used in regard to myself on this occasion. I am deeply sensible of the great honour that has been conferred upon me, and I beg to assure the Mayor, for his own private information, that although the members of the Association are bound to adjourn occasionally from labour to refreshment, our time in work at these meetings does extend over a much longer period than is represented by the eight hours movement.

The President then delivered the address, which is published at page 273.

Mr. Howard Marsh said that he had been asked to propose a vote of thanks to their President for the very able address he had just given them. He was quite sure that unless he spoke of it in terms of the warmest praise he should not be acting as their mouthpiece. They must all have noticed in the admirable address to which they had just listened the very great research, the clear statements, and the correct appreciation of all the great truths which he had been passing in review.

Dr. Cameron (President of the Toronto Branch) said he had been unexpectedly accorded the very distinguished honour on that special occasion of seconding the resolution. They need not be afraid that he should detain them long, but he could not refrain from giving expression to the very great pleasure with which he, and he felt sure all of those present there that night, had listened to such an excellent and admirable address. It seldom fell to the lot of any of them to listen to a survey of about 500 years of the history of any art so pleasurably as they had done that night.

The resolution was carried by acclamation.

The President thanked them all for the very kind manner in which they had listened to his address and for the resolution they had passed.

Dr. Ward Cousins then on behalf of the Association extended a hearty welcome to the Colonial and foreign representatives.

Professor Roddick, in reply, assured the meeting that it was with very great pleasure that he thanked Dr. Cousins on behalf of the Colonials for the very kind welcome that had been extended to them at Ipswich. He felt sure when he came there that a meeting at Ipswich under the able presiding of Dr. Elliston was certain to be a great success, and he thought these feelings had been thoroughly borne out.

Professor Nicolaysen (Christiania) replied on behalf of the foreign guests, and the proceedings then terminated.

Second General Meeting.

The second general meeting was held on Wednesday, August 1st, 1900.

Changes in the Council.

The President of Council stated he had to report that twelve of the Council of last year were not returned to the Council this year: Dr. Brassey Brierley, Dr. John Campbell, Mr. Fowler, Dr. Goyder, Dr. Ogilvie Grant, Surgeon-Colonel McCreery, Dr. McVail, Mr. Manning, Dr. Isambard Owen, Dr. Russell, Dr. Sandford, and Dr. Urquhart. The following new members were returned to the Council: From the Bath and Bristol Branch—Dr. Edward John Cave; the Cape of

Good Hope Branch—Surgeon-General Hamilton; Cork and South of Ireland Branch—Brigade-Surgeon Moriarty; Edinburgh Branch—Dr. Norman Walker; Lancashire and Cheshire Branch—Mr. Colin Campbell and Dr. O'Sullivan; Melbourne and Victoria Branch—Dr. Harricks; Metropolitan Counties Branch—Mr. Victor Horsley; Northern Counties of Scotland Branch—Dr. John Murray; North of Ireland Branch—Dr. Byers; Perthshire Branch—Dr. Thos. Niven; South-Eastern of Ireland Branch—Dr. Denis Walshe; Southern Branch—Dr. W. Morton Harman; Stirling, Kinross, and Clackmannan Branch—Dr. W. A. Mackintosh.

Annual Meeting of 1901.

The President of Council reported that at a meeting of the Council held that morning a deputation from the Gloucester Branch, consisting of Dr. Soutar, Dr. Bower, Dr. Cardew, and Mr. Fowler offered a cordial invitation to the British Medical Association to hold its annual meeting in 1901 at Cheltenham. The Council had passed the following resolution unanimously:

That it be recommended to the general meeting of members to-day that the annual meeting for 1901 be held in Cheltenham, and that Dr. G. B. Ferguson be nominated President-Elect.

In accordance with that finding of the Council, and the report which he had submitted, he begged to move that a cordial vote of thanks be given to the members of the Gloucester Branch for the invitation to hold the next annual meeting at Cheltenham, and that the same be accepted, and that Dr. G. B. Ferguson be appointed President-Elect.

Surgeon-Colonel Ince seconded the resolution, which was carried unanimously.

The President then introduced Dr. Pye-Smith, his distinguished friend, to deliver the Address in Medicine.

Dr. Pye-Smith said his first duty was to thank his old friend and fellow-student and the Association for the honour they had done him in asking him to give this address, an honour not only because it came from one's fellow practitioners—persons for whose opinions one cared very much about—but because of the lustre of those who had stood in that place before. Dr. Pye-Smith then delivered the address, which is printed at page 280.

Dr. Saundby felt it a great honour to be asked to move a vote of thanks to Dr. Pye-Smith for the very learned and interesting address to which they had listened. He had heard a good many similar addresses on medicine delivered at meetings of the British Medical Association; but he felt sure that the members had never listened to one which for literary excellence, for scientific spirit, for elevation of thought, and in every respect was more worthy of this annual occasion on which the medical profession met together. He was sure that the members would agree with him in thinking that they were greatly indebted to Dr. Pye-Smith for his address, and he had great pleasure in moving:

That the best thanks of the meeting be given to Dr. Philip Henry Pye-Smith for his able Address in Medicine.

Professor Kenneth Macleod, in seconding the vote of thanks, said it was not usual on the those occasions to criticise the addresses, but if the address they had just listened to was not open to criticism, he thought he was safe in making one or two remarks upon the manner of the address, which was best indicated by one word, and that was—"healthy." The tone of the address was eminently healthy in every respect. The lecturer had stimulated their appetite, and also supplied them with a very welcome consignment of intellectual food. He also thoroughly agreed with the observations of Dr. Pye-Smith in reference to the disfiguring advertisements.

The resolution was then put and carried by acclamation.

Dr. Pye-Smith expressed his sincere thanks for the way in which the motion had been received. He pleaded guilty to one fault, which he hoped was a fault they all shared. He was glad that what he thought was a persistent nuisance in going about the country, and what threatened to pervade their profession, had not been spoken to in less strong language by the gallant officer who had seconded the resolution.

Middlemore Prize.

The President, in presenting this, stated that it was a prize of £50, interest on money left by the late Mr. Middlemore, F.R.C.S.Edin., to be awarded from time to time by the British Medical Association. On this occasion it had been awarded to Dr. E. E. Maddox on the recommendation of Mr. Macnamara, Dr. Argyll Robertson, and Mr. Power. The prize consisted of an illuminated address and a cheque for £50.

Dr. Maddox thanked the President.

Report of the Parliamentary Bills Committee.

On this report coming up, Mr. Anderson said that he thought it was due to himself to say with regard to the Midwives Bill which had been discussed on the previous day, when Mr. Victor Horsley took exception to his rider as being inaccurate because it did not recognise the services of Sir George Pilkington, that nothing was further from his mind or intention than to minimise those services, which were rendered with the best goodwill and the best possible intention.

The President was sure they were all satisfied with Mr. Anderson's explanation.

The report was then agreed to.

Report of the Scientific Grants Committee.

Dr. Byers wished to bring one or two points before the meeting which might be of interest to the Association. He thought in giving these grants there had been a little too much centralisation. There were two divisions, research scholarships and scientific grants; the total amount of the grants was £340, of which £210 went to London, £64 to the English Branches, £36 to Ireland, and £30 to Scotland. He believed the grants were of great benefit to the Association; but he thought they should be given over a wider area where there were laboratories and men competent to carry out research. He did not wish to make a personal grievance, but the Branch he had the honour to represent had put forward one of its ablest men, and they felt a little vexed that with a capital laboratory and a good man they did not get a grant. He did not wish to air an Irish grievance, but there were not enough Irishmen on the Committee.

Dr. Saundby: There is Dr. Windle.

Dr. Byers: Dr. Windle does not come from Ireland.

Dr. Saundby accepted the correction and said he was misinformed.

Dr. Byers said he did not come to fight any battles. He had a right to ask Englishmen for fairplay and he did not propose any resolution at all: he left it in their hands in that fair spirit that as Englishmen in future they would see that fairness was done.

Dr. Haddon moved that the grants be suspended until the Association was out of debt.

The motion was not seconded, it was not put, and the report was agreed to.

The reports of the Anæsthetics Committee and the Therapeutic Committee were then agreed to.

Report of the General Practitioners and Ethical Committee.

Dr. C. F. K. Murray thought reports of this description helped general practitioners only in so far as they pointed to a way of escape from the difficulties which beset them; but the report did not convey to the rank and file of the profession the moral support of the Association as a whole. The present system worked in a vicious circle because the remuneration given to young men was so small that it was quite impossible for them to attend properly to their duties. He proposed:

That this meeting resolves that the Council be requested to issue circulars to all Branches of this Association inviting them to express an opinion and submit proposals on the question of the "wage limit" as applied to clubs, provident dispensaries, and societies, etc., with a view to suggesting a reasonable and fair working basis. Furthermore, that it be an instruction to the Council to report and advise this Association thereon at its next annual meeting.

Dr. Broadbent was pleased to have the opportunity of seconding the resolution. It was time, he thought, that something should be done by the Council of the Association in a definite manner. In Manchester they had the question of provident dispensaries before them in a definite manner for less than twelve months, thanks to the Editor of the British Medical Journal, who had published a pretty free correspondence during three or four months on this question. The result has been that a proposition was made at the annual

meeting of the Guild that provident dispensary men should be expelled from it. He could assure them it would be one of the best things that ever happened to the profession that this resolution had been proposed at this annual meeting.

The resolution was carried with one dissentient.

REPORT ON THE DECAY OF TEETH.

The report of the Committee appointed by the Council of the British Medical Association to consider the early decay of teeth among the inhabitants of Britain was agreed to.

Dr. WHITAKER moved a vote of thanks to the gentlemen who had prepared the report, for he thought such services should not go without being recognised.

Surgeon-Colonel INCE, in seconding the vote, remarked that it was one of the best reports he had seen.

The resolution was carried.

RECONSTITUTION OF THE ASSOCIATION.

Mr. VICTOR HORSLEY, in bringing forward the resolution which appeared in his name, said that he was happy in bringing forward a proposal before this meeting which he understood was likely to meet with general acceptance. It was not the first time in the history of this Association that a committee had been formed to reorganise the Association. One such Committee was formed some years ago, and a report was furnished by the Chairman, Dr. Saundby, to the Council, but the Council did not accept it. Many of the provisions of that report he wished to urge on them to accept that day. He thought it would have struck everybody who had followed the fate of the Association during the last few years that reorganisation of some kind was necessary, and in London recently they had a proposal put before them, of a sort, for reorganisation. The Association decided against this proposal. He now came before them on the same sort of mission, but with proposals of a somewhat different kind, and merely to ask the members to appoint a committee to draw up a scheme, and to produce the schemes before March 1st next year, so that those schemes can go to the Branches, be considered by them, and the result of those considerations by the Branches be discussed at the next annual meeting. He did not suppose for a moment that business of that kind could be got through without a considerable expenditure of time. It certainly could not be completed in a hurry. The reasons for reorganisation might be briefly grouped under the heading of the constitution on the one hand and the objects for which the Association was founded on the other. It was a notorious fact that the membership of the Association did not constitute a real factor in the machinery of the Association. He was glad to see the notices of motion which appeared in the names of Dr. Brown Ritchie and others which dealt with that which he believed to be the fundamental factor in the question. If it were true, as it evidently was, that there was a large number of unattached members who literally had no representation, it was a farce to go on supposing that they, as a Council, represented the Association. They did not. They represented a certain proportion. Therefore the first and fundamental question was the bringing into the Association of the unattached members. That could be done very easily by reorganising the Branches. If they adopted, in the words of Dr. Crawshaw and others, a much smaller unit, in the shape of sub-branches, or sections of branches, and each section or sub-branch represented its view by a delegate or representative, who should associate himself with others, and form such a body, it was clear that a council could be elected—a small one, if they required it. That brought him to the matter of representation. The mode of representation led practically to the disfranchisement of a number of members, but it had also led to a great deal of confusion in their methods. Many members would agree with the feeling of many members of the Council that it was unwise that this Association should be committed to a line of policy by a snap vote at the general meeting, or by a chance vote. The Committee of the Manchester Conference of Delegates had put forward a very valuable proposal which appeared in the notices of motion, and he hoped it would be accepted by the meeting as a rider to his proposal by way of instruction to the committee he wished them to appoint. The proposal was that in order to obtain theoretically and practically the utmost representation it was essential that machinery in the nature of delegacy should be appointed. A man should not be elected as representative with a free hand to vote according to his own personal opinions, because then he no longer represented anybody but himself; but he should be elected with definite instructions on certain lines of public policy; he should meet other delegates, and then those delegates in meeting should by a large majority come to a conclusion. By that means they could ensure that every member of the Association would have an opportunity of expressing his voice on the policy of the Association. Then they would have done a great thing by creating such machinery. There was another subject altogether to which he wished to allude in regard to which their Association needed reorganisation. He referred to that part of the memorandum which dealt with the objects of the Association as being a body of medical men banded together to further the honour and interests of their profession. At Birmingham a resolution was carried to the effect that that part of the memorandum should be actively dealt with. Unfortunately the Council had not carried out that. It was for that reason also that he thought the Association required reorganisation, because he believed the reason the Council did not carry out that was that the Council was not absolutely representative of the mass of the members. The proposal at Birmingham was really to secure that the funds of the Association should be expended in part in the interests of its members in several directions, first, in a whole set of directions where he could only include the word "general" and leave the rest to imagination. The second was more precise, and the idea was that there should be a kind of bureau or office in the Association which should take up the so-called defence of its members. That he would call the defence bureau. There was also a feeling, and this again was put in the form of a notice of motion, that they should have something more than a Parliamentary Bills Committee in the Association; for many reasons it was impossible for men in active practice to work a committee of that kind in the way that the work ought to be done. Under those circumstances it was obviously necessary that they must have again a small bureau to watch the legislation affecting the profession, and to call together the Parliamentary Bills Committee when necessary. He would call that the medico-political bureau. Then, lastly, he thought there should be a definite bureau in the office of the Association to which a member in his professional work could always turn for information. For years past it had been the custom of men to write either to their friends or to the office of the Association for information, and it seemed to him they ought to meet that want among the members in a more direct way. That, however, might perhaps be included among the general needs of the members of the Association to which more attention ought to be directed. In the names he proposed for the committee he had taken care to include, of course, a full representation of the Council; in fact, of the names of the committee he proposed to read more than half were those of members of the Council. No one had any wish in any way to interrupt the continuity of the progress and success of their great Association. It was with the firm belief that the proposal to appoint a committee of this kind was likely to receive general acceptance that he moved the resolution which stood in his name.

Dr. BRASSEY BRIERLEY had great pleasure in seconding the proposal. It relieved him of the necessity of bringing forward the notices of motion which appeared in his name, and he should ask the meeting through the President to allow him to withdraw the whole series of resolutions with the exception of one, as to which he would ask the meeting to hear a statement from him. (This permission was granted.)

Mr. VERRALL, in rising to support the proposal of Mr. Victor Horsley, said that he did so as a junior member of the Council; he did it on his own account and not as representing the Council. He expressed his own personal gratification at the extremely moderate and excellent speech which they had listened to. They had no doubt for some time been approaching a crisis, and they could not blink the fact that for some time the relative position of the general body of members and the Council was not by any

means satisfactory. With regard to the question of the delegates not having a free hand, he would point out that every member of Parliament was really a delegate, and no member of that House who was worthy of his position would ever consent to hold that position unless he were allowed to some extent freedom of judgment. He appealed to them not to send a number of men there and tie their hands too tightly. Whatever might be said as to the illegal action of the Council, it certainly was the fact that they honestly thought they had a perfectly legal support for the action they took. They had for years past done everything that they thought was for the benefit of members at large. With regard to the suggestion of medical defence, it was very easy to pass a resolution in favour of it which they would all be glad of, if they were able to carry it out, without having thought it out sufficiently to be able to give practical suggestions as to it. The constitution of the committee was a most important point. He had no doubt that Mr. Victor Horsley in selecting the names of the committee had proceeded with sufficient wisdom, judgment, and fairness, so as not to wreck the scheme to which he had given his heart.

Dr. Cox wished to bring forward what he described as a "rider" to the resolution of Mr. Victor Horsley, and stated that he had reason to think that Mr. Horsley would accept it. Therefore he suggested that it be an instruction to the committee to be formed that the principle of delegation should be conceded.

The President declined to accept this as a rider, but said he was willing to accept it as an amendment

Dr. Brummitt said it seemed to be assumed that Mr. Horsley's motion would be carried unanimously, but he would like to point out that the date of March 1st as mentioned in his notice of motion would be too late to allow the Australian Branches and the New Zealand Branches to express themselves. He therefore suggested that the date should be February 1st.

Mr. Victor Horsley accepted the suggestion.

Dr. Bernard O'Connor inquired whether the Association was registered as a public company under the Companies Act.

The General Secretary replied that it was registered as a scientific company without the word "Limited."

The President then put the resolution as follows:

That a committee be appointed to consider and report upon the best means of reorganising the constitution of the British Medical Association, such committee to furnish a provisional report to the Branches by February 1st, 1901.

The resolution was carried unanimously.

Mr. Victor Horsley suggested that the committee should consist of 23 members, including the President of the Association, the Treasurer, and the President of Council. With regard to the Colonies he proposed Mr. Cantlie, who resided in London, and who represented the Hong Kong Branch; that would represent the East Indian side. Dr. Gooding, who resided at Deptford, and who represented the Barbadoes Branch, to represent the West Indian side; and Dr. Morier, of London, who represented the South Australian Branch. Then, as regards other parts outside England, first as to Scotland he proposed Dr. William Bruce, the direct representative on the General Medical Council, and Dr. R. C. Buist; and for Ireland Sir Christopher Nixon. Then the English members of the Council, and those who had shown by their public work their interest in the subject he took together: Dr. Henry Barnes (ex-President of the Association), Dr. Brassey Brierley, Dr. Cox, Dr. Crawshaw, Dr. William Gordon, Dr. Garrett Horder, Dr. E. Jepson, Dr. Milburn, Dr. Brown Ritchie, Dr. Macdonald, Dr. Saundby, Mr. Tomes, Dr. Whitaker, himself, and Dr. Bateman as Secretary.

Mr. Anderson suggested that a representative should be put on for Canada.

Mr. George Brown desired to know if the consent of those mentioned to serve on the committee had been obtained, because a good many of them lived a long way off, and could hardly attend a committee in London.

Dr. Ward Cousins said that, strongly as he felt in favour of the appointment of the committee, he thought it should be a little broader in its bearings, and that it should not include only those who felt in one direction on the question; but that there should be all shades of opinion on the committee as far as possible. Mr. Victor Horsley represented one section, as they had heard to-day, and he thought it only fair to the Council that a portion of the committee should be nominated by it. He concluded by moving that half the number of the committee be nominated by the Council.

The President of Council, in seconding the amendment, pointed out that so far as he was aware the general meeting had never elected a committee, and the legal opinion which they possessed, be it right or wrong, was that it was not legal for general meetings to elect committees. He thought, without pressing the matter, that there must be full confidence in the committee, but he did not anticipate anything more than an interim report by the next annual meeting. He did not think it wise to accept the list proposed to them to-day, and it would be much better for Mr. Victor Horsley and those who thought with him to accept the compromise which was offered by the amendment.

Dr. C. F. K. Murray asked that a representative should be put on for South Africa.

Dr. Oldfield was of opinion that Mr. Victor Horsley was not the person to determine who should go upon the committee; it was for the general meeting to determine. He had picked out a list of names to carry out his own resolution, whereas he should have put them to the meeting, and taken a ballot upon them.

Mr. Victor Horsley, by way of explanation, pointed out that it was customary for the mover of a resolution to be asked if he was ready with his committee, and it was for that reason he had put forward the names. After some further discussion Mr. Victor Horsley accepted the amendment.

On the motion of the President, seconded by Mr. George Brown, it was resolved:

That this committee consist of twenty-four members, half of whom are to be nominated by the Council, and that they report to the adjourned meeting to-morrow afternoon.

Dr. A. Cox moved:

That it be an instruction to the Committee on Reorganisation to provide for the discussion of questions by an annual conference of delegates elected by the members of the Association residing in each Parliamentary or other suitable area, in respect of which medico-ethical or medico-political questions a vote of a two-thirds majority of the delegates in conference assembled shall be binding on the Association.

He pointed out that if this resolution were carried it would compel the committee to produce a scheme, first, forming the Association into small areas; secondly, providing for an annual conference of delegates; and, thirdly, that the resolutions of the annual conference carried by a majority of two-thirds should be binding on the Association. The committee had been appoined without opposition, but he was afraid they would not get this, because it had been proposed to leave the committee with a free hand. His opinion was that if they gave the committee definite instructions they were more likely to get the scheme than if they left them with a free hand. At present they had no means of voicing the feeling of the profession, and they proposed by this conference to get such a voice, because if the Branches were split up into small areas it would enable many who hitherto had not been able to do so to attend the Branches, and in that way they would get the real opinion of the members.

Dr. J. A. Macdonald seconded the motion, because he thought that many members were left out in the cold by the Association under the present system. In his opinion the principle of delegation was the best method of obtaining the opinion of the profession generally.

On the suggestion of Dr. Ward Cousins, Dr. Cox agreed to the insertion of the words after "discussion," "of medico-ethical and medico-political."

Dr. Wolstenholme desired to point out that they appeared before the meeting on the instruction of the Conference held in Manchester, which consisted of 54 delegates representing 54 different Branches or medical societies, including 7 Branches of the British Medical Association and also representatives of the Council of the Association. They represented in the gross nearly 5,000 members of the profession, almost all of whom were members of the Association. The Conference appointed a committee and that committee appointed a deputation to come to this meeting at Ipswich where they had had the honour of appearing before the Coun-

cil to lay this scheme before them. The essential principle for which they were sent here to fight was the principle of delegation. They did not desire in the least to interfere in the scientific work, but to restrict the efforts of the proposed delegates to medico-ethical and medico-political questions.

Dr. RADCLIFFE CROCKER thought they ought to leave the whole question to the committee for them to consider what was best, and not forestall them by instructing them as to what the meeting, which was not very large, considered the best. By all means instruct the committee to consider the principle of delegation, how far it was desirable, and how far it was practicable, but do not tie their hands.

Dr. WHITAKER said that at the present moment the annual meeting was the only means by which the opinion of the profession could be ascertained, but that opinion was in no way representative.

Dr. WARD COUSINS pointed out that it would be exceedingly difficult to carry out the principle of delegation with regard to the Colonies.

Dr. RADCLIFFE CROCKER moved as an amendment :

That the committee be requested to consider the question of delegation in their deliberations, but that they be not instructed that they must evolve such a principle.

The PRESIDENT OF COUNCIL seconded the amendment. One of the chief arguments for delegation was that the annual meeting did not voice the views of the Association, yet in that small meeting they were going to appoint a committee and put the whole organisation of the Association into the crucible of that committee while binding it to a very large and important scheme.

Dr. HELME did not think the meetings were sufficiently representative of the Association to deal with a matter of this importance, and to tie the committee by a hard and fast rule on the principle of delegation.

Dr. CRAWSHAW thought the proposed conference of delegates could not enter into details ; it could only work out the broad outlines.

Mr. KINSEY did not think the committee should be handicapped; they would lose all confidence in a committee so strictly bound down.

Dr. BROWN RITCHIE pointed out that even if the instruction to the committee were adopted it would have to go to the Branches and would have to be adopted by an annual meeting.

The amendment was then put, when 28 voted for, 16 against, and it was carried.

Dr. BROWN RITCHIE, before it was put as the substantive motion, suggested the insertion of the words "that they be invited to consider and report upon," which was agreed to, and it was then put and carried unanimously.

The meeting then adjourned.

BRITISH MEDICAL ASSOCIATION.

SIXTY-EIGHTH ANNUAL MEETING.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

Wednesday, August 1st.

THE following notes upon the proceedings in the various Sections will afford some indication of the discussions which have taken place. We propose to publish during the next few months complete reports of the papers and discussions in the various Sections.

SECTION OF MEDICINE.

AFTER some informal introductory remarks by the President of the Section, Dr Thomas Buzzard, a discussion on Influenza as it affects the Nervous System was opened by Dr. Judson Bury, of Manchester. He pointed out that different types of the disease could be recognised according to the particular organs on which the chief stress of the attack fell, but that in all the types the nervous system suffered severely. There were two main groups of nervous disorders associated with influenza; in one the nerve symptoms developed during the pyrexial stage of the disease, and in another during the non-febrile stage. The first group contained the comatose and delirious cases, and the second the neurasthenic, mental, and paralytic cases. All depended on a general toxæmia or on secondary structural lesions produced by the influence of the influenza bacillus either alone or in conjunction with streptococci. Cases were described of lesions of the brain, cord and peripheral nerves, in illustration of these propositions. Sir William Broadbent considered that most of the neurasthenic, neuralgic, and neuritic cases, like those of diphtheria, were due to toxins, but that the comatose cases were due directly to the bacilli, as in some of the malignant forms of malaria, where the meningeal capillaries were choked with the malarial parasites. Five cases of sudden coma due to influenza were described, some of which proved fatal in a few hours, and in one of which a temporary improvement, lasting a week, followed the hypodermic administration of quinine. Allusion was also made to a case with unilateral convulsions, to one with gradual hemiplegia accompanied with active muscular spasm, and to a third who died from paralysis of the respiratory muscles. Sir Peter Eade thought that the toxic influence of the influenza bacilli was exerted more on the sensory than on the motor mechanisms, and that the medulla oblongata had for it a special selective affinity. Professor Clifford Allbutt alluded to the difficulty of the diagnosis of influenza. Its sudden onset was almost pathognomonic. He thought the poisonous effect of the disease fell especially on the anterior part of the brain, and that prognosis of influenzal nervous disorders was not hopeful. Dr. Newton Pitt asked whether the meningitis was due to the influenza bacilli directly or to their breaking down the resistance of the tissues, and thus giving access to the pyogenic and other micro-organisms. In one case he had found Fraenkel's pneumococcus, but not the influenza bacillus. He described some cases of post-influenzal multiple neuritis, and said that the cardiac disturbance was more likely nervous than muscular. Dr. J. M. MacCormac doubted if the multiform disease known as influenza could be due to one bacillus alone. Dr. F. M. Pope described a case of coma, and referred to the prognosis in the anosmia following influenza. Dr. S. K. Mullick considered influenza a disease primarily of the nervous system and secondarily of other organs. Dr. E. Solly (Colorado) described a case of hemiplegia following this disease. Dr. Saundby, in reply to a question, said that the influenza poison might possibly act in causing diabetes by setting up a chronic interstitial pancreatitis. Mrs. Garrett Anderson believed that crowding intensified the virulence of the poison, and referred to two cases of diabetes in influenza. Dr. Haddon considered that when the nervous system presiding over the lungs was early affected then pulmonary diseases followed. Dr. William Ewart pointed out that in the post-influenzal nervous disorders simulating system diseases, such as tabes, the maximum of change in the nervous system occurred early in the course of the attack with a subsequent improvement, thus differing from the system diseases themselves. He suggested that in those persons who were the subjects of repeated attacks there might be a chronic influenza intoxication from the persistence of the bacilli in the nasal passages. Sir J. W. Moore referred to the psychical state of influenza patients which led them to believe themselves the subject of organic disease when they were not. Dr. StClair Thomson remarked on the anosmia, the pharyngeal hyperæsthesia, and the laryngeal paralysis that occurred in influenza. The President distinguished between those diseases which were merely revealed by influenza and those which were caused by it. He alluded to a case of tabes which occurred suddenly after influenza, as mental disease not infrequently did. He compared the *bizarre* manifestations of the toxæmic process in syphilis and epidemic infantile paralysis with the symptoms of influenza, and described some most complex cases of the disease, for example, with symptoms of spastic paralysis conjoined with those of multiple neuritis. In another case with bulbar symptoms there were marked changes in the vagal and hypoglossal nuclei. He urged that the nomenclature of the nervous forms of the dis-

ease should be widened, and stated that the diseases of the nervous system depending on toxæmia had greatly increased in late years, which he attributed to the influenza epidemics.

Section of Surgery.

After a short introductory address by the President (Mr. Howard Marsh), a discussion on the subject of Subphrenic Abscess was introduced by Mr. Rickman J. Godlee. Especial attention was drawn to the various causes of the condition, including gastric ulcer, appendicitis, and Mr. Godlee mentioned that in the last five years he had seen no fewer than 13 cases of actinomycosis, which was a more common condition than was generally supposed. The many and varying symptoms of subphrenic abscess and its treatment was fully discussed. Cases illustrating the difficulty of diagnosis were narrated by Messrs. Bruce Clarke, Bidwell, Chicken, Professor Cameron, and others. It was agreed that the character of the aspirated pus did not enable a surgeon to decide whether it had been let out from above or below the diaphragm. Mr. Leonard Bidwell narrated a series of successful cases of pyloroplasty for non-malignant conditions of the stomach, illustrating the slight risk of the operation. Professor Berg (Stockholm) had found retraction of the stricture recur in 50 per cent. of his cases of pyloroplasty, and had been compelled to do gastro-enterostomy; he urged that at least three years must elapse before one could consider the cases cured. An interesting case of anastomosis between the gall bladder and colon (cholecystcolostomy), performed for obstructive jaundice due to syphilitic thickening round the common bile duct, was brought forward by Mr. Betham Robinson. After the operation the patient had completely recovered under iodide of potassium. Mr. F. C. Wallis discussed the causes and treatment of non-malignant stricture of the rectum, urging that septic infection of some kind was present as the cause in many cases, pointing out in confirmation of this view that synovitis of various joints sometimes occurred as a complication. He adduced 2 cases of extensive excision of the lower stricture part of the rectum; in both the mucous membrane was brought down and successfully united to the anal skin, although some 5 inches had been excised. The result in both cases had been excellent, although in one (in which no preliminary colotomy was done) the shock had been extreme. Mr. Treves stated his belief that many cases of stricture of the rectum and other parts of the gastro-intestinal tract were due to congenital abnormality, whilst excision could only be carried out in a few cases of fibrous stricture of the rectum, but in these it might prove most valuable. In Mr. Wallis's cases control over the sphincter had been preserved. Mr. Stanley Boyd brought forward the latest results of oöphorectomy in cases of scirrhus of the breast. From these apparently about 40 per cent. of the patients were benefited. He did not himself attach importance to thyroid feeding, but Dr. G. E. Herman urged that the combined treatment gave the best result. Mr. Boyd considered the operation practically useless after the menopause, and that it was still in the experimental stage. Full details were given of 38 cases, in 17 of which it was considered improvement had resulted.

Section of Obstetrics and Gynæcology.

The President, Dr. W. S. A. Griffith, referring to the fact that an address in obstetrics was to be given by Dr. W. J. Smyly, and in view of the importance of the subjects selected for the consideration of the Section, at once called on Dr. Berry Hart to open the discussion upon Puerperal Fever in Relation to Notification. In spite of all our progress in antisepsis and the management of labour, the mortality from puerperal fever had not materially decreased. Dr. Hart discussed the advantages of notification, the difficulties of carrying it out, the way it should be done, and the measures which should follow it. The circumstances under which it should be recommended for any district, and the necessity that such district should be provided with isolation hospitals to which suitable cases could be removed. In the discussion which followed Dr. Hart's contribution Dr. W. J. Smyly, Dr. Campbell (Belfast), Dr. Boxall, Dr. A. V. Macan, Professor Byers, Dr. Green, Dr. Brummitt (South Australia), Mr. Targett, Dr. Beverley (Norwich), Dr. Helme, and Professor Henry Briggs took part. The President read a communication from the Local Government Board pointing out that "the object to be attained, in so far as preventive medicine was concerned, was to bring to the knowledge of the sanitary authority all those conditions which, supervening upon parturition, were communicable from one parturient woman to another," and also a statement from a medical officer of health that his experience of notification had been disappointing, the deaths from puerperal fever in one or two years having in his district exceeded the notifications, and that, except for disinfection of bedding at the end of a case, the intervention of the M.O.H. was seldom necessary. The sense of the meeting was that to make notification a privileged communication between the medical attendant and the officer of health was impracticable, and at the close of the discussion it was resolved unanimously, on the motion of Dr. Boxall, seconded by Dr. Beverley,

> That it be a recommendation to the Council that in the opinion of the meeting it was desirable that notification of puerperal fever (septicæmia) should be adopted generally.

Mr. Targett then read his paper on cephalotripsy for the after-coming head, based on the case of a rickety dwarf, barely 4½ feet high, who had declined Cæsarean section, and in whom dilatation of the cervix having failed to bring on labour, it was (after forty-eight hours) decided to bring down a leg in the hope of exciting uterine contractions. The trunk was delivered after more than twelve hours' further delay—there was then no pulsation in the cord, and cephalotripsy was performed rather than than risk the failure of forceps to deliver the after-coming head. The patient made a good recovery. The President remarked that on a dead child craniotomy was undoubtedly to be preferred to extraction by forceps and the danger it entailed to the mother. Dr. Purslow concurring with the President as to the advantage of craniotomy—preferred to perforate through the mouth. Madamoiselle Catherine van Tussenbrock's communication on human placentation in its second stage, apart from its inherent interest as embodying valuable original research, was remarkable for the enlarged diagrams of microscopical sections with which it was illustrated.

Section of State Medicine.

The proceedings of this Section were opened by the President, who made some introductory remarks on Certain Problems in Rural Hygiene. One of the most difficult problems of the time was the depopulation of the agricultural districts and the corresponding increase in the size of the towns. Unless this were stopped we should before long receive a rude awakening. One of the reasons of this condition was undoubtedly the greater attention which was paid by the town authorities to the sanitary problems and to providing adequate housing for the inhabitants. The country cottages should have land and water supply, and above all an Act was wanted which would encourage sanitary authorities to build and offer them every facility for providing decent accommodation for the labourer with the least possible trouble and at the lowest possible cost. There were many obstacles thrown in the way of such action, but the problem would have to be faced and the sooner the better. Dr. Nathan Raw then read his paper upon Rate-supported Sanatoria for Consumptives. He described what had been done in Liverpool, and felt sure that in a very few years sanatoria would have to be provided at the expense of the State, since no one with phthisis would be able to get employment. Dr. Cooper-Pattin said that in Norwich gratuitous disinfection had had a great influence upon the spread of the disease. Dr. Alfred Hill pointed out that the great objection to sanatoria had been expense. Dr. Oldfield thought that the first duty was to teach the people the value of fresh air and cleanliness. Dr. Groves pointed out that the residence in sanatoria being merely temporary, the great value of these institutions lay in their educational value. Dr. Peck insisted upon compulsory notification and disinfection. Dr. Grünbaum thought the sanatoria should be considered as special hospitals. Dr. Macfie thought that more attention should be paid to the personal disinfection of the patient. Dr. Thresh having made a few remarks, Dr. F. Drew Harris described how sterilised humanised milk was supplied for the use of the infants of St. Helens. The paper was illustrated by lantern slides showing the methods

of sterilisation and distribution. Although the process had not been working for a sufficiently long time to allow of final conclusions being drawn, he was satisfied that the experiment had been justified and that there had really been a reduction in the mortality of the infants from marasmus, diarrhœa, and other kindred conditions. Dr. Peck, although he thought the experiments of Dr. Harris were interesting, considered that St. Helens was beginning at the wrong end, and that the cows should be inspected, and no milk allowed to go for sale which was drawn from an unhealthy cow. Dr. Houston next introduced a discussion upon the question, "Can modern systems of sewage treatment be depended upon to remove the bacillus typhosus and allied organisms." He described a number of his own experiments and generally came to the conclusion that modern methods had not yet solved the problem of getting rid of the pathogenic bacteria. There was much to learn, but so far the time factor was a very important one. Dr. Thresh thought that the authorities should know that these modern methods could not as yet necessarily cause the disappearance of pathogenic bacteria, in order that they should be saved the expense of putting down plant which might be useless. Dr. Grünbaum pointed out the difficulty of isolating the bacillus typhosus. Dr. Cooper-Pattin asked how they were to treat effluents from filter beds before allowing them to flow into the stream. In the unavoidable absence of Professor Boyce, Dr. Grünbaum gave a lantern demonstration illustrating the structure and arrangements of various sanatoria in various parts of the world.

SECTION OF PSYCHOLOGY.

THE Presidential address by Dr. Percy Smith dealt with the prevention of the causes of insanity, among which were enumerated hereditary transmission, alcoholism, and syphilis, in each of which respect it was urged that preventive measures should be brought into operation by the efforts of mental physicians and legislators. A vote of thanks for the address was moved by Dr. Macdowall of Northumberland, seconded by Dr. Soutar of Bristol, and carried unanimously. Dr. Macnaughton Jones opened a discussion on the correlation between sexual function, insanity, and crime, and the discussion was continued by Drs. Soutar, O'Connor, Wynn Westcott, Percy Smith, Tuke, and Cardew, after which Dr. Jones briefly replied. A paper was read by Dr. Passmore, of Banstead Asylum, on epileptoid mania and its characteristic feature of recurrence, as well as its epileptoid characters. The paper was discussed by Drs. Oldfield, Lloyd Andriezen, Macnaughton Jones, Percy Smith, Soutar, and MacDowall, after which Dr. Passmore replied.

SECTION OF PHYSIOLOGY.

AFTER a preliminary word of welcome, the President of the Section, Professor Halliburton, at once proceeded to open a debate on the Production of Uric Acid. He dwelt on the physiological side of the question, as it is necessary to know the normal history of uric acid before its abnormal behaviour can be unravelled. He advocated an extension of Horbaczewski's views on the formation of the acid from nuclein; there are probably several factors concerned—namely, the nuclein and purine compounds of the food, and that which results from the metabolism of the nuclei of leucocytes and other cells. He also pointed out that uric acid is only one of the so-called purine compounds, and that all of these substances must be considered in any wide survey of the subject. He drew attention to another error into which some investigators have fallen—namely, in regarding the uric acid in the urine as the amount which is produced in the body. Dr. Haig's paper was next read, and the discussion continued by Dr. Milroy; he pointed out the importance in leucocytosis of determining the character of the leucocytes which occur. Digestive leucocytosis is rather a lymphocytosis, and any marked metabolism in the lymphocytes would not be expected. He attributed great importance to Minkowski's observations on the *rôle* of the liver in metabolism, and mentioned that hypoxanthine alone of the purine bases is transformed into uric acid, and that in birds this is independent of the liver. Dr. Hopkins emphasised the importance of diet; pure proteids and milk produce practically no effect on uric acid; the amount of either may be doubled in the food, and though the urea is doubled, alloxuric nitrogen remains unaltered. If uric acid comes from the nuclein only, the relative stability of the nucleus of cells is proved. He did not consider the amount of hypoxanthine in muscle extracts sufficient to account for the rise of uric acid. What the other precursors of uric acid are has still to be sought. Dr. Smith Jerome divided the facts regarding uric acid into proven and unproven; among the former he placed the origin of uric acid from purine substances, and the fact that the amount of uric acid is in large measure under control by means of diet. The possibility of uric acid retention in the normal state, the amount of uric acid normally in the blood, the causal relationship between gout and uric acid, the cause of deposition of uric acid in the urine and of urates in the tissues were among the points considered unproven. Dr. Haddon then spoke as a vegetarian; Dr. Harry Campbell and Dr. Anderson made a few remarks, and the President briefly replied. The papers which were afterwards read comprised the following: Dilatation of the Pupil from Stimulation of the Cortex, by J. H. Parsons, M.B.; Changes occurring in the Cells of the Newt's Stomach during and after Secretion; Presence of Ciliated Cells in the Convoluted Tubules of the Human and Mammalian Kidney, by Professor Carlier (with microscopic and lantern demonstration); Notes on Fatigue of the Cerebral Cortex, by Dr. A. G. Levy; the Inertia of Protoplasm, by Dr. D. F. Harris.

SECTION OF PATHOLOGY.

AFTER the President's address, dealing with the additions to our knowledge in pathology made by bacteriology, had been given, a discussion on the pathological distribution of bacillus diphtheriæ and the bacteriological diagnosis of bacterial infections was introduced by Dr. Andrewes, who referred to the impossibility of giving a certain diagnosis within twenty-four hours, as clinicians were apt to expect. He said that the question of the diagnosis of diphtheria had to be looked at (*a*) from the strictly scientific, and (*b*) from the clinical, point of view. From the first standpoint it might be a week or more before a certain diagnosis could be given, but such a delay would render the bacteriological diagnosis valueless for the physician. From the clinical standpoint it was necessary, in his opinion, to have full information of the clinical aspects of the case before giving an opinion upon the bacteriological data, owing to the impossibility of giving a certain opinion in the case of an organism culturally and morphologically indistinguishable from the diphtheria bacillus, without resorting to animal experiment. The subject was discussed by Dr. Lister, who referred to the relationship between chronic nasal discharge and diphtheria; by Dr. Crowfoot, who referred to a case in which several members of a family suffered from diphtheria and in which cultivations from the throat of the first affected gave no evidence of B. diphtheriæ; and by Professor Muir, Dr. Lazarus-Barlow, and the President. It was unanimously felt by the speakers that the physician ought not to expect anything more than a relatively probable diagnosis from a simple morphological examination made of a cultivation 24 hours old, and that a certain diagnosis could only be given after the effects of a pure culture inoculated into animals had been determined. Professor Muir read a paper on a case of serious anæmia and purpura associated with great deficiency in the red bone marrow. The case, that of a boy aged 14, showed, clinically, an anæmia reaching to 600,000 red blood corpuscles per c.mm., together with severe hæmorrhages, and death within eight weeks of the onset of the disease. Pathologically, there was a complete absence of the usual vascularity found in cases of profound anæmia; and, on the contrary, the marrow of the femur and of the ribs simply consisted of fat. He discussed the question as to whether the medullary condition was the primary lesion. Dr. Lazarus-Barlow described a somewhat similar case he had seen, and Dr. Andrewes recalled one case in which the bone marrow was avascular, which was not a primary anæmia, but was secondary to carcinoma; Mr. Roger Williams referred to the changes in the marrow in cancer; Dr. Crowfoot mentioned a case of leucocythæmia, in which he had removed the spleen with considerable and lasting benefit to the patient; the

President asked about the urinary pigments in Professor Muir's case; and Professor Muir replied. Dr. Eyre read a paper on Nutrient Media of Standard Reaction. He urged the use of phenolphthalein as an indicator, and gave various points, which he considered to be of importance in the preparation of media. Mr. Foulerton held that the first point in the standardisation of media was standardisation of the meat from which the media were to be made. Professor Muir dealt with the relative values of indicators. After a few words from Dr. Lazarus-Barlow Dr. Eyre replied. The meeting of the Section concluded with the reading of a paper by Mr. Roger Williams on the Pathology of Uterine Myomata, in which the author strongly upheld the view that these tumours arose from the growth of some portion of tissue segregated in embryonic life.

Section of Ophthalmology.

The proceedings in this Section were opened by the brief address by the President, Dr. Brailey, which will be printed in an early issue. The first discussion was opened by Mr. Richardson Cross on the Treatment of Chronic Glaucoma. He based his remarks upon 47 cases of the disease which had occurred during his private practice, and which had been very carefully tested. In his diagnosis he relied to a very great extent by the condition of the field. He discussed at length cases treated with myotics and also by operation, and showed many fields of vision, most of which demonstrated the fact that the fields improved after the tension was removed. He thought that sclerotomy was a most useful operation, and he preferred to do this operation with a keratome rather than with a Graefe's knife. He expressed himself strongly in favour of early operation. Dr. J. Hern, who insisted that early diagnosis was absolutely essential, spoke in favour of supplementing an iridectomy by establishing a communication between the anterior chamber and the vitreous by passing a knife backwards between the top of the margin of the lens and the ciliary body. Mr. Work Dodd, who said that his experience of operations in chronic glaucoma was by no means so good as Mr. Cross's, stated that he had recently removed the upper cervical ganglion of the sympathetic on both sides, and the immediate result was contraction of the pupil and diminution of the ocular tension. Dr. Karl Grossmann stated that he had seen great benefit result from the subconjunctival injection of normal saline solution, which he sometimes increased in strength up to 2 per cent. This should be repeated every day for a week or more. If he did a sclerotomy he preferred to do the operation with a Graefe's knife rather than with a kerotome. Mr. Bower (Gloucester) had not experienced good results from operating and he had kept patients under eserine and cocaine with practically no deterioration of vision for a very long time. Mr. George Berry (Edinburgh) advocated the use of myotics in the early stages, but as soon as this disease was marked would do iridectomy and sclerotomy, which he performed with a keratome. Mr. Devereux Marshall thought that the operation advocated by Dr. Hern was very risky, and asked whether a pathological examination had been made of an eye in which this operation had been performed, to which question Dr. Hern replied in the negative. The President, in summing up, stated that he thought that if tension were relieved the disease would be cured; though when there was much atrophy of the nerve it frequently progressed, even in spite of all treatment. Dr. Karl Grossmann then read a paper on Quantitative Colour Tests, in the course of which he said that he had found Holmgren's wools inefficient in some cases of slight colour vision. As an improvement he showed a lantern he had invented for a more minute test. Mr. Sydney Stephenson, in a paper on the Etiology of Phlyctenular Affections of the Eye, had given particular attention to the coincidence of eczema and tuberculous affections with phlyctenulæ of the conjunctiva and cornea, and from statistics he produced he had formed a strong opinion in favour of the view that they were intimately associated. Mr. George Foggin read a paper on Epicanthus, in which he pointed out that undue tightness of the cheek muscles prevented the proper expansion of the nasal bones, and for the treatment of the affection proposed some mechanical methods as well as operations.

Section of Diseases of Children.

The President, Dr. Frederick Taylor, in his opening remarks said he did not know whether the Council or the annual general meeting had framed the regulation limiting the time of his remarks, but he thought the rule a good one. He called the attention of the meeting to the Society recently formed for the study of diseases in children and to the excellent constitution of the Society. Dr. Nestor Tirard read a paper on the Nature and Varieties of Pneumonia, in which he referred to the main types of the disease and their relation to one another. He discussed the questions of general infection and the employment of antipneumococcic serum, contagion and the association of pneumonia with other infective diseases such as influenza. The various kinds of temperature seen in the disease were noted, and the duration and various initial symptoms, especially those associated with abnormal or deficient physical signs, were discussed. The bad prognosis in certain cases was alluded to and explained. An interesting discussion followed, in which Dr. S. Hart, Dr. Nicholson, Dr. Gossage, Dr. Fenwick, Dr. F. Taylor, and Dr. Lister took part. Dr. Tirard replied to the various points raised by the speakers. Dr. John Thomson and Dr. Logan Turner read a paper on the Causation of Congenital Stridor, well illustrated by anatomical specimens and photographs. An animated discussion followed, in which Dr. MacBride, Dr. Dundas Grant, Dr. Lack, Dr. Tilley, and Dr. F. Taylor took part. Dr. Thomson and Dr. Logan Taylor replied. The meeting was attended by a large number of members, and was of especial interest owing to the strict adherence to the points under discussion.

Section of Pharmacology and Therapeutics.

After the President, Dr. Walter G. Smith (Dublin) had delivered the address published at page 292, he proceeded to open a discussion on the Treatment of Internal Hæmorrhage. He observed that few cases of hæmorrhage from the lungs, bowels, or kidneys were in themselves fatal or imminently dangerous. Patients died after hæmorrhage, but not often of it (S. West). Many cases of hæmorrhage stopped naturally if only let alone. Hence drug treatment of hæmorrhage was often superfluous an sometimes mischievous. The efficacy of local styptics was undoubted, and their *rationale* quite simple. Gallic acid was devoid of local styptic power, and tannic acid was excreted partly as alkali-tannate and partly as gallic acid, neither of which coagulated albumen nor constricted blood vessels. Hence tannic acid was useless as a remote hæmostatic. The most rational treatment of, say, a serious case of hæmoptysis, consisted simply in mental and body rest, administration of morphine, and free evacuation of the bowels. Dr. Walter E. Dixon dealt with a few drugs which he had personally tried. As regards suprarenal gland extract, he had found the tablets to contain active properties, but not the solutions. Among other drugs, the speaker referred to calcium chloride, which, according to some authors, has been stated to accelerate coagulation. This observation he had been unable to confirm. Citric acid, however, undoubtedly prolonged the period up to coagulation. The President remarked that no doubt each area was subject to its own vasomotor laws. Dr. Ernest Kingscote made some observations on calcium chloride, after which Dr. Edward Liveing Fenn said that he would gladly have heard something with regard to saline infusions. Mr. Murray Leslie dealt almost exclusively with hæmoptysis, and described his treatment, consisting in turning the patient over to the affected side in order to prevent the sound lung from being asphyxiated. Professor C. R. Marshall referred to the action of tannic acid in hæmaturia, and Dr. Thomas H. Morse said that in cases of severe hæmorrhage he usually found infusions most efficacious. Dr. Walter E. Dixon read a paper on The Influence of Certain Drugs on the Vascular Mechanism of the Testis, and Professor C. R. Marshall three papers on Jaborandi; one by Dr. H. A. D. Jowett, the other by himself in co-operation with Dr. Jowett, and the third by himself alone. Dr. Ernest Kingscote closed the morning's proceedings with his paper on the Treatment of Asthma, describing a means of forcibly expanding the upper portion of the thorax, upon which observations were made by Dr. Harry Campbell and Dr. Douglas.

SECTION OF LARYNGOLOGY AND OTOLOGY.

THE President (Dr. Scanes Spicer) delivered an inaugural address, which will be published. Indications for the Intranasal Treatment of Ear Disease formed the subject of a discussion which was introduced by Dr. McBride, Mr. Cresswell Baber, and Dr. Dundas Grant in papers which will appear in the full report. The President remarked that with regard to nasal obstruction we were in need of a fixed standard. Was reduction of pressure the essential thing? When could improvement be promised to the patient, or even a stationary condition? Dr. Herbert Tilley said he had never seen any improvement of hearing in chronic non-suppurative cases from the removal of nasal obstruction. He would not even promise arrest. In the cases of moist catarrh it was different. Dr. Horne thought age had a good deal to do with it. In children the naso-pharynx was small, and removal of nasal obstruction gave brilliant results—much better than were obtained in adults in whom the naso-pharynx was more roomy. Dr. Watson Williams regarded the catarrh as the essential thing rather than the obstruction. The influence of "negative pressure" was largely hypothetical. Mr. R. Lake thought all cases of chronic dry catarrh were nasal in origin, but the cases which could be benefited were those in which air conduction was not very much shortened, and in which there was fair mobility of the malleus. Most good was done by the the removal of the more posterior nasal obstructions, such as posterior hypertrophic rhinitis. He disbelieved in the "negative pressure" theory, and thought nasal obstruction acted by setting up mucous catarrh, causing constant hawking efforts to clear the naso-pharynx. Dr. Holbrook Curtis (U.S.A.) claimed excellent results from intranasal operations both in catarrhal and sclerotic cases. Anæmia was relieved and oxygenation increased. He objected to the term "negative pressure" as unscientific. One might as well describe vomiting as "negative swallowing." Dr. Pegler thought it was difficult to draw the line between catarrhal and non-catarrhal cases. He had often obtained unexpected improvement in hearing in cases which had been operated upon for nasal obstruction. The President remarked that many cases were mixed and with such there was some difficulty. If the deafness had existed for a year he did not promise improvement, but in recent cases he advised operation. Dr. McBride, in reply, said he was quite certain that deafness from adenoids depended more upon the situation of the growths than upon their size. A central cushion caused no deafness, but a small amount laterally might compress the tubes. He asked for definite details of cases in which intranasal operations had improved the hearing. Mr. Cresswell Baber said that the adenoid operation was often only the beginning of treatment, and, on the other hand, it was no doubt sometimes unnecessarily performed. If there was "negative pressure" during inspiration he thought there must be "positive pressure" during expiration through the nose.

SECTION OF TROPICAL DISEASES.

THE President, Colonel Kenneth Macleod, M.D., opened the proceedings of the Section by giving an account of the important work done by this Section in the past, and its possibilities in the future. His address will be found at page 294 in this issue. Dr. Andrew Duncan then read a paper on The Action and Modes of Employment of Quinine in Malaria. Mr. Carré believed quinine diminished the chance of infection in the simpler forms of fever, but was well nigh useless in the pernicious forms. M. Marand was of a similar opinion. The evidence of Russian and Austrian army surgeons found no advantage from quinine as a prophylactic. M. Pola experimented on 736 soldiers; of 500 who took quinine 18 per cent. were attacked, whilst of the remainder who did not take quinine 28 per cent. had malarial attacks. Of American physicians Dr. Bryan found quinine and cinchona to be true prophylactics. Dr. Duncan's own observations amongst Sikhs and Goorkhas was in favour of quinine as a prophylactic. On the West Coast of Africa, among 133 observations recorded the drug was efficacious in 87.7 per cent., but gave no result in 12.3 per cent., showing a marked prophylactic power. No drug could be compared with quinine in efficiency, either as a prophylactic or as a curative agent. Injection of quinine by the rectum was recommended when exhibition by the mouth proved disappointing. Major W. I. Buchanan, I.M.S., communicated a favourable paper on the Prophylactic Issue of Quinine—a Synopsis of an Experiment on a Large Scale of Indian Jails. He stated that he had never seen a case of hæmoglobinuria, nor had he ever heard of a case since the administration of quinine was introduced into the prisons of India. Dr. Fielding Ould (West Coast of Africa) communicated a paper on The Administration of Quinine, with Special Reference to the Practice on the West Coast of Africa. He contended that so long as there was no gastric irritation administration by the mouth was most satisfactory. Rectal injections of quinine were highly efficacious; its subcutaneous injection was reliable. He deplored Koch's doctrine as to the dangers of quinine. A discussion on the three papers read then took place. Dr. Patrick Manson, C.M.G., F.R.S., said that the reputed prophylactic action of quinine was but a phase of its therapeutic action; it was the application of the drug to the parasite, and not an immunising of the body against the entrance of the parasite. In the more pernicious forms quinine failed as a curative agent, and in such would inevitably fail as a prophylactic. Dr. Manson recommended that in future quinine should be tested as a prophylactic after careful examination of the blood, so that it might be known with what form of the parasite it was likely to be successful. Lieutenant-Colonel Marsden, I.M.S., spoke highly of quinine in malaria, and said that in twenty years' experience he had seen only one case of hæmoglobinuria that could be connected with taking quinine. Mr. D. C. Rees stated that from his experience in Nigeria the value of quinine as a prophylactic was not marked, but its exhibition seemed to lessen the severity of subsequent attacks. Dr. C. F. Harford-Battersby (London), from experience gained in Central Africa, believed thoroughly in the prophylactic action of quinine. Major Wilson, R.A.M.C., said that in the Ashanti expedition of 1895 quinine failed, and again in Sierra Leone it did not appear of much value. Dr. Ringer (Canton, China) mentioned a case of quinine blindness which got well under 10-gr. doses of iodide of potash. Lieutenant-Colonel Maitland, I.M.S., spoke highly of methylene blue in malaria given in 3-gr. doses thrice daily. Mr. James Cantlie (London) mentioned a case of fever in a child aged 4 months. The fever defied all treatment for six weeks, but after giving quinine to the mother, who was suckling the child, and to the child itself the fever completely disappeared in three days. Dr. Henderson (Shanghai) had never seen permanent deafness nor any form of amblyopia arise from the exhibition of quinine. He believed the administration of quinine to pregnant women dangerous. Major Ronald Ross, Ret.I.M.S., pointed out that old cases of malaria suffered from a secondary form of fever due probably to enlargement of the liver and spleen. Dr. Guthrie Rankin related a case of hæmoglobinuric fever which developed fourteen months after residence in Central Africa in a young man who had taken no quinine as a prophylactic. Lieutenant-Colonel Oswald Baker, Ret.I.M.S., thought the reason quinine so often failed as a prophylactic was because it was not given in sufficient doses; the thought the prophylactic doses should be similar in amount to the curative dose. Colonel Kenneth Macleod also pointed out the necessity for microscopic diagnosis of the parasites in the blood before testing quinine as a prophylactic; he also referred to the difference between hæmoglobinuria and hæmoglobinuric fever, and considered that in all reference to quinine as a cause it should be distinctly stated which of the two ailments was meant. Lieutenant-Colonel Maitland, I.M.S., read a paper on the Etiology of Filariasis, in which he contended that the discovery of the filarial worm passing along the proboscis of the mosquito was not conclusive proof that the old idea of infection by water was wrong. He remarked upon the immunity of Europeans in India from filaria, and ascribed it to the fact that they drank for the most part only boiled or filtered water. Captain S. P. James, I.M.S., communicated a paper on the Metamorphosis of Filaria Sanguinis Hominis in Mosquitos, especially with reference to its metamorphosis in the *Anopheles Rossii* and other mosquitos of the *Anopheles* genus. He was of the opinion that Dr. Manson's statement that seven days only were required for the metamorphosis of the filaria in the mosquito was open to question, and believed that the mosquitos must have fed on the blood

of a filiariated person some time before he commenced his investigations. Dr. Manson stated that climate probably affected the period of metamorphosis. Major W. Buchanan, I.M.S., presented a paper on Hot Weather and Diarrhœa in India. The illness he described was one of sudden attack, frequent watery stools, collapse, and cyanotic countenance resembling somewhat a lesser degree of cholera. He compared it to the summer diarrhœa in England and cholera nostras. Dr. George Thin, M.D., communicated a note on a case of blackwater fever, with specimens, based on a case recorded by Dr. Douglas Gray, of British Central Africa. The patient had lived 10 yards from the bank of the Shiré river, always used a mosquito net, and lived in the same house with other healthy men. The microscopic specimens showed in the substance of many of the liver cells pigment in minute granules. The patient probably died of acute malarial fever, in which the hæmoglobinuria was a concomitant symptom. Dr. Manson remarked that the coexistence of malaria with hæmoglobinuria did not prove that the one disease was necessarily dependent upon the other. Dr. Rees observed that he had the opportunity of examining the specimens from the same case as that mentioned by Dr. Thin, and that he came to the conclusion that death was not due to an ordinary malarial infection. Dr. Andrew Duncan then read a paper on the Diseases of the Goorkhas.

Section of Navy, Army, and Ambulance.

Inspector-General Belgrave Ninnis, M.D., R.A., the President, read his address, which is published at page 296. Letters of apology and regret at inability to attend were then read from Surgeon-General Sternberg, Director-General U.S. Army, Lord Knutsford, Sir John Furley, and others. Surgeon Lieutenant-Colonel J. E. Squire, V.D., commanding London Companies Volunteer Medical Staff Corps, formerly Senior Medical Officer Red Cross Society, Suakim Field Force, 1885, read a paper on the Augmentation of the Royal Army Medical Corps. He urged that an advancing army should be relieved of its sick and wounded as rapidly as possible, and that a large medical *personnel* was therefore requisite. He considered untrained medical officers and nurses would prove a hindrance, and that a reserve should be arranged for, whose efficiency should be provided for by their being borne as supernumerary in the Volunteer forces with a retaining fee for efficients, and with pay when voluntary training subsequently. He deprecated civilians being incorporated with military units, though they should be under military control. Mr. Frederick Treves observed that transport for field hospitals had been questioned, but that all field hospitals have their own transport, and that transport is admirable. The present campaign has shown the value of a large mobile field hospital (taking 300 to 600 beds) to immediately follow the column. This hospital should have its own transport. This was so in Natal, and it made the efficiency of the hospital perfect. That the R.A.M.C. and the civil surgeons worked in perfect harmony throughout, a fact largely due to the unselfish attitude taken by the former officers. He considered the question of orderlies is a difficult one; that the present campaign showed that female nurses, keenly as their services were appreciated, could not work in field hospitals, but that in the base hospitals their number could be greatly increased with advantage. In his opinion the formation of an army medical reserve is one of importance, and such reserve could well be formed by recently qualified medical men who could agree to serve three years—one year with the colours and two with the reserve. The one year with the army would give them an acquaintance with the routine of the R.A.M.C., and would be no mean training for the members of the reserve themselves. This reserve would help the Army Medical Department to meet the emergencies of war, and at the same time give no grounds for lessening the *personnel* of the Royal Army Medical Corps when on its peace strength. The reserve would be called upon only in the time of war and would enable the Army Medical Department to avail themselves of a body of specially trained medical men who, from their point of view, would have the advantage of such training as the Army provides. Surgeon-Major G. A. Hutton, J.P., considered that the Army Medical Department had proved its ability to supplement the Royal Army Medical Corps satisfactory by civilians in the present war, and feared no inquiry into the efficiency of the medical service in South Africa. Dr. John Forbes feared a Royal Army Medical Corps Reserve would starve the permanent establishment both as to numbers and pay. As a colonist he advocated the treatment of an epidemic of enteric fever in a campaign by placing the sick on recently-dug mounds of soft earth covered with a waterproof sheet as a preventative of the spread of the disease when bedding could not be efficiently disinfected. Surgeon-Captain James Cantlie (Seamen's Hospital, Albert Docks) read a paper on how to link the medical services of the auxiliary forces with the Royal Army Medical Corps. He pointed out the divergence in systems of the former with that now obtaining in the latter service, which he fully described, and proposed: (1) That the Militia and Volunteer medical services be organised on the same footing as the Army Medical Service. (2) That there be a Militia medical corps and a Volunteer medical corps. (3) That in the *Army List* the Army Medical Service should appear thus—Division I. Royal Army Medical Corps. Division II. Militia Medical Corps affiliated with the R.A.M.C. Division III. Volunteer Medical Corps, affiliated with the R.A.M.C. (4) That all medical officers joining the auxiliary forces be gazetted to one or other of their respective corps. (5) That a medical officer of a volunteer corps be seconded or told off for special (it may be permanent) duty with the volunteer battalion in his district. (6) That in the event of war or of a national emergency that the officers and men of the auxiliary forces corps be considered the first line of medical reserve for the regular army. (7) That a cadet company of medical students be formed in every medical school of the kingdom, and the whole organised into a corps. (8) That it be urged on all surgeons and physicians in our hospitals to attach themselves officially, or to take up duty, in either the cadet corps of their university or school, or in the volunteer medical corps. (9) That the services of no civil surgeon or physician who has not attached himself for duty or professional training in either of these corps, be accepted for service in the field or during national emergency. In conclusion he moved:

> That the Navy, Army, and Ambulance Section requests the Council of the British Medical Association to appoint a committee to draw up a scheme to be forwarded to Government, for the reorganisation of the medical services of the auxiliary forces, on the basis of the system in the Royal Army Medical Corps, and for the purpose of bringing the medical services of the regular and auxiliary forces into unison.

Surgeon-Captain James Harper, V.M.S.C., seconded the motion, which was unanimously supported. Major Wilson, R.A.M.C., considered the questions raised by Surgeon-Captain Cantlie deserving of careful consideration. Surgeon-General H. S. Muir, C.B., M.D., R.A.M.C., supported the motion, and felt sure the Director-General would welcome any matured opinion of the Council of the British Medical Association. Brigade-Surgeon-Lieutenant-Colonel G. S. Elliston, V.D., read a paper on volunteer brigade bearer companies founded on his twenty-eight years' experience of the Volunteer Medical Services which he sketched in this connection: he considered that a brigade bearer company should be a distinct unit, with its own officers, capitation grant, and other allowances, and as companies should be affiliated to their present brigade for mobilisation, etc., that these units should not only have their own headquarters, but a paid sergeant-instructor. Major Wilson, R.A.M.C., considered a reorganisation of the present system desirable. Surgeon-General O'Dwyer (P.M.O., Aldershot) advocated a reform of the system of training for the bearer companies and in their position. Brigade-Surgeon-Lieutenant-Colonel King, V.M.S.C., expressed similar views. Brigade-Surgeon-Lieutenant-Colonel Giles, V.D., read a paper on the Volunteer Medical Organisation, dwelling on the experience of the present war, pointing to an increase of the stretcher squads and their efficiency being improved, and suggested a scheme with this view.

According to the *Allgemeine Wiener medizinische Zeitung*, Senhor Teixura de Souza, who has been appointed Minister of Marine in Portugal, began life as an army surgeon.

THE ANNUAL MUSEUM
OF
FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

THE annual museum which is being held in connection with the sixty-eighth annual meeting of the British Medical Association is, in respect of interest and variety, fully up to to the level of former years. We give below notices of some of the more remarkable exhibits:

INSTRUMENTS AND ORTHOPÆDIC APPLIANCES.

MESSRS. ARNOLD AND SONS (26, 30, and 31, West Smithfield, London, E.C.) exhibit a number of new or improved surgical instruments or appliances, among which may be mentioned Mr. C. B. Lockwood's improved form of Gottstein's curette, improved laminectomy forceps, and a new clamp for operations on the liver made for Mr. H. J. Waring, and clamp forceps for breaking down the hard palate made for Mr. W. J. Walsham. A set of modified tracheotomy instruments designed by Mr. G. C. Garratt, assistant resident medical officer at the London Fever Hospital, is illustrated in the accompanying drawings, and the following is Mr. Garratt's description of their form and use:

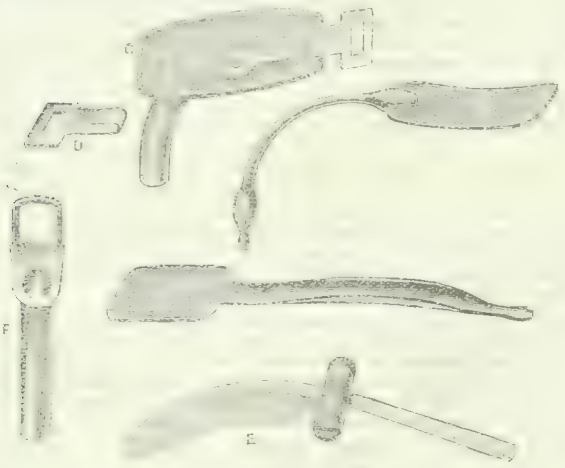


Fig. 1.

The dilating director A is inserted by the side of the knife before the latter is withdrawn from the trachea; on turning it transversely it dilates the wound, and serves as a director for the tube. The pilot B is original only in its probe point. The outer tube C is shaped like Parker's, but has larger wings. The tape holders D are hooked on to the bars of the shield before use; they prevent the tube from being coughed out, but allows it free movement. The cleaner E, of stiff-plumed feather, is guarded by two little ebonite bars united by rubber wings and adjusted to the length of the tube. It is easily sterilised, and cannot reach the trachea. Where an inner tube is necessary, the pattern F is used like Durham's; it is self-retaining, without key. The single handle is placed in the position of greatest mechanical advantage, and taken well out of the way. As there is room for a finger on either wing of the outer tube, the latter can and should be fixed during the removal of the inner, and is then not jogged about in the trachea, nor can it be pulled through the shield. There is nothing about the orifice of the tube nor within it likely to catch dirt, every part is readily taken to pieces for cleaning, and the tapes, being inserted without any disturbance of the shield, are not introduced until all is clean.

Messrs. Arnold also exhibit an aseptic catheter stand, fitted with six stoppered tubes, the iodised phenol aseptic outfit for the treatment of hydrocele, designed by Mr. Frederic Deane, of Barbadoes (described in the BRITISH MEDICAL JOURNAL of May 19th, 1900), and a general collection of instruments for major and minor operations for the treatment of diseases of the eye, throat, ear, and nose, as well as improved forms of sterilisers and aseptic cabinets for instruments.

MESSRS. DOWN BROTHERS (21, St. Thomas's Street, S.E.) exhibit a large series of surgical instruments of the best patterns adapted for operations on various parts of the body, including sets of instruments for operations on the eye, the abdomen, the larynx, etc. A special feature of interest is a room fitted up as an operating theatre, with aseptic operation table, stools, stands, sterilisers for instruments, ligatures, and dressings, instrument cupboards, etc. The principal object in the exhibit is one of Down Brothers' patent operation tables to raise and lower, so as to suit the heights of different operators. This arrangement is also particularly convenient when the Trendelenburg position is in use, as under ordinary circumstances an operator must then raise himself on some support in order to reach well over the patient. Another point in this table is that it rests on castors, two of which can be put in and out of action at a moment's notice. It is fitted with a patented tubular frame-work for heating purposes. Another useful piece of furniture of new design is a stand for reservoirs with glass shelf under for

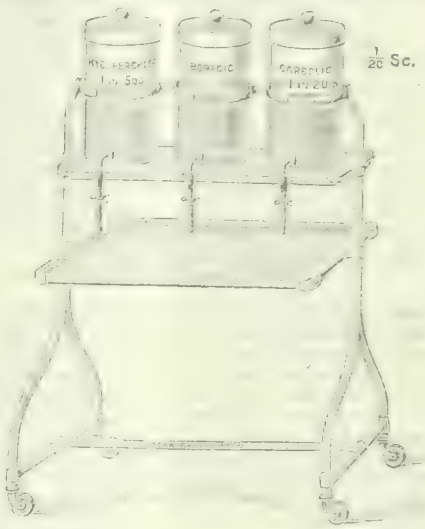


Fig. 2.

basins (Fig. 2). There is also a new model of operation



Fig. 3.

stool (Fig. 3). All the previous models of operation stools have been open to the objection that there is a long exposed screw which is frequently coated with grease; this new model stool has the advantage of having no exposed screw. There are several forms of glass tables and instrument cabinets, all these articles of furniture being fitted with an improved type of ball-bearing castors. The firm's exhibit of surgical instruments consists entirely of instruments for aseptic surgery. There are complete sets of instruments for major and minor operation and for special branches of surgery, all being fitted into metal cases capable of thorough sterilisation. There are sets of scalpels in metal cases in Down Brothers' registered lift-out racks, also sets of catheters and sounds on the same principle, and many other cases in which the same principle is carried out. Among the exhibits of this firm is an aseptic vaccine case devised to meet the new Act and the Order of the Local Government Board, and approved by the Council of the Association of Public Vaccinators. This consists of lancets with metal handles, steriliser, spirit lamp, numbered tubes for the lymph, tube nippers for breaking off the ends of the tubes, blower, etc. It forms a most complete set, and can be

carried in the pocket or in a special wallet constructed to strap on the bicycle, and which has spare room for dressings. Various forms of serum syringes (Fig. 4), including those made

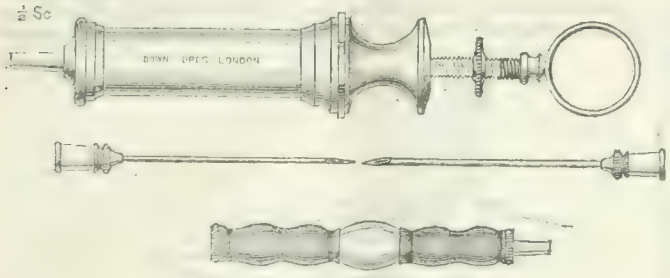


Fig. 4.

entirely of glass, which are extremely simple, and others made throughout of metal. The latter are especially recommended, as there are no mounts to come off and no washers to get out of order. The metal piston and barrel are so accurately ground together that the piston works with the utmost smoothness. A very complete set of Mr. Arbuthnot Lane's bone-screwing instruments is also shown. In connection with these instruments there is also a very ingenious modification of lion forceps designed by Mr. Peters. This forceps is especially useful for holding the fragments in apposition in any operation for screwing or suturing the bone. The openings in the blades allow of the drill being passed rapidly in any direction, and without fear of loosening the grip on the bone. The wire or screw is passed or adjusted without removing the forceps. Among the instruments for bullet extraction there are shown



Fig. 5.

French and Austrian models of bullet forceps, but one of the simplest forms is that known as the Egyptian bullet forceps (Fig. 5). This model was originally made for the Egyptian Army, and was reported favourably upon by Mr. Abbott in his paper on the Surgery of the Græco-Turkish War. It has since been adopted by the navy. It may be described as an elongated model of the ordinary bow dressing forceps. Mr. Arbuthnot Lane's needle holder is a very delicate instrument for holding extremely fine needles for operating on cleft palate in young children. This instrument might also be used with advantage in vaginal fistula and other delicate operations. There are aseptic sets of eye instruments, with nicely-balanced metal handles, and a case containing a particularly useful selection by Dr. Sym; eyelid retractors and trachoma forceps by Dr. Stephenson, the latter being a modification of the well-known Knapp's forceps, rather stronger in the blade, and fitted with two sets of smooth rollers for expression; chalazion forceps by Mr. Griffiths, especially intended to facilitate the treatment of Meibomian cysts in the lower eyelid; gland instruments by Professor Kocher and Dr. Johnston; and a varied selection of instruments for intestinal operations, including Mr. Mayo Robson's and other decalcified bone bobbins, Murphy's buttons, and Laplace's forceps for suturing; various forms of bowel clamps, and also Dr. Doyen's pylorectomy clamp. Among the lithotrity instruments we noticed a useful set of lithotrites for children made on Mr. Milton's model, and put up in aseptic metal case, and a new stone crusher for perineal lithotrity by Dr. Neve of Kashmir. There are several forms of wallets for carrying midwifery instruments, vaccination instruments, or the ordinary pocket instruments on the bicycle, which will be found useful for the country practitioner; instruments for hysterectomy by Dr. Doyen and Dr. Pozzi; Dr. Kelly's rectum instruments, including proctoscope, sigmoidoscope, etc., and Turck's double tube for the colon; instrument for skin grafting, including Thiersch's razor, McBurney's hooks for stretching the skin, and perforated tin foil for dressing; a set of modified O'Dwyer's tubes by Dr. Codd of Wolverhampton, which offer some advantage in introduction; various instruments for skull surgery, including Gigli's chain saw with Podrez's director and Van Arsdale's saw and motor. There is a new and simple form of Potain's aspirator made at the suggestion of Mr. Cuthbert Wallace of St. Thomas's Hospital. A piece of flexible indiarubber tubing is inserted in the cannula, and this is compressed with the fingers as the trocar is withdrawn, effectually preventing the ingress of air.

Mr. J. H. Montague, 101, New Bond Street, W., exhibits aseptic metal pocket cases, minor operating cases, scalpel and knife cases and metal-handled instruments of various kinds, which can be easily sterilised. He also exhibits several forms of inhaler, for the administration of anæsthetic,



Fig. 6.

and a number of special instruments. A new valveless stopcock, designed by Dr. G. Flux, for administering nitrous oxide gas. It is made entirely of metal, so that it can be thoroughly sterilised and cleaned without fear of injury. By its use it is claimed that the amount of gas can be regulated to a nicety. The general construction of the stopcock is shown in the illustration (Fig. 6). A chloroform inhaler, also designed by

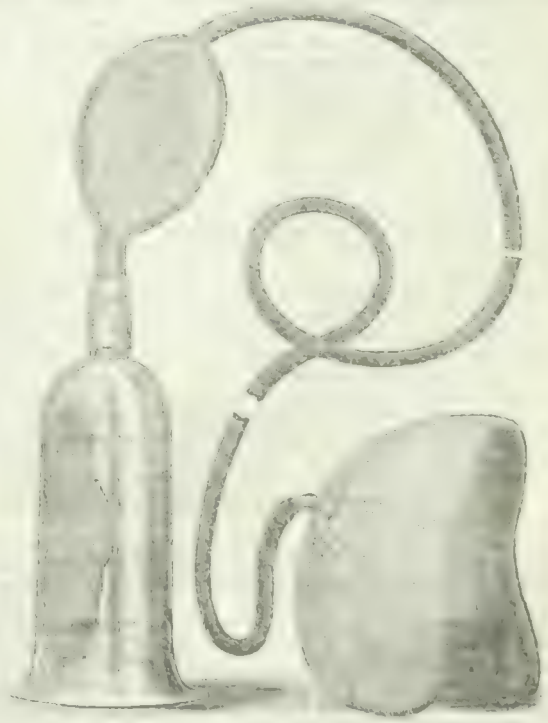


Fig. 7.

Dr. Flux, is exhibited. The principle on which it is constructed depends on the fact that air can only take up chloroform in definite proportions at any given temperature or pressure. It consists of a light metal cylinder, 4 inches long and 1½ inch in diameter, filled with cotton wick. The lower

end is open, the upper is attached by a short inlet to the neck to the inlet of an india-rubber bellows. In the neck of the cylinder—(that is, between the body of the cylinder and the bellows)—two slots are cut; these slots can be covered or uncovered by sliding a movable metal collar over them. The action of the bellows is to draw air in through the cylinder, and to discharge it through a short length of tubing into the

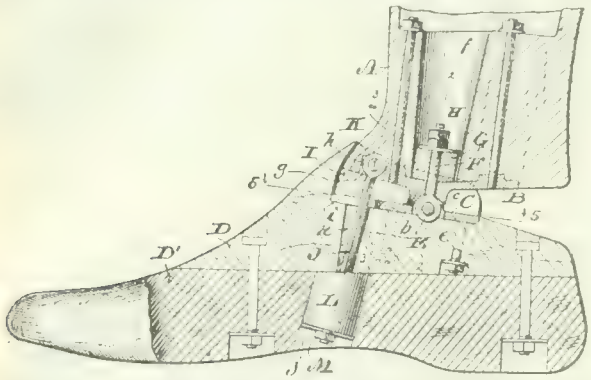


Fig. 8.—B. and C. are the two steel rocking plates which form the rocking joint. K. and I. are the two lock nuts, one with left thread and the other with right thread, which keep the two rocking steel plates together by the swinging bolt H. J. is the cushion which allows forward motion of the leg, without any sudden checks, and takes the place of the heel cord. L. and M. is the rubber spring, with steel piston and nut, which controls the ankle motion.

facepiece or other terminal. This air, when the wick has been previously moistened with liquid chloroform poured upon it through the lower end of the cylinder, becomes saturated with chloroform vapour. If the slots in the neck of the cylinder are opened, some normal air that has not passed through the cylinder will be drawn into the bellows; with the slots completely closed all the air entering the bellows is drawn through the cylinder and contains, it is stated, a definite percentage of chloroform vapour; if the slots are partly open, the amount of air passing through the cylinder varies inversely with that entering by the slots, and the percentage of chloroform vapour transmitted to the terminal is correspondingly diminished. The amount administered to the patient is limited by the fact that the bulb of the bellows can only be filled and emptied once a second. One of the chief advantages claimed is that the intensity of the chloroform vapour cannot be accidentally increased by the accumulation of unused vapour within the cylinder, since as it is heavier than atmospheric air it will fall rather than rise, and that no admission to the bellows is possible except when they are being worked. A further advantage claimed is that the liquid chloroform is absorbed entirely by the wick and hence cannot be dropped on the face. The apparatus can also be used for A.C.E. mixture. Mr. Montague also exhibited a new artificial leg in which catgut tendon is dispensed with in favour of a steel bearing rocker plate ankle-joint as shown in the illustration (Fig. 8), which represents a section of the foot. It is claimed that the mechanism is simple, and that the wearer can easily get at it to clean and oil. The leg is also fitted with a special hip socket designed to avoid chafing.

The SURGICAL SUPPLY ASSOCIATION (35, Market Street, Manchester) exhibits a number of surgical instruments, a series of improved dispensing bottles, as well as other general and medical surgical appliances.

The O'CONNOR EXTENSION COMPANY (2, Bloomsbury Street, London, W.C.) exhibit a number of appliances for the lame, some of which were pretty fully described last year at this time. Mention may be made of a boot recently designed to assist persons, especially those suffering from infantile paralysis, in whom the act of walking is interfered with by foot drop. A mould is taken of the sole of the foot, and this is continued upward at the back of the heel and ankle, so as to make an L-shaped support (Fig. 9) which is inserted in a suitable boot and firmly laced on the patient's foot (Fig. 10). The same company exhibits a double support with steel stay Fig. 11) for the treatment of varus and valgus. The support is moulded to the ankle, whilst the foot is held in the best obtainable position, and the mould is itself worn inside the boot, which is especially made to receive it. The same principle of obtaining a mould of the sole of the foot is adapted to boots for the treatment of flat foot. A mould (Fig. 12) taken

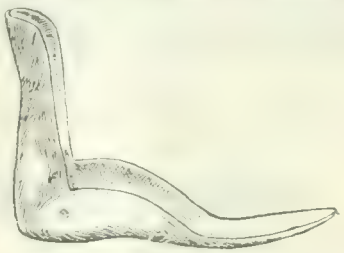


Fig. 9.

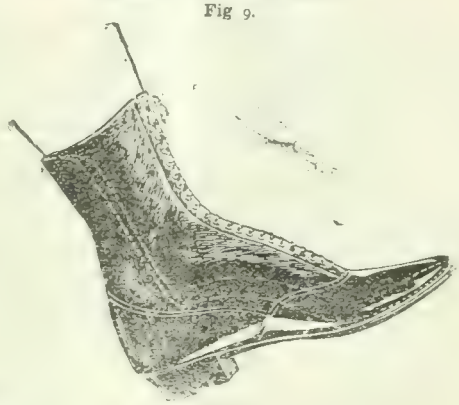


Fig. 10.



Fig. 11.

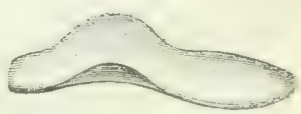


Fig. 12.

whilst the arch of the foot is upheld as much as possible, forms the basis upon which the boot is made. Various modifications can be introduced to suit special cases.

Messrs. JOHN WEISS AND SON, Limited (287, Oxford Street, London, W., and Manchester) show an extensive collection of surgical instruments of various kinds and sets of instruments for special operations. Among the novelties to which attention is called is Dr. Colin Campbell's vaccination case for the use of public vaccinators and others who, under the new regulations, vaccinate at the home of the patient. The case, which is of moderate size, opens so as to form a tray. It contains all the instruments and dressings which are required, including vaccinating lancet, spirit lamp, scissors, bandage, collodion, etc. The case is intended to fulfil the conditions laid down in the Order of the Local Government Board, and appears to fulfil its purpose admirably. The same firm exhibits M. Doyen's instruments for the operation for the formation of an acetabular cavity, a mouth opener resembling a large wedge-shaped thimble with slots for the teeth, designed by Dr. Hewitt, a small phonendoscope, a small binaural stethoscope, and a solid rattan stethoscope which appears to possess good acoustic properties. Mention

may also be made of the "Déchery" automatic cautery, which has already been fully described in the Journal, a model of an operating table in nickel steel, with gearing for altering the height and angle and provided with hot-water tanks, and also sterilisers and instruments for aseptic operations. A very powerful lithotrite, taking a stone 4 inches in diameter, designed for Surgeon-Major Keegan, is also exhibited.

Mr. Wm. Offord (2a, Regent Street, Cambridge) showed apparatus for fixing the hip-joint and the knee in early tuberculous disease, and for the prevention of recurring displacement of the internal semilunar cartilage of the knee. The last-named apparatus has been described in the Section of Surgery, and a full description will appear. The apparatus for fixing the hip in early tuberculous disease consists of a tempered steel band fitting closely round the pelvis, below the crests of the ilia, terminating anteriorly in a padded metal plate, which is shaped to fit the lower part of the abdomen.

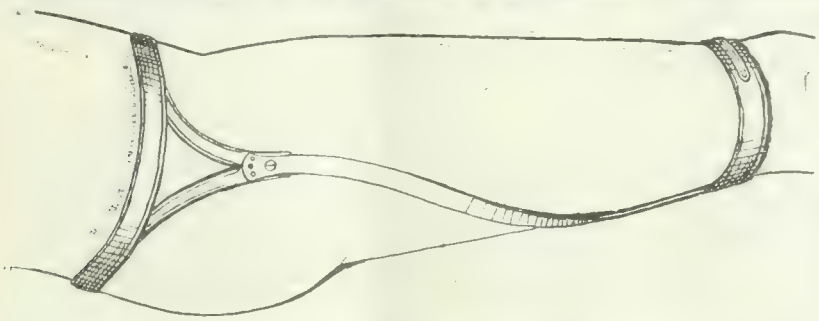


Fig. 13.

Above the affected hip a steel bar is firmly fixed to the pelvic band, and runs downwards to a little below the great trochanter, from whence it curves gently backwards and downwards, till it terminates just above the knee in a padded metal band, which encircles the limb, fastening in front by buckling straps. To allow of any alteration in the angle or flexion at the hip-joint the steel bar is jointed and made adjustable by means of screws. The advantage claimed for the apparatus is that as it fits closely to the skin surface, it is less cumbersome and lighter than a Thomas's splint, while it effectually prevents movements of the hip.

Dressings and Sick-room Appliances.

Messrs. Pate, Burke, and Co. (6, Wool Exchange, Basinghall Street, London, E.C.), exhibit a number of dressings and materials made from "Petanelle" wool, which is a fibrous material derived from peat. The absorbent and deodorising properties of peat are well known, and various preparations of it have been used as surgical dressings. The petanelle material appears to be very carefully prepared, and its fibrous quality permits it to be made into dressing pads; it absorbs liquids easily, and when saturated retains a considerable amount of elasticity. The firm makes aseptic pads, which are sterilised, and packed in paraffin paper. The wool can also be obtained in packets, and appears well adapted for cases in which there are foul discharges and it is desirable to have an elastic absorbent pad. The material is also made into "towelines," in which a core of petanelle wool is surrounded by cotton wool, and enclosed in a fold of soft material. The material is also woven with a mixture of pure lambswool into various fabrics, such as blankets and cot blankets, which, except in their brown colour, resemble so called natural wool fabrics which are now so much used. The wool is also used for stuffing mattresses, for which, so far as can be judged without prolonged use, it appears to be well adapted. The various articles are well made, and the productions of this firm appear to deserve attention.

The Liverpool Lint Company (Mark Street Mills, Liverpool) exhibit a large variety of absorbent dressings, flax and cotton lint, carbolised tow, and so on. They also show a simple but ingenious fastening for bandages; it consist of an india-rubber band, to which is fixed at either end a double flat hook, which catches in the bandage. It is very easily adjusted, lies flat to the surface, and is likely to be found not only comfortable to the patient, but convenient to the surgeon. The same company are manufacturers of a material made from wool yarn, with a fleece or pile on one side, which can be made into body belts, under vests, etc. The chief claim for it is that it is not only warm, but allows of free evaporation.

The Sanitary Wood Wool Company (26, Thavies Inn, Holborn Circus, London, E.C.) exhibit Hartmann's patent wood wool adapted to various purposes. These have already been in many previous cases mentioned in the British Medical Journal, and the advantages claimed for them are pretty well known. One main advantage of the material is that it is very absorbent, light, and elastic. The wood wool tissue made in a continuous roll consists of a layer of the wood wool between two pieces of sublimate gauze, a piece of any size or shape can be cut from the roll as required. The Company also makes vaccination pads, sponges, towelettes, and napkins for infants, in which the absorbent qualities of the wood wool are utilised. It also provides outfits for accouchements. They also make sublimate and iodoform gauze, catgut in various states, including the finished article prepared with juniper oil carbolised or sublimated. They also show a pure absorbent cotton wool made after Professor Brun's method.

The Alione Company (Broadway, West Norwood) shows a well-designed invalid gown which can be laid flat and fastened upon the invalid, and can be opened at various parts so as to lay bare the shoulder or the back, with the minimum of disturbance to the patient. The same company makes clothes for infants, which can be easily adjusted or removed.

Walford's domestic Turkish bath consists of two baths—the one is a cabinet which folds up when not in use. It is fitted with a hammock seat, which can be adjusted to any convenient height. It is heated with a spirit lamp, and can be used as a Russian or vapour bath, or a Turkish bath. The other bath is a shower bath, which gives a graduated hot and cold shower where hot and cold water are not laid on. The shower cisterns are hoisted, after being charged with hot and cold water, by means of pulleys and caught automatically by a hook; a douche of hot water, of cold water, or of the two mixed can be given.

The Dowsing Radiant Heat Company fitted up a room to show the manner in which the radiant heat and light can be applied to the surface of the body generally or to any particular part. The lamps are made with reflectors which throw the rays in the desired direction.

Messrs. George Gale and Sons and Messrs. S. B. Whitfield and Company (both of Birmingham) show a series of spring bedsteads of various models for use in hospitals and asylums, and a folding bedstead of a pattern which, it is stated, has been supplied in large numbers for the use of the military hospitals in South Africa.

Messrs. Billington Brothers (Liverpool) also exhibit a number of beds adapted for use in institutions, and lockers, bed tables, and bed rests.

The Longford Wire Company (Warrington) show wire mattresses designed to carry heavy weights, an "epileptic bedstead" with wire sides and a wire cycle saddle covered with leather.

"Ronuk," Limited (Brighton), exhibit staining for preparing deal floors for polishing and a material for polishing and cleansing hospital floors.

Mr. Phildius (23, Bartholomew Close, Aldersgate, London, E.C.) exhibits a mechanical bed manufactured by M. Billon, of Geneva. The bed is fitted with mattresses in the ordinary way, but upon the mattresses is a movable frame, across which, in either direction, bands of stout material can be stretched. The bed as shown is fitted with a long fore and aft strip for a case of fracture of the thigh. The pillows of the bed are hollow to carry the hoist, which is worked by a lever at the side. In this way the patient can be lifted from the mattress for any purpose. The head end can be raised to any angle. For other cases the foot of the frame, after the whole has been raised can be lowered to let the feet drop. By altering the bands the lift can be adapted for cases of paralysis.

The bed is strongly made, and appears likely to be useful in treating bedridden patients.

Milk Sterilisers.

The Aymard Patent Milk Steriliser Company (Ipswich) exhibits the milk sterilisers which it makes both for large institutions and for domestic purposes. The principle upon which these sterilisers are constructed was fully described in the British Medical Journal of October 10th, 1896, and after careful tests we were able to report that "it may be fairly claimed for this method that it is simple and efficacious in so far that it ensures the destruction of the pathogenic organisms most commonly found in milk, only slightly alters its palatability, and avoids the difficulty of the separation of the fatty constituents, a serious disadvantage in the bottle sterilisers .....The small sizes are very suitable for household use, and are not so likely to get out of order as the various forms of bottle sterilisers. The cauldrons are well adapted for use in large institutions, especially where a good supply of steam is available."

Messrs. Browne and Sayer (Old Swan Chambers, Upper Thames Street, E.C.) exhibit a cheap infant's milk steriliser, consisting of six 3-oz. bottles contained in a circular block-tin stand, which can be placed in an ordinary household saucepan containing water and placed upon the fire or upon a gas ring.

The Cambridge Sentinel Manufacturing Company (Llandaff Chambers, Regent Street, Cambridge) exhibited ingenious sentinel milk sterilisers. In one form there is an arrangement by which a bell is rung, in the other the gas is put out automatically when the temperature of the milk has been raised to 85° C. Both forms depend for their operation on the melting of a fusible alloy adjusted to free certain movable parts of the mechanism, whereby the required operation (ringing a bell or cutting off the gas) is accomplished at a temperature dependent on the composition of the alloy employed. The apparatus has been tested for us, and it is found that the bell form of the apparatus does ring the bell at the temperature stated (85° C.), and that when the bell has rung no appreciable difference in temperature exists in any part of of the heated milk. The apparatus may therefore be considered as capable of rendering milk a harmless article of food. The specimen of the other variety of the apparatus as received did not work, for it failed to put out the gas; but this is due to a specific defect in the individual apparatus examined, and not to the inefficiency of the means provided. The spindle of the star wheel which released the weight attached to the gas tap was bent. It could be easily put straight, and should be made of stouter material to avoid the risks of such accidents. There is reason to believe that if the film which forms on the surface of heated milk is thrown away, it is not necessary in order to kill the tubercle bacillus to heat to so high a temperature as 85° C. Considerable changes in flavour take place below this temperature, and, what is more important, specific changes take place in the milk proteids, and the less they are altered the better for the consumer (especially infants). It must be added that alloys have an inconvenient trick of crystallising and altering in fusibility, and only prolonged trial would render it possible to say whether the apparatus, ingenious as it is, will be permanently efficient over long periods.

Clinical Apparatus.

Mr. W. Martindale (10, New Cavendish Street, London, W.) exhibits a variety of apparatus for bacteriological research, including a new bacteriological test case designed by Mr. W. Harrison Martindale, Ph.D. It is intended for the use of the practitioner who has not the use of a laboratory, and where room is limited. The case, which is neat and compact (Fig. 14), contains practically everything which is necessary for staining sputum, pus, urinary deposit, etc., and for collecting blood for Widal's reaction. Small as it is, and numerous as are the contents, room is left for the insertion of several extra articles which the fancy of the individual practitioner may suggest. We have tried some of the apparatus, and found that generally it was sound, but we should suggest that too much care cannot be taken in making the stains—the carbol-fuchsin was not as good as the solutions which Mr. Martindale is in the habit of sending up. The case is one which is to be strongly recommended for those for whom it is intended. Mr. Martindale also exhibits the portable urine test case designed by Dr. Harrison Martindale, and described

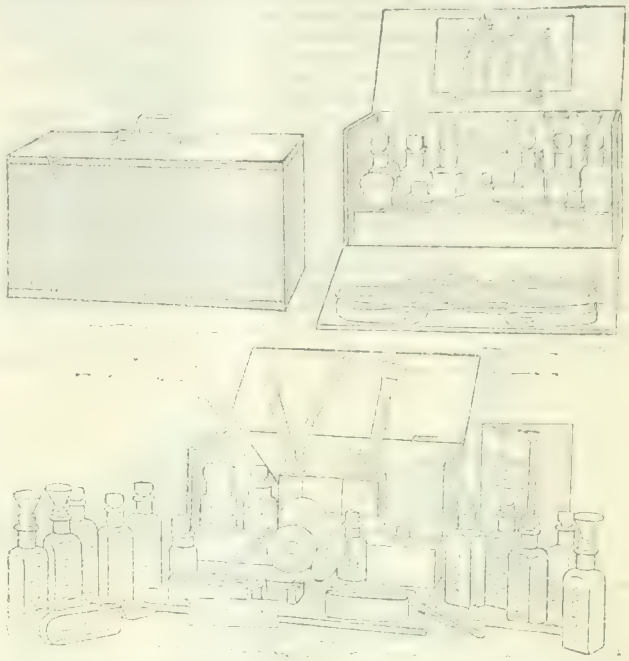


Fig. 14.—Portable bacteriological test case (Martindale).

in the British Medical Journal of December 2nd, 1899. It is very neat and compact, and is likely to be found extremely useful for examinations to be conducted at the patient's own house. Inhalers for various purposes are exhibited, as well as a simple portable spittoon, which presents certain advantages over any other pattern which we remember to have seen. In the first place, it is made throughout of white metal, so that it can be boiled with impunity. It is in two segments; the lower part, which is the reservoir, fits on to the upper, which has a funnel-shaped aperture to receive the expectoration. The spittoon is flat with rounded ends, so that it can be carried easily in the breast pocket, and it has a broad, flat bottom, so that it is not easily upset if placed on a table. The lid has a spring, so that it can be opened with one hand. Mr. Harrison Martindale, who has designed the spittoon, recommends that a small antiseptic tablet containing thymol, which is made for the purpose, should be placed in the reservoir when the spittoon is in use. The general form and construction of the spittoon is shown in the accompanying diagram, which is made to about half-scale.



Fig. 15.—Portable Spittoon (Martindale).

Messrs. Harry W. Cox, Limited (Cursitor Street Chancery Lane) show apparatus for *x*-ray work of the type which is now pretty well known, as this firm has supplied apparatus to many hospitals, including the Yeomanry, Welsh, and Scottish National Red Cross Hospitals now in South Africa.

(*To be continued.*)

CORRESPONDENCE.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

SIR,—In consequence of the appearance of an article in the *Times* of July 27th, we, the members of the honorary medical and surgical staff of the National Hospital for the Paralysed and Epileptic, Queen Square, now desire to address you on the crisis in the affairs of our hospital, which has been brought about by the acts of the Board of Management during a number of years.

The relations between the medical staff and the Board of Management have shown increasing signs of strain for several years past, in proportion as the Board has more and more relegated its functions and authority to the hands of a paid official, Mr. Burford Rawlings, who, from the position which he originally occupied as secretary, has been advanced to the dignity of "secretary and general director." Those practically acquainted with hospital affairs will scarcely need to be told that the effect of such an appointment is that, although the management of the hospital may be nominally directed by a Board, the institution is practically, to a great and dangerous extent, in the hands of one man. That the autocracy of the office referred to should be as complete as possible it is enacted in the rules of the hospital that no member of the medical staff shall be allowed to have a seat on the Board. The "secretary and general director" is thus relieved of any inconvenience which might possibly be occasioned by the presence on the Board of persons professionally acquainted with the work and necessities of a medical institution, and able to supply essential information and counsel.

It is not surprising, therefore, that for a number of years the medical staff have found that the administration of the hospital was becoming more and more unsatisfactory. Ten years ago, with the view of remedying this state of things, the medical staff suggested to the Board of Management that two of the medical officers should be annually elected members of the Board (twelve members) as their representatives. This was refused, and various substitutes were proposed by the Board, which have proved failures owing to acts of the Board. The first of these substitute arrangements was summarily terminated in 1893 by a decision of the Board of Management, no reason being assigned.

The last of these arrangements came to an end in 1899, in consequence of a breach of faith on the part of the Board of Management. Since then the medical staff has renewed its claim for direct representation, which the Board has persistently refused, and as a result a state of acute dissension between the two bodies has existed since the early part of last year. In July, 1899, the Chairman of the Distribution Committee of the Hospital Sunday Fund warned the Secretary and General Director that, unless the want of harmony ceased, the customary grant would not be renewed in the following (this) year, at the same time expressing the opinion that the medical staff should be directly represented on the Board of Management. He also instructed the Secretary-Director to communicate these observations of the Committee to the Board of Management. We must here observe that the Secretary-Director, Mr. Burford Rawlings, in reporting to his Board, did not communicate the whole of the instructions he had received from the Chairman of the Sunday Fund Committee, but informed them that the Chairman (Sir Sydney Waterlow) had "confined his observations to an expression of regret that perfect harmony did not exist between the Board and the staff, and the expression of the hope that this state of things would have passed away before next year."

Between the meeting of the Sunday Fund Committee last year and that held on July 19th the medical staff, after further fruitless negotiations with the Board of Management, determined to inform the governors of the hospital not only of the defects of its constitution, but also of certain administrative evils which had resulted therefrom. To this end the medical staff issued to those governors whose names and addresses could be discovered by them a statement and report of the condition of the affairs of the hospital. This report we enclose, together with other documents.

It should be noted that an application by the medical staff for a copy of the official list of the names and addresses of the governors was refused by the Board of Management. The next step was the appointment by the Board of a Subcommittee, consisting of three of their own members, to investigate the grave defects to which their attention had been called and for which they were responsible.

The medical staff naturally at once repudiated such an unsatisfactory inquiry, and urged upon the governors that any Committee of Investigation should be an independent one, and not appointed by the body whose acts were called in question.

The final stage of this dispute was reached at the recent meeting of the Distribution Committee of the Hospital Sunday Fund. The Sunday Fund Committee, bearing in mind their instructions to the Board of Management of last year, issued this year a request to the Board and medical staff respectively to send representatives to their meeting on July 19th.

After hearing both sides the Distribution Committee of the Hospital Sunday Fund adopted the following resolution for submission to their Council:

In consequence of the serious dissensions between the staff and the Board of Management at the National Hospital for the Paralysed and Epileptic, Queen Square, your Committee held a conference at which both were fully represented. After a long discussion it was decided that no award could be recommended until the existing differences had been satisfactorily arranged.

In conclusion, we desire only to reaffirm our view that the affairs of the hospital need a searching inquiry and its constitution thorough reform. We are unanimous in our resolve to put an end to the evils of the present system of administration.—We are, etc.,

J. HUGHLINGS JACKSON, M.D., F.R.S., F.R.C.P.,
THOMAS BUZZARD, M.D., F.R.C.P.,
Consulting Physicians to the Hospital.
R. BRUDENELL CARTER, F.R.C.S.,
Consulting Ophthalmic Surgeon.
H. CHARLTON BASTIAN, M.D., F.R.S., F.R.C.P.,
W. R. GOWERS, M.D., F.R.S., F.R.C.P.,
DAVID FERRIER, M.D., F.R.S., F.R.C.P.,
J. A. ORMEROD, M.D., F.R.C.P.,
Physicians to In-patients.
CHARLES E. BEEVOR, M.D., F.R.C.P.,
HOWARD H. TOOTH, M.D., F.R.C.P.,
JAMES TAYLOR, M.D., F.R.C.P.,
J. S. RISIEN RUSSELL, M.D., F.R.C.P.,
Physicians to Out-patients.
W. ALDREN TURNER, M.D., F.R.C.P.,
FREDERICK E. BATTEN, M.D., M.R.C.P.,
Assistant Physicians.
FELIX SEMON, M.D., F.R.C.P.,
Physician for Diseases of Throat.
VICTOR HORSLEY, F.R.S., F.R.C.S.,
CHARLES A. BALLANCE, F.R.C.S.,
Surgeons.
R. MARCUS GUNN, F.R.C.S.,
Ophthalmic Surgeon.
A. E. CUMBERBATCH, F.R.C.S.,
Aural Surgeon

[The names of absent members have been added by authority.]

July 27th.

UNIVERSITIES AND COLLEGES.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

At the ordinary quarterly comitia of the Fellows, held on July 26th, the President, Dr. W. S. Church, in the chair, the President announced that in accordance with the resolution of the co[illegible] of congratulation, engrossed on vellum and sealed, had been presented by the College to the Royal College [illegible] centenary, and that the same had been received with acclamation. The President further gave notice th[illegible] livered by Dr. Archibald Garrod on [illegible] ments and their Pathological Aspe[illegible] Geo. Sir R. Douglas Powell, M.D., and [illegible] W. A[illegible] dicators of the Weber-Parkes Prize (1902).

Dr. Pavy, F.R.S., was appointed Vicarius for the President during the absence of Dr. Church in South Africa.

Membership.—The following gentlemen, having passed the required examination, were admitted Members of [illegible] A[illegible] Glasg.; N. D. Bardswell, M.D.Edin.; A. J. Cleve[illegible] M[illegible] donne, M.D.Edin.; F. W. Goodbody, M.D.Dub.; F. H. Hawkins, M.D.Edin.

T. D. Lister, M.D.Lond.; W. B. Warde, M.D.Lond.; T. R. C. Whipham, M.A., M.B.Oxon.; O. K. Williamson, M.A., M.B.Camb.

Licences.—Licences to practise Physic were granted to 131 gentlemen. Of these, 22 were granted under regulations dated October 1st, 1884, and one under old regulations previous to that date.

Diplomas in Public Health.—Diplomas in Public Health were granted (conjointly with the Royal College of Surgeons) to the following 16 gentlemen: A. E. Carruthers, W. H. De Wytt, R. A. Dove, L. Falkener, G. H. Graham, G. C. Hancock, J. Harris, A. Kidd, J. S. Low, H. W. G. Macleod, H. M. Page, G. Perkins, T. O'N. Roe, W. Smith, W. H. Wilcox, R. E. Williams.

The following Fellows were elected officers of the College: *Censors:* William Cayley, M.D.; Charles Theodore Williams, M.D.; Sir Dyce Duckworth, M.D.; Thomas Henry Green, M.D. *Treasurer:* Sir Dyce Duckworth, M.D. *Emeritus Registrar:* Sir Henry Alfred Pitman, M.D. *Registrar:* Edward Liveing, M.D. *Harveian Librarian:* Joseph Frank Payne, M.D. *Elected Members of the Library Committee:* Samuel Gee, M.D.; John Wickham Legg, M.D.; George Vivian Poore, M.D.; Norman Moore, M.D. *Curators of the Museum:* William Howship Dickinson, M.D.; Henry Charlton Bastian, M.D.; William Cayley, M.D.; Norman Moore, M.D. *Finance Committee:* Thomas Tillyer Whipham, M.D.; Alfred Lewis Galabin, M.D.; Stephen Mackenzie, M.D. *Examiners: Chemistry and Chemical Physics:* Percy Faraday Frankland, Ph.D., F.R.S.; Frederick Daniel Chattaway, Ph.D., D.Sc.; Arthur Pillans Laurie, D.Sc.; Henry Wilson Hake, Ph.D.; Henry Foster Morley, D.Sc., F.C.S. *Materia Medica and Pharmacy:* Francis Warner, M.D.; William Carter, M.D.; Hector William Gavin Mackenzie, M.D.; Edwin Cooper Perry, M.D.; James Calvert, M.D. *Physiology:* Marcus Seymour Pembrey, M.D.; John Sydney Edkins, M.B.; Robert Arthur Young, M.D. *Anatomy:* George Robertson Turner, F.R.C.S., L.R.C.P.; Alfred William Hughes, M.B., F.R.C.S. *Medical Anatomy and Principles and Practice of Medicine:* Joseph Frank Payne, M.D.; Sir Thomas Lauder Brunton, M.D.; Thomas Barlow, M.D.; Francis de Havilland Hall, M.D.; Herbert Isambard Owen, M.D.; Percy Kidd, M.D.; John Abercrombie, M.D.; Nestor I. C. Tirard, M.D.; Donald MacAlister, M.D.; William Hale White, M.D. *Midwifery and Diseases Peculiar to Women:* Charles James Cullingworth, M.D.; John Phillips, M.D.; Amand J. McConnell Routh, M.D.; C. Montague Handfield-Jones, M.D.; Robert Boxall, M.D. *Public Health:* Part I: James Lane Notter, M.D. Part II: William Henry Corfield, M.D.

Moxon Gold Medal.—This medal, founded in 1886 in memory of the late Dr. Walter Moxon and awarded every third year for distinction in Clinical Medicine, was awarded to Sir William Tennant Gairdner, M.D., K.C.B., F.R.S., Emeritus Professor of Medicine in the University of Glasgow.

University of London.—Upon the nomination of the Council Dr. P. H. Pye-Smith and Dr. W. H. Allchin were elected to be members of the Senate of the University of London.

Communications.—Communications were received (1) from the Secretary of the College of Surgeons reporting certain proceedings of the Council on July 12th; (2) from the Director-General, Medical Department of the Navy, on the registration of volunteers for emergency service as surgeons in the Royal Navy; (3) from the Vice-Chancellor of the University of London, July 6th.

Reports.—A report was received and adopted from the Committee of Management recommending that the following institutions, all of which have been visited by a member of the Committee and reported on favourably, be added to the list of institutions recognised by the Examining Board in England: (*a*) For instruction in chemistry, physics, and practical chemistry—Municipal Technical School, Halifax; Modern School, Bedford. (*b*) For instruction in chemistry, physics, practical chemistry, and biology—Technical College, Huddersfield; Municipal Technical College, Derby. Reports were received and adopted from (1) the representative of the College in the General Medical Council on the proceedings of that Council during its session in May last; (2) from the Fever Hospitals Committee with reference to certain cases of scarlet fever and diphtheria, alleged to have proved sources of infection on returning home. An interim report from the adjudicators of the Weber-Parkes Prize, the quarterly report of the College Finance Committee, and the annual reports of the Library Committee and of the Curators of the Museum were also received and adopted.

Alteration of By-laws.—By-law cxxxiii was amended and re-enacted as follows: "A candidate shall not be admitted to the Second Examination until the expiration of two winter sessions and one summer session (or fifteen months during the ordinary sessions) from the date of registration as a medical student, nor until one year after passing Parts I and III of the First Examination." Upon the motion of the Registrar the following by-law was also enacted for the second time: "That Dr. Fleming Mant Sandwith, resident in Egypt, be admitted a Fellow of the College *in absentid*, any by-law to the contrary notwithstanding."

Presentation of Books.—A list of books presented to the library during the past quarter was read, and the thanks of the College accorded to the donors.

Votes of Thanks.—Upon the motion of the Librarian a special vote of thanks was accorded to the Senior Censor (Dr. Pye-Smith) for his recent gift of a beautiful case for the bestowal of the many valuable manuscripts in the possession of the College. On the motion of Dr. Norman Moore, seconded by the Registrar, the thanks of the College and the sum of 100 guineas were unanimously voted to Dr. W. H. Allchin as a slight acknowledgment of his services during several years as secretary to the University Committee.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on July 25th, Sir William Mac Cormac, Bart., K.C.V.O., President, in the chair.

The late Mr. Storer Bennett.—A vote of condolence was passed relative to the death of Mr. Storer Bennett, who on July 12th had been elected a Member of the Board of Examiners in Dental Surgery. The vacancy in the Board thus occasioned will be filled up at the quarterly Council in October.

University of London.—The Council appointed Mr. H. G. Howse and Mr. Pearce Gould to represent the College upon the Senate of the University, under Section 12 of the Statutes.

MEDICO-LEGAL AND MEDICO-ETHICAL.

MEDICAL ADVERTISING.

WITH reference to the unauthorised publication of handbills in the name of Dr. O'Malley, the Registrar of the Royal College of Physicians of Ireland writes to say that as soon as the attention of the authorities of the College was drawn to the matter by the paragraph in the BRITISH MEDICAL JOURNAL, Dr. O'Malley was asked for an explanation, and the Registrar considers that it would have been better had our correspondents communicated at once directly with the College, which is always ready to do all in its power to check unprofessional conduct upon the part of its licentiates. We are glad to make public acknowledgment of the prompt action of the College, and shall have great pleasure in referring future cases directly to its officers.

REMUNERATION OF *LOCUM TENENS*.

FESTINA LENTE wishes to know what is the usual fee for a *locum tenens*, and whether travelling expenses are usually paid over and above.

*** The remuneration of a *locum tenens* varies considerably with the character of the practice and the amount of the work required. Four guineas per week is a very usual payment, and travelling expenses are frequently claimed over and above, but this is a matter for arrangement.

COMPENSATION FOR DISTURBANCE.

A CORRESPONDENT writes that some three and a-half years ago he built a house in a rising suburb of a large manufacturing town, and there succeeded in getting together a lucrative practice owing to certain natural advantages possessed by the site he selected for his house. The local railway now requires his premises in order to widen their line, and he wishes to know:

1. What general principles should guide him in making a claim for compulsory ejectment?
2. Who is the best person to advise him as to valuation?
3. As there is no other site offering the same advantages for medical practice as his present one, how should the valuation proceed?
4. As the widening of the line by increasing the traffic will probably bring an inferior class of residents into the neighbourhood and diminish the value of property there, can a claim be added on this account?

*** 1. The market value of the premises at the time the railway company takes possession.

2. A local surveyor well acquainted with the value of the property in the neighbourhood.

3. The railway company is obliged to pay a certain percentage over and above the estimated value of the premises on account of the compulsory nature of the sale. This, we believe, is the only compensation our correspondent can claim for the causes he enumerates in 3.

4. No claim can be laid on this account.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HOUSING OF THE WORKING CLASSES ACT, 1890.

R. D. C. asks about the procedure under Section XXXIII of the Housing of the Working Classes Act, 1890—(*a*) As to dwelling-houses dangerous to health by reason of internal dirt and dilapidation and external insanitary surroundings in which the objectionable conditions can be removed; (*b*) as to houses with conditions as in the foregoing but insufficient means of air movement and ventilation, and which it is sought to close absolutely.

*** In both cases, acting under Section XXXII, on receipt of a representation from the medical officer that the dwelling house "is in a state so dangerous or injurious to health as to be unfit for human habitation," the local authority must take proceedings against the owner or occupier for closing the dwelling house under the enactments cited in the third schedule to the Act. These are, in England, outside London: Sections XCI, XCIV, XCV, and XCVII of the Public Health Act, 1875. That is to say, they must give the owner or occupier notice to abate the nuisance. Under ordinary circumstances it is necessary in such a notice to set forthwith in detail the things that require to be done; but Section XXXII, Subsection II, enacts that, for its own purposes, the forms may be those given in the fourth schedule of the Act of 1890. The first of these (Form A) is to the effect simply that the owner or occupier must make the said premises fit for human habitation. Otherwise the procedure is as under the Public Health Act. It is an anomaly that one should require the owner to make habitable a building which cannot be made habitable. But there is no reason why the owner should not have a hint that such is the opinion of the authority, and thus be saved needless expenditure. Any such hint, however, had better not be made in writing. On the hearing of the summons it would be for the court to decide whether the building had been made habitable or not. The Act in this respect is exceedingly unsatisfactory. "R.D.C." should not proceed in the matter without consulting the solicitor to the authority.

MEDICAL NEWS.

A Medical Congress in Chili.—In December of the present year it is proposed to hold a Medical Congress in Santiago, Chili, where the other South American Colonies will be represented by delegates. In connection with the Congress there will be an exhibition of hygiene, which will be opened on December 15th. The organising committee includes some of the most prominent persons in the Republic. There is a prospect of a hygienic museum being established as the outcome of the Congress.

Antirabic Inoculation in Greece.—At a meeting of the Medical Society of Athens on May 10th M. P. S. Pampouk is presented a communication on the treatment of hydrophobia at the Pasteur Institute of Athens. The number of patients who underwent the treatment from the foundation of the Institute in 1894 to the end of 1898 was 1,300. Of these 1,200, or 92.8 per cent., had been bitten by rabid dogs, 58 by cats similarly afflicted, 7 by asses and mules, 4 by pigs, 2 by cows, 2 by wolves, and 1 by a horse. In 18 cases the disease was transmitted by human saliva and in 1 by the bite of a man suffering from hydrophobia.

MEDICAL VACANCIES.

The following vacancies are announced:

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary, £150 per annum, with allowance of £30 for cab hire, and furnished rooms, etc. Applications to the Secretary by August 13th.

BIRMINGHAM WORKHOUSE.—Medical Officer for three weeks. Board, apartments, and laundry found. Applications, stating terms, to the Clerk to the Guardians.

BOURNEMOUTH: BOSCOMBE HOSPITAL.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Secretary by August 13th.

BOURNEMOUTH ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £80 per annum, with board. Applications to the Chairman of the Committee by September 6th.

BRECON INFIRMARY.—Resident House-Surgeon, unmarried. Salary, £100 per annum, with furnished apartments, board, etc. Applications to the Secretary, 6, Bulwark, Brecon.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon. Applications to the Secretary by September 10th.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant House-Surgeon," to the Secretary.

CARDIFF: UNIVERSITY COLLEGE.—(1) Demonstrator and Assistant Lecturer in Anatomy; (2) Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120. Applications to the Secretary by September 8th.

CARLISLE: CUMBERLAND INFIRMARY.—(1) House-Surgeon. Appointment for one year. Salary, £70. (2) Assistant House-Surgeon for seven months. Salary at the rate of £40 per annum. Board, lodging, and washing provided in each case. Applications to the Secretary by August 22nd.

CHORLEY HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board and lodging. Applications to the Honorary Secretary.

CITY OF BOMBAY.—Executive Health Officer. Appointment for five years. Salary, Rs. 1,200 to Rs. 1,500 per month. Applications to Municipal Commissioner for City of Bombay, care of Mr. John Lithiby, Local Government Board Office, Whitehall, S.W., by August 25th.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary, £100 per annum, with board, etc. Applications to the Secretary by September 8th.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer. Salary £120 rising to £150, with board, furnished apartments, etc. Applications to the Medical Superintendent by August 11th.

COUNTY ASYLUM, Dorchester.—Second Assistant Medical Officer, unmarried. Salary, £140 per annum. Applications to Medical Superintendent by August 18th.

DOVER HOSPITAL.—House-Surgeon, unmarried. Salary, £100 per annum, with board, lodging, and washing. Work includes visiting sick poor in their homes. Applications to Honorary Secretary, 13, Castle Street, Dover, by August 9th.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary, £140, rising to £160, per annum, with board, laundry, and attendance. Applications to the Medical Superintendent.

EDINBURGH: VICTORIA HOSPITAL FOR CONSUMPTION.—(1) Resident Physician. Residence, board, and nominal honorarium provided. (2) Non-resident Clinical Assistant. Honorarium, £60 per annum. Applications to the Honorary Secretaries, Messrs. Wallace and Guthrie, W.S., 1, North Charlotte Street, Edinburgh, by August 27th.

GLASGOW: ST. MUNGO'S COLLEGE.—Bellahouston Chair of Anatomy. Emoluments, £300 per annum. Applications to the Secretary, 93, West Regent Street, Glasgow, by August 7th.

GLASGOW UNIVERSITY.—Professor of Clinical Medicine. Salary about £112 and share in fees. Applications to the Secretary of the Glasgow University Court, 91, West Regent Street, Glasgow by September 12th.

GOSFORTH: CITY ASYLUM.—Assistant Medical Officer, unmarried and under 30 years of age. Salary, £130, increasing to £150; knowledge of pathological work preferred. Applications to the Superintendent by August 6th.

GROVE HALL ASYLUM, Bow, E.—Junior Assistant Medical Officer. Salary, £120 per annum, with board, furnished apartments, attendance, and washing. Applications to the Medical Superintendent.

HALIFAX ROYAL INFIRMARY.—(1) Senior House-Surgeon. Salary, £120 per annum. (2) Second House-Surgeon. Salary, £100 per annum. (3) Third House-Surgeon. Salary, £80 per annum. Candidates must be unmarried. Residence, board, and washing provided in each case. Applications to the Secretary by August 8th.

HAMPSTEAD HOSPITAL, N.W.—Resident Medical Officer. Salary at the rate of £120 per annum, with rooms, coals, and gas. Applications to the Honorary Secretary by September 10th.

IPSWICH: EAST SUFFOLK AND IPSWICH HOSPITAL.—Second House-Surgeon, unmarried. Salary, £60 per annum, with board, lodging, and washing. Applications to the Secretary by August 7th.

LONDONDERRY COUNTY BOROUGH.—Medical Superintending Officer of Health and Medical Attendant at Foyle Hill Infectious Disease Hospital. Salary, £350 per annum. Applications to the Town Clerk, Guildhall, Londonderry, by August 14th.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship. Appointment for six months. Honorarium, £10 10s. Applications to the Secretary by August 14th.

MANCHESTER, HULME DISPENSARY, Dale Street.—Honorary Surgeon. Applications to the Honorary Secretary, Medical Committee by August 18th.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—Resident Medical Officer. Salary, £120 per annum, with board, residence, and washing. Applications to the Secretary at the City Office, 27, Clement's Lane, E.C., by August 6th.

NOTTINGHAM CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing. Applications to the Medical Superintendent.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Unmarried. Salary, £140 per annum, with all found except board. Applications to the Secretary.

OLDHAM INFIRMARY.—Junior House-Surgeon. Salary, £75 per annum, with board residence, and washing. Applications to the Honorary Secretary by August 6th.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—House-Surgeon. Salary at the rate of 50 guineas a year, with board and residence. Applications to the Secretary by August 18th.

ROCHESTER: ST. BARTHOLOMEW'S HOSPITAL.—Assistant House-Surgeon. Salary, £100 per annum, with board, apartments, etc. Applications, marked "Application for Assistant House-Surgeon," to the Clerk to the Trustees by August 7th.

ROTHERHAM HOSPITAL.—Senior House-Surgeon. Salary, £165, all found. Candidates should have ophthalmic experience. Applications to Mr. E. S. Bayliss, Moorgate, Rotherham, by August 2nd.

ROYAL HANTS COUNTY HOSPITAL, Winchester.—House-Physician, unmarried. Salary, £65 per annum, with board, residence, etc. Applications to Secretary by August 24th.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Clinical Assistant. Salary, £40, with board and residence. Applications to the Secretary, 34, Craven Street, Strand, W.C.

SHEFFIELD INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer. Salary, £120 per annum, with board, lodging, and attendance. Applications, endorsed "Assistant Medical Officer," to the Town Clerk, Town Hall, Sheffield, by August 9th.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House-Surgeon. Salary, £70 per annum, with board, lodging, and washing. Applications, addressed to the Medical Staff of the Royal Infirmary, care of the Secretary, by August 13th.

SOUTHPORT INFIRMARY.—Resident Junior House-Surgeon and Visiting Surgeon. Appointment for six months, but renewable. Honorarium at the rate of £50 per annum, with residence, board and washing. Applications to Mr. Joseph Worrall, Infirmary Office, 24, King Street, Southport, by August 11th.

SURREY DISPENSARY, Great Dover Street, Southwark.—Resident Medical Officer. Applications to Secretary, 53, Borough High Street, Southwark, S.E.

WEST BROMWICH DISTRICT HOSPITAL.—House-Surgeon, unmarried. Salary, £100 per annum, with board, residence, and washing. Applications to the Secretary.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary, £130 a year, rising to £160, with board, residence, attendance, and washing. Applications to the Medical Superintendent by August 9th.

WISBECH: NORTH CAMBS. HOSPITAL.—Resident House-Surgeon. Salary, £130 per annum, with furnished house. Applications to the Honorary Secretary by August 9th.

MEDICAL APPOINTMENTS.

BINNEY, E. M.B., appointed Surgeon to the Children's Hospital, Glebe, Sydney.

DE MARCO, Emilio, M.D., appointed Government Medical Officer and Public Vaccinator at Coolah, New South Wales.

EMMETT, Richard, L.R.C.P.Lond., M.R.C.S.Eng., appointed Certifying Factory Surgeon for the County Borough of Portsmouth and the Civil Parish of Cosham.

ENSOR, Henry Collen, M.R.C.S., appointed Ophthalmic Surgeon to the Cardiff Provident Dispensary and to the Cardiff Infirmary.

FLASHMAN, J. F., M.D., appointed Pathologist in the Lunacy Department, New South Wales.

FLEMING, H. H., M.D., appointed Health Officer for the Shire of Kara Kara, Victoria.

FOX, Hugh Clayton, M.R.C.S.Eng., L.S.A., appointed Assistant Registrar to the London Throat, Nose, and Ear Hospital.

FOX, R. A., M.B., appointed Junior Medical Officer in the Lunacy Department, New South Wales.

GOTT, J., L.S.A., appointed Certifying Factory Surgeon for the Ringwood Rural District.

HANLY, T. F., L.R.C.P., L.R.C.S.Edin., appointed Certifying Factory Surgeon for the Gillingham District of Dorset.

HERBERT, A. W. C., L.S.A., appointed Certifying Factory Surgeon for the Southwold District.

KUIPERS, J. C., M.D., appointed Health Officer at Eidsvold, Queensland.

MILES, Alexander, F.R.C.S.Edin., appointed Lecturer on Surgery in the Medical College for Women, Edinburgh.

NAYLOR, R. G., L.R.C.P., appointed Health Officer for the Borough of Browns and Scarsdale and Borough of Smythesdale, *vice* Lionel N. Hoysted, M.R.C.S., resigned.

NOLAN, J. A., M.R.C.S.Eng., L.R.C.P.Edin., appointed District Surgeon, Camperdown, Natal, South Africa.

ORCHARD, W. H., M.B., appointed Health Officer and Public Vaccinator for Port Fairy, Victoria.

PEREIRA, D. E., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., appointed House-Surgeon to the Italian Hospital, Queen Square, W.C.

RIMELL, A. T., L.R.C.P.Edin., M.R.C.S.Eng., appointed Certifying Factory Surgeon for the Long Sutton District of Lincolnshire.

SCATCHARD, J. P., M.B., B.S.Lond., appointed Certifying Factory Surgeon for the Tadcaster District of the West Riding of Yorkshire.

SMITH, E. G., L.R.C.P.I., L.S.A., appointed Certifying Factory Surgeon for the Walton-on-Naze District of Essex.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

COPEMAN.—On the 29th July, 1900, at Wakehurst Place, Sussex, the wife of Sydney Monckton Copeman, M.D., F.R.C.P., of a son.

PENN-MILTON.—On July 24th, at 13, North Parade, Penzance, the wife of J. Penn-Milton, M.R.C.S.Eng., L.R.C.P.Lond., of a son.

MARRIAGES.

EDWARDS—JACKSON.—On the 31st July, at the Parish Church, Reigate, by the Rev. A. A. Gibson, M.A., uncle of the bride, Francis Henry Edwards, M.D., M.R.C.P., to Eleanor Margaret (Daisy), younger daughter of George Jackson, Cherchefelle, Reigate. At home the first three Wednesdays in October.

MADDEN-COX.—On Wednesday, July 25th, at All Saints, Margaret Street, London, W., by the Rev. S. R. Reynolds, uncle of the bride, assisted by the Vicar, the Rev. A. Whitworth, Frank Cole Madden, M.B., B.S.Melb., F.R.C.S., of Cairo, second son of Mr. D. A. Madden, of Melbourne, Victoria, to Madeline Alice, second daughter of Dr. William Cox, Wincheombe, Gloucestershire.

DEATH.

STEELE.—On July 25th, at Byford House, York Road, Southend-on-Sea, Ernest A. T. Steele, M.R.C.S., L.R.C.P., aged 31, Surgeon to St. Mary's Hospital for Children Plaistow, E.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

O. R. L. asks where the "Osborne" military stretcher can be obtained in this country.

X. Y. Z. asks to be referred to any experiments bearing on the changes in the cortical nerve cell after cutting off the blood supply.

P. S. writes: Is there any efficient means of protection against the "harvest bug" (leptus autumnalis) which at this season of the year is a terrible nuisance in some parts of the country, both to visitors and natives?

DR. F. SMITH (Hove) writes: Could any of my professional brethren, readers of the BRITISH MEDICAL JOURNAL, tell me of a relief (if a cure is not attainable) for corns on the sole of the foot bad enough to cripple me? I have tried advertised remedies and bunion plaisters, but am rendered hardly able to walk.

J. W. G. asks for information on the following points:—(1) When does skating and tobogganing commence at Davos? (2) Would middle of November be too soon to go there? (3) Cost of living in winter and railway fare. (4) Any other particulars as regards clothing, etc., for a healthy man wanting a holiday.

D. E. B. asks for advice in the treatment of a woman, well nourished and healthy, aged about 34, who has a brownish discoloration of the backs of both hands, with whitish patches (healthy skin presumably) between. The patches came last summer, but are not sunburns altogether. A woman, aged 58, in the same parish has large brown discoloration on the hands, arms, and face, with normal skin between.

CARIES, who has been operated on for lumbar abscess, wishes if possible to winter in some dry climate with an equable temperature so that he can be out in the open air as much as possible. He thinks it possible that some readers could suggest a suitable place at home or abroad (and, if possible, his wife and two little ones) to winter at. His very slender income owing to his illness (about £150 per annum) precludes many places.

ANSWERS.

FORCEPS.—Abortion is not legally practised either in France or in America.

IGNORAMUS.—It would not be correct for a qualified medical man to administer an anæsthetic in the circumstances stated.

C. B.—A British double qualification gives no legal right to practise medicine in Geneva. A Swiss diploma must be obtained by passing the Federal examination. This can be done at Geneva or Lausanne in French, or at Basel, Zürich, or Bern in German.

NOTES, LETTERS, Etc.

A NOTE OF WARNING.

A CORRESPONDENT calls attention to the necessity of caution in the purchase of books from travellers for publishers. It appears that our correspondent ordered from one of these *soi-disant* travellers a book on bacteriology. The book was delivered, and subsequently the traveller called for payment, and gave a receipt on a slip which he attached to the invoice. The publishers soon after applied for payment, and on the receipt given by the traveller being sent, the firm replied that it was not signed by one of their accredited representatives, and repeated their claim. The amount was accordingly remitted, and our correspondent requested that the publishers should warn medical men through the press that though willing to execute the orders of casual travellers, payment must be made only to the firm.

EPIDEMIC DIARRHŒA.

DR. C. STUART VINES (Newport) writes: Dr. Ashby, M.O.H., has rather missed my point, which was this: Are cholera nostras and cholera infantum to be regarded as the same disease as epidemic diarrhœa? I find that they are so regarded by Stevenson and Murphy in their *Treatise on Hygiene*. On the other hand, the College of Physicians says that cholera nostras and epidemic diarrhœa are two distinct specific diseases. If so, with which of these two is cholera infantum synonymous?

THE PREVENTION OF HEAT EXHAUSTION.

DR. RONALD DANIEL (Ravenscourt Park, W.) writes: Dr. Pernet has touched upon an important point in relation to the above, for undoubtedly a lack of fluid engenders a quicker collapse. Tea, from its mildly stimulating effects, is certainly preferable to water, but with a rapid nitrogenous waste a "refresher" more sustaining is more satisfactory if obtainable. With a somewhat large experience amongst athletes, I find that a couple of teaspoonfuls of a reliable meat extract, such as invalid bovril (previously dissolved in hot water), some crushed ice, and a Schweppe's soda, flavoured if desired with a little lime juice, constitutes a beverage which is palatable, invigorating, and lasting in its effects. Though hardly applicable, without some modification, to field days at Aldershot, the above or something similar will be found an excellent restorative in the exhaustion attending the labours of the hard-worked practitioners during the present sultry weather.

PREVENTION OF LACERATION OF THE PERINEUM.

MR. HERBERT THOMPSON, M.R.C.S. (Sevenoaks) writes: I have been much interested in the discussion on laceration of the perineum. I am afraid I shall be accused of "meddlesome midwifery" when I say that, as the result of upwards of thirty-five years' practice, I have become very strongly convinced that many a primiparous perineum may be saved by the early and judicious use of the forceps. To my mind the perineum which is most liable to laceration is that which has been for hours and hours subjected to the pressure of the fœtal head. I, of course, do not say that the forceps is to be used indiscriminately; but every doctor of experience knows when the conditions are favourable for their application, and when such conditions exist the use of them will not only save the perineum, but will also save the patient from many hours of unnecessary suffering. I have many a time been astonished at the wonderful elasticity of the perineum in primiparæ, and at the ease with which it slides without laceration over the head when drawn downwards and forwards by the forceps. I may say that I have only once had to stitch a perineum, and that was in a case in which the use of forceps became necessary after a protracted labour.

THE BITTER CRY OF THE EXAMINEE.

DR. ANDREW CROLL (Handsworth) writes: It is a pity that "Victim" does not name the hospital where such a method of applying forceps in occipito-posterior positions of the vertex is in vogue. "Victim" will soon find out, after some practical experience, that when he has made up his mind that forceps are required in such a case he will apply them in the same way as in occipito anterior positions. The application of forceps is to be deferred so long as the occiput looks backward, and an endeavour made to rotate it forwards by the vectis. When the occiput remains backward forceps are only to be applied when the condition of the mother makes their application imperative, and when there is no chance of rotation taking place, as in occipito-posterior positions there is greater risk of lacerating the perineum. This is, I think, what Galabin teaches, and "Victim" will find it sufficient for the most fastidious examiner.

ACADEMIC COSTUME.

DR. JOS. WM. GILL (Liskeard) writes: I should think "Antihumbug," who appears to have so little regard for clothes, robes, or attire of any sort, might well remain content to wear his nightgown during the day as well as night. Pyjamas would perhaps be a little more respectable, but even this savours too much of a distinctive class. Let him enjoy his opinion, and appear on all occasions in his nightgown or shirtsleeves, and possibly he may convert a large section of the community. I now confidently assert that "Antihumbug" does not fully appreciate the subject he has in hand, and I also say that it is a good thing for members of the profession to have the option of wearing academic costume if they feel inclined. If it adds dignity to the learned judge to wear a wig, or a Master of Arts to wear his hood and gown on suitable occasions, I maintain that members of the medical profession need not be ashamed to don their robes when occasion requires.

LETTERS, COMMUNICATIONS, ETC., have been received from

B Mr. E. Bromhall, Rawtenstall; Dr. W. A. Brailey, London; Dr. W. Berry, Wigan; Messrs. W. H. Bailey and Son, London; W. C. Bluck, M.B., Southend. **C** W. Colquhoun, M.B., Glasgow; Dr. J. Craig, Dublin; Dr. E. O. Croft, Leeds; Cyclops; A. Croll, M.B., Birmingham; Mr. W. R. E. Coles, London; C. B. **D** Messrs. Down Brothers, London; Mr. P. H. Day, Stalmine; Dr. L. Durno, London. **E** Mr. J. Ellerton, Leamington; Mr. F. Edmunds, Chesterfield; Messrs. Evans, Lescher, and Webb, London. **F** Mr. R. Foskett, London; Forceps; Far Away. **G** P. R. Griffiths, M.B., Cardiff; Mr. J. W. Gill, Liskeard. **H** Mr. J. A. Hartnell, Leicester; Hard Facts; Dr. J. Highet, Workington. **I** Ignoramus. **J** Dr. J. H. Jackson, London; J. W. G. **K** E. Kingscote, M.B., London; Mr. S. K. N. Kabraji, Bombay; L. Knuthsen, M.B., Plymouth. **L** Messrs. Lamplugh and Co., London; Dr. J. M. Littlejohn, Ipswich; E. H. Lendon, M.B., London. **M** S. K. Mullick, M.B., London; Mr. J. H. Montague, London; Dr. R. W. Marsden, Newton Heath; Madrasi; Mr. A. Macpherson, Middlesbrough. **O** Mr. W. F. Offord, Cambridge. **P** Dr. G. C. Purvis, Grahamstown; Proper Place; Dr. P. H. Pye-Smith, London. **R** J. L. Roberts, M.B., Denbigh. **S** Messrs. Street and Co., London; Mr. W. L. Symes, London; Dr. S. Spicer, London; Miss M. S. P. Strangman, London; Dr. S. Stephenson, London; W. G. Spencer, M.B., London; Dr. W. J. Smyly, Dublin; Mr. J. Smith, Hove. **T** Dr. J. C. Thresh, Chelmsford; Thirty Years' Service. **U** Unemployed. **V** Vigilans. **W** Mr. S. Wilks, London; Mr. H. de C. Woodcock, Leeds; Dr. J. S. Wallace, Kingston-on-Thames. **X** X. Y. Z., etc.

BOOKS, ETC., RECEIVED.

La Constipation Habituelle, son Traitement. Par G. Herschell, M.D. Traduit de la 2e Edition Anglaise par M. Cohendy. Paris: O. Doin. 1900.

A Practical Treatise on Sexual Disorders of the Male and Female. By R. W. Taylor, A.M., M.D. Second Edition. London: Henry Kimpton. 1900.

Paton's List of Schools and Tutors. Third Annual Edition. 1900. London: J. and J. Paton. 1s.

Handy Newspaper List, 1900. London: C. and E. Layton. 6d.

The Pathogenesis and Treatment of Cancer without Operation. By R. Bell, M.D., F.F.P.S. Glasgow: R. L. Holmes. 1900.

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ADDRESS IN OBSTETRICS

BY

WILLIAM J. SMYLY, M.D., F.R.C.P.I.,

Vice-President of the Royal College of Physicians in Ireland; Gynæcologist to the Adelaide Hospital, Dublin.

At the Annual Meeting of the British Medical Association at Ipswich, July-August, 1900.

THE MATERNAL MORTALITY IN CHILDBED.

As the century draws to its close a retrospect is not only excusable but advisable. At such a time we naturally pause to consider the way we have come, how we differ from our predecessors, and what we have gained in these hundred eventful years. Periodical literature is full of such retrospects: our modes of life; the discoveries of science; means of locomotion; and methods of warfare, are contrasted with those of 1800, and the verdict is that in the present century a greater advance has been achieved than in all that preceded it. Medicine and surgery have shared to the full in the advances of this wonderful age; and it now falls to my lot to show how midwifery has participated in the general improvement.

In considering the history of midwifery many subjects suggest themselves which would offer ample material for an address in obstetrics.

The struggle between science and nescience, as represented by medical practitioners and midwives, commenced in the sixteenth century, was fought in every civilised country with varying fortune, and continues in our own time to be a burning question.

The contest between Radicals and Conservatives, or those who incline to operative interference and those who rely more exclusively on Nature, are as fully represented amongst us here to-day as they were in the days of Levret and Smellie, of Boër and Osiander.

The rise and fall of lying-in hospitals, their almost total extincton and resuscitation in our own time, has no parallel in medical history. To have closed these institutions would have been the sealing of the fountain of knowledge at its very source, yet few could deny that Simpson was actuated by the highest motives of humanity in the campaign which he carried on against them.

The development of obstetrical literature, the origin and development of obstetrical and gynæcological societies, national associations, and international congresses, each and all of these would have offered ample material. I have preferred, however, a subject much more familiar, and often dealt with, but at the same time of much greater importance than any other that could be chosen, namely, the maternal mortality in childbed.

The Failures of the Earlier Part of the Century.

The history of midwifery is a long one, extending back to the earliest times. The Hebrew scriptures abound in obstetrics, and midwives as a class are distinctly mentioned therein. A knowledge of the art existed amongst the Indians, Greeks, and Romans, and later amongst the Arabians, but scientific midwifery may be said to have commenced with Ambroise Paré in the sixteenth century. During the intervening years up to the present time it has been advanced by ardent and zealous investigators, many of whose names can never be forgotten—Mauriceau, Deventer, the Chamberlens, Levret, Baudelocque, Sir Fielding Ould, Smellie, William Hunter, Boër, Naegele, the Ramsbothams, Sir James Simpson, Mathews Duncan, Robert Barnes, and a host of others too numerous to mention. But in considering the improvement in the death-rate in childbed we need not go back many years. It did not take place gradually as the light of science slowly dawned upon our art, but occurred suddenly in the seventh decade of the present century. The observers of the past pursued their object in the face of failure little short of disaster; their zeal and perseverance were not rewarded by success, but, on the contrary, the more famous the professor the wider his field of observation, the greater his industry and the more searching his investigations, the worse were his results. In the first half of the present century the mortality amongst parturient women, especially in hospitals, was probably greater than in any other period of the world's history.

The Decline of Mortality in Lying-in Hospitals.

Towards the close of the Seventies, however, a sudden and salutary change took place. In the Paris Maternity, for example, the mortality dropped in one year from 8 per cent. to 4 per cent., and in 1881 to 1 per cent., and has since improved, and in all the hospitals of Europe a similar change occurred. As to private practice, however, I am not able to give any facts founded upon reliable statistics. Dr. Mathews Duncan in his monograph on mortality in childbed published in 1870 deliberately stated that "all attempts at ascertaining scientifically the mortality in childbed must be given up." Dr. McClintock also said about the same time: "With our great registering machinery all at work we cannot find out what is the mortality of childbed in London. For my part I think that obstetrical common sense will be well contented if the true childbed mortality of modern London is at all less than in London of 1660. It is very doubtful if it is even now as low as 1 in 107."

Mathews Duncan after careful investigation agreed with McClintock that the mortality in private practice was not less than 1 in 120. His own results were 1 in 105, McClintock's 1 in 108, Dr. Churchill's 1 in 159. In the face of such results in the hands of the best men it is idle to talk of the general mortality having been at that time 19 per 10,000. In comparing the results, therefore, of modern with ancient practice, we must confine ourselves to hospital statistics, and I have no doubt that the results in private practice are a faithful reflection, perhaps some years later, of the teaching in those institutions.

Statistics of the Rotunda Hospital.

I will take as an example for the purpose of contrasting the results obtained in the Rotunda Hospital during Dr. Johnston's Mastership, 1870-1876, and the seven years, 1890-1896. I have chosen Dr. Johnston's report because it was the period immediately preceding the introduction of antiseptics, and because his results were considered at the time to have been remarkably good. During the first period (1870-1876) 8,092 women were delivered in the hospital, of whom 169 died, or 1 in 45.5. During the second period (1890-1896) 9 085, with 50 deaths, or 1 in 181.7; showing a saving of about 200 maternal lives in every 10,000 deliveries.

If we adopt the classification of the Registrar-General the deaths appear as due to:

	1870-1876.	1890-1896.
1. Septic infection	89.1 in 90.9	10.1 in 908.5
2. Accidents of childbirth	46.1 in 176	24.1 in 378
3. Unconnected with childbirth ...	34.1 in 238	16.1 in 568

Similar results are shown by hospitals generally. It is evident, therefore, that in hospitals at least a marked improvement has taken place during the past quarter of the century in all the three groups: death from puerperal fever, accidents of labour, and other causes.

Puerperal Fever or Septic Infection.

The greatest improvement is observable in this group, and I shall offer no apology for dwelling at length upon the way in which it has been brought about.

In the beginning of the century obstetricians were ignorant of the nature of this, the chief cause of childbed mortality, and were helpless either to prevent or cure it. Epidemics became more frequent and more virulent; and obstetricians endeavoured by clinical observation and *post-mortem* examination to discover its nature; but unfortunately both these roads to knowledge were pursued by the same individuals, and with disastrous results. In Paris, Cruveilhier, the most illustrious of French pathologists, was appointed Physician to the Maternity; he multiplied his researches, and at the same

time the mortality in that institution increased. Little of value was added to our knowledge by these investigations, and even in 1872 Dr. Churchill reflected the general ignorance when he published in the sixth edition of his well-known work his opinion that puerperal fever was due to mental emotion, cold, putrefaction of portions of retained placenta, gastro-enteric irritation, the state of the atmosphere, epidemic influences, and contagion. With regard to the latter he felt compelled, by the evidence, to admit the possibility of its being conveyed and communicated or excited by those who had attended midwifery cases after being employed in dissection or *post-mortem* examination, or who were much in contact with fever patients, but in all other cases he attributed its occurrence to epidemic influence.

It is pleasant to turn from this general ignorance, and mark the first beams of the dawning day.

Dr. White of Manchester.

Towards the end of the last century a remarkable work on the management of pregnant and lying-in women was published by Dr. White, a surgeon practising in Manchester. In that work, published in 1791, he attributed puerperal fever to the absorption of putrid matter by the lymphatics and vessels of the womb. To this conclusion he arrived by observing the similarity, in causation and symptoms, to putrefactions occurring in other parts of the body. In chronic abscess, for example, dangerous symptoms, similar to those of puerperal fever, set in after it had been opened and the air had gained admission; so also in childbed, fever did not occur until after the child was born. He further observed that when a putrid wound was cleansed, the symptoms abated; and that where the disease was so situated that it could be removed by amputation they entirely disappeared—and from this he concluded that absorption of putrid matter was the cause of puerperal fever.

His treatment was therefore directed towards the prevention of putrefaction and elimination of putrid matter should it have already formed. To these ends he advocated thorough ventilation, cleanliness, and drainage. Foul stagnated air, human effluvia, heat and moisture, were to be avoided. Free and even cold air should pervade the apartment, and clean linen be supplied every day. The lochia, if permitted to stagnate in the vagina, would soon become putrid, for, he said, it is well known that the mildest humours in the human body, if suffered to stagnate, become acrid as soon as the air has access to them. He therefore encouraged his patients to sit up several times a day, and even to leave their beds, so as to prevent a lodging of offending matter either in the vagina, uterus, intestines, or bladder. Perhaps the most remarkable statement in this work is the following: "I must not omit to mention," he says, "the good effects I have experienced from emollient or antiseptic injections into the uterus by means of a large ivory syringe or an elastic vegetable bottle in those cases where the lochia have become acrid or putrid, and by being absorbed into the circulation have served as a constant fomes to the disease. I have by this means known the fever much assuaged, and in many cases wholly extinguished, for though the quantity of the lochia is not to be much regarded, the quality of this discharge is a matter of infinite importance." One cannot but wonder at White's independence of opinion and the general correctness of his views. He was only a provincial surgeon, yet he did not shrink from stigmatising the teaching of the obstetric world of his day "as a set of pernicious maxims and opinions, built upon ignorance, and supported by prejudice and obstinacy." With truth he declared that the slightest remark drawn from real observation is of more utility than the most extensive theory of causes drawn from hypothesis alone. Ignorance, prejudice, obstinacy! these were the forces against which he combated, and, alas! in vain, nor for fifty years after did another champion take the field against them, to perish in the encounter.

Ignaz Philipp Semmelweis.

That champion was Ignaz Philipp Semmelweis. With what feelings of regret and shame should we recall his name! Not long ago obstetricians in every land combined to raise a memorial to it. But during his sad life no such recognition of his virtues smoothed his thorny road. Of us it may well be said, "Your fathers killed the prophets, and ye build their sepulchres." Had they but learned of him, instead of ridiculing, opposing, and neglecting him, how different would have been the history of obstetrics in the past half century! Obstetricians would have led the van, and have taught the surgeons antiseptic methods; but the contrary has been the case, and surgeons have taught us what Semmelweis strove to teach our fathers twenty years before. What an amount of human life would have thus been saved, what untold anguish and remorse might there have been avoided; but ignorance, prejudice, and obstinacy prevailed.

In 1846 Semmelweis, a young man of 28, was appointed assistant to Professor Klein in the maternity department of the Vienna Hospital. Not only was his sensitive nature shocked by the fearful mortality which prevailed in the department attended by the students, but his observant mind was also struck by the more favourable results obtained in the neighbouring department reserved for the instruction of pupil midwives. Reviewing the history of the institution, he found that from 1784 to 1822 the physicians connected with it performed no *post-mortem* examinations, and that the average mortality during that period was 1.25 per cent.; from 1825 to 1833 *post-mortem* examinations were made, and the mortality increased to 5.3 per cent. In 1839 the clinic was divided into two departments, and the second was reserved for pupil midwives; the mortality in it fell at once to 2.6 per cent., whilst in the other, where the students attended, it increased to 9.5 per cent., and this proportion remained the same for the five succeeding years, excepting the years 1841-43, when during an epidemic of twenty months' duration the mortality in the first department averaged 16 per cent., and at one time rose even to 31.3 per cent. At the *post-mortem* examination of his colleague Kollitshka, who died of septic poisoning, Semmelweis was so struck by the similarity between the appearances in that case, and in the patients who died from puerperal fever, that he concluded that the cause must be the same in both—namely, an infection from without, due to the transportation of cadaveric poison by the fingers of the attendants, and he directed that before attending lying-in women they should wash their hands in a solution of chloride of lime. The mortality at once sank to 3.05 per cent. Subsequently, however, he formed the opinion that any organic substance in course of putrefaction, and especially the discharges of women with septic diseases; and even air charged with putrefactive matter might cause fever; and from this time the hands were disinfected in every case, as well as instruments, and the materials used in cleansing the patients, and the sick were separated from the healthy. The mortality fell to 1.27 per cent. Having been defeated, by the intrigues of his colleagues, whose animosity he had aroused, in his candidature for a professorship in Vienna, he went to Buda Pesth, where he filled the office of Senior Physician to the Rochus Hospital for a period of six years, and under his administration the mortality in that institution averaged only 0.85 per cent. Having again been unsuccessful in his candidature for the Professorship in Prague, he retired from practice and devoted his energies to publishing his great discovery in a work on the *Nature and Prophylaxis of Puerperal Infection*.

The story of Archimedes springing from his bath and rushing forth shouting "Eureka, eureka!" is a comedy in science, but the history of this man urging his great discovery upon those who received it with indifference or hostility and ridicule; stopping the passers in the streets to impress on them the importance of life-saving truths which they would not receive—this forms a tragedy fit to make the angels weep. In these endeavours he fretted and fumed his life away, until at last reason departed and he was consigned to the lunatic asylum in Vienna, where four years later he died from septic poisoning, that very disease which he spent his life in combating. Semmelweis discovered the same truth as White had done fifty years before that putrefaction was the cause of puerperal fever, but he added another and much more important one, namely, that the disease could be conveyed to the patient by her attendants. These two methods he termed auto- and hetero-infection.

Antiseptics.

Long before Semmelweis fretted himself into insanity he might have discovered, had he had patience to observe it, that the seed he was sowing had already taken root and would soon

bear abundant fruit. Michaelis and Lange had adopted his views with success. Simpson warmly advocated them in this country and pointed out their applicability to operative surgery. The wonderful discoveries of Pasteur were published two years before his death, and these discoveries not only confirmed his views, but placed them upon a firm scientific footing. Lister was already in the field in 1864 and astonished the world by the wonders of antiseptic surgery. But it was not until 1870 that antiseptic principles were applied to obstetric practice, and practically banished puerperal fever from our hospitals. Stadfeld, Bishoff, Fritsch, Schroeder, Breisky, Lucas-Championnière were the pioneers in this movement. At first Listerian methods were closely followed, but not only was the original system too cumbrous for general practice, but it was soon discovered that many of its details might with advantage be abandoned.

The Douche

The spray was replaced by the douche, and the vagina was douched with antiseptic fluids before and after every labour. Soon the uterus was also included in the process and prophylactic douching reached its climax when permanent irrigation or instillation was introduced by Schücking. Soon, however, serious accidents and even deaths, the result of the douche, began to multiply. These were due to injection of air and antiseptic fluids into the veins. In some cases the uterus was perforated and poisonous fluids injected into the peritoneal cavity, but, worst of all, the douche proved to be a cause of the very disease which it was intended to prevent. Runge described an epidemic in the Charité Hospital, Berlin, in which the mortality remained at 3 8 per cent. so long as prophylactic douching was employed, but immediately sank to 0 39 per cent. upon its abandonment. Breisky reported a similar experience. In a series of papers in the *Archiv für Gynæcologie* Professor Leopold clearly showed that by thoroughly disinfecting the external parts and avoiding unnecessary examinations far better results were obtainable than by prophylactic douching. In 1888, however, in consequence of the results of bacteriological examination of vaginal discharges he returned to vaginal douching; immediately the morbidity increased by 3 per cent. The next year he again gave up the irrigator, and this was followed by an improvement of 9 per cent. I need hardly explain that by morbidity is meant a rise of temperature even once to 100.4° F. The whole question of the value of prophylactic douching—and it can hardly be said to have been finally settled even yet, for many leading obstetricians both in this country and abroad still resort to it—resolves itself into the probability or even possibility of auto-infection. That the vaginal discharge often contains germs, many of which are apparently septic or saprophytic, is undeniable, but are these germs really dangerous to the patient, and can they be removed by antiseptic measures? These are the two important questions. In 1888, Winter examined the discharge in twenty women, and found twenty-seven varieties of micro-organisms. In 50 per cent. of these women he found streptococci and various saprophytes, though in an attenuated condition. In 1890 Streffeck made a similar series of examinations, and found pathological organisms in nearly the same proportion of cases. He therefore advocated vaginal douching. Döderlein's investigations in the same direction led him to classify discharges as normal and pathological. The normal were of a creamy consistence, intensely acid in reaction, and contained usually a pure culture of an organism which he named the vaginal bacillus, and to which he attributed the acidity of the discharge. The pathological discharge was of thinner consistence, often puriform in appearance, was feebly acid neutral or even alkaline in reaction, and contained a great variety of micro-organisms, some of which were dangerous. The normal discharge he discovered to be not only innocuous but actually antiseptic. He injected into the vagina of a virgin a culture of staphylococcus, and found that in the course of forty-eight hours this organism had entirely disappeared. From these and other experiments he concluded that where the discharge was normal vaginal douching was unnecessary, but on the contrary where it was pathological, a thorough disinfection of the canal was imperative. Döderlein's investigations were repeated in the same clinic in Leipzig by Krönig. In 56 8 per cent. he found the discharge normal, in 43.2 pathological; but in none of these was it either neutral or alkaline in reaction. He agreed with Döderlein as to the antiseptic properties of the normal discharge, but denied that it was due to the vaginal bacillus, and found on the contrary that the so-called pathological discharges which did not contain the bacillus also possessed a similar bactericidal property. He injected cultures of the bacillus pyocyaneus, staphylococcus doré, and even streptococcus pyogenes into the vagina, and found that they were all eliminated within twenty-four hours. A most important observation with regard to douching was that in cases in which, after injecting the micro-organisms, he at once thoroughly scrubbed out the vagina with a 1 per cent. solution of corrosive sublimate or lysol, they had not entirely disappeared at the end of 36 hours. The douche, therefore, not only failed to dislodge them, but so altered or removed the natural discharges, that for at least 12 hours the normal bactericidal action of the vagina was annihilated. The result of these investigations was that vaginal prophylactic douching was altogether abolished in the Leipzig Hospital, with the result that morbidity was thereby reduced 10 per cent.; the gravity also of the infected cases was less; so that the number of women who were detained in the hospital beyond the tenth day was reduced by one half. Some of the most distinguished French accoucheurs, whilst admitting the importance of the facts I have mentioned, still adhere to the prophylactic douche, and with good results, but at the same time they point out the absolute necessity for observing perfect asepsis; the external parts of the patient, the hands of the operator, instruments, and even the water must be absolutely pure. When we remember, however, that this operation, if carried out two or three times every day must necessarily be entrusted to a nurse, I have no hesitation in saying that the preservation of perfect asepsis, or anything approaching it, will be found in general practice to be absolutely impossible. Where are such nurses to be found? In these countries they are certainly rare, and from personal experience I feel certain that routine douching has been productive of much more harm than good.

The Hands of the Attendant.

We now come to the attendant, and our attention may be concentrated upon his hands. The teaching of Semmelweis and Sir James Simpson that infection is carried chiefly by the hands of attendants is now the generally accepted opinion. If I were to state that where there had been no handling there would be no septic infection I should not be very far from the truth. Leopold has clearly proved that patients who deliver themselves without any vaginal interference make a better convalescence than those who have been examined even with the most scrupulous antiseptic precautions. Experience therefore proves—what bacteriological investigation would lead us to expect—that an absolutely aseptic condition of the hands cannot be insured by any known process, and from this we learn:

1. To avoid as far as possible septic contamination.
2. To spare no pains to render our hands as innocuous as possible; and
3. To restrict local interference within the narrowest bounds.

The last of these includes not only unnecessary operative interference, but also needless vaginal examinations. We can limit the numbers of such examinations best by substituting for them external manipulations; and, next to antiseptics, I consider this to be the most important advance in modern midwifery. By whom it was introduced or when I know not, but its systematisation and popularity we owe to Pinard, Credé, and Leopold. In 1888 Credé wrote as follows: "Even the simplest manipulation may cause infection. It should therefore be laid down and taught as a fundamental principle that internal examination of parturient women should be altogether avoided or restricted within the narrowest possible limits; it can be very well replaced by external examination. To instruct their pupils as thoroughly as possible in this method is the present and future duty of teaching institutions."

Diagnosis by External Examination.

By external examination we can tell whether the woman is pregnant or not, and the period to which the pregnancy has

advanced, the presentation and position of the fœtus; whether it be living, dying or dead, and whether there be one or more children in the uterus. We can also tell whether she is actually in labour or not; and its course and progress may be followed with accuracy. Pelvic deformity is suggested by pendulous abdomen, abnormal mobility, and obliquity of the uterus, especially in primiparæ and in the latter also, excepting hydramnios, hydrocephalic fœtus, and plurality of children, all of which may be diagnosed by this method, it is an ominous sign, where labour has actually commenced, to find the head still above the brim; the way in which it enters the cavity is also characteristic. In prolonged labours danger to the mother is indicated by thickening of the upper and thinning of the lower uterine segments; the elevation of the contraction ring and the prominence of one or both round ligaments. External examination is equally useful in the third stage of labour, and its proper conduction depends upon it.

The external examination is then the one chiefly to be relied upon, not only because it is safer, but also because it gives more information to the examiner, and because it is easier and more reliable. Having for many years practised the vaginal examination exclusively, I found it difficult to persuade myself of the truth of the latter assertion; but not only has my own individual experience proved to me that this is so, but in the Rotunda Hospital, where the students are obliged to write down upon the bedcards the result of each examination, I found that mistakes in diagnosis were much more frequent with the vaginal than with the abdominal method. There are two things, however, which can only be made out by vaginal examination, and these are the condition of the os uteri and a prolapse of the umbilical cord; and if for any reason such as inexperience on the part of the examiner or insuperable difficulties, such as very fat or rigid abdomen on the part of the patient, the results of the abdominal examination are unsatisfactory, a vaginal examination becomes necessary.

Internal Examination.

But before each internal examination the practitioner should remember that it is an operation never altogether devoid of risk, and he should be fully persuaded in his own mind as to its necessity. For my own part I seldom examine internally more than once in the course of a natural labour, and I endeavour to do so as soon as possible after the full dilatation of the os, as indicated by the rupture of the membranes or a change in the character of the labour pains. I need not delay to describe the disinfection of the hands; many excellent methods are in vogue, but thoroughness in carrying it out is of more importance than the selection of any particular method; at the same time in general practice it should be simple as well as efficient.

Treatment.

In the treatment of the disease when once established we have also made considerable advances. Local disinfection by antiseptic douching is generally employed, the curette, abdominal section, and ablation of the infected organs have been employed with success, but are hardly in a position for a dogmatic pronouncement upon their value in an address which is not to be followed by discussion. For the same reason I shall not speak of the antistreptococus serum; but the general treatment with which I have met most success, and which is, I believe, now most generally adopted, is that introduced by Runge in 1886, and consists in cool bathing, nourishing diet, avoidance of internal antipyretics, and free administration of alcohol.

Conclusion.

The subject with which I have dealt is no doubt lacking in novelty, and the method an elaboration of the old saying that "meddlesome midwifery is bad," but I have been urged to its consideration by the opinions expressed by Hegar, Boxall, and Cullingworth, that in private practice there has as yet been no improvement. If this be true, or even partially true, it proves that those who undertake the care of parturient women are not yet alive to the responsibilities of their calling, and I have no doubt that a faithful adherence to the principles, the development of which I have briefly sketched, will result in a vast saving of most valuable lives, and will prevent you individually from standing—as many of us have done in the past—helpless spectators of a fatal malady which an accusing conscience whispers might have been averted.

INTRODUCTORY REMARKS

DELIVERED AT THE OPENING OF

THE SECTION OF PSYCHOLOGY,

At the Annual Meeting of the British Medical Association at Ipswich, July-August, 1900.

By R. PERCY SMITH, M.D., F.R.C.P.,

Lecturer on Psychological Medicine Charing Cross Hospital; President of the Section

ON THE PREVENTION OF INSANITY.

Probably few circumstances connected with insanity have stirred the public mind more in the last few years than its real or apparent increase. The question is constantly asked by people, Is it not very much on the increase? and it seems to me to be worthy of consideration by this Section of the Association whether we as medical men concerned in the treatment of mental disorders are doing all we can to check what at any rate is a most serious increase in the actual numbers of the insane. As the public owes the checking of the ravages of small-pox, the notification of infectious diseases, the improved sanitary measures which have led to such a marked diminution of the death-rate, and now in all probability the successful coping with the large amount of illness due to malarial poison—to name only a very few instances to the medical profession, so undoubtedly it will be to the profession that the public will look for guidance in what is undoubtedly a very serious question for the future of our population. The annual report of the Commissioners in Lunacy for the year 1898 (published June, 1899) begins with the remark that the total number of patients under their cognisance in England and Wales on January 1st, 1899, was 105,086, "being an increase on the corresponding number on January 1st, 1898, of 3,114, the largest annual increase we have yet had to record." The increase reported by the Commissioners had concerned all classes of patients, the private class to the extent of 2.73 per cent., the pauper class 3.09 per cent., and the criminal class 2 per cent. Of greater importance than the mere fact of increase is the fact that there is also an increase in the ratio of insane to general population, the advance being the small one of 0.4 per cent. in the private class, and of 0.59 per cent. for the pauper class. The total gives the ratio of 1 "officially known" lunatic to 302 individuals, as against 1 in 308 on January 1st, 1898, and 1 in 337 on January 1st, 1899.

Attempts have been made to show that the increase is more apparent than real, that it is largely due to the accumulation of senile cases and to a diminished death-rate, and that there is no real increase of new cases; but when all is said there remains the undoubted fact that the numbers increase by leaps and bounds, and that the county and borough authorities are constantly being confronted by the demand for more accommodation in county and borough asylums, that new asylums spring up as the result, and that the taxpayer has constantly to put his hand in his pocket to defray expenses. It will hardly be denied that such a condition demands that we should use every effort to diminish if possible at the source the numbers of those who thus become incapacitated either temporarily or permanently, who, if not possessing private means, become either a burden to their relatives or to the taxpayer, and who in some cases become criminals as the result of their mental disorder.

It would be of course quite impossible in the limits of time accorded by the rules of the Association to introductory remarks by Presidents of Sections to review all the causes of insanity and to cover the whole ground of their removal, but it seems to me to be profitable to draw attention to three items—namely:

1. The propagation of the race by those of insane inheritance or those who have suffered from insanity.
2. The influence of alcohol in the production of insanity and the need for preventive legislation.
3. The causation of general paralysis by syphilis.

I.—Propagation of Insane Stock.

In Table xxvi in the report referred to above, giving the percentage of causes of insanity in patients under the cognizance of the Commissioners of Lunacy for the five years 1893-97 inclusive, hereditary influence was attributed as a cause in 20.4 per cent. of males and 25 9 of female patients. These figures are well known to be far below what is the real proportion, and in Table xxvi, where the causes are reviewed in the two great groups of private and pauper patients, the percentages are found to be higher in the former, largely no doubt on account of the greater facilities for obtaining a history in that class. But even allowing that these figures are below the actual facts, we cannot escape from the fact that "hereditary influence" still gives the largest percentage of any of the causes enumerated by the Commissioners.

It cannot fail to be of the highest importance to the future of our race that the stock should be maintained in as healthy a condition as possible, and should not be reproduced from defective individuals. This is fully recognised in the case of the lower animals, but human beings have a reluctance to apply the same rules to themselves. Nevertheless there can be no doubt that if we are to hold our own in the struggle for existence with other nations, it is of the highest importance that the race should not be largely reproduced by individuals whose nervous system is so unstable that it very easily gives way under those stresses which must after all occur with great frequency in the various conditions of life, but should be propagated mainly by those who are abundantly well equipped from the nervous point of view. It will be no doubt thought that I am only giving utterance to a truism when I say that if the race were only reproduced by those of stable nervous system and sound by inheritance our existing asylums would soon be found to be larger than the requirements of the population. In the last half of the nineteenth century enormous strides have been made in the care and treatment of the insane. They are infinitely better housed, their bodily and mental disorder is treated more assiduously and more scientifically, committees and unofficial visitors of all sorts take a much greater interest in and a much more humane view of their condition, their pathology is minutely inquired into, they are, thanks in great measure to the Medico-Psychological Association, infinitely better nursed, and after recovery such a society as the After-Care Association busies itself in helping the friendless victim of the most painful disorder again to take his place in the world. But I submit that with all this, which is most desirable and which exhibits all those qualities of sympathy with suffering for which our nation is so justly famed, very scant attention has been given to the question how a great deal of insanity can be avoided, and to the fact that a great deal of insanity is preventable and should be prevented. The Lunacy Law has been amended in the last few years so as to make it more difficult for those who urgently need care to be placed under care, while it has rendered it more difficult for patients to be detained and more easy to be discharged, as if the Legislature unconsciously arrived at the conclusion that by so doing it could diminish the numbers of the insane. There certainly was an impression among some members of the community, in spite of the denial of this by the Commissioners in Lunacy, who are responsible to the public for the due discharge of patients from asylums, that large numbers of persons were detained on the very slightest pretexts, and it is thought by many that this impression weighed with those who were responsible for the drafting of the present Lunacy Acts. Nevertheless the numbers increase, and I submit that there is no more important problem for the twentieth century than the possibility of diminishing the numbers of the insane by their non-production. Among the more educated classes of the community there is, judging by the fact that those specially concerned in the treatment of mental disorders are often consulted on the subject, a recognition of the fact that the presence of insanity in a family at least demands from its members some serious reflection before marriage is entered upon, and it is often in the power of medical men to give advice which may at any rate prevent the union of two bad stocks. A short time ago I was consulted as to the rectitude or desirability of a marriage being contracted between a lady whose father had become insane about the time of her birth, and had remained chronically insane since, and a gentleman whose maternal aunt had been insane for thirty years. The gentleman would not agree to marry unless he could be assured that there was no risk whatever that his proposed wife would suffer from puerperal insanity in the event of a child being born, which assurance it was manifestly impossible to give, and also unless he were assured that there would be no risk of mental disorder in any offspring, which in view of the chronic insanity on both sides it was also impossible to give. Such a case shows that at least some members of the community have their eyes open to the fact of the importance of selection. Love is, however, proverbially blind; and among the unreflecting classes of the community nothing is thought of marriage with a person of insane inheritance. Unfortunately medical men themselves, unless they have had experience in an institution for the treatment of mental disorders, are not always sufficiently alive to the dangers of the propagation of the race from defectively constituted individuals, and are sometimes apt to pooh-pooh any possibilities of risk in cases in which they are consulted, and to give the opinion that there is no danger in a marriage between two persons of neurotic or insane stock provided the individuals themselves are apparently sound, or have been so up to that time. It is perhaps well understood that in a question of marriage between cousins, where there is insanity or any serious neurosis in a common ancestor or in the two separate families, the idea of marriage ought not to be entertained, but it is often overlooked that danger exists in the intermarriage of members of two families not related, but where there is insanity or neuroses on both sides. It is very unlikely that the Legislature will ever intervene and interpose any legal bar to marriage of individuals of insane inheritance; there will continue to be "free trade" in marriage as far as the law is concerned, but public opinion will have to be educated more and more to understand the importance of not propagating from bad stocks, and it is safe to lay down a rule that no person of direct insane inheritance ought to marry with another of direct insane or neurotic inheritance, and that even if a person of stable inheritance proposes to marry with a person of insane inheritance, this latter fact of inheritance ought to be known and stated beforehand. In many cases this is done honourably, but in other cases the fact of insane inheritance of the most direct nature is concealed, on the one hand where large property is concerned, and on the other where perhaps there are several marriageable daughters in a family of limited means, and where it is thought that the avowal of insanity in the family will "ruin their chances," as if the chief object in life were to propagate defective individuals. In other cases, concealment takes place from ignorance or carelessness. In this, as in many other things, the greatest happiness of the greatest number must be thought of rather than the happiness merely of the individual, and there is the more honour to those who have relinquished what might have been a life of happiness rather than lend themselves to the degeneration of the race.

With regard to the first heading, therefore, I conclude that it is the duty of the medical profession to give sound advice to those who consult them on this matter, and not to lose sight of the fact that inheritance is the largest cause of insanity, as shown by statistical tables.

But if there is doubt as to the marriage of persons of insane inheritance, there should be little doubt as to what ought to be the course and what ought to be the advice given in the case of persons who have themselves suffered from a definite attack of insanity, and in such cases marriage ought, as a rule, to be absolutely forbidden. Deplorable cases must be familiar to the minds of all those connected with psychiatry, where patients who have recovered from a severe attack of mental disorder necessitating confinement in an asylum, have subsequently married, and either broken down again or propagated children defective from birth, or breaking down at the critical periods of life. I remember well a patient in Bethlem Hospital who had great hostility to her parents, for which for a time I could find no explanation, till one day she told me that what made her most angry was the fact that her birth had occurred subsequently to an attack of insanity from which her mother had suffered.

Unfortunately marriage with a person who has been insane is sometimes contracted by those who should by their educa-

tion know better. For instance, I remember a patient in Bethlem who broke down in adolescence and eventually joined the large army of chronic dements, whose father was a doctor who had married one of his patients who had recovered from an attack of insanity. In another case a nurse who was familiar with mental disease married a male patient who had temporarily improved, but whose symptoms returned very quickly and led to a separation and much unhappiness. Fortunately there were no children of the marriage. She had taken this step against the advice of everyone who knew the man's condition. Again, a lady who had had several attacks of maniacal excitement and had been in Bethlem Hospital in one of them, married subsequently against advice and has only recently been discharged from Bethlem again, having broken down after the birth of a child. Such marriages as these are the surest way to increase insanity, but if they are sometimes entered into with a light heart by people of the educated classes it is not surprising that the more unreflecting classes should contract them freely. In the January number of the *Journal of Mental Science* for this year a deplorable case is recorded by Dr. Easterbrook, in which a girl of insane inheritance married after a fifth attack of insanity (which attack was a puerperal one following the birth of an illegitimate child) and subsequently had two children, after the births of each of which she again broke down mentally. I have no hesitation in saying that in some way or other such a patient ought to be prevented by law from reproducing her species. In all probability Nature will speedily put an end to such a bad stock, but it may be at great cost to the community first.

Another case occurs to me in which a young girl who had broken down acutely after the death of her lover recovered in a few months and within a year had found another young man to marry her. The marriage was undertaken against advice, and within six months after marriage she had broken down again. In such cases the popular idea is that the patient is sure to be all right when she is married, and that the insanity is due to the celibacy, and medical men even have not always the strength of mind to inform the relatives that the likelihood of insanity after childbirth, if not at any other epoch, is greater in such cases than the likelihood of stability.

A great difficulty is presented in the case of those who break down subsequently to marriage but recover and where the woman is still of child-bearing age. It is impossible to go deeply into this matter, but it is an important question when, for instance, a woman has had puerperal insanity after the birth of her first child whether she ought further to reproduce her kind.

The answer to this in my opinion depends largely upon whether the puerperal attack depended simply upon what may be called an accident, as for example, some septic condition, or whether it is merely the expression of an inherited neurosis which first appears at the puerperal epoch. In the latter case one feels that it would be best that the woman should cease child-bearing; but here again it is impossible to do more than advise to that effect, the advice given being in most cases not followed. In the case of a woman who has a puerperal attack after the birth of each child there can be no doubt of the unsatisfactory nature of the children she is bringing into the world and that such a bad stock ought not further to be reproduced, but how to effect this except by advice is difficult to see. The new Civil Code in Germany enacts that continuing insanity of over three years in duration is a ground for divorce, but I apprehend that in this country such a measure would have no chance of being placed on the Statute Book, in view of the fact that recovery may take place after a longer period than that, that where there are children their position would be rendered socially unpleasant, and that marriage is "for better or worse," and that the accident of disease should not be allowed to absolve a husband of his obligations. There is no doubt, however, that some such enactment would assist in putting an end to the chance of reproducing a bad stock.

It might be thought superfluous to comment on the iniquity of a congenital imbecile being allowed to marry were it not that several cases are recorded in which this has taken place where large property is concerned, and with, of course, deplorable results to the offspring. Again, marriage ought not to be permitted in the case of chronic epileptics whether the disorder be of the nature of *petit mal* or *grand mal*.

II.—The Influence of Alcohol in the Production of Insanity.

Next to heredity alcohol figures most largely in the causes of insanity given in the Commissioners' tables, accounting for 22 per cent. of the male and 9.1 per cent. of the female cases. This refers to the effect of alcohol on the individual alone, and takes no note of alcoholic inheritance as leading to the production of insanity, idiocy, alcoholism, hysteria, epilepsy, or other neuroses in the offspring, though it is well known to act in this way.

This large percentage of what may well be looked upon as a preventable cause of insanity ought to give the Legislature profound heart searching as to whether it is doing its duty to the community in checking the ravages of this destructive poison. I shall not be contradicted when I say that the percentages above quoted do not represent anything like the real amount of damage which is done to the nervous systems of the community by alcoholic excess.

In addition to the actual numbers who are sufficiently poisoned by alcohol to be certified as insane, there are large numbers of individuals who are from time to time dangerously unsound, it may be for a few hours or a few days, who are the terror of their relatives, form a large proportion of the cases at police-courts, and ruin themselves in health and fortune. And those who have had charge of the insane will agree with me that the cases of mental disorder due to alcohol are among the most difficult to manage, the most hostile and litigious, and after recovery very often the most ungrateful of any patients with whom we have to do. No doubt in many cases the alcoholic is a person who starts life with an unstable nervous system; he has either alcoholic or insane or neurotic inheritance, and to a certain extent he is defective *ab initio* in self-control, and goes without much resistance into the paths of chronic alcoholism, but at present the Legislature has given him no assistance. The facilities for drinking are enormous, and the revenue of the country largely depends upon the quantity of alcohol consumed.

As long ago as 1893[1] a memorial signed by many members of the medical profession urging the enactment of compulsory detention for inebriates was presented to a Departmental Committee appointed by the Home Office, but the only outcome of movement in that direction has been the Inebriates Act of 1898, upon which Mr. Wood Renton, in the April number of the *Journal of Mental Science* for 1899, remarks: "The first point that calls for observation is that in spite of the unanimous demand for them on the part of every Parliamentary Committee that has inquired into the subject during the last quarter or a century..... no powers for the compulsory committal of non-criminal inebriates have been brought into existence by the new statute." The new powers for dealing with criminal inebriates, moreover, have been almost a dead letter in consequence of the supineness of local authorities, though it is satisfactory to see that the London County Council is at last alive to its responsibilities in this respect. The report of the Royal Commission appointed to inquire into the operation and administration of the laws relating to the sale of intoxicating drinks, published in 1899, recommends that simple drunkenness should render an individual liable to arrest, that it should be penal to serve habitual drunkards with liquor, and that habitual drunkenness should be treated as "persistent cruelty," entitling a wife or husband to separation or protection for herself, himself, or the children, but unfortunately the present Government seems disinclined to take the subject in hand. That such protection is frequently needed by the relatives of those who become maniacal from drink is undoubted, and there are few histories more sad than those told by the wives of the alcoholic insane, where there has frequently been, for a long time before it has become necessary to take steps under the Lunacy Acts, recurring excitement, brutality, and danger to wife and children, with gradually increasing poverty and loss of social position. In a note on the report in the *Journal of Mental Science* for January, 1900, the following remarks are made: "The Commission does not seem to have troubled itself with statistics with regard to the share of intoxicants in the production of mental disease." There need have been no difficulty in this respect, as it is only necessary to look at the tables in the reports of the Commissioners in Lunacy, or in any asylum report, to see

that between one-fourth and one-fifth of the male cases of insanity admitted annually to asylums are attributed to alcohol. Dr. Clouston, in the report of Morningside Asylum for 1899, speaks of alcoholic excess having been the cause of insanity in 25 per cent. of the cases admitted. He remarks that few persons who had had an opportunity of studying the effect of alcohol on the brain would not heartily approve of most of the recommendations of Lord Peel's Commission. The Inebriates Act of 1898, he points out, has done very little good, and if there is to be legislation on the subject it should be effective. Even those who hold the liberty of the subject so sacred as to wish to leave the alcoholic to drink himself to organic disease or insanity, and his family to poverty, might at least turn their attention to the fact that nearly a quarter of the insane are so, either wholly or in part, from a preventable cause, and that in a large proportion of these cases the ratepayer has to bear the expense.

Closely related to this subject is the question of the relation of suicide to alcoholism. In a paper by Dr. Sullivan, Deputy Medical Officer of Her Majesty's Prison, Pentonville, in the April number of the *Journal of Mental Science*, attention is drawn to the increase of suicide and of suicidal attempts concurrently with recent increase of alcoholism. He points out that the recent increase of suicide has coincided with a considerable increase of abortive suicidal attempts which have approximated to the type of alcoholic suicide in being more impulsive, more related to organic conditions in the individual, and occurring at an earlier average age than suicide from other causes. If his views be correct it is evident that alcohol is thus responsible for the loss to the community of many valuable lives in the period of early adult life. I hold, therefore, that it is our duty as medical men concerned with the care of the insane to point out, amid all the outcry about the increase of insanity, that with regard to alcohol at least there should be an opportunity, with proper legislation, of preventing a good deal of insanity, and that this Association should continue to urge the necessity of further legislation to check the ravages of that seductive but destructive poison.

III.—The Causation of General Paralysis by Syphilis.

There can, I think, be very little opposition now to the statement that acquired syphilis is one of the most potent predisposing causes of general paralysis. While some observers hold that in every case of general paralysis, if the history be carefully taken some evidence of syphilis will be found, the great majority recognise at least that even if a history of syphilis cannot always be obtained, at any rate such a history is to be found in cases of general paralysis very much more frequently than in any other forms of mental disease, and I intend to regard this preponderance of a history of syphilis in cases of general paralysis as an established fact, and to lay down the proposition that if there were no syphilis there would be very little general paralysis. According to the Report of the Commissioners in Lunacy for 1898, the yearly average number of general paralytics admitted to asylums, hospitals, and licensed houses amounted to 13.1 per cent. of the male and 2.8 per cent. of the female cases (Table xxiii), while general paralysis was the cause of death in 1,057 males out of a total of 4,065, or more than one-fourth of the total male deaths, and in 265 females out of a total of 3,513. Evidently in males at least general paralysis is a most serious cause of death in asylums, and moreover it kills those chiefly who are in the prime of life. It is, therefore, most important that no stone should be left unturned to stay this waste of life. It is well known that general paralysis occurs most frequently in towns where syphilis, alcohol, and fast living are most rife, and no doubt one of the most important measures is to train the dwellers in towns in habits of self-control, and to teach them to lead physiological lives; but there seems no reason why the Legislature should not take some steps to check the spread of such a potent poison to the nervous system as syphilis, as it has already done in the case of the infectious fevers. It was formerly held that the general paralytic did not transmit the disease to his children, but in the last few years many cases have been recorded of "juvenile general paralysis," in practically all of which there has been found to be a history of parental syphilis,[2] and in many of these cases the father has previously died of general paralysis. It cannot be said therefore that the syphilitic general paralytic is not a danger to his offspring, and so a further waste of valuable lives takes place. In my opinion, if syphilis were made a notifiable disease and the chances of its spread diminished, we should see a corresponding diminution in the number of cases of general paralysis. I am well aware that any suggestion to control syphilis or in fact any venereal disease by legislation meets with opposition from a section of the community, but it is well to refer to the fact that is published in the British Medical Journal for March 10th, 1900, to the effect that in Finland, as the result of the hospital treatment of syphilis and the power given by the Legislature enabling the compulsory examination of any suspected individual, syphilis has much diminished in the course of twenty years, that congenital syphilis has become less frequent, and that both the hereditary and acquired forms have become of much milder type. Dr. Drysdale, in a paper on the Norwegian Bill for the Prevention of Venereal Diseases, in the Journal of February 3rd, 1900, calls attention to the existing law in that country requiring practitioners to notify the existence of any case of venereal disease to the Medical Officer of Health, but without giving the name of the patient, and suggests that such simple notification would at least "for the first time in the history of these contagions, afford a basis for calculation of the extent to which they prevail among the population of the United Kingdom. He further says, "Eventually I believe that the danger to public health caused by these extremely prevalent contagions will result in the punishment of persons who, knowing themselves to be infected, carelessly, or even without any compunction, are heartless enough to put themselves in the way of infecting other persons with their contagion."

In my opinion general paralysis should be looked upon as a preventable disease, and I feel strongly convinced that were syphilis controlled this truly malignant degenerative disease of the nervous system, which at present seems to defy all treatment, which adds so largely to the deaths in asylums, which mainly affects men in the prime of life, and which may also affect their children by means of hereditary syphilis, would to a great extent disappear. In all probability, however, the public mind is not prepared for any legislation on the subject.

I have merely attempted to call attention briefly to what I consider to be preventable causes of insanity, and of the importance of prevention rather than cure I think there can be no doubt. Whether the ensuing century will be marked by an arrest of insanity at its sources is, however, a matter on which we cannot speak with any certainty, but it seems to me to be the direction in which our efforts should tend.

References.

1 *Jour. Ment. Sci.*, April, 1893. 2 Mott, On 22 Cases of Juvenile General Paralysis, *Archives of Neurology.*

INTRODUCTORY REMARKS

DELIVERED AT THE OPENING OF THE

SECTION OF OPHTHALMOLOGY.

At the Annual Meeting of the British Medical Association at Ipswich, July-August, 1900.

By W. A. BRAILEY, M.A., M.D.,

Ophthalmic Surgeon to Guy's Hospital.

OCULAR HEADACHES.

Our presence here to-day reminds me of the first meeting of the Ophthalmological Section of the British Medical Association in 1880, at Cambridge, when I chanced to be one of the secretaries under the distinguished presidency of Bowman, with the support of George Critchett, Donders, and many other notable men.

I have been doubtful as to the advisability of delivering an address, but it is difficult to pass over our assembly with the mere words of welcome which I venture to offer you, so I lay before you in the form of an address a small contribution to the work of our meeting made as wide as possible in its bearing on the work of our profession.

The subject is ocular headaches, that is headaches in association with refractive and muscular ocular errors. While the great majority of headaches are, of course, independent of the eyes, it is a matter of general acceptance that ocular errors produce headache, though by no means in all cases. Are there any errors especially effective in the causation of headaches, or in producing any particular form of headache?

Muscular errors are by far the most important, though, of course, these must be ultimately of nervous origin. Other influences than muscles are glare and sudden irregularities in the distribution of light, such as flickering.

Muscular ocular movements are—

Intrinsic { pupillary / accommodative

Extrinsic { of recti / and obliqui muscles

Pupillary movements are unimportant except as slightly influencing glare.

Accommodative movements are bound up with the great majority of ocular headaches.

It is a general law that the larger the ocular error the less the effect produced on the head, the reason being that a great defect of accommodative power leads to its abandonment, the patient seeing as best he can without it. So also uncorrected presbyopia is rare as a cause of headache except just at its commencement. It may cause strain and burning, but not headache.

A highly hypermetropic patient will read close with poor vision, but no aching, as also will patients with high hypermetropic astigmatism. Similarly great inequality of refraction gives comparatively little trouble, the worse eye being abandoned to disuse, and muscular action being regulated by the better one.

High degrees of myopia and myopic astigmatism produce little effect, distant objects hardly being seen, while near vision can be remedied largely by adjusting the distance. But low degrees of hypermetropia and hypermetropic astigmatism are often causes, especially when they lead to an excess of effort both in amount and duration beyond what is needed, as with weak muscles or hypersensitive nervous supply, this spasm of accommodation continuing in distant vision, and even under retinoscopy in the dark.

But both spasm and headache are more produced by moderate inequality of refraction, especially if astigmatic, and most of all by astigmatism with asymmetry of the axes. The ciliary muscle appears to act unequally on the two sides in correcting this, or a muscle even in different parts of its circuit in remedying astigmatism or asymmetry of axes. Evidence of this is seen when atropine reveals astigmatism on one side or both, increases its amount, or alters the axis of the correcting lens in amount less than 90°.

So astigmatism, often unequal-sided, may become manifest when presbyopia begins, and refractive defects reveal themselves to retinoscopic examination in eyes blind with fundus changes, such as optic atrophy, in proportion beyond that observed in average seeing eyes. The above refractive errors cause aching in the eyes, often passing presently or the following morning into the brows, immediate aching in the brows, temples, back of the head, and occasionally also headache of the type of migraine. Treatment by appropriate glasses is of extreme value.

Errors of the extrinsic muscles produce headache, but less than of the accommodative muscles, though more migraine, more giddiness, and more general distress. Here also the rule holds: the larger the amount of error the less the disturbance, the explanation being that in considerable degrees of strabismus the image falls on the peripheral and so less acutely-seeing retina.

But another potent factor in headaches is the tendency to binocular vision, and so we have another rule: the stronger the tendency to binocular vision the more headache produced by an error of the recti and obliqui muscles.

Binocular vision varies much in its strength in different subjects. Possibly there are natural differences related to the centres as much as to the muscles, for I have seen such indisposition run through families. But binocular vision appears to be generally made rather than born. Babies often squint irregularly till after a few weeks of life they get their yellow spots gradually to accord. I have met cases where, instead of bringing them into harmony, the child has developed another retinal point to work with the opposite yellow spot in an eye congenitally squinting, though with fair concomitant movement. Rectification of such apparent squint by tenotomy will produce diplopia.

Other cases are common where the two eyes remain quite independent; for example, where there is congenital want of power of both external recti from central defect. Diplopia is absent, and the child sees to his left with the right eye, and *vice versâ*.

Binocular vision is not strongly established by the early age at which ordinary concomitant squint arises; so diplopia, though present, gives no trouble, and, indeed, is little noticed even in the comparatively rare cases where each eye has normal refraction and vision.

But take the case of a paralytic strabismus—for example, of the superior oblique—suddenly arising in an adult. Here we have much disturbance, and the same with cases where, when the two eyes have been used for different purposes—that is, one for near and the other for far vision—we suddenly attempt by lenses and prisms to unite the images, the results being distress, giddiness, migraine, and other headache. But extrinsic muscles may, like the ciliary, have large latent defects, and I suspect that many obscure cases of headache have their solution here. I quote the case of Mrs. X., aged 60, neurotic. A surgeon practising many years ago in London gave, for some ocular distress when she was aged 40, glasses for constant wear, each eye +1.25 D sph., 1° prism base in, and in response to her gradually increasing trouble, altered them through eighteen changes extending over twenty years to + 1 D sph, 6° prism base in each eye for constant distant wear, and +4.5 D sph, 7° prism base in for near work. Then I came in, and finding to ordinary tests no more than the average error of lateral muscles, tried to take away the prisms, but to no purpose. She declared that they "supported her" and "held her up." Consequently I made a closer examination, and found a difference of vertical level, which has increased in the six subsequent years; so now she is "supported," satisfactorily on the whole, by, for distance, right eye: +1 D cyl., 115°, 4° prism base in; left eye: +0.75 D sph., +0.25 D cyl., 115°, 4° prism base down.

My belief is that this vertical error was always the essential one, and that its existence weakened the power of the internal recti so much that she was able to wear the huge prisms that she had. Without the glasses she feels an intolerable strain, and cannot bear to look.

One more case of Miss W., aged 38, a doctor's daughter, with occasional distress. I found low hypermetropic astigmatism and insufficiency of the internal recti. Through several changes she has come to the constant wear of right eye: + 0.25 D cyl. 150°, 3° prism base in, left eye the same, with, in addition, 1° vertical prism. With these she gets on fairly, without them she cannot bear to look.

These, I think, are real latent errors, doubtless very conducive to quackery, and so to be touched cautiously, especially as regards operation.

I cite also a case of great power of adjustment, though with distress, but no diplopia ever. Mrs. M., a doctor's wife, sensible, suffering much from migraine, quite unrelieved by spherical lenses. The images at 6 metres show half a metre difference of vertical level. She has now worn for two years, with great benefit to her head, her full refractive correction: Each eye — 1.5 D sph., — 0.25 D cyl., 165°, 3° vertical prism in opposite directions.

I myself have a latent difference of vertical level, though I am happily entirely free from headache, but not quite free from migraine.

Besides individual tendencies other influences alter the disturbing effect of ocular errors:

1. Age, they being most potent between 10 and 45.
2. Sex, women being the greater sufferers.
3. Nationality. My experience does not extend much beyond English and citizens of the United States, the latter of whom are eminently affected by them, so that a series of doctors and operators has arisen to take charge of that special subsection of practice. Doubtless there are other influences, such as occupation and temporary states of the nervous system.

AN INTRODUCTORY ADDRESS

DELIVERED AT THE OPENING OF THE

SECTION OF LARYNGOLOGY AND OTOLOGY,

At the Annual Meeting of the British Medical Association held at Ipswich, July-August, 1900.

By SCANES SPICER, M.D., B.Sc.Lond.,

Surgeon in Charge of the Throat Department, St. Mary's Hospital, London.

It is my pleasant duty to welcome those gentlemen taking part in the business of this Section and to thank not only those who have promised to introduce the discussions, but those who have tendered papers for our consideration. I trust that both by reason of the work done and of the numbers attending our Section at Ipswich, this year will prove worthy to rank with the best of preceding years.

Again in 1900 we have a combined Section of Laryngology and Otology, in which arrangement I think the Council of the Association have acted wisely. Except when we meet in the largest centres, or on special occasions like international congresses, it is not easy to secure a sufficiently large attendance to make two Sections profitable. Then, nearly all the present generation of specialists in throat, nose, and ear diseases practise all divisions, and there can be no doubt that the field of work and the chief questions of interest are the same to us all. Further, it appears to me that the sections of the British Medical Association annual meeting are intended not only for specialists but for the much larger number of practitioners who feel attracted to our subjects, and that we shall more effectually secure the diffusion of knowledge and interest by the consideration of broad questions common to both branches rather than of minute and unsettled problems peculiar to either laryngology or otology, more appropriately dealt with at the special societies and larger congresses.

In accordance with custom, it falls to my lot to offer some brief introductory remarks. The limited time at my disposal prevents the exhaustive consideration of a scientific topic, and having regard to the recent excellent Lettsomian lectures on the Diseases of the Throat and Nose in Relation to General Medicine, given by Dr. de Havilland Hall before the Medical Society of London,[1] and the able and suggestive Presidential address of Dr. Dundas Grant to the British Laryngological, Rhinological, and Otological Society,[2] on Some Lines of Progress, the ground is cut from under the feet of anyone who would like to have taken a similar course for some time to come, as the position has not materially changed since these reviews. It therefore seems more profitable for me to go on another tack, and offer for your consideration some reflections more or less desultory.

Some of these may be exceedingly trite and obvious, but I venture to believe they are not always kept in such full view in our daily work and thought as they deserve, and, as I think, would add to our utility and prestige if they were more regarded.

There can be little doubt that in the past the specialist was only too often a mere skilled artisan, working in a groove, and with no eye for any considerations outside, and with little conception of the relations and interdependence between the phenomena of his field and those of the organism generally and the external world. Thus he deserved many of the reproaches which were levelled at him. At the present day, however, all that is changed, and any specialist worthy of the name is not only a master of his special technique, but has a real living appreciation of physical, chemical, and biological sciences, a thorough knowledge of the principles and up-to-date practice of medicine and surgery, and he also takes a wide philosophical outlook from the evolutionary and developmental standpoint, and is ready to apply light from each of these sources to the elucidation of each problem that confronts him.

Not but what we have reason in our specialities to be thankful to, and proud of many of the earlier workers in this country—men whose names will at once occur to all; who saw imperfectly dimly glimmering truths; who groped and sometimes blundered; who occasionally made hasty or exaggerated generalisations, which have required modification in the light of increased experiences, and of that criticism which we, their followers, have often been only too eager to apply. But this is quite parallel with what has taken place throughout medical history, and we, the newest generation, have reaped the benefit.

Indeed, to this newest generation we have good reason for self-congratulation that we belong. For whereas we find in our own country that the men who are now holding aloft the standard and fighting in the front rank as specialists in our branches are men who have won their spurs by gaining the highest university and academical distinctions, in original scientific researches, and in honourably maintaining the efficiency and reputation of our art in practice; on the other hand, on the Continent and in America we find the universities giving to our specialities and their professors a recognition equal to that of any other branch of medicine or surgery, even selecting from among our ranks to the post of University Professor of General Medicine one who has devoted his life to our speciality. I refer to Professor von Schrötter, of Vienna. It cannot be long now before laryngology and otology take full rank in all university and qualifying tests in this and all countries.

The rapidity with which the evolution of our specialities has taken place is startling, though if we attempt to realise the vast problems that arise in it, it is not to be wondered at. When we limited ourselves to rule-of-thumb treatment of disorders of the throat and ear, it is not surprising that we were relatively insignificant; but now we have found that special practice in the field of diseases of the upper air passages has to deal with such problems as the proper growth and evolution of the skull, nose, and accessory sinuses, jaws, palate, teeth, chest, and spine, the bearing of nasal respiration on catarrhal ear processes and deafness, and the development of the orbit; the physiognomy and expression; and the normal evolution of the mental functions, as well as with the treatment of disease, it is not astonishing that interest and recognition are alike on quite a different scale and widespread.

The nose as the front door, main entrance hall, warming, moistening, and filtering mechanism of the respiratory current must necessarily take a leading place in the physiology and pathology of the throat and ear, and it is well to remember that the physical conditions of the nasal chambers differ from those of any other part of the body. For here we have chambers whose walls form a rigid box, lined with a highly vascular and nervous membrane through which is forcibly drawn by the act of inspiration about seventeen times per minute during life a current of air, and as the rigid walls of these chambers cannot collapse as in the chest on a fall in the internal air pressure any diminution in air tension can only affect the soft membranous linings of these walls by favouring their distension with blood and lymph by the lessening of the normal pressure on their vascular walls. No doubt the controlling action of the vasomotor nervous system in healthy subjects often wards off for some time the tendency to arterial dilatation; but the suction action on the veins and lymphatics when intranasal air tension is materially lessened must ensue, and after a time, or in weakly subjects or when a dyscrasia is present (such as syphilis, gout, or rheumatism) then the result of diminished air tension is further seen in persistent relaxation of membranes and vessels—conditions which initiate congestive, catarrhal, and hypertrophic processes. Given, therefore, an obstruction to the passage of the inspiratory current through the nose, its presence will necessarily be followed by a fall of air tension behind the obstruction, and proportional to its degree and situation and the effect of breathing through such a partially stenosed nose, will be dry cupping of the nasal membranes, whereas the tendency on the pneumatic accessory sinuses will be to lower their air tension in the same way as the action of an air pump would do, and so lead to similar changes in their lining membranes with other subsequent results which cannot here be considered. Such is very briefly the line of reasoning which has led me to attribute to nasal stenosis, obstruction, or insufficiency such a pre-eminent position as a factor in the etiology of catarrhal throat, nose and ear processes; and this view I find is borne out by clinical experience. Opinions

still differ as to the degree of importance and influence nasal insufficiency has in this direction. Some only recognise a fairly complete obstruction, leading to a sensation of stuffiness or blockage, of which the patient complains; whereas others like myself regard as pathological any insufficiency of passage which renders full free nasal respiration by day and night, in all positions of the body, under ordinary circumstances, together with practically equal passage and air tension on both sides of the nose.

In my experience the results of such a minor degree of stenosis may not be at once apparent, but they are none the less real, and the effects may be very slow and insidious in their appearance. Such a degree of stenosis should be attended to not later than the first onset of marked symptoms well known to be the results of nasal obstruction, so as to arrest their further development. Many such cases breathe well through the nose during the day, and may be regarded as having then the physiological minimum of passage; but in change of position at night the horizontal position leads to such a redistribution of fluids in obedience to gravity in the nasal membrane that the passage is encroached on, and mouth breathing with its own special evils ensue.

Further, it would appear reasonable that a slightly obstructed nostril has a more deleterious effect as a cause of chronic catarrhal changes in the nose and ears behind the obstruction than a more completely blocked one, since in the former case there is, from the diminished air tension, a more contant dry cupping of the membrane, and consequently a more liberal blood supply than in the latter; for in such latter subjects mouth breathing is necessarily more frequently, if not exclusively, resorted to; and this habit, though attended with its own bad results on the pharyngeal, and laryngeal, and bronchial mucous membranes, does not so directly injure the membranes of the throat and ear.

Perhaps here I may be allowed to refer to a query which I have often heard raised: "Why if nasal obstruction is a cause of these catarrhal changes, and the so often resultant deafness, are so many cases of polypus nasi with extreme obstruction not deaf?" To this I would reply that it does not follow that because there is nasal obstruction that the vasomotor nerve control may not be sufficiently strong in some cases to prevent the Eustachian and middle ear catarrh which is usually secondary to obstruction, but I would rather advance the view that in most cases of large watery polypi the tumours themselves act as centres of counter-irritation, as far as Eustachian catarrh is concerned by draining the areas to which they are attached, and acting as reservoirs of fluid which collects in the polypi, so that adjacent areas of the nose, naso-pharynx, and ear do not become blood-logged and catarrhal. Further, this action is facilitated by the dependent position of polypi, their constricted attachments, and the action of gravity. In support of this view, I would adduce that my experience is that it is in those cases of large watery polypi extensively blocking the nose, yet with small bases of attachment, that aural catarrh and deafness are less frequent, while on the other hand in those cases of diffuse muco-periostitis and polypoid degeneration (in which obstruction is less extreme), deafness is more common. But of course the influence of reflex aural impulses and also of conveyance of purulent infection will have to be borne in mind as well.

I have been led to conclude that most cases of nasal obstruction originate in an injury, and that when once an injury has even partially flattened the nose, or displaced the septum or cartilages, or initiated muco-periostitic changes in the spongy bones or accessory sinuses, though the results are often inconspicuous at the time, or even for years, it is in such antecedent injury that later nasal affections originate. The effects of such an injury is always to diminish the calibre of the respiratory channel, and that due proportion between the nasal channels and the needs of the organism with which we are born; hence arises the causative stenosis followed by hypertrophic catarrh. Hypertrophic catarrh causes increased obstruction, and so a vicious circle is created, the circumference of which is far-reaching and ever-widening. It is unnecessary to attempt to detail the ways in which the nose gets injured, but it appears desirable to mention how rickets predisposes to injury by the more numerous falls the rickety child has in learning to walk, especially if it commences too early. It is interesting to observe in this connection that nasal obstruction is so rare in quadrupeds, whereas I am not aware that any condition corresponding to adenoids has ever been described. I have been on the look-out for years, but have never seen anything like it. The reflection arises, Are obstruction and adenoids among the penalties of our erect posture?

That the results of nasal obstruction are being gradually recognised is evidenced by the fact that it is now no uncommon thing to have cases of obstruction of the most diverse character sent for the adenoid operation in which the post-nasal adenoid hyperplasia element is absent or insignificant. This implies that the symptoms of obstruction as seen in one of its commonest forms are by some erroneously supposed to be due only to adenoids. It is by no means derogating from the claims of William Meyer to our gratitude if I suggest that in most cases of adenoids the postnasal adenoid hyperplasia is only a part, and often a small part, in the pathological condition of the so-called adenoid child; that fractured and deflected bones and cartilages, turbinal enlargements, hypertrophied tonsils pushing up and growing up behind the soft palate, stunted nostrils, and even vaulted palate are often far more important features in the case at the time of examination than the postnasal adenoid hyperplasia. The failure to recognise this or to act upon it is the cause of the unsatisfactory results which sometimes ensue if the practitioner has undertaken to bring about a cure by simply removing the adenoids. Hence the discredit and suspicion which has often surrounded the question of adenoid operations, and an explanation, at the same time, of the most common factor in a recurrence. I believe the truth to be this: In many children with nasal obstruction no formal adenoid operation need be done with an anæsthetic—and its risks are not negligeable unless under special circumstances—if the other factors in the obstruction are attended to.

I have no hesitation in estimating that many hundreds of adenoid operations are done unnecessarily in this country every year when adenoids are not present, or if present are only an insignificant element in the obstruction, which depends mainly on other causes. The result of this is a complete absence of relief of the symptoms of obstruction, or only a slight and temporary improvement by the adenoid operation. The question we should put to ourselves is this: Is it the mere presence of the adenoids or the impeded breathing which leads to the arrested evolution evidenced by the so-called "adenoid physiognomy," the alar collapse, the stunted nostrils (persistence of infantile condition), the vaulted palate and crowded teeth, the "drawn" eyes, and the deformed chest? The answer can only be—the impeded respiration. This leads to imperfect use or disuse of the nasal channels, the structures adjacent have not the normal stimulus to growth excited by functional activity, and it is in the use or disuse of structures during growth and evolution that we shall find the master key to explain the normal or arrested evolution of the surrounding organs and structures. Hence child breathing is just as important as child feeding to bring about normal growth and with insufficient supply of air through stenosed nostrils, or improperly-prepared supply through the mouth come lessened vigour and weak breathing in addition to the developmental arrest.

It often happens that an operation for adenoids or nasal obstruction is regarded as the termination of the case, and that it should be unnecessary to take any more special trouble. This idea should be most strongly combated. The operation is only the first step towards the child getting back into the right road. The track being clear it has now to be used and developed. Well-considered developmental and respiratory exercises for the expansion of the chest, and the restoration of respiratory vigour, for the removal of articulation and resonance defects, hearing drill, correction of ocular defects, regulation of vaulted palate and crowded teeth, and numerous other defects may require careful attention if the child is to catch up his more fortunate companion who has not been hampered by years of obstruction. The operation removes the obstruction, but he has to overcome, often with difficulty, many of the results of the previous deficiency.

In laying such stress on the influence of obstruction in producing hypertrophic or hyperplastic processes, it is not my

wish to even apparently ignore other factors in the pathogeny of adenoids such as unresolved catarrhs, specific fevers, syphilis, struma, soil, climate, atmosphere, rickets, feeble breathing, and low vitality, but it is my deliberate opinion that while restoring perfect nasal respiration will in many cases, if the child is put under ordinary favourable hygienic conditions, be followed by almost miraculous improvement; all the care and attention directed against the other factors will prove unsatisfactory or fruitless if the nasal obstruction is ignored. Not that all cases of obstruction by any means require a formal operation if taken early. But it is far better to operate too early or for minimal obstruction than too late or not at all; but in order to prevent a long-standing obstruction during growth from imprinting itself indelibly upon the frame and features we must always have in view not only the removal of adenoids, but ensure the complete functional efficiency of the nasal channels as a whole.

In conclusion, I would remind you that prevention is better than cure, and that if in our field of work, as in others, we have knowledge of causative factors of disease, we can in many cases eliminate and prevent them. Just as in general medicine and surgery the highest achievement is the prevention of disease and deformity, so in our special areas of work should we aim at developing the prophylactic aspect of our subject, and in diffusing the knowledge thereof broadcast. In this way, when a morbid process has been originated and detected, it can be corrected at an early stage. In this connection I firmly believe that the greater recognition of the influence of nasal obstruction in its earlier and slighter forms in producing those catarrhal changes which extend to the ear, is destined to play a great part in the future in the prevention and arrest of deafness and other disorders in an early stage. As the constant dropping of water wears away the stone, though imperceptibly, so does the constant action of fall of air tension in a stenosed nostril make its result evident sooner or later. Physical laws are no more suspended in our field of work than in any other. It behoves us to resolutely and firmly apply scientific facts, and to concern ourselves no less with the beginnings of disease and its prevention than with the highest developments of special technique.

References.
[1] *Proc. Med. Soc.*, vol. xx, 1897. [2] *Journ. of Laryngology*, vol. xiii, 1898.

The Teaching of Tropical Medicine.—Dr. Le Dantec, professor-agrégé in the medical faculty of Bordeaux, has been appointed to give a course of instruction on tropical diseases. He has for several years lectured on the subject. In Holland the teaching of tropical medicine has recently been inaugurated by Dr. J. H. Kohlbrugge, *Privat-docent* in the University of Utrecht.

Medical Duels.—Several duels between medical practitioners were recently mentioned in the British Medical Journal, and it was there suggested that if doctors wish to fight they should test the effects of new remedies and patent foods on each other. A correspondent of the *Chronique Médical* recalls the fact that a contest of a more original character between two distinguished French surgeons was proposed in 1893. Pean challenged Verneuil to operate in the presence of witnesses, or should we say seconds? The fastest operator was to be declared the victor in this remarkable form of duel, in which the cuts and thrusts were to be delivered on the *corpus vile* of a patient.

A Catechism of Tuberculosis.—The Hainaut section of the Belgian League against Tuberculosis has hit upon what appears to us an excellent idea. Instead of a leaflet which is probably not read by three-fourths of the people whom it reaches, it has issued a short catechism on tuberculosis in which all needful information on the subject is given in language of admirable clearness and simplicity. The concluding questions and answers are as follows: What resolve do you make? I firmly resolve to go at once to a sanatorium if the doctor declares me to be attacked by tuberculosis, and to induce those whom I love—children, relatives, and friends to do the same if they fall ill. What wish do you form?—That a sanatorium for the sick should be erected as soon as possible in the province of Hainaut, and that everybody should adopt the means of prevention recommended in this catechism.

BRITISH MEDICAL ASSOCIATION.

SIXTY-EIGHTH ANNUAL MEETING.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

Section of Medicine.

The attention of this Section on the second day of its meeting was mainly occupied with an interesting discussion on the problem of Gastric Ulcer, which was opened by Dr. J. F. Payne. In his paper the following questions were raised: Was Gastric Ulcer becoming increasingly prevalent in this country as appeared from hospital statistics; was the diagnosis of gastric ulcer satisfactory, based, as it generally was, on the occurrence of hæmatemesis with pain and vomiting, when it was unconfirmed by a *post-mortem* examination; was it possible to draw a sharp distinction between an acute form of gastric ulcer and and an early stage of the chronic form; was the starting-point or the essential cause of gastric ulcer known; was the alleged hyperacidity of the gastric juice in the presence of gastric ulcer proved, and, if so, could it be relieved; was gastric ulcer really more common among the poorer classes than among the well-to-do; should the administration of water by the mouth in frequent small quantities, except immediately after the hæmorrhage, be prohibited; and was the acetonæmia often present in cases of gastric ulcer, the result of rectal feeding, and consequent malnutrition? He also made special allusion to the incidence of gastric ulcer in regard to age and sex, concluding that the disease was commoner in women but more fatal in men. The latter subject was then discussed by Dr. S. H. Habershon, who followed, and diagrams were shown drawn from a large number of cases. In regard to diagnosis he described three classes of cases in which there was difficulty, in young anæmic subjects without hæmatemesis, in neurotic hyperæsthetic cases, and in cases where the pain did not follow but was relieved by the taking of food. Dr. W. Gordon pointed out that the excision of gastric ulcers by the surgeon afforded an opportunity of investigating their etiology, and described one specimen in which he had found micrococci in the tissues of the ulcerated gastric wall. He maintained that perforation occurred in those portions of the gastric wall to which the antiseptic gastric juice had least access. Dr. Calwell directed his remarks especially to the question of adhesions, and stated that he had known such to be the medium of a rent in the stomach wall directly due to a strain; he argued for the preventive treatment of gastric ulcer. Miss Julia Cock, M.D., described 2 cases illustrating the difficulty of diagnosis in some cases of hæmatemesis; in neither was there any ulceration of the stomach, although both had the cardinal symptoms. Dr. Newton Pitt thought that the apparent preponderance of cases of gastric ulcer among young females was due to their diagnosis being founded on the presence of hæmatemesis, and that some of these not being confirmed *post mortem* might not really be gastric ulcer. He described two cases of apparent ulcer, which not only proved not to be such, but did not show at the necropsy any evidence as to the origin of the hæmatemesis. He referred to the excretion by the gastric mucous membrane of poisons circulating in the blood as a possible cause of gastric congestion and hæmorrhage in these cases and adverted to the probable toxæmia in chlorotics. He stated that while acute ulceration could be produced in dogs by traumatic means chronic ulceration could not. He thought the acetonæmia was due to the breaking up of proteid material consequent on starvation. Mr. Stuart-Low alluded to the possible etiological factor of imperfect mastication of food, and advocated the giving of mucin by the mouth as a protective in gastric ulcer. Dr. P. H. Pye-Smith made reference to the diverse results of clinical and pathological records in regard to the incidence of the disease in association with age and sex. Thrombosis of the veins, not of the arteries, he considered a good working hypothesis of the etiology of gastric ulcer. He believed that as young men were liable to epistaxis, so young women might be considered liable to hæmatemesis from unexplained

causes. The direct risk to life from an attack of hæmatemesis was, as experience showed, only slight. Dr. Saundby maintained that gastric ulcer, even taking into account the operation cases, was commoner among young women than others. Seeing that the diagnosis of gastric ulcer from anæmic gastralgia was difficult, it was satisfactory to recollect that the treatment of both was the same. He advocated rectal feeding for forty-eight hours, but not for weeks or any long time. After some remarks by Dr. Pope, Dr. Payne replied. Professor Cushing next read a paper on the Intermittent Pulse, in which he differentiated four types of irregularity, ascribing them to excess or defect in ventricular or auricular contraction; and Dr. Barr (Liverpool) adversely criticised the conclusions. The proceedings of this meeting of the Section were brought to a close with a demonstration of some sphygmographs, especially a recent modification of Fick's instrument, by Professor C. R. Marshall.—The proceedings of this Section on the third day of its sitting were commenced with a paper by Dr. David McKeown, in which he endeavoured to explain the So-called Imperfect Aëration Symptoms of Postnasal Adenoids, by attributing them not to the insufficiency of the air supply during sleep when inspiration was nasal, but to the obstruction to the vascular and lymphatic circulation and to pressure on nerves due to the hypertrophy of the tissues in the nasopharynx. Dr. T. Stacey Wilson next read a paper on the Diastolic Expansion Movement of the Ventricles as a Factor in Compensation for Disease of the Mitral Valve, in which he maintained that there was a vital active expanding energy belonging to the heart whereby the blood was aspirated from the vessels into its cavities. Cardiographic evidence was advanced in support of the principal points of the paper. Dr. W. R. Gore then read a paper on his Toxin Theory of the Causation of Gout, suggesting that gout was due to the absorption of some toxin formed in the digestive tract by microbes inhabiting it. Diet and hereditary conditions were assumed to favour the formation of the toxin which acting on the liver induced a concomitant excessive formation of uric acid. Dr. Barton thought that there must be some other factor than that of uric acid in the blood in the production of gout. There were many cases of marked lithic acid calculus without any indication of acute articular gout. Dr. Gordon said that in Devonshire there was little lithæmia, and yet there was much of what was termed irregular gout for which he had found salol of particular service. Dr. Pope thought the value of colchicum depended to a great extent on its aperient action. Mrs. Garrett Anderson opposed the toxin theory of gout on the ground of the persistency of the disease. She thought it was due to a fault of bodily chemistry and of elimination. Dr. W. Ewart and Dr. Beaumont Percival then communicated a paper on the Treatment of Pneumonia with Subcutaneous Saline Infusions, which was based on the principle that infusion had been found of use in cases of severe collapse and in late stages of pneumonia. The conclusion drawn was that the treatment had not had any special value in the cases described, although in severe cases they seemed rather to delay than accellerate the fatal result. Dr. Jane Walker followed with a paper on the Progress of the Sanatorium Treatment of Consumption in England. It was maintained that sanatorium treatment was essentially a system of elaborated common sense applied to a long and tedious illness, and that the tact and resourcefulness of the attending doctor had a large part to play in its success. After Dr. Chowry-Muthu had made some general remarks on the sanatorium treatment of phthisis, Dr. Burton-Fanning emphasised the importance of the wisdom of the patients themselves. He thought a year was the shortest time in which any patient could expect a cure. Almost everything depended on the earliness of the stage at which the disease was recognised, the best cases being those in which definite physical signs had not yet developed. Climate he thought was comparatively of very little importance. Dr. StClair Thomson insisted on the necessity of medical supervision. Absolutely hopeless cases should not, he considered, be retained in sanatoria. Dr. Charles Davies next read a paper on Consanguinity as a Factor in the Etiology of Tuberculosis, in which he maintained that its great prevalence in the Isle of Man was due to intermarriage. Dr. R. Murray Leslie asked if phthisis were more common in other conditions of consanguinity due to social reasons as among the royal families of Europe. Dr. Barton suggested that the prevalence of phthisis in the Isle of Man depended less on consanguinity than on heredity, given once the introduction of the disease. Dr. Gore attributed much of the phthisis in primitive peoples to their living in small crowded cottages. The last paper of the meeting was by Dr. W. Ewart on a Case of Fatal Malignant Endocarditis and Right Embolic Hemiplegia apparently due to Infection from Dental Caries and Stomatitis, which was treated with Antistreptococcus Serum and Saline Infusions. Dr. Coldstream described a similar case following an ordinary gum boil associated with a carious tooth, in which the ulcerative endocarditis chiefly affected the right side of the heart. Dr. Haddon described three cases occurring in one small district about the same time. Dr. R. Murray Leslie thought idiopathic ulcerative endocarditis was merely a disease of undiscovered cause, and that the mouth might be an important source of infection, as in the enlargement of the cervical glands in children. Dr. T. Stacey Wilson also spoke, referring particularly to middle-ear disease as a cause of pyæmia.

SECTION OF SURGERY.

A DISCUSSION on the Modern Treatment of Simple Fractures was introduced by Mr. W. H. Bennett, followed by Mr. Howard Marsh, Mr. Keetley, Mr. Eve, Mr. Robert Jones (Liverpool), Mr. Burghard, and others. Among the points generally agreed upon were the following: The bad results as regards capacity for work following the ordinary treatment of fractures of the leg have been greatly exaggerated by some advocates of open operation; in the few cases of simple fracture of long bones which justify operation the use of screws is much inferior to that of silver wire; in the case of transverse fracture of the patella, with separation of half an inch or upwards, open wiring with due safeguards gives by far the best results; the length of time required for many fractures of long bones to unite has been overrated, and it is of great importance to attend to the neighbouring joints and soft parts as early as is consistent with securing union; and that early massage of the fractured region is sometimes useful and deserved further trial, especially in adults. Mr. Burton (Norwich), Mr. Freyer (London), Mr. Cadge (Norwich), Mr. Reginald Harrison, and others took part in an animated debate on the best method of dealing with large vesical calculi—those unsuitable for ordinary litholapaxy. Messrs. Freyer, Keegan, and Harrison favoured one or other form of perineal lithotrity, whilst Messrs. Cadge, Burton, Professor Nicolaysen (Christiania), and Mr. Chester Nance (Norwich) brought forward evidence in favour of suprapubic extraction. Much difference of opinion prevailed as to the mortality of the suprapubic method, and on the comparative hardness of calculi met with in India and England. The current belief that native Indians tolerate operation better than the average European was strongly contested. Messrs. Freyer and Keegan had more and more discarded lithotomy, in cases of large stones with improved mortality. Mr. Cadge argued strongly in favour of suprapubic cystotomy, especially in the hands of the average surgeon. Mr. Chicken (Norwich) narrated an interesting case of the removal of multiple large vesical calculi from a woman through the dilated urethra; one of the stones, being completely encysted, would not have been detected had lithotrity been employed.—At the third meeting of this Section a demonstration was given by Mr. Mackenzie Davidson on recent improvements in the application of Roentgen rays to surgery. Experience has fully confirmed the value of stereoscopic methods in skiagraphy, and Mr. Mackenzie Davidson has recently succeeded in applying it to ordinary screen work. In detecting the exact position of a bullet or other foreign body in the thickness of a limb this constitutes a most important advance. Mr. Phelps (New York) gave an account of his method of treatment of club-foot by open incision, a method he has used since 1878, and which in his hands has largely supplanted osteotomy. He urged that the deformity should be over-corrected by the operation, so as to produce the position of valgus or even calcaneus, that the use of orthopædic splints and apparatus should be wholly abandoned, as plaster-of-paris bandages were preferable. Messrs. Jackson Clarke, Tubby, Noble Smith, and Chisholm Williams strongly opposed the use of Phelps's operation, especially from the point of view of its ultimate results.

Mr. J. Hutchinson, jun., brought forward the subject of Sub-astragalar Amputation of the Foot, proving that the final results of it were excellent, and urging that it should be performed, when possible, in preference to Syme's and Pirogoff's amputations. Mr. Griffiths (Cambridge) introduced the subject of Injuries to the Ligaments of the Knee-joint, especially the internal lateral one and displacement of the semilunar cartilages. He showed a useful new form of apparatus for these cases. Mr. Burghard narrated three cases in which he had excised the superior or middle cervical ganglion of the sympathetic. He advocated incision along the anterior border of the sterno-mastoid, the sympathetic being approached by turning forward the jugular vein, carotid artery, and vagus nerve in their sheath. The operation was not difficult but at present it was quite uncertain whether the results claimed for it in the treatment of epilepsy, glaucoma, and other conditions were likely to be obtained. In one case of glaucoma on which Mr. Burghard had operated, removing both upper cervical ganglia, the patient's condition had been made much worse by the operation. In none of the three cases did any diminution in tension of the eyeball follow the operation, nor was there any marked result on the pulse-rate. One of the operations was performed for a condition of neuro-fibroma attended with great pain, and the relief was complete.

Section of Obstetrics and Gynæcology.

The greater part of the session was occupied by a discussion introduced by Mr. Alban Doran on the Natural History of Fibroids and Recent Improvements in their Treatment. Much stress was laid on our ignorance of the relation of the ovaries to fibroid tumours, and on the fact that menorrhagia, though usual, was not a constant symptom, and was of uncertain significance. He pointed out that the growth of these tumours was erratic; they were subject to sudden increase and to retrogressions, and even to spontaneous disappearance. The influence of the menopause upon fibroids was not yet certain, but after it was established only a minority continued to give trouble. Fibroids of the broad ligament should always be removed, but the majority required no operative treatment. Assuming that a case was so serious as to require operation, retroperitoneal hysterectomy was the most popular method in this country and was the one Mr. Doran preferred, but no intraperitoneal ligatures or sutures should be left communicating with the stump. Dr. Berry Hart approved of the healthy scepticism of the introducer as a most judicious attribute in gynæcology, but believed that the standpoint in this country was too conservative, probably on account of the disastrous results of the old extraperitoneal methods and exaggerated hopes in the beneficial effects of the menopause. He thought the two best methods were supravaginal amputation as described by Kelly and Doyen's panhysterectomy. Mr. Harrison Cripps dissented from Dr. Champneys's statistics, and considered that 2 per cent. was probably less than the real mortality directly due to fibroids, which he considered a much more serious disease than was generally supposed. The greatest improvements had been the intraperitoneal treatment of the stump, the Trendelenburg position, and improved antisepsis. Dr. Cameron (Toronto) pointed out that the mortality of early operation was practically *nil*: the simplest operation—that of Howard Kelly for choice—was the best. Dr. W. J. Smyly, Dr. A. V. Macan, Mr. Roger Williams, Mr. Stanmore Bishop, Dr. John Campbell (Belfast), Dr. Macnaughton-Jones, Mrs. Stanley Boyd, M.D., Mrs. Scharlieb, M.D. (Vice-President), Dr. A. E. Giles, Professor Briggs, and Mr. Skene Keith also took part in the discussion. The President, Dr. W. S. A. Griffith, remarked on the general unanimity that the discussion had elicited as to methods of operating, and the fact that grave symptoms entailed operation to save life, and that fibroids caused a certain, if not very great, mortality and a very great amount of serious disease and invalidism. The difficult cases were those on the borderline, and each must be judged individually. He pointed out that it was exceptional for fibroid tumours to be associated with amenorrhœa, or not to lead to menorrhagia. Hardly sufficient credit had been given to the benefit of medical treatment. Mr. Doran having replied, Mrs. Scharlieb read a paper on Vaginal Hysterectomy, its Immediate and Remote Results; and Professor Briggs exhibited a collection of drawings illustrating the vaginal enucleation of fibroid tumours.—On Friday, August 3rd, in the absence of Dr. Dakin, Professor Byers opened the discussion for the day upon *Post-partum* Hæmorrhage, its Prevention, and Treatment. A woman always lost some blood in childbirth, and the loss to be pathological must be excessive, and what was excessive for one woman might not be so for another, but for the purpose of definition the arbitrary limit of one pound might be taken as approximately correct. Having sketched the causes of *post-partum* hæmorrhage, Dr. Byers said that the treatment lay essentially in prophylactic measures, the avoidance of undue haste in the second stage of labour, and of any abuse of Credé's method in the third. He pointed out that the placenta should be allowed to separate in the natural way, and that when it had done so might be felt as a rounded tumour resembling a distended bladder. If a second ligature be placed close to the vulva when the cord was tied, the increased distance of this ligature from the vulva would indicate the descent of the placenta. If in any case there was reason to fear hæmorrhage after delivery, uterine inertia would be less likely to occur if the membranes were ruptured early in the second stage. Dr. Byers spoke of the danger of washing out the uterus with mercurial antiseptics, and deprecated the introduction of the hand merely to induce contraction. He advocated packing the uterus with gauze in obstinate cases, but pointed out that simply drawing the uterus down to the vulva with a pair of forceps materially controlled, and would often arrest the hæmorrhage, and mentioned the treatment proposed by Schauta for obstinate bleeding from atheromatous vessels in the placenta, by forcibly everting the uterus and placing a band of gauze round the cervix. The discussion was continued by Dr. Boxall, who concurred with Dr. Byers as to the benefit of rupturing the membranes early in the second stage, and said that a collarette placenta, as described by Auvard, had been found in 15 of 22 cases of *post-partum* hæmorrhage at the general lying-in hospital. Dr. Haddon caused some amusement by recommending that women in this country should be trained so that childbirth should be as simple a matter for them as for the untutored savage, and one they could conduct for themselves, and by declaring that pregnancy could be diagnosed by the sphygmograph. Dr. Smyly mentioned metritis and endometritis as interfering with the normal separation of the placenta, and so causing *post-partum* hæmorrhage. The President, Dr. W. S. A. Griffith, spoke of the difficulty of making sure that the uterus was empty without introducing the hand, and of the importance of placing the woman in a dorsal position during the third stage of labour. Dr. John Campbell, of Belfast, expressed the greatest reliance upon drawing the uterus down to the vulva, and keeping it there for twenty minutes or longer, as an effective means of controlling hæmorrhage. Mr. Stanmore Bishop, Mrs. Scharlieb, Dr. Purslow, Dr. Gramshaw, and Professor Briggs also spoke. The discussion was followed by Dr. Purslow's case of Complete Inversion of the Uterus of Three Years' Duration treated by Amputation, and Mrs. Stanley Boyd's paper on Conservative Surgery of the Tubes and Ovaries, showing that better results were obtained by conservative operations on the ovaries than on the tubes, and accompanied by tabular records of cases so treated at the New Hospital for Women since 1894. A cordial vote of thanks to the President for his admirable conduct of the business of the Section was carried by acclamation, on the motion of Professor Byers, seconded by Professor Briggs.

Section of State Medicine.

At the second meeting of this Section Dr. H. R. Kenwood opened a discussion on the Action which could be taken by Local Authorities for the Prevention of Tuberculous Disease apart from the Control of Milk and Meat Supplies. After reviewing the various improvements which had already taken place and the educational methods which were already practised, he concluded that, useful as these were, they were not enough, and very strongly advocated the compulsory notification of phthisis. He gave an account of the Manchester scheme and the way in which it had worked. From the sanitary and also from the economic point of view there was only one thing to do: to control phthisis as other infectious diseases were controlled. He believed that the public was now prepared for the introduction of notification, and strongly urged

that the measure should be adopted as soon as possible. Dr. Hill could not entirely support Dr. Kenwood as to compulsory notification, but he thought that much could be done by voluntary notification and by the judicious distribution of literature. Dr. Caverhill thought it was useless attempting to teach the public about the infectiousness of phthisis when the cases in the general hospitals were not so treated. Dr. Oldfield considered that so long as a phthisical patient kept to his own house he should not be interfered with. Dr. Fuller (South Africa) thought that a system of voluntary notification must precede that of compulsory notification. At the East Somerset Hospital they had built a bungalow in connection with the hospital so that phthisical patients were not admitted to the main building. Dr. Allan, Dr. Peck, Dr. Cooper-Pattin, and Dr. Jones having spoken, Sir Hugh Beevor read his paper upon Rural Phthisis and the Insignificance of Case-to-case Infection. Dr. Cooke then resumed the discussion upon Dr. Kenwood's paper, and Dr. Kenwood replied. Dr. Tew next opened the discussion upon the Provision of Cottages in Rural Districts and its Bearing upon Public Health. He considered that it was absolutely necessary that the rural councils should undertake to provide dwellings for the rural working class, since it appeared impossible to expect that under existing circumstances such dwellings would be provided by anyone else. Dr. Groves suggested that returns should be obtained from rural authorities giving population and accommodation. Dr. Peck gave a description of bad cottages at Chesterfield. Sir H. Beevor, Dr. Sutherland, Dr. Haddon, and Dr. Jones having spoken, Dr. Tew replied. Dr. Oldfield read his paper upon Diet in Relation to Cancer, which was criticised by Dr. Kenwood, and followed by one from Dr. Scott on Cancer Mortality in East Anglia.—At the final meeting of the session Dr. Cooper-Pattin opened a discussion on the question, Should Municipalities provide Common Lodging-houses and Workmen's Dwellings? He considered that the common lodging-house had a distinct influence upon the health of the class which frequented them. It was the duty of every municipality to provide the minimum of accommodation for the poor just as it was incumbent upon the State to provide a minimum of education. He was of opinion that it was the duty of municipalities to provide this accommodation. Dr. Hill said that in Birmingham the problem that faced them was to provide rooms for the working classes at 1s. per room; there were plenty of dwellings at 4s. and 4s. 6d.; but this was too expensive for a man earning 18s. per week with a wife and large family. Dr. Manby gave his experience of Liverpool, and said that there had been supplied cheap dwellings for the poor, but they had not been a financial success. Dr. Walter Smith moved a resolution recommending that the Council of the Association should petition Government to amend the Housing of the Working Classes Act. This was carried unanimously. Dr. Tew thought that the authorities should not expect to make these undertakings pay. Dr. Thresh said that municipalities should hope to pay for them, but should be prepared to incur a loss. Dr. Grünbaum then read his paper on the Addition of Preservatives to Food Stuffs. He maintained that the principles of asepsis should be applied to foods instead of those of antisepsis, and moved a resolution that the addition of preservatives to milk, butter, beer, wine, and similar products should be prohibited, and their addition to other foods regulated by statute. Dr. Hill pointed out how difficult it was at present to obtain a conviction, and thought that some State measures should be adopted. Drs. Pakes, Walsh, MacWalter, and Thresh spoke; Dr. MacWalter then read his paper upon the Hygienic Aspects of the Use of Water Gas, which was discussed by Drs. Peck, Pakes, and Walsh. Dr. Eyre contributed a paper on the Presence of Members of the Diphtheria Group, other than the Klebs-Loeffler Bacillus, in Milk.

SECTION OF PSYCHOLOGY.

DR. ROBERT JONES (Claybury Asylum) read an elaborate paper on Insanity in Lead Workers, and stated that among 1,050 male patients in the asylum no fewer than 35 owed their insanity to lead poisoning. Painters and house decorators, glaziers, plumbers, and workers in lead factories were most prone to poisoning by lead. Lead encephalopathy was now a recognised condition, and since Tanquerel in 1840 wrote his classical thesis on saturnine encephalopathy great additions had been made to our knowledge. The pottery and china industries also furnished a considerable number of cases of lead poisoning. Many cases were due to carelessness on the part of the workers employed. Partial or total blindness, paralysis, and convulsions were the outcome of the poison acting on the brain. Among the mental disturbances were mania, melancholia, and dementia. Some cases were complicated with epilepsy, others showed symptoms of general paralysis, and in the latter class the lead was a contributory cause. Mental confusion, incoherence, headache, loss of memory, hallucinations of sight and hearing, and delusions of persecution were not uncommon. Fits occurred in 7 out of 19 cases, and were probably of toxæmic origin, as in uræmia. A generous diet, and the administration of aperients, massage, open-air exercise, and galvanism, were found useful in treatment. The papers were discussed by Drs. Lloyd Andriezen, Passmore, Harry Corner, and Percy Smith. Dr. John Turner read a paper and gave a lantern demonstration on the Condition of the Cerebral Nerve Cells in Acute Delirium. Cases might be of alcoholic, septic, or of unknown origin. The clinical symptoms were uniform and characteristic, the termination was usually fatal, and the changes in the brain cells were in the form of pigmentary degeneration, chromatolysis, and pericellular hyperplasia. The discussion was continued by Drs. Easterbrook, Lloyd Andriezen, Aldren Turner, and Percy Smith. Dr. W. Aldren Turner opened a discussion on the Colony Treatment of Epileptics, pointing out the principles involved in classification and treatment. The method adopted at the colony at Chalfont St. Peter, though yet in its infancy, already gave promise of good results. Further contributions to the discussion were made by Drs. Shuttleworth, Robert Jones, Corner, Passmore, Lloyd Andriezen, and Anderson. Dr. John MacCormack (Belfast) read a paper on the Lunacy Law in relation to Neuro-psychological Diseases, and pointed to the defects of the existing law and to the insufficient protection afforded to medical men signing lunacy certificates. Remarks were made by Drs. Lloyd Andriezen, Douglas, Seymour Tuke, and Percy Smith. On Friday Dr. C. Easterbrook (of the Edinburgh Asylum) read a paper on Organo-Therapeutics in Mental Disease, a method of therapeutics first brought out by Brown-Séquard, of Paris. The discovery of the thyroid treatment of myxœdema by the grafting of thyroid, and subsequently by the method of thyroid feeding should be associated with the names of Mr. Victor Horsley, and Dr. George Murray of Newcastle. A number of lunatics (suffering from myxœdematous and other forms of insanity) were nowadays treated with thyroid and other organic extracts, for example, preparations of the pituitary gland, cerebrin, testicular extract, etc. It was very important that all possibilities of mental "suggestion" should be excluded while administering these new drugs. Sheep's thyroid was generally found sufficient. In 130 cases of insanities of various kinds treated by organic extracts, to a large extent, of course, empirically and with a view to gain knowledge, the following results appeared: (*a*) In 130 cases of insanity subject to thyroid treatment 12 patients recovered, 29 were improved, and 89 remained unimproved. Those who recovered included cases of stupor, puerperal or lactational melancholia, myxœdema, and simple and climacteric melancholia. Imminent attacks of *folie circulaire* were cut short or diminished by prompt thyroid treatment. Parathyroid substance gave negative results, and the same was the case with regard to thymus extract. Varying results were given by cerebrin, testiculin, and ovarin. The last was exhibited in 36 cases, all being females. Four of these were cases of stupor in one form or other, and they improved temporarily. Other cases, however, did not improve, and one or two got maniacal or more troublesome. The active principle of the thyroid gland was found to establish an increase of katabolic activity and of tissue oxidation, so that patients lost weight under treatment. On the whole the experiences gained in the various forms of mental disease under thyroid or other organo-therapeutic treatment were not very favourable, exception being always made with regard to myxœdema and stuporose conditions, which reacted favourably under thyroid treatment. Brief remarks on the above paper were made by Drs. Soutar and Percy Smith. Dr. James Whitwell, of the Suffolk County Asylum, read a paper on Certain Cardio-Psychical Relations.

He pointed out that imbecility might be correlated in some cases with a condition of cardiac (and vascular) hypoplasia, where syphilitic disease was absent, and referred to interesting cases published by Hagen in 1872 on the subject. Dr. Whitwell had personally observed the connection of infantile cardiac disease with an arrest of intelligence at the level of childishness, and pointed out interesting features as regards impulsiveness and sexuality which these cases might exhibit. In adults who had been for long the victims of cardiac disease an associated group of cerebral symptoms was irritability, morbid suspicion, and a proneness to develop hallucinations. In some cases it could be distinctly shown that the cardiac condition was primary and the cerebral secondary. The eupathia of advanced chronic cardiac conditions was due probably to an illusion of the kinæsthetic sense, and patients thus afflicted put forth at times violent efforts resulting in death. Dr. Maurice Craig of Bethlem Hospital read a brief paper on Blood-pressure in the Insane, showing that whereas the blood-pressure was high in cases of simple melancholia it was low in mania and agitated melancholia, and remarkably low in well-established general paralysis. Brief remarks on the above papers were made by Drs. Passmore, Corner, Lloyd Andriezen, Robert Jones, Seymour Tuke and Percy Smith. Dr. Percy Smith read a paper on Peripheral Neuritis in Insanity, dealing with the condition described as psychosis polyneuritica by Korsakov, and variously called neuritis multiplex, and "cerebropathia psychica toxæmica" by Continental psychiatrists. The condition was a characteristic mental alienation secondary to a toxæmia resulting from alcohol or metallic or septic poisoning, and associated with evidences of peripheral neuritis. The mental disturbances took the form of amnesia and loss of orientation in a marked degree, incapacity for attention, restlessness or delirium, attended often with hallucinations. During the period 1885-98 at Bethlem Hospital, the casebooks furnished records of 16 cases, and these, together with 4 cases in private practice, comprised a total of 20 cases, which furnished the material for this paper; 16 of the cases were females and 4 were males; 11 of the females and 3 of the males were undoubtedly alcoholic. The symptoms of peripheral neuritis were very distinct, and included tenderness in muscles and nerve trunks, areas of anæsthesia, analgesia, and paralysis, with wasting of muscles, and the electrical reactions of degeneration. The mental symptoms were characteristic. No other of the causes above enumerated but alcohol could be ascertained. In no case was there evidence of septic or metallic poisoning. Dr. Smith was doubtful whether these cases should be separated from those of alcoholic insanity complicated with polyneuritis. Dr. James Stewart (Dunmurry Asylum) said that in no case under his care during the last 20 years was loss of memory for recent events absent. Two interesting cases—one that of a clergyman, the other that of a married lady—were mentioned, with symptoms of marked amnesia, and a third case was alluded to as seen in consultation, where, however, the cause of the disorder was probably lead poisoning. Dr. Passmore (Banstead Asylum) had seen two cases, one of alcoholic origin, and the other diabetic, with symptoms of polyneuritis and amnesia as described by Dr. Smith. Dr. Soutar (Bristol) mentioned two interesting cases where the cause of the disorder (polyneuritis and amnesia with delusions as to personal identity) was sulphonal intoxication due to the taking of excessive doses of that drug. Prior to the conclusion of the meeting the following resolution was passed:

That this Section of the annual meeting held at Ipswich, 1900, begs to draw the attention of the Council to the fact that the present title of the Section is a misnomer, and recommends that in future the Section should be called "Section of Psychiatry."

Votes of thanks to the President and to the Honorary Secretaries of the Section were proposed and passed, and were suitably responded to, after which the proceedings of the Section terminated.

Section of Physiology.

The most important item in the second day's work was a discussion on Muscular Tonus, which was opened by Dr. Mott, who dwelt on the importance of the integrity of both the motor and sensory sides of the reflex arc. Degeneration of the sensory neurones or their branches led to an effect very similar to that produced by section of the posterior nerve roots. Thus in tabes, loss of tonus was a marked phenomenon; it was, however, unequal, because not all the sensory neurones were affected. The loss of tonus in the hamstrings could be readily demonstrated in tabetic patients by the fact that the flexion of the hip joint might be carried beyond a right angle without causing pain. The loss of tonus in face muscles could be seen when emotions were absent; thus the mask-like expression in various forms of mental disease was accounted for. These facts were illustrated by a lantern demonstration of photographs of patients. The tonus of the middle-ear muscles should be investigated in cases of disordered hearing. He next alluded to the work of Sherrington on reciprocal innervation of antagonistic muscles, and mentioned the interesting fact that the possibility of the nervous system acting in an inhibitory way on muscles was first pointed out by Sir Charles Bell in 1826. The importance of the subject came out when one examined the causation of the knee-jerk and other tendon reflexes. In conclusion, an account was given of the rare and interesting condition known as myotonia congenita. Dr. Muskens (Utrecht) followed, and dwelt particularly on his work on tonus, and on the so-called tendon reflexes. He further demonstrated an instrument called a tonometer for investigating the tension of a muscle: it lent itself specially well to investigations on the tendo Achillis. Dr. Warrington, Dr. Anderson, Dr. W. Harris, and the President spoke briefly, and after Dr. Mott had replied the Section passed to the consideration of the following papers: Changes in Nerve Cells of the Cord after Section of the Cord and Nerve Roots, by Dr. Warrington (with microscopic demonstration), which provoked an interesting discussion, in which Dr. Mott, Professor Carlier, and others joined; the *Rôle* of the Liver in Metabolism of Nucleins, by Dr. T. H. Milroy; a Note on Respiration, by Professor R. J. Anderson; Observations on the Temperature of Man after so-called Heat Stroke, by Drs. M. S. Pembrey, W. H. Passmore, and E. T. Clayton.—The first papers taken at the third meeting of the Section dealt with the effect of anæsthetics on the kidney and its secretion. Professor W. H. Thompson found in dogs that ether and A.C.E. mixture led to an increase in the water secreted, and also in the amount of total nitrogen per hour, while chloroform produced the opposite result. A mixture of ether and chloroform (2 to 1) produced a very slight effect. Albumin was absent. Chloroform produced glycosuria. Ether produced a reducing substance which was not glucose, but not yet fully identified. Chlorides were markedly diminished after the administration of all the anæsthetics. The volume of the kidney in the main followed the volume of the urine. The paper by Drs. Dudley Buxton and Levy, which were next taken, recorded experiments made for testing the results described by Kemp and Thomson, of America, who stated that with ether a rise of blood pressure accompanied by an expansion of the kidney occurred, but on pushing the anæsthetic the kidney shrunk, and the urine became scanty and albuminous, and might even be suppressed. The present experiments on dogs showed that this was not a specific effect of ether, and was only noted in five out of twelve cases; but suppression never occurred. In man, ether, if properly given, produced no bad effects on the kidney; the amount of water in the urine was somewhat lessened, but albumin was practically never found. Fall of blood pressure was largely due to surgical shock. Ether should still be regarded as the safest anæsthetic. Dr. Waller, Mr. Moore, Professor Cushny, and others joined in the discussion. Two papers on the pulse were next taken. Dr. Waller demonstrated the use of his new digital sphygmograph, its special value being that it recorded variations in the tension, and the pulse of the arterioles. Professor Cushny then read a paper on the Intermittent Pulse. The following papers occupied the final hour of the sitting: The Electrical Response of the Retina to Light, by Dr. Waller; the Histology of the Œsophageal Glands, by Professor Coffey; the Influence of Sodium Salicylate on General Metabolism, by Dr. F. W. Goodbody; the Changes in Volume of the Submaxillary Gland Accompanying Secretion, by Dr. J. L. Bunch; and a demonstration of an Embedding Bath, by Mr. W. L. Symes.

Section of Pathology.

The meeting of the Section began with a discussion on the Pathology of Cirrhosis opened by Dr. Voelcker, who considered

in detail the evidence from the historical, clinical, anatomical, and experimental sides. The lines upon which the subject was discussed were the origin of the fibrous tissue, the question of the formation of new bile ducts, the conditions met with in children, and the evidence derived from direct experiment. A paper written by Professor Hecktoen (Chicago) was then read in his absence by the Secretary. Some experiments were described in which he succeeded, by injecting into guinea-pigs certain bacteria and their products, either altogether or separately, in producing a very definite fibrosis of the liver. In the case of rabbits, injection failed to produce the hepatic fibrosis unless the virus was inoculated into the anterior chamber of the eye. He also succeeded in producing the condition in dogs with the same micro-organism and its products. Professor Flexner referred to his own experiments on the relation of the fibrous tissue in cirrhosis to the parenchyma of the liver, and spoke of the effects of the injection of bacterial products, of ricin and abrin, and of the effects of the injection of the blood serum of dogs into rabbits. He showed some specimens of cirrhosis in which he had digested the hepatic cells and the yellow elastic fibres in the liver by the action of pancreatin and bicarbonate of soda, and proved in this way that in cirrhosis there is an increase of the white fibrous tissue, of the yellow elastic tissue, and of the intralobular connective tissue in all forms of cirrhosis though the relative increase of the various elements varied in different cases. He concluded by referring to the cause of death in cirrhosis as due in the majority of cases to an invasion of the enfeebled tissues by pyogenic cocci or by other bacteria. Dr. Lazarus-Barlow dealt with two points, namely, the question whether the fibrosis was of the inflammatory type or whether it was comparable with the scleroses of the central nervous system, and the etiology of the atrophic cirrhosis that was met with in children of 8 to 16 years. The senile fibroses, cirrhosis of the liver, chronic granular kidney, fibroid change in the heart, and the scleroses of the nervous system should, he thought, be collected into one group, and be definitely separated from the fibrotic conditions that occurred as sequels of chronic inflammation. The atrophic cirrhosis of young persons he followed Dr. Rolleston in regarding as the result of congenital syphilis. Dr. Wakelin Barratt described and showed lantern slides of an experimental fibrosis of the liver he had produced by ligature of a single bile duct. Dr. Lister described a case of ulcerative colitis in a child in the liver of which there was a definite early acute interstitial hepatitis. Dr. Theodor Fisher believed that some cases of cirrhosis began as cases of interstitial hepatitis, and adduced the histories of 4 cases of acute cirrhosis in septicæmia in support of his argument. Dr. Maxwell said that the appearance of the liver in congenital atresia of the hepatic duct were similar to those resulting from ligature of a single bile duct. Many cases of intensely altered liver in congenital syphilis showed no macroscopic changes. Dr. McDonald read the notes of a case of cirrhosis of the liver in a girl, aged 15, in which there was fatal hæmatemesis. Dr. Voelcker replied. A paper was then read and specimens were shown by Dr. Lazarus-Barlow on Lipoma of the Kidney, and the pathology of the condition was discussed by the author. Dr. Voelcker suggested that perhaps the lipomata might arise in suprarenal "rests." Professor Flexner read a paper on the Bacteriology of Acute Tropical Dysentery. When investigating the diseases of the American soldiers in the Philippines, he isolated a group of organisms having certain resemblances with the "coli" group which bore important relations to the disease in point of agglutination, distribution, and pathogenicity. The same organism had been isolated from cases of acute dysentery in Japan and in Porto Rico. Dr. Manson insisted that there was not one single form of dysentery, but many; it was merely the expression of a colitis. Professor Flexner in his reply said that acute dysentery differed in many respects from chronic amœbic dysentery.—The only paper which was taken in this Section on Friday was one by Dr. Wilfred Harris on The Significance and Pathology of the Argyll-Robertson Pupil, in which he claimed that the phenomenon was more than a sign of locomotor ataxy and general paralysis, the two diseases in which it was most commonly present, but was an almost certain sign of antecedent syphilis, whether congenital or acquired. He had met with Argyll-Robertson pupil in progressive muscular atrophy, in lead poisoning, aortic aneurysm, and in numerous other patients who presented all manner of symptoms, but showed no signs of ataxy or anæsthesia; and had normal knee-jerks, but gave, almost always, a clear history of syphilis. He had only seen it in one case in which syphilis could be fairly excluded. He had seen 20 cases in which the loss of light reaction was quite unilateral, but more commonly the reflex was impaired on both sides, being more marked on one than on the other. The morbid anatomy of the phenomenon was next considered. It had never been demonstrated, but had been surmised to depend on a nuclear lesion or on a sclerosis of Meynert's fibres between the anterior corpora quadrigemina and the third nucleus, or even on a lesion of the ciliary ganglion. He had examined the effects of uniocular extirpation in birds and mammals upon the nerve tracts, in order to arrive at some conclusion in the matter. He believed that in higher mammals and man the two nuclei of the third nerve were not tied together, as was commonly supposed, but that there was a semi-decussation of the fibres subserving the light reflex between the anterior corpora quadrigemina and the third nuclei, in addition to that semi-decussation which was known to take place at the chiasma. He thought that the Argyll-Robertson pupil was due to sclerosis of the fibres in Meynert's "fountain" decussation, although it took place so slowly that it could not be demonstrated by the Marchi method, and was of so inconsiderable extent that it would probably not be shown by the Weigert-Pal method.

SECTION OF OPHTHALMOLOGY.

MR. KENNETH SCOTT read a paper on Dacryocystitis Aggravan resembling Tumour of the Face. The patient was a native of Upper Egypt who had the condition on both sides, but on the left it was so large that it resembled a malignant tumour. He opened and drained it, and the patient quite recovered. In the absence of Mr. W. Watson Griffin, his paper on Leuco-Sarcoma of the Iris was read by the Secretary. The discussion on the Treatment of Lachrymal Obstruction was opened by Mr. G. A. Berry. After remarking on the divergence of opinion as to its treatment, he expressed the view that, as a rule, cases were overtreated. He did not advocate the use of large probes, but held that most cases could be cured (when there was no bony obstruction) by slitting the upper canaliculus and passing a probe gently, not, however, repeating the operation too frequently. The cases that did best were those which had but little subsequent treatment. In very chronic cases he preferred to remove the sac, but removal of the gland was never justifiable. Mr. Cartwright objected to slitting the canaliculus in most instances, but in advanced cases he advocated the use of gold styles. Mr. Kenneth Scott advocated the use of fairly large probes, and when the obstruction was osseous he thought that a burr and dental engine got over this better than anything else. Mr. StClair Thomson said that the nose was healthy in most of the cases he had examined. Mr. Bower (Gloucester) thought that over-treatment was usually responsible for the bad results. He never used styles, and had for the most part given up the use of probes. Mr. Ernest Clarke preferred to slit the canaliculus, remove the posterior wall, and insert a nail-headed gold style. Mr. Richardson Cross advocated in severe cases slitting of both canaliculi when more efficient treatment was possible. Mr. Sydney Stephenson thought that very large probes were sometimes useful and necessary. In newborn children pressure on the sac would sometimes effect a cure. Remarks were also made by Mr. Ensor, Mr. Work Dodd, and the President, and Mr. Berry replied. Mr. Ernest Clarke read a paper on a case of Cerebral Tumour with Optic Neuritis which ended fatally The position of the growth was diagnosed during life, and for the relief of pressure Mr. Arbuthnot Lane trephined. The patient died shortly afterwards. Necropsy showed that the growth was a psammoglioma. Mr. Freeland Fergus (Glasgow) gave a lantern demonstration of the fields of vision in some forms of optic nerve disease of sympathetic origin. He drew attention to the fact that possibly the advent of sympathetic ophthalmia might be inferred from observations of the field of vision. Remarks were made by the President, Mr. Cross, and Mr. Berry. Mr. E. E. Maddox demonstrated a stereoscope in which the sight of each eye could be cut off alternately by a

screen worked by electromagnets within the instrument. He also showed some new needles, and some black and green silk sutures for cases of advancement of the ocular muscles. A paper on a Case of Congenital Microphthalmos with Cyst, by Dr. Leslie Buchanan, was taken as read.

Section of Diseases of Children.

At the second meeting of this Section, Mr. Jackson Clarke read a paper on Lateral Curvature, Knock-Knee, and Flat-Foot. The discussion was limited to those deformities which could be classed as habitual pressure deformities. Their development was discussed, as well as the structural changes that ensued. Stress was laid on the underlying pathological basis in such cases, such as anæmia, rickets, a tendency to rheumatoid arthritis or abnormal softness of the bones, and the association of the deformities with such conditions as postnasal growths. Preventive instrumental and operative measures were discussed. Mr. Chisholm Williams read an Analysis of 500 consecutive cases of Lateral Curvature of the Spine and their Treatment. Mr. Noble Smith, Mr. Green, Mr. Chisholm Williams, Mr. Muirhead Little, and Mr. Frederick Taylor took part in the discussion, and Mr. Jackson Clarke and Mr. Chisholm Williams replied to the various speakers. Mr. Noble Smith (London) contributed a paper on Ambidexterity as a Method of Teaching Children, in which he contended that education of the left hand increased the usefulness of the right, and was of great value to persons gaining their living by their hands. The President, Mr. Green, and Mr. Muirhead Little joined in the discusion, and Mr. Noble Smith replied. Mr. Muirhead Little read a paper on Infantile Paralysis, with an analysis of a series of cases, with remarks on the treatment of the condition. Mr. Jackson Clarke and Mr. Noble Smith spoke, and Mr. Muirhead Little replied. At the third meeting of the Section Dr. Samuel West read an interesting paper on Enlargements of the Spleen in Children in Malaria, Leucocythæmia, Hodgkin's Disease, Tubercle, and Syphilis, but mainly in the Splenic Anæmia of Children. The symptoms, blood changes, course, duration, and treatment were fully discussed, also the relation in which the enlargement of the spleen and the anæmia stood to each other and to other diseases. Dr. Murray Leslie, Dr. Gossage, Dr. Theodore Fisher, Dr. John Thomson, and Dr. Frederick Taylor took part in the discussion. Dr. J. H. Nicoll then read a paper on Congenital Hypertrophic Stenosis of the Pylorus, with an account of a case successfully treated by operation. Dr. Thomson and Dr. Fisher took part in the discussion. Dr. C. C. Corlette read a paper on the Causation of Infantile Scurvy, and Dr. Gossage made some remarks on the subject.

Section of Pharmacology and Therapeutics.

Dr. T. J. Bokenham opened the discussion on Serumtherapy. He gave a brief outline of the various theories which had been advanced to explain the formation and mode of action of therapeutic sera. He pointed out that the only one which seemed to apply satisfactorily to all cases was the "side-chain" theory of Ehrlich. He gave brief illustrations of how this coincided with the facts as displayed in antitoxic, bactericidal, cytolytic, and agglutinating sera. He had found antipneumococcus serum to check a tendency to septicæmia, but it did not appear to cure the lung symptoms or bring a critical fall of temperature. Sanarelli's yellow fever serum had a more than doubtful influence, but better results might be expected from preventive inoculation with the toxin of B. icteroides. Antistreptococcus serum should be used as fresh as possible and early in the course of infection. When used properly it had given excellent results. Antityphoid serum direct from the laboratory had given striking results, but the serum on the market seemed utterly valueless. Antidiphtheria serum he considered most valuable as an immunising agent and its use quite unobjectionable. In the course of the following discussion Drs. Forbes Ross, Haddon, and Sommerville mainly dealt with diphtheria and its treatment by antitoxin; and Dr. Lorimer Hart also spoke. The discussion on Diet in the Treatment of Disease was begun by Dr. Harry Campbell, who more particularly dealt with two classes of foods -namely, the stimulants and the fibrous; meaning by the latter, green vegetables. The former exist in meat and other aromatic foods, and a certain amount of these stimulants were by the speaker considered essential. Equally important he considered the fibrous foods as having a bearing on the prevention of caries and adenoids. Finally, he dealt with the quantity of food required to maintain the organism in health. Drs. Lindley Scott, Sarat K. Mullick, and Haddon continued the discussion. The latter laid considerable stress on the treatment of disease by diet only, especially on the omission of meat or a meal. Dr. Harry Campbell replied. Dr. G. K. King Martyn read a paper on Gouty Eczema, followed by remarks by the President, Dr. Given, and Dr. Fenn. The nutritive value of casein was the title of a paper read by Dr. F. W. Tunnicliffe, and the day concluded with papers by Drs. F.W. Forbes and Lindley Scott on Medicinal and Dietetic Treatment of Heart Failure in the Aged, and the Preventive Treatment of Oxalate of Lime, Gravel and Calculus respectively. —The third day's proceedings in this Section commenced with a discussion on the Therapeutics of Open Air. Dr. Burton Fanning remarked that the main necessities for success were an atmosphere comparatively free from microbes, the presence of a certain amount of ozone, and the existence of air more or less in motion. At the same time he pointed out the importance of insuring more the assimilation than a large ingestion of food. He suggested that specific fevers such as enteric might often be considerably benefited by the treatment in the open air, and he had seen much advantage from the same method in cases of nervous diseases. After Sir John W. Moore, and Dr. C. Muthu had made some observations, Dr. Ernest Kingscote attributed the advantages of the treatment to the ability to breathe pure air, the avoidance of impure air, the stimulation of the skin, the effects of light, and finally hypnotic suggestion. Necessary precautions were the avoidance of draughts, clothing with pure wool, and abundance of food, especially carbohydrates. Dr. William Calwell was followed by Dr. Jane Walker, who had met with some difficulty in phthisical patients who had much bronchitis. Dr. Esther Colebrook wished some suggestion could be made which would enable patients to safely get fresh air while strong winds prevailed. Dr. Woodcock asked whether Dr. Burton Fanning had actually treated fevers such as scarlatina and measles by means of open air. Dr. Somerville described a case which did very well treated privately, and not in a sanatorium. Dr. F. Howard Sinclair then read a paper on Open-air Treatment in Ireland. Dr. Bernard O'Connor referred to the results obtained by the open-air treatment of tuberculous lungs during several years as carried out at the North London Consumption Hospital. The President referred to some of the conditions existing in Ireland. Dr. Woodcock read a paper on the Transference of Pathisical Patients from the Town to the Country, and advocated the establishment of country sanatoria for the working classes. Dr. William Ewart concluded the work of the Section with a paper on the Subcutaneous Administration of Oxygen.

Section of Laryngology and Otology.

A discussion on the Pathology and Treatment of toxic paralyses of the Larynx was introduced by Dr. Watson Williams and Dr. Jobson Horne. Dr. Samuel Lodge contributed a record of 2 cases of adductor paralysis of the larynx due to lead poisoning. Dr. Herbert Tilley described a case of septic or "hospital" sore throat followed by abductor paralysis of the left cord. No doubt the cause was neuritis due to absorption of toxins from the throat. The case occurred before the days of bacteriological diagnosis. The President said that cases of laryngeal paresis occurred after tonsillitis, but it was uncertain what proportion were due to toxæmia and what to inflammatory changes. There seemed to be a sort of stiffness of the cords, both abduction and adduction being defective. He had personal experience of this after influenza. Dr. Watson Williams, in reply, remarked that adductor paralysis from lead was very rare. The abductors generally suffered first and often alone. This was now clearly established. Dr. David McKeown read a paper on the Auditory Results of Removal of Post-nasal Adenoids. He tested the hearing immediately before operation and immediately after it, as soon as the anæsthesia and emotional disturbance had passed off. As a rule there was very great improvement. This could not be explained on the ordinary theories of altered intratympanic pressure. He thought relief to the local circulation had much

to do with it. The venous return was impeded in adenoid cases. Some loss of hearing might occur afterwards from adhesions about the tubes. Rosenmüller's fossa should be cleared by the finger nail only, to avoid excessive cicatrisation. Dr. Watson Williams had never observed excessive scarring, and would be sorry to return to the finger-nail operation. The immediate improvement was of great interest, and difficult to explain. He had never tested the hearing immediately after operation. Dr. Logan Turner had examined cases four or five hours after operation with similar results to those of Dr. McKeown. He had observed no change in the curvature of the membrana tympani in these cases to account for the improvement. Dr. Horne thought that imperfect crushing of diseased adenoid tissue with the finger would be more likely to lead to infection of the middle ear, bruised tissues forming a suitable nidus for bacteria. The President considered that the finger-nail was useful to complete the operation. The older operators got many good results with it. Dr. McKeown's explanation of the rapid improvement seemed to him likely. Dr. McKeown, in reply, maintained that recurrence of the growths was easily dealt with and infinitely preferable to adhesions. The immediate testing of the hearing was quite unobjectionable. Dr. S. Lodge read a paper on Two Cases of Thrombosis of the Lateral Sinus. Dr. Harry Campbell made some remarks upon the Etiology of Adenoids, in which he maintained that the great cause of adenoids was imperfect mastication, owing to the food being soft and concentrated. Mastication stimulated the circulation of blood and lymph, and when deficient this circulation tended to be sluggish. Moreover, the pharynx was less stimulated directly by soft and concentrated than by hard and bulky food. Primitive peoples, whose jaws had much hard work, never suffered from adenoids. Adenoids were closely associated with malformed jaws. Dr. Watson Williams referred to the known connection of measles and other exanthemata with the development of adenoids. He doubted the mastication theory. Dr. Herbert Tilley read a paper on Three Cases of Frontal Sinus Suppuration, illustrating the difficulties in diagnosis and treatment. Dr. Watson Williams remarked that the cases showed the necessity for external operation in such cases. Dr. Pegler read a paper on the Surgical Treatment of some Forms of Nasal Insufficiency.—The third day's work of this Section was begun by Dr. Aikin, who read a paper and gave a demonstration on the Resonators of the Voice. Dr. Logan Turner remarked that in Malay and Australian aborigines some of the resonating cavities such as the frontal sinuses were absent in a large proportion of cases, and asked if that accounted for the vocal peculiarities of the races in question. Dr. Jobson Horne read a paper on some points bearing on the Pathology and Prevention of Loss of Voice in Singers. He showed photographs of the living larynx during the emission of head and chest notes, and also microscopic sections of larynges in a condition of so-called "chronic catarrh," which did not, he thought, support the view of a chronic inflammation, but rather showed a process of fibrosis, and suggested the supreme importance of physiological rest in the treatment of such conditions. Dr. StClair Thomson asked Dr. Horne if he could explain why singers' nodules generally occupied one particular situation. Mr. Waggett remarked that vocal troubles were most frequent amongst tenors and women singers who ought not to rely on the chest register. Dr. Lambert Lack inquired the precise meaning of "falsetto," "head," and "chest" register. Dr. Aikin suggested that the terms referred to were not sufficiently precise for definition. Mr. Ernest Waggett then read the concluding paper on the subject of Bezold's Mastoiditis.

SECTION OF TROPICAL DISEASES.

MAJOR G. M. GILES, I.M.S., opened the discussion on Ankylostomiasis with a paper in which he dealt with the history of the disease, his own researches into the life-history of the free stage of ankylostomum, the harmful or harmless nature of the parasite, and the way it acted upon the human being. Captain C. J. Fearnside, I.M.S., communicated a paper on ankylostoma duodenale, describing the results of a systematic search for the ova of this parasite amongst the convicts and new arrivals in the Rajahmundry Prison. Captain Leonard Rogers, I.M.S., sent a communication entitled the Classification and Differential Diagnosis of Ankylostomiasis with special reference to the type of the anæmia, in which he discussed the meaning of the term kala-azar applied to the disease by the natives. He was supported in his opinion by Major Ross that kala-azar is malarial fever and not ankylostomiasis. In the discussion which followed, Lieutenant-Colonel Baker related his experiences of ankylostomiasis in Burmah. He thought that ankylostomiasis was spread by food and not by water. Dr. Manson stated that he had twice encountered the ankylostomum in dangerous profusion in Englishmen from abroad. Dr. Manson referred to Dr. Powell's interesting observation that betel-nut chewing was possibly a protective habit with the natives of Assam, Burmah, and the Eastern Peninsula, and agreed with the opinion of Lieutenant-Colonel Baker that the parasite was generally acquired in food rather than in water. Major Ronald Ross held that the well-known fact of the disease being so commonly an earth-worker's disease supported Major Giles's discovery. Major Ross thought there was little to be said in favour of the probability of infection by way of the drinking water in ankylostomiasis. Mr. James Cantlie (London) remarked that he had searched for the ankylostomum in Hong Kong in cases of beri-beri, but had failed to find it; on the other hand, Dr. Walker (Borneo) found the parasite in every *post-mortem* examination made in cases of death from beri-beri. Colonel Macleod, President of the Section, read a paper upon the Management of Lung Lesions consequent on Liver Abscess. Its object was to urge that cases of abscess of the lung consequent upon liver abscess should be treated as those of a lung cavity and exploration and incision made into the chest. Mr. James Cantlie read a paper upon Subhepathic Abscess. He believed a subhepatic abscess was due to an inflammation of the lymphatics on the under surface of the liver, corresponding to the suprahepatic abscess lying between the layers of the coronary ligament, and also caused by a lymphangitis. The two conditions were not associated with or caused by dysentery or other intestinal lesion. He also gave an account of investigations he had made concerning the depth of the inferior vena cava from the surface of the thoracic and abdominal walls in reference to the danger of exploration by an aspirating needle or puncture by a trocar and cannula. Mr. Johnston Smith read a paper on the Diagnosis and Surgical Treatment of Tropical Liver Abscess during the last five years at the Seamen's Hospital, Greenwich, and Staff-Surgeon Bassett-Smith, R.N., sent a paper upon abscess of the left lobe of the liver, with remarks particularly referring to its amœbic causation. On Friday, August 3rd, the adjourned discussion on Liver Abscess was resumed. Dr. Manson thought the surgeons in this country were unnecessarily heroic in operations upon liver abscess. He had seldom seen necessity for removal of a rib, or for the elaborate stitching of parts together which such an operation appeared to require. He had seen the best results from the use of a large trocar and cannula and a large-sized drainage tube. There was need of investigation into the means at our disposal of diagnosing pus in the liver; the presence of the amœbæ coli in the sputum was not present unless direct communication existed between the cavity of the abscess and the cavity in the lung. Dr. Manson could not understand the reason for the serious cases of hæmorrhage which had been reported by Bombay surgeons from the use of the exploratory needle. Major R. Ross remarked that in a case of liver abscess which occurred in Liverpool, leucocythæmia and not malaria was in evidence. Mr. Cantlie said that he always used the trocar and cannula, as taught by Dr. Manson. He agreed in the opinion that as a rule surgeons in England practised operations of unnecessary severity, and the results were not so good as by the use of the trocar and large drainage tube. Besides, on a foreign station, where skilled assistance was unattainable, a surgeon would not hesitate to use a trocar, whereas he would demur to perform a laparotomy singlehanded, or even cut down by way of the chest. Mr. Cantlie advised early exploration of the liver, and considered the formation of secondary abscesses in the lung as a sign that operation had been unjustifiably delayed. Colonel K. Macleod agreed with Dr. Manson that operations in England for liver abscess were unnecessarily severe. He referred to a case in which laparotomy failed to establish the diagnosis of pus, and yet the pus was passed

by the bowel three days afterwards. He regarded removal of a portion of a rib to reach a liver abscess as an unnecessary proceeding, and except in cases of actual invasion of the lung or pleura by liver pus not to be commended. Dr. George A. Williamson (Cyprus) communicated a paper on the Cyprus Sphalangi and its connection with Anthrax (called locally "sphalangi bite"). The so-called sphalangi was an insect in general appearance resembling an ant of medium size. The insect was some one-third to one inch in length; its body was covered by fine hairs which probably served to carry infective material such as anthrax spores to an abraded surface. According to Professor Trail (Aberdeen) the sphalangi belonged to a genus of sting-bearing hymenoptera called mutilla. Dr. Williamson described a case of a woman bitten during the night in the temple; a local induration took place, and a marked subsequent œdema around the eyes. In the discharge coming from the wound large numbers of anthrax bacilli were found. The source of infection seemed to have been from a sheep dead of "phlangari" (the local name for anthrax) whose carcass was near by; and the infection being carried by the insect's bite. The treatment adopted was cauterisation by thermocautery, and injection, hypodermically, around the wound of a solution of mercuric chloride and potassium iodide. Dr. Manson remarked upon the close analogy between the method of infection in plague and such diseases as sphalangi. Major Ronald Ross (retired I.M.S., Liverpool) read a paper on Some Suggestions for the Improvement of Sanitary and Medical Practice in the Tropics. The special points dwelt upon by Major Ross were: (1) Instruction in animal parasitology in the ordinary curriculum and in comparative parasitology. (2) Instruction in tropical medicine to all medical men proceeding to the tropics whether as ship surgeons or as private practitioners. (3) The necessity for small up to-date libraries in the principal towns in our tropical possessions. (4) The supply of microscopes and other apparatus, such as antitoxins, antivenene, and material for Grünbaum-Widal's tests. (5) A publication of medical regulations and municipal sanitary regulations. (6) Organisation of research by the foundation of research laboratories, by the appointment of specialists to prosecute definite lines of investigation, and by encouragement of private research. (7) A central scientific authority to encourage and support medical scientific research in the tropics was most desirable. Dr. Mullick (London) remarked that it was high time specialists were chosen to fill the medical chairs in Indian schools. Colonel K. Macleod remarked that teaching and original research were gifts seldom found combined; that the primary object of a lecturer in a medical school was to be a good teacher. Original investigators were not necessarily the best men to hold such appointments. Mr. Jonathan Hutchinson, F.R.S., opened the discussion on Yaws. Mr. Hutchinson showed a man who had been on the West Coast of Africa, and, according to the medical men who saw him there, was suffering from yaws. He was seen subsequently by a medical man in Liverpool well acquainted with yaws, and by Mr. Hutchinson himself, and there was no doubt in their opinion the patient had yaws. The typical symptoms had disappeared, and the eruption which appeared on the lower extremities, forearms, etc., looked exactly like syphilis. Mr. Hutchinson then dwelt upon the fact that in his belief yaws was syphilis; that it was in fact the parent or original source whence syphilis was imported into this country; and he brought forward a considerable amount of evidence in support of his belief. Mr. Hutchinson showed many photographs of cases of yaws and of syphilitic skin eruptions side by side, and he deduced exactly the opposite opinion from the pictures that Sir William Kynsey, Dr. Daniels, and Dr. Nichols, the possessors of the photographs, entertained, inasmuch as he believed the diseases to be the same. The contention that yaws showed no local primary sore Mr. Hutchinson held to be erroneous. In Fiji yaws was very general, and there was no syphilis. Mr. Hutchinson considered this a proof that the people were already inoculated. The explanation that sailors did not return to this country with yaws was that they developed syphilis and not yaws in the temperate climate, whereas in warm countries the growths assumed a granulomatous form more readily. Dr. Davis (Samoa) said syphilis did not exist in Samoa or Fiji, but yaws was plentiful. He had never seen a case of yaws except in children. The natives thought it was healthy for their children to have yaws. Yaws did not exist in the Ellis group of islands until the Samoans went there, and the Samoans in turn contracted the disease from the Fijians. Dr. Manson, on general grounds, opposed Mr. Hutchinson's theory that yaws and syphilis were identical diseases, depending for their variation in type upon climate. Inoculation by yaws did not seem to prevent syphilis; cases were recorded in which the patients had first yaws, and then syphilis, and, on the other hand, syphilis and then yaws. Yaws was not met with in England in cases coming from the tropics, because, just as in several forms of ringworm, a high temperature was required. Mr. Rees (London) stated that at Cape Coast Castle Hospital he saw cases of syphilis and yaws, but in the hinterland he met with yaws only. The natives called syphilis a new disease, and distinct from yaws, with which they were well acquainted. Colonel K. Macleod believed that the case shown by Mr. Hutchinson was a case of syphilis, and, on taking the opinion of those present at the Section, all declared a similar belief. Dr. Phineas Abraham showed a case of Leprosy and Scrofulous Lichen. A vote of thanks to the President, proposed by Dr. Manson, was seconded by Mr. Caulie, and unanimously carried.

Section of Navy, Army, and Ambulance.

The subject for discussion in this Section was the First Aid and Transport of Sick and Injured in Civil Life in Large Towns. It was opened by a paper by Surgeon-Major G. A. Hutton, J.P., Organising Commissioner, St. John Ambulance Association. He gave a retrospect of fifty years, but said that it was not till 1872 that any effort was made in this country to organise transport for such service, when a member of the Order of St. John of Jerusalem established an ambulance service in the mining and pottery district at Burslem and Wolverhampton by the purchase of two litters made in Berlin. In 1877 the St. John Ambulance Association began work at Woolwich, and soon extended their sphere of labour to the metropolis, establishing a depôt at St. John's Gate, Clerkenwell. Since that date the work had largely extended throughout the kingdom, owing in great measure to Sir John Furley's efforts. In 1890 the present Prime Minister called for reports from our Ministers at the Continental capitals and from the chief cities of the United States on the subject, which were still most interesting and instructive reading. Experience had proved that the police were the best administrators of the system, and their education in this connection had for some years been recognised by the Home Office. He urged that they should undergo an annual course of instruction to maintain their efficiency. The Invalid Transport Corps established at St. John's Gate he highly valued, and he considered the whole subject was deserving of the assistance and support of the medical profession. Brigade-Surgeon-Lieutenant-Colonel Elliston, V.D., V.M.S., concurred as to the value of the instruction of the police in this work, and urged that the local authorities should give these men more help and encouragement to maintain their efficiency; he also bore testimony to their proved efficiency at the disastrous railway accident at Wellingburg. The President mentioned the numerous ambulance and first aid stations in the metropolis, and pointed out that the extension of the system was merely a question of money. Surgeon-Major de Zouche Marshall, A.M.R., contributed a paper on First Aid in Civil Life, claiming the support of the local authorities and the payment of the working or "professional ambulancers" and their instructors. He proposed a scheme for their efficient instruction, and that pay should be regulated by the efficiency attained. He thought that instruction with pay according to efficiency should be given to the coastguard, fire brigade, railway men, officers of the mercantile marine, lock-keepers, boatmen, and intelligent men of good physique all over the country. At the President's invitation the ladies present were invited to remark on the suggestions made, and they endorsed the value of the work and its claim for greater support. Surgeon-Major Ince, I.M.S., anticipated great results from the labours of the Section. Surgeon-Major T. F. S. Caverhill, M.B., read a paper on Cavalry Ambulance Service, a subject he had also dealt with in the British Medical Journal of January 27th last. He presented this as

a pressing question, seeing the new demand for mounted troops. The New South Wales cavalry ambulance service had been able to keep up with cavalry in South Africa, and its services were in great demand. He advocated the formation of a mounted bearer company, with suitable conveyances for the wounded. Surgeon-Major Valentine Matthews, V.M.S.C., contributed a paper on the same subject, maintaining that it was hardly a matter for controversy that the present arrangements for the mounted services were inadequate. He considered wheeled ambulances requisite, and suggested that large umbrellas with a spike at the end might be a useful addition as shelters to the wounded exposed to the weather. Lieutenant-Colonel C. B. Maitland, I.M.S., suggested a four-mule cart with four coir-rope stretchers slung from spring hooks, and one seat; two mules could be ridden by orderlies, and other two orderlies could sit behind, the cart to be heavy, with big wheels and broad tiers, and filled with a few essential requisites. Major E. M. Wilson, R.A.M.C., considered the large number of horses that the schemes in the papers proposed was impracticable as far as that country was concerned in the South African war. Surgeon-General O'Dwyer, (P.M.O. Aldershot) was in favour of a bearer company with mounted equipment and lighter-wheeled ambulances on American lines. Surgeon-Captain F. L. Stephenson, V.M.S.C., contributed a paper on the Cycle in Field for Medical Services. The ambulance was formed by two bicycles side by side, held rigidly together by a framework which carried the stretcher. It had to be made very strong for rough ground, but had been taken along ordinary roads at from six to seven miles an hour without jolting the patient, who was under the eye of the riders. He considered the cycle had been proved capable of supplying medical aid in the field to mounted troops. Surgeon-General O'Dwyer (P.M.O. Aldershot) said that he had formed a very favourable opinion of the possibilities of the cycle for medical service in the field after a demonstration by Surgeon-Captain Stephenson with some forty of his cycle company at Aldershot, and had so reported officially. On August 3rd Surgeon-General J. B. Hamilton read a paper on The Royal Army Medical Corps, Past, Present, and Future. The past history of the R.A.M.C. from the Warrant of 1858 was clearly and succinctly given. The author submitted that to attract suitable candidates for entering into the R.A.M.C. and place it on a proper footing, it was necessary (1) to increase the present rate of pay at home and in the colonies; (2) to grant in India pay at least equal to that of combatant officers of the same rank; (3) to increase the strength of the R.A.M.C. to at least 1,000 executive officers with the formation of an adequate reserve; (4) to reappoint medical officers to militia regiments; (5) to extend military titles to militia and volunteer medical officers; (6) to guarantee a fair amount of leave and study leave; (7) that surgeons-general should be granted the title of major-general, and be graded with the rest of the general officers of the army; (8) that the major-generals and colonels R.A.M.C. on the staff of the army and on that of the general officer commanding should receive proper recognition; (9) that there should be a more equitable distribution of honours and rewards. Surgeon-General O'Dwyer referred to the great advantages that would result if Principal Medical Officers on active service were on the staff of the General Officer in Command so that they might be enabled to administer their department under the most favourable circumstances. He also suggested that the Principal Medical Officer on the General Officer Commanding's Staff should have executive power *re* sanitary matters, and instanced many advantages that would result. Surgeon-Major Caverhill, M.B., Lothian and Berwickshire Yeomanry, advocated the evolution of a specially qualified sanitary staff from the R.A.M.C. Surgeon-Captain Harper, V.M.S.C., criticised the proposed new Volunteer Act with the substitution of the present call on volunteers in the case of actual or threatened invasion, to that of "extreme national danger or sudden emergency," virtually placing officers of the volunteers at the call of a Secretary of State. He strongly deprecated this proposed legislation, predicting it would result to a large extent in the ruin of the Volunteer force. Surgeon-General Hamilton, in reply, said the future supply of candidates for the R.A.M.C. was worthy of the consideration of the British Medical Association. He deprecated the proposed new Volunteer Act. Mr. Clinton T. Dent read a valuable paper on Modern Small-bore Rifle Wounds. He considered Mauser and Lee-Metford rifle wounds on a par, if their destructive effects were solely regarded. The recoveries from small-bore rifle wounds of the most severe description in the Boer War had been numerous and most remarkable; the percentage of such wounded men who resumed duty had been unusually high. Amputations had been fewer proportionately than in any previous war, conservative surgery more successful, though he thought the so-termed "humanity" of the small-bore bullet had been a great deal exaggerated. Aseptic surgery he considered practically impossible under the conditions of active service. Surgeon-General O'Dwyer, from recent extensive observations of wounded from South Africa arriving at Aldershot, had been struck by the frequency of nerve injuries. He had also discovered a sequence of more or less dyspnœa from chest wounds. "Septic orderlies" on field service was difficult to prevent. He emphasised the necessity for the instruction of the soldier in the employment of his antiseptic dressing pad. Mr. Clinton Dent, in reply, agreed as to the proved value of the antiseptic pad dressing. Staff-Surgeon W. J. Colborne, R.N., contributed a paper on Infectious Diseases on board ship, in which he advocated the most elaborate precautions to prevent the entry or spread of infectious disease on board ship, including the removal to hospital on shore of the infected patient and his personal attendant when possible. Inspector-General Belgrave Ninnis, M.D., R.N., President of the Section, advocated a central position on the upper deck as being the most desirable for the treatment of infectious patients. Major James, R.A.M.C., contributed a paper on the Sanitation of Camps, and Lieutenant-Colonel J. C. Marsden, I.M.S., advocated the use of permanganate of potash for purifying the drinking water and also the "Jewish system" of conservancy in temporary camps. There is no doubt that this the first Navy, Army, and Ambulance Section has been one of great public interest; it certainly was a great success.

NAVY, ARMY, AND AMBULANCE SECTION: LOAN COLLECTION.

THE loan collection of objects germane to this Section attracted the attention of many of the associates and visitors. It included Mackenzie Davidson's *x*-ray localising couch and localiser. Staff-surgeon Beadnell, R.N., contributed an interesting collection of small-bore rifle bullets and cartridges, including Dum-dum and improvised Boer Dum-dum bullets, pom-pom cartridges, bandolier, and shell fragments, etc. The St. John Ambulance sergeant in attendance had a similar collection, gathered at the Base Hospital at Wynberg during his service there. There were interesting diagrams of the authorised R.A.M.C. arrangements and provision for an army corps on service abroad 100 miles from its base on the sea coast; a similar diagram for a cavalry brigade; one for a bearer company in action; another for a bearer encampment (the work of Surgeon-Lieutenant R. Fletcher, A.M.R.). The collection also included a diagram of Badvodvoski's fitting for four sling stretchers, two a side one over the other, in a railway goods van; and Private Thomas, V.M.S.C., patent pneumatic stretcher and hammock, the margins of which were pneumatic-cushioned, the head cushion from its breadth serving as a pillow. Numerous radiographs of bullets lodged in the body and limbs were hung on the walls of the room. Maw and Sons exhibited their field service panniers and haversacks, fitted with medicines, splints, and appliances; and the St. John Ambulance Association their ambulance hamper and surgical haversack fitted; Burroughs and Wellcome's tabloid cases for tropical service, complete; a wheeled hand ambulance litter invented by members of the St. John Ambulance Brigade, Ipswich, considered an improvement on the Ashford litter, the wheels being lighter, a tin case with first-aid relief apparatus fitted below the carriage, and the hood provided with an inspection flap at one side.

The Military Equipment Company exhibited in the grounds of the Gainsborough Hall a tortoise tent, 20ft. by 24ft. at the ridge, the roof lined, with flap ventilators at side, and fully fitted with 12 beds, with bedding, tables, forms, commode chairs, camp stools with canvas backs, bed tables and cupboards combined, Indian chairs, water cylinder, with drinking cup of

block tin, and carrying straps. All the furniture was collapsible and readily packed in a kit bag. On the tent poles were clip bands for the hanging of clothes, etc.

Adjoining was a squared upright latrine tent, with w.c. pail and seat, urine receptacle and slop pail—all metal receptacles—"nesting," while the tent packs in small compass in a w.p. canvas bag.

The Monson tent, an American patent, exhibited by the same company, 14 feet × 13 feet × 10 feet, was specially interesting from the provision of a "fly" canvas cover 8 inches above tent roof, protected by which the roof of the tent was ventilated on either side of ridge by reticulated apertures. It was furnished with a "compactum" bed frame, with canvas bed bottom, cork mattress, bedding, and mosquito net frame. There were also most ingenious basin and bath of Willesden canvas fitted on four light poles, which on removing the basin stretched the bath out; it had previously acted as a save-all tray under basin; and a water bucket of the same material. There was a hinged tripod-supported basin of the same canvas, with soap, shelf, and sponge around central hinge of the tripod.

Another bed frame with bedding—the Burleigh—was shown in this tent; the supports of folding lattice work which when collapsed formed a case for the bedding, including an elastic tinned wire-thread stuffed pillow.

The Congo stove, with central fireplace and two ovens, was shown. It was of fair dimensions, and of sheet iron, with tinned baking dishes, the whole nesting for carriage in the larger oven.

The Bedford invalid jacket, designed by Mrs. Alfred Paine, of Bedford, attracted attention. The flannel seams had hemmed edges, and were readily ripped as requisite, to expose arms or chest. The sleeves thus opened up can be converted into a sling by means of attached tapes. The ripped seams can be readily brought together with safety pins.

SIXTY-EIGHTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at Ipswich, July 31st, August 1st, 2nd, and 3rd.

Third General Meeting.

The adjourned general meeting was held on Thursday, August 2nd, 1900, at the Central Hall, Higher Grade School, at 2.30 P.M. The President (Dr. Elliston) occupied the chair.

The President: Ladies and gentlemen, the first business this afternoon is the Address in Surgery. I have the greatest possible pleasure in calling upon our distinguished member, Mr. Frederick Treves, to deliver his address.

Mr. Frederick Treves, who upon rising was received with great applause, then proceeded to deliver the address, which was published in the British Medical Journal of August 4th, page 284.

The President then called on Mr. Jessop, of Leeds, to propose a vote of thanks.

Mr. Jessop said that he esteemed it a great privilege to have this proposition placed in his hands. Mr. Treves was a prolific theme. There were hundreds of students now scattered throughout the land who would carry out the principles which they had learnt at his feet. Whether they viewed him as a teacher of surgery through the medium of his works, or as a hospital surgeon and teacher of students, no surgeon or student of surgery at this time could afford to do without that close study about which he had spoken. They were all very much indebted to him for the alacrity with which at the call of his Queen and his Government a few months ago he left his practice, he left his home, and made enormous sacrifices which could hardly perhaps be understood in order to give his services on the battlefield to the soldiers who were fighting their country's battles. They were also indebted to him for his able and very instructive address. Whether they viewed him as the patriotic surgeon who left everything at a moment's notice in order to do his country's service in the battlefield or as the brilliant deliverer of a masterly address, or whether they viewed him as a man, he was sure they would all agree that the resolution he was going to propose was one which commended itself to everybody present, and he called upon them with great confidence to pass it:

That the cordial thanks of the meeting be given to Mr. Frederick Treves for his able and interesting Address in Surgery.

Dr. Ward Cousins esteemed it a very high honour to second the vote of thanks to his friend and colleague, Mr. F. Treves, for his remarkable address and statement of fact, which had been couched in well-chosen sparkling words. He had given them a lesson as to the necessity of exactness of expression in their everyday practice of the art of surgery; but the progress of surgery had been so great that there was no excuse for any want of exactness in their expressions. In days gone by they smiled at the surgeon with his gold-headed cane and mysterious medicines, but to-day by the exactness of their science he had been placed in a very different position. Sixty years ago the art of surgery was rough, and success in a great degree depended upon dexterous rapidity. The surgeon to-day, however, must be calm and exact in every movement, and at the same time, with all his exactness, with all his scientific knowledge and equipment, he could still be kind and still benevolent, and have sympathy with the suffering ones who were in his hands. He was very much pleased with Mr. Treves's reference to their indebtedness to the great discoverer of anæsthetics, because they owed the starting of anæsthetics in surgery to their friends and colleagues across the Atlantic. Anæsthesia came from America, and asepsis came from England. [Laughter.] He begged Scotland's pardon. The surgical world had sometimes regretted that the discovery of antiseptics did not precede that of anæsthesia; they thought if surgeons had had the power of using antiseptics before the introduction of anæsthesia, it would have saved a large loss of life, because they knew that on the introduction of anæsthesia operations multiplied one hundredfold. However, they would agree with him that these great gifts of Providence fell upon the world at the right moment and in the right order. In conclusion, he felt sure they would join him (Dr. Ward Cousins) in the wish that Providence might spare Mr. Treves many years to adorn the profession which he had done so much to uphold.

Mr. Treves, in reply, said he was very greatly indebted both to Mr. Jessop and to Dr. Ward Cousins for the extremely kind and flattering way in which they had proposed this vote of thanks, and still more so to the meeting for the manner in which they had received it. He might say, without any question of saying the right thing at the right time, and speaking from the bottom of his heart, that there was no sort of approval of which any man could think better of or be more jealous of, or more anxious about than the approval of the members of his own profession.

Constitution Committee.

The President of Council stated that the Council at its meeting that morning, with regard to the selection of this committee, had agreed to a principle which they hoped the general meeting would adopt, namely, that two members should be apportioned to Scotland and two to Ireland, the Council nominating one and the general meeting the other. The great Branches in the Colonies were divided into five groups—East India and the Archipelago, Australia and New Zealand, South Africa, the West Indies, and Canada, with one representative for each of those divisions. The Council had nominated two of these five, leaving it to the meeting to nominate the other three. The names which the Council submitted to the meeting for approval as its half of the committee were as follows: Surgeon-General Hamilton, as representing South Africa; Mr. Cantlie, as representing East India and the Archipelago, leaving the meeting to nominate representatives for Canada, Australasia, and the West Indies. The representatives of the Council were: Sir John Moore, as representing Ireland; Dr. J. C. McVail, as representing Scotland; and Mr. Verrall, Dr. Woodcock, Dr. Saundby, Mr. Andrew Clark, Dr. Ward Cousins, Dr. Radcliffe Crocker, Mr. Butlin, and Dr. Roberts Thomson, as representing England.

Mr. Victor Horsley said that on the previous day he had had the honour of submitting certain names to them, and he

had now to submit a different list—a list of twelve names. From what had fallen from the President the members would understand that they had to submit to them a representative from Scotland. They proposed again Dr. Buist, of Dundee. With regard to Ireland, inasmuch as the middle and South of Ireland were represented by Sir John Moore, he proposed that Professor Byers should represent the North of Ireland. As the representative of the West Indies they proposed Dr. C. G. Gooding; as representative of Australasia Dr. Morier. Then as regards the English members they proposed Dr. Bateman, Dr. Cox, Dr. Gordon, Dr. Milburn, Dr. A. Brown Ritchie, Mr. J. S. Whitaker, and himself. That would be a list representative of all parts of England, north, south, east, and west, and he hoped it would meet with their approval. In regard to Canada, he was pleased to see Professor Cameron present, because he could advise them whom to nominate for Canada as being a man likely to attend the meetings in London during the winter.

Dr. Murphy inquired whether it was desirable that the members of the Council should vote for the appointment of the committee inasmuch as they had already voted in the Council.

The President hoped the committee as proposed would at once be accepted. He hoped that the courtesy of the meeting would be extended to Mr. Horsley's proposal, and that they would at once accept it. It had been carefully considered, and the names represented every shade of opinion.

Professor I. H. Cameron suggested the name of Mr. Edmund Owen, stating that Mr. Edmund Owen had promised to deliver an address on surgery in Canada, and as he would be at Ottawa next month no doubt he would be able to ascertain the local view.

Mr. Victor Horsley accepted the name of Mr. Edmund Owen.

The President of Council then suggested that the first meeting of the committee should take place in October at the time when the Council and other committees meet.

The twenty-four names forming the committee were then put to the meeting and approved of unanimously, namely: Dr. A. G. Bateman, Dr. R. C. Buist, Mr. H. T. Butlin, Professor J. W. Byers, Mr. James Cantlie, Mr. Andrew Clark, Dr. J. Ward Cousins, Dr. H. R. Crocker, Dr. Alfred Cox, Dr. C. G. Gooding, Dr. W. Gordon, Surgeon-General J. B. Hamilton, Mr. Victor Horsley, Dr. J. C. McVail, Dr. C. H. Milburn, Sir John Wm. Moore, Dr. C. G. D. Morier, Mr. Edmund Owen, Dr. A. Brown Ritchie, Dr. R. Saundby, Dr. J. Roberts Thomson, Mr. T. J. Verrall, Mr. J. S. Whitaker, and Dr. S. Woodcock.

Dr. Cox wished to know if they could now nominate the chairman of that committee.

The President replied that the committee must elect its own chairman.

Dr. Bernard O'Connor observed that in Royal Commissions the chairman of the commission was named by Parliament and not by the commission. He considered that the Association should nominate the chairman of the committee, and he proposed Mr. Victor Horsley.

The President was afraid that he must rule that out of order.

Dr. B. O'Connor said that it was an unconstitutional ruling.

The President replied that that was his ruling.

Indian (Military) Medical Service.

Dr. S. K. Mullick had given notice of motion in reference to this subject, but as he had been advised that many of the statements in his resolution might possibly offend, and as his object was not to offend but to have the matter discussed, he had deleted a certain part, and he now moved the following resolution:

> The present system of filling professorial chairs in the medical colleges in India by virtue of grade rank in the Indian (Military) Medical Service is apparently prejudicial to the interest of medical education and the advancement of original research in India. This meeting hereby appoints a subcommittee to consider the matter and report to the Council.

In doing so he did not wish to cast any aspersions on the Indian Medical Service; it had done yeoman service in India, but they in India considered that they had a certain grievance in this matter, and he asked that it be referred to a committee to consider and report to the Council, which they did not seek to bind in the least. The Indian Medical Service was a purely military service, because the gentlemen who filled the chairs could be called away at any time on active service. Very often the gentlemen who filled these chairs were shifted from chair to chair, which did not conduce to the advancement of the subjects which they were called upon to teach, and he gave various illustrations of it. These chairs were open to the profession only if they joined the Indian Medical Service. It was a great hardship that the examinations for that service were held in England instead of India, because those who competed for these posts had to come over to England on the off-chance of getting into the Indian Medical Service. He had communicated with Sir William Mac Cormac and Sir William Broadbent and others on this subject, most of whom said they had not sufficient knowledge to give an opinion on the subject, which was perhaps true; but Dr. Church, the President of the Royal College of Physicians, had put the whole thing in a nutshell, from his (Dr. Mullick's) point of view, in the following letter:

> My dear Sir,—I do not feel that I have sufficient knowledge of the subject about which you have written to me to express any opinion on it. It cannot be right that professors should be constantly changed from chair to chair if the subject matter of the chairs are different.—I am, yours very faithfully, W. S. Church.

Mr. Victor Horsley formally seconded the resolution.

Colonel Kenneth Macleod was pleased the motion had been modified, as he had been saved the disagreeable necessity of using any strong language. Most of his life had been spent in India in educating medically Dr. Mullick's countrymen, and, therefore, he had the very warmest sympathy with them. The question was one of administration by the Government. The medical colleges in India were Government institutions, and the appointments to them were made by the Government, and they filled them up with the men they thought the best. The resolution was practically a reflection on the Government, and he was glad to recognise that no reflection had been cast on the medical officers in the Service who had held office in these colleges. He was bold enough to say that no such thing could possibly be done, because their work was beyond cavil. The work had been initiated and developed by the Indian Medical Service and there was not the slightest possibility of casting a shadow of doubt on the honesty of the officers who filled these posts. Such being the case, *cadit quæstio;* why make a change? The question of rank had nothing to do with the selection of these officers; it was a question of ability, fitness, and competence. The object of the Government was to attract the very best men, and if they abolished these professorial appointments they deprived the service of one of its best attractions to good and sound men. He did not think that because a man had held one chair and taught one subject he was disqualified for teaching another subject. If this matter was referred to a committee he was sorry for that committee. How were they to proceed? were they to go to India and and summon before them various Government officials? And if they did not do that where would they get their evidence from? As regards Dr. Church's letter it showed he did not know the merits of the case, and nobody did who had not worked in India.

Dr. Chowry-Müthü fully endorsed what Dr. Mullick had said. Colonel Macleod had gone off on a side issue; it was not a question of casting a slur on the Government. They only asked that the principle which obtained in England should be extended to India. Here all appointments were thrown open to competition, and the best qualified selected for the post, whereas in India it was not so.

Dr. Groves pointed out that there was already a Committee which was considering qualifications in India and the Colonies, and this subject might very well be referred to it.

Dr. Saundby thought a *primâ facie* case had been made out, and without expressing any opinion on either side it would be better to refer it to that Committee for inquiry.

Mr. Freyer thought there was no analogy between this country and India. If the resolution were passed, there would not be the remotest likelihood of its having any effect; they might just as well think that tickling the dome of St. Paul's would have any effect on the Dean and Chapter as to

think that this would have any effect on the Government of India.

Surgeon-General Hamilton, who had served for many years in the north of India, endorsed the observations of Colonel Macleod and Mr. Freyer.

Dr. Pope pointed out that there was a Subcommittee of the Parliamentary Bills Committee which was watching the interests of medical officers in the army and naval services, and all that was proposed was that this should go before that Committee.

Mr. Freyer protested that the Association would be making a fool of itself by passing a resolution which would have no effect.

The resolution was then put and adopted.

Expenses of Constitutional Committee.

Mr. Victor Horsley said that a motion which appeared in his name was not quite correct. He was told that it had been the custom in the past not to allot a fixed sum, but that the expenses should be paid. Within his own knowledge that was not correct, because a certain sum was paid to a Committee, of which he was a member, to defray the expenses of provincial members. He asked the meeting to carry out exactly the same principle, but not merely that the travelling expenses should be paid, but the hotel expenses, although no fixed sum should be mentioned.

Dr. Oldfield suggested that the words should be "Not exceeding £300."

Dr. Woodcock formally seconded the resolution.

The Treasurer inquired what was meant by "hotel expenses." If a meeting was held at 2 in the afternoon and a member could go home that night, he took it they ought not to pay him for hotel expenses.

Mr. Victor Horsley said that what was ordinarily understood by "hotel expenses" was only the defrayal of hotel expenses when a member was obliged to stay in London in the execution of a duty. If there was no necessity for him to stop he would not get them.

The President of Council thought they should allow the travelling expenses only, or the travelling expenses and a definite sum of one guinea a day.

Mr. Victor Horsley was prepared to accept the last suggtion.

The President then put the following resolution:

That the travelling expenses of all members of the Constitutional Committee be paid, and the provincial members of the Committee be further paid a sum of one guinea a day for hotel expenses.

Carried unanimously.

Practice of Medicine in India.

Dr. Mullick stated that he would move that the following resolution, of which he had given notice, be referred to the Parliamentary Bills Committee:

That having regard to the fact that persons possessing no knowledge of medicine are by law allowed the same right to practise in India as fully-qualified practitioners, this Association considers it advisable that there should be a system of registration to protect the public from the mischievous machinations of charlatans; it further undertakes to do all it can to carry this resolution into effect.

Dr. Groves stated that the Council had applied to the Colonial Office, and had received a good deal of information with reference to the medical practice in the Colonies; they had also applied to the India Office for information; there was no reason to suppose that it would not be supplied. The papers received as to the Colonies were now being tabulated. The Council were in earnest about this matter, and were determined to carry it through.

Dr. Mullick was quite satisfied with that explanation so long as the Council were doing something in the matter.

Constitution of the Association.

Mr. R. B. Anderson wished to move the resolution, which appeared in the notices of motion for Wednesday, but had been omitted from the notices for that day. He thought an instruction should be given to the Constitutional Committee. His motion was:

That whereas the Council, as now constituted, has systematically repudiated, contrary to the Articles of Association and by-laws, its subordination to the Associati in general meeting, it has become necessary to make provisions whereby its responsibility to the Association will be secured; and that the Council be instructed to prepare, and submit to an early extraordinary general meeting, articles or by-laws providing for the election by the annual meeting of 20 elective members, not being officials; and for the constitution of an executive committee, to consist of four *ex-officio* members, and of one vice-president, five elective members, and five representatives of Branches, to be elected by the Council.

The President of Council rose to a point of order. It was well to remind the members that Mr. Horsley's original motion about the Committee was put in the forefront of the whole of the business, for the purpose of covering all these questions, and he thought that the present notice of motion was entirely covered by the original resolution.

Mr. Anderson replied that he had in no way consented to such an arrangement, and it was only in deference to the wish of the meeting that he did not claim his right to move his motion antecedently to Mr. Horsley's.

The President stated that it was understood on the previous day that the passing over of all the amendments on the paper was practically conceding that the resolution for the appointment of a committee would stand as a substantive resolution in the opinion of the meeting. He therefore ruled the present notice of motion out of order.

Mr. Anderson gave formal notice of protest, and stated that he reserved all his rights.

Dr. Lorimer Hart stated that he had set down a notice of motion which appeared in the *Daily Journal* on Wednesday, but not in that day's *Journal*.

The President replied that that stood in the same position as Mr. Anderson's, and he must rule it out of order.

Dr. Douglas inquired whether the President had any right to assume anything when a member did not give up his right.

The President considered that he had a right to assume it. He had swept away all these resolutions without anyone objecting, and they could not go back from that.

Concluding General Meeting.

The concluding general meeting was held in the Central Hall, Higher Grade School, Ipswich, on Friday, August 3rd, 1900, the President, Dr. Elliston, in the chair.

The President, before calling on Dr. Smyly, said he would like to read a telegram which he had received from Osborne addressed to the President of the British Medical Association: "The Queen desires me to convey to you and the Association her thanks for kind message of sympathy.—A. B." In calling upon Dr. Smyly to deliver his Address in Obstetrics, he felt sure it was not necessary to introduce him formally, because he (Dr. Smyly) was known by his connection with the Rotunda, Dublin, and the numerous works and papers which he had written on this his own subject.

Dr. Smyly, who was very cordially received, then proceeded to deliver his Address in Obstetrics, which is printed at p. 337 of this issue of the Journal, at the conclusion of which

Professor Byers moved:

That the warm thanks of the meeting be given to Dr. W. J. Smyly for his able Address in Obstetric Medicine.

In doing so he said he felt a very great honour had been conferred upon him in having been asked to propose this resolution, because he was sure he was only expressing the opinion of all present when he said they had had an extremely interesting address and one full of information, and also one with a certain quality which he was sorry to say was rather rare—namely, the effacement of self. He had also a personal reason, because it offered him the opportunity of paying a tribute to one with whom he had maintained a long and continued friendship. The meeting over which Dr. Elliston had presided would always stand out prominently for the wonderful addresses they had had from what he might call the three arms of the tripod on which all medicine was constituted, none of which had been more interesting than the one they had listened to that day. There were times, perhaps, when medical men should look round like business men and take stock, and look back upon what had gone before, and estimate their present position. That was very much the line upon which the address of yesterday and that day followed; and he was sure it was gratifying to all obstetricians that obstetrics had made as great or greater progress than any of the other

branches. They owed a great deal to Dr. Smyly, which they would feel more by-and-bye when they read his paper for the information contained in it with reference to the mortality of childbirth, and as to how it might be prevented. He had very much pleasure in moving a vote of thanks to him for giving an address alike worthy of himself and of the great school of which he was such a distinguished member.

Dr. Griffith, in seconding the resolution, said it was needless for him, after what Professor Byers had said, to add anything, as he could not speak in more appropriate language of Dr. Smyly than Professor Byers had done. Dr. Smyly was well known to all of them, and the point of his address was one of the very highest importance, and could not be too often repeated. There were too many of their profession who did not know what antisepsis was. There were parts of the country where the mortality of childbirth from septicæmia was very high; and until every member of the profession used methods which they knew to be safe, and were certain to be safe, his (Dr. Smyly's) observations and his historical survey of the subject could not be too often repeated. He had the very greatest pleasure in seconding the vote of thanks, which was carried with acclamation.

Dr. Smyly said on this occasion he had to express his deep thanks for the second time to the Council of the Association and the members for having placed him in that position in which he felt so proud, but so uncomfortable, and especially those ladies and gentlemen who had done him the honour of coming there to encourage him, and for their kind reception of what he felt was an imperfect address.

Resolutions of Sections.

The President reported the receipt of three resolutions, one from the Section of Obstetrics and Gynæcology and two from the Section of State Medicine:

Resolution from the Obstetric Section.

Resolved: That it be a recommendation to the Council that in the opinion of this meeting it is desirable that notification of puerperal fever (septicæmia) should be adopted generally.

Resolutions from State Medicine Section.

Resolved: That the Council of the British Medical Association be recommended to petition the Government to amend the Housing of the Working Classes Acts, with a view to simplifying the working of the same, and also that the time for repayment should be extended to a period not exceeding sixty years, and that the land be considered as a perpetual asset.

Resolved: That in the opinion of the State Medicine Section of the British Medical Association the addition of preservatives to milk, butter, and similar products, beer, and wine, should be prohibited, and their addition to other foods regulated by statute.

It was agreed that they should be referred to the Council.

Votes of Thanks.

The President said there remained, after what he hoped had been a very pleasant and successful meeting, the duty of recording votes of thanks where they were due, and he had great pleasure in moving:

That the thanks of the Association be given:

To his Worship the Mayor and Corporation of Ipswich for the warm welcome accorded to the Association at the opening meeting, and for the use of the Town Hall, Christchurch Park and Mansion, so liberally accorded to the Association.

To his Worship the Mayor and Mayoress of Ipswich for their grand reception given in Christchurch Mansion.

To the Right Rev. the Lord Bishop of Norwich for his sermon to the Association.

To the Vicar of St. Mary-le-Tower Church, the Rev. Ythil Barrington, for the services at the Tower Church.

To Mrs. W. A. Elliston for her hospitable reception at Stoke Hall on Monday evening.

To Mr. D. Ford Goddard, M.P., and Mrs. Ford Goddard for their hospitable entertainment on Tuesday afternoon.

To Mr. Felix T. Cobbold for his most enjoyable garden party at Felixstowe on Wednesday afternoon.

To Captain Pretyman, M.P., and Lady Beatrice Pretyman, for their hospitable reception at Orwell Park on Thursday.

To the Committee of the Ipswich and Suffolk Club, the Ipswich Golf Club, and the Ipswich Institute, for granting the honorary membership of their respective clubs to the members of the Association during the meeting.

To the members of the Association resident in Norwich, Yarmouth, Cambridge, Bury St. Edmunds, and Colchester, for their entertainment and welcome of members.

To the Right Hon. Lord de Saumarez, and to Mr. Charles Berners for receiving parties of members at Shrubland and Woolverstone Park.

To the directors of the Lyceum for the use of the Lyceum during the President's Address.

To the Committee of the Ipswich Museum for the use of the Museum buildings.

To the members of the East Anglian Branch for the evening reception at the Museum on Thursday, and for the *soirée* on Friday evening.

To Mr. J. Shewell Corder for his kindness in conducting parties to places of interest in Ipswich.

To the authorities of the hospital, the Borough Asylum, and the New Workhouse Infirmary for granting liberty to inspect those institutions.

To the following firms for their kindness in allowing members to inspect their factories and works:—The *East Anglian Daily Times*; Ransomes, Sims, and Jefferies; Mr. Harrison, of Ancient House; the English Silk Weaving Company, W. Fraser and Co., Ransomes and Rapier, W. Pretty and Sons, Reavell's High Speed Engine Works, and E. R. and F. Turner.

To the Chairman and Honorary Secretaries of the various committees, namely, Dr. Herbert Brown, Mr. Branford Edwards, Mr E. L. Rowe, Captain H. Cotton, A.M.S., Mr. G. S. Elliston, Mrs. R. W. Brogden, Mr. W. Fryer, Dr. S. H. Long, Mr. C. K. Moseley, Dr. Vincent, Mr. J. R. Staddon, Dr. Francis Ward, Dr. Rygate, Mrs. Oliver Eades, Mrs. Mildred Sims, M.B., for their able and willing help, and to the members of the various local subcommittees.

To the chairman and members of the Ipswich School Board for the use of the Ipswich Higher Grade School.

To the Directors of the Girls' High School Company for their kindness in granting the use of the Ipswich High School.

To his Worship the Mayor and Mayoress of Norwich, and Dr. Jane Walker and the Directors of the East Anglian Sanatorium at Nayland, for their hospitable entertainment of the members visiting those places.

To Dr. Edgar Barnes and Mr. Hossack, and Dr. Brogden and Dr. Casley, for their great labours in organising and carrying out this very successful and important meeting.

The Treasurer seconded the resolutions, and said he was sure it required no speech of his to ensure their being carried with acclamation.

The resolutions were then put and carried unanimously.

The President of Council said they could not separate without tendering their most hearty and grateful thanks to the President for his able and courteous conduct during the meetings. It was not necessary to detain them one single minute to speak of the marvellous way in which the President had carried on the work of this very important and interesting occasion. He was sure the President would not wish him (the President of Council) to say all he felt about it; but as one who had had to bear the anxieties and responsibilities of the work of running an annual meeting, and therefore knowing what it was, he had very great pleasure in moving this vote of thanks.

Sir John Moore had very great pleasure in seconding the resolution. They had all been delighted with their visit to Ipswich, and a great deal of its success no doubt was due to the indefatigable work for many months past by their esteemed and respected President. The meeting had promised to be a stormy one, but happily the clouds had dispersed and the sunshine of prosperity and contentment again appeared in the sky; and that was largely due to the conciliatory attitude of their President.

The President of Council then put the resolution, which was very cordially adopted.

The President, in reply, said he was deeply indebted to them for their formal record of their appreciation of their visit to East Anglia, and for the way in which it had been received. The success of the meeting was almost entirely due to the admirable Secretaries, Dr. Edgar Barnes and Mr. Hossack, but for whose services things could not have gone so smoothly as they had. He had endeavoured to be impartial in the discharge of his duties in the chair, and if he had been successful he was amply repaid for all he had done.

ANNUAL DINNER.

The annual dinner of the Association was held on Thursday evening, August 2nd, in the Council Chamber of the Town Hall, the President, Dr. W. A. Elliston, in the chair.

"The Queen."

After dinner the Chairman, on rising, said he wished to propose the first toast of the evening, a toast that was acceptable to all Englishmen and all members of the British Empire wherever they were assembled. They first desired to record the high estimation in which Her Majesty the Queen of Great Britain and the British Empire was held by all her subjects both at home and abroad, and all the world over. He hoped that in drinking the health of Her Majesty they would all remember the great affliction under which she was suffering at the present moment, and they begged to express to her their deep sympathy in all the trouble she was now experiencing. They were favoured that night with subjects of Her Majesty not only living in this country, but in all her Colonies. From all parts of the British Empire they welcomed that night distinguished representatives of the British Medical Association, an Association which had Branches in every part of Great Britain and Ireland, and in all parts of Her Majesty's Empire. He would, without further observation, give them the toast of Her Majesty the Queen, expressing the hope that she might long be spared to reign over them.

[The audience rose and sang "God Save the Queen."]

"Prince and Princess of Wales."

Dr. Murray (President of the Cape of Good Hope Branch) said it had fallen to his lot to have the honour of proposing this toast. He wished to say at the outset that he stood there as a humble representative of one of the great Colonies belonging to this great Empire. He felt that, personally, he was not competent to do justice to the toast, but he felt sure it was one that would not only commend itself to everyone present, but to all Englishmen and all colonials throughout the world. It so happened that so far as he, personally, was concerned in South Africa, he had never heard one word or expression falling from his fellow colonists, who were very kindly disposed, but that of admiration and respect for His Royal Highness, and, it went without saying, for Her Royal Highness and for all her family. He ventured to say that there was not in that part of the world a small farmhouse where they would not find hanging on the wall, be it good or bad, a portrait of the Queen, the Prince of Wales, or some member of the Royal Family. It seemed to him that the names of His Royal Highness the Prince of Wales and the members of the Royal Family appealed to them in many ways. As colonists they were there to respect them, and speaking as a member of the British Medical Association, in honouring His Royal Highness the Prince of Wales they were honouring one of themselves, because they knew that he was now an honorary member. He therefore proposed the healths of their Royal Highnesses the Prince and Princess of Wales, and wished them health and prosperity and good wishes to the Royal Family. [The audience then sang "God Bless the Prince of Wales."]

"The Navy, Army, and Reserve Forces."

The High Sheriff of Suffolk, in proposing this toast, thought it ought to be one of the easiest toasts to propose at the present moment, for it was one that struck at the heart of every Englishman. [Applause.] Nobody knew what the army and navy had suffered in this war, and nobody could imagine better than medical men what their sufferings had been. They knew more than the ordinary layman what the miseries of war were, and how much it was to the credit of the army and navy that those terrible hardships which everybody heard of had been endured in such a splendid spirit. There had been a certain amount of attack made upon the medical attendance during the war. [Cries of "No, no."] But there was no foundation for those suggestions. [Hear, hear.] He considered the Army Medical Service had emerged from the campaign in the very best possible light, and that the attacks made upon them had been shown to be absolutely without foundation. [Hear, hear.] He felt, therefore, that with such an assemblage the toast he had to propose would be gladly responded to. There might have been shortcomings in regard to transport arrangements and that kind of thing, but for that the medical attendants were in no way to blame. The men of the county of Suffolk had, he thought, behaved themselves extremely well in South Africa, and the mounted infantry had also distinguished themselves. They had all seen the way in which when the mounted infantry was mentioned the name of Lieutenant-Colonel Alderson, son of his old friend, Colonel Alderson (Ipswich), had been referred to. The Duke of York had been thoroughly satisfied also with the way in which the Suffolk Yeomanry had discharged their duties. He had no fear that our soldiers and sailors would not show the same bravery and loyal spirit in China that they had displayed in the Cape. He, therefore, asked them to drink to the toast he had mentioned, and he coupled with the toast the name of Surgeon-General Hamilton, Inspector-General Turnbull, and Lieutenant-Colonel Andrew Clark. [Loud applause.]

Surgeon-General Hamilton, in responding on behalf of the army, said he supposed that at the present moment, next probably to China, as regards the medical aspect of the campaign, their attention was directed more than anything else to the sensational, and perhaps the hysterical, statements of Mr. Burdett-Coutts. [Hear, hear.] He had served in South Africa and knew something of the war, and he knew of the difficulties connected with that campaign. It struck him very forcibly that there was one point which had not been dwelt on to the extent that it might have been in elucidating the difficulties under which the whole medical service—in fact the whole army—had to labour. It was the fact that Lord Roberts made his advance on what might be called the left flank—that is to say, he took the line of railway leading up to Kimberley, and ultimately on to Rhodesia. He fought his battles and relieved Kimberley; he then turned completely to the right and marched 110 miles across the veld before he got to Bloemfontein. He was then in the position that he had a line of rail to the Modder River Station, and 110 miles of veld over which it was practically impossible to carry stores and food for the army. He got to Bloemfontein, and then he found 200 or 300 miles of railway absolutely wrecked between him and his base of supplies. So what was the position? He had an army of 60,000 men, his left hand railway was useless to him, and he had two or three hundred miles of railway from the Cape wrecked behind him. To imagine for a moment that he could have done more than was done was to imagine impossibilities. [Cheers.] He had had the honour of having served under Lord Roberts, and he could only say that a more humane man never existed. [Cheers.] He had spent hours with him in hospital, and he knew the humane care that he took of the sick, and that there was not a thing he would not do to save a single man an hour's suffering. [Loud applause.] But Lord Roberts not only had to fight his way across such a country, but he had to support an army of 60,000 men, and could it be wondered at that with 300 miles of railway in a broken condition he had great difficulty in getting stores? They must all remember that their troops unfortunately were bottled up on the river at Paardeberg, drinking literally diluted—he might almost say essence of—Boer and mule. [Loud laughter.] He had seen other officers who were there, who had told him of the conditions under which the troops existed, and he had been informed that the water which they drank was practically putrid. It was impossible for Lord Roberts to anticipate beforehand that he would have had to encounter these frightful conditions. When he got to Bloemfontein, the sudden outbreak of enteric fever was wholly unexpected. Everything possible that could be done for these men was done. Nobody would deny that Mr. Burdett-Coutts saw a great deal of what he said he saw, but if they had read the evidence in that day's paper, they would have seen that one witness said that in one hospital they had provided 500 beds and had to take care of 1,800 sick. Let them imagine for one moment what it would have been in the best hospital in London which was prepared for 500 people, if, all of a sudden, 1,800 sick were tumbled in for them to look after. [Hear, hear.] There was no doubt that what Mr. Burdett-Coutts said he saw was to a great extent correct, but he hoped, and he thought it would be perfectly clearly proved, that what that gentleman saw was absolutely

inevitable. [Loud cheers.] It was one of the misfortunes of war which had to be put up with. [Applause.] It was impossible to suppose that among 6,000 or 7,000 orderlies there would not be here and there a "bad hat," but he felt sure that an enormous majority of the medical officers, the nurses, and orderlies had worked in such a way that, when the truth came to be known, it would show that they deserved the highest commendation and praise that could be given to men, and further that Lord Roberts and his staff had done everything humanly possible for the relief of the sick. [Loud applause.] At any rate, it was only fair that they should suspend their judgment, and, when the truth was known, he believed the medical services of this great army, the greatest army that England had ever put in the field—and might he say almost entirely unprepared in its medical aspect before the war broke out—would come out with the highest possible credit. [Loud cheers.] He should like to mention that, when the war broke out, they were supposed to have had everything ready for two army corps, but they had the equivalent of what might really efficiently only amount to one. The matter was dealt with by the Director-General and his staff in the most magnificent way considering the difficulties, and the War Office at the last moment gave them everything. But for years they had been pressing on the War Office, and had done everything they could to make them understand the difficulties that would arise in case of war. [A Voice: "But you can't."] They were told over and over again the difficulties that would arise. When he entered the service forty years ago there were 1,200 medical officers. Since that time the army had more than doubled, counting in the militia, and the medical service had been reduced by more than one-third. That was the position they occupied that day. [Cries of "Shame."] It was a shame, and it was a scandal, but he hoped that when this war was over the medical service would be placed on a footing that would prevent any possibility of such a scandal occurring again. [Loud applause.]

Inspector-General TURNBULL, on behalf of the navy, said: Mr. President, Mr. Mayor, fellow Associates, and Gentlemen,—I desire to thank you for the cordial and enthusiastic manner in which you have responded to the toast of "The Navy," our first line of defence, and my old service, associated with the army and imperial forces. Since our last annual dinner the "handy man" has had his opportunity in the South and in the East, and been found "ready, aye ready." At our last annual dinner I ventured to predict that under the present able and progressive Admiralty administration important reforms in the naval medical service might be expected; and as the British Medical Association has recently established Tropical Disease and Ambulance Sections, so now surgeons on entering the navy receive instruction in these subjects. The former disabilities naval medical officers suffered from—half-pay and sick leave in attaining fleet rank—have been recently abolished, and an equipment of surgical instruments and appliances is now supplied to all ships and establishments, and naval medical officers will no longer have to provide their own. And now I learn from the London schools and "coaches" that the service is popular, and that slight competition for commissions in the navy continues, though there is such a wide demand for qualified medical men.

Lieutenant-Colonel ANDREW CLARK, F.R.C.S., in responding on behalf of the Reserve Forces, had no idea that he was going to be called upon to reply to that toast. There was no doubt a great deal that might be said about the Volunteer Medical Service at the present time. Papers had been read and resolutions had been passed at the Navy and Army Ambulance Section, which had been established for the first time at Ipswich, which he thought they would probably hear more about. He was quite sure that the Volunteer Medical Service, as all the other volunteer services of the country, was always willing and anxious to do all that it could for the service of the country. [Hear, hear.] He was bound to say, however, that there seemed to him to be a certain amount of ridiculous red tape, in requests which were made upon the Volunteer Medical Service. For instance, within that week he had been asked if he would undertake, if he was required, to serve with any unit in any part of the country. If he had said that he was, then the next week he might have been sent to the North of Scotland. [A voice: "Quite right."] He believed that every volunteer surgeon in the kingdom was willing to go wherever his own unit went, but he thought it was impossible and ridiculous to expect that he should go to any other part of the country. [Hear, hear.] There were a great number of volunteer surgeons, and he supposed non-medical officers also, and volunteer medical officers generally, who were associated with a regiment in that neighbourhood, and wherever that regiment went they would, he believed, sacrifice anything to go. But he did not think they could be expected to go to any part of the country. There were a good many other things in which volunteer surgeons were interested, but he did not think that was the occasion on which to refer to those matters, and therefore he would content himself with thanking those present for the courteous way in which they had received the toast of the Reserve Forces. [Loud applause.]

"BOROUGH OF IPSWICH."

Sir JOHN WILLIAM MOORE, President of the Royal College of Physicians in Ireland, thought that a great honour had fallen to his lot in proposing, at the request of their President, one of the most important toasts that night. He was sure he represented the views of every visitor to the ancient borough of Ipswich when he said that their visit had been an unqualified success. [Hear, hear.] They came, indeed, expecting to be pleased, but the realisation of their hopes had been complete. He thought he might well say the "ancient borough of Ipswich," for anyone who had walked down Fore Street, or had visited the Wolsey Gate, or had penetrated the innermost recesses of that magnificent building, "the Ancient House," must be satisfied that Ipswich was a historic town. That being so, he had the honour to put before them a toast which was easy to propose, because he knew the cordial reception it would meet. They owed much to the distinguished member of their own profession who had been called upon by the suffrages of this great Association to preside over its destinies during the coming year. [Hear, hear.] His unlimited hospitality—[hear, hear]—his genial nature—[hear, hear]—his kindliness of disposition—[hear, hear]—his *fortiter in re* when occasion demanded it—[hear, hear]—all commended to their favourable consideration the President of the Association. [Applause.] But he ventured to say that behind the chair there must on occasions of this kind be another and an independent power; and that was the Municipal Authority of the town in which the Association met. On this occasion they owed a deep debt of gratitude to the Corporation of the Borough of Ipswich for their hospitality in allowing them to hold their meetings in that handsome and commodious Town Hall. [Hear, hear.] But to come to more particular instances of local hospitality he would like to recall, though it was hardly necessary, the fairy-like scene of enchantment to which they were invited last night. [Loud applause.] He did not know whether all the members studied, as he had studied, that splendid example of Elizabethan architecture in which the Association had been received. Did they notice that the ancient building was constructed in the form of a gigantic "E," which meant that it had a history of three centuries and upwards? Three hundred years hence, when the British Medical Association met in the city of Ipswich—[hear, hear]—no doubt they would be entertained in a building shaped like a "V," or probably a "V.R." [Cheers.] To the Mayor of Ipswich they owed a deep debt of gratitude. He had been unceasing in his efforts to entertain them and to make the meeting go as smoothly as possible. He had identified himself with their objects, with their interests, and with their welfares, and therefore he asked the members present to drink long life, health, and prosperity to the Mayor, and also a lengthened period of prosperity to their clean, well managed, and sanitary town of Ipswich. [Loud applause, the audience singing "For he is a jolly good fellow."]

The Right Worshipful the MAYOR OF THE BOROUGH OF IPSWICH, in replying to the toast, said he was very much obliged to Sir John Moore for the very kind things he had said about him, and about the town of which he had, unworthily, the honour of being Chief Magistrate. [No, no.] He begged to thank them very much for receiving this toast so cordially. He was bound to say that he had looked forward with some little apprehension to the meeting, but he did not mind telling the company that they were not quite the sort of people whom he had expected to meet. [Laughter.] He could assure them that the present week would be one of the bright spots

in his year of office. If the visitors would extend their stay over a few days longer the town would certainly continue to extend them a hearty welcome. [Cheers.] He had the honour to preside over a very honourable body of aldermen and town councillors—(hear, hear)—full of nothing but anxiety for the welfare of their town—more especially during the latter days of October. [Laughter.] The meetings usually held in that room were of a drier character than that at which they were assembled. [Laughter.] If they could have such a dinner before all their Council meetings he was sure they would get on swimmingly. [Laughter.] A good deal was heard in these days about the payment of members of Parliament; but before these gentlemen were paid he hoped they would pay town councillors. [Hear, hear.] Everyone knew that a town councillor worked much harder than a member of Parliament. [Laughter.] The former had to stand up to be shot at once every three years, and he did not have the pleasure of voting away millions of money, but had sometimes to argue and discuss for half a day matters involving the expenditure of three or four shillings. [Laughter.] He thanked them very much in the name of the Corporation and in his own name for the kind way in which they had responded to the toast. [Applause.]

"The British Medical Association."

Sir Charles Dalrymple, M.P., said everybody thought his own toast was the most important one, but the toast with which he had been entrusted was really the toast of the evening. At any rate, there was happily no toast which required less advocacy to commend it to the meeting. He was relieved of the duty of telling them about themselves, and he was sure that if he attempted it he should be speedily found out. [Laughter.] He had not had the pleasure of hearing any of the addresses delivered during the week, except that of the President, but he knew no better instance of the rapidity of communication which prevailed at the present time in the country than a circumstance which had been brought under his notice that morning—when he read as he went to London an article upon an address which had not then been delivered. [Laughter.] It was a matter of gratification to all who were intererested in Ipswich that the Association should have held their meeting in the town this year, and he was sure that the inhabitants would rejoice to hear of the satisfaction which had been afforded by the warmth of the reception which had been given to them in Ipswich. The other great element of interest attaching to the occasion lay in the fact that the gathering was so fully representative. [Hear, hear.] In Ipswich this week they had the representatives of many different countries—of Australia, of Canada, of the Cape of Good Hope, of all parts of England and Ireland. He could not but help feeling that their special greetings went out to those who had come to them beyond the seas—[applause]—to those who, animated by a common purpose, had been drawn to this typical English town of Ipswich, there to discuss the welfare of the whole human race. Such a cosmopolitan gathering was peculiarly appropriate to the year, and the time at which it had been drawn together, because those who were living in this country had been learning what some of them had hardly realised before what was meant by the British Empire. [Loud cheers.] If they had been feeling in some degree the burden of Empire, they had also been realising its force and its solidarity; and he believed that the benefits that would accrue from this splendid community of feeling and action that had been witnessed this year were of absolutely incalculable value in regard to the future. [Cheers.] The exhibition of such resources as the Empire commanded was not only a pledge of national progress and civilisation, but also, as he always liked to think, a definite and powerful pledge for the future peace of the world at large. [Applause.] He had said that their hearts went forth in a special manner to those who came to them from beyond the seas. [Hear, hear.] They had received a hearty welcome from those who, like the Mayor, were specially qualified to speak for Ipswich, but he hoped that when they returned to their distant homes they would carry with them pleasant recollections of their sojourn at Ipswich and of those conferences at once practical and beneficient. [Hear, hear.] He asked them all to join with him in drinking prosperity to the British Medical Association—[applause]—and he coupled with it the name of Dr. Roberts Thomson, the President of the Council, whom he thought he ought to dub by the title which he was well fitted to carry, because he commanded a battalion of 900 men, namely, that of Lieutenant-Colonel Roberts Thomson.

Dr. Roberts Thomson, in replying, said that on a recent occasion, when he was enjoying the hospitality of the Metropolitan Counties Branch, he was reminded of a Scotch story which was appropriate to the circumstance then; and as it seemed appropriate to the present occasion he would venture to repeat it. A young clergyman in the North was holding forth very much to his own satisfaction, and he walked home after service with one of his elders. He was a little disappointed to find no remarks made about the service, and so he led up, or tried to lead up to it, by saying: "That was a very powerful text I preached from this morning," to which the elder replied: "Aye, I hed nae fault to find wi' the text." [Laughter.] He presumed as the text was their worthy selves they would have no fault to find with it. They were on the eve of the consideration of great changes in the organisation of the Association—[hear, hear]—but he thought that one of the things that should come within the purview of the Committee appointed to take the matter in hand was that the President of the Council should not of necessity respond to this toast at the annual dinner—[laughter]—because it was quite likely—nay on that occasion it was true—that whatever a man might feel inside the Council chamber he was rather the wrong man in the right place when called upon to respond for the Association. [Cries of "No, no."] But however that might be, he had to thank Sir Charles Dalrymple for the extremely kind way in which he had spoken of their great Association; for, without arrogance, he might claim that they were great, when they thought that their numbers were nearly 19,000 members, and consisting of all that was best in the profession in the old country and in their colonies. [Hear, hear.] When they were considering that day the question of obtaining the voice of the profession throughout the colonies they had to divide them into five, in order that they might distribute the representation. The Association was world-wide in its extent, and therefore he thought, without arrogance, he was entitled to call it "great." Sir John Moore had told them how much they had enjoyed their visit to this ancient town. It would astonish the Mayor if he told them what a refreshing effect it had upon himself, for he lived in a borough that was not as many years old as their borough was centuries. At their annual meetings they endeavoured to arrive at the maximum of scientific work with the maximum of social enjoyment, and he was sure that in both of those points that meeting had attained its object. The Sections had been largely attended, and had been doing a large amount of interesting and valuable work, and the addresses to which they had listened he was sure would take rank with any addresses that had ever been given by the Association; and, when he thought of those lively afternoons that some of them had spent in the Higher Grade Schools, he was sure he would not offend in any way by saying that to the two maximums which he had mentioned might be added the maximum of unlimited discussion. [Laughter.] Their visit to East Anglia would leave much in their memories from the fact that the great changes to which it was possible before very long the Association would enter took their origin in the important meeting which had been held there; and so the pleasant memories to which Sir John Moore had referred which they would have of their visit to Ipswich would be rendered still more lasting when those changes were carried out, which they all sincerely hoped would lead to increased progress, increased prosperity, and the increased influence of the Association. [Loud applause.] On the part of the Association he begged to convey their very hearty thanks to Sir Charles Dalrymple for his very kind words, and for the very cordial way in which they had been received.

"The President."

Dr. Philip Henry Pye-Smith proposed "The health of the President," remarking that there was no higher praise that any man could wish for than the praise that emanated from his fellow practitioners. The favour of the public was often fleeting and often ill-deserved, but the praise of those who knew them and appreciated their professional work was the

highest reward that any man could hope to attain. [Hear, hear.] A more grateful recognition of many years' service in their profession than to be placed by the suffrages of one's own friends and neighbours, and still more by the election of this great representative Association, in the position of President could not be conceived. [Hear, hear.] That position was occupied by Dr. Elliston, and the Association owed him a great debt for the admirable organisation of this year's meeting, for the hospitality with which he had received them, for the genial tact with which he had smoothed over all difficulties that must inevitably arise in such meetings as those of the present week, and for the admirable historical survey which the President had presented to them on a recent evening. [Applause.] Those who knew most of the subjects that he traversed would most appreciate the comprehensive and exact manner in which he revealed to them the gradual evolution of their profession. He proposed with the utmost cordiality the health of the President, Dr. Elliston. [Loud applause, the members singing "For he's a jolly good fellow."]

REPLY OF THE PRESIDENT.

The PRESIDENT, in response, expressed his sincere thanks for the distinguished honour conferred upon him, and for the reception given to the toast proposed by his old, and now most distinguished, friend, Professor Pye-Smith, who was known to the world as one of the most cultured physicians of the century. [Cheers.] He (the President) and Dr. Pye-Smith were then fellow-dressers to a distinguished surgeon of Guy's Hospital, and the toast could not have been proposed by any man in the world whom he would have more highly appreciated. He felt it a very great honour indeed—an honour he could never have anticipated—of being elected President of the greatest scientific society in the world. He believed he was right in saying that no scientific society in the world numbered 18,000 members, and the society not only existed in this country and the Kingdom, but it had Branches in every portion of the Empire whose destinies were ruled over by Her Most Gracious Majesty the Queen. He himself had always recognised the great influence for good that their Association must have over the medical profession all the world over, and for that reason he had always been a constant supporter of the British Medical Association and the influences which it was capable of exercising. He esteemed it a very high honour indeed to be the representative of East Anglia in welcoming the Association this year. He looked forward to the time when the Association, still under the influence of the reforming knife, would emerge from the ordeal with a far greater influence than it had ever exercised before. [Applause.] He was not fearful of the influences of the many suggestions of reform and improvements that had been advocated at their meetings. [Hear, hear.] He believed that it was simply an evidence of the increasing influence of their Association, and the feeling that existed among a large number of members that by reforming a little here and there they might have still greater influence in the future. [Hear, hear.] He believed that what had taken place at their meetings would be for the good of the Association, and that they would be stronger in the future than they had been in the past. He begged to thank them for the high honour they had paid him in drinking his health and for the good wishes they had expressed in regard to the future of the British Medical Association.

"OUR GUESTS."

Dr. THOMAS BUZZARD said he had the honour to propose the toast of "Our Guests," and stated that amongst their guests they numbered one citizen of the town to whom they were under great obligations, and that was Mr. Edward Packard. [Hear, hear.] He was Chairman of the Museum Committee, and as such had been of the utmost service to the Association by facilitating the use of the Museum and the Art Gallery. He was sure they would all agree with him they should drink his health with the most cordial feelings of gratitude. It was said that Science knows no nationality. But the British Medical Association did know nationality and recognised with gratitude the appreciation shown by representatives of various nationalities in coming to attend its meetings. [Hear, hear.] Those representatives would come to them from the north, south, east, and west. He had a long list before him of their guests, and he was sure they would all join with him in drinking their healths, and as they had welcomed the coming so they would speed the parting guests. He coupled with the toast the name of Mr. Edward Packard, Professor John Berg, Professor Lennander, Professor Nicolaysen, and Professor Cameron.

Mr. Alderman EDWARD PACKARD (the Jubilee Mayor of Ipswich) said he felt it a great honour to have his name associated with the distinguished members of the profession who were the guests of the Association. He thought that their organisation was rightly described as the greatest of all scientific societies, as their object was to alleviate human suffering, and it had given him great pleasure to show that the town of Ipswich appreciated their visit.

Professor JOHN BERG (Stockholm), in the names of the four Scandinavian surgeons who had received the great honour and pleasure of receiving the invitation to attend at that meeting, begged to express their deep-felt and cordial gratitude. When they left the hospitable shores of England they would do it in the same manner as their forefathers, the renowned Vikings, namely, richly loaded with English goods, and the whole of the English nation could not prevent it. [Laughter.] They would take with them many dear and pleasant memories, increased knowledge, and new and strengthened impulses. They in their northern outposts were trying to do their work in that spirit of high-minded humanity in which their English colleagues had never been surpassed. In the names of his friends and himself he begged to thank them most cordially for the kindness which they had shown them, for the hospitality they had received; and they sincerely wished the British Medical Association prosperity and success. [Applause.]

Professor LENNANDER (Upsala, Sweden), in replying, said that after the speech of his friend and teacher in surgery, Professor Berg, he had not much to say; but he begged to give them their most hearty thanks for the kindness which they had received. He thanked them very much for the invitation, and he begged to tender his most heartfelt thanks to the British Medical Association.

Professor NICOLAYSEN (Christiania, Norway) was not quite sure that the members present were not a little tired of Scandinavian praise. [No, no.] His colleague and friend, Professor Berg, had very eloquently said what he should have liked to have said. They had been several times invited guests to the British Medical Association, and the kindness and hospitality which they received had been greater and greater. [Cries of "Come again."] He found that on the toast-list the toast was "Distinguished Guests." [Cries of "And you are."] But it was the Association who had distinguished them. He wished to thank the whole British Medical Association for their kindness and for all that they had learned, and he could assure them they went away with new impulses and with very hearty remembrances. [Loud applause.]

Professor CAMERON (of the Toronto Branch of the Association), also replying to the toast, observed that as a visitor from over the water he brought with him the greetings of their Canadian brothers and their wishes for the Association's success. In thanking the Association for the hospitable manner in which they had received him, he suggested that the word "Colonial," instead of being used in conjunction with the words "Foreign and," should in future be used with the word "British" to form the phrase "British and Colonial Medical Association." [Hear, hear.]

The National Anthem then closed the proceedings.

EXCURSIONS.

Cambridge.—The excursion to Cambridge proved most enjoyable. The weather was most unpromising when the train left Ipswich at 8.43 A.M., but before Cambridge was reached the heavy rain had entirely ceased. The visitors, including ladies, to the number of 95, were met at the station by Dr. Joseph Griffiths, Secretary of the Cambridge and Huntingdon Branch, and were conveyed in carriages to the Round Church (St. Sepulchre's), which is of Norman origin, and is the oldest of the four round churches of England. After inspecting this, the party was split into three divisions, which, under the guidance of Dr. Rogers, Mr. Higgins, and Dr. Lloyd Jones was taken to visit several of the Colleges during the forenoon.

In this way the visitors were shown, not only the College buildings, but were taken into the halls, the libraries, the conversation rooms, and the chapels of Catherine's, Clare, Caius, Peterhouse, Queen's, St. John's, and other colleges, and had pointed out to them many objects of interest, and were taken along the backs of the colleges and over the bridges, the several parties ultimately converging on King's College. Here they were received by Professor Clifford Allbutt, Professor Bradbury, and other members of the Association resident in Cambridge, and were entertained at a most hospitable luncheon, at which Professor Clifford Allbutt presided, and briefly welcomed the visitors to Cambridge. At its conclusion Sir John Moore, on behalf of the visitors, proposed a vote of thanks to the Provost and Fellows of King's College for kindly allowing the use of their Hall for the occasion, and to the Cambridge members of the Association for the kind way in which they had entertained their visitors. After luncheon the magnificent chapel of King's College was inspected, and then the visitors dispersed, some to Newnham College, others to Addenbrooke's Hospital, and others to the Fitzwilliam Museum, to reassemble again at Trinity Hall, where they were refreshed, through the kindness of Professor and Mrs. Sims Woodhead, with afternoon tea, before starting for the station for the return journey. The majority remained in the gardens of Trinity Hall until starting time arrived, but some few found their way back to the afternoon service in King's College Chapel. The excursion, for which special carriages were reserved in the ordinary train, reached Ipswich at 8.5 P.M., only fifteen minutes behind time, in spite of the amount of Bank Holiday traffic with which the railway company had to deal. On the journey the unanimous feeling of "thanks to our Cambridge members" was frequently expressed.

Bury St. Edmunds.—The excursion to Bury St. Edmunds proved a great success, despite the small number of members who applied for tickets. On arrival at the station, the visitors were met by Dr. Lucas and Dr. Kilner, who conducted the party to the Abbey gate. Here they were met by Mr. Spanton and Mr. Lancaster, who kindly showed them through the abbey ruins, and afterwards over the fine old church of St. James. The magnificent church of St. Mary was next visited, and here the party was met by the vicar, the Rev. F. L'Estrange Fawcett, who explained the many objects of interest in the grand old building, an organ recital in the meanwhile being given by the organist, Mr. Bouttell, F.R.C.O. The party then proceed to the Norman House, the residence of Miss Kilner, the Guildhall and Moyses Hall, where the fine collection of antiquities was shown by Mr. Barker, the curator. An adjournment was next made to the Angel Hotel of Pickwickian fame, where the local members of the Association entertained their visitors to luncheon. After luncheon, Dr. Kilner, the President-Elect of the East Anglia branch, in the name of his colleagues welcomed the visitors to Bury St. Edmunds. In the afternoon Rushbrooke Hall was visited at the invitation of Mr. and Mrs. Rushbrooke, who kindly entertained their visitors and showed them over the Hall, the marvellous tapestries, the fine old pictures, and antique furniture being much admired. The party then returned to Bury St. Edmunds, when afternoon tea was hospitably provided by Dr. and Mrs. Lucas. After tea the members drove over to Hengrave Hall, and were met by Mr. and Mrs. Wood, who kindly conducted them over the hall and the church which stands in the grounds. Here again the pictures, the antique furniture, and some fine old painted glass were much admired. Thus ended a very enjoyable trip, the general arrangements having given much satisfaction.

Colchester.—The original arrangements for this excursion were quite upset. It being understood on Friday that the excursion had been abandoned, all the orders for the entertainment and reception of members were countermanded, and it was not until about an hour before the arrival of the visitors that some other impromptu arrangements could be made. Dr. Fenn, the President, and Dr. Nicholson, the Honorary Secretary of the East Anglian Branch, exerted themselves, however, to do the best they could under the circumstances for the convenience of their guests. The party, numbering fifteen, arrived at the North Station at 10.50 A.M., and were met by Dr. Fenn, who acted as guide throughout the day. The Eastern Counties Asylum for Idiots and Imbeciles was first visited; here they were courteously received by Mr. J. J. C. Turner, the Superintendent, and Mr. E. Chetwode Owsley, the Resident Medical Officer, who conducted them over the large establishment. The new and well-arranged Peckover schools were inspected with much interest; here mat-making, boot-mending, tailoring, wood-carving, as well as ordinary school instruction, were observed in the different rooms. Some of the wood-carving was particularly artistic and well executed. At the conclusion of the visit, Mr. Turner having been heartily thanked for his kindness and courtesy, the party proceeded in a brake to the Essex and Colchester General Hospital, where they were received by Dr. Nicholson, one of the honorary surgeons; Dr. Logan, the house-surgeon; and Miss Davies, the matron, under whose guidance the Nurses' Home, lately erected as a Queen Victoria Jubilee Memorial, the new operating theatre fitted with modern appliances, its floor and dado being laid in marble terazzo, and the wards, which have also recently been refloored with polished oak blocks, were in turn visited; the dispensary, a pattern of neatness and order, now under the direction of a lady dispenser (Miss Parsons) was also visited. The drive was then continued by the cavalry and artillery barracks to the large new military station hospital, where they were kindly shown round by Lieutenant-Colonel Ray and other members of the R.A.M.C. on duty, Colonel Maturin, the P.M.O., later on joining the party. After visiting the wards and offices, several hospital marquees of the "tortoise-shell" and other designs were inspected in the grounds adjoining. Having heartily thanked the officers for their courtesy the party drove on to the Three Cups Hotel, where luncheon was provided. After a short rest the visitors proceeded to inspect the interesting remains of Colchester Castle, and the Museum, now housed in what was once the chapel, which contains the important Joslin collection of Roman antiquities; the picturesque ruins of the Norman Priory of St. Botolph, the restored gateway of the ancient abbey of St. John, St. Giles's Church, where the two Royalist Generals, Sir Charles Lucas and Sir George Lisle, lie buried, and Holy Trinity Church with its Saxon doorway and tablet erected to the memory of Dr. Gilbert, Physician to Queen Elizabeth and James the First, and author of the celebrated work *De Magnete*, were also in turn visited. Later the party at the kind invitation of Dr. and Mrs. Fenn, returned to Grey Friars for tea. Before leaving, Professor Cameron of Toronto, on behalf of the visitors, conveyed the grateful thanks of all present to Dr. Fenn and Dr. Nicholson for the trouble they had taken to make the excursion a success, and assured them that it had been thoroughly appreciated and enjoyed by all who had attended.

River Trip.—On Friday, August 3rd, a party of over 200 members of the Association and their friends started from the Ipswich Quay on the steamer *Norfolk* for a trip on the rivers Orwell and Stour. The weather looked very threatening, and a gale of wind was blowing. The rain, however, kept off, and the visitors seemed thoroughly to enjoy their boisterous trip. As the river was at high tide, the water rushed right up to the wooded banks on either side, and an occasional gleam of sunshine from behind the black clouds added much to the beauty of the scene. On reaching Harwich harbour the visitors were taken past H.M.S. *Ganges*, an old three-decker used as a training ship, to the G.E.R. landing stage at Parkstone, where three or four of the Continental boats were lying. From Parkstone the *Norfolk* proceeded past Harwich towards Felixstowe; returning after a short cruise to Harwich pier, where the visitors landed for tea in the G.E.R. Pavilion. After tea the party re-embarking on the *Norfolk*, started up the river Orwell for Ipswich, leaving on the pier the genial Dr. Evans of Harwich, the chief promoter of this most enjoyable trip.

East Anglian Sanatorium for Consumptives, Nayland.—About forty, including nine or ten lady members, availed themselves of the Directors' invitation to view this sanatorium, now nearly completed; they were received by Miss Jane Walker, M.D., the Lady Medical Superintendent, who conducted them over it, and furnished every information regarding it. Provision is made for a resident medical officer, and there is a Roentgen ray room with a research laboratory. The sanatorium

is situated on high ground about six miles distant from Colchester, amid charming scenery, and is built on sandy soil on a concrete surface. It has accommodation for thirty-five patients. The dormitories, 14 feet × 10 feet × 8½ feet, are situated in two three-storeyed wings, built at an obtuse angle, with connecting verandahs; the obtuse angle will protect from the prevailing winds; they face south-east by east. The servants occupy the upper storey. The windows are closed only for dressing and undressing; at other times the large front windows are open, the current of air being regulated by upper glazed sashes opening on to the corridor behind the dormitories, so that the patients sleep virtually in the open air. The dormitories are simply but efficiently furnished, electrically lighted, while at each bed head is a small, electrically-heated hot-water plate, to maintain the patients' food at a suitable temperature. The large mess and living room has a N.N.W. aspect, and, like the dormitories, is warmed by low pressure steam radiators, and two Doulton ware enclosed open-hearth fireplaces as being more cheerful. The lavatories are on the dry-earth system, slop water is carried away by well-trapped drains. Sputum is received into spittoons containing water, which are emptied into sawdust, which is burnt; a destructor is proposed. The grounds are extensive, 94 acres in all, much of which will be farmed for milk, vegetables, and possibly mutton supplies. Interesting walks surround the building, and the late Astronomer-Royal, Sir George Airey, pronounced this the sunniest district in England. The electric-lighting dynamo, the engine-house, and laundry of the most modern type adjoin the sanatorium. The success attending the treatment of consumptives at the original sanatorium some three miles distant has led to the erection of the larger building visited. This was a most instructive and enjoyable excursion.

Yarmouth.—In April last Drs. Bately and Rigby, and Messrs. Mayo and Moxon were appointed the local representatives of the Central Excursion Committee at Ipswich. Among other excursions proposed was one to Yarmouth. The following programme was arranged: Members coming from Ipswich to be met at South Town Station, and conducted to the Town Hall, where Mr. Mayo was requested to address them; Dr. J. Bately to conduct such as wished to the points of interest in the town; Dr. Russell (the medical officer of health) was prepared to show the sanitary arrangements of the borough and the new isolation hospital. 1 P.M.—Lunch at Winton's Rooms by invitation of local members. 2.15 P.M.—Drive to Fritton Lake. 4 P.M.—Garden party at the Royal Naval Hospital by invitation of Fleet-Surgeon O'Grady and Surgeon Clayton, R.N. The wives and daughters of the medical men expressed their readiness to accompany the ladies of the party during the day. Mr. W. E. Wyllys kindly undertook the management of the drive to Fritton, and Messrs. Vickers and Meadows the details of the lunch. In addition to the gentlemen named, Lieutenant-Colonel Harvie Scott, R.A.M.C., Dr. T. Lettis, Dr. H. Blake, Dr. Shaw, Messrs. Whitaker, W. Wyllys, O. Farrell, and Bayfield offered assistance. Unfortunately in consequence of the small number of members taking tickets the excursion was abandoned.

A PASTEUR institute and laboratory have been established in Atlanta with the approval of the Medical Association of Georgia.

STREET NOISES IN CHICAGO.—The citizens of Chicago are said to be trying to suppress street noises. An ordinance to this end has just been prepared which is directed against the following:—Railroad companies, banana vendors, vegetable pedlars, the iceman, the milkman who rattles his cans, the musical "gripman," the umbrella tinker, the foghorn, the toy balloon man, river tugs, crowing cocks, dogs that bark at the moon, braying donkeys, and cats that serenade.

TUBERCULOSIS IN HAWAIIAN SCHOOLS.—According to the *Philadelphia Medical Journal*, a resolution has been adopted by the Board of Education of Honolulu prohibiting anyone from teaching in the public schools who is suffering from tuberculosis or any contagious or infectious disease, and also prohibiting children with such diseases from attending school. The mild climate of the islands has caused a great influx of consumptives recently, and the authorities are alarmed for the safety of the native population.

THE ANNUAL MUSEUM

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

(Continued from page 332.)

FOODS.

MESSRS. BRAND AND CO. (11, Little Stanhope Street, Mayfair, W.) exhibited a new food preparation composed of essence of beef, yolk of egg, and cream, which they consider to be well adapted for use in the treatment of fever. It is stated that it will keep for about thirty-six hours after the tin is opened. The same firm exhibited a liquid meat juice which is stated to be free from chemical preservatives and to contain 25 per cent. of albumen. It mixes well with aërated waters, making a not unpalatable drink. Messrs. Brand exhibit also a nutrient powder made from dried meat and a number of other preparations.

Messrs. CALLARD AND CO. (65, Regent Street, London, W.) exhibited a number of preparations, such as bread and biscuits, including some casein rusks, for the use of patients suffering from diabetes. They showed also a novelty in the form of tablets of chocolate stated to contain albumen and phosphates and to be sweetened with saxine. It is proposed to subject these chocolate tablets to analytical examination, and to publish the results on some subsequent occasion.

Plasmon, a soluble preparation of milk proteids made by the PLASMON SYNDICATE COMPANY (56, Duke Street, Grosvenor Square, W.) is a granular powder soluble in water and watery fluids. It was also exhibited made up into biscuits, mixed with chocolate, and compounded with beef extract.

Protene, made by the PROTENE COMPANY (36, Welbeck Street, London, W.), also consists of milk proteids. It is a white powder, which can be stirred into solid and liquid foods. The company also makes it up into biscuits, pure or mixed, into a form of bread and into other preparations. The report upon this material was published in the BRITISH MEDICAL JOURNAL of January 13th, 1900, p. 82.

The BRITISH SOMATOSE COMPANY (165, Queen Victoria Street, E.C.) exhibited somatose, a powdered preparation of meat, and also iron somatose, and a preparation of the albumens of milk, to which the term milk somatose is applied. The somatose made from beef is soluble in water and watery fluids, and has been largely used, especially in Germany, for some years past.

A novelty in preparations of this class is a dried fish powder made by the PATENT FISH FOOD SYNDICATE (Upper Greenock), to which they have applied the name "Marvis." With it fish soup can very quickly be made.

Among meat preparations it will be sufficient to mention, without going into details, the preparation of BOVRIL, LIMITED, including beef jelly, meat lozenges, and campaigning rations. Virol, a preparation of red bone marrow, malt extract and eggs, with lemon juice, made by VIROL, LIMITED (152, Old Street, London, E.C.), the extract of meat of the LIEBIG'S EXTRACT OF MEAT COMPANY, to which the name "Lemco" is now applied, and the same company's peptarnis, peptones of beef.

The condensed milk with and without additions of the ANGLO-SWISS COMPANY, the foods made by MELLIN'S FOOD, LIMITED, and the cod-liver oil emulsion of the same company; the infants' food made by the firm of HENRY NESTLÉ, 48, Cannon Street, E.C., and the condensed milk of the same firm; the peptones and preparations of animal ferments made by FAIRCHILD BROTHERS AND FOSTER (Snow Hill Buildings); the barley, groats, and other preparations of Messrs. KEEN, ROBINSON AND CO., and the exhibit of the AYLESBURY DAIRY COMPANY, which comprised a humanised milk, peptonised milk, sterilised milk and cream, milk sugar, sterilised food for infants and koumiss, were worthy of note.

Messrs. BROOMFIELD AND CO. (83, Upper Thames Street, E.C.), exhibited albene, a fat stated to be derived from vegetable sources and to be especially suitable for use in cooking as a substitute for butter.

DRUGS.

The BAYER COMPANY, Limited (Manchester and St. Dun-

stan's Hill, E.C.) exhibited a large selection of drugs, including tannigen, which is being used in chronic diarrhœa and in the summer diarrhœa of children, lycetol, a tartrate of piperazine, employed in the treatment of the uric acid diathesis, and europhen (isobutylorthocresoliodide), a substitute for iodoform.

Messrs. Burgoyne, Burbidges and Company (12, Coleman Street, E.C.) showed a number of drugs, including acoin, an anæsthetic to be used by infiltration, xeroform (tribromphenol bismuth), a substitute for iodoform, and carbonates of creosote and guaiacol, made by Hayden, to which the names creosotal and duotol respectively have been applied.

Messrs. J. and J. Colman (Norwich) exhibited mustard oil, sinapisms, and mustard bran for making poultices.

Messrs. Gilbert, Kimpton and Company (19, St. Dunstan's Hill, E.C.) showed arsycodile (cacodylate of sodium), recommended as a tonic in exhausting diseases, and milkene food and tablets said to be composed of milk, malt, and meat, and having and agreeable flavour.

Messrs. C. J. Hewlett and Son (35, Charlotte Street, London, E.C.) showed a large number of pharmaceutical preparations, including antiseptic jellies, pellets, and cream. They also exhibited some convenient test apparatus for albumens, and certain comparatively new drugs, including preparations of monsonia ovata, recommended as a remedy for dysentery and mentioned in this connection on several occasions recently by our special correspondents in Capetown.

Messrs. Kutnow and Co. (41, Farringdon Road, E.C.) exhibited their effervescing Carlsbad salts.

Mr. W. Martindale (10, New Cavendish Street, W.) in addition to the apparatus mentioned in the last issue of the British Medical Journal, showed a number of pharmaceutical preparations, including nasal and urethral bougies, an emulsion of cod liver oil with glycerophosphates, tablets of erythrol nitrate, eye ointments (atropine and cocaine, homatropine, and cocaine, etc.), prepared on a petroleum basis, and put up in collapsible tubes, an oleate of iodine, various granular effervescing preparations (including a sodio-magnesian aperient, the formula of which is given in Martindale and Westcott's *Extra Pharmacopœia*), peptonised beef suppositories, and capsules of amyl nitrite, chloroform, and other volatile drugs enclosed in pocket cases.

Mr. E. Merck (Darmstadt, and 16, Jewry Street, E.C.) exhibited a long series of pharmaceutical preparations. Among these mention may be made of iodipin, bromipin, stypticine, and tannaform; a box designed by Professor Koberts for use in the treatment of cyanide poisoning was also exhibited. Professor Koberts is of opinion that peroxide of hydrogen is an efficient antidote, since it reduces the cyanide to a comparatively innocuous oxamide salt. Accidental cases of poisoning with this drug are liable to arise in mining works, where the cyanide process of extraction is used, and such a case as that exhibited might be kept at such works. It is a tin case containing two glass flasks filled with peroxide of hydrogen (3 per cent. and 30 per cent.), a glass syringe, an œsophageal probang with funnel, a small file, and a pair of forceps for breaking the glass flask. The tin case serves as a vessel in which to make the mixture. Iodipin and bromipin are names given to products obtained by the addition of iodine and bromine to the salt of *Sesamum orientale*. These drugs are recommended as substitutes for ordinary iodine and bromide preparations for internal administration.

The Wm. S. Merrell Chemical Company (Cincinnati and Wilson Street, Finsbury, E.C.) showed a series of drugs and pharmaceutical preparations, including iodozen, which, it is stated, is obtained from oil of wintergreen by the introduction of two atoms of iron. It is recommended for use as an antiseptic.

Among the pharmaceutical preparations exhibited by Messrs. Parke, Davis, and Co. (111, Queen Victoria Street, E.C.) reference may be made to mercurol, stated to be a combination of nuclein and mercury. It is a brownish-white powder, which does not coagulate albumen, and is recommended as an antiseptic. They also exhibited various antitoxins—the antitoxin of diphtheria, which, it is stated, is standardised in the laboratories of the Royal Colleges in London: antitoxin of tetanus, which, it must be confessed, is still upon its trial; and a streptococcus antitoxin, as to which it may perhaps be said that it has passed beyond that stage. They showed also extracts of thymus, thyroid, and suprarenal glands, and various preparations such as taka diastase, a preparation containing an amyiolitic ferment, and a number of preparations of well known drugs.

Messrs. Oppenheimer, Son, and Co., Limited (179, Queen Victoria Street, E.C.), exhibited a number of preparations. Attention may perhaps specially be called to a mode of administering drugs *per rectum*. It is a case made of jujube material into which any ointment or medicated soap can be introduced and the capsule closed. The name cerettes has been applied to these capsules. Traumatol (cresylic iodide) is suggested as a substitute for iodoform, being free from odour and not caking. Messrs. Oppenheimer exhibited a cheaper form of globe nebuliser, an apparatus much used in the treatment of diseases of the larynx and nose.

A convenient and very portable form of spray was exhibited by Mr. Frank A. Rogers (327, Oxford Street, W.). It is of small size, and can be worked while held in one hand. Various shaped nozzles can be adjusted so that the spray can be directed to any desired direction. A commendable addition to the apparatus is the antiseptic paper handkerchief, which can be destroyed after use. He also exhibited various other patterns of improved sprays and atomisers and sterilised hypodermic solutions in small glass flasks, each containing a dose; to these "hypodermules" reference has already been made in these pages.

Messrs. Wyleys (of Coventry) exhibited a number of drugs and preparations; Messrs. Scott and Bowne (Great Saffron Hill, E.C.) showed Scott's emulsion of cod-liver oil; the Surgical Supply Association (Manchester) exhibited various drugs and preparations supplied by them, as did also Messrs. Zimmer and Co. (Frankfort-on-Maine).

Mineral Waters.

The Harrogate Corporation showed samples of the water of the spa, photographs of the town, and models of the baths used there.

The Borough of Leamington showed the natural mineral waters of the Royal Spa, and photographic views of the town and surrounding country.

The Apollinaris Company showed the water which bears that name, and also Johannis, Johannis lithia, and Johannis potash waters, Apenta, which is a magnesium and sodium sulphate water, and Friedrichshall water.

Condal Water (32, Walbrook, E.C.), which is an aperient water containing a large proportion of sodium sulphate, was exhibited, as also the Orezza water.

Messrs Ingram and Royle (26, Upper Thames Street, E.C.) exhibited a collection of mineral water, including those of Vichy and Carlsbad and evaported Carlsbad salts.

Hunyadi Janos was shown by Andreas Saxlehner (Trafalgar Buildings, Charing Cross), and Messrs. Tidman and Son exhibited sea salt made by them, and a soap intended for use with it.

Miscellaneous.

Among the miscellaneous exhibits mention may be made of Erators, Limited, who exhibited their ingenious apparatus for aërating water and tablets for mineralising the product. The books used for the A. B. C. system of modern bookkeeping, published by B. Allsop, *Times* Office, Shipley, Yorks, and a selection of books published by and exhibited by Messrs. Macmillan and Co., the Pasteur-Chamberland filter and disinfecting appliances, made by Messrs. Defries and Sons, and the disinfectants manufactured by Jeyes' Sanitary Compounds Company, were also on view.

Murder of a Russian Surgeon.—Dr. Hermann Dohnberg, a leading ophthalmologist of St. Peterburg, was recently shot dead in his own consulting room by a Russian officer. The motive of the crime is said to have been unfounded jealousy. Dr. Dohnberg was about 50 years of age.

Medical Defence in America.—A movement has been set on foot by the members of the Ramsey County Medical Society (Minnesota) to establish a defence union on the English model. A committee was appointed to investigate the system, and report the result of the inquiry at the next meeting of the State Medical Society.

THE WAR IN SOUTH AFRICA.

THE MEDICAL ARRANGEMENTS IN BLOEMFONTEIN.

[By an Occasional Correspondent.]

Bloemfontein, July 7th, 1900.

The attack which has recently been made on the medical arrangements in Bloemfontein has been as unexpected as it has been wholly unmerited. From the telegrams which have been published here it would appear that Mr. Burdett-Coutts visited the town shortly after its occupation. At this time railway communication with the Orange River Colony was almost cut off by the destruction of several bridges across the Orange River. Every available train and every possible waggon was required to hurry provisions to the front. The rationing of the troops being of even greater importance than the equipment of the hospitals, the military authorities rightly decreed that it should take precedence of every other consideration. When Mr. Burdett-Coutts visited the town, therefore, he found the hospitals insufficiently equipped. Heedless of the difficulties which beset the medical authorities, and unmindful of the excellent work which the R.A.M.C. had already done during the campaign, he forthwith proceeded to frame highly-coloured and sensational charges against the Corps. He appears to have admitted that in framing these charges, he was comparing the condition of the hospitals in Bloemfontein with that of hospitals in London with which he was acquainted. Could anything have been more unreasonable? If we try to picture to ourselves the condition of even a fully-equipped London hospital into which 500 bad accidents had been admitted in a day, we may form some idea of the difficulties which the R.A.M.C. have had to face in South Africa. Yet this is what has happened many times during the present campaign; whilst on occasions nearly double that number of sick and wounded have had to be accommodated in a single day, and this whilst some at least of the hospitals were still in the process of equipment. That the R.A.M.C. have met and successfully dealt with such emergencies as these entitles them to the thanks, most certainly not to the censure, of the nation.

I venture to say that no one could have been more keenly alive to the temporary shortcomings of the hospitals in Bloemfontein than were the officers of the R.A.M.C. They were, however, powerless—tied hand and foot by the exigencies of the situation.

Were Mr. Burdett-Coutts to visit the town at the present moment, however, he would give a very different account of the hospital management. As soon as the more urgent demands on the railway traffic would admit, hospital equipment was hurried up from the base. In addition to those which are housed in permanent buildings, there are now seven hospitals under canvas in the neighbourhood of the town. For many weeks past all the hospitals have been fully equipped with spring and trestle beds, and with all the other requisites which are necessary for the comfort of the sick. So far, therefore, as Bloemfontein is concerned, the sick and wounded are as well and comfortably cared for as they would be in any station hospital in England, and I have reason to believe that the same remark applies to hospitals further up the line. I have frequently visited patients who are being treated under canvas, and one and all express satisfaction with the arrangements which have been made for their comfort. Indeed, many of them state that they would prefer to be treated in tents, as these are brighter, fresher, and better ventilated than most of the public buildings in Bloemfontein. All the cases under canvas which are in any way seriously ill are accommodated in large marquees, which are provided with double roofs and flies. The tents are bright and warm, and the supply of blankets and underclothing is ample, so that not one of the patients complained of cold. Indeed, there is a general consensus of opinion amongst the medical officers that enteric fever patients do better in tents than in permanent buildings, and it is not difficult to understand why this should be so. When the weather is bright and warm, as it usually is during the day time at this season of the year, the flies of the tent can be raised and a current of pure fresh air admitted, which is both grateful and beneficial to the patients.

As for the dieting of the sick, the arrangements are all that could be desired. Each hospital is fitted up with stoves and all necessary cooking utensils. There is an abundant supply of excellent fresh meat, fowls, turkeys, fish, eggs, butter, milk, delicious bread, etc. The supply of medical comforts is as ample as could be desired, and includes champagne, brandy, wines, bovril, Liebig's extract, Brand's essence, tinned and malted milk, and many other articles. As far as I have seen—and I have had many opportunities of judging—the dieting and treatment of the sick in Bloemfontein are quite satisfactory.

A further charge has been brought against the R.A.M.C. by Mrs. Richard Chamberlain, namely, that the officers oppose the distribution of comforts to patients. This is an even more invidious attack than that of Mr. Burdett-Coutts, for it is calculated to arouse the resentment of every lady in England, or at least of all those who have relatives and friends serving in South Africa, or who have contributed towards the funds of the Society. An interesting point about these attacks is that they were published almost simultaneously. Is it possible that there can have been concerted action?

It has certainly not been my experience that medical officers throw any difficulties in the way of the distribution of suitable and necessary comforts to the sick. Indeed, I have found them not only willing but anxious to avail themselves of these, and officers from each of the hospitals pay almost daily visits to the Red Cross Society. There can be no doubt, however, that articles which are entirely unsuitable are oftentimes given to patients in hospital. I am aware of instances in which bags of biscuits have been handed by visitors to men who were in the third week of enteric fever, and this mistaken kindness has actually led to the death of the patients from perforation. Can we wonder then if medical officers throw difficulties in the way of indiscriminate distribution of articles of diet to men in hospital? Some at least of the articles which are sent to hospitals would be injurious even to men in perfect health; how much more then to men who are convalescing from, say, a dangerous attack of enteric fever?

Again, in other cases men in hospital have been found with perhaps a dozen cardigan jackets, or an even larger number of shirts; whilst in one instance that I know of a man was found in possession of 29 of these useful articles, which had been given him at different times by kind but not overjudicious visitors. Patients have even been known to exchange articles of clothing surreptitiously for liquor, in these cases generally of the worst quality. Again, is it surprising if medical officers occasionally throw difficulties in the way of visitors?

Bloemfontein is practically devoid of modern sanitary improvements. Enteric fever is endemic in the town, from 300 to 400 cases occurring annually amongst the permanent civil population. Under ordinary circumstances there is a good and abundant supply of water, derived from the town waterworks. Shortly after our occupation this was cut off by the Boers, and a considerable interval elapsed before it could be re-established. During this time the large force which was encamped round the town had perforce to fall back on shallow well and surface water. As the surrounding district is destitute of trees, or of wood of any kind, it was difficult to obtain sufficient fuel even to cook the men's rations. It was therefore quite impossible to boil the drinking water. It was even impossible to filter it, for during Lord Roberts's historic march most of the Berkefeld filters had been accidentally broken.

THE HOSPITALS AT CAPETOWN.

[From our Special Correspondent at Capetown.]

July 11th, 1900.

Green Point Camp Hospital.

The Green Point Camp Hospital, like its bigger sister at Woodstock, has grown gradually from very small dimensions to the size of a general hospital, although it is not as yet graded or staffed as such. This process of gradual development, conducted under the strain of active service conditions, is perhaps

the most severe of all tests of the administrative ability of the Medical Department, and in this case it is the more instructive from the fact that one officer, Major Trevor, R.A.M.C., has been at the head of affairs from the beginning. Judging by what I have seen on a recent visit, neither the Principal Medical Officer nor the Department can be accused of failure. The hospital is, in my opinion, all that can be reasonably expected as an agency for securing the wellbeing of the patients.

At the commencement of hostilities, when it was decided to establish a camp on Green Point Common, an ordinary camp hospital was, of course, part of the establishment. This was "non-dieted," the men simply drawing the ordinary soldier's ration, supplemented by such extras as the medical officers might consider it necessary to order, and it was only intended for the reception of cases of slight and temporary illness. All affections of at all a serious nature were transferred to Woodstock. Later, partly because of the large increase in the work at the camp, partly because of the great pressure on Woodstock, the Green Point Hospital was largely extended in its scope, and, by arrangement with the Corporation of Capetown, the Infectious Diseases Hospital, then just completed, was taken into it. It became partially dieted, and did, and is still doing, the full work of a station hospital, treating practically all the sick from its own camp, a certain proportion of sick landed from the transports, and at times convalescents from up-country. In addition to this, owing to the establishment of a camp for the Boer prisoners on the common, the sick from this place have been added to the patients. The position of the hospital is convenient, and, except for the drawback of a dusty atmosphere (not specially evident in winter), fairly salubrious, although not of course to be compared with Wynberg and Rondebosch. Green Point and Seapoint (the latter being a prolongation of the former) are the northern suburbs of Capetown, occupying a gradually narrowing belt of land fringing the peninsula between the sea and the foothills of the "Lion." They are the only marine suburbs, those in the Wynberg direction skirting the base of Table Mountain at some distance from the ocean. At Green Point the belt of land is still fairly wide, and is mainly occupied by a large common used as an open recreation ground, part of which is fenced in as an athletic and cycle track. This latter portion is now used for the Boer prisoners. The whole locality is practically a portion of Capetown and is easily reached by an excellent tram service. The hospital is situated just within the city or southern boundary of the common with the New Somerset Hospital between it and the sea, the Boer prisoners' enclosure intervening between it and the main road, whilst the camp proper stretches away to the north. Its convenience with reference to supplies is obvious, whilst its proximity to the New Somerset Hospital has frequently proved of service, enabling the two institutions to render mutual assistance in many ways. The two staffs have co-operated most happily. The medical officers of the Green Point Hospital perform the ordinary camp medical duties, including attendance on those officers and non-commissioned officers who live out of quarters. No. 5 General Hospital, it may be mentioned, performs the like duties for the garrison at the Castle and the main barracks, having one medical officer permanently detailed for the purpose.

The permanent part of the hospital—that is, the municipal infectious hospital—consists of three blocks, one facing the street, and two at right angles. The first of these, intended for an administrative block, is occupied as wards. The only disadvantage is that, the rooms being small, a large amount of extra trouble in nursing and supervision is necessitated. The building is a very fine two-storeyed one, excellently built, splendidly ventilated, and fitted with every necessary appliance. The kitchen and annexes are connected with it, and are perfect in their arrangements. Indeed, so far as the permanent buildings are concerned, the Green Point Hospital is probably the best in South Africa, as the infectious hospital was designed in accordance with the latest ideas of hospital construction. Enteric patients, who constitute here, as elsewhere, the majority of the acute cases, have been placed in the original wards. They are lofty, airy, cheerful, and new-looking. The latrines are fitted with Shank's arrangement for the mechanical cleaning of bedpans. A third small block is used as nurses' quarters.

The remainder of the accommodation consists of well-built iron huts, wood lined, with a few tents. The Principal Medical Officer's office is a small and inconvenient hut at the camp end of the building. One of the huts deserves special notice, as it was presented by British actors and actresses, and bears a notification to that effect. It is used as an enteric ward, and contains 26 beds.

The Boer prisoners have a block of huts to themselves. They are extremely comfortable, and admit it. One of them, a field cornet, speaking in the mellifluous *taal*, was quite profuse in his appreciation of the good treatment he had met with, and told me that, although he was most anxious to get out on parole; it was only because he was now convalescent, and did not need any more attention. One at least of the nurses, a South African lady, I noticed to speak Dutch.

The *personnel* consists of Major Trevor, R.A.M.C., in charge; Captain Douglas, R.A.M.C., and 5 civil surgeons, one of them a retired Volunteer surgeon-major. There are 12 nurses and 23 orderlies, with a sergeant-major. Only 4 of the orderlies are R.A.M.C. men. When I paid my visit there were 190 soldier patients and 48 Boers. The total accommodation is 380 for the former, and 72 for the latter, thus very closely approaching the regulation dimensions of a general hospital. Next to enteric fever, dysentery bulks most largely, and there are a few cases of pneumonia. Here, as elsewhere, treatment by magnesium sulphate appears to be the favourite method for dysentery. On a general survey of the whole place, made just prior to Mrs. Dick Chamberlain's letter appearing, I can only say that any allegations made as to lack of comfort or want of cleanliness at Green Point were then certainly unfounded. My visit was entirely a surprise one, and I came away convinced that, so far as these essentials were concerned, the patients in this hospital were as well off as in any civil hospital in South Africa, better than in most, whilst private inquiries made from several patients lately discharged have failed to elicit any tangible complaints on other points.

The Hospital for Boer Prisoners at Simonstown.

The special point about this hospital for sick Boer prisoners is that it is the only one which has been entirely worked under civil surgeons. Even the "outside" hospitals, such as the Portland and the Yeomanry, albeit their professional staff was civil, have been administered by R.A.M.C. commandants. The "Palace" was organised by a civil surgeon P.M.O., Dr. Carré, who remained in charge ever since, and, of course, his junior medical officers have all been civil surgeons. When the first batches of prisoners were interned on ships in the Bay, a very lamentable amount of sickness, mostly enteric, appeared amongst them, and it became evident that their removal to a proper hospital on shore was desirable, although undoubtedly the original source of the trouble was not in the ships. Under these circumstances, the Base P.M.O., with his usual promptitude in grasping a situation, got hold of the "Palace," an old building which was at the time occupied as barracks by the Cape Garrison Artillery, and had been, I believe, originally built for a hotel. Dr. Carré, at the time one of the staff of No. 1 General, was put in charge, and given as free a hand in the way of organisation as was compatible with a very elementary conformity to military medical regulations. He has succeeded remarkably well, in spite of many obstacles. He has had no quartermaster and no steward, and until lately not even a non-commissioned officer. His present sergeant is a man promoted from the ranks of the Cape Volunteer Medical Staff Corps. Consequently, he or Dr. T. G. Hall, his only remaining junior officer, do all the work of making up diet summaries, accounting for stores and the like, and they may be seen at any time turning from professional work to unlock the store and give out so many pounds of butter or so many ounces of port wine. The P.M.O. has never had even a clerk from the R.A.M.C., a Boer prisoner on parole, who had been, I think, an attorney in Johannesburg, performing the duties. To carry on things smoothly must have been a difficult task, but it appears to have been accomplished.

At one time four civil surgeons were on the staff besides Dr. Carré, but now only one remains, Dr. T. G. Hall, formerly District Surgeon of Jacobsdal, who, as I mentioned in one of my previous letters, had been working the Jacobsdal Hospital for the Boer sick. He is a most valuable man, understanding the Boer character, and speaking the *taal* fluently.

There were originally 12 nurses, none of the Army Nursing Service, and two only from the reserve. The remainder were outsiders, and the majority untrained. One of these was the late Miss Kingsley, of whose ability and devotion to the sick Dr. Carré speaks in the highest terms. Several of the volunteer nurses were local Dutch ladies. There are only 6 nurses now.

The male staff consists of about 30, none of them R.A.M.C., some are Cape V.M.S.C., some St. John's, some line orderlies, and some civilians. Very few speak Dutch, but this is not of much importance, owing to the fact that a large number of the prisoners are members of other nationalities, and generally speak English.

There are now only 40 patients in the hospital; there have been as many as 136. The majority of cases are enteric fever, with a few cases of dysentery and pneumonia, and very little else. On the whole I think that the Boer is a worse patient for a disease like enteric than the British soldier, owing to his peculiar liability to nervous complications. He is very prone to get a low form of delirium with failing cardiac action, to which he often succumbs. Dr. Hall showed me two cases in which pure dementia had been left on convalescence. Many of the cases also showed signs and symptoms apparently those of a general neuritis in the third and fourth weeks. It has been noticed here, as elsewhere, that many cases of enteric keep up a fairly uniform temperature during the third and fourth weeks, not ranging very high, perhaps not above 101° or 102°, with very slight morning remissions, and in these cases one learns to form a very bad prognosis; complications develop or a relapse supervenes, and in either case the patient dies.

The hospital consists of a main building and four large huts, but none of the latter are at present in use for patients. They are constructed after the same pattern as those at Woodstock, and are roomy, well ventilated, and comfortable. The main building consists of a number of small wards, mostly holding 8 or 10 beds, and many open into each other. They have whitewashed walls, and consequently look somewhat unfinished, but all are scrupulously clean, and they have never been overcrowded. Every comfort is provided, and friends have free access to the patients, perhaps too much so, as they not infrequently abuse the privilege by conveying forbidden articles of food.

Besides the official supplies, which are liberal to a degree, plenty of clothing, tobacco, pipes, and other comforts are freely supplied by local sympathisers, and every deference is paid to their idiosyncrasies by relaxing in a large measure the discipline of military hospitals properly so called.

This hospital is a standing proof of one thing at least, that the authorities, who can boldly entrust the entire task of organisation and administration to a civilian staff, are not so hide-bound by tradition as some critics assert, whilst the fact of its being so great a success shows not only the ability of Dr. Carré, but that he must have had the cordial support of his chief, the Base P.M.O., in his arduous task.

INSPECTION BY GENERAL COMMANDING LINES OF COMMUNICATION.

The campaign of criticism against the medical administration is visibly slackening in view of the failure of the critics to bring up tangible facts. The General Commanding the Lines of Communication has just completed a tour of inspection of all the hospitals on the lines, and has authorised the publication of a general order expressing his entire satisfaction with the way in which the sick and wounded are cared for.

DINNER TO WAR SURGEONS AT DURBAN.

ON June 30th the medical practitioners of Durban entertained Sir William Stokes, Consulting Surgeon to the Field Forces, and Sir Thomas Fitzgerald, of Melbourne, at dinner in the Durban Club. The Rev. Dr. Booth was also among the honoured guests. There was a large attendance of members, and Dr. Addison presided. In the speeches which followed appreciative remarks were made by the Chairman and Dr. Allen on the services rendered by the guests during the present war. Special reference was made by Sir William Stokes to the unjustifiable, and in many instances grotesque, charges that had recently been made against the Army Medical Service. He paid a high tribute of praise to the superb way the medical and surgical work had been accomplished in the present campaign by the army medical officers both in the field and base hospitals, which undoubtedly had far distanced any similar work done in former wars. Sir Thomas Fitzgerald, whose health was proposed by Dr. Allen in a felicitous speech, fully endorsed all that had fallen from Sir William Stokes, and thanked the proposer not only for his kind references to himself, but also for what he had said of the splendid achievements of the Australian forces that had come forward so loyally and promptly in defence of their Queen and mother country. The Rev. Dr. Booth and Major McCormick, R.A.M.C., also spoke effectively. To the toast of "The Chairman," proposed by Sir William Stokes, Dr. Addision replied in suitable and eloquent terms. The entertainment was diversified by music, and some excellent and humorous anecdotes connected with his Colonial experiences were contributed by Dr. Damas.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

IN Bombay during each of the two consecutive weeks, ending July 12th and 19th respectively, 60 persons died of plague. Six to eight deaths daily is the record of plague mortality at the present moment. The number of deaths occurring under the heading "diseases of the respiratory system" has increased lately in Bombay, and as these have in the past been looked on with suspicion, as pneumonic plague may be incorporated in the return, it may be concealment or ignorance is partly accountable for the favourable plague returns.

In Calcutta during the week ending July 17th there were 56 cases of plague and 53 deaths from the disease, a great falling off compared with the two previous weeks.

From the report of Captain J. K. Condon, Indian Staff Corps, on plague, the mortality from plague can be fairly well estimated. Up to the present moment some 300,000 persons have died of plague in the Bombay Presidency since the disease first appeared in Bombay in September, 1896.

AUSTRALIA.

New South Wales.—On July 21st there remained in the plague hospital 49 cases of plague; during the subsequent week no fresh cases were admitted. Of the 49 who were in hospital between July 21st and July 28th, 14 were discharged recovered and 1 died, leaving 34 in hospital on July 28th. Since the outbreak in Sydney 302 cases in all have been treated; of these 102 died. The mortality amongst the Chinese attacked by plague is out of all proportion to the death-rate amongst Europeans, as of 10 Chinamen attacked 8 died.

MAURITIUS.

During the month ending August 2nd, 10 cases of plague occurred in Mauritius, all the cases proving fatal.

SUSPECTED PLAGUE AT HAMBURG.

The ss. *Rosario* is lying at the quarantine station at Hamburg under medical supervision. The cause of the detention is that one of the crew was found to be suffering from symptoms suspiciously like plague. The steamer was carrying coal from Cardiff to Hamburg. The patient is progressing satisfactorily, and the rest of the crew continue well.

THE IDENTIFICATION OF BLOOD OF INDIVIDUALS.—Dr. W. Birchmore has satisfied himself that he has discovered a method of identifying the blood of individual members of the human race. In the *New York Medical Journal* of July 7th he gives the details of the apparatus and methods which he has used for some time in making thousands of blood-counts, and he has come to the conclusion that he can without hesitation swear to the fact that two specimens are not those of the same person and can with considerable certainty say that the blood of one stain is the same as that of some other presented. The sources of error are many, for the discrepancies in the best of eyepiece micrometers are oftentimes very great. The personal equation must also be fully considered. The author believes, however, that by making a large number of blood-counts and plotting the results into curves opinions of considerable legal value can be given.

PRESENTATION TO DR. ALAN HERBERT.—At the Hertford British Hospital, Paris, on August 4th, the Honourable Alan Herbert, physician to the hospital, was presented with an illuminated address by Dr. J. F. Sutherland of Edinburgh, on behalf of the former residents, numbering twenty. Dr. Faure Millar of Paris, presided. Sir Dyce Duckworth, Dr. F. H. Bateman, Dr. Brandt, Dr. Edward Neech, and Professor Berger took part in the proceedings.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, AUGUST 11TH, 1900.

THE ANNUAL GENERAL MEETING.

The sixty-eighth annual meeting of the British Medical Association is now a part of history, but it will be possible to estimate the full value of the scientific work done by its Sections only after the publication of the full reports of their proceedings (which has already been commenced in the columns of the British Medical Journal) is completed. From the brief notes in this and in the last issue it will be seen that many topics of special clinical and pathological importance at the present moment have been discussed.

The number of members present has not been so large as on some previous occasions, but it is a fact that both general meetings, and many of the meetings of the Sections, have been as well or better attended than on some occasions when a larger number of members registered their names. The arrangements both for the general meetings and for the Sections were well thought out and worked excellently, and for this the thanks of the members of the Association are due, and have been most heartily expressed, to the local Committees. For the excellence of these arrangements, and, indeed, for all that was done for the comfort and convenience of members, gratitude is in particular due to Dr. Edgar G. Barnes (Eye), who as the Honorary Local Secretary (in which office he had Mr. J. F. C. Hossack, of Ipswich, as an able coadjutor) proved himself an admirable organiser, always ready to meet any difficulty which his foresight had not anticipated, (and they were few in number), and indefatigable in his determination to make the meeting a success. He has his reward in the knowledge that this end was fully attained.

The hospitality shown by the members of the East Anglian Branch was most generous and cordial, and Dr. J. R. Staddon of Ipswich, the Secretary of the Local Entertainments Committee, upon whose shoulders much of the work fell, must be more than satisfied by the result. Opportunities of visiting the many objects of interest, and the many important manufactories in Ipswich, as well as the beautiful environs of the town, were afforded both to the members and to ladies accompanying them. The arrangements made by the Excursion Committee, of which Dr. Francis Ward was the indefatigable Secretary, and the Ladies' Reception Committee, of which Mrs. R. W. Brogden was a most energetic member, were all that could be desired, but they were unfortunately somewhat marred by broken weather. An interesting collection of pathological specimens had been brought together, and the Annual Museum of surgical instruments, drugs, and hospital and invalid appliances was, thanks especially to the hard work of Dr. C. K. Moseley, the Secretary of the Museum Committee, very well displayed. We cannot pretend to mention the names of all those members of the Local Committees who contributed to make the meeting agreeable and interesting, but it must at least be said that in Dr. Elliston the meeting had a President who by his conduct in the chair more than fulfilled the expectations which had been formed, while the genial hospitality which he and Mrs. Elliston extended will always be gratefully remembered.

The most important business done at the third general meeting, which was held on August 2nd, was the election of the Committee to consider and report upon the best means of reorganising the constitution of the British Medical Association. The members of this important Committee were chosen on a territorial basis, and it was found convenient to arrange that there should be fifteen members for England and Wales, two for Ireland, two for Scotland, and five for the colonies and dependencies of the Empire. The five groups of colonies and dependencies formed for this purpose were East India and the Archipelago, Australia and New Zealand, South Africa, the West Indies, and Canada. The Committee was instructed to furnish a provisional report by February 1st, 1901, and some little difficulty was felt as to the selection of representatives of Colonial Branches. It was clearly essential that the gentlemen selected should be resident in the United Kingdom at the present time, and the choice fell upon representatives selected by Branches in the various groups to serve upon the Council with the exception of Canada. Mr. Edmund Owen was, at the suggestion of Professor Cameron, of Toronto, elected the representative of Canada. Mr. Owen is about to attend the meeting of the Canadian Medical Association at Ottawa, when he will be able to gather the views of the Canadian members, and has, we believe, other ties with the Dominion which will make his selection agreeable to them. One-half of the members of the Committee were nominated in the general meeting, one-half were nominated by the Council to the general meeting, and the whole Committee was elected by the general meeting without a division. The Committee has been given a free hand, the only instruction, in addition to the general reference, being that it shall consider and report upon the question of delegation in respect, as we understand the resolution, to medico-ethical and medico-political questions, and it will elect its own chairman.

The task before the Committee is neither easy nor light, but it is obvious that the time has come when it must be undertaken. The Association has outgrown its present constitution as expressed in its Articles and By-laws, and, quite apart from matters of principle, these need to be examined, codified, and amalgamated. But matters of principle also are involved, and we may express the hope that the Committee will face the many important questions which will arise in a spirit at once bold and conservative, and be able to issue a unanimous report to the

Branches. It ought to be possible to obtain opinions from all the Branches, both home and colonial, in time for presentation to the annual meeting next year in Cheltenham. In this way as complete an expression of the wishes of all the members will be obtained as appears to be possible under existing conditions.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

Reference was made in a recent number of the British Medical Journal to the fact that differences of a somewhat acute character had arisen between the medical staff and the Board of Management of the National Hospital for the Paralysed and Epileptic, and the nature of the differences may be gathered from the letter signed by the whole of the medical staff of the hospital which was published in the Journal of August 4th.

Briefly stated, the grievance of the medical staff is that for several years past the control of the affairs of the hospital has been too much concentrated in the hands of a single official, and that they are deprived of any voice in the management of the institution which they serve. The result of this one-man government has, they contend, been that the administration of the hospital has become, from a medical point of view, very unsatisfactory.

The state of things attracted the attention of the Distribution Committee of the Hospital Sunday Fund last year, and the Chairman then conveyed an intimation to the Secretary and General Director that unless the differences between the medical staff and Board of Management were satisfactorily adjusted the customary grant would be withheld. In spite of this warning nothing appears to have been done to remove the grounds of complaint of the medical staff. The questions in dispute were again considered at a meeting of the Hospital Sunday Fund on July 19th, with the result that after hearing both sides the Distribution Committee decided that no award should be recommended until the existing differences had been arranged. The Secretary and General Director has announced that a special general meeting of Governors and subscribers has been convened for August 11th for the purpose of considering the whole matter. The medical staff, however, have declined to accept this date, on the ground, as will be seen from their letter published at p. 392, that it falls in the heart of the holiday season, when it will be impossible for any large proportion of the governors to attend, and when the great majority of the medical staff will also be away from town. They justly contend that the circumstances call for a full and searching inquiry into the constitution and management of the hospital to be carried out by an independent and at the same time competent body. They have accordingly asked that the meeting should be postponed till the end of October. It is to be hoped that in the interest of the hospital this request will be acceded to, otherwise the Board of Management will lay itself open to a suspicion of being unwilling to submit the quarrel to the judgment of a full and impartial meeting.

It would, of course, be premature at this stage to attempt to pass a definitive judgment on the merits of the case. But as the medical staff have appealed to the profession it will be well for our readers to have the essential facts of the case put before them.

In a report to the Governors, dated May of the present year, the medical staff formulated complaints on matters affecting the interests of the patients and on matters relating to the management of the hospital. Under the former head the report dealt with (1) the diet, and (2) the condition, care, and treatment of the patients, and (3) the nursing. After careful investigation they found that the dietary was seriously defective in several important respects. New diet tables were drawn up in 1899, and the Board accepted the conclusions of the staff. Nevertheless, the diet is still deficient in quantity and quality, and in consequence articles of food are brought in from the outside by patients' friends, and this with the approval of the Board of Management. As regards the care of the patients it is alleged that they are often not kept clean, and that there is not a sufficient supply of clean linen; further, that the treatment is not always efficiently carried out, and that even the relief of natural functions in the paralysed is at times not properly attended to. The medical staff consider that this state of affairs is due to the undermanning of the nursing staff, and to very insufficient provision of linen by the managers. There is no reserve of nurses, and the accommodation for them is inadequate both for comfort and for health, while their food is exceedingly defective in quality. To all these matters, it is added, the attention of the Secretary and General Director has been drawn by the resident medical officers, but without result at the time of the issue of the report.

The maladministration of the hospital is said to be due to the want of co-operation of the Board of Management with the medical staff, and especially to the existence of an intermediate office, that of Secretary and General Director. Originally two members of the medical staff were members of the Board, but in 1880 a rule was made that no member of the staff should be eligible for election on the Board of Management. This principle was afterwards extended still further by another rule that no person should be allowed to vote as a Governor whilst holding office upon the medical staff.

Attempts have at different times been made by the medical staff to obtain some representation on the Board, but this has been persistently refused. The medical staff is unanimous in holding that to safeguard the interests of the patients and the reputation of the hospital it is indispensable that the medical staff should be directly represented on the Board of Management, and in view of the impossibility of their continuing the work at the hospital under existing conditions they have appealed to the governors to effect this necessary change in its management.

To the complaints as to the diet and care of the patients the Board of Management replies with a general denial. A Subcommittee of Inquiry was appointed from their own body, and this subcommittee virtually declared that all the complaints of the medical staff were unfounded, and that all was for the best in the best of all possible hospitals. With regard to the charges of maladministration, the report of the Subcommittee of Inquiry may be described as amounting to a panegyric of the

Secretary and General Director, Mr. Burford Rawlings, during the thirty-four years of his service in that capacity, and the hostility expressed by the medical staff to the existence of such an office is ascribed "to the fact that the office of Director has made lay control real and effective." Their objections to the medical staff being represented on the Board are summed up in the proposition that members of the staff being officers and servants of the hospital could not be included in the governing body. The members of the staff are, it is argued, charged with the performance of definite duties, and questions relating to their performance of these duties may arise at any time.

The Governors are invited to believe that if the representation asked for were conceded, "the interference by the medical staff would show itself in every detail of management and finance, and instead of being maintained for the benefit of the poor and suffering, the hospital would be in danger of having the philanthropic aspect of its work subordinated to that which is merely scientific and investigatory." At present the Secretary and Director is independent of the Medical Committee—a fact to which the Board attach the greatest importance, and they say that to include members of the medical staff in the Board would alter his relation to the medical staff, and render some of his most useful functions almost impossible of performance.

We have given, we think, with perfect fairness an outline of the case as presented by each side. While, as already said, it would be premature to attempt to pass a final judgment, we consider that we are in a position to give a general opinion on the situation. Regarding the dieting and care of the patients, as to which there is a direct conflict of testimony, the medical profession will have no difficulty in deciding to which statement most weight should be attached. On the constitutional question also the medical staff may count on the support of the profession. In their demand for representation on the board of management they are only asking for what is generally recognised as an essential condition to the successful management of a hospital, and for what is actually in existence at almost all the principal hospitals in the metropolis.

The Board of Management state in their report that "from every quarter comes testimony to the value of the hospital and the success of its administration." Now we ask the Governors to consider frankly to whom this success is really due. We have no wish to undervalue the services of the respectable gentlemen who form the Board of Management; they are entitled to every recognition for the time and labour which they give to this philanthropic work. But after all, to speak plainly, they misconceive their position. In their relation to the hospital they are only hewers of wood and drawers of water; it is not they who have built up its reputation. The Board of Management might easily be replaced a dozen times over without the efficiency of the hospital being seriously impaired; but what would become of it if it were to lose the services of a medical staff whose names are among the glories of contemporary medicine, and who have made the hospital a Mecca of neurology, to which pilgrims in search of knowledge resort from every country in the world?

To put the whole case in a nutshell: The Board of Management express the determination to persist in their exclusion of the medical staff from any share in the management of the hospital, and this for no better reason apparently than they wish to be entirely independent of the medical staff. They say that they are willing to co-operate with the medical staff, and invite full discussion on the matters in dispute. Their attitude reminds us of that of Goldsmith's "Good-natured Man," who always liked to hear arguments when he had made up his mind, because then he knew they could have no effect on him. We trust that they may yet be brought to recognise that they have taken up an untenable position, and that if they persist in the effort to maintain it, they will destroy the usefulness of the institution, the credit and prosperity of which they profess to have at heart.

ANNUAL MEETING.

On Wednesday evening the Mayor of Ipswich (Mr. W. A. Churchman) held a reception and garden *fête* at Christchurch Park, an estate of 51 acres, situated near the centre of Ipswich, the property of the town, and tastefully laid out as a public park. Within its precincts is a spacious mansion, which occupies the site of an ancient priory; the conventual buildings having been levelled to the ground in the reign of King Henry VIII, the present mansion was built about 1547, and was a few years since generously presented to the town by Mr. Felix Cobbold. It contains several picture galleries, and is well adapted to the purposes of a big reception. The guests were received in the entrance hall by the Mayor and Mrs. Bond, in the absence of the Mayoress. The grounds were illuminated with Chinese and Japanese lanterns and with variously-coloured fairy lights. A large marquee was erected near the mansion, and in it refreshments were served, whilst the band of the Norfolk Regiment, stationed on the lawn, played a very pleasing selection of music. In the course of the evening there was also a display of fireworks on and near the Round Pond in the park, which ended with a set-piece that exhibited the device, "Welcome to the British Medical Association." Altogether the entertainment provided by His Worship was very highly appreciated by the hundreds of members and their friends whom he thus kindly entertained.

One of the most pleasurable functions of the meeting was a garden party given on Thursday afternoon by Captain E. G. Pretyman, M.P., and Lady Beatrice Pretyman, at Orwell Park, beautifully situated about five miles from Ipswich on the bank of the river Orwell, and stocked with deer. The mansion contains probably the finest picture gallery in the eastern counties, in which are several works of Murillo and other equally famous artists, and also an astronomical observatory. All these parts of the mansion and the adjoining gardens were thrown open to the inspection of the visitors. The band of the 1st Suffolk and Harwich Volunteer Artillery played a choice selection of music during the afternoon, which added to the enjoyment of those present.

During the programme of the smoking concert organised by the Museum exhibitors, and held at the Grand Hotel on Thursday evening, August 2nd, several influential members of the medical profession being present, Mr. John Weiss, of the firm of Messrs. J. Weiss and Son, Limited, rose and thanked Mr. C. K. Moseley for all the trouble he had taken to make the exhibition the success it was, and, on behalf of himself and the rest of the exhibitors, presented Mr.

Moseley with a handsome silver bowl, bearing the following inscription:

British Medical Association.
Ipswich Meeting, 1900.
Presented to CHARLES KINGDON MOSELEY, M.R.C.S., L.R.C.P.,
By the Exhibitors at the Annual Exhibition, as an acknowledgment of the tact and courtesy he had shown in the management of the Exhibition.

Mr. Moseley made a suitable acknowledgment.

IN CONTACT WITH PLAGUE.

THERE seems to be little doubt that cases of plague find their way occasionally to our seaports. It is almost inconceivable, considering the extent and rapidity of communication between Indian, Egyptian, and British ports, that it should be otherwise. It is true, the length of time a ship must be at sea between leaving a known plague-infected town and Great Britain exceeds the utmost limit assigned to the incubation period of plague; yet it is doubtful if we are well enough acquainted with the behaviour and spread of plague to rely implicitly upon such knowledge or to consider ourselves safe from infection. Practical experience seems against the belief that we are rendered thereby immune, for now for the third time plague has been reported as occurring on ships lying in our harbours. Some eighteen months ago two deaths from plague were reported at the Branch Hospital of the Seamen's Hospital Society, at the Albert Docks. It was only after the death of the patients that confirmation of the disease being really plague was established; but the fact that the cases were not diagnosed during life ought to be a warning to medical officers in all our ports. Recently, within the past fourteen days, 4 cases believed to be plague have been landed from the P. and O. steamship *Rome*, trading between Bombay and London at the Albert Docks. Two of the patients died shortly after landing, and 2 are now in a fair way of recovery, and are under the care of the Government authorities. By telegram we learn that on August 7th a case of suspected plague was found on board the ss. *Rosario* in Hamburg harbour. The ship sailed from Cardiff to Hamburg, and it is difficult to understand without further information how this vessel could have become infected. It is impossible to ignore the importance of these statements, which, if they are true, throw a great responsibility upon our sanitary authorities. We are aware that every precaution is being taken as to inspection, diagnosis, and isolation, but we are not sure that even the vigilant medical officers of health at our numerous seaports are in a position to deal with imported cases of plague as promptly as is desirable. The machinery for dealing with an outbreak is no doubt capable of being put together, but we should like to be certain that it is ready now, and always, so long as the threat of plague is in evidence. Have we special hospitals ready to receive plague patients? Are there quarters set apart and ready to accommodate a shipload of "contacts"? It is necessary for our hospital authorities everywhere, both in coast towns and inland, to know immediately what to do with a case, or with cases, of plague should such crop up in their wards or reception rooms. Information as to the situation of the nearest plague hospital and the means of transit should be available in all our hospitals. There is no need for alarm, but we are not convinced that we are not liable to have cases of plague occurring here and there in our seaport towns and in our large cities; and the disturbance to trade, even by a single case, would be so great to the country that the Government is justified in sparing neither money nor pains in preventive measures for such a contingency. How to deal with the passengers, the crew, the cargo, and the ship itself are well known, and the regulations on these points are definite and precise; but for cases occurring in hospitals, or applying for admission to hospitals, the regulations are neither so well known nor so precise as we could wish. We would urge the sanitary authority—the Local Government Board—to issue special information upon this subject, and see that it reaches the proper channels, so that every medical man should know immediately what to do. Plague cases ought not to be sent to our infectious disease hospitals, they must be provided for specially; and it is necessary for everyone to know where these plague hospitals are situated, and by what means they are to be reached.

UNIVERSITY OF LONDON.

A GIFT of £1,000 has been received by the University from the children of the late Mr. William Lindley, in affectionate remembrance of their father. The Senate of the University have gratefully acknowledged the gift and invested it, leaving the disposition of the fund to the new Senate which is to assemble in October. The new laboratories at South Kensington are now completed, and are a great improvement upon those which were in use at Burlington Gardens. The new examination rooms have been fully tested during the holding of the recent intermediate examinations in Medicine, Art and Science, and tht Preliminary Scientific Examinations, and are reported to have given satisfaction to the examiners. One disadvantage attaching to the new site of the University is its distance from the northern, eastern, and southern parts of the metropolis, and already the question of providing elsewhere for some of the matriculation candidates has had to be considered. No fewer than 2,826 candidates entered for the last matriculation examination in June. It is estimated that a greater number than 1,600 candidates at South Kensington at one time would entail much discomfort and inconvenience. The removal of the catering syndicate and its property still remains to be dealt with, but we understand it is not improbable that a speedy and final solution of that difficulty is likely to take effect.

DR. RODDICK AT THE COLLEGE OF SURGEONS.

AMONG the distinguished surgeons who spoke in acknowledgment of the Honorary Fellowship conferred on them on the occasion of the centenary of the Royal College of Surgeons was Dr. Thomas George Roddick, M.D., LL.D., of Montreal. Dr. Roddick is Professor of Surgery in McGill University, Montreal; Consulting Surgeon to the Montreal General Hospital and Royal Victoria Hospital, Montreal, and Honorary Surgeon to His Excellency the Governor-General of Canada. He is a Past President of the British Medical Association, and many members will remember the ability, tact, and dignity with which he presided over the annual meeting which was held in Montreal in 1897. Besides being one of the leading surgeons of Canada, Dr. Roddick is a prominent member of the Canadian Parliament. We were unable to publish his speech last week with those of the other representative recipients of the Honorary Fellowships, as the report did not reach us till too late. We are sure that many of our readers will be grateful to us for now supplying the involuntary omission. The following is the text of Dr. Roddick's speech: "Mr. President, My Lords, Fellows of the Royal College of Surgeons, Ladies and Gentlemen,—On behalf of my colleagues from Canada and myself I return thanks for the great distinction conferred upon us to-day by your illustrious body on this, the one hundredth anniversary of your foundation. The Honorary Fellowship of the Royal College of Surgeons of England is unquestionably the greatest honour that can be conferred on any Colonial surgeon, or indeed on any surgeon no matter whence he hails. Be assured, Sir, we are not so selfish as to appropriate this great compliment entirely to ourselves. We take it that we have been selected from the two great centres of education and commerce in Canada to represent the Universities of

Laval, McGill, and Toronto, and in a measure to represent generally the medical profession of that now far-famed Dominion. We feel that in conferring this distinction upon us you have to-day forged another link in that great chain of British Imperialism which is surely and rapidly encircling our globe. We see in your action a desire to further that great scheme of reciprocity in medicine throughout the Empire, which we in Canada especially are most anxious to establish. We hope to be in a position soon to submit to your General Medical Council a well-digested plan which we trust will be acceptable to that very representative body. Thus will Colonial graduates meet the graduates of the Mother Country on an equal footing in the army and navy, and in connection with the various Colonial and Indian appointments, from which they are now practically debarred." Dr. Roddick, in conclusion, referred to the work of the President and his associates in South Africa.

BRITISH CONGRESS ON TUBERCULOSIS.

It has already been announced in the British Medical Journal that a Congress on Tuberculosis is to be held in London next year. The date of meeting has been fixed for the last week of April. H.R.H. The Prince of Wales is the President of the Congress, and among the Vice-Presidents are the Duke of Fife, the Marquis of Dufferin, K.P., Earl Spencer, K.G., Lord James of Hereford, Lord George Hamilton, P.C., Lord Reay, G.C.S.I., Lord Lister, P.R.S., Sir John Burdon Sanderson, Sir Hermann Weber, the Presidents of the Royal Colleges of Physicians and Surgeons, the President of the Royal College of Veterinary Surgeons, the Director-General of the Medical Department of the Navy, and the Chairman of the London County Council. The President of the Organising Committee is the Earl of Derby; the Chairman, Sir William Broadbent; the Honorary Treasurers Lord Avebury and Sir James Blyth; the Chairman of the General Purposes Committee, Professor Clifford Allbutt; and the Honorary Secretary-General, Mr. Malcolm Morris. The Prince of Wales has graciously consented to open the Congress in person. In order to make the Congress as comprehensive as possible every colony and dependency in the Empire will be asked to send representatives, and distinguished guests will be invited from Europe, Asia, and America. Authorities in these and other countries will be invited to take an active part in the work of the Congress. It is hoped that the Congress will be able to adopt practical resolutions which will serve to indicate the measures best adapted for the suppression of tuberculosis. The work of the Congress will be divided into Sections as follows: Section 1 (State and Municipal). President—Right Hon. Sir Herbert Maxwell, Bart., M.P. Secretaries—Dr. Bulstrode, Dr. Arthur Newsholme, Dr. James Niven. Section 2 (Pathological, including Bacteriology). President—Professor Sims Woodhead, M.D. Secretaries—Dr. Wethered, Professor Rubert Boyce, Dr. E. J. McWeeney. Section 3 (Tuberculosis in Animals). President—Sir George Brown, C.B. Secretaries—Professor Hobday, Royal Veterinary College; Messrs. Harold Sessions, F.R.C.S., Stuart Stockman (Glasgow), Frank Leigh (Bristol). Section 4 (Clinical and Therapeutical (including Climatology and Sanatoria). President—Sir R. Douglas Powell, Bart., M.D. Secretaries—Sir Hugh Beevor, Bart., M.D., Dr. Hector Mackenzie, Dr. R. W. Philip, Dr. William Calwell (Belfast). The subscription for ordinary members will be £1. As the expenses of the Congress will be very considerable, donations to the Reception Fund are invited. Donations of more than one guinea will be considered as including member's subscription, and will entitle the donor, whether an individual or a corporation, to all the privileges of membership. The English language is adopted as the official language by the Congress in all international relations; but in the general assemblies and at sectional meetings papers may be read and discussions carried on in the language of the reader or speaker.

BRITISH DENTAL ASSOCIATION.

On July 27th the annual meeting of the Western Branch of the British Dental Association was held at the University College, Bristol. The retiring president, Mr. J. Laws (Weymouth), delivered a valedictory address, in which he said they might congratulate themselves that the year had been one of quiet yet substantial progress throughout the ranks of the British Dental Association. They had launched a scheme for the endowment of dental scientific research. Birmingham had organised a scheme for the award of higher qualifications in dentistry. Consequently their metropolitan friends as usual had suddenly begun to rub their eyes and see if it was not possible for London to follow the provinces and institute a higher dental degree to be granted from the long anticipated Teaching University of London. Mr. William Helyar was then invited to take the chair as president for the ensuing year. In his inaugural address he said that, thanks to the initiative of the London and Counties Medical Protection Association, they might hope that the law would assist them to weed out all offenders, since recent prosecutions had produced a very emphatic expression of opinion and prompt action from the General Medical Council. Dr. Hayman read a paper on neuralgia, and Mr. H. J. Pickering (Chippenham) dealt with the condition of school children's teeth. He contended that in infancy the feeding-bottle was used with detrimental effects, and its abolition was a result they should strive to attain. Less soft food should be given to children, and he especially condemned the toothsome but tooth-destroying biscuit. He urged the importance of the appointment of public officers of dentistry. In the course of the discussion on Mr. Pickering's paper most of the speakers contended that the poor health of children and the bad condition of their teeth were due in a large degree to the substitution of the feeding-bottle for the natural means of nourishment. The health of the mother had also a great deal to do with the after-health of their offspring. The President said they had heard of guns being wrong in South Africa, but might it not be the eye of the soldier which was wrong in consequence of teeth trouble? Mr. Thomson submitted a paper on the question of the correction of irregularities of teeth. Mr. Kendrick brought forward some singular cases of dental troubles. In the evening the annual dinner was held at the Clifton Down Hotel, under the presidency of Mr. W. Helyar, the vice-chair being occupied by Mr. Laws. There was a goodly assembly, amongst those present in addition to members of the Association being the Dean of Bristol, the Rev. H. W. Pate, the Rev. Dr. Glover, Dr. Bertram Rogers, Dr. C. Hailes, and Dr. Carling.

TROPICAL DISEASES.

It is announced that the Liverpool School of Tropical Medicine recently heard from the expeditions it has sent to West Africa and America. Drs. Annett, Elliott, and Dutton report from Bonny that they have visited Opobo, Slave, Trees, Bakana, Bugana, Degama, Abonnema, and Egwanga. They intended to revisit the latter place to complete some experiments there initiated, and then proceed up the Niger as far as Lokoja. The expedition under Drs. Durham and Myer received a cordial welcome from the authorities at Washington and Baltimore, and at the special wish of Dr. Sternberg, Surgeon-General of the United States Army, has gone to Cuba with the American Government expedition to study yellow fever in Havana. The Brazilian Government

is preparing to receive the expedition at the end of this month. A letter has been received at the Liverpool School of Tropical Medicine from Dr. J. Paes de Cavalho, Governor of the State of Para, in reference to the expedition to study yellow fever. He writes: "Appreciating the high and scientific value of the Liverpool School I herewith anticipate my thanks for the valuable services that scientific institution will render to Para, to Brazil, and, in fact, to humanity, thus contributing to the study of a disease which, unfortunately, has become endemic in some Brazilian ports, and every year destroys hundreds of precious existences, carrying discredit to our country and harming our progress. To such a mission I most gladly pledge this Government's assistance and co-operation, which I consider due to the noble intention of the said society. The State of Para will do its utmost to receive them with honour."

HEREDITY AND INEBRIETY.

THE Society for the Study of Inebriety has appointed a Committee of medical men to inquire into the relation of heredity to the production of inebriety. The President is Dr. Wynn Westcott, coroner for North-East London, and the Committee includes the names of Mr. Victor Horsley, Professor Sims Woodhead, Drs. Archdall Reid, Heywood Smith, and Harry Campbell, with Dr. Thomas Morton as secretary. Much progress has already been made with the investigation, and the medical profession is now asked to supply evidence on the following subject: "The Committee are fully satisfied that drunken parents tend to have children who become drunkards; but they earnestly desire to obtain evidence bearing upon the question, whether a parent who himself inherits no special tendency to inebriety can, as the result of mere intemperate habits, entail upon his children a potential inebriety." Communications will be gratefully received by the President or Secretary, and may be addressed to 396, Camden-road, London, N.

THE PSYCHOLOGY OF THE SCOTTISH GAEL.

MR. ALEXANDER MACDONALD, Assistant Secretary of the Gaelic Society at Inverness, has contributed a series of articles to the *Caledonian Medical Journal* (June and July) dealing with various interesting problems on the Ethnological and Mental Characteristics of the Gaelic Highlanders. The psychological characters form an interesting branch of study, and the main facts are very clearly summed up in the analysis given. The Celtic population of the Highlands is divisible into two sections or races, namely, the Ibero-Celtic, a dark-haired race, and the Germano-Celtic, a fair race. To the former would belong the darker featured individuals, with a preponderance of long heads; to the latter the fairer complexioned with a preponderance of round heads. There is a red-haired variety which it is difficult to include definitely in one class or the other. "Psychologically they fall under the Germano Celtic classification, though as to several traits in their character, notably passion and emotion, they much resemble the dark." In mental constitution perhaps the most important and serious difference between the dark and the fair persons is the inadaptability, individually, of the former. Though physically wiry and elastic, they are not mentally plastic or adaptable. They are refractory and slow to submit even to things which they cannot control. The dark person—the Ibero Celt—considers his being more important than even to be the servant of an inexorable fate. What he wishes to do he can do well enough, but what he does not wish to do he cannot mechanically take to. "Work in the sense of a task is not attractive to him, work as a spontaneity he loves. From this arises much of the idealism so characteristic of him. He dreams when he should act. He lives in vision, while he dies in fact." From these traits, again, undoubtedly arose the poetry, the art, the mental influence which the dark Celtic races always possessed and developed; also the comparative lack of dramatic force in all their intellectual creations. They had ideals and aspirations, but lacked action. "The dark-type man we are picturing was not a particular lover of the material world. Give him a simple life outwardly, inwardly his life was one above the clouds in full view of the Elysian fields of his own creation." The dark Celtic man showed intense passion, and under the influence of anger not a little vindictiveness. Success raised him, disappointment lowered his spirits and made him melancholy. He was proud and independent, and fond beyond all things of freedom. He learnt instinctively rather than mechanically, he preferred generalisation to analysis, and was vague and metaphysical rather than precise and mathematical. "As a commercialist he is not foremost, though fair, and in political organisation and nationalisation he is deficient. He takes long to mature, but is exceptionally recuperative." The fair Celt was the very antithesis of his dark brother. He was energetic, more active and less dreamy, a materialist and hard matter-of-fact man in philosophy, given to cultivation of the soil and to practical and worldly pursuits, learning not by fits and starts or as the mood seized him, but by steady plodding, a speculator and a commercialist first and a sentimentalist afterwards, born to organise, a creator of banks and similar commercial institutions, and interpreting riches as a means to an end rather than a thing to live for. Contact with the Saxon fostered and developed his practical and commercial instincts further, and made him what he is at the present day—practical, pushful, and canny.

DEATHS BY VIOLENCE IN THE UNITED STATES.

STATISTICS show that deaths from suicide are steadily decreasing in the United States. During 1899 there were 5,340 persons who made away with themselves, as against 5,920 the year before, 6,660 in 1897, 6,520 in 1896, and 5,759 in 1895. Of the total for last year, 4,155 were males and 1,185 females. Among professional men were 38 medical practitioners, 9 clergymen, 7 attorneys, 7 bankers, 7 journalists, 2 college professors, and 2 actors. This classification is necessarily incomplete, and includes only persons of some prominence, but it is interesting as showing the tendency toward self-destruction among professional men. The preponderance of medical practitioners is striking, more than one-half of those enumerated belonging to that profession. Classified according to cause, despondency is said to be accountable for 2,573 cases, insanity for 355, drink for 127, ill-health for 225, domestic unhappiness for 191, disappointed love for 146, business losses for 74, while 1,649 are attributed to unknown causes. In regard to the means of self-destruction employed, 2,134 used poison, 527 hanged themselves, 302 cut their throats, 30 burnt themselves to death, 25 threw themselves in front of trains, 42 jumped from housetops or windows, 7 blew themselves up with dynamite, and 4 starved themselves. In the same year the number of murders was 6,225, or nearly 1,000 more than the suicides. There were 131 executions, a number so utterly out of proportion to the murders as to indicate a failure of justice in a vast number of cases. Nevertheless the figures show a slight improvement when compared with those of former years. There were 109 executions in 1898, 128 in 1897, 122 in 1896, 132 in 1894, 126 in 1893, and 107 in 1892. It is a notable fact that the largest number of legal executions was in the Southern States. Georgia had 19, Texas 11, Alabama 10, while in the other Southern States there were 32. But if the number of legal executions was small, that of lynchings was large enough to make up for any deficiency in the infliction of the last penalty of the law. There were 107 cases during the year compared with 127 in 1898, 166 in 1897, 131 in 1896, and 171 in 1895. Of these, 103 occurred in the Southern States, Georgia leading with 28. The alleged crimes were: Murder, 44; complicity in murder, 11; rape,

11; alleged rape, 6; race prejudice, 5; robbery, 5; aiding criminals to escape, 3; arson, 1; inflammatory language, 1; rape and murder, 1; highway robbery, 1; arson and murder, 1. In 1 case mistaken identity is assigned as the reason; in 1 no offence was alleged, while in 4 the reason is said to be unknown. Apparently lynching is regarded by some of the free citizens of the great Republic of the West as a form of amusement.

A CHAIR OF ANATOMY AT ST. ANDREWS.

A MEETING of the University Court of St. Andrews University was held on July 28th, Dr. James Stuart, M.P., Rector of the University, presiding. The Lord Rector announced that he had received the following communication from Mr. A. R. S. Pitman, law agent to the Marquis of Bute: "Edinburgh, July 26th, 1900. Dear Sir,—I have been authorised by Lord Bute, whose health does not at present admit of his writing personally to you, to inform you that his lordship proposes to offer to the University of St. Andrews a sum of £20,000, to be held as a fund for endowing a chair of anatomy. Should this proposal be accepted, Lord Bute will grant an undertaking binding himself and his executors to provide the money under the following conditions: (1) That the said sum of £20,000 shall be paid to the University not later than ten years hence. The exact date cannot be specified, as it will depend upon the completion of certain works at Cardiff. Interest at 3 per cent. will be payable to the University from the time of the appointment of the first professor until they receive the principal sum. (2) That the first presentation to the chair shall be in favour of Mr. Musgrove, the present holder of the lectureship in anatomy in St. Andrews. (3) That the lectures shall be given exclusively in St. Andrews. (4) That the course shall meet the requirements of the two first *anni medici*. (5) That before the beginning of the University Session 1901-2 the approval of the Universities Committee of the Privy Council to the establishment of the chair under the following conditions be obtained, and that the approval of Lord Bute or his representatives be obtained to any further conditions embodied in the ordinance instituting the chair. I shall be much obliged if you will submit this proposal to the University Court at their meeting on the 28th inst. P.S.—This letter is written on the understanding that the University is prepared to make adequate arrangements for completing the permanent provisions in St. Andrews of teaching necessary for the two first *anni medici*." It was unanimously resolved, on the motion of Principal Donaldson:

That the very hearty thanks of the University Court be sent to Lord Bute for his generous offer, and that his letter be printed and circulated, and that the subject be considered at a special meeting of the Court to be held on Saturday, September 1st.

THE ROYAL NAVY RATION.

IN an article on The Health of the Navy, Past and Present, which appeared in the BRITISH MEDICAL JOURNAL of June 30th, it was remarked that "while it is doubtful if the naval ration has been actually altered since the Russian war, the quality of the supplies has been vastly improved." We learn that an Admiralty Departmental Committee is at present engaged in considering the question of the naval ration, which in the naval service is supplied to officers, men, and boys alike, with the privilege of receiving money payments for such portions of it they may elect not to receive, and with these "savings" to purchase a greater variety of diet where such is possible; the question of the meal hours we understand is also under consideration. The members of this Committee are Vice-Admiral Rice (Chairman), Rear-Admiral Fellows, C.B., the Director of Victualling, H. F. R. Yorke, C.B., formerly a naval officer, Deputy-Inspector-General Irvine, Captain Bradford, and Staff-Paymaster Harrison Smith, R.N. The Committee have visited the chief naval ports, and taken the evidence of various naval ratings and others, and are now pursuing their inquiries in London, obtaining further opinions on the question from experienced naval officers and others. The present meal hours for the crews on board Her Majesty's ships are in the early morning, at noon, and at 4.30 P.M.; it will thus be obvious that there is no authorised meal from the afternoon until the early morning despite the night watches at sea on deck and in the stoke-hold in these days of a steam navy. The men themselves as a rule arrange for a supper meal from their dinner ration, and at sea the "bread (biscuit) barge" is even available to appease the pangs of hunger, but except in stress of weather or other exceptional circumstances, when soluble chocolate may be issued for a warm nourishing drink in the night watch, the crew must provide themselves at their own cost from the canteen when one exists on board, or otherwise with any extra diet they may desire. From the nature of the inquiries of the Committee which have transpired there is reason to believe they may report in favour of a rearrangement of the meal hours to remedy the defects of the present system with so long an interval between the tea meal at 4.30 P.M. and the early morning breakfast, and possibly in the rations now provided, namely, ship's cocoa and biscuit for the latter and tea and biscuit for the former meal. We await with interest the result of the inquiry in the hope that the "handy man" may be provided with an attractive and satisfactory ration in these days when the corresponding classes in civil life enjoy a good dietary, and that in future there will be less demand on his pay to supplement the service ration than at present.

TETANUS IN JUTE MILLS.

IN reviewing the annual report of the Chief Inspector of Factories a week or two ago, space did not allow us to call attention to all the interesting medical facts contained within the volume. One of the most recent discoveries which medicine owes to bacteriology is the association of jute and tetanus. Dundee is the centre of the jute industry. Within the last twelve months two fatal cases of tetanus came under the notice of Mr. Wilson, the District Factory Inspector. The last victim was a female worker who, after receiving a crushed and lacerated wound of the foot, developed tetanus six days after the accident, and died within twenty-four hours. Some of the dust taken from under the machine in which the foot was crushed was found on bacteriological examination by Dr. Andrews, of St. Bartholomew's Hospital, to contain an unusually large number of tetanus bacilli. This circumstance rather suggests that between jute and tetanus there exists a similar relation to that between wool sorting and anthrax. Eight months after the accident just alluded to the dust from under the same machine still contained the bacilli of tetanus, but they had lost their virulence. During the ten years 1890-1899 inclusive 11 fatal cases of tetanus occurred in Dundee, 5 of which were workers in jute mills, and 3 were the children of workers in the yarn mills. The origin of the tetanus bacilli in jute works is still a matter of obscurity, and is being made the subject of fresh inquiry. It occurred to Dr. Morrison Legge, the Medical Inspector, that probably their source is the soil of India, where the jute is cultivated. He has been informed on good authority that lacerated wounds in India are extremely liable to be followed by tetanus. Owing to this and other circumstances the inquiry is now being made in India as to the incidence of tetanus among jute workers there.

THE Council of Owens College has appointed Mr. F. A. Southam to be Professor of Clinical Surgery in place of Mr. Whitehead who has resigned, and Mr. G. A. Wright to be Professor of Systematic Surgery in place of the late Mr.

Jones. These appointments are subject to the confirmation of the Court of Governors which meets in October. The Council has also appointed Mr. W. Thorburn to be Lecturer in Operative Surgery; and Mr. Joseph Collier to be Lecturer in Practical Surgery.

MEDICAL NOTES IN PARLIAMENT.

[From our Lobby Correspondent.]

The South African Hospitals Inquiry.—There was quite a lively debate on Monday night initiated by Mr. Burdett-Coutts, who complained of the want of power given to the Commission appointed to inquire into the treatment of the sick and wounded in South Africa. The absence of authority to take evidence on oath, and the want of compulsory powers to call witnesses, he contended, sent the Commission out with its hands tied behind its back. He read letters from officers and men who, while giving information, were anxious to have their names kept secret, and he urged that this feeling would prevent full disclosures being made even by those who had suffered from the mismanagement in the hospitals at Bloemfontein and elsewhere. He made a strong appeal to the Government to confer on the Commission powers which he argued were necessary to make the inquiry effective. Mr. Balfour replied in a speech which was characterised by great warmth, and defended the powers given to the Commission as the only powers usually conferred in such cases. To give the powers demanded would raise difficulties in Cape Colony, and in his opinion were unnecessary, as men were not so mean as not to come forward and tell the truth under the scheme devised by the Chairman of the Commission. Sir Walter Foster, who followed, said a discussion on such a subject should not have evoked either party passion or personal recrimination, and regretted the feeling which had been exhibited more than once on the Treasury Bench. He regarded the reference to the Commission as too narrow; and after pointing out the enormous loss of life from preventable disease like typhoid, pressed his view that the Commission should have been given power to inquire into the causes of the outbreaks of fever and the means taken to prevent them. He thought that in the sanitary and medical conduct of the war there had been a lack of foresight. Colonel Blundell, who followed, said it was a question whether the conditions described by the hon. member for Westminster were due to the Medical Department or were unavoidable, or might have been avoided by different arrangements of transport. The Commission, he felt, could decide the truth. The subject then dropped, and Mr. Pickersgill brought forward the subject of the want of supplies among the troops under General Rundle, which Mr. Wyndham assured the House was having the most careful consideration of the War Office.

Enteric Fever Statistics.—Mr. Wyndham informed Sir Walter Foster last week that there had been at Bloemfontein for the week ending June 8th 487 admissions and 98 deaths from enteric fever. For the week ending June 15th 213 admissions and 64 deaths, and for the week ending June 22nd 221 admissions and 52 deaths. At Kroonstadt there were for the week ending May 25th 6 admissions: for the week ending June 1st 83 admissions and twelve deaths; for the week ending June 8th 18 admissions and 18 deaths; and for the week ending June 15th 66 admissions and 11 deaths.

Army Medical Corps Reinforcement.—Mr. Wyndham announced on Tuesday that it had been arranged that a reinforcement of trained men of the R.A.M.C. to the number of 300 should be sent out to South Africa.

Volunteer Medical Officers.—The Under-Secretary for War, in answer to Mr. Thornton, said that the position of civil medical practitioners differed in important particulars from that of officers of the R.A.M.C. The latter received fixed rates of pay calculated for all conditions of service. The conditions of the present war were, however, unusual as regards the cost of living in South Africa, and on this account special colonial allowances had been granted. The case of the civil surgeons was quite different. They served under special contracts for the present war, and there was, therefore, nothing unforeseen in the conditions of service which required alteration in the terms of the contract. They received higher emoluments than many of the officers of the R.A.M.C. Civil veterinary surgeons received colonial allowances, but that was because they were paid at the same rate as the army veterinary surgeons.

The Medical Acts Amendment Bill, which was withdrawn last week, was a Bill introduced at the instance of the General Medical Council to strengthen their disciplinary powers and to give the Universities and Corporations power to withdraw their certificates from practitioners who had come under the ban of the Council. There is a little history about its withdrawal. It had been hoped to get it starred as a non-contentious measure, and on Wednesday last it appeared in the enviable position of a Bill which the Government would help to pass, but the hopes were short-lived, for a vigilant member of the House detected the manœuvre and appealed with success against the measure being starred. It had therefore to be withdrawn.

Poppy Cultivation in India.—In answer to Mr. H. J. Wilson, the Secretary of State for India, informed the House that the area of poppy cultivation in India had increased between the years 1890 and 1897, as stated by the Bengal opium department, from 770,000 bighas to 890,000 bighas. In 1898 the area was considerably below that of 1897. The Secretary of State further stated that the cultivators were perfectly free to sow food or other crops, and that he was unwilling to interfere with the rules and regulations of the system, which had worked well and which gave full weight to the importance of controlling the traffic in opium and keeping it within bounds.

The Midwives Bill, although it had long ceased to interest the House as a measure possible to pass this session, kept its place on the order paper up to the very last day. There it stood at the head of the Private Members' Bills for adjourned debate from June 27th. The policy of the promoters is probably founded on the hope that the Bill will thus impress the House with its singular want of good fortune this year, and so induce them to regard it favourably another session.

Vaccination under the Act of 1898.—A question from Sir Walter Foster on this subject elicited from Mr. Chaplin the satisfactory statement that the number of certificates of successful primary vaccination received by the vaccination officers during the year 1899 was 669,349, as compared with 500 314 during 1898, being an increase of 33.3 per cent. The returns for the past six months of the present year were not complete. A return of the number of certificates of conscientious objections granted, Mr. Chaplin said, would be issued.

The Session of 1900 has not been marked by any legislation of great interest to the medical profession. The startling success of the Midwives Bill up to a certain point excited a good deal of interest in the proceedings of Parliament, but no other Bill—except, possibly, the Lunacy Bill—attracted much attention from the profession. It is much to be regretted that the Lunacy Bill was once again withdrawn after passing the Lords. The Companies Act has become law, without Clauses 2 and 3, which touched the practice of medicine and pharmacy. The Inebriates Amendment Act for Scotland has also passed and the Census Act, but these only remotely interest the profession. Among the Bills withdrawn and dropped are the Factory and Workshops Bill, the Isolation Hospitals Amendment Bill, the Medical Officers of Health and Sanitary Inspectors Bill, and some Private Members' Bills dealing with public health subjects. Among the thirty-eight orders on the paper on the closing day of the session there were the Vaccination Bill, which has not been printed, and the Medical Act (1858) Extension Bill, which seeks to remove the disqualification of colonially educated medical men for service in the naval and military services of the Crown. These and their thirty-six companions have now passed into the long list of abortive attempts at law making.

THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

[From Our Special Correspondent.]

THE OPENING CEREMONY.

The opening general meeting of the Congress took place in Paris on Thursday, August 2nd, with the official ceremony which entails evening dress, in the vast Salle des Fêtes in the Exhibition. Owing to the assassination of the King of Italy, the President of the French Republic was not present, but he was represented by M. Monis, the Minister of Justice, who arrived punctually at 2.30 P.M. to the strains of the "Marseillaise," played by the band of the Republican Guard.

Professor Lannelongue, the President of the Congress, dressed in the green embroidered coat and wearing the sword of an Academician, had on his right, M. Fallières, the President of the Senate, and on his left the Minister of Justice. On the platform were also seated the members of the Committee of Organisation, the members of the Académie de Médecine, the professors of the Faculty of Medicine, the presidents and vice-presidents of Sections, while behind and to the right of the chair sat the official foreign delegates, among the representatives of Great Britain being Sir William MacCormac, Bart, K.C.V.O., Sir Dyce Duckworth, Sir Lauder Brunton, and Professor Simpson of Edinburgh. In the body of the circular hall were the members of the Congress, the representatives of French and foreign universities, and delegates of learned societies; the ladies were placed in a gallery at the distant back of the hall, 150 yards or so away from the platform, while the Press was allotted a gallery in an equally disadvantageous position. As a result, only three words of the President's opening speech, which has been printed *in extenso*, penetrated to the far end of the vast auditorium.

President's Address.

The President of the Congress read an opening address welcoming the members of the Congress, at the end of which he said: In wishing you welcome I offer you my warmest congratulations. I most heartily thank the Committees of all the foreign countries who have helped in the organisation of this vast undertaking; the entire press for its active and disinterested aid; the Executive Committee, who have never failed to respond to my call, and have given the best of their advice; the University of Paris and the members of the Government of the Republic, who have understood from the first the importance of our task and have rendered its realisation easier. As to my myself, my heart filled with the keenest emotions I have ever felt in my life, I can find, in conclusion, no better words than those addressed to you by Bouillaud, the first and one of the most illustrious Presidents of this Congress: "Thanks to you my whole life has just received its crowning award. I hold you in the depths of my heart, and you will continue to live there till its last beat." I will only add: Now to work, time is pressing; never since the beginning has there been promise of a richer or more plenteous harvest. May we know how to profit by it, and gather in the fruitful grain, which future generations will cause to bear more fruit.

General Secretary's Report.

The Minister of Justice, in the name of the Government, then welcomed the members of the Congress. M. Chauffard, the General Secretary, next read his report, describing the complex work of organisation. As a result, 190 delegates, representing the Governments of 34 foreign States, were present on the platform; 250 universities, academies, or learned societies had sent delegates, and over 6,000 members of the Congress had come to Paris. The programme of the Congress included 260 reports, and more than 1,200 communications.

Presentation of Foreign Delegates.

After the termination of the Secretary's report, the official delegates of the foreign nations came forward to offer their good wishes to France, and hopes for the success of the Congress. Professor von Bergmann led the lengthy procession. Sir William MacCormac, Bart., K.C.V.O., represented Great Britain. Professor Baccelli was absent owing to the mourning of the Italian nation. M. Mandizabal, the delegate of Mexico, made a long and spirited speech, which was greatly applauded. The delegate of Venezuela closed the series.

Address by Professor Virchow.

This terminated the official portion of the programme, and as the audience had heard little or nothing of the speeches the majority left, and it was a very small crowd which gathered round the foot of the platform when Professor Rudolf Virchow rose to give his address on Traumatism and Infection. The venerated Professor, who was in the best of health and spirits, spoke in German. After a historical review of the subject, Professor Virchow expressed the opinion that the present attention to bacteria had withdrawn us too much from other causes of pathological processes. Injuries of bones took place without abrasion of the skin, yet osteomyelitis ensued. Brain abscess resulted from head trauma. Some surgeons claimed that microbes entered even through the slight lacerations of skin. This, however, was mere theory. We knew that cells might degenerate without any microbian influence. Trauma might kill them. We knew from dead parasites, such as trichina within the body, what happened to dead cells. The changes occurring in extrauterine fœtuses also made this clear. Let us, then, not attribute too much importance to microbes, but let us study carefully the cellular changes as they occurred. With the address of Professor Virchow, which was received with great applause, the proceedings terminated: the discourse of Professor Pavlov, which was included in the original programme of proceedings, being postponed to the first general meeting.

The Sections.

The work in the various sections, twenty-six in number, began generally at 9 A.M. on Friday morning, with the exception however of the sections of Neurology and Dermatology with Syphilography. These sections were perhaps the best attended. The section of Neurology was at the same time the second International Neurological Congress, and it was a question which would be decided before the end of the present Congress whether the International Neurological Congress as such should cease to exist, or whether it would arrange its meetings at a different time to the International Medical Congresses. These two sections, owing to the great number of communications promised and the number of subjects for discussion, met on Thursday morning at 9 A.M. and were holding morning and afternoon sittings every day.

Receptions and Soirées.

The President of the Congress and Madame Lannelongue gave a reception by invitation to the delegates and Presidents of Sections on Friday evening, August 3rd. The programme included minuets and ballets by dancers from the Opera, while a Hungarian band played at intervals in the refreshment room.

The Committee of Organisation gave a *soirée* in the Palace of the Senate and in the Luxembourg Gardens on Monday, August 6th, at 9 P.M. The programme included dancing and an entertainment in the Salle des Fêtes of the Palace. M. Mounet-Sully, of the Comédie Française, and Madame Sarah Bernhardt recited poetry, while the musical talent was supplied by M. Renaud and Madame Litvinne of the Opera, and M. Fugère of the Opéra Comique. As all the members of the Congress with their wives and families had been invited, the number of guests must have exceeded 15,000. Owing presumably to faulty organisation the enjoyment of some hundreds was spoilt, as the sole entrance into the Palace, a door five feet wide, also served as the popular means of exit, so many guests never succeeded in even reaching the door of entrance, but after a struggle of half an hour or so gave up the attempt and left.

Dinners and *soirées* have been given by the Presidents of all the Sections, and these smaller *fêtes* have been a very enjoyable feature of the meeting to the fortunate guests.

Excursions were arranged for Sunday, August 5th, to Versailles and to Fontainebleau.

Dinner in Honour of Lord Lister.

A dinner was given by the scientific society "Scientia," on August 1st, in honour of Lord Lister. The dinner took place in the Restaurant des Congrès, in the Exhibition Grounds. About sixty guests were present, the obstetricians and physi-

ologists turning up in force. At the President's table were Professors Richet, Lucas-Championnière, Marcy, Bouchard, Guyon, Pinard, Pozzi, and Landouzy. Professor Lucas-Championnière recalled how he went to Glasgow, and after seeing and working with the master, returned as an apostle to Paris, and was not listened to. Professor Pinard spoke in the name of the obstetricians and of the *accouchées* of France. Lord Lister replied in French, in his own simple and quiet manner, speaking almost half apologetically, and was received with great applause. He told the story of his early struggles and work—saying, "All my efforts were without result till Pasteur showed a possible way, which I have done my best to follow: that is all, gentlemen. If the result of my work has been as beneficial to humanity as you say, it has been largely due to the happy accident of my epoch." After the dinner, on the invitation of the Medical Club in Paris, Lord Lister and the guests went to a reception in the Club in the Avenue de l'Opéra, where Lord Lister was welcomed by Professor Pozzi, the President, and on whose motion it was decided to put up a tablet on the wall in commemoration of the event.

Owing to the death of the King of Italy, the official *fêtes* to the members of the Congress were put off. The evening *fête* in the Town Hall, given by the Municipality, and the evening *fête*, given by the President of the Republic and Madame Loubet at the Elysée, were changed into afternoon receptions; the latter was to take place on Friday afternoon, August 10th, at 4 30 P.M. Members of the Congress had thus many evenings free, and were able to utilise to the utmost the card giving free admittance to the Exhibition.

STATISTICS.

Up to August 5th, 6,170 members had registered their names, the nationalities being represented as follows: France, 2,293; Russia, 805; Germany, 572; the United States, 412; Italy, 324; Great Britain, 222; Spain, 219; Belgium, 147; Austria, 141; Argentine Republic, 108; Swiss, 101.

PRESS ARRANGEMENTS.

Owing to the initative and energy of Dr. Blondel and the French Medical Press Association, a reception room and a workroom were placed at the disposal of the French and foreign press reporters. Here members of the press found the daily programme and printed summaries of all the communications made in the various Sections, and were able to write their articles and post them on the premises. Members of the French Press Association in rotation were always in attendance to give information and advice. This is the first occasion at an International Medical Congress when such facilities have been given to medical journalists and correspondents. [Abstracts of the scientific proceedings will be published in the EPITOME.]

INTERNATIONAL CONGRESS OF MEDICAL DEONTOLOGY.

[BY OUR SPECIAL COMMISSIONER.]

(*Continued from page 257.*)

THE ORGANISATION OF THE PROFESSION IN HUNGARY.

DR. JENDRASSIK (Buda-Pesth) read a paper on the Organisation of the Association of Medical Practitioners of Hungary. He said that in Hungary, as in other countries, the question of the regular organisation of the medical profession had been discussed for the last ten or twenty years. A committee was formed which tried to get accepted a proposal to take as their model the Chambers of Advocates, which had been in existence and legally established in Hungary since 1876. The discussion on this proposal, both in the medical societies and also in towns where there were no medical societies, but where meetings were called specially *ad hoc*, waxed exceedingly warm, and the more they discussed the proposal to establish a medical chamber by law, the more persuaded the great majority of medical men became, that instead of ameliorating the deplorable condition of the profession in Hungary, it would bring still more sensibly than at present the whole body of the profession under the authority of the Minister of the Interior. At a large Congress held in Buda-Pesth in 1896, both sides of the question having been fully argued, it was resolved definitely to reject the proposal for a medical chamber, and to form instead a voluntary association of medical men.

The cause of this present deplorable condition of medical men in Hungary was not that the material condition of the people was worse than before, nor that the number of doctors had excessively increased, since there were entire arrondissements in which there was not a single doctor. On the contrary, it was believed that the mischief arose from the two following causes: (1) A general fall in fees; (2) the organisation of innumerable clubs and societies, one of whose principal objects seemed to be to obtain medical assistance on the lowest terms. He did not hesitate to say that there was a direct connection between these two causes, and this fact being recognised it seemed evident that to counteract the evils caused thereby only an association or league of medical men could do any good. The choice lay between a chamber established by law and a voluntary association. For each of these there was something to be said, the chamber giving the protection of the law, the compulsory adhesions, and disciplinary powers over its members; but these advantages seemed to be counterbalanced by the proposed Bill on the subject, which imposed new charges and new regulations on the profession without any serious attempt to improve their incomes or other material interests. Finally, the unattractive example of the German and Austrian Medical Chambers was decisive for the great majority of Hungarian medical men, who had resolved to make trial of a voluntary association whose objects were to unite the doctors of Hungary into one corporation, to protect their authority and defend their interests, and to establish between its members a system of mutual assistance. For three years this association had existed, and it now numbered five-sixths of the doctors practising in Hungary, whose only motive for joining, it was added, was the unsatisfactoriness of their position. The association had during those three years established a pension system for its members, founded a journal for advocating medical interests, had drawn up a memorandum of the wants and grievances caused by certain laws and official orders, and had published a minimum tariff of medical charges.

MEDICAL DEONTOLOGY.

Professor GRASSET (Montpellier) read what he described as a long, tiresome, but he hoped not obscure, report on the fundamental principles of medical deontology. It would be impossible to give even an outline, since it treated of the matter under eight headings as follows:

1. Preliminaries; definition, limits, importance, and division of the subject.
2. and 3. Principles which ought to regulate the relations of doctors to the public and to one another.
4. and 5. Principles which ought to regulate the relations of consultants to general practitioners, and *vice versâ*.
6. Principles as to hydropathist doctors and specialists.
7. Means proposed to fix and expand the principles of medical deontology.
8. Conclusions.

Professor Grasset is of opinion that whatever sceptical or downhearted doctors may say, there is a deontological question, and it was not insoluble, and the object of his report was to state the question clearly and set forth the difficulties as well as the importance of it. It was desirable that no doctor should be able in a given case to excuse himself by a plea of ignorance of deontology, and yet there was no code to which he could be referred. Such a code should be drawn up by a superior council of the medical profession which might be connected with some Government Board, but its members should be elected for gratuitous service by faculties and medical schools, the academies and medical scientific societies of Paris and the provinces, medical unions, medical provident societies, and by the medical press (!) It was evident, of course, that such a council would exercise only a moral authority over its members, but that, the professor thinks, would be quite enough for those who only needed to know their duty in order to perform it.

In the discussion which followed, and which was at times very animated, no fewer than a dozen members speaking or exclaiming at once, Dr. Antonelli, an Italian practising in Paris, mentioned one point likely to come before the proposed Council with regard to doctors of different nationalities practising in the same country or district. It appears from Dr. Antonelli's statement that jealousy and self-interest

seriously interfere with the recognition of his professional brethren of a foreign *confrère*, even when he is desirous of acting in the most honourable professional manner. The Superior Medical Council would, Dr Antonelli thinks, rise above local petty jealousies, and would fix in its code of deontology that the foreigner practising in the country he has adopted should above all things be looked upon as a brother practitioner, and be freely admitted to medical and scientific societies, syndicates, and similar institutions.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

The annual meeting of this Association was held under the presidency of Dr. Fletcher Beach. On the morning of Thursday, July 26th, the general business of the meeting was conducted, and in the afternoon Dr. Spence vacated the chair, which was taken by Dr. Fletcher Beach, who delivered his presidential address. After referring to the losses which the Association had suffered by the deaths of some prominent members during the year, he gave an account of the progress which had been made in the treatment of certain defective classes of society, such as idiots, imbeciles, the feeble-minded, the epileptic, and juvenile delinquents, during the last sixty years. He described the labours of Seguin, Saegert, and Guggenbühl, who were pioneers in the work of educating and training idiots and imbeciles. He then traced the progress of educating idiots and imbeciles in England, and mentioned the various institutions, both charitable and other, which had been erected in England, Scotland, and Ireland. An account was also given of the work in America from the time of the opening of the Massachusetts and New York Asylums for Idiots, in 1848 and 1851 respectively, down to the present time. He mentioned the provision made on the Continent, in our Colonies, and in the Argentine Republic for this class of cases. The author fully described the way in which the education of feeble-minded children originated in England, and reference was made to the Departmental Committee which was appointed to inquire into the systems now in force for the education of feeble-minded children, and a short account was given of the Elementary Education (Defective and Epileptic Children) Act which was subsequently passed. The labours of the National Association for Promoting the Welfare of the Feeble-minded were also referred to, and it was shown that England, in spite of what she had done, was still far behind many Continental countries in the provision made for the education of feeble-minded children. The author described the arrangements made for epileptics, and showed that it was only in recent years that accommodation had been specially made for the sane and insane patients of this class. A short description was then given of the way in which juvenile delinquents were now treated, from which it appeared that it was not until 1854 that reformatory treatment of criminals was substituted for retributive punishment.

Dr. Wynn Westcott (Coroner for North-East London and President of the Society for the Study of Inebriety) then read a paper, entitled, Inebriety, its Causes, Results, and Treatment. He reviewed the present opinions on the causation of inebriety, and especially the question of inherited tendency to the drink crave. He pointed out the follies of the numerous claims to the cure of inebriety by secret medicines and processes, and expressed his confidence in the treatment of inebriates in licensed reformatories by recognised therapeutic means. The paper was discussed by Dr. Formby, Vice-Chairman of the Committee of the London County Council for Providing Inebriate Asylums, Dr. Morton, Dr. Heywood Smith, Dr. Archdall Reid, Dr. Stewart, and others.

On Friday morning Dr. Hayes Newington exhibited and described the plans of the New East Sussex Asylum, and the rest of the morning was devoted to lantern demonstrations by Drs. Orr and Cowen, G. A. Watson, Barratt, and J. Turner, by which the morbid anatomy of general paralysis of the insane, juvenile general paralysis, leptomeningitis, and alterations produced by disease in the giant nerve cells of the cortex were fully pointed out, and showed that some of the younger members of the Association were doing good work. Dr. Shaw Bolton exhibited some naked-eye preparations and specimens from the Museum of the Pathological Laboratory of the London Asylums at Claybury, and Dr. Clouston showed for Dr. Ford Robertson a microscopical demonstration of the normal and pathological histology of mesoglia cells. In the afternoon Dr. Bruce read a paper prepared by himself and Dr. Alexander entitled Observations upon the Various Physical Changes in the Acute and Subacute Stages of Melancholia. This was followed by a paper by Dr. Beadles on The Insane Jew, and papers were afterwards read by Dr. Sullivan on Alcoholic Homicide, Dr. Blair on Non-diabetic Glycosuria, Dr. Shoyer on an Angeioma of Broca's Convolution in a Lunatic, and by Dr. Edridge-Green on Psycho-physical Perception; but want of space prevents a description of them being given. The annual dinner was held on Thursday evening, July 26th, at the Whitehall Rooms, Hotel Métropole, at 8 o'clock, the President, Dr. Fletcher Beach, in the chair. On Saturday, the 28th, the President and Mrs. Fletcher Beach were "At home" to members and their friends at Winchester House, Kingston Hill.

PUBLIC HEALTH CONGRESS.

The annual Congress of the Royal Institute of Public Health was opened in Aberdeen on August 2nd. Representatives from important centres in Great Britain and Ireland, it was estimated, to the number of some 800 were likely to attend. The President, Lord Aberdeen, having been presented with the badge of office by Professor W. R. Smith, the President of the Institute, delivered his inaugural address in the Mitchell Hall at Marischal College, Lord Provost Fleming occupying the chair.

President's Address.

After moving a resolution of sympathy to be offered to Her Majesty the Queen in the loss she had so lately sustained, Lord Aberdeen drew attention to the progress of sanitation from a legislative point of view, and briefly touched on the more important measures passed with this object. In looking forward to the problem to be confronted he laid special stress on the importance of the evil of overcrowding of dwellings, and also on the educative regulation required to obtain the assistance of the public in the control of tuberculous disease.

The Bacteriology of Railway Carriages.

In the meetings of sections Professor Hamilton addressed an interested audience on that of bacteriology and comparative pathology. Dealing with the tremendous danger of disseminating contagion through the medium of the dust impurities in public conveyances and places of public resort he recorded the results of a research on the bacteriological impurities of dust in railway carriages. By inoculation experiments he ascertained that 16.6. per cent. of his samples of dust, that is, two samples out of 12, contained tubercle bacilli. In each case the compartment from which the tuberculous dust was obtained was first-class and for smokers. In considering the need for legislation Professor Hamilton drew a striking contrast between the excellent sanitary precautions taken under the Diseases of Animals Act of 1894, for the conveyance of animals other than human when compared with the lack of disinfection and cleansing of conveyances reserved for ourselves.

The Disposal of Sewage.

Many papers of interest on matters of public health and sanitation were read, notably those on the disposal of sewage, by Professor Frankland, and of distilling refuse by Mr. Kendrick, Lecturer on Agricultural Chemistry at Aberdeen, both dealing as they did with bacterial agencies as of primary importance in such questions.

The Malaria Parasite.

Dr. Patrick Manson gave an admirably lucid demonstration of the life-history of the malaria parasite and of its stages in the mosquito. His subject was illustrated by a very complete series of slides.

Premature Burial.—An American Society for the Prevention of Premature Burial has recently been incorporated. Among the members of the Society are: Mr. Clark Bell, Dr. Thomas Darlington, Dr. Henry J. Garrigues, Assemblyman Cyrus B. Gale, and Mr. H. Gerald Chaplin.

SOUTH AFRICAN HOSPITALS COMMISSION.

Summary of Evidence.

On July 27th the Commissioners went to Netley and examined a number of men who had been through the campaign. Very few made any complaint, and most of those who had suffered from want of attention accepted it as part of the inevitable discomforts of war. On July 30th the sittings in London were resumed. Captain Cousens, C.I.V., had visited the Woodstock and Portland Hospitals, and expressed the opinion that everything was done for the comfort of the inmates. Mr. Murray Guthrie, M.P., visited every hospital in Bloemfontein, and also the field hospitals in the neighbourhood. At Driefontein the doctors worked like slaves, and had no better food than the patients. The Imperial Yeomanry Hospital at Driefontein was far and away the finest in South Africa—"just like Guy's Hospital put down in the middle of the veld." There was no complaint, but many people spoke of the want of organising power in the R.A.M.C. There was one cause of complaint at Bloemfontein, and that was the want of milk, which could have been procured if proper steps had been taken. The private hospitals were very much better than the military hospitals, because the former had power to refuse more patients than they could deal with. Nothing could have been done better by the medical officers in charge of hospitals, but certainly there was something wanting on the part of the higher medical authorities. The medical officers should have more freedom, or there should be at the head a man trained like the Army Service men. After some evidence from other witnesses, Mr. Treves said the difficulty was transport. Female nurses were desirable, but their services could not be utilised in field hospitals. He could not imagine a *bonâ-fide* basis for a real complaint, considering that they were at war and the enormous difficulties that had to be coped with. Dr. Conan Doyle, who was in Bloemfontein for three months, saw things that he thought might be improved, but nothing that shocked him or that was due to deliberate neglect. He believed that if men, instead of making criticisms at large, had gone to the responsible head of the department, whatever was wrong would have been put right.

On July 31st Mr. Burdett-Coutts, M.P., said he arrived at Bloemfontein on April 7th, at Kroonstadt on May 1st, and returned to Bloemfontein on May 19th. The men were dying like flies at Bloemfontein owing to the want of staff and equipment. Generally there did not seem to be any great effort to get milk for the hospitals. He did not understand the difficulty of having female nurses in field hospitals. A bed could easily be extemporised, and beds might easily have been got by getting them made of mattresses stuffed with hay or straw or dried grass. If there had been more prevision the transport difficulty would have been overcome. The Army Medical Department could be much improved if it were given more elasticity; it was undermanned, and there was no system by which the deficiency of the *personnel* could by supplied. Sir William Mac Cormac said his general impression was that the arrangements were admirable. He thought that in every trying emergency the medical men had met the duties imposed on them under circumstances of extreme tension with very complete success, and he knew the officers of the army and the men had the greatest confidence in their medical corps. He had nothing to withdraw or modify in the opinions he had formed.

On August 7th, Lord Justice Romer made a statement in contradiction of an idea which he said existed in some quarters, that the Commission was conducting its investigations in private. From the first all the evidence had been taken in the presence of shorthand writers, and made public. For the protection of witnesses who were afraid the evidence given by them might injure them in any way, the Commission had decided that their names or particulars of their evidence by which they could be identified should not be published. But the Chairman believed that very few witnesses would wish to withhold their names. Mr. O'Callaghan, Surgeon-in-Chief of the Langman Private Hospital, spoke of the difficulties they had met with in getting their stores up. But after the first week all went well. The two field hospitals at Bloemfontein were overcrowded, chiefly with typhoid and dysentery cases, and there was no nursing. Mr. Rudyard Kipling said he had visited Nos. 1, 2, and 3 Hospitals at Capetown, and was assured by the doctors that they wanted nothing. But the nurses told a different story, and at their suggestion Mr. Kipling had sent in supplies of pyjamas and other things "at the back door." To one hospital he sent "privately" a few pounds' worth of medicine. The A.S.C. and the R.A.M.C. were, he knew, in want of these things, but it took them "for ever and ever" to get them from the Stores department. He went through four or five town hospitals at Bloemfontein before the epidemic, and their condition was very good. He left before the big epidemic. There was, he said, no enthusiasm about nursing enterics; they were long and troublesome, and there was no halo of heroism about them. On his return to the Cape he found there were more and more enterics. The hospitals were clean, and everybody was working hard, but there was always the difficulty of getting at anything in the stores. Mr. Cheatle said he was at the Modder River for two months, and everything worked perfectly. There and at Kroonstadt and Pretoria the wounded had everything, but he could not speak of the typhoid and dysentery cases. Lieutenant-Colonel F. Barrow, Principal Medical Officer of No. 9 General Hospital, Bloemfontein, said he did not see Mr. Burdett-Coutts there at all. The other buildings that might have been better as hospitals were post-houses. The open veld was far better than an insanitary room. All the houses were insanitary, and he would not put cattle in them. They had female nurses in the marquees, but they were not required in the field hospitals, as the cases were mild. As regards the demands of medical officers, the witness said if he did not get what he wanted there was a row. He neglected most of his returns and statistics. They were necessary, but could not be furnished when work had to be done at high pressure.

Visit to Netley.

On July 27th the Commissioners visited the Royal Victoria Hospital at Netley, and examined about 70 patients who had gone through the campaign. Between 40 and 50 of the convalescents were addressed by Sir Robert Romer, who told them that they had come to inquire into the care of the sick and wounded in South Africa, and they wanted to know how they had been treated. He assured them that they need be under no apprehension that anything they said would be entered up against them, and if they desired it their names would not appear in print. The Commissioners then took evidence from the men in the sick wards, repeating the assurance of privacy of the proceedings. Out of the 70 men examined only 2 desired that their names should not be published. The following are some specimens of their replies as given in the *Times*:

No. 1.—Suffered from dysentery. Was in bell tents at Bloemfontein. Was on the ground, but had waterproof sheets. Had nothing to complain of, bearing in mind that they were at war.

No. 2.—In bell tent at Chieveley. Had enteric and dysentery. Was not overcrowded till 400 cases came in from Ladysmith. Short of orderlies, one orderly to eleven or twelve bell tents. No want of attention. Never lay in mud.

Nos. 3, 4, 5, and 6 said in effect there was no overcrowding, and nothing to complain of.

No. 7.—Wounded in the spine at Paardeberg. Never was more surprised in his life than when he went down to the field hospital and found the comfort and provision which was made for the sick and wounded. Only one in a 100 made any kind of complaint, and those ought to take their mothers with them wherever they went.

No. 8.—Shot at Driefontein. Carried on bullock waggons to Bloemfontein. Well cared for at the Dame School there.

No. 9.—Nothing to complain of. Full rations.

No. 10.—In hospital at Colenso. In bell tent for a week, no blankets, only a big coat. Removed and got a stretcher and two blankets. Had to crawl about 200 yards to the trench because they had no bed utensils, and some of them had to lie out all night, being too weak to get back. Did not expect things to be as well at the front as at the base.

No. 11.—Taken sick in going out to Africa. Was in Woodstock Hospital. Nothing to complain of.

No. 12.—In the siege of Ladysmith. Medicine supply ran short in hospital. Food, of course, was given to everyone as far as possible.

No. 13.—Suffered from dysentery at Elandslaagte. Went into field hospital. Sometimes eight or nine in a tent. Had milk and ship biscuits. Went to Modder Spruit hospital. Had an insolent orderly, who, if asked for anything, told them to get it themselves. He was two or three months there. Shifted to another hospital, where everything was convenient. There were no utensils, but that could not be helped. As they got down the country they had everything for their convenience.

No. 14.—Sick at East London. In Green Hospital. Had to go 200 yards to trenches on two sticks. Only one orderly with 20 or 30 men to look after. Could not expect much comfort in little field hospitals.

No. 15.—Had both jaws broken at Krugersdorp. Taken to General Hospital, Bloemfontein. Had bruises on the back and side and was told to sleep on the floor. Objected, and they gave him a stretcher and afterwards took it away. The orderlies did not make them comfortable, and he had to pay 2d. for hot water.

No. 16.—In bell tent at Bloemfontein. Had read a good lot about the discomforts, but had nothing to complain of. The orderlies might have done better.

No. 17.—Got leg broken at Paardeberg. Had a bad time for thirty-six

hours in train with leg in splint. Could not move, and no attendant and no convenience.

No. 18.—Wounded at Spion Kop. Made very comfortable. No one took their rations—they only had a biscuit.

No. 19.—Lost leg at Elandslaate. Nothing to complain of.

No. 20.—Lost leg at Pieter's Hill. Rather short of food at Chieveley, but no fault to find with nurses or doctors.

No. 21.—Shot in knee at Driefontein. Left out in the sun at the field dressing station without water. Lord Roberts and staff came by and gave tea and water out of their own bottles. Afterwards well looked after by New South Wales orderlies.

Some of the witnesses spoke of losing money whilst in hospital, and they generally spoke of being well treated on the return voyage, though in two or three instances they had suffered from neglect at the hands of the doctors and attendants.

On July 30th the Commission resumed its sittings in London. Colonel Steevens having made a correction of his previous evidence, Captain Cousens, of the City Imperial Volunteers, said he went through the Woodstock Hospital at Capetown and talked to the patients, and he never heard the slightest complaint of their treatment. He was in the Portland Hospital eight days and saw men of his own regiment there. Everything that possibly could be done was done for their comfort; there was plenty of food and the beds were clean. In Bloemfontein he saw men of his own regiment and other regiments, and he was quite sure they would have made complaint if there had been anything to complain of.

Evidence of Mr. Murray Guthrie, M.P.

Mr. Murray Guthrie, M.P., said that in the first place he went out as Secretary to a field hospital, and when he reached Bloemfontein he was appointed by Lord Roberts to see to the forwarding of comforts to the soldiers sent from home. He visited every hospital in Bloemfontein and also the field hospitals in the neighbourhood. His first experience was at Driefontein, where there were 430 cases in the field hospital, nearly all wounded, but some fever cases. The doctors did everything they possibly could. They were rather short of supplies but that was only natural. There were only 30 or 40 stretchers, and all the rest were lying on the grounds, but he did not think there was any grumbling, for they quite realised that it was impossible for things to be otherwise. The battle of Driefontein took place on March 10th, and it was about seven days before they were removed. They were very short of everything bar meat. The doctors worked like slaves. There were very few doctors to a great many patients. The doctors had no better food than the patients; he knew because he messed with the former. If there had been sufficient transport the wounded would never have been left at Driefontein. He visited the Imperial Yeomanry Hospital at Driefontein, and it was far and away the finest hospital in South Africa. They had wine glasses with the Prince of Wales's crest engraved, and the same with the basins. The thing was absolutely perfect; just like Guy's Hospital put down in the middle of the veld. There was no complaint, but a great many people spoke of the want of organising power on the part of the Royal Army Medical Corps. He went to the No. 8 General Hospital at Bloemfontein, where there were 1,300 or 1,400 cases under canvas a mile from the town. The sister superintendent told him they were overcrowded. The marquees were good. When they got to the tents the men were lying on the ground very much crowded. The sister said it was impossible to attempt to nurse the men in the state they found them. There were enteric and dysentery cases, and some of them were in a filthy state and too ill to get up. It was impossible for the orderlies to get through the work at these tents. Some of these men had lain in this condition for forty-eight hours. The men were lying on the ground. There were not sufficient marquees to put them in. When the men were convalescent they were sent to the base; they had to clear them out to make room for others. He could not speak more highly of the doctors nurses, and orderlies, and, though no doubt there were black sheep among them, he never came across any. He saw every hospital in Bloemfontein. There was certainly one cause of complaint—namely, the want of fresh milk. None of the hospitals had a sufficient supply of milk—some none at all—and it could be had at his club for porridge and tea and at the three hotels at any time. A proclamation should have been issued that no private consumer should be allowed to buy milk, and he knew that fresh milk could have been had. The private hospitals were very much better than the military hospitals, because the former had power to refuse more patients than they could deal with. When the weather was hot there was no disadvantage in lying on the ground—it was rather an advantage. Nothing could have been done to make things better by the medical officers in charge of the hospitals, but certainly there was something wanting on the part of the higher medical authorities. The principal medical officer at Bloemfontein (Colonel Stevenson) ought to have commandeered everything that would have been of any good to the hospitals, and there were hotels and clubs and houses that might have been converted into hospitals with the greatest of ease. The officers in the hotels could have slept in the camps. As regards the transport, he described one thing which was of very frequent occurrence. Fifteen men had been brought from the north both by train and waggon, and the orderly told him that eight men who were lying-down cases had only had two tins of condensed milk in forty-eight hours. He saw these men in trucks at 6 o'clock in the morning, and was not until 3 in the afternoon that they were taken away. Witness had these men taken out of the truck and laid on the platform, and supplied them with bovril and milk. He thought it was scandalous for these men to be left in such neglect, and he went and saw the principal medical officer, who said that he had not been advised that these men were coming; that the civilian officers constantly neglected to advise the despatch of sick. It was the business of the principal medical officer to keep a man at the station supplied with bovril and condensed milk to give to the invalids when they arrived. Witness suggested this to the principal medical officer, but it was not done. There was no lack of bovril supplied by the Army Service Corps, and they had enough spirits and wine, and the arrangements [illegible] were admirable. At Pretoria he saw [illegible], who had charge of Lord Roberts' Irish Hospital, which was [illegible] for 100 beds, but they had charge of [illegible] on the ground. He got permission from Colonel Stevenson to visit the seven hospitals in Pretoria and found them short of everything. With Lord Roberts's permission he formed a Committee, and then went to all the shops in Pretoria and Johannesburg and got what was wanted. These deficiencies could have been met both at Bloemfontein and Pretoria if the principal medical officer, instead of waiting for things coming up from Capetown, had commandeered the thing in the neighbourhood. The medical officers should have more freedom, or there should be at the head of the whole thing a man who was trained something like the Army Service men, who were never short of anything. These men went and commandeered everything they wanted.

Mr. Treves stated that he was with General Buller from December 11th to March 5th. They practically had nearly all the wounded and the sick through the field hospital. Their work was admirable. They had enough orderlies for anything, but in the two great emergencies after the battles of Colenso and Spion Kop they could have done with five times the number of orderlies. Some of these orderlies were good and some indifferent, but it must be remembered that they had to fix tents and dig trenches as well as nurse the sick, and they did very well. There were no marked deficiences. The difficulty was transport, and for a month they were twenty-six miles from a railway. The medical department had their own transport. Female nurses were very desirable, but it was impracticable to have them in field hospitals. Pillow cases were not wanted, and they could not be washed. The soldiers did not like sheets. There was no better sleeping accommodation than a stretcher provided with a blanket sack. No doubt they were lamentably short of utensils. He could not imagine a *bona fide* basis for a real complaint, considering that they were at war and the enormous difficulties they had to meet with. The ox waggon was preferable to the ambulance because it rolled over the grass, and it was a very pleasant mode of progressing. Some of the ox waggons had a hood to protect them from the weather. The Boer ambulances were very good: they were on the model of the spider cart. At Pietermaritzburg they had 1,100 wounded men suddenly dumped down upon them, and some inconvenience naturally arose.

Evidence of Dr. Conan Doyle.

Dr. Conan Doyle stated that he arrived in Bloemfontein on April 2nd and stayed till July 5th, and during that time he was in the private hospitals. They had beds for 100, but the pressure was so great that they took in 150. They had not beds and utensils and could not treat the patients properly, but they did the best they could. The army medical establishments were worse off, as they could not refuse patients like the private hospitals. He did not go into the army medical hospital, but he discussed the matter of the extreme stress with Mr. Burdett-Coutts and others. He saw some things that he thought might be improved, but he saw nothing which shocked him or which was due to deliberate neglect. He thought houses should have been commandeered instead of leaving the men to lie on the veld. He thought also a rest camp should have been formed earlier to make room for cases that really needed more careful treatment. The devotion of the medical men was very great and the mortality was very high amongst them. Their men were entirely civilian orderlies from the St. John Ambulance and they worked splendidly, and 65 per cent. of them got enteric fever. Except in the matters he had mentioned he saw no cause of complaint. He believed if men instead of making criticisms at large had gone to the responsible head of the department and pointed out what was wrong it would have been put right.

Evidence of Mr. Burdett-Coutts.

On July 31st Mr. Burdett-Coutts, M.P., gave evidence. He saw no cause of complaint in the hospitals he visited until he got to Bloemfontein, except at Woodstock. The site of Woodstock was badly chosen, and the hospital was full of vermin. When he got back to Capetown the hospital had been very much improved. He arrived at Bloemfontein on April 7th, at Kroonstadt on May 1st, and went back to Bloemfontein on May 10th. The General Hospital No. 9 had its tents erected on April 8th at Bloemfontein to accommodate 800 beds. There was nothing in them, and it was not until a fortnight later that the equipment came up. It would have been better to send up the tents and equipment for 400 beds than tents for 800 beds which were useless. The men were dying like flies at Bloemfontein owing to the want of staff and equipment. His expression "growing neglect and inhumanity" had been taken hold of as he never had intended. What he meant was inhumanity arising from the deficiencies of medical comforts. He never had the slightest intention of making any reflection on the Army Service Corps. They were working under superhuman difficulties which they should never have had to encounter. In reply to the Chairman he said he chiefly complained of the 12th Brigade. There were stationary hospitals that ought to have been better equipped, and the 12th Brigade remained long after Lord Roberts had moved at the end of May. There was no selection at all of patients for enteric disease. Generally at Bloemfontein there did not seem to be any great effort to get milk for the hospitals. At any rate the hospitals did not get milk, while he knew several places that did get it. He did not understand the difficulty of having females in hospitals in the field. The female nurses always had tents, and there was not the slightest reason why they should not have been lodged there. A bed could be extemporised, and a mattress stuffed with hay or [illegible] from the veld. Beds might have been got for a little [illegible] by getting the men to make them. There were to [illegible] or four days about the third week in April, and the [illegible] under a kopje, and the water poured down and [illegible] He desired to show the advantage of raising the [illegible] He had seen very much the same things in the [illegible] South Africa. It was very difficult to make [illegible] Africa and practically a barbarous war with [illegible] side. The evidence witness had came from various [illegible] of whom appeared to be convinced that it would injure their present and future if they came forward.

The Chairman hereupon said: We should protect [illegible] amply, and you can tell them so. [illegible] considers that his future would be injured [illegible] or allowing it to appear in print or to [illegible]

In reply to questions as to hi[illegible] have been taken for the accommo[illegible]

Coutts said he himself had a house at Bloemfontein to put his things in which would have done admirably for a small hospital of forty or fifty beds, and there were three large hotels and a magnificent Dutch church and an English and a Roman Catholic church, and stores which would have afforded a large amount of accommodation. He did not mention this to Colonel Stevenson, because he did not consider that he was in a position to make suggestions to the principal general officer or the Field-Marshal. His attention being called to Mr. Wyndham's statement in the House of Commons that on April 27th there were at Bloemfontein six fully-equipped general hospitals, Mr. Burdett-Coutts said he knew of only three at that time, and of those the *personnel* in one arrived without its equipment, and the tents of another arrived without the staff, and there seemed to be a great want of organisation. Describing what he saw at Kroonstadt, he said the non-commissioned officers and orderlies had been reduced from 36 to 18, and there were only three medical officers, two of whom had to be out during the day. There were no medical comforts and no beds and no equipment in the hospitals at all. Two days afterwards a few beds and mattresses were got, but the sick and wounded at first were laid on the stone floor of the church, with possibly a blanket underneath them. When the patients were in the church and hotel there were practically only two doctors, because one had to go about to get things, and there were hardly any orderlies. Nearly a fortnight elapsed, during which there was this great deficiency of doctors and attendants. If witness could buy waggons and mules, as he did, the authorities could have done the same. If there had been more prevision, he thought the transport difficulty would have been overcome. The authorities should have used the tortoise tents, which were only half the weight of the regulation tent, and they were used almost wholly by private hospitals. There was a remarkable difference in the percentage of mortality in the private hospitals as compared with the others. If as good attendance and equipment had been provided in the military hospitals a great many lives would have been saved. The Army Medical Department could be much improved if there was more elasticity. The department was undermanned, and there was no system by which the deficiency of the *personnel* could be supplied.

STATEMENT BY SIR W. MACCORMAC.

Sir W. MacCormac read a statement, which showed that he arrived in Capetown on November 20th, and went to Natal, and on two occasions he returned to Capetown. His general impression was that the arrangements were admirable, and would compare with any previous campaign by any country in any part of the world. At Colenso he saw the working of three hospitals in the field, where the pressure was great but absolutely unavoidable. The surgeons were at work from three o'clock in the morning of the battle of Colenso till three o'clock the following morning. In spite of the stress and trial, all the operations in the three hospital tents were conducted with every care, with the assistance of every modern appliance, with the same precautions that would be used at home. He had known the men lying on the field of battle at Sedan for three or four days before getting any succour whatever. He thought that in a very trying emergency the medical men had met the duties imposed on them under circumstances of extreme tension with very complete success, and he knew that the officers of the army and the men had the greatest confidence in their medical corps. In all the field hospitals he visited there were stretchers and sheets and blankets for each man, and though after the action the demand exceeded the accommodation provided, he could not see how that was to be altogether avoided. He thought a stretcher was a most comfortable bed to lie on. Vermin were prevalent in all wooden buildings in South Africa and in all barrack buildings in India. As far as he was concerned he had nothing to withdraw or modify in the opinions he had formed. The medical conduct of the campaign was exceedingly good.

VARIOUS WITNESSES.

Among the evidence taken on this day was the following:

Dr. Lawden, in charge of the Southampton Ambulance Corps, who had experience at the Orange River and Bloemfontein, said the R.A.M.C. worked like slaves.

Dr. Russell, Senior Surgeon to the Kimberley Hospital, said they were fairly well off for everything except milk during the siege.

Dr. Charles Chesswell, of the Central Red Cross, and Nursing Sister Barwell were also examined, the latter stating that the men never complained.

Harold Meadmore, a private in the Royal Horse Artillery, who was in hospital on April 20th at Bloemfontein, said the orderlies did the best they could, but there was too much work. It took three days to go down to Capetown by rail, and they got beef-tea and milk, supplied by the Red Cross and other societies, but scarcely anything from the military authorities.

Captain Adam, aide-de-camp to the Indian Division, was in Itombi Hospital near Ladysmith. He heard no serious complaints as to the care of the sick and wounded.

Lieutenant Osborne said he went out with the Australians, and then joined the 16th Lancers. He got enteric fever on May 1st at Bloemfontein, and was put into the Langman Hospital. He had nothing to complain of.

Lady Champion de Crespigny said she visited the Civil hospital at Kimberley, where they got everything they wanted, but outside the hospital men were lying about.

THE PROTECTION OF WITNESSES.

At the meeting of the Commission on August 1st, the Chairman, at the beginning of the proceedings, said: There appears to exist in some quarters the idea that this Commission is conducting its investigations in private. That is a complete misapprehension, subject to what follows. From the first, the whole of the evidence has been taken in the presence of shorthand writers and made public, and this practice will be continued and the evidence taken will be printed and published. But it has been stated to us that some witnesses who could give useful evidence might be deterred by fear of consequences from coming forward and giving information. The Commissioners felt some difficulty with regard to this subject, but they were determined that information should not be withheld from them on any such ground, and, on consideration, they came to the conclusion, as the best course to adopt under the circumstances with regard to witnesses who informed the Commission that they felt apprehension as to giving evidence and desired that course to be adopted, that their names or the particulars by which they could be identified should not be printed or published; though, subject to this, their evidence should be communicated to the Press at the time it is made and be printed and published in the usual way. This course the Commissioners have hitherto adopted and intend to adopt in the future, though from their experience up to the present time they believe that there will be but very few witnesses who desire to withdraw their names. I need scarcely say that the Commission will take care that witnesses shall not be permitted to use the withholding of their names as a cloak for making personal attacks on individuals.

EVIDENCE OF MR. O'CALLAGHAN.

Mr. R. O'Callaghan, Surgeon-in Chief of the Langman Private Hospital, who was the first witness, said they arrived with stores at Capetown on March 22nd, but the railway being overcrowded they were sent to East London, where they experienced the greatest difficulty in getting their stores sent up although they had a special train ready, and Lord Roberts and Colonel Stevenson were sending urgent messages for medical assistance. The consequence was that they arrived at Bloemfontein four days before their stores, and they were thus perfectly helpless. This was purely supineness and dilatoriness on the part of the transport officers: in fact, the military transport officers placed every difficulty in the way of the Army Medical Department. The Langman Hospital took out 100 beds, and they had to take 50 more patients owing to pressure. The authorities supplied them with female nurses but refused them utensils. Fortunately Mr. Langman bought extra buckets and pans out of his own pocket. After the first week everything went on well in the Langman Hospital; there was no trouble, and it was perfectly complete. All their rations were supplied by the authorities, but they bought milk for themselves. The St. John Ambulance Corps did very well but they were untrained, and what the patients wanted was nursing. There was no ground for complaint with the management of the Langman Hospital. He visited the Irish and the Portland hospitals and their organisation was perfect. The two field hospitals at Bloemfontein were overcrowded, and there was absolutely no nursing. They were chiefly dysentery and typhoid cases. There were large public buildings in Bloemfontein that ought to have been utilised, and this would have been far better than eight or ten men in a bell tent.

EVIDENCE OF PATIENTS.

Lieutenant C. A. Lee went out with the New South Wales Rifles. He got enteric fever on April 20th. He had to thank the hospital people for being here now.

Captain Thompson, of the 1st Australian Horse, got dysentery and enteric between Kroonstadt and Johannesburg. The advance was rapid and they were fighting occasionally, and it was never thought that there would be so many dysentery and enteric cases. He was nursed in a hotel at Kroonstadt for about 30 days, where they had about 100 patients. He got every care and attention, and he never heard anybody complain. They got milk when possible, but they always had condensed milk. They requisitioned beds and other things at Kroonstadt for the hospitals all round he was told. The only thing that struck him was the great amount of work the medical officers got through. Many of the regimental surgeons were out all night; especially after an engagement, and the following day they attended to their batch of sick. The doctors were too solicitous for the health of the men and were too particular about temperature, refusing to allow men to go forward when they were anxious to do so. The care of the sick and wounded was excellent.

MR. RUDYARD KIPLING'S TESTIMONY.

Mr. Rudyard Kipling, who was the next witness, said: I landed in Capetown about February 5th. From that time to the end of the month I was generally in and out the Capetown hospitals. My experience is confined entirely to the Capetown hospitals. I went to No. 1, No. 2, and No. 3 Hospitals—not to Woodstock at all. I took particular care to go with the official doctors in charge of the hospitals, and we discussed all sorts of indifferent matters, and I asked incidentally if they had everything that they wanted. They said there was no particular strain, and the hospitals were by no means full. They had everything, and did not need anything at all. I went to the nurse, and I asked the nurse: "What do you want, because I can get things out of the A.M.B. (Absent-Minded Beggar) Corps, and there may be some odds and ends you may want." The reply was: "We want pyjamas. Don't bring them to the store issue department, but bring them to the back door." So I got ninety-eight pairs of pyjamas and unloaded them at the back entrance and gave them quietly to the nurse. I went to another hospital, and I asked the same question and received practically the same answer—that it was not any good taking it to the officials, but if I would quietly bring pyjamas, and also slips, they would feel much obliged, because the nurses said there was a difficulty in getting pillow-slips or pyjamas. I also had the same answer from the nurse of a hospital train. There were three hospitals which I visited in February before there was any strain, when the doctors gave me to understand that they needed nothing, and they were exceedingly well pleased with themselves. Later in February, about the time the Yeomanry were coming over, I visited the Maitland Hospital, a few miles out of Capetown. In that hospital there were a large number of unsorted men coming out from England, and they had no medicine except boric acid and quinine pills. I went to the druggists, after consulting a professional man, and sent over a few pounds' worth of medicine. They were willing to take things privately and there was no acknowledgment, and none desired, of course; but the general impression was that they got them quicker that way than through the store department.

In reply to Professor Cunninghan, Mr. Kipling said if he had given those things openly to the stores he should not have got the people into trouble. He knew from the doctor of the Maitland through a friend that they wanted these drugs. The Army Service Corps and the Royal Army Medical Corps were in want of these things. It took them, as they said, for ever and ever to get them from the stores department. It saved time to get them otherwise than through the stores. He did not for a moment

say that the stores were not there. He was told explicitly that they were there, but they could not be got at. After that he went with a hospital train, and saw the wounded come down. There was nothing bad, and everybody was working hard. The system at Capetown was slow and cumbrous, and he felt it was much better to have the things sent in another way where a man's life was at stake. He went through four or five town hospitals at Bloemfontein—that was before we had any epidemic and before the waterworks were cut. Their condition was very good, but they were all under cover. He did not go to the tents. The enteric was beginning then, and there was an advertisement in the paper he had the honour to be connected with inviting people to give beds and blankets and bedding. The hospitals were pretty clean. The Dutch had been using them before and they smelt a bit. That was before the heavy strain began. He was there twelve days. He left before the big epidemic. There was no enthusiasm for nursing enterics—they were long and troublesome, and not as interesting as the wounded. There was not much heroism about the enterics. He went back to the Cape and there were more and more enterics. The hospitals were perfectly clean, and everybody was working hard, but there was always this quiet complaint about the excessive slowness of getting at anything in the stores. He was in South Africa from February to May. He did not go to Woodstock. The air was foul, and the place was simply unspeakable. The drains ran out there and the place stank.

The Supply of Clothing.

Colonel Mulcahy said he was in charge of the Royal Army Clothing Department, and, under the Director-General of Ordnance, he was responsible for the supply of clothing to the army. He put in statistics showing the supply of hospital clothing sent out to South Africa. They shipped 50 per cent. more than the proper equipment for every hospital, so that there might be some reserve. The only case where it might appear that there was a delay in answering requisitions was the wire from the Cape received on March 26th, asking for certain shirts which were not sent out till July 21st. Shirts were sent out to the number of half a million, but they were not the particular pattern asked for. These shirts were practically as useful as those requisitioned. Requisitions were generally quickly answered. Pyjamas were not recognised in the army. A flannel shirt and a pair of drawers were used instead of pyjamas for walking about in. There was no deficiency in these things. The pyjamas were not approved by the medical authorities at home.

The Modder River Hospital.

Mr. J. A. Morrison, M.P., a lieutenant in the Grenadier Guards, said he went out to South Africa on special service connected with the raising and equipping of Colonial Volunteers, and was admitted into hospital at the Modder River at the end of January. He was about five weeks in hospital, and personally he thought everything was done that could be done. He came home in the *Cheshire*, and the men all said they were well treated in the various hospitals they were in. There were complaints of loss of cups and saucers, and they were short of utensils at Wynberg.

Evidence of Mr. Cheatle.

Mr. G. L. Cheatle, F.R.C.S., said he arrived at the Modder River in January and was there for two months attending to the surgical cases in the field hospitals and divisional hospitals, and occasionally to the enteric cases when there were complications. Everything worked perfectly. He saw the wounded from Paardeberg and Kimberley; 770 cases arrived in one day from Paardeberg. Some of them were put in tents, but most of them were sent on by train. There were no deficiencies after the first 24 hours. He bought the necessary things and fed the men, who did not want for anything. He went to Bloemfontein and saw the Guards' Brigade hospital, where there were 400 patients, and that was very much overcrowding. There were a mixed lot of enterics and dysentery, but no wounded. All the tents were entrenched, and the men had mackintoshes and blankets, and in some cases red pyjamas. They did not get fresh milk. The doctors complained of the amount of work. The wounded got all necessaries at Kroonstadt. Asked as to his experience from Kroonstadt to Pretoria, the witness said he could not speak of the typhoid and dysentery cases, but the wounded had everything. There were plenty of dressings.

No. 9 Hospital, Bloemfontein.

Lieutenant Colonel F. Barrow said he was Principal Medical Officer of No. 9 General Hospital at Bloemfontein. The hospital was equipped for 500 rank and file and 20 officers. They arrived at Bloemfontein about April 7th. There was a delay for a few days in opening the hospital owing to a block on the railway, and they did not get all their supplies till about a fortnight after. This delay could not be avoided. They were equipped for 520, but they soon got 1,500, then 1,600, and 1,800 men to look after. They had a surplus of sick mild cases which were put into bell tents, and if their cases became serious they were sent to the marquees. The water supply was very inadequate owing to the breakdown at the waterworks. They were entitled to 60,000 gallons of water, but they had a difficulty in getting 6,000 gallons from two wells. They were told to boil the water, but they had no firewood and there were no trees to cut down. This state of things lasted for three weeks until they got coal and wood from the base. Naturally they ran short of the regulation army stock, and they had to requisition persons who were not trained orderlies, who did their best and did it very well. He went round morning, noon, and night and asked for complaints, but he never heard one. One patient told General Kelly-Kenny that he had nothing to eat for eight days, and that man had had 11 pints of liquid bovril, beef-tea, milk, etc. Solid food was not suitable in that man's case. He stopped the supply of fresh milk because it was dangerous when manipulated by the Kaffir boys. The condensed milk was much better, as it was not liable to contamination. He opened two or three thousand tins a day of condensed milk. The men had frozen mutton and fresh meat, and very often they had to bury it because the ration had been overdrawn through the men not being able to get through it. Later on he issued orders not to draw the full rations as they were being replaced by milk, bovril, and medical comforts generally. There was no overcrowding in No. 9 Hospital. No. 9 Hospital was built on a slope and there was never any water in the tents. He did not see Mr. Burdett-Coutts there at all. If he had been there he ought to have had a pass. Asked whether other buildings could have been taken as hospitals, the witness said these buildings were pest houses. It was far better to be treated in the open veld with desert air than to be treated in an insanitary room. All the houses were insanitary; and the bucket system was in vogue, but it was abominable. He would not put cattle in those houses. They had a large staff of female nurses in the marquees, and the reason they had not them in the field tents was that they were not required as the cases were mild ones. The site of the hospital was chosen by the board of army officers. It having been put to the witness that the medical officers did not like to ask for things they wanted, he said that if he did not get what he wanted there was a row. He asked for transport of his own owing to the inconvenience in getting things. They said it was impossible, but he got his own transport at once. He neglected most of the returns and the statistics too. He got many urgent telegrams from Capetown asking "Where are your returns?" and he took no notice of them. These returns were necessary, but there was great difficulty in furnishing them when working at high pressure. Many of the returns could be done away with. The men were not afraid to make complaints.

Pretoria.

Captain Duncan Stewart, of the Royal Canadian Foot Regiment, got malarial fever at Pretoria. He could not speak too highly of the doctors and sisters.

Bloemfontein Hospitals.

Dr. Little said he went out to South Africa as a visitor to hospitals, and he was favourably impressed. He worked at No. 9 Hospital, where he considered many patients probably lost their lives. He thought there ought to have been fresh milk. When he got to Port Elizabeth he was offered by a responsible person a thousand bottles of fresh sterilised milk per day. He wrote to No. 9 Hospital, but no notice was taken of it.

Captain Tryon, a patient at Bloemfontein, the hospital train, and at Wynberg, said he was fairly well looked after.

Transport Difficulties.

Lieutenant-Colonel Cooper, of the Irish Guards, was employed as a railway staff officer. He said there were great difficulties in passing the sick and wounded along the railway line in consequence of the vast quantities of supplies sent off to the fighting troops

The Milk Supply at Bloemfontein.

Major Blenkinsop went out with the 20th Field Hospital. They had 106 enteric and dysentery cases in the hospital just outside Bloemfontein. The patients were well looked after and got their food. He told the farmers if they did not supply him with milk he would commandeer their cows and send them to prison in Bloemfontein, and he had no more difficulty about fresh milk. He suggested that there should be specially made-up boxes containing medical comforts, jellies, and such like for the sick convoys; and the medical staff should have their own transport.

This concluded the evidence.

Departure of the Commissioners for South Africa.

Major Tennant (the Secretary) stated that the Commission would leave for South Africa in the *Dunottar Castle* on August 14th, and they would be away about two or three months. On their return, their further evidence would be taken in London.

THE DISPOSAL OF THE DEAD.

An important report has been presented to the London County Council by its Public Health Committee in obedience to a reference instructing it to inquire into the condition of metropolitan cemeteries, and also whether it is expedient that any regulations should be laid down in respect of such places in the interests of public health and decency. An able report has been prepared by Dr. Young, one of the Assistant Medical Officers of the County of London dealing exhaustively with the existing provision of cemeteries in or near London, owned partly by trading companies and partly by local sanitary authorities. The report gives occasion for reflection, and must serve to again direct the attention of Government and the public to this question.

It was in 1843 that Mr. Edwin Chadwick startled the public conscience by a disclosure of the scandals and insanitariness which surrounded the mode in which dead bodies were then disposed of, and especially condemned the practice of interments in already overcrowded intramural cemeteries. In 1850 the General Board of Health, the forerunner of the Medical Department of the Local Government Board, advised that Government should take in hand the responsibility for the burial system of the country, and that for the metropolis all burial business should be done by a branch of the central government, while in country towns burial boards should be established acting under regulation of a central bureau.

This centralising policy achieved a momentary success by an Act passed in 1850, but two years later the special central jurisdiction of the Board of Health was repealed, and local Burial Boards were entrusted with the power of providing places for interment, while intramural sepulture was finally abolished. It appears from Dr. Young's report that there are

in metropolitan burial grounds at the present time some 1,300 acres of land purchased for burial purposes and not as yet utilised, and an attempt is made to ascertain at what period this accommodation is likely to be exhausted. The problem is not one that permits of any precise solution, but ground is given for thinking that for some thirty or forty years to come this provision will suffice. Much, however, depends on the nature of the soil and on the mode of interment in determining to what extent any given cemetery is available for the purpose of disposal of dead bodies. Thus burial in clay retards the resolution of the body into its elements, and the use of brick vaults and lead coffins directed to the preservation of the dead body is a wasteful mode of employing the sanitary agencies of the earth for the disposal of corpses. But happily public sentiment is changing, slowly but surely; and while cremation has been gradually gaining recognition, the practice of burial in perishable coffins, advocated by Sir Seymour Haden and Dr. Poore, is steadily increasing in popularity. The report states that

> Dr. Young has made an estimate of the amount of suitable land which would be required for the dead of the London population if surface burial were adopted, and he finds that fifty-five acres, or, with land for paths and an unburied-in belt, some seventy acres would be required annually, and the land could be again utilised after the necessary interval of time, which Sir Seymour Haden shows to be proportionate to the depth below the surface at which interment takes place. Similar estimate for Greater London shows that about eighty acres would be required for the number of deaths which now occur in a year, with an increase of about 1.7 per cent. per annum to allow for increase of population.
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> If it were intended to encourage the adoption of methods of interment under natural conditions, which aim at the speedy dissolution of the body, much no doubt could be done if a representative body in each county were authorised to make regulations which put limitations upon the continuance of practices aiming at or leading to the preservation of the body. Such regulations would tend to guide public opinion, and might, as this grows in the proper direction, be strengthened from time to time.
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> More speedy results would no doubt be attained if the ownership of all burial grounds were vested in public authorities who would not be influenced, as trading companies might be, in the retention of customs which it is desirable should cease. Especially, if it were determined to give facilities for surface interment, would it be desirable that ground so utilised should be in public ownership.

We are therefore brought back again to the position advocated in 1850 by the Board of Health. The disposal of the dead, involving as it does questions of cause of death, questions of public nuisance, and of river pollution, as well as questions of public decency and sentiment, to say nothing of ecclesiastical considerations, is scarcely one that can be allowed to remain indefinitely in the hands of trading companies, subjected though they be to regulations of a Secretary of State. The *Campo Santo* in former times was public property, and the object of scrupulous care and veneration; in the case of large towns like London the magnitude of the task of proper disposal of the dead requires uniformity of action by a body responsible to the public, and we believe that public opinion will not rest satisfied until some such settlement as that foreshadowed in the report is permanently effected.

FORTY-FIFTH ANNUAL REPORT OF THE REGISTRAR-GENERAL FOR SCOTLAND.

Births—The population of Scotland as estimated to the middle of 1899 is 4,281,850, of which 2,069,438 were males, and 2,212,412 females. During the year 1899, 130,656 births were registered throughout Scotland, giving a birth-rate of 30.5 in 1,000. Of the estimated population, 8,488 births were illegitimate.

Deaths.—The number of deaths registered during the year was 79,548—39,919 males and 39,629 females—a mortality rate of 18.6 in 1,000 of the estimated population. The highest rates occurred in the principal town districts.

Marriages.—32,935 marriages were registered, giving a marriage rate of 7.7 in every 1,000 of the estimated population. June gave 4,943 marriages, July 4,394, and January 4,218, while the smallest number occurred in May with 1,228.

Birth and Death Rates of Principal Towns.—Taking eight of the principal towns of Scotland—Glasgow, Edinburgh, Dundee, Aberdeen, Leith, Paisley, Greenock and Perth, we have 49,753 births registered in these, a rate of 31.3 in every 1,000 of their population. The highest rate occurred in Greenock with 34.3 per 1,000, and the lowest in Edinburgh with 27.5. Dundee gave the largest proportion of illegitimate births. Thirty-two thousand four hundred and thirty deaths were registered in these towns, giving a rate of 20.4 in every 1,000 of the estimated population. The mortality rate was highest in Greenock with 21.7, and lowest in Leith with 18.2.

Zymotic Diseases.—The highest mortality from zymotic diseases occurred in Greenock, where 0.366 per cent. of the inhabitants died from those diseases, and the lowest in Edinburgh with 0.256, and in Dundee with 0.248, per cent. of the inhabitants. In Glasgow, in every 100 deaths, 3.59 were ascribed to diarrhœa and dysentery, in Edinburgh 2.99, in Dundee 4.86, in Aberdeen 2.84, in Leith 3.56, in Paisley 4.85, in Greenock 6.49, and in Perth 3.74. As regards influenza, the record stands thus: In Glasgow, in every 100 deaths, 1.02 were ascribed to that disease, 1.57 in Edinburgh, 0.47 in Dundee, 1.81 in Aberdeen, 0.64 in Leith, 1.73 in Paisley, 0.38 in Greenock, and 1.19 in Perth. In all, then, in the eight towns taken together, diarrhœa and dysentery caused 1,197 deaths, being at the rate of 3.72 per cent. of the total mortality in the same, and in the ratio of 7.6 in every 10,000 of their inhabitants; while to influenza are ascribed 363 deaths, at the rate of 1.13 per cent. of the total deaths, and 2.3 in every 10,000 of the inhabitants of the eight towns. Measles caused 938 deaths, equal to 2.92 per cent. of all the deaths, and 6.0 in every 10,000 of the population of these towns. Whooping cough caused 808 deaths, equal to 2.51 per cent. of the total deaths, and 5.1 per 10,000 of the population. Fevers caused 343 deaths, being at the rate of 1.07 per cent. of all deaths, or 2.2 per 10,000 of population. Enteric fever caused 319 of the whole, typhus caused 16, cerebro-spinal fever 3, and simple or ill-defined fever 5. To scarlet fever 340 deaths were due, at a rate of 1.06 per cent. of all the deaths, or 2.2 per 10,000 of the inhabitants. Diphtheria was the cause of 261 deaths, equal to 0.81 per cent. of the total, or 1.7 in every 10,000 of population. Zymotic diseases together caused 4,648 deaths, in the proportion of 14.57 per cent. of the total mortality, or 29.8 in every 10,000 of the inhabitants: 131 deaths were ascribed to syphilis, 63 to erysipelas, and 85 to puerperal fever. Small-pox caused 1 death in Glasgow. There is no information as to whether the person who died was vaccinated or not.

Rheumatic fever caused 163 deaths. Cancer was responsible for 1,415 deaths, or 4.40 per cent. of all, and 9.0 per 10,000 of the population; most marked in Glasgow, Edinburgh, Dundee, and Aberdeen. Gout accounted for 2 deaths.

Phthisis caused 3,033 deaths, at the rate of 9.43 per cent. of the total mortality, and 19.3 in every 10,000 of the population, the highest rate falling in Glasgow, Leith, Dundee, and Greenock.

Diseases of the nervous system caused 3,643 deaths, equal to 11.33 per cent. of all deaths, or 23.1 in 10,000 of the population of these eight towns. Diseases of the circulatory organs caused 2,722 deaths, a rate of 8.47 per cent. of the total mortality, and equal to 17.3 in every 10,000 of the inhabitants. Diseases of the respiratory organs caused 6,267 deaths, at the rate of 19.49 per cent. of all deaths, or 39.8 per 10,000 of population.

Diseases of the organs of digestion caused 2,383 deaths, equal to 7.41 per cent. of all, and 15.1 in 10,000 of the inhabitants.

Diseases of the urinary organs caused 793 deaths, or 5.0 in 10,000 of population; 1,007 deaths were registered as due to atrophy and debility; 31 to dropsy; while in 275 the death was sudden, and the exact cause not ascertained, or was due to ill-defined or not specified causes.

Violent deaths were in all 1,310, forming 4.07 per cent. of the total, and 8.3 in 10,000 of the inhabitants of these eight principal towns. There were 60 suicides, and 103 deaths were due to intemperance.

Old Age.—134 old persons died in the eight towns during the year at the ages of 90 and upwards, 39 being men and 95 women. The oldest were a labourer at 99 years, and a widow aged 101 years. But 1,205 deaths are set down as due to "old age," a term lacking in precision.

The diseases of parturition caused 128 deaths thus distributed: Abortion, 2: puerperal mania, 1; puerperal convulsions, 29: placenta prævia, flooding, 41; phlegmasia dolens, 1; other accidents of childbirth, 54. Of these 128 deaths, all save 5 occurred between the ages of 20 and 60, a curious and arbitrary grouping surely. Glasgow was responsible for 59 of the 128 deaths from diseases of parturition, Edinburgh for 30, and Perth for none. Puerperal fever caused 85 deaths.

LITERARY NOTES.

It is announced that under the title *Aus meinem Universitatsleben* Professor Schenk is about to publish a reply to the Professorial Collegium of the University of Vienna, whose memorial to the Austrian Cultus-Minister led to his compulsory retirement. The book is to be published by Carl Marhold, of Halle.

In the *Glasgow Medical Journal* for May Dr. James Finlayson gives an amusing account of Dr. Charles Badham, who was Professor of the Practice of Medicine in the University of Glasgow from 1827 to 1841. Badham's chief title to medical fame appears to have been that he was the inventor of the word "bronchitis." This he used for the first time in his *Observations on the Inflammatory Affections of the Mucous Membrane of the Bronchiæ*, which was published in London in 1808, went through two or three editions, and was translated into German. He was a graduate both of Edinburgh and of Oxford, a Fellow of the Royal College of Physicians, London, and of the Royal Society. But his mind seems to have been given much more to literature than to medicine. In 1812 he issued anonymously *Specimens of a New Translation of Juvenal* (Oxford, 1812). This was ridiculed in the *Quarterly Review* in a manner more savage and tartarly even than usual, a circumstance that may doubtless be accounted for by the fact that Gifford the editor had himself published a metrical version of the Roman satirist. Undeterred by what he calls "the ruffian style of criticism" to which he had been subjected, Badham published, in 1814, a translation of the whole of the *Satires*. This again brought down the editorial cudgel on his head. But Badham was made of sterner stuff than John Keats and was not to be killed off by one critique. His translation of *Juvenal* was republished in Valpy's Classical Library in 1831. Badham made other excursions in the field of poetry. In *Blackwood's Magazine*, vol. xxv, 1829, he published "Lines written at Warwick Castle." The verses occupied nearly three pages of the magazine, while the notes, which bristled with Greek and Latin quotations, filled twice as many pages as the poem itself. This poem with eight more—one of them entitled "The Gold-headed Cane"—was issued in 1835 in the form of a slim duodecimo volume, "not printed for publication," under the title *Brief Recollections, Chiefly of Italy. By an Amateur*. The appointment of Dr. Badham by the Crown to the Chair of Medicine in the Glasgow University, which was made apparently on the recommendation of Sir Henry Halford, President of the Royal College of Physicians, excited a good deal of local feeling, as Badham's fame had not reached so far north. The editor of the *Lancet* asked in his polite way, "Who is this Dr. Badham?" A correspondent wrote to explain that the London College of Physicians regarded Badham as "their pauper Fellow," he having spent £16,000 to £20,000 in the process of becoming an Oxford graduate and a Fellow of their College! Badham's lectures on medicine, whatever may have been their scientific value, must have been remarkable for their style, if we may judge from some specimens quoted by Dr. Finlayson. Referring to the value of medical attendance, and appealing to the personal recollections of his hearers when affected with feverish illnesses, he concluded an address with this sentence, followed by a Latin quotation:

> How often when the hot and chafed blood was dashed against its bulwarks like the tide of some disturbed æstuary, and the once calm and placid respiration had become a hurricane has the white star of medicine (like the constellation of the Dioscuri to the ancient mariner) risen upon your dwelling, the harbinger of returning security, and the pacificatrix of the storm?

In a memorial to Lord Melbourne, then Home Secretary, the writer, referring to Dr. Badham, says his lectures were

> more frequently on poetical and literary than on medical subjects. He has, more than once, spent two or three weeks of his course in criticising the works of the English poets, and describing his own travels and hair breadth escapes on the Continent.

Badham was an interesting figure, a scholar and a man of great and varied knowledge, but he scarcely seems to have been in the right place in the Chair of Medicine of a University.

"Curious" writes:

> In the Literary Notes of British Medical Journal of July 14th so much space was taken up by numerous replies to my query, why is a chilblain on the heel commonly called in France *la mule*, that I feel I cannot ask to have the question reopened, but this much I want to say. In the replies so liberally furnished I find no allusion to the term *le mulon* used for a chilblain on the heel in the old province of Poitou, and *la mulette* in Champagne. Both terms are given for the complaint in a footnote on p. 285 of *Histoire des Expressions Populaires* (1892), by Brissaud. Now, in Nugent's dictionary I find *mulon* defined as "a heap, a pile," and *mulette*, "a calf's maw." Here is more matter for speculation! Apropos of *la mule*, an old magic cure for it in Franche-Compte, or Upper Burgundy, deserves some notice:
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> "Pour faire passer la mule, on va frapper à la porte d'une veuve et quand elle demande qui est là? on répond: C'est la mule et le mulet, je te les laisse et je m'en vais."

We take *mulon* and *mulette* to be merely augmentative and diminutive forms respectively of *mule*.

ASSOCIATION INTELLIGENCE.

NOTICE OF QUARTERLY MEETING OF COUNCIL FOR 1900.

A meeting of the Council will be held on October 10th, 1900. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before the meeting—namely, September 27th, 1900.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary*.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

PROCEEDINGS OF COUNCIL.

At a meeting of the Council, held in the Magistrates' Room, Town Hall, Ipswich, on Tuesday, July 31st, 1900.

Present:

Dr. John Roberts Thomson, President of Council, in the Chair.
Dr. John Ward Cousins, President.
Dr. William Alfred Elliston, President-elect.
Mr. Andrew Clark, Treasurer.

Dr. Edgar G. Barnes, Eye.
Dr. James Barr, Liverpool.
Dr. T. Beattie, Newcastle-on-Tyne.
Dr. Michael Beverley, Norwich.
Dr. J. Brassey Brierley, Old Trafford.
Mr. Langley Browne, West Bromwich.
Dr. J. Campbell, Belfast.
Dr. H. Radcliffe Crocker, London.
Dr. T. M. Dolan, Halifax.
Mr. George Eastes, M.B., London.
Dr. Freeland Fergus, Glasgow.
Dr. John H. Galton, Upper Norwood.
Dr. Bruce Goff, Bothwell.
Dr. Joseph Groves, Carisbrooke.
Dr. T. Arthur Helme, Manchester.
Dr. Holman, London.
Mr. T. R. Jessop, Leeds.
Mr. Evan Jones, Aberdare.
Mr. R. H. Kinsey, Bedford.
Sir John William Moore, M.D., Dublin.
Dr. James Murphy, Sunderland.
Surgeon-General T. F. O'Dwyer, Aldershot.
Mr. C. H. Watts Parkinson, Wimborne Minster.
Dr. Frank M. Pope, Leicester.
Dr. A. Brown Ritchie, Hulme.
Mr. H Betham Robinson, M.S. London.
Dr. I. G. Roddick, Montreal.
Dr. Robert Saundby, LL.D., Birmingham.
Dr. W. J. Tyson, Folkestone.
Mr. T. Jenner Verrall, Brighton.
Dr. S. Woodcock, Old Trafford.

The minutes of the last meeting having been printed and circulated and no objection received, were taken as read and signed as correct.

Read letters of apology for non-attendance from Sir G. Hare Philipson, Dr. Bridgwater, Dr. Henry Barnes, Mr. T. Vincent Jackson, Mr. Jordan Lloyd, Dr. T. B. Moriarty, Dr. L. W. Sedgwick, Dr. E. Markham Skerritt, Dr. Parsons, Brigade-Surgeon Lieutenant-Colonel Drake-Brockman.

Read communication from Dr. Urquhart intimating his retirement as a representative of the Perthshire Branch on the Council.

Read communication from the Cape of Good Hope Branch forwarding a suggested by-law (VI) [dealing with the subject

of medical advertising, and asking for the support of the Council in considering advertising a disqualification for unattached members.

Resolved: That the suggested By-law VI of the Cape of Good Hope Branch be approved and confirmed.

The election of candidates was then considered

Resolved: That the seventy candidates whose names appear on the circular convening the meeting be, and they are hereby, elected members of the British Medical Association.

At a meeting of the Council held in the Magistrates' Room, Town Hall, Ipswich, on Wednesday, August 1st.

Present:

Dr. J. ROBERTS THOMSON Presidentof Council in the Chair.
Dr. W. A. ELLISTON, President.
Mr. ANDREW CLARK, Treasurer.

Dr. EDGAR G. BARNES, Eye.
Dr. JAMES BARR, Liverpool.
Dr. THOMAS BEATTIE, Newcastle-on-Tyne.
Dr. MICHAEL BEVERLEY, Norwich.
Professor J. W. BYERS, Belfast.
Mr. LANGLEY BROWNE, F.R.C.S., West Bromwich.
Mr. JAMES CANTLIE, F.R.C.S., London.
Dr. E. J. CAVE, Bath.
Dr. W. CALWELL, Belfast.
Dr. JOHN WARD COUSINS, Portsmouth.
Dr. H. RADCLIFFE CROCKER, London.
Dr. T. M. DOLAN, Halifax.
Mr. GEORGE EASTES, M.B., London.
Dr. A. FREELAND FERGUS, Glasgow.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. BRUCE GOFF, Bothwell.
Dr. J. GROVES, Carisbrooke.
Surgeon-General J. B. HAMILTON, M.D., London.
Dr. W. MORTON HARMAN, Winchester.
Dr. T. ARTHUR HELME, Manchester.
Dr. C. HOLMAN, London.
Mr. VICTOR HORSLEY, F.R.S., London.
Mr. T. R. JESSOP, F.R.C.S., Leeds.
Mr. EVAN JONES, Aberdare.
Mr. R. H. KINSEY, Bedford.
Sir JOHN WILLIAM MOORE, M.D., Dublin.
Dr. JAMES MURPHY, Sunderland.
Surgeon-General T. F. O'DWYER, Aldershot.
Mr. D. A. O'SULLIVAN, Southport.
Mr. C. H. WATTS PARKINSON, Wimborne
Dr. FRANK M. POPE Leicester.
Dr. A. BROWN RITCHIE, Manchester.
Mr. H. BETHAM ROBINSON, M.S., London.
Dr. ROBERT SAUNDBY, LL.D., Birmingham.
Mr. T. JENNER VERRALL, Brighton.
Dr. NORMAN WALKER, Edinburgh.
Mr. DENIS WALSHE, Graigue.
Dr. S. WOODCOCK, Manchester.

Read letters of apology for non-attendance from Dr. Handford, Dr. Sheen, Dr. T. Niven, and Mr. Colin Campbell.

The PRESIDENT OF COUNCIL reported the returns of the election of representatives of Branches.

Aberdeen, Banff, and Kincardine Branch.—David W. Finlay, Aberdeen. *Adelaide and South Australia Branch.*—C. G. D. Morier, London. *Barbados. Branch.*—C. D. Gerald Gooding, Deptford. *Bath and Bristol Branch.*—Edward John Cave, Bath; E. Markham Skerritt, Bristol. *Bermuda Branch.*—(No return.) *Birmingham and Midland Counties Branch.*—Langley Browne, West Bromwich; Alfred Carter, Birmingham; Jordan Lloyd, Birmingham. *Bombay Branch.*—(No return.) *Border Counties Branch.*—R. Maclaren, Carlisle; R. Somerville, Galashiels. *Brisbane and Queensland Branch.*—(No return.) *British Guiana Branch.*—(No return.) *Burmah Branch.*—(No return.) *Cambridge and Huntingdon Branch.*—Henry Stear. Saffron Walden, Essex. *Cape of Good Hope Branch.*—Surgeon-General J. B. Hamilton, M.D. (ret. A.M.S.), London. *Colombo, Ceylon Branch.*—(No return.) *Cork and South of Ireland Branch.*—Brigadier-Surgeon T. B. Moriaty, M.D., Cork. *Deccan Branch.*—(No return.) *Dorset and West Hants Branch.*—C. H. W. Parkinson, Wimborne Minster. *Dublin Branch.*—Sir John William Moore, Dublin. *Dundee and District Branch.*—J. W. Miller, Greenfield, Dundee. *East Anglian Branch.*—Edgar George Barnes, Eye, Suffolk; M. Beverley, Norwich. *East York and North Lincoln Branch.*—C. H. Milburn, Hull. *Edinburgh Branch.*—R. W. Philip, Edinburgh; Norman Walker, Edinburgh. *Gibraltar Branch.*—(No return.) *Glasgow and West of Scotland Branch.*—Andrew Freeland Fergus, Glasgow; Bruce Goff, Bothwell. *Gloucestershire Branch.*—R. W. Batten, Gloucester. *Grahamstown and Eastern Province Branch.*—(No return.) *Griqualand West Branch.*—(No return.) *Halifax, Nova Scotia Branch.*—Surgeon-General T. F. O'Dwyer, Aldershot. *Hong Kong and China Branch.*—James Cantlie, London. *Jamaica Branch.*—(No return.) *Lancashire and Cheshire Branch.*—J. Barr, Liverpool; Colin Campbell, Saddleworth; A. Godson, Cheadle; T. Arthur Helme, Manchester; D. A. O'Sullivan, Southport; A. Brown Ritchie, S. Woodcock, Old Trafford, Manchester. *Leeward Islands Branch.*—(No return.) *Londonderry and North-West of Ireland Branch.*—E. Donaldson, Londonderry. *Malaya Branch.*—(No return.) *Malta and Mediterranean Branch.*—(No return.) *Melbourne and Victoria Branch.*—F. M. Harricks, London. *Metropolitan Counties Branch.*—H. Radcliffe Crocker, George Eastes, Victor Horsley, Henry Betham Robinson, L. W. Sedgwick, Charles Sissmore Tomes, London. *Midland Branch.*—H. Handford, Nottingham; F. M. Pope, Leicester. *Montreal Branch.*—(No return.) *Natal Branch.*—(No return.) *New Zealand Branch.*—(No return.) *Northern Counties of Scotland Branch.*—James Murray, Inverness. *North of England Branch.*—T. Beattie, Newcastle-on-Tyne; James Murphy, Sunderland. *North of Ireland Branch.*—J. W. Byers, Belfast; Wm. Calwell, Belfast. *North Wales Branch.*—W. Jones Morris, Portmadoc. *Ottawa Branch.*—(No return.) *Oxford and District Branch.*—Thomas Henry Cheatle, Oxon. *Perthshire Branch.*—Thomas Niven, Fifeshire. *Quebec Branch.*—(No return.) *Reading and Upper Thames Branch.*—H. H. Phillips-Conn, Reading. *Shropshire and Mid-Wales Branch.*—John Davies Harries, Shrewsbury. *South-Eastern Branch.*—J. H. Galton, Upper Norwood, S.E.; W. J. Tyson, Folkestone; T. J. Verrall, Brighton. *South-Eastern of Ireland Branch.*—Denis Walshe, Kilkenny. *Southern Branch.*—J. Groves, Carisbrooke, I.W.; Wm. Morton Harman, Winchester. *South Indian and Madras Branch.*—Brigade-Surgeon-Lieutenant Colonel E. F. Drake-Brockman, London, N.W. *South Midland Branch*—R. H. Kinsey, Bedford. *South Wales and Monmouthshire Branch.*—Evan Jones, Aberdare; A. Sheen, Cardiff. *South-Western Branch.*—P. Maury Deas, Exeter; John Rolston, Devonport. *Staffordshire Branch.*—T. Vincent Jackson, Wolverhampton. *Stirling, Kinross, and Clackmannan Branch.*—W. A. Mackintosh, Stirling. *Sydney and New South Wales Branch.*—(No return.) *Thames Valley Branch.*—G. E. Shuttleworth, Richmond Hill, Surrey. *Toronto Branch.*—(No return.) *Trinidad and Tobago Branch.*—(No return). *Western Australia Branch.*—(No return.) *West Somerset Branch.*—W. L. Winterbotham, Bridgwater. *Worcestershire and Herefordshire Branch.*—G. W. Crowe, Worcester. *Yorkshire Branch.*—T. M. Dolan, Halifax; W. Dyson, Sheffield; T. R. Jessop, Leeds.

The Council received a deputation from Cheltenham, consisting of Mr. G. A. Cardew, Mr. O. K. Fowler, Dr. Soutar, and Mr. E. Dykes Bower, to invite the Association to hold its annual meeting at Cheltenham in 1901.

Resolved: That it be recommended to the General Meeting of to-day that the annual meeting for 1901 be held in Cheltenham, and that Dr. G. B. Ferguson be nominated as President-elect.

The Council received a deputation from the Manchester Conference respecting the question of Improvement in the Organisation of the Association, consisting of Dr. Wolstenholme, Dr. Whitaker, Dr. Crawshaw, Dr. J. A. Macdonald, Dr. Bagley, and Dr. A. Cox, who, after representing their views to the Council, were thanked and withdrew.

Resolved: That the 19 candidates whose names appear in Wednesday's *Daily Journal* be, and they are hereby, provisionally elected, subject to confirmation at the October meeting of Council.

Read list of attendances of members of Council for the past twelve months as follows (nine meetings):

	Total Attendances.
Cousins, Dr. J. Ward, Portsmouth, President ...	7
Elliston, Dr. W. A., Ipswich, President-Elect ...	6
Thomson, Dr. J. Roberts, Bournemouth, President of Council	9
Clark, Mr. Andrew, F.R.C.S., London, Treasurer ...	9
Acland, Sir H. W., K.C.B., M.D., F.R.S., Oxford, Vice-President	0
Armstrong, Dr. G. E., Montreal, R.	0
Banks, Sir J. T., M.D., Dublin, Vice-President ...	0
Barnes, Dr. E. G., Suffolk, R.	6
Barnes, Dr. Henry, Carlisle, Vice-President ...	[illegible]
Barr, Dr. James, Liverpool, R.	9
Barrow, Mr. B., F.R.C.S., Ryde, Vice President ...	[illegible]
Batten, Dr. R. W., Gloucester, R.	3
Beattie, Dr. T., Newcastle-on-Tyne, R.	5
Beverley, Dr. M., Norwich, R.	5
Bridgwater, Dr. T., LL.D., Harrow-on-the Hill, Vice-President	2
Brierley, Dr. J. Brassey, Manchester, R.	8
Browne, Mr. Langley, F.R.C.S., West Bromwich, R....	6
Butlin, Mr. Henry T., D.C.L., F.R.C.S., London, Vice-President	4
Calwell, Dr. W., Belfast, R.	3
Campbell, Dr. John, Belfast, R.	1
Cantlie, Mr. James, London, R.	5
Carter, Dr. Alfred H., Birmingham	4
Cheatle, Mr. T. H., Oxford, R.	4
Crocker, Dr. H. Radcliffe, London, R.	8
Crowe, Dr. G. W., Worcester, R.	4
Deas, Dr. P. Maury, Exeter, R.	3
Dolan, Dr. T. M., Halifax, R.	5
Donaldson, Mr. E., Londonderry, R.	0
Drake-Brockman, Brigade-Surgeon-Lieutenant-Colonel E. F., F.R.C.S., London, R.	4
Dyson, Dr. W., Sheffield, R.	6
Eastes, Mr. George, M.B., London, R.	9
Edwards, Dr. W. T., Cardiff, Vice-President	0
Fergus, Dr. Freeland, Glasgow, R.	2
Finlay, Professor David W., Aberdeen, R.	3
Foster, Sir Walter, M.D., D.C.L., LL.D., M.P., London, Vice-President	1
Fowler, Mr. R. S., Bath, R.	2
Fox, Dr. E. Long, Bristol, Vice-President	0
Gairdner, Sir William T., K.C.B., M.D., F.R.S., Glasgow, Vice-President...	0
Galton, Dr. J. H., Upper Norwood, R.	8
Godson, Dr. A., Cheadle, R.	4
Goff, Dr. Bruce, Lanarkshire, R.	8
Gooding, Dr. C. G., Deptford, R.	3
Goyder, Dr. David, Bradford, R.	4
Grant, Dr. Ogilvie, Inverness, R.	4
Groves, Dr. J., Carisbrooke, R	8
Handford, Dr. H., Nottingham, R.	8
Harries, Mr. John D., Shrewsbury, R.	3
Helme, Dr. T. A., Manchester, R.	6

	Total Attendances.
Holman, Dr., London, Vice-President	7
Jackson, Mr. T. Vincent, Wolverhampton, R. ...	3
Jessop, Mr. T. R., F.R.C.S., Leeds, R.	8
Jones, Mr. Evan, Glamorganshire, R.	7
Kinsey, Mr. R. H., Bedford, R	5
Lloyd, Mr. Jordan, F.R.C.S., Birmingham, R. ...	4
Lovegrove, Dr. T. H., Perth, W.A., R.	0
Maclaren, Dr. R., Carlisle, R.	2
Macnamara, Mr. N. C., F.R.C.S., London, Vice-President	6
McCreery, Surgeon-Colonel N., Kilkenny, R. ...	0
McVail, Dr. J. C., Glasgow, R.	7
Manning, Mr. H. J., Salisbury, R.	6
Milburn, Dr. C. H., Hull, R.	0
Miller, Dr. J. W., Dundee, R.	5
Moore, Sir John William, M.D., Dublin, R.	4
Morier, Dr. C. G. D., London, R.	3
Morris, Mr. W. Jones, Portmadoc, R.	2
Murphy, Dr. James, Sunderland, R.	7
Nisbet, Dr. W. B., Queensland, R.	5
O'Dwyer, Surgeon-General T. F., M.D., Aldershot, R.	6
Owen, Dr. Isambard, London, R.	3
Parkinson, Mr. C. H. W., Wimborne Minster, R. ...	9
Parsons, Dr. Charles, Dover, Vice-President... ...	7
Philip, Dr. R. W., Edinburgh, R.	2
Philipson, Sir G. H., D.C.L., Newcastle-on-Tyne, Vice-President	0
Phillips-Conn, Dr. H. H., Reading, R.	3
Pope, Dr. F. M., Leicester, R.	9
Ritchie, Dr. A. Brown, Hulme, R.	7
Robinson, Mr. H. B., M.S., London, R.	7
Roddick, Dr. T. G., Montreal, Vice-President ...	1
Rolston, Dr. John, Devonport, R.	1
Russell, Dr. W., Edinburgh, R.	2
Sandford, Dr. A. W., Cork, R.	1
Saundby, Dr. R., LL.D., Birmingham, Vice-President	5
Sedgwick, Dr. L. W., London, R.	4
Sheen, Dr. A., Cardiff, R.	7
Shuttleworth, Dr. G. E., Richmond Hill, R.	7
Skerritt, Dr. E. Markham, Bristol, R.	7
Somerville, Dr. R., Galashiels, R.	4
Stear, Mr. Henry, Saffron Walden, R.	7
Stewart, Dr. James, Montreal, R., ...	0
Tomes, Mr. C. S., F.R.S., London, R....	4
Turner, Dr. Wm., Gibraltar, R.	1
Tyson, Dr. W. J., Folkestone, R.	7
Urquhart, Dr. A. R., Perth, R.	3
Veeudam, Dr. L. J., London, R.	
Verrall, Mr. T. J., Brighton, R.	5
Wade, Sir Willoughby, M.D., Italy, Vice-President ...	0
Waters, Dr. A. T. H., Liverpool, Vice-President ...	0
Wheelhouse, Mr. C. G., F.R.C.S., Yorks, Vice-President	
Winterbotham, Dr. W. L., Bridgwater, R.	2
Woodcock, Dr. S., Manchester, R.	1

R=Branch Representative.

At a meeting of the Council, held in the Magistrates' Room, Town Hall, Ipswich, on Thursday, August 2nd, 1900.

Present:

Dr. J. Roberts Thomson, President of the Council, in the Chair.

Dr. W. A. Elliston, President.

Mr. Andrew Clark, Treasurer.

Dr. E. G. Barnes, Eye.
Dr. James Barr, Liverpool.
Dr. T. Beattie, Newcastle.
Dr. M. Beverley, Norwich.
Mr. Langley Browne, West Bromwich.
Professor J. W. Byers, Belfast.
Dr. W. Calwell., Belfast.
Mr. James Cantlie, London.
Dr. Edward J. Cave, Bath.
Dr. H. Radcliffe Crocker, London.
Dr. J. Ward Cousins, Southsea.
Mr. George Eastes, London.
Dr. Freeland Fergus, Glasgow.
Dr. J. H. Galton, Upper Norwood.
Dr. Bruce Goff, Bothwell.
Dr. J. Groves, Carisbrooke.
Surgeon-General J. B. Hamilton, London.
Dr. W. M. Harman, Winchester.
Dr. T. Arthur Helme, Manchester.
Mr. Victor Horsley, F.R.S., London.
Mr. T. R. Jessop, Leeds.
Mr. Evan Jones, Aberdare.
Mr. R. H. Kinsey, Bedford.
Sir John Wm. Moore, M.D., Dublin.
Dr. James Murphy, Sunderland.
Dr. James Murray, Inverness.
Surgeon-General T. F. O'Dwyer, Aldershot.
Mr. D. A. O'Sullivan, Southport.
Mr. C. H. W. Parkinson, Wimborne.
Dr. Frank M. Pope, Leicester.
Dr. A. Brown Ritchie, Manchester.
Dr. R. Saundby, Birmingham.
Mr. T. Jenner Verrall, Brighton.
Mr. D. Walshe, Graigue, co. Kilkenny.
Dr. S. Woodcock, Manchester.

The minutes of the last meeting having been printed in the *Daily Journal* were taken as read and approved.

The appointment of the Journal and Finance Committee was then considered, and in accordance with the by-laws the three members longest on the Committee, namely, Dr. Handford, Mr. Jordan Lloyd, and Mr. Macnamara retired. Two vacancies were created by the retirement of Dr. W. Russell from the Council and Sir John William Moore for insufficient attendance. There were nine nominations. A ballot was taken. Dr. Galton and Mr. Verrall were nominated scrutineers, and the following were reported to have the greatest number of votes—namely: Mr. Langley Browne, Dr. Ward Cousins, Mr. Victor Horsley, Mr. C. H. W. Parkinson, and Dr. F. M. Pope.

Resolved: That the following be appointed the Journal and Finance Committee for the ensuing year:—

The President; the President-elect; Dr. J. Roberts Thomson, President of Council; Mr. Andrew Clark, Treasurer; Dr. James Barr, Mr. Langley Browne, Dr. J. Ward Cousins, Dr. H. Radcliffe Crocker, Mr. George Eastes, Mr. Victor Horsley, Mr. T. R. Jessop, Mr. Evan Jones, Mr. C. H. W. Parkinson, Dr. C. Parsons, Dr. F. M. Pope, Dr. R. Saundby, Dr. E. Markham Skerritt, Mr. T. J. Verrall, and Dr. S. Woodcock.

Resolved: That the following be appointed the Parliamentary Bills Committee for the ensuing twelve months:

The President; the President-elect; Dr. J. Roberts Thomson, President of Council; Mr. Andrew Clark, Treasurer; Mr. S. H. Agar, Mr. D. B. Balding, Mr. Gilbert Barling, Dr. James Barr, Dr. A. G. Bateman, Dr. R. W. Batten, Dr. R. L. Bowles, Dr. T. R. Bradshaw, Mr. George Brown, Dr. J. S. Cameron, Mr. Colin Campbell, Mr. J. Cantlie, Dr. W. A. Carline, Mr. T. H. Cheatle, Dr. Ward Cousins, Dr. Alfred Cox, Dr. P. Maury Deas, Dr. Alex. Dempsey, Dr. H. E. Dixey, Dr. T. M. Dolan, Dr. E. Donaldson, Dr. W. Douglas, Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, Mr. George Eastes, Dr. Robert Farquharson, M.P. (Chairman), Sir Walter Foster, M.D., M.P., Dr. Bruce Goff, Dr. C. G. Gooding, Dr. Major Greenwood, Dr. J. Groves, Dr. J. B. Hackett, Surgeon-General J. B. Hamilton, Mr. J. D. Harries, Dr. A. J. Harrison, Mr. Victor Horsley, F.R.S., Mr. Evan Jones, Dr. J. C. McVail, Dr. A. R. Manby, Dr. C. W. Marriott, Dr. C. H. Milburn, Dr. J. W. Miller, Sir J. Wm. Moore, Brigade-Surgeon T. B. Moriarty, M.D., Mr. W. Jones Morris, Dr. J. Murphy, Dr. James Murray, Dr. W. Newman, Surgeon-General T. F. O'Dwyer, Mr. C. H. W. Parkinson, Dr. F. M. Pope, Dr. A. Brown Ritchie, Dr. John Rolston, Dr. R. Saundby, Dr. G. E. Shuttleworth, Dr. R. Somerville, Mr. W. D. Spanton, Mr. C. R. Straton, Dr. J. C. Thresh, Inspector-General Alex. Turnbull, R.N., Dr. A. R. Urquhart, Mr. T. J. Verrall, Dr. Norman Walker, Dr. M. Ward, Dr. Dawson Williams, Dr. W. L. Winterbotham, and Dr. S. Woodcock.

Resolved: That the following be appointed the Scientific Grants Committee:

The President; the President-elect; Dr. J. Roberts Thomson, President of Council; Mr. Andrew Clark, F.R.C.S., Treasurer; Professor T. Clifford Allbutt, M.D., F.R.S.; Sir T. L. Brunton, F.R.S.; Professor J. W. Byers, Dr. J. Ward Cousins, Dr. H. Radcliffe Crocker, Professor W. D. Halliburton, F.R.S.; Dr. H. Handford, Dr. Holman, Mr. Victor Horsley, F.R.S.; Professor John McFadyean, Mr. N. C. Macnamara, F.R.C.S.; Dr. R. Saundby Professor J. Lorrain Smith, Professor Ralph Stockman, Dr. Norman Walker, Professor B. C. A. Windle, F.R.S.; and Dr. G. Sims Woodhead.

Resolved: That the following be appointed the Inebriates Legislation Committee:

The President; the President-elect; Dr. J. Roberts Thomson President of Council; Mr. Andrew Clark, F.R.C.S., Treasurer; Mr. D. B. Balding, Dr. Fletcher Beach, Dr. T. Bridgwater, Sir C. Cameron, M.P.; Mr George Eastes, M.B.; Dr. R. Farquharson, M.P.; Sir Walter Foster, M.D., M.P.; Dr. E. Long Fox, Sir W. T. Gairdner, K.C.B., F.R.S.; Dr. Alexander Grant, Mr. F. J. Gray, Dr. F. S. D. Hogg, Dr. A. A. Jamison, Mr. H. R. Ker, Dr. A. E. T. Longhurst, Dr. T. Morton, Dr. A. E. Neale, Surgeon-Major G. K. Poole, M.D.; Fleet-Surgeon G. Robertson, M.D., R.N.; Dr. G. D. P. Thomas, Dr. W. J. Tyson, Dr Wynn Westcott, Dr. H. W. Williams, and Dr. D. Yellowlees.

Resolved: That the following be appointed the Premises and Library Committee:

The President; the President-elect; Dr. J. Roberts Thomson, President of Council; Mr. Andrew Clark, F.R.C.S., Treasurer; Dr. T. Bridgwater, Dr. J. Ward Cousins, Dr. Holman, Mr. N. C. Macnamara, F.R.C.S.; Mr. C. H. W. Parkinson, Dr. C. Parsons, Dr. F. M. Pope, and Dr. R. Saundby.

Resolved: That the appointment of the Medical Charities Committee be postponed until the October meeting of Council.

Resolved: That the following be appointed the Therapeutic Committee:

Dr. J. Roberts Thomson, President of Council; Dr. J. [illegible] W. H. Broadbent, Bart., M.D., F.R.S.; Dr. Mitchell B[illegible] Brunton, F.R.S.; Dr. J. L. Bunch, Dr. A. H. Carter, [illegible] F.R.S.; Dr. R. Crawfurd, Professor T. R. Fraser, F.R.S.; Sir W. [illegible] Gairdner, K.C.B., F.R.S., M.D.; Dr. W. Hunter, Dr. James Little, [illegible] fessor D. MacAlister, M.D.; Dr. E. Mackey, Dr. C. R. M[illegible] Dr. Sidney H. C. Martin, F.R.S.; Dr. M. McHugh, Dr. W. M[illegible] fessor W. Osler, F.R.S.; Dr. C. Y. Pearson, Dr. C. D. F [illegible] Sidney Phillips, Dr. Sydney Ringer, F.R.S.; Professor Walter R[illegible] fessor R. Stockman, Dr. N. J. C. Tirard, Dr. W. Hale White, Dr. W. Whitla, and Dr. F. Willcocks.

Resolved: That the following be appointed the General Practitioners and Ethical Committee:

The President; the President-elect; Dr. J. Robert[illegible] President of Council; Mr. Andrew Clark, F.R.C.S., Tr[illegible] James Barr, Dr. T. Bridgwater, Mr. Langley Browne, Mr. Colin Camp-

bell, Dr. J. Ward Cousins, Dr. J. H. Galton, Dr. Bruce Goff, Dr. J. Groves, Mr. R. H. Kinsey, Mr. W. Jones Morris, Dr. O'Sullivan, Mr. C. H. W. Parkinson, Dr. C. Parsons, Dr. F. M. Pope, Dr. R. Saundby.

Resolved: That the following be appointed the Trust Funds Committee:

The President; the President-elect; Dr. J. R. Thomson, President of Council, Mr. Andrew Clark, Treasurer, Dr. T. Bridgwater, Dr. Bruce Goff, Mr. N. C. Macnamara, F.R.C.S.; Dr. C. Parsons, Dr. R. Saundby, Mr. T. J. Verrall.

Resolved: That the Conciliation Board Committee be not reappointed.

Resolved: That the following be appointed the Arrangement Committee for considering the arrangements and programme for the annual meeting at Cheltenham for 1901:

The President, the President of Council, the Treasurer, Dr. Edgar Barnes, Professor J. W. Byers, and Professor D. W. Finlay. The remaining six to be appointed by the Local Committee.

Resolved: That the following twelve members of the Association be appointed on behalf of the Council, with twelve to be added by the General Meeting, to act on the Constitution Committee, namely:

Surgeon-General J. B. Hamilton for South Africa; Mr. James Cantlie for India and Eastern Archipelago; Sir John Wm. Moore, M.D., for Ireland; Dr. John C. McVail for Scotland; and Dr. J. Roberts Thomson, Mr. T. J. Verrall, Dr. S. Woodcock, Dr. R. Saundby, Mr. Andrew Clark, Dr. J. Ward Cousins, Dr. H. Radcliffe Crocker, Mr. H. T. Butlin as Representatives of the Council.

Resolved: That the Contagious Diseases Committee be reappointed as follows:

Dr. J. Roberts Thomson, President of Council; Mr. Andrew Clark, F.R.C.S., Treasurer; Dr. James Barr, Dr. H. R. Crocker, Dr. J. Groves, Mr. N. C. Macnamara, F.R.C.S.; Mr. C. H. W. Parkinson, Dr. R. Saundby. The following are the representatives of the Memorialists' Committee: Colonel C. W. Long, M.P.; Mr. H. B. N. Mothersole, M.A.; Mr. W. D. Rawlins, Q.C.

Resolved: That the Anæsthetics Committee be reappointed for another year for the purpose of completing its report, namely:

Professor T. Annandale, F.R.S.E.; Dr. Joseph Bell, Mr. F. W. Braine, Professor G. Buchanan, Dr. Dudley W. Buxton, Professor J. W. Byers, Professor M. Cameron, Professor J. Chiene, M.D.; Dr. C. Childs, Mr. John Croft, F.R.C.S.; Professor E. Duncan, Mr. George Eastes, Dr. A. L. Galabin, Dr. Frederic W. Hewitt, Mr. Jonathan Hutchinson, F.R.S.; Right Hon. Lord Lister, P.R.S.; Professor William Macewen, M.D.; Professor A. Ogston, M.D.; Mr. George Rowell, F.R.C.S.; Dr. W. V. Snow, Mr. T. Pridgin Teale, F.R.S.; and Mr. David Wallace, M.B.

SOUTHERN BRANCH: ISLE OF WIGHT DISTRICT.

A MEETING was held at Sandown on July 20th, T. A. BUCK, M.B.Lond., in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Election of Honorary Secretary and Treasurer.—Brigade-Surgeon-Lieutenant-Colonel J. B. Thomas was elected Honorary Secretary and Treasurer, *vice* Dr. Shirtliff, deceased.

Death Certification.—Dr. GROVES introduced a discussion on death certification. He viewed the subject from the standpoint of certification, and not from nomenclature of disease. A vote of thanks was passed to Dr. Groves for his paper.

Communication.—The PRESIDENT related a case of excision of kidney for sarcoma by Langenbuch's method. The patient, who had thoroughly recovered with no signs of discomfort, was shown.

Next Meeting.—It was decided that the next meeting should be held at the Pier Hotel, Sandown, on the third Friday in October. The subject proposed for discussion was the feeding of infants. Dr. Preston has kindly consented to read a paper.

CAPE OF GOOD HOPE BRANCH.

THE ordinary monthly meeting of this Branch was held on June 22nd, Dr. G. E. C. ANDERSON presiding in the absence of the President and Vice-President.

Cases.—An obscure case of multiple small tumours and one of sporadic cretinism were exhibited.

Professional Advertising.—A long discussion took place upon a report brought up by the Branch Council on the advertising question. The report recommended a resolution regarding all advertising with disfavour, but with the very important saving clause that announcements, not exceeding three, of commencement or resumption of practice, or of change of residence, should not be considered advertising. An amendment, however, was carried, with only two dissentients, absolutely condemning all advertising, whether in public prints or placards, and it was directed that this decision be communicated to the public press and to the other South African medical societies. It was likewise decided to request the editors of local newspapers not to insert laudatory personal paragraphs about medical men without the consent of the parties named.

New Member of Council.—Dr. Gregory, the Assistant Colonial Medical Officer of Health, was elected to the Council in the place of the late Dr. Silke.

SYDNEY AND NEW SOUTH WALES.

THE regular monthly meeting of this Branch was held at the Royal Society's Room, Sydney, on May 25th, Dr. W. H. COUTIE, President, in the chair. There were thirty-seven members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Member.—The PRESIDENT announced the election of Dr. Blackburn, of Prince Alfred Hospital, as a member of the Association.

Plague Quarantine.—The HONORARY SECRETARY read a letter from the Hon. the Premier to Dr. Graham, M.P., with reference to the quarantining of "contacts in cases of plague."

Communications.—Dr. NORTON MANNING read a paper on the epileptic, his treatment and care. A discussion ensued in which Drs. RENNIE, FOREMAN, THRING, F. H. QUAIFE, MILLS, CHARLES MACLAURIN, and WORRALL took part. Dr. MANNING replied.—Dr. HINDER read a paper on vesical ulcer, and exhibited drawings to illustrate the paper. Drs. WORRALL, TAYLOR YOUNG, BARRINGTON, and NEILL took part in the discussion. Dr. HINDER replied.—Dr. SYDNEY JAMIESON exhibited some pathological specimens.

SPECIAL CORRESPONDENCE.

LIVERPOOL.

Annual Report of the Medical Officer of Health: Area and Population: Death-rate General and Local.—Association of Alcoholic Intoxication with Poverty and High Death-rate.—The Influence of the City Hospitals.—Underground Bakehouses.—Insanitary Property.—Free Baths and Washhouses.—THE annual report of the medical officer of health for 1899 is a royal octavo volume of 232 pages, and contains several excellent maps and some interesting illustrations. The area of the city is 13,236 acres, and the estimated population is 668,645. The latter figure differs from that given by the Registrar-General, but it is believed by the medical officer of health to be the most probable estimate, though in view of the fact that nine years have elapsed since the census was taken it is impossible to fix the present population with anything approaching certainty. Accepting these figures as correct the annual rate of mortality for the whole city was 24.3, but as might be expected there is an enormous difference in the various districts. The highest rate of mortality was in the Exchange district where it reached 38.7, Scotland division being little behind with a mortality of 37.2. The lowest rate of mortality is in Sefton Park district, where it is only 10 1, and the newly-incorporated districts of Walton, West Derby East, and Wavertree have all a mortality under 17 per 1,000. It is hardly necessary to point out that these statistics show that the death-rate of a large city has little or no bearing on the health of those inhabitants who are in a position to select their own residences. The rise of 0.9 per 1,000 as compared with the previous year is attributed mainly to the prevalence of influenza, and as usual a large number of deaths of children among the poor was due to measles, whooping-cough, and diarrhœa. Dr. Hope expresses profound regret and concern at an increase which he records in the number of deaths from excessive drinking. Inquests were held on 216 cases in which death was more or less directly due to this cause, and there were many cases of fatal injury in which the verdict of "accidental death" omits any reference to the fact that the injured person was drunk at the time. Attention is drawn in the report to the fact that deaths from excessive drinking are

localised, and it is in the district where they are most numerous that the general death-rate is highest, and the proportion of deaths in workhouse is greatest. This is brought out in a striking manner by comparing two districts with an equal population:

Population.	General Death-rate per 1,000.	Proportion of Deaths in Workhouses and Hospital.	Proportion of Deaths Due to Excessive Drinking.
		Per Cent.	Per Cent.
Exchange, 42,137	38.7	39.4	3.4
West Derby (East), 42,14	16.5	15.5	0.5

The association between alcoholic indulgence, poverty, and ill-health is unquestionable, but it does not follow that alcoholism ought to be held entirely responsible for the other two. The hardships and privations, and the insanitary surroundings which are the lot of the casual labourers at the docks, must give rise to a condition of depression and lowered vitality which urges the subjects of it to seek the artificial stimulation of alcohol.

The City Infectious Hospitals have been kept fully employed, owing in no small measure to the fact that the public have come to recognise the benefit of hospital treatment both to the patient and to his friends. The benefit to the patient is shown by the fact that the chances of recovery increase with the early removal to hospital, and in the case of scarlatina the benefit to the community at large is shown by the fact that while the admissions to hospital have increased during the past few years, the prevalence of the disease has largely diminished. The need for further hospital accommodation is pressing, and the work of supplying it is being pushed forward. Plans have been approved by the Local Government Board for the erection of small-pox wards for the accommodation of 44 patients, together with the necessary administrative offices, upon a suitable part of the site purchased for the purpose at Fazakerley, and work is at present in progress for the provision of 88 additional beds at the City Hospital East. The total number of beds at present available is 480, but according to the recommendations of the Local Government Board, Liverpool ought to have a minimum of 650 beds for ordinary infectious sickness and 100 beds for small-pox. A highly satisfactory feature of the report is the decline in every form of tuberculosis, a decline which is as conspicuous among children as among adults.

The condition of bakehouses is the subject of a good deal of attention, and fear is expressed that the statutory restrictions in force with regard to underground bakehouses may be relaxed. It is pointed out that there are grave objections to the construction of bakehouses of which any part is underground, the chief of which are the difficulties of ensuring effectual drainage and in obtaining adequate light and ventilation, the risk of dust and other refuse being blown in owing to the windows being nearly level with the street, and the tendency of the areas to become receptacles of rubbish and filth.

One of the most important and interesting sections of the report is that dealing with insanitary property. During the year 511 houses of this class have been demolished, and 706 reported on. These houses each contain three rooms placed one above the other, the staircase leading direct from one room to the other. Very little sunlight can get into the courts, and the porous walls are saturated with the filth of many years. The houses are placed back to back, so that through ventilation is impossible, and the closet accommodation is inadequate for health and decency. The property was erected at a time when sanitary requirements were not understood, and there were no building regulations whatever; some of it appears on maps dated 1813. One of these districts is identified with the history of disease and mortality in the city, and its records are those of suffering and misery. Dr. Duncan, the first medical officer of health, recorded that these streets suffered severely in the great fever epidemic of 1847, and they were again severely visited in the great cholera epidemic of 1849, and it was in some of them that the earliest local cases appeared. For many years fever was never absent from the district, and although of late years the exertions of the Health Committee have reduced zymotic diseases to a minimum, the average death-rate in the district during the last three years has amounted to 42.1. The corresponding death-rate for the workmen's dwellings in Victoria Street and Juvenal Street was only 21.2. In one street the average death-rate was 65.3. The work of demolishing insanitary dwellings is going on steadily from year to year, but it is obvious that such a work can only be effected by gradual stages. Apart from the cost of purchasing the property the provision of fresh quarters for the displaced population has to be faced. That sufficient accommodation in the immediate neighbourhood cannot be found is obvious, but fortunately the changed conditions of life in large cities does away with the necessity of rehousing the displaced population in the same locality. Cheap and rapid locomotion all over the city is being supplied by the municipal electric tramways, and already the altered incidence of trade has led to many men being left at a considerable distance from their work. The best interests of the community will be served if the displaced population settle down on the outskirts of the city.

A notable fact in the city administration is the provision of free baths and washhouses in the poor parts of the city. Baths are provided for girls as well as for boys, and both continue to be used by increasing numbers. The practice of tubbing children in open-air baths is rapidly increasing, being especially carried out by parents on Saturday nights.

Taking the report as a whole, it forms a most valuable and accurate statement of a vast undertaking carried out in the face of many serious obstacles. Liverpool was the first town in the United Kingdom to appoint a medical officer of health, and its position as a centre of sanitary work is not unworthy of its history as a pioneer in that department.

MONTREAL.

Proposed Bureau of Public Health.—The Prevention of Tuberculosis in Cattle.

At the recent Session of the Dominion Parliament a number of resolutions were introduced which are of considerable interest to medical men. One proposed the establishment of a bureau of public health, modelled possibly after the Department of Public Health in France. Such a bureau would deal with sanitary and medical measures, particularly those relating to the prevention of the introduction of bubonic plague, the prevention of the spread of tuberculosis, and the care of the cases of leprosy now existing in different parts of the Dominion. Canada has at present comparatively small laboratory facilities under the care of the Government, and the splendid work done in such laboratories has emphasised the necessity of establising similar institutions here. In connection with this work, the subject of tuberculosis in cattle and man receives a still greater interest. The Committee on Agriculture has recently reviewed the experiments, which show that in a favourable area the complete extermination of tuberculosis in cattle is a definite possibility. It has been proposed to take a limited area like that of Prince Edward Island and there collect herds of absolutely healthy cattle. By the careful observation of these, and the painstaking examination of any animals later introduced, it is possible to keep such collections of cattle quite free from tuberculosis.

About a year ago the Legislature of Prince Edward Island passed "an Act respecting tuberculous cattle," which applies especially to the veterinary inspection of all cattle imported into this island. The important provisions of this Act are:

3. Every person importing or bringing [illegible] this Province either for breeding, grazing, feeding, or dairying purposes shall give immediate notice to the inspector appointed in pursuance of this Act, and every person who neglects to give such notice [illegible] a penalty of not more than $100.

4. All cattle imported or introduced into this Province accompanied by a certificate signed by an official veterinarian showing that they have been submitted to the proper tests and found free from tuberculosis, said certificate giving the date of testing, with a chart of reaction and a description of the cattle, with age and markings, and verified by affidavit if required that the certificate refers to the cattle represented, shall not be subject to detention in quarantine unless otherwise ordered by the inspector.

5. All cattle, when not accompanied by the certificate and affidavit, shall be detained in quarantine for one week under the supervision of the

inspector, and during such detention an inspection made and the tuberculin test applied.

6. Cattle found free from disease at the end of this period of quarantine will be released, but should there be found tuberculosis in any of such cattle tested aforesaid, such cattle shall be destroyed or disposed of as the inspector shall direct.

7. If any cattle are imported or introduced into this Province, or attempted to be imported or introduced contrary to the provisions of this Act, the same shall be forfeited, and shall be forthwith destroyed or disposed of as the inspector shall direct, and every person who imports or introduces, or attempts to import or introduce, any cattle contrary to the provisions of this Act, shall incur a penalty not exceeding $100 for every animal so imported or introduced.

Recent advices from Prince Edward Island in connection with the carrying out of the provisions of this Act show that practically all cattle introduced into the island at present are accompanied by a certificate, and that all cattle shippers and dealers are careful not to ship into the province any suspicious cattle. Moreover the percentage of tuberculous cattle in this province has fallen below that seen in any other province of the Dominion, being probably less than half of 1 per cent. The entire cattle population of this island is 75,000, and there are thus not more than 500 tuberculous cattle. The climatic and topographical conditions of the province are unsurpassed for the grazing of large herds and the breeding of fresh animals, making it in fact an ideal place for the supply of cattle to other tracts which are not in themselves fitted for this industry.

The yearly exportation of cattle to the United States from Canada is over 80,000, valued at a million and a quarter dollars, this valuation representing only average conditions. Should any one province in Canada, such as Prince Edward Island, succeed in eradicating tuberculosis from its cattle, it naturally becomes the purest breeding place for cattle in North America. It has therefore been proposed that the Government of the Dominion should assume entire charge of the cattle of Prince Edward Island, eradicate all tuberculous animals, and thus endeavour to render the entire cattle population of Canada non-tuberculous.

CORRESPONDENCE.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

Sir,—We have seen with much surprise that the special general meeting of governors and subscribers "to consider and determine the following question, that is to say, (1) whether the demand of the medical and surgical staff for direct representation upon the Board should be granted; and (2) whether it is desirable to hold a further inquiry into the condition of the hospital," has been fixed by the Board of Management for Saturday, August 11th. That date has been selected according to the Secretary-Director as representing "the earliest day permitted by the rules." Unfortunately, it falls in the very heart of the holiday season, when it will be impossible for any large proportion of the governors to attend the meeting. The great majority of the medical staff will also be away from town Under these circumstances, feeling that a full and fair consideration of the questions is impossible at this time, we have requested the Board of Management to postpone the meeting till the end of October, when an adequate attendance of governors can be secured, and have intimated to them that it is not possible for the medical staff to be represented at the meeting on August 11th, or to take any part in it. We would point out that any decision to be arrived at on August 11th cannot be final, and that we shall be ready at a meeting summoned at an appropriate time to place fully before the governors our view of the questions at issue.

We cannot venture to trespass on your space to the extent which would be necessary to point out all the statements in the letter of the Secretary-Director in the *Times* of August 3rd, which are calculated to mislead; but it appears to us distinctly necessary to object to what is represented as the "clear issue" and also to the apparent intention to limit the scope of the inquiry to the present condition of the hospital. What is needed is, as described by us in our letter of July 27th, "a full and searching inquiry into the constitution and management of the hospital, to be carried out by an independent and at the same time competent body."—We are, etc.,

J. Hughlings Jackson, M.D., F.R.S., F.R.C.P.,
Thomas Buzzard, M.D., F.R.C.P.,
Consulting Physicians to the Hospital.
R. Brudenell Carter, F.R.C.S.,
Consulting Ophthalmic Surgeon.
H. Charlton Bastian, M.D., F.R.S., F.R.C.P.,
W. R. Gowers, M.D., F.R.S., F.R.C.P.,
David Ferrier, M.D., F.R.S., F.R.C.P.,
J. A. Ormerod, M.D., F.R.C.P.,
Physicians to In-patients.
Charles E. Beevor, M.D., F.R.C.P.,
Howard H. Tooth, M.D., F.R.C.P.,
James Taylor, M.D., F.R.C.P.,
J. H. Risien Russell, M.D., F.R.C.P.,
Physicians to Out-patients.
W. Aldren Turner, M.D., F.R.C.P.,
Frederick E. Batten, M.D., M.R.C.P.,
Assistant Physicians.
Felix Semon, M.D., F.R.C.P.,
Physician for Diseases of Throat
Victor Horsley, F.R.S., F.R.C.S.,
Charles A. Ballance, F.R.C.S.,
Surgeons.
R. Marcus Gunn, F.R.C.S.,
Ophthalmic Surgeon.
A. E. Cumberbatch, F.R.C.S.,
Aural Surgeon.

[The names of absent members have been added by authority.]

August 6th.

THE REPORT OF THE DECAY OF TEETH COMMITTEE.

Sir,—In reading the report of the Decay of Teeth Committee, I was gratified to find that to a large extent the Committee had abandoned many prevalent theories, and had very largely accepted my views on this subject. I intend to confine my remarks more especially to the essential part of the report, namely, causes of the increase and prevalence of the disease.

Under the heading "Increase of Dental Caries in the Race," the Committee says, "Heredity must be regarded as a predisposing cause of dental caries. In practice many cases are noticed in favour of this opinion, the tendency being increased through means of a similarity of environment, including the food, habits, and degree of personal cleanliness."

Except one believes in the inheritance of acquired characteristics, it is incorrect to say that heredity can by any possibility be regarded as a predisposing cause of the increase of dental caries. Nor is it at all correct to say that the heredity tendency is increased through similarity of environment. One might as well say that the environment was increased by heredity. Heredity and environment are very frequently confused in this way. Possibly there has been a confused attempt to epitomise what I say on the subject. My contention was that caries was not hereditary, but that hereditary peculiarities of the teeth which might favour the lodgment of food and micro-organisms do exist and do predispose to caries; and that the environment of the teeth and consequent liability to caries is similar in certain families and races on account of similarity of dietetic and other (for example, use of toothbrush) customs.

With regard to the theory of the degeneracy of teeth so much in evidence in our best textbooks (for example, Mr. Tomes and Messrs. Smale and Collyer), I am glad to see the Committee is silent on this point. I presume it hardly deems it necessary to condemn this theory, although the arguments against it might have been recapitulated as the belief is so very prevalent. Those who have observed that the belief in the insufficiency of the lime salts cannot account for the apparently hereditary character of the disease, have hitherto either sought for it in the kind of calcification or molecular constitution of the lime salts, or have sought for it in the hereditary nature of the oral secretions. (Tomes, Black).

When we pass to the report with regard to civilisation, my explanation of how caries is prevalent among the civilised is fully accepted.[1]

With regard to the detergent action of fibrous foodstuffs,

[1] *The Cause and Prevention of Decay in Teeth*, p. 32, *et seq.*

I am glad to see that my contentions on this point have also been accepted.

The report says: "Comparing the condition of the mouth after a meal of flesh, and one after some form of carbohydrates, in the one case the mouth is comparatively clean, a few fibres perhaps remaining between the teeth, which may be easily removed; in the other case the interstices between the teeth and the fissures of the teeth are packed with soft masses of fermentable material, difficult, and in fact impossible, to remove entirely, and thus presenting all the conditions most favourable for the production of lactic acid." This is the fact I pointed out as the result of my experiments and observations on the relative lodgeability of foodstuffs.[2]

I think it must have been a want of recognition of those important facts and the prevalent fashion of classifying foodstuffs into proteids, carbohydrates, etc., which led Mr. J. R. Mummery to blame rather the hygienic conditions under which certain races lived than their diet. Indeed, looked at from a chemical point of view, the kinds of foods consumed by savage races would rather indicate that it was *not* the foodstuffs which were to blame for the prevalence of dental caries. I believe that it has been a slavish following of Mr. Mummery's exceptionally valuable researches which has prevented the recognition of the fact that the prevalence of dental caries is of dietetic origin.

A few references to the source or sources of the important conclusions referred to in the report would have been helpful to those who wish to pursue the subject further; and considering that references are given for what is contained in the less essential and better known part of the report, the omission is conspicuous.

With regard to the report as a whole, it is regrettable that the essential part which the Committee were appointed to report upon has been so neglected and obscured by the introduction of much which was well known and generally accepted. What was wanted to be known was the cause of the prevalence of the early decay of teeth; the medical world wanted to know why the teeth of the present day were so very subject to decay. When search was made in dental textbooks it was seen that the direct cause was well known and beyond dispute, but they also found many theories which were obviously incorrect, and utterly unable to account for the present-day prevalence of the disease.

I think, too, that the Committee might have mentioned the cause, or mentioned that there was a theory which explained, or attempted to explain, the cause of the *early* decay of teeth, as it was "in view of the early decay of teeth" that the Committee was appointed.

However, it is gratifying to find that the report, so far as it goes, recapitulates the gist of my investigation, as it is only a few weeks since my contention was characterised as an "ingenious theory" which was "highly improbable."

If, as the report might lead one to suppose, the Committee came to these conclusions independently of my investigations, it will be at least as interesting to dentists as the independent discovery of Neptune by Adams and Leverrier is to astronomers.—I am, etc.,

Kingston-on-Thames, July 30th. J. Sim Wallace.

*** We may remind Dr. Wallace that the report has no claim to be an exhaustive monograph, in which authority for every statement would be appropriate. It is intended to arouse interest in the minds of practitioners of medicine, to invite their co operation, and to save them from traversing ground already fairly well investigated. It is true that authorities are quoted for some facts and theories, but by no means for all. Dr. Wallace's book does contain one suggestion as to a possible means of protection which we believe to be entirely original, and had this been alluded to, it should, and no doubt would, have been coupled with his name.

But this is only in the stage of untested suggestion, and is not mentioned; whereas the matters to which he seems especially to refer are to a very large extent common knowledge. Very likely the chief compiler of the report may have been influenced by reading Dr. Wallace's clear presentment of facts pretty well known, and by his inferences from them, but the comparison made in the last paragraph of the letter to the simultaneous discovery of something quite new seems rather far-fetched. At all events, we feel sure that the Committee would not have had the smallest desire to appropriate any man's work without due acknowledgment.

[2] *Ibid.*, pp. 8, [illegible]

THE TREATMENT OF CHRONIC GLAUCOMA.

Sir,—In the account of the discussion on Mr. Cross's paper on the Treatment of Chronic Glaucoma in the British Medical Journal of August 4th, the following remarks are attributed to me: "Mr. Bower had not experienced good results from operating, and he had kept patients under eserine and cocaine with practically no deterioration of vision for a very long time."

As this is very far from what I really did say, I trust you will allow me to correct what would otherwise give rise to an entirely erroneous impression.

My results in the operative treatment of chronic glaucoma have been, as far as I am aware, neither better nor worse than those of other operators, and in a fair proportion of my cases the disease has apparently been arrested, and what remaining vision there was has been preserved. What I did say, however, was that it would be interesting to know what percentage of cases of chronic glaucoma were permanently cured after operative measures, as my impression was that eventually, after a longer or shorter period of time—it might be years—in the greater number of cases which might be looked upon as cured the ultimate end was gradual deterioration of vision terminating in blindness.

In all but a few exceptional cases I invariably recommend iridectomy in chronic glaucoma provided the central vision is fairly good and there is not too much contraction of the field, but one is sometimes perhaps inclined to rely for too long a time on myotics in the very early stage of the disease, lest after the performance of iridectomy with its possible resulting astigmatism the sight might be left rather worse than it was before the operation, and so cause the patient to be disappointed with the result and dissatisfied with the surgeon.

Mr. Cross's suggestion to perform sclerotomy rather than iridectomy in the very early stage of the disease is, I think, a valuable one, as there would probably be less disturbance of vision from that operation than where a large piece of iris was removed, and iridectomy could always eventually be performed if necessary.

The statement that I "had kept patients under eserine and cocaine with practically no deterioration of vision for a very long time" is also incorrect. I merely mentioned one case which had been under my care for at least six years where glaucoma had been kept in abeyance during the whole of that time by the use of myotics. She always refused operation, but said she would consent to iridectomy if the sight should get worse, which it has not done up to the present time. She had already lost one eye from glaucoma, which naturally made one not over-anxious to operate on the remaining eye if it could be avoided. Such cases, however, are rare, and should never prevent us from advising an operation in chronic glaucoma when once the diagnosis is established.

I should not have troubled you with this letter were it not that the operative treatment of chronic glaucoma is not now, as far as I am aware, open to question, so that the remarks erroneously attributed to me are entirely contrary to what is now well-established fact.—I am, etc.,

Gloucester, Aug. 4th. E. Dykes Bower.

PURIFICATION OF SEWAGE AT LEICESTER.

Sir,—In the British Medical Journal for the week ending July 21st you have an editorial on the "Purification of Sewage at Leicester," dwelling mainly on the results obtained from what was supposed to be plant laid down on the "septic tank" principles.

I have read Mr. Mawbey's very interesting report to his Council with the valuable results given in it, but not one of the experiments has been carried out according to the true guiding principles embodied in the "septic tank system." So I would maintain that the second head line of the article in question, namely, "Apparent Failure of the Septic System," does not describe the case at all. All that Mr. Mawbey says is that in his opinion, as the result of the experiments he has carried out, Process No. 7—including a closed detritus tank, clarifying bed, and filtration through old pasture land—gives the best results in his hands: at the same

time, in speaking of other experiments, he unfortunately uses the term "septic tank" to indicate that his settling tank was covered. I would point out that the "septic tank system of sewage treatment" is not limited to the use of a large covered tank only but comprehends the whole of the methods and plants the promoters of this system have adopted; this I maintain has not been tried in its entirety at Leicester, and until this has been done it cannot be said that the "septic tank system" is unable to purify the sewage of Leicester. Furthermore, the promoters of the septic tank system had no intimation or knowledge of these experiments until after they had been carried out. Is it fair to condemn a particular piece of machinery simply because one built by others than the patentees will not do the work ably carried out by those built by the patentees themselves?

Further, I would point out that the results obtained from the "processes" which come most nearly to the septic tank system are really better than those from the process (No. 7) recommended. In the estimate of purification (p. 61) from the chemical standpoint, reduction in "albuminoid ammonia" and in oxygen absorbed are alone taken into account, and, as regards both of these, chemists are entirely in ignorance as to what is being estimated, except in so far as, generally speaking, the greater the amount of organic matter present, the higher are the figures both for oxygen aborbed and for albuminoid ammonia. As regards nitrates, we are in a totally different position; here we are dealing with a known entity, and can estimate very accurately the amount formed. If, then, good quantities of nitrates are found in effluents, good work to a corresponding degree has been done in the sewage works: and in the light of this should the results be read. As regards the oxygen absorbed and the albuminoid ammonia, if these figures are somewhat higher than in another process dealing with the same sewage, while at the same time there has been a greater formation of nitrates in the former, it probably means that the organic matter in the sewage has been purified to a stage in which they give off more ammonia by treatment with alkaline permanganate, and at the same time would also show a higher figure for oxygen absorption. And this has been proved by the results obtained at Manchester.

The formation of nitrates in the Leicester experiments has been most active in those cases in which the detritus tank or settling tank, or both, have been closed, and the highest figure for nitrates was obtained in that experiment which came nearest to the arrangement used by the "septic tank" promoters, namely, Process No. 16, while the figures for albuminoid ammonia and for oxygen absorbed are but little higher than in the process recommended, No. 7. I would submit, then, that even better results would have been obtained had the sewage at Leicester been treated on "septic tank" principles. As regards the formation of sludge, figures are unfortunately not given to show whether the amount was increasing or diminishing. It is possible that as the "closed tank" had been used as such comparatively only a short time, the deposit had reached its maximum only at the time the experiment was stopped, and that had it been continued, even for years instead of weeks, the amount of deposit would have remained the same or even slightly diminished, in spite of the increase of harmless mineral ash.

I must not trespass more severely on your space, although there are many other points in the report to which I should like to refer, but I trust I have said sufficient to justify my statement that there has been no even apparent failure of the "septic tank system" at Leicester.—I am, etc.,

J. MIDDLETON MARTIN, B.A., M.B.Cantab.,
Stroud, Gloucester, July 28th. D.P.H.Camb.

P.S.—Since writing the above I have seen your review of Dr. Rideal's new book on *Sewage* in which you again refer to the experiments at Leicester. "From it (the Leicester report) we gather that the interposition of a septic tank made no appreciable difference in the results obtained from filters that were designed with a view to the development of bacterial action." How then, may I ask, do you explain the fact, as demonstrated by these experiments, that there has been greatly increased oxidation of organic matter, evidenced by the nitrates produced—the aim, as I take it, in any real attempt to purify sewage—in those processes which more nearly approached that adopted by the "septic tank system?"—J. M. M.

THE MOST FREQUENT CAUSE OF "SUMMER DIARRHŒA."

SIR,—We have all sorts of reasons given us as a cause of "summer diarrhœa," such as the increased temperature, eating unripe fruit, drinking sour milk, etc. These may sometimes be a cause, but I have never yet seen a case of "summer diarrhœa" which I felt certain was due to any of these causes. On the other hand, I have hardly ever seen a case of "summer diarrhœa" which I could not trace to a chill, and I contend that it is the fall of temperature following the heat which is the actual cause of the diarrhœa. It is a purely mechanical process. A hot day occurs, an unusual amount of liquid food is taken, and as long as the temperature keeps up evaporation from the skin disposes of the increased intake of fluid; the temperature falls a few degrees, the bowels and kidneys are suddenly called upon to do an unusual amount of work; this causes irritation of the intestinal glands, and also fills the bowels with an undue amount of fluid. There can be only one result—diarrhœa. This explains why so many people commence with diarrhœa in the early morning. Again, on a hot day, after drinking an unusual amount, an individual sits in a draught or in a cool garden, the skin ceases to eliminate the necessary amount of sweat and the result is the same. I am absolutely convinced that if an individual be kept in an even and continuous temperature, let it be ever so high, he will not get diarrhœa, even if he takes unripe food. And, by the bye, who does take unripe food, or sour milk, or bad food? Certainly very few people, and yet diarrhœa is very common.

In the close slums of London, diarrhœa probably may be due to overcrowding, but I fancy it is probably due to the inhabitants thereof trying to get cool, and succeeding. Children, even babies, are covered lightly at bedtime because "it is so hot," but in the night the temperature falls, the child gets diarrhœa as above explained, and the milkman or some poor harmless microbe gets blamed. I have now held this idea six years, and as sure as the temperature falls I never fail to get ready my "diarrhœa mixtures"—I know they will be wanted as surely as I know that the sun will rise each morning.—I am, etc.,

Leytonstone, Aug. 4th. ARTHUR TODD-WHITE.

THE CONTAGIOUSNESS OF LEPROSY.

SIR,—It may be of interest to refer to a case I saw last year in the leper hospital at Trondjeim. A man, aged 38, left the Christiania district when 21 for the United States. After seven years there, in an inland farming district, he became a leper; so that his present condition—blind, and with feet, legs, arms, and face affected—began or was first noticed ten years ago. He was not aware of any case in his own family or in the district he had emigrated to; but, as is customary, clothes had been taken to him from Norway by other emigrants. One must presume either that he took the bacillus lepræ with him and nourished it in a dormant state for seven years, or that it was taken out to him in clothes at a later period. Possibly the hardships and insanitary conditions of early life in Norway might have rendered him a "suitable soil" for leprosy or tubercle. The poor of Norway (more especially on the coast in northern districts, whence most lepers come) are badly fed and badly housed. A coarse kind of bread, with milk and the poorer kinds of white fish, form the dietary. Meat, eggs, fish such as salmon, and green vegetables are, for them, articles of merchandise not of food. Even in the beautiful Lofoden Islands one noticed marked anæmia in an otherwise pretty and well-made child of twelve. Tuberculosis is common and on the increase; leprosy, since it has been isolated, is decreasing. It seems, therefore, not difficult to account for "susceptibility," and no doubt, as Sir Hugh Beevor says of tubercle, "to avoid susceptibility is to avoid infection." But the bacillus plays a part, difficult though it be to track it to its lair.

One noticed in the leper hospital several of those patients who could still use their hands engaged in "wool-combing." What becomes of this wool I did not ascertain, nor whether special precautions were taken to sterilise it. I merely mention the fact, and quote the case and such history of it as could obtain as suggestive of "contagion," and a possible

source of such, while the "food element" one would regard as "paving the way" equally to leprosy and tuberculosis.—I am, etc.,

Manchester, July 16th. T. Carter Booth, M.D.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE NAVAL MEDICAL STATISTICS OF 1898.

In the British Medical Journal of June 30th an article was published on the Health of the Royal Navy, Past and Present, in reference to the views expressed in the forty-fourth report of the Mission to Seamen Society. In an article on the Naval Medical Statistics, 1898, which appeared in a recent issue of the *United Service Gazette*:

"Between 15 and 25 years" is spoken of as "the sickly age." Though the recently entered naval cadet and recruited boy entering on a new life and surroundings, and in the latter case a new dietary, which in the case of the Scotch boys' training ship *Caledonia* must be a special factor, are very liable during their period of training to suffer from measles, rubella, scarlet fever, mumps, simple continued fever, and other ailments, and injuries incidental to their new life. This will account for the very high, indeed the highest, comparative ratios of daily sickness of the Home Station ships, as in the case of the *Caledonia* and *Ganges* especially, which in the period under consideration were 61.31 and 47.74 respectively; while that of the *Britannia*, the training ship for naval cadets, was 29.13 per 1,000 of average force daily. Midshipmen, sub-lieutenants, lieutenants, ordinary and able-seamen between the ages of 18 and 25 years cannot, however, be classed as "sickly," but, on the contrary, are, as a rule, remarkably healthy and robust.

Regarding the health of the boys' training establishments, the *Impregnable* and the *St. Vincent*, the largest and the second largest ships so employed, on the other hand, furnish the remarkable small daily sick ratios of 2.97 and 2.27 per 1,000 respectively.

This remarkable comparative difference in the daily sickness of the naval boys' training ships is no new experience, and we believe we are correct in saying that the *Impregnable* has generally compared favourably with the *Lion*. Both are training establishments at Devonport; the remarkable contrast of 2.97 and 17.74 per 1,000 we do not consider can be accounted for by a comparison of the "police reports and the religious organisation on board," which must have varied in a period of years. Is it possible that the larger ship is the most sanitary and suitable for these boys' training establishments—the *Impregnable* being a vessel of 6,657 tons while the *Lion* consists of two vessels of 3,842 and 3,232 tons? We are not acquainted with the height between decks of these respective ships, which are all wooden ships.

It is desirable that the period of from 15 to 25 years at present employed in naval statistics should be divided into two equal periods, from 15 to 20 and 20 to 25. The former period would include the special disabilities of naval cadets, boys, domestics, stokers, etc., entering on a new life which now gives an erroneous impression as to those occurring in the second period suggested for these statistics which included adult lives; our previous observations on the medical statistics under review would appear to justify this proposed reform. "The diseases directly proceeding from immorality" certainly are rarely met with among naval cadets or boys, though at a later age, unfortunately, this cannot be asserted, and these diseases undoubtedly contribute largely to the sickness and invaliding, and occasionally even to the mortality, in the later period of the first decade dealt with in the present health of the navy statistics.

We agree with the writer of the article that great benefit in this connection will result from an improved morality. The temptations offered to youths and men when on leave in our home and in foreign ports are undoubtedly a great danger to their health and efficiency. This has been fully recognised by the military authorities in reference to our forces recently sent for service in South Africa, and all efforts to safeguard the young when so exposed are deserving of every encouragement from naval and military authorities. Missions, sailors' and soldiers' institutes where established have already had very beneficial results.

As regards the variations of the ratios of the sickness in seagoing ships of the same squadron, their construction, administration, and the berthing of their crews have been known to produce such variations, and in some an "excused list" has been sanctioned consisting of men not physically fit for all their duties but capable of some duty, and, therefore, not entered on the sick list.

ROYAL ARMY MEDICAL CORPS.

The following have been discharged from hospital to duty:—Civil Surgeon F. G. Ralston, Major J. G. Black, Major A. P. Hart.

The undermentioned are returning home invalided:—Major Clements and Civil-Surgeon Holmden, per *Lake Erie*, left July 19th; Civil-Surgeon Stuart, per *Orcana*, left July 20th.

Lieutenants Stevenson L. Cummins, M.B., Joseph McArdle, M.B., Charles H. Hopkins, Lewis J. C. Hearn, M.B., Peter McKessack, M.B., John McD. McCarthy, M.B., Ernest Brodribb, John Poe, M.B., Henry L. W. Norrington, Hamilton G. F. Stallard, Robert D. Jephson, and Arthur W. N. Bowen, having completed three years' full pay service, are promoted to be Captains, July 28th. Most of these gentlemen have had war experience. Captains Cummins, Hopkins, and Jephson were in the Soudan campaign of 1898, and were at the battle of Khartoum, Captain Cummins being mentioned in despatches (British medal and Egyptian medal with clasps). Captains McArdle, Hearn, McKessack, McCarthy, Norrington, and Stallard were in the same campaign, receiving the British and Egyptian medals, Captain Hearn being also in the operations in Sierra Leone in 1898-9, for which he has the West African medal with clasp. Captain Stallard was also in the operations resulting in the final defeat of the Khalifa, when he had charge of the medical department of the Flying Column, and was mentioned in despatches.

The Christian name of Lieutenant James C. G. Macnab are as now stated, and not as given in the *Gazette* of April 3rd (British Medical Journal, April 7th).

Quartermaster and Honorary Lieutenant T. Bond is granted the honorary rank of Captain, July 30th.

Lieutenant-Colonel A. Walker Browne is placed on temporary half-pay on account of ill-health, July 14th. He was appointed Surgeon, August 5th, 1877; Surgeon-Major, August 5th, 1889; granted the rank of Lieutenant-Colonel, August 5th, 1897; and made Brigade-Surgeon-Lieutenant-Colonel, November 20th, 1899. He was in the Afghan war in 1878-80, and was in the engagements at Ahmed Khel and Urzoo (medal with clasp), and in the Soudan campaign in 1884 (medal with clasp and Khedive's star).

The following officers have been discharged from hospital in South Africa to duty:—Majors A. Wright and A. Kirkpatrick, Civil Surgeons A. Simpson Wells, Aldred R. Williams, T. H. Wells, T. T. Bark, and May, Quartermaster T. F. Brake.

INDIAN MEDICAL SERVICE.

The tenure of service as Principal Medical Officer Presidency District of Lieutenant-Colonel J. Young, M.B., Bengal Establishment, has been extended till March 31st, 1901, owing to the pressure on the medical service.

Captain John Stuart Stevenson, Bengal Establishment, died at Lucknow, of sunstroke, on July 20th, in his 28th year. He was the only son of Colonel W. F. Stevenson, R.A.M.C., who is now on service in South Africa, and joined the department July 29th, 1896, being made Captain three years later.

Surgeon-Major William Johnson Stuart, Bombay Establishment, retired, died at Gloucester Terrace, W., on August 4th, aged 81. He was a son of the late Bute Stuart, M.D., of Wisbech, Cambs. He served at the suppression of the mutiny at Aurangabad, in June, 1857, and the subsequent relief of Mhow. He was also engaged in the operations in front of, and the siege and capture of the fort of Dhar, in the actions in front of Mundesore, at tha battle of Guraria, and the subsequent capture of that village on November 23rd and 24th, 1857. He took part in the siege and storm of the fortresses of Chendari and Jhansi, the battle of the Betwa, the action at Kunch, the different actions on the banks of the Jumma ending in the capture of Calpi, the action of Morar, and the capture of Gwalior (medal with clasp).

THE VOLUNTEERS.

Surgeon-Lieutenant A. Little, M.B., 1st Volunteer Battalion the East Lancashire Regiment, and Surgeon-Captain S. A. Mugford, 2nd Volunteer Battalion the Essex Regiment, resign their commissions, July 25th.

The undermentioned Surgeon-Captains have resigned their commissions, from August 4th: E. Kingscote, M.B., Royal Wiltshire Yeomanry (Prince of Wales's Own Royal Regiment); A. G. Paterson, M.D., 1st Volunteer Battalion Princess Charlotte of Wales's (Royal Berkshire Regiment); W. A. Bond, M.D., 2nd London Rifles.

Surgeon-Lieutenants H. Waite (2nd West Riding of Yorkshire, Leeds, Artillery), J. R. I. Raywood (5th Volunteer Battalion the South Wales Borders), and G. Black, M.B. (2nd Volunteer Battalion the Royal Sussex Regiment), are promoted to be Surgeon-Captains, August 4th, Surgeon-Captain Black remaining supernumerary.

Captain C. H. Newby, 3rd (Duke of Connaught's Own) Volunteer Battalion the Hampshire Regiment, resigns his commission, and is appointed Surgeon-Lieutenant, August 4th.

Surgeon-Lieutenant James Godding, 15th Middlesex Rifles, resigns his commission, and is appointed Lieutenant, August 4th.

Mr. John J. R. Macleod, M.B., is appointed Surgeon-Lieutenant in the 19th Middlesex Rifles, August 4th.

ARMY MEDICAL SERVICE.

Surgeon Captain Hugh Rayner, M.B., Royal Horse Guards, is promoted to be Surgeon-Major in succession to Surgeon-Lieutenant-Colonel J. S. Forrester, deceased, June 19th. Surgeon-Major Rayner entered the service as Surgeon January 30th, 1886, was appointed to the 1st Battalion Grenadier Guards April 14th, 1886; transferred to the 3rd battalion in 1888, and thence to the Royal Horse Guards February 13th, 1897. He has no war record in the Army lists.

Surgeon-Major Arthur Croker died at Seaford, Sussex, on the 18th ultimo, aged 68 years. He was appointed Assistant Surgeon May 7th, 1858, made Surgeon-Major April 1st, 1873, and retired on half pay November 17th, 1878.

VOLUNTEER MEDICAL STAFF CORPS.

Surgeon Major W. Coates, the Manchester Companies, is promoted to be Surgeon-Lieutenant-Colonel on increase of establishment, and to command, August 4th.

Surgeon-Captain J. J. K. Fairclough, M.D., the Manchester Companies, is promoted to be Surgeon-Major, August 4th.

POINTS FOR THE HOSPITAL COMMISSION

R.A.M.C. writes: In addition to the points you [illegible] which the South African Hospitals Commission should take up I would beg inquiry into the following:—(1) The subordinate position of the Director-General, A.M.S., on the War Office Staff. He is not one of the principal officers of the army (see Queen's Regulations) like the Adjutant and Quartermaster-Generals, the Inspector-General of Fortifications and the Director-General of the Ordnance; he neither sits nor votes on War Office boards or councils, but may attend as a mere witness. (2) His inability to deal directly with the Secretary of State for War on sanitary matters; all orders of this kind are issued by the Quartermaster-General and Inspector-General of Fortifications. The A.M.S. should be in the same position as the Army Service Corps and permitted to perform its own duties; an officer of the latter is on the staff of every General in Command, under whom he carries on his duties directly. (3) Principal medical officers are seldom allowed to issue executive orders on sanitary matters directly under the General's sanction, but they have to filter through a subordinate member of the staff.

MEDICO-LEGAL AND MEDICO-ETHICAL.

Replies in this column are limited to questions affecting the legal interests and privileges of the medical profession at large. The column is not to be used as a medium for affording legal advice in private or personal matters as to which the applicant ought to consult his own solicitor.

From communications which we have received recently it appears to be necessary to repeat that we cannot undertake to express any opinion upon medico-ethical cases submitted to us unless we have before us statements by both parties to the controversy.

SALE OF PRACTICE.

PROVINCIAL would like to know the usual arrangement with regard to the income and expenses during the period of introduction when a practice is bought and the buyer boards and lodges in the house of the vendor. Does the buyer receive all the income from the practice and pay all the expenses, or are they shared during the period?

*** On the completion of the sale of the practice the buyer is entitled to all the income and must pay all the expenses. If he is boarded by the vendor he must pay the expenses of his board, and the latter may be entitled to certain payments while introducing the buyer, but this is usually settled in the agreement for the sale of the practice.

LANDLORD AND TENANT.

FAR AWAY writes to say that a small book, price 1d., published by Ward, Lock, and Co., Ltd., Salisbury Square, E.C., entitled, *Landlord and Tenant*, may be of use to "Surgeon."

THE EMPLOYMENT OF UNQUALIFIED ASSISTANTS.

VIGILANS draws attention to a case in which the chairman of a local bench of magistrates if stated to have reprimanded a local doctor for allowing a grave case of wounding to be treated by an unqualified assistant. On the face of it the case seems to be one which the General Medical Council will no doubt deal with in due time.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF EDINBURGH.

GRADUATION CEREMONIAL.

THE summer graduation ceremonial was held in the McEwan Hall on Saturday, July 28th, at 10 A.M., the Vice-Chancellor presiding.

The following 52 gentlemen received the degree of Doctor of Medicine. Those marked (***) were awarded gold medals for their theses, those marked (**) were highly commended for their theses, and those marked (*) were commended for their theses:

Doctor of Medicine.—C. C. Aitken, M.B., C.M., C. J. H. Aitken, M.B., C.M., *H. L. Apthorp, M.B., C.M., *J. A. Blair, D.Sc., M.B., C.M., **J. M. Brown, M.B., C.M., A. Brownlie, M.B., C.M. (with First Class Honours), ***W. W. Chipman, B.A., M.B., C.M. (*in absentiâ*), *F. H. A. Clayton, M.B., C.M., F. W. Collinson, M.B., C.M., *H. C. Colman, M.B., C.M., W. Craig, M.B., C.M., *H. W. Crosse, M.B., C.M., A. Dickson, M.B., C.M., **C. C. Easterbrook, M.B., C.M., *A. Edington, M.B., C.M., W. E. L. Elliott, M.B., C.M., ***D. J. Galloway, M.B., C.M. (*in absentiâ*), W. A. Gibb, M.B., C.M., W. E. Gibbons, M.B., C.M., *J. A. Gibson, M.B., C.M., **R. M'L. Gibson, M.B., C.M., R. W. Gibson, M.B., C.M., T. Gibson, M.B., C.M., *H. Grey, M.B., C.M., G. P. Henderson, M.B., C.M., **P. A. Hird, M.B., C.M., G. B. Hollings, M.B., Ch.B., E. S. Jackson, M.B., C.M., A. S. Lawrence, M.B., C.M., *W. D. Lawrie, M.B., C.M., H. J. Ley, M.B., C.M., *P. B. M'Nicol, M.B., C.M., *J. S. Martin, M.B., C.M., G. V. Miller, M.B., C.M., A. Mirza, M.B., C.M., *O. St. J. Moses, M.B., C.M., *B. E. Myers, M.B., C.M., *J. Nicoll, M.B., C.M., H. Nuttall, M.B., C.M., E. S. Nutting, M.B., C.M., *E. L. Owen, M.B., C.M., G. Peterkin, M.B., C.M., *J. C. Potter, M.B., C.M., F. G. Proudfoot, M.B., C.M., **F. W. H. Robson, M.B., C.M., D. R. Rowlands, M.B., C.M., G. A. S. Sander, M.B., C.M., *J. D. Slight, M.B., Ch.B., A. C. Smith, M.B., C.M., *J. N. Stark, M.B., C.M., J. E. Thomas, M.B., C.M., **P. G. L. Toit, M.B., Ch.B., ***D. Waterston, M.B., C.M.

Degrees of Bachelors of Medicine and Masters in Surgery (Old Regulations).—M. Barket, J. B. Boyd, T. G. Elsworth, O. A. Gee, J. T. Hurst, J. M. Jeffrey, R. A. M. Macleod, J. C. Mitchell (with Second Class Honours), A. D. Nimmo, R. Owen, M. C. C. Seton.

Bachelors of Medicine and Bachelors of Surgery—R. C. Affleck, H. Alexander, T. H. W. Alexander, Eliza M. Anderson, Mary Scott Anderson, H. E. Arbuckle, R. A. J. Asbury, B. H. S. Aylward, A. A. Ayton, A. J. Baird, M.A., H. Baird, S. A. Ballantyne, L. D. H. Baugh, J. H. Bell, J. M. Benson, H. Bishop, A. B. Black (Second Class Honours), J. S. Bostock, O. C. Bradley (Second Class Honours), L. P. Brassey, J. M'C. L. Brown, M.A., L. Bruce, A. Brydon, G. F. Buist, G. B. Butt, J. P. Campbell, M. Campbell, M.A., S. M. D. Campbell, G. S. Carmichael (First Class Honours), Violet Alice Penrose Coghill, J. Craig, L. Crossley, H. B. Dodds, J. P. Douglas, C. H. Durrant, W. Eadie, R. S. Ellis, C. H. Elmes, J. S. Enslin, D. R. Evans, E. Ewart (Second Class Honours), D. J. Fergusson, A. Fleming, B. G. Forman, Catherine Fraser, C. Fraser, M.A., A. Frew, W. E. Frost (First Class Honours), Y. Fukuda, J. S. Geikie, W. Girdwood, A. E. Goldie, G. W. Guthrie, G. H. Hanna (First Class Honours), F. Hardie, N. E. J. Harding, H. Harris, T. Henderson, D. Heron, Eleanor Hodson, Katie Welton Hogg, B.A., H. J. Hoile, M.A., L. J. Hood, W. Hutchison, F. F. C. Jagger, E. B. Jamieson, J. G. S. Jamieson, M.A. (Second Class Honours), J. C. Kennedy, F. K. Kerr, H. C. Keun, S. M. de Kock, G. R. Laing, L. Laurie (Second Class Honours), R. G. Leach, C. G. S. Leeds, G. H. Lewis, R. J. M'Clelland, C. B. M'Conaghy, J. G. M'Dougall (Second Class Honours), Sara Lyle M'Elderry, Elizabeth M'Elney, A. N. M'Hattie, J. H. M'Kee, A. J. MacKenzie, D. S. MacKnight, R. C. Maclachlan, Harriet Joanna Campbell Maclaren, M.A., J. H. M'Lean, D. M. MacLeod, J. M'C. A. Macmillan, M.A., Elizabeth Macrory, A. A. Martin (Second Class Honours), H. Mason, F. C. Matthew, M.A., Mary Jenny Menzies, H. C. Miller, M.A., J. B. Milne, R. M. Mitchell, Janet Ainslie Shiells Mouat, J. Munro, Florizel de Lorme Myers, H. C. Nixon, Caroline Elizabeth O'Connor, J. C. Parker, N. Patterson, C. B. Paul, J. Pender (First Class Honours), Mary Churchill Pepper, J. B. Primmer, J. R. Prytherch, S. Rattray, P. C. Rayner, J. L. Rentoul, O. L. Rhys, Catherine Mary Richardson, L. C. P. Ritchie, T. R. Robertson, W. Rogers (*in absentiâ*), R. A. Ross (First Class Honours), W. C. Ross, A. J. Ryle, Laura Stewart Sandeman, R. A. Savage, T. B. H. Scott, W. S. Scott, A. K. S. Shand, H. D. Shepherd, T. S. Shepherd (Second Class Honours), S. R. Sibbald, F. D. Simpson, W. Sloss, H. O. Smith, C. B. Snow, B.A., B.Sc., C. E. Southon, H. M. Speirs, A. D. Spence, Eleanor Rosina Sproull, T. G. Stewart, C. P. Strong, F. T. Thompson, J. Thornhill, J. H. Thornley, A. Trotter (second Class Honours), G. R. Turner, K. H. H. Uffmann, W. Wallace (Second Class Honours), A. G. Watson, A. S. Watson, N. S. Wells, G. D. Whyte, F. M. Wigg, A. J. Williamson, T. J. G. Wilson, A. E. B. Wood, A. M. Wood (First Class Honours), G. Wright (Second Class Honours), J. H. Wrightson, J. C. Zuidmeer.

The following Gold Medals, Scholarships, and Prizes were then handed to the successful winners: Thesis Gold Medallists: W. W. Chipman, M.D., D. J. Galloway, M.D., and D. Waterson, M.D. Ettles Scholarship: R. A. Ross, M.B., Ch.B. Beaney Prize in Anatomy and Surgery: G. C. Carmichael, M.B., Ch.B. Freeland-Barbour Fellowship in Anatomy, Physiology, and Pathology, J. Pender, M.B., Ch.B. Allan Fellowship in Clinical Medicine and Surgical Surgery, G. S. Carmichael, M.B., Ch.B. Mouat Scholarship in Practice of Physic, E. Ewart, M.B., Ch.B. Stark Scholarship in Clinical Medicine, G. Lyon, M.B., Ch.B. Gunning Victoria Jubilee Prize in Materia Medica, E. F. Bashford, M.B., Ch.B. Gunning Victoria Jubilee Prize in Obstetrics: A. C. Sandstein, M.B., Ch.B. Buchanan Scholarship in Gynæcology, F. D. Simpson, M.B., Ch.B. James Scott Scholarship in Midwifery, W. E. Frost, M.B., Ch.B. M'Cosh Graduates and Medical Bursaries, J. C. Mitchell, D.Sc., M.B., C.M. Anderson Henry Prize in Botany, C. R. Gibson. Cameron Prize in Therapeutics, W. M. Haffkine, C.I.E., for his work in preventive inoculation for plague.

The degree of D.Sc. in the department of Public Health was conferred on A. D. Webster, M.D., B.Sc.

The degree of B.Sc. in the department of Public Health was conferred on G. Dick, M.B., Ch.B.; O. St. J. Moses, M.D.; P. Murison, M.B., C.M.

The Vans Dunlop Scholarship in Chemistry has been awarded to J. K. H. Inglis, M.A., B.Sc.; Baxter Scholarship in Physical Science, D. Drysdale M.A., B.Sc. (*vice* J. K. H. Inglis, M.A., B.Sc., resigned); Baxter Scholarship in Natural Science, C. M. Campell, M.A., B.Sc.; Mackay Smith Scholarship in Chemistry, J. Falconer, M.A.

The Promoter's address to the graduates was then given by Professor Charles Hunter Stewart, of the chair of Public Health and Sanitary Science. He discussed therapeutic or curative medical science, and then the not less important prophylactic or preventive methods. He showed that the science of bacteriology enabled us to study the micro-organisms.

DEGREES OF M.B. AND CH.B.—The following passed the several examinations for these degrees:

First Professional.—F. Ali, W. L. L. Alston, L. Anderson, W. W. Anderson, R. G. Archibald, J. Arthur, N. H. Beath, C. A. Bennet, J. G. Briggs, W. A. Brown, B.Sc., G. G. Buchanan, W. C. Burton, E. E. Cassaday, R. V. Clark, M.A., A. R. Douglas, C. B. Drew, P. el Karey, J. Fairbairn, M. Davies, A. B. Flett, A. J. Gardner, W. L. M. Goldie, R. G. Gordon, P. Hallam, D. J. Hamman, F. M. Harper, A. O. Hooper, W. Hume, J. Hunter, A. Hutley, B. Jex-Blake, S. Khan, E. A. King, W. E. Knight, H. Kraemar, V. Langmore, A. Leach, D. Lorimer, A. W. B. Loudon, W. F. Macdonald, D. Mackinnon, S. W. Maclean, J. J. M'Millan, E. L. Meynell, R. C. Monnington, A. E. Morton, E. J. Morton, P. H. Mules, R. S. Munro, F. O'Neill, Sophie Palmer, H. Porter, E. C. Prichard, A. M. Pringle, A. M. Pryce, A. H. Rabagliati, J. J. Redhead, E. M. Reece, R. E. Russell, C. W. V. Rutherford, D. Sandler, M. Sinclair, G. W. R. Skeen, G. D. Sloan, D. W. Standley, E. Stevn, G. C. Trotter, P. Vickers, J. F. de S. de Villiers, G. Wight, C. E. Wood.

The following candidates have passed the Second Professional Examination for the degrees of M.B., C.M., under the Old Regulations: P. E. H. Guiseppi, J. Wallace, B.Sc.

Third Professional.—D. M. Aitken, M.A., R. V. C. Ash, J. W. Barrack, E. S. Brett, D. G. Carmichael, A. W. S. Christie, R. V. Clark, M.A., H. L. Clift, W. J. Dunn, O. J. Evans, A. H. Firth, G. A. Forrest, R. Hamilton, P. I. Hay, J. Jamieson, G. A. Jolly, E. W. Lewis, C. H. Lindsay, S. Lyle, Harriet E. M'Cloghry, H. K. Macdonald, W. M'Farlane, N. F. MacHardy, G. M'Neill, T. Mill, R. Morison, W. Murray, J. G. Peebles, E. T. Potts, L. T. Price, F. L. Rigby, J. S. E. Robertson, A. L. Roxburgh, G. W. R. Skeen, C. W. Somerville, B. A. Spence, C. S. Stevenson, I. S. Stewart, G. C. Struthairn, J. Sullivan, H. P. Thompson, G. I. Tyrrell, A. G. Waugh, Ada Wilkinson.

THE following passed the recent first, second, and third professional examinations for Degrees in Medicine and Surgery:

First Professional.—M. I. Ali Khan, J. Allan, D. I. Anderson, C. T. Ayana, E. A. Aylward, J. W. H. Babington, R. B. Barnetson, J. R. Bartholomew, W. J. Breson, B. Baty, W. P. Beattie, D. W. Boswell, F. T. Bowerbank, F. R. Bremner, M.A., D. Brown, W. S. M. Brown, L. G. Bruce, G. L. Brunton, Mary T. Cameron, T. F. Campbell, T. E. Carlyle, V. T. Carruthers, Mildred M. L. Cathels, R. A. Chapman, W. P. Chrystall, D. M. C. Church, Lizzie M. S. Clark, J. Clarke, M. L. Cohen, B.A., A. G. Coulbe, T. F. Dowson, J. Craw (with distinction), G. A. Davies, R. Donaldson, M.A., S. E. Douglas, C.I.E. Dumanoire,

E. J. Elliot, H. Ferguson, J. M. R. Flament, W. H. Forsyth, W. J. Fraser, N. J. H. Gavin, H. V. Goldstein, Eleanor A. Gorrie, P. Gosnold, B.A., T. Gowans, J. M. Graham, W. Grant, W. W. Greer, E. J. Griffiths, Elizabeth C. Gunn, T. M. Guthrie, P. A. Harry, A.W. Hogg, M. A. Huk, M. M. Huk, J. H. Hume, K. U. A. Inniss, Ada Jackson, J. Jardine, W. Jarvis, J. M. Johnston, J. H. H. Joubert, G. P. Joy, S. F. Jung, G. F. S. Landon, F. E. Larkins, S. W. S. Leary, A. G. Leitch, A. J. Lewis, C. W. Lewis, B.A., J. Lockhead, M.A., D. H. C. MacArthur, S. A. M'Clintock, W. M'Conaghy, J. S. MacDonald, J. W. M'Ewan, J. P. M'Gowan, M.A., H. R. Macintyre, J. Mackenzie, Amy M. Mackintosh, W. MacLaren, N. M'Leod, A. MacRae, M. M. Mamourian, L. S. Milne, K. A. Moody-Stuart, W. M. Munby, D. S. Murray, A. W. Neill, C. D. O'Neal, A. Pampellonne, B. Pickering, Florence M. S. Price, D. S. R. Rao, H. S. Reid, Margaret H. Robertson, T. Robertson, J. Robinson, B.Sc., S. C. Roy, C. S. Ryles, A. L. Shepheard Walwyn, F. R. Sinton, L. H. Skene, C. J. Smith, E. H. Smith, G. M. Smith, R. A. L. van Someren, P. Steele, G. Stewart, H. M. Thompson, A. Todrick, Rose C. Townsend, Caroline Twigge, G. H. Ussher, F. L. de Verteuil, W. Waddell, T. Walsh, R. H. Watt, W. H. Welsh, D. W. Wilton, W. B. Wishart, T. Wright, Margaret C. W. Young, M.A.

Second Professional.—F. Ali, W. L. L. Alston, L. Anderson, W. W. Anderson, R. G. Archibald, J. Arthur, Nina H. Beath, Constance A. Bennett, J. G. Briggs, W. A. Brown, G. G. Buchanan, W. C. Burton, E. E. Cassaday, R. V. Clark, M.A., M. Davies, A. R. Douglas, C. B. Drew, P. El-Karey, J. Fairbairn, A. B. Flett, Agnes J. Gardner, P. E. H. Guiseppi, W. L. M. Goldie, R. C. G. P. Hallam, D. J. Hamman, Frances M. Harper, A. O. Hooper, W. Hume, J. Hunter, A. Hutley, Bertha Jex-Blake, S. Khan, E. A. King, W. E. Knight, H. Kramer, V. Langmore, A. Leach, D. Lorimer, A. W. B. London, W. F. Macdonald, D. Mackinnon, S. W. Maclean, J. J. M'Millan, E. L. Meynell, R. C. Monnington, A. E. Morton, E. J. Morton, P. H. Mules, R. S. Munro, F. O'Neill, Sophie Palmer, H. Porter, E. C. Prichard, Agnes M. Pringle, A. M. Price, A. F. H. Rabaghiati, J. J. Redhead, E. M. Reece, R. E. Russell, C. W. V. Rutherford, D. Sandler, M. Sinclair, G. W. R. Skeen, G. D. Sloan, D. W. Standley, E. Steyn, G. C. Trotter, P. Vickers, J. F. van de S. de Villiers, J. Wallace, B.Sc., G. Wight, E. E. Wood.

Third Professional.—D. M. Aitken, M.A., R. V. C. Ash, J. W. Barrack, E. S. Brett, D. G. Carmichael, A. W. S. Christie, R. V. Clark, M.A., H. L. Clit, W. I. Dunn, O. J. Evans, A. H. Firth, G. A. Forrest, R. Hamilton, P. J. Hay, J. Jamieson, G. A. Jolly, E. W. Lewis, C. H. Lindsay, S. Lyle, Harriet E. M. M'Cloghry, H. K. Macdonald, W. M'Farlane, N. F. MacHardy, G. M'Neill, T. Mill, R. Morison, W. Murray, J. G. Peebles, E. T. Potts, L. T. Price, F. L. Rigby, J. S. E. Robertson, A. L. Roxburgh, G. W. R. Skeen, C. W. Somerville, B. A. Spence, C. S. Steavenson, I. S. Stewart, G. C. Strathairn, J. Sullivan, H. P. Thomson, E. J. Tyrrell, A. G. Waugh, Ada Wilkinson.

VICTORIA UNIVERSITY.

Second Examination in the Faculty of Medicine.—The following candidates passed the Examinations in the subjects undermentioned:

Anatomy and Physiology.—P. W. Ashmore, Yorks.; C. H. Bromhall, Owens; S. Brown, Univ.; T. Brown, Yorks.; W. J. Cox, Univ. Coll., Sheffield; J. A. Davenport, Owens; R. T. Dobson, Univ.; W. P. Grant, Owens; H. S. Harling, Yorks.; R. Heathcote, Owens; E. W. Henstock, Owens; B. Herald, Owens; G. R. Hitchin, Owens; E. F. Hoare, Univ.; C. H. Hopwood, Owens; G. H. Leigh, Owens; H. McManus, Univ.; W. Rotherham, Univ.; J. A. C. Roy, Owens; S. H. Ryan, Owens; W. F. Shaw, Owens; J. M. Skinner, Owens; J. N. M. Sykes, Univ.; I. C. Thorburn, Univ.; G. F. C. Walker, Univ.; M. S. Wood, Owens.

Materia Medica and Pharmacy.—R. A. H. Atkinson, Owens; J. B. Barnes, Owens; J. Battersby, Owens; A. N. Benson, Owens; J. P. Bligh, Univ.; A. Boothroyd, Owens; A. Boyle, Yorks.; W. E. Brierley, Yorks.; H. Buck, Owens; L. Clay, Owens; R. Coates, Yorks.; R. Collier, Owens; T. Coogan, Owens; E. Cundall, Yorks.; J. L. Falconer, Owens; J. P. Garlick, Owens; E. Gibson, Univ.; T. Glover, Owens; J. W. Hartley, Owens; H. D. Haworth, Owens; S. L. Heald, Yorks.; J. P. Henderson, Univ.; A. Hendry, Univ.; B. Herald, Owens; W. E. Hewitt, Univ.; H. Hodge, Owens; F. C. Hudson, Owens; C. A. Hughes, Univ.; A. D. Hunt, Yorks.; H. R. Hurter, Univ., H. Irving, Owens; J. M. H. Jones, Owens; W. H. Judson, Owens; E. W. Kemp, Yorks.; G. Laurence, Univ.; J. T. Lloyd, Univ.; T. W. Lonsdale, Owens; J. F. McCann, Univ.; J. de V. Mather Owens; S. Murray, Owens; R. T. A. Patchett, Owens; F. G. Pell-Ilderton, Owens; F. Robinson, Owens; W. Rotherham, Univ.; W. E. Rothwell, Owens; F. H. Salisbury, Univ.; J. L. Schilling, Yorks.; W. G. Scott, Yorks.; H. Simms, Owens; J. M. Skinner, Owens; R. T. Slinger, Owens; J. C. Smyth, Owens; J. W. Sowerbutts, Yorks.; B. Suggitt, Yorks.; R. H. Swindells, Owens; A. F. Thompson, Owens; A. M. Walker, Owens; D. Wardleworth, Owens; E. M. Wilkins, Owens; H. Woods, Univ.; A. R. Wright, Owens; W. Wright, Owens.

Final Examination in the Faculty of Medicine.—The following have passed this examination:

Part I.—E. M. Ascroft, Owens; F. H. S. Ashworth, Owens; H. Bates, Univ.; S. W. Battle, Yorks.; S. B. Brentnall, Owens; H. Brown, Yorks.; C. W. Budden, Univ.; J. B. Cook, Owens; J. F. Corson, Owens; J. M. Cort, Owens; A. Cran, Owens; E. N. Cunliffe, Owens; S. W. Davies, Univ.; T. Eastham, Owens; F. S. Fletcher, Owens; M. Gamble, Owens; G. W. Golderd, Univ.; V. G. Glover, Univ.; P. H. Green, Owens; J. W. Greenwood, Owens; F. Griffith, Univ.; F. W. Harrowell, Yorks.; A. G. Jackson, Univ.; R. E. Kelly, Univ.; C. P. Lapage, Owens; H. F. Lee, Owens; C. Mackay, Owens; J. C. Mann, Univ.; S. B. Mehta, Owens; J. S. W. Nuttall, Univ.; T. F. Pugh, Univ.; P. A. H. Radcliffe, Yorks.; R. H. Rayner, Owens; F. M. Rodgers, Owens; F. R. Sawdon, Owens; G. H. Shaw, Owens; R. Smalles, Yorks.; H. G. Tansley, Owens; A. R. Thompson, Yorks.; G. Unsworth, Owens; H. C. Waterhouse Owens; S. C. Wilkinson; Yorks.; R. D. Willcocks, Univ.; B. M. Wilson, Owens; J. G. Woolham, Owens.

Part II.—A. Anderson, Owens; E. W. Anderton, Yorks.; D. A. Ashton, Owens; P. Benington, Univ.; J. H. Billing, Univ.; A. G. S. Broughton, Yorks.; J. P. Brown, Owens; R. Burnet, Univ.; A. H. Capamagian, Owens; D. Cowin, Owens; C. W. Crawshaw, Owens; †J. L. Dimond, Univ.; F. H. Flack, Owens; *C. R. Hall, Owens; A. E. Horsfall, Yorks.; E. C. Hulme, Owens; †A. R. Jackson, Univ.; L. C. Johnson, Univ.; R. Lawrence, Owens; C. H. Lee, Owens; S. F. Linton, Univ.; B. C. Middleton, Owens; R. S. Nichol, Owens; A. S. Parkinson, Yorks.; W. Rigby, Owens; H. W. Russell, Owens; C. R. Schofield, Owens; H. Terry, Owens; †A. G. Wilkins, Owens; C. R. Willans, Yorks.; P. G. Williamson, Owens; and W. A. B. Young, Owens.

* First Class Honours. † Second Class Honours.

The diploma in Public Health has been conferred on Messrs. J. J. Butterworth, M.B., Ch.B., F. J. H. Coutts, M.D., A. S. Grünbaum, C. A. Hill and W. F. Moore.

ROYAL UNIVERSITY OF IRELAND.

Summer Examinations, 1900.

The following honours and exhibitions have been awarded in connection with the First Examination in Medicine:

Honours in Botany.—First Class: Alice Vance, Royal College of Science and Catholic University School of Medicine. Second Class: W. Wilson, Queen's College, Belfast; Isabella G. A. Ovenden, B.A., Royal College of Science and Catholic University School of Medicine.

Honours in Chemistry.—Second Class: Alice Vance, Royal College of Science and Catholic University School of Medicine; Isabella G. A. Ovenden, B.A., Royal College of Science and Catholic University School of Medicine.

Honours in Experimental Physics.—First Class: Isabella G. A. Ovenden B.A., Royal College of Science and Catholic University School of Medicine; W. J. Wilson, Queen's College, Belfast. Second Class: R. J. Spence, Queen's College, Belfast; R. Johnston, Queen's College, Belfast.

Exhibitions.—The following candidates were qualified upon their answering to obtain exhibitions; the name with an asterisk was disqualified by standing: First Class, £20: *Isabella G. A. Ovenden, B.A., Royal College of Science and Catholic University School of Medicine; W. J. Wilson, Queen's College, Belfast. Second Class, £10: R. J. Spence, Queen's College, Belfast.

Diploma in Sanitary Science.—W. M'Callin, M.B., B.Ch., B.A.O., University College, London.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

At a general meeting of the College on July 26th, it was resolved that a copy of the following resolution of the College, adopted October 25th, 1883, should be sent to every Fellow and Member of the College: "That it is undesirable that any Fellow or Member of the College should be officially connected with any company having for its object the treatment of disease for profit."

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

The following gentlemen, having passed the requisite examinations, were at a meeting of the College, held on July 24th, admitted Fellows of the College: E. D. Bower, M.R.C.S.Eng.; L. F. Bucknell, L.R.C.S.E.; R. Grieve, M.D.; V. E. Nazareth, L.R.C.S.E.; A. H. H. Sinclair, M.D.; H. J. M. Wyllys, L.R.C.S.E.

CONJOINT BOARD IN SCOTLAND

The quarterly examinations of the above Board, held in Edinburgh, were concluded on July 30th, with the following results:

First Examination (four years' course).—Jessie Eleanor George and S. A. Rahman.

There were 4 candidates.

First Examination (five years' course).—Edith Dora Grove (with distinction), W. L. Watson, J. S. Taylor, W. M. Johnston, H. T. Simpson, A. M. Walsh, C. Garner, A. Hastings, D. J. Neethling, Sybil Louie Lewis, E. H. E. Coghlan (with distinction), R. Wearing, G. W. Meade, and M. Ashruff.

There were 34 candidates; 6 passed in Physics, and 6 in Elementary Biology.

Second Examination (four years' course).—W. Anderson, T. A. Fall, J. Buckner, E. P. Mead, and J. L. Niven.

There were 13 candidates; 2 passed in Anatomy, 2 in Physiology, and 1 in Materia Medica.

Second Examination (five years' course).—S. H. Allen, F. E. Moore, W. J. O'Sullivan, T. J. Walsh (with distinction), W. E. Knight, A. W. Hall, J. S. Burton, C. S. Mucaskie (with distinction), T. Bragg (with distinction), Mary Lucinda Calderwood, J. M. Gorely, D. Christie, P. Jollie, F. G. Heyer, J. G. Heathcote, W. P. Scott, A. L. Fielding, and L. W. Thomson.

There were 32 candidates.

Third Examination (five years' course).—L. Beesly, H. W. Y[illegible], E. Coghlan, W. J. N. Todd, M. B. Conroy, J. R. Sutton, R. S. S[illegible], Anne Low Venters, T. S. Pearse, New Zealand, H. A. Knight, P. G. Marshall, Catharine Frances Marianne Leach, Clara Hind, M. F. Cusack, F. J. Scrimgeour, R. D. A. Douglas, May Thomson, R. B. Johnston (with distinction), and P. Howe.

Thirty candidates entered; 2 passed in Materia Medica.

Final Examination.—J. A. Chisholm, A. Sharp, J. L. Bradley, M.D., C.M., A. C. L. Fox, M.D., C.M., W. C. Brown, W. M[illegible], Catharine Elizabeth Gregg, F. W. E. Courtenay, F[illegible]e, H. M. Newton, T. McDonagh, H. J. Pickering, T. S[illegible] Maud Cole, M. Varey, W. Lock, G. Robertson (with honours in Doctor), P. T. A. Vilain, C. S. Oliver, A. Dods, B. G. Advani, W. Donovan, H. N. N. Dodd, P. K. Kanga, D. Fialho, H. D. Vaillant, J. C. Hamilton, J. Flanagan, W. H. Marsden, G. E. Cook, M.B., M. V. McKechnie, D. E. Pereira, W. J. Healy, R. Gowing, and E. A. Bardsley.

There were 61 candidates; 2 passed in the division of Medicine and Therapeutics, 3 in Midwifery, and 3 in Medical Jurisprudence.

At the April sittings of the Scottish Conjoint Board of the Royal Colleges of Physicians and Surgeons of Edinburgh, and Faculty of Physicians and Surgeons of Glasgow, held in Glasgow, the following candidates passed the respective examinations:

First Examination (five years' course).—E. Gaunt, Yorkshire College, Leeds; J. C. Pickup, Glasgow University; A. F. Spinks, Anderson's College; P. Henderson, University College, Liverpool; W. W. Dempster, Queen's College, Belfast; M. J. J. De Jong, Ceylon Medical College; W. A. Magill, Queen's College, Belfast; W. M. Ramsay, St. Mungo's College; J. J. F. M. O'Flaherty, Queen's College, Galway; M. P. Desmond, Queen's College, Cork; J. B. Patterson, St. Mungo's College (with distinction); T. F. Murphy, Queen's College, Cork; N. B. Watch, Anderson's College; G. Hart, Anderson's College; J. H. Roberts, St. Mungo's College.

First Examination (four years' course).—A. Ardill, Dublin School.

Second Examination (five years' course).—R. C. Blyth, St. Mungo's College; A. M. Laurie, St. Mungo's College; W. D. Cockburn, St. Mungo's College; W. Ball, University College, Liverpool, and Anderson's College (with distinction); H. R. Helsby, University College, Bangor, and St. Mungo's College; J. F. Webster, Anderson's College; R. N. Macdonald, Anderson's College; A. R. Young, St. Mungo's College; T. J. M'Caigney, St. Mungo's College; M. J. M'Carthy, Queen's College, Cork.

Second Examination (four years' course).—T. B. Trotter, Anderson's College; H. Forbes, Calcutta Medical College.

Third Examination.—A. Young, St. Mungo's College; J. Kean, St. Mungo's College; Alice Evangeline Brown, London School of Medicine for Women; E. Brown, Firth College, Sheffield; R. J. Roberts, St. Mungo's College; J. E. Cooper, Newcastle Medical School; R. de Mello, Grant Medical College, Bombay; E. L. M. Hackett, Queen's College, Cork.

Final Examination (and admitted licentiate of the three co-operating authorities).—P. H. Rainbird, St. Mungo's College; G. J. Campbell, St. Mungo's College; Alice Miles, Queen Margaret College; Sarah Harper Smith, London School of Medicine for Women; A. E. Ward, Anderson's College; J. T. Malloch, St. Mungo's College; H. M. Roberts, St. Mungo's College; Mary Eleanor Rocke, London School of Medicine for Women; R. E. Moorhead, Anderson's College and Glasgow University; Charlotta Rudd, Ceylon Medical College; R. Goulden, Owens College, Manchester; D. Crombie, St. Mungo's College; T. D. Bird, St. Mungo's College; R. H. O. Garbutt, Newcastle School of Medicine; A. A. Brown, Surgeon's Hall, Edinburgh; R. M'K. Wilkin, Anderson's College and Queen's College, Belfast; A. G. Sutton, Queen's College, Cork; A. Scoular, Anderson's College; J. T. O'Connor, Queen's College, Cork; J. J. Lynch, Queen's College, Cork; F. Fernandez, Grant Medical College, Bombay; H. R. Loverock, Royal College of Surgeons, Ireland; J. Taylor, Glasgow Schools; S. G. Kinloch, Edinburgh School; T. Dow, Glasgow University; R. de Mello, Grant Medical College, Bombay; A. G. Meares, Melbourne University; D. S. Coto, Melbourne University; A. D. Kearney, Melbourne University; W. J. Buckmaster, Queen's College, Cork; T. R. Hunter, Anderson's and St. Mungo's Colleges; T. B. Trotter, Aberdeen University and Anderson's College; P. Brady, Dublin School; F. J. Nolan, Dublin School.

APOTHECARIES' HALL OF IRELAND.

AT the annual meeting of the General Council of the Apothecaries' Hall, Ireland, on August 1st, the following were duly balloted for and elected to hold office for the ensuing year ending July, 1901:—*Governor:* H. A. Auchinleck, F.R.C.S.I. *Deputy-Governor:* G. Stritch, L.R.C.S. *Directors:* Francis G. Adye-Curran, M.D., T.C.D., F.R.C.S.I.; A. Atock, M.D., M.S.R.U.I.; John Evans, L.R.C.S.I.; W. V. Furlong, L.R.C.S.I., L.R.C.P. Edin.; John A. Johns, M.D., T.C.D.; Robert Montgomery, M.R.C.S.; Robert J. Montgomery, M.B., F.R.C.S.I.; R. G. O'Flaherty, M.B., T.C.D., L.R.C.S.I.; Christopher M. O'Brien, M.B. Durh., L.R.C.S.I., L.R.C.P.I.; Joseph A. Ryan, L.R.C.S. Edin.; James Raverty, L.R.C.S. Edin.; James Shaw, L.R.C.S.I.; C. R. C. Tichborne, L.R.C.S.I. *Representative on General Medical Council:* C. R. C. Tichborne, L.R.C.S.I., D.P.H. *Secretary:* Robert Montgomery, M.R.C.S.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN

THE Registrar-General has just issued his return relating to the births and deaths registered in England and Wales during the second, or spring, quarter of this year, and to the marriages during the three months ending March last. The marriage-rate was equal to 11.1 per 1,000, and was 0.7 per 1,000 below the average rate in the corresponding quarters of the ten preceding years.

The births registered in England and Wales during the quarter ending June last numbered 234,523, and were equal to an annual rate of 29.3 per 1,000 of the population, estimated by the Registrar-General at more than thirty-two millions in the middle of this year. This rate was 1.4 per 1,000 below the mean rate in the second quarters of the ten preceding years. The birth-rates in the several counties ranged from 21.6 in Westmorland, 22.0 in Sussex, 23.1 in Oxfordshire, and 23.6 in Dorsetshire, to 33.3 in Warwickshire and in Northumberland, 35.4 in Durham, and 35.8 in Staffordshire. In thirty-three of the largest English towns, including London, the birth-rate last quarter averaged 29.6 per 1,000, and exceeded by 0.3 the general English rate. In London the birth-rate was equal to 28.7 per 1,000, while it averaged 30.2 in the thirty-two provincial towns, among which it ranged from 20.8 in Halifax, 23.4 in Oldham, 23.5 in Huddersfield, 24.0 in Brighton, and 24.5 in Bradford, to 34.2 in Salford, 35.0 in Sunderland, 35.3 in Liverpool, and 36.2 in Gateshead.

The births registered in England and Wales during the three months ending June last exceeded the deaths by 93,010; this represents the natural increase of the population during that period. From returns issued by the Board of Trade, it appears that 90,150 emigrants embarked during last quarter, for places outside Europe, from the various ports of the United Kingdom at which emigration officers are stationed. Of these 90,150 emigrants, 24,063 were English, 5,126 Scotch, and 21,507 Irish, while 39,454 others were of foreign nationality. Compared with the averages in the corresponding quarters of recent years, the proportion of English emigrants showed a slight increase, while those of Scotch and of Irish emigrants respectively were largely in excess of the average.

During the second quarter of the year the deaths of 141,513 persons were registered in England and Wales, equal to an annual rate of 17.7 per 1,000 of the population, the average rate being 17.6 per 1,000 in the corresponding quarters of the ten preceding years. The lowest county death-rates last quarter were 13.0 in Middlesex, 13.3 in Bedfordshire and in Westmorland, and 13.6 in Rutlandshire, while the highest rates were 19.8 in the North Riding of Yorkshire, 20.2 in North Wales, 20.9 in Lancashire, and 21.2 in Staffordshire. In the urban population of England and Wales, estimated at about twenty-two millions, the rate of mortality during the quarter under notice was 18.1 per 1,000; while in the remaining and chiefly rural population of about ten millions the rate was 16.7 per 1,000. These urban and rural rates were respectively 0.1 below and 0.2 per 1,000 above the averages in the corresponding quarters of the ten preceding years. Among thirty-three of the largest English towns the mean death-rate was 18.7 per 1,000, or 1.0 in excess of the general English death-rate during the same period. In London the rate was 17.6 per 1,000, while it averaged 19.4 in the thirty-two large provincial towns, among which the rates ranged from 13.8 in Birkenhead, 13.9 in Croydon, 14.2 in West Ham, and 14.6 in Burnley, to 22.6 in Plymouth, 23.0 in Wolverhampton, 23.6 in Salford, and 25.1 in Liverpool and in Manchester. In sixty-seven other large towns, with an estimated aggregate population of more than four millions, the mean death-rate was 17.7 per 1,000, or 1.0 below the average rate in the thirty-three great towns.

The 141,513 deaths registered in England and Wales during the three months ending June last included 4,535 which were referred to measles, 3,145 to whooping-cough, 1,861 to diphtheria, 1,428 to diarrhœa, 1,019 to "fever" (including typhus, enteric, and ill-defined forms of continued fever), 913 to scarlet fever, and 30 to small-pox; in all, 12,931 deaths resulted from these principal zymotic diseases, equal to an annual rate of 1.61 per 1,000, which was slightly below the average rate in the second quarters of the ten preceding years. The mortality from diphtheria, from measles, and from "fever" was above the average, while that from each of the other principal zymotic diseases showed a decline. Of the 30 deaths from small-pox registered in England and Wales during the quarter under notice, 13 were of persons belonged to the city of Liverpool.

The rate of infant mortality in England and Wales last quarter, or the proportion of deaths under 1 year of age to registered births, was equal to 131 per 1,000, and slightly exceeded the average rate in the corresponding periods of the ten preceding years. In thirty-three of the largest English towns the rate of infant mortality averaged 141 per 1,000; in London the rate was 125 per thousand, while it averaged 150 in the thirty-two large provincial towns, among which it ranged from 100 in Croydon, 114 in Portsmouth, 116 in Birkenhead, and 119 in Gateshead, to 166 in Preston, 172 in Halifax, 191 in Wolverhampton, and 233 in Blackburn. The mortality in England and Wales last quarter among persons aged between 1 and 60 years was equal to 9.6 per 1,000 of the estimated population at this group of ages, and corresponded with the mean rate in the ten preceding second quarters. In the thirty-three great towns the mortality at this age-group averaged 10.9 per 1,000, and ranged from 6.7 in Norwich, 7.5 in Croydon and in Birkenhead, and 8.0 in West Ham, to 13.4 in Plymouth and in Oldham, 14.2 in Salford, 15.2 in Liverpool, and 15.6 in Manchester. Among persons aged 60 years and upwards, the death-rate in England and Wales last quarter was equal to 68.7 per 1,000 of the estimated population at this age-group, against an average rate of 69.2 in the corresponding quarters of the ten preceding years. In the thirty-three great towns the rate was 76.5 per 1,000, ranging from 55.7 in Plymouth, 62.7 in Norwich, 63.0 in West Ham, and 63.2 in Portsmouth, to 95.6 in Liverpool, 103.4 in Salford, 104.7 in Manchester, and 104.8 in Halifax.

The mean temperature of the air at the Royal Observatory, Greenwich, was 52.8°, and was 0.4° above the average in the corresponding quarters of 129 years; it showed an excess of 1.2° in April, and 1.1° in June, but was 1.0° below the average in May. The rainfall during the quarter amounted to 5.11 inches, and was 0.50 of an inch below the average.

ENGLISH URBAN MORTALITY IN THE SECOND QUARTER OF 1900.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE vital statistics of the thirty-three large English towns dealt with by the Registrar-General in his weekly returns are summarised in the accompanying table. During the three months ending June last, 85,726 births were registered in the thirty-three towns, equal to an annual rate of 29.6 per 1,000 of their aggregate population, estimated at 11,610,296 persons in the middle of the year. In the corresponding periods of the three preceding years the birth-rates in these towns were 30.0, 30.0, and 30.8 per 1,000 respectively. In London the birth-rate last quarter was 28.7 per 1,000, while it averaged 30.2 in the thirty-two provincial towns, among which the rates ranged from 20.8 in Halifax, 23.4 in Oldham, 23.5 in Huddersfield, and 24.0 in Brighton, to 34.2 in Salford, 35.0 in Sunderland, 35.3 in Liverpool, and 36.2 in Gateshead.

During the quarter under notice 54,204 deaths were registered in the thirty-three towns, corresponding to an annual rate of 18.7 per 1,000, against 16.9, 17.1, and 17.5 in the second quarters of the three preceding years. In London the rate of mortality was 17.6 per 1,000, while it averaged 19.4 in the thirty-two provincial towns, among which the death-rates ranged from 13.8 in Birkenhead, 13.9 in Croydon, 14.2 in West Ham, 14.6 in Burnley, and 14.8 in Cardiff, to 22.6 in Plymouth, 23.0 in Wolverhampton, 23.6 in Salford, and 25.1 in Liverpool and in Manchester. The 54,204 deaths registered in the thirty-three towns last quarter included 5,643 which were referred to the principal zymotic diseases, equal to an annual rate of 1.95 per 1,000, against 1.70, 1.88, and 1.74 in the corresponding periods of the three preceding years. In London the

zymotic death-rate last quarter was equal to 1.79 per 1,000, while it averaged 2.06 in the thirty-two provincial towns, among which it ranged from 0.81 in Newcastle and in Birkenhead, 0.85 in Gateshead and in Croydon to 3.06 in Plymouth, 3.54 in Oldham, 3.75 in Wolverhampton, and 3.99 in Blackburn. The 5,643 deaths referred to the principal zymotic diseases in the thirty-three towns during the quarter under notice included 1,908 which resulted from measles, 1,568 from whooping-cough, 841 from diphtheria, 522 from diarrhœa, 406 from scarlet fever, 378 from "fever" (principally enteric), and 20 from small-pox. The fatal cases of measles, which had been 1,226, 1,336, and 1,622 in the three preceding quarters, further rose to 1,908 during the three months ending June last, and were equal to an annual rate of 0.66 per 1,000; in London the death-rate from this disease was 0.67 per 1,000; while it averaged 0.65 in the thirty-two provincial towns, among which measles was proportionally most fatal in Plymouth, Bristol, Cardiff, Derby, Oldham, and Huddersfield. The deaths from scarlet fever, which had been 458 and 413 in the two preceding quarters, further declined to 406 during the three months under notice, and were equal to an annual rate of 0.14 per 1,000; in London the scarlet fever death-rate was only 0.08 per 1,000, while it averaged 0.18 in the thirty-two provincial towns, among which this disease showed the highest proportional fatality in Nottingham, Salford, Oldham, Blackburn, Burnley, and Bradford. The fatal cases of diphtheria, which had been 1,521 and 1,229 in the two preceding quarters, further declined to 841 during the three months ending June last, and were equal to an annual rate of 0.29 per 1,000: in London the death-rate from this disease was equal to 0.28 per 1,000, while it averaged 0.30 in the thirty-two large provincial towns, among which diphtheria was proportionally most fatal in Cardiff, Swansea, Leicester, Blackburn, Leeds, and Sheffield. The deaths from whooping-cough, which had been 761 and 1,591 in the two preceding quarters, declined again to 1,568 during the three months under notice, and were equal to an annual rate of 0.54 per 1,000; in London the death-rate from whooping-cough was 0.52 per 1,000, while it averaged 0.56 in the thirty-two provincial towns, among which this disease showed the highest proportional fatality in Birmingham, Norwich, Liverpool, Manchester, Salford, and Oldham. The deaths referred to different forms of "fever" (including typhus, enteric, and simple and ill-defined forms of fever), which had been 607, 1,014, and 514 in the three preceding quarters, further declined to 378 during the three months ending June last, and were equal to an annual rate of 0.13 per 1,000; in London the "fever" death-rate was 0.11 per 1,000, while it average 0.15 in the thirty-two provincial towns, among which the mortality from these diseases was highest in Liverpool, Wolverhampton, Leicester, Salford, Preston, and Sunderland. The 522 fatal cases of diarrhœa were equal to an annual rate of 0.18 per 1,000; in London the death-rate from this disease was 0.13 per 1,000, while it averaged 0.21 in the thirty-two provincial towns, among which diarrhœa showed the highest proportional fatality in Wolverhampton, Manchester, Salford, Burnley, and Blackburn. Of the 20 deaths from small-pox in the thirty-three towns last quarter, 13 were of persons belonging to Liverpool, 2 belonging to London, and 2 to Oldham.

Infant mortality in the thirty-three towns, measured by the proportion of deaths under one year of age to registered births, was equal to 141 per 1,000 during the three months ending June last, against 128, 133, and 124 in the corresponding quarters of the three preceding years. In London the rate of infant mortality was equal to 125 per 1,000, while it averaged 150 in the thirty-two provincial towns, among which it ranged from 100 in Croydon, 114 in Portsmouth, 116 in Birkenhead, and 118 in Gateshead, to 166 in Preston, 172 in Halifax, 191 in Wolverhampton, and 233 in Blackburn.

The causes of 683, or 1.3 per cent., of the deaths in the thirty-three towns during the three months ending June last were not certified, either by a registered medical practitioner or by a coroner. The proportion of uncertified deaths in London did not exceed 0.6 per cent., while it averaged 1.6 in the thirty-two provincial towns. The causes of all the deaths during the quarter were duly certified in Croydon, Derby, and Oldham, and only two deaths were uncertified in Brighton, in Plymouth, and in Birkenhead; while the largest proportions of uncertified deaths were registered in Liverpool, Preston, Huddersfield, and Halifax.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,531 births and 4,313 deaths were registered during the week ending Saturday, July 28th. The annual rate of mortality in these towns, which had been 14.5, 15.6, and 16.4 per 1,000 in the three preceding weeks, further rose during the week under notice to 21.0. The rates in the several towns ranged from 11.1 in Derby, 11.4 in Bolton, 11.5 in Huddersfield, and 11.6 in Bristol to 22.0 in Leeds, 22.1 in Sheffield, 24.1 in Salford, and 28.0 in West Ham and in Liverpool. In the thirty-two provincial towns the mean death-rate was 18.3 per 1,000 and was 2.7 below the rate recorded in London, which was 21.0 per 1,000. The zymotic death-rate in the thirty-three towns averaged 4.2 per 1,000; in London this death-rate was equal to 4.7 per 1,000, while it averaged 3.9 in the thirty-two provincial towns, among which the highest zymotic death-rates were 6.8 in Salford, 7.0 in Liverpool, 7.3 in Leeds and in Sheffield, and 10.8 in West Ham. Measles caused a death-rate of 1.0 in Swansea, 1.5 in Huddersfield, 2.4 in Derby, and 2.9 in Brighton; scarlet fever of 1.1 in Blackburn; whooping-cough of 1.1 in Sheffield and 1.2 in West Ham; "fever" of 1.1 in Portsmouth, and diarrhœa of 4.8 in Sheffield, 5.2 in Salford, 5.8 in Liverpool, 5.9 in Leeds, and 7.8 in West Ham. The 66 deaths from diphtheria in the thirty-three towns included 27 in London, 10 in Leicester, 6 in Sheffield, 5 in West Ham,, and 4 in Leeds. One fatal case of small-pox was registered in Blackburn, but not one in any other of the thirty-three large towns. There were 11 cases of small-pox under treatment in the Metropolitan Asylum Hospitals on Saturday, July 28th, against 17 and 14 at the end of the two preceding weeks; 3 new cases were admitted during the week, against

Analysis of the Vital and Mortal Statistics of Thirty-three of the Largest English Towns during the Second Quarter of 1900.

Towns.	Estimated Population middle of 1900.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Zymotic Diseases.	Deaths from Principal Zymotic Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.	Diarrhœa.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
33 Towns	11,610,296	85,726	54,204	29.6	18.7	1.95	5,643	20	1,908	406	841	1,568	378	522	141	1.3
32 Provincial Towns	7,021,167	52,834	34,025	30.2	19.4	2.06	3,596	18	1,146	309	521	973	254	375	150	1.6
London	4,589,129	32,892	20,179	28.7	17.6	1.79	2,047	2	762	97	320	595	124	147	125	0.6
West Ham	314,472	2,179	1,113	27.8	14.2	2.02	158	—	53	1	23	57	11	13	144	1.5
Croydon	131,186	841	455	25.7	13.9	0.85	28	—	4	1	5	17	—	1	100	—
Brighton	124,348	742	504	24.0	16.3	1.12	35	—	3	5	14	9	2	2	121	0.4
Portsmouth	194,955	1,281	747	26.4	15.4	1.16	57	—		2	19	26	6	4	114	1.3
Plymouth	102,161	731	575	28.7	22.6	3.06	78	—	64	—	2	7	1	4	141	0.3
Bristol	324,973	2,277	1,461	28.1	18.0	2.36	191	—	134	6	20	12	11	7	174	1.0
Cardiff	194,247	1,300	719	26.8	14.8	2.89	140	1	96	2	25	10	4	2	132	0.4
Swansea	105,472	664	407	25.3	15.5	1.07	28	—	1	—	16	4	5	[illegible]	137	0.7
Wolverhampton	89,598	743	514	33.3	23.0	3.75	84	1	31	2	3	30	9	[illegible]	191	0.6
Birmingham	519,610	4,400	2,662	34.0	20.5	1.81	236	—	34	27	25	99	25	21	164	2.3
Norwich	114,855	852	450	29.8	15.7	1.32	38	—		—	3	26	3	6	140	0.9
Leicester	219,169	1,595	936	29.2	17.1	1.94	107	—	11	4	64	9	10	[illegible]	127	1.6
Nottingham	242,676	1,766	1,013	28.2	16.7	1.21	73	—	17	27	4	5	8	1	149	1.3
Derby	107,991	767	457	28.5	17.0	2.78	75	—	58	6	—	7	1	[illegible]	162	—
Birkenhead	117,170	853	402	29.2	13.8	0.81	24	—	1	1	3	5	4	[illegible]	116	0.5
Liverpool	634,780	5,586	3,974	35.3	25.1	2.15	344	13	18	21	34	184	29	[illegible]	165	4.1
Bolton	164,240	1,236	780	30.2	19.0	1.52	62	—	16	4		24	10	[illegible]	141	0.5
Manchester	548,768	4,558	3,430	33.3	25.1	2.82	384	—	96	24	22	161	16	[illegible]	163	0.9
Salford	220,816	[illegible]	1,297	34.2	23.6	2.81	154	1	26	24	12	57	11	[illegible]	162	0.7
Oldham	153,297	895	770	23.4	20.1	[illegible]	135	2	53	19	5	44	1	[illegible]	151	[illegible]
Burnley	116,730	744	425	25.6	14.6	1.58	46	[illegible]	4	8	4	12	5	[illegible]	151	1.2
Blackburn	137,107	804	765	26.2	22.4	3.99	136	—	39	20	20	13	5	[illegible]	233	2.4
Preston	118,002	878	611	29.6	20.6	2.03	60	—	18	8	11	8	7	[illegible]	166	3.6
Huddersfield	104,484	611	513	23.5	19.7	2.11	55	—	34	6	1	5	5	4	141	3.3
Halifax	100,710	523	507	20.8	20.2	1.24	31	—	10	4	6	—	4	1	172	3.4
Bradford	291,535	1,784	1,252	24.5	17.2	1.34	97	—	35	22	7	11	12	[illegible]	[illegible]	0.9
Leeds	431,287	3,296	2,148	30.7	20.0	2.33	250	—	96	10	57	43	10	[illegible]	160	0.4
Sheffield	365,922	3,059	1,914	33.5	21.0	2.74	249	—	71	17	97	40	5	[illegible]	153	2.9
Hull	238,736	1,891	1,013	31.8	17.0	1.71	102	—	53	9	8	15	10	[illegible]	142	0.2
Sunderland	147,398	1,285	728	35.0	19.8	1.87	69	—	38	4	6	1	10	[illegible]	164	1.8
Gateshead	109,403	988	464	36.2	17.0	0.85	23	—	3	4	1	[illegible]	1	[illegible]	119	0.9
Newcastle-on-Tyne	234,369	1,793	1,010	30.7	17.4	0.81	47	—	23	3	4	12	4	1	[illegible]	1.0

4 and 1 in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 1,754 to 1,877 at the end of the seven preceding weeks, had declined again to 1,859 on Saturday, the 28th ult.; 207 new cases were admitted during the week, against 229, 208, and 222 in the three preceding weeks.

In thirty-three of the largest English towns, including London, 6,889 births and 4,564 deaths were registered during the week ending Saturday last, August 4th. The annual rate of mortality in these towns, which had increased from 14.5 to 19.4 per 1,000 in the four preceding weeks, further rose to 20.5 last week. The rates in the several towns ranged from 8.0 in Burnley, 9.4 in Cardiff, 11.1 in Wolverhampton, and 11.4 in Halifax, to 26.2 in West Ham, 30.0 in Salford, 33.5 in Sheffield, and 34.6 in Liverpool. The mean death-rate in the thirty-two provincial towns was 20.8 per 1,000, and exceeded by 0.7 the rate recorded in London, which was 20.1 per 1,000. The zymotic death-rate in the thirty-three towns averaged 6.0 per 1,000; in London this death-rate was equal to 5.7 per 1,000, while it averaged 6.2 in the thirty-two provincial towns, among which the highest zymotic death-rates were 8.8 in Preston, 10.4 in Salford, 13.3 in Sheffield, 12.7 in Liverpool, and 15.1 in West Ham. Measles caused a death-rate of 1.0 in Leeds, 1.1 in Sunderland, 1.5 in Huddersfield, 2.1 in Brighton, and 2.4 in Derby; whooping-cough of 1.5 in West Ham; "fever" of 1.1 in Portsmouth; and diarrhœa of 7.6 in Salford, 8.0 in Preston, 10.8 in Sheffield, 11.4 in West Ham, and 11.8 in Liverpool. The mortality from scarlet fever showed no marked excesss in any of the large towns. The 70 deaths from diphtheria in the thirty-three towns included 24 in London, 8 in Leeds, 8 in Sheffield, 7 in West Ham, and 7 in Leicester. One fatal case of small-pox was registered in Blackburn, but not one in any other of the thirty-three large towns. There were 7 small-pox patients under treatment in the Metropolitan Asylum Hospitals on Saturday last, August 4th, against numbers decreasing from 17 to 11 at the end of the four preceding weeks; no new case was admitted during the week, against 4 1 and 3 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,877 and 1,859 at the end of the two preceding weeks, had further declined to 1,827 on Saturday last; 156 new cases were admitted during the week, against 208, 222, and 207 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, July 28th, 996 births and 541 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.2 and 19.0 per 1,000 in the two preceding weeks, declined again to 17.5 during the week under notice, and was 1.9 per 1,000 below the mean rate during the same period in the 33 large English towns. Among these Scotch towns the death-rates ranged from 10.6 in Leith and 13.0 in Dundee to 18.9 in Glasgow and 13.3 in Paisley. The zymotic death-rate in these towns averaged 2.8 per 1,000, the highest rates being recorded in Glasgow and Aberdeen. The 270 deaths registered in Glasgow included 2 from small-pox, 18 from measles, 5 from scarlet fever, 8 from whooping-cough, 3 from "fever," and 23 from diarrhœa. Five fatal cases of measles were recorded in Edinburgh, 2 of "fever" in Dundee, 6 of diarrhœa in Aberdeen, and 3 of scarlet fever in Paisley.

During the week ending Saturday last, August 4th, 1,011 births and 533 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 19.0 and 17.5 per 1,000 in the two preceding weeks, further declined to 17.2 last week, and was 3.3 per 1,000 below the mean-rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 13.3 in Dundee and 13.5 in Perth, to 19.3 in Paisley and 19.5 in Glasgow. The zymotic death-rate in these towns averaged 3.5 per 1,000, the highest rates being recorded in Glasgow and Paisley. The 279 deaths registered in Glasgow included 2 from small-pox, 14 from measles, 9 from whooping-cough, 6 from "fever," and 37 from diarrhœa. Four fatal cases of measles, 4 of "fever," and 3 of diarrhœa were recorded in Edinburgh. Five deaths from diarrhœa occurred in Dundee, 3 in Aberdeen, and 7 in Paisley; and 2 deaths from whooping-cough in Greenock.

ADULTERATED VINEGAR.

IN his annual report (1899) as Medical Officer of Health and Public Analyst for the Parish of St. James, Westminster, Dr. Edmunds draws attention to several convictions which he secured under the Sale of Food and Drugs Act, 1875, against vendors of vinegar which was either not of the required strength or which had been treated with sulphuric acid.

Vinegar is not one of those articles regarding the composition of which any definite authoritative standards exist, but "a pure malt vinegar" should contain nothing but what is furnished to it by the barley, the yeast, and the water which are used in its manufacture. While it is true that mere traces of sulphuric acid may find their way into such a vinegar from the barley and water employed, it is safe to maintain that any sulphuric acid over and above a mere 0.03 per cent. has either been added to the vinegar or to the materials out of which it is made. Sometimes it is poured into the finished vinegar to preserve it, and sometimes it is added to the grain in order to reduce it to a readly fermentable substance, and when the sulphuric acid has done its work on the grain it is neutralised with lime so as to form gypsum. Further, the practice of sulphuring the casks and vats may be so managed as to introduce a material quantity of sulphuric acid into vinegar. Dr. Edmunds is to be congratulated on his success in securing convictions during the year 1899 against five vendors of vinegar containing sulphuric acid, for the addition is probably harmful and certainly unnecessary.

As to the strength of vinegar, an old Act, since repealed, fixed the strength of proof vinegar as a little over 6 per cent. by weight of real acetic acid. Such a vinegar keeps well, and acts efficiently as a preservative, whereas much weaker vinegar does not fulfil either requirement, and for dietetic purposes a vinegar can always be diluted to the consumer's choice. The practice at the Government Laboratory at Somerset House is to regard the acetous strength of commercial vinegar as amounting to at least 3 per cent. of real acetic acid. This is a very low limit, but public analysts are more or less governed by it in advising prosecutions under the sale of Food and Drugs Act. The result is, as pointed out by Dr. Edmunds, that makers of cheap vinegars water down their vinegar to just above this 3 per cent. bottom limit, and in this way the nominal prices are cut down, the purchaser gets a larger bottle of vinegar to carry home and the manufacturers of unwatered vinegars are placed at a commercial disadvantage. In two instances during the year 1899 the vinegar purchased under the sale of Food and Drugs Act in the parish of St. James, Westminster, was found to contain less than 3 per cent. of real acetic acid, and the vendors were prosecuted and fined.

CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.

IN a paragraph which appeared under this heading in the BRITISH MEDICAL JOURNAL of July 28th (p. 269), Mr. John F. Sugden was described as Public Analyst for Leeds and North Riding instead of Assistant to the Public Analyst for Leeds.

THE HOUSING OF THE WORKING CLASSES.

IN a circular letter issued recently the Local Government Board has brought under the consideration of local authorities the question of the housing of the working classes. This important matter has recently much engaged public attention, and has been the subject of a lengthened debate in the House of Commons in connection with the Bill which has been introduced to amend the Housing of the Working Classes Act, 1890.

The Board desire by this circular to call special attention to the powers of the local authorities for dealing with insanitary dwellings (apart from "insanitary areas" under a so-called improvement scheme), and it is pointed out that if by reason of a nuisance a house is unfit for human habitation, an order may be made by a magistrate or justices prohibiting its being used for that purpose. Further, when two convictions in respect of the overcrowding of the same house have taken place within three months, whether the persons convicted were the same or not, the Court may order the house to be closed for such period as they may deem necessary. Moreover, the provisions which are contained in Part II of the Housing of the Working Classes Act, 1890, in relation to insanitary dwelllngs, make it the duty of the M.O.H. to represent to the local authority any dwelling house which appears to him to be in a state so dangerous or injurious to health as to be unfit for human habitation, with the view of taking proceedings against the owner or occupier for closing it. Provision is also made by this Act under which it is the duty of the local authority, subject to certain conditions, to order the demolition of a dwelling house where a closing order has been made, and they are of opinion (1) that the house has not been rendered fit for human habitation, (2) that the necessary steps are not being taken with all due diligence to render it fit, and (3) that its continuance is dangerous or injurious to the health of the public or of the inhabitants of the neighbouring dwelling houses.

THE NATIONAL VACCINE ESTABLISHMENT.

DR. HENRY LISTON, Medical Officer and Public Vaccinator, No. 4 District (Sunderland), writes: Is there any remedy for the vagaries of the National Vaccine Establishment? About a couple of months ago I sent an application for vaccine for 30 children—they sent 10 tubes. I telegraphed for more, which they did not send for two days. Again I sent for sufficient vaccine for 40 children, and I received 20 tubes. Last Friday I wrote for 10 tubes, expecting to be able to vaccinate on Sunday, and up till now have received no answer to my application. If public vaccinators make appointments to vaccinate on a certain day and then receive no lymph from the N.V.E., it will not tend to make the public in favour of having their children vaccinated if the public vaccinator does not turn up on the appointed day.

FEES PAYABLE FOR NOTIFICATION OF CASES OF INFECTIOUS DISEASES.

F. F. J. writes to ask as to the fees he can claim for notification of cases of infectious disease, and whether club and parish cases are to be regarded as institution cases.

*** For notification of all private cases 2s. 6d. is the proper fee. Club patients for notification purposes are private patients, and 2s. 6d. should consequently be charged for every club case notified. It has been decided that pauper cases attended and notified by the district medical officer should be charged for as institution cases, namely, 1s. per case.

COCKLES AND TYPHOID FEVER.

Mr. G. R. SHORTS, Town Clerk of Exeter, has sent us a copy of the following report presented to the Town Council of Exeter by the Inspector of Nuisances at a meeting of that body on August 1st:

"During the month of July seven cases of typhoid fever have been notified. Out of this number five cases have been traced to the partaking of raw cockles, either at or from Exmouth, and one case was imported from London, leaving only one case of this disease that can be fairly said to have been contracted in the city."

SAMARITAN FREE HOSPITAL.—Dr. Percy Boulton, having retired from the active staff, has been placed on the consulting staff of this hospital. Dr. Hubert C. Roberts has been promoted to the indoor staff. On July 23rd Dr. Percy Boulton was presented by his colleagues with a very handsome silver bowl, "as a testimony of their esteem for him as a friend and their respect for him as a physician."

SUCCESSFUL VACCINATION.—Mr. H. O. Westwood Public Vaccinator for the Bingham District of the Bingham Union, has been awarded the Government grant for efficient vaccination for the third time in succession.

HOSPITAL AND DISPENSARY MANAGEMENT.

MONTREAL GENERAL HOSPITAL.

The report presented to the annual meeting of the Corporation of the Montreal General Hospital by the Secretary, Dr. Finley, showed that the total number of indoor patients was 2,824, an increase of nearly 100 over the previous year. The total number of deaths was 195; 106 occurred within three days of admission. The total death-rate was 6.5 per cent., and excluding those dying within three days after admission, 3 per cent. The outdoor department had 37,373 consultations, an increase of 2,295, while the ambulance made over 1,000 trips. It was decided to make extensive changes and improvements in the dispensary accommodation, as the present quarters seem too small. If possible an entirely new building will be erected and equipped for this department of the hospital. Dr. von Eberts, who has been Superintendent during the past year, was reappointed.

Since its annual meeting this hospital has lost one of its best friends and staunchest supporters, Mr. F. Wolferston Thomas, President of the Corporation, who passed away the day after the annual meeting, his resignation as President having been received the day previously. For the past six years Mr. Thomas had been the President, and it was due to his untiring efforts that the financial affairs of the hospital were managed so well. It was due largely to him also that the Montreal General Hospital Training School for Nurses was established, this project being completed at the celebration of the Queen's Diamond Jubilee.

THE NORTH CAMBRIDGESHIRE HOSPITAL.

Through the munificence of Miss W. Peckover, sister of the Lord Lieutenant of the county, to whom Addenbrooke's Hospital at Cambridge is so much indebted, the operating room of the North Cambridgeshire Hospital at Wisbech has been reconstructed, and furnished with all necessary appliances for the practice of operative surgery under aseptic conditions. This work appears to have been well and thoroughly done. Both in structural details and in equipment this new operating room, though small, seems to be a good example of what this important part of a hospital should be, and we must congratulate Dr. A. W. Clark, one of the honorary surgeons, on having, with the support of an energetic Committee, carried out with so much success the wishes of the donor.

THE LONDON MISSION HOSPITAL, TIENTSIN, CHINA.

In connection with this Hospital Mission there are four establishments—the Hospital, the Hospital Dispensary, the City Dispensary (all in the city of Tientsin), and the Tung-an Dispensary, a mission hospital station halfway between Peking and Tientsin. The attendancies at the hospital are very large, as many as 25,510 being made during the year 1899. In the hospital wards 394 patients were treated during the year, and a number of surgical operations were successfully performed.

The names of the medical staff who conduct the work in these hospitals and dispensaries are not mentioned in the report, but the respect and confidence they have engendered amongst the Chinese inhabitants of the province of Chihli is remarkable. An outbreak of phlyctenular conjunctivitis and an epidemic of influenza accompanied by an epidemic of jaundice are described. Phthisis is stated to be very prevalent, especially amongst the young men of the educated classes. They differ in their ways considerably from our public school and university youths, inasmuch as the Chinese "students never dream of going out for a walk, but sit from morning till night over their books in stuffy ill ventilated rooms." No leprosy is mentioned among those treated at the hospital, a further proof that in Northern China leprosy is not endemic. Plague was not met with in Chichli during 1899, and no cholera occurred. When it is considered that the whole of this charitable work was carried on at a direct expenditure of under £400, we have a lesson in hospital management which hospitals at home might well copy.

OBITUARY.

FRANCIS RAWORTH HEYCOCK, M.D.,

Consulting Surgeon, St. Peter's Hospital for Stone

It is with regret that we announce the death of Dr. Francis Raworth Heycock on July 8th. Dr. Heycock relinquished practice four years ago in consequence of his health having failed owing to an attack of locomotor ataxy and spinal affection contracted through a fall on the staircase of St Peter's Hospital, when in the act of carrying a patient to his bed. Dr. Heycock was born on September 1st, 1842, at Owstore Rectory, Leicestershire. He was the second son of the late Rev. C. Heycock, J.P., of Pytchley House, Northamptonshire. He was educated at Uppingham School, and afterwards at Edinburgh University, where he graduated M.B., C.M. in 1868, and as M.D. with honours in 1871. He was clinical assistant to the Consumptive Hospital, Brompton, and house surgeon to the Lock Hospital, and for many years surgeon to St. Peter's Hospital. At the time of his death he was honorary consulting surgeon to that institution. For a long time he carried on an extensive consulting practice in Upper Wimpole Street. He was the author of a graduation thesis on skin grafting. His funeral took place on July 14th, when his remains were interred in the family vault.

Mr. Percy R. Lowe, B.A., M.B., B.C.Cantab., Medical Officer in charge of Princess Christian Train (late second in command), writes with reference to the lamentable death from enteric of Surgeon-Lieutenant-Colonel Forrester, of the Royal Horse Guards, recorded in the British Medical Journal of July 21st: "Colonel Forrester had been indefatigable in his latest command and in his successful endeavours to do all in his power to alleviate the sufferings of the sick and wounded on their way from the front to the various hospitals on the lines of communication and at the base. He had taken a just pride and interest in the 'Princess Christian train' on which he had done such good work, notably at the time of the evacuation of Intombi just after the relief of Ladysmith, where the train was employed in removing all the most serious and urgent cases, and in the evacuation of the field hospitals at Elandslaagte and Sunday River just prior to Buller's advance on Laing's Nek. No one, not even the officers and men of his regiment who mourn his loss with keen regret, will suffer more by his loss than the sick and wounded to whom he was so considerate. To ourselves on the train his sudden illness and death came as a keen blow, for he had endeared himself to all by his ever genial and kindly nature and his kind-hearted consideration."

We regret to announce the death of Mr. E. A. T. Steele, of Plaistow. Mr. Steele, after a highly successful career as a student at University College, Liverpool, took the diplomas of M.R.C.S.Eng. and L.R.C.P.Lond. in 1888. He then became Sir William Banks's House-Surgeon at the Liverpool Royal Infirmary. Afterwards he held the appointment of Resident Medical Officer to the Worksop Dispensary. He then settled at Plaistow, where he soon gained a reputation for his skill in surgery and gynæcology. It was chiefly owing to his exertions that St. Mary's Children's Hospital was gradually built up from a very small beginning to the large and successful institution it has now become. He also acted as Honorary Medical Officer to the Plaistow Maternity Charity and District Nurses' Home, and his loss was deeply felt when in 1897 he was compelled by failing health to give up his Plaistow practice, and remove to Southend, in the hope that better surroundings and less onerous work might effect a restoration. Here he speedily built up an increasing practice, and gained many friends. But the disease had gained too firm a hold, and in spite of increasing weakness and pain he battled bravely on for over three years, working to the last, and only giving up when he was absolutely unable to move from his bed. His talents and abilities were recognised by all who knew him, and his death at the early age of 34 is deeply deplored. He leaves a widow and one child.

MEDICAL NEWS.

British Pharmaceutical Conference.—The thirty seventh annual meeting of the British Pharmaceutical Conference was held in London from July 23rd to 26th under the presidency of Mr. E. M. Holmes, F.L.S. In the Presidential address the progress of science as far as it affects pharmacy was reviewed, and the changes brought about during the century were enumerated. There was a large attendance, and the meeting was a success in every way.

Newcastle-upon-Tyne Royal Infirmary.—The vacancy on the surgical staff caused by the death of Mr. Williamson was filled a few weeks ago by the promotion of Mr. Albert Martin to the full surgeoncy, and the vacancy similary created in the Ophthalmic Department by the appointment of John D. Wardale. As Mr. Wardale had acted as Assistant in the Eye Department to Mr. Williamson he was invited by the Infirmary Committee to discharge the duties of the office until an ophthalmic surgeon was appointed. Last week the Governors who form the Selection Committee met to fill the vacancy in one of the assistant surgeoncies caused by the promotion of Mr. Martin. There were four competitors, and the contest was a keen one. After the first vote it was agreed that two of the candidates should be eliminated. As the result of the second vote the Chairman declared Joseph William Leech, M.D., elected.

THE POZZI-DEVILLERS DUEL.—As a result of the recent duel between Professor Pozzi and Dr. Devillers, the Procurator of the French Republic ordered the latter to be prosecuted for having insulted Dr. Pozzi in his capacity as a magistrate, he having been a member of the High Court which tried M. Paul Déroulède and the other conspirators. M. André, the examining magistrate charged with the case, has sent Dr. Devillers before the Correctional Court.

MEDICAL VACANCIES.

The following vacancies are announced:

BATH: ROYAL UNITED HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board, lodging, and washing. Applications to the Secretary by September 3rd.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary, £150 per annum, with allowance of £30 for cab hire, and furnished rooms, etc. Applications to the Secretary by August 13th.

BOMBAY CITY.—Executive Health Officer. Monthly salary, minimum Rs. 1,200, maximum Rs. 1,500. Applications to be addressed to the Municipal Commissioner for the city of Bombay, c.o. Mr. John Lithiby, Local Government Board Office, Whitehall, London, by August 25th.

BOURNEMOUTH: BOSCOMBE HOSPITAL.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Secretary by August 13th.

BOURNEMOUTH ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £30 per annum, with board. Applications to the Chairman of the Committee by September 6th.

BOW: GROVE HALL ASYLUM.—Junior Assistant Medical Officer. Salary, £120 per annum, with furnished apartments, attendance, and washing. Applications to the Medical Superintendent.

BRECON INFIRMARY.—Resident House-Surgeon, unmarried. Salary, £100 per annum, with furnished apartments, board, etc. Applications to the Secretary, 6, Bulwark, Brecon.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House-Surgeon. Salary, £120 per annum, with board and residence. Applications to the Assistant Secretary, 113, Queen's Road, Brighton, by August 28th.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon. Applications to the Secretary by September 10th.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant House-Surgeon," to the Secretary.

CARDIFF: UNIVERSITY COLLEGE.—(1) Demonstrator and Assistant Lecturer in Anatomy; (2) Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120. Applications to the Secretary by September 8th.

CARLISLE: CUMBERLAND INFIRMARY.—(1) House-Surgeon. Appointment for one year. Salary, £70. (2) Assistant House-Surgeon for seven months. Salary at the rate of £40 per annum. Board, lodging, and washing provided in each case. Applications to the Secretary by August 22nd.

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary, £80 per annum, with residence and maintenance. Applications to the Chairman of Board of Management, 29, Eastgate Road, Chester.

CHORLEY HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board and lodging. Applications to the Honorary Secretary.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary, £100 per annum, with board, etc. Applications to the Secretary by September 8th.

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—District Surgeons. Applications to the Secretary by September 18th.

DORCHESTER COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary, £140 per annum. Applications to Medical Superintendent by August 18th.

EDINBURGH: VICTORIA HOSPITAL FOR CONSUMPTION.—(1) Resident Physician. Residence, board, and nominal honorarium provided. (2) Non-resident Clinical Assistant. Honorarium, £60 per annum. Applications to the Honorary Secretaries, Messrs. Wallace and Guthrie, W.S., 1, North Charlotte Street, Edinburgh, by August 27th.

GLASGOW UNIVERSITY.—Professor of Clinical Medicine. Salary about £112 and share in fees. Applications to the Secretary of the Glasgow University Court, 91, West Regent Street, Glasgow, by September 12th.

HAMPSTEAD HOSPITAL, N.W.—Resident Medical Officer. Salary at the rate of £120 per annum, with rooms, coals, and gas. Applications to the Honorary Secretary by September 10th.

KENT AND CANTERBURY HOSPITAL.—Assistant House-Surgeon; unmarried. Salary, £60 per annum, with board and lodging. Applications to the Secretary by August 30th.

LONDONDERRY COUNTY BOROUGH.—Medical Superintending Officer of Health and Medical Attendant at Foyle Hill Infectious Disease Hospital. Salary, £350 per annum. Applications to the Town Clerk, Guildhall, Londonderry, by August 14th.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship. Appointment for six months. Honorarium, £10 10s. Applications to the Secretary by August 14th.

MANCHESTER, HULME DISPENSARY, Dale Street.—Honorary Surgeon. Applications to the Honorary Secretary, Medical Committee by August 13th.

MANCHESTER: OWENS COLLEGE.—Demonstrator in Anatomy for the Winter Session. Applications to the Registrar.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum, with residence, board, and washing. Applications, endorsed "House-Surgeon," to be addressed to the Chairman of the Board of Management by August 17th.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House-Surgeon, unmarried, and not under 22 years of age. Salary, £75 per annum, with furnished apartments, board, attendance, and washing. Applications to the Secretary by August 22nd.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—Resident Medical Officer. Salary, £120 per annum, with board, residence, and washing. Applications to the Secretary at the City Office, 27, Clement's Lane, E.C., by August 18th.

NORTH-WEST LONDON HOSPITAL, Kentish Town Road, N.W.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum, with board, residence, and washing. Junior Officer, eligible for election to senior post when vacant. Applications to the Secretary by September 4th.

NOTTINGHAM CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing. Applications to the Medical Superintendent.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Unmarried. Salary, £140 per annum, with all found except board. Applications the Secretary.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—House-Surgeon. Salary at the rate of 50 guineas a year, with board and residence. Applications to the Secretary by August 18th.

ROTHERHAM HOSPITAL.—Senior House-Surgeon. Salary, £105, all found. Candidates should have ophthalmic experience. Applications to Mr. E. S. Bayliss, Moorgate, Rotherham, by August 22nd.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Clinical Assistant. Salary, £40, with board and residence. Applications to the Secretary, 34, Craven Street, Strand, W.C.

ROYAL ORTHOPÆDIC HOSPITAL, Oxford Street.—House-Surgeon and Registrar. Appointment for six months but eligible for re-election. Salary at the rate of £100 per annum, with residence and partial board. Applications to the Secretary by September 1st.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House-Surgeon. Salary, £70 per annum, with board, lodging, and washing. Applications, addressed to the Medical Staff of the Royal Infirmary, care of the Secretary, by August 13th.

SHREWSBURY: EAR AND THROAT HOSPITAL FOR SHROPSHIRE AND WALES.—Surgeon, must be F.R.C.S.Eng. Honorarium, £150 per annum. Applications to the Secretary by August 27th.

SOUTHPORT INFIRMARY.—Resident Junior House-Surgeon and Visiting Surgeon. Appointment for six months, but renewable. Honorarium at the rate of £50 per annum, with residence, board and washing. Applications to Mr. Joseph Worrall, Infirmary Office, 24, King Street, Southport, by August 11th.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon. Appointment for six months. Salary at the rate of £24 per annum, with board, washing, and residence. Applications to the Secretary by August 28th.

SURREY DISPENSARY, Great Dover Street, Southwark.—Resident Medical Officer. Applications to Secretary, 53, Borough High Street, Southwark, S.E.

TOTTENHAM HOSPITAL.—House-Surgeon. Honorarium at the rate of £20 per annum, with board, residence, and lannary. Applications to the Chairman of the Joint Committee, Tottenham Hospital, The Green, South Tottenham, by August 20th.

VICTORIA HOSPITAL FOR CHILDREN, Queen's Road, Chelsea, S.W.—Resident Medical Officer. Appointment for six months. Honorarium, £25, with board and lodging. Applications to the Secretary by September 1st.

WEST BROMWICH DISTRICT HOSPITAL.—House-Surgeon, unmarried. Salary, £100 per annum, with board, residence, and washing. Applications to the Secretary.

WINCHESTER ROYAL HANTS COUNTY HOSPITAL.—House-Physician, unmarried. Salary, £65 per annum, with board, residence, etc. Applications to Secretary by August 24th.

WISBECH: NORTH CAMBS. HOSPITAL.—Resident House-Surgeon. Salary, £130 per annum, with furnished house. Applications to the Honorary Secretary by August 9th.

MEDICAL APPOINTMENTS.

ATKINSON, C. M., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer of the East Ashford Union Workhouse, *vice* C. S. Atkinson, M.R.C.S.Eng., deceased.

BEACHCROFT, F. S., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Second District and Workhouse of the Petworth Union, *vice* R. J. McDermott, M.B., M.Ch. Dubl., resigned.

BLAKISTON, F. C., M.R.C.S., L.R.C.P.Lond., appointed Junior Assistant Medical Officer to the Wandsworth and Clapham Union Infirmary, *vice* Mr. C. Powell.

BROWN, G. H., L.R.C.P.Edin., L.F.P.S.Glasg., appointed Medical Officer for the Nantyglo and Blaina District of the Bedwelty Union, *vice* H. C. Bevan, L.R.C.P., M.R.C.S., resigned.

CAMPBELL, Colin, L.R.C.P.I., M.R.C.S.Eng., appointed Certifying Factory Surgeon for the Saddleworth District of the West Riding of Yorkshire.

COOKE, L., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Aspull District of the Wigan Union.

COWIE, W., M.A., M.B., C.M.Aberd., appointed Medical Officer for the Charlton District of the Woolwich Union, *vice* J. Logie, M.B., C.M.Aberd., deceased.

CROSSFIELD, A. K., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Dartmouth District of the Totnes Union, *vice* R. W. Soper, M.R.C.S.Eng.

ELLIS, R. Sidney, M.B., Ch.B.Edin., appointed Assistant Resident Medical Officer to the St. Mary's Children's Hospital, Plaistow.

GOURLAY, F. T., M.B., C.M.Edin., appointed Medical Officer for the Shiffnal and Stockton Districts and the Workhouse of the Shiffnal Union, *vice* T. H. Keough, L.R.C.P.&S.I., resigned.

GRANT, Lachlan, M.D.Edin., appointed Medical Officer to the Ballachulish Slate Quarries.

HALL, G. C., M.R.C.S.Eng., appointed Medical Officer for the Islip District of the Bicester Union, *vice* G. T. B. Blick, M.R.C.S., L.R.C.P., resigned.

HENRY, John P., B.A., M.D., B.Ch., appointed Honorary Ophthalmic Surgeon to the Italian Hospital, Queen Square.

MARTIN, Albert M., M.B., B.S.Durh., appointed Honorary Surgeon to the Royal Infirmary, Newcastle-upon-Tyne.

NEWINGTON, C. W. H., M.R.C.S., L.R.C.P., L.S.A., appointed Medical Officer and Public Vaccinator of the Sixth District of the Sevenoaks Union, *vice* C. F. Gregory, M.R.C.S., resigned.

PRITCHARD, R. J., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Third District of the Petworth Union, *vice* R. J. McDermott, M.B., M.Ch., resigned.

SOUTHAM, F. A., F.R.C.S.Eng., appointed Professor of Clinical Surgery at Owens College, Manchester, *vice* W. Whitehead, F.R.C.S.Edin., resigned.

UNSWORTH, J. W., M.B., Ch.B.Vict., appointed Medical Officer for the Blackrod District of the Wigan Union, *vice* Henry Smith, M.R.C.S.Eng.

WIELD, David, M.D., M.A.Edin., appointed Medical Superintendent to the "Contact Area," Brisbane, in connection with the outbreak of bubonic plague in Brisbane.

WOODFORD, E. V. R., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the First District and the Workhouse of the Abingdon Union, *vice* S. A. Hayman, L.R.C.P., M.R.C.S.

WRIGHT, G. A., F.R.C.S.Eng., appointed Professor of Systematic Surgery at Owens College, Manchester, *vice* Thomas Jones, F.R.C.S., deceased.

CORRECTION.—In the notice of his appointment published on July 28th, p. 270, Mr. David Thomas was accidentally described as M.R.C.S. instead of F.R.C.S.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

DEMPSTER.—On August 3rd, at Winsley, South Croydon, the wife of W. T. Dempster, M.R.C.S.Eng., L.R.C.P.Lond., of a son.

FINNY.—August 1st, at Tamesa, Kingston Hill, Rosa, the wife of Dr. William Evelyn St. Lawrence Finny, J.P., Ex-mayor of Kingston-upon-Thames, of a son.

MILLARD.—On August 7th, at 55, Stanton Road, Burton-on-Trent, the wife of C. Killick Millard, M.D., D.Sc., of a son.

QUILLER.—On August 5th, at St. Paul's Close, Clapham, S.W., the wife of Charles Turner Quiller, M.R.C.S., of a son.

MARRIAGE.

BERRY—BRIGHOUSE.—On August 7th, 1900, at the Parish Church, Ormskirk, by the Rev. John Williams, M.A., Curate of All Saints', Southport, assisted by the Rev. J. E. Woodrow, Vicar of Ormskirk, and the Rev. J. F. Hogg-Goggin, Rector of Rufford, Richard James Arthur Berry, M.D., F.R.S., F.R.C.S.Edin., to Beatrice Catherine, eldest daughter of Samuel Brighouse, Esq., Solicitor, and Coroner for South-West Lancashire.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30 Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Röntgen, W., 9.45; Orthopædic, Th., 1. *Operations*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, 1.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, i.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2, Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, i.-p., M., 2.30; Tu. F., 9.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, i.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; i.-p., Tu. Th., 2.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; i.p., 1; o.p., 12; Obstetric, i.p., Tu. F. 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30 Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M. 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30 *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30. (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 8.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

A. T. C. would like a good remedy for large quantity of phosphates in urine, sometimes passed loaded with them, and to know if pain over the kidney with phosphatic urine indicates stone or other pathological conditions.

SANGONGO asks for information as to the best means of treating a child 18 months old for flat-foot. Massage and movements are at present performed by the nurse. Should the child be allowed to walk?

LEUCOMA writes that corks are not an inconsiderable item of expense, especially in a large practice. He asks if any member could inform him of a method of bleaching them, so that they could be used a second time.

HIBERNICUS will be grateful for information as to a suitable institution for a young medical man mentally deranged. His father was a medical man, and the son has since been the chief support of family. Means are very limited.

ANSWERS.

CRISTA GALLI has omitted to enclose his card.

WE would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided.

CORNS ON THE SOLE.

MR. T. S. ELLIS (Gloucester) writes: If Dr. F. Smith will give the toes free play by adopting boots and socks having a straight inside line, avoid the conventional eversion of the foot and acquire the habit of pressing the toes against the ground in every step, the callosities will disappear. They are due to defective function of the toes. Removal may, of course, be hastened by use of solvents, such as a mixture of salicylic acid and collodion.

MR. E. HARDING FREELAND, F.R.C.S. (Portland Place, W.), writes: In answer to Dr. F. Smith's query in the BRITISH MEDICAL JOURNAL of August 4th, p. 336 relative to the cure of corns, I should like, very briefly, to call attention to a method of treatment which I have practised for some time past, namely, the free and complete excision of the corn. Having now removed by this method a very considerable number of these growths, many of which were inveterate and had been subjected to all sorts of treatment, I can confidently recommend it as efficient. The operation can be rendered perfectly painless by local anæsthesia; the wound, if the edges can be approximated, heals by primary union in about five days. The relief from pain is immediate and complete, and the cure is permanent.

DR. THOMAS FENTEM (Bakewell) writes: I have found that corns on the sole of the foot rarely resist the following treatment: A piece of salicylic and creasote plaster muslin, as suggested by Unna, is cut rather larger than the corn, and applied to it. This is removed each or every alternate day. As much of the corn as is then removable is ground off with pumice stone, and another piece of the plaster muslin applied, and so on until the part is normal. I use the muslin plaster containing acid salicylic 20 per cent., creosote 40 per cent., and have found that it is more comfortable in wear if it is "backed" with one or two thicknesses of ordinary plaster. Of course a properly fitting boot with a sufficiently thick sole is a *sine quâ non.*

MR. J. S. PEARCE (Plymouth) writes: The best relief I found was to take a piece of moderately thick leather, circular, about 2 inches in diameter, and cut a small hole—size of corn—in the middle. There is no need of fastening the leather to the foot; I found it retained its position on fixing it in place after putting on my sock.

DR. THOMAS HILL (Bristol) suggests a trial of the following remedy: Soak a piece of lint or cotton wool with acetic acid, the size of the corn (forming in fact a compress) to be well covered with a piece of gutta-percha sheeting; bandage lightly. Do this for three consecutive nights.

LUMBAR ABSCESS.

DR. FREDERIC C. WOOD (Ripley) writes in reply to the query by "Caries" in the BRITISH MEDICAL JOURNAL of August 4th: Colwyn Bay on the North Wales coast would, I think, answer "Caries'" requirements in every particular. If he will communicate with me I shall be happy to give him further and full information.

MEDICAL ADVERTISING.

DR. LENDON.—Such a circular and card as that enclosed seem to be not uncommonly used by foreign medical practitioners in order to notify their having commenced practice. We think it is rather beyond our province to criticise the conduct in such a matter of a foreign medical practitioner residing in his own country.

SKATING AND TOBOGGANING AT DAVOS.

DR. S. INGLEBY ODDIE (Hastings) writes: In answer to "J. W. G.'s" query with reference to skating and tobogganing at Davos: (1) It generally commences about the first or second week in November. (2) The middle of November should be a very good time in an ordinary season, though it would be safer to go a little later. (3) For a stay of some weeks *pension* terms would be given at about 10s. a day for a small room in the best hotels. (4) Tweed knickerbocker suit and ordinary winter underclothing, a lounge suit say of blue serge, evening clothes, big overcoat or fur coat for travelling and driving. As to "further particulars" for a healthy man wanting a holiday, I would urge him not to go to Davos.

where the invalids form the huge majority, and the air and hotels are full of tubercle bacilli. He should go to St. Moritz, a longer journey but a smaller place with fewer "lungers" and more holiday makers. At St. Moritz there is the finest iced crooked-run tobogganing in the world; the rinks for skating are first-rate, lake skating can be generally got in November and the life generally is most cheerful and pleasant, unlike the depressing atmosphere of Davos, with its crowds of serious cases. I myself spent a holiday at St. Moritz at the Kulm Hotel in 1897. I went out in November (23rd), and started lake skating at once. I spent the whole winter there, never felt cold despite the low temperatures, which are counteracted by the dryness of the air, and certainly I could not imagine a more delightful and invigorating holiday. It is foolish to take holidays in the summer when England is so pleasant—speaking comparatively; the winter is the more appropriate season for deserting these cheerless shores. I will advise your correspondent further if he cares to write to me.

DR. G. C. MILLIGAN (Elie, N.B.) writes: (1) and (2) One cannot be certain of skating or tobogganing at Davos until the middle of December. (3) *Pension* terms at one of the English hotels are roughly from 10 to 15 francs per day. Return tickets from London (available for six weeks), first class about £11, second class about £8, exclusive of luggage. (4) Clothing exactly the same as for England in winter. Snow boots are necessary. If "J. W. G." desires any further information I shall be glad to give it if he will communicate directly with me.

NOTES, LETTERS, Etc.

TREATMENT OF SIMPLE FRACTURE.

MR. WILLIAM H. BENNETT wishes to tender his sincere thanks to the 300 surgeons and practitioners who were good enough to reply to the questions relating to the treatment of simple fractures which he recently circulated with a view to obtaining information upon which to base his remarks in opening the discussion upon the subject at the Ipswich meeting.

EPIDEMIC DIARRHŒA.

DR. ALFRED ASHBY (M.O.H. Reading) writes: In attempting to be brief in my reply to Dr. C. Stuart Vines, I referred him to the effort which is being made to clear up the confusion attaching to certification and classification of "diarrhœa" deaths. The answer to his question—"Are cholera nostras and cholera infantum to be regarded as the same disease as epidemic diarrhœa?"—is Yes; those names being only two of the numerous synonyms of the disease in question enumerated by the late Dr. Ballard in his far too little known report on diarrhœa, which he made to the Local Government Board, as follows: "The most frequently used term is 'diarrhœa.' This term designates a complex malady by the name of its leading symptom. Other terms, however, are in use. 'Choleraic diarrhœa,' 'English cholera,' 'cholera nostras,' 'infantile cholera' are terms used sometimes to designate very severe cases which in one way or another appear to the persons using these terms to assimilate to true cholera. Often such terms as 'enteritis,' 'muco enteritis,' and gastro-enteritis' are employed, the person using them desiring to signify that he recognises in the illness an inflammatory condition of the digestive mucous tract. When bloody stools or tenesmus occur, the disease is often designated 'dysentery' or 'dysenteric diarrhœa.' There is obviously a good deal of fancy in the selection of any particular term as it is met with in public records, the terms 'diarrhœa,' 'dysentery,' 'dysenteric diarrhœa,' 'cholera,' and 'choleraic diarrhœa' being those most commonly used in the diarrhœal epidemic seasons, both in the case of infants and other persons; at other seasons the other terms are found to be more used, but still the term 'diarrhœa' predominates. Moreover, the term 'cholera' or 'choleraic diarrhœa' is applied less frequently to the severe malady of infants than when a similarly severe case occurs in older persons."

Dr. Ballard wrote: "It is obvious, from all that has preceded, that this malady, which we designate as diarrhœa, is not a mere dyspepsia, nor a mere enteritis, although enteritis is one element in the disorder, but a general disease of specific character, to which a distinct and specific name other than diarrhœa (the name of only one symptom of the disease) ought to be attached." That specific name has now been provided by the Royal College of Physicians, who have officially named the disease epidemic enteritis or zymotic enteritis. It remains only for the medical profession to universally adopt one or other of these terms when certifying deaths from diarrhœa.

PREVENTION OF LACERATION OF PERINEUM.

DR. ALEX. DUKE, F.R.C.P.I. (Ex-Assistant Master, Rotunda Hospital, Dublin) writes: I cannot but think there are numbers of the profession practising midwifery who have had quite as much, if not more, experience, who will not agree with Dr. Walters's statements. No certain plan has as yet been found for the prevention of laceration, and when Dr. Walters discovers such we shall be all glad to know of it. I question very much whether his "more modern practice with excellent results" is any better, or as good, as intermittent dilatation, that is, during the pain. What about delivery of shoulders?

ACADEMIC COSTUME.

JACKDAW writes: On page 208 of the BRITISH MEDICAL JOURNAL of July 21st I notice "Antihumbug's" answer to "H." *re* the wearing of academic costume at the Ipswich meeting. Whenever I attend an Association meeting I certainly shall wear academic costume. Every man can regard the wearing of "orders" from his own point of view—this is a free country. I should like to know "Antihumbug's" ideas *re* the following: Would the College of Surgeons have instituted the wearing of academic costume merely to add brilliancy to a meeting? 2. Lawyers are generally supposed to be longheaded individuals; why, then, do not they discard their costume? 3. Do clergymen forget to don their hoods during service? 4. Which is the better legend on a doorplate—"X. and Y., physicians and surgeons," or "Drs. X. and Y., physicians and surgeons?" 5. A brother medico called one evening and told my maid to "tell Dr. A. that B. of C. has called." Did B. lower himself and his profession in my maid's estimation? 6. I know a medico who frequently asks a club patient whether "D.," that is, his assistant, "had done so-and-so;" wouldn't "Dr. D." be preferable? Why is it that our regiments have certain decorations? Are they needed? 8. Why do retired army and navy officers wear their uniforms on special occasions?

A CASE OF INTOLERANCE OF HYOSCYAMUS.

DR. R. E. FRANKLYN PEARSE (Jagersfontein, Orange River Colony) writes: A patient, aged 20, clerk, consulted me for bladder irritability. I prescribed potassium nitrate, potassium bicarbonate, buchu, and tincture of hyoscyamus, 3ss three times a day. The next day he noticed indistinctness of vision for near objects, giddiness, headache, and dryness of the throat. After the tenth dose he came to see me and complained of these symptoms. I at once noticed that the pupils were greatly dilated, which of course accounted for his indistinct vision. On stopping the hyoscyamus all these symptoms gradually disappeared. I have frequently prescribed 3ss doses and 3j doses three times a day, but never came across such a marked case of intolerance to this drug.

MEDICAL ARTISTS IN BLACK AND WHITE.

THE medical student is a resourceful person, and his knowledge of chemistry is sometimes applied to purposes that are somewhat outside the province of the healing art. Not long ago the residents of one of the Paris hospitals used their scientific knowledge to avenge some real or fancied grievances on an unpopular official. The victim rejoiced in the possession of a white horse, which he drove out every afternoon. One day, two or three hours before the hour of the drive, the conspirators made their way into the stable, and painted one half of the horse's body with brushes steeped in a solution of nitrate of silver. When the coachman went to harness the horse he fled in terror at the appalling spectacle that met his gaze, the milkwhite steed being on one side coal black. The official was naturally very indignant at the outrage, and has ordered the strictest inquiry, but it is not thought likely that he will discover the ingenious artists in black and white who exercised their pictorial talent on his horse.

LETTERS, COMMUNICATIONS, ETC., have been received from
A W. J. J. Arnold, M.B., St. Helena; A. Ashby, M.B., Reading; A. T. C. **B** Messrs. Burroughs, Wellcome, and Co., London; Messrs. P. B. Burgoyne and Co., London Dr. P. Boulton, London; Mr. E. Bromhall, Rawtenstall; Mr. E. D. Bower, Gloucester; Dr. W. A. Brailey, London; Mr. W. H. Bennett, London; Bios; A. Brownlie, M.B., Redcar; T. A. Buck, M.B., Ryde, Isle of Wight; Dr. E. G. Barnes, Eye. **C** Mr. H. J. Clark, Swanage; Mr. W. R. E. Coles, London; J. J. Clarke, M.B., London; Cantab.; Crista Galli. **D** Mr. E. G. Dutton, Brighton; A. F. Dixon, M.B., Cardiff; Dr. R. Domenichetti, Horncastle; Mr. S. Daly, Manchester; Dr. G. H. R. Dabbs, Shanklin, Isle of Wight. **E** Mr. T. S. Ellis, Gloucester; Enquirer; Mr. W. L. Edwards, Barry. **F** Mr. E. H. Freeland, London; Dr. E. L. Fenn, Colchester; Dr. T. Fentem, Bakewell; Dr. A. F. Fergus, Glasgow. **G** Dr. L. W. Gans, Frankfort; Dr. J. Griffiths, Cambridge; J. Graham, M.B., Glasgow; Mr. T. P. Gostling, Worcester; Dr. J. B. Gimson, Adelaide; Miss L. M. Grant, London; G. S. F. **H** Mr. E. P. Hardey, Hull; Mr. H. Hemsted, jun., Winchester; Hibernicus; A. C. Houston, M.B., London; Dr. J. R. Hamilton, Hawick; Dr. T. Hill, Bristol; A. Henderson, M.B., Aberdeen. **I** "Indian Medical Gazette," Editor of, Calcutta. **K** C. S. Kilner, M.B., Bury St. Edmunds. **L** Dr. E. Liveing, London; Leucoma; Mr. C. R. Lucas, London; Mr. T. Laffan, Cashel; Dr. A. E. Lloyd, Rhyl. **M** Dr. J. M. Martin, Stroud; Mr. B. E. Matthews, London; Mr. E. Merck, London; Member of Medical Defence Union; G. C. Milligan, M.B., Elie; Dr. W. O. Moor, Rome; J. MacRury, M.B., Glasgow. **O** S. I. Oddie, M.B., Hastings; Observer; Dr. J. A. Ormerod, London. **P** P. S.; Mr. J. S. Pearse, Plymouth; Perplexed; Mr. H. J. Pickering, Chippenham; E. Phillips, M.B., Coventry. **R** Mr. J. Robertson, Edinburgh; Dr. J. Reid, Redhill; Rusticus. **S** Mr. G. R. Shorto Exeter; A. J. Somers, M.B., Selby; Surgeon; S. R.; Mr. N. Smith, London; Sangongo Mr. W. L. Symes, London. **T** Mr. A. T. Todd-White, Leytonstone; Mr. D. Thomas, Penybryn; Mr. R. F. Tobin, Dublin; J. Tennant, M.B., Belfast. **V** Veritas; Visitor at the Centenary Meeting; Dr. M. A. Veeder, Lyons, N.Y. **W** Mr. F. F. White, Coventry Dr. A. W. Woodroffe, Ticehurst; W. C.; Mr. F. C. Wood, Ripley; W. W. Westcott, M.B., London; Dr. T. S. Wilson, Birmingham, etc.

BOOKS, ETC., RECEIVED.

The Permanganate Treatment of Opium and Morphine Poisoning. By Dr. W. O. Moor. London: Baillière, Tindall, and Cox. 1899. 1s. 6d.

The Principles and Practice of Hydrotherapy. By S. Baruch, M.D. London: Baillière, Tindall, and Cox. 1900. 16s.

Footpaths: their Maintenance, Construction and Cost. By A. T. Allen, C.E. London: The Sanitary Publishing Company. 6d.

. In forwarding books the publishers are requested to state the selling price.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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N.B.—It is against the rules of the Post Office to receive letters at *Poste Restantes* addressed either in initials or numbers.

SIXTY-EIGHTH ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION.

Held at IPSWICH, July 31st, August 1st, 2nd, and 3rd, 1900.

PROCEEDINGS OF SECTIONS.

SECTION OF STATE MEDICINE.

John C. Thresh, M.D., D.Sc., etc., President.

RATE-SUPPORTED SANATORIA FOR CONSUMPTIVES.

By Nathan Raw, M.D., F.R.S.Edin., D.P.H.,
Medical Superintendent, Mill Road Infirmary, Liverpool.

The whole civilised word has at last awakened to the fact that the dreaded scourge of tuberculosis may be stamped out by proper precautions and treatment. Whatever is done must be on a sensible and comprehensive scale, as a disease which sweeps away 60,000 people annually in Great Britain alone cannot be lightly dealt with. The immortal Pasteur has said, "It is in the power of man to cause all parasitic diseases to disappear from the world," and as we now certainly know tuberculosis to be a parasitic disease, we have the power to eradicate it. It is not the intention of this short paper to discuss the causes of this malady, but it is necessary to emphasise the fact that it is never directly hereditary, but in every case acquired. Being a communicable disease, it is transmitted chiefly by the sputum of a consumptive to a previously healthy person, by tuberculous meat, and by milk from a tuberculous cow. The two latter causes, namely, meat and milk, are being rigorously dealt with by all medical officers of health and municipal bodies, and we may safely assume that as direct causes of tuberculosis they will soon be removed. It is, however, to the first cause—the danger of one consumptive in a household infecting his fellows by his sputum that I wish particularly to draw attention. As a general rule, the unfortunate member or members of a family who are attacked are young, and naturally command a great deal of sympathy. They are looked upon as hopelessly stricken, and, in consequence, are nursed and pampered to their great detriment. Carefully located in the best room of the house, the air religiously excluded, the windows sealed up, the air impure and overheated, the patient is loaded with woollen clothing and his bed with eiderdowns, he is provided with the very best conditions for his destroyers to flourish. Tubercle bacilli enjoy this treatment, and under these circumstances their work is rapid.

We ask ourselves the question, How are these delusions to be dispelled? They are delusions, and they are fixed in the minds of the general public.

The greatest preventable evil the world has ever known must be combated by general and gradual action. It cannot be expected that so important a disease can be stamped out by legislative action as if it were a dangerous infectious disease like cholera, small-pox, or plague. It does not come under the same category of disease, and far from being an acute infective process it is essentially a chronic disease, although at times acute in its manifestations. To my mind, before any legislative or coercive measures can be thought of, our duty is to educate the public thoroughly as to the cause, means of prevention, and hope of cure. When this is done—and some years will be required for the process—the public themselves will gladly co-operate with the health authorities in any measures they may adopt for eradicating tuberculosis. The upper and middle classes will have to provide for themselves, but the working mass of population, including the poor, will have to be cared for at the expense of the rates.

My energies have up to now been confined to the condition of the consumptive poor, of whom we have a large number in Liverpool. The city is divided for Poor-law purposes into three large unions in order of size: West Derby, Liverpool, Toxteth. The aggregate population is nearly a million souls, with necessarily a large number of consumptives. The infirmaries and Poor-law institutions all being situated in the centre of this large city, they are eminently unsuitable for the treatment of consumption; most of the cases were admitted in an advanced stage of the disease and died, whilst those who were in the curative stage had no opportunity or fair chance to recover.

In September, 1898, I presented a report to the West Derby Board of Guardians setting forth the large number of consumptives admitted into the Mill Road Infirmary every year, and the great desirability of giving those patients in the early stages of the disease a better chance for their lives by placing them in a suitable sanatorium in the country.

They at once favourably considered the scheme, and expressed in every way their desire to do everything possible to relieve the poor committed to their charge. For the purposes of administration and economy, and to prevent one union being imposed upon unduly, it was decided to ask Liverpool and Toxteth Unions to unite in the scheme and erect one large sanatorium for the whole of the Liverpool poor. They cordially agreed, and a joint Committee was appointed consisting of representatives from the three unions according to their population, constituting a Tuberculosis Committee, each union to bear its fair proportion of cost as allocated to it. The Local Government Board at once agreed to the scheme, although it was new and unprecedented, and the work is now in progress. The Committee has been fortunate in securing a most excellent site on the banks of the river Dee, near Heswall, at an elevation of 650 feet, and easily accessible from Liverpool.

This sanatorium will be reserved for the early or curable cases, and no patient will be admitted without a careful medical examination and a certificate to that effect. In order to prevent patients from other unions seeking admission to the sanatorium it will be necessary for them to prove their *bona fides* by a term of residence, to be fixed by the Committee, in one of the Liverpool unions.

The advanced cases have all been carefully removed from the general wards of the infirmaries and segregated in consumption wards, and careful precautions instituted against infection. To my mind this is an ideal treatment, as, in addition to being a good education to the poor, it presents the only chance of recovery. I would strongly advocate Boards of Guardians in large and populous towns and in large industrial areas combining together in this way, as, in addition to the pleasure it must afford them to act in the true spirit of humanity and Christianity to their humbler brethren, it is economical.

A man or woman cured of consumption is again a breadwinner, and not only himself, but his wife and children, removed from the burden of the rates. Those Boards of Guardians who are not large enough, or have not enough consumptive poor for a special sanatorium, may provide special facilities for the open-air treatment at their different workhouses and institutions, most of which are situated in the country. By doing this they will educate the poor in the way the disease ought to be treated at home, and so prevent its spread.

With regard to the working non pauper class of the community they ought to be provided for by the municipalities at the expense of the rates. Each county council, corporation, or district council should erect a sanatorium in some suitable district for the working classes. The cost would not be great, as a large number of patients would only be too glad to pay (as far as their means would allow) for their maintenance.

The Lancashire County Council has already had this matter before it, and it is earnestly hoped it will lead the van in this humane work. Private enterprise and charitable and philanthropic persons will continue to provide treatment for a few, but a preventable disease such as tuberculosis, which is sapping the vitality of the whole community of mankind, must be dealt with in a general way by those corporations which have the custody of the public health in their keeping. The health authorities must do everything possible to prevent the disease, directing their attention in particular to the houses and surroundings of the working classes, the disinfection of houses in which consumptives have lived and died, with their clothes and bed linen.

Having the control of preventive measures they certainly

ought to have the means of cure, and the only cure known at present is fresh air and sunlight in a proper sanatorium. The scope of this short paper does not permit of the discussion of the question of notification of tubercle to the health authorities. I sincerely hope that for some years at any rate it will not be attempted. Voluntary notification is desirable, and if successful may be replaced later by compulsory notification.

The health authorities should inform themselves where any death from tubercle has taken place and offer to disinfect the house free of charge.

The city of Liverpool has set an example to the whole country in the treatment of tuberculosis, both as regards municipal and private enterprise, for in addition to the sanatorium for the poor, a similar institution is being erected in Delamere Forest by the Consumption Hospital Committee, and a private citizen of Manchester is erecting a large sanatorium in Delamere Forest for the poor of Manchester entirely at his own expense. The erection of large numbers of sanatoria throughout the country will do more to solve the difficult problem of how to reduce the mortality from tuberculosis and prevent its spread than anything else, and I hope the day is not far distant when every town and district will have a well-equipped sanatorium in its midst. At the present time numerous sanatoria are being erected and maintained at the municipal expense in America, Canada, and all over the Continent, and as England has been a pioneer in the open-air treatment it certainly ought not to be left behind in municipal enterprise.

I feel sure that in a very few years it will be a matter of extreme difficulty, if not an impossibility, for a consumptives to find ordinary means of employment, as public opinion will have been so awakened to the possibilities of danger from infection, that ordinary workers in factories, workshops, and offices will object to their presence in the same rooms. Then, what is to become of them? Some provision must be made for their cure, otherwise they will be thrown upon the rates. The proper authorities to deal with this problem are the county councils and municipalities, as it is too large and general a question to be left to chance philanthropy and charitable institutions.

DR. COOPER PATTIN (Norwich) agreed generally with the reader of the paper. He thought strenuous efforts should be made to bring home to the ratepaying mind the evidence which would show that the provision of sanatoria from public resources for the poor would prove to be a positive economy. Gratuitous disinfection after the removal or death of a person from phthisis had been carried out in his district for the last seven years with increasing success. Voluntary notification had, however, not been up to date a marked success.

Dr. HILL (Birmingham) said that interesting and valuable as Dr. Raw's paper was from a professional point of view, it appeared to him particularly so as calculated to diffuse a much-needed information on the subject. As far as his experience went the principal obstacle to the establishment of sanatoria was the expense involved, and it was only by repeating a discussion of the subject and thus impressing its great importance that desirable action was likely to be brought about. In the absence of compulsory notification voluntary intimation should be invited, cases should be watched, and where removal or death occurred effectual disinfection of the house, etc., should be carried out. This was as far as our powers at present extended, and, so far, he was in the habit of making use of them.

Dr. OLDFIELD (London) objected to the loss of independence involved in the establishment of sanatoria. He thought the first thing that should be taught was that fresh air and sunshine were inimical to phthisis, and people should be taught to dress more lightly, to ventilate their houses and not to live in close rooms but to get as much fresh air and sunshine as they could. It was by this means, and by this means only, that phthisis in the incipient stages could be eradicated.

Dr. GROVES (Isle of Wight) said that the treatment of phthisis thirty years ago was the treatment of to-day, but because of royal recognition, or for some other reason, the public now listened to the teaching of the medical profession. The danger was, under such circumstances, that the whole thing might be quacked. As yet public opinion would not sanction the permanent isolation treatment of cases of phthisis; the periods of residence in sanatoria could only be temporary. In every instance the ultimate treatment of the patient must be in his own hands. The greatest value of sanatoria was to be found at the present time in the education received in them.

Dr. PECK (Chesterfield) was pleased to know that the tuberculous patients in the West Derby Union were segregated from other patients. In his time, when House-Surgeon at the Walton workhouse in that union, no such separation took place, and it not infrequently happened that a patient in an advanced stage of phthisis was placed next to a pneumonia patient. Remonstrance to those in office was useless, for he could get no medical support for the view of the infectious nature of the disease. He did not agree with Dr. Raw as to the inadvisability of the compulsory notification of phthisis. He thought it should be compulsorily notifiable, and that the disinfection of houses in which deaths from tuberculosis had occurred should also be made compulsory.

Dr. GRÜNBAUM emphasised the necessity for sanatoria, inasmuch as treatment at home was practically impossible—the *Liege-cur* would never be adopted by poor people. A sanatorium was merely a special hospital, and quite as necessary.

Dr. MACFIE (Bolton) thought it would be well for a general practitioner to express his opinion of the line of treatment of tuberculosis in general practice, as previous opinions had mostly come from medical officers of health. Personally he treated all cases as cases of infectious fever, isolated the sleeping room, circumscribed and destroyed all expectoration, and encouraged the patient to take as much fresh mountain air as the circumstances of the individual case could take. But besides there were intratracheal injections which, if carried out at the beginning of the complaint, would certainly arrest the onward progress of the case, and would allow the fresh air treatment to take effect with other minor lines of treatment. He had no difficulty in getting patients to carry out his instructions. He always had disinfection carried out, and one should have cases reported, but enforced reporting should not lead to severe measures being undertaken against the invalid—the public should be trained gradually. Sanatoria would come, and they ought to be at the public expense, therefore the authorities should themselves be trained.

Dr. NATHAN RAW, in reply, said he was grateful for the excellent discussion his paper had aroused, and although he had placed a high ideal before them he felt sure it would soon be realised. It was absolutely impossible to attempt the proper treatment of consumption in the homes of poor patients, from which they ought to be removed, and a short residence in a sanatorium would not only benefit the patient, but educate him and his friends to the proper means of treatment. In his opinion compulsory notification must not be attempted for some years till the public had been slowly but surely educated to its value.

A DISCUSSION AS TO WHETHER MODERN SYSTEMS OF SEWAGE TREATMENT CAN BE DEPENDED UPON TO REMOVE THE BACILLUS TYPHOSUS AND ALLIED ORGANISMS.

I.—A. C. HOUSTON, M.B., C.M.Edin., D.Sc., F.R.S.E.

I MUST first thank Dr. Thresh, the President of this Section, for the great honour he has done me in asking me to open this important discussion.

I take the above title broadly to mean, Can the modern system of "treating" sewage in septic tanks and bacterial filters be relied upon to remove or destroy pathogenic germs? If it is desired to include in the discussion the older methods of "treating" sewage chemically or on land, I must leave these points to the attention of other speakers.

I propose to confine my remarks wholly to bacterial filters because septic tanks, whatever their advantages may be from the chemical and practical points of view, cannot, I think, be regarded as much better than modified cesspools from the view-point of the epidemiologist; and the unfortunate part

played in the past by the overflow and leakage from cesspools in the dissemination of typhoid fever is familiar to everyone.

The possibility of the mechanical separation of micro-organisms in bacterial filter beds may be dismissed in a few sentences. In nearly all cases the size of the particles in bacterial beds is such as to preclude the possibility of the mere mechanical separation of the germs. Frequently the size of the material is about that of a walnut. When it is remembered that the spherical bacteria are only about one-twenty-five-thousandth of an inch in diameter the impossibility of microbes being retained in biological filters will be readily appreciated. Where the attempt has been made to use finer material with the object of holding back the bacteria, the filters have usually if not invariably become "choked up" and useless. At the same time it is easy to imagine that some of the micro-organisms, as well as the suspended matters in sewage, while passing to and fro over the surface of the material in a bacterial bed may effect a temporary or permanent lodgement in the substance of the bed. Indeed we know that a new bacterial bed produces unsatisfactory results until the material of which it is composed has become coated with a slime of animal and vegetable matters, and of course innumerable bacteria. When a bed has reached this stage it is commonly spoken of as being "mature," and is regarded as being fully "charged" with the special bacteria concerned in the work of purification. But the occasional accidental retention of some of the sewage bacteria in bacterial beds can hardly be regarded as a factor worthy of serious consideration in this connection. Of course in the case of secondary or tertiary bacterial beds, and when the sewage is first "treated" in such a way as to remove all the suspended matters, the material used may be so fine as to lead to the mechanical separation of a large percentage of the total number of bacteria. But, having regard to permanency of action and to what is feasible in practice, I think it may be stated in general terms and with comparative safety that the mechanical separation of the micro-organisms in sewage by the use of bacterial beds is virtually impossible.

But there are other means by which certain of the bacteria, and more especially the pathogenic microbes, might be got rid of in the bacterial treatment of sewage. I refer of course to the possibility of the biological processes at work in the filter beds proving inimical to those germs which are to be thought of as being causally connected with morbid processes in the human subject. In the first place, I would remind you that before the sewage has reached the sewage works where it is proposed to "treat" it, many important changes have already occurred in its chemical, and doubtless also in its bacteriological composition during the passage of the liquid along, it may be, miles of sewers. But I think for the purposes of this discussion we are privileged to conclude that whatever chemical and bacteriological changes may have taken place in the sewers, the sewage is still nearly (although possibly not quite) as dangerous from the epidemiological point of view as when it left its original objectionable source.

It needs no remark of mine to assure you that to search for the typhoid bacillus in sewage or in sewage effluents is a task which is to be thought of as well-nigh hopeless. The extremely remote chance of detecting the typhoid bacillus in London sewage was well stated by Andrewes and Laws. Their calculations were, of course, purely conjectural, but I think may be accepted as showing conclusively that the mathematical chances of isolating the typhoid bacillus from ordinary sewage are so remote as to be almost infinitesmal. Nevertheless it is of interest to remind you in this connection that Andrewes and Laws[1] on May 23rd, 1894, succeeded in isolating from the fresh sewage of Homerton Fever Hospital two microbes indistinguishable from B. typhosus. Unfortunately at the period of their investigations our knowledge as regards the differentiation of B. coli (and allied forms) from the typhoid bacillus was far from complete, and it is possible that had the modern method of testing been then available their conclusions might have been different. It will be understood that this criticism is offered in no captious spirit. That these reliable observers were fully justified in drawing the conclusion they did in 1894 need not for one moment be doubted since they utilised all the tests then at their command, yet it is not equally certain that these seemingly typhoid germs would have stood the test of modern investigation.

If, then, it is desired to form any conception of the probable fate of the typhoid bacillus and other pathogenic germs during the biological processes at work in bacterial beds, it is necessary to go further afield and see how other microbes more easily to be recognised and identified fare in the struggle for existence. It will at once occur to you that the micro-organisms specially suited for this purpose are those bearing a close relation to excremental matters, and further, those microbes which are to be thought of as likely to be associated with the pathogenic typhoid bacillus whenever present.

In February, 1898, when I commenced my bacteriological investigations on the bacteriology of crude sewage and sewage effluents for the London County Council, I was impressed with the importance of selecting one or more micro-organisms in the crude sewage and ascertaining their relative abundance therein, and then tracing the fate of these microbes during the biological treatment of the sewage at Barking and Crossness. The two micro-organisms (B. coli and B. enteritidis sporogenes), which I chose for this purpose, are both typical of excremental matters, and specially abundant therein. B. coli (Fig. 1) is an aërobic (facultative anaërobic) intestinal



Fig. 1.—Surface phenol gelatine plate culture $\frac{1}{10000}$ c.cm. of Crossness crude sewage; 75 colonies counted in all; 15 of these seemed on macroscopic and microscopic examination to be indistinguishable from B. coli communis. Subcultures of these colonies (marked 1 to 15 on figure) yielded results as follows: Gelatine shake cultures: 1 to 15 inclusive produced gas in 24 hours at 20° C. Litmus milk cultures (38° C.). By the sixth day 6 and 10 strongly acid (6 commencing clot, 10 solid clot); 9 and 11 practically no visible change; 2, 8, 12, and 13 slightly acid; 1, 3, 4, 5, 7, 14, and 15 faintly acid. Broth cultures (38° C.): In 24 hours diffuse cloudiness in all the tubes. On the sixth day all the tubes were tested for indol reaction, and all gave a negative result with the exception of 9, which showed a strong indol reaction. (About natural size.)

germ, certain strains of which are pathogenic, and B. enteritidis sporogenes (Fig. 2.) (Klein) is an anaërobic spore-forming microbe whose cultures are extremely virulent to guinea-pigs, and which Dr. Klein's researches show may be casually related to certain cases of acute diarrhœa in the human subject.[2]

The results to which I now propose to call your attention have already been published in the London County Council

[1] *Investigations on the Micro-organisms of Sewage.* London County Council Report, 1894.

[2] See report by Dr. Klein, Reports of the Medical Officer, Local Government Board 1896-7-8-9; also reports by Dr. Andrewes, Report of the Medical Officer, Local Government Board, 1896-7; and the *Lancet*, January 7th, 1899.

Reports,[3] but it is believed that a brief reference to them will not be out of place in the present connection.

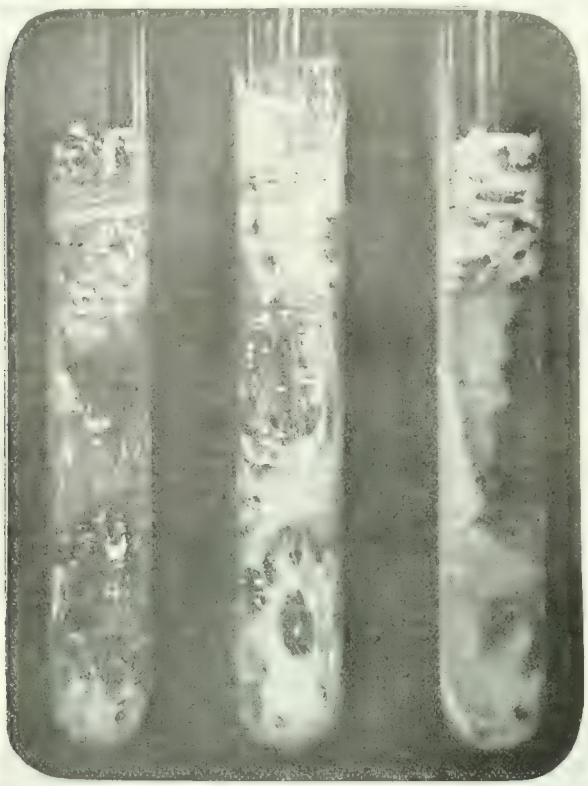


Fig. 2.—An illustration of the changes produced in milk cultures by the growth of B. enteritidis sporogenes. The middle tube was inoculated with $\frac{1}{10}$ c.cm. and the lateral ones with $\frac{1}{100}$ c.cm. of Crossness crude sewage. The tubes were next heated to 80° C. for 10 minutes, and then cultivated anaërobically by Buchner's method at a temperature of 38° C. (About natural size.)

The following table (Table I) shows the results, as regards B. coli (and closely-allied forms) of the bacteriological examination of 26 samples of Crossness crude sewage, 15 samples of the 4-feet coke-bed effluent, 8 samples of the 6-feet (primary) coke-bed effluent, and 3 samples of the 6-feet (secondary) coke-bed effluent. Without entering into detail it may be said that the biological processes at work in the coke beds did not effect any constant or striking reduction in the number of B. coli in the effluents as compared with the number in the corresponding samples of crude sewage.

TABLE I.—*Number of Bacillus coli (or closely-allied Forms) in 1 c.cm.*

Date. 1898.	Crossness Crude Sewage.	Effluent from 4 ft. Coke Bed.	Effluent from 6 ft. (primary) Coke Bed.	Effluent from 6 ft. (secondary) Coke Bed.
May 11	*	200 000	—	—
,, 18	300,000	200,000	—	—
,, 25	1,500,000	700,000	—	—
June 9	200.000	100,000	—	—
,, 15	300,000	600.000	—	—
,, 22	300,000	300,000	—	—
July 20	300,000	300,000	—	—
,, 27	500,000	—	600,000	—
Aug. 4	200,000	300,000	—	—
,, 9	1,000,000	—	200,000	—
,, 19	100,000	*	—	—
,, 24	300,000	—	400,000	—
Sept. 14	600,000	400,000	—	—
,, 21	1,600,000	—	700,000	—
,, 28	1,000,000	900,000	—	—
Oct. 5	1,200,000	—	1,300,000	—
,, 12	800,000	500,000	—	—
,, 21	800,000	—	800,000	—
,, 26	*	—	—	*
Nov. 9	400,000	400,000	—	—
,, 16	300,000	—	500,000	—
,, 23	600,000	—	—	100,000
,, 30	600,000	200,000	—	—
Dec. 7	400,000	—	200,000	—
,, 14	400,000	—	—	100,000
,, 21	500,000	600,000	—	—

* None in 0.00001 c.cm.

[3] *Bacterial Treatment of Sewage*, London County Council Reports. By Dr. Clowes and Dr. Houston.

TABLE II.

Number of Spores of Bacillus Enteritidis Sporogenes.

Date 1898.	Crossness Crude Sewage.	Effluent from 4 ft. Coke Bed.	Effluent from 6 ft. (primary) Coke Bed.	Effluent from 6 ft. Coke Bed again passed through the laboratory vessel at Crossness.	Effluent from 6 ft. (second'ry) Coke Bed.
May 11	+0.1 c.cm. —0.01,0.001 & 0.0001 c.cm. sewage	+0.01 c.cm. —0.001 & 0.0001 c.cm. effluent	— —	— —	—
,, 18	+0.1, 0.01 & 0.001 c.cm. sewage	+0.1 & 0.01 c.cm. —0.001 c.cm. effluent	—	—	—
,, 25	+0.1 & 0.01 c.cm. —0.001 c.cm. sewage	+0.1, 0.01 & 0.001 c.cm. effluent	— —	— —	— —
June 9	+0.1 & 0.01 c.cm. sewage	+0.1 & 0.01 c.cm. effluent	—	—	—
,, 15	+0.1 c.cm. sewage	+0.1 c.cm. effluent	—	—	—
,, 22	+0.1, 0.01 & 0.001 c.cm. sewage	+0.1 c.cm. —0.01 & 0.001 c.cm. effluent	— —	— —	— —
July 6	+0.1 c.cm. —0.01 & 0.001 c.cm. sewage	+0.1 c.cm. —0.01 & 0.001 c.cm. effluent	— —	— —	— —
,, 20	+0.1 & 0.01 c.cm. —0.001 c.cm. sewage	+0.1 & 0.01 c.cm. —0.001 c.cm. effluent	+0.1 & 0.01 c.cm. effluent	+0.1 & 0.01 c.cm. effluent	— —
,, 27	+0.1 & 0.01 c.cm. sewage	+0.1 & 0.01 c.cm. —0.001 c.cm. effluent	+0.1 & 0.01 c.cm. effluent	+1 0 & 0.1 c.cm. —0.01 c.cm. effluent	— —
Aug. 4	+0.1 & 0.01 c.cm. sewage	+0.1 & 0.01 c.cm. effluent	+0.1 c.cm. effluent	+0.1 c.cm. effluent	—
,, 9	+0.1 c.cm. —0.01 c.cm. sewage	+0.1 & 0.01 c.cm. effluent	+0.1 & 0.01 c.cm. effluent	+0.1. c.cm. —0.01 c.cm. effluent	— —
,, 19	+0.1 & 0.01	+0.1 & 0.01	+ 0.1	+0.1	—
,, 24	+0.1 & 0.01 —0.001	+0.1 & 0.01	+0.1 & 0.01 —0.001	+0.1 —0.01	—
Sept. 14	+0.1, 0.01, & 0.001	+0.1, 0.01 —0.001	+0.1 —0.01	— —	+0.1 & 0.01
,, 21	+0.1, 0.01, & 0.001	+0.01 & 0.01	+0.1, 0.01 —0.001		+0.1 & 0.01
,, 28	+0.1, 0.1 —0.001	+0.1, 0.01 —0.001	+0.1 & 0.01		+0.1 & 0.01
Oct. 5	+0.1 & 0.01 —0.001	+0.1 & 0.01	+0.1 & 0.01 —0.001	— —	+0.1 & 0.01
,, 12	+0.1, 0.01 & 0.001	+ 0.1, 0.01 & 0.001	+0.1 & 0.01		+0.1 —0.01
,, 21	+ 0.1 0.01 —0.001	+0.1 & 0.01	+0.1, 0.01 —0.001		+0.1 & 0.01
,, 26	+0.1, 0.01 —0.001	—0.1 & 0.01	+0.1 & 0.01		+0.1, 0.01 & 0.001
Nov. 2	+0.1	+0.1	+0.1		+0.1
,, 9	+0.1, 0.01 & 0.001	+0.1, 0.01 & 0.001	+0.1 & 0.01	—	+0.1 & 0.01
,, 16	+0.1, 0.01 & 0.001	+0.1 & 0.01	+0.1 00.1 —0.001	— —	+0 1 —0.01
,, 23	+0.1, 0.01 & 0.001	+0.1 & 0.01	+0.1 & 0.01	—	+0.1, 0 01 —0.0C01
,, 30	+0.1, 0.01 & 0.001	+0.1, 0.01 —0.001	+0.1 & 0.01	—	+0.1 & 0.01
Dec. 7	+0 1 —0.01 & 0.0001	+0.1 & 0.01	+0.01, 0.01 —0.001	— —	+0.1 —0.01
,, 14	+0.1, 0.01 —0.001	+0.1 & 0.01 ?	+0.1 & 0.01	—	+0.1 & 0.01 —0.001
,, 21	+0.1, 0.01 & 0.001	+0.1, 0.01 & 0.01	?0.1 —0.01	— —	? 0.1 —0.01

The sign + signifies the presence, and the sign — the absence o the spores of bacillus enteritidis sporogenes.

spores of B. enteritidis sporogenes of the bacteriological examination of 28 samples of Crossness crude sewage, 28 samples of the 4-feet coke-bed effluent, 21 samples of the 6-feet coke-bed effluent, 6 samples of the effluent from the 6-feet coke bed after passing through a small coke filter in the laboratory at Crossness, and 15 samples of the 6-feet (secondary) coke-bed effluent. These figures speak for themselves. They show that there was no material or constant reduction in the number of spores of this pathogenic anaërobe in the effluent as compared with the raw sewage.

Although of relatively less importance, it is not out of place to draw your attention to Table III, which shows the results as regards the total number of bacteria of the bacteriological examination of 26 samples of Crossness crude sewage, 15 samples of the 4-feet coke-bed effluent, 8 samples of the 6-feet (primary) coke-bed effluent, and 3 samples of the 6-feet (secondary) coke-bed effluent.

TABLE III.—*Total Number of Bacteria in 1 c.cm.*

Date 1898.	Crossness Crude Sewage.	Effluent from 4 ft. Coke Bed.	Effluent from 6 ft. (primary) Coke Bed.	Effluent from 6 ft. (secondary) Coke Bed.
May 11 ...	3,930,000	4,800,000	—	—
,, 18 ...	3,670,000	4,100,000	—	—
,, 25 ...	6,400,000	6,100,000	—	—
June 9 ...	6,500,000	1,200,000	—	—
,, 15 ...	4,000,000	5,300,000	—	—
,, 22 ...	9,100,000	3,000,000	—	—
July 20 ...	12,800,000	9,200,000	—	—
,, 27 ...	7,200,000	—	6,600,000	—
Aug. 4 ...	4,200,000	1,800,000	—	—
,, 9 ...	3,600,000	—	1,700,000	—
,, 19 ...	5,800,000	3,400,000	—	—
,, 24 ...	4,100,000	—	5,700,000	—
Sept. 14 ...	8,000,000	3,400,000	—	—
,, 21 ...	8,600,000	—	7,200,000	—
,, 28 ...	7,500,000	7,500,000	—	—
Oct. 5 ...	10,500,000	—	8,000,000	—
,, 12 ...	4,000,000	4,200,000	—	—
,, 21 ...	8,000,000	—	15,800,000	—
,, 26 ...	5,200,000	—	—	3,100,000
Nov. 9 ...	7,800,000	8,800,000	—	—
,, 16 ...	5,800,000	—	5,300,000	—
,, 23 ...	8,600,000	—	—	4,500,000
,, 30 ...	13,500,000	5,400,000	—	—
Dec. 7 ...	5,600,000	—	4,000,000	—
,, 14 ...	10,500,000	—	—	5,300,000
,, 21 ...	7,400,000	6,300,000	—	—

It will be noted that sometimes the number of bacteria in the effluent was actually greater than the number in the corresponding samples of crude sewage, and that as a rule the reduction in numbers was insignificant.

Besides estimating the number of B. coli and number of spores of B. enteritidis sporogenes in the crude sewage and effluents, it was ascertained that a microbe which I have described under the term "sewage proteus" (Figs. 3 and 4) passed through the filter in practically undiminished numbers. Some strains of this micro-organism were found to be virulent to guinea-pigs. Further, on comparing the cultures made from the crude sewage and those made from the corresponding effluents side by side and on numerous occasions, no striking difference was noted between the two sets of cultures. Again, I have isolated a highly virulent strain of B. pyocyaneus (Fig. 5) not only from crude sewage but from



Fig. 3.—"Sewage proteus." Microscopic preparation stained by v. Ermengem's method, showing one flagellum at the end of each rod, from a 24 hours' growth agar culture at 20° C. This microbe is usually present in crude sewage and effluents from bacterial beds in great abundance (about $\frac{1}{100,000}$ in 1 c.cm.). Some strains of this proteus-like germ were found to be very virulent to guinea-pigs. (Magnifying power, 1,000.)



Fig. 4.—"Sewage proteus." Left tube, gelatine "shake" culture, 24 hours at 20° C. Middle tube, gelatine "stab" culture, 24 hours at 20° C. Right tube, gelatine "stab" culture, 48 hours at 20° C. (About natural size.)

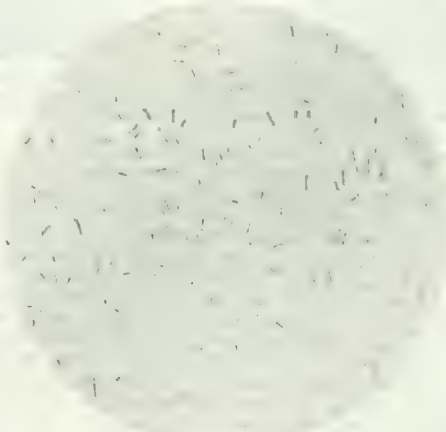


Fig. 5.—Bacillus indistinguishable in its morphological and biological characters from B. pyocyaneus, isolated from $\frac{1}{1,000}$ c.cm. of the effluent from a bacterial bed. Cultures of this microbe were found to be very virulent to guinea-pigs. Microscopic preparation from an agar culture. (Magnifying power, 1,000.)

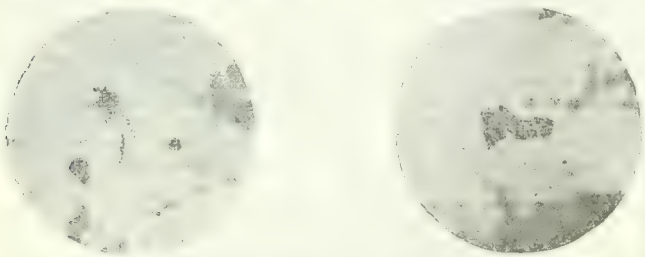
$\frac{1}{1,000}$ c.cm. of a coke-bed effluent. This microbe was indistinguishable in its morphological and biological characters from the bacillus of green pus. Dr. Klein has found in crude sewage

an extremely virulent micro-organism (B. pyogenes cloacinus),[4] but I have no knowledge of its relative abundance in raw sewage, and as to whether it is also present in sewage effluents. Lastly, I would remind you that the subcutaneous injection into guinea-pigs of 1 to 3 c.cm. of the effluent from bacterial beds almost invariably produces a rapidly-fatal result. Occasionally the animal apparently recovers, and then eventually dies from pseudo-tuberculosis (B. pseudo-tuberculosis of Pfeiffer). This I have observed in the case of the effluents from bacterial beds, and Dr. Klein has previously recorded the same fact as regards polluted river water and raw sewage.

It may be said that these results do not prove that B. typhosus and other pathogenic germs causally related to morbid processes in the human subject are capable of existing under the conditions prevailing in a biological filter. This is true, but they do prove that some pathogenic microbes pass through the filters in practically undiminished numbers, and they certainly indicate that until positive evidence to the contrary is forthcoming it would be wise to regard the effluents from bacterial beds as no more safe in their possible relation to disease than crude sewage. Of course you must understand that I am here dealing chiefly with the Crossness experiments, and it does not follow that these results have a constant value in the case of all bacterial filters. It is only right to add that from the chemical and practical point of view the coke beds at Crossness were highly efficient. Thus the suspended matters were removed, the reduction in the amount of dissolved oxidisable matter was very striking, and the effluents were apparently non-putrescible.

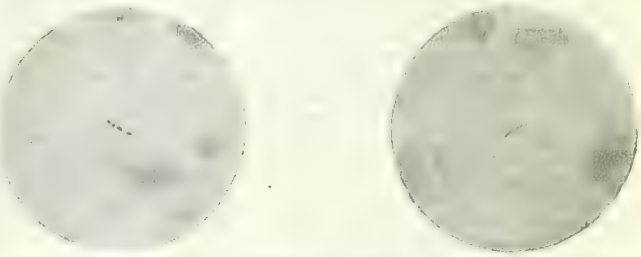
I would next draw your attention to the possibility of bacterial filters acting as a storehouse for pathogenic germs.

Two mice inoculated subcutaneously with a small quantity of the deposit which had accumulated on the coke fragments in the bacterial beds at Barking died with all the characteristic symptoms of tetanus.[5] Further, a large number of cover-glass preparations were made of the deposit on the coke fragments from one or another bacterial bed. These were stained with hot carbol-fuchsin thoroughly decolorised in 33 per cent. nitric acid and counter-stained with methylene blue. "Acid-fast" bacteria (Figs. 6 and 7)



Figs 6 and 7.—"Acid-fast" bacteria. Barking coke-bed deposit, stained with hot carbol-fuchsin, thoroughly decolorised with 33 per cent. nitric acid, counter-stained with methylene blue. (Magnifying power, 1,000.)

were found to be present in abundance, and some of them were indistinguishable morphologically from the tubercle bacillus. By centrifugalising large quantities of crude sewage and effluents, and staining the deposit in the above manner similar results were obtained. Guinea-pigs were inoculated subcutaneously and intraperitoneally with small portions of the deposit from different bacterial beds. The result was negative[6] in all cases but one. In the positive experiment[7] the animal died after the lapse of some weeks, and on examination presented the usual appearance of tubercle infection, and sections of its organs when appropriately stained showed the presence of numerous tubercle bacilli (Figs. 8 and 9). It was concluded from the experiments "that, even if some of the 'acid-fast' bacteria collecting in the coke beds are those of the tubercle bacillus, they have for the most part lost their infective power. Nevertheless, the single positive experiment recorded tends to destroy the belief that none of the bacteria in question are those of tubercle, or that, being tubercle, they have all lost their infective power."



Figs. 8 and 9.—Sections of organs of guinea-pig dead of tuberculosis. Stained as for tubercle. The animal was inoculated with a small quantity of the deposit from a coke bacterial bed. (Magnifying power, 1,000.)

In 1894 Andrewes and Laws carried out some interesting experiments on the vitality of B. typhosus in sewage.[8] Their experiments seem to clearly indicate that sewage is an unfavourable medium for the growth of the typhoid germ, and that certain sewage bacteria have a directly prejudicial effect on the life-history of B. typhosus. But, to show you how careful we must be not to ignore the element of time or "delay" in this matter, I quote from their report as follows:

"It seems, however, clear that sewage does not form a medium in which much, if any, growth is possible for them [that is, typhoid bacilli] under natural conditions, and their death is probably only a matter of a few days, or at most one or two weeks. But this degree of resistance may, nevertheless, be sufficient to allow of their being carried in sewage to remote distances, and of their being able to produce disastrous results should they gain access to any water supply."

During 1894-95 Dr. Klein carried out some interesting experiments on the vitality of the typhoid bacillus and the cholera vibrio in sterilised "pure sewage (+ 0)" and "sewage (+ 1 per cent. of potassium nitrate)."[9] In both of his experiments the typhoid bacillus throve in the "nitrate sewage," whereas in the "pure sewage (+ 0)" a much lower degree of resistance was noted. As regards the cholera vibrio in one experiment it seemed to prefer the "pure sewage (+ 0)," in the other the "sewage (+ 1 per cent. of potassium nitrate)." In all of the experiments these pathogenic germs persisted for days, and usually for weeks.

The distinct preference for the "nitrate sewage" exhibited by the typhoid bacillus is of considerable interest, since we know that a conspicuous property of bacterial filters is the large amount of oxidised nitrogen produced during the process of purification.

I have carried out some preliminary experiments on the vitality of the cholera vibrio and staphylococcus pyogenes aureus in unsterilised crude sewage, but I do not propose to discuss them here beyond saying that the death of these microbes is certainly a question of some days, probably of some weeks.

In conclusion, I would urge that one lesson to be learnt from these experiments is, that the element of time or "delay" is an all-important factor, and that it is doubtful if any bacterial process in practical operation at the present time "treats" or "detains" the sewage for a sufficiently long period to allow of the complete destruction of all the pathogenic germs by bacterial agencies.

I have shown that in the Crossness experiments the number of B. coli and spores of B. enteritidis sporogenes are nearly as numerous in the effluents as in the crude sewage; but perhaps it will be said that B. enteritidis sporogenes is a sporing anaërobe, and B. coli, although a non-sporing form, is nevertheless a hardy germ in comparison with B. typhosus and the cholera bacillus. This criticism is just, yet it is also true that an effluent enormously rich in these objectionable bacteria cannot conceivably be regarded as non-prejudicial to

[4] BRITISH MEDICAL JOURNAL, July 8th, 1899, p. 69.

[5] *Supplement to Second Report, Bacterial Treatment of Crude Sewage.* By Dr. Clowes and Dr. Houston, 1899.

[6] That is, negative as regards tuberculosis, not negative as regards pathogenic effect.

[7] The deposit was obtained from a coke bacterial bed which had been treated with sewage for a considerable time, and worked on similar lines to those adopted at the Northern and Southern outfall works.

[8] *Observations on the Bacillus of Typhoid Fever and its Relation to Sewage*, London County Council Report, 1894.

[9] App. B. No. 2 Report of the Medical Officer Local Government Board, 1894-95.

health, or as at all likely to be altogether free from other and more dangerous germs of pathogenic sort. Nevertheless I have considered the problem from this point of view also.

In a recent report [10] I have pointed out that streptococci are present in abundance in crude sewage, in sewage effluents, and in recently polluted soils and water, but are seemingly absent from pure waters, and even from impure soils and water not recently contaminated with matters of animal outcome. Now, if streptococci, as a class, are to be thought of as derived from the intestinal evacuations of animals, as delicate germs which readily lose their vitality and die, and as not



Fig. 10.—In illustration of a streptococcus isolated from $\frac{1}{100}$ c.cm. of the effluent from a coke bacterial bed. Microscopic preparation from a broth culture (2 days at 38° C.). Stained by Gram's method. (Magnifying power, 1,000.)

unlikely to be, moreover, pathogenic, the fact that I have repeatedly isolated them from $\frac{1}{10\cdot0}$ c.cm. or less of the effluents from bacterial beds cannot, I think, be without significance. Indeed, to my mind, it clearly carries the conviction that if these germs of feeble vitality pass through the filters in practically unaltered numbers, it is extremely unlikely that pathogenic germs, such as B. typhosus and the cholera vibrio, which are seemingly more resistant, would be altogether destroyed during the biological processes at work in the filter bed.

It is for you, gentlemen, to judge how far these facts and inferences throw light on the vitally important subject which is now open for your discussion.

[The photomicrographs which illustrate this paper have been reproduced by the kind permission of the Main Drainage Committee of the London County Council.]

II.—J. C. Thresh, M.D.,

Medical Officer of Health, Essex; President of the Section.

Dangers of Present Effluents.

Dr. Thresh said Dr. Houston's researches were of great value, and should be more widely known, since so much stress was being laid upon the improvement effected in sewage from the chemical point of view, that there was danger of forgetting that the real danger from sewage arose from the nature of the bacteria present in it. If the specific organisms of cholera and typhoid were not removed by the modern systems of sewage treatment then it would be even safer to cast the crude sewage into a stream or upon the foreshore, than to treat it, since in the former case the nuisance created would give an indication of danger, whilst in the latter the absence of nuisance of smell or appearance would engender a false feeling of security.

III.—J. Groves, M.B.,

Medical Officer of Health, Isle of Wight.

Dr. Groves thought the paper just read was most seasonable as sanitary authorities were looking to the bacterial treatment of sewage as an inexpensive way out of many of their difficulties. The Local Government Board had rather gone out of its usual course in discouraging the smaller authorities in this matter. Fortunately although medical officers of health had been pretty certain that whatever the chemical and other effects of bacterial filter beds upon sewage might be, the pathogenic organisms were effective for evil after passing through them; but they have had no authoritative declaration to appeal to. This want had now been supplied by Dr. Houston, for whose experiments and his account of them the gratitude of the public health service was due.

[10] App. B., No. 6. Report of the Medical Officer, Local Government Board, 1898-9.

IV.—Alderman Ward,

Harrogate Corporation.

Alderman Ward, wished to specially thank Dr. Houston for his valuable paper (as a member of a municipal corporation). Their Council was having the bacteriological system of sewage disposal persistently brought before it, and the fact of the increase of certain micro-organisms after treatment was a statement of very serious import and demanded the most careful investigation before the bacteriologial system could be thoroughly entertained.

V.—A. S. Grünbaum, M.D.,

Assistant Lecturer on Physiology, Liverpool.

Isolation of Bacillus Typhosus.

Dr. Grünbaum thought that by further examinations with Dr. MacConkey's bile-salt medium, it might be possible with comparative ease to isolate the B. typhosus, and that in all probability it would then be found to pass the bacterial beds. Consequently every attempt should be made to destroy the bacillus before it entered sewage by disinfection of the stools and urine.

VI.—H. Cooper Pattin, M.D.,

Medical Officer of Health, Norwich.

Dr. Cooper Pattin was upset by the paper of Dr. Houston, and he would like to ask him what they must do with their effluents after they left the filter beds. Should they pass them over land or over sand beds similar to those used for the purification of water?

Dr. Houston's Reply.

Dr. Houston, in reply, said that he agreed with Dr. Grünbaum that B. coli was not a resistant germ, but he thought it best to give the view ordinarily held, namely, that B. typhosus was less resistant than B. coli. The fact that B. enteritidis sporogenes was a sporing anaërobe did weaken somewhat its usefulness as a test of recent sewage contamination. At the same time, in the Crossness experiments there seemed to be an advantage in selecting both an anaërobe and an aërobe. As regarded Dr. Cooper Pattin's question, he regretted that he could only answer the question in a general way, but certainly filtration of the effluent through land of the character referred to by Dr. Cooper Pattin would very materially lessen the danger of such effluent getting into the rivers.

A DISCUSSION ON THE ACTION WHICH CAN BE TAKEN BY LOCAL AUTHORITIES FOR THE PREVENTION OF TUBERCULOUS DISEASE, APART FROM THE CONTROL OF MILK AND MEAT SUPPLIES.

I.—Henry Kenwood, M.B., D.P.H.

Assistant Professor of Public Health, University College, London

The amount of consideration and discussion given to the subject of the prevention of tuberculosis during the past year or two bears testimony to the concern with which the more enlightened section of the community is viewing the restricted and inadequate measures which have hitherto been taken to check the spread of a disease which continues to disable and kill a far greater proportion of our population than any other communicable disease.

In opening this discussion I propose first to review briefly the various measures which are available and which do not necessarily entail a scheme of voluntary or compulsory

notification and then to pass on to a consideration of the subject of the notification of phthisis.

IMPROVED SANITATION.

In the first place we all recognise that none of our efforts must be relaxed in the direction of removing those conditions of site, dwelling, occupation, and food, which promote the prevalence of the disease, seeing that the work of sanitary authorities in that direction has reduced such prevalence some 40 per cent. among males and some 54 per cent. among females, from 1861-70 to 1891-98; and in dealing with the phthisis still in our midst we must more especially direct our energies towards enforcing the provisions of sanitary law (1) for the prevention of overcrowding, (2) for securing healthy homes for the lower classes, and (3) for an improved general scavenging; to these ends an oft-repeated and systematic sanitary inspection of the poorer class houses, so many of which are nowadays tenemented or let in lodgings, is imperative. That overcrowding and the adverse social conditions with which it is generally associated affects the incidence of phthisis is supported by all statistical evidence dealing with the matter. Not the least convincing of these statistics are those brought together by Mr. Shirley Murphy, which deal with the Administrative County of London. He has taken the death-rate from phthisis, in each of the five groups of London sanitary areas, at several age-periods, and he finds that speaking generally the more overcrowded groups have higher death rates at *each age-period* than the less overcrowded, and this is especially marked at those age-periods which are most susceptible to phthisis. It is seen then what a close relationship exists between phthisis prevalence and the housing of the poorer classes.

But appreciating, as I do, the limitation of our powers in the direction of securing healthy homes and the observance of a healthy *régime* of life throughout the whole of a population, I believe we shall never secure a satisfactory reduction in the number of our phthisis sufferers by the above means alone; and in fact at the present day the phthisis death-rate for England and Wales remains at the high figure of over 1,300 per million (1898).

EDUCATIONAL MEASURES.

Everyone must recognise that what is an essential preliminary to all successful action against a disease with a period of prolonged infection, and respecting which the necessary preventive measures must be largely left to individual initiative, is the education of the public as to the circumstances favouring the individual susceptibility to the disease and the conveyance of its infection from the sick to the healthy. This education in the matter of tuberculosis is of prime importance, for there is no other communicable disease in respect of which the community must always be so dependent on individual initiative for the limitation of infection, and in which the adoption by the individual of a few simple precautions so greatly diminishes the liability to its transmission; and in these respects it is sharply separated from those diseases the notification of which is compulsory in this country. The disease has an average duration of about three years, during which the patient must subject himself to a more or less rigid *régime*, which is largely undertaken in the interest of others; how necessary, therefore, that he should be imbued with the knowledge of what he should do and with the conviction that what he does is necessary. I am not one of those who appear to be satisfied that the poorer section of the community will be brought to practise the necessary *régime* by the simple expedient of a handbill left at their doors; and they do not come in sufficient numbers to public addresses and lectures. These measures are capable of effecting but a very limited amount of good, but they are valuable means to an end, and popular lectures, given if possible by some local man, who is generally known and respected in the district, are at least as valuable as handbills.

So far as this essential matter of the education of the public is concerned, happily the public press in this country may be counted upon to co-operate in any public-spirited action. It has already afforded material and invaluable help, and by reporting the transactions of the National Association for the Prevention of Consumption it has done much more to educate the general public on the communicability of phthisis than that excellent Association could ever have done without such assistance. Indeed, I largely ascribe the very rapid and fairly general diffusion of this education among the masses which doubtless now exists on this matter, to the newspaper reporter—for nowadays almost every working man may be seen to read his paper.

The annual meetings of the British Medical Association, the Sanitary Institute, the Royal Institute of Public Health, and the National Health Society, directly (and indirectly through the press), do so much to educate the public on matters of public health that it is a lost opportunity if the subject of tuberculosis, in some one or other of its relations, does not come up for treatment.

But there is another most powerful educational factor on which we can and ought to be able to count. It could be made a very potent means of disseminating the knowledge which is essential to a successful campaign against the disease. I refer to the Church Sanitary Association. The Church, as she exists in England, with her parochial system extending to the remotest parts, is the most powerful organisation for doing good which the nation possesses; and if her officers co-operate with sanitary reformers, she can do much to educate the public on health matters and disease prevention, and thus communicate knowledge which will serve at the same time to raise the moral well-being of the whole community.

A great means of educating *the future generation* is provided through the schools. Instruction in the elements of hygiene, of healthy infant-rearing, and of infection and its prevention should be made compulsory. In every standard it could be taught, either under composition, reading, writing (copybook headings), or as a special subject; and the education should be made to appeal directly to the scholars by means of object lessons of defective hygiene, etc. The physical culture of scholars should be paid more attention to, and more air space and better ventilation provided in our schools.

Every means, then, of educating the population as a whole must be encouraged and used by the sanitary authority, and the education must be direct, convincing, and practical. In this connection it may be said that, in the opinion of many, some of the information seen in print is not always judiciously selected and convincing, nor free from suspicion of faddism and over-statement. This must be carefully avoided, for it is difficult to over-estimate the mischief which an injudicious poster is capable of effecting.

Judiciously-worded handbills may be placed in the hands of nurses, district visitors, the clergy, and the heads of schools, for distribution; and they may be distributed by the local authority to all parts of the district where the information is more particularly required. On these handbills of general information an offer should always be made to disinfect, free of charge, infected premises. In Manchester such handbills have been left three times at every house in the city since the year 1894.

Permission may be sought for placards (brief and practical), to be hung up in work-rooms, public-houses, railway-carriages and other public conveyances, theatres, and music-halls, in which the dangerous and disgusting habit of spitting everywhere and anywhere is condemned, and in which the precautions are indicated which should be taken with the expectoration coughed up by those who have coughs of long-standing.

Now, if advantage were taken of all these measures the scheme of education would be fairly comprehensive as a scheme, but it would not suffice. It is most necessary and valuable, however, in securing the sympathy and co-operation of the more intelligent section of the community, for some education of the public must be the precursor of any valuable measure of municipal control of the disease, as all municipal action in health matters is initiated and controlled by an electorate of the general public, who are influenced in no small degree by public opinion. I find no fault with that circumstance, for I believe that if a scheme proposed by a medical officer of health does not appeal to the very large majority of the sanitary authority he advises, the scheme is either a bad one, and is not therefore likely to prove valuable, or that it is premature. If it does not appeal to them it is not likely to appeal to the general public, and if it does not appeal to the bulk of public opinion it will not work in practice.

Other Measures.

Arrangements may be made with the registrar of deaths to advise the medical officer of health of all deaths from phthisis as soon as possible after registration, when the house is visited, an offer made to disinfect, and a handbill of advice left. In respect of this practice I may say that in Stoke Newington and Finchley we have, during the past two years, secured satisfactory disinfection in slightly over 70 per cent. of the applications made after learning of a death from phthisis.

Circular letters should always be sent asking the co-operation of medical men and nurses in advising and directing the necessary preventive measures in infected households. It is generally recognised that a great duty devolves upon the medical attendant who advises a phthisical patient, and his educational power is enormous.

The employment of consumptives in the cooking or selling of food should be prohibited as far as possible; and in any case, where consumptives *must* work along with healthy people, the superintendent of the works should make the observance of the rules with reference to expectoration an absolute condition on all workers. In this connection the importance of a careful selection of occupation for those who inherit a predisposition to phthisis cannot be exaggerated and since otherwise work has often to be persisted in by a phthisical patient to the detriment of his own recovery and the safety of his fellow workers, the German measure of compulsory insurance has much to recommend it. In Germany at present all persons, male and female, engaged for wages or salary in trade or business (about 8 millions) are compulsorily insured against sickness and death, the employer paying one-third, and the employee the remaining two-thirds of the premium. This law does not include domestic servants or agricultural labourers.

Finally, many sanitary authorities are now providing, free of charge, the means of a bacteriological examination of sputum, on the condition that certain particulars of the disease, when diagnosed as phthisis, should be communicated confidentially to the medical officer of health, who does not arrange for a visit to the house if the medical attendant objects.

Isolation Hospitals and Sanatoria.

The provision of some measure of hospital isolation is an essential part of an effective scheme to deal with the disease. Whatever the extent of the provision made in an isolation hospital, the great majority of the sufferers from phthisis would remain outside with their families and at their work, and I agree that it would be impossible, and unnecessarily cruel, to compulsorily take them from their homes and ambitions for purposes of compulsory isolation, save in very exceptional cases; but the fact must be recognised that if a phthisical individual, by reason of his surroundings or mental habit, is, despite all our efforts in other directions, a continuous source of danger to others, he should be compelled to submit to isolation, and without this provision all our efforts to reduce the prevalence of the disease must be seriously handicapped. What then is more particularly wanted is an isolation home or hospital for each district, or combination of districts, and where the medical officer of health and medical attendant are both able to certify that the isolation of the patient is the only measure by which others can be protected, power should be given and the means provided to secure such isolation.

In such a widely prevalent disease it is, I suppose, Utopian to expect that it will be possible to isolate most of those who require it, and a judicious selection of cases will have to be made so as to gather the best fruits from voluntary or compulsory isolation, and this involves the fairly complete knowledge of all the cases which can only be obtained by compulsory notification.

So far as sanatoria are concerned, almost without exception those located in England are designed for the benefit of the well-to-do classes, and no sanatorium is yet available for poor patients. It is impossible to believe that this state of things can be allowed to continue. For the very poor the sanitary and Poor-law authorities should accept the responsibilities of dealing with necessitous cases, and Boards of Guardians should make special provision for housing consumptive paupers apart from others. Liverpool and the County of Westmorland have already moved in this matter; in the former the provision is made by the guardians, and in the latter by private philanthropy.

The National Association for the Prevention of Consumption, which has recently taken up the crusade long preached by medical officers of health, is taking active measures in this direction in the County of Durham and elsewhere; and in two or three of the States of America large sums have been voted for the erection of State sanatoria.

Institutions of both classes will have to be provided, for general hospitals are already showing some disinclination to admit cases of phthisis to the general wards. Personally, I shall be glad to see the day come for this practice to be discontinued, for the precautions ordered to be taken against the spread of infection are rarely of such a nature as would reassure me if I were occupying the next bed to the patient, nor do they furnish a very impressive object lesson to the nurses or the other patients.

By making such provision the authority presents a most valuable object lesson to the whole community, and the more of the poorer classes who can be induced to pass through the doors of a sanatorium, either for a short residence or for gratuitous advice and treatment as out-patients, the more completely will the poorer section of the community be educated to the routine observance of the necessary precautions.

The Notification of Phthisis.

Now, all will agree that the largely educational scheme outlined above can only be regarded as complete when it is carried with certainty and promptitude to those who more particularly stand in need of it and are the most likely to act as possible sources of danger to the community; and the initiated recognise that the measures already indicated do not reach that desirable standard so far as the masses who occupy lodging houses, poor class tenements and tenemented dwellings, work-rooms, etc., are concerned. It is necessary to know where the infected homes are, and this information can be obtained by notification and by notification alone. What, moreover, we have to bear in mind is the circumstance that a large section of the community is by nature indifferent and careless, and with these, knowledge is rarely acted upon. There is not one of them, for instance, who does not know that excessive indulgence in alcohol is harmful, and yet this knowledge and the painful object lessons which they daily witness have little effect upon their actions or mode of life. Witness again the neglect of precautions against measles and whooping-cough, diseases in which the effects of negligence frequently make themselves so immediately apparent as to appeal for caution in a manner that phthisis can never do. I therefore go further, and maintain that power is required to enforce certain precautions in homes where the occupants cannot or will not adopt the necessary precautionary measures.

Handbills and lectures, etc., have little educational effect compared with that which is brought about by the visit of the medical officer health or of his assistant, who would direct and impress upon the household the necessary precautions which must be observed. This is effective education, and without notification it is impossible to thus educate and protect a large number of persons who must otherwise inevitably fall victims to the disease; that is the price which the community is paying for the failure to adopt notification.

It is said that our knowledge of the circumstances and conditions of site, dwelling, occupation and mode of life which favour tuberculosis are well known, and enable us to make a very shrewd guess of where the disease is most prevalent, apart from notification; but certain work rooms and houses have been shown by Flick, Ransome, Niven, and others to act as centres of infection, and the experience of New York (where voluntary notification has been in force since 1894, and compulsory notification was adopted, under certain restrictions, in 1897) indicates also that there are certain blocks of dwellings which are infected, and others comparatively free, which with all our knowledge of the etiology of the disease could not have been found out except by notification. As Dr. Newsholme points out, even though in an individual case no further precautions and no sanitary improvements are judged necessary by the medical attendant, the official knowledge of the case may direct attention to an "infected area."

It has been said by those who do not favour the adoption of the further measure of notification that the reduction in the mortality from phthisis exceeds that in many of the notifiable diseases, but I would prefer to put the matter from the point of view that the reduction, in the case of phthisis, is less during the past 20 years than that of several of the notifiable disease (that is typhus, small-pox, scarlet fever, and erysipelas.)

It is in the interest of the individual, the community and the State, that all communicable disease should be reduced to the lowest attainable limit, and this is impossible, so far as phthisis is concerned, without the preliminary information obtained by notification alone, and I believe this to be a conviction generally shared by those of us who have honestly tried and experienced the limitations of all other measures.

It is suggested, therefore, that a system of voluntary notification should be everywhere instituted without further delay; but not before notification is made compulsory shall we obtain a sufficiently complete knowledge of cases to enable us to cope with the disease with the greatest effect. There can be no two opinions that the action which will follow upon the compulsory notification of this disease cannot involve all the obligations and penalties enacted by public health legislation against the spread of the infection of those diseases already scheduled in the Infectious Diseases (Notification) Act. This would be impracticable and indeed unnecessary, for the reasons that (1) the average duration of infection that ultimately proves fatal is about three years, and (2) the illness falls mainly on the middle periods of life (25-55), when the sufferers are generally engaged in obtaining a livelihood for themselves and others; they are, moreover, generally capable of continuing their work for many months and often for years, and the observance of certain elementary precautions, happily summarised by Dr. Niven as "educated cleanliness," are sufficient to protect others. In fact the action taken under compulsory notification need be little if any more than that embraced in the voluntary notification scheme as practised at Manchester.

Those who know Dr. Niven and the pioneer work which he has done with reference to the great subject which we are discussing, will conclude that the measures taken in the city of Manchester are kept well abreast of public opinion. I will briefly outline the main features of the measures there adopted, for they furnish by far the most complete scheme which has hitherto been put in operation in this country, although valuable measures, embracing voluntary notification for payment, have been adopted at Brighton, Sheffield, Norwich, and Plymouth.

The Manchester Scheme.

Handbills of information and advice are freely distributed as opportunity presents itself; and as already pointed out, a handbill has been left at every house in the city on three different occasions since 1894.

Placards dealing with expectoration are affixed as often as possible in work-rooms, public-houses, public conveyances, etc.

All premises in which a death from phthisis has occurred, as reported by the registrar, are visited; advice is tendered, and an offer made to disinfect.

Pending the approval of the Local Government Board to phthisis being included amongst the diseases compulsorily notifiable under the local Act, a voluntary system of notification is in force, medical practitioners receiving the following fees:—

For each report of a case not previously reported, when reported by a private medical attendant, 2s. 6d.

For each report of a case previously reported from another source, 1s.

For each report of a change of address of a phthisical case, the new address being reported, 1s.

For each fresh case reported from a public institution, 1s.

For each change of address reported from a public institution, the new address being reported, 1s.

On receipt of the notification a visit is paid to the premises by a medical officer specially appointed and exclusively engaged in this work.

In all cases reported by a private practitioner, he calls at the house and makes a record of the circumstances requiring to be noted on the very complete inquiry form of the medical officer of health, and gives general instructions as to the sanitation of the house, but no directions as regards the personal habits of the patient, unless authorised to do so by the medical attendant. He leaves, however, in every case, a general paper of instructions as regards preventive measures.

No visit is paid to the house in those cases in which the medical attendant expresses a decided objection, provided he is willing himself to fill in the office form, to give all necessary instructions, and to take charge of disinfection, to be carried out in the manner usually employed by the health department.

The offer to disinfect and cleanse dirty premises is found to be invariably accepted. A lady health visitor or a sanitary inspector pays a fortnightly visit to each infected house with the object of seeing that the necessary measures of precaution are being carried out, and then the circumstances are reported to the medical officer of health. I ask anyone present at this meeting if he can indicate anything that is objectionable in the scheme? What is there that is unnecessary or even undesirable in it; and why may not the notification under such a scheme be made compulsory?

The Cost of Notification.

What does experience show to be the annual cost of voluntary notification? Well under 300 cases are notified in a population of 100,000; and with compulsory notification the numbers may be taken as not much over a third more than this figure. Every 100 cases notified, allowing for a fair proportion of shilling fees, does not cost more than £10, and in the experience of Manchester, Brighton, and Sheffield, the notifications from public institutions far exceed those from private practice. The extra clerical work, administration, and inspection would be covered by the expenditure of an additional £250 per annum in a large population of 100,000 or more, and often in smaller communities no increase in the existing staff would be necessary. Thus, whereas the cost of the measure in the large majority of the sanitary areas of Great Britain would not exceed a few pounds, the expenditure of about £300 per annum would suffice for the needs of a community of some 100,000. Now let us follow the economist, and disregarding the mere sacredness of human life, regard it from the standpoint of its value to the State, and we find that the above expenditure of £300, on Farr's calculation of the economical value of a human life, would be justified if it led to the saving of two lives (at £150 each) per annum.

Concluding Remarks.

In the last discussion that I had the privilege of opening I was opposed to the compulsory notification of measles, and in my opinion the arguments which tell against the adoption of that measure are no more cogent than those which may be advanced in favour of the compulsory notification of phthisis. The subject has been discussed over and over again during the past year or two, but never before with the advantage of the new light which has recently been thrown upon it, and has sufficed to dispel some preconceived views respecting the effective working of the scheme.

In conclusion, gentlemen, I firmly believe that the intelligent section of the public now sufficiently realises the enormous benefits which the community would derive from a reduction in the prevalence of phthisis (as, in fact, of all communicable disease) to the lowest attainable limit; and if they are advised that the compulsory notification of the disease would be of great assistance in enabling us to attain this end, and that it is known by all who have done something to feel the public pulse in the matter that it is now possible to introduce a system of compulsory notification which would work smoothly and effectively in practice, then we can count upon the approval and co-operation of all those whose opinion ought to weigh with us. I do not fear contradiction when I add that all those of us who have had to deal with phthisis-infected premises during, say, the past two years have witnessed an almost invariable recognition (even among the poorest) of the infectious nature of the complaint, and a readiness (and often a desire) to adopt the necessary measures of precaution. The public is then prepared to receive our advice and help, and the measures which we advocate will not only operate against the consumption, which they so dread, but at the same time they *must* have the effect of raising the standard of general health. The "crusade against consumption" is, in fact, a crusade against all disease.

II.—Alfred Hill, M.D., F.R.S.E.,

Medical Officer of Health for the City of Birmingham.

Dr. Hill agreed almost entirely with the views and recommendations put forward by Dr. Kenwood, indeed the only

fault he had to find with the paper opening the discussion was that it left very little to discuss. It would have been useful if the question had been more fully explained with regard to its bearing on notification, and the speaker, without questioning that some benefit would accrue, would have liked to hear a categorical statement of the advantages expected to be derived from notification of phthisis. He apprehended that they would be something on a par with those in connection with measles, but as this aspect of the subject did not bear directly on the title of the paper he would not diverge into its consideration. In Birmingham certain measures were taken from which considerable advantages were gained. The speaker invited practitioners to notify cases of phthisis coming within their cognisance. The health visitors sought out such cases, and left handbills giving advice on precautionary measures, and in all cases of known removal or death efficient disinfection was practised by the disinfecting officers of the health department.

III.—T. F. S. Caverhill, M.B., F.R.C.P.E.,
Medical Officer of Health for the County of Haddington.

Dr. Caverhill wished to correct Dr. Kenwood concerning his statement that there was no provision for the admission of phthisical patients of the poorer classes in Great Britain. There certainly was such provision in Scotland.

IV.—Josiah Oldfield, M.A., M.R.C.S.,
Physician to the Hospital of St. Francis, London.

Dr. Oldfield took strong objections to any attempt to make phthisis compulsorily notifiable as regarded private patients residing in their own private houses, but there were two classes where notification should be made. All persons frequenting public-houses, whether hotels or boarding-houses, should be inspected, and the houses themselves should be carefully disinfected when phthisical patients had visited such places.

V.—E. Barnard Fuller, M.B., F.R.C.S.E.,
Capetown, South Africa.

Dr. Fuller said that in Capetown they were presented with a problem which did not affect any community in this country to the same extent. He referred to the fact that every week large numbers of fresh cases of phthisis seeking health in South Africa arrived in the city. It became a question as to whether some restriction should not be put upon this wholesale intake into the city of these vast quantities of virulent cultures of tubercle bacilli which constantly reinfect the place. At present no restriction was put upon this influx, but he thought the time would come when at least some regulations must be insisted upon in order to ascertain where these infected units went, so that their power for harm to the community at large might be at least modified. For the past three years he had carried out in Capetown as far as possible the recommendations of Dr. Niven on the subject of phthisis, with the exception of notification, which he hoped shortly to obtain. He believed, however, in connection with the subject of notification, that it was wiser to begin with a period of voluntary notification in order to prepare the ground for compulsory notification, and so to avoid unnecessary friction. It might be of interest to members to know that at the Somerset Hospital in Capetown they now excluded phthisis from the general wards, and a bungalow had been built in the hospital grounds to receive any cases of phthisis which it was absolutely essential to admit. He quite agreed with Dr. Kenwood that every community should have a pauper isolation hospital for phthisis, for it was among the poor that the spread of phthisis took place most freely, owing to the poor dwellings and uncleanly habits. He might mention that phthisis was extremely prevalent among the coloured population of Capetown. During the last five years one death in every six among the coloured population of Capetown had been due to phthisis.

VI.—Francis J. J. Allan, M.D., D.P.H., F.R.S.E.,
Medical Officer of Health for the Strand District; Lecturer on Sanitary Science at King's College.

Dr. Allan thanked Dr. Kenwood for the very clear and fair manner in which he had stated the necessity for increased precautions in regard to the prevention of phthisis. For some years he had visited personally each house where a death from phthisis had occurred, but although one might have cleansing and disinfection carried out, it was like "locking the stable door after the steed has been stolen." For 3 years the patient had been disseminating the disease, possibly without any precautions having been taken. He had been surprised at the number of cases in which personal infection had occurred, and also at the number of instances in which members of other families living in the same houses had been infected. Dr. Oldfield had, he fancied, scarcely grasped the method which was carried on by Dr. Niven in Manchester. If the medical attendant was willing to see that proper precautions were being taken, there was no need for the medical officer of health to interfere in the matter. It was almost amusing at this date to hear Dr. Oldfield maintaining the attitude he did in this matter, and he was sure the public were quite of opinion that if any person was in a condition to be dangerous to his family and to other members of the public, that person must take steps to prevent that danger whatever his status might be. Dr. Oldfield's own arguments did not support the opinion he had enunciated.

VII.—Herbert Peck, M.D., D.P.H.,
Medical Officer of Health for Chesterfield U. and R.D.C.

Dr. Peck agreed with compulsory notification, but doubted whether it was at yet attainable. Good might be done in other ways than suggested by Dr. Kenwood. The Chesterfield Infant Life Protection Society had a lady inspector who visited all houses at which a birth had taken place and gave instructions as to nursing, sterilisation of milk, and so on, and also as to sanitary matters, including that under discussion. The Corporation assisted in this by contributing £40 a year to the funds of the Society. A large reduction of the infant mortality-rate had already taken place in the two years which had elapsed since the adoption of the practice.

VIII.—Herbert Jones, L.R.C.S.I., D.P.H.,
Medical Officer of Health for the Rhondda Valley U.D.C.

Mr. Herbert Jones said that the key to the action which should be taken by sanitary authorities for the prevention of tuberculosis was summed up by Dr. Kenwood in his concluding sentence: "The crusade against consumption is the crusade against all disease," and he was fearful lest in taking special precautions we should lose sight of those general measures which were so necessary. Under existing conditions there were many districts unprovided with the means of carrying on disinfection, and so understaffed that it would be impossible to take proper preventive measures even if the equipment were provided. A medical officer of health was entitled to receive from the Poor-law medical officer a fortnightly return of all pauper patients he was attending, and in Crewe he had established a system of voluntary notification of sickness by the secretaries of friendly societies, by which he was kept informed of 80 per cent. of the incidence of disease in the whole town, and thus got to know of a large number of cases of consumption.

IX.—John W. Cook, M.D., M.R.C.S.,
Medical Officer of Health for the Clacton and Walton-on-the-Naze U.D.C.

Dr. Cook was extremely pleased to be present to hear Dr. Kenwood's interesting address, and to listen to the interesting discussion that had taken place. He had through the kindness of the local medical men succeeded in getting voluntary notification of tuberculosis at Clacton-on-Sea, on his giving no publicity to such notification, and agreeing not to interfere with the patient's home without approval of the notifier, but to supply such disinfection as was deemed necessary during illness, and thorough disinfection of premises after death or removal. Feeling thus strongly on the desirability of notification, he was of opinion that local authorities should adopt measures which up to now had been overlooked: he meant the present mode of scavenging. Cleanliness in and around the home was of immense consequence in arresting the spread of disease, and he thought the present filthy ashpit did not tend to this end; he would suggest that pressure from the Section should be exercised to get a quicker and more cleanly mode of removing house refuse.

X.—Charles R. Drysdale, M.D., M.R.C.P., F.R.C.S.,
Consulting Physician to the Metropolitan Hospital.

Dr. Drysdale considered that, as overcrowding in our great cities was one of the most important factors in the spread of phthisis, the great aim of sanitarians should be to diminish this. He thought that all cases of phthisis should be notified, and that hospitals for consumption should be erected in all cities.

Dr. Kenwood's Reply.

Dr. Kenwood, in reply, said that Dr. Hill was under a wrong impression when he regarded him as an advocate of the compulsory notification of measles. He had elsewhere expressed himself as strongly opposed to that measure, and in his opening remarks he stated that he regarded the arguments opposed to it as cogent as those which might be advanced in favour of the compulsory notification of phthisis. The cost of voluntary notification which he had mentioned had been deduced from the actual experience of some of those who had had experience of the measure. The figures were, of course, an estimate only, but he believed they were approximately correct. Certain it was, that the cost of notification must always considerably exceed the mere payment of notification fees; and for the scheme to be effective additional assistance would be required in the Public Health Department of most local authorities. But one individual engaged exclusively in this work would generally be sufficient, with the co-operation and assistance of the medical officer of health, to do all the necessary work in relation to phthisis in a large population. Dr. Oldfield had advocated the non-interference with the liberty of the subject, apparently because he held the view that our action to protect the members of the community from phthisis infection was necessarily resented. It was his experience that it was almost invariably welcomed and valued, as it ought to be. He hoped and believed that the Local Government Board would soon sanction applications for the adoption of the compulsory notification of phthisis. The Local Government Board was eminently conservative. It almost invariably followed public opinion and did not lead it; but when many local authorities were prepared to petition the Local Government Board with reference to the adoption of a new measure it invariably consented. Many local authorities were now convinced of the necessity of acquiring powers of effectively dealing with the largely preventable sickness and mortality from phthisis. Compulsory notification was essential, and it had to come; he felt confident that he would live to see it general in this country. In his opinion it should always be preceded by a year or two of voluntary notification.

RURAL PHTHISIS AND THE INSIGNIFICANCE OF CASE-TO-CASE INFECTION.

By Sir H. R. Beevor, Bart., M.D., F.R.C.P.,
Physician to King's College Hospital, London.

This Ipswich meeting seems an occasion particularly appropriate to seek some light upon this relation of pulmonary tubercle. It is an appropriate time, for now the public are being directly addressed, and they turn to our profession for guidance. This is also an appropriate place, because the neighbourhood affords one of the clearest tests we can apply to this problem. One seeks the opinion of those who study the public health as to the meaning of the evidence now placed before them.

That the death-rate is the best and most reliable index of the incidence of phthisis I need hardly remark, and surely to argue the contrary is simply a sophistry. A primary indication of epidemic or infectious agencies in any disease is afforded in the irregularity of incidence in that disease. On this account a hesitating attitude of professional opinion has been inclined to attribute either great or little influence to the powers of infection in phthisis, for in the vital statistics there are great irregularities, and there is also most remarkable constancy. It is this constancy in rural phthisis I desire to bring to your notice. A year-to-year constancy of phthisis has been repeatedly commented upon by Dr. Longstaff and others. Seldom has the constancy from place to place, but only the inconstancy, attracted attention.

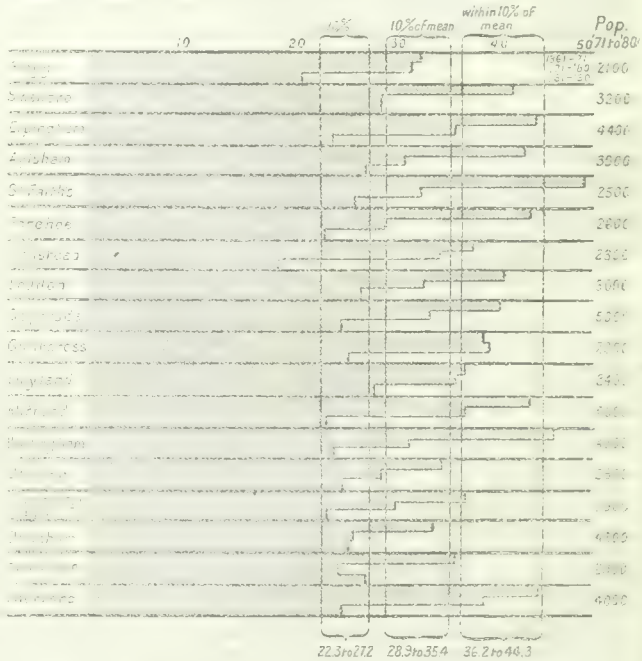
I looked for information to some county where one might hope to find that will-o'-the-wisp, *cæteris paribus*, present; that I might compare districts alike in their environment, alike in food, air, occupation, and habits; so I turned to that quiet county which lies a little aside from the centres and routes of the great growth of trade and manufacture in this century—to the county of Norfolk.

You will see by the statistics before you that—omitting Norwich, Yarmouth, and Lynn (the towns), and, further, Blofield, which holds the county asylum—there are 18 rural districts which have undergone as little change, probably, as any in England. In thirty years their occupations remain the same, and their populations are nearly stationary. These populations are small, and the records are limited to ages from 25 to 45. For three reasons: it is the age of heaviest incidence giving most deaths to estimate; it is the age when error is least likely to creep into a death certificate, and it is the age when in rural districts correction for sex incidence is unnecessary, such correction being not possible for the whole period. Correction has been made for any difference in the proportions living in either of the two decennia.

The value of this inquiry lies largely in the constancy seen in small figures; populations from 2,000 to 6,000, and deaths from 50 to 100 in 10 years. It affords evidence that in the case of phthisis it is not futile to estimate the incidence of the disease from small figures.

In the diagram, a graphic representation of the figures before you, each zone marks a range above and below 10 per cent. of the mean-rate for all rural districts, a zone for each decade, 1861-70, 1871-80, and 1881-90.

Phthisis Death-rate per 1,000 Living, aged 25-45, Norfolk Rural Sanitary Districts, showing similar rates in each decade for three decades, 1861-70, 1871-80, 1881-90.



Decade after decade it is seen that nearly all of these districts with 100 deaths fall within 10 per cent. of the mean.

How can we account for a family likeness so remarkable for that local constancy which is so regular; not by any appeal to the chances and vagaries of infection, but to the stamina of the individual. From 1860 to 1890 the little rural districts of Norfolk suffered an experience common to all parts of England in the same generation, an experience becoming increasingly favourable; accordingly it happens that in each decade the mean for the rural county has fallen 20 per cent. from the prior decade with the effect in the diagram that zones do not overlap, and we may note besides the districts falling within or nearly within 10 per cent. of the mean, that with but one

exception in each decade no district attains in a succeeding decade the rate it held in the preceeding.

We have, then, 54 collections of facts, districts with likeness in the unlike; rates alike in each decade, but unlike from one decade to another. This uniformity in the history of rural phthisis strikes me as most cogent evidence of the insignificance of case-to-case infection; the rates are far too regular for so variable a factor to be the determining factor.

Infection is a force that may almost without exception gain admittance, as in some of the epizoötic diseases of cattle, or it may be a force which is omnipresent, but gains no admittance without conspicuously contributing agencies, as tetanus in the case of gardeners.

This table assists one to appreciate the fact that contributing agencies play far the larger part in phthisis.

This is all the evidence upon the subject of my paper. To specify what the contributing agencies are would require an analysis case by case. Such an analysis has been partly performed, and for one of these districts, in the most valuable report of the kind I have seen. It is written by Dr. Plowright (286 deaths). He takes the details of incidence and notes several etiological factors. He speaks of family phthisis, pointing out more than 20 per cent. of cases were recurrent in families, and calls attention to infection. Phthisis infection attacked in the course of twenty years about every fourteenth house, and of these houses every seventh was a second time invaded. Mr. Lack gave also the twenty years' data for Hingham, which gave the same house incidence, but the seventh house with its recurrent phthisis may or may not owe this experience to the determining force infection. At the same time Dr. Plowright states, besides the agency of infection, many of these recurrent family cases may be due to the accentuation of an unhygienic mode of life among the other members of the family, such being the common sequence of events when a sick room is established in the very small accommodation of a cottage. Dr. Plowright forbears from pressing conclusions drawn from the small numbers dealt with, but I think his figures valuable, and this table tells us in phthisis deaths useful knowledge is attainable apparently from far fewer figures than in the generality of special death-rates. Among other things one learns in the 33 parishes that composed his district, not one rose to double the mean rate, though 3 with a population of 100 only had a zero. When opportunity allows of working from a standard of corrected population in each village, the value of such investigation is very greatly enhanced. It is such analyses that will enable us in the future to estimate the part played by different agencies.

I have not the data on which to discuss what the contributing agencies are, but in the uniform difference—the similar decline in rate from one decade to the next—which the powers of infection have not been able to override, one manifest agency stands out which deserves to be mentioned. I will quote from Dr. W. B. Richardson's report in 1862 to the *Medical Record*:

"Norfolk dumpling, weak tea, potatoes, heavy bread, and an occasional spare plate of animal food, and that more frequently salted than fresh, make up the daily meal of the Norfolk labourer. It is a sad lot. What wonder that the physicians call out for supporting measures so early in the course of disease." The Norfolk dumpling was flour and water; butter and milk were evidently a negligeable quantity in those days. Evidence this that stamina has so improved in these days that resistance to phthisis is accordingly increased. Stamina may be more increased than these records testify, if as is said in that rural exodus, often the proper subject of lamentation, the weaklings only are left behind.

Norfolk experience is in no way peculiar; it is merely an example. I had occasion to note, when studying the declension of phthisis in England, how constant the rate kept in rural sanitary areas of the agricultural counties of Norfolk, Essex, Bucks, Herts, Wilts, Somerset, Dorset, Shropshire, Lincolnshire, Northamptonshire, and others. I remarked generally how independent of density of population the disease stood in this country; how vast were the opportunities of infection when (to apply another test) one found the rural populations dying in a larger proportion of deaths than more crowded populations. Of all male occupations calling for frequent contact with phthisis, the clerical and medical professions are prominent, yet they are among the very freest from the phthisis. Infection is significant enough when taken as a pathological factor, but not as a determining cause; it is the other contributory causes which declare when the disease shall manifest itself. Thus it can be independent of density of population and of frequency of opportunity for infection.

Table showing Prevalence of Phthisis in Norfolk Rural Districts, 1860-90.

	Age 25-35.			35-45.			Rate Corrected for Decennia 25-45.	1860-90.
	Population.	Deaths.	Rate.	Population.	Deaths.	Rate.		
Flegg...	*a* 1,104	43	3.9	991	26	2.6	3.25	2.8
	b 1,136	49	4.4	962	19	2.0	3.15	
	c 1,211	31	2.5	984	15	1.5	2.07	
Smallborough	*a* 1,807	93	5.1	1,534	47	3.0	4.16	3.2
	b 1,712	52	3.0	1,516	40	2.6	2.84	
	c 2,006	62	3.0	1,720	45	2.6	2.86	
Erpingham	*a* 2,496	129	5.1	2,318	82	3.5	4.39	3.4
	b 2,331	87	3.7	2,063	70	3.4	3.57	
	c 2,430	63	2.5	1,869	40	2.2	2.38	
Aylsham	*a* 2,251	109	4.8	1,975	72	3.6	4.27	3.3
	b 2,047	80	3.9	1,864	46	2.4	3.09	
	c 2,143	71	3.3	1,786	36	2.0	2.70	
St. Faith's	*a* 1,374	78	5.5	1,200	46	3.8	4.81	3.5
	b 1,347	52	3.9	1,156	31	2.7	3.24	
	c 1,473	42	2.8	1,251	29	2.3	2.60	
Forehoe	*a* 1,487	77	5.1	1,371	46	3.3	4.31	3.1
	b 1,357	48	3.5	1,289	29	2.2	2.92	
	c 1,337	36	2.7	1,094	20	1.8	2.28	
Henstead	*a* 1,314	58	4.4	1,225	37	3.0	3.76	3.0
	b 1,253	44	3.5	1,104	37	3.3	3.43	
	c 1,456	29	2.0	1,224	21	1.7	1.86	
Loddon	*a* 1,663	81	4.8	1,554	50	3.2	4.09	3.3
	b 1,581	65	4.1	1,412	33	2.3	3.28	
	c 1,587	46	2.8	1,347	33	2.4	2.68	
Depwade	*a* 2,903	146	5.0	2,562	73	2.8	4.00	3.2
	b 2,683	97	3.6	2,392	72	3.0	3.33	
	c 2,768	64	2.3	2,333	61	2.6	2.45	
Guiltcross	*a* 1,318	64	4.8	1,186	33	2.7	3.88	3.4
	b 1,243	65	5.2	1,112	27	2.4	3.91	
	c 1,235	34	2.7	1,054	24	2.2	2.52	
Wayland	*a* 1,336	59	4.4	1,294	37	2.8	3.68	3.3
	b 1,256	55	4.3	1,148	31	2.7	3.59	
	c 1,288	37	2.9	1,083	29	2.7	2.77	
Mitford	*a* 3,297	185	5.6	3,086	87	2.8	4.30	3.4
	b 3,204	125	3.8	2,819	96	3.4	3.66	
	c 3,330	89	2.7	2,721	56	2.0	2.31	
Walsingham	*a* 2,469	128	5.1	2,229	85	3.8	4.54	3.3
	b 2,325	75	3.3	2,053	62	3.0	3.13	
	c 2,409	67	2.8	2,062	41	2.0	2.40	
Docking	*a* 2,141	92	4.3	1,950	48	2.4	3.43	2.9
	b 2,042	69	3.3	1,879	41	2.1	2.81	
	c 2,034	56	2.7	1,824	39	2.1	2.46	
Freebridge Lynn ...	*a* 2,671	65	3.8	1,439	50	3.4	3.68	2.9
	b 2,571	49	3.1	1,326	39	2.9	2.98	
	c 1,567	38	2.4	1,313	26	1.9	2.25	
Downham	*a* 2,405	91	3.7	2,216	64	2.8	3.36	2.7
	b 2,316	70	3.0	2,032	42	2.0	2.57	
	c 2,267	60	2.6	1,939	47	2.4	2.53	
Swaffham	*a* 1,650	65	3.9	1,460	46	3.1	3.57	2.8
	b 1,571	44	2.8	1,326	27	2.0	2.42	
	c 1,474	44	2.9	1,289	33	2.5	2.70	
Thetford	*a* 2,306	118	5.1	2,018	73	3.6	4.41	3.5
	b 2,165	97	4.4	1,874	60	3.2	3.88	
	c 2,101	52	2.4	1,811	45	2.4	2.47	

a, 1861-70. *b*, 1871-80. *c*, 1881-90.

I can go further than this country in an appeal to Sweden, where Dr. Andvord has made a careful inquiry into the tuberculous deaths in five Swedish towns for ten to sixteen years. He declares that the special constancy of lung tuberculosis points to no place among infectious illnesses, and that it does not agree with our present conceptions; for he found a local constancy from year to year, a constancy which extended so closely to every period of age incidence annually that a decennial age curve was repeated in each annual age curve. The same peculiar curve will attend a locality in England from one decennium to another; this I found to be the case in tracing the different curves of Dudley, West Ham, and Cambridge: they retained in 1881 to 1890 the form they held in 1861-70, a fact that further emphasises the predominant place predisposition of the individual holds.

Dr. Andvord finds in Sweden a close relation of phthisis mortality to all-cause mortality, and to the mortality from other tuberculous diseases, neither statement can be made of this country without considerable qualification. As to other tuberculous disease in the rural districts of Norfolk, it is interesting to see that it resembles the experience of the counties of England; here and there a relation seems to occur to the amount of phthisis, but on the whole no close relation can be asserted to exist; in time or place there is no similar constancy in deaths from other tuberculous disease and no close relation to pulmonary tubercle.

Among the prevailing similarities it is the province of this paper to dwell upon there exist some differences. It would be improper to explain them without some such careful analysis as was made in the case of Freebridge Lynn by Dr. Plowright. I cannot forbear, however, from remarking that the most conspicuous differences seem from general information attributable rather to powers of resistance than to powers of infection. One would suggest that flint-making at Brandon and asylums in St. Faith's may have left those two districts just worse than their neighbours, or it may be there equally due to town occupations. Flegg, one would suggest, was among the best from its fisher folk, and the four high-ground districts, Docking, Swaffham, Downham, and Freebridge Lynn, are free from the cold boulder clay. Still I would say that the discussion in this Section upon cottage provision was more germane to the incidence of phthisis than to climate.

In conclusion—returning to my main subject—I would adapt Dr. Andvord's remark and say, "In like places the special constancy of lung tuberculosis does not point to any place among infectious illnesses."

A DISCUSSION ON THE PROVISION OF COTTAGES IN RURAL DISTRICTS, AND ITS BEARING UPON PUBLIC HEALTH.

I.—J. S. TEW, M.D., B.S., D.P.H.,

Medical Officer of Health for the West Kent Combined Sanitary District.

THE privilege has been accorded to me to-day of introducing a discussion on the question of the provision of cottages in rural districts and its bearing upon public health.

This, inseparably connected as it is with the larger and general question of the housing of the working classes throughout the country, is of such paramount importance that it would be a matter of regret if some little time were not allotted for its discussion at a meeting of the State Medicine Section of this Association, where experiences of those having charge of sanitary districts in different parts of the country can be exchanged, and where many useful hints can be circulated among us as to the requirements, administration, and action to advise with regard to this many-sided and intricate question.

I do not think I am claiming too much in saying that to no one is the actual condition of life among the working classes better known than to members of our own profession and particularly to those of us who have been engaged in general practice and who have, therefore, seen all the phases of cottager's lives literally from the cradle to the grave. Further than this we see the conditions under which they live in an unprepared state and have opportunities of obtaining reliable details of information while attending cottage patients which are accorded to no one else.

This intimate—and I think I may say accurate—knowledge of the domestic hygiene of the working classes enables us to appreciate their wants and failings and indicates to us the advisability of adopting a middle course in judging of their general conditions—on the one hand to avoid giving too much weight to the sensational sketches of the spasmodic amateur investigator, who frequently deduces generalities from inquiring into only a few picked cases; and, on the other hand to avoid giving unlimited credence to the placid assurances of those who seldom see the inside of a cottage, that little or nothing is required with regard to obtaining better sanitary conditions or more living air space in cottage homes. Those who have given the question any attention must realise that there is much to be done. The President of this Association recognised this, and in his comprehensive and able address spoke last year as follows:—

> The great hindrance to the progress of preventive medicine which we have to overcome is the overcrowded and insanitary condition of the dwellings of the working classes. This is the field on which the great battle will have to be fought out. Our warfare will not be directly with microbic life but rather with the conditions in which specific organisms are grown.

In considering the condition and requirements of so-called rural districts, it has always appeared to me that for the present purposes some explanation of this term should be made. The term "rural district" may be considered, as far as the question of housing is concerned, in two ways:—

1. When viewed in the light of the legal powers of its governing authority as a *rural* district, that is, as an arbitrary division, distinguishing it from *urban* districts, and

2. When viewed as to its actual constitution, that is, in the light of its proportion of population to area and the occupation of its inhabitants.

Many large "rural districts," particularly in and near manufacturing and mining parts of the country and in districts near London and large towns, include contributory places of an urban character, and are rural only in name, and it is I think important to recognise the difference in the requirements of these as compared with purely agricultural districts, where the conditions are entirely different.

It is only reasonable that where houses for the working classes are inadequate, the consideration of building by local authorities and the nature of the dwellings most suitable to meet the local wants must be regulated by the constitution of the district, and by its prevailing industries.

For this purpose I would propose some such division as the following, as indicating districts having different wants and requiring different treatment:—

CLASSIFICATION OF DISTRICTS.

1. The metropolis proper, the conditions of which are quite unique, and, with the exception of certain generalities, quite beyond the scope of this discussion.
2. Suburban districts, where the question of accommodation is somewhat less acute than in the actual centre of London.
3. Extra-suburban districts, that is, just beyond the immediate suburbs, often some 15 or 20 miles out, and many of which are in a transition state, but gradually losing their rural character by absorption into the suburbs of the spreading metropolis.
4. Agricultural districts, where the poorer classes mainly, if not entirely, work on the land.
5. Cities and large provincial towns, where, in the majority of cases, special conditions of situation, staple industry, etc., make the question of the necessity for further provision of houses for the working classes almost a purely local one.
6. The suburbs of cities and large provincial towns, respecting which the conditions are extremely variable, and must be dealt with on their individual merits.

I do not pretend that this by any means is a complete classification, or that there are distinct lines of demarcation between the districts referred to, but they may serve as giving an idea of the differences of constitution, and so point to the variable requirements.

The classes usually coming under the head of rural districts will mainly be under my divisions Nos. 3, 4, and 6, and resolve themselves into three classes:—

1. A section in good work and receiving wages varying from 25s. to 30s. a week, but yet where there is the greatest difficulty in obtaining a decent dwelling for a family—6s. 6d. to 8s. 6d. being frequently paid as house rent alone in districts which I have endeavoured to indicate as "extra-suburban." This leads to the inevitable lodgers and the consequent overcrowding with the attendant evils.

2. A section, mainly including the ordinary agricultural labourer, with a varying wage of about 12s. to 22s. a week. In many cases, particularly on large estates, this class is well housed in cottages from 1s. to 2s. 6d. a week rent with a good garden, and often a supply of milk; in others, the cottages may be cheap—under 2s. a week, but too small for a family—damp, ill-drained, badly supplied with water, and in a bad state of repair. Many of these cottages are let with farms, and the tenant farmer is the employer, and sublets the cottage to the labourers. In this case, if the cottage is in bad repair, it is difficult or impossible for the labourer to get his master to insist on repairs, as the farmer is very frequently reluctant to request the landlord or his agent to improve the condition of the labourer's cottage, having in these days of agricultural depression many other, and, in his opinion, more pressing matters on which to obtain his landlord's considera-

tion. As a rule, however, the worst class of cottage is that owned by poor persons who have to live out of the proceeds of old cottage property, frequently mortgaged, and where practically no repairs have been done for years, and interference means that the owners become chargeable to the parish. Cottages owned by labourers themselves are rarely in satisfactory condition.

3. The third and fortunately, in my experience, the smaller section in rural districts would include those having no regular occupation, and having an alternating existence between a slum cottage, the workhouse, the gaol, and the road. This is the class which so frequently comes under the notice of the Society for the Prevention of Cruelty to Children, and the school attendance officer, the children of whom are such active agents in the spread of infectious and parasitic diseases in our elementary schools.

The bad influence which insanitary and overcrowded cottages have upon the public health can hardly be overestimated.

To my mind the foremost evil is the lowering of the individual stamina of those living under bad conditions, rendering them liable to be an easy prey to any general disease to which they have any susceptibility, reducing the working capacity and the inducement of premature old age. Next to this come those two most formidable diseases of infant life—whooping-cough and measles, which between them in the year 1899 caused in England and Wales over 19,000 deaths, the vast majority of these occurring among children of the working classes. Those who have witnessed the home treatment of these diseases will not wonder at the magnitude of the mortality. The case of phthisis and other diseases nursed at home can only be expected to have the worst chances of recovery, cooped up as they are in rooms often giving less than the cubic space insisted on in a common lodging house.

The obstacles to the provisions of an adequate number of healthy cottages in rural districts are many and great, so great that although increased powers to provide accommodation were given 10 years ago, yet I believe that so far only two rural district councils in England have reached the stage of actual buildings. Proposals to adopt Part III of the Housing of the Working Classes Act have, however, in many instances stimulated local enterprise to provide the necessary accommodation.

It would appear to the uninitiated, with the powers possessed by rural district councils, both under the Public Health Act and the Housing of the Working Classes Act, and with a few years of active work, that at any rate rural cottages in a dilapidated condition, with bad sanitary arrangements and unwholesome water supplies could be easily dealt with. Let us, however, inquire into the machinery which is expected to do this work and the clashing interests which prevail.

In the majority of rural districts the staff of sanitary inspectors is inadequate and only sufficient to cope with the urgent calls with regard to infectious disease and their removals to hospital (if there be one), routine work and the attention to general nuisances complained of, leaving little time for the detailed and systematic inspection and testing of the drains of cottage property, which frequently belongs to persons with local interest who resent any interference, and who have the power to retaliate and oppose the annual re-election.

With an insecurity of tenure and a liability not to be reappointed at the end of every year of office, it is unlikely and unreasonable to expect that the majority of sanitary inspectors or medical officers of health will take the active steps which they otherwise would.

Again, the clerks to rural authorities have naturally no great enthusiasm in the matter of adoptive Acts of this kind, which require great attention and cause endless extra meetings, and as experience shows in the great majority of cases eventually are allowed to fall through at an earlier or later stage.

When it has been fairly shown that further cottage accommodation is required provision should be made and completed before action is taken with regard to closing of insanitary property, otherwise the ejected families either overcrowd cottages near, or else leave the neighbourhood.

Where possible a detached or semi-detached cottage with a small garden is undoubtedly the desideratum, but there are many nominally rural districts where much less than this must be gladly accepted, descending to rows and even to flats and tenement houses.

There are, I think, the strongest arguments in favour of rural district councils taking up the matter of building, in fact it has now become a necessity if their duty as councils is to be faithfully carried out. The all-important question in starting a scheme is whether the cottages will be self-supporting or become a burden on the rates.

Under ordinary circumstances and where land is not high priced, I have every reason to believe that with care and economy in architecture, and not aiming at anything large or elaborate, even with the present high price of all building material and wages, councils can build cottages to just pay their way; and if from exceptional local circumstances there is a slight loss on them, it should be looked upon in the light of an insurance premium on the health of the place.

We naturally looked with considerable expectation to the Bill now before Parliament to amend Part III of the Housing of the Working Classes Act, 1890, but a perusal of the Bill as amended in Committee gives little hope of making the mode of procedure less cumbersome and lengthy for rural districts, however much the possibility of acquiring land and building outside their areas may benefit districts other than rural. There are many other matters to consider in relation to this question, but I hope that my remarks may suffice to elicit opinions specially—

1. As to the urgent necessity for better cottage accommodation in many rural districts.

2. As to the desirability of rural district councils undertaking the building of cottages, and

3. As to the insufficient air space in crowded cottages being responsible for largely contributing towards lowering the vitality of the occupiers and contributing to the high death-rate among the working classes from such diseases as measles, whooping-cough, and phthisis, which are usually nursed at home.

II.—Joseph Groves, B.A., M.B.,

Medical Officer of Health, Isle of Wight Rural District.

Dr. Groves said that as regarded strictly rural districts while depopulation was going on the lives of many cottages were coming to an end and were being closed by the authorities, and other houses were not built to take their place. The result was that workers on the land were forced into the town, and had to walk long distances to and from their labour. It was a complicated question, but returns should be required from rural authorities not only of population but of the amount of accommodation, as a preliminary to forcing sanitary authorities to put the permissive Act bearing upon the housing of the people into operation in their districts.

III.—Herbert Peck, M.D., D.P.H.,

Medical Officer of Health for Chesterfield R.D.C.

Dr. Peck considered that the difficulty of the methods to be adopted under the Housing of the Working Classes Act almost prohibited the provision of cottage property by rural sanitary authorities, and related the history of a futile endeavour to induce a rural authority to provide such accommodation. He exhibited a photograph of a much dilapidated cottage recently condemned.

IV.—Sir Hugh R. Beevor, M.D., F.R.C.P.,

Physician to King's College Hospital.

Sir H. Beevor was glad to have the definite statements of the reader of the paper that lowered stamina and an unnecessary amount of mortality from whooping-cough and measles were the main visible effects of the present cottage accommodation. He inquired if considerable advantage to health might not accrue by attending to some small matters, and desired information from rural medical officers of health as to the effects of damp foundations, walls, and basement upon the stamina of the cottager. He suggested that Dr. Groves's desire for compulsory building should hold as a corollary to compulsory habitation.

V.—DONALD G. SUTHERLAND, M.D.,
Cambridge.

DR. SUTHERLAND emphasised the importance of rural and sanitary authorities getting and using powers of "improvement schemes" such as were obtainable in town districts. If local authorities in the interests of public health thought it necessary to close uninhabitable houses, it would be advantageous to erect substitutes of a thoroughly sanitary kind so as to induce the people to be willing to leave their unhealthy abodes, and to make it easier for the medical officer of health to proceed to condemn a house. Many medical officers of health stayed their hands at present because they knew positively that the ejected poor would either overcrowd other districts, or possibly be rendered altogether homeless. It was known that these insanitary houses were the "seed plots" of infectious disease, and that because of dampness and bad flooring they were associated with successive cases of phthisis. The problem of the poor was ever present; and while we gladly acknowledged the activity of a large number of good landlords, who took a personal interest in the welfare and health of their tenants, there were other landlords who simply took the rent and did not make themselves acquainted with the condition of their property or the inhabitants thereof. To stop the continual exodus from rural districts there would need to be tempting inducements in the nature of healthy houses with at least a minimum of sanitary conveniences so as to enable people to stay in the country. The whole question was only a branch of a very large one, namely, social economics, and for the welfare and real prosperity of our country everyone should use all means to induce a large number of our population to remain in rural districts.

VI.—JOHN HADDON, M.D.,
Hawick.

DR. HADDON said that though not a medical officer of health, he took an interest in cottages in the country. In his district they were in most cases totally inadequate for the families who were obliged to live in them. Their morality was endangered as well as their health by such overcrowding, and in any scheme of rural cottages it would be well to suggest that a large room should be in every cottage where the girls could sleep, another for the boys, and a third to treat infectious cases, which would obviate the necessity for those infectious diseases hospitals which were being built all over the country. The expense in building new cottages would not be much increased by making the rooms a little larger.

VII.—HERBERT JONES, M.D.,
Medical Officer of Health for the Rhondda Valley.

DR. JONES said that it was very evident that Dr. Haddon was not a medical officer of health, or he would never have dared to suggest the erection of cottages with three large bedrooms and a large room for isolating cases of infectious disease. He agreed with Dr. Tew that the cottages which were the most difficult to deal with were those owned by the occupier, who might have little or no money to expend upon repairs. If the sanitary authority insisted upon such cottages being kept in repair, they would never get into so dire a state that only a large expenditure would put them right.

DR. TEW'S REPLY.

DR. TEW did not intend to suggest that either medical officers of health or sanitary inspectors failed in their duty with respect to dealing with insanitary houses even at the present time, but he did say that they would be enabled and be prompted to do more in this direction were their tenure of office made permanent. This, it had already been suggested, could only be effected through the agency of the Local Government Board, and as that Board was largely guided by public opinion it was necessary that this question should be discussed at all available meetings of this kind. The desirability of putting aside a certain percentage every year for the repair of cottage property was imperative, and would probably be well covered by 1 to 1½ per cent. per annum. From a considerable experience in the examination of cottage property he had found that a great deal of the prevalent dampness was caused by the bad condition or absence of eaves gutters, and by the bad methods of storage or carrying away of the rain water. He fully recognised the difficulty of the adoption of Part III of the Housing of the Working Classes Act for rural districts, and in the one instance in his own district, where building was actually in progress, the period which elapsed from the time of the adoption of the Act by the Rural District Council to the time when building could commence was fully three years, and this where no unusual obstacles occurred. The condemnation of many insanitary cottages had inevitably to be postponed in many districts, as no better accommodation was available or likely to be provided by private enterprise.

DIET IN RELATION TO CANCER.

By JOSIAH OLDFIELD, M.A., M.R.C.S.,
Physician to the Hospital of St. Francis, London.

[ABSTRACT.]

CANCER is not a disease which is caused by flesh eating *per se*, since it has not been found to be largely prevalent among the early hunting tribes who lived almost wholly upon the products of the chase; the disease was increasingly prevalent in this country among the aristocracy, despite the fact that the aristocracy of to-day ate less meat than in the time of Queen Elizabeth. The contention of Sir W. Banks that the cause of cancer was the nitrogenous element could not be upheld. Cancer, however, is found more prevalent among the classes who indulge in generous living than among those who live more plainly. Again, the topographical distribution of cancer in temperate climates is along the beds of sluggish rivers. The theory propounded "suggests that under certain circumstances there is present in the cell envelope, and closely connected but not actually transformed by a complete metabolism into cell substance, food matter partly broken down and ready to still further break down, and thus to form a fit pabulum for low organisms. The position of the food, mingled up, as it is, with the cell substance throughout the body, or certain parts of the body, renders it possible only to be utilised by organisms which can invade the cell itself, and which, by the position of their progress in search for their food, must be necessarily pathogenic, and must possess the essential type of invading cell from cell and of penetrating cells throughout and permeating them and passing through them, leaving behind those parts of each cell which were essentially vital, and destroying far ahead those parts of the cells which consisted of that food matter described. The presence of food half assimilated, and thus spread throughout the cells, and the search for and the feeding upon this food by low organisms that would thus necessarily invade, half destroy, and rapidly spread on to other cells without actually destroying all the cell life as they progressed, gives us a picture very like what a malignant growth is in its characteristic features."

CANCER MORTALITY IN EAST ESSEX.

By GEORGE MELMOTH SCOTT, B.A., M.D.Camb.,
Witham, Essex.

I DESIRE, in the first place, to acknowledge the debt I owe our President, Dr. Thresh, in allowing me to carry out a work which he had already begun, and for his ever-ready advice and assistance.

The inquiry relates to the two unions of Chelmsford and Maldon, situated in eastern Essex. The Chelmsford Union is entirely inland, while the Maldon Union contains a large extent of salt water estuary. All the data are derived from the death registers of the two unions, the populations of the parishes, etc., being kindly supplied by the Registrar-General.

Some 1,000 deaths from cancer occurred within these two unions between the years 1871-98 inclusive. This period contains two complete intercensal periods of ten years each (1871-80 and 1881-90), and an incomplete period of eight years (1890-98). In order to compare the mortality of one period with another it was necessary to calculate this last incomplete period to ten years. The number of deaths per decade increased from 6.36 in the first to 7.73 in the second and 8.41 in the third.

At first sight this would appear to be conclusive evidence of an increase, but further investigation throws doubt upon

it, for the same table shows that the increase is largely in the male population, while the female death-rate is much more nearly stationary. Thus to every 100 women dying of cancer in the first decade 51 men died; in the second decade 61 men died to 100 women, and in the third 83 men to 100 women.

A further analysis of the deaths among men is shown. The cases in which the cancer occurred in the lip, tongue, throat, penis, and testis—easily accessible parts—are separated from those occurring in more deeply-seated organs. Perhaps the same results, given in ratio, will be more easily grasped, and expressed in that way we may state that while, in the three decades, accessible cancer increased in the ratio of 1, 1.6, 2.4, less accessible cancer increased in the ratio 1, 2.2, 3.5, that is to say, the increase was much more marked in those parts of the body where it could be diagnosed by increased knowledge and skill on the part of the medical men certifying.

Furthermore, I gather that it is only of recent years that the Registrar-General has made such solicitous inquiries as to the nature of the "tumours" and "growths" to which we may have attributed the deaths of our patients, for during the first half of the period under discussion many deaths were certified as being due to "tumour," "stricture of bowels," and other indefinite causes which, though probably cancerous in their nature, could not be reckoned as such in an inquiry having any pretensions to accuracy.

On the whole, then, our figures tend to show that there has been some actual increase in the number of deaths due to cancer in the past thirty years, but my own impression is that the increase has been much more marked in the professional skill of the medical men certifying.

Leaving then the question of actual increase unanswered, we will turn to that of the distribution of the disease. The object I had set before myself was to test the truth of Dr. Alf. Havilland's theory by applying it to this part of the country.

This theory postulates that:

1. In the counties having a high mortality from cancer we find that the tributaries of the large rivers rise from soft marshes or other easily-disintegrated rocks, and these fall into sheltered valleys through which the main rivers flow.

2. These rivers invariably flood their adjacent districts during the rainy season, and have generally their waters coloured by the suspension of alluvial matter.

3. The districts "characterised by the tertiary and more recent clays and other retentive soils" have a very high mortality from cancer.

In order to test the soundness of the theory we must first get a clear conception of the contour, geology, etc., of the district we are investigating.

This consists of the two unions of Chelmsford and Maldon, the former of which lies to the west of the latter, the two together forming a tract of country extending inland some twenty-five miles, from east to west, while from north to south the distance is roughly from ten to fifteen miles. The district forms an irregular parallelogram, being bounded on the east by the North Sea, on the south by the River Crouch, and on the west by a line running north and south some six miles to the west of Chelmsford. The northern boundary is more irregular. The area of the whole is 175,231 acres.

In one respect the physical features of the two unions differ markedly, for while the Chelmsford Union is entirely inland, and is watered by small rivers only, the Maldon Union is cut in two from east to west by the great salt-water estuary of the Blackwater, and is bounded on the south by the very similar estuary of the Crouch.

The country lying on each side of these estuaries, and the seashore lying between their mouths, is extremely flat, the water being kept out by sea-walls, and the fields intersected with small creeks and ditches, while, as the map shows, in many places there are "saltings," that is, land which grows a rough species of grass, although covered with salt-water at high tides. This part of the country used formerly to be the home of malaria. De Foe, writing in the year 1772, says that "those gentlemen who are such lovers of the sport (of wild-fowling), and go so far for it, often return (to London) with an Essex ague on their backs, which they find a heavier load than the fowls they have shot."

The streams that run into these estuaries are the Crouch and the Chelmer (with its tributaries the Can, the Widd, and the Blackwater), which have their origins in the clay lands for which the country is noted. They flow though an undulating country, though the hills are not of sufficient height to form very sheltered valleys. In times of heavy rain both these rivers and their tributaries are liable to floods, which are apt to take some time in subsiding in consequence of the level nature of the country through which they flow. But these floods are not of very frequent occurrence, as the rainfall is under 30 inches per annum.

The geology of the whole district might be fairly be summed up in the one word "clay." Excepting along the course of the rivers and on the seacoast, where there is a deposit of alluvium, the geological map is coloured one uniform tint over the whole area.

In the higher parts of the south-western division the clay is capped with beds of Bagshot gravel and sand, while small deposits of a similar character are scattered irregularly and sparsely over a large part of the rest of the area.

From this short description it may be gathered that we have to deal with a district in parts of which, at all events, one would presume a very high cancer mortality if Dr. Havilland's theory be correct. We shall now proceed to put this presumption to the test.

The Registrar-General's Report for 1881-90 shows that the cancer death-rate for Essex is by no means high. Although the soil of the county is very largely clay, and although it bounds large estuaries and contains considerable tracts of low-lying land, yet there are thirty-two counties in England and Wales with a higher mortality from cancer as against thirteen with a lower.

This alone would tend to show that the geographical peculiarities of the county are not such as to promote the disease, and we see that not only is the cancer death-rate of Essex below that for England, but the rate for these two unions with their large amount of foreshore is below that of the county as a whole, and yet further the rate for the union of Maldon, which is bounded by two large estuaries, and contains large marshes and saltings, is below that for the drier union of Chelmsford.

If we divide up our area into smaller units, we arrive at some interesting results. In order to eliminate error as far as possible, I have divided the whole area into parishes and groups of parishes in such a way that the population in each group shall not be less than 1,000, and have estimated the death-rate from the returns for the years 1871-98.

The highest mortality (8.9 to 8.02 per 1,000 per decade) occurs in the Waltham and Purleigh groups. Of these, Great Waltham is situated in the extreme north-west part of our area. The soil consists entirely of clay, which rises in one part to a height of 230 feet above mean sea level, and is nowhere less than 130 feet. It may be considered a fairly elevated parish. Through it runs the Chelmer, which is here little more than a brook, but such as it is the houses are mostly aggregated in its vicinity. The floods in this and other parts are seldom serious, as the rainfall rarely exceeds 25 inches per annum.

The Purleigh group also lies fairly high, a large part of the surface being above the 100 feet contour, while it rises in one part to 170 feet. The village of Purleigh comprises by far the largest collection of houses within the group, and is situated on a sharp slope. The low-lying part of the parish is liable to be flooded when Purleigh Wash is swollen by very heavy rains, but there are few houses in the vicinity.

Amongst the groups with the lowest mortality are those of Tollesbury and Wickham Bishops. Tollesbury (with the lowest death-rate of all) is extremely flat, the village being situated at an elevation of only 85 feet. The outline of the parish is roughly triangular, two sides of the triangle being formed by muddy foreshore, creeks, and saltings; more than half the parish is under water at high tide; there are no fresh-water streams.

In contrast with the above is the Wickham Bishops group. Here the largest collection of houses is the village of Wickham itself, situated on a patch of gravel at an elevation of 230 feet, the village church forming a conspicuous landmark. Although the (fresh water) river Blackwater, which is liable to floods, bounds the group on one side, yet there are very few houses in the vicinity of the water.

But the most striking differences in cancer mortality under closely similar circumstances are shown in the contiguous Burnham and Southminster groups. Both include saltings and a large extent of marsh land; one has a long frontage to a tidal river, the other a (shorter) frontage to the low seashore. In both the majority of the inhabitants live in small towns. And yet, although Burnham town is on the banks of the river, and Southminster town is situated at a distance from the water, the former has a low mortality and the latter a high.

These six instances serve to illustrate the results shown throughout the entire area—namely, that in this part of Essex the cancer death-rate bears no evident relation to the variations in the physical features of the country.

Assuming the truth of Dr. Havilland's theory, we should expect, if anywhere, to find a high cancer mortality along the course of our rivers, for though they cannot be said to be subject to very frequent floods, nor yet to run through sheltered valleys, yet they rise in and run through retentive soil, and overflow their banks whenever the rainfall is especially heavy.

The facts of the case, however, tend to point to an opposite conclusion; for those groups which lie on the banks and shores of our rivers and estuaries have, with only one exception, a death-rate below the average of the whole area.

Taking, first, the River Crouch, we have already seen that in the Burnham group, situated at the mouth of the estuary, the mortality is low (4.24 per 1,000). The groups to the west of this latter are those of Latchingdon, Stow Maries, and Runwell, with death-rates of 4.96, 4.71, and 3.96 per 1,000 respectively, all of which are decidedly below the average of 6.70 per 1,000. The proximity of the River Crouch, therefore, cannot adversely affect the cancer mortality in its neighbourhood. And the same conditions obtain with respect to the River Blackwater, the north bank of which is formed from east to west by the groups of Tollesbury (a small slip of Tolleshunt d'Arcy), Goldhanger, Langford (Hatfield), Boreham, and Springfield. These have mortality rates of 3.41, 4 99, 5.56, 7.86, and 4.54 per 1,000, all of which are below the average, with the exception of that for Boreham.

On the south bank of the river lie the groups of Bradwell, St. Lawrence, Latchingdon, Maldon, Woodham Walter, and Little Baddon, with death-rates of 6.64, 5.43, 4.96, 6.14, 4.70, and 6.26, all of which, again, are below the average of the whole area, although somewhat higher than the rates which obtain along the north bank of the river.

If, then, we may attach any weight to the results of this inquiry, we must look for the causes of cancer in some other direction than in an alluvial and clayey soil subject to floods, for, to sum up, in the first place, (1) the disease is less common within the county of Essex with its clay soil and numerous estuaries than it is in England as a whole; (2) although the unions of Chelmsford and Maldon contain an excessive proportion of marshy land and estuary, yet their death-rate is below that of the county; (3) those parts of the two unions which include the greatest extent of muddy foreshore, creek, and saltings have a mortality below that of the two unions taken together; and (4) the disease is not especially prevalent in those places which are situated on the banks of the fresh-water rivers.

A DISCUSSION ON THE QUESTION "SHOULD MUNICIPALITIES PROVIDE COMMON LODGING-HOUSES AND WORKMEN'S DWELLINGS?"

1.—H. COOPER PATTIN, M.A., M.D.Camb., D.P.H.,
Medical Officer of Health for the City of Norwich.

I HAVE preferred to put the subject matter of our debate in an interrogative form because I am more anxious to elicit individual views than to commit the Section to a collective declaration.

I apprehend that the reply of those of us who are medical officers of health will be in the affirmative with varying reservations. My own reply it may save time for me to give at once. It is a distinct affirmative, with, however, very definite limitations. These limitations and the reasons which lead me to so limit my affirmation of the proposition that municipalities should provide common lodging-houses and workmen's dwellings, I will state a little later. I am more anxious just now to make as clear as I possibly can what we shall be discussing; to state the general grounds in favour of the proposition, and also some general objections to it—so that these points may be taken as understood between us, and the ground be cleared for the deployment of original and individual opinions.

About what we mean by common lodging-houses there can be little doubt, but I think that what most of us have in our minds when we speak of workmen's dwellings are the wants of poor men rather than artisans, at any rate skilled artisans. Those of us who are medical officers of health will inevitably look at the problem from the standpoint of officials who are anxious to have what I may call slummers provided with healthy and cheap habitations. I think we mostly find that the average workman, certainly the average skilled workman, can and does provide himself with the home he wishes; so if we are to keep to our definition let us agree that we are considering the question of municipalities providing dwellings for workmen below the rank of skilled artisans, for poor men and women generally, and in particular those of our brethren to whom we may give the designation of slummers.

Anything which affects the healthiness of great masses of the commonalty cannot be other than a matter of importance to the whole body politic. That the conditions under which large portions of our urban population have to exist do constitute such a matter of importance, the amount of attention now being directed to this matter of the better housing of our poorer classes sufficiently testifies. I need not refer you to speeches, articles, proposals, and even Acts of Parliament bearing more or less directly upon the problem, but a circumstance which to my thinking is just now ominous, is that out of 11,000 would-be recruits in Manchester alone, something like 90 per cent. were excluded from the regular army on the ground of physical unfitness. In times when the State is becoming obliged to take stock of its fighting material, facts like these are likely to prove more effective levers for the promotion of remedial measures than rivers of philanthropic talk. The housing problem is in the air. It is our business to try and solve it on the earth.

The general propositions in favour of municipalities providing common lodging-houses and poor men's dwellings are something like these.

That anything which damages the health of the community included in a municipality injures that municipality in its most valuable asset—vigorous humanity;

That inefficiently-equipped and managed common lodging-houses, badly-situated tenements and dwellings do this;

That the credit of the municipality being greater than that of an individual it can erect and carry on common lodging-houses and provide poor men's dwellings more cheaply than private persons trading for profit are likely to do.

That the direct control which it obtains over common lodging-houses enables a municipality to check more easily the importation and the propagation of various communicable diseases;

That by securing to its poor people more air space and healthier surroundings than these find in the slums, etc., it is laying up a richer harvest of healthy dwellers for the succeeding generation, as well as actively diminishing ill-health and disease in the existing community;

That it is discreditable to a municipality, as well as bad business management, to have any members of its communal family housed under conditions which inevitably tend to diminish the common stock of healthiness;

That unwholesome housing and lodging, being a largely remediable evil, which, unrelieved, must and does vitally affect the healthiness of a community, it is the duty as well as the interest of that municipality to apply appropriate remedies in the shape of healthier dwellings at the cost of the community.

The general objections to all schemes may be summarised thus:—

That the carrying of them out commits the municipality to trading;

That it interferes very seriously with private enterprise;

That it will add to the already enormous amount of municipal debt;

That it imposes an improper amount of strain upon members of municipalities in the matter of management;

That the further progress of much socialism threatens municipalities with becoming in time not the servants, but the slaves of their tenants, etc.

These points need not, I think, detain us. At any rate, my desire being to elicit opinion, I mean to go on and give the reasons why I reply to the interrogation, Should municipalities provide common lodging-houses and workmen's dwellings? in the affirmative, with limitations. As I am before all things in this matter an inquirer, I hope any members who can speak from experience of such experiments will give us the benefit of their knowledge.

Well, then, I say, municipalities should provide common lodging-houses—upon precisely the same principle which leads the State to insist that every child shall have a certain amount of education, or every starving person a certain amount of food and shelter; the principle of common interest dictating a minimum standard below which the education, the sustenance, or, in the especial case before us, the lodging of the poorest members of the community shall not be suffered to fall. Pray do not misunderstand me. I by no means believe that it is the duty—that it is wise, or even prudent for the municipality to provide all the common lodging-houses accommodation which may be needed by its permanent and temporary population; what I do feel is that it is desirable, wise and prudent for a municipality to say: "We will not, out of regard alike for the healthiness of our city and for the welfare of our common humanity suffer any persons to be lodged in a common lodging-house within our boundaries below a certain minimum standard of healthiness and comfort, and to ensure this we will provide such minimum ourselves, and leave it for private enterprise to attract custom by offering a higher standard of comfort, etc., for the same money, and for those who desire and can pay for it a higher sum of money."

Of course I know it may be urged that by owning all common lodging-houses a municipality can simplify administrative control and inspection, etc., but I am at present satisfied that the principle I urge is the soundest basis for action—the establishment by the municipality in its own common lodging-house of the minimum standard of accommodation it will tolerate; just as, although a starving man is now fed and sheltered by the community in a workhouse, one by no means desires to see every other place where food and shelter can be obtained in the direct possession of the State. There can be little doubt, too, that the provision of all the common lodging-house accommodation needed in any locality by the municipality will favour the tendency to crowd larger numbers upon a given site, if only to reduce administrative expenses—a tendency I regard with disapproval. Moreover, it is hard upon the wayfarer to be compelled to tramp perhaps right across a town before he can reach a common lodging-house in which he can find accommodation.

My personal attitude of approval of the provision of dwelling for poor people by municipalities is conditioned by the limitation I apply to the provision of common lodging-houses—that the municipality is entitled to say, and wise to say, "we will not permit any members of our communal family to be housed under conditions below a certain standard in healthiness; which minimum standard we will ourselves supply, leaving private enterprise to provide greater conveniences, etc.," for those who desire to live on a scale exceeding our minimum, just as we now say it is to the public advantage that every child shall receive a certain minimum amount of education, which minimum we provide, but leave the way open for the attainment of any desired maximum through private expenditure.

I feel tolerably sure that the influence of what I may term "standardising" municipal common lodging-houses and poor men's dwellings will be of even more indirect than direct benefit to the affected municipality; it will act as a perpetual spur to private competition which to prove remunerative must offer accommodation more attractive. With these fragmentary observations I shall now leave it to others to carry on the discussion, my business being simply to open it; and I have in prospect the advantage of an opportunity to reply to the many interesting answers which will doubtless be given to my interrogation—Should municipalities provide common lodging-houses and workmen's dwellings?

II.—Alfred Hill, M.D., F.R.S.E.,

Medical Officer of Health for the City of Birmingham.

Dr. Hill, while agreeing in the main with the aspirations and proposals of Dr. Pattin, feared that the difficulties of the question were at present insurmountable, although they appeared to be slowly advancing towards realisation. The great difficulty seemed to be the impossibility of making such provision remunerative, or even self-supporting; on this account public authorities hesitated to embark in these undertakings, because it involved the contribution of one class of the community to the support of another, which was manifestly inequitable, and naturally objected to by those who were called upon to make the sacrifice. It was too often lost sight of that it was the very lowest social stratum which had to be provided for. A class of people who added to the difficulty enormously by their very dirty and wilfully-destructive conduct, by which clean, good, convenient houses were rendered filthy and so damaged as to be unfit for human habitation. The question of common lodging-houses was much more simple. They could be and were actually provided without difficulty and with profit by private enterprise, which only required the approval of the establishment by the municipal authority, and naturally in the absence of private effort they could be advantageously taken in hand by a local authority.

III.—Edward R. P. Manby, B.A., M.D.Camb., D.P.H.,

Inspector, Local Government Board; late Assistant Medical Officer of Health to the City of Liverpool.

Dr. Manby gave a brief summary of the attempts which had been made in Liverpool to provide cheap dwellings for the poor classes which should yield a return, but stated that they had not been successful financially.

IV.—Walter Smith, M.D., M.R.C.P.E.,

London.

Dr. Smith was in favour of municipalities providing houses for the poorer working classes, but called attention to the difficulty of carrying it out owing the difficulty of obtaining land and to the complication arising in administering the Act. He proposed the following resolution:

That the Council of the Association be recommended to petition the Government to amend the Housing of the Working Classes Act with a view to simplifying the same, and that the time for repayment should be extended to a period not exceeding sixty years, and the land to be considered a perpetual asset.

Dr. Peck (Chesterfield) seconded the resolution.

V.—James Scott Tew, M.D., D.P.H.,

Medical Officer for the West Kent Combined Sanitary District, Tonbridge.

Provision for the Provident Poor.

Dr. Tew said that at the Conference on the Housing of the Working Classes held in London this week, the plans of the Liverpool cheap dwellings designed by Mr. P. Boulnois were shown, and he gathered, in common with others, that the 3½ or 4 per cent. paid referred to the total revenue derived from the rents less repair and management but did not represent profit. It appeared quite impossible to provide municipal dwellings at anything like 1s. per room per week. The municipal dwellings erected in London and other large centres cost an amount requiring a rent of 2s. to 3s. a room to pay their way. The three or four-room dwellings erected by the Richmond Corporation, and letting at a rent of 4s. 6d. and 5s. 6d. respectively, were comfortable, healthy, and self-supporting. They were built as double cottages in flats, with a small garden for each tenant at the rear, and were well worth a visit by anyone interested in the question. All details were given in Alderman Thompson's excellent description of these dwellings.

VI.—John Thresh, D.Sc., M.D., D.P.H.,

Medical Officer to the Essex County Council.

Dr. Thresh said that in discussing this question we must remember that the available labour was the chief capital of any

community. To maintain the health of the labourer, and if possible to increase it, was therefore the duty of a community in its own interests as well as a common dictate of humanity. Municipalties must recognise that houses for the poorest classes could only be provided and maintained by aid from the rates. The provision of such houses would not only improve the health but also the habits and morals of the inhabitants and lead to a reduction in the cost of policeing and in sanitary administration. If we wanted to prevent further brutalisation of our very poor and diminish the risk of trouble in periods of trade depression, slums must be abolished and the poor made to live in houses freely exposed to fresh air, sunlight, and to the full gaze of the public. On the other hand, the provision of such dwellings might discourage thrift and tempt the lazy and ne'er-do-well as well as the deserving poor. The public must be taught to look at and consider the subject from this point of view. When this was done the result would probably be that it would come to the conclusion that it would be best and most economical to consent to a slight addition to the rates, or, in other words, to make a small sacrifice for the future advantage of the country.

DR. COOPER PATTIN'S REPLY.

DR. PATTIN expressed his general concurrence with the observations of the President. What was needed was a simplification of the legislative machinery provided for dealing with the housing problem. He apprehended that the housing of the really poor could not be expected to prove a directly profitable undertaking to any municipality—the profit would be indirect, but enduring.

FOOD PRESERVATIVES AND COLOURING MATTERS IN FOOD.

WITH REFERENCE ALSO TO FOREIGN LAW AND CONDITIONS.

By ALBERT S. GRÜNBAUM, M.D., D.P.H.,
Assistant Lecturer in Physiology, Thomson-Yates Laboratories, University College, Liverpool.

THE enormous extent to which food preservatives are now being used, the abuses to which they are put, and the injuries which they may cause, make stringent and definite legislation on the subject necessary. At present our law is too vague and narrow and our trade interests too selfish, and our magistrates for the most part too ignorant, for much progress in this direction. Meanwhile Continental nations are going rapidly ahead, and we shall, if not careful, soon lose our front place in matters relating to public health and State medicine.

That laws requiring any trade to have consideration for the public good would be destructive to such trade I do not believe. It may reduce the profit, which is often excessive, but it will not destroy it. During a visit to Germany, a country which although neglectful of precautions against the export of insanitary food, is yet very particular about the health of its own subjects, I found the laws and regulations concerning two matters fairly stringent and definite—namely, concerning food preservatives and concerning disposal of trade refuse—yet no destruction of trade has been observed. Commerce and competition are treated in Germany in a very paternal manner, but with conspicuous success.

The addition of preservatives, regarded independently of their action, may be classified as follows:

Preservatives may be added—
(1) Either (*a*) *bonâ fide*, or (*b*) with fraudulent intent.
(2) With a view to either (*a*) permanent (for example, ham), or (*b*) temporary (for example, milk) preservation.

The addition may be considered bonâ fide if—
(*a*) The purchaser is made aware of the addition.
(*b*) The article is well known to usually contain a preservative.
Always provided that the preservative has no injurious action.

The use is fraudulent if—
(*a*) The addition is concealed.
(*b*) Used to make a stale article appear fresh
(*c*) The preservative is injurious.

Consequently preservatives added to articles intended for consumption when fresh are generally added with fraudulent intent, since they conceal the inferior quality of the article to the prejudice of the purchaser.

MILK.

Milk may be taken as the most important type of food under this heading. It seems to me that in a strictly legal sense any addition of preservatives to milk is illegal, because any customer if offered his choice of fresh milk or of milk apparently fresh, to which the preservative had been added, would undoubtedly choose the former—that would be the quality demanded. The saving clause in the statute does not cover milk, since it is not produced nor does it require preparation as an article of commerce. In the case of cream the defence has sometimes relied upon the fact that the addition of the preservative has been noted upon the bottle; but I am not aware of any case in which the milk dealer has informed his customers of the presence of a preservative.

Continental opinion seems pretty unanimous regarding the inadvisability of permitting the addition of preservatives to milk. Although not specifically prohibited by the Foods Act, the German Ministry in a circular letter as far back as 1884 advised the local authorities to make by-laws to this effect, and repeated the advice in another letter last year.

In Hamburg the local law has been so effectual that in milks examined with that object, the percentage of those containing boric acid fell from 23 in 1895 to 4·9 in 1897.

A similar regulation holds good in Vienna. It does not therefore appear that such restrictions cause difficulty in the adequate supply of milk to large towns. I wish to emphasise this point, because the opponents of preservatives are usually considered mere theorists.

WINES AND BEERS.

In regard to wine the German law is very particular, and there is a statutory prohibition against the addition of certain things to wine or to drinks like wine. Amongst these are salicylic acid, glycerine, and aniline dyes, also saccharin to sparkling or fruit wines. It would be well if prosecutions were instituted in this country against the addition of salicylic acid and dyes to the so-called fruit wines.

A favourite preservative on the Continent is sodium sulphite; it is used principally for giving a fresh appearance to minced meat. There have been numerous convictions against its use, sometimes with imprisonment. There is reason to believe that the sulphites are used in this country, although for a different purpose, but I am not aware that any cases have been, although they certainly should be, taken into court.

In examining into the question of preservatives and colouring matters I have unfortunately not been able to find evidence of a high standard of commercial morality.

I will take two instances from the price-lists of firms engaged in supplying confectioners and brewers. Concerning saccharin there is the following paragraph:

> As a cure for "sick" beers, even when such a dubious lot of beer already begins to show signs of incipient "taint," there may yet be time to save it by quick action in introducing, as may be needed, from 1 to 2 ounces of saccharin per 500 gallons, and thereby arresting the souring process and at once making the beer drinkable and marketable.

Even apart from its preservative qualities the substitution of saccharin for sugar is undesirable, as diminishing the nutritive value of the food. Another list has amongst its "brewers' materials," in the largest letters, potassium metasulphite, directing 1 oz. per barrel to be used, with the remark that "it is a perfect antiseptic in crystals, etc." This quantity is equivalent to 1.5 gr. per pint. On another page is a list of brilliant aniline colours for boiled sugars, fondants, lozenges, jujubes, etc.

I think the law at present somewhat too lenient, since it permits imprisonment as punishment only with the second offence, and if the fine amounts to £50.

OBJECTIONS TO PRESERVATIVES.

If we could rely on the quantity and quality of a preservative being always intimated to the purchaser, it might be possible to permit its use within certain limits, but I see no hope of inducing any trade at large to do so. Occasionally and exceptionally one does come across instances where the addition of a preservative is noted on the label; but having regard to the inherent selfish characteristics of commerce, the regulations should be definite and punishment severe. For most articles of food the addition of preservatives should be uncompromisingly forbidden, and the only class in which it seems to me in any way admissible is preserved meat of various kinds—for example, ham, bacon, etc., but not

potted meat. The chief reasons for the hostile attitude to preservatives are:

1. The addition of a small quantity of a preservative like borax does not hinder the growth of micro-organisms as a whole, although it does repress the putrefactive ones, and interferes with the digestive functions.

As Professor Halliburton has shown, the addition of even a small quantity of borax (0.05 per cent.) inhibits the action of rennet ferment. I can confirm this experiment, and add that the reason is to be found in the precipitation of the calcium by the borax. It exerts practically no antiseptic action—the photographs which I pass round show you this. Adding calcium, to make up for that precipitated, only makes matters worse from a bacterial point of view.

2. The addition of a large quantity sufficient to inhibit all growths is injurious to the cells of the digestive tract. We know that these cells are more sensitive than bacteria. Milk treated with 0.1 per cent. formalin forms larger clumps in the stomach, which thereafter digest with more difficulty than those formed from pure milk.

3. The same end can be attained by harmless means.

I consider the occurrence of putrefaction to be a good indicator of when the number of other bacteria is assuming dangerous proportions, and to repress their growth in an article like milk is like sitting on the safety valve of a steam engine.

If milk has once gone bad the dealer cannot mix it with that which is new and sweet; if a preservative is added and it remains apparently good, no doubt yesterday's or even the day before yesterday's milk will be added to to-day's, and indefinitely, and no legal prohibition without inordinate expenditure on inspection could control such a procedure.

We should use the experience already gained in surgery. Asepsis now rules instead of antisepsis, and what we require is aseptic not antiseptic food. Two physical means are at our command for this purpose—heat and cold. The former is chiefly applicable to articles not intended for fresh consumption, the latter chiefly to more perishable foods like milk and cream. That it is effectual is well known; certainly more effectual than antiseptics at ordinary temperatures. The photographs already shown illustrate this point. Cooling and keeping cool will keep the number of bacteria in milk down to that with which it starts.

Colouring Matters.

Colouring matters seem to me even less defensible than preservatives, especially those containing aniline dyes. To add colouring matter to milk, butter, cream, etc., for the purpose of apparently improving its quality is, of course, as culpable as the addition of a preservative.

But their addition for making a food more attractive requires restraint. Nearly all colours can be obtained by harmless, although sometimes more costly, means. The addition of copper sulphate is quite indefensible.

Conclusion.

I am anxious that the blame in this matter should be correctly apportioned.

As regards colouring matters, the public is chiefly to blame, but it could soon be educated to a sanitary level. If brightly coloured foods could nowhere be obtained, the public would buy the other.

As regards preservatives in milk, cream, etc., it seems to me to rest chiefly with the railway companies and with the ice-vendors. Ice is used far too little in England, principally on account of its exorbitantly high price; for I imagine most people prefer to have their summer drinks cold. I believe the cowkeeper would use a refrigerator if ice could be obtained at a reasonable price.

But the railway companies are the chief offenders. They do not supply refrigerator vans, they require milk cans to be sent open (unless they are full) in spite of the obvious risks of contamination, their rates are too high, and their servants too careless. These seem almost to take a malicious pleasure in putting milk cans in the sun.

It would appear, therefore, that we may do some injustice by legislating too hardly for the purveyors of our perishable foods, unless at the same time we require rational treatment of the same from their carriers.

Dr. Grünbaum then proposed:

That in the opinion of the State Medicine Section of the British Medical Association the addition of preservatives to milk, butter, and similar products, beer, and wine, should be prohibited, and their addition to other foods regulated by statute.

Dr. Cooper Pattin (Norwich) seconded the resolution, which was carried unanimously.

Discussion.

Dr. Hill had previously proposed a similar measure, and thought that no preservative should be added to articles of food unless it was declared, since there was no doubt that perfect preservation could be effected without adding or subtracting anything. He agreed with Dr. Grünbaum in decrying the use of aniline colouring matters to articles of food and recounted a case where a vendor of sugar containing an aniline dye had been prosecuted unsuccessfully because the magistrates considered that the sugar, although dyed, was of the nature, substance, and quality demanded by the purchaser.

Mr. Pakes assured Dr. Grünbaum that sodium sulphite was commonly used in Great Britain for the preservation of such foods as sausages. He doubted whether it would be possible yet to enforce the resolution which Dr. Grünbaum proposed, highly desirable as it was to attempt to do so.

Dr. Walsh considered that a transaction might be quite *bonâ fide* according to Dr. Grünbaum's definition and yet do a great amount of harm to the consumer. Without a more accurate knowledge of the effect of these preservative drugs on the human system, we lacked data on which to found legislation. In the present transition stage Dr. Grünbaum's insistance upon asepsis as against antisepsis of food was the most practical contribution yet made to the subject.

Dr. McWalter thought that the resolution seemed to prohibit the use even of salt in butter, and was altogether of too sweeping a character, and would involve a considerable injustice to some of the great industries.

Dr. Thresh thought that salt should be left out of the list of condemned preservatives, because it was a necessary article of food and not introduced for the purpose of selling an inferior article.

Dr. Grünbaum, in reply, thought that if a strong stand were taken the objections raised by the trading corporations would be overcome.

THE HYGIENIC ASPECT OF THE USE OF WATER GAS.

By James Charles McWalter, D.P.H., L.R.C.P.I.,
Dublin.

[Abstract.]

The increasing use of water gas by the many gas companies was a source of distinct danger to the consumers. The dangers were very considerable for more than one reason. As was well known, the leaking of the mains, the leakages from the house fittings, and the occasional omission to turn off the taps were sources of great danger. There was another which Dr. McWalter suggested, that carbon monoxide together with the other gases leaked through the leaden and composite pipes by osmosis, and suggested that this gas might get through at a greater rate than the other constituents.

He pointed out how the introduction of considerable admixture of water gas with coal gas in towns had been followed by an "immediate, enormous, and proportionate increase in the number of deaths ascribed to carbon monoxide poisoning." The saturation of the ground air, in towns supplied with water gas, with carbon monoxide, he thought, was one of the causes of the endemicity of such diseases as enteric and epidemic cerebrospinal meningitis.

He strongly advocated that the official gas testers should return the proportion of carbon monoxide in the gas, and that legislative measures should be adopted to prevent the gas companies mixing without warning any proportion of water gas with the coal gas which they supplied.

He hoped that since attention was being called to the danger of water gas, some more convenient and accurate means might be devised to ascertain the presence of minute proportions of the gas than the method by absorbing it with cuprous chloride.

ON THE PRESENCE OF MEMBERS OF THE DIPHTHERIA GROUP OF BACILLI OTHER THAN THE KLEBS-LOEFFLER BACILLUS IN MILK.

By J. W. H. EYRE, M.D., F.R.S.Edin.,

Ernest Hart Memorial Research Scholar.

(From the Bacteriological Laboratory of Charing Cross Hospital.)

DURING the sitting of this Section last year at Portsmouth, I described the isolation of the bacillus diphtheriæ from a specimen of milk that had been submitted to me for examination (in February, 1899) in some detail, and also explained the measures that had been adopted to establish its identity. I also referred to a similar case published by Bowhill in the *Veterinary Record*, April 8th, 1899, these two cases being the only ones recorded in which the specific organism of diphtheria has been isolated from a suspected milk and carefully tested by experimental methods.

During the past year I have continued my observations, and have examined all samples of milk submitted to me with a view to the detection and isolation of any bacilli occurring therein which morphologically resembled the Klebs-Loeffler bacillus. As a result, I have obtained from no fewer than five specimens, organisms that microscopically appeared to be typical diphtheria bacilli, but I may say at once that none of them were capable of initiating lesions in the guinea-pig resembling those produced by the Klebs-Loeffler bacillus.

The interest of these observations lies in the fact that it would be quite easy to be deceived by the microscopical appearances of any one of these organisms, and I therefore describe these bacilli in order to point out the imperative necessity of biological and inoculation experiments, in order to confirm or disprove a diagnosis founded upon a morphological resemblance, no matter how striking.

The method adopted for the isolation of the organisms I am now referring to was identical with that previously described, namely, through centrifugalisation of a fairly large quantity of the milk sample, followed by "consecutive" inoculation of from six to a dozen slanted blood-serum tubes—for these bacilli resemble the Klebs-Loeffler bacillus in this particular also, that during the early hours of growth upon inspissated serum they outstrip the majority of the other organisms present in the milk.

If organisms morphologically resembling the bacillus diphtheriæ were found to be present when the growth from any of the serum tubes was examined microscopically, attempts were made to obtain a pure cultivation direct from one of the less crowded tubes, and if unsuccessful further serial tube inoculations were prepared, or agar plates poured.

A pure cultivation having been obtained by one of the above methods, the isolated bacillus was critically studied, side by side with the typical Klebs-Loeffler bacillus from the laboratory "stock." Its morphology, staining reactions, biological characters, and the possession of or lack of pathogenic properties investigated by means of inoculation experiments upon guinea-pigs first, and finally upon mice and rabbits.

The bacilli thus isolated were found to be, in the main, fairly easily distinguishable from the true Klebs-Loeffler bacillus, and also to differ amongst themselves, forming three distinct groups, which for convenience I have temporarily designated "Diphtheroid 1, 2, and 3."

Of these three groups I have encountered representatives of 1 in two samples of milk, of 2 in two samples, and of 3 in one sample.

The chief characteristics of these three groups may be briefly summed up as follows:

Designation.—Diphtheroid 1.
Source.—Milk.

Description	Pleomorphic bacillus of about the size of the B. diphtheriæ, showing segmentation of its protoplasm, metachromatic granules, and early involution forms, characterised chiefly by club shapes.
Motility	None.
Flagella	*Nil.*
Spores	*Nil.*
Staining reactions	Stains by all the aniline dyes. Stains "Gram."
Growth on	
Broth (at 37° C.)	Granular like that of B. diphtheriæ.
Beer Wort (at 20° C. and 37° C.)	No growth takes place either macroscopically or microscopically.
Gelatine stab (at 20° C.)	Growth to the bottom of the needle track of discrete colonies at 24 hours—no liquefaction. Wrinkled circular growth on the surface at entrance of needle, soon becoming yellowish in colour.
Gelatine shake (at 20° C.)	Growth near the surface but not in the depths; no gas production.
Gelatine streak (at 20° C.)	White streak, not spreading much, which becomes a light citron colour in about 48 to 72 hours; no liquefaction.
Gelatine plates (at 20° C.)	(3 days) 5 to 8 mm. diameter; spherical opaque porcelain-like colonies, smooth and shining, with sharp regular edges. Fifth day yellowish citron colour noted.
Agar smear (at 37° C.)	Discrete semi-transparent colonies—whitish at 24 hours but taking on a yellowish colour in 48 to 60 hours, by which time many have coalesced into a thick layer. Growth afterwards becomes dry and powdery in appearance.
Blood serum (at 37° C.)	Discrete or sometimes confluent semi-transparent colonies—whitish yellow at 48 to 60 hours. No liquefaction takes place.
Potato (at 37° C.)	Very slightly raised yellowish powdery growth. (Potato itself unaltered.)
Litmus milk (at 37° C.)	Unaltered at the end of 96 hours, although a good growth takes place.
Anaerobiosis	At 48 hours in sugar formate broth in Buchner's tubes, no growth macroscopically. At 72 hours very scanty growth can be demonstrated microscopically, and a slightly granular deposit is visible to the naked eye.
Chromogenicity	Yellowish pigment formation in colonies, not infiltrating the medium.
Gas production	*Nil.*
Acid production	*Nil.*
Indol production	None even at 8 days.
Pathogenicity	Non-pathogenic.
Microscopical Appearances.	
Broth	At 24 hours.—Bacilli aggregated into small clumps. Individuals are short and somewhat slender. A darkly staining point of protoplasm is visible at each pole. At 6 days.—Appearances as above. In many bacilli the interpolar protoplasm takes practically no stain, and the organism simulates a diplococcus.
Agar and blood serum	At 24 hours.—Slender segmented bacilli showing a fair amount of metachromatism. Even at this age involution forms are present which closely resemble those of the B. diphtheriæ, and may be clubbed or segmented, or both, or segmented ovals or spinning-top forms. At 3 days.—Involution forms are more numerous, but many bacilli are present showing polar staining only, and so resembling diplococci.

Designation.—Diphtheroid 2.
Source.—Milk.

Description	Short pleomorphic bacillus showing segmentation of its protoplasm, metachromatic granules, and early involution forms characterised chiefly by club shapes.
Motility	None.
Flagella	*Nil.*
Spores	None.
Staining reactions	Stains by all the aniline dyes. Stains "Gram."
Growth on	
Broth (at 37° C.)	Uniformly turbid, with small amount of deposit at the bottom of the tube.
Beer Wort (at 20° C. and 37° C	Very scanty growth, causing slight general turbidity of the medium in 48 hours.
Gelatine stab (at 20° C.)	Growth of discrete spherical colonies takes place in 24 hours. A circular flat growth also develops on the surface at the point of puncture. No liquefaction occurs. The upper part of the gelatine acquires a faint claret colour.
Gelatine streak (at 20° C.)	Good growth at first of discrete colonies, which afterwards become confluent. No liquefaction occurs. The more superficial portions of the gelatine acquire a faint claret colour in about 3 days—the colonies remain white or grey—which becomes deeper, and tinges the whole of the gelatine in about a week. The colonies then acquire a faint rose pink tint.
Gelatine plates (at 20° C.)	Three days. Small raised circular semi-transparent colonies (3 to 6 mm. diameter), with sharp contour. The surrounding gelatine very pale pinkish in colour.
Agar smear (at 37° C.)	Small discrete colonies raised and translucent. Agar is not coloured, but the colonies themselves appear to develop a faint coloration (pinkish) in 4 to 6 days.

Blood serum (at 37° C.)	Fairly large (1 to 2 mm. diameter) discrete, raised spherical, opaque, greyish, or white colonies, very closely resembling those of B. diphtheriæ. Growth in some cases is confluent.
Potato (at 37° C.)	Fairly good whitish, slimy growth on the surface, which afterwards becomes pinkish. In 3 days the medium itself acquires a rose pink, or pale-claret colour, which becomes slightly deeper during the next few days.
Litmus milk	Slight acid production takes place during the first 24 hours of growth, but at the end of 48 hours the milk has regained its original colour. The medium is not coagulated.
Anaërobiosis	No growth is present in glucose formate broth at the end of 72 hours. The organism is not killed, however, by the temporary absence of oxygen, for if the glucose formate tube on removal from Buchner's tube is replaced in the incubator, and free access of air permitted, a good growth takes place in 24 hours.
Chromogenicity	Claret-coloured or rose-pink pigment is formed which infiltrates the solid nutrient media, and is sometimes held in the actual colonies.
Gas production	*Nil.*
Acid production	Very slight in amount, and only during the first 24 hours of growth.
Indol production	*Nil* (none present even at 8 and 10 days).
Pathogenicity	Non-pathogenic.
Microscopical Appearances:	
Broth	Short squat bacillus occurring in small clumps; individuals showing two polar aggregations of protoplasm.
Agar	At 24 hours—resembles broth cultivations microscopically except in that a few clubbed involution forms are present. At 3 days—the cultivation is one mass of involution forms indistinguishable from those of the bacillus diphtheriæ, and many exhibiting marked metachromatism.
erum	At 24 hours—The bacilli resemble the sheath form of the bacillus diphtheriæ. The sheath encloses two or at most, three darkly staining areas of protoplasm. A few evenly staining bacilli are also present.
Potato	On potato, however, the long clubbed forms—sometimes segmented — and the large segmented ovals so characteristic of the Klebs-Loeffler bacillus are the predominant forms, but a few short forms with polar staining are also to be seen.

Designation.—Diphtheroid 3.
Source.—Milk.

Description	Pleomorphic bacillus showing segmentation of the protoplasm and early club-shaped involution forms.
Motility	None.
Flagella	*Nil.*
Spores	*Nil.*
Staining reactions	Stains with all the aniline dyes. Stains by Gram's method.
Growth on Broth (at 37°C.)	Small flocculent masses precipitated on the sides of the tube and falling eventually to the bottom, not unlike streptococcus growth.
Beer wort (at 20°C. and 37°C.)	No growth could be demonstrated, either macroscopically or microscopically.
Gelatine stab	No growth could be demonstrated macroscopically or microscopically in 96 hours; but at 120 hours, small discrete, spherical, white or buff-coloured colonies appear, 1 mm. in diameter, which do not increase in size. No liquefaction of the medium occurs.
" streak	
" shake	
" plates	
(at 20°C.)	
Agar smear (at 37°C.)	Good growth takes place in the form of raised circular white opaque shining colonies, discrete at first, but tending afterwards to become confluent.
Blood serum (at 37°C.)	White opaque growth, confluent, which appears as a film over the entire surface of the medium.
Potato (at 20°C. and 37°C.)	No growth can be demonstrated macroscopically or microscopically.
Litmus milk (at 37°C.)	Growth takes place, although no change occurs in the colour or character of the medium.
Chromogenicity	White.
Gas production	*Nil.*
Acid production	*Nil.*
Indol production	*Nil*—not even after 8 or 10 days.
Pathogenicity	Non-pathogenic.
Microscopical Characters:	
Broth	At 24 hours: Short segmented bacilli, not unlike those produced in the same medium by Diphtheroid 2. In addition there is a fairly large admixture of clubbed and segmented involution forms.
Agar	The growth consists of well stained bacilli showing marked segmentation and metachromatism, together with a certain amount of clubbing.
Blood serum	The majority of the bacilli stain badly. Some scattered about the field stain well, exhibiting polar granules and thus resembling diplococci.
Anaërobiosis	No growth takes place under anaërobic conditions even after 72 hours, and apparently the absence of oxygen causes the death of the bacillus, for no subsequent growth occurs in the tube even if oxygen is freely admitted.

Conclusions.

1. That several groups of bacilli, exhibiting segmentation, metachromatism and clubbed involution forms, are occasionally present in retail milk.

2. That the bacilli of these groups agree in resembling the bacillus diphtheriæ to some extent, but are capable of being differentiated from it and also from each other.

3. That these bacilli arrange themselves according to their colour production into three well-defined groups which are characterised by the coloration of the colonies themselves in Groups 1 and 3 (yellow and white respectively) without the nutrient medium being affected, and by the infiltration of the medium by a pinkish colour in Group 2, the colonies themselves being only slightly chromogenic.

4. That the members of these three groups are non-pathogenic.

5. From the foregoing it follows that it is practically impossible to diagnose the presence of the true B. diphtheriæ in a milk sample, by microscopical tests alone, but that the identity of the Klebs-Loeffler bacillus can only be established by careful consideration of its biological and pathogenetic characters.

THE SUPPLY OF STERILISED HUMANISED MILK FOR THE USE OF INFANTS IN ST. HELENS.

By F. Drew Harris, M.B., D.P.H.,
Medical Officer of Health.

The Prevention of Diarrhœa.

The problem of combating and limiting to some extent the excessive mortality of infants under 1 year is, I think, second to none in importance from the point of view of a medical officer of health, and among the diseases particularly fatal to infant life, diarrhœa and diseases of the digestive system hold a most prominent position. At the present moment these diseases are occupying, to a very large degree, the attention of various health authorities throughout the country, consequent upon the fact that for three successive years the infantile death-rate and the death-rate from diarrhœa have been abnormally high. I feel, therefore, that any system which promises, in however small a degree, to help in diminishing this excessive death-rate, will be of interest to many, and for this reason I have ventured to occupy your time for a short period to-day, in describing a system which has been started in St. Helens with this object in view.

Without going deeply into the etiology of diarrhœa and the allied diseases, I think there can be little doubt that the incidence of these diseases is particularly heavy among bottle-fed children, a fact due either to the foul condition of the bottles or to the sourness of the milk, or to both these causes combined. In support of this contention, I need only quote that during the past five years in St. Helens of the children under 6 months who have died from diarrhœa 81 per cent. were bottle-fed.

Municipal Sterilisation of Milk.

My attention was first called to the system which we have since established in St. Helens by a short leader in the *Journal of State Medicine*, which described briefly the working of the system at Fécamp, in Normandy, where it had been installed for over four years by Dr. Leon Dufour. So impressed was I with its possibilities for reducing infant mortality that, acting on the advice of the Chairman of the Health Committee, I at once put myself in communication with Dr. Dufour. From that gentleman I obtained a large amount of information, which I embodied in a report to my Committee, and which resulted in the immediate appointment of a small subcommittee to visit and further investigate the subject. As a result of that visit and the subsequent report of the subcommittee, it was decided to start a depot in St. Helens.

A small six-roomed house was taken in a conveniently central position, and was adapted to our requirements. The ground floor is devoted entirely to the preparation of the milk, while the first floor is occupied by the directress and her assistants. The back room contains the sterilisers and the bottle-washing machine, and it is here that the milk is prepared, the bottles washed and filled, and the sterilisation takes place. Opening from this room is a second lined with



Fig. 1.—Wire basket for bottles.

shelves, on which the baskets of bottles are placed until fetched by the customers. The front room is used as a committee room, and it is here the babies are weighed. The necessary apparatus and appliances having been bought, we were able at the beginning of August last year to start the supply of sterilised humanised milk for infants. Briefly the system is as follows:

The milk on its arrival is tested to ascertain roughly its percentage of cream, between 9 and 10 per cent being regarded as the best amount. It is then diluted by one third of its bulk

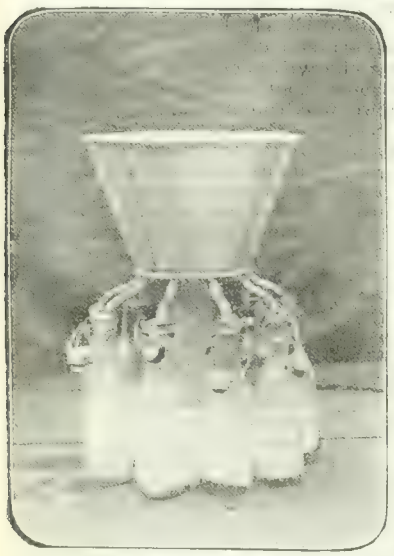


Fig. 2.—Tin vessel for filling the bottles.

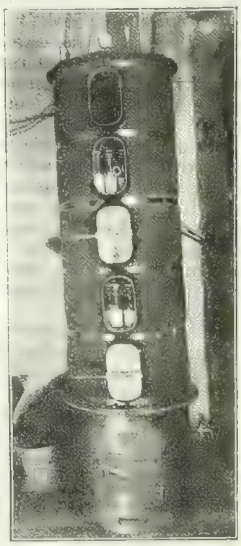


Fig. 3.—Steriliser and boiler.

to reduce the proteids to the proportion usually found in human milk. Cream and sugar are then added to the extent of 2 ozs. per gallon of mixture respectively, and a small amount of salt is also put in. By these means a milk approximating in composition to human milk is obtained. The milk is next placed in stoppered bottles and the stoppers closed, the bottles when filled being placed in the steriliser.

A rather ingenious apparatus for filling the bottles was designed by Dr. Caron, of Havre. It consists of a tin vessel capable of holding rather more than 2 pints, from which nine tubes lead, under each tube a bottle being placed; the requisite quantity of milk having been measured in a glass beaker is poured quickly into the filler, which distributes the milk equally to the nine bottles.

THE STERILISER.

The steriliser is a cylindrical vessel divided into five compartments, separated from each other and from the boiler by perforated zinc plates. Below the lowest compartment is a small boiler capable of holding about 8 gallons of water, and acted upon by a fire at the base of the apparatus. Each compartment is closed by a door, hermetically sealed by rubber washers, and a similar door is placed on the top of the apparatus. On the water being heated the steam rises through the perforated plates and fills the whole chamber, passing out by a small pipe, governed by a stopcock which is conducted to a bucket of water, about 4 inches of the pipe being immersed. By this means a slight pressure is obtained, and the temperature of the steam raised about 2° C. On the top of the apparatus are also placed a thermometer, a pressure gauge, and a small safety valve. As soon as the thermometer indicates 102° C. the time is noted, and that temperature is maintained for three-quarters of an hour. The time occupied in the whole operation is from three to three and a-half hours.

By this simple means very perfect sterilisation is obtained, and yet the milk in no sense tastes "boiled." I have kept bottles of this milk for over a month, and on opening them have invariably found the milk perfectly sweet. A sample is kept from each operation for subsequent reference.

DISTRIBUTION.

As soon as sterilisation is complete the fire is raked out and the doors opened. Having cooled somewhat, the bottles are taken out and placed in baskets, nine in each, each basket representing the necessary amount of food for a child for one day, that is, six feeds for the day and three for the night. In no instance is the quality of the milk varied, but the quantity is adjusted according to the age of the child as follows:

Age.	Amount.	Age.	Amount.
1 day	1½ ounces	10 days	18 ounces.
2 days	3½ ,,	11 ,,	19 ,,
3 ,,	5 ,,	12 to 30 ,,	21 ,,
4 ,,	7 ,,	2 to 3 months	25 ,,
5 ,,	9 ,,	4 ,,	28 ,,
6 ,,	10 ,,	5 ,,	32 ,,
7 ,,	12 ,,	6, 7 and 8 ,,	36 ,,
8 ,,	14 ,,	9 to 10 ,,	40 ,,
9 ,,	16 ,,	11 to 12 ,,	42 ,,

The baskets having been filled are placed in the shelves in the distributing room, where they remain till they are wanted. When a new customer comes for the milk the name and address of the child and its age and sex are obtained, and these with the date are entered in a book kept for that purpose. The mother is then given a basket of nine bottles, containing the requisite amount of milk according to the age of the child, and two teats are also given her. She is recommended before giving the child a feed to place the bottle, without removing the stopper, in a basin of hot water, thus warming the milk to the requisite temperature. The stopper is then loosened, and one of the teats fitted to the bottle. She is required to bring the teats at intervals to be examined as to their cleanliness. By these means contact with the air is avoided, and the danger of pouring the milk into a dirty feeding bottle is obviated. On returning the basket of empty bottles next day a fresh basket in given in exchange.

Lastly, on Wednesday afternoons, the mothers are requested to bring their babies to be inspected and weighed. Records of their weight are entered in a book, and also on a card which is given to the mother. I regret that it has not been possible to insist on this, and that the records we have obtained are somewhat fragmentary.

The depôt was opened on August 8th, 1899, and within a very short time over 80 children were on the books. Since then the numbers have steadily increased, till at the present time over 140 are being fed. To meet this increased demand it has been found necessary to make certain structural alterations in the house, and to purchase a second steriliser. A bottle-washing machine has also been obtained; it consists of a revolving wheel in which the bottles are

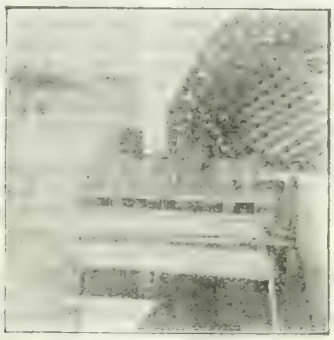


Fig. 4.—Bottle-washing machine.

placed to soak. As the wheel revolves every part of the bottle is brought into contact with the water. The bottles are put in at one side of the wheel, which revolves by its own weight, and are taken out at the opposite side, the time occupied in travelling from one side to the other being about an hour. Thoroughly washed, the bottles are taken out one by one and brushed by a revolving brush worked by a water tur-



Fig. 5.—Revolving brush worked by water turbine.

bine, and are then placed in the rinser. When the rinser is full the water is turned on, and they are thoroughly rinsed for about half a minute, and are then placed on shelves to drain.



Fig. 6.—Fetching milk.

Lastly, during the past month it has been decided to purchase a carrier tricycle, by means of which the outlying parts of the borough may be supplied, or the milk taken to people at their own homes at a slightly increased cost. The staff employed at the depôt consists of one female directress and two assistants, who are given rooms in the upper storey of the house.

Results.

It is difficult at this early period to give any accurate direct statistics. Up to the end of the year 284 children had been supplied with the milk for longer or shorter intervals. Of these, 52 only used the milk for a week or less. Excluding these, which can hardly be said to have given the milk a fair trial, the death-rate among the remainder was only 103 per 1,000, compared with 157 per 1,000 births, taking the borough as a whole. This in itself is a considerable saving of life. If the figures were spread over a longer period the results would be, I am sure, even more striking. Unfortunately I am not in a position at present to give them accurately. Of the 24 deaths which occurred in the above 232 children, 4 were from diarrhœa (all in children who had had the milk for less than three weeks, and who were already suffering from this disease when brought to the depôt), marasmus 3, bronchitis 4, pneumonia 2, measles 2, and convulsions, gastro-enteritis, meningitis, general tuberculosis, tabes mesenterica, croup, asthenia, and whooping-cough 1 each. With the exception of 7 of these deaths all occurred in children who had had the milk for less than a month.

With regard to indirect evidence as to the benefits derived from the system, I would point out that in a year when the infantile mortality in the country was almost universally above the average of the past 8 years, in St. Helens it dropped to 157, or 19 per 1,000 below the average for the past 8 years, and was for the first time below that of the country as a whole.

	Average, 1891-98.	1899.	+ Increase. − Decrease.
England and Wales	153	163	+ 10
33 great towns	170	182	+ 12
67 large towns	156	179	+ 23
England and Wales without these towns	116	145	+ 29
St. Helens	176	157	19

Judged on an average of the past eight years (which arguing from the analogy of the country as a whole is a considerable underestimate), over 60 infant lives have been saved. It is also a fact worthy, I think, of notice, that it is only in children under 1 that this saving has occurred, the reduction in the death-rate per 1,000 living under 5 is practically wholly accounted for by the reduction under one year, there having been only an additional saving of 4 lives in the next four years. Coming to the reduction in the number of diarrhœa deaths, the following table from the Registrar-General's quarterly reports is of interest:

Table showing the death-rate per 1,000 living from diarrhœa in the third or summer quarters of the past eight years in England and Wales, the 33 great towns, the 67 large towns, England and Wales (excluding these towns), and in St. Helens.

England and Wales			2.8					
33 great towns								
67 large towns								
England and Wales (excluding these towns)								
St. Helens ...								

You will note from the above table that not only in each case was the death-rate in 1899 above the average of the past eight years by over 1 per 1,000, but that with the exception of the 1897 rate for the 33 great towns, the respective rates in 1899 were greater than those recorded in any other of the eight years. In St. Helens the 1899 rate was also above the average, but by only 0.7 per 1,000, and on three occasions during the eight years, viz., in 1893, 1897, and 1898, far higher rates were recorded. Yet, in 1899, the meteorological conditions were certainly as favourable to the epidemicity of this disease as in either of the years mentioned.

There is, however, one other point—namely, that it is only in children under 1 that any appreciable reduction in the rate occurred. In the eight years, 1891-98, the average proportion which the deaths under 1 from diarrhœa bore to the total deaths from this disease in St. Helens was 66.3 per cent., while from gastro-enteritis the proportion was 60.5 per cent., or, taking the two diseases together, the proportion was 63.8 per cent. In 1899 the proportions were respectively 54.4 per cent., 52.7 per cent., and 53.6 per cent. Thus, while the total deaths from diarrhœa and from gastro-enteritis and from these diseases combined were all above the average, the percentage which the deaths under 1 bore to the total deaths was below the average by 12.0 per cent., 7.8 per cent., and 9 9 per cent. respectively. Had the average proportion been maintained, there would have been 63 more deaths from these diseases alone of children under 1 year.

With regard to the statistics which I have just quoted, I do not, of course, claim that the whole of this saving of life was due to the supply of sterilised humanised milk, but that it was responsible for a large proportion I feel sure.

In individual cases, moreover, I can testify to the good which has resulted from taking the milk. During the very hot weather last August and September, when diarrhœa was so prevalent throughout the whole country, many cases were brought to the depôt in the last stages of this disease. In more than one instance the milk seemed to work like magic, and the recoveries were most remarkable. Many of these cases had the milk for only a comparatively short period, and when inquiries were made as to the reason of their discontinuance the reply made was, "Oh, the child is all right again now, and is able to take its ordinary food," the milk evidently being regarded as a medicine rather than a food. Increased experience, however, will, I trust, eradicate this wrong impression.

Before leaving this part of my subject, I should like to quote a few statistics which have been compiled by Dr. Leon Dufour of Fécamp, the inventor of the system, if I may use the term, and to whom is due all credit for its inception and working details.

Fécamp is a small seaside town in Normandy of some 14,000 inhabitants. In common with the department in which it is situated, Seine Inférieure, this town has an abnormally high infantile mortality rate—247 per 1,000 (1894-98). Owing to the smallness of the town, and the comparatively small annual number of births (1894-98, yearly average 428), the effect of this system, is more easily shown. Certainly the statistics are remarkable.

Years.	No. of Births in Town.	No. of Children in Goutte de Lait.	Deaths from Enteritis.		Deaths from Other Causes.		Infantile Mortality.	
			In Town	In Goutte de Lait.	In Town.	In Goutte de Lait.	In Town.	In Goutte de Lait.
1894-5	400	33	25	—	71	4	240	121
1895-6	429	73	178	5	107	16	431	287
1896-7	420	68	37	2	20	5	146	106
1897-8	455	135	56	3	30	9	186	90
1898-9	434	156	42	2	57	9	228	70
1899-1900 (7 months)	—	180		3	—	7	—	52

The contrast in the death-rate among children fed at the Goutte de Lait and children in the town is sufficiently marked to need no further comment.

With reference to the above figures, Dr. Dufour remarks that owing to the intense and prolonged heat the summers of 1896, 1898, and 1899 were very deadly to infants. The year 1899-1900 was also characterised by a severe epidemic of measles.

At Havre, where a depôt has been opened for one year, the following results have been obtained. Dr. Caron divides his children into two categories, (1) those who came to the Goutte de Lait healthy, and (2) those who were ill (mostly suffering from diarrhœa, vomiting, and thrush) when they started the milk. The first series included 230 children; of these 9, or 5.2 per cent., died of enteritis, against 13.37 per cent. in the town as a whole, while from all other causes 20, or 7.39 per cent., died, as against 7.83 per cent. in the town, or a total mortality of 126 per 1,000.

The second series comprised 75 children, of which 15, or 20 per cent., died from enteritis, and 20, or 26.6 per cent., from all other causes. Thus even amongst these over 53 per cent. recovered.

FINANCE.

Lastly, I should like to touch briefly on the financial aspect of the system. In Fécamp and Havre, the societies being philanthropic, the charge for the milk is graduated according to the ability of the parents to pay, being gratuitous to the very poor and increasing gradually to as much as one franc per day to the rich. The Council at St. Helens when the scheme was started there, felt that it was impossible to follow this plan, and that one uniform rate must be charged. The price was fixed at 2d. per day's supply, as it was found that this sum rather more than covered the cost of materials and of fuel. The corporation supplied the installation and agreed to pay the rent of the house, the wages for attendance, and the wear and tear of plant. The following figures to the end of the financial year, namely, for eight months' working, are as follows:—

	£ s. d.	£ s. d.
Cost of Installation...		235 2 5
Current Expenditure:—		
Wages for Cleaning and Attendance	63 11 0	
Milk	160 11 9	
Rent of House	18 [illegible]	
Sugar	12 1 2	
Fuel	4 8 [illegible]	
Sundries	5 19 [illegible]	
		264 11 1
Total		499 13 6

Against the item for current expenditure has to be set £187 income received from the sale of milk.

To meet those cases which are really too poor to pay even the modest sum of 2d. per day's supply, a ladies' committee has been formed, who have at their disposal a fund from which deserving cases can be paid for. It has not, however, up to the present been found necessary to utilise this on more than half a dozen occasions. From what I have endeavoured to tell you, you will see I think that considerable benefit, as regards the saving of infant life, has been obtained, and I have every hope that, with more extended operations, this benefit will be increased.

During the initial stages of the scheme, and ever since the depôt has been started, it has been my good fortune to have been aided in every possible way by my committee, and I would take this opportunity of expressing my gratitude to Mr. Alderman Forster, the chairman, Mr. Alderman Massey, the deputy-chairman, Alderman Sir David Gamble, and Dr. Bates, for the time and trouble they have devoted to the organisation of the scheme, and for the many valuable suggestions which from time to time they have made. Much of the success which has attended the movement in St. Helens is also attributable to the fact that I have had the thoughtful co-operation of the medical practitioners in the district, who have in many instances recommended the use of the milk to their patients, with results which have in many cases been most beneficial. To the assistance thus so kindly given to me is due in a large measure the success to which we have already attained.

Lastly, I would thank Dr. Dufour, the originator of the system, and Dr. Caron of Havre, for their great kindness and courtesy in supplying me with all the information I required.

Dr. PECK thought that Dr. DREW HARRIS was really starting

at the wrong end, and that what was really wanted was that the cows from which the milk was supplied should be certified as healthy.

CONSTRUCTION AND ARRANGEMENT OF SANATORIA.

In the unavoidable absence of Professor Boyce, Dr. Grünbaum gave a lantern demonstration illustrative of the construction and arrangement of various sanatoria which Professor Boyce had visited in various parts of Europe. The last plans shown were those of the Liverpool sanatorium. The demonstration was much appreciated by those present.

THE HOUSING OF THE WORKING CLASSES.

By WM. BERRY, F.R.C.S.I., D.P.H.,
Medical Officer of Health, Wigan.

The provision of dwelling accommodation for the working classes, and especially of the very poor, is a problem that will require ere long to be dealt with by municipal and local authorities, and in such a manner that they have not hitherto done.

Many towns have done practically nothing in this matter, whilst large towns and cities have dealt with large insanitary areas, either under Part I. of the Housing of the Working Classes Act or a local Act of their own, and have provided accommodation for the displaced population by building tenement dwellings. It is not the large towns and cities where the difficulties arise, but it is in the smaller towns and villages, and it is in these towns that most insanitary dwellings exist, the older the town and greater the number of hovels unfit for human habitation.

It is also in these places that the medical officer of health is most thwarted in carrying out such Acts as the Housing of the Working Classes Act, 1890, which is an Act to consolidate and amend the Acts relating to artisans and labourers' dwellings and the housing of the working classes, and is divided into seven parts:

Part I. Unhealthy areas.
Part II. Unhealthy dwellings.
Part III. Working class lodging-houses.
Part IV. Supplemental.
Part V. Application of Act to Scotland.
Part VI. Application of Act to Ireland.
Part VII. Repeal and temporary provisions.

The powers given by the Act are ably summarised as follows by Allan in *The Housing of the Working Classes Act* (Introduction p. xxxiii.):

1. Individual houses by insisting on having them made fit for habitation, or if that is not, or cannot be, done by closing or demolishing them.
2. Obstructive buildings which cause other houses to be unhealthy by enabling the local authority to demolish them.
3. Small areas of unhealthy houses by having them pulled down and reconstructed.
4. Large areas or "slums," which can be acquired and pulled down and an improvement scheme carried out.
5. The erection of dwelling or lodging houses for the working classes in districts where the same are required.

Under Part I no doubt it is sometimes desirable to condemn insanitary areas, but it is a costly method and one which the smaller towns seek to avoid, the purchase of the site and the provision which has to be made for the displaced tenants being the cause of the costliness.

Part II of the Act therefore is more suitable for small towns and villages, and as a rule private enterprise steps in and provides for the displaced tenants. The object therefore of Part II of the Act is the demolition of unhealthy or obstructive buildings where the fewness of the buildings or smallness of the area renders it inexpedient to proceed under Part I.

When an area is condemned under Part I of the Act, dwelling accommodation must be provided for tenants displaced by the scheme, for Section 11 paragraph 2 says:

> Where a scheme comprises an area situate elsewhere than in the county or city of London it shall, if the confirming authority so require (but it shall not otherwise be obligatory on the local authority so to frame their scheme) provide for the accommodation of such number of those persons of the working classes displaced in the area with respect to which the scheme is proposed in suitable dwellings to be erected in such place or places either within or without the limits of the same area as the said authority on a report made by the officer conducting the local inquiry may require.

It is the compulsory acquisition of lands and the rebuilding that make these schemes so expensive. In the county borough of Wigan two such areas have been condemned at a cost to the ratepayers of £28,568 (including cost of houses) and 127 houses have been built to supply the displaced tenants with accommodation, but the houses which have been put up are such that the rental is so great that none of the tenants which have been displaced from the insanitary areas could afford to pay the rent. What, however, does happen is that the thrifty artisan who requires better accommodation takes these houses, and the houses from which he has moved being of less rent become tenanted by the displaced tenant of the insanitary house, or he migrates to other cheap or insanitary property in adjoining townships.

Part III of the Act provides for working-class lodging-houses, and in Section liii we have:

> The expression lodging-houses for the working classes, when used in this part of this Act, shall include separate houses or cottages for the working classes, whether containing one or several tenements, and the purposes of this part of this Act shall include the provision of such houses and cottages.

This part of the Act is adoptive, and therefore is not taken advantage of as it ought to be. If it were, the numerous rural districts would be enabled to provide working class dwellings on a reasonable scale, and would step in where local enterprise failed.

Local authorities may purchase under this part of the Act existing lodging-houses, and manage them as municipal dwellings, and thus providing much more efficiently for the poorer classes than can be done by private individuals.

If local authorities would only enforce the powers already possessed under these Acts, much more could be done under Parts II and III of the Act of 1890, although it may be desirable to have this Act amended; and the Housing of the Working Classes Act (1890) Amendment Bill before Parliament this year, if it becomes law will empower local authorities to go outside their own boundary and obtain land on which to erect dwellings; if, however, these bodies do not enforce existing powers, no new legislation will avail them much.

The Local Government Board has recently addressed communications to the various corporations and district councils throughout the country, pointing out that it is deemed advisable to again bring under the notice of these authorities the very extensive powers which they possess in regard to the housing of the working classes. The circular lays special emphasis on the powers for dealing with insanitary dwellings apart from carrying out schemes of improvement and reconstruction, and the Board impresses upon the local authorities the importance of putting such powers in force wherever the exercise of them is required. The circular continues:

> The Legislature has in some cases made provision to meet default on the part of the local authorities in this matter. This is particularly so as regards London, where the County Council, on its being proved to their satisfaction that any local authority have made default in doing their duty under the Public Health (London) Act with respect to the removal of any nuisance, the institution of any proceedings, or the enforcement of any by-law, may themselves institute any proceedings, or do any act which the authority might have instituted or done. Again, if the County Council are of opinion that the local authority have made default in relation to proceedings under Part II of the Housing of the Working Classes Act, or have failed to make an order for demolition, or [illegible] for pulling down an obstructive building, they may pass a resolution to this effect, and thereupon the powers of the local authority as to the dwelling-house and building in question under Part II (other than in respect of a scheme) rest in the County Council. But, apart from provisions of this kind, Parliament has made it the duty of the local authority entrusted with the laws relating to public health and local government to put into force from time to time, as a matter of course, the powers with which they are entrusted. [illegible] tary condition of all premises within the [illegible] the Board would point out that a heavy responsibility rests upon local authorities if they fail to give effect to the intention of Parliament in this matter.

This shows that the central authority is aware that full advantage has not been taken of the Act of 1890.

Some towns have done much under Part I and II of the Act, and in Wigan we have dealt with two large areas under Part I. and a return recently made by Mr. Bolton, our Borough Engineer and Surveyor to the Streets Buildings and Improvements Committee, is given in the table on p. 432.

The number of dwelling houses of a similar character erected by private enterprise since the commencement of the schemes 609, and the number for which room can be found on Corporation land in Bradshawgate is 7. The number of cot-

tages erected in the years 1890, 1891, 1892, 1893, and 1894 was 682, and the number of insanitary houses demolished since 1895, including above areas, is 637.

Scheme.	Number of Houses required by Scheme to be Erected.	Number Erected already.	Number Remaining to be Erected.	Available Sites.
Vauxhall Road Area	130	90 Vauxhall Road	40	Whelley 25. Coop St. 15.
Rodney Street Area	80	37 Pottery 33 Whelley	— 10	Coal Yard 10

Wigan has been peculiarly fortunate in dealing with insanitary property under Part II of the Act. Owing to the foresight of the Borough Treasurer (Mr. Wanklyn) and the Chairman and members of the Insanitary Houses Committee, compensation was permitted to be given under powers in a local Act (Wigan Corporation Act, 1889). The money, though small, smoothed the way very considerably at first. It was a five years' purchase on a three years' net rental, and, as always has been the case where corporations have to pay, it was not considered a sin to get as much as possible, and it was astonishing as time went on to find how regularly and well these poor people paid their rents, and how little it cost to keep these houses in a state of repair, these attempts to obtain compensation simply compelled the Committee to adopt a scale which was on an amount the owner himself had paid rates—namely, three years' purchase on the rateable value. The result has been that previously the owner of the insanitary dwellings got from £18 to £28 per cottage, or an average of about £20, now he gets from £8 to £18, or an average of £12. The money has been borrowed at a low rate of interest for the purpose, but when it is exhausted I do not know whether the same liberality will be extended or not, for on the Committee now are members who do not hesitate to say that insanitary property has no value whatever, and in theory that is so, for property has its duty as well as its rights, and it ought to be fit to live in, if rent is paid for it.

From the Borough Treasurer's abstract of accounts for 1900 I see that £20,000 was the amount to be borrowed, £18,000 has been borrowed, and nearly £14,000 expended. During my tenure of office since January, 1896—

564 houses have been condemned.
441 demolished.
33 made sanitary.
90 still under notice.

There is, however, a class of persons who are affected by the condemnation of these houses that must be taken very largely into consideration, and I quite agree with Sir Charles Cameron when he says—

> The closing of insanitary houses and the clearing of unhealthy areas have, however, been of little benefit to the poorest of the poor. The people who lived on the unhealthy areas have not returned to occupy the next dwellings which replaced their wretched tenements. The rents of the new dwellings were beyond their means. (*Journal of State Medicine*, 1898, p. 400.)

Dr. Priestley, Medical Officer of Health for Lambeth, in an able paper on "Present Day Area Condemnation" read before the Incorporated Society of Medical Officers of Health, March, 1900, and published in *Public Health*, May, 1900, says:—

> Indeed, the classes who live chiefly in an area.....condemnation and... demand the attention (and help) of a sanitary authority, are the *bona-fide* labourers, and the accommodation required is, in my opinion, such as I have outlined. There are, in addition, the very poor—the so-called submerged tenth or outcasts of society—also to be catered for, and for such, model common lodging-houses (male and female) are needed, that is, such as Glasgow and other towns are successfully providing. Decentralisation and cheap locomotion do not settle, by any means, the housing question. (*Public Health*, 1900, p. 581.)

Sooner or later municipal and local bodies will require to deal with this question. Private enterprise will not touch it, and philanthrophy will fall short, but the residuum must be provided for; this can be done under Part III of the Act. Money can be borrowed at a low rate of interest and repaid after a long period, from thirty years to sixty years, and one hundred years has even been suggested. Small towns and villages could be dealt with in this way and suitable dwellings obtained for the very poor. The carrying out of this has many obstacles, but these should not be insurmountable, and where large cities and towns can deal with areas and build suitable dwellings, retaining the same in their own possession, surely suitable houses on a smaller scale could be built and looked after by the local authorities.

Overcrowding also could be dealt with in this way, and where we have insufficiency of dwellings for the population, and private enterprise failed to supply the demand, then the local authority ought to step in. It has been stated that 900,000 live in an overcrowded condition in London, and this forms nearly a fifth of the population of the metropolis; 400,000 in the county of London are said to be living in one-roomed tenements, 30,000 living six in one room, and 3,000 eight in one room.

In conclusion, I would suggest that medical officers of health should take the bull by the horns and carry out the Housing of the Working Classes Act of 1890, taking the worst and most insanitary property first. These measures require to be carried out with discretion, and consideration must be shown to the displaced tenants, but not to the extent of rendering the Act inoperative.

MEMBERS PRESENT AT THE ANNUAL MEETING.

The following names of members and visitors attending the annual meeting were entered in the books provided for that purpose:

Abraham, Phineas S., M.D., London
Addison, C. E., Colchester
Aikin, Wm. A., M.D., London
Allan, F. J., M.D., London
Allbutt, Thomas Clifford, M.D., F.R.S., Cambridge
Alpin, Major W., M.D., I.M.S., London
Anderson, Professor R. J., M.D., Newry
Anderson, Mrs. E. Garrett, M.D., London
Anderson, R. B., F.R.C.S., London
Andriezen, W. L., M.D., London
Applebe, E. A., L.R.C.P., Edin., Winchester
Archer, Ernest G., M.R.C.S., Brandon
Ashworth, James H., M.D., Halstead
Atthill, R. C., L.R.C.P.Edin., Great Bentley
Aylward, Walter Charles, L.R.C.P., Tunbridge Wells

Baber, E. Cresswell, M.B., Brighton
Bagley, S., L.R.C.P.I., West Gorton
Baker, Surgeon-Lieutenant-Colonel Oswald, M.D., I.M.S.(Ret.), London
Balding, D. B., F.R.C.S., Royston
Barr, James, M.D. Liverpool
Barratt, John O. W., M.D., Wakefield
Barnes, Edgar G., M.D., Eye
Barton, S., M.D., Norwich
Bassano, Thomas M., M.B., Colchester
Bateman, Alfred, M.B., London
Baxter, W., M.R.C.S.Edin., Manningtree
Beattie, Thomas, M.D., Newcastle
Beatty, T. Carlyle, M.D., Clacton-on-Sea
Bennett, William H., F.R.C.S., London
Berry, George A., M.B., Edinburgh
Beverley, Michael, M.D., Norwich
Biden, C. W., M.R.C.S., Framlingham
Bidwell, Leonard A., F.R.C.S., London
Billett, Mrs. Helen L., L.S.A., London
Birt, George, M.B., Stourbridge
Bishop, Edward S., F.R.C.S., Manchester
Blair, Charles, F.R.C.S., London
Bokenham, T. J., M.R.C.S., London
Bovey, Thomas W. W., M.R.C.S., Abbotsbury
Bower, Ernest Dykes, F.R.C.S.Edin., Gloucester
Boxall, Robert, M.D., London
Boyd, Mrs. Stanley, M.D., London
Boyd, Stanley, F.R.C.S., London
Boyle, Mrs. Alice H. A., L.R.C.P. Edin., Brighton
Brailey, W. A., M.D., London
Brander, Robert L., M.B., Apsley Guise
Brenman, Mark A., L.R.C.P., Charlestown, co. Mayo
Brierley, James Brassey, M.D., Old Trafford
Briggs, H., M.B., Liverpool
Broadbent, G. H., M.R.C.S., Manchester
Broadbent, Sir W. H., Bart., M.D., F.R.S., London
Brogden, Richard William, M.B., Ipswich
Bromley, John B., M.R.C.S., Castle Hedingham
Brooks, Francis A., M.D., Felixstowe
Brown, George, M.R.C.S., London
Brown, Herbert H., M.D., Ipswich
Brown, Robert Charles, M.B., Diss
Browne, H. Langley, F.R.C.S., West Bromwich
Brummitt, R., M.R.C.S., Kooringa, South Australia
Buckenham, J., M.R.C.S., Cambridge
Bunch, J. L., M.D., London
Burghard, F. F., M.D., London
Burton, Robert G., M.D., London
Burton, Samuel H., F.R.C.S., Norwich
Burton-Fanning, F. W., M.D., Norwich
Bury, Judson S., M.D., Manchester
Buxton, Dudley W., M.D., London
Buzzard, Thomas, M.D., London
Byers, Professor J. W., M.D., Belfast

Cadge, William F.R.C.S., Norwich
Caldecott, Charles, M.B., Redhill
Calwell, William, M.D., Belfast
Cameron, Charles H. L., L.R.C.P. Eastbourne
Cameron, Irving H., M.B., Toronto, Canada
Campbell, Harry, M.D., London
Campbell, John, M.D., Belfast
Campbell, P. E., M.B., Caterham
Cantlie, James, F.R.C.S., London
Cardew, George Arthur, M.R.C.S., Cheltenham
Carlier, Professor E. Wace, M.D. Birmingham

Cartwright, E. H., D.M., Maidstone
Casley, R. K., M.D., Ipswich
Castor, R. H., Major, I.M.S., London
Carey, William, L.R.C.S.I., Holbrook, Ipswich
Carline, W. Arthur, M.D., Lincoln
Caton, R., M.D., Liverpool
Cave, Edward John, M.D., Bath
Caverhill, Thomas F. S., M.B., Edinburgh
Chamberlain, J. T., L.R.C.P.Edin., Great Shelford, near Cambridge
Chicken, Rupert C., F.R.C.S., Nottingham
Clark, Andrew, F.R.C.S., London
Clarke, Ernest, M.D., London
Clarke, J. Jackson, M.B., London
Clarke, William B., M.B., London
Cleghorn, George, M.D., New Zealand
Clifford, Thomas, M.B., Stalybridge
Cock, Miss Julia, M.D., London
Coffey, Dennis J., M.B., Kingstown
Coldstream, Alexander, M.D., Florence, Italy
Colebrook, Mrs. Esther L., L.S.A., Peppard, Oxon.
Conford, George J., M.R.C.S., Felixstowe
Connor, W.G., L.R.C.P.I., Earl Soham
Cook, John W., M.D., Colchester
Cook, Robert, M.D., Leiston
Coombs, Rowland Hill, M.D., Bedford
Corner, Harry, M.D., London
Cotton, H., Captain A.M.S., Ipswich
Courtney, Guy B., M.D., Ramsgate
Cousins, John Ward, M.D., Portsmouth
Cox, Alfred, M.B., Gateshead
Craig, Henry L., M.B., Bury St. Edmunds
Craig, Maurice, M.D., London
Crawshaw, Samuel, M.B., Ashton-under-Lyne
Crerar, J. W., M.B., Maryport
Crocker, H. Radcliffe, M.D., London
Cross, F. R., M.B., Bristol
Crowfoot, William M., M.B., Beccles
Cruickshank, Mrs. Mary H., M.D., Reading
Cullen, Thomas S., M.D., Baltimore, U.S.A.
Cuthbert, C. Firmin, M.R.C.S., Gloucester

Dartnell, Surgeon Louis E., M.R.C.S., R.N., H.M.S. *Ganges*
Davidson, James M., M.B., London
Davies, Charles A., M.D., Ramsey, I. of Man
Davies, Eleazer, L.R.C.P., Fochriw
Davies, Evan N., M.R.C.S., Penycraig
Davies, Ll. Wynne, M.B., Ipswich
Davies, Rev. S. H., L.R.C.P., London
Dixon, John, M.B., Staines
Dixon, Walter E., M.D., Cambridge
Dodson, George E., M.R.C.S., Norfolk and Norwich Hospital
Dodd, H. W., F.R.C.S., London
Dolan, Thomas M., M.D., Halifax
Doran, Alban, F.R.C.S., London
Douglas, Wm., M.D., London
Dove, F., Captain R.A.M.C., London
Dow, W. B., F.R.C.S.Edin., Dunfermline
Drake, F. P., M.D., London, Canada
Draper, J. W., L.R.C.P., Huddersfield
Drummond, William B., M.B., Edinburgh
Dufton, Hy. Tempest, L.S.A., Brockford
Duke, Edgar, M.D., Hove
Duncan, Andrew, M.D., London
Dunkley, William Wilberforce, F.R.C.P., Guernsey
Dutton, Thomas, M.D., London

Eade, Sir Peter, M.D., Norwich
Eades, S. Oliver, L.R.C.P.Edin., Ipswich
Easterbrook, C. C., M.D., Edinburgh
Eastes, George, M.B., London
Eastes, George L., M.B., London
Eccles, Wm. McAdam, M.S., London
Edwards, Branford, L.R.C.P., Ipswich
Edwards, Edward Charles, M.D., Penzance
Elder, William Nicol, M.D., Edinburgh
Ellaby, Charlotte, Miss, M.D., London
Ellis, William G., M.D., Singapore
Elliston, Geo. S., M.R.C.S., Ipswich
Elliston, William Alfred, M.D., Ipswich
Ensor, Henry C., M.R.C.S., Cardiff
Esler, Robert, M.D., London
Evans, Maurice G., M.D., Caerphilly
Evans, Samuel, L.R.C.S., Dovercourt
Evans, Willmott, M.D., London
Ewart, William, M.D., London
Eve, F., F.R.C.S., London
Eyre, John, M.D., London

Farndon, Levi, M.D., Maidenhead
Fenn, E. L., M.D., Colchester
Fenwick, W. Soltau, M.D., London
Fergus, A. Freeland, M.D., Glasgow
Fielding, James, M.R.C.S., Norwich
Fisher, Theodore, M.D., Bristol
Ford, Frank C., M.B., London
Foster, Sir Walter, M.D., M.P., London
Foulerton, Alex. G. R., F.R.C.S., London
Fowler, Oliver H., M.R.C.S., Cirencester
Fryer, W. F., L.R.C.P.& S.E., Ipswich
Fuller, Edward B., M.B., Capetown, S.A.

Galbraith, Thomas H., M.B., Wolverhampton
Galton, J. H., M.D., London
Garner, J. E., M.D., Preston
Gibb, W. Alexander, M.D., Ipswich
Giles, Arthur E., M.D., London
Gillett, George E., M.R.C.S., Brooke
Given, John C. M., M.D., Liverpool
Goff, Bruce, M.D., Bothwell, N.B.
Goodbody, Francis W., M.D., London
Gordon, Mary L., L.R.C.P.S., London
Gordon, William, M.D., Exeter.
Gore, William A., M.B., Whitchurch
Gossage, Alfred M., M.B., London
Gramshaw, F. Sidney, M.D., Stillington
Grant, J. Dundas, M.D., London
Gray, Clement F., M.R.C.S., Newmarket
Greet, Charles H., L.S.A., London
Greet, W. A., M.R.C.S., London
Green, James, L.R.C.P., Portsmouth
Griffith, W. S. A., M.D., London
Griffiths, Joseph, M.D., Cambridge
Grossman, Karl, M.D., Liverpool
Groves, Joseph, M.D., Carisbrooke
Grünbaum, Albert S., M.D., Liverpool
Gurney, Harold, L.R.C.P., Dovercourt

Habershon, Samuel H., M.D., London
Haddon, John, M.D., Hawick
Hales, R. T., M.D., Holt, Norfolk
Hall, John, M.D., London
Halliburton, Professor W. D., M.D., London
Hamel, Julius, M.R.C.S., Felixstowe
Hamill, Samuel M., M.D., Burnham
Hamilton, Miss Lillias, M.D., London
Hamilton, Surgeon-General J. B., M.D., A.M.S., London
Hamilton, John R., M.D., Hawick
Hannigan, M. H., M.D., Botesdale
Harford-Battersby, C.F., M.B., London
Hargreaves, M. K., M.D., London
Harman, W. M., M.D., Winchester
Harper, James, M.D., London
Harper, Henry, M.D., Nottingham
Harricks, Francis, F.R.C.S., Melbourne, Australia
Harris, David Fraser, M.D., St. Andrews, N.B.
Harris, Frank D., M.B., St. Helens
Harris Wilfred, M.D., London
Harrison, Charles, M.R.C.S., Bristol
Harrison, Reginald, F.R.C.S., London
Hart, D. Berry, M.D., Edinburgh
Hart, F. Lorimer, M.B., Sydenham
Hatton, Edwin F., M.B., Grenada, B.W.I.
Havell, C. G., M.D., Felixstowe
Heath, H. Llewellyn, L.S.A., Ipswich
Helme, T. Arthur, M.D., Manchester
Henderson, Edward, M.D., London
Henley, Anthony A., M.R.C.S., Woodbridge
Herman, George E., M.B., London
Hern, John, M.D., Darlington
Hill, Alfred, M.D., Birmingham
Hill, Wm., M.D., London
Hinks, Alfred G., M.B., Southend-on-Sea
Hoar, Charles E., M.D., Maidstone
Hodgkins, Miss Charlotte, L.R.C.P., Bradford
Holden, J. Sinclair, M.B., Sudbury
Hollis, Alfred, M.D., Isle of Wight
Hollis, Elphinstone, M.D., Woodbridge
Holloway, Samuel F., M.R.C.S., London
Holman, C., M.D., London
Hopkins, F. G., M.B., Lynfield
Horne, W. Jobson, M.B., London
Horsley, Victor, F.R.C.S., F.R.S., London
Hossack, James F. C., F.R.C.S.Edin., Ipswich
Hounsfield, Sydney C., M.R.C.S., Stowmarket
Hoyland, Stanley S., M.D., Ipswich
Hubbard, Daniel L., M.R.C.S., Bordighera, Italy
Hulme, G. F., M.B., Felixstowe
Hunt, Lewis, M.D., Sheffield
Hunter, James H., M.D., South Shields
Hutchinson, Jonathan jun., F.R.C.S., London
Hutton, Surgeon-Major George Allan, J.P., Leamington

Ince, John, M.D., Lieut.-Col., I.M.S. (Ret.), Swanley

Jackson, Thomas, M.D., Hull
Jepson, Edward, M.D., Durham
Jessop, T. R., F.R.C.S., Leeds
Johnston, Henry F., M.D., Farnborough
Joll, Boyd B., M.B., London
Jones, B., M.D., Leigh
Jones, Evan, M.R.C.S., Aberdare, S. Wales
Jones, Herbert, D.P.H., Rhondda Valley
Jones, Robert, M.D., Liverpool
Jones, Robert, M.D., Woodford

Kealy, John R., M.D., Gosport
Keay, Joseph H., M.D., Greenwich
Keetley, Charles B., F.R.C.S., London
Keith, Skene, M.B., London
Kendall, W. B., L.R.C.P.Edin., Kingswear
Kennedy, William P., M.D., Lydney (Glos.).
Kenwood, Henry, M.B., London
Kilner, Charles S., M.D., Bury St. Edmund's
King, Henry W., M.D., Chester
King, James, M.B., Leigh
King, Preston, M.D., Bath
Kinsey, Robert H., M.R.C.S., Bedford
Kinsey-Morgan, A., M.D., Bournemouth
Klein Edward E., M.D., F.R.S., London
Kyogdon, Frederick, M.D., Sydney, N.S.W.

Lack, H. Lambert, M.D., London
Lack, T. Lambert, M.R.C.S., Hingham
Lake, Richard, F.R.C.S., London
Lamb, William, M.D., Birmingham
Larking, A. E., M.D., Folkestone
Lawrence, F. O., M.D., Ontario
Lazarus-Barlow, W. S., M.D., London
Leach, John C., M.D., Sturminster
Loney, Miss Lydia, L.R.C.P., London
Leslie, R. Murray, M.B., London
Levy, A. G., M.D., London
Lewis, E. J., M.B., London
Lillingstone, Miss Amy G., L.R.C.P. Edin., Romford
Lindley, Lennox H., M.B., London
Lister, Edward, L.R.C.P.Edin., Leamington
Lister, Thomas D., M.D., London
Little, Ernest M., F.R.C.S., London
Littlewood, H., M.R.C.S., Leeds
Lodge, Samuel, jun., M.D., Bradford
Long, Constance, L.S.A., London
Long, S. H., M.B., Norwich
Longworth, Stephen G., L.R.C.P., Melton
Lower, N. Y., M.R.C.S., Chelmondiston
Luard, Captain H. B., I.M.S., Colchester
Lucas, R. Harry, M.R.C.S., Bury St. Edmund's
Lucey, Wm. Cubitt, M.D., Hampstead

Macan Arthur V., M.B., Dublin
Macan, Jameson J., M.D., Cheam
Macfie, Charles, M.D., Bolton
McBride, P., M.D., Edinburgh
Mac Cormac, John M., M.D., Belfast
McCreery, Lieutenant-Colonel N., A.M.S., Kilkenny
Macdonald, J. A., M.D., Taunton
McDonald, S., M.B., Birmingham
McDowall, T. W., M.D., Morpeth
McGlashan, James, M.D., Bedworth
Mackenzie, A. G., M.D., London
Mackenzie, William G., F.R.C.S., Belfast
Macleod, Colonel Kenneth, M.D., Woolston
Macleod, N., M.D., Mitcham
Macnaughton-Jones, H., M.B., London
McWalter, J. C., D.P.H.L., Dublin
Maddox, Ernest, M.D., Bournemouth
Mahomed, A. G. S., M.R.C.S., Bournemouth
Mahon, William A., L.R.C.P., Holbrook, Ipswich
Maitland, Lieutenant-Colonel C. B., F.R.C.P.Edin., London
Malcolm, J. D., M.B., London
Mallins, John R., M.B., Richmond
Manby, A. R., M.D., East Rudham
Manby, E. P., M.D., London
Manson, Patrick, M.D., London
Marsden, J. C., M.R.C.S., Lieutenant I.M.S., London
Marsh, Howard, F.R.C.S., London
Marshall, Augustine, M.D., Lowestoft
Marshall, Charles, M.D., Dundee
Marshall, Mrs. Mary, M.D., Watford
Martin, Lieutenant-Colonel P. R., I.M.S., Bath
Martyn, G. K., M.D., Bath
Master, Geo. R., M.R.C.P., Norwich
Masters, J. A., M.D., London
Maxwell, James L., M.D., London
Maynard, Major F. P., I.M.S., London
Mayo, Alfred C., M.R.C.S., Great Yarmouth
Metcalfe, G. Herbert, L.R.C.P., Clare
Mills, Major Langley, R.A.M.C., M.D., London
Milnes, John G., M.R.C.S., Gislingham, Eye
Milroy, Thomas H., M.D., Edinburgh
Milson, R. H., M.D., London
Minns, P. R. J. B., M.D., Thetford
Monro, Thomas K., M.D., Glasgow
Montgomery, James B., M.D., Penzance
Moore, Sir John William, M.D., P.R.C.P.I., Dublin
Morgan, D. N., L.R.C.P., Bridgend
Morris, P. J. L., L.R.C.P., Halesworth
Morris, T. H., M.B., Tylorstown
Morse, Thomas H., F.R.C.S., Norwich
Moseley, Charles K., M.R.C.S., Ipswich
Mott, F. W., M.D., London
Moxey, Vincent, M.R.C.S., London
Muir, Surgeon-General H. Skey, M.D., London
Muir, Robert, M.D., Glasgow
Mullick, S. K., M.B., London
Muriel, C. J., M.R.C.S., Norwich
Murray, C. F. K., M.D., Kenilworth, Cape of Good Hope
Murray, James, M.D., Inverness
Murphy, James, M.D., Sunderland
Muthu, Chowry, M.D., Isle of Wight

Nance, H. C., F.R.C.S., Norwich
Nash, W. Gifford, F.R.C.S., Bedford
Newington, H. H., M.B., Ticehurst
Nicoll, James H., M.B., Glasgow
Nicholson, B.H., M.B., Colchester
Nicholson, H. O., M.B., Edinburgh
Ninnis, Inspector-General B., M.D., R.N., London

O'Connor, Bernard, M.D., London
O'Dwyer, Surgeon-General T. F., M.D., Aldershot
Oldfield, Josiah, M.R.C.S., London
O'Neill, Henry, M.D., Belfast
Osborne, Cecil A. P., F.R.C.S., Norwich
O'Sullivan, D. A., L.R.C.P., Southport
Overend, Walker, M.D., Clacton-on-Sea

Pakes, Walter C. C., L.R.C.P., London
Parkinson, C. H. W., M.R.C.S., Wimborne
Parry, Thomas W., M.R.C.S., Ferndale, S. Wales
Parsons, J. Herbert, M.B., London
Paterson, A. W., M.B., Ipswich
Pattin, H. Cooper, M.D., Norwich
Pearse, Arthur, M.D.Edin., Blofield
Payne, Joseph F., M.D., London
Pearson, Albert E., M.R.C.S., Seacroft
Peck, Herbert, M.D., Chesterfield
Pegler, Hemington, M.D., London
Penny, Deputy Surgeon-General James C., M.D., London
Pettingill, Alfred E. A., M.R.C.S., Ipswich
Phillips, Edward, M.B., Coventry
Piper, Charles C., L.R.C.P., Aleppo
Pitt, George N., M.D., London
Pocock, Alfred G. C., M.B., London
Pope, Frank M., M.B., Leicester
Prankerd, O. R., M.D., Brighton
Prichard, R. Arthur, M.R.C.S., Conway, North Wales
Pringle, Arthur Young, M.R.C.S., Ipswich
Purslow, Charles E., M.D., Birmingham
Pye-Smith, Rutherford J., F.R.C.S., Sheffield
Pye-Smith, P. H., M.D., London

Rand, John, F.R.C.S., London
Rankin, Guthrie, M.D., London
Rankin, James, L.R.C.P.Glasg., Kilmarnock
Ransome, A. S., M.B., London
Ranson, W. E., M.R.C.S., Needham Market
Raw, Nathan, M.D., Liverpool
Rayner, Edwin, M.D., Stockport
Rees, D. C., M.R.C.S., London
Ringer, B. S., M.D., Canton, China
Ritchie, A. Brown, M.B., Manchester
Rix, W. K., M.R.C.S., Southbourne
Robinson, H. Betham, M.S., F.R.C.S., London
Robinson, H. S., M.R.C.S., Norwich
Roddick, Thomas G., M.D., Montreal
Ross, F. W. Forbes, M.D., London
Ross, J. R., M.D., Londonderry
Ross, Major Ronald, I.M.S., Liverpool
Rowe, E. L., L.R.C.P., Ipswich
Russell, R. Hamilton, F.R.C.S., Melbourne
Ryerson, G. S., M.D., Toronto
Rygate, Henry B., B.A., M.B., Ipswich
Rygate, J. J., M.B., Hove
Rygate, J. R., L.R.C.P., Bridgwater

Saundby, Robert, M.D., LL.D., Birmingham
Scharlieb, Mrs. Mary, M.D., London
Scott, Charles C., M.B., Twickenham
Scott, Kenneth M., M.B., London
Scott, Lindley, M.D., London
Sherrington, C. S., M.D., Liverpool
Sibthorpe, Surgeon-General C., C.B., I.M.S., London
Sims, Mrs. Mildred, M.B., Ipswich
Sinclair, F. H., M.D., Rostrevor, co. Down
Sinclair, W. W., M.B., Ipswich
Slater, Chas., M.B., London
Smith, A. Lionel, M.R.C.S., Walton-on-Thames
Smith, David T., M.B., Preston
Smith, Edward G., L.R.C.P., Walton-on-Naze
Smith, Noble, F.R.C.S.Edin., London
Smith, R. Percy, M.D., London
Smith, Thomas W., M.R.C.S., Deal
Smith, Walter, M.D., London
Smith, Walter G., M.D., Dublin
Smith, W. Johnson, F.R.C.S., London
Smyly, W. J., M.D., Dublin
Snape, Ernest A., M.D., London
Soffe, William Edward, M.R.C.S., East Harling
Solly, S. Edwin, M.D., Colorado Springs
Somerville, David, M.D., London
Soutar, James G., M.B., Gloucester
Spencer, W. G., M.B., London
Spicer, Scanes, M.D., London
Staddon, Captain H. G., R.A.M.C., Ipswich
Staddon, John R., M.R.C.S., Ipswich
Staddon, W. J., M.R.C.S., Ipswich
Stamberg, A. C., M.B., Jersey
Staniland, John H., M.R.C.S., London
Stephenson, Sydney, M.B., London
Sterling, Robert, L.R.C.P.Edin., Stoneyford
Stevens, George, F.F.P. and S.Glas., Bury St. Edmund's
Stewart, James, F.R.C.P.Edin., Clifton
Stowers, James H., M.D., London
Stuart-Low, William, F.R.C.S., London
Summerskill, Wm., L.R.C.P., London
Sutherland, D.G., M.D., Cambridge
Sydenham, Geo., F., M.R.C.S., Somerset
Symes, William Legge, M.R.C.S., London
Sympson, E. M., M.D., Lincoln

Targett, James Henry, M.S., F.R.C.S., London
Tate, Capt. G. W., R.A.M.C., Blackrock
Taylor, Frederick, M.D., London
Tew, James S., M.D., Tonbridge
Thomas, William, M.B., Birmingham
Thomas, W. E., M.D., Ystrad Rhondda
Thomas, William T., F.R.C.S., Liverpool
Thompson, Prof. W. H., M.D., Belfast
Thomson, John, M.D., Edinburgh
Thomson, J. Roberts, M.D., Bournemouth
Thomson, StClair, M.D., London
Thornett, A. Marion, L.M., London
Thornhill, John, M.B., Cork
Thorp, Henry J., M.R.C.S., Ipswich
Thresh, John C., M.D., Chelmsford
Tidbury, Robert, M.D., Ipswich
Tilley, Herbert, M.D., London
Tirard, N., M.D., London
Tomlin, R. F., M.R.C.S., London
Tomlinson, J. H., M.R.C.S., Egham
Travell, John W., M.B., Nottingham
Treves, Frederick, F.R.C.S., London
Tubby, Alfred H., M.S., F.R.C.S., London
Turnbull, Alex., M.D., Emsworth
Turner, A. L., M.D., Edinburgh
Turner, Fredk. H., M.R.C.S., East Bergholt
Turner, Henry W., M.R.C.S., Norwich
Turner, John, M.B., Brentwood
Tuke, Thomas S., M.B., London
Twamley, H. J., M.R.C.S., Sible Hedingham
Tweed, Reginald, M.R.C.S., Honiton
Tyson, W. J., M.D., Folkestone

Underhill, S. V. H., L.R.C.P., Weybridge

Vasey, C. Lyon, Fleet Surgeon, R.N., London
Vaughan, Miss Ethel, M.D., London
Verrall, T. Jenner, M.R.C.S., Brighton
Vinrace, Dennis, M.R.C.S., London
Vinrace, John, M.D., Birmingham
Voelcker, Arthur F., M.D., London
Vokes, Charles, L.R.C.S.I., Birmingham

Waggett, E., M.B., London
Walker, H. B., L.R.C.P., Lowestoft
Walker, Miss Jane H., L.R.C.P., London
Walker, Surgeon-General J. P., M.D., Clacton-on-Sea
Walker, Norman, M.D., Edinburgh
Wallace, Frederick, L.R.C.P., London
Wallace, James W., M.D., Glasgow
Waller, Augustus D., M.D., London
Wallis, Frederick C., M.B., London
Walsh, David, M.D., London
Walshe, Denis, L.R.C.P., Kilkenny
Warburton, Edmund S., M.R.C.S., Treherbert
Ward, Francis, M.D., Glasgow
Ward, F. F., M.B., Ipswich
Warner, Thomas, M.D., Ipswich
Warrington, William B., M.D., Liverpool
Watson, James Kenneth, M.D., Byfleet
Wells, Albert P., L.R.C.P., Beckenham
West, Samuel, M.D., London
Westcott, William Wynn, M.B., London
Whitaker, James S., M.R.C.S., Great Yarmouth
White, Lieutenant-Colonel Charles, R.A.M.C., London
Whiting, Arthur J., M.D., London
Whitwell, James R., M.B., Melton
Wigmore, J., M.D., Bath.
Williams, Dawson, M.D., London
Williams, G. Chisholm, F.R.C.S.Ed., London
Williams, John, M.D., Cardiff
Williams, P. Watson, M.D., Clifton
Williams, W. Roger, F.R.C.S., Bristol
Wilson, Major E. M., R.A.M.C., London
Wilson, S., M.R.C.S., London
Wilson, Theo. S., M.D., Birmingham
Wolstenholme, R. H., M.R.C.S., Salford
Wood, Arthur Thorley, M.R.C.S., Ipswich
Woodcock, H. de C., M.R.C.S., Leeds
Woodcock, S., M.D., Manchester
Worrall, E. S., M.R.C.S., London
Worts, Edwin, L.R.C.P., Colchester
Wright, Charles F., M.R.C.S., Eye
Wynter, W. Essex, M.D., London

GUESTS AND FOREIGN DELEGATES.

Begg, Professor John, Stockholm

Curtis, H. H., M.D., New York
Cushny, Arthur R., A.M., M.D., Ann Arbor, Mich., U.S.A.

Flexner, Simon, M.D., Pennsylvania, Pa., U.S.A.

Laplace, Dr., Philadelphia
Lennander, Professor, Upsala, Sweden

Macdonald, A. E., M.D., New York
McLurg, Dr. John, Bay City, U.S.A.
Murphy, John B., A.M., M.B., Chicago, Ill., U.S.A.
Muskens, L. J. J., M.D., London

Nicolayson, Professor Julius, M.D., F.R.C.S., Christiania
Nicolayson, Professor Johan, M.D., Christiania

Phelps, A. M., M.D., New York

Root, Joseph E., M.D., Hartford, U.S.A.

Seaman, Major Louis L., M.D., New York
Staples, Allen, M.D., Dubaque, Iowa, U.S.A.

Thoma, Dr. Sanitatsrath, Aix-la-Chapelle
Turner, Mr. John J. C., Colchester

Van Tussenbroek, Miss Catharine, M.D., Amsterdam

PRESENTATION.—Dr. Stritch, assistant medical officer in the Argyll and Bute Asylum, Lochgilphead, was recently presented by the officials and employees with a gold albert and appendage bearing a suitable inscription.

THE NEW HOSPITAL AND CONVALESCENT HOME AT RHYL.—The Royal Alexandra Hospital at Rhyl is to be opened with a bazaar on September 12th and 13th. A hospital of this kind is sometimes the only means of giving the great advantages of a stay at the seaside to invalid children of the poorer classes from neighbouring inland towns. For this reason, amongst others, such institutions, more of which are required on all parts of the coast, should be supported by the charitably-minded inhabitants of a large inland adjoining district, as well as by the residents of the immediate neighbourhood. In the present case further funds to complete the new buildings are needed, and contributions will be duly acknowledged if sent to "The Treasurer, Royal Alexandra Hospital, Rhyl."

A MEMORIAL OF DR. MALCOLMSON OF MIDDLESBROUGH.—The Children's Ward of the North-Riding Infirmary was opened on July 17th by Sir Raylton Dixon. The ward is intended as a memorial of the late Dr. Malcolmson, Medical Officer of Health of Middlesbrough. A memorial medallion of Dr. Malcolmson on the wall of the ward was unveiled by Colonel Sadler, who paid a fitting tribute to his self-sacrificing labours and fine character. The medallion, which is in white marble, bears the following inscription: "This medallion of the late John Andrew Malcolmson, who was medical officer of health for Middlesbrough, and for many years one of the honorary medical surgeons of this institution, who died in the discharge of his public duties on 1st March during the small-pox epidemic of 1898, has been erected to his memory by many friends and admirers, and the Governors of the North Riding Infirmary, impressed by his many valuable services, have dedicated this ward to his memory under the title of the Malcolmson Ward." The medallion is the work of Mr. Jones, sculptor, of West Hartlepool.

NOTES ON HEALTH RESORTS.

Salsomaggiore, Italy.

We have received some notes on the muriated iodobromine baths of Salsomaggiore, Italy, from Dr. John J. Eyre, of Rome.

Situation.—Salsomaggiore is a village of 1,200 inhabitants, about five miles from Borgo-San-Donino, a station on the main line between Milan and Bologna, where all the express trains stop during the bath season. It is connected with Borgo by means of a light railway, and is within thirty hours of London by the St. Gothard route. It is situated in a valley 520 feet above the sea, at the foot of the Apennines, and is almost surrounded by low hills cultivated as vineyards and gardens, with olive groves and trees dotted here and there.

Sanitation.—The drinking water comes from the mountains, and although the sanitary condition of a part of the village left something to be desired when I visited the baths in August last, this will be remedied before the end of the season.

Accommodation.—There are at present two superior hotels, and six others suitable for moderate purses, besides many lodging-houses and furnished villas in and near the village. Before this article can be published the new Grand Hotel des Thermes, which has been recently built in the highest part of the outskirts of Salso, will have been opened. It contains 300 bedrooms.

Source of the Mineral Waters.—The waters of Salso were first used for therapeutic purposes in 1839. In 1852 twelve bath rooms were constructed in connection with the building, where table salt was extracted (this is still called "The Old Establishment," though it has been recently rebuilt), and their number was continually increased till 1883, when another establishment named "The New" was erected. In 1893 a third establishment, the Therme Magnaghi, was built. Up to 1864 the waters were obtained from shallow wells, but in that year the first artesian well was bored to a depth of 308 metres. Since then many other artesian wells have been sunk to a depth varying from 200 to 690 metres, five of which are now in use for supplying the mineral waters for the baths.

Composition of the Waters.—The water as it issues from the wells is clear, but it soon becomes brown and turbid from oxidisation. It contains much bituminous matter, consisting of a greenish-black petroleum that floats on the surface in the tanks, and is easily removed. The water, even after the removal of the petroleum, has a bituminous odour, a strongly saline taste, and a density of 16° Beaumé. This natural water is generally used for the baths, diluted to the desired density and brought to the proper temperature by the addition of ordinary hot water. In the two older establishments a large quantity of the mineral water is evaporated by heat in open pans for extracting the sodium chloride. The evaporation, however, is not complete, and there remains in the pans after the salt is removed a solution of more deliquescent salts called the *aqua madre* (mother water), which is very rich in iodine and bromine. It is added to the baths of natural water when deemed desirable. The following is the analysis of a litre of the natural water made by Professor Gibertini, of Parma (density of 16° Beaumé):

	Grams.
Sodium chloride	131.1500
Lithium chloride...	0.1675
Ammonium chloride	0.6527
Calcium chloride	13.3084
Magnesium chloride	4.9558
Aluminium chloride	0.0702
Ferrum chloride...	0.1170
Magnesium iodide	0.0686
Magnesium bromide	0.200
Bituminous matter	—
Total ...	154.4604

Hence: Total iodine = 0.0627 gram per litre.
Total bromine = 0.1820 gram per litre.

The analysis of the *aqua madre* made by Professors Cardone and Seveso, of Milan, is as follows:

A litre at a density of 33° Beaumé contains:

	Grams.
Potassium chloride	4.57
Sodium chloride...	44.25
Calcium chloride	150.65
Magnesium chloride	80.20
Magnesium bromide	6.09
Magnesium iodide	3.85
Ferrum protoxide	0.46
Organic matter	0.30
Total ...	316.37

Hence: Total iodine = 3.52 grams per litre.
Total bromine = 5.30 grams per litre.

The foregoing analyses prove that the Salsomaggiore mineral springs are richer in iodine and bromine than any similar waters known.

Methods of Treatment.—Diverse forms of baths of the natural and mother waters, inhalations of these waters, and mud baths are given. Massage and electrotherapy done by qualified medical men are employed. The bath-rooms are clean and well ventilated, and most of them (all in the Therme Magnaghi) have rounded angles, so as not to harbour dust, etc. The importance of disinfecting the baths, linen, etc., after being used, is recognised. The temperature of the bath varies from 86° to 97° F., and its duration from 20 to 30 minutes. One bath is taken daily, and the average time for the cure is 20 days. The season is from May 1st to the end of October, but the baths are kept open during the whole year. The best months for English invalids are May, June, September, and October.

Therapeutic Indications.—The disease which occupies the first place at these baths is scrofula in its various manifestations. The good results are doubtless chiefly due to the very considerable amount of iodine contained in the waters (it is reckoned that a bath of 30 litres of the *aqua madre* at 6° Beaumé contains nearly 90 grs. of iodine), inasmuch as Durante, the distinguished Professor of Clinical Surgery in the University of Rome, has proved the great value of parenchymatous injections of iodine in the treatment of chronic tuberculous diseases of the glands, bones, joints, and mucosæ. According to this author, the iodine has not a specific action on the tubercle bacillus, but acts as a reconstituent of the tissues, which acquire the power of destroying the pathogenic germs. He has found that soon after the injections are begun the patient's appetite increases, and hæmatopoiesis becomes more active. The forms of chronic tuberculosis most benefited by the waters are the glandular, osseous, serous, and mucous. They are also very useful in rickets and gelatinous goitre. Judging from the statistics of the maladies treated at Salso, the gynæcological cases are most numerous. Good results are obtained in simple and parenchymatous metritis, uterine hypertrophy, catarrhal and hæmorrhagic endometritis, salpingitis, and ovaritis. Leucorrhœa and dysmenorrhœa are improved or cured by the baths and hot irrigations of the natural or mother waters. The advantages of these springs in secondary and tertiary syphilis are well known, and many persons suffering from this disease present themselves there for treatment during the season. The majority suffer from secondary lesions, but cases of gummata and of diseases of the eye are not infrequent, and are treated successfully by baths and inhalations sometimes associated with mercurial treatment. Although the balneotherapy of rheumatism and gout has only comparatively recently been introduced at Salso, still, owing to the good effects obtained, especially in the subacute and chronic articular and muscular forms of rheumatism, it is now much frequented by persons suffering from these diseases. In affections of the spinal cord, such as locomotor ataxy, sclerosis, various forms of paralysis little improvement has been observed, except when they were due to syphilis. Neuroses of the peripheral nerves (sciatica, various forms of neuralgia, writer's cramp, etc.) have derived great benefit from the baths associated with electricity and massage. Benefit has also followed the use of the waters in certain sequelæ of acute diseases, such as the exudates of peritonitis, perityphlitis, and appendicitis; stiff joints, muscular rigidity, localised painful spots, and fistulous sinuses following fractures, dislocations, or surgical operations. They are also very useful in stimulating the absorption of the callus of fractures. Diseases of the respiratory tract, for example, specific and non-specific chronic laryngitis, chronic bronchitis, and bronchorrhœa derive benefit from the inhalations.

Mineral Waters and Baths in Nephritis.—Dr. Felix Schlagintweit,[1] of Bad-Brückenau, thinks that mineral waters are often used rather indiscriminately in cases of nephritis.

[1] *Zeitschr. f. diät. und phys. Therapie*, 1900, vol. iii, p. 571.

Renal cases are often sent to health resorts to which they are not at all suited. The author during three seasons at Brückenau has examined many varieties of renal cases, and has collected notes of 40 cases, from a study of which he arrives at certain interesting conclusions concerning the action of mineral waters (such as the Wernarzer Quelle at Brückenau), and of diuretic treatment in nephritic patients. C. von Noorden [2] has pointed out a possible danger in ordering too much milk and mineral water in cases of contracted kidney. By this treatment the circulatory system may become overlooked, and too much work may be thrown on the heart, which may thus show premature signs of insufficiency. Bamberger has, however, proved clinically that plenty of fluid is useful in the treatment of cases of chronic parenchymatous (not indurating) nephritis. There are likewise many theoretical points in favour of the "washing-out treatment" in renal cases. Amongst them are the following:—Bacteria and toxins may be excreted by the kidneys in infectious diseases; diuretic mineral waters are often useful in infectious diseases, even when the kidneys are not involved; nephritis of infectious origin allows of more favourable prognosis; most doubtful cases of nephritis are really of hæmatogenous origin; harmful substances circulating in the blood not only irritate the renal blood vessels and renal epithelium, but may probably also injure the capillaries of the skin and serous membranes, and so cause early œdematous conditions, which may arise in this way independently of cardiac and renal disease; the same harmful substances circulating in the blood may probably irritate the heart directly, and thus cause cardiac hypertrophy before renal disease; the blood serum is abnormally concentrated in uræmia, and the toxicity of the urine is abnormally diminished in nephritis; the renal tubules may be mechanically obstructed by casts and epithelial *débris*. Schlagintweit, however, admits that the excessive drinking of milk or mineral water (though these are doubtless the two mildest diuretics) may possibly directly injure the kidneys (the kidneys rather than the heart), especially in chronic parenchymatous nephritis. It must not be forgotten that in acute and chronic parenchymatous nephritis the kidneys may eventually become contracted instead of healthy again; and the heart, although it may still be normal, should not be overworked by drinking quantities of mineral waters, by vapour baths, etc. Schlagintweit reserves drastic systematic diuresis and diaphoresis for sudden exacerbations with excessive œdema or uræmic conditions. Electric light baths are, he thinks, a relatively harmless method of inducing sweating. Effervescent baths (that is, containing CO_2), by their action on the skin and circulatory system, are of great value. In recent cases of nephritis great caution should be exercised in advising the patient to take mineral waters. When induration of the kidneys is commencing an endeavour should be made to increase the efficiency of the renal parenchyma which is still capable of exercising its function. In chronic renal cases one to three mild courses of mineral water (one, if possible, taken at the spa itself) during the year may be serviceable, notably in stages of the disease when the patient is half bedridden and tormented by symptoms continually varying, such as slight œdema, palpitation, slight uræmic symptoms, etc. Schlagintweit explains how by comparing the specific gravity and proportion of albumen in the daily quantity of urine, by noting the amount of casts, etc., useful indications can be obtained for increasing or decreasing the quantity of mineral water taken by the patient.

[2] *Therapie der Gegenwart*, 1899, No. 6.

THE PLAGUE.

PLAGUE COMMISSION REPORT: RESOLUTION OF THE INDIAN GOVERNMENT.

THE *Englishman* of Calcutta gives a summary of a resolution, extending over some 25 pages, which has been published in the Home Department on the chapters of the India Plague Commission dealing with the measures for the suppression of plague. Every aspect of the question is fully dealt with, and the main conclusions appear to be as follows: The Government of India thinks the obligation of private persons and medical practitioners to report cases of sickness can be relied on only in very exceptional circumstances, and that house-to-house visitations are justifiable only when plague exists in small well-defined areas. The Government agrees with a surveillance over persons arriving from infected areas, and believes this means has been freely resorted to in rural areas, but does not favour the system of rewarding informers of plague cases. It publicly thanks the many volunteers who devoted themselves to the work of fighting the plague, and thinks the expense of special reporting agencies are fully compensated for by their success. Much attention is devoted to the question of corpse inspection, but on a review of the whole case Government considers the compulsory examination of bodies a very unpopular measure and its object as likely to be defeated. With regard to the compulsory removal to hospitals the Governor-General accepts the conclusions of the Commission, but desires that the removal should be compulsory only in places and under circumstances when it can be an effectual precaution. The removal of moribund patients is prohibited. Government agrees that the segregation of contacts should be abandoned as ineffective and harassing, except where special conditions are stated by the Commission to enable it to be carried out. The complete evacuation of villages and small towns when attacked is believed to be the most effective safeguard against the spread of the disease yet discovered. The question of disinfection is dealt with at length, and Government considers the Commission's advice generally excellent.

Government and the Commission are in accord with the precautions taken regarding the annual pilgrimage to the Hedjaz, but the examination of the passengers from one infected port to another is now ordered to cease. With regard to the examination of railway passengers, all local governments are desired to report on the question of reducing the inspection stations, as from an economical point of view it is highly desirable now to maintain only those which are absolutely necessary; and, acting on the advice of the Commission, all disinfection stations maintained on the railways are ordered to be closed. The detention of ordinary passengers because they come from infected areas is also prohibited. The stoppage of booking passengers is regarded as a wise precaution and will continue. The shutting up of people in infected houses and prevention of their movement from an infected area by means of a cordon or other means is condemned. Finally, Government expresses its recognition of the careful and sympathetic manner in which the Commission has examined the difficult problems, acknowledges its valuable advice, and feels confident that the local governments will be able to benefit therefrom.

INDIA.

The returns for the week ending July 21st show for all India only 198 deaths from plague. Of these, 84 occurred in Calcutta, 70 in Bombay city, 10 in the Bombay Presidency exclusive of the city, 20 in the Mysore Province, and 12 in Bengal, exclusive of the metropolis. Ahmedabad and Karachi have been declared free of plague. The fall in the death-rate from plague is, however annulled by the great increase in mortality in Bombay from cholera.

HONG KONG.

During the week ending August 11th 29 cases of plague occurred in Hong Kong and 28 deaths from the disease. It is fortunate that plague is unknown in the neighbourhood of Peking and at Shanghai, where the allied troops are concentrating. Newchwang, a Manchurian town, said to be held at present by the Russians, is the only place where plague has been reported from in all the wide district of China north of Foochow in which the troops are operating.

MAURITIUS.

For the week ending August 9th, 6 fresh cases of plague are reported in Mauritius, and 3 deaths from the disease. It would appear that a recrudescence of plague has begun in Mauritius, for it is only a few weeks ago that we were able to report that there were no cases of plague in the island.

AUSTRALIA.

A telegram from Sydney, New South Wales, dated August 10th, states that a fresh case of plague had occurred in the city.

CONSTANTINOPLE.

The ten days' quarantine imposed upon all arrivals from Smyrna has been reduced to forty-eight hours.

HAMBURG.

The steward of the British steamer *Rosario*, who was suffering from plague, died on August 10th. At first it was thought this man was suffering from typhus fever, but subsequent bacteriological investigation proved the disease to be plague. No other person has been attacked by the disease, and it is hoped that in consequence of the strict precautionary measures which have been taken in Hamburg further spread of the disease will be prevented.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, AUGUST 18TH, 1900.

THE INTERNATIONAL MEDICAL CONGRESS.

The Thirteenth International Congress of Medicine has come and gone, and, like most congresses, has left the world pretty much where it was before. It opened with the unfavourable omen of the murder of the King of Italy, and the rites of the inaugural ceremony were consequently maimed by the absence of the Italian delegates. Another feature which robbed the occasion of the character of completeness which should be the mark of such assemblies was the comparatively scanty attendance of representatives of British medicine. Of the 6,170 members and delegates present Great Britain sent only some 200; in point of numbers, indeed, it stood sixth in the list of foreign countries, coming *longo intervallo* after Italy, and being only a little before Spain. The explanation of this fact is not far to seek, but it would serve no useful purpose to dwell on the matter here. Our French *confrères*, indeed, showed by their courtesy and hospitality that as far as in them lay no political clouds were to be allowed to darken the bright sky of science. The organisation was excellent, the programme of entertainments was vast and varied, and the provision for the comfort of the foreign visitors extended to the minutest detail. The President, Professor Lannelongue, is said to have subscribed £4,000 towards the expenses of the entertainments, and every effort was made by him, by the General Secretary, Dr. Anatole Chauffard, and by the leaders of the profession in France to make the Congress a success. Yet not much more than half the expected twelve thousand attended, and of the foreigners who went to Paris probably a considerable proportion sought amusement rather than scientific edification.

Paris, as M. Chauffard said, was for a week the centre of the medical world; but the Congress passed almost unnoticed by the world at large. Even the newspapers of the City of Light itself seemed to grudge room for any report of its proceedings; such space as they could spare from chronicling the daily movements of the Shah and describing the career of Bresci was devoted to the troubles in China and the war in South Africa. Doubtless the journalists are wise in their generation. What they want is sensation, and the element of sensationalism has been conspicuous by its absence in the doings of the Congress. Many solid contributions were made to the sum of knowledge, and much useful criticism of facts and theories already familiar to the profession was offered; but no striking discovery was announced, no great landmark in the path of medical progress was erected. The work of the Congress may, in fact, not unfitly be described as scientific stocktaking on a large scale, a kind of labour which, though not yielding showy results, is valuable as marking the height of the scientific tide, and showing the direction of its flow. The work, to use a phrase of Lord Bacon's, if not *fructiferum* was *luciferum*, and it comes with peculiar opportuneness at the end of a century which has witnessed the birth of a new medicine.

If but few of our countrymen took part in the work of the Congress, those who did so were among the most distinguished that could be found. Lord Lister—*clarum et venerabile nomen*—was the observed of all observers: and although the enthusiastic welcome intended for him was accidentally bestowed on another subject of our beloved Queen who was mistaken for him, he was throughout the Congress accorded the honours due to a Sovereign of Science. The founder of antiseptic surgery was a picturesque figure in the great gathering of the medical clans, and the impression he everywhere produced was vividly rendered in an article from the pen of Dr. M. de Fleury which appeared in the *Figaro*.

Sir John Burdon Sanderson's address, a summary of which is given at p. 449 was, to paraphrase Lord Hannen's description of the late Lord Russell of Killowen's speech before the Parnell Commission, a great discourse and worthy of a great occasion. In the spheres of medicine and surgery the reputation of our country was most worthily upheld by Sir Lauder Brunton, Sir Dyce Duckworth, Dr. Ferrier, Mr. Hutchinson, Mr. Mayo Robson, Professor Sherrington, Mr. D'Arcy Power, Dr. A. Garrod, and others.

Doubts have from time to time been expressed as to the practical utility of the International Congress of Medicine. They will now probably be heard more distinctly than ever, for fairly successful as the meeting in Paris was in some ways, it will hardly be contended that, apart from the festivities for which Paris offers such exceptional facilities, anything was done there that could not have been equally well done without the pride, pomp, and circumstance of an International Congress. Nevertheless, we think there can be no question that the world would lose by the discontinuance of these periodical assemblies. Work in which lie the hopes of the progress of the human race must needs gain in accuracy by the workers seeing each other in the flesh and learning how to correct each others' statements by means of the personal equation, and in breadth by the action of mind on mind when both are warmed by the glow of living debate. International Congresses in particular help to counteract what Matthew Arnold called the vulgar and retarding effects of a narrow nationalism. Further, if they do not, as has lately been suggested, directly tend to preserve the peace of the world, they probably do something to promote friendly relations between civilised countries.

The Congress, which had its birth in Paris in the year of the great Exhibition of 1867, has now nearly been the round of Europe, besides on one occasion crossing the Atlantic. It was fitting, therefore, that Madrid should be chosen as the place for the next meeting which will be held in the spring of 1903, under the presidency of Professor Calleja, Dean of the Medical Faculty of the Central

University of Spain. It is of happy augury that the prize of 5,000 francs founded in 1897 by the city of Moscow should have been awarded for the first time to a Spanish investigator, the distinguished professor of histology in the University of Madrid, Professor Ramon y Cajal.

In the organisation of these Congresses the freest scope is left to the National Committee of the country in which the meeting is to be held, and those who attended the International Congress of Hygiene in the Spanish capital two years ago will feel assured that the Congress of Medicine will be welcomed there with the finest courtesy and the largest hospitality.

THE FUTURE OF THE ARMY MEDICAL SERVICE.

We do not wish to twist or turn unduly statements made in debate, but we must draw attention to those reported to have been made by Mr. Wyndham on the Supply Estimates on July 27th. In reply to criticisms, the Under-Secretary of State for War said: "The question of the Royal Army Medical Corps demanded their most careful attention at the end of the war. He thought that instead of trying to expand the Army Medical Corps in time of peace so that it would be adequate in time of war, it would be necessary to have a highly efficient army corps as a directing body; and in time of peace to make application to the great medical bodies in this country to know what men would be ready in time of war to come forward and work for the Army Medical Corps. The Secretary of State for War in his period of office had done more than any of his predecessors."

The last statement was received with cheers, and as it doubtless refers to the granting of full army status and titles to medical officers in a Royal corps, we readily endorse it.

But we wish that the intimations of future intentions had been more explicit and displayed less tendency to deprecate augmentation of the corps and depend on some form of civil aid during war.

The Army Medical Service is, of course, needed as a great "directing body" in time of war, but it must not be forgotten that it is also the chief executive body both in peace and war: and it is just because it is notoriously unequal, in its present undermanned condition, to these latter duties, that we desire a more distinct assurance that its establishments will be adequately increased at the end of the war.

The great cause of its continued unpopularity in the medical schools is the unfair and harassing high pressure conditions under which it is constantly worked; these are felt in inequitable tours of foreign service; perpetual movements from station to station; difficulty in obtaining private or study leave; grinding orderly duty, etc. For these hard conditions of ordinary service there is not sufficient compensation, present or prospective.

All future endeavours at reorganisation must keep these facts in view. We fear too much reliance will be placed on civil reserves, which have hitherto proved somewhat illusory. We cannot speculate as to how the great medical bodies of the country can form or guarantee any such reserves; but in any case they must be more than mere paper ones.

The first thing, we maintain, is to strengthen the Royal Army Medical Corps by, say, 200 medical officers, so that it may be reasonably equal to carry on peace duties and minor wars without continued resort to the employment of retired pay officers and a large contingent of civil surgeons.

We constantly receive communications from those behind the scenes, showing the inefficiency and lack of discipline in military hospitals which a chronically "scratch" medical service inflicts on the army.

We fully recognise that it is impossible to keep up a peace establishment sufficient to meet the wants of a great war such as we have on hand; and we therefore endorse the principle of reserves enunciated by the War Secretary, while sincerely trusting that the formation of such reserves will not, as hitherto, be made an excuse for delay in strengthening the regular full pay service.

These remarks do not touch on the reforms required in autonomous reorganisation, which must also be made concurrently with increase of establishments.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

The special general meeting of the Governors and subscribers of this hospital, which was called for August 11th, was held last Saturday. The object of the meeting was "to consider and determine the following questions: (1) Whether the demand of the medical and surgical staff for direct representation upon the Board should be granted; and (2) whether it is desirable to hold a further inquiry into the condition of the hospital."

Mr. G. W. E. Russell presided, and among those present were Colonel Porter, Chairman of the Board of Management, Sir Gerald FitzGerald, the Hon. Louis Greville, Lady Russell Reynolds, Sir Henry Burdett, and Mr. B. Burford Rawlings, Secretary and General Director of the hospital. The medical staff, who, as stated in the British Medical Journal last week, protested against the meeting being held at a time when they, as well as the majority of the Governors, would be absent from town, were not represented. The attendance was scanty, only sixteen persons taking part in the voting.

The Chairman, in opening the proceedings, said some apology was necessary to the Governors for calling them together at that period of the year. He threw the responsibility for this on the medical staff on the ground that, although their statement to the Governors was dated in May, it was not issued till June 16th. The Board's reply was dated July 24th, and the Chairman contended that the fact of its being issued so soon showed that no time had been lost. He went on to say that there were two definite questions submitted for decision to the meeting: first, whether the rules of the hospital should be so altered as to allow of the medical staff being allowed to sit on the Board; and secondly, whether a further inquiry should be held into the actual condition and management of the hospital. Taking the second point first, he said he had presided over the special subcommittee of inquiry into the internal condition of the hospital, and in the opinion of himself and his colleagues no further inquiry was necessary. They had, indeed, discovered some faults, but these could fairly be written down as in-

finitesimal and could very easily be remedied. A further inquiry conducted from the outside would be costly and would interfere with the working of the hospital while it was being held. The Chairman went on to say that if the Governors wished for such an inquiry the Board would offer no opposition to it, but would stipulate that the inquiry should be conducted by an entirely independent authority. As to the demand of the medical staff for representation on the Board, he said they were agreed that in the interests of the hospital that claim must be resisted. He recited the reasons, already summarised in the JOURNAL, which induced the Board to maintain this attitude. Referring to the fact that the usual grant had been withheld this year by the Hospital Sunday Fund, the Chairman said he felt that the Board had grave cause for complaint at this action, and he hoped that when the authorities of the fund realised the true position of matters they would reconsider their position and renew the grant. He concluded by moving the following resolution:

That it is inexpedient to grant the demand of the medical and surgical staff for direct representation on the Board.

This, after a short discussion, in which Sir Henry Burdett and others took part, without throwing any fresh light on the matter under consideration, was carried by 14 votes to 2.

The situation, then, is that a handful of Governors have decided to refuse to allow the medical staff, without whom the hospital could not be carried on for a day, any voice in its management, and have apparently accepted the suggestion of the gentleman who presided over the inquiry into the condition of the hospital that, as he is satisfied with it, they should accept it as conclusive. With all respect we venture to submit that something more than this is required. The members of the Board of Management are doubtless good men and true, but they really must procure us better assurance than their own testimony to the fulness and impartiality of an inquiry as to the efficiency of their administration conducted by themselves. Nor will solemn blessings on the management of the hospital pronounced by volunteer inspectors be accepted as absolute security either by the profession or the public.

Mr. Russell has given a general absolution to himself and his Board, but he is grievously mistaken if he fancies that this is to be an end of the matter. The Board say they are well assured that the hospital has nothing to fear from the closest investigation. This makes it all the more difficult to see why they place themselves in a position of appearing to resist an inquiry, the result of which would, they believe, be to their own greater glory. If the hope expressed by Mr. Russell that the authorities of the Hospital Sunday Fund will "reconsider their position" is to be fulfilled the Board of Management will have to set them the example.

OUR SEAPORTS AND THE PLAGUE.

WE have received several communications upon this subject since the announcement that plague had occurred on a ship sailing from Cardiff to Hamburg. In every one the writer urges the necessity for vigilance, not only at the larger, but also at the smaller of our ports. One writer considers that it would be "more satisfactory to the public if, beyond issued information, the Local Government Board were to appoint 'inspectors' having the special experience necessary to deal with or examine into suspected cases; also were the passengers, as well as the crew of outward-bound ships medically examined, such delays by quarantine as lately occurred with a P. and O. ship at Gibraltar would be avoided." We quite agree that there is need to be upon the alert, and that there should be no possibility of cases of plague again leaving our shores and being diagnosed within a couple of days' sail of our coasts, as occurred at Hamburg. At the same time, we have no wish to dislocate the means at our disposal by interfering with the work of the Local Government Board. We know the medical officers of the Board are efficient, and the only doubt we have is whether the Government Sanitary Department is adequately manned to cope with an epidemic or even a scare. Parsimony in this direction might involve the people of this country in a financial loss, in comparison with which the cost of even a prolonged war with a first class Power would be small. The staff of the Board is barely sufficient to deal with the everyday details of national sanitary work, and where the reserve of trained specialists is to come from is beyond our power to conjecture. This is not the time to hug ourselves in the belief that our superior sanitation will defy plague as it has cholera and other diseases. Plague does not behave like cholera or any other known disease; its invasion is subtle, its stay is indefinite, its virulence is variable, and its recurrence, once it has appeared, almost a certainty. Plague may simulate, or be mistaken for many diseases—from pneumonia to sympathetic bubo, from sunstroke to filariasis. There is but one certain method of diagnosis, namely, the recognition of the plague bacillus, and with this it behoves every medical man who has to deal with our seaports to be familiar. If his training is insufficient to give him confidence in his own investigations and observations, he should be informed where a skilled report upon the case can be immediately obtained.

THE UNIVERSITY OF LONDON.

THE names of the members of the new Senate appointed by the Crown are now made public and will be found to be in accordance with the prognostications indicated in these columns on June 2nd. Lord Davey, as the chairman of the Statutory Commission, has naturally the first place. He was a Fellow of University College, Oxford, is D.C.L. (Oxford) and F.R.S. He was Senior Mathematical Scholar and Eldon Law Scholar: was M.P. for Christchurch, Hants, 1880-5, and in 1893 was appointed a Lord Justice of Appeal. Sir Henry Roscoe, F.R.S., as Vice-Chancellor of the University of London in its unrevised state, is reborn as a Crown representative on the new Senate. The new Vice-Chancellor will be appointed by the new Senate and may, under Statute 27, be a salaried officer. As was expected, a representative of engineering science, which is now to take its place among the faculties, has been fitly found in Sir J. Wolfe-Barry, F.R.S., son of the late Sir Charles Barry, R.A., and well known to Londoners as the engineer of the Tower Bridge. As we indicated was likely to be the case, a lady has been introduced to the Senate, and we are sure that in Mrs. Eleanor Mildred Sidgwick the aspirations of women graduates will find able expression. As a former principal of Newnham College and member of the Royal Commission on Secondary Education, Mrs. Sidgwick, apart from natural gifts, will bring most valuable experience to the assistance of the new Senate. Lastly, as we anticipated, the Colonies find their claims entrusted to the capable representation of the Hon. W. P. Reeves, Agent-General for New Zealand. Mr. Reeves, though still young, has had a brilliant and varied career, his presence on the Senate will tend to secure that the Imperial scope of the University will not be circumscribed. Dr. Pye-Smith, F.R.S., a member of the present Senate, and Dr. Allchin have been chosen to represent the College

of Physicians, while Dr. Collins, a member of the present Senate, and Mr. Sidney Webb have been appointed by the London County Council. During the past week a circular has been issued by the University of London Graduates' Association recommending certain names for the sixteen seats to be filled up by Convocation voting in faculties. It is claimed that these candidates "whilst desirous of aiding the development of University teaching in London, are anxious to preserve the existing work of the University, and keep all its degrees and distinctions open to all comers on terms of equality and impartiality," and it is further stated that they "may be relied on to support the system of high standard and impartial examinations, from matriculation upwards." The champions of this programme in the Medical Faculty are Dr. Sydney Ringer, F.R.S., and Mr. A. Quarry Silcock, M.D., B.S.; in Arts, Mr. Fletcher Moulton, F.R.S., Dr. Mears, M.A., LL.D., Dr. Napier, LL.D., Sir Albert Rollit, M.P., Dr. J. Bourne Benson, B.A., LL.D., and Dr. J. D. McClure, B.A.; in Science, Sir Philip Magnus, B.A., B.Sc., Dr. Russell Wells, B.Sc., Dr. Kimmins, D.Sc., Mr. Bryant, D.Sc., Professor Clowes, D.Sc., and Dr. J. S. Macaulay, D.Sc., while Mr. Joseph Walton, Q.C., B.A., seeks the suffrages of the legal graduates. Under Statute 134 the old Senate is still the executive for carrying on the work of the University. The meeting on July 25th was probably the last time on which it will be called together. That it is practically *functus officio* may be judged from the fact that only four Fellows attended, the quorum, we understand, being six; but the business transacted appears to have been of a purely formal character.

THE HOSPITALS IN SOUTH AFRICA.

THE so-called "hospitals scandals" in South Africa are discussed in several of the monthly magazines. In the *Contemporary Review* Sir Walter Foster brings forward a large body of evidence not only from Mr. Burdett-Coutts, but from Mr. Watson Cheyne, Mr. Bowlby, Mr. Clinton Dent, Dr. Conan Doyle, and others, to show that although the epidemics of typhoid fever in the Orange River Colony and in Natal were great and severe, the arrangements for the care and treatment of the sick were so seriously inadequate that they must in the nature of things have added to the difficulties of the doctors and aggravated the mortality from disease. He says the outbreaks at Bloemfontein might have been, and indeed were, foretold, and yet no sufficient provision was made for the reception of patients during the two or three weeks the disease was incubating. While fully admitting the difficulties of transport and supplies with which the R.A.M.C. had to contend, he argues that if the enormous quantity of stores required for Lord Roberts's advance could be sent on, the necessaries for nursing the sick could have been supplied in sufficient quantities to have prevented the dangerous condition of things existing at Bloemfontein before the outbreak. "It was no case of a beleaguered garrison," he says, "waiting for an advance for its relief, but an army flushed with victory and eager for the speedy occupation of the capital of the enemy. It did not matter substantially when that place was reached, as it was clearly at the mercy of the British General whenever he liked to move in force. The exigencies of war so strongly pleaded as an excuse for the lack of supplies for the treatment of the sick were not so urgent as they are in many instances, and the delay of a day or two in collecting stores for the advance on Pretoria would, in all probability, have been sufficient to have supplied the sick with hospitals, nurses, doctors, and necessaries." Referring to the estimated mortality of the epidemic as 21 per cent., Sir Walter admits that this is not a high death-rate, but he says if it represents the mortality under the conditions described by Mr. Burdett-Coutts, one is forced to the conclusion that it might have been considerably reduced under more favourable conditions. The question however, he goes on to say, is really not so much the mortality-rate from sickness for the whole campaign as the death-rate among the gallant soldiers who, after making one of the most remarkable marches in history, reached Bloemfontein only to die amidst indescribable conditions, and without the medical attention, the nursing, the nourishment, and the drugs which their ailment demanded. He concludes that there has evidently been fault somewhere and the matter must be investigated to the bottom. The R.A.M.C. is not, in his opinion responsible, nor are the civil surgeons and staffs sent out to help them. He directs attention to the undermanning of the Corps, which is now less numerically than when it was declared by Sir Thomas Crawford to be "perilously low for a peace establishment." He holds that if the War Office had early in the campaign given to the medical and sanitary side of the work in South Africa the same consideration and similar assistance to that given to the surgical side, many of these scandals might have been prevented. He contends that had there been an independent body of experts with the Forces in South Africa, "camps and hospitals might have been selected with greater attention to sanitary conditions. Outbreaks of disease essentially preventable in their nature might in some cases have been lessened in their incidence, in others met with greater prudence and a more long-sighted providence. Medical men, nurses, attendants, and stores might have been distributed with greater advantage to the sick, and in the case of typhoid the mortality probably lessened and many hundreds spared the weakness and weariness of a convalescence that lasts for months, and is sending home every week worn and broken specimens of humanity as sad object-lessons of the horrors of war." In the *National Review* the Hon. Arthur Stanley, M.P., also expresses the opinion that the result of the inquiry will be to show that the provision made at the outset of the campaign by the War Office was entirely insufficient, and that the subsequent preparations were conducted on much the same lines. In view of the facts that have been made public, it will, he thinks, be found necessary for the War Office to place their medical department on an improved footing. He advocates the formation of two distinct branches in the R.A.M.C., one whose duty shall be purely medical, another which shall deal solely with questions of administration. He suggests further that all candidates for medical employment under the Government shall be required to serve for a few years in the Army Medical Corps. In *Blackwood's Magazine* a "Military Contributor" seems to imply that the breakdown was in some way or other due to the fact that medical officers have been given military titles!

MISS MARY KINGSLEY ON THE SOUTH AFRICAN HOSPITALS.

MISS FLORA L. SHAW, the well-known writer on Colonial topics, has sent to the *Times* a copy of an unfinished letter addressed to her by the late Miss Mary Kingsley. It is undated, and breaks off in the middle of a sentence, but Miss Shaw thinks it may be taken as having been written almost immediately before Miss Kingley's death. After explaining how it came about that with her Imperialistic sympathies she found herself employed in the work of nursing Boer prisoners at Simonstown, Miss Kingsley goes on: "I turn to the hospital where so many deaths occurred during March and the first week in April for two main reasons—(1) The men were sent there in a moribund state; (2) the disease they were suffering from was not enteric as is commonly understood, but typhus, or camp fever, of a virulent type. There was no mistaking it—there was the characteristic rash and it was catching, which enteric and typhoid are technically not. We have had three orderlies nearly dead of it, and several others and nursing sisters merely saved by the vigilance of the C.M.O., Dr. Carré. When I came on duty things were at their worst. With

this form of fever five men died the first night, and they had been dying like flies. After a few days, however, the typhus set of patients were all dead or on the mud—mainly the latter—and I have no hesitation in saying that considering what that fever was we had an uncommon low mortality. Now we have plenty of real enteric fever cases. They are all doing extremely well, but to put down the typhus mortality as an enteric mortality and kick up a row about it, as people out here have been doing, is most absurd and unfair. It may also be possible that these enteric cases contracted the fever since they had been prisoners of war, for, as you know, at this season of the year, that fever is endemic round here, etc.; but that fever that killed off the Boer prisoners was a fever they brought with them from the awful conditions they had been living under in Cronje's laager and other places up Modder River way, and, as aforesaid, they recovered far more frequently than they had any right to expect. As for the conduct of our authorities in the matter, it has been excellent. Every mortal thing in the way of special food and supplies has been freely sent, however difficult to procure; fresh milk, eggs, brandy, champagne, air beds, etc. The people who have had the hardest time of it have been those who had to work those things into use. The C.M.O., Dr. Carré, when I came here first——." Testimony to the value of Dr. Carré's work has already been borne by our Capetown correspondent. Miss Kingsley's letter is interesting as an account of what a singularly shrewd and experienced woman—one, too, full of the "common sense" on which Lord Roberts justly places so high a value—saw with her own eyes in South Africa. Had Miss Kingsley's valuable life been spared, she would have been able to give evidence of the greatest value before the Commission of Inquiry.

DR. ALAN HERBERT AND THE HERTFORD BRITISH HOSPITAL, PARIS.

On August 4th during the meeting of the International Medical Congress the Hon. Alan Herbert, M.D., Physician to the British Hospital, Paris, was, as already stated in the British Medical Journal, presented with an address in appreciation of twenty-eight years' service by the present and former resident medical officers. In addition to Dr. Faure Miller, who presided, there were present Sir Dyce Duckworth, Professor Berger of the Beaujon Hospital, Dr. Edward Neech, Dr. J. F. Sutherland, Dr. F. H. Bateman, Dr. Egerton Brandt, Dr. Leith Waters, Dr. Warden, Dr. Chree, Dr. Ian Macdonald, and others. Apologies for absence were sent by Sir John Murray Scott, Bart., Sir T. Lauder Brunton, Mr. Austin Lee, C.B., Mr. English, and twelve former residents. Dr. Faure Miller said it gave him the greatest pleasure to preside and to congratulate Dr. Herbert on the singular honour which had been conferred upon him by all the former residents. He had been agreeably associated with Dr. Herbert in hospital work for sixteen years, and he quite understood how the former residents wished to do honour to Dr. Herbert while in Paris during the meeting of the Congress. He called upon Dr. J. F. Sutherland as the oldest resident present to present the address. In doing so Dr. Sutherland stated that it was signed by men who were doing good work and holding honourable positions in all parts of the world, on the South African veld, under the Southern Cross, under the Northern Lights, and even at the Gateways of the Day. The signatories not only acquiesced in the terms of the address, but wrote letters manifesting the regard for Dr. Herbert as a chief and as a friend. Most of them said "Good-bye" to the hospital very much in the frame of mind of Ahmed Akbar, the last Moorish king, when from the last ridge of the Sierras he witnessed for the last time the minarets of the Alhambra. But most of them had come back to the scenes of other days when an opportunity like this presented itself. The red cross would recall to Dr. Herbert's memory comrades in arms who had passed away—namely, the late Sir Richard Wallace, the founder of the hospital, and the late Sir John Rose Cormack, his first hospital colleague. Dr. Herbert said it was very difficult for him to describe how deeply he was touched by the kind and unexpected presentation of the address of the former resident medical officers, and the more than generous terms in which the address was phrased. The names of so many old friends brought back the recollection of other days more or less remote when he was ably assisted in all his hospital duties by the residents. He could not help feeling grateful for the services rendered by them to the hospital and to himself personally. Much more might be said, and he might dwell on the work accomplished during thirty years in the wards and in the outdoor department of the hospital. The residents present that day and those absent and engaged in honourable work in every part of the world might rest assured that he would look upon this occasion as one of the happiest and proudest moments of his life. He could wish for no better testimony or higher reward than to be assured that he still retained the regard of men some of whom had worked in the hospital with him so long ago as twenty-five years. From the bottom of his heart he thanked the former residents for their more than generous expression of their sentiments, and Dr. Sutherland for the kind way in which he had spoken of him on behalf of the other residents and himself. Sir Dyce Duckworth expressed the pleasure it gave him to be present on the occasion of this honour to his friend Dr. Herbert. He and others sometimes thought it a pity that Dr. Herbert had not chosen London for the practice of his profession. While that was so, he had no hesitation in saying that what London had lost Paris had gained, and to-day and for some time Dr. Herbert was rightly looked upon as *doyen* of the British medical practititioners resident in Paris. Not only so, but he enjoyed the confidence of the British public and of his fellow practitioners. Speaking from long experience as a hospital physician, he attached the greatest value to such an address from the former residents, who felt that they owed much to their chief, both as a clinician and a good friend. Professor Berger, of Beaujon Hospital and also of the British Hospital, who spoke in French, tendered his warmest assurances of friendship to Dr. Herbert, whom he had known since 1870, when Dr. Herbert took his place as *interne* at the Hôtel Dieu to enable him to take the field as surgeon with the French troops. Dr. Ed. Neech, Dr. Brandt, Dr. F. H. Bateman, and Dr. Warden also spoke.

A FORGOTTEN ENGLISH MEDICAL POET.

Mr. W. Roberts, writing in the *Athenæum* of August 14th, claims to have discovered a new poet—"not a great one, perhaps, but one who certainly does not merit the obscurity into which he has fallen." To us the new poet is particularly interesting, as he was a member of the medical profession. His name was Simon Trippe, and in a MS. in the British Museum he is described as follows: "Discip: Devoniensis electus pro comitate surriæ annos natos 15— Admissus Apr. 22, 1559; admissus scholaris in biennium probationis Feb. 12, 1563; Lector Logicæ 1568. Lector Humanitatis eodem anno in quo munere successit M^ro Joanni Raynolds noster Presidenti." According to Foster's *Alumni*, Trippe took his B.A. degree in 1564, and was elected Fellow of Exeter College, March 3rd—May 19th, 1565. Simon Trippe's claims on the attention of posterity are based—so far as Mr. Roberts can discover—entirely on two MSS., both unpublished. They are both referable to about 1571-2. The more interesting, because the more varied, of them is now in the British Museum (Add. MSS. 6251), and is entitled "Epistolæ, Orationes et Carmina," a volume of

ninety-six leaves quarto. This seems to have been a book in which Trippe copied his letters, poems, etc., before they were despatched to the various persons to whom they were addressed. The most interesting portion of this volume is a long letter, one version in Latin and the other in English, which Trippe addressed to his friend and patron Robert Dudley, Earl of Leicester, "From CCC. in Oxforth the —th August 1572," and subscribed "Your honours most humble and obedient, for ever to commaund, Simon Trippe." The English runs thus (the blank spaces represent words or phrases which Mr. Roberts could not decipher, but they do not materially affect the gist of the letter):

Right honorable, my very good lorde, whereas of late by the means of my very good friendes, Mr. Woolley & Mr. Mathew I was so bolde as to crave your lordshippes most honorable favour for my continewance in Corpus Chri Colledge, by obtaining the Phisicions place there: yt pleased your honour according to your accustomed goodness to stand so far forth my very good lord, that you did not only speake & write for me unto the B. of Winchestere, but also directed ye severall l'res [*i.e.* letters] unto Mr Cole our Præsident, so honorably & so effectually written, that for my life I might nor would desire any more to be said or done. Such being so I thought yt necessary of my most bounde dewty, both tinforme your honour, how your sayd l'res were accepted, and withall to rendre most humble & harty thanks for that yt pleased your honour to have such speciall regard of me, a poore and symple scholer. Most true it is therefore that Mr Cole our præsident, and your lordshippe chapleine, did so recall your first lettres dyrected to him and the without making them privie to the tenure and contents, contrary to his dewty towardes your honour, and thauncient custome also of our colledge, your lordshippes second l'res for me againe most honorably & most earnestly written, he hath not satisfied, but to my utter undoing, as much as in him lieth in a maner contained. The wiser sort of men do much marvell at his heddiness, & over much boldness in so lightly esteeming his lord and masters so honorable & so effectual l'res. Surely for my parte before god & your honor be it spoken, I doo not know any instance in the worlde why he should deale so extremely with me. But in the meanwhile I unhappy man am dryven to my shyftes, and must perforce forsake the university, but that your good & godly chapleine Mr Tobye Mathew Præsiden of St. Johns Colledge I know for your honours sake, doth most lovingly tender my case and is most willing in what he may to supporte my poore necessity. All which thinges of me accordingly consydered, I must needes acknowledge myself so much bound unto your honour, as I shal be unable to requite: most humbly beseaching your lordshippe to pardon my hitherto boldness and ever hereafter so account of me as of one who most willingly offreth himself, his service & his life, to do your honour the best pleasure I can, in any thinge what soever I may possibly

The poems are four in number: (1) "Ad Discipulum quendam"; (2) "To T. G." (or D. G) in English; (3) "Luctus funebris, sive de vita and morte Joann. Watsonis Epis. Winton."; (4) "Ad Janerum," filii pædagogum. It appears from a note appended to the second poem that the lady to whom Trippe addressed it continued "still in good will towards me, faithful and constant," in spite of "our late breache," and that she refused "for my sake all suters whatsoever." We may, therefore, conclude that Trippe, like Benedick, however pitiful he may have deserved in singing, was successful in loving. The poem consists of eight verses of four lines each. Mr. Roberts has been unable to decipher any one of these to his satisfaction, but the first three lines of the last verse run thus:

> Farewell, my deare, Farewell, a thousand times farewell,
> And hope for happy days the goddes will find them thee,
> Give quiet place within thy heavie hart to dwell.

One of Trippe's friends and patrons was Robert Home, then Bishop of Winchester. The Bishop, who occupied his see from 1561 till his death in 1579, recommended Trippe to his friends, and thanks to his influence, and also let us hope to his own professional skill, the poet doctor soon acquired an extensive reputation. He appears to have remained at Winchester for the rest of his life. In the "Loseley Manuscripts," edited by A. J. Kempe in 1835, there is (pp. 263-5) printed a curious letter from Trippe to George More (whose third daughter married Dr. John Donne) dated September 18th, 1581; it relates to a professional visit he was about to make to More, and exhibits the prejudices which physicians of the time entertained for administering or avoiding remedies on certain days. Another MS. to which Mr. Roberts calls attention is the only one of Trippe's compilations which can be described as a work in the proper sense of the term. It is a very neatly written volume in 178 pages quarto, and the title runs: "Christianus Medicus sive dis. in qua cum primis Galenus vindicatur a 4 calumnis," etc. This MS. was presented to C. L. Prince, M.R.C.S., by the late Rev. E. Turner, rector of Maresfield in 1870, and it appeared in the sale of the late Mr. Prince's library at Sotheby's, March 10th last (lot 1,002); it again occurred at Sotheby's on May 24th (lot 919). It is thus divided:—De mortalitate animarum, 1. De Christi et Moysis irrisione, 2. De Summa dei potestate im'inuta, 3. De Nimia rationis adversus side' approbatione, 4. The dedication to Robert Dudley, Earl of Leicester, is dated "ex collegio corporis christi Oxonii 1572 idibus maii." Mr. Roberts refers to the curious fact that although he was a native of Devonshire, Trippe entered college as coming from Surrey. This may perhaps be explained by his father having migrated to that county. There is in the Harleian MSS. (607, 281) a document which is abstracted thus in the Catalogue: "Honyton in Com. Devon percella possessionum datarum pro manutenencia unius presbiteri, etc., in Ecclesia de Honyton, rated 17 die Novembris, 1557, for John Trippe." This John Trippe was possibly Simon's father, and a search among the Honiton records—if there are any—might reveal some particulars of Simon Trippe and his family. Trippe's name does not appear in the *Dictionary of National Biography*, although it may be gathered from the particulars respecting him collected by Mr. Roberts that he was in his day a man of considerable ability and learning.

LUNATICS IN TURKEY.

M. LUIGI MONGERI, of Constantinople, has published a work giving an account of the condition of psychological medicine in Turkey. In that country the belief in the existence of a kind of diabolical possession is still rooted in the public mind so profoundly as to paralyse every official effort. Even the members of the medical faculty only a few years ago were so little impressed with the need for any study of the subject, that no provision was made for instruction in it in the one school of medicine at Constantinople. During the last two years there have been symptoms of improvement, and there is now a course of theoretical psychiatry, attendance at which however is not compulsory. From this attitude of the professional mind may easily be inferred that of the administrative authorities. Any person can be placed in confinement by the simple process of being taken to the asylum by a relative, servant, or friend. No medical certificate appears to be necessary. Sometimes to save themselves the trouble of taking a lunatic to the asylum the friends hand him over to a Government official. The patient is first taken to prison, thence to the asylum, where he is accompanied by a police order to the following effect: "The management of —— hospital is requested to receive —— and to confine him in the section of lunatics, he having been certified as such." Nothing is said about age, civil state, antecedents, causes, or previous morbid phenomena. It is obvious that perfectly sane persons can thus be put away very easily, and the physicians have no opportunity of learning their patient's history. If a person has been placed in an asylum by relatives they can take him out when they please; but if he has been confined by order of the police a certificate of cure must be forthcoming, and, moreover, the medical man is asked to commit himself to a prophecy that the disease will not return. In Constantinople there are 5 asylums, 1 of which is reserved for women. The most important

is that of Suleimanie, constructed by Suleiman the Magnificent, which was used up to thirty years ago, when the patients were transferred to the present asylum at Scutari. At the time of its foundation this asylum in accordance with Oriental custom had a veritable army of attendants, there being 150 for 20 patients. These were divided into different categories, at the head of which was a special officer (chief cook, chief scrubber, chief water-carrier, etc.). The patient on admission, after having a vapour bath followed by massage, was handed over to the chief barber, who shaved him completely and passed him on to the chief warder who placed him in a room. If he was violent he was entrusted to the tender mercies of the chief of the cells. In either case an iron ring was put round his neck, and from this hung a long chain by means of which he could be fixed to the wall or to the floor. In very violent cases an apparatus consisting of two pieces of wood, with semicircular openings for the hands and feet, was put on the patient. If that were not enough, the unhappy patient was flogged. In front of each room was a stand for singers and instrumental performers, who tried to soothe the captive with music. In the other towns of Turkey the asylums are simply prisons. Comparatively few women are to be found in them. This is owing to religious scruples which are so strongly implanted in the Turkish mind that they are not easily induced to allow their women folk to be placed under control unless they are very violent. In all the asylums not only Mussulmans but Christians and Jews are admitted, whether they are Ottoman subjects or not. But as all the colonies have special quarters for lunatics in their hospitals it is rare to find non-Mussulman patients in the Suleimanie.

TUBERCULOSIS IN ELEMENTARY SCHOOLS.

The July number of *Tuberculosis*, the journal of the National Association for the Prevention of Consumption, contains an interesting article by Dr. James Kerr of Bradford on Tuberculosis in Elementary Schools. The author says that out of a thousand cases examined where attendance officials and parents differed as to the advisability of school attendance, 3 per cent. were phthisical, 4 per cent. had other obvious tuberculous, chiefly bone, disease, 3 per cent. chronic bronchitis, 6 per cent. the rheumatic class of diseases, 3 per cent. photophobia or keratitis, 4 per cent. chronic otorrhœa, 7 per cent. obviously adenoids, and 10 per cent. vague diseases with debility. These are given in round numbers, as they do not represent distribution of diseases, but only selected cases with not much wrong, and in about 40 per cent. the children were really fit for school. Phthisis—the actual disease—Dr. Kerr states is rarely seen in a Board school, an affected child usually ceasing apparently to attend at an early stage. As, however, anything that debilitates prepares for phthisis, the writer dwells with some emphasis on these conditions. Thus no less than 40 per cent. of girls at a school were found to have throats in abnormal states, chiefly due to adenoids. The children of the town Board schools are found to be smaller in size and less healthy than those of the same age at country schools. The most important practical problem for schools is that of ventilation. For this purpose Dr. Kerr favours some artificial form of ventilation in addition to the natural one of windows, and in this view he is supported by no less an authority than Dr. Newsholme. At the same time, the windows should also be freely opened on occasion, and the fresh air drill which the writer recommends is worth the consideration of all school keepers. By the fresh air drill a child or teacher is taught to man each door and window, and to systematically open them during intervals for recreation, and on other suitable opportunities. This drill has an educational effect, and tends to develop a sanitary conscience in both teachers and children.

MAJOR RONALD ROSS AND THE INTERNATIONAL MEDICAL CONGRESS.

During the sitting of the International Medical Congress in Paris, Professor Blanchard, in the name of the Section of Bacteriology, sent a telegram to Major Ronald Ross congratulating him on the discoveries made by him on malaria. The following is the text of the message: "Section de Bactériologie vous adresse chaleureuses félicitations pour découvertes sur paludisme. (Signed) Blanchard." Such an acknowledgement of his work from such a source must be particularly gratifying to Major Ross in view of the unfair manner in which it has been minimised or altogether ignored by certain other foreign investigators. We venture to add our hearty congratulations to those of the scientific men assembled in Paris.

MOSQUITOS AND ELEPHANTIASIS.

A telegram was received on August 7th by the Liverpool School of Tropical Medicine from its second malaria expedition, which is now at Bonny, on the West Coast of Africa, to the following effect: "Active nocturna proboscis anopheles." This evidently means that they have found *Filaria nocturna* in the proboscis of *Anopheles*. The expedition is somewhere up country, and it is believed has not received letters from England for months. For this reason, and because it is unlikely that otherwise they would have incurred the expense of telegraphing, it is to be presumed that the discovery announced has been made independently of that made simultaneously by Dr. Low in England, mention of which was made in the British Medical Journal of June 16th, p. 1456, and by Captain James in India. In view of this discovery and of that as to the relation between mosquitos and malaria for which we are indebted to Major Ross, it is really high time that the authorities in our tropical colonies set themselves seriously to the task of destroying these baneful insects or their breeding places wherever this can be done.

EUROPEANS IN THE TROPICS.

The Liverpool Chamber of Commerce have received a letter from the Colonial Secretary, in reply to a request made on behalf of the Liverpool School of Tropical Medicine, that he should receive a deputation to discuss the subject of the improvement of the conditions of life for Europeans in the tropics. Mr. Chamberlain replied, expressing regret that at this time of the year he was unable to appoint a time for receiving a deputation. He assured the Chamber, however, that he fully appreciated the importance of improving the conditions of life for Europeans in tropical Colonies, and added he was always ready to support, as far as lay in his power, any well-considered schemes submitted to him by the local governments of the Crown Colonies, or by Chambers of Commerce, or others interested in these Colonies. He said his efforts in this respect would be limited only by financial considerations.

Troops under orders for China are, it is said, to have the opportunity of undergoing inoculation for enteric fever. The operation is, of course, not compulsory. This would appear to show that the treatment is not regarded as a failure by the authorities.

We regret to announce the death of Pierce Adolphus Simpson, Emeritus Professor of Forensic Medicine in the University of Glasgow, which occurred a few days ago at Auchengrange, Lochwinnoch. Dr. Simpson, who was 63 years of age, was a graduate of the University of Edinburgh and for many years occupied a leading position in the medical profession in Glasgow. He was appointed in 1872 to the Chair of Forensic Medicine in the University of Glasgow, but retired on account of ill-health at the beginning of 1898.

THE WAR IN SOUTH AFRICA.

A NOTE ON THE SO-CALLED "POISONED BULLET."

By G. H. MAKINS, F.R.C.S.,
Consulting Surgeon with the Field Force in South Africa.

Pretoria, July 5th, 1900.

FOR some months past the wax-coated bullets employed by the Boers and discovered amongst captured ammunition have been a source of both interest and anxiety, particularly to the lay mind, in South Africa. To the evil action of these suspected missiles many a case of suppuration and cellulitis has been ascribed. By this time the appearance of the cartridges may be familiar to many of your readers, but to such as are not a short description may be of interest. It has apparently been the custom both by the Boers and some ammunition manufacturers to coat the bullet with a layer of wax, I believe on the theory that the missile in consequence takes the rifling more readily, while at the same time the lubrication preserves the grooving of the barrel from wear by friction. How rapidly the latter takes place is patent to those who were familiar with the deep grooves seen on extracted Mauser bullets at the commencement of this campaign, and can contrast them with the many almost smooth bullets met with at the present time; and when the hardness of the casing of the bullet is considered one would not expect it to be otherwise. Beyond this, the Boer seldom cleans his rifle, and the wax left may act as a preservative against erosion.

The wax coating of the various bullets I have seen differs in tint. In the older large leaden bullets a white wax has been employed, and the wax remains uncoloured except where fouled by contact with dust. Many cartridges I have seen have had a coating of white wax applied which apparently from age, and perhaps the conditions under which they have been stored in hiding, has acquired a brownish tinge.

Of the green-coloured bullets I have seen two varieties; in the first and less common, white wax of some kind has been applied both to the bullet and brass case of the cartridges, and probably from exposure to damp the latter has acquired an incomplete coating of verdigris, which has become irregularly diffused into the wax coating; in the second and more common variety a green-tinted wax is employed in the original coating; cases of cartridges treated in this way are numerous. As to the composition of this wax, I am unable to furnish any information, but in support of the innocuousness of the process I may only first repeat the opinion I expressed on a former occasion, that the surface of the bullet clearing its passage through the grooves of the rifle is almost completely renewed, only the extreme tip and base being untouched, while the velocity with which the missile is started is such as to make it probable that the tip itself would be cleansed by the flight through the atmosphere. This view as to the cleanliness of the surface of the bullet has been most thoroughly confirmed in the case of the coated ones by an experiment performed by Captain Mitchell Wood, at Capetown, as long ago as last March.

A green-coated bullet fired by the Mauser rifle was made to traverse a book of white paper, and then bury itself in a bank of sand. As a result, when the book was examined no trace of the green wax was found on the margins of the perforation in the paper, and the casing of the bullet itself, although somewhat split, was perfectly clean and white. The complete disappearance of the wax is no doubt partly to be explained by the heat generated during the passage of the bullet through the rifle, which, although insufficient to cauterise the tissues, is yet great enough to fuse the wax, and in part to the actual scraping of the surface by the rifling of the barrel.

THE WOUNDED AT PRETORIA.

Only the wounded from the Diamond Hill engagement have been in hospital in Pretoria, hence I can give little surgical information of interest. The service hospitals here are located in the Model School, the Girls' School, the Volk's Hospital, and a building known as the Burke Hospital, while the Irish Hospital has found a home in the splendid new Palace of Justice. Enteric fever is still the most prominent disease, but its incidence is now happily on the wane.

THE LATE MISS KINGSLEY.

I must not close this note without paying a modest tribute to the memory of Miss Kingsley, of whose sad death I have only yesterday become aware. Early in the year Miss Kingsley came to me with an introduction from Sir Lauder Brunton, although I had had the privilege of her acquaintance in England. My wife, at that time nursing at Wynberg, took Miss Kingsley to the Surgeon-General, who offered her the post of nursing the sick Boer prisoners at that time at Simon's Town. Miss Kingsley undertook this difficult work with characteristic energy, she donned a Boer hat, provided herself with a stock of cigarettes of special composition, and battled with one of the most severe epidemics of enteric fever that has occurred out here. The difficulties to be overcome were great, but she overcame them all, working with untiring cheerfulness and success, infusing her own spirit and thoroughness into those working with her, and gaining the hearts of the patients depressed and unhappy in their captivity and suspicious and fearful as to their disease. The most arduous part of her work may be said to have been over when she was struck down with the same disease herself. She bore her illness with the greatest fortitude, and when the fatal perforation took place she courageously grasped her last chance and underwent an operation by Mrs. Snowden. Much as the surgeon dreads one of these operations, and confident as I am that she was in the best of hands, I cannot but feel a personal regret that I was too far distant to be able to fulfil her wish that I should undertake this for her. It was perhaps characteristic of Miss Kingsley that all she asked was that if she had to die that "she should be allowed to die alone, and that she should be buried at sea." To so great a traveller and so ardent a lover of Nature these desires seem both fitting and natural, and she has found her last resting-place in the sea that she loved and among its denizens who formed her chief interest in the realm of Nature. I think we as a profession may all be proud that the daughter of one of our brethren did such noble and disinterested work out here and met her death as a real heroine. Miss Kingsley's remains were accorded the rare if not unique honour for a woman of both a military and naval funeral. The military service having been performed on shore the coffin was placed on board H.M.S. *Thrush* and committed to the deep with naval honours some 20 miles from the shore.

SOUTH AFRICAN HOSPITALS.

[FROM OUR CAPETOWN CORRESPONDENT.]

THE WOODSTOCK HOSPITAL.

July 18th, 1900.

As the No. 5 General Hospital at Woodstock is the one at which the principal work at the base is being carried on, and as it has probably reached something like its final stage of development a somewhat detailed description of it may be of interest, if only from the fact that it constitutes now the nearest South African approach to a general hospital at home. Moreover, as a reference to some of my previous articles will show, it has grown from very small beginnings in the course of the present war, a fact that goes some way to prove that the army medical officials can bring constructive ability to bear upon occasion. The position, as I have pointed out before, is not a good one, either from the sanitary or the æsthetic point of view, and perhaps its only recommendation is that it is in close proximity to the railway station. Situated on a low-lying piece of shore, on which nothing will grow, it is dusty and windswept in summer, a swamp in winter, and noisy at all times. But for the ordinary work of a garrison station hospital it was handy to the castle and the main barracks, and no one foresaw that it would ever have to be turned into a general hospital. The best had to be done with the only available site, and apparently the best has been done.

The hospital now consists of the permanent building, that is the original station hospital, an old and somewhat ramshackle double storeyed brick building, large huts, smaller ditto, and marquees, with a few bell tents. The old building consists of two wings, each containing four eleven-bed wards, two on each floor, with a large central block used as quarters for medical officers and nurses, with small wards for prisoners, isolation, and ophthalmic cases, and a number of stores and offices. Some of the latter are housed in a recently erected iron building in one of the quadrangles. The wards are roomy and airy enough, and their bareness has been much relieved

by a number of little accessories and decorations, some supplied by authority, others by the outside public. No reasonable objection can be made to them on the score of cleanliness, for the most scrupulous care is evident in regard to this point, but from the age of the building the floors are necessarily worn and dingy, and superficial observers might rashly assume them to be dirty, forgetting that no amount of scrubbing can make old floors look white. The wards on each upper floor are approached by roomy landings, used normally as lounges for the more or less convalescent patients, who in the rainy weather now prevalent in the Cape peninsula cannot spend much time in the open air. On occasions of exceptional pressure caused by the sudden arrival of large drafts of convalescents from up country, beds are occasionally made up on the floors of these landings, but this never lasts more than a few days pending departures to England, and certainly no discomfort to speak of has been endured.

Each set of wards has an annexe for cleansing purposes, and another as a sister's room. On the ground floor of each wing of the permanent building is a dispensary, serving the left and right divisions respectively. The total capacity of the permanent building is somewhat under 100 beds. There are six principal huts, substantially built of iron lined with wood, floored, and lighted, as is the old building, with electric light. These are most comfortable, and in fact preferable in many respects to the main building. Each of these huts has 36 beds.

There are four huts of iron of a more or less temporary nature, less substantially built than those just named, but comfortable enough for the class of patients, mostly convalescents, sent into them. Their capacity is also 36 each. There are also 7 portable huts, built in sections of 25 beds. These could easily be taken down and re-erected in a very short time. There are 2 infectious huts of 10 beds each, well built and floored with wood. Some infectious cases are occasionally put into bell tents. An observation hut for 10 patients, and a number of marquees and bell tents, all wooden-floored, complete the accommodation for patients, which totals up to 804.

Two of the large huts are specially set apart for enteric cases, and a fair proportion of the beds in the permanent building are also allocated to the same disease. Generally speaking, one of the ground-floor wards in the main building is reserved for surgical cases, and the other seven wards are as far as possible devoted to serious medical cases. Of course classification is most difficult to carry out, with the sudden influxes of patients from up country, but it is enforced as far as possible.

The dining hall is an iron structure, capable of seating more than 200 patients. The convalescents take their meals there, and it is also used for Divine service and for recreation purposes, including concerts, which by the praiseworthy efforts of the outside public are frequently given.

There are eight or ten Boers at Woodstock at present, accommodated in a separate hut. All are absolutely convalescent, and being fed up on luxuries galore. Indeed, the dietary throughout the hospital is liberal to a fault, extras being absolutely unrestricted, and practically every man gets everything he asks for unless precluded by actual medical reasons.

A commodious operating room of iron is now being erected. There are libraries attached to each set of wards. There is a post-office in the old building.

The staff now consists of Lieutenant-Colonel Williamson, in command; Major Russell, secretary and registrar; Majors Gibson and Saunders in charge of divisions; one Militia Surgeon-Lieutenant, who acts as company officer; one Volunteer Surgeon-Lieutenant, holding a temporary commission in the R.A.M.C.; and 10 civil surgeons, besides a quartermaster.

The nursing staff consists of the superintendent (who has also sole charge of all gifts contributed from outside) and 13 Sisters. Part of these are accommodated in the hospital, and part in a hired house near by.

The detachment consists of 1 R.A.M.C. warrant officer, 3 staff-sergeants R.A.M.C., 2 staff-sergeants V.M.S.C., and 1 St. John Ambulance, 6 sergeants V.M.S.C., and 3 St. John sergeants, 48 corporals and privates R.A.M.C., 11 Militia M.S.C. corporals and privates, 75 V.M.S.C. corporals and privates, and 33 St. John men. Four of the Militia privates are specially enlisted compounders, and, of course, a large number of the company are employed in the kitchen, stores, and offices. The R.A.M.C. warrant officer is assisted by an acting sergeant-major who takes his duties at night, and two sergeants are engaged as wardmasters during the day, and one at night. Two nursing sisters and about 20 men are permanently engaged on night duty, supplemented by special orderlies as occasion requires. An orderly medical officer is constantly on duty; all the officers below the divisional officers, except the senior civil surgeon, taking turns on this roster. The orderly medical officer likewise visits the castle cells. A medical officer detailed for outside duties at the barracks and amongst the castle staff, is attached to the No. 5 unit, but does no hospital duty, and is not included in the list of the staff given above.

The professional staff is amply sufficient to ensure the most careful attention being given to every case, and they are a very well qualified set of gentlemen, one being a M.R.C.P. of London. The subordinate staff is pretty heavily worked, and a good many—an average, I believe, of about 20—are constantly non-effective through sickness, mostly enteric. Three orderlies have died from this disease already. Regimental orderlies are now and then drafted in to fill the gap temporarily caused by illness. No nurses have contracted enteric, and only one medical officer, and his case is clearly traceable to *post-mortem* work.

The general conclusion one draws from a look over No. 5 is that the patients are comfortable and exceptionally well fed—far better, indeed, than the average rich civilian—and that here, at least, no foundation exists for the strictures passed upon the medical administration.

A Campaign of Criticism.

A new development of the campaign of criticism has come out in the publication of a letter accusing the medical officers at Wynberg and elsewhere of partiality in their selection of cases for invaliding, but, on the whole, there is a general disposition not to anticipate the investigations of the Commission.

Personally, I do not think that Commission will find much evidence of preventable discomfort to patients, although it may be able to suggest some modifications in Army Medical organisation, whilst the testimony of the large number of civil surgeons at present employed may throw some light on the etiology of the paucity of candidates for commissions in the R.A.M.C.

As an instance of the loose way in which statements are circulated to the detriment of the Department, I may mention that some weeks ago it was announced in the *Cape Times* that the secretary of the Soldiers' Christian Association had received a request from the principal medical officer of one of the military hospitals for shirts, socks, and warm clothing, "badly" required for the patients, and inviting the public to send to the said secretary any such articles. This, of course, gave the impression that the principal medical officer in question could not get these necessaries from official sources, and had to appeal to outside. Now, as a matter of fact, there is an ample supply of all these articles at the hospital in question, but the secretary voluntarily offered some pyjamas and other things, which were, naturally, gratefully accepted, and on his offering to supply more, he was told that they would be thankfully received, but nothing in any way approaching an appeal was made, or was necessary.

NOTES FROM THE SEAT OF WAR.

[From a Correspondent].

The Commission of Inquiry from a South African Standpoint.

On the whole medical officers in South Africa manifest but slight interest in the forthcoming Committee of Inquiry. This is no doubt due to the fact that one and all feel convinced that the inquiry will result in a complete vindication of the R.A.M.C. It may, perhaps, also lead to the introduction of a few much-needed reforms reforms which have already been advocated by many of the officers. If these are conceded in a liberal spirit they will undoubtedly tend to strengthen and consolidate the corps, and will prove beneficial in every way. There can be little doubt that the inquiry will still further

bring home to the nation the sterling quality of the medical and surgical work which has been done during the campaign, and will in this way also tend to strengthen the position of the corps.

From telegrams published here it would seem that Mr. Burdett-Coutts has now qualified his original statement by announcing that it was not meant as an attack on the *personnel* of the R.A.M.C., but applied only to the system. This, however, is rather a lame explanation, for the system *is* the *personnel* in the sense that without the system the *personnel* could not exist as it exists to-day. Without the system the *personnel*, if it existed at all, would be an untrained and more or less useless body.

Mr. Burdett-Coutts doubtless meant that his attack was directed against the corps as at present constituted and not against its individual members. It is presumed, therefore, that the attack was started with the object of weakening and discrediting the corps, thus causing its overthrow and erecting on its ashes a renovated regimental system, which is still the chimera of the "combatant" officer. Think what it would mean if Mr. Burdett-Coutts were to accomplish his object—always presuming that his object is as above stated. A corps of highly trained officers and men, who are always ready to proceed to any place where their services may be required, would be split up into its individual atoms (if I may use such a term) and distributed in twos and threes amongst the regiments which now form our army. They would become isolated units, incapable of collective action; tied to their regiments however urgently their services might be required in another direction. In other words we should have returned to the medical organisation which existed in the days of the Crimea. Where, then, would be the general, the stationary, and the field hospitals, whose work during the campaign will probably survive as a record in military surgery which will be pointed at with envy by Continental armies. For criticise the administration of individual hospitals as we may, the fact remains that the collective surgical results of the campaign have been successful in an eminent degree.

A TYPICAL FIELD HOSPITAL.

Several detailed descriptions of general and stationary hospitals have been published from time to time, from which it will have been seen that these units are equipped on a scale corresponding to station hospitals in England, and that they are, as a rule, models of neatness and comfort. Hitherto field hospitals have been more or less overlooked by your correspondents. I am therefore induced to send the following brief notes on an inspection of one of these hospitals, as doubtless they will prove interesting to your readers, especially as there is reason to believe that recent adverse comments have been mainly levelled at these units. What follows, however, will tend to show how little justification there is for such adverse criticisms. In this case the unit selected was No. 15 Field Hospital, it being the only representative of its class then stationed in Bloemfontein.

Before entering on its description, I may premise that a field hospital is equipped for 100 patients. It is attached to a brigade, and moves with it wherever it goes. It is essential, therefore, that the equipment should be as light and portable as possible. This consists of field medical and surgical panniers, an operating and thirty-nine circular tents, etc. To insure lightness and portability, the medicines are in tabloid form. All told, the equipment weighs roughly 8 tons, and can easily be carried on four ox or five mule waggons. A field hospital receives the sick from its brigade, and all wounded that may be brought to it by the bearer companies. The serious cases are transferred to the base as soon as possible, only slight cases, which are expected to be fit for duty in a few days, being retained in the hospital. This rule, however, has been frequently modified during the present campaign, as in the following instance:

Before leaving England No. 15 Field Hospital was detailed for duty with the Fifth (Irish) Brigade. It landed at Durban on December 1st, 1899, the officers with the unit being Major G. H. Younge (in command), Major F. T. Wilkinson, Captain E. M. Pilcher, Lieutenant R. H. S. Fuhr, Lieutenant and Quartermaster J. Hirst. Having drawn its transport at Pietermaritzburg, the hospital joined its brigade at Frere on December 8th, 1899, and was present with it at the battles of Colenso, Spion Kop, Val Krantz, Pieter's Hill, and the relief of Ladysmith. The hospital was subsequently ordered to Bloemfontein. Since arriving here it has been attached to the Third Division, and has been detailed to treat the sick from the various rest camps and from the drafts which are continually passing through the station. It rapidly became filled with enteric fever cases, and to accommodate these additional tents and equipments had to be drawn. The hospital now consists of 65 tents, 18 of these being marquees.

The camp is pitched on a level plain west of the town. It is rectangular in shape, and covers an area of 140 by 250 yards. The bell tents are pitched in six rows with an interval of 16 yards between each row, the marquees in two separate rows on the south side of the camp. On the south side also corrugated iron latrines and a large washstand and on the east a pretty corrugated iron cookhouse have been erected. From whatever point the camp is viewed the tents are in perfect alignment with a broad avenue between each row. As the tents are snow white and the site smooth and well kept the whole forms a neat and pleasing picture. In rear of the camp are the mortuary tent, a marquee for hospital stores, the horse lines, etc. The marquee is kept well stocked with large reserves of medical comforts and warm underclothing, which are issued liberally to the patients whenever necessary. The sanitary arrangements receive especial attention. The camp is scrupulously clean, not even the tiniest scrap of paper being visible. All refuse is at once burnt; all waste water being emptied into a deep pit filled with broken stones, through which it rapidly percolates. Chloride of lime is freely used for disinfecting the waste water.

For excretions and clothing izal is almost exclusively employed. Large supplies of both are on hand. The hospital is now almost entirely occupied by enteric fever cases, and the marquees are reserved for these. Three nursing sisters are doing duty in the enteric fever wards.

Each marquee is 14 by 30 feet. They are provided with double roofs and walls, and comfortably accommodate 7 beds. Those in use in the hospital are wire-wove spring beds, which are found light, portable, and very comfortable. The beds are placed round the marquees at right angles to the walls. This leaves a large space in the centre, in which stands a long table. In the centre of this is an elevated tray, on which are placed feeding-bottles, medicine bottles, etc. The remainder of the table is covered with books and illustrated papers. Beside each bed stands a bedside table. The marquees are bright and neat, and every article in them is spotlessly clean. The floor of each marquee is covered with a double layer of tarpaulin, which is found safer, more comfortable, and much more convenient than wood.

Each bell tent accommodates three beds, arranged so as to form three sides of a square. The patients are provided with mattresses, blankets, sheets, and pyjamas. Most of them are now convalescent, and those who are allowed up wear the regulation blue hospital clothing, in which they look neat and smart. One and all speak in the highest terms of the treatment they have received, and express indignation at the charges which have been brought against the hospitals in South Africa.

I append a few figures which have been jotted down from the hospital returns. They will show that, although field hospitals are only equipped for 100 patients, they are capable of doing much good work.

Since its arrival in South Africa the following are the numbers which have passed through the hospital:

—	Admitted.	Died.
Gunshot wounds	1,012	33
Simple continued fever	609	*Nil*
Enteric fever	338	38
Dysentery	539	9
Other diseases	990	1
Total	3,488	81

These figures represent a very large amount of work. The death-rate works out to a fraction under 2.33 per cent. Of the cases which have passed through the hospital 732 have been discharged to duty, 120 are still under treatment, whilst the remainder have at different times been transferred to the base. Altogether, No. 15 Field Hospital may well be proud of both its equipment and record.

RELIEVED MAFEKING.

Writing from Deelfontein on July 16th Mr. A. D. Fripp says: There is not a single seriously sick or wounded man now left in Mafeking. Fuel is still very scarce up here, the locomotives having to depend on wood, of which they draw a huge truck after them. Of food there is plenty, and of danger there is none. But in all other respects very little change has as yet come over Mafeking since it was relieved.

Trophies and mementos of the siege of all sorts are in great demand both at Mafeking itself and also down country. Siege stamps, paper money, shells and bullets, occupy the most prominent place in most people's minds, and realise most extraordinarily high prices, but Professor Chiene, who was visiting us not long ago, is the possessor of one of the most interesting mementos in the shape of a concertina, whereby, in conjunction with the noise made by a native dancing on a sheet of corrugated iron, the Boers were tempted to put up their heads when only separated from our sharpshooters by about 60 yards. Many Boers paid for their curiosity with their lives, for the moment anything showed above the sandbags it got a bullet through it; even a cartridge case, which is only 2½ inches by less than half an inch, left by chance on the top of the sandbags, got two bullets put through it. There are some field glasses made on such an arrangement of angles and prisms that by their aid a man in a trench can spy over the top without exposing his head. I saw one such glass which had had a Mauser bullet bang through its lens, and also through the hat of the person who was using it.

Throughout the siege they seem to have been remarkably free from sickness, despite the fact that Mafeking is as innocent as any other town in South Africa of any attempt at sanitation. I am glad to say that sickness among the staff here has materially diminished of late. Only twenty-one of our orderlies are in hospital, and they are all doing well, and so are the two doctors who are convalescent from enteric, and a couple of sisters who are off duty for slight ailments. This most satisfactory statement seems to be general throughout the country. The epidemic of enteric continues to rapidly decrease. Sloggett, who is just back from Pretoria, whither he had to go to make arrangements for the new advanced branch of the Yeomanry Hospital, the first instalment of which is due at Capetown to-morrow, says that there are only 400 sick and wounded in that city, and only 1,600 in Bloemfontein, instead of the 5,000 that there were when I was there six weeks ago. He says that there are two whole general hospitals now in Kroonstad besides the Glasgow Hospital of 300 beds, but there, as at Kimberley, where I visited the hospitals on my way to Mafeking, and everywhere else that the hospital trains ply to, the report is extremely favourable, and there are vacant beds everywhere now. The difficulty of transport, however, continues. Between Kroonstad and Johannesburg it is even greater than it was, owing, of course, to the depredations of Christian de Wet.

We have taken in nearly 250 patients this week, including one train from Winburg, half sick and half wounded, and one train load of convalescents from Pretoria, and about fifty Yeomanry, including a batch of the Warwicks and a batch from Kimberley.

THE STANDARDISING OF DRUGS BY EXPERIMENTS ON ANIMALS.

The Home Secretary recently asked the Royal College of Physicians and of Surgeons to advise him in reference to an application from a firm of manufacturing chemists for a licence for the performance at their laboratories of experiments on living animals for the purpose of standardising drugs. The views of the Royal Colleges were specially requested on the following three questions:

1. "Is the standardising of drugs by means of experiments on animals indispensable in the public interest?"

2. "If so, is it probable that, in proper cases, duly-qualified experimenters working in the premises of manufacturing chemists should be empowered to perform the necessary experiments on animals for this purpose?"

3. "If it is not thought desirable that manufacturing chemists should be entrusted with this power, what other provision is it advisable and practicable to make for the purpose?"

The letter was referred to the Laboratories Committee (consisting of Dr. Pye-Smith, Chairman, Drs. Halliburton and S. Martin, Mr. Howse, Sir William Mac Cormac, and Mr. H. Morris) for consideration and report.

In a report dated July 3rd the Committee replied to the first question that with certain remedies containing active agents which cannot be estimated by any known chemical process, experiments on animals (usually rabbits, guinea-pigs, or mice) are absolutely necessary, in order that their therapeutical strength may be estimated. This applies more particularly to the group of remedial agents, anti-serums (antitoxins, etc.), which have been introduced for the treatment of infective diseases. In the case, for example, of the diphtheria antitoxin, which is the only preparation of this kind at present in general use, the antitoxin strength of each sample of serum as it is obtained from the horse has to be estimated, since individual horses, even if treated in the same manner, yield serum of different strengths. The antitoxic strength must be ascertained by determining what amount of the serum will exactly counteract a known amount of the toxin or poison of the diphtheria bacillus, when both substances are injected into the same animal (usually a guinea-pig). The strength of both toxin and antitoxin cannot be estimated by chemical means, so that a physiological test becomes necessary. An unstandardised antitoxin is a source of danger, for the practitioner might be relying on a remedy which would not produce the effect required, and life would be endangered, or might be lost, from using a more or less inert preparation.

To the second question the Committee replied that they would regard the authorisation of the necessary experiments in the premises of manufacturing chemists as highly undesirable. They pointed out that even in the event of such firms being able to obtain the services of experimenters of such acknowledged skill and experience as to guarantee the accuracy of the work, the standardisation of antitoxic serum by experiment is still a matter of investigation and improvement. A competent worker on the subject must be conversant with others working at the same and kindred subjects in the various research laboratories at home and abroad. Moreover, it is difficult to foresee to what extent the grant of licences to manufacturing chemists would be carried, if any are issued, for it would be a matter of difficulty to determine which firms would be permitted to perform experiments and which should not, the more so because the possession of such a licence would be of value from a commercial point of view. Again, experiments made for the purposes of trade have not the same independent character as the purely scientific and humane experiments in pathology, physiology, or therapeutics which are carried on under the Act 39 and 40 Vict., cap. 77.

In reply to the third question, the Committee said that, while they thought that it is undesirable for a licence to be given to any firm of manufacturing chemists, they are strongly of opinion that it is essential for the public welfare that in the case of the antiserums the antitoxic strength of the remedies should be tested and certified by some responsible authority. This standardisation might be carried out either by the Government directly in a State laboratory, or by some public body or bodies with the sanction of the Government. In Germany the standardisation is carried out in a State laboratory, under the direction of a Minister; in France it is undertaken by the Pasteur Institutes; while in New York the State is responsible for the work. If a State laboratory is not established, there would be no difficulty in finding laboratories in London or elsewhere provided with the necessary appliances, worked by skilled officers, and carried on for purely scientific ends; and such laboratories might be used by authority of the Government for testing these remedies and for issuing certificates at such charges as would cover the expenses in-

curred. As a matter of fact, it may be mentioned that for some time past the laboratories of the Royal Colleges of Physicians and of Surgeons in London have undertaken, in the public interest and without pecuniary advantage, the standardisation of diphtheria antitoxin for any firm which has applied for it, and a considerable number of certificates have been issued. The Committee believe that the standardising of antiserums and similar remedies would carry greater weight both with the profession and with the public if it were carried on in one or more independent institutions than if it were left to the several manufacturers.

If the Government should think fit to authorise such laboratories, whether their own or working under their sanction, the Committee believe that it would be desirable to provide for inoculations under 39 and 40 Vict., cap. 77, a special certificate which might be known as an "inoculation" certificate.

THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

[From Our Special Correspondent.]

SECOND GENERAL MEETING.

The second general meeting of the Congress took place on Monday, August 6th, in the large amphitheatre of the Sorbonne, which was fairly well filled when Professor Lannelongue took the chair at 2.15 P.M.

The General Secretary, M. Chauffard, first read a long list of Honorary Presidents of the sections. Among the Englishmen so honoured were Lord Lister, Sir William MacCormac, Bart., K.C.V.O., Jonathan Hutchinson, Sir John Burdon Sanderson, Dr. Ferrier, Professor Sherrington, and Dr. Alexander Bruce. Other nationalities were represented by Professors Virchow, Waldeyer, von Bergmann, Hitzig, Koch, von Leyden, Politzer, Fraenkel, Metchnikoff, Baccelli, Retzius, Kitasato, etc.

Experimental Therapy.

Professor Pavlov, whose address was postponed at the first general meeting in the Salle des Fêtes on the opening day of the Congress, was absent through illness, so Professor Likhatcheff read his paper, entitled Experimental Therapy as a New and Extremely Fruitful Method of Physiological Research. In support of his subject the Russian professor minutely described his numerous experiments on section of the pneumogastric nerve and its consequence, more especially in dogs. The intimate association of medicine with physiology has served more than once a useful purpose. The physician who treats a case of myxœdema, for instance, with preparations of thyroid gland, acts exactly analogously to the physiologist who makes an injection of thyroid extract in an animal deprived of this organ, in order, by synthetical means, to make clear the mechanical, chemical and nervous functions of those glands. The Professor then spoke of his experiments with Professor Mosseu on dogs, in which all the blood of the portal vein was poured into the inferior vena cava. This operation, which is usually fatal, was not so in some of the animals, thanks to a special dietary. The Professor touched on the brilliant and important experimental therapy which forms part of contemporary bacteriology. In conclusion, he paid a tribute to Claude Bernard, who in his vast and profound brain united in a harmonious whole physiology, pathology, and experimental therapy.

Pathological Problems of the Day.

Professor Baccelli (Rome) should have been the next speaker, but, owing to the national mourning of Italy, he withdrew.

Professor Lannelongue in the name of the Congress expressed his profound sympathy to the Italian professor, and then called on

Sir John Burdon Sanderson, who spoke in French, on Some of the Pathological Problems of the Present Day, and as he warmed to his subject was received with many rounds of applause. The professor stated that forty-five years ago, after taking his degree of Doctor in Medicine, he came to Paris to complete his medical education; and now, nearly at the end of his medical and scientific career, he felt it a great honour to speak before the Congress. Sir John then called the attention of his audience to the above period. At that time in Paris, without speaking of the great clinicians, Claude Bernard was in the most active period of his career, Brown-Séquard had demonstrated the functions of the vasomotor nerves, and had begun his work on the physiology of the spinal cord. Everybody came to Paris to see the latest progress in experimental medicine. This was also the epoch of "cellular pathology." He then sketched the progress in cellular pathology from 1858, when Virchow published his work, through the work of Cohnheim, Recklinghausen, Leber, and Pfeffer, down to the beginning of the bacteriological period in 1878. But microbiology has not hindered the advance of pathological histology. On the contrary, never has the progress of histology been so rapid, in support of which statement he cited the work of Golgi of Pavia and of Ramon y Cajal in Madrid. Everyone recognises the great value of bacteriological diagnosis and of serum-therapeutics, but micro-biology has rather produced its greatest influence on the science of medicine by the new and more extended ideas it has given us of the physiological functions of the cell, and consequently of cellular pathology. Pathology is to-day fundamentally as emphatically "cellular pathology" as it was when Virchow adopted the expression. Leucocytes, which were formerly interesting chiefly as factors in the process of inflammation or as typical examples of contractile and amœboid protoplasm, are now known to possess special chemical functions indispensable to the life of the organism. From the work of recent years one is led to believe that the actions of the cell on its surroundings, and *vice versâ*, are due to ferments, the products of the evolution of the living cell. The professor alluded to the work of Miescher and Drechsel, and the more recent work of Kossel of Marburg on this subject.

Medicine and Doctors in the United States.

Professor Jacobi (Columbia University) then read a paper on Medicine and Doctors in the United States before a very scanty audience. In a very interesting manner the professor traced the growth of the medical profession, education, and press in the United States from its earliest beginnings in chaos down to the present day. This terminated the proceedings, when everybody went away to dine and prepare for the *fête* in the evening in the Luxembourg Palace described in the Journal of August 11th.

Massage and Movement in the Treatment of Fractures.

At the Hôtel Dieu, before a crowded amphitheatre, M. Lucas-Championnière gave a lecture and demonstration on the varieties of fractures in which the right treatment is massage and mobilisation, with suppression of fixed apparatus. In expounding the principles and theory of the new method, the surgeon laid emphasis on the fact that a methodical moderate movement is favourable to the setting of fractures, and to the formation of a firm callus. Surgeons of every age have condemned the fractured limb to immobility for the following reasons: It permits the primitive form of the limb to be restored; it ensures the reunion of the bones; it prevents or cures the inflammation of the region; and it is therefore the indispensable condition for the restoration of the functions of the limb. M. Lucas-Championnière has introduced the following new principles in the treatment of fractures: Movement is as necessary for the repair of all living parts as for their regular vitality, and this fact should be stated as soon as possible after the traumatism. The good influence of movement is incontestable for all soft parts, but it is not the less evident for solid structures also, in spite of their being solid bony levers. Not only do the muscles and soft parts more quickly and more completely regain their vigour with movement, but the bony callus also is formed more quickly, it is more solid and resistant, the reunion takes place more quickly and more firmly. The movement necessary for this bony reunion must be methodical, and, so to speak, "dosed" in a certain measure. An excessive range of movements has drawbacks. This "dose" of useful movement can be obtained by massage immediately after the traumatism. This is the best method of anæsthetising the limb, of removing the pain. Immobility only suppresses the pain for it to reappear each time that movement occurs, and by stiffening the limb to prepare the way for a new kind of pain. Whenever massage

is painful, it may be concluded that it has not been performed according to the rules laid down by the Professor. This new method does away with muscular contraction, which is the cause of a considerable extent of the deformity and against which fixed apparatus are often powerless. It follows, therefore, that massage avoids deformity which is especially noticeable in the clavicle, at the elbow, at the olecranon process. The disappearance of ecchymoses and inflammatory products takes place, and more rapidly in a massaged limb. The vitality of the skin is preserved, but more especially is the vitality of the limb restored. Muscular atrophies are reduced to a minimum, and have often disappeared from the time of the first attempts at normal function. The fractures which can always be treated by massage and movement are: Fractures of the humerus in its upper portion as far as the deltoid insertion; fractures of the lower end of the humerus up to a handsbreadth above the elbow; fractures of the elbow and especially fractures of the olecranon (M. Lucas-Championnière has never sutured an olecranon); fractures of the radius at the wrist in the great majority of cases, fractures of the clavicle; also fracture of the fibula, except in cases where deviation of the axis of the foot threatens. The same holds in peri-malleolar fractures without deviation. These cases are among the most satisfactory, and in which, on the other hand, rigidity is most to be feared. At the knee fractures of the femur without tilting of the fragment, and fractures of the head of the tibia (*plateau du tibia*) give marvellous results. In all the above cases this treatment is the regular and common practice, the apparatus being reduced to a minimum, and is replaced by the least support after the first few days. To give an idea of the generalisation of this treatment, the professor concluded by giving the statistics of cases treated during the last five years at the Beaujon Hospital and at the Hôtel Dieu.

Operation for Hernia.

On Tuesday morning, August 7th, M. Lucas-Championnière gave a demonstration on his method of treating hernia, and operated before the numerous members of the Congress who were present.

Visit of English Surgeons to a Surgical Clinic.

Several English surgeons having expressed a wish to see a French surgical clinic, a very successful visit was arranged through the energy of the Secretaries of the British Committee, Mr. D'Arcy Power and Dr. Garrod. Under the guidance of Dr. Mercier, from Montreal, who acted as interpreter, about twenty-five English surgeons, met on Tuesday morning, August 7th, at 9.30 A.M., at the gates of the Laënnec Hospital.

M. Faure, Surgeon to the hospital, welcomed the surgeons in the operating theatre of M. Reclus. The operations performed were the removal of a tumour from the abdominal wall, and an abdominal hysterectomy for cystic salpingitis. M. Faure used antiseptics only for the preparatory cleansing, the surgeon and his assistant washed their hands with soap and water, using a good brush, then successively solutions of potassium permanganate, sodium bisulphite, and alcohol at 90°. During the subsequent course of the operation corrosive sublimate (1 per 1,000) was used for cleansing the hands. M. Faure performed the abdominal hysterectomy by a modification of Doyen's method of dealing with the uterus. After the abdominal incision, the uterus was seized and a thermocautery passed through the fundus into the cavity of the uterus, the os internum was then closed by the cautery and the two internal openings of the Fallopian tubes. There being no further danger of infection of vaginal origin, the surgeon now cut the uterus longitudinally into two parts and removed each separately with its corresponding tube and ovary, cutting from below upwards through the broad ligaments, stopping with great precision at the site of the uterine and ovarian arteries, which were ligatured before proceeding with the knife. The operation was prolonged aseptically, boiled distilled water being used. No sponges were used, only boiled compresses of tarletan or cheese cloth with hemmed edges.

After the operation M. Faure showed the English surgeons through the wards and described the more interesting cases. The washable nature of the nurses' blouses was much remarked on. Thus a very instructive and enjoyable morning was passed in this old hospital, which is doomed to destruction in the new scheme of hospital construction for Paris.

INTERNATIONAL CONGRESS OF MEDICAL DEONTOLOGY.

[By Our Special Commissioner.]

(*Continued from page 381.*)

The Medical Chambers of Austria.

Dr. H. Adler (Vienna) presented a report on this subject. It had required, he said, the efforts of 15 years to get conceded the demand of Austrian doctors, that they should have, like barristers and merchants, an official representation in the form of medical chambers. This demand, which had its origin at some meetings of the profession in Vienna, soon extended to the provinces. It overcame the indifference of the medical world and the differences of opinion among *confrères*. It had also to convince the Government and Parliament of the utility of such institutions. In congresses representing the whole profession in Austria it was decided after much discussion to adhere to the fundamental principle formulated by the Innsprück Congress in 1886, to the effect that "medical chambers, as the authoritative legal representatives of doctors, are necessary to defend their interests, to elevate their social position, to protect their professional honour, to ensure means of subsistence to doctors and their families, to safeguard the sanitary interests of society, to make known sanitary needs, and to aid the authorities when they undertake to make new, or to improve old, sanitary laws." The following is an abridgement of the law establishing medical chambers in Austria (December 22nd, 1891):

There shall be established in the kingdom and countries represented in Parliament medical chambers. Everyone authorised to practise medicine, with the exception of army doctors on active service and medical men serving civil authorities, is placed under this law; he is bound to have his name entered on the books of the medical chamber where he lives, and if he changes his domicile he must give notice of such change within a fortnight. The medical chambers are to occupy themselves with all matters affecting the common interests of their profession and its honour and dignity, with hygiene and sanitary matters; they are besides, when a medical meeting is to be held in their district, to form committees and take charge of resolutions; to enter into communication with the doctors of the district, or with other medical chambers; to address requests to the local authorities, and by means of the local political body under which they are placed, to bring the proposals and wishes of such medical meetings under the notice of Government. The chambers are bound, when invited by the authorities, to give their opinion and advice on all subjects belonging to their sphere of action and to aid the authorities in regulating sanitary matters, the authorities on their part providing the chambers as occasion requires, with opportunities of expressing their opinions on all subjects within their competence.

The hopes raised in medical circles by the establishment of these Chambers have not, Dr. Adler says, been realised (1) because the law is defective in not giving the Chambers sufficient powers; (2) because the Chambers exercise hardly any influence on sanitary matters, the authorities having the right, but not the duty, to ask their advice—a right hardly ever exercised; and (3) because neither the army doctors, the police-surgeons, nor the district medical officers are subject to their regulations. The author holds that the Chambers have been too short a time in operation to enable an opinion to be formed as to their ultimate value and importance to the profession. He attributes the small results they have obtained to the imperfection of the law establishing them, and says it is certain the condition of the profession in Austria without them would have been still more deplorable than it actually is. Although their actual results might be small, they had pointed the way for reform in various directions, which would be attained if the profession were united and well organised in seconding their efforts, remembering La Fontaine's maxim that heaven helps those who help themselves.

The Illegal Practice of Medicine.

Dr. Descoust, Senior Demonstrator in Forensic Medicine in the Paris Medical Faculty, in his report said that for many years the profession in France had been complaining of the difficulty of gaining a livelihood, and preserving the independence of its members, and these complaints were unfortunately but too well founded. This state of affairs arose from many causes, among which he mentioned the overcrowding of the profession, the diminution of cases of disease owing to

sanitary progress, the abuse of gratuitous consultations by well-to-do people at dispensaries and hospitals, the ever-increasing number of sick clubs, the insufficient pay of doctors attached to the Assistance Publique, and the puffing of pharmaceutical specialities in the lay press. But the situation had above all become critical in consequence of the incredible audacity with which medicine is every day practised illegally under the very eyes of doctors, and even with the complicity of a few of them. In Paris alone he estimated that from 15,000 to 20,000 medical consultations are daily given by unqualified persons, including chemists, herbalists, bone-setters, masseurs, electricians, and others. By the law of November 30th, 1892, the profession was provided with a means of defence against such illegal practices, but it was necessary to prove that the accused "habitually" practised medicine, and it was on the interpretation of this word habitually that offenders mostly escaped before the tribunals. The provisions of this law were quoted, showing that anyone who habitually practised medicine without having the diploma of doctor of medicine or *officier de santé*, was liable to a fine of 100 to 500f., and for a second offence to a fine of 500 to 1,000f. with imprisonment for six days to six months, or to fine or imprisonment alone. Article 13 of the same law authorised the formation of associations of medical men for the defence of professional interests. Such associations had been formed, but up to the present they had not had so much success as might have been hoped for, in consequence, in the author's opinion, of want of union, petty jealousies, and general indifference on the part of the profession. He did not say they had rendered no service to the profession; he thought they had, but that it might be much more considerable, and would be if it were fully recognised that the practitioner's great enemy was quackery in all its forms. Their associations, which extended all over France, should prosecute these fellows without truce or mercy, taking care to have the facts of each case well verified, and not disheartened if they did not succeed in every case. It would be said that this would cost money, but even if it cost them each a subscription of 20, 30, 40, or 50 francs it would be money well spent, and would repay itself a hundredfold.

Several other papers were presented on the same subject by Dr. D'URSO (Naples), Dr. OTTOLENGHI (Vienna), Dr. DAGRON (Paris), Dr. BELUGON (St. Andiol, Bouches du Rhône), Dr. MANOLESCU (Bucharest).

MEDICAL SICKNESS AND ASSURANCE SOCIETIES.

Dr. LANDE (Bordeaux) reported on these Societies in various countries. He pointed out that the young medical man, when he obtains his diploma, represents even on the threshold of his career a considerable capital. The capital consists of (1) the cost of living while a student, (2) the special expenses necessitated by long and onerous studies, (3) the intrinsic value resulting from his intellectual and scientific capacities, or, in other words, of his proper brain work. By the exercise of his profession, the young doctor ought normally and equitably to receive interest on the capital he represents, and in the course of his professional life to get back the capital as well; if not, there is a loss to Society and a loss to the young doctor himself. After spending a considerable sum in establishing himself, and after working for twenty years, of which some will be especially difficult and laborious years, it but rarely happens that even then he is able to gain a sum which constitutes the interest on this double advance, and very often he succumbs before he has been able to repay any part of the capital engaged from the first day of his professional life. If he has no relations, the loss when he disappears is solely to Society; but if he has parents who have made many sacrifices for his education and start in life, and who had a right to count upon some return in their old age, or if, as is usual, he has married, matters wear a different aspect. The married doctor, soon probably becoming a paterfamilias, sees his expenses materially increased. While he has health and strength he can face his new responsibilities with equanimity; but if he dies, the family capital is destroyed by the death of its head. The author speaks, of course, not of the more fortunate members of the profession, who have inherited a sufficient patrimony, nor of those who have made rich marriages, but of the ordinary run of medical practitioners. In any other calling, when a man embarks on life with an equal capital, he takes precautions to guarantee his capital against the risks which may, in spite of every precaution and of his daily endeavours, diminish or destroy it. The manufacturer insures his buildings, his machinery, his stores, and the employees towards whom he incurs certain responsibilities, the merchant his merchandise, the shipowner his ships, the proprietor his houses, his cattle, or his crops. How is it that the doctor alone, who represents in his proper person a considerable capital, thinks little or nothing of insuring this capital against the chances of life? His sole guarantees being his health and life, if his health gives way the capital is diminished, while if death take place the capital disappears altogether. In spite of the custom of selling a practice for what it will bring, death destroys the value of the capital which the doctor represents. The author had not ascertained the facts as to the legality or rate of such sales in other countries, but in France they represent, under the most favourable circumstances, hardly six months' income of the deceased doctor. The prejudice which exists among doctors against insurance against sickness may partly arise, the author thinks, from the abuse of such societies among the working classes, of which the profession has so much cause to complain; but this, he thinks, comes from a wrong interpretation of the facts. Without dwelling too much on the causes which have hindered the development of medical association against sickness, old age, and death, he asks if it would not be possible to organise a simple yet complete plan by which medical men of all countries could assure themselves against all these professional risks. He had collected all the information he could from Turkey, Greece, the United States of America, Italy, Spain, Argentine Republic, Switzerland, Belgium, Denmark, Austria, Hungary, Germany, England (under which heading he gives particulars of the Medical Sickness and Life Assurance Society, founded by the late Mr. Ernest Hart). A very full account is given of the French Societies, which is well worth study by all interested in the question. The establishment of these societies dates from 1845. A few years later, on the initiative of some doctors in the Gironde, an Association of French Doctors was formed by the federation of 94 local societies, some of which were for a department, some only for a single arrondissement. The object was to afford help to medical men whom age, infirmity, or misfortune placed in need of it, as well as to their widows and orphans. Each local society manages and administers its funds for the benefit of its members, and makes, besides a fixed contribution to the funds of the central body, and the rich ones add to this a voluntary gift more or less considerable in order to aid the central fund for life pensions. These pensions, of which the amount was at first fixed at 300 frs. (£12), have been raised successively to 600 and 800 frs., and the desire of the Medical Council is to raise the figure shortly to 1,200 frs. (£48). Unfortunately the low subscriptions of 12 frs. paid by 8,500 members does not yet permit of the full development wished for. Unfortunately, too, some of the richer local societies have of late years felt themselves sufficiently strong to separate from the general association and proclaim their autonomy. A survey of the various societies in different countries shows that, for the most part, their idea is a charitable one, and however noble this may be or however great the result it is not in the author's view enough; he believes a fresh start should be made with a view to combining as well providence with mutual assurance. A professional association which completely fulfilled its objects should provide, he contends, for the following—Charity, insurance against sickness, insurance against permanent disabling, pensions and life insurance. With regard to the latter the plan of the English society is recommended of obtaining a reduction from an established life office, and as to pensions the age of 65 is named as adopted by the same society.

MEDICAL DEFENCE.

Dr. SALOMON (Savigné l'Evêque) was the author of the report on this subject. Looking back with regret to the time when there was no such thing as medical defence, and no need for it; when, spite of Molière's pleasantries, at which he himself laughed, the doctor went on his way through the world with a mysterious dignity which gained him the respect of all; when his decisions were accepted without question, and even kings bowed to his will; when he gained by the

exercise of his profession both honour and profit, and only academical quarrels disturbed the serenity of his existence, the author pointed out that in the present day the doctor has suddenly awakened to the fact that in the changed condition of things instead of being one of the masters of mankind he is now the slave of all. Under pretence of charity, attacks had been made on his position by clubs, insurance companies, and even parliament itself, so that his position has become more difficult from day to day. In order to contend against the evils which oppress him, and which the author sets forth at great length in his paper, the following steps were necessary:—(1) In order to preserve and defend their rights, all members of the profession should unite and consolidate themselves. (2) This union and consolidation would be brought about by forming societies which should be at the same time disciplinary chambers and societies for medical defence. (3) The work of medical defence could only be done by syndicates of medical men. (4) There should be one syndicate for each department, and these should all have the same regulations. (5) These syndicates should all be consolidated into one union of syndicates. (6) This union would form a federation for all France, to which should be given legal authority to appear in courts of law for any affiliated syndicate. It was further suggested that overcrowding of the profession should be prevented by requiring a classical degree to be taken before entering as a student in the medical schools; by throwing obstacles in the shape of requiring naturalisation and military service from foreigners wishing to study medicine in France, and by restricting even more than at present French military doctors from engaging in civil practice; that hospitals should be exclusively reserved for the poor, and that in those having paying wards the doctors should have the right to charge for their services; also that a Parliamentary group should be formed of those medical men having seats in the Senate and Chamber for the defence of professional interests.

Among other papers presented was one by Dr. Major Greenwood (London) on the International Recognition of Medical Degrees, in which it was advocated that all titles and distinctions conferred by regular Universities should be cosmopolitan in character, and that all civilised nations should put them on a par; also a paper by Mr. Nelson Hardy (London) on the Relations of Police Surgeons to the State and to Municipalities, of which we hope to publish an abstract.

PUBLIC HEALTH CONGRESS.

The Public Health Congress at Aberdeen brought its sittings to a close on August 7th. In looking generally at the work of the Congress, among the many very interesting and important subjects which came under discussion, two matters of national moment to stand out prominently.

An Imperial Board of Health.

At the close of his extremely able paper on the Purification of Sewage, Professor Frankland drew attention to the great gain likely to accrue from the creation of an Imperial Board of Health. Taking the subject of the address as an example, while all the great developments in the disposal and purification of sewage, precipitation, intermittent filtration, bacterial treatment (including septic solution), are essentially due to British work, it is only by private enterprise, often at private expense and with practically no encouragement, that investigations in sanitary science have been carried out; and while to the British this progress is largely due, there is no organisation throughout the Empire, whose duty it is to carry out experimental inquiry in sanitary subjects on the scale or with the thoroughness of the Manchester Board of Health. The importance of a Central Imperial Board of Health to lead and initiate and combine research as well as to guide administration in the light of the living knowledge of the time was eloquently urged.

Dr. Farquharson, M.P., in moving a vote of thanks, warmly supported the formation of such a Board, claiming the subject as "a bantling of his own."

The Prevention of Malaria.

The second matter which might be alluded to as of national importance was the feasibility suggested by Dr. Manson of seriously combating malaria. In the course of his striking address, though making no reference to the Campagna experiment, he showed that while the physician must continue to fight the disease with bark and its alkaloids the sanitarian must apply the new knowledge to the prevention of the disease. The public must be instructed as to the real nature of the disease, and while the complete extermination of the *Anopheles* mosquito cannot be looked upon as practicable, yet in localities, by filling in swamps, by clearing the eaves from hibernating insects, by the protection of dwelling-houses with wire gauze, by the proper use of mosquito curtains, and particularly by the isolation and protection from mosquitos of patients suffering from malaria in a district infected with *Anopheles*, something or even much might be done. As Dr. Manson said, if malaria can be held in check, those interested in colonial enterprise would be delivered from one of the worst enemies of the human race.

Festivities.

The Congress was distinctly a success. There was the usual round of lunches, garden parties, and the like, and it may be believed that the hospitality of the City and of private individuals combined to give the visitors a no unpleasing memory of their visit to Aberdeen. Very warm sentiments were expressed in thanking Professor Matthew Hay and Mr. Kenneth Cameron, the Honorary Secretaries, for their indefatigable exertions in organising and in securing the success of this Congress.

THE "BRITISH PHARMACOPŒIA."[1]

The last edition of the *British Pharmacopœia* is scarcely two years old, and already preparations are being made for its successor. There is no reason to suppose, however, that this will be called for before a reasonable number of years has elapsed, but a prudent forethought provides that preparation for it shall not be left to the last moment. With this object in view the Pharmacopœia Committee of the General Medical Council requests their editor, Dr. John Attfield, to furnish a yearly report on the various published criticisms, suggestions, and researches which have a direct bearing on the contents of our national *Pharmacopœia*. This year the work has been done with unusual minuteness and thoroughness, and has involved the reading and condensing of a very large number of separate articles and papers.

On the whole it is conclusively shown by the tone of the criticisms and suggestions that our present *Pharmacopœia* has been carefully arranged and compiled and is well abreast of the times. That it is perfect or incapable of being improved upon has never been maintained, but a perusal of the editor's present report leads to the conclusion that many of the proposed changes are not necessarily improvements, and that some of them at least have not been carefully thought out by their authors. A few of the suggested changes are not practicable in the present state of our knowledge. All these points have been duly noted and commented on by Dr. Attfield. It is worthy of note that the suggested alterations have come almost entirely from pharmacists, and are often of a highly technical pharmaceutical character or deal with minute practical points only. The nomenclature and the chemistry and botany of the volume have also been subjected to a good deal of criticism, but mostly of a trifling kind and sometimes involving a mere matter of opinion. Many suggestions are made for further research on certain subjects.

[1] Report for 1898 on the Progress of Pharmacy in its relation to the Future Revision of the *British Pharmacopœia* of 1898. A digest of Researches and Criticisms, prepared for the General Council of Medical Education by John Attfield, F.R.S.

Antirabic Vaccination at the Pasteur Institute.—During 1899 the number of persons who underwent the antirabic treatment at the Pasteur Institute, Paris, was 1,614. Of these 10 died of hydrophobia, in 4 of whom death occurred within a fortnight of the termination of the treatment. These figures do not include two persons who were attacked by hydrophobia whilst actually under treatment. The mortality for the year is given as 0.25 per cent.

NOVA ET VETERA.

JOHN ARCHER, M.B.,

THE FIRST AMERICAN GRADUATE IN MEDICINE.

JOHN ARCHER was born near the present village of Churchville, Harford County, May 5th, 1741, and was the first person to receive a medical degree from a university in the United States of America.

From a biography published a short time ago in the *Bulletin of the Johns Hopkins Hospital*, we learn that he was the son of Thomas Archer, a farmer and agent for several ironworks. After a preliminary education, John Archer graduated B.A. at Princeton in 1760 and M.A. in 1763, and began to study theology under Presbyterian auspices. He preached his trial sermon but failed at his examination before the Presbytery of New Castle, seemingly because he did not give entire satisfaction on some doctrinal points. In the spring of 1765 he became a pupil of Dr. Morgan, who in the following November began the initiatory course of medical lectures in Philadelphia College, which formed the foundation of the medical department in that institution, afterwards the University of Pennsylvania. Archer began to practise, though without a degree, in New Castle County, Delaware, in the summer of 1767, and in two years he had attended 212 families, receiving for his services about 1,000 dollars; nearly three-quarters of it in money, the remainder in rent, produce, or labour. About one-third of his patients paid nothing. The degree of Bachelor of Medicine was conferred upon him and nine other students on June 21st, 1768. This being the first occasion in America of the conferring of a medical degree, the Faculty of the College, most of whom had been educated in England, wished to show their respect for the mother country by granting the first diploma to the only Englishman amongst the candidates—Jonathan Potts. But with the recently attempted humiliations of the odious Stamp Act fresh upon their memory, the glorious nine regarded this loyal concession as a downright insult. After a vain protest, they threatened to demand certificates of their successful examination, armed with which they would secure the coveted parchment from the neighbouring college at Princeton. That settled the question. The thought of losing all except one of their graduating class, and he a foreigner, was more than the intensest loyalty could have endured. The rebels were told to settle the matter among themselves. This they did by compromising upon the alphabetical order, though they allowed Potts to take some sort of precedence. The order of graduation was John Archer, Benjamin Cowell, Samuel Duffield, Jonathan Potts, Jonathan Elmer, Humphry Fullerton, David Jackson, John Lawrence, James Tilton, and Nicholas Way.

Declining an offer of partnership kindly extended to him by his preceptor, Professor Morgan, Dr. Archer returned to his native county in July, 1769, where he practised his profession for forty years. He took part with characteristic energy in the great revolutionary struggle, and was chosen in November, 1774, a member of the first revolutionary committee and of the several successive committees until August, 1776. Meanwhile in December, 1774, he enrolled the first militia company of the county, was commissioned its captain, and drilled it until in January, 1776, he was commissioned Major of one of the local battalions. In the same year he was chosen an Elector of the State Senate. In 1797 he was nominated to the further honour of Presidential Elector, and in 1800 he was elected a member of Congress.

After the Revolution he devoted himself exclusively to his professional duties, and he died September 28th, 1810, leaving a wife and five sons. His will directs that as there are many persons indebted to him as a physician, many of whom cannot pay without distressing them, "my sons, who are my executors, are directed to make the following entry in cases such as they think are unable to pay, 'Forgiven by order of the testator.'" His male slaves are to be free at 30 years of age, and the females at 25.

Numerous anecdotes have been handed down which illustrate the more salient points of his character. A neighbour who was widely known to be more ambitious of fine display than of satisfying the just demands of his creditors, once undertook to rally the doctor on the mean appearance of his badly groomed and awkwardly gaited Rosinante. "Every hair of this horse is paid for," was the gruff though well-merited reproof. At a mixed political meeting he got into dispute with the sheriff of the county on some exciting party issue. The sheriff, finding himself worsted in argument, came down upon his adversary with brute force, whereupon the assaulted party hurled the pugnacious dignitary to the ground, and was pounding him according to his idea of justice, until Mr. Sheriff soon began to cry "Enough!" "Do you pretend to know the dose better than the doctor, you rascal?" was the uncompromising reply; and it was not until after an additional cuff or two that the restraints put upon the shrievalty were removed.

Dr. Archer was not only successful in many of the important operations of surgery, but as an accoucheur he was so renowned for judgment and dexterity that students from far and near were placed under his tutelage. For more than a quarter of a century he had seldom less than half a dozen, and sometimes as many as thirteen, young men under his instruction at one and the same time, whom he housed in a large stone building known as the "Medical Hall."

It is interesting to note that in the early days of the University the degree of M.B. was conferred in accordance with the traditions of the English and Scotch curriculum, though for many years the medical graduate in the United States has proceeded straight to the M.D., as is always done in the French and German universities. It is said that when Dr. Archer was nearly worn out with his professional duties he would from time to time steal off to some hospitable home where he was sure of a welcome, and remain until rested, not even telling his wife of his hiding place. This proceeding so irritated her that on one occasion when a stranger appeared at the "Medical Hall" and inquired if Dr. Archer lived there, she replied sarcastically, "A man of that name gets his washing done here." His recreation during these periods of rest consisted in devouring novels, which he did eagerly, but in a peculiar manner, for he always began at the end and read them backwards.

LITERARY NOTES.

DR. WEIR MITCHELL'S new novel, *The Autobiography of a Quack*, to which attention was called in the BRITISH MEDICAL JOURNAL some time ago, when it was appearing in *The Century* as a serial, will be published as a volume by Mr. Fisher Unwin, in the autumn season. The story deals with the frauds, adventures, and general experiences of the quack, and the book is an interesting study of the psychology of that particular species of wrongdoer.

Dr. Corfield's Harveian Lectures on Disease and Defective House Sanitation have been translated into Hungarian by Dr. Frank. The translation was made for the Royal Society of Public Health of Hungary. Dr. Frank says, in his preface:

> The following two lectures by Professor Corfield merit the attention of Hungarian readers because they explain the views of the English hygienist, and because the sanitary arrangements of dwellings in our country are much more unsatisfactory than those in England. Professor Corfield may accept this translation as a token of esteem and gratitude for the hospitality and kind advice which he has given to those of the Hungarian hygienists who have called upon him in London.

The North American Review for July contains a translation of the article by Professor Lombroso entitled The Ultimate Triumph of the Boers, on which we commented some weeks ago. We do not propose to say more about it here, but the following passage may be interesting to ethnologists:

> The celebrated Dutch author, Kuiper, calculates that, besides 73 per cent. of Dutch blood, there is 12 per cent. of French, 12 per cent. of English 3 per cent. of Scotch, and hardly any negro blood in the veins of the Boers. This mixture of four of the best nations of Europe, in a climate not enervating, with energetic habits, promises the formation in this people, from old and new results, of a race loving liberty and culture which will probably be superior to all the races of Europe because, as I have demonstrated elsewhere, the mixture of the best peoples under conditions of liberty, in a nascent State, is the best producer of civilisation. Of this we even already see the earnest in their form of government in their constitutions which, if not written in judicial style or with rhetorical art, are the best adapted to make their people happy: in that gentleness which they use towards defeated enemies, from whom there is so often no like return; in the rapidity of the strategic conceptions of their commanders and in the great mobility of their soldiers.

On the last part of this passage we need only say that the rapidity of the strategic conceptions of the Boer commanders has for a considerable time past been displayed mainly in finding new lines of retreat, while the great mobility of their soldiers has been shown in escaping from their pursuers.

Dr. W. Fingland, of Liverpool, has sent us the following interesting record of an amputation performed before the days of anæsthesia. It may be compared with Dr. Wilson's narrative of a similar experience in his own person, which was published in the *Practitioner* for October, 1896:

Several cases of amputation of limbs without an anæsthetic have recently been published in the pages of the BRITISH MEDICAL JOURNAL. The following authentic account of a similar procedure, but in pre-anæsthetic times, will be read with considerable interest in connection therewith. It is extracted from *Oxoniana*, compiled by the Rev. J. Walker, Vicar of Hornchurch, vol. iii, p. 149, published in 1831. About the year 1701, Mr. E. Thwaites, Fellow of Queen's College, and Regius Professor of Greek in the University of Oxford, was visited with a growth in one of his knees, attended with great pain. Mr. Brome, in a letter to his friend Mr. Rawlins, goes on to state "that after all advices and means used at Oxford proved ineffectual; and an amputation above the knee was the last reserve. He went to London to Charles Bernard, Queen Anne's Sergeant Surgeon, to perform it. Mr. Bernard thought the operation so hazardous and desperate that he would have declined it. Says Mr. Thwaites: "I came to London on purpose to have my leg cut off, and off it shall go; and if you will not do it, lend me your tools, and I will do it myself." Says Mr. Bernard, "I believe I can do it better than you," so set to work. He would not suffer himself to be tied down, and during the whole operation not one distortion nor exclamation. Mr. Bernard leaves him and goes abroad about his business, but not out of call. The arteries burst the cauteries, and set a-bleeding. Mr. Thwaites takes his handkerchief, and with a bedstaff twists it as hard as he could upon the end of the stump, rammed his fingers into the mouths of the arteries like the spickets; then knocks for Mr. Bernard, who was called back and sewed up the veins and arteries.

The patient entirely recovered from the operation.

Mr. Clemens Herschel, an American hydraulic engineer, has published a translation of the two books of Sextus Julius Frontinus on the water supply of the city of Rome, A.D. 97. This is, we understand, the first English translation of his work ever published. The volume contains an introduction, a photographic reproduction of the sole original manuscript, a Latin reprint and its translation into English (on alternate pages), 12 explanatory chapters, with 2 maps, a historical diagram, 88 half-tone and other illustrations, and two indexes, the whole fully annotated. Chapter 11 treats of the law of waters in Rome, and the appendix to Chapter 11 shows how the influence of the Roman law is felt in our day. The book, which is published by Dana Eastes and Co., Boston, Massachusetts, has received the commendation of leading classic, as well as engineering, authorities.

The special "Stone" number of the *Indian Medical Gazette* (August) contains: 1. Original articles on operations for stone by the following medical officers: Drs. D. F. Keegan, R. J. Baker, J. A. Cunningham, D. M. Davidson, H. Smith, W. H. Henderson, P. Durrell Pank, C. E. Sunder, E. F. Neve, G. T. Birdwood. 2. An historical sketch of stone operations in India for the past fifty years, with a summary of all important articles by surgeons in India on stone operations. 3. Replies to circular; details of operations in various hospitals; notes on hospital equipment. The subject chosen is one on which Indian surgeons can hold their own, and the present number will go far to establish the superiority of litholapaxy as the operation of election for all uncomplicated cases in adults and boys. The statistics collected are on a large scale and show the value of the rival operations at each 5-year period of life. We congratulate the editor, Major W. J. Buchanan, I.M.S., on an excellent piece of journalism and a most useful and permanently valuable addition to surgical literature.

In the *Open Court* for August it is stated that the principle of "like cures like" is found in Greek legend. Homœopathy, says the writer, is of very ancient origin, and was based originally on religious considerations. The idea is that of "an eye for an eye and a tooth for a tooth"; blood guilt could be propitiated, or cured, only by the shedding of blood, and reparation had to be made in kind. The extension of this principle to the art of healing appears first in classical antiquity in the Greek epic, where we are informed that a warrior by the name of Telephus, one of the allies that came to Troy, was wounded by the spear of Achilles. The wound did not close, and the oracle was consulted. The reply was that the spear which had caused the wound alone could cure it; whereupon the patient, after considerable effort, procured some shavings from the spearhead of Achilles, and applying them to the wound, healed it. The idea has been frequently represented in Greek art, and an Etruscan mirror depicting the event is reproduced in our American contemporary. The background of the scene is ornamented with a solar disc, which is frequently used as an emblem of the restoration of health. This idea is also found in the Bible, where in Malachi iv, 2, we read, "The Sun of righteousness shall rise with healing in his wings."

At a recent meeting of the Valencian Medical Society entitled "Lo Rat-Penat," Dr. Peset presented a communication on Ancient Spanish Pharmacy. After a brief sketch on the early history of pharmacy, he dwelt particularly on its development from the 13th to the 15th century. In 1272 Don Jaime el Conquistador and the Legislative Chambers of Monzon and Cervera passed measures intended to raise the pharmaceutical profession from the state of anarchy in which it had been till then. A system of strict examinations by physicians appointed by the King was established. In this reform Valencia preceded Castille by two centuries. In 1283 the regular inspection of apothecaries' shops was ordered, and frauds in dispensing were made punishable by severe penalties, including the loss of a hand. In 1426 Don Alfonso the Third appointed Matias Martin, who had been apothecary to his predecessor on the throne, inspector of medicines in Valencia. His duty was to settle any disputes which arose about prices. This continued until 1448, when a regular tariff was introduced. The pharmacy of the 15th century was made up of botany of Theophrastus, Messue, and Dioscorides, while the therapeutics of the time were based on Arnold of Villanova, Avicenna, Gentil, Pulgino, and others. The *Pharmacopœia Valentina* drawn up in 1601 contains formulæ by physicians which show that pharmacy was then in Valencia a serious profession, free from the superstition which held sway elsewhere. Dr. Peset mentions that at a later day Castells introduced the use of jalap into Spain. With a decoction of saxifrage in wine the physicians of Ferdinand the Catholic endeavoured to break up the urinary calculi which afflicted that monarch.

The editor of the *Philadelphia Medical Journal* calls attention to what he calls a new style of credit and robbery in journalism, which consists of republishing in a second journal an article that has been first published in a journal chosen by the author. The "stolen" article appears as an original contribution. "I trust," says Dr. Gould, "the custom may not extensively prevail in America." He says that as far as he has observed, it is at present confined to two English and an Indian medical journal. Following the example of the House of Commons, we cry "Name, Name!" Our own withers being unwrung we feel quite safe in asking the question. We venture to point out, however, that Dr. Gould's observation has not apparently been very extensive or he would have noted that the practice he deprecates is by no means uncommon in America. Without any special search we not seldom come across papers that have appeared here "conveyed" to Transatlantic journals without any indication of their source.

CHINESE IMPERIAL MARITIME CUSTOMS.

Medical Reports.

The Medical Reports for the year ending September 30th, 1899 (58th issue) are, like their predecessors, full of interesting and instructive material.

A Plague Centre.

The first is a report on bubonic plague in Mongolia by Dr. Matignon, communicated to the Academy of Paris. With the assistance of two maps Dr. Matignon conveys to his readers a clear idea of the position of Toung-kia-yug-tze where plague has prevailed since 1888. The village is in a valley situated in a mountainous district some 5000 feet high; 20 years ago it was not inhabited, but now it contains about 360 inhabitants, entirely Chinese. The region, except from June to September, is cold. The hygienic condition of the population is as bad as it could well be. The people live in mud huts with thatched roofs, entered by a sort of vestibule, the rooms open into this by a low door, each room is occupied by a family, and is generally about 12 feet square and 9 feet or 10 feet high. It contains numerous boxes and a large bed which occupies more than half the room and under which is placed an arrangement to keep the room warm. The bed may serve for the accommodation of 5 or 6 persons, parents, children, and domestics being huddled together. In the winter all windows and openings are hermetically sealed until the advance of spring. Those who are sick occupy the same

bed as those that are well, and the conditions are excellent for the development of typhus fever, small-pox, and granular ophthalmia which are the most common affections. Added to these insanitary conditions of the environment is an extreme filthiness of person and clothes. None wash more than once a year, and the clothes are only changed when from wear and filth they drop off. The water is excellent. There is no impurity from privies because there are none; the Chinese satisfy their needs in the open air. The clothes of those who die of infectious diseases are neither washed nor disinfected, but are worn by some member of the family. Their modes of burial are extremely primitive and consist in covering the coffin slightly over with earth, which the first shower of rain displaces. In times of epidemics the bodies are thrown into a gorge where they may or may not be devoured by wolves.

It is under these conditions plague prevails, the astonishing circumstance is that it does not sweep away the whole of the inhabitants. Perhaps it would if the inhabitants when the disease becomes severe did not get alarmed and flee from the place. But this after all seldom occurs. The outbreaks vary in intensity, sometimes they are widespread, at other times only a few persons are attacked. From Dr. Matignon's description of the clinical features they seem to partake of the pneumonia type. Yersin's serum proved of no avail in these cases and the disease was often fatal to the extent of nearly or actually 100 per cent. Dr. Matignon believes that it was introduced from the endemic centres in the south by workmen, and he thinks that the new centre is a considerable menace to Russia, which has a large trade in tea and skins with Kalgan, which is quite near.

Plague in Newchwang.

Dr. De Burgh Daly's report on the health of Newchwang deals with plague in this town where it broke out in July, 1899. A great mortality occurred in some families at a small village near Newchwang, and the friends were so struck by it that they employed a geomancer who ordered the grave of the first victim to be opened as he could not have been properly buried. It is stated that when the body was opened it was covered by a thick fur and the corpse was shedding tears of blood. By order of the geomancer kerosene oil was poured on the corpse, which was then cremated. After the cremation all was peaceful and no more cases occurred in the village. Dr. De Burgh Daly noticed that during one period of the outbreak in Newchwang rats, chickens, ducks, geese, pigs, dogs, deer, and cattle were dying in unusually large numbers. No foreigners were attacked in the settlement.

Tientsin.

Dr. Rennie Robertson's report on the health of Tientsin records that the health of the foreign community was satisfactory. Tientsin had also so far escaped the plague. A number of useful sanitary regulations have been framed to prevent importation by ships.

Chefoo.

Dr. John Francis Molyneux's report on the health of Chefoo deals chiefly with the prevalence of intestinal hæmorrhage, a grave disease in this settlement. It appears to be an outbreak of "colitis," similar to that which occurred in the Derby County Asylum and which attacked 54 persons in the month of May and caused 23 deaths.

Ningpo.

Dr. Hickin's report on the health of Ningpo shows that the health of the port was good. With reference to the treatment of dysentery he finds that the Chinese tolerate ipecacuanha much better than Europeans.

Swatow.

Dr. Henry Laing gives a good account of Swatow; 1899 seems to have been one of the hottest seasons for many years, but it was healthy and no epidemic of any kind was met with.

Plague in Southern China.

Dr. Roderick J. J. Macdonald writes an excellent report on the health of Wuchow. It appears that since the floods two years ago the 50,000 helpless inhabitants of Wuchow have allowed their city to become like the Augean stables. Wuchow only seems to be cleansed by floods, and these are uncertain. Most of the report is devoted to the epidemic of plague which began early in March. In dealing with the development of the plague in Southern China, Dr. Macdonald thinks that the Franco-Chinese hostilities of 1883 and the Kwangsi rebellion of 1898 have possibly been factors in increasing the virulence of plague, and that flight due to panic, examinations, pilgrimages, as well as travelling for trade, help to spread it in the back country. The following incident illustrates the risk incurred by foreigners who live among the Chinese. The British Consulate was at the Chur Tai Kok temple. Its inmates were annoyed by the effluvium from a considerable number of dead rats. The Consul inspected his larder and found that the rats had eaten the heart of a cabbage, some tomatoes and potatoes, and, most dangerous of all, because served uncooked, part of a cheese. The priests' granary also proved very attractive to rats. The Consul and his staff left immediately. In a few days two or three of the priests were attacked. A good description is given of a plague-stricken dwelling. The same conditions are to be found nearly everywhere in the East. Of preventive measures there are none; money is, however, spent on idol processions, subscriptions are given to the priests, and charms are worn. Dr. Macdonald ends his report with the following conclusions: 1. No precautions are taken at Wuchow to arrest the disease. 2. Hong Kong's inherent danger is the possession of an epidemic constitution open to infection through its Chinese suburbs of Wuchow and Pakhoi, which maintain direct communication with the endemic area. 3. Would the magnitude of the interests involved and the intricacies of the situation justify the appointment of a Plague Commissioner for the Far East?

Dr. Sharpe Deane reports on the health of Pakhoi, and, like the other medical officers, his report is mostly taken up with the prevalence of plague, which began in February, but which did not assume serious proportions until April. Sums of money were spent on processions and religious ceremonies to drive away the plague, but they were of no avail. In April merchants fled from their hongs, and many houses were deserted. The coffin makers were unable to supply the demand, and coffins were imported from the town of Kaotuk. There were about 800 deaths, but the exact number is not known. Preventive measures never enter into the minds of the people. Most epidemics of plague in Pakhoi occur after a long continuous drought, and heavy rains speedily put a stop to the disease.

Dr. Reygondand and Dr. Laurent Gaide conclude this series of reports by accounts of the sanitary conditions of Mongtze and Ssemao.

ASSOCIATION INTELLIGENCE.

NOTICE OF QUARTERLY MEETING OF COUNCIL FOR 1900.

A MEETING of the Council will be held on October 10th, 1900. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before the meeting—namely, September 27th, 1900.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

SPECIAL CORRESPONDENCE.

INDIA.

Venereal Disease in the British Army in India.—Plague in Calcutta.—The Famine and the Monsoon.

In view of the recent decrease of venereal disease in the British army, the remarks on the subject in the recently-issued report of Surgeon-General Harvey are of interest. Part of the decrease is said to be due to the more widespread treatment of these cases as out-patients, and is consequently unreal, and partly real and due to the introduction of "continuous and more prolonged treatment of the sick," both by mercurial injections and the taking of the drug by the mouth as out-patients, as has several times been urged in the British Medical Journal. Other contributory causes are the measures adopted under the Cantonment Act, the placing of certain bazaars and cities out of bounds on account of plague, and the employment of some regiments on field service. That there is still room for vast improvement is shown by the facts that the equivalent of over two regiments were constantly sick, in spite of the out-patient system having reduced the number; that the admission-rate is still 362 per 1,000, whilst in 39 stations that for secondary syphilis alone was over 100 per 1,000, and in 47 more over 75 per 1,000; while venereal diseases still remain the most important cause of invaliding. With regard to the Cantonment Acts twelve officers report benefit from them, while six others are not satisfied with them. In several instances it is reported that the placing of bazaars out of bounds has failed owing to the women flocking into the cantonments to meet the men. In such cases as Bareilly, where the cantonment boundaries are very extensive, this may be hard to combat, but this state of affairs appears to call for a more efficient organisation of the cantonment police. The present Act is but a compromise, and as such only a very limited amount of good can be expected from it. Moral influences—such as lectures—have also been brought to bear, but do not appear to have effected much good, if the remark of the medical officer of Cawnpore, to the effect that good character men and members of the Temperance Association constituted the majority of the men affected, has at all a general application. The question of "non-venereal buboes" is referred to, but the general opinion appears to be that they are usually cases of enlarged glands from slight strains occurring in persons who have suffered from venereal disease. An interesting table is given in the appendix showing the relationship between the increase of the proportion of youthful soldiers arriving yearly in India and the greater prevalence of both venereal disease and enteric fever.

The report of the Calcutta Municipality, which has just appeared, gives the last year's monthly figures from plague. The disease, which had been epidemic in the early months of 1899, declined during April very rapidly, and, except for a slight increase in August, it remained low to the end of the year. In January, 1900, it began to rise once more, and rapidly reached a much greater height than in the previous year, no fewer than 3,326 deaths being recorded in March alone, but, as already noted, it as rapidly declined again in May, yet remains still a good deal higher than it did during the decline of last year, so that there is reason to fear a still more virulent outbreak at the end of the next cold weather. With regard to the plague measures, the special hospitals and all efforts at segregation were given up, and reliance entirely placed on disinfection of the rooms in which the cases had lived, while in a few cases, especially recently, efforts have been made to disinfect more than one room of infected houses. The Chairman of the Corporation considers that this change of policy has been successful, as it has greatly lessened the tendency of the people to hide their cases, and has allowed of a larger number of houses being disinfected. He is also of opinion that the disinfection, as carried out, has been of service in preventing recurrences, but in view of the marked tendency of the disease not to spread rapidly through a household in Calcutta, many are in doubt as to the value of results said to be obtained by disinfecting the one room, pointed out as that in which the patient died, which may or may not be correct. The measures may possibly have done something to lessen the spread of the disease, but they do not appear to have had the remotest effect in preventing the annual progressive recrudescences of the epidemic form, or a steady rise in the number of cases during the quiescent period year by year. If the expected greater epidemic occurs next cold weather, the Corporation will not have much to congratulate itself on. The disease remains quiescent in other parts of the country, and presents no features of special interest at present.

Much more serious is the lateness of the monsoon, as the most affected tracts are still without rain, and the terrible sufferings of the people are being prolonged several weeks longer than there was reason to hope would be the case. Another failure of the rains is too fearful a catastrophe to be calmly contemplated, so we must still pin our faith in the forecast of the meteorological reporter that the monsoon, although very late, will still be a favourable one.

SYDNEY.

The Bubonic Plague.—Health Statistics.—Queen Victoria Consumption Homes.—Prince Alfred Hospital.

The number of cases of bubonic plague diminished considerably during the two weeks ending June 16th. In the second week 10 cases were admitted to the quarantine hospital, 3 cases died, and 15 were discharged cured; 73 still remained under treatment. One of the fatal cases was a patient who had been admitted on April 22nd, in whom a persistent high temperature continued till the end. The Board of Health has decided to cease performing inoculation with Haffkine's serum, and now any medical man can obtain a supply of the prophylactic for use in his own practice. The Citizens' Vigilance Committee, with branches in the different city electorates still continues to do useful work—in enforcing the law with regard to cleanliness and proper sanitation. The public lecture recently delivered on two occasions by Professor Anderson Stuart has now been printed by the Government printing office, and recommended by the Premier for widespread circulation.

The statistics of the health of Sydney and suburbs for the first quarter of this year reveal a considerable increase in the number of deaths from so-called preventable disease, such as typhoid fever, diarrhœa, bubonic plague, and diphtheria. The cases of typhoid fever numbered 533, as against 306 in the similar period of last year, and of these 50 proved fatal. Diarrhœa was assigned as the cause of death in 67 persons, as against 37 last year. Though a large number of persons have died from the plague the rate of mortality has been only about 33 per cent. Pulmonary phthisis was the cause of death in 102 persons, as compared with 123 in the corresponding quarter of last year.

During his recent visit to England, Dr. Sydney Jones, who has always evinced a deep interest in the consumptive patient, took occasion to visit the different sanatoria for the open-air treatment of consumption in Great Britain and on the Continent, so as to obtain the fullest information in view of the proposed establishment of sanatoria in this colony by the Queen Victoria Consumptives' Home Committee, in commemoration of the Queen's Diamond Jubilee. At a recent meeting of the Executive of this fund, Dr. Jones gave a lengthy report upon the subject, pointing out the essentials of the treatment, and referring to some of the difficulties which must be faced in this colony in the establishment of sanatoria for consumptives. It is hoped that before long some definite steps will be taken towards building a sanatorium for the open-air treatment.

Owing to the strain which has been put upon the charitable public during the last year or two, and the bad seasons caused by the prolonged droughts in the western districts of the colony, the contributions to the hospitals have fallen off, and both the Sydney and Prince Alfred Hospitals have now a large overdraft. But the work of the hospitals tends to increase rather than diminish, and the strain on the existing accommodation at the Prince Alfred Hospital, already referred to in my previous letters, was made the ground of an application to the Government for assistance to build two more pavilions in part completion of the original plan of the hospital. This will involve an expenditure of £40,000, and provide 124 additional beds, making up the total of 360 beds. In the meantime the Government have given a sum of £1,800 towards

providing additional accommodation for out-patients, for a pathological room and a lecture room. In consequence of the large number of surgical operations it was felt that a second operating theatre was necessary, so that septic cases might not be operated upon in the same theatre as non-septic. The clinical lecture theatre was then converted into a second operating theatre at the expense of Sir Edward Knox, and this is now called the "Edward Knox Theatre."

CHICAGO.

Small-pox in Illinois.—Alcohol.—Proposed Emergency Hospital.—The College of Physicians and Surgeons.

THROUGHOUT a large part of the State of Illinois small-pox prevailed more extensively during the past winter than for many years before. From December 1st, 1899, to April 1st, 1900, about 2,400 cases of the disease had been reported. That the epidemic was of a mild character is indicated by the fact that there were only 22 fatal cases, most of the cases occurring in the rural districts, and Chicago suffered but mildly. Active repressive measures were taken and general vaccination and revaccination were insisted upon. In quite a number of communities the very mild type of the disease led to a mistaken diagnosis and a considerable spread of the infection before the nature of the disease was fully recognised.

In a recent address before the Chicago Academy of Sciences on Foods and Foodstuffs, Professor W. S. Hall, of the North-Western University Medical School of this city, in contending against the belief in the value of alcohol as a food, read a number of conclusions as follows:

It requires more and more alcohol to produce a given effect on a person. The same quantity of food always produces the same effect. Habitual use of alcohol is likely to induce an uncontrollable desire for more in ever-increasing amounts. Habitual use of food never induces an uncontrollable desire for more in ever-increasing amounts. After the habitual use of alcohol, sudden stopping may derange the central nervous system. The sudden abstinence from food never deranges the central nervous system. Alcohol is oxidised rapidly in the body. All foods are oxidised slowly. Alcohol is not stored in the body. All foods are stored in the body. Alcohol is a product of decomposition of food material within living protoplasms and in the absence of or scarcity of oxygen. All foods are products of constructive activity of protoplasms in the presence of abundant oxygen. Alcohol is a poisonous excretion. It may be beneficial in certain phases of disease, but is never beneficial to the healthy body. All foods are wholesome and beneficial to the healthy body; they may injure the body in certain phases of disease. Physicians advise healthy persons to avoid alcohol altogether, but never advise them to avoid food altogether. All connoisseurs advise people to avoid taking alcohol into the empty stomach. People are invariably advised to take food into the empty stomach. The young developing individual is always advised to abstain from alcohol, but is always advised to partake bountifully of food. The use of alcohol, as with narcotics in general, is followed by a reaction. The use of foods is followed by no reaction. The use of alcohol is followed by a decrease in the activity of the muscles and brain cells. The use of food is followed by an increase in the activity of the muscle and of the brain cells.

It is announced that sufficient contributions have been received, and a sufficient encouragement from the city given, to make it certain that the much needed emergency hospital (mentioned recently in this correspondence) will be soon developed. It is understood that the suggestion and its accomplishment may be credited to the Medical Woman's Club—an organisation of a number of the leading medical women practitioners of Chicago.

The College of Physicians and Surgeons (Medical Department of the University of Illinois) lately held its annual graduating exercises, conferring the degree of Doctor of Medicine upon 140 candidates. These young graduates will scatter all over the great North-West Territory of this country, finding places for themselves in small, growing agricultural towns. The very rapid development of an extensive and fertile district, and therefore the constant creation of new communities, has in the past made a demand for physicians, and this demand has not entirely ceased, although to-day it is very much harder to find a desirable opening than ten and twenty years ago.

FEMALE NURSES FOR SERVICE IN CHINA.—According to the *Boston Medical and Surgical Journal* about thirty female nurses of the Army Nurse Corps, now *en route* to the Philippines on transports stopping at Nagasaki, will probably be diverted for service with the expeditionary force in China, serving at base hospitals. There are now in service in the Philippine Islands, or *en route* thereto, 212 female nurses in the Government employ[illegible]

HONG KONG.

Plague.

DURING the week ended June 16th there were 74 cases and 64 deaths reported of bubonic plague.

The following table gives a note of the number of cases and deaths reported in each week from the beginning of this year with the figures for the corresponding weeks in 1899 and 1898:

Week Ended	1900.		1899.		1898.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
January 6th ...	1	1	—	—	2	1
January 13th ...	2	2	—	—	—	—
January 20th ...	1	1	1	1	2	2
January 27th ...	1	1	—	—	2	4
February 3rd ...	5	3	—	—	5	3
February 10th ...	2	3	—	—	5	5
February 17th ...	2	1	—	—	9	6
February 24th ...	0	1	—	—	46	42
March 3rd	2	2	5	5	22	17
March 10th... ...	0	0	6	5	16	12
March 17th... ...	0	0	6	6	31	28
March 24th... ...	0	0	3	3	47	40
March 31st	4	4	7	7	45	40
April 7th	6	6	19	16	106	87
April 14th	20	19	10	4	97	92
April 21st	21	16	31	31	127	109
April 28th	33	28	28	34	119	114
May 5th	34	32	64	52	164	133
May 12th	59	56	89	69	179	157
May 10th	96	86	87	70	112	107
May 26th	89	82	143	134	63	61
June 2nd	81	75	92	97	68	63
June 9th	70	64	97	91	22	20
June 16th	74	64	109	117	15	12

Dr. Clark, medical officer of health, in his report for 1899, writes:

The total number of cases of bubonic fever reported during the year was 1,486, and the total number of deaths was 1,428; this is equal to a case-mortality of 96.1 per cent. as compared with a mortality of 88.2 per cent. in 1898, and 89.5 per cent. in 1896. I am inclined to think, however, that this increased mortality is more apparent than real, and that it was occasioned by the fact that a larger number of cases were able to escape from the colony than in former years owing to the temporary depletion of the police service to meet the needs of the new territory. The result of this was that only the moribund cases and the dead bodies were detected, while most of those who had any chance of recovery managed to make good their escape to Chinese territory. This view is borne out by the fact that while during 1898 36 per cent. of the cases reported were bodies found in the streets, etc., during 1899 40 per cent. were bodies so found.

The nationalities of the patients were as follows:

Chinese	1,455
European (not including Portuguese)	7
Other non-Chinese	24

Of the deaths from this disease, 2 were British, 1 German, 1 Austrian, 8 Indian, 7 Portuguese, 2 Japanese, and the remainder—1,407—Chinese. The mortality, therefore, amongst the non-Chinese alone was 67.7 per cent. as compared with 65.3 per cent. in 1898.

The same measures were adopted in dealing with the outbreak as had been used in former years, namely: (1) The removal of the sick to hospital, and of the dead to the public mortuary; (2) the detention of persons who had been in contact with the sick, pending the disinfection of the bedding and clothing; (3) the cleansing and disinfection of the infected premises, including a special house to house cleansing and disinfection throughout No. 9 Health District in which the outbreak was most severe; and (4) the disinfection of all the public latrines by means of chloride of lime. The work was, however, greatly hampered by the inability of the police to render any assistance this year as they had done in former epidemics, and the impossibility of obtaining reliable assistance from other quarters.

The following table gives the number of cases and deaths which have occurred each year since the outbreak of the disease:

		1894.	1895.	1896.	1897.	1898.	1899.
Chinese	cases	2,619	43	1,157	21	1,244	1,455
	deaths	2,447	36	1,047	19	1,126	1,407
Europeans... ...	cases	11	—	16	—	26	7
	deaths	2	—	8	—	11	4
Other non-Chinese	cases	49	2	31	—	50	24
	deaths	36	—	23	—	38	17
Totals ...	cases	2,679	45	1,204	21	1,320	1,486
	deaths	2,485	36	1,078	19	1,175	1,428

The figures of 1894 do not include a large number of dead Chinese bodies found in the streets and taken direct to the cemetery. It is unknown how many of these had died of bubonic fever.

CORRESPONDENCE.

COVENTRY PROVIDENT DISPENSARY.

Sir,—At the general meeting of the British Medical Association no doubt many of the members present were surprised at the attitude of Dr. Saundby in supporting the doctors holding appointments in the Coventry Provident Dispensary and condemning any attack upon that institution.

It is plain that an ex-President of Council in supporting such an institution has not made himself conversant with the facts of the case, seeing that it has been condemned by the Ethical Branch of the British Medical Association, the British Medical Journal and the *Lancet*, condemned also at the annual meetings at Edinburgh and Portsmouth, and that the institution is entirely without a wage limit, and accepts members without any regard to their social position.

This dispensary is one of glaring abuse, and has been severely criticised by various committees of the Association; in addition it has been closely investigated by a special commissioner of the *Lancet*, who represented it as being one of the most abused institutions in the kingdom.

Under these circumstances the Association will stultify itself if it takes no action in the matter after the strong expression of opinion at the annual meetings.

The profession in Coventry would suggest that the Council should appoint a special delegate (not a Birmingham consultant) to visit Coventry and report upon the whole question in dispute.—I am, etc.,

Coventry, Aug. 7th. Edward Phillips.

*** We thought it right to send a proof of this letter to Dr. Saundby, who writes in reply as follows:

Sir,—In order to remove any misapprehension which may have been caused by my protest against what seemed to me the unfairness of Mr. George Brown's speech at Ipswich, will you permit me to say that I do not support the Coventry Dispensary or its staff, and I am quite prepared to co-operate in any reasonable scheme which may be devised to reform, or, if this be impossible, to abolish, an institution which I am satisfied does infinite injury to the medical profession in Coventry. I confess that I see no prospect of getting anything effected except through the General Medical Council. There is no need to inquire further into the facts, as they are quite well known. What outraged my sense of fair play was that the Coventry Dispensary should be singled out for condemnation upon the ground *that it has no wage limit*, while the same blot exists upon all the great friendly societies throughout the country.—I am, etc.,

Llandridrod Wells, Aug. 10th. Robert Saundby.

MEDICAL SERVICE IN THE HIGHLANDS AND ISLANDS OF SCOTLAND.

Sir,—Herewith I enclose copy of reply to memorial which I received last night from the Secretary of the Local Government Board.

The Board appear to favour the proposal, but, as they have not the power to insist upon the parish councils providing a fair substitute, I am afraid that few parish councils would grant the privilege.

I suppose we must just wait for an alteration in the Local Government (Scotland) Act. I trust we may obtain the help of the British Medical Association in getting the above Act altered.—I am, etc.,

Durness, July 27th. Jos. F. D. Macara,
Medical Officer, Durness, Sutherlandshire.

(Copy.)
Local Government Board,
Edinburgh, July 25th, 1900.

Sir,—With reference to your letter dated 27th ultimo, enclosing a memorial by the medical officers of the more remote parishes of the Highlands and Islands of Scotland as to the difficulty experienced by them in obtaining an annual holiday, I am to say that this matter has received careful consideration from the Board.

In reply, I am to say that the Board desire to express their sympathy with the views expressed in the memorial, and, having regard to the very special circumstances and conditions under which the duties of the memorialists have to be discharged, are of opinion that it would be to the advantage of the public service that parish councils should grant an adequate holiday to their medical officers, defraying at the same time the cost of a substitute to act for the doctor during his absence. But as the Board have often had occasion to point out, their powers in regard to the relation subsisting between parish councils and their medical officers are very limited, being derived solely through the medium of the grant in aid of medical relief to the conditions in connection with the distribution of which parish councils are required to conform in order to participate. I am to add that the rules of the grant have been held to be stereotyped by the Local Government (Scotland) Act of 1889, so that, as will be seen, additional legislation would be necessary to give general effect to the views of the medical officers. The Board, however, direct me to say that they are prepared to do the best within their power, that is, they will offer no objection to the cost of substitute medical officers being ranked against the medical relief grant in the more remote parishes of the Highlands and Islands of Scotland, provided that the local circumstances are such as are described in the memorial, and provided care be taken that the parish councils shall pay only for the services rendered by the substitute to the paupers and not for his services to the medical officer's private patients.

The Board have forwarded a copy of this letter to Lord Lister.

I am, Sir,
Your obedient servant,
(Signed) G. Falconar-Stewart.
Secretary.

Dr. Macara, Durness, Lairg.

THE REPORT OF THE DECAY OF TEETH COMMITTEE.

Sir,—In the comment you append to my letter in the British Medical Journal of August 11th, you say that the matters which I seem "especially to refer to are to a very large extent common knowledge." I referred definitely to certain points, and shall at present confine myself to these alone.

If the points were matters of common knowledge it seems incredible that Mr. Cantlie should not have been aware of them. He says:

> The cause for this premature and abnormal decay is, however, scarcely dealt with. True, I have received innumerable suggestions as to the cause, but scarcely two people are agreed on the subject. One blames sweets, another infant foods, a third declares that children partake at too early an age of animal food; some contend that it is a developmental change, and that in time the human teeth will disappear; some ascribe the decay to two such opposite conditions as gout and rickets. In fact, there is scarcely an inherited disease or a variety of human food or drink which has not been suggested to me as a cause.

After condemning the developmental theory too, he says:

> Another phase of the developmental theory is that our jaws are getting smaller, leaving less room for our teeth. The teeth, therefore, it is contended, become overcrowded and overlap, leaving nooks and recesses in which particles of food may find shelter, setting up decomposition, eroding the enamel and leading to caries of the dentine. This is stating an actual condition whilst begging the cause.[1]

He then suggests that the cause of the increase of the disease may be due to deterioration of the teeth due to interference with their proper development, especially from thermic considerations.

Mr. Cantlie does not say one word about the detergent effect of fibrous foodstuffs, nor of the relatively greater lodgeability of the refined foods of the present day as in any way accounting for the increase of dental caries. He also makes a totally different explanation from me of how civilisation helps to bring about decay in teeth.

Then, as regards Dr. Black's theory, published in England simultaneously with the first part of mine, I see no reference to these points. He, however, does not believe in the constitution of the tooth as accounting for the prevalence of the disease. He says:[2]

> Observations already made render it certain that caries of the teeth has its beginning only when the conditions of the oral secretions are such that the micro-organisms causing caries form gelatinous plaques, by which they are glued to the teeth ..... The effect of these studies and the proposition which logically follow is to divert the search for [illegible] which predispose persons to caries of the teeth from the [illegible] where they were previously looked for, to the surrounding [illegible] or the oral fluids and the bodily conditions which give character to the secretions.

Not a word about fibrous or non-fibrous foodstuffs or relative lodgeability of different foods or about civilisation. He believes unhesitatingly in heredity as a predisposing cause, but does not at all allude to this being due to a continuance of similar dietetic and other customs. Thus, although Dr. Black is perhaps the most erudite dentist in America, he does not appear to have been acquainted with the matters which you say were to a very large extent common knowledge.

Nor do my explanations of the cause of the prevalence of caries occur in our recognised textbooks (for example, Tomes's, Smale's, and Colyers's). These writers appear to believe in the constitutional deterioration of the teeth, rendering them liable to be attacked by caries. They do not mention the detergent effect of fibrous foods nor the greater lodgeability of non-fibrous foods; nor do they mention how civilisation brings about these results.

[1] British Medical Journal, September 2nd, 1899.
[2] *Journal of the British Dental Association*, October 15th, 1899, p. 604.

Curiously enough Mr. Tomes specifically admits not knowing how civilisation affects the teeth. He says:

> There appears to be no room for doubt that increased civilisation predisposes to caries, though as yet it is uncertain in what way it does so.[3]

And I am quite sure that Mr. Smale would admit that when I published my book, "this very difficult problem" was "baffling all research." Surely no man would accuse these writers of being unacquainted with what was "to a very large extent common knowledge."

I think what I have said proves beyond dispute that instead of the points referred to being to a very large extent common knowledge, previous writers on this subject have been totally unacquainted with the views I put forward. Indeed, a confession of inability to give such an explanation as is contained in my investigation, and subsequently in the report of the Committee, is openly or implicitly made.

Whether ideas which were deduced from biological principles[4] from an acquaintance with the chemico-parasitical theory of caries, from experiments and observations carried out on my own and other mouths, and a general acquaintance with the literature of the subject, can be called "entirely original," is of little consequence. I think if the Committee started even from similar grounds and co-ordinated their ideas so as to arrive at the same result, the coincidence is very remarkable; and if they arrived at the conclusions after reading my work, as you think very likely the chief compiler of report may have done, then I say an acknowledgment might fairly have been expected. For not only is the omission conspicuous, as other apparently less readily acceptable theories have been acknowledged, but also because my investigation is recent, and, I understand, the only book on the subject. It appears also to be, on your own showing, clearly presented and to carry conviction. Further, I think it might have been referred to because the arguments which led to the conclusions are given.

It was intended partly to stimulate interest in the subject in the medical profession that the report was to be made; so, too, was my book. Further, a proffered solution to practically all the questions upon which further knowledge is solicited by the Committee is to be found in it. Finally, because the medical profession has it largely in its power to stamp out this frightfully prevalent and painful disease if the conclusions which I published and which have been endorsed in the report are true.

It is a belief shared by many that before the publication of my investigation the cause of the prevalence and early decay of teeth was practically completely unknown, whereas since its publication the cause is believed to be known and in a general way beyond a doubt.—I am, etc.,

Kingston-on-Thames, Aug. 14th. J. SIM WALLACE.

VENEREAL DISEASE IN THE ARMY.

SIR,—The loss of service to the State by venereal disease in the army is a very serious matter. There is much to be said as to the causes of this amount of disease—namely, the idleness of the soldier, his defective lodgment, the want of education and of better-organised amusements for him, but with these I do not now desire to deal. What I wish to suggest is that with the view of a better study of syphilis and its complications, a specially chosen Professor of the Army Medical School at the Royal Victoria Hospital, Netley, is needed.

This important disease is to-day dealt with at Netley by the Professor of Surgery, an officer chosen no doubt for special qualifications as an operative surgeon, and he may or may not take any special interest in venereal disease. I propose to ensure that interest of a very special kind shall surely be taken in this ailment by choosing an officer and specialising him for the study of syphilitic treatment and investigation exactly on the same footing as any other Netley Professor of the Army Medical School. This will cost the country perhaps £1,000 a year, but it will be well spent money to look into and specially study this ailment, which does such injury to the service—and through it to the whole country.

There is no special venereal division for patients at the Netley Hospital.

I propose, further, to set apart a definite portion of the surgical division at Netley, into which all venereal cases of every kind shall be sent, and where the special Professor can give lectures and show examples of all the phases of the disease to the young officers. The moment this is done it will vivify and waken up interest in this class of affections. How often we find in a hospital the venereal wards in the hands of the least experienced medical officers, with the worst ward masters and the least efficient orderlies in charge of them, medicines carelessly issued, and the whole place under a cloud as being merely venereal. Yet venereal does more damage than the bullet.

I could not to-day name any large number of army medical officers who are specialists in venereal disease. With ample opportunities, and a large field for investigation at home and abroad, I still fail to single out many specialists in the army medical service who are masters in their art so far as the study of venereal disease is concerned. There is nothing to be gained by such specialisation. Perhaps the prospect of a Netley professorship to be worked for might do good.

The specialised lectures to be given to the young officers would be a real advantage to them, and all the invaliding documents and *post-mortem* reports of such diseases throughout the empire would be at the disposal of such a Professor. Surely with such scope and such material, progress would be made.

I offer this suggestion for the consideration of your readers.—I am, etc.,

Devonport, Aug. 4th. GEORGE EVATT, M.D.

THE CONTAGIOUSNESS OF LEPROSY.

SIR,—In connection with the letter of Dr. Carter Booth on this subject in the BRITISH MEDICAL JOURNAL of August 11th, may I make a suggestion? There seems to be clear evidence that leprosy is not communicated by ordinary contact. A leper has been known to live in ordinary intercourse with his fellow men for years, sharing the same dwelling, eating at the same table, and even sharing the same bed without communicating the disease. On the other hand, there is abundant evidence that the *materies morbi* is in some way conveyed from man to man. The inference is that it is only communicable by the assistance of an "intermediary host," in the absence of which there is no danger. The problem is to find the creature which in leprosy plays the *rôle* which the mosquito does in filaria sanguinis hominis and in malarial disease. Dr. Carter Booth's case suggests that the infection was conveyed in clothing; if so, and if an intermediary host is necessary, suspicion naturally falls upon the *pediculus vestimenti*. Is it not possible that this parasite is the means of conveying the bacillus of leprosy and inoculating it into the healthy? This view would harmonise with the distribution of the disease, and with its gradual disappearance before advancing civilisation and cleanliness. It would explain the connection of the disease with filthy insanitary conditions without requiring the supposition of any constitutional predisposition or vulnerability, of which there is no evidence, and without recourse to any food theory, hitherto unconfirmed. At any rate, there seems to be a *primâ-facie* case against the supposed culprit sufficiently strong to warrant further proceedings being taken against him by the expert in bacteriological research, material for which could doubtless be easily obtained in Norway.

In the hope that it may be thought worthy of investigation I venture on the suggestion.—I am, etc.,

Wigton, Aug. 12th. THEOBALD A. PALM, M.D.

THE PROTECTION OF PARTURIENT WOMEN.

SIR,—At the quarterly meeting of the Medical Guild held at the Medical Common Room, 64, Bridge Street, Deansgate, Manchester, on July 26th last, I had the honour of proposing that the Council should be instructed to take into consideration the drawing up of a scheme for the "protection of parturient women and newly-born children with a view to legislation." This was carried and the Council has appointed a sub-committee to deal with the question. As I am the hon. secretary of the committee I shall be glad to have any suggestions from any of your readers in order to make the

[3] *Dental Surgery*, 1897, p. 255.

[4] I believe I am the only writer who has as yet dealt with the subject from the standpoint of the non-inheritance of acquired characteristics.

scheme as satisfactory as possible to the profession at large and which shall have its cordial support. The main idea is suggested in the title and this will be rigidly adhered to, and differs from previous attempts at legislation, whose object has been more or less for the registration and legal promotion of midwives.

We contend that as far as possible the skill of those legally registered to practise medicine, surgery, and midwifery should be placed by the State at the disposal of every parturient woman. That public obstetricians should be appointed in all districts with a view to this, just as we have public vaccinators who are paid by the State, and as the public is protected by local corporate bodies by the compulsory notification of infectious diseases. I do not consider it necessary to enlarge upon the advantages to public health which such a scheme, if properly carried out, would be.

So long as the committee receives as many suggestions as possible it is a matter of indifference whether they are addressed to me personally or appear in your columns with a view of giving rise to a discussion. The more the matter is discussed the more likely are we to arrive at a sound and lasting conclusion to this difficult question.

On the other hand, if practitioners will not avail themselves of expressing their views upon this subject either publicly or privately they will have no one to blame but themselves if legislation takes place in a manner contrary to their desires.—I am, etc.,

Manchester, Aug. 11th. G. H. Broadbent.

"SUMMER DIARRHŒA."

Sir,—The summer diarrhœa of infants in England is the cholera infantum of the United States, but it matters little whether it is called by these names or by epidemic enteritis or zymotic enteritis as suggested by the College of Physicians. The cause is more important than the effect, and there can be little doubt that this ubiquitous and very troublesome disease is due to fermentation of the alimentary canal. Heat is the leading factor, and direct solar heat will suffice without a high ground temperature, although when both are present the nerve depression which invariably precedes an attack is all the greater. In fact, a form of heat stroke with high temperature is present in almost all of these cases. Reaction, however, soon sets in, and the normal gastric secretions are replaced by the butyric, acetic, and other low acid producers. The bacillus coli and other normal inhabitants of the bowel now gain the upper hand, and we have a ptomaine poisoning with most alarming symptoms of collapse and congestion of the brain, ending in death—coma or convulsions frequently ending the scene. It is very hard to treat this disease successfully in infants, but after the initial stage small doses of hydrarg. cum creta and Dover's powder answer best, the liver acts, and the green foul smelling motions gradually disappear. Thin water arrowroot is best in the vomiting stage, milk of all kinds being out of the question. Occasionally everything fails, and the infant dies poisoned by its own perverted secretions.—I am, etc.,

East Sheen, Aug. 12th. Alex. McCook Weir.

THE TRANSMISSION OF TYPHOID AND CHOLERA IN INDIA.

Sir,—In an annotation in the British Medical Journal of August 4th you say, "There is, indeed, much in the personal habits of the Indian races which might with advantage be imitated by Western peoples. All Hindus, for instance, strictly observe the custom of washing with water after answering a call of Nature, and the European habit of using paper is looked upon by them as an utter abomination, of which they never speak except with horror."

I have understood that this use is confined to Mohammedans, and they are enjoined to wash by their religious code. When I was in the East I noticed often Albanians and Turks carrying small vessels of water, and retiring to a secluded spot; on inquiry as to their motive, I was told that, if they could not get to the margin of a river or other water to perform the call of Nature, they took water with them wherewith to wash themselves. This habit of theirs pollutes all the water of the country, rivers, rivulets, lakes, tanks, etc., and there is no water in India but what is in this way infected by the poison of typhoid and cholera. Water in the neighbourhood of towns is more especially polluted, as all natives arriving at towns make a habit of relieving themselves on the outskirts before entering.

I should like to direct the attention of those who are inquiring into the prevalence of typhoid in India to the above.—I am, etc.,

Hildenboro', Aug. 6th. J. B. Curgenven.

INDIAN (MILITARY) MEDICAL SERVICE.

Sir,—In dealing with the above subject at the last meeting of the Association, Colonel Macleod spoke with the authority of an Indian Professor. May I be allowed to say a word with the experience of an old student of an Indian university? In doing so, I have no hesitation in saying that there is considerable room for improvement in the way the professorial chairs are filled in the Indian Medical Colleges. In a country like India, where the average often passes for the sublime, it is no argument to say that as the present system has hitherto worked satisfactorily there is no necessity for a change. Colonel Macleod maintains that because a professor teaches one subject he is not disqualified for teaching another. That may be so, but how much better would matters be if he taught one subject only. Again, if the object of the Government is to attract "the very best men" for the posts, why is the field of selection restricted to the Indian Medical Service and why are the vacancies not publicly advertised as is the case in this country? The motion is neither a reflection on the Indian Medical Service nor on the Government, but is entirely in the interests of higher education in India. To my mind, sir, the question involved in the resolution is as important as it is straightforward, and need not be obscured by side issues.—I am, etc.,

August 13th. M. L. D.

FIBROIDS AND HYSTERECTOMY.

Sir,—Allow me to turn your attention to a slight error in the report of my observations made at the Ipswich meeting.[1] I am represented as making a paradoxical statement, a logical error to which the sons of Erin are said to be addicted. "Fibroids of the broad ligament should always be removed, but the majority required no operative treatment" are the words attributed to me. What I said was that the majority of fibroids of the uterus itself required no operative treatment.—I am, etc.,

Newquay, Aug. 13th. Alban Doran.

THE MOUNTING OF MOSQUITOS.

Sir,—With reference to Dr. D. C. Rees's note on an easy method of mounting mosquitos, it may be well to point out that specimens so treated would be useless for identification. The specific distinctions of mosquitos depend almost entirely on colour characters, and their colours can only be seen by reflected light and are lost if the specimen be immersed in balsam or any other fluid. It saves much trouble, for example, to mount wings in balsam, but I soon found such specimens useless for comparison.

Hence if put up as microscopical specimens at all mosquitos should be mounted dry. For this purpose a slide such as that contrived by the late Dr. Carpenter for mounting foraminifera are the best. This consists of a slip of deal or other wood 3 inches by 1 inch by $\frac{1}{12}$ inch thick with a hole about $\frac{3}{8}$ inch in diameter in the middle. This hole is converted into a cell by fixing over it an ordinary square cover secured by means of a perforated gummed label the full dimensions of the slide. (Before doing this it is well to paint the sides of the hole with creosote.) The mosquito is dropped into the cell so formed spread as far as may be and covered with a second cover secured in the same way. Though far inferior to properly pinned specimens, insects so preserved at least remain recognisable.

In the case of *Anopheles* or other species with decorated wings it is well if extra specimens be available to put up a separate preparation of a pair of wings, preferably male as well as female. These should be mounted dry on an ordinary glass slide, the cover being fixed *in situ* by strips of gummed paper such as the edges of postage stamps.

Care is required in labelling with corresponding numbers

[1 British Medical Journal, August 11th, 1900, p. 349.]

the entire insects in "Carpenter's" slides with the wing specimens. There is however no real difficulty in pinning, and I shall be happy to send anyone an outfit for the purpose who will be good enough to send me specimens for identification.—I am, etc.,

G. M. GILES, Major I.M.S.,
Officiating Sanitary Commissioner N.W.P. and Oudh.

Lucknow, July 4th.

THE MEDICAL DEFENCE UNION, LIMITED.

SIR,—I have just perused the balance sheet for the year ending December 31st, 1899, of the above society. I do not know if it is generally known amongst the 4,000 of its members (or whether they have taken the trouble to learn) that out of an annual income of £2,000, the treasurer received an honorarium of £105, plus £52 10s. for special services. I am of the opinion that with a secretary who draws £350 and a clerk at £127 per annum, the payment of £157 to a treasurer is quite out of place, and a waste of the members' subscriptions. There are hundreds of men of standing in the profession who act as treasurers to larger societies, and who would not seek to extract funds from what I call a struggling society.

I find, moreover, notwithstanding the inflated manner in which the balance sheet is drawn up, that the total amount actually to our credit is £602 11s. on December 31st, 1899, and this, compared with £1,050 on the same date in the previous year, shows that the society is not gaining ground even under the personal supervision of the honorary treasurer.

I would urge the members to inquire into the matter, at the same time congratulating them that the society is limited, and, I believe, registered.—I am, etc.,

A MEMBER OF THE MEDICAL DEFENCE UNION, LIMITED.

August 6th.

*** We think our correspondent scarcely realises the amount and complexity of the work done by the officers of the society. We have no doubt the payments to which he specially objects were justified by special circumstances.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE UNDERMANNING OF THE ARMY MEDICAL SERVICE.

THE following is the distribution of the active list of the Army Medical Service and Royal Army Medical Corps, according to the monthly Army List for August, 1900:

Distribution in the July Army List, 1900.

Ranks.	Home.	South Africa.	Other Foreign Stations.	Not Posted.	Total.	Remarks: Seconded.
Surgeon-Generals ..	5	1	4	—	10	—
Colonels	7	9	11	—	27	3
Lieutenant-Colonels...	16	35	58	1	110	3
Majors	18	196	171	—	385	4
Captains	14	73	93	1	181	3
Lieutenants	44	117	34	3	198	6
Total	104	431	371	5	911	19

The strength increased during the month from 889 to 911, through the gazetting of 17 lieutenants and by now including 5 of the Guards' medical officers whose names do not appear in the general list. The strength at home has increased 14, in South Africa by 3 and at other foreign stations 6. But to the South African establishment should be added 4 retired pay officers, and 6 of the Militia Medical Staff Corps. Volunteer surgeons in South Africa are also not included, and there is no return of the number of civil surgeons. Altogether 117 retired pay officers are employed and 16 retired pay quartermasters.

VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

THE following has been sent to us for publication:

The fortieth class for the instruction of medical officers in the subjects of the Proficiency Examination will be held at the Headquarters of the Prince of Wales's Own, 12th Middlesex (Civil Service) V.R., Somerset House, Strand, W.C., by permission of Lieutenant-Colonel H. B. H. Tytheridge, commanding Prince of Wales's Own, 12th Middlesex (Civil Service) V.R., and will last five days, commencing on Monday, September 24th, 1900, at 2.30 P.M. precisely, and concluding on Friday, September 28th, 1900, at 5.30 P.M.

The instruction will include all the subjects of the examination, also the duties of medical officers generally in camps, quarters, bivouacs, with brigade-bearer companies and other units, on the line of March and elsewhere.

Practical instruction in bearer company drill will form an important part of the work of the class.

Officers who are unable to attend this class can obtain instruction by correspondence.

These classes will be under the instruction of Surgeon-Captain E. M. Callender, M.D., Prince of Wales's Own, 12th Middlesex (Civil Service) V.R., to whom all officers will apply, at 40, Connaught Square, Hyde Park, London, W., who intend to join either class or who wish for further information, at the same time stating their rank and corps.

ROYAL NAVY MEDICAL SERVICE.

THE following qualified candidates have been appointed to be Surgeons, dated August 2nd: G. ROSS, B.A., M.B., J. S. DUDDING, W. BASTIAN, C. T. BAXTER, R. W. B. HALL, H. C. ADAMS, LL. LINDOP, N. H. HARRIS, W. E. GRIBBELL, H. V. WELLS, J. M. H. CONWAY, R. B. SCRIBNER, J. WHELAN, A. I. SHELDON, J. VERDON, C. R. RICKARD.

ARMY MEDICAL SERVICE.

SURGEON-COLONEL JAMES YOUNG DONALDSON, M.D., died at Saltburn-by-Sea on July 7th. He was appointed Assistant-Surgeon, June 13th, 1859; Surgeon, March 1st, 1873; Surgeon-Major, January 6th, 1875; Brigade-Surgeon, June 24th, 1888; and Surgeon-Colonel, December 10th, 1890. He was placed on retired pay December 23rd, 1893. He had no war record in the Army Lists.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Majors, having completed twenty years' full pay service, are promoted to be Lieutenant-Colonels, dated July 31st: G. H. SYLVESTER, F.R.C.S., W. J. MACNAMARA, M.D., D. O'SULLIVAN, F.R.C.S.I., E. O. MILWARD, C. ROLLESTON WOODS, M.D., F.R.C.S.I., J. O. GREATOREX SANDIFORD, M.D., R. L. LOVE, M.D., H. W. MURRAY, M.B., M. W. KERIN, A. PETERKIN, M.B., E. L. MAUNSELL, W. HEFFERNAN, R. W. E. H. NICHOLSON, J. G. W. CROFTS, W. DUGDALE, D. L. IRVINE, E. R. CREE, D. F. FRANKLIN, F.R.C.S.Edin. The following is the record of such of these as have war service: Lieutenant-Colonel Woods, Manipore expedition in 1891 with the British Field Hospital in the column under Brigadier-General Graham (medal with clasp); Lieutenant-Colonel Kerin, Burmese expedition in 1885-86 (medal with clasp); Lieutenant-Colonels Peterkin and Dugdale, Boer war of 1881; Lieutenant-Colonel Nicholson, Chitral Relief Force under Sir Robert Low in 1895 (medal with clasp); Lieutenant-Colonel Irvine, Nile expedition in 1884-85, including action of Kirbekan (medal with two clasps and Khedive's star); Lieutenant-Colonel Cree, Soudan campaign in 1885, including the engagements at Hasheen and the Tofrek zereba, and the destruction of Temai (medal with two clasps and Khedive's Star).

Sergeant-Major A. J. PILGRIM is appointed Quartermaster, with the honorary rank of Lieutenant, *vice* F. Illingworth, deceased, August 15th.

The following officers are returning from South Africa: Lieutenant-Colonel BARKER, Captain BUTLER, Civil Surgeon J. P. BUSH (for duty on the voyage), Consulting-Surgeon MAKINS, Civil-Surgeon STEWART.

Civil-Surgeons CORFE and WALKER have been discharged from hospital to duty.

The following are returning from South Africa invalided: Major RAYMOND, Captain MASON, Captain STALKARTT, Civil-Surgeon PARKER, Civil-Surgeon DENT, Major DODD, Lieutenant PHIPPS.

Lieutenant-Colonel ARTHUR WELLESLEY CARLETON, M.B., died at Greystones, county Wicklow, on the 10th ultimo. He entered the service as Surgeon February 4th, 1877; became Surgeon-Major February 4th, 1880; was granted the rank of Lieutenant-Colonel February 4th, 1897; and was made Brigade-Surgeon-Lieutent-Colonel July 1st, 1899. He was in the Afghan war 1878-80, being present in the engagement at Ahmed Khel (medal with clasp); in the Egyptian war 1882 (medal and Khedive's star) and with the Nile Expedition in 1884-5 (clasp).

ARMY MEDICAL RESERVE.

SURGEON-CAPTAIN J. W. ELLIS is promoted to be Surgeon-Major, August 15th.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL H. F. O. F. ESMONDE-WHITE, Madras Establishment, is granted the temporary rank of Colonel while holding the appointment of Principal Medical Officer on the Line of Communication Chinese Expeditionary Force.

Lieutenant-Colonel T. S. WEIR, Bombay Establishment, is promoted to be Colonel, July 9th. He was appointed Assistant Surgeon, April 1st 1870, and Brigade-Surgeon-Lieutenant-Colonel, March 31st, 1897.

The following appointments to be Lieutenants, dated June 28th, are submitted for Her Majesty's approval: J. D. GRAHAM, C. A. SPRAWSON, MACKELVIE, W. LAPSLEY, W. H. CAZALY, P. A. BROWNE, W. V. COPPINGE, A. SPITTELER, J. C. S. OXLEY, H. R. MACNEE, L. J. M. DEAS, W. W. HOUSTON, W. D. A. KEYS, G. J. G. YOUNG, J. GOOD, A. CHALMERS, W. HAMILTON, S. R. GODKIN.

Surgeon-General DANIEL JAMES O'CALLAGHAN, late of the Honourable East India Company's Service, died at 38, Queen's Mansions, W., on August 12th, in his 85th year.

IMPERIAL YEOMANRY.

THE appointment of R. MERVYN WILSON, M.D., as Medical Officer to the 4th Battalion, with the temporary rank of Captain, notified in the *Gazette* of February 2nd, is cancelled.

THE VOLUNTEERS.

Surgeon-Lieutenant A. B. Wright, 1st Hampshire Engineers, resigns his commission, August 11th.

Surgeon-Lieutenant F. B. Manning, 4th Volunteer Battalion the Devonshire Regiment, is promoted to be Surgeon-Captain, July 31st.

Surgeon-Captain S. H. Snell, M.D., from 1st Essex Volunteer Artillery, is appointed Surgeon-Captain in the 2nd Volunteer Battalion the Princess of Wales's Own (Yorkshire Regiment), July 14th.

Surgeon-Captain H. H. Gourley, M.B., from the 4th Durham Volunteer Artillery (Western Division Royal Garrison Artillery), is appointed Surgeon-Captain in the 1st Newcastle-on-Tyne Artillery, June 29th.

The undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps respectively specified: Arthur R. Badger, 1st Volunteer Battalion the Royal Warwickshire Regiment, August 11th; Edward J. W. Carruthers, M.D., 5th Volunteer Battalion the Cheshire Regiment, August 11th; Henry McI. W. Gray, M.B., 1st Aberdeenshire Artillery, August 15th; Philip N. Vellacott, M.B., 2nd Hampshire Artillery (Southern Division Royal Garrison Artillery), August 15th.

VOLUNTEER MEDICAL STAFF CORPS.

Mr. Robert W. Beesley, M.D., is appointed Surgeon-Lieutenant in the Manchester Companies, August 15th.

CHANGES OF STATION.

The following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From	To
Colonel J. McNamara, M.D.	Malta	Cork.
Major F. M Baker, M.B.	Half-pay ...	Woolwich.
,, M. O'D. Braddell, M.B.	Aldershot ...	South Africa.
,, J. Meek, M.D.	South Africa ...	China.
Captain E. W. Slayter, M.B.... ...	,, ...	Portsmouth.
Lieutenant A. H. Safford	,, ...	Aldershot
Quartermaster A. Wilson	Mauritius ...	South Africa.
,, T. J. Jacomb...	— ...	,,
,, A. H. H. Niblett	— ...	,,

The recently appointed Lieutenants are stationed as follows: P. H. Henderson, M.B., Aldershot; J. P. J. Murphy, M.B., Aldershot; A. R. Greenwood, Aldershot; F. H. Hardy, Salisbury Plain; W. M. H. Spiller, M.B., Aldershot; A. D. Jameson, Woolwich; W. Bennett, M.B., Aldershot; B. B. Burke, Salisbury Plain; W. B. Fry, Salisbury Plain; C. R. L. Ronayne, M.B., Salisbury Plain; G. Baillie, M.B., Salisbury Plain; L. L. G. Thorpe, Aldershot; J. B. Hall, Salisbury Plain; W. S. Crosthwait, Salisbury Plain; P. C. Douglass, Salisbury Plain; R. F. Ellery, Aldershot; R. L. Popham, Aldershot.

Lieutenant-Colonel R. D. Hodson has been granted increased pay under Article 362 of the Royal Warrant.

Lieutenant-Colonel J. J. Crean, retired pay, has been appointed to the medical charge of troops at Brighton.

The undermentioned retired officers have relinquished the medical charge of troops at the stations named: Lieutenant-Colonel C. E. Dwyer, Shorncliffe; Major J. E. V. Foss, M.D., Salisbury Plain; Lieutenant-Colonel J. A. Anderson, M.D., Shorncliffe.

Dr. Norman E. Harding has been appointed Civilian Medical Officer to Her Majesty's Forces in South Africa.

COMMISSIONS IN THE ROYAL NAVY.

The undermentioned gentlemen, who competed on July 27th and following days at Examination Hall, Victoria Embankment, for appointment as Surgeon in the Royal Navy, have been granted commissions:

Name.	Marks.	Name	Marks.
G. Ross, B.A., M.B.	2,318	W. E. Gribbell	1,687
J. S. Dudding	1,986	H. V. Wells	1,662
W. Bastian	1,936	J. M. H. Conway	1,647
C. T. Baxter	1,824	R. B. Scribner	1,589
R. W. B. Hall	1,794	J. Whelan	1,583
H. C. Adams	1,764	A. I. Sheldon	1,575
L. Lindop	1,713	J. Verdon	1,313
N. H. Harris	1,711	C. R. Rickard	1,294

THE SUB-MEDICAL DEPARTMENTS IN INDIA.

According to reports which have reached us there is considerable discontent in the subordinate medical services in India, arising chiefly from their undermanned condition and the high pressure at which work is carried on: the same evils, in short, which beset the higher appear to exist in the lower medical establishments. We have received the following statements, the accuracy of which we have no reason to doubt:—

According to regulation one assistant-surgeon is allowed for every 25 beds in a military hospital—an order only carried out in the Bengal Command, but not elsewhere. Extreme pressure is said to exist in the Madras Command: at Poorundhur there are only two assistants instead of four; at Madras one instead of two; at Secunderabad seven instead of fourteen; at Belgaum two instead of four, and so on, calculated on the regulation scale of beds. In this hospital there is thus no margin for sickness or leave; and the "Civil Reserve" supposed to be available for military exigencies is practically non-existent. In stations where only one assistant is allowed it means work single-handed in uniform day and night, which is, of course, absurd. This state of things it is said might be largely rectified by co-operation between the surgeon-generals on the civil and military sides. The Native Army Hospital Corps "pay and privileges" also require overhauling.

It has been ruled that when a man of the corps is sick or goes on leave the medical officer in charge must carry on duty without employing a substitute, as was formerly done; but if that is unavoidable, and is allowed, then the absentee forfeits his pay. This somewhat illiberal regulation was no doubt framed to prevent shirking of duty or undue absenteeism; but as it is quite impossible to avoid real sickness or prevent reasonable leave; and as the medical officer will not, if possible, employ substitutes at the expense of honest absentees, the broad result is that hospitals are generally in a chronically undermanned condition.

It might surely be possible to frame regulations which, while protecting the State, would not oppress servants who may be absent from duty through no fault of their own.

The exceeding value of the sub-medical establishments to India demands that they should receive fair and liberal treatment at the hands of the State.

INDIAN MEDICAL MATTERS.

We have before us a large accumulation of Indian correspondence containing statements as to the accuracy of which we are not in a position to judge: we give them in the same good faith as they reach us. As it is quite impossible to publish such correspondence *in extenso* we have endeavoured to give a fair summary, a task of no little labour and difficulty.

Eyemes, in a lengthy but able communication, writes: Indian medical grievances need no exaggeration, but are sufficiently forcible in themselves; while considering them in detail, under several heads, they may be summed up, in that the continuous trend of all medical alterations is towards the reduction of the emoluments of the Service.

In considering *emoluments* it may be stated:

1. The abolition of certain deputy-surgeon-general's appointments was balanced by four extra pensions of £100 a year granted in lieu.

2. These pensions have now been abolished for those entering after a certain date.

3. The abolition after a certain date of the four months at Netley allowed to count towards pension.

4. Reduction of enrolments of surgeon-generals on the military branch.

5. The threatened reduction of the emoluments of the surgeon-generals with the Governments of Madras and Bombay when present holders of these offices retire. It has even been proposed that the appointments should in future be filled by colonels notwithstanding that the duties connected with them increases.

6. Abolition of the higher pay appertaining to the secretaries to principal medical officers.

7. Limitation of presidency "house rents," although such have much increased in these towns, together with increased cost of living; the latter, indeed, has been said to diminish the attractiveness even of puisne judgeships.

8. "Pin prick" reductions, such as the disallowance of the carriage of horses in moving to officers of the rank of captain, while even subalterns of the Staff Corps have theirs carried.

It may be said that these reductions only affect a limited number: but they unsettle all, no one knowing where the pruning shears may be next applied. The abolition of district gaols with their allowances has hit many civil surgeons, who lose by passing from the military to civil appointments to the extent of Rs.50 per month. The Indian Government had lately to offer Rs.700 to Rs.800 to civil surgeons to accept plague duty, and even then had a paucity of applicants for the posts: civil surgeons as captains receive Rs.550 as a maximum, and as a rule a major in civil employ Rs.750. One of your correspondents, who it may be assumed is near the end of his service, and may possibly have enjoyed the former plums thereof, is very optimistic. He says: "Many of these official incomes (civil surgeoncies) are well known to be largely augmented through private practice." But the days of private practice are beyond recall, and you might find the truth about this by addressing an inquiry to each of the 600 officers of the Indian Medical Service.

Position and Honours.—Lieutenant-Colonel Freyer, at the dinner of the I.M.S. in 1899, asserted, in the presence of the Surgeon-General (Harvey), I.M.S., that "no recognition had ever been known in the history of the service to have been accorded for sound practical professional work." This was not contradicted; and, it is true, with the single exception of Cunningham of Bengal. "Honours," said the *Times of India*, "have mostly concerned administration or outside detail.....; so long as men like Freyer, Keegan, and Ross can leave the service unrequited and disregarded, so long will the reproach lie at the door of Government that they care nothing about surgery, diagnosis, or therapeutics." Such men as Lethbridge, King, and Robertson did not receive honours for medical services. The shabby treatment of the medical service in the late distribution of birthday honours is still fresh in memory.

Leave.—The stoppage of leave was for long a serious inconvenience to the service, and the end is not yet of the plague, and war we may again have any day. The strength of the service should be temporarily increased.

Frequent Moves.—For some reason medical officers are more frequently moved than any other; involving much expense not alone in travelling but in breaking up of establishments.

Popularity of the Service.—That the service is waning in popularity is proved by the fact that while 22 vacancies were advertised in the spring of 1899, only 18 candidates qualified; in the spring of 1880 68 candidates competed for 10 appointments; all were reported qualified.

The number of officers lately retiring at an early period, and not waiting for the higher pension, also indicates the unpopularity of the medical service. Out of 15 lately retired only 4 remained for full pension, and these had good grounds for staying on. Finally, there will be a further stoppage of leave now that native troops have been sent to China.

*** We understand that leave has again been stopped owing to the China war, much to the regret of those in medical administration, for it cannot be held to be their fault, but must be attributed solely to an undermanned service. As far as we can learn the Indian Medical Service is constituted as follows:

One officer for each permanently sanctioned cadre, *plus* 20 per cent. for leave, *plus* 5 per cent. for casualties; but as there are always a number of temporary appointments (non-cadres) which are not provided for, they have to be filled out of the 20 per cent. for leave; the more of these appointments the greater the curtailment of leave. The total number of cadre appointments is 527; 20 per cent. gives 106 for furloughs—total 633. But at present about 100 are on leave, 42 specially employed (plague, South Africa, etc.), and now 43 have to be found on special duty for field hospitals in China. Thus, 185 from 633 leaves 448 for 527 cadre appointments, a shortage of 79. It is thus clear that Indian medical administration must have an uphill struggle merely to carry on duty.

MADRASI writes: In reply to your correspondent, who you say has a "thorough experience" of the Indian Medical Service, and the assertion that one should pass in Hindustani in six months, I made three applications before I was even allowed to enter for the examination; on two occasions I was suddenly ordered away from the station just as the examination was about to take place. (2) He asserts that after passing an officer is practically certain to get charge of a regiment on Rs. 400 a month, with probably Rs. 100 extra for civil charge of the station. I know about 40 officers under five years' service, not one of whom is in receipt of this "probable" Rs. 100 a month. (3) "The loss of extra allowances is more imaginary than real" how can a real loss be imaginary? (4) "Official incomes very largely augmented by private practice; senior officers of 25 years' experience will tell you they would willingly have accepted Rs. 100 a month for all the private practice they ever got; its day has gone by except for a very, very few; it is a delusion against which candidates should be cautioned.

5. "The chief local authority (that is, the collector) must be the head of all branches of administration inclusive"; but he is not the head of the forest or postal departments, then why of the medical? Civil surgeons should be under their own Surgeon-General alone.

6. Of increased pay he states: "There is no prospect"; an underpaid cannot be a contented service.

7. You remark: "The R.A.M.C. have a full right to a share of the of the good things of India" willingly granted; but they got considerably more than a fair share—namely, P.M.O. appointments, extra plague pay, sick furlough passages, etc.

9. The following reforms are needed: (1) Civil surgeons to be under orders of the Surgeon-General only; (2) Surgeon-General to have a seat on the Presidency Council; (3) Director-General to sit on Viceroy's Council; (4) increase of pay; (5) increase of pension; (6) arrangements whereby every officer should get three months' privilege leave every third year.

Another correspondent writes: I can well imagine your difficulty in balancing the conflicting statements of your correspondents. The Indian Medical Service long was the best in the world. How? Not from pay and allowances, but from lucrative native civil practices, which enabled competencies and even fortunes to be made. Those days are gone; practice is in the hands of skilful baboos; the service lives on its former great reputation. It is not that there is nothing to be made in India still, for a few; but for the rank and file——! The contrast between your pessimistic juniors and the optimistic senior correspondent, who may be making his pile, is very instructive. It is useless to deny ill-feeling between the R.A.M.C. and the I.M.S., but when in civil life was there professional loyalty between doctors? One correspondent asks why the former in India numbering 300 to 600 of the latter, should have half of the District Principal Medical Officers? But he forgets only 283 of the I.M.S. are in military employ. But the R.A.M.C. are not entitled to have charge of cantonment hospitals as they wish, which would always belong to the I.M.S. The R.A.M.C. are getting rid of grievances, we are only beginning to grieve; and you will have plenty to do to look after us for years to come—the more's the pity.

HARD FACTS writes: The I.M.S. complain of deductions from pay, but are not these for the benefit of the officer's widow and family? The R.A.M.C. would be glad to secure similar benefits. The junior officers of the R.A.M.C. have much harder work than their brethren of the I.M.S. and less pay; the senior ranks are much on a par. When a man of the R.A.M.C. goes on leave his duty fall on someone who does it without extra pay; but the officer of the I.M.S. gets extra pay under similar circumstances.

THE FUTURE OF THE ARMY MEDICAL SERVICE.

OBSERVER draws attention to the speech of the Under Secretary for War on the Estimates as to future reforms, and says that if reliance is to be wholly placed on so-called reserves, no real strengthening or reorganisation of the medical service will be effected. If candidates are not to be attracted to it, how are its depleted ranks to be kept up?

*** We discuss the future of the service in another place.

HOSPITAL ORDERLIES.

A CORRESPONDENT draws attention to the complete stripping of the home hospitals of trained orderlies, and the sorry substitutes that have taken their place. In India for years past a certain number of men of every European regiment have been trained for hospital work under lady nurses. No doubt a large number of such men are to be found in the Royal Army Reserve regiments, and he suggests they should be employed as orderlies not on 4d. but 8d. or 1s. a day. This would be utilising an already trained reserve.

*** The idea, if feasible, seems a good one.

ARMY MEDICAL DESIGNATIONS.

IN thanking "Surgeon-General Retired" for newspaper cuttings bearing on the present army medical controversy, we also note his pertinent observations thereon. He says writers and speakers frequently err in designations and titles of the medical service; there is, for instance, no such thing as an army medical department; it is a corps, an integral part of the army, and generally expressed in the word "Service." So also there are no Surgeons-General, but Surgeon-Generals, the plural in the former being in the wrong place, as applied to a substantive rank. Our correspondent's observations are quite correct. In our own case we always endeavour to use proper designations; but time-honoured terms and names die hard.

PROMOTION IN R.A.M.C.

PROPER PLACE.—We cannot explain the announcement referred to. The position of the restored officer would not affect the "batch" on promotion at twenty years' service, but would of course do so in further advancement to the position of the old brigade surgeon, etc.

MEDICO-LEGAL AND MEDICO-ETHICAL.

Replies in this column are limited to questions affecting the legal interests and privileges of the medical profession at large. The column is not to be used as a medium for affording legal advice in private or personal matters as to which the applicant ought to consult his own solicitor.

From communications which we have received recently it appears to be necessary to repeat that we cannot undertake to express any opinion upon medico-ethical cases submitted to us unless we have before us statements by both parties to the controversy.

CANDIDE ET CAUTE should consult a solicitor.

PROFESSIONAL SECRETS.

PERPLEXED.—Our correspondent should remember that he is bound to keep inviolate that which he has been told by his patient, and he should carefully distinguish between the facts he may have observed and his inferences from them. In the contingency suggested he must be quite sure of his ground before acting as he suggests, for failure to prove his case will involve blame from both sides.

FALSE REPORTS.

G. S. F.—Our correspondent complains that there is a report in his district that he is about to leave, and asks what means he shall adopt to stop it, and whether a "notice" in the local papers would be unprofessional? We should advise our correspondent to contradict the report through his friends, and, in addition, he may address a letter to the editor of the local paper, asking to be allowed to contradict in the columns of his newspaper the report in question, but we cannot approve of a paid advertisement.

CASES IN ETHICS.

ENQUIRER (MOSMAN).—1. The case is C.'s. 2. If the husband wishes D. to continue in attendance D. cannot do so without the permission of C., but if approached courteously C. should not withhold his permission. 3. If a medical man is called in an emergency to see the patient of another practitioner he should consider himself as acting for his professional brother.

INSTRUCTION IN MIDWIFERY.

DR. JAMES GRAHAM.—The regulations of the General Medical Council and of the Examining Board recognise instruction in practical midwifery by any duly qualified medical practitioner.

PRACTITIONERS AND PATIENTS.

DR. F. S. ZAYTOUM.—A public vaccinator has no monopoly of vaccination in his district, and patients may, and do change their medical attendant if they please. It is best not to be too mindful of small slanderous reports; they are often exaggerated by those who repeat them and are sometimes invented by them.

MEDICAL ADVERTISING.

MR. TOWNSEND BARKER.—There can be no doubt that the handbill is objectionable. We will refer the case to the Ethical Committee of the Council, but we are glad to know that it has been brought under the notice of the licensing authority, and we shall be pleased to be informed of the result.

MEDICAL PRACTITIONER AND PARISH NURSE.

H. H. W.—We are not aware that the question has ever arisen in the form submitted by our correspondent. When considering the now happily defunct Midwives Bill, the General Medical Council assented to the proposal that the registered midwife should call in a medical man in all cases of abnormal labour, and so gave countenance to the relation between the two under these circumstances. Hence if our correspondent is a party to the arrangement described only to the extent that he will consent to attend when so called in, it does not appear that any exception could be taken to that course. We should advise him, however, to abstain from being otherwise mixed up with the scheme.

A CHARGE OF MANSLAUGHTER AGAINST A MIDWIFE.

ON August 8th Angelina Lore, a midwife, was charged with manslaughter before Mr. Francis at the Westminster Police Court. According to a report which appeared in the *Times* of August 9th the deceased died from suppurative peritonitis following confinement. The accused had attended

her in her confinement, although but a fortnight before she had been in attendance on a person who had died from puerperal fever, and although she had been warned by Mr. Braxton Hicks and the parochial authorities not to undertake another midwifery case for a period of six weeks at the least.

It was argued on behalf of the accused that unless it could be absolutely shown that the puerperal malady was caused by infection communicated by her, the charge of manslaughter could not be maintained. The force of this argument was admitted by counsel for the prosecution, who stated that he could not carry the case further, but Mr. Francis, in expressing his opinion on the matter, said: "A charge of this kind must not rest on conjecture, so I do not feel justified in sending the prisoner to trial. It seems to me that the law in regard to the spread of infectious disease is in a peculiar position. Persons suffering from infectious diseases wilfully exposing themselves are liable under the Public Health Act, but so far as I can see, persons who attend infectious cases can mix with the community without any penalty.....So far as this Court is concerned the prisoner is discharged, but she must appear at the Old Bailey to answer the charge of manslaughter on the coroner's inquisition."

This case affords an additional argument in favour of the registration of midwives. As was pointed out by the magistrate, there is nothing to prevent persons who are conveying infection from exposing themselves in public conveyances, or otherwise causing the risk of infection to the public generally.

It has not even been decided in any reported English case that an infected person who wilfully exposes himself with intent to infect another, and who succeeds in his object, is guilty of any offence. With the same regard to the public health, upon which the statutes relating to quarantine have proceeded, the Legislature appears to have acted in former times in making persons guilty of felony who, being infected with plague, went abroad and into company with infectious sores upon them, after being commanded by the magistrates to stay at home (2 (Vulgo 1), Jac. 1, c. 31, s. 7). The statute which contained this enactment has long since expired; but Lord Hale puts the question, whether if a person infected with the plague should go abroad with intent to infect another, and another were thereby infected and die, it would not be murder by the common law (1 Hale, 432). And he seems to consider it as clear, that though where no such intent appears it cannot be murder, yet, "if by the conversation (*sic*) of such a person another should be infected, it would be a great misdemeanour." Seeing that the law is in an uncertain state with regard to the criminality of a person actually suffering from an infectious disease, it is no wonder that a magistrate considers it unsafe to commit for trial a person who by carrying about her the seeds of infection may have caused the death of a patient under her charge.

UNIVERSITIES AND COLLEGES.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on Tuesday, August 7th, 1900, Dr. Andrew (President) in the chair.

The late Duke of Edinburgh.—The President referred to the death of H.R.H. the Duke of Edinburgh, and read the following telegrams which had passed between him and Sir A. Bigge:—"Please convey to Her Majesty the Queen the respectful and sincere sympathy of the President and Fellows of the Royal College of Physicians, Edinburgh, on the occasion of the death of His Royal Highness, Alfred, Duke of Saxe-Coburg and Gotha, Duke of Edinburgh."

"The President, Royal College of Physicians, Edinburgh.—The Queen desires me to convey to the President and Fellows her thanks for their kind message of sympathy.—A. Bigge."

Admission to the Fellowship.—Francis Howard Humphris, M.R.C.P.E., M.R.C.S., Honolulu, was admitted by ballot to the Fellowship of the College.

Admission to the Membership.—On a ballot the following candidates were admitted to the Membership of the College after examination:—George Robert Wilson, M.D., Mavisbank, Midlothian; Wilfrid Glegg, M.D., Edinburgh; Edwin Bramwell, M.B., C.M., Edinburgh; Thomas Arthur Ross, M.B., C.M., Ventnor; William Maule Alexander Smith, M.B., Ch.B., Mavisbank, Midlothian; George Crewdson Thomas, M.B., C.M., London.

Admission to the Licence.—The Registrar reported that since the last quarterly meeting seventy persons had obtained the Licence of the College by examination.

School of Medicine of the Royal Colleges.—The secretary laid on the table the annual statement by the Governing Board of the School of Medicine of the Royal Colleges in terms of the constitution. The statement showed that the classes of the school have been largely attended, and the management and discipline have been satisfactory. The College elected Dr. Andrew (President), Sir John Batty Tuke (Vice-President), Dr. Simpson, Dr. P. A. Young and Sir John Sibbald, to be representatives of the College on the Governing Board of the School of Medicine of the Royal Colleges.

Triple Qualification: Conjoint Committee of Management.—The Secretary announced that Dr. Andrew had been appointed by the Council representative of the College on the Conjoint Committee of management of the triple qualification in room of Dr. Wyllie resigned.

Morison Lecturer.—Intimation was made that Dr. G. W. Balfour had, on the nomination of Dr. Alexander Morison, been appointed Morison lecturer for the year 1900-01.

Bacteriological Diagnosis of Diptheria and Typhoid Fever.—On a letter from the Town Clerk of Edinburgh the College agreed to express its willingness to enter into an arrangement with the magistrates and Town Council for the bacteriological examination of suspected products in respect of diphtheria and typhoid fever, on the understanding that the proposed facilities should be made equally available to all classes of citizens.

Bequest.—Sir Henry Bouchier Toke Wrey, Bart., of Tawstock, near Barnstaple, has bequeathed £100 each to the North Devon Infirmary and the Dispensary, Barnstaple.

OBITUARY.

We regret to record the death of Mr. William Drew Parsons, one of the oldest medical practitioners of Liverpool, which took place on August 7th. Mr. Parsons was born at Shaldon in Devonshire, on December 19th, 1816, and was therefore in his 84th year when he died. He studied at St. Thomas's Hospital and was admitted L.S.A. in 1838 and M.R.C.S. in 1839. After acting as Assistant to a practitioner in Tenby for a couple of years he started practice in Liverpool nearly sixty years ago. He retired from active practice ten years ago, but some of his old patients would not leave him and he continued to attend some of them until he was struck down by his last illness. Mr. Parsons was held in high esteem by his patients and his professional brethren. The end when it came was quite sudden and was due to heart failure.

We regret to record the death of Surgeon-General Daniel James O'Callaghan at the advanced age of eighty-five. After serving in the Navy, he joined the Hon. East India Company's service in January, 1842. He served in the field hospital of the Army of the Sutlej with the 49th Bengal Native Infantry, and also in the Chinese war of 1860, for which he received the medal. In the Indian Mutiny in 1857 he acted as surgeon in chief medical charge of Foot Artillery at the siege of Delhi, and was present at the storming and capture of the city, for which he received the medal and clasp. He retired in December, 1872, with the rank of deputy-inspector-general of hospitals. He leaves two daughters, one of whom is Lady Irving, the wife of Sir Henry Irving, and mother of Mr. Henry and Mr. Laurence Irving.

Dr. Nicholas Cretzulesco, whose death in his 92nd year is announced in the *Archives Orientales de Médecine et de Chirurgie*, was the oldest medical practitioner of Bucharest. He was of noble family, and studied medicine in Paris, where he took his doctor's degree in 1840. On his return to his native land he founded, in connection with the Colteea Hospital, a school of surgery, which was the starting point of medical teaching in Roumania. He was the author of the first treatise of anatomy published in the Roumanian language. The book has gone through numerous editions, the latest having been issued in 1890. To the last Dr. Cretzulesco took the keenest interest in everything concerning his profession, the dignity of which he steadfastly upheld throughout his long career.

Dr. Ernst Anders, who died on June 23rd at Carlsbad, was born at Dorpat in 1850, being the son of the University Librarian. He received his education in the Gymnasium of his native city, and studied medicine in its University. He took his degree in 1876 with a dissertation entitled Experimental Report on our Knowledge of the Etiological Factors of Septic Extoxication. He settled in St. Petersburg, where he was attached to the Elizabeth Children's Hospital. With that institution he remained connected for nearly twenty years, first as Assistant, then as full Surgeon, and afterwards as head of the surgical department. He was a specialist in the diseases of children. He took an important part in setting on foot the work of holiday colonies and health stations. He was the author of numerous contributions on the surgery of children and orthopædics published in *Langenbeck's Archiv*, and other publications. Deformities of the spine, congenital luxation of the hip, genu valgum, pes varus, etc., were his favourite subjects for study and demonstration. He had a cultivated taste for art, and had no mean skill with the pencil. He was famous for his plaster casts of deformities, etc.; he was very ingenious in inventing apparatus for their correction.

Congress of Polish Medical Men.—At the Congress of Polish medical men recently held at Cracow the opening address was delivered by Professor Kostanecki, who took as his theme the universality of medical science. The two principal subjects discussed were the means of combating tuberculosis and alcoholism. The work of the Congress was divided among twenty-four sections, and there was a large attendance.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

ZYMOTIC MORTALITY IN LONDON.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE accompanying diagram shows the prevalence of the principal zymotic diseases in London during the second, or spring, quarter of this year. The fluctuations of each disease and its fatal prevalence, as compared with that recorded in the corresponding periods of recent years, can thus be readily seen.

Small-pox.—Two fatal cases of small-pox were registered in London last quarter, the corrected average number in the corresponding periods of the ten preceding years being 18; 36 small-pox patients were admitted into the Metropolitan Asylums Hospitals during the quarter, and 16 remained under treatment at the end of June last.

Measles.—The deaths referred to measles, which had been 530 and 602 in the two preceding quarters, further rose to 762 during the three months ending June last, but were 240 below the corrected average. Among the various sanitary areas of the metropolis measles showed the highest proportional fatality in Kensington, Hammersmith, Holborn, Clerkenwell, Limehouse, and Rotherhithe.

Scarlet Fever.—The fatal cases of this disease, which had been 131 and 84 in the two preceding quarters, rose again to 97 during the three months under notice, but were 106 below the average number in the corresponding periods of the ten preceding years. Among the various sanitary areas this disease was proportionately most fatal in Fulham, City of London, Shoreditch, St. George Southwark, Rotherhithe, and Woolwich. The number of scarlet fever patients in the Metropolitan Asylums Hospitals, which had been 2,797 and 1,654 at the end of the two preceding quarters, had risen again to 1,788 at the end of June last. The number of new cases admitted into these hospitals, which had been 4,011 and 2,160 in the two preceding quarters, rose again to 2,491 during the quarter ending June 30th.

Diphtheria.—The deaths referred to diphtheria in London, which had been 696 and 533 in the two preceding quarters, further declined to 320 last quarter, and were 155 below the corrected average number. Among the various sanitary areas this disease showed the highest proportional fatality in St. James Westminster, Shoreditch, Bethnal Green, St. Saviour Southwark, Newington, and Bermondsey. The number of diphtheria patients in the Metropolitan Asylums Hospitals at the end of June last was 1,212, against 1,679 and 1,236 at the end of the two preceding quarters; 2,004 new cases were admitted during the three months under notice against 2,980 and 2,102 in the two preceding quarters.

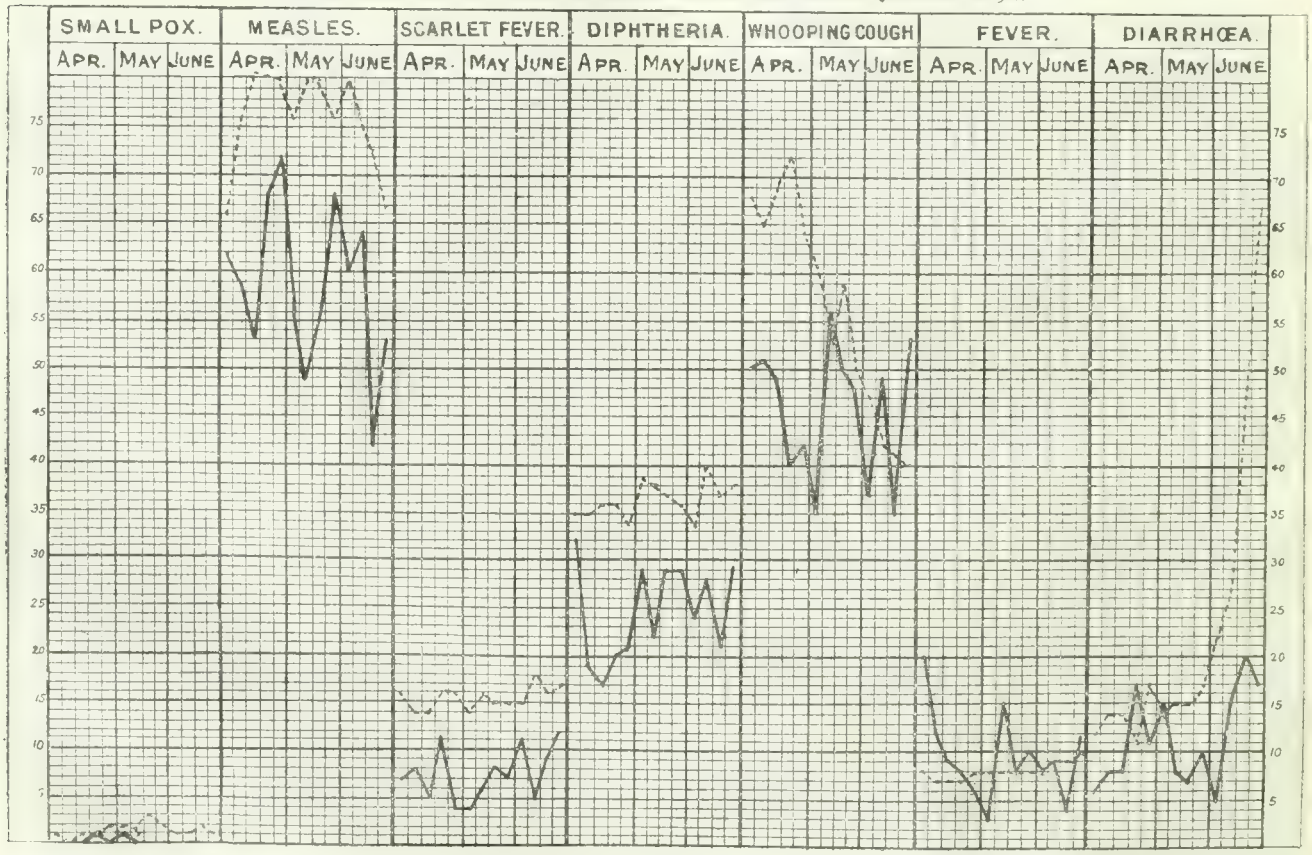
Whooping-cough.—The fatal cases of this disease, which had been 216 and 518 in the two preceding quarters, further rose to 595 during the three months ending June last, but were 136 below the average number in the corresponding periods of the ten preceding years. Among the various sanitary areas whooping-cough was proportionately most fatal in Clerkenwell, Limehouse, St. George Southwark, Bermondsey, Greenwich, and Lewisham.

Fever.—Under this heading are included deaths from typhus, enteric, and simple and ill-defined forms of continued fever. The deaths referred to these different forms of "fever," which had been 381 and 204 in the two preceding quarters, further declined to 124 during the three months ending June last, but were 20 above the corrected average number. Two deaths from simple continued fever were registered during the quarter under notice, but not one from typhus. Among the various sanitary areas the "fever" death-rate was highest in Chelsea, Westminster, St. Martin-in-the-Fields, Strand, Bermondsey, and Lewisham. The Metropolitan Asylums Hospitals contained 148 enteric fever patients at the end of June last, against 406 and 263 at the end of the two preceding quarters; 311 new cases were admitted during last quarter, against 816 and 498 in the two preceding quarters.

Diarrhœa.—The 147 fatal cases of diarrhœa registered in London during the three months ending June last were 143 below the corrected average number in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in Chelsea, St. Giles, Strand, Holborn, St. Luke, and St. George in the East.

In conclusion it may be stated that the 2,047 deaths referred to the principal zymotic diseases in London during the second, or spring, quarter of this year were 775, or more than 27 per cent., below the average number in the corresponding periods of the ten preceding years, 1890-1899. Among the various sanitary areas, the lowest zymotic death-rates were recorded in St. George Hanover Square, Hampstead, St. Martin-in-the-Fields, City of London, St. Olave Southwark, and Lee; and the highest rates in Holborn, Clerkenwell, Shoreditch, Bethnal Green, Limehouse, and Rotherhithe.

DEATHS FROM ZYMOTIC DISEASES IN LONDON DURING THE SECOND QUARTER OF 1900.



NOTE.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted line shows the *average* number of deaths in the corresponding weeks of the ten preceding years, 1890-99.

SMALL-POX AT STALYBRIDGE.

WE have received a copy of a report by the Medical Officer of Health for Stalybridge, entitled *History of the Importation of Small-pox into the Borough*

of Stalybridge, and the Means taken by the Local Authority to Stamp it out. The report is printed by order of the Sanitary Committee. Small-pox was introduced into Stalybridge by an English workman, who had been in Russia and left Moscow on April 17th suffering from the hæmorrhagic and confluent form of the disease. He travelled from Moscow by way of Warsaw, Berlin, Flushing, Queensborough, London, and Manchester to Stalybridge, the journey occupying three days. As a result of his movements 19 cases of small-pox occurred in Stalybridge, and the main points of the report are (1) that from not one of these 19 cases did any extension of the disease take place, and that (2) this stamping-out of a threatened epidemic is attributed to prompt revaccination, accompanied by removal to hospital and the burning of infected bedding, etc. Of the total twenty cases (including the man from Russia) five proved fatal, namely, the first case as to whose vaccination the facts were unknown and four unvaccinated children aged four months, three years, nine years, and eleven years. Following on the outbreak a deputation from the Stalybridge Corporation had an interview with Mr. T. W. Russell, M.P., Parliamentary Secretary of the Local Government Board, urging the addition of small-pox to the list of diseases cholera, plague, and yellow fever specified in the Cholera Order of 1896. Mr. Russell, however, was unable to hold out any hope that the request would be granted, as the three specified diseases differed from smallpox in not being indigenous.

NATIONAL VACCINE ESTABLISHMENT.

Dr. John Todd (Public Vaccinator for Gateshead) writes: My experience of the National Vaccine Establishment is quite different from that of Dr. Liston, of Sunderland. I usually send for thirty tubes at a time, and I invariably get the number sent by return of post. I have never got less than I sent for, and have never had to wait a single day.

FEE FOR CERTIFICATION OF LUNATIC FOR ASYLUM.

D. L. D. writes, saying: In January last I examined and certified a lunacy case by order of a justice. In due course I sent in my claim (endorsed by the justice) to the Board of Guardians. They refused payment, giving as a reason that the family of the patient undertook all expenses in connection with the examination and removal of the case. Our correspondent says he is at a loss to understand how his claim can be regarded as illegal.

*** D. L. D. does not say that this was a case of pauper lunacy, but, assuming it to have been one of this class, the guardians were no doubt liable for the fee claimed notwithstanding any undertaking which may have been given by the patient's friends. Unfortunately, our correspondent is now too late to recover this fee. It would, in fact, be illegal for the guardians to pay it, as it was not paid either during that quarter of the year in which it was earned nor during the subsequent quarter, which ended at Midsummer last. The Local Government Board cannot now sanction the payment of this claim.

EXTRA FEE FOR ADMINISTRATION OF CHLOROFORM IN POOR-LAW PRACTICE.

A. W. W., a district medical officer, writes to ask whether he can claim a guinea which he has already paid as a fee to a neighbouring practitioner for administering chloroform in a difficult case of midwifery, and this in addition to the special fee of £2 allowed by regulation for attendance on the case in question.

*** Our correspondent cannot demand an extra guinea for the administration of chloroform, though he may himself have paid this fee for the service rendered, but the guardians may grant it as an extra fee if they think fit to do so, and the Poor Law allows this. This, we believe, would be sanctioned by the latter authority if the guardians recommend it. We have for a long time past advocated [British Medical Journal, March 11th, 1893, p. 533, col. 1, on Poor-law Practice (Administration of Anæsthetics)] the allowance of a special fee throughout the Poor-law District Service for the administration of chloroform by a properly qualified assistant for any necessary operation.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,014 births and 4,520 deaths were registered during the week ending Saturday last, August 11th. The annual rate of mortality in these towns, which had risen from 14.5 to 20.5 per 1,000 in the five preceding weeks, declined again last week to 20.3. The rates in the several towns ranged from 11.2 in Burnley, 11.9 in Halifax, 12.1 in Cardiff, and 12.2 in Bradford, to 25.6 in Brighton, 26.1 in Sheffield, 26.3 in Liverpool, and 26.8 in Preston. In the thirty-two provincial towns the mean death-rate was 20.2 per 1,000 or 0.3 less than the rate recorded in London, which was 20.5 per 1,000. The zymotic death-rate in the thirty-three towns averaged 5.7 per 1,000; in London this death-rate was equal to 5.0 per 1,000, while it averaged 5.7 in the thirty-two provincial towns, among which the highest zymotic death-rates were 8.5 in West Ham and in Liverpool, 10.1 in Sheffield, and 10.0 in Norwich. Measles caused a death-rate of 1.4 in Derby and 1.7 in Brighton; scarlet fever of 1.1 in Blackburn; whooping-cough of 1.0 in Bolton and 1.3 in Brighton; and diarrhœa of 7.3 in West Ham, 7.6 in Liverpool, in Salford, and in Sheffield. The mortality from "fever" showed no marked excess in any of the large towns. The 65 deaths from diphtheria in the thirty-three towns included 25 in London, 9 in Sheffield, 7 in Leeds, 4 in Leicester, and 4 in Liverpool. No fatal case of small-pox was registered last week, either in London or in any of the thirty-two large provincial towns; and only 5 small-pox patients were under treatment on Saturday last, August 11th, in the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,877, 1,859, and 1,827 at the end of the three preceding weeks, had risen again to 1,838 on Saturday last: 155 new cases were admitted during the week, against 222, 207, and 156 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, August 11th, 939 births and 526 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.5 and 17.2 per 1,000 in the two preceding weeks, further declined to 17.0 last week, and was 3.3 per 1,000 less than the mean-rate during the same period in the thirty-three large English towns. Among these Scotch towns the death rates ranged from 13.3 in Paisley and 13.7 in Dundee, to 19.9 in Leith and 24.0 in Greenock. The zymotic death-rate in these towns averaged 3.5 per 1,000, the highest rates being recorded in Glasgow and Greenock. The 254 deaths registered in Glasgow included 1 from small-pox, 8 from measles, 2 from scarlet fever, 19 from whooping-cough, 4 from "fever," and 39 from diarrhœa. Seven fatal cases of diarrhœa were recorded in Edinburgh; three deaths from whooping-cough and 4 from diarrhœa occurred in Dundee; and 2 from whooping-cough and 6 from diarrhœa in Greenock.

MEDICAL NEWS.

International Theatrical Congresses.—An International Theatrical Congress was held in Paris from July 27th to 31st. Among the subjects discussed were the mode of nomination of doctors to the theatres receiving a subvention; the organisation of the medical service of theatres; accidents during performances and rehearsals; the maintenance of boxes of medicines and appliances; visits to members of the company and theatre staff at their own homes; reports on the unhealthiness of theatres; actors' dressing rooms; heating and ventilation, etc.

A Baby-Rearing Exhibition in Vienna.—A hygienic exhibition intended for the training of mothers was recently held in Vienna. The chief feature of the exhibition was the display of all that is necessary to the care and nursing of little children from the earliest age, so as to give young mothers a sort of object-lesson on the proper treatment of their little ones. It was intended that the exhibition of newborn babes in incubators should form part of the show, but the authorities forbade this on the reasonable ground that there are objections to a public show being made of children requiring the extremest quiet and attention.

A New Antituberculosis Society in France.—There has recently been founded in France a Society for the Protection of the People against Tuberculosis by Popular Education. It proposes to diffuse a knowledge of the means of preventing the disease by the means of pamphlets, circulars, leaflets, placards, pictures, articles in the newspapers, and popular lectures. The President is Dr. J. J. Peyrot, and the Committee includes the names of Drs. Armaingaud of Bordeaux, founder of the Ligue Contre la Tuberculose, Maurice de Fleury, F. Helme, Landouzy, Letulle, Siredly, Salamon, and others.

Royal Visit to Netley.—On August 14th Princess Christian, Princess Henry of Battenberg, and Princess Victoria of Schleswig-Holstein, attended by Major Brown, paid a visit to Netley Hospital. They were met by Colonel Creagh and Colonel Webb. There are in the hospital nearly nine hundred patients. Most of them are from South Africa, and many of them are very sad cases. All the bad cases without exception were visited, and each of the Royal visitors spoke words of sympathy to the men. The Queen had sent with the Princesses a large quantity of cut flowers, and these were given to the worst cases. They were personally handed by one of the Royal visitors, who conveyed to each patient a message from Her Majesty. On receiving this message the faces of the weakest of the sick men beamed with pleasure.

Wear and Tear among Women Workers.—Regarding the alleged fatal wear and tear of a business life for women, especially for typewriters and stenographers, a St. Louis woman is said by the *Philadelphia Medical Journal* to have collected some interesting statistics. She has found in one hospital, where the patients are mainly from well-to-do families, that of 165 women who have been admitted during the last year 95 are housewives, 14 are domestics, 3 are nurses, 6 teachers, 2 seamstresses, 1 a laundress, 2 worked in a factory, 4 are schoolgirls, and 2 are stenographers. The remainder are women of leisure. In an institution where

nervous diseases are a speciality there are 82 women patients. Of these 46 are housewives, 7 unmarried had been keeping their own homes, 5 are domestics, and 15 are women of leisure. No stenographer had ever been an inmate there.

SOCIETY OF TRAINED MASSEUSES.—The founders of the Society of Trained Masseuses announce that the Society has become incorporated under licence of the Board of Trade, and will henceforth be known as the "Incorporated Society of Trained Masseuses." The Society will work on the same lines as before, with the exception that certificate holders will not be members unless nominated and elected by the Council. All particulars of the Society can be obtained of the secretary at the registered address, Trained Nurses' Club, 12, Buckingham Street, Strand, W.C.

SCHOLARSHIPS AT ST. BARTHOLOMEW'S.—At the recent examination the following scholarships were awarded at St. Bartholomew's Hospital College:—Lawrence Scholarship and Gold Medal—C. J. Thomas. Brackenbury Medical Scholarship—A. T. Pridham. Brackenbury Surgical Scholarship—C. E. West. Senior Scholarship in Anatomy, Physiology, and Chemistry—N. E. Waterfield. Entrance Scholarships, Junior—D. Clements-Smith and K. S. Wise (equal). Entrance Scholarships, Jeaffreson Exhibition—M. B. Reichwald. Entrance Scholarships, Shuter Scholarship—H. H. Dale. Kirkes Scholarship and Gold Medal—A. E. H. Thomas. The next examination for entrance scholarships will take place on September 26th.

MEDICAL VACANCIES.

The following vacancies are announced:

BATH: ROYAL UNITED HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board, lodging, and washing. Applications to the Secretary by September 3rd.

BOMBAY CITY.—Executive Health Officer. Monthly salary, minimum Rs. 1,200, maximum Rs. 1,500. Applications to be addressed to the Municipal Commissioner for the city of Bombay, c.o. Mr. John Lithiby, Local Government Board Office, Whitehall, London, by August 25th.

BOURNEMOUTH ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £80 per annum, with board. Applications to the Chairman of the Committee by September 6th.

BRADFORD ROYAL INFIRMARY.—(1) Dispensary Surgeon. (2) Junior House-Surgeon. Candidates must be unmarried. Salary, £100 and £50 per annum respectively, with board and residence. Applications, endorsed "Dispensary Surgeon" and "Junior House-Surgeon," to be sent to the Secretary by August 28th.

BRECON INFIRMARY.—Resident House-Surgeon, unmarried. Salary, £100 per annum, with furnished apartments, board, etc. Applications to the Secretary, 6, Bulwark, Brecon.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House-Surgeon. Salary, £120 per annum, with board and residence. Applications to the Assistant Secretary, 113, Queen's Road, Brighton, by August 28th.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon. Applications to the Secretary by September 10th.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant House-Surgeon," to the Secretary.

CARDIFF: UNIVERSITY COLLEGE.—(1) Demonstrator and Assistant Lecturer in Anatomy; (2) Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120. Applications to the Secretary by September 8th.

CARLISLE: CUMBERLAND INFIRMARY.—(1) House-Surgeon. Appointment for one year. Salary, £70. (2) Assistant House-Surgeon for seven months. Salary at the rate of £40 per annum. Board, lodging, and washing provided in each case. Applications to the Secretary by August 22nd.

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary, £80 per annum, with residence and maintenance in the house. Applications to the Chairman of the Board of Management, 29, Eastgate Row, Chester.

CHORLEY HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board and lodging. Applications to the Honorary Secretary.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary, £100 per annum, with board, etc. Applications to the Secretary by September 8th.

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—District Surgeons. Applications to the Secretary by September 18th.

DOUGLAS, ISLE OF MAN: NOBLE'S GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon, unmarried. Salary, £72 per annum, with board and washing. Applications to the Honorary Secretary, 25 Athol Street, Douglas, by September 7th.

EDINBURGH: VICTORIA HOSPITAL FOR CONSUMPTION.—(1) Resident Physician. Residence, board, and nominal honorarium provided. (2) Non-resident Clinical Assistant. Honorarium, £60 per annum. Applications to the Honorary Secretaries, Messrs. Wallace and Guthrie, W.S., 1, North Charlotte Street, Edinburgh, by August 27th.

GLASGOW UNIVERSITY.—Professor of Clinical Medicine. Salary about £112 and share in fees. Applications to the Secretary of the Glasgow University Court, 91, West Regent Street, Glasgow, by September 12th.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Anæsthetist. Applications to the Secretary by September 10th.

HAMPSTEAD HOSPITAL, N.W.—Resident Medical Officer. Salary at the rate of £120 per annum, with rooms, coals, and gas. Applications to the Honorary Secretary by September 10th.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House-Surgeon. Salary, £75 per annum, with residence, board, and washing. Applications to J. R. Wheldon, 74, King Street, South Shields.

IPSWICH EAST SUFFOLK AND IPSWICH HOSPITAL.—Second House-Surgeon, unmarried. Salary, £70 per annum, with board, lodging, and washing. Applications to the Secretary by August 21st.

KENT AND CANTERBURY HOSPITAL.—Assistant House-Surgeon; unmarried. Salary, £60 per annum, with board and lodging. Applications to the Secretary by August 30th.

LANCASTER COUNTY ASYLUM.—Assistant Medical Officer. Salary, commencing £125 per annum, with usual allowances. Applications to the Medical Superintendent.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee.

MANCHESTER: OWENS COLLEGE.—Demonstrator in Anatomy for the Winter Session. Applications to the Registrar.

MANCHESTER WORKHOUSE, Crumpsall.—Junior Resident Assistant Medical Officer, unmarried. Salary £110 per annum, with furnished apartments, fire, light, washing, and attendance. Applications to the Clerk to the Guardians by August 22nd.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House-Surgeon, unmarried, and not under 22 years of age. Salary, £75 per annum, with furnished apartments, board, attendance, and washing. Applications to the Secretary by August 22nd.

NORTH-WEST LONDON HOSPITAL, Kentish Town Road, N.W.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum, with board, residence, and washing. Junior Officer, eligible for election to senior post when vacant. Applications to the Secretary by September 4th.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Unmarried. Salary, £140 per annum, with all found except board. Applications to the Secretary.

ROTHERHAM HOSPITAL.—Senior House-Surgeon. Salary, £105, all found. Candidates should have ophthalmic experience. Applications to Mr. E. S. Bayliss, Moorgate, Rotherham, by August 22nd.

ROYAL ORTHOPÆDIC HOSPITAL, Oxford Street.—House-Surgeon and Registrar. Appointment for six months but eligible for re-election. Salary at the rate of £100 per annum, with residence and partial board. Applications to the Secretary by September 1st.

RUBERY HILL ASYLUM, Barnt Green Worcestershire.—Junior Assistant Medical Officer, unmarried. Applications to the Medical Superintendent.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer. Salary, £50 per annum, with furnished apartments, board, and washing. Applications to the Clerk to the Guardians, Union Offices, Westbar, Sheffield, by August 22nd.

SHREWSBURY: EAR AND THROAT HOSPITAL FOR SHROPSHIRE AND WALES.—Surgeon, must be F.R.C.S.Eng. Honorarium, £150 per annum. Applications to the Secretary by August 27th.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon. Appointment for six months. Salary at the rate of £24 per annum, with board, washing, and residence. Applications to the Secretary by August 28th.

TOTTENHAM HOSPITAL.—House-Surgeon. Honorarium at the rate of £20 per annum, with board, residence, and laundry. Applications to the Chairman of the Joint Committee, Tottenham Hospital, The Green, South Tottenham, by August 30th.

VICTORIA HOSPITAL FOR CHILDREN, Queen's Road, Chelsea, S.W.—Resident Medical Officer. Appointment for six months. Honorarium, £25, with board and lodging. Applications to the Secretary by September 1st.

WEST NORFOLK AND LYNN HOSPITAL Kings's Lynn.—House-Surgeon. Salary, £100 per annum, with board, residence, and washing. Applications to the Chairman of the Weekly Board by August 31st.

WINCHESTER: ROYAL HANTS COUNTY HOSPITAL.—House-Physician, unmarried. Salary, £65 per annum, with board, residence, etc. Applications to Secretary by August 24th.

MEDICAL APPOINTMENTS.

ALDERSON, Wilfred E., M.D., M.S.Durham, appointed Honorary Physician to the Newcastle-upon-Tyne Dispensary, *vice* J. D. Dixon, resigned.

BISSETT, Alfred, M.B., Ch.B., appointed Resident Physician to the Aberdeen Royal Infirmary.

CROLL, Wm. Flett, M.B., Ch.B., appointed Resident Surgeon to the Aberdeen Royal Infirmary.

HODGSON, J. F., M.B., Ch.B.Vict., appointed Assistant House-Surgeon to the Oldham Infirmary.

HOPKINS, J. J., L.R.C.P., L.R.C.S.I., appointed Certifying Factory Surgeon for the Nos. 1 and 2 Castlebar Dispensary Districts and the Electoral Division of Bellavady, in the Union of Castlebar.

LEECH, J. W., M.D., B.S., F.R.C.S.Edin., appointed Honorary Assistant Surgeon to the Royal Infirmary, Newcastle-upon-Tyne.

THOMAS, G. Crewdson, M.B., C.M., M.R.C.P.Edin., appointed Registrar to the Chelsea Hospital for Women, Fulham Road.

DIARY FOR NEXT WEEK.

MONDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Mr. McAdam Eccles: The Application of Splints to the Upper Extremity. Lecture I.

THURSDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Mr. McAdam Eccles: The Application of Splints to the Lower Extremity. Lecture II.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BAKER.—On August 9th, at the Mount, Witley, Surrey, the wife of John Charles Baker, M.B., of a daughter.

BILLINGS.—On August 11th, at 3, Pittville Parade, Cheltenham, Grace Stewart Billings M.B., B.S.Durh., wife of F. W. Billings, of a son.

COUPER.—At South Shore, Blackpool, on August 12th, the wife of Sinclair Couper, M.B., C.M., of a daughter.

KENDALL.—On August 8th, at 9, King's Parade, Clifton, Bristol, the wife of Herbert W. Kendall, M.R.C.S., L.R.C.P., of a daughter.

LEWARNE.—On August 10th, at Cricklade, Wilts, the wife of Frank Lewarne, M.R.C.S., L.R.C.P., of a son.

ROBERTSON.—On August 14th, at 24, Disraeli Gardens, East Putney, the wife of F. W. Robertson, M.A., M.D., B.S., M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

GREENWOOD—LEE.—The marriage took place on August 1st of Alfred Greenwood, M.D., D.P.H., Medical Officer of Health for Crewe, with Beatrice M. Lee, of Manchester, at Christ Church, Moss Side, Manchester.

SCORER—NORRIS.—On August 9th, at Holy Trinity, Bournemouth, by the Rev C. P. Koelle, M.A., assisted by the Rev. Malcolm W. Brown, M.A., Frank Scorer, M.R.C.S., L.R.C.P., second son of Alfred Scorer, of Upper Hamilton Terrace, London, to Violet Eleanor Norris, only daughter of Alfred Norris, of Catford, Kent.

DEATHS.

ANDERSON.—On August 9th, at 1, New Cross Road, S.E., John Anderson, M.D., in his 82nd year.

BARKER.—On July 7th, 1900, at Kuching, Sarawak, Constance, the dearly-beloved wife of A. J. G. Barker, Principal Medical Officer, Sarawak, Borneo.

MALLETT.—On August 8th, at his residence, Newport House, Bolton, Frederic Blakesley Mallett, M.D., J.P., aged 59 years.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

Cancer, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

Central London Ophthalmic. *Attendances.*—Daily, 1. *Operations.*—Daily.

Central London Throat, Nose, and Ear. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.

Charing Cross. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Röntgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.

Chelsea Hospital for Women. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

City Orthopædic. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.

East London Hospital for Children. *Operations.*—M. Tu. Th. F., 2.

Great Northern Central. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

Guy's. *Attendances.*—Medical, i.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, i.-p., daily, 1.30; o.-p., M., W. Th. S., 12; Obstetric, i.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, i.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

Hospital for Women, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.

King's College. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

London. *Attendances.*—Medical, daily, i.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

London Temperance. *Attendances.*—Medical, i.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, i.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

London Throat, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.

Metropolitan. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

Middlesex. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

National Orthopædic. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

New Hospital for Women. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.

North-West London. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

Royal Ear, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations.*—Tu., 3.

Royal Eye, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

Royal Free. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

Royal London Ophthalmic. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

Royal Orthopædic. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; i.-p., Tu. Th., 2.30.

Royal Westminster Ophthalmic. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

St. Bartholomew's. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.

St. George's. *Attendances.*—Medical and Surgical, daily; i.p., 1; o.p., 12; Obstetric, i.p., Tu. F. 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.

St. Mark's. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

St. Mary's. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

St. Peter's. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

St. Thomas's. *Attendances.*—i.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.

Samaritan Free for Women and Children. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

Throat, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily, exc. M., 10.

University College. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

West London. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

Westminster. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

Communications for the Current Week's Journal should reach the Office not later than Midday on Wednesday. Telegrams can be received on Thursday Morning.

Communications respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the Journal, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

Original Articles and Letters *forwarded for publication are understood to be offered to the* British Medical Journal *alone, unless the contrary be stated.*

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look at the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any circumstances be returned.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal, and not at his private house.

Telegraphic Address.—The telegraphic address of the Editor of the British Medical Journal is *Aitiology, London.* The telegraphic address of the Manager of the British Medical Journal is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Rusticus would be glad to know the best way of keeping surgical instruments which are only occasionally used from getting rusty. Provided the atmosphere of the room is fairly dry, should they be kept loose in a drawer or in cases, boxes, etc.?

Verax will be glad if any member can suggest a remedy for the treatment of tapeworm. The patient is a man, aged 27 years, and has been home from Natal about eighteen months. Our correspondent has tried everything that he can think of except ol. terebinth, and that the patient refuses to take.

Scotia asks for advice as to treatment in the following case. A girl, aged 13¾, began to menstruate for the first time at the end of April. Since then her periods have been painless and regular, but have come on every third instead of every fourth week. She is in good general health. She was born in India, but came home when two years of age, and has lived in Scotland ever since. Her mother has always been regular, but one of her father's sisters has always had her periods every third instead of every fourth week. In this case would it be better to attempt to rectify the too frequent recurrence of the period, or is it not likely that more harm than good would be done by interference?

*** (1) No harm will come from the changed monthly rhythm. (2) No treatment will alter it. (3) Interference will do more harm than good.

Zephyr writes: I shall feel obliged if you could refer me to some authentic literature on the administration of ergot during delivery. The modern view on the subject is that it is advisable to give ergot only after expulsion of the placenta, and that it is not permissible—very harmful—to give it before that step, unless in anticipation of *post-partum* hæmorrhage, in case of atony of the uterine muscular fibres, or some other well-known condition. May I know what positive harm would there be to administer ergot as a routine treatment, always after the delivery of the child and before the expulsion of the placenta? Bearing in mind that taken internally it takes some time to exert its action, and that its effect is not so immediate from the moment of its administration, nor so uniformly effectual on the uterine muscle, as proved by its frequent failure in checking *post-partum* hæmorrhage, would it be unreasonable, I venture to ask, to administer ergot immediately after the birth of the child, to strengthen uterine contractions, and hasten thereby the expulsion of the placenta, as well as avert any tendency to hæmorrhage? Ergot, as we know, promotes tonic contractions of the uterine muscle, but is it not a fact that after internal administration the contraction does not remain permanently tonic, but that relaxation follows to some extent, and that the drug only lengthens the period of toxicity at each administration? In that case what would be the harm in giving only one dose of the drug internally with a view to assist the uterine contractions, without necessarily bringing about a strong tonic contraction of the uterine muscle? I shall be grateful if your learned correspondents could elucidate me on the subject.

*** There would be no harm, but it is unnecessary in a normal and well-managed labour.

Surgical Sterilisers.

Surgeon asks for an opinion whether it is best to place the sterilisers—(*a*) for instruments, (*b*) for dressings, and both using gas as source of heat—in the actual operating theatre or in the ante-room? The advantages of the former position are—that the process is carried out nearer the instrument cabinet, and that the staff, resident and visiting, will be more constantly present and thus see (1) that it is well done; (2) that it is not undone by subsequent carelessness. The disadvantages are that the products of combustion will foul the air and cause deposition of dew on walls and windows.

*** If gas sterilisers are used for instruments and dressings, they should certainly not be placed in the operation theatre. The fouling of the air, walls, windows from the burning gas is considerable. Electric heaters, as supplied by the Electric Supply Company, are very useful for the sterilising of instruments, and can be placed in the operation room. The best gas steriliser for dressings is supplied by Down Brothers. A useful "hold-all" for dressings and mops is made by Robinson, Chesterfield. It consists of a square of gamgee tissue covered with holland. The pads and dressings are wrapped in the hold-all and sterilised, and are unpacked only at the moment they are require

ANSWERS.

Tropicus has omitted to enclose his card.

Plague Duty.

M.B.—Application should be made to the India Office.

Antityphoid Serum.

Dr. Lloyd Jones.—Our correspondent should apply to Professor Wright, Netley.

Bleaching Corks.

Melanoma writes: In reply to the query of "Leucoma" re bleaching of corks in the British Medical Journal of August 11th, I can assure him that he will find the following method satisfactory, as it not only bleaches them but restores them to their original form, eliminating the constriction produced by the neck of the bottle: Prepare a solution of potassium permanganate, 1 oz. to one pint of water, and boil the corks in this until they are of a deep brown colour. Wash them thoroughly in clean water to dissolve the unaltered permanganate. Next boil in a solution of oxalic acid, 2 ozs. to one pint of water, when the brown dis-

coloration will disappear. A thorough wash in clean cold water will get rid of the oxalic acid. This will clean the majority of the corks, but should any remain dirty from the presence of carbonaceous matter, this may be removed by brushing with soap and water. By these methods 95 per cent. of the corks may be rendered fit for service again.

DR. H. SERJEANT (Camberwell) writes: "Leucoma will find 1 oz. oxalic acid in one pint of water will bleach corks, sponges, wood, etc. Leave them in until clean.

ECONOMIST writes: As a hint to "Leucoma" I may mention that I have for some time past kept in my surgery a jar with very dilute hydrochloric acid, into which I have put returned corks. These after washing and drying I have found sufficiently clean and of use for some purposes.

NOTES, LETTERS, Etc.

DR. J. B. SIDDALL (Bideford) writes: In reply to Dr. F. Smith's query as to a remedy for corns on the sole of the foot, I have found the following treatment efficacious:—First apply liq. ammon. fort. to the centre of the corn with a pointed piece of wood and dry off the superfluous fluid with blotting paper, and repeat night and morning for three days; then rub in night and morning an ointment composed of vaseline 5iij, lanolin 5v for about five minutes to each corn, and finish up by rubbing in some dry salicin mixed with a little of the ointment. If Dr. Smith wears knitted socks or stockings it would be as well for him to give them up.

CORNS ON THE SOLE.

J. E P. recommends the following treatment:—Apply a stick of potassa fusa cum calce to the core of the corn, to be used dry. Poultice the whole of the interior sole of the foot each night after the application. Repeat the process two or three times till the whole of the core is removed. Apply unguentum zinci till the small ulcer heals. The caustic is a powerful one. Our correspondent has cured himself and others after much suffering.

D. A. C. BARRON (Dailly, Ayrshire) writes: From personal experience of the torture complained of, I am certain Dr. F. Smith will never get the relief he wishes until he pays attention to his boots. Somehow or other the boots must be pressing unduly on the parts of his feet where the corns have developed. The boots may be too narrow. The socks are of equal importance—they may be too small for him If the boots and socks are roomy enough he should get his shoemaker to scrape out the parts of the soles of his boots corresponding to the parts of his feet complained of. To relieve the present tenderness, let him pare away all hard skin and then apply a piece of Mead's inch wide rubber plaster over each part of his foot. The help from his shoemaker and Mead's plaster will allow him at once to gallop north with his thanks.

"ST. CRISPIN" CYCLE SADDLE.

WE have given a very thorough trial to the "St. Crispin" cycle saddle, and found that in its new and improved form it is very comfortable. The method of triple tension adopted keeps the sides of the saddle in position, and preserves the shape. The peak is well shaped, and the back part is sufficiently broad to allow the rider to sit fairly and squarely upon his ischial tuberosities, while the centre is composed of soft fabric, and is well calculated to obviate any injurious pressure on the perineum. Like every saddle, it requires a little care and attention to adjust it properly to the rider, but when it is rightly fixed it needs no more attention. It is well made and very durable. For ladies' use it appears to be well adapted. The saddle can be obtained from J. Gerard and Son, 257, King's Road, Chelsea, S.W.

HYGIENIC REGULATIONS AT DAVOS.

ON April 1st last the adjacent stations of Davos Dorf and Davos Platz amalgamated so far as the organisation for the comfort of visitors is concerned. Instead of each having its own separate administration, there is now only one Kurverein for Davos, with its office at Davos Platz (Promenade No. 23), where all information as to either place may be obtained. The Kurverein issued in May some carefully drawn up regulations to prevent harm from the presence of so many consumptive visitors. Consumptives are obliged to carry spittoons, and are forbidden to spit on the floor of rooms, or on the paths, or even on the snow. Rooms which have been occupied by phthisical invalids must be disinfected before being again occupied. The slight restraint which these regulations impose upon the consumptive invalids will be more than compensated for by the feeling of security which other visitors to Davos will enjoy.

WAR SURGERY IN THE EARLY DAYS OF THE CENTURY.

DR. J. REID (Redhill) writes with reference to Mr. Treves's address in surgery at Ipswich:—Battle of Aboukir: "All amputations done within a few hours were successful," vol. ii, p. 263; Faure had one third successful; three-fourths of Larrey's amputations, several being double, were successful, *loc. cit.*, p. 455; amputation of both legs done several times with success, vol. i, p. 91, vol. iii, p. 377; amputation at the hip-joint, twice successful, vol. iv, pp. 27 and 50; pericardium drained, vol. iii, pp. 458-474; suture of wounded intestine recommended, vol. iii, pp. 434-6; wounds of abdomen and viscera with recovery, vol. iii., pp. 488-90, 487-8, 436-9, etc.; empyema operations, vol. i, pp. 200, 234, etc. At that time a surgeon included the median nerve in ligaturing the artery! vol. iii, p. 287.—Larrey, *Chir. Mil.*, 1812 It is unfair to stamp our ancestors as uncouth brutes and vainglorious, when probably the proportion of such surgeons was not greater than it is to-day. There is a tendency to forget what our forefathers have done, and the young are ever ready to teach their "grandmothers to suck eggs." Let us have results with anæsthetics and improved antiseptics placed alongside Larrey's.

ACADEMIC COSTUME.

A VISITOR AT THE CENTENARY MEETING writes: While congratulating the Council of the Royal College of Surgeons on their Fellows' and Members' gowns, the institution of which is decidedly a move in the right direction, I would suggest that a hood should be added to complete the costume, as in educational bodies in which academic costume is worn, it is the hood which distinguishes the qualified from the unqualified. The hood is not confined to universities, as King's College, the College of Preceptors, and the various theological colleges authorise their licentiates to wear them.

A CASE OF SUPPOSED CHLORAL POISONING.

DR. E. R. FOTHERGILL (Roche, Cornwall) sends an account which has been condensed from his notes of the following case: On June 3rd last I was called at 8 A.M. to a farmer aged 68 who "could not be woke up." I found him lying fully dressed on the bed unconscious, with blue lips and blanched face, irregular, slow, and feeble pulse, very slow and irregular, but not stertorous respiration, and pin-point pupils. He had that morning taken a dose of what he believed to be a solution of salts and gin; he retched, sat down almost at once, and went to sleep. Although apparently moribund I had him undressed and wrapped in a wet sheet, when the pupils at once enlarged, and I then gave an injection of strychnine, strophanthin, and caffeine, and washed out the stomach. A little mucus with a yellow tinge, but without smell, came away, and after an hour as the pupils were again contracting I had another wet sheet applied; this caused him to move his legs. After half an hour I repeated the injection, and slapped him with the sheet. This seemed to revive him very much. It was now suggested that he might have taken some medicine intended for a cow which had been in pain. Thinking that the medicine might contain morphine I gave through a tube a pint of strong coffee, dried him, and wrapped him in blankets. He now seemed to improve, and I gave a third injection, and arranged for him to be walked up and down, and for coffee to be given him at intervals. After four hours I left on account of an urgent message, and when I returned at 2 P.M. I found him much better; he could draw on his clothes with aid, and was protesting vehemently against treatment and wanting to sleep. Through the kindness of Dr. Mason of Austell, who saw the case with me, it was ascertained that the medicine for the cow contained chloral hydrate, and it seemed probable that the farmer had taken at least half an ounce of the drug. The treatment was continued during the night, and the next day he was doing well, and in two days was out of doors. I was very much struck by the influence cold applications and air seemed to have on him, seeing that the case was practically hopeless on my arrival.

LETTERS, COMMUNICATIONS, ETC., have been received from

A A. B.; Anti-Humbug. **B** Sir H. R. Beevor, Bart., London; Mr. W. J. T. Barker, London; A. C. Barron, M.B., Dailly; Mr. G. H. Broadbent, Manchester; Dr. W. J. Baird, Huddersfield. **C** Mr. J. B. Curgenven, Hildenborough; W. Colquhoun, M.B., Glasgow; Canada; Mr. G. W. Cooper, London; Dr. J. Calvert, London; Crista Galli; Candide et Caute. **D** Mr. E. R. Dale, Salisbury; Mr. D. L. Davies, Criccieth; Miss A. Dowling, London; Mr. A. Doran, Newquay. **E** A. Edington, M.B., Grahamstown; E. **G** Dr. W. S. A. Griffith, London; Mr. C. C. Godding, Plymouth. **H** P. L. Hart, M.B., London; Mr. J. Hutchinson, jun., London; H. H.; Hypericum; Mr. C. Harley, Farnham; Dr. T. W. Hime, Bradford. **J** J. E. P.; J. C.; J. G.; Justitia; Messrs. W. and A. K. Johnston, Edinburgh. **K** Mr. J. Keen, Waddesdon. **L** Dr. H. L. Lack, London; Mr. T. Laffan, Cashel. **M** M.O.H; Mr. J. Marsh, Shanklin, Isle of Wight; Mr. G. H. Makins, Pretoria; Maranta; Melanoma; M.O.H.; Dr. E. P. Manby, Liverpool; M. L. D. **N** J. H. Nicoll, M.B., Glasgow; Dr. E. F. Neve, Srinigar. **O** E. Owen, M.B., Glasgow; Mr. C. A. P. Osburne, Church Stretton. **P** Dr. G. C. Purvis, Grahamstown; Dr. T. A. Palin, Wigton **R** Rusticus; Mr. W. A. S. Royds, St. Mary Bourne; Mr. W. A. Renshaw, Altrincham. **S** Mr. E. N. Smith, London; W. G. Spencer, M.B., London; Dr. J. B. Siddall, Bideford; Mr. J. B. Safford, London; Mr. H. Serjeant, London; Mr. W. L. Symes, London; Mr. F. B. H. Smith, Dublin. **T** Mr. P. Turner, London; Dr. J. L. W. Thudichum, London; Tropicus; Mr. J. Todd, Gateshead; Dr. F. W. Tunnicliffe, London. **V** Verax. **W** Dr. A. McC. Weir, East Sheen; W. R. E. Williams, M.B., Liverpool; Dr J. S. Wallace, Kingston-on-Thames. **Z** Zephyr; etc.

BOOKS, ETC., RECEIVED.

Descriptive and Illustrated Catalogue of the Physiological Series of Comparative Anatomy contained in the Museum of the Royal College of Surgeons of England. Vol I. Second Edition. London: Taylor and Francis. 1900.

Ueber die Einwirkung des Tropenklimas auf die Ernährung des Menschen. Von Dr. K. E. Ranke. Berlin: August Hirschwald. 1900. M. 2·40.

A Handbook of the Diseases of the Eye and their Treatment. By H. R. Swanzy, A.M., M.B., F.R.C.S.I. Seventh Edition. London: H. K. Lewis. 1900. 12s. 6d.

Aetiologie, Prophylaxis, und Therapie der Rhachitis. Von Dr. P. Zweifel. Leipzig: S. Hirzel. Glasgow: F. Bauermeister. 1900. 6s.

Over the Alps on a Bicycle. By Elizabeth R. Pennell. London: T. Fisher Unwin. 1898.

L'Année Chirurgicale. Publiée sous la direction du Dr. A. Depage. Deuxième Année. 1899. Deuxième Fascicule. Brussels: H. Lamertin. 1900.

Consumption: How to Avoid it. By J. H. White, M.D., B.S., F.R.C.S.E. Birmingham: Cornish, Brothers. 1899.

*** In forwarding books the publishers are requested to state the selling price.

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EDUCATIONAL NUMBER.

SESSIONS 1900-1901.

MEDICINE AS A CAREER.

When a youth has chosen, or has had chosen for him, the profession of medicine for his career in life, his parents or guardians naturally wish to inform themselves as to the successive steps necessary to be taken in order that he may become a qualified practitioner, and the probable cost of those steps, as well as to gain some idea of the prospect of his being able, at the end of his pupilage, to support himself either by starting in practice on his own account, or by entering the medical service of the army or navy They probably turn to their medical adviser for information on these points, and he, if he has arrived at middle age, knowing full well that the whole system of medical education has been changed since he was himself a student, refers to the Educational Number of one of the medical journals to see how matters stand at the present time.

Regulations of the General Medical Council.

The first thing which confronts the inquirer is that all the course along which the student has to tread has been marked out for him by the regulations of the General Council of Medical Education and Registration. Before he can even register himself as a medical student he must first of all pass a Preliminary Examination approved by the Council, and until he has so registered himself no time spent in study or attending lectures will be allowed to count as part of the five years required by the regulations of the Council to be spent in medical study. The curricula of the hospitals and schools where he is taught must conform to the Council's regulations, and when at length he has obtained a registrable qualification or qualifications, these must be duly recorded by the Council in its *Medical Register* before he is legally qualified to practise his profession. The Council's regulations are given in another part of this number, and may be taken as representing the minimum required from all students.

Universities and Corporations.

Even before the student passes his Preliminary Examination a decision should be come to as to whether he intends to take a degree (M.B. or M.D.) at a university, or to be content with the less ornamental but perhaps, for general practice, quite as useful, double diploma of the Conjoint Board in London, Scotland, or Dublin, entitling him to write after his name the letters L.R.C.P. and M.R.C.S. in England, L.R.C.P. and S. in Ireland, and L.R.C.P. and S. and L.F.P.S.G. in Scotland. If this decision be delayed, and he should desire after commencing study to go in for the degree of the London University, for instance, he will find himself seriously handicapped by having to take up again his preliminary work, when he ought to be working hard at his strictly medical studies.

Where expense is no object, the advantages of having had a university education at Oxford or Cambridge, Edinburgh, or Dublin, are apparent to all. Friendships are formed in all these places, often among those who intend to enter other professions—friendships which are of service to the student in his after-career. Then also, the degree of M.D., which they in common with the Victoria and Durham Universities in England, the other Scotch Universities, and the Royal University of Ireland, confer, has a mysterious charm in the eyes of the public which no other combination of letters seems to possess, and it is, moreover, indispensable for those who seek to obtain honorary appointments to hospitals on the medical side, or to practise as consulting physicians. The degrees of the University of London, for which residence is not required, stand on a somewhat different footing from those of the older Universities, and maintain their high character by the exceptionally severe nature of their examinations, which render them comparatively difficult to obtain. The licences of the Society of Apothecaries of London and of the Apothecaries' Hall of Ireland also give admission to the *Medical Register*, but few students are content, after a course of study as prolonged and, with the exception of the cost of the diploma, as expensive as that for the Conjoint Board, to be able to write after their names merely L.S.A. or L.A.H.

For the ordinary run of English students, the great objection to seeking a university degree is the extra year which in practice is so often required, and the fact that unless he happens to reside in a university town, or one in which a college connected with a university exists, his calculations as to cost must be on a higher scale than if he merely design to qualify at the Conjoint Board. At Cambridge, for instance, residence for the university year of about twenty-four weeks can hardly be done under £200, while at the residential colleges connected with several of the London medical schools, as also at Owens College, Manchester, and the Yorkshire College, Leeds, the charges, varying somewhat in each place and according to the rooms selected, are all very much less than those at Cambridge. Thus, at King's College, London, the cost of the academic year for rooms and dinner varies from £50 to £60.

In Ireland the same difficulty of expense in obtaining the degree of M.D. need not arise, since, in addition to old Trinity in Dublin, there are the three Colleges of Belfast, Cork, and Galway in connection with the Royal University of Ireland, which enable the Irish student to qualify as M.D. with as little expense as he would incur in obtaining the diplomas of the Conjoint Board. In Scotland the cheapness with which a university degree can be obtained has

long been a marvel to Englishmen, and seems to be largely due to the capability of the Scotch student for restricting his personal expenses, both for living and clothing, within such narrow bounds as are rendered necessary by the *res angusta domi*, a practical lesson in self-control and self-denial which stands him in good stead in after-life.

Selection of a Medical School.

The decision whether a university degree is to be sought or not having been made, the next step is to select a medical school. In the following pages particulars are given of the attractions offered by the various schools, and it would be invidious to name any one of them as affording better opportunities than another for gaining a practical knowledge of medicine, surgery, and midwifery. London, Edinburgh, and Dublin will always attract large numbers of students, but the parent or guardian may be assured that in many of the great provincial centres his son or charge will receive as good practical teaching, and be as well prepared either for the ordinary diplomas or for the higher degrees, as in the metropolitan cities.

As a general rule, the best time for entering at a medical school is May. The student then learns during his first summer session chemistry and chemical physics, also practical chemistry, and passing an examination in them at the end of the session, gets them, so to speak, out of his way before he commences anatomy and physiology in his first winter session. He may also, if he has done practical pharmacy either in the hospital dispensary or with a general practitioner, go in for examination in it, or he may defer this till a later period. By taking practical pharmacy with an outside practitioner the student will gain a useful insight into the usages of private practice, and will be better prepared to undertake the duties of an assistant should this at any time become necessary. With the winter session commence the lectures on anatomy and physiology, the dissections and tutorial classes, with always the prospect of an examination at the end of the session looming in the distance.

The student who loves his work will find the five years spent at a medical school by no means too long to make him thoroughly prepared for practising on his own account. After he has passed his first examination in anatomy and physiology at one of the Examining Boards he becomes eligible for the offices of clerk or dresser at his hospital, by holding which he is brought at once into close personal contact with the medical and surgical cases of which he is required to take note; in order that he may be able to do this in a systematic manner he receives instruction from the medical tutor at the hospital on the examination of patients and on note-taking. As clinical clerk to one of the physicians, or dresser to one of the surgeons, he has opportunities, of which he should avail himself to the utmost, of cultivating the faculty of accurate observation, of training his eyes, ears, and hands, and of learning the use of various instruments of precision. He will also at this time find occasion for applying the knowledge he has already gained of microscopic and chemical work in the ward and laboratory to the study of disease in the living, and by holding the appointment of clerk in the *post-mortem* room to the morbid appearances after death.

Whether holding these appointments or not, every student should attend as regularly as possible the medical and surgical wards and the *post-mortem* room. Among the special departments of the hospital which he will do well to attend regularly are those dealing with diseases of the eye and throat. Fascinating in themselves as studies, especially the former, they will both be found useful in after-life even by those who do not follow them as specialities. Diseases of the ear should also receive attention, and the dental department should on no account be neglected, as many a country practitioner finds it quite necessary to be able to extract teeth skilfully.

The Cost of a Medical Education.

Most of the London hospital schools arrange that by paying a composition fee of from a little over £100 to £150, either in one sum or by instalments, the student becomes a perpetual student, and is entitled to attend all necessary lectures and hospitals for the double diploma. As cheapness here cannot be considered a special recommendation, we take the larger sum for the purpose of our estimate, and adding to it the necessary expenses for maintenance, clothing, books, anatomical parts, etc., at £100 a year for five years—a rather low estimate for London—we find that the total cost of an ordinary student at a London hospital who qualifies at the Conjoint Board would be from £650 to £700; that of a university graduate would necessarily be greater, and might amount to £1,000. Of course there is always the possibility in either case that rejections at intermediate examinations may prolong the period of studentship by an additional six months or a year, or may even render coaching necessary, and so add to the cost.

The Prospects of a Qualified Practitioner.

Supposing our student to have become fully qualified and registered, he is next confronted with the question, What is he to do to obtain a livelihood? There are, of course, the medical services of the army and navy open by competitive examinations; or if he has filled the offices of house-physician and house-surgeon at his hospital with credit and distinction, and has also some facility for acquiring languages, he may be advised to compete for the Indian Medical Service. With regard to all these services, details will be found on pp. 517-520. Other openings which frequently occur and are advertised in the medical journals are those of assistant medical officers at lunatic asylums, or in the smaller general and special hospitals in London or the provinces, and assistant medical superintendents at the metropolitan infirmaries or fever hospitals; but these, though well enough for a year or two, ought not to be held too long, or the holder is liable to become unfitted for ordinary practice. One form of temptation which the newly qualified man cannot be too strongly cautioned against is that of the co-operative friendly societies, who seek to engage his whole services at a certain fixed salary, they providing him with drugs and a dispenser, and also with a residence or allowance in lieu of one. The offer sounds tempting enough, but those who have tried it have in many cases found themselves the mere slaves of unreasonable members, and after a short time have thrown up their appointments in disgust.

The General Medical Council has expressed disapproval

of medical men taking office under these societies, and the profession as a rule fights shy of them, so that the holders find themselves looked upon as black sheep, and cut off from professional society: some of the Branches of the British Medical Association have decided not to admit the holders of such appointments to the membership of the Branch. The lot of a qualified assistant is not without its trials, but it may be considered a happy one as compared with those who allow their medical services to be exploited by a commercial company.

The newly-qualified man who secures an assistantship with a successful practitioner in the suburbs of London or in the country may expect to receive from £100 to £150 a year indoors, with a prospect of rising, if he is found to contribute to the success of the practice, to perhaps £200 or £250. He will also usually have a percentage on the midwifery cases which he attends. At the present time, in consequence of the condemnation by the General Medical Council of the employment of unqualified assistants for any duties except such as dispensing, there is said by medical agents to be an abnormally large demand for qualified assistants and an abnormally small supply of them, showing itself, particularly at this season of the year, in a dearth of *locum tenentes* to supply the place of principals going away on holidays; but the laws of supply and demand will doubtless set this all right within a year or two.

The qualified assistant will find it a distinct advantage to be able to dispense not only accurately but neatly, and with due regard to the requirements of private patients. Should the practice be a country one in England or Wales, he will find that it is principally made up of three elements, in varying proportion: (1) Private practice, which is of course as a rule the part which pays best; (2) Poor-law appointments, generally including that of public vaccinator, which, since the antiseptic method of performing this little operation has been made obligatory and vaccinating stations have been done away with, is better paid for than it used to be; and (3) clubs and friendly societies, which are taken more as an introduction to other practice than for the sake of the remuneration given, which, ranging from 2s. 6d. to 4s. a head per annum is far too small—certainly the lower figure is—to pay for the actual work done. If the Conciliation Board, proposed by the General Medical Council, is able to bring about, as we have been led to hope, a rise in these contract prices to at least 4s. a year, it will have done a very considerable service both to our profession and to the friendly societies.

It will be seen that from the moment when the student becomes a registered medical practitioner, his services have a definite money value, which ought in the course of years to give him a fair interest on the capital expended on his education, and, if he be at all successful, by degrees the return of the capital itself. Should he be so fortunately situated as not to have expended the greater part of his capital already, the choice lies before him of either setting up in practice for himself, or purchasing a practice or partnership, for which, however, much judgment is required. His safest plan is to consult some well-known medical agent, and under his advice to purchase a partnership, after a year's preliminary assistantship.

THE MEDICAL CURRICULUM.

The course of professional training through which a student who desires to enter the medical profession must pass is, under the regulations now in force, essentially the same in all cases. The Universities and medical corporations differ from each other chiefly in the severity of the various examinational tests which they impose, but the subjects of study which are laid down by the General Medical Council are broadly the same for all. The minimum period of study after registration as a medical student is five years, whether the curriculum be passed in England, Scotland, or Ireland, and whether the student is seeking a University degree or a College diploma. Although in the case of the Universities the minimum period of study is the same as that for a diploma, some students find it desirable to spread their work over a longer period, and before deciding upon a University course the intending student should carefully consider the regulations and requirements: for his guidance in this respect particulars are given in the following pages of the regulations of the various Examining Boards. When the student has decided upon the degrees or diplomas to which he aspires, and has selected the medical school at which he desires to attend, he should communicate with the Warden or Dean, who will give him all necessary advice in regard to the mode of entrance, registration, and the details of the best way to prepare for his several professional examinations.

Before he can begin his course of medical study, the student must pass one of the recognised Preliminary Examinations in Arts, a complete list of which can be obtained from the Registrar of the General Medical Council (299, Oxford Street, W.) or from the Registrar of the Branch Council in Scotland or Ireland (48, George Square, Edinburgh, or 35, Dawson Street, Dublin). Care should be taken in the selection of the Preliminary Examination for in the case of the student seeking a University degree he must pass the particular Preliminary Examination laid down by that University. Thus, for example, to pass the First-class College of Preceptors or the Junior Oxford or Cambridge Local Examination in the required subjects will suffice for registration, and thus allow the student to obtain college diplomas, but will not admit him to the examinations for the degrees of the University of London, for which the only recognised preliminary is the Matriculation Examination at that University. A list of recognised preliminary examinations will be found at p. 474. Immediately after passing the required Preliminary Examination the student should enter at the medical school he has selected, and register his name at the office of the General Medical Council, after which he begins to count the five years of compulsory study.

Under former regulations it was the almost universal custom for students to begin their professional studies in October; but under the alterations recently made in the curriculum there is now no special advantage in beginning in October. At some of the medical schools, indeed, arrangements have been made whereby the student may with advantage begin his medical course in the summer session and commence the study of chemistry, physics, and pharmacy, if he has passed a Preliminary Examination early in the year.

It will not be necessary or desirable that we should enter into a comparison of the details of the adaptation of the curriculum to the requirements of the various Examining Boards. The following account of the curriculum and examinations for the diplomas of L.R.C.P.Lond. and M.R.C.S.Eng., given by the Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons will, we hope, prove useful to the student as an example of the general course required for entrance into the profession. With slight modifications in detail the account will be applicable to the course for the degrees of the University of London, for the curriculum and examinations of this Board have now been brought much more into line with those of the other Universities than was formerly the case. Broadly speaking there are three stages with three examinations in the student's career; the first is devoted to elementary science, the second to anatomy and physiology, and the third to the purely professional subjects of medicine, surgery, and midwifery, and their special branches.

The First Examination includes chemistry and physics, elementary biology, and practical pharmacy. Pharmacy, however, may be passed separately and, indeed, may be taken at any stage of the curriculum. Generally speaking, the whole of the student's first year is devoted to the study of the subjects of the First Examination, which is usually passed in three parts: (1) biology, at the end of the winter session in March, (2) chemistry and physics, at the end of the summer session in July, (3) pharmacy, which may be passed during the first year or be postponed. The First Examination of the Conjoint Board may be passed before registration, but in this case time spent in the study of biology, chemistry, and physics does not count as a part of the compulsory five years. Except under very special circumstances, therefore, the student should pass a Preliminary Examination in Arts before he begins his science work, and should take care to attend lectures and laboratory instruction in science at a properly equipped and recognised institution, such as a medical school. If the student has been registered, a year spent in the study of science at a recognised institution counts as a year of the curriculum, but not otherwise. In the metropolitan medical schools the students of the first year, except those proceeding to the University of London degrees, generally attend lectures on anatomy and dissect whilst engaged in their science study, a plan which has the advantage of permitting them to see the applications of science to the study of more professional subjects. The student should always endeavour to complete the First Examination in his first year of attendance at a medical school, since he must attend at a medical school for four years subsequent to passing it. Before admission to any part of the First Examination a certificate of attendance at a recognised institution on a course of instruction in the subject or subjects for which the student desires to present himself must be produced.

After passing the First Examination the student proceeds to the study of the intermediate medical subjects—anatomy and physiology. The regulations require him to attend, at a recognised medical school, a course of lectures in anatomy (six months), a course of lectures in physiology (six months), a course of practical physiology (six months), and to have dissected during two winter sessions or twelve months. The earliest time at which he can be admitted to the Second Examination is twelve months after completing the First Examination, or if he has passed the First Examination before entering at a medical school, after two winter and one summer sessions of attendance at a recognised medical school. The student who has followed the usual course and has entered at a medical school in October and completed the First Examination at the end of his first year will therefore devote the whole of his second year to anatomy and physiology, and pass the Second Examination at the end of his second summer session. He will find it greatly to his advantage to have begun anatomy and dissecting during his first year as is the practice in the metropolitan medical schools, for one year is a short time for two such important subjects as anatomy and physiology, and many students require six months longer. In the case of those seeking the University of London degrees, two years are required after passing the Science Examinations instead of one year.

Having passed the Second Examination, the student begins the systematic practical study of disease by attending the out-patient rooms, at the bedside, in the operating theatre, and in the *post-mortem* room, although, if he is wise, he will have taken the opportunity from time to time during the earlier part of his course of paying occasional visits to the wards and out-patient and *post-mortem* rooms. If he has been industrious, and has passed all examinations without mishap, he now has two and a half or three years to devote to the uninterrupted study of disease. The Third or Final Examination is passed at the end of five years from the date of registration, and at the expiration of four years from the date of passing the First Examination and of two years from the date of passing the Second Examination. One subject of the Final Examination however, namely, Midwifery, may be taken before the rest of the Examination at the end of four years of study and not earlier than one year from the date of passing the Second Examination. It is important that the student should pass each examination at the prescribed time, otherwise he will be delayed in obtaining his diploma until the lapse of the required time from the date of passing his earlier examinations, or will find it necessary to encroach upon the time which should be devoted to the more important practical subjects of his profession.

Space will not permit us to enter into full particulars of the lectures and other work required to be attended during the last two or three years, and for this information we must refer the student to the official regulations, outlines of which are given below. Speaking generally, however, he must attend lectures in medicine (six months), surgery (six months), midwifery (three months), pathology, including pathological histology and bacteriology (three months), pharmacology and therapeutics (three months), forensic medicine (three months), public health (three months), together with practical instruction in medicine, midwifery, and surgery, operations on the dead body, hospital practice (two winter and two summer sessions), *post-mortem* demonstrations (twelve months), and clinical lectures on medicine and surgery (nine months). The student is also required to attend clinical instruction in ophthalmic surgery, insanity, and diseases of women,

and to act as clinical clerk and surgical dresser for not less than six months each, and to attend twenty labours. Instruction in vaccination and attendance at a fever hospital are also necessary.

THE ROYAL MEDICAL SERVICES.

The Medical Services of the Royal Navy, of the Army, and of India afford honourable careers for medical men; but each branch has advantages and drawbacks, which will be variously estimated by different persons.

A commission in Her Majesty's Sea or Land Forces undoubtedly confers on the holder a social status not always easily attained in civil life; but it entails, at the same time, subjection to the restraints of discipline, some sacrifice of personal freedom, and the curtailment of certain home amenities enjoyed by civilians. On the other hand, it affords an opportunity of seeing life and the world in some of their best aspects; and foreign service has many and varied attractions in our widely-extended empire.

The admission to the services is by competitive examination, held twice a year—January and July—in London by a special Board of Examiners.[1] The main subjects of the examinations are medicine, surgery, anatomy, and physiology, but those who may have any intention of entering one of the services should bear in mind that modern languages are included in the examination, and that proficiency in these may not only have an effect upon the candidate's place in the competition but also upon his prospects in the service. Candidates who are successful in the competitive examination for admission to the Royal Army Medical Corps or the Indian Medical Service proceed to the Army Medical School at Netley, where they pass through a special course of instruction. At the end of this course there is a further examination, and the final position of the candidate in the "batch" is determined by the total of the marks obtained at the two examinations (London and Netley). Recently the Secretary of State for War has used his right to nominate to the Royal Army Medical Corps. Such nominations have hitherto been made on the recommendation of the authorities of one of the medical colleges or schools. The gentlemen thus selected pass through the course at Netley, and their places are regulated by the result of the examination at the end of the Netley course, but they all rank in seniority after the members of the batch who have entered by the competitive examination.

In the case of the Royal Navy, the successful candidates at the competitive examination pass through a course of special instruction at Haslar Hospital. The Royal Navy offers a good career for those who have a taste for sea life. The pay, estimated relatively to unavoidable expenditure, contrasts favourably with the necessary outgoings which fall on the army medical officer. At the present time no medical man need be deterred from entering the Royal Navy through fear of meeting with harsh treatment at the hands of the executive authorities.

The medical service of the Army is no longer a department, but a Royal Corps, and, as such, forms an integral part of the army. The ranks of the Corps are: Colonel, Lieutenant-Colonel, Major, Captain, Lieutenant. Officers above the rank of Colonel are styled Surgeon-Generals (ranking with Major-Generals) on the Medical Staff; the Director-General is addressed as of the Army Medical Service, not Department.

The Royal Army Medical Corps may be recommended as offering a promising career to young medical men.

The Indian Medical Service has not yet a corps organisation, but has simple military titles. With a great and honourable past, that service still affords many importan and lucrative appointments to its medical officers, and unique opportunities to those who desire distinction, especially in the clinical work of their profession, as well as to others who may aspire to high administrative duties, both medical and political.

The pay and pensions, speaking generally, of the medical services are not illiberal, and are sufficient for the reasonable maintenance of the individual officer; but, if he has no private means, he must bear in mind that it is generally hazardous to venture early on matrimony, perhaps to find himself in middle life in straitened circumstances, through having to maintain and educate a family. Frequent separation from wife and children and the necessity of keeping up two establishments is a drawback, social and financial, which attaches more or less to each of the three branches of the service.

The prizes of the services are few, especially in the Navy and Army; and even in the Indian service are not what they were within comparatively recent times. The lessened value of silver, and the fall in the exchange-rate of the rupee, have disastrously affected the medical, in common with all branches of the public service in India, while, as fully a third of the army medical officers are constantly employed in that country, the depreciation in the currency presses on them correspondingly as on their Indian brethren. This matter formed the subject of representation to the India Office by the Parliamentary Bills Committee of the British Medical Association, with the result that a moderate increase of pay was conceded to certain of the medical ranks; and also participation in special concessions by the Government of India in the exchange-rates for remittances home.

If current pay in the medical services is not relatively large, but even small compared with the earnings of many civil practitioners, it is however supplemented by substantial pensions; and it will not be overlooked that the State is the most stable of all paymasters.

As army pensions to widows and orphans are small and limited, medical officers must not neglect the duty of making some provision by insurance or otherwise for those they may leave behind them. The medical officer on entering the army should, with this view, satisfy himself whether it would not be to his advantage to join the Friendly Society of the Officers of the Medical Department of the Army, which affords pensions to widows; he should also support the Army Medical Officers' Benevolent Society, which affords assistance to the orphans of medical officers left in needy circumstances. It is a matter of regret, and even astonishment, that these excellent, long-established, and comparatively wealthy societies are not better known and supported by army medical officers. Particulars of these societies can be obtained at the office of the Director-General, Army Medical Service, 18, Victoria Street, S.W.

[1] Further particulars as to the mode of entering these services, and the rates of pay, etc., will be found on pages 517 520.

REGULATIONS OF THE GENERAL MEDICAL COUNCIL.

IN REGARD TO THE REGISTRATION AND EDUCATION OF MEDICAL STUDENTS.

THE regulations of the General Medical Council as to registration, preliminary examination, and professional education must be followed by all medical students seeking to obtain degrees or licences to practise from the universities or medical corporations of the United Kingdom. The separate regulations of the universities and corporations are so drawn up as to meet the requirements of the General Medical Council.

PRELIMINARY EXAMINATION.

Every medical student must be registered by the General Medical Council at the commencement of his studentship. To obtain registration the student must pass a preliminary examination in general education, and must produce evidence that he has commenced medical study. A degree in Arts of any British or Colonial University, or of such other Universities as may be specially recognised from time to time by the General Medical Council, is considered a sufficient testimony of proficiency. The student must make application for registration on a special form, to be had on application to the several qualifying bodies and medical schools.

The *Students' Register* is kept by the Branch Registrars, namely: in England, Mr. H. E. Allen, B.A., LL.B., 299, Oxford Street, London, W.; in Scotland, Mr. James Robertson, 48, George Square, Edinburgh; in Dublin, Mr. S. Wesley Wilson, 35, Dawson Street, Dublin.

The following is a list of examining bodies whose examination in general education will be recognised by the General Medical Council, as from January 1st, 1900, as qualifying for registration as medical or dental student:

I.—UNIVERSITY EXAMINATIONS HELD IN THE UNITED KINGDOM.

University of Oxford:
- Junior Local Examinations; Certificate to include all the required subjects at one time.
- Senior Local Examinations; Certificates to include the required subjects.
- Responsions; Certificate to be supplemented by others showing that the required mathematical subjects have been passed.
- Moderations; Certificates to include the required subjects.
- Final Examination for a Degree in Arts.

University of Cambridge:
- Junior Local Examinations; Certificate to include all the required subjects at one time.
- Senior Local Examinations: Certificates to include the required subjects.
- Higher Local Examination; Certificates to include the required subjects.
- Previous Examination; Certificates to include the required subjects.
- General Examination; Certificates to include the required subjects.
- Final Examination for a Degree in Arts.

University of Durham:
- Examination for Certificate of Proficiency; Certificate to include all the required subjects at one time.
- Preliminary Examination in Arts for Graduation in Medicine and Science; Certificate to include the required subjects.
- Final Examination for a Degree in Arts.

University of London:
- Matriculation Examination; Certificate to include the required subjects.
- Final Examination for a Degree in Arts or Science.

Victoria University:
- Preliminary Examination; Certificate to include all the required subjects at one time.
- Entrance Examination in Arts; Certificate to include all the required subjects at one time.
- Final Examination for a Degree in Arts or Science.

University of Birmingham:
- Matriculation Examination; Certificate to include all the required subjects at one time.

University of Wales:
- Matriculation Examination; Certificate to include all the required subjects at one time.
- Final Examination for a Degree in Arts.

University of Edinburgh:
- Junior Local Examination; Certificate to include all the required subjects at one time
- Senior Local Examination; Certificates to include the required subjects.
- Preliminary Examination for Graduation in Medicine and Surgery; Certificate to include the required subjects.
- Preliminary Examination for Graduation in Arts or Science; Certificate to include the required subjects.
- Final Examination for a Degree in Arts or Science.

University of Aberdeen:
- Junior Local Examination; Certificate to include all the required subjects at one time.
- Senior Local Examination; Certificates to include the required subjects.
- Preliminary Examination for Graduation in Medicine and Surgery; Certificate to include the required subjects.
- Preliminary Examination for Graduation in Arts or Science; Certificate to include the required subjects.
- Final Examination for a Degree in Arts or Science.

University of Glasgow:
- Preliminary Examination for Graduation in Medicine and Surgery; Certificate to include the required subjects.
- Preliminary Examination for Graduation in Arts or Science; Certificate to include the required subjects.
- Final Examination for a Degree in Arts or Science.

University of St. Andrews:
- Preliminary Examination for Graduation in Medicine and Surgery; Certificate to include the required subjects.
- Preliminary Examination for Graduation in Arts or Science; Certificate to include the required subjects.
- Final Examination for a degree in Arts or Science.
- Final Examination for the Diploma of L.L.A.

University of Dublin:
- Public Entrance Examination; Certificate to include the required subjects.
- Examination for the First, Second, Third, or Fourth Year in Arts; Certificate to be signed in the approved form by the Medical Registrar of the University.
- Final Examination for a Degree in Arts.

Royal University of Ireland:
- Matriculation Examination; Certificate to include the required subjects.
- Final Examination for a Degree in Arts or Science.

Oxford and Cambridge Schools Examination Board:
- Lower Certificate, to include all the required subjects at one time.
- Higher Certificate, to include the required subjects.

II.—GOVERNMENT EXAMINATIONS HELD IN THE UNITED KINGDOM.

Scotch Education Department:
- Examination for Lower Grade Leaving Certificate, to include all the required subjects at one time.
- Examinations for Higher Grade or Honours Leaving Certificate, to include the required subjects.

Intermediate Education Board of Ireland:
- Junior or Middle Grade Examination; Certificate to include al the required subjects at one time.
- Senior Grade Examination; Certificates to include the required subjects.

Central Welsh Board:
- Senior Certificate Examination.

III.—EXAMINATIONS BY CHARTERED BODIES HELD IN THE UNITED KINGDOM.

College of Preceptors:
- Examination for a First-class Certificate; to include all the required subjects at one time.

Educational Institute of Scotland:
- Preliminary Medical Examination; Certificate to include all the required subjects at one time.

*Royal College of Physicians and Surgeons in Ireland:**
- Preliminary Examination; Certificate to include all the required subjects at one time.

* The Council has recommended that this Examination be discontinued.

IV.—EXAMINATIONS HELD OUT OF THE UNITED KINGDOM.

University of Malta:
- Matriculation Examination.

University of Calcutta:
- First Examination in Arts.

University of Madras:
- First Examination in Arts.

University of Bombay:
- Matriculation Examination.

Punjab University:
- Intermediate Examination in Arts.

University of Allahabad:
- Intermediate Examination in Arts.

Ceylon Medical College:
- Preliminary Examination.

University of McGill College, Montreal:
- Matriculation Examination.

University of Bishop's College, Montreal:
- Matriculation Examination.

College of Physicians and Surgeons of the Province of Quebec:
- Matriculation Examination

Universities and Colleges of the Province of Ontario:
- Departmental Arts Matriculation Examination (conducted under the direction of the Provincial Education Department).

University of Manitoba:
- Preliminary and Previous Examinations.

University of New Brunswick, Fredericton:
- Matriculation Examination.

University of Mount Allison College, New Brunswick:
- Matriculation Examination.

College of Physicians and Surgeons of New Brunswick:
- Matriculation Examination.

Dalhousie College and University, Halifax, Nova Scotia:
- Matriculation Examination.

Provincial Medical Board of Nova Scotia:
- Preliminary Examination.

Newfoundland Medical Board:
Preliminary or Matriculation Examination.
University of Melbourne:
Matriculation Examination.
University of Sydney:
Matriculation Examination.
First Year Examination in Arts.
Senior Public Examination.
Entrance Examination for Medicine and Science.
University of Adelaide:
Senior Public Examination.
First Year Examination in Arts.
University of Tasmania:
Senior Public Examination.
University of the Cape of Good Hope:
Matriculation Examination.
University of Otago:
Preliminary Medical Examination.
University of New Zealand:
Preliminary Examination for Medical Students.
Codrington College, Barbadoes:
Examinations qualifying for a Degree in Arts at the University of Durham.
Foreign Universities in Europe:
The German Arbiturienten-Examen of the Gymnasia and Realgymnasia; Examinations entitling to the French Diplomas of Bachelier ès Lettres and Bachelier ès Sciences; and other corresponding Entrance Examinations to Foreign Universities in Europe.
Egyptian Government:
Examination for the Secondary Education Certificate.

PROFESSIONAL EDUCATION.

The period of professional study between the date of registration as a medical student and the date of the Final Examination for any diploma which entitles its holder to be registered under the Medical Acts must be a period of *bonâ fide* study during not less than five years. The course of professional study and examinations must include the following subjects:

(i) Physics, including the Elementary Mechanics of Solids and Fluids, and the rudiments of Heat, Light, and Electricity. (ii) Chemistry, including the principles of the science, and the details which bear on the study of Medicine. (iii) Elementary Biology. (iv) Anatomy. (v) Physiology. (vi) Materia Medica and Pharmacy. (vii) Pathology. (viii) Therapeutics. (ix) Medicine, including Medical Anatomy and Clinical Medicine. (x) Surgery, including Surgical Anatomy and Clinical Surgery. (xi) Midwifery, including Diseases peculiar to Women and to Newborn Children. (xii) Theory and Practice of Vaccination. (xiii) Forensic Medicine. (xiv) Hygiene. (xv) Mental Disease.

The first four of the five years must be passed at a School or Schools of Medicine recognised by any of the Licensing Bodies; but (*a*) the first year may be passed at a University or Teaching Institution recognised by any of the Licensing Bodies where the subjects of Physics, Chemistry, and Biology are taught; and (*b*) a graduate in arts or science of any university recognised by the General Medical Council, who has spent a year in the study of Physics, Chemistry, and Biology, and has passed an examination in these subjects for the degrees in question, is held to have completed the first of the five years of medical study provided that he has registered as a medical student with the General Medical Council. It is also to be noted that a student who has previous to registration attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any university, school of medicine, or teaching institution recognised by any of the licensing bodies, may without further attendance be admitted to examination in these subjects, provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

The General Medical Council recommends the Licensing Bodies to require that the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries, British or foreign, recognised by any of the medical authorities mentioned in Schedule (A) of the Medical Act (1858), provided that of this year six months may be passed as a pupil to a registered practitioner possessing such opportunities of imparting medical knowledge as shall be satisfactory to the medical authorities.

THE ENGLISH UNIVERSITIES.

THE UNIVERSITY OF OXFORD.

There are two degrees in Medicine (B.M. and D.M.), and two degrees in Surgery (B.Ch. and M.Ch.), which under the most favourable circumstances may be obtained in six or seven years from Matriculation.

B.A. Degree.

The degrees of B.M. and B.Ch. are conferred only on candidates who have taken the B.A. degree, for which residence for three years within the University is necessary; the examinations, however, for the degrees in Arts and Medicine may be passed in any order, provided the subjoined regulations are complied with.

The degree of B.A. may be obtained in either of the following ways:

(*a*) By passing Responsions (or one of the examinations which are accepted as equivalent), Moderations, a Scripture Examination, or, in the event of a candidate objecting, an examination in some substituted book; and the Final Pass School in three subjects, two of which may be the same as two in the Preliminary Examination in Natural Science.

(*b*) By passing Responsions; an additional subject in Responsions; the Scripture Examination; some of the Preliminary Examinations in the Natural Science School, or the Preliminary Examination and the School of Jurisprudence, or the Honour School of Mathematics in the First Public Examination; and one of the Final Honour Examinations.

Responsions and the additional subject may be passed before a candidate is a member of the University;[1] Moderations and Scripture can be passed in the fourth term; the Final Pass School may be taken any time after Moderations; a Final Honour School may be taken at the end of the third or within the fourth Academical year, that is, twelve or sixteen terms respectively; the Preliminary Examinations of the Natural Science School may be taken as soon as Responsions have been passed.

Degrees in Medicine and Surgery.

Every candidate who is admitted to the degree of B.M. is *ipso facto* admitted also to that of B.Ch., to obtain which the following examinations must be passed:

Preliminary.—The preliminary examination in (1) Mechanics and Physics, (2) Chemistry, (3) Zoology, (4) Botany, of the Natural Science School.

Professional.—There are two professional examinations held twice a year at the end of Michaelmas and Trinity terms. The subjects of the first B.M. examination are Organic Chemistry, Human Anatomy and Physiology, Materia Medica, and Pharmacy; but candidates who have previously obtained a First or Second Class in the Final Examination in Physiology or Chemistry are exempt from further examination in these subjects. This examination may be passed at any time after the preliminary. The second examination may be taken at any time after the first, but usually two or three years elapse. It comprises the remaining subjects of the medical curriculum, namely, Medicine, Surgery, Midwifery, Pathology, Forensic Medicine, and Hygiene. Pathology may be offered either with or without the other subjects.

D.M. Degree.—A B.M. who has entered his thirty-ninth term is admitted D.M. on presentation of a dissertation approved by the appointed professors and examiners.

M.Ch. Degree.—An examination for this degree is held in June. The candidate must be in his twenty-seventh term.

Fees.—University: B.A., £16 or £17. B.M. and B.Ch., £14. D.M., £25. M.Ch., £17. Also an annual fee to the University of £2 for the first four years, reduced to £1 when the B.A. is taken. College: Fees (varying in amount) on taking degrees and for the first four years of membership. Tuition fees, £21 to £30. The cost of living for the four University terms cannot be stated at less than £120.

Scholarships, etc.—The several Colleges grant scholarships of £80 a year tenable for four years in Natural Science, Chemistry, Physics, and Biology, and also exhibitions. Particulars can be obtained on application to the College tutors. A Radcliffe Travelling Fellowship of £200 a year, tenable for three years, is conferred annually. Candidates who have been placed in the First Class in any Final Examination in the Natural Science School, whether they have taken the degree of B.M. or not, are eligible.

Teaching.

Preliminary Examination.—Courses of lectures and demon-

[1] Membership is constituted by Matriculation, and by becoming a member of a College or Hall, or a non-collegiate student.
The regulations for Graduates who took the degree of B.M. previous to 1886 differ slightly.

strations on elementary Mechanics and Physics, on Inorganic Chemistry, on Animal Morphology, and on Botany, are given at convenient periods, and are open to members of the University intending to proceed to a medical degree.

Degree of B.A.—The Course of Instruction for the Final Honour Examination in Physiology consists of lectures and practical work, and extends over two years. It is intended for students who have passed the Preliminary Examination in other subjects.

First B.M.—The instruction in Human Anatomy is by lectures and demonstrations; the dissecting room is open daily, and dissection may be continued during the vacation. The course of instruction in Physiology consists of a course of lectures extending over three full terms, a course of practical instruction in Histology during three terms, and a course of Elementary Physiological Chemistry, with practical laboratory work during two terms. Instruction in Organic Chemistry is given in the Chemistry Department.

Second B.M.—Lectures on Materia Medica and practical instruction in Pharmacology are giving during the summer term, and clinical lectures and tutorial instruction and demonstrations in Physical Diagnosis in Regional Anatomy are given in each term at the Radcliffe Infirmary. Lectures on Pathology and practical instruction in Bacteriology and Pathological Histology are given in Michaelmas and Hiliary Terms in the Pathological Laboratory.

THE UNIVERSITY OF CAMBRIDGE.

BACHELOR OF MEDICINE (M.B.) AND BACHELOR OF SURGERY (B.C.)

A student proceeding to this degree must (1) reside in the University during the required portion of each of nine terms, (2) pass (or obtain exemption from) the Previous Examination, (3) pursue medical study for five years.

There are three examinations for the degree of Bachelor of Medicine. They are partly in writing, partly oral, and partly practical. The examinations take place twice in the year, in the Michaelmas and Easter terms.

The First Examination is divided into two parts: 1. Chemistry and other branches of Physics; 2. Elementary Biology. These two parts may be taken together or separately. Before admission to this examination the candidate must have passed (or obtained exemption from) the Previous Examination. He must also produce certificates of diligent attendance on a course of lectures in Chemistry, and of practical instruction in Chemical Manipulations.

The Second Examination is divided into two parts, which may be taken together or separately: 1. Human Anatomy and Physiology; 2. Pharmaceutical Chemistry. Before admission to this examination the student must have passed both parts of the First Examination, must have attended hospital practice, and have practised dissection during six months, and must produce certificates of diligent attendance on a course of lectures on each of the following objects: 1. Human Anatomy; 2. Physiology.

The Third Examination is divided into two parts, called the First part and the Second part respectively. Before presenting himself for either part, the student must have passed both parts of the Second Examination. The First part includes Principles and Practice of Surgery and Midwifery and Diseases Peculiar to Women. The Second part includes Pathology, Principles and Practice of Physic, Elements of Hygiene, Medical Jurisprudence, and Mental Diseases. The student, before admission to the First part, must produce certificates of attendance on one course of lectures in each of the following subjects: Pathology, Physiological Actions and Therapeutic Uses of Remedies, Principles and Practice of Surgery, and Midwifery; he must have attended a course of Practical Surgery, and acted as dresser or house-surgeon at a recognised hospital for six months; must have attended twenty cases of Midwifery, and must have obtained a certificate of proficiency in vaccination from an authorised vaccinator appointed by the Local Government Board. Before admission to the Second part he must produce evidence that he has completed the five years' course of medical study and obtained certificates of diligent attendance on one course of lectures in each of the following subjects: Principles and Practice of Physic and Medical Jurisprudence; he must also have attended the Medical and Surgical Practice of a recognised hospital (with clinical lectures), including certain special hospitals and asylums, during three years at least; must have been Clinical Clerk at a recognised hospital for six months at least, or have, subsequently to the completion of his attendance on Hospital Practice, attended to Practical Medicine or Surgery with special charge of patients in a hospital, dispensary, or parochial union, under superintendence of a qualified practitioner, unless the student himself be duly qualified. All candidates must also produce certificates of attendance during three months on (1) practical instruction in Pharmacy and Dispensing, (2) clinical instruction in Fevers at a general or special hospital.

Act.—After these examinations have been passed, an Act must be kept in the schools in the following manner. The Regius Professor of Physic assigns a day and hour for keeping the Act, of which public notice has to be given eight days before. The candidate reads a thesis, composed by himself, on some subject approved by the Professor; the Professor brings forward arguments or objections for the candidate to answer, and examines him orally on questions connected with his thesis as well as on other subjects connected with medicine of a more general nature. As the Third Examination for the degree of M.B. includes operative and clinical surgery, the degree of Bachelor of Surgery is conferred upon candidates who pass the Final Examination for M.B. without further examination and without the Act. The degree of M.B., B.C., is thus a registrable qualification in Medicine, Surgery, and Midwifery.

DOCTOR OF MEDICINE (M.D.).

This degree may be taken by an M.B. of three years' standing, or by an M.A. of four years' standing, who has been engaged in medical study for five years at least. In the latter case certificates of attendance on lectures and hospital practice for the M.B. must be produced, and the examination for the M.B. must be passed. In either case the candidate keeps an Act by reading an original thesis upon which he is examined, and writes a short extempore essay upon one of four topics (at his choice) relating severally to Physiology, Pathology, Medicine, or State Medicine.

MASTER IN SURGERY (M.C.).

This degree is granted to a candidate who has completed all that is required for the degree of B.C. at least two years previously; the candidate is either (1) examined in Pathology, Surgery, Surgical Anatomy, and Surgical Operations, the examinations being both written and practical; or (2) submits books or writings constituting original contributions of merit to the science or art of surgery.

DATES, FEES, ETC.

The dates of examinations are announced early in the Michaelmas and Lent terms. Each candidate pays £2 2s. to the Registrary of the University on giving notice of his intention to offer himself for either part of the First or Second, and £3 3s. for either part of the Third Examination for M.B. He pays £3 3s. before that for M.C. Schedules defining the range of subjects in the First M.B. Examination, and of the Pharmaceutical Chemistry in the Second Examination; also schedules for the necessary certificates, and a list of the schools of medicine and hospitals recognised by the University, may be obtained on application to the Registrary of the University, the Registry, Cambridge.

THE UNIVERSITY OF LONDON.

DEGREE OF M.B.

Every candidate for the degree of M.B. is required to pass four examinations:

1. *Matriculation*, held twice a year, in January and June. This examination consists of the following subjects: (1) Latin, (*a*) translation of selected authors, (*b*) unseen translation, (*c*) translation of English into Latin, (*d*) Latin grammar; (2) one of the following languages: Greek, French, German, Sanskrit, Arabic: translation and grammar; (3) English, grammar, and composition, and the history of the language and literature; History of England to the end of the seventeenth century, with the geography relating thereto; (4) Mathematics, including Arithmetic, Algebra to Quadratic Equations inclusive, Geometry, including the subjects of the

first four books of Euclid, and simple deductions; (5) General Elementary Science (including a general acquaintance with the apparatus by which the elementary principles of physics can be illustrated and applied); (6) one of the following branches of science; (*a*) Elementary Chemistry, (*b*) Sound, Heat, and Light, (*c*) Magnetism and Electricity, (*d*) Botany, (*e*) Mechanics. The full text of the regulations, with the syllabus in each subject, can be obtained on application to the Registrar of the University of London, Burlington Gardens, London, W. The candidate must be 16 years of age.

2. *Preliminary Scientific (M.B.) Examination.*—This examination is held for Pass and Honours in July, and for Pass only in January. It consists of two sections: (*a*) Chemistry and Physics, (*b*) General Biology. The examinations are conducted by written papers, *viva voce*, and by practical tests. The two sections may be taken together or separately, and the candidate who passes in one section only, though presenting himself in both, will be credited with the one in which he is successful. Honours may be taken in (*a*) Chemistry, (*b*) Experimental Physics, (*c*) Botany, (*d*) Zoology. Particulars as to the conditions of competition for honours and syllabuses of the subjects, both in the Pass and in the Honours examination, may be obtained on application to the Registrar, as above.

3. *Intermediate Examination in Medicine.*—This examination is held for Pass and Honours in July, and for Pass only in January. The candidate must have completed his nineteenth year, and must, subsequently to having passed the Preliminary Scientific Examination, have been a student in a recognised medical school for at least two years, have dissected for two sessions, have attended courses of Practical Chemistry and Practical Pharmacy, and have attended three courses of lectures in the medical school. The subjects of the examination are: Anatomy, Physiology and Histology, Organic Chemistry, Materia Medica and Pharmaceutical Chemistry. Physiology may be postponed by pass candidates till a later examination, but candidates will not be allowed to present themselves for the M.B. Examination till at least twelve months after they have passed in Physiology. The examination is conducted by written papers *viva voce*, and by practical examinations. Honours may be taken in any one of the subjects of the examination under conditions stated in the *Calendar*, an extract from which containing these particulars, as well as syllabuses of the subjects, can be obtained from the Registrar.

4. *M.B. Examination.*—This examination is held for Pass and Honours in October, and for Pass only in May. The candidate must have passed the Intermediate Examination at least twenty-one months earlier, must have attended lectures and hospital practice in a recognised medical school for two years, including at least two months' attendance each on lunacy and infectious diseases, one of which must be subsequent to the Intermediate Examination, must have conducted at least twenty labours, and have acquired proficiency in vaccination. After having attended Medical and Surgical Hospital practice for at least twelve months subsequent to passing the Intermediate Examination in Medicine, the student is required to attend to Practical Medicine, Surgery, or Obstetric Medicine, with special charge of patients in a Hospital, Infirmary, Dispensary, or Parochial Union during six months, such attendance not to count as part of the Surgical or Medical Hospital Practice already referred to. The examination, which is conducted by written papers, *viva voce*, and by practical examinations, comprises the following subjects: Pathology, Therapeutics, Hygiene, Surgery, Medicine, Obstetric Medicine, and Forensic Medicine. The candidate must pass in all the subjects. Honours may be taken in Medicine, Obstetric Medicine, and Forensic Medicine.

Degrees in Surgery.

Bachelor of Surgery (B.S.)—This degree is granted to Bachelors of Medicine after an examination held annually in December. The candidate must have attended a course of operative surgery. The examination comprises Surgical Pathology and Surgery, and the candidate is examined by written papers and clinically, and is required to operate on the dead body. Candidates who pass this examination in the first division may be examined for Honours.

Master in Surgery (M.S.).—This degree is granted, after examination, to Bachelors of Surgery of at least two years' standing; one year is, however, remitted in the case of candidates who passed the B.S. examination in the first division. The examination comprises Mental, Physiology, Surgery, and Surgical Anatomy.

Degree of M.D.

Doctor of Medicine.—The degree of Doctor of Medicine is granted to Bachelors of Medicine of at least two years' standing; one year is remitted if the candidate passed the M.B. examination in the first division. The examination comprises Mental Physiology and Medicine, and is conducted by written papers, clinical examination, and *viva voce*. A candidate who presents a printed dissertation, thesis, or commentary, which shall have been approved by the examiners, will be excused the written examination.

Doctor of Medecine in State Medicine.—This degree is granted to Bachelors of Medicine after examination on producing evidence of having attended (*a*) to State Medicine during two years, or (*b*) to State Medicine for one year, and of having held the position of Medical Officer of Health for two years, or (*c*) of having held the position of Medical Officer of Health for three years. The examination is similar to that for the ordinary M.D., State Medicine taking the place of Medicine.

Fees and Scholarships.

The fees are as follows: Matriculation, £2; for the other examinations, in each case, £5. A rejected candidate on again presenting himself, pays half the fee.

Exhibitions or Scholarships are granted to the first six candidates in honours at the Matriculation Examination, and, if sufficient merit be evinced, to the first candidates in honours at all the other examinations.

The Sherbrooke Prize.—This prize, founded by the late Lord Sherbrooke, will in future be awarded triennially for the best essay embodying original research in some branch of natural science. It is open to all graduates of not more than five years' standing.

VICTORIA UNIVERSITY.

Colleges.—The Colleges of the Victoria University are Owens College, Manchester; University College, Liverpool; and the Yorkshire College, Leeds.

Preliminary.—A candidate for the Preliminary Examination is examined in: (1) Latin; (2) Elementary Mathematics; (3) Elementary Mechanics; (4) English Language, including Grammar and Composition; (5) *One* of the following: i, Greek; ii, French; iii, German; iv, Italian; v, Spanish. Candidates may, by special permission of the Board of Studies, substitute any other modern language for either of the subjects named under (5). Candidates who propose to present themselves in Italian or Spanish, or in a modern language not included in the list, must give notice to the Registrar on or before March 1st in the year in question.

Matriculation.—Before matriculating, which consists in signing the University Register, candidates must produce proof that they are registered students of a College of the University, or of a medical school recognised by it.

Degrees of Bachelor of Medicine and of Surgery (M.B., Ch.B.).

Curriculum and Residence.—Five years must be spent in study at a recognised medical school subsequent to registration as a medical student; of these five years, two must be passed in a college of the University, and one of these two years must be subsequent to passing the first M.B. Examination.

First M.B. Examination.—Candidates must have attended during at least one year courses of lectures and laboratory work in each of the subjects of the examination—namely: Part I. (*a*) Physics: (*b*) Chemistry. Part II. Biology (Animal and Vegetable Morphology, Physiology, and Laboratory work). The two parts may be taken together or separately.

Second M.B. Examination.—Candidates must have attended winter courses in Anatomy and Physiology, and a summer course in Materia Medica and Pharmacy, must have dissected for two winter sessions and one summer, and must have had practical instruction in Physiology and in Materia Medica and Pharmacy. The subjects of the examination are: (1)

Anatomy; (2) Physiology; (3) Materia Medica and Pharmacy; (3) may be passed separately.

Final M.B. Examination.—Candidates must produce certificates of having attended, in a recognised medical school, courses of instruction in all the subjects of the examination, which are: Part I. (*a*) Pharmacology and Therapeutics, (*b*) General Pathology and Morbid Anatomy, (*c*) Forensic Medicine and Toxicology and Public Health. Part II. (*d*) Obstetrics and Diseases of Women, (*e*) Surgery, (*f*) Medicine (including Mental Diseases and Diseases of Children). The two parts may be taken separately, and any one of the subjects of Part I may be deferred and taken with Part II.

DEGREE OF DOCTOR OF MEDICINE (M.D.).

A candidate must have obtained the degree of M.B. at least one year previously. He must present a printed dissertation, and may be examined on any subject connected therewith.

DEGREE OF MASTER OF SURGERY (CH.M.).

A candidate must have obtained the degree of M.B. at least one year previously, must have been engaged in the study of Practical Surgery in the interval, and have held a surgical appointment for not less than six months in a hospital or other public institution. He must also produce certificates of having attended special courses in Operative Surgery, Bacteriology, and Ophthalmology.

FEES AND DATES OF EXAMINATION.

Entrance examination, £2; re-examination after failure, £1. First, Second, and Third M.B. Examinations, each £5; re-examination after rejection, £2. M.D., £10. Ch.M., £5 on examination, and £5 on the conferring of the degree.

The Preliminary Examination is held in June and September. The First M.B. Examination is held in June and also in September. The Second and Final M.B. Examinations are held in March and July, and that for the Ch.M. in July.

THE UNIVERSITY OF DURHAM.

The University of Durham grants six degrees in the medical faculty—M.B., M.D., B.S., M.S., B.Hy., D.Hy. The degrees of M.D., B.S., and M.S. are granted only to M.B. graduates of the University. The degrees B.Hy. and D.Hy. are granted under certain conditions to registered medical practitioners (see page 513). The University also grants a diploma in Public Health. These degrees are open both to men and women. It is hardly necessary to say that every student intending to attend the University of Durham College of Medicine, Newcastle-on-Tyne, would do well to pass the necessary examination in general knowledge, and qualify himself to obtain the degrees of the University.

DEGREE OF BACHELOR OF MEDICINE (M.B.).

Preliminary Examination in Arts.—In addition to the Certificate of Registration, a candidate must (*a*) pass the Preliminary Examination in Arts for the degree in Medicine of the University of Durham, or hold a certificate of having passed one of the following examinations: (1) The First Public Examination for the Degree of B.Litt. of the University of Durham; (2) the First Public Examination in Arts of the University of Durham; (3) the University of Oxford Moderations; (4) the University of Cambridge Previous Examination with the extra subjects; (5) the University of Cambridge General Examination; (6) the Matriculation Examination of the University of London; or (*b*) be a graduate in Arts of the University of Durham, Oxford, Cambridge, London, Victoria (Manchester), Dublin, Queen's University (Ireland), Edinburgh, Glasgow, St. Andrews, Aberdeen, Calcutta, Madras, Bombay, McGill (Montreal), Sydney, Melbourne, Queen's College (Kingston), the Victoria or the Royal University of Ireland. Particulars as to the Preliminary Examination of the University of Durham (*a*) can be obtained from the Rev. Henry Ellershaw, M.A., Secretary of the Examinations, the University, Durham, to whom the fee (£1) is payable.[1]

The Preliminary Examination in Arts is held thrice yearly, in January, March, and September, at the same time as the Registration Examination. The next examination will be commenced on September 11th, 1900.

Curriculum.—The curriculum extends over five years, of which one at least must be spent in attendance at the University of Durham College of Medicine, Newcastle-on-Tyne, and in the clinical practice of the Royal Infirmary there. Students are recommended to carry out the curriculum on some such plan as the following:

First Winter: Anatomy, Dissections, Chemistry, Physics, Elementary Biology. First Summer: Practical Chemistry, Practical Physics, Elementary Biology, (if not attended during the Winter).

Second Winter: Anatomy, Physiology, Practical Physiology, Dissections. Second Summer: Practical Histology, Practical Pharmacy, Materia Medica, Therapeutics and Pharmacology.

Third Winter: Medicine, Surgery, Hospital Practice, with Clinical Lectures, Midwifery and Diseases of Women and Children, Practical Midwifery, Public Health. Third Summer: Pathology, Practical Pathology, Medical Jurisprudence, Hospital Practice, with Clinical Lectures.

Fourth Winter: Medicine, Surgery, Regional Anatomy, Hospital Practice, with Clinical Lectures. Fourth Summer: Mental Diseases, Operative Surgery, Hospital Practice, with Clinical Lectures.

Fifth Winter: Infectious Diseases and Clinical Lectures. Fifth Summer: Clinical Lectures, Mental Diseases (if not attended during the Fourth Summer).

Professional Examinations.—There are four professional examinations conducted in writing, practically, and *viva voce*, each held twice a year (April and September). *First Examination:* Elementary Anatomy and Biology, Chemistry, Physics. *Second Examination:* Anatomy, Physiology, Materia Medica, Therapeutics, and Pharmacology. *Third Examination:* Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology. *Final Examination:* Medicine, Clinical Medicine and Psychological Medicine, Surgery and Clinical Surgery, Midwifery and Diseases of Women and Children. The *Calendar* of the University of Durham College of Medicine, Newcastle-on-Tyne, contains synopses of the subjects of the examinations and examination papers. Applications for further information should be addressed to Professor Howden at the College. A candidate who has passed the First Examination of the Conjoint Board in England of the Royal College of Physicians of London and the Royal College of Surgeons of England will be exempt from the subject of Biology in the First Examination of the University of Durham if registered as a Medical Student before October 1st, 1896.[2] Candidates who hold a qualification from a recognised licensing Board in the United Kingdom at the date of entry for the First Examination for the Degree in Medicine are in every case required to pass in Chemistry with Chemical Physics.[3] Candidates who have completed part of their curriculum elsewhere may pass their First, Second, and Third Examinations *previously* to entering at Newcastle-upon-Tyne.

DEGREE OF DOCTOR OF MEDICINE (M.D.).

A candidate for this degree must have been engaged in practice for at least two years subsequent to obtaining the degree of M.B. in the University of Durham. The candidate is required to write an essay based on original research or observation, and is subject to examination on the topic of his essay. For particulars as to the degree of M.D. for medical practitioners of fifteen years' standing, without curriculum, see page 510.

DEGREES IN SURGERY.

Bachelor of Surgery.—A candidate must have passed the examination for the degree of M.B.(Dunelm), and have attended courses of lectures on Operative Surgery and on Regional Anatomy. He is required to perform operations on

[1] Candidates from Indian Universities must have passed a Matriculation Examination at one of the Indian Universities, and will have to reside for one academic year at the University of Durham College of Medicine at Newcastle-on-Tyne before presenting themselves for the M.B. Degree Examination, in accordance with the regulation on page 56 of the *Calendar*. If the Matriculation Examination at the Indian University did not embrace Latin and Persian or Sanskrit, then it will be necessary for the candidate, in addition, to produce evidence that he has passed in Latin and one of those subjects, or in Greek, within twelve months of his presenting himself for the Examination for the Degree in Medicine.

[2] A candidate who has passed the First and Second Examinations of the University will be exempt from the First and Second Examinations of the Conjoint Board in England, and will be entitled to present himself for the Final Examination of the Board on the completion of the necessary curriculum.

[3] All candidates for the First Examination for the Degree in Medicine, whether exempt from a portion of it or not, are required to pay the full fee—£5.

the dead body, and to show practical acquaintance with the use of surgical instruments and appliances.

Master in Surgery.—A candidate must have obtained the degree of B.S.(Dunelm) at least two years previously, and have been engaged in practice for that period. The subjects for the examination are Principles and Practice of Surgery, Surgical Pathology, Surgical Anatomy, Surgical Operations, Clinical Surgery.

Degrees in Hygiene (B.Hy., D.Hy.).

For the regulations as to these degrees, see page 513.

Fees.

Preliminary Arts Examination for Degrees, £1. First, Second, and Third Professional Examinations (M.B.), each £5. Final (M.B.), £10. Examination for the degrees of M.D., B.S., and M.S., each £5, in addition to the University of Durham for each degree, £6 6s.

UNIVERSITY OF BIRMINGHAM.

The University of Birmingham grants the degrees of M.B., B.Ch., M.D., M.Ch., and also a B.Sc., in the subject of Public Health. In order to obtain any of these degrees it is necessary that a student shall have passed at least the first four years of his curriculum in attendance upon the classes of the University.

Degrees of Bachelor of Medicine and Bachelor of Surgery.

The student must have passed either the Matriculation Examination of the University or one of the following examinations, which will be accepted in lieu thereof, *for the present*. (*a*) The Previous Examination of the University of Cambridge. (*b*) Responsions of the University of Oxford. (*c*) The Matriculation Examination of any other University in the United Kingdom. (*d*) The leaving Certificate (Higher) of the Oxford and Cambridge Boards. (*e*) The Oxford or Cambridge Junior Local Examinations (First or Second Class Honours.) (*f*) The Oxford or Cambridge Senior Local Examination (Honours.) (*g*) The College of Preceptors Examination for First Class Certificate. A Matriculation Examination will be held on June 3rd, 1901, and succeeding days.

First Examination.—Part I., Elementary Biology. One course of lectures and practical work. Part II., Chemistry and Physics. One year's lectures with practical work.

Second Examination.—Anatomy and Physiology. Two winters' and one summer's dissections with lectures in anatomy. One winter course and one summer course of lectures and practical work in Physiology.

Third Examination.—Materia Medica and Pharmacy. One course of lectures and practical work.

Fourth Examination (at the end of the fourth year).—Pharmacology, Pathology, Forensic Medicine, and Public Health. Two years hospital work must have been accomplished, and the following course attended: Medicine and Surgery (two each), Hygiene and Public Health, Pathology, Therapeutics and Pharmacology, Midwifery, Gynæcology, Forensic Medicine.

Final Examination.—Medicine, Surgery, Midwifery, Gynæcology, Mental Diseases, and Ophthalmology. Attendance on General Hospital for a year after the passing of the Fourth Examination, also attendances at Fever Hospital, Lunatic Asylum, Vaccination, courses of Ophthalmology, Medical and Surgical Anatomy, and Operative Surgery.

Degrees of Doctor of Medicine and Master of Surgery.

Candidates for either of these Degrees will be required either: (A) To present a Thesis, embodying original observations in some subject embraced in the medical curriculum and approved by a Board of medical examiners to whom the Thesis will subsequently be submitted on the report of which Board the Degree will be awarded or withheld. The candidate will be examined on the subject which he has chosen for his Thesis and the examiners may require to see the notes of original observations on which the Thesis is based. (B) To pass a general examination (written and practical) in Medicine or Surgery, according to the Degree desired, and, in addition, to show special proficiency in any one of the following subjects to be chosen by the candidate:—

For the Degree of M.D.—(*a*) Infectious Diseases, (*b*) Diseases of the Chest, (*c*) Diseases of the Abdomen, (*d*) Nervous Diseases, (*e*) Diseases of Children (*f*) Midwifery, (*g*) Pathology, (*h*) Bacteriology, (*i*) Medical Jurisprudence and Toxicology, (*j*) Public Health, (*k*) Mental Diseases, (*l*) Diseases of the Skin.

For the Degree of M.Ch.—(*a*) Regional Surgery, (*b*) Gynæcology, (*c*) Ophthalmology, (*d*) Diseases of the Ear, Nose and Throat.

Degree in Public Health.

For the Regulations for Degree and for the Diploma in the same subject see p. 512.

Fees.

Matriculation, £2; First Examination, £5; Second, £5; Third, £1; Fourth, £3; Final, £5. The composition fee for the University courses is 80 guineas.

Entrance Scholarships.—Queen's Scholarships, 40 guineas: Sands Cox, restricted to sons of medical men, 40 guineas; Sydenham Scholarships, one or more annually, restricted to orphan sons of medical men, elected by the Council, on the recommendation of the Medical Board of Studies 40 guineas.

Further particulars may be obtained by application to Professor Windle, Dean of the Medical Faculty, at the University.

THE ENGLISH COLLEGES.

The Medical Corporations in England are the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The two Royal Colleges now co-operate to hold a series of examinations, on passing which the candidate receives the diplomas of Licentiate of the Royal College of Physicians (L.R.C.P.), and Member of the Royal College of Surgeons (M.R.C.S.). The Society of Apothecaries grants its diploma separately.

CONJOINT EXAMINING BOARD IN ENGLAND.

A candidate who desires to obtain the Licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England is required to pass three professional examinations, and to produce evidence of having passed through a stated course of instruction at a recognised medical school. The full period of five years must be spent in professional study, after registration as a medical student, of which six months may be spent at an Institution recognised by the Board for instruction in Chemistry, or one year may be spent at an Institution recognised by the Board for instruction in Chemistry and Biology. The candidate must pass an examination in subjects of Preliminary Education before entering the medical school (see page 474), and must register as a medical student within fifteen days of entering such school. Except in the case of Chemistry and Physics, Practical Chemistry, Practical Pharmacy, and Elementary Biology, professional studies commenced before registration will not be recognised. For institutions from which certificates are accepted by the Conjoint Board see p. 506.

First Professional Examination.

The examination consists of three parts: (1) Chemistry and Physics, (2) Practical Pharmacy, (3) Elementary Biology.

A candidate may take this examination in three parts at different times, or he may present himself for the whole at one time. A candidate will be admitted to examination in Chemistry and Physics and Practical Chemistry and Elementary Biology before registration as a medical student by the General Medical Council, *and he may take Practical Pharmacy at any time during the curriculum.*

A candidate is required to produce evidence of having received instruction in each of the above-mentioned subjects. A candidate referred in any part or parts will not be admitted to re-examination for three months. If referred in Chemistry or Biology he must produce evidence of further instruction. A candidate who produces evidence of having passed an examination for a degree in Medicine on any of the subjects

in this examination at a university in the United Kingdom, India, or a British colony will be exempt from examination on the subjects in which he has passed.

SECOND PROFESSIONAL EXAMINATION.

The subjects of this examination are Anatomy and Physiology, and both must be passed at the same time. A candidate must have passed Parts I and III of the First Examination at least nine months (one winter and one summer session) earlier, and have attended during two winter sessions and one summer session (or fifteen months during the ordinary sessions) at a recognised medical school lectures on Anatomy, Physiology, and a course of Practical Physiology and Histology, and have dissected for twelve months during the ordinary sessions. If rejected, a candidate, before being admitted to re-examination, must continue his studies for not less than three months.

THIRD OR FINAL PROFESSIONAL EXAMINATION.

This examination consists of three parts: Part I, Medicine, including Medical Anatomy, Pathology, Practical Pharmacy,[1] Therapeutics, Forensic Medicine, and Public Health; Part II, Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances; Part III, Midwifery and Gynæcology.[2] The examination may be passed at one time or in each part separately. Evidence of attendance at courses of instruction in the subjects of the three parts must be produced, and also of attendance on twenty labours. The candidate must have passed the Second Examination two years previously, and have been registered as a medical student for at least five years. A rejected candidate must produce evidence of further instruction during three months.

All applications with reference to the examinations for the Licence of the Royal College of Physicians of London and to the Diploma of Member of the Royal College of Surgeons of England should be addressed to the Secretary, Examination Hall, Victoria Embankment, London, W.C. (telegraphic address, "Conjoint," London), from which also synopses of some of the subjects can be obtained.

REGULATIONS FOR COLONIAL, INDIAN, OR FOREIGN CANDIDATES AND UNIVERSITY CANDIDATES.

A person holding a Colonial, Indian, or foreign qualification which entitles him to practise in the country where such qualification has been obtained, is, after a course of study and examination equivalent to those required by the Regulations of the two Royal Colleges, admissible to the Second and Third or Final Examinations without any interval. Members of an English, Scotch, or Irish University are under certain conditions eligible for admission to the Third or Final Examination two years after passing at their University the subjects included in the First and Second Examination of the Board.

A Doctor or Bachelor of Medicine or Surgery of an Indian, Colonial, or foreign University recognised for the purpose, who shall have passed at his university in the subjects of the First and Second Examination, will be eligible for admission to the Third or Final Examination two years after passing in the said subjects.

FEES, DATES, ETC.

First Examination, £10 10s. Re-examination, Part I, £3 3s., Parts II, III, each £2 2s. *Second Examination*, £10 10s. Re-examination, £6 6s. *Third Examination*, £21. Re-examination, Part I, Medicine, £5 5s. Practical Pharmacy, £2 2s. Part II, Surgery, £5 5s. Part III, £3 3s. Members of an English, Scottish, or Irish University, £5 5s.; for the diplomas, £36 15s.

The examination are held in January, April, July, and October. A book of questions set at the several examinations is published annually, and can be obtained from Messrs. Taylor and Francis, Red Lion Court, Fleet Street, London, E.C.

[1] Candidates who have previously passed in Practical Pharmacy will not be re-examined in that subject at the Third Examination.

[2] Candidates may present themselves for examination in Midwifery and Diseases of Women at any time after the completion of the fourth year of professional study at a medical school, and not less than one year after the passing of the Second Examination, on production of the required certificates.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

Licentiates.—Candidates are now subject to the regulations of the Conjoint Examining Board in England.

Members.—The Membership of the College is granted after examination to graduates in Medicine of recognised Universities, or to Licentiates of the College, being above the age of 25 years, who do not engage in trade, do not dispense medicine, and who do not practise in partnership. Under the provisions of the Medical Act of 1886 the Diploma of Membership is not registrable at the present time as a primary qualification, and is therefore granted only to persons already registered, or who have passed the Final Examination for the Licence.

The examination, which is held in January, April, July, and October, is partly written and partly oral. It is directed to Pathology and the practice of Physic, and is conducted by the President and Censors. Candidates under 40 are examined in Latin, and either Greek, French, or German. Candidates over 40 are not so examined, and the examination in Medicine may in their case be modified under conditions to be ascertained by application to the Registrar. The fee for the Membership is £42, but if the candidate is a Licentiate the fee is the difference between what he has already paid and £42. In either case £6 6s. is paid before examination.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Membership.—Candidates who registered on or after October 1st, 1884, are now subject to the regulations of the Conjoint Board.

Fellowship.—The Fellowship of the College of Surgeons is granted after examination to persons at least 25 years of age, who have been engaged in professional studies for six years. There are two examinations—the first in Anatomy and Physiology, which may be passed after the third winter session; the second, chiefly directed to Surgery, which may be passed after six years of professional study, or after five years' professional study in the case of a Bachelor or Master of Arts, or Bachelor or Doctor of Science of a university recognised by the Council for the purpose. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of Graduates in Medicine and Surgery of universities recognised by the College for the purposes of not less than four years' standing.

Fees.—At First Examination: Members, £5 5s.; non-Members, £10 10s.; £5 5s. returned if rejected. At Second Examination: Member, £10 10s. Further information can be obtained on application to the Secretary, Examination Hall, Victoria Embankment, London, W.C.

SOCIETY OF APOTHECARIES OF LONDON.

The examinations are Primary and Final. The Primary Examination is held quarterly on the first Wednesday, and on the Monday and Thursday in the same week, in the months of January, April, July, and October. The Final Examination is held monthly.

Primary Examination.—This examination consists of two parts: Part I includes (*a*) Elementary Biology (oral only), (*b*) Chemistry, Chemical Physics, Practical Chemistry; (*c*) Pharmacy. A synopsis indicating the range of the subjects in the examination will be sent with the regulations on application. This examination may be passed any time before or after registration as a medical student. No professional studies commenced before registration will be recognised as part of the medical course. Should the candidate not succeed in passing in all the subjects of the examination, he will be referred only in the subject or subjects in which he fails. Part II includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy, with demonstrations. These subjects cannot be taken separately except in the event of the candidate having previously passed in one. A schedule of the Primary Examination, to be obtained of the Secretary, must be signed by the Dean of the Medical School or other authority. Candidates will be excused any or all the subjects of the Primary Examination on producing evidence that they have passed equivalent examinations before any

examining body recognised by the Society. Candidates referred in Anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re-examination.

Final Examination (Sec. I).—This examination consists of three parts. Part I includes: The Principles and Practice of Surgery, Surgical Pathology, Operative Manipulation, Surgical Anatomy, Instruments and Appliances. Part II includes: (*a*) The Principles and Practice of Medicine (including Therapeutics, Pharmacology, and Prescriptions), Pathology, and Morbid Histology; (*b*) Forensic Medicine, Hygiene, Theory and Practice of Vaccination, and Mental Diseases. Candidates passing either (*a*) or (*b*) will not be re-examined therein. Part III: Midwifery, Gynæcology, and Diseases of Newborn Children, Obstetric Instruments and Appliances. Sec. I of the Final Examination cannot be passed before the expiration of 45 months after registration as a medical student, during which time not less than 3 winter sessions and 2 summer sessions must have been passed at one or more of the medical schools connected with a general hospital recognised by the Society.

Final Examination (Sec. II).—This examination consists of two parts. Part I includes an examination of and written report of Surgical Cases. Part II includes an examination of and written report of Medical Cases, Medical Anatomy. This examination cannot be passed before the end of the fifth year.

Information as to the details of the course of study required may be obtained on application to the Secretary, Court of Examiners, Apothecaries' Hall, Blackfriars, E C. The Examination offices are open from 10 to 4, Saturdays 10 to 1.

Fee, £15 15s.—Primary Examination, £5 5s.; Final Examination, £10 10s.

THE SCOTTISH UNIVERSITIES.

It will be convenient to give the regulations for Edinburgh more in detail, and then briefly indicate points of difference as regards the other three Universities.

UNIVERSITY OF EDINBURGH.

The following regulations apply to all who began their studies after October 1st, 1892.

Four degrees in Medicine and Surgery are conferred—namely, Bachelor of Medicine, Bachelor of Surgery, Doctor of Medicine, and Master of Surgery. The degree of M.B. is not conferred separately from Ch.B., and *vice versâ*, but M.D. and Ch.M. are separable.

Preliminary Examination.

This must be passed before beginning medical study; the subjects are: (1) English[1]; (2) Latin, Translation, and Parsing. Prose, Composition, Grammar, and Sentences; (3) Elementary Mathematics, Arithmetic[2], Algebra, and Geometry, Euclid, Books I, ii, and iii (or their equivalents with easy deductions); (4) Greek (Translation, Sentences, and Grammar), or French, or German. [One paper will be set in French and one in German. The papers will be of a lower standard than those set in these subjects in the Arts and Science Preliminaries. The time allowed for such paper will be three hours. The papers will comprise questions in grammar, translations, a piece of English for translation, and some short sentences.]

Excellence in one or more subjects will in some measure compensate for deficiency in others. The examination is conducted by a Joint Board of the four Universities, and will be held from September 29th to October 6th, 1900, and from March 30th to April 6th, 1901, and these dates apply to all the Scottish Universities. The standard of examination corresponds pretty nearly to the certificate of the Scotch Education Department, or the lower certificate of the Oxford and Cambridge Schools. Candidates are required to pass in all the necessary subjects at one or at not more than two examinations. The examinations of a large number of bodies are taken as equivalents of the Preliminary; these will be found on pages 433-442 of the *University Calendar* (Regulations of the Joint Board of Examiners). The fee is 10s. 6d. each time, and is to be sent with the schedule to Mr. T. Gilbert, the University Clerk, not later than September 19th, 1900, and March 1st, 1901.[3]

Registration.

The student must register within fifteen days after the commencement of medical study. There is no fee. Forms and information may be had from Mr. James Robertson, 48, George Square, Edinburgh, or at the office of the Faculty of Medicine.

Professional Education.

The course extends over five years. During the first four the student must attend Elementary Botany, Elementary Zoology, Physics, Practical Chemistry, Practical Physiology, Practical Pathology, and Medical Jurisprudence and Public Health during courses of not less than 2½ months each; Practical Anatomy during two courses of not less than 5 months each; Chemistry, Anatomy, Physiology, Pathology, Surgery, Materia Medica and Therapeutics, Medicine, and Midwifery, and the Diseases of Women and Infants, during courses of not less than 5 months each. During the fifth, or final year, he must be engaged in clinical study for at least 9 months, and must attend a 9 months' course in Clinical Medicine and in Clinical Surgery. In all, before graduation he must have attended, for at least three years, a hospital which accommodates not fewer than 80 patients, and possesses a distinct staff of physicians and surgeons, and he must have acted as clerk in the medical, and dresser in the surgical wards of such a hospital. He must have had approved opportunities of studying at a hospital *Post-mortem* Examinations, Fevers, and Ophthalmology. He must have had a course of Operative Surgery. Every candidate must attend one of the three following courses: (1) A six weeks' course of clinical instruction in the Diseases of Children. (2) A course of instruction, of at least 18 meetings, in diseases of the Larynx, Ear, and Nose. (3) A course of clinical instruction in diseases of the skin, of not less than 20 meetings. He must have attended a course of 25 meetings on Practical Pharmacy, a course on Mental Diseases, been properly instructed in Vaccination by a certificated public vaccinator, have attended 12 cases of labour, or had 3 months' attendance at a lying-in hospital, and have personally conducted 6 cases. Certificates for these various courses must attest regular attendance and due performance of the work of the class. The fees vary from 1 to 4 guineas for each class, and the total minimum cost in class, examination, and other fees for M.B. and Ch.B. may be set down as £150. Two of the five years' course must be taken in the University of Edinburgh. For students beginning their course in winter there may be given the following minimum curriculum for the degrees of M.B. and Ch B., with suggested order of study and examination:

First Winter Session: Chemistry, including Practical Chemistry, Physics,[4] or Elementary Zoology, Anatomy (Lectures). Examination in Chemistry, including Practical Chemistry, and either Physics or Elementary Zoology. First Summer Session: Elementary Zoology or Physics,[4] Elementary Botany, Examination in Elementary Botany and Elementary Zoology, or Physics.

Second Winter Session: Practical Anatomy, Physiology, Surgery Second Summer Session: Practical Physiology, Practical Materia Medica, Clinical Surgery (with Dressership), Hospital.

Third Winter Session: Materia Medica, Practical Anatomy, Clinical Surgery (with Dressership), Hospital, Examination in Anatomy, Physiology, and Materia Medica and Therapeutics (the last may be postponed to the end of the following summer). Third Summer Session: Practical Pathology, Medical Jurisprudence and Public Health, Clinical Medicine.

[1] In English no set books are prescribed, nor is a general knowledge of the life and works of the greater authors expected of candidates, but one or two questions may be set, giving an opportunity to candidates to show a knowledge of famous literary works. The historical questions will not be confined to any one period, but will cover the whole of British History, and will be set in such a way as to give an opportunity to candidates who have confined their studies to a single period to show their knowledge. A single three hours' paper will be set, containing an Essay, a Paraphrase, two questions on History, two on Geography, four on Grammar (including correction of sentences, parsing, analysis of sentences, and derivations), two of a literary and general kind. Eight answers will be required. The Essay, the Paraphrase, one answer on History, and one on Geography will be compulsory.

[2] *Arithmetic* (including Vulgar and Decimal Fractions, Proportion, Percentage, Square Root, Simple Interest); *Algebra* (including Fractions, Factors, Square Root, Equations of the First Degree, Simultaneous Equations of the First Degree, Easy Quadratics, and problems leading to the above Equations).

[3] A student whose native language is not English may substitute his own language for either French or German, and may substitute any other classical language for Latin or Greek.

[4] Three months' course.

Hospital, Examination in Materia Medica and Therapeutics (if not previously taken).

Fourth Winter Session: Pathology, Medicine, Midwifery and Diseases of Women and Children, Clinical Medicine (with Clerkships), Hospital, Examination in Pathology, and Medical Jurisprudence and Public Health (the latter may be postponed to the end of the following summer).

Fourth Summer Session: Examination in Medical Jurisprudence and Public Health (if not previously taken).

Fourth Summer and Fifth Winter Session: Clinical Medicine, Clinical Surgery, Mental Diseases, Ophthalmology, *Post-mortem* Examinations, Fevers, Diseases of Children, or Diseases of the Larynx, Ear, and Nose, Diseases of the Skin, Out-practice of a Hospital, Dispensary, etc. Midwifery Cases and Practice, Vaccination, Hospital.

Fifth Summer Session: Examination in Surgery and Clinical Surgery, Medicine and Clinical Medicine, and Midwifery.

PROFESSIONAL EXAMINATIONS.

These are four in number, and the first three may be taken in sections as indicated above.

First.—Botany, Zoology, Physics, Chemistry, taken any time after the full specified course in these subjects.

Second.—Anatomy, Physiology, Materia Medica, and Therapeutics at the end of the fourth winter.

Third.—Pathology, Medical Jurisprudence, and Public Health, at the end of the third winter.

Final.—Surgery, Clinical Surgery, Medicine, Clinical Medicine, and Midwifery, at the end of the fifth year.

Failure in one subject does not involve failure in the other subjects of that division. Candidates must be 21 years of age before admission to the degrees of M.B. and Ch.B.

Examination Fees for M.B. and Ch.B.

	First Time.	Re-entry.
	£ s. d.	£ s. d.
Preliminary	0 10 6	0 10 6
First Professional	6 6 0	
Any two Subjects of Ditto ...	3 3 0	
Second Professional	6 6 0	£1 1s. each time for each subject.
Anatomy and Physiology ...	4 4 0	
Materia Medica, etc.	2 2 0	
Third Professional	4 4 0	
Final	6 6 0	

DEGREE OF M.D.

The candidate must be M.B. and Ch.B. of Edinburgh, must have been engaged for one year in the medical wards of a hospital, or at scientific work at a recognised research laboratory, or in the military or naval medical services, or for at least two years in general practice, and must be 24 years of age. He must write a thesis on a subject not exclusively surgical, and he will be examined in Medicine, and in some of its special departments. The fee is £10 10s., and the re-entry fee £5 5s.

DEGREE OF CH.M.

The candidate must be M.B. and Ch.B. of Edinburgh, have worked one year in the surgical wards of a hospital, or been engaged in scientific work, or in the military and naval medical services, or for at least two years in practice not confined to medicine. He must be 24, must submit a thesis on a subject not exclusively medical, will be examined on Surgical Anatomy, Operations on the Dead Body, Clinical Surgery, and some of its special departments. The fee is £10 10s.

For further details the student is referred to the *University Calendar* (published by Mr. Thin, South Bridge, Edinburgh, price 3s., post free 3s. 6d.), or the medical *Programme*, price 2d., also published by Mr. Thin, or to the Dean of the Faculty of Medicine, University of Edinburgh.

REGULATIONS FOR GRADUATION OF WOMEN.

When granting recognition to medical schools or teachers for the medical instruction of women, the University Court *requires that the classes shall not be mixed classes, except on special cause shown.*

The University Court have recognised the Medical College for Women, 30, Chambers Street, Edinburgh, as a medical school whose courses of instruction qualify for graduation in Medicine (but see p. 497). Every candidate must produce evidence of having satisfied the conditions with respect to the preliminary examination and registration as medical students, and will be examined in all the subjects necessary for graduation by the Examiners of the University in which she takes her degree. Students attending either of these schools are free to take a class or classes separately in either the one or the other of the schools. All students not matriculated students of the University attending these schools for purposes of graduation must, at the commencement of each year of such attendance, enter their names in a book to be kept in the University for that purpose, paying a fee of the same amount as the matriculation fee paid by students of the University, and having, in respect of such payment, a right to the use of the library of the University.

THE UNIVERSITY OF GLASGOW.

THE regulations are essentially the same as those given above for Edinburgh.

PRELIMINARY EXAMINATION.

The dates of the next two Examinations are the same as those given under Edinburgh. Fee, 10s. 6d. each time. Names to be given in and fee paid by September 10th, 1900, and March 8th, 1901, to the Assistant Clerk, Matriculation Office. The extent of the examination will be found under Edinburgh.

REGISTRATION.

Printed form of application may be had from the Assistant Clerk at the Matriculation Office, and this must be transmitted to Mr. James Robertson, Scottish Branch Registrar, 48, George Square, Edinburgh.

PROFESSIONAL EDUCATION.

The minimum cost is about £126, and the course is the same as at Edinburgh.

FEES, ETC.

The total examination fees for M.B., Ch.B., are the same as for Edinburgh, but are differently distributed. The fee for the First and Second is £6 6s., and for the Third and Fourth £5 5s. each. In the event of a candidate being rejected in any of these he may be admitted once to re-examination without payment of further fee, but for a second and for each subsequent re-examination a fee of £2 2s. is charged.

For further details the student is referred to the *Glasgow University Calendar* for 1900-1901, published by James Maclehose and Sons, 61, St. Vincent Street, Glasgow, price 3s., post free 3s. 6d. (see also p. 498).

Queen Margaret College, which provides a course of instruction for women, is now an integral part of the University. For course of study, etc., see p. 498.

THE UNIVERSITY OF ABERDEEN.

The regulations are essentially the same as for Edinburgh.

PRELIMINARY EXAMINATION.

The next Preliminary Examination will be held on precisely the same dates as are given under Edinburgh, and the subjects are the same. Names must be intimated, and the fee paid ten days previously, to the Secretary of the Medical Faculty, Marischal College.

PROFESSIONAL EDUCATION.

The University Court has ordained that the candidate before admission to his Final Examination must produce certificates to the effect that he has acted for a period equal to a winter session both as a Clinical Clerk and Surgical Dresser, that he has attend not fewer than twenty-five necropsies, and taken part in some: that he has attended for not less than three months a fever hospital of at least forty patients, and has had a three months' course on Disease in Children, and the same in Opthalmology. The total minimum cost for M.B. and Ch.B. is about £115.

The fees for Professional Examinations are: Preliminary, 10s. 6d.; First, Second, and Third, £5 5s.; Final, £7 7s. The fees for second and subsequent examinations have apparently not yet been adjusted.

Further information will be given by the Secretary of the Medical Faculty, or will be got in the *University Calendar* for 1900-1901, published by A. King and Co., Aberdeen; price 2s. 6d., or post free 2s. 11d.

THE UNIVERSITY OF ST. ANDREWS.

United College, St. Andrews: University College, Dundee.

Preliminary Examination.

The dates of the next two examinations are September 29th, 1900, and March 30th, 1901. Fees, 10s. 6d. each time. Examination schedules to be returned, filled up, and fees paid by September 14th, 1900, and March 9th, 1901, to the Secretary of the University.

Registration.

Printed forms may be obtained from the Dean, and must be sent to the Scottish Branch Registrar.

Professional Education.

The United College, St. Andrews, offers classes in the subjects of the first two years of the medical curriculum; University College, Dundee, for the full period of five years.

Bursaries and Scholarships.

United College, St. Andrews.

The following Bursaries and Scholarships are open to competition during session 1899-1900:

I. Bursaries for men. Two Berry Bursaries of the annual value of £40 each, tenable for three years, open to men who intend to study Arts, Science, or Medicine.

Twelve Berry Bursaries, of the annual value of £20 each, open to men only who are proceeding to graduation in Medicine. (Candidates must reach the standard necessary to entitle them to pass the Medical Preliminary Examination of the University.)

II. Bursaries for women. The Valentine Bursary of the annual value of about £25, tenable for three years, for students of Arts, Science, or Medicine, *but restricted to applicants from certain districts of Scotland.* Fourteen Taylour-Thomson Bursaries of the annual value of £20 to £30 each, tenable partly for one year, partly for two.

The Bursaries are allocated in the order of merit, the most valuable ones being given to those students who obtain the highest marks in the Preliminary Medical Examination, and who are prepared to take two *anni medici* at the United College, St. Andrews.

University College, Dundee.

Entrance Bursaries, open to either sex, for students of Arts, Science, or Medicine. Eleven bursaries of £15, tenable for one year.

Second Year Bursaries (Arts, Science, or Medicine, either sex). Four bursaries of £20 and three of £15, tenable for one year.

Third Year Bursaries (Arts, Science, or Medicine, either sex). Four bursaries of £20 and two of £15, tenable for one year.

Patrick Lowson Scholarship, £60 for two years, *restricted to candidates from schools in Dundee or Broughty Ferry.*

Educational Endowment Trust Bursaries. Two bursaries of £25, tenable for three years.

Bute Bursary. Annual income from £1,000 (men only).

Fees, etc.

The total fees for M.B.&Ch.B. are the same as for Edinburgh (22 guineas). The fee for the First Division is £6 6s., and is payable in two instalments of £3 3s. (Each payment of £3 3s. admits the candidate to two periods of examination in the same subject, but for every subsequent appearance in any subject a further payment of £1 11s. 6d. is necessary.) The fee for the Second Division of the Professional Examination is also £6 6s., and is payable in instalments at the rate of £2 2s. for each of the three subjects. Each payment of £4 4s. or £6 6s. admits the candidate to two periods of examination in the same subject, but for every subsequent appearance in any subject a further payment of £2 2s. is necessary.

Degrees of M.D. and Ch.M.

The regulations and fees for these will be found under Edinburgh.

THE SCOTTISH COLLEGES.

The three medical corporate Colleges in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons in Glasgow—now co-operate to hold a series of examinations, after passing which the student is presented with the diplomas of all three Colleges. Each College grants its single qualification only to persons who already possess another and opposite qualification (see below).

CONJOINT EXAMINATION.

A candidate who passes this series of examinations is granted the diploma of each of the co-operating bodies, and is entitled to register the three diplomas under the Medical Acts, and to write after his name—L.R.C.P.Edin, L.R.C.S.Edin., and L.F.P.S.Glasg.—qualifications which are recognised by the army, navy, and other public services.

Preliminary Examination.

The Educational Institute of Scotland conducts special preliminary examinations in Edinburgh and Glasgow for the Colleges. The next examination will be held on September 18th, 19th, and 20th, 1900, and names must be in and fees paid by September 8th. Full particulars may be obtained from Mr. David Ross, LL.D., Secretary to the Examining Board of the Institute, Established Church Training College, Glasgow: or to Mr. Alex Mackay, LL.D., 40, Princes Street, Edinburgh, Treasurer of the Institute. Certain other preliminary examinations, of which a list may be obtained on application, are also accepted. The entire examination must be passed at one period.

Professional Curriculum.

The course of study after registration as a medical student must occupy not less than forty-five months, which period shall include not less than four winter sessions' attendance.[1] Professional studies commenced before registration will not be recognised, except in the case of Physics, Elementary Biology, Chemistry, Practical Chemistry, and Practical Pharmacy; but graduates in arts or science of any recognised University, who have spent a year in the study of Physics, Elementary Biology, and Chemistry, and have passed examinations in these subjects for their degrees, are held to have completed the first year of medical study. The fifth year must be devoted to practical clinical work, and six months of this year may be spent as a pupil of a registered practitioner.

The following order of study is recommended as conforming generally to the sequence of examinations, but is not imperative:

First Summer: Physics, Elementary Biology. First Winter: Chemistry, Practical Chemistry, Junior Anatomy, Dissections. Second Summer: Histology, Dissections. Second Winter: Anatomy, Dissections, Physiology. Third Summer: Pathology, Materia Medica and Hospital Practice. Third Winter: Surgery, Hospital Practice with Clinical Surgery. Fourth Summer: Midwifery and Gynæcology, Hospital Practice, with Clinical Surgery. Fourth Winter: Medicine, Hospital Practice, with Clinical Medicine. Fifth Summer: Clinical Medicine, Medical Jurisprudence and Hygiene, Insanity, Practical Midwifery, Eye Diseases. Fifth Winter: Hospital Practice, Dispensary, Fevers, Vaccination.

Students are also recommended to study in the fifth year the following subjects: Operative Surgery, Diseases of Children, Ear and Throat, Skin.

Professional Examination.

During the five years of the professional curriculum the student has to pass four examinations. Each examination is held six times in each year, four times in Edinburgh, and twice at Glasgow, and a candidate may present himself at either place. An interval of not less than three months must elapse between the passing of any two successive examinations, and an interval of two academic years must intervene between the passing of the Second and of the Final Examination. Candidates may enter for all the subjects of an examination at one period, or may enter for any division of subjects. If the latter a higher percentage is exacted. Schedules showing the course of study followed must be submitted before the examinations to one or other of the Inspectors of Certificates: in Edinburgh, Mr. James Robertson, Solicitor, 48, George Square; in Glasgow, Mr. Alexander Duncan, B.A., LL.D., Faculty Hall, 242, St. Vincent Street, to whom all inquiries as to professional examinations should be addressed.

First Examination.—This examination may be passed at any time after registration as a medical student by any candidate who has attended the obligatory courses. The examination consists of three parts: (1) Physics, (2) Chemistry, (3) Elementary Biology, and each division may be taken separately.

Second Examination.—This examination may be passed at any time after the end of the second year by a student who has attended courses of Anatomy, Physiology, and Dissection for six months each. The subjects of the examination are: (1) Anatomy and (2) Physiology, including Histology. A candidate may pass in one subject while failing in the other.

Third Examination.—The student must have attended a course of Pathology and of Materia Medica before presenting himself for this examination, the subjects of which are (1) Pathology, (2) Materia Medica and Pharmacy. It may be

[1] This regulation does not apply to students who commenced medical study before January 1st, 1892.

taken in three divisions, or at one time, or at any time after the end of the third year; but the subjects must be entered for together.

Final Examination. The student must be 21, and may not pass this examination till the end of the fifth year. The subjects are: (1) Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; (2) Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye; (3) Midwifery and Diseases of Women and of Newborn Children; (4) Medical Jurisprudence and Hygiene. Candidates may also be examined on Diseases of Children, Diseases of the Ear and Throat, Insanity, Vaccination, etc. The examination may be taken in divisions at different times or all at once.

TABLE SHOWING THE FEES FOR THE CONJOINT EXAMINATIONS IN SCOTLAND.

The Figures signify Pounds Sterling.

	Whole Examination.	Re-entry for all Divisions.	Re-entry in one or two Divisions.	Entry for one Division.	Re-entry for one Division.
Preliminary	1	½	—	—	—
Professional First ...	5	3	2½	2½	2
,, Second ...	5	3	2	—	—
,, Third ...	5	3	2	—	—
,, Final ...	15	5	—	6	2

The total minimum cost for Lectures and Examination Fees for the Conjoint Examinations is about £102.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

Licence.—The Licence is only granted as a separate qualification (in Medicine) to persons (of either sex) who already possess a recognised British, Irish, Colonial, or Indian qualification in Surgery. A candidate, who must not have been rejected within three months by any Licensing Board, is subjected to written and oral examination in Medicine, Clinical Medicine, Materia Medica, Midwifery, and Medical Jurisprudence. The fee for the examination is £15 15s.; it is held on the first Wednesday and succeeding days of each month except September and October. A special examination can be obtained on showing cause, and paying £5 5s. extra. Eight days' notice must be given by all candidates to the Secretary of the College, from whom further particulars can be obtained.

Membership.—The candidate, who must be a Licentiate of a College of Physicians, or graduate of a British or Irish University, and 24 years of age, is examined in (1) Medicine and Therapeutics, and in (2) one of the following subjects chosen by him: (*a*) One or more departments of Medicine specially professed; (*b*) Psychological Medicine; (*c*) General Pathology and Morbid Anatomy; (*d*) Medical Jurisprudence; (*e*) Public Health; (*f*) Midwifery; (*g*) Diseases of Women. Further particulars as to other formalities can be obtained from the Secretary. A candidate 40 years of age and ten years in practice *may be excused* any part of or all the examination by the Council. The fee paid by a Licentiate of the College is £21 if licensed prior to August 1st, 1876; if subsequently, £15 15s. Fee for others, £31 10s. The examination is held quarterly (October, January, April, and July), and application must be made a month previous to the date of examination.

Fellow.—A Member, aged 25, and of at least two years' standing, may be elected a Fellow; he pays £56 10s. (including stamp duty). Women are not yet admitted to the Membership or Fellowship.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

Licence.—The Licence is only granted as a separate qualification (in Surgery) to persons (of either sex) who already possess a recognised British, Irish, Colonial, or Indian qualification in Medicine. A candidate, who must not have been rejected by any other Licensing Board in Surgery within three months, is examined on one day by written papers, and on a subsequent day orally, on specimens in the wards of a surgical hospital, and may be required to operate on the dead body. The fee is £15 15s., of which £10 10s. will be returned to unsuccessful candidates, and is payable to Mr. James Robertson, Clerk to the College, 48, George Square, Edinburgh, from whom further particulars may be obtained, and to whom eight days' notice must be given. A special examination can be obtained on showing cause. The fee is £20, of which £10 will be returned to candidates remitted on examination.

Fellowship.—A candidate must have the diploma of the Royal College of Surgeons of Edinburgh, England, or Ireland, or of the Faculty of Physicians and Surgeons in Glasgow, or the surgical degree of one of the Universities of Great Britain and Ireland, must be 25 years of age, and must have been engaged in practice for two subsequent years at least. Candidates who are Licentiates of the Edinburgh Colleges are examined in Surgery, Surgical Anatomy, including Clinical and Operative Surgery, and one optional subject, and in other subjects not adequately included in the examination passed elsewhere. The optional subjects embrace: (*a*) Surgery in any of its Ophthalmic, Aural, Laryngeal, Cerebro-spinal, Dental, Abdominal, Gynæcological, Orthopædic, Venereal, or Genito-Urinary branches; (*b*) Advanced Anatomy; (*c*) Advanced Physiology; (*d*) Surgical Pathology and Morbid Anatomy; (*e*) Midwifery; (*f*) Medical Jurisprudence. The examinations are written, oral, and practical. Three weeks' notice must be given to Mr. James Robertson as above, from whom full particulars as to certificates required (among others two from Fellows of the College, of whom one must reside in Edinburgh) may be obtained. The fee is £30 to those who hold the diploma of Licentiate of the College, and £45 to others (no stamp duty is payable on the diploma). Registered practitioners, aged not less than 40, and who have been in practice for not less than twenty years, and who have distinguished themselves in their profession, may under special circumstances be elected without examination. Women are not admitted to the Fellowship.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

Licence.—The licence is only granted as a separate qualification to candidates who already possess a recognised British, Irish, Colonial, or Indian qualification in Medicine. Candidates are examined in Surgery (including Clinical Surgery) and Surgical Anatomy. The fee is £15 15s. The examination is held quarterly. Further particulars can be obtained on application to Mr. Alexander Duncan, B.A., LL.D., 242, St. Vincent Street, Glasgow.

Fellowship.—Every candidate must be qualified for two years, and aged 24. The ordinary mode of admission to the Fellowship shall be by examination and subsequent election. The subjects of examination shall be either (*a*) Medicine (including Clinical Medicine, Medical Pathology, and Therapeutics); or (*b*) Surgery (including Clinical Surgery, Operative Surgery, Surgical Anatomy, and Surgical Pathology); and one of the following at the option of the candidate: (1) Anatomy, (2) Physiology, (3) Pathology, (4) Midwifery, (5) Diseases of Women, (6) Medical Jurisprudence, Surgery, in one of its following branches, (7) Ophthalmic Surgery, (8) Aural, Laryngeal, and Nasal Surgery, (9) Dental Surgery, Medicine in one of its following branches, (10) State Medicine, (11) Psychological Medicine, (12) Dermatology. Four examinations are held annually (January, April, July, October). Fourteen days' notice must be given. The fee is £30, unless the candidate desires to qualify to hold office, when it is £50. In the case of a Licentiate of the Faculty, £25 and £15 respectively.

Four Fellows may be elected in each year "in virtue of distinction," and without examination. They must be not less than 40 years of age, and ten years qualified.

CHOLERA IN INDIA.—According to Reuter's telegram from Simla, dated August 14th, 147 cases of cholera, of which 85 were fatal, had occurred during the previous 10 days in the various military stations. The 4th Hussars have lost 13 men.

THE IRISH UNIVERSITIES.

THE UNIVERSITY OF DUBLIN.

The University of Dublin grants two degrees in Medicine (M.B. and M.D.), two in Surgery (B.Ch. and M.Ch), and two in Midwifery (B.A.O. and M.A.O.). A candidate for any one of these degrees must be a graduate in Arts and have passed the Previous Medical Examination.

The following schools, in addition to the School of Physic, are recognised by the Board of Trinity College—the Schools of the Royal College of Surgeons in Ireland, the Schools of the Catholic University.

Previous Medical Examination.

This examination is divided into three parts: (1) Physics and Chemistry, (2) Botany and Zoology, (3) Anatomy, Practical Histology, and Physiology. The three parts may be taken together or passed at separate examinations. The examinations are held in November, January, May, and June.

Degrees in Medicine.

Regulations for Students who Matriculated since 1891.—The following conditions must be fulfilled in order to qualify for the degrees in Midwifery (B.A.O.), Surgery (B.Ch.), and Medicine (M.B.): The student must be of B.A. standing, and his name must be for at least five (academic) years on the books of the Medical School, reckoned from the date of his matriculation. He may carry on his Arts course concurrently with his Medical course, and he need not have taken his B.A. before presenting himself for his Final Medical Examinations, but he cannot have the Medical degrees conferred without the Arts degree. The following courses must be attended:—Lectures: Winter Courses: Systematic Anatomy; Practical Anatomy (with Dissections), first year; Practical Anatomy (with Dissections), second year; Applied Anatomy (with Dissections), Chemistry, Surgery, Physiology (two courses). Practice of Medicine, Midwifery, Pathology. Summer Courses: Practical Chemistry, Practical Histology, Botany, Zoology, Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene, Operative Surgery, Practical Pathology. Term Courses: Physics (Michaelmas, Hilary, and Trinity Terms). The student must attend three courses of nine months' attendance each on the Clinical Lectures of Sir Patrick Dun's or other metropolitan hospital recognised by the Board of Trinity College. One year at a recognised London or Edinburgh hospital or two years at a recognised county infirmary or recognised Colonial hospital previous to the commencement of their metropolitan medical studies may be allowed, on special application to the Board of Trinity College, to count as equivalent to one year spent in a recognised metropolitan hospital. The following examinations must be passed: The Previous Medical or Half M.B. Examination and the Final Examination. The Final Examination is arranged as follows:—First Part:—Section A: Applied Anatomy (Medical and Surgical), paper; Applied Physiology, *vivâ voce*; Materia Medica and Therapeutics, paper and *vivâ voce*. Section B: Medical Jurisprudence and Hygiene, paper and *vivâ voce*; Medicine, paper and *vivâ voce*; Surgery, paper and *vivâ voce*; Pathology, paper and *vivâ voce*. Section A may be passed in any part of the fourth year, provided the corresponding curriculum shall have been completed, and must be passed before B can be entered for; Section B not before Trinity Term of the fourth year. Examinations for both Sections are held in November, January, or February, and May or June. Liceat fee £5 to be paid on entering for A. Second part Section C: Midwifery, paper and *vivâ voce*: Gynæcology, paper and *vivâ voce*; Obstetrical Anatomy, paper. Section D: Clinical Medicine; Mental Disease, paper. Section E: Clinical Surgery, Operations, Clinical Ophthalmology. Both Sections of the First Part must be passed at least one term before any section of the Second Part can be entered for. One section of the Second Part must be passed in Trinity Term of the fifth year or subsequently: the other two in any part of the fifth year if the corresponding curriculum be completed. Subject to this provision the sections of the Second Part may be taken in any order. Liceat fee £5 to be paid when entering for whichever section the candidate takes first.

Degree of M.D.—The candidate must have taken, or have been qualified to take, the degree of M.B. three years previously, and must read a thesis before the Regius Professor of Physic.

Degree of M.Ch.—The candidate must be a B.Ch. of not less than three years' standing, and have been engaged in practice for two years. Graduates of ten years' standing may be given a special examination.

Degree of M.A.O.—The candidate must have passed the M.B. and B.Ch. examinations. The examination is specially directed to Obstetrics and Practical Gynæcology.

University Diplomas.

The University grants diplomas in Medicine, in Surgery, and in Obstetric Medicine. A candidate must have completed two years in Arts and five years in medical studies.

Diploma in Medicine.—The medical course and examination are the same as for the degree of M.B., excepting that attendance is not required on lectures on Botany and Zoology, and that the candidate is not examined in these subjects.[1]

Diplomas in Surgery and in Obstetric Science.—The examination and courses necessary for those diplomas are the same as for the degrees of B.Ch. and B.A.O. respectively.

Fees.

Matriculation, 5s; M.B., B.Ch., B.A.O., £17; M.D., £13; M.Ch., £11; M.A.O., £5; L.M., L.Ch., L.A.O., £11.

A schedule containing recommendations respecting the five years' medical curriculum can be obtained on application to the Registrar of the School of Physic in the University of Dublin.

THE ROYAL UNIVERSITY OF IRELAND.

The University grants two Degrees in Medicine, M.B. and M.D.; two in Surgery, B.Ch. and M.Ch.; and two in Obstetrics, B.A.O. and M.A.O. The course for the lesser of these degrees is at least five years. Graduates in Arts or Science who have spent a year in the study of Physics, Chemistry, and Biology, and passed an examination in those subjects, are held to have completed the first of the five years.

Medical Curriculum.

The order in which the subjects of the medical curriculum are required to be studied is minutely stated in the *Calendar*: the general character of the curriculum is sufficiently indicated by the examination held at the termination of each year.

Matriculation and First University Examination.

Candidates for any degree must pass the Matriculation Examination and First University Examination.

Matriculation.—This examination is held for pass and honours in June, and for pass only in September. Notice of intention to compete must be sent with the fee to the Secretaries, Royal University of Ireland, Dublin, on a printed form, at least one month before each Examination. The examination consists of the following parts: I, Latin; II, any one of the following languages: Greek, French, German, Italian, Spanish, Celtic, Sanskrit, Hebrew, or Arabic: III, English Language; IV, Elementary Mathematics; V, Natural Philosophy. A schedule of the subject is contained in the *University Calendar*.[2]

First University Examination.—A candidate who has passed the Matriculation Examination in the autumn of one year may be admitted to the First University Examination in the summer of the next year, otherwise an academical year must elapse: The subjects are: I, Latin; II, any one of the following languages: Greek, French, German, Italian, Spanish, Celtic, Sanskrit, Hebrew, or Arabic; III, English Language and Literature; IV, Mathematics; V, Natural Philosophy. Schedules are published in the *Calendar*.

[1] A Diplomate in Medicine, on completing his course in Arts and proceeding to the degree of B.A., may become a Bachelor of Medicine by attending the lectures on Botany and Zoology, passing the Previous Medical Examination in those subjects, and paying the degree fees.

[2] Dublin: Alex. Thom. and Co.; London: Longmans, Green and Co. Price, 2s. 6d.; by post, 3s. Extracts can be obtained, Arts, etc., price 1d.; Medicine, price 2d.

DEGREES IN MEDICINE, SURGERY, AND OBSTETRICS.

A candidate must pass four examinations subsequently to the First University Examination.

First Examination in Medicine.—Candidates must have matriculated at least one year previously, and must have passed the First University Examination, and completed the first year of the medical curriculum. The subjects are Natural Philosophy, Systematic Chemistry, Botany, and Zoology. Schedules are contained in the *Calendar*. The examination is written, oral, and practical.

Second Examination in Medicine.—Candidates must have passed the First Examination one year previously, and are examined in Anatomy, Physiology, and Practical Chemistry. Schedules will be found in the *Calendar*.

Third Examination in Medicine.—Candidates must have passed the Second Examination one year previously. They are examined in Anatomy, Physiology, Materia Medica, Pharmacology, and Therapeutics.

Examination for the Degrees of M.B., B.Ch., B.A.O.—Candidates must have passed the Third Examination. The examination consists of three parts—(*a*) Medicine, theoretical and clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology, (*b*) Surgery, theoretical, clinical, and operative, including the use of instruments and appliances; Surgical Anatomy, Ophthalmology and Otology, Surgical Pathology, (*c*) Midwifery and Diseases of Women and Children. All candidates must enter for and go through the entire examination, but a candidate may be adjudged to have passed in any of the foregoing parts in which he satisfies the examiners. Successful candidates receive the triple degree.

Honours.—There are special examinations for honours held in connection with each of the last four examinations.

M.D. DEGREE.

A candidate must have obtained the degrees of M.B., B.Ch., B.A.O. at least three years previously, and must have spent at least two of these in practice. The candidate is examined in writing and orally in Medicine and Pathology and at the bedside.

M.CH. DEGREE.

The candidate must have obtained the degrees of M.B., B.Ch., B.A.O. at least three years previously, two of which must have been spent in practice. The candidate is examined in Surgery, including Ophthalmology and Otology, and in Pathology at the bedside, and is required to write detailed reports on cases.

M.A.O. DEGREE.

The candidate must have obtained the degrees of M.B., B.Ch., B.A.O. at least three years previously, have been engaged in practice for two years, have had personal charge of at least 20 cases of labour, and have attended clinical Gynæcology for three months. The candidate is examined in writing, orally, and clinically, in Midwifery, Diseases of Women and Children, and Pathology.

EXHIBITIONS AND SCHOLARSHIPS.

Two first class and two second class exhibitions are given after each of the four examinations in Medicine. They are of the value at the first of £20 and £10; at the second of £25 and £15; at the third of £30 and £20; and at the degree examination of £40 and £25 respectively. A travelling medical scholarship, value £100, is awarded in October, after a special examination, to a candidate who has passed the Medical Degrees Examination in that year or the preceding one. Two Dr. Henry Hutchinson Stewart Medical Scholarships are awarded annually, the one of the value of £10, tenable for three years, in the subjects of the Second Examination in Medicine; the other of the annual value of £50, tenable for three years, for Proficiency in the Knowledge of Mental Diseases. One Medical Studentship, tenable for two consecutive years, of the annual value of £200, is offered for competition in October.

FEES.

Matriculation, £1; First University Examination, £1; First, Second, and Third Examinations in Medicine, for each £1. The Examination for Degrees, £2; for admission to the Degrees, £10; for the Degrees of M.D., M.Ch., M.A.O., each £5.

THE IRISH COLLEGES.

CONJOINT EXAMINING BOARD OF THE ROYAL COLLEGE OF PHYSICIANS AND THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE diplomas of these two bodies are now granted upon terms and after examinations settled between the Colleges.

Preliminary Examination.—Examinations in general education, which fulfil the requirements of the General Medical Council, are accepted by the Colleges (see pages 474-75). The Preliminary Examination of the College is held twice a year, in spring and autumn, and seven clear days' notice must be given to Mr. Greenwood Pim, Secretary of the Committee of Management, Royal College of Physicians, 6, Kildare Street, Dublin. The Preliminary Examination for the commencement of medical study of the Royal Colleges of Physicians and Surgeons for Sessions 1900-1901 will be held on Wednesday and Thursday, September 26th and 27th, 1900. Prospectus can be had on application.

PROFESSIONAL EXAMINATIONS.

There are four Professional Examinations:

The *First Professional Examination* may be passed not earlier than the end of the first winter session. It consists of four Parts: I, Chemistry and Physics; II, Practical Pharmacy; III, Biology; IV, Anatomy (Bones and Joints). The four Parts may be taken together or separately.

The *Second Professional Examination* consists of two Parts:

Part I.—A. Anatomy; B. Histology; C. Physiology, as found in Foster and Shore's *Physiology for Beginners*, omitting Chapters 5, 6, 7, and 8, and 18, 19, 20, and 21. Candidates are not admissible to this portion of the examination sooner than the end of their second winter session. No subject can be deferred, but candidates who obtain passing marks in any subject may, at the discretion of the examiners, obtain credit therefor.

Part II.—A. Advanced Physiology (textbook Starling's *Elements of Human Physiology*); B. Materia Medica. Candidates are not admissible to this portion of the examination sooner than the end of their third winter session and they must have completed Part I before presenting themselves for Part II. Neither subject can be deferred, but candidates who pass in one and fail in the other may, at the discretion of the examiners, obtain credit for the subject passed.

The *Third Professional Examination* may be passed not sooner than the end of the fourth winter session. It consists of five parts: I, Medicine; II, Surgery; III, Pathology; IV, Therapeutics; V, Public Health and Forensic Medicine. A candidate must present himself in the first instance in I, II, III, and IV at least, but if he pass any of them he may, at the discretion of the examiners, obtain credit therefor.

The *Final Professional Examination* may be passed not sooner than the end of the fifth year of medical study. A candidate may present himself in all the subjects at one time, or in one or more in the following groups: (*a*) Medicine, including Mental Diseases, Medical Anatomy, and Clinical Medicine; (*b*) Surgery, including Ophthalmic and Aural Surgery, Clinical Surgery, Operations, and Surgical Anatomy; (*c*) Midwifery, including Diseases of Women and Newborn Children, and the Theory and Practice of Vaccination.

CURRICULUM.

The curriculum, as above stated, extends over five years, and its general arrangement can be gathered from the subjects of the examination which are arranged to test the student's progress. Full details may be obtained on application to the Secretary as above.

FEES.

Preliminary Examination, £2 2s., except in the case of matriculated pupils of the Royal College of Surgeons, who pay £1 1s.; re-examination, £1 1s. First Professional Examination, £15 15s.; Second, £10 10s.; Third, £9 9s.; Final, £6 6s.; Re-examination fee, £1 1s. for each subject, with a maximum fee of £3 3s., except in Medicine and Surgery at the Final Examination, for each of which the re-examination fee is £2 2s.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THIS College continues to issue its Licence in Medicine and the Licence in Midwifery to registered medical practitioners whose names appear on the *Medical Register* of the United Kingdom.

Licence in Medicine.—The subjects of examination are:

Practice of Medicine, Clinical Medicine, Pathology, Medical Jurisprudence, Midwifery, Hygiene, and Therapeutics.

Licence in Midwifery.—The candidate must produce certificates of having attended a course of lectures on Midwifery, and of having attended Practical Midwifery and Diseases of Women, for six months, at a lying-in hospital or maternity recognised by the College; or, where such hospital attendance cannot have been obtained during any period of the candidate's course of study, of having been engaged in Practical Midwifery under the supervision of a registered practitioner holding a public medical appointment, the certificate in either case to state that no fewer than twenty labour cases have been actually attended. A registered medical practitioner of five years' standing is exempted from the examination by printed questions.

Fees.—Fee for the Licence to practise Medicine, £15 15s. Fee for examination for the Licences in Medicine and Midwifery, if obtained within the interval of a month, £16 16s.—to be lodged in one sum.[1] Fee for special examination for the Licence to practise Medicine, £21. Fee for examination for the Licence to practise Midwifery, £3 3s. Fee for special examination for the Licence to practise Midwifery, £5 5s. The admission fee, less the sum paid to the examiners, will be returned to rejected candidates. The examinations for these licences are held in the week following the first Friday in February, May, and November. Notice must be given, and the schedule transmitted at least four days before the first Friday in each of the above months to the Registrar of the Royal College of Physicians of Ireland, Kildare Street, Dublin, from whom further information can be obtained. A special examination can be obtained under conditions, which can be ascertained from the Registrar.

Membership.—A candidate for the Membership of the College must be 25 years of age and a Licentiate of the College of three years' standing, or if a graduate of Arts of a university in the United Kingdom, a Licentiate of one year's standing, or if a practitioner of seven years' standing, then he is admitted to the Membership after one year. He must not be engaged in trade, dispense medicine, or practise in partnership. He must also have held during at least six months the office of resident physician or resident medical pupil, or have acted during the same period as medical clinical clerk in a recognised hospital, or have been in medical charge for at least twelve months of a public institution for the treatment of the sick. Every candidate must pass an examination in: (1) Principles of Medicine, including Pathology, Morbid Anatomy, and Medical Chemistry; (2) Practice of Medicine, including Principles of Public Health; (3) Clinical Medicine. The fee for the examination is £21, which must be lodged in the Royal Bank, Dublin, before the applications and certificates are sent in. The admission fee, less the sum paid to the examiners, will be returned to the rejected candidates. The examinations are held in January, April, July, and October.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Licence.—Candidates who hold registrable surgical diplomas including the licence of the Apothecaries' Company, London, granted since October, 1886, are admitted to examination without further evidence of study, but candidates who hold medical qualifications only, including the L.S.A. granted before October, 1886, will be required to produce certificates of two courses of lectures in Anatomy and Dissections, one course of Practical Histology, one course of lectures in Surgery, and one course of Operative Surgery.

Subjects.—Candidates are examined in Surgery, Clinical Surgery, Operative Surgery, Surgical Appliances, and Ophthalmic Surgery. The examination is partly written, partly *viva voce*, and partly practical. The fee is £26 5s., of which £5 5s. is retained by the College in case the candidate be unsuccessful. The fee for a special examination is £31 10s.

Diploma in Midwifery.—A diploma in Midwifery is granted after examination to persons possessing a registrable qualification. Candidates must produce evidence of (*a*) attendance on a course of lectures on Midwifery and Diseases of Women and Children in a recognised school; (*b*) attendance on six months' practice of a recognised lying-in hospital or recognised dispensary for lying-in women and children, and (*c*) of having conducted at least thirty labour cases. The fee for the examination is £15 15s., of which £5 5s. is retained by the College in case the candidate is unsuccessful.

Fellowship.

A candidate for the Fellowship shall make application to the President and Council to be admitted to examination, and, if the Council decide to entertain the application, it shall lie on the table for at least a fortnight for consideration before it is put to the Council for approval. All the required evidences of study or qualification, fees, and testimonials as to character must be submitted previously to its being so considered, and the candidate shall then, if approved by the Council, be admitted to the next Sessional Examination or to a Special Examination if granted by Council, at such date as the President may fix. In order that these regulations may be carried out, candidates are required to enter their names with the Registrar at least one month before the date of examination.

Periods of Examination.—Sessional Fellowship Examinations commence, as far as arrangements permit, on the third Mondays in February, May, and November. Special Examinations may be granted at other times by the Council if they see fit, on sufficient cause being shown.

Grades of Examination.—Candidates for the Final Fellowship Examination are divided into two grades: (1) Licentiates or graduates in surgery of less than ten years' standing. (2) Licentiates or graduates in Surgery of more than ten years' standing. Students not either Licentiates or graduates in Surgery, are permitted to present themselves for the Primary Examination under Grade 1 at the end of their third winter course of dissections.

Grade 1.—Candidates are required to pass two Examinations—Primary and Final. But candidates may present themselves for the Final Examination immediately after passing the Primary part, provided they have complied with the necessary regulations. The subjects for the Primary Examination are: (*a*) Anatomy, including Dissections; (*b*) Physiology and Histology; those for the Final are: (*a*) Surgery, including Clinical and Operative Surgery, (*b*) Surgical Pathology.

Grade 2.—The subjects of examination are: (*a*) Surgical Anatomy, (*b*) Surgery, including Clinical and Operative Surgery, (*c*) Surgical Pathology.

Fees—Grade 1: For Licentiates of the College—for Primary Examination, 15 guineas; for Final Examination, 10 guineas. For Licentiates in Surgery of other licensing bodies—for Primary Examination, 25 guineas; for Final Examination, 15 guineas; for Students of the College, Primary Examination, 5 guineas; Final Examination, 20 guineas; for Students of other licensing bodies, Primary Examination, 10 guineas; Final Examination, 30 guineas. *Grade 2:* Licentiates of the College, 25 guineas; Licentiates in Surgery of other licensing bodies, 40 guineas. Extra fee for Special Examination, 10 guineas. In case of rejection, £10 10s., in addition to the Special Fee, if such has been paid, is retained by the College, and is not allowed in the fees of re-examination. In the case of Fellowship candidates who fail to present themselves for the examination at the time fixed, without having previously given at least a week's notice of their withdrawal, £5 5s. of the fees is retained by the College.

Regulations and entrance forms can be obtained from the Registrar at the College.

APOTHECARIES' HALL OF IRELAND.

The Licence of this Hall is granted to students who can present certificates of having fully completed the course of study as laid down in the curriculum. This Diploma entitles the holder to be registered as a practitioner in Medicine, Surgery, and Midwifery, also with the privileges of the Apothecary Licence. It is divided into four professional examinations; total fees amount in all to 21 guineas. Further particulars can be had from the Registrar, Dublin. Ladies are eligible for this diploma. Candidates already on the *Register* will receive the Diploma of the Hall on passing an examination in the subjects which are not covered by their previous qualifications, and on paying a fee of 10 guineas. If Medicine or Surgery is required 2 guineas extra will be charged.

The Hall also grants the power to practise as an Apothecary

[1] Any candidate who has been rejected at the examination for the Licence in Medicine loses this privilege, and will be required to pay the full fee of £3 3s. for the Licence in Midwifery.

through Ireland, but this power is not granted separately except to persons holding other qualifications registered. The Hall grants its Licence to qualified practitioners whose names appear on the *Medical Register*, who wish to add this to other qualifications. By resolution of the Royal College of Surgeons, Edinburgh, gentlemen registered as holding the licence of the Apothecaries Hall, Ireland, will be admitted to the examination for the Fellowship of their College on compliance with regulations applicable to other candidates. The fee for the licence is £10 10s. on examination.

The Hall has ceased to be conjoined with the Royal College of Surgeons of Ireland.

Further information can be obtained from Mr. R. Montgomery, M.R.C.S., Registrar of the Apothecaries' Hall, Dublin.

NOTES ON MEDICAL SCHOOLS AND COLLEGES

LONDON.

The reconstitution of London University, which has been long talked of, will take effect next October. The regulations for Matriculation, the Preliminary Scientific and the Intermediate and Pass Examinations in Medicine set out in the current *Calendar* will doubtless hold good for the next year, and may continue unchanged for a longer period; but a perusal of the statutes and regulations framed by the Commissioners indicate the probability of considerable changes in the examinations of the University before very long. The matriculation may remain the same for all or, as foreshadowed in Statute 117, may be different "for different classes of students." The Commissioners in the final report urge the fusion into "common classes of instruction" of much of the preliminary scientific and intermediate teaching which is now provided separately at most of the medical schools. This revolutionary change, if carried out, may necessitate some modification in the examinations leading up to the Pass M.B. But for the present all who seek the M.D. of London must, as a first step, matriculate. Most of the medical schools have special regulations to meet the case of those who commence their studies at the Universities of Cambridge or of Oxford. This involves a residence of three years in one or other university, during which the earlier subjects of the medical curriculum—including anatomy and physiology—can be taken. It should be clearly understood that the Conjoint Board in England, consisting of the Royal Colleges of Physicians and Surgeons, does not grant a degree, but the diplomas of L.R.C.P. and M.R.C.S. The Society of Apothecaries grants a licence to practise, which is a registrable qualification. Those intending students who desire to obtain a university degree should from the first regulate their course of preliminary study in accordance with the requirements of the university which they may choose to enter.

The following particulars as to the twelve medical schools in London which provide for the full curriculum will be useful to students who propose to prosecute their studies in the metropolis. The arrangements of the various medical schools are everywhere the same in principle, and are in conformity with the requirements of the General Medical Council and the qualifying bodies. The laboratories for chemistry, physiology and histology, and pathology have at most of the schools been greatly improved during recent years, and the facilities for instruction at the smaller as well as at the larger schools are now in most respects very complete, and are yearly extended and improved.

St. Bartholomew's Hospital Medical School.

The Hospital contains 744 beds.

Appointments.—Clinical Clerks to the Physicians and to the Physician-Accoucheur, and Dressers to the Surgeons and in the Casualty Department are chosen from the students. Clerks and Dressers are also selected from the students to attend in the out-patient rooms, in the special departments (Ophthalmic, Orthopædic, Gynæcological, Laryngological, Aural, Dermatological, Electrical, and Dental), and in the *post-mortem* room. Ten House-Physicians and ten House-Surgeons are appointed annually. During their first six months of office they act as "Junior" House-Physicians and House-Surgeons, and receive a salary of £25 a year. During their second six months they become "Senior" House-Physicians and House-Surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident Midwifery Assistant and an Ophthalmic House-Surgeon are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two Assistant Anæsthetists are appointed annually, and receive salaries of £120 and £100 a year respectively. An Extern Midwifery Assistant is appointed every three months, and receives a salary of £80 a year. Two Assistant Electricians are elected every six months.

There is a residential college within the precincts of the Hospital.

Last year a new Physical Laboratory was added to the school, and it has been furnished in such a manner as to satisfy all modern requirements.

The Physiological Laboratory was—in 1898—rearranged and equipped with all the most modern appliances, including electric motor for experimental work, etc.

The ground—10 acres in area—provided for the use of the members of the Students' Amalgamated Clubs is at Winchmore Hill, within easy reach of the Hospital.

Special classes for students preparing for the Preliminary Scientific Examination will commence October 2nd. Special laboratory instruction for the D.P.H. of Cambridge, Oxford, Durham, and London, is also given. Tutorial Classes in all subjects are held in preparation for all University and other examinations without further fee.

Entrance Scholarships.—Five Entrance Scholarships will be awarded after an Examination to be held on September 26th, 1900, and following days. The subjects of examination and conditions of eligibility for these Scholarships are: 1. Two Scholarships, value £75 each, in not fewer than two nor more than three of the subjects—Chemistry, Physics, Botany, Zoology, Physiology, and Anatomy, limited to students under 25 years of age who have not entered to the medical or surgical practice of any London medical school. 2. One Scholarship, value £150, in not fewer than three of the following subjects—Chemistry, Physics, Botany, Zoology, and Physiology, limited to students under 21 years of age who have not entered to the medical or surgical practice of any London medical school. 3. The Preliminary Scientific Exhibition of £50 will be given for the second best examination in the same subjects and under the same conditions as 2. 4. The Jeaffreson Exhibition in Mathematics, Latin, and one other language—Greek, French, or German—and of the value of £20. The Treasurer's Research Studentship in Pathology, of the value of £100 a year, is given by election to the most promising of the recently-qualified men. The Research Student must engage in original work in the Hospital laboratories. The value of the Scholarships and Prizes is nearly £900 annually.

Fees.—The composition fee is 150 guineas.

Communications must be addressed to Dr. James Calvert, Warden of the College, St. Bartholomew's Hospital.

Charing Cross Hospital Medical School.

The Hospital contains 180 beds, and is now being enlarged. Students are also admitted to the practice of the Royal Westminster Ophthalmic Hospital, which contains 30 beds.

Appointments.—In the Medical School Demonstratorships and Assistant Demonstratorships, when they fall vacant, are open to students of the school, and carry honoraria. The Curator and Pathologist is appointed annually, and receives £100 a year. Medical and Surgical Registrars to the Hospital are appointed annually, and receive £40 a year each, with luncheon in the Hospital. Six House-Physicians, six House-Surgeons, and two Resident Obstretical Officers are appointed each year on the recommendation of the Medical Committee, after Competitive Examination. They are provided with board and residence in the hospital. An assistant to the Roentgen and Electrical Departments is appointed every six months. He receives an honorarium of 12 guineas, with

luncheon at the Hospital. Clinical Clerks, Dressers, and Surgical Ward Clerks are appointed in all the general and special departments of the Hospital. Arrangements can be made for students who have not entered for the entire medical curriculum to hold the posts of Clerk and Dresser. Every student holds in turn the appointment of Pathological Assistant, and assists at the *Post-mortem* Examinations. The above appointments are open without any additional fee.

Entrance Scholarships.—Five Entrance Scholarships, of the respective value of 100 guineas (Livingstone Scholarship, founded in memory of the late Dr. Livingstone, a former student of this school), 60 guineas, 55 guineas (Huxley Scholarship, founded in memory of the late Professor Huxley, a former student of this school), 40 guineas, and 30 guineas are open to students commencing their medical curriculum. Three of these (100 guineas, 60 guineas, and 40 guineas) are open to all general students,[1] one (55 guineas) is reserved for the sons[1] of medical men, and one (30 guineas) is open to Dental students only. All these Scholarships are awarded annually at the commencement of each winter session, after a competitive examination in the following groups of subjects: (1) English, including Language, History, and Geography; (2) any two of the following four languages—Latin, Greek, French, and German; (3) Mathematics, including Arithmetic, Algebra, and Geometry; and Mechanics, including Statics and Dynamics: (4) Inorganic Chemistry and Experimental Physics, including Acoustics, Heat, Magnetism, Electricity, and Optics; and (5) Animal and Vegetable Biology. No candidate may offer himself for examination in more than three of the above groups of subjects, the selection of the groups being left to the candidate. Students who join in the summer session have the same privileges as regards scholarships, medals and prizes as those who join in October of the same year. The value attached to each group of subjects is 1,000 marks. No credit will be given for any paper in which the candidate obtains less than one-fifth of the total marks. Candidates must be under 25 years of age on the first day of the examination. In the first three groups the subjects, as regards extent and the authors selected, will be the same as those chosen for the Matriculation Examination of the University of London in the June immediately preceding; in the fourth and fifth, the same as those for the Preliminary Scientific Examination of the same University. Candidates must give notice to the Librarian of their intention to compete, and of the groups in which they offer themselves for examination, on or before Saturday (10 A.M.), September 22nd, 1900. The examination will commence at the school on Monday, September 24th, at 9 A.M., and will continue during the two following days. The successful candidates will be required to enter forthwith for their complete medical education at the Charing Cross Hospital.

One Epsom Scholarship, giving a free education, is, each winter session, placed at the disposal of the Royal Medical Benevolent College at Epsom, to be competed for by foundation scholars who have passed the Preliminary Scientific M.B. Examination of the University of London.

Two University Scholarships, of the value of 60 guineas each, are open to students from the University of Oxford who have passed the First M.B. Examination, to students of the University of Cambridge who have passed the Second M.B. Examination, and to students of the University of London who have passed the Intermediate Examination in Medicine, and who have not entered at any London Medical School. Subjects: Anatomy and Physiology, including Histology. The examination for these Scholarships, which will be partly practical, will be held at the school on September 26th and 27th. Candidates must give notice to the Librarian of their intention to compete on or before Monday (2 P.M.), September 25th, 1900. The successful candidates will be required to enter forthwith at the Hospital for the completion of their curriculum.

Fees.—The composition fee is 110 guineas.

Further information may be had of the Dean, Dr. Montague-Murray, Charing Cross Hospital Medical School, Chandos Street, Strand, London, W.C.

St. George's Hospital Medical School.

The Hospital contains 351 beds, of which 205 are devoted to Surgical, and 146 to Medical cases.

[1] Those who enter for their entire medical education.

Appointments.—Four House-Physicians and four House-Surgeons are appointed quarterly from among the perpetual pupils; they hold office for six months in each capacity in succession, and reside and board in the hospital free of expense. An Obstetric Assistant is appointed half-yearly; he must be a legally qualified practitioner. He resides and boards in the hospital, and receives a salary at the yearly rate of £100. A Curator of the Pathological Museum is appointed annually, with a salary of £100; and an Assistant Curator, with a salary of £50. A Medical and a Surgical Registrar are appointed annually from among the senior pupils, each with a salary of £50; and another Medical Registrar with a salary of £30. A Senior Anæsthetist is appointed annually, with a salary of £50 a year; and two Junior Anæsthetists with salaries of £30. As the result of a competitive examination held every three months, those students who desire to proceed to the offices of House-Physician and House-Surgeon are appointed as assistants during twelve months in the special and general divisions of the out-patient departments. Three Demonstrators of Anatomy are appointed annually, each with a salary of £50. Each pupil of the Hospital must act as Clinical Clerk and Dresser before a certificate of attendance on hospital practice can be signed.

Entrance Scholarships.—The following Entrance Scholarships are offered for competition: 1. A scholarship, value £150, for the sons of medical men who have entered the schools during the current year. 2. Two Scholarships, each of £50, open to all students commencing their studies. The subjects for these three Scholarships will be Latin, Greek, French, German, Mathematics, Physics, Chemistry, and Biology. Three of these to be taken, at option, save that at least one linguistic and one scientific subject must be taken. The examination for all these scholarships will be held on September 26th to 29th. 3. Two Scholarships, value £85, for students who have entered during the current year, and have passed or completed the curriculum for the Oxford First M.B. or the Cambridge Second M.B. Subjects for these three Scholarships: Organic Chemistry, Anatomy, Physiology, Zoology, Botany; any two to be taken at option. 4. A Scholarship, value £85, for students of Provincial University Colleges in England and Wales who have entered the School during the current year, and have passed or completed the curriculum for the First M.B. of London or the corresponding examinations of the Victoria University or of Durham. The examinations for these Scholarships will commence on October 5th.

Fees.—The composition fee is £150.

Further information may be obtained from the Dean of the School; from any of the Lecturers; or from Mr. F. J. Marshall, the Resident Medical Officer at the Hospital.

Guy's Hospital Medical School.

The Hospital contains more than 600 beds, of which 550 are in constant occupation. Thirty-six beds are set apart for diseases of the eye, and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. One of the wards containing 40 beds, which has been closed for fifteen years, has been reopened for the reception of cases of diseases of women. A few beds are reserved for cases of difficult labour.

Appointments.—All appointments are given without extra payment, and according to the merits of the candidates, as determined by a committee of the medical staff. Eight assistant house-physicians, 8 house-physicians, 24 assistant house-surgeons, and 8 house-surgeons are appointed annually. The house physicians and house-surgeons hold office for six months each, and receive free board and lodging in the college, as also do the resident obstetric assistants, of whom 8 are appointed annually, each holding office for six months. Every student is provided with rooms and commons in the hospital during the period of his "take in" as dresser. In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynæcology, dermatology, otology, electricity, anæsthetics, and dentistry. More than 150 additional appointments have recently been added to the list of those annually open to students of the hospital, the majority of them being in the special departments.

The College, fronting the east gate of the Hospital, provides accommodation for 60 resident students. It contains a dining hall, reading rooms, library of general literature, and gymnasium for the use of the residents and of the members of the Clubs Union. The athletic ground is easily accessible.

Scholarships, Prizes, etc.—Two Entrance Scholarships in Arts: One of the value of £100 open to candidates under 20 years of age, and one of £50 open to candidates under 25. Subjects: English, Latin, Arithmetic, Algebra, Euclid, and either Greek, French, or German. Three Entrance Scholarships in Science: One of £150 and one of £60, open to candidates under 25, and one of £50 to University students who have completed their study of Anatomy and Physiology. Subjects: Anatomy, Physiology, Chemistry, Practical Chemistry, Biology, and Physics. These examinations begin on September 25th; names must be sent in on or before September 10th. Junior prizes for general proficiency, £20, £15, £10; Arthur Durham prizes for dissection, £15, £5; Hilton prize for dissection, £5; Michael Harris prize for Anatomy, £10; Sands Cox scholarship for physiology, £15 for three years; Wooldridge Memorial prize for physiology, £10. Senior prizes for general proficiency, £20, £15, £10; Beaney prize for pathology, £34; Treasurer's gold medal in medicine, Treasurer's gold medal in surgery, and the Golding-Bird gold medal and scholarship (£20) for sanitary science are awarded annually after competitive examination. The Gull Studentship in pathology and the Beaney Scholarship in materia medica, of the annual value of £150 and £31 10s. respectively, are awarded without examination to enable research to be carried on in these subjects.

Practical Classes.—An advanced course of Practical Physiology is held in the new laboratories during the winter session and, in association with the advanced course of Practical Anatomy, is designed to prepare candidates for the University and Fellowship examinations in these subjects.

Special classes are held for the Preliminary Scientific examination of the London University throughout the year. Two courses of laboratory instruction for the D.P.H. are conducted annually.

Fees.—The composition fee is 150 guineas.

The Clubs Union recreation ground, situated at Honor Oak Park, is reached from the Hospital in less than 25 minutes.

KING'S COLLEGE MEDICAL FACULTY.

The Hospital contains 220 beds in daily use.

Appointments.—Resident Medical Officers, Clerks, and Dressers are chosen from matriculated students, and the former have rooms and commons free. Two Sambrooke Registrarships, Medicine and Surgery, of the annual value of £50 each, are open to matriculated students in higher appointments of the Hospital. Clinical assistants are appointed in the Ophthalmic, Ear, and Throat Departments.

Entrance Scholarships.—1. Two Warneford Scholarships, for the encouragement of previous education, each £75 value; subjects of examination, Mathematics, Classics, Divinity. 2. Two Sambrooke Exhibitions, one £60 and one £40, open; subjects of examination, Mathematics, Elementary Physics, Inorganic Chemistry, Botany, and Biology. 3. Rabbeth Scholarship, value £20, in July, for best evidence of early scientific training. 4. Two Scientific Exhibitions, open, given annually, in October, by the Clothworkers' Company, value £60 and £40, for proficiency in any four of the following subjects: Mathematics, Mechanics, Physics, Chemistry, Botany, Geology, Mineralogy, and Zoology will be open to all candidates who are under the age of 19. 5. Medical Entrance Scholarships.—One of 70 guineas and one of 60 guineas, instituted for Students who propose to take their degree at Oxford, Cambridge, or other British University, having already passed the examination of that University in Biology, Chemistry, and Physics.

During the curriculum Scholarships and Prizes of the value of £300 are open to matriculated students.

For conditions of scholarships and subjects of examinations apply to the Dean, Medical Faculty. Examinations commence September 27th.

The Dean of the Medical Department, Professor A. W. Hughes, attends daily (Saturdays excepted) at King's College for the purpose of seeing students and their friends. Any letter addressed to the Dean during the vacation will receive early attention.

Fellowship Examinations of the Royal College of Surgeons.—Special classes for the Primary and Final Examinations are held, and a special prospectus regarding these classes will be forwarded on application to the Dean.

University of London.—A special class for the Matriculation Examination will commence on September 25th. Classes for the science subjects are held by the Professors of the Science Faculty of King's College, and students avail themselves of their laboratories.

Fees.—The composition fee is £135.

Athletic Club.—All students are entitled to the privileges of the Athletic Club, which manages a large recreation ground of the College at Wormwood Scrubbs.

Resident Chambers are available for students. The cost of the academical year varies from £50 to £60 for rent of rooms and dinner.

LONDON HOSPITAL MEDICAL SCHOOL.

The Hospital is the largest general hospital in the kingdom; it contains nearly 800 beds. Number of patients treated last year: In-patients, 13,234; out-patients, 189,638; total, 202,872.

Appointments.—Among the salaried appointments open to students are those of Medical Registrar, Surgical Registrar, Medical, Surgical, and Obstetric Tutors, Receiving-room Officers, and Medical, Surgical, and Ophthalmic Clinical Assistants. There are also 5 Resident House-Physicians and 5 Resident House-Surgeons and Accoucheurs. In addition there are Assistantships, and Clerkships, and Dresserships in the various departments.

Scholarships and Prizes.—The following is a list of scholarships and prizes. *At Entrance:* Price Scholarships in Science, £120; in Anatomy and Physiology, £60; Entrance Scholarships in Science, £60 and £35; Epsom Scholarship, £126; Buxton Scholarships in Arts, £30 and £20. *After Entrance:* Anatomy and Biology Scholarships, £20; Anatomy and Physiology Scholarship, £25; Letheby Prize, Senior, £20; Letheby Prize, Junior, £10; Scholarships in Clinical Medicine, Surgery, and Obstetrics, £20 each; Duckworth Nelson Prize, £10; Hutchinson Prize, £35; Sutton Prize, £20; Sir Andrew Clark Prize, £26; Anderson Prizes, £9; Out-patient Dressers' Prizes, £60; Practical Anatomy Prizes, £10.

A special course for the D.P.H. will commence at the beginning of the winter session.

Fees.—The composition is 120 guineas. A reduction of 15 guineas is made to sons of medical men.

New Buildings.—The new Departments of Bacteriology, Public Health, Chemistry, and Biology are now completed and in full use. During the last year new Students' Rooms have been added, and a Garden and Fives Court opened for the use of the members of the London Hospital Clubs Union.

Information may be obtained from the Warden, Mr. Munro Scott, at the London Hospital Medical College, Mile End, E.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

The Hospital contains 281 beds, which number will be raised to 381 on completion of the Clarence Wing. The new out-patients department, opened in 1898, with its extensive accommodation and modern equipment offers exceptional advantages to students for clinical work. The situation of the hospital in the centre of the residential districts of Paddington, Bayswater, and North Kensington renders it especially convenient to students who wish to reside in the immediate vicinity, and a register of approved lodgings is kept in the office of the Medical School.

All clinical appointments in the hospital are free to students of the Medical School, and the Resident Medical Officers are chosen by competitive examination. Six House-Physicians, six House-Surgeons, four Obstetric Officers, and two Resident Anæsthetists are appointed each year and receive board and residence in the hospital.

Entrance Scholarships in Natural Science.—One of £145, two of £78 15s., one of £52 10s. and two of £57 15s. (open to students of Oxford and Cambridge), are awarded annually by competitive examination in September.

Improved Laboratories.—The Physiological Laboratories have been further extended, and a special Physiological Lecture Room, adapted for advanced practical classes, has been added.

The alterations completed in 1898 provide new laboratories for pathology and bacteriology, a new lecture room, fitted with electric light and every modern improvement for practical classes in these subjects, and a new museum. An enlarged chemical laboratory has been provided, and the former chemical laboratory has been adapted for public health courses and for the study of pathological chemistry.

Special Tuition.—In addition to systematic courses of Lectures and Demonstrations, special tuition is provided for the Intermediate and Final Examinations of the Universities of Oxford, Cambridge, and London without additional fees.

Preliminary Scientific Course.—Special classes, including Lectures and Laboratory work, are held throughout the year.

The composition fee for students is £140 if paid in one sum, or £145 if paid in four instalments. University students who have completed their examinations in Anatomy and Physiology are admitted on payment of a composition fee of 55 guineas (£57 15s) paid in one sum, or on payment of an annual fee of 28 guineas (£29 8s.) for each year of study prior to graduation in Medicine. Separate courses of Lectures, Laboratory Work, or Hospital Practice may be taken.

The composition fees include membership of the amalgamated clubs.

The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.

Middlesex Hospital Medical School.

The Hospital contains 320 beds. A new wing containing 40 beds and special research laboratories is entirely devoted to patients suffering from cancer. It offers unrivalled opportunities for the study of this disease, both in its clinical and pathological aspects.

Appointments, etc.—Eighteen Resident appointments are open annually to competition among pupils of the Hospital. The officers reside and board in the Residential College free of expense. There are two Casualty Medical and two Casualty Surgical Officers appointed annually. Six House-Surgeons are appointed every year at intervals of two months, after examination; and six House-Physicians are also appointed annually at similar intervals; they must have a legal qualification, or hold a Broderip Scholarship. An Obstetric House-Physician (qualified to practise) is appointed every six months. Non-resident Physicians' Assistants are appointed in the various out-patient departments. In the out-patient department the appointments are: Dresser to the Assistant Surgeon and to the Dental Surgeon, Clerk to the Assistant Physician, Dresser to the Ophthalmic Surgeon, Clerk in the Department for Diseases of the Skin, Clerk in the Department for Diseases of Women, and Dresser to the Throat and Ear Department. There are also Extern Midwifery Clerks and *Post-mortem* Clerks. The appointments are so arranged that every student may during his course hold all the Out-patient and In-patient Clerkships and Dressership. Each student must have held an out-patient clerkship and dressership before being eligible to hold in-patient clerkships or dresserships. No student can be appointed to any office until he has passed the Second Examination of the Examining Board in England, or its equivalent. Clinical Assistants are appointed in the Children's, Ophthalmic, Skin and Throat, and Ear Departments.

Entrance Scholarships.—Two Entrance Scholarships, value £100 and £60, are open to all gentlemen commencing their medical studies in May or October, 1900. The successful candidates must become general students of the school. Examination on September 25th and 26th. Candidates must send in their names to the Dean, stating the three subjects they select, on or before September 18th.

Universities Scholarship.—An annual Entrance Scholarship, of the value of £60, is open to students of the Universities of Oxford and Cambridge who have completed the curriculum for or passed the examinations in Anatomy and Physiology. Subjects: Anatomy and Physiology, including Histology. The examination takes place on September 25th and 26th. Application to be made on or before September 18th. Students joining the school in the previous May are eligible to compete for the Entrance and University Scholarships in that year.

The Freer Lucas Scholarship is annually awarded on the nomination of the head master to a pupil of the Royal Medical College, Epsom, who has passed the Preliminary Scientific M.B. Examination.

Fees.—The composition fee is 135 guineas.

Further Information may be obtained from Dr. Pasteur, the Dean.

The Residential College is situated in Cleveland Street, W., and has its frontage in the Hospital Garden; it accommodates about 30 students. Warden, Dr. R. A. Young, B.Sc.

St. Thomas's Hospital Medical School.

The Hospital contains 572 beds, of which about 512 are in use. It is built on the system of separate pavilions, which are connected by a covered and an open-air corridor. The Hospital and School are situated along the banks of the Thames between Westminster and Lambeth Bridges, an open-air terrace running the whole length of the buildings facing the Houses of Parliament. The two large Operating Theatres are now undergoing alterations by means of which the Hospital will contain two Children's Wards and four Operating Theatres. A Clinical Laboratory has been recently built, in which all the more difficult methods of diagnosis, bacteriological, chemical, and microscopical, are carried on under the direction of a Superintendent. The Department for Out-patients has been rearranged, and now consists of a series of rooms, among which are two large, well-ventilated Clinical Theatres provided with ample sitting accommodation, so that large numbers of students are enabled to follow closely the practice and teaching of the assistant staff. During the twelve months ending December 31st, 1899, the number of patients admitted into the hospital amounted to 5,831. In the same period 18,549 out-patients have been treated, and in the maternity department 2,471 women have been attended at their own homes. Casualties to the number of 94,836 attendances were treated during the same period.

The *School Buildings*, which are separated from the hospital by a quadrangle containing a lawn tennis court for the use of the residents, comprise numerous theatres, laboratories, and class rooms, and are well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A large library and reading room and a very complete museum are open to all students from 9 A.M. to 5 P.M. The new club premises, opened in 1894, contain a dining room, a smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. A cloak room with lockers, and a lavatory with bath rooms are in the main school building. Students are thus able to spend the whole day at the school, all meals being obtainable at a moderate tariff, and they are further provided with facilities for exercise and recreation. A ground of more than nine acres in extent is provided at Chiswick. It can be reached in forty minutes from the hospital, it is admirably adapted for football, cricket, lawn tennis, and athletic sports. It is provided with a pavilion where refreshments can be obtained.

Scholarships.—Three Entrance Scholarships will be offered for competition in September, namely: One of £150 and one of £60, in Chemistry and Physics, with either Physiology, Botany, or Zoology at the option of candidates, for first year's students. (The Medical School Committee is empowered to grant an exhibition of £20 to any unsuccessful competitor who obtains sufficient marks to qualify for a scholarship); one of £50 in any two of the following subjects, Anatomy, Physiology, Chemistry, for students who have completed their examinations in Anatomy, Physiology, Materia Medica and Pharmacy for a medical degree in any of the Universities of the United Kingdom, and have not entered as students in any London medical school. Copies of the examination papers of last year may be obtained on application to the Medical Secretary. Applications must be sent in not later than September 19th, with certificate of birth and of Preliminary Examination, and with a notification of the choice of optional subject. Numerous Scholarships, prizes, and medals are open to competition throughout the whole career of a student, including a Fellowship of £100 given by the Salters' Company for research in Pharmacology.

Appointments. All Hospital Appointments are open to students without charge. A Resident Assistant Physician and a Resident Assistant Surgeon are appointed annually at a

salary of £100 with board and lodging. Two Hospital Registrars, at an annual salary of £100 each, are appointed yearly. The tenure of these offices may be renewed for a term not exceeding two years. An Obstetric Tutor and Registrar is appointed each year at an annual salary of £50. Four House-Physicians, two Assistant House-Physicians, four House-Surgeons, four Assistant House-Surgeons, two Obstetric House-Physicians, two Opthalmic House-Surgeons, and eight Clinical Assistants in the special departmente are appointed every three months, and hold office for six months if recommended for re-election. Clinical Clerkships and Dresserships to the in-patient and out-patient departments are available to the number of 400 each year.

Fees.—The fees may be paid in one sum or by instalments. Entries may be made separately to lectures or to hospital practice. The composition fee is £150. Special arrangements are made for students from the Universities and elsewhere entering in their second or subsequent years, also for dental students and for qualified practitioners.

University Examinations.—Special Classes for the Preliminary Scientific and Intermed. M.B.Lond., for the Oxford and Cambridge Examinations, and for the Primary F.R.C.S. are held throughout the year.

Lodgings.—A register of approved lodgings is kept by the Medical Secretary, who has a list of local medical practitioners, clergymen, and others who receive students into their houses.

Further information may be obtained by application to Mr. Rendle, the Medical Secretary, St. Thomas's Hospital, Albert Embankment, S.E.

UNIVERSITY COLLEGE: MEDICAL FACULTY.

The Hospital contains 185 beds, all of which are available for clinical instruction and study.

Appointments.—Eight House-Physicians, six House-Surgeons, twelve Obstetric Assistants, Out-Patients Physicians' and Surgeons' Assistants, Clinical Clerks, Surgeons' Dressers, and Ophthalmic Surgeons' Assistants, are selected annually from among the students without extra fee. The House-Physicians, the House-Surgeons, and four Obstetric Assistants reside in the Hospital, receiving free board and lodging.

Entrance Scholarships.—The Bucknill Scholarship of £30 a year for four years, and two Exhibitions of the value of 55 guineas each, are offered for competition in September to gentlemen who are about to commence their first winter's attendance. The subjects are Chemistry, Physics, Botany, and Zoology. Two Exhibitions of the value of 76 guineas each are offered for competition in September, the subjects of the examination being Anatomy and Physiology. Only one of these Exhibitions may be awarded to a student who has received his Anatomical and Physiological instruction in University College. The Bucknill Scholar is not eligible for these Exhibitions. The examinations for the Scholarship and Exhibitions will take place at the College on September 26th and 27th, 1900. Notice of intention to compete must be given to the Secretary, on or before September 25th, at the office of the College.

Other exhibitions and prizes of the annual value of about £500 are given in the Faculty of Medicine.

Fees.—The composition fee is 135 guineas.

Information respecting the College may be obtained from the Dean, Professor H. R. Spencer, M.D., F.R.C.P.; the Vice-Dean, Professor J. Rose Bradford, M.D., F.R.C.P., F.R.S.; the Sub-Dean, Professor Thane; or the Principal, Mr. G. Carey Foster.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.

The Hospital contains upwards of 200 beds.

Appointments.—A Medical and a Surgical Registrar are appointed annually, each with a salary of £40. Two House-Physicians, two House-Surgeons, two Assistant House-Surgeons, and a Resident Obstetric Assistant are appointed for six months, after examination, and are provided with rooms and commons. An Assistant House-Surgeon, after six months' service, becomes House-Surgeon for a further period of six months. Clinical Assistants to the Assistant Physicians and Assistant Surgeons, and to the officers in charge of special departments, are appointed from among qualified students. Every student must perform the duties of Out-patient Dresser for four months, and afterwards hold the office of In-patient Dresser for four months, of Out-patient Clinical Clerk for four months, and of In-patient Clinical Clerk for four months. Two Pathological Clerks are appointed every four months to assist in the *Post-mortem* Room. No Student is eligible as an In-patient Dresser or Clinical Clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and Dressers in the Special Departments of Hospital Practice are periodically appointed. So far as vacancies permit, students of other hospitals are admitted to In-patients' Dresserships or Clerkships.

Scholarships.—The following Scholarships are offered for competition during the year 1900-1: *In September, 1900:* Three Scholarships in Arts, £60, £40, and £30; Scholarship in Arts for Dental Students, £20; two Oxford and Cambridge Scholarships in Anatomy and Physiology, £40 and £30; Two Natural Science Scholarships, £60 and £40; Free Presentation, open to pupils of Epsom Medical College. *In April, 1901*: Two Scholarships in Arts, £50 each; two Oxford and Cambridge Scholarships in Anatomy and Physiology, £40 and £30; Two Natural Science Scholarships, £60 and £40.

Fees.—The composition fee is 110 guineas.

Further information can be obtained on application to the Dean at the Westminster Hospital Medical School, Caxton Street, Westminster, S.W.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

The Hospital contains 170 beds, all of which are available for clinical instruction. There are separate departments for Diseases of Women, Diseases of the Eye, Throat and Ear, Skin, and classes for instruction in Anæsthetics, Bacteriology, etc., in addition to the ordinary Clinical Lectures and Demonstrations and Tutorial Classes. Students also attend the practice of one of the Fever Hospitals of the Metropolitan Asylums Board, and receive special instruction in Lunacy at one of the Hospitals under the Asylums Board of the London County Council, and are also admitted to the practice of 13 special hospitals.

Appointments as Surgical and Medical Registrar, Anæsthetist, Curators of the School and Hospital Museums, and Clinical Assistants and Demonstratorships in various subjects are open to Students after qualification.

Scholarships.—An Entrance Scholarship value £30, and the St. Dunstan Scholarship value £60 a year for four years, are offered for competition at the end of September in each year. The Bostock Scholarship value £60 a year for two or four years, is awarded on the result of the Preliminary Scientific Examination of the University of London. The Singleton Scholarship value £90 will be awarded on the results of the Preliminary Scientific Examination of the University of London in July, 1901. The Stuart Mill Scholarship value £30, the John Byron Bursary and two Mackay Prizes, value £20 each, the Helen Prideaux Prize of £50, together with many other scholarships and prizes, are offered on sundry conditions. Various Missionary Societies also offer scholarships on certain conditions, and assist ladies who wish to go to India as medical missionaries.

The Course of Study includes preparation for the Examinations of the University of London, the Royal University of Ireland, the University of Durham, the Conjoint Colleges of Scotland and of Ireland, and the Society of Apothecaries, London. Special classes are held in preparation for the Preliminary Scientific Examinations of the Universities of London and Durham.

School Buildings.—The entire School has been rebuilt and considerably enlarged. The first two wings containing Laboratories for Anatomy, Chemistry, Physiology, Biology, and Physics, and three large Lecture Theatres are now in full working order. The third wing, which will complete the School, will be opened in October, 1900, and will contain common room, library, museums, and sets of chambers available for students.

Fees.—The composition fee is £125.

COOKE'S MEDICAL SCHOOL, LONDON.

The School is prepared to admit to its supplementary work all who may wish to join the same, but in regard to its

curriculum work it does not receive more than half a dozen students in the course of the year; these have special advantages both as regards anatomy and physiology. The fees, we are informed, are but slightly in excess of current charges.

The Bland-Sutton Presentation—named after Mr. Bland-Sutton, F.R.C.S., Surgeon to the Middlesex Hospital (a former pupil of the School)—confers the privilege of free education during the first two years of medical studies. Particulars will be forwarded on application.

By decision of the various Examining Bodies, gentlemen rejected at their Anatomical and Physiological Examinations (Second Conjoint, etc.) can get "signed up" from this school for the three months' supplementary work they are required to put in before re-examination. The School is also recognised for the special dissections for the Fellowship of the Royal College of Surgeons.

The operations of Surgery are performed on the dead body. Such courses are recognised for army promotion by the College of Surgeons.

The School possesses a good collection of anatomical models, physiological and chemical apparatus, and gentlemen preparing for the higher examinations receive special instruction in the more difficult subjects.

PROVINCES.

The medical schools in England, outside London, which give instruction in the full medical curriculum, are those of the Universities of Oxford, Cambridge, and Durham (University of Durham College of Medicine, Newcastle-on-Tyne); the three Colleges of the Victoria University (Owens College, Manchester; University College, Liverpool; and the Yorkshire College, Leeds); The University of Birmingham (Mason University College); University College, Bristol; and University College, Sheffield (School of Medicine).

The opportunities for obtaining a good knowledge of the Preliminary Sciences, and of Anatomy and Physiology at the Universities of Cambridge and Oxford are unsurpassed: the staffs of teachers are distinguished, and the laboratories are most completely appointed. Instruction in Clinical Medicine, Surgery, and Midwifery is given by the University Lecturers, and by the visiting staffs of the Radcliffe Infirmary at Oxford and of Addenbrooke's Hospital, Cambridge; but it is the rule for Oxford and Cambridge men, after spending three years at the University, and passing the necessary examinations, to proceed for the remaining two years to London or some other large town where the opportunities for gaining clinical experience are greater. At many of the London schools special arrangements—as to which full particulars can be obtained on application to the respective Deans—are in existence to meet the case of students from the Universities joining under these circumstances. At some of the schools they are placed on the same footing in regard to obtaining the appointments of House-Physician and House-Surgeon as students who have attended the hospital throughout. As the circumstances of the various schools are liable to vary from time to time, special inquiries should be made on this point, which after-experience will show to be of great importance.

The arrangements and appliances for laboratory and other practical instruction at Owens College, Manchester, at University College, Liverpool, at the Yorkshire College, Leeds, and at University College, Bristol, are most complete, having in each case been recently enlarged and improved. At Birmingham the medical school is a Faculty of the newly-formed University, and is provided with all the most modern facilities for instruction in science, while the great hospitals afford excellent opportunities for clinical work, and a very unusual number of resident appointments in proportion to the present size of the school.

The Medical School of the University College of South Wales and Monmouthshire at Cardiff gives instruction in all the subjects of the medical curriculum belonging to the first three years.

The General and Queen's Hospitals, Birmingham.

The practices of these Hospitals are amalgamated for the purpose of clinical instruction under the direction of the Birmingham Clinical Board by whom all schedules will be signed and all examinations conducted.

The hospitals have a total of upwards of 400 beds; 6,000 in-patients and 80,000 out-patients are treated annually.

Appointments open to Past Students.—At the General Hospital: Two Resident Medical Officers, salary £70 a year; a degree in Medicine is necessary. One Resident Surgical Officer, salary £100 a year. One Resident Pathologist, salary £100 a year. Two non-resident Surgical Casualty Officers, salary £50 a year. Two non-resident Anæsthetists, salary £50 a year. Four House-Surgeons, office tenable for six months, without salary. Two Assistant House-Physicians, tenable for six months, without salary. One Resident Medical Officer at the Jaffray Hospital, salary £150 a year. One Resident Assistant at the Jaffray Hospital (post vacant early in April, July, October, and January, tenable for three months). At the Queen's Hospital: Two House-Physicians (posts vacant in May and November, tenable for twelve months, at a salary of £50). Three House-Surgeons (posts vacant in February, May, and November, tenable for twelve months, at a salary of £50). One Obstetric and Ophthalmic House-Surgeon (post vacant in May and November, tenable for six months). Salary £10, with board and lodgings, etc. One Resident Dresser (post vacant on the first day of January, April, July, and October, tenable for three months). Candidates must previously have attended all their lectures, etc., and need not be qualified.

University College, Bristol: Faculty of Medicine.

The lectures and instruction given in the Faculty of Arts and Science of University College, Bristol, are adapted to the various Preliminary Examinations, including the Preliminary Scientific Examination of the University of London; and students can complete in Bristol the entire course of study required for the medical and surgical degrees of the University of London, the diplomas of the Royal College of Physicians of London and the Royal College of Surgeons of England, and of the Apothecaries' Society of London, and for the Examinations for admission to the Royal Navy and the Indian Medical Services, and the Royal Army Medical Corps.

It is now arranged that students of the College shall be admitted to the Clinical Practice of the Bristol Royal Infirmary and the Bristol General Hospital conjointly, and consequently both these institutions are open to all students.

The Infirmary and the Hospital comprise between them a total of 470 beds, and both have very extensive Out-patient Departments, Special Departments for the Diseases of Women and Children, and of the Eye, Ear, and Throat, besides large Outdoor Maternity Departments and Dental Departments. Students may also attend the practice of the Bristol Royal Hospital for Sick Children and Women, containing 104 beds, and that of the Bristol Eye Hospital, with 28 beds. The total number of beds available for clinical instruction is therefore 602. Very exceptional facilities are thus afforded to students for obtaining a wide and thorough acquaintance with all branches of Medical and Surgical work. Each student has the opportunity of personally studying a large number of cases and of acquiring practical skill in diagnosis and treatment.

Appointments—Royal Infirmary—House-Physician, House-Surgeon, Junior House-Physician, and Junior House-Surgeon; Clinical Clerks and Dressers, also Ophthalmic, Obstetric, and Pathological Clerks are appointed. The Dressers reside in the Infirmary in weekly rotation. *General Hospital:* House-Surgeon, Assistant House-Surgeon, Assistant House-Physician and Casualty House-Surgeon; Clinical Clerks, Dressers, and Obstetric, Ophthalmic, and Pathological Clerks are appointed. The Dressers reside in the Hospital in rotation free of expense.

Scholarships and Prizes.—(1) University Entrance Scholarships, £50. (2) Lady Haberfield Entrance Scholarship, £30 (about), after examination in subjects of general education. (3) Martin Memorial Pathological Scholar-

ships, two of £10 each. (4) Tibbit's Memorial Prize, value 9 guineas, for proficiency in Practical Surgery. (5) Committee Gold Medal for fifth year Students for general proficiency. (6) Committee Silver Medal for the same. (7) Augustin Prichard Prize, value about 7 guineas, for proficiency in Anatomy. (8) Henry Clark Prize, value about 11 guineas, for general proficiency. (9) Crosby Leonard Prize, value 7 guineas, for proficiency in Surgery. (10) Suple Surgical Prize, a Gold Medal and 7 guineas in money. (11) Suple Medical Prize, a Gold Medal and 7 guineas in money. (12) Henry Marshall Prize, value about £12, Dresser's Prize. (13) H. M. Clarke Scholarship, value £15, for proficiency in Surgery. (14) Sanders Scholarship, value £22 10s., for general proficiency. Prizes and certificates are also awarded in the various classes of the College.

Fees.—The composition fee for the College courses is 65 guineas (or 70 guineas in two instalments). Dental Composition Fee, 55 guineas.

Clinical and Bacteriological Research Laboratory.—This Laboratory has been established with the view of enabling medical men in the West of England to obtain reliable information and reports upon pathological material, to assist them in the clinical investigation of cases presenting obscure symptoms, and to afford them the opportunity of personally carrying out investigations.

Full information can be obtained on application to the Dean of the Medical Faculty, Professor E. Markham Skerritt, University College, Bristol.

THE YORKSHIRE COLLEGE, LEEDS (VICTORIA UNIVERSITY), DEPARTMENT OF MEDICINE.

Clinical instruction is given at the Leeds General Infirmary, which has over 400 beds in constant use, and includes gynæcological and ophthalmic wards and a large new out-patient department. The Ida Semi-convalescent Hospital attached to the Infirmary has over 40 beds. The West Riding Lunatic Asylum at Wakefield is also open for the study of Mental Diseases. Students can in addition attend the practice of the Leeds Public Dispensary, the City Fever Hospitals (100 beds), and the Hospital for Women and Children.

Appointments.—Senior Anæsthetist, £50. Five Anæsthetists, £25 each. The Resident Medical, Surgical, and Casualty Officers, each at £100 per annum. The Resident Ophthalmic Officer at £50 per annum. A Resident Obstetric Officer is attached to the gynæcological ward and an extensive external maternity department. A Resident Medical Officer is appointed every six months for the Ida Hospital (honorarium £25). Three House-Physicians, each holding office for six months, and four House-Surgeons holding office for twelve months. Physicians' Clerks, Surgeons' Dressers are appointed for six months; Ophthalmic and Aural Dressers, Gynæcological Ward Clerks, Assistant Physicians' Clerks, and Assistant Surgeons' Dressers, Dressers in the Casualty Room, *Post-mortem* Clerks, and Laboratory Assistants for three months. A Pathological Curator (£120 per annum) has charge of the new pathological laboratory. Appointments are also open to students at the Leeds Public Dispensary (three Resident Medical Officers, with salaries commencing at £80), at the Hospital for Women (House-Surgeon, honorarium £120, and Anæthetist £25), and at the West Riding Asylums.

Entrance Scholarships.—The Yorkshire College awards annually a scholarship in the form of a free admission to the lectures and classes covered by the composition fee. Candidates must have passed the Preliminary Scientific (M.B.) Examination of the London University, or the First (Scientific) Examination of the Victoria University. The subjects of the examination are those included in the above examination. The Infirmary also awards a scholarship of the value of 40 guineas in the form of a free admission to the clinical teaching of the Infirmary. The subjects of the examination are (*a*) Latin, (*b*) Elementary Mathematics, (*c*) English Dictation and Composition, (*d*) English History, and (*e*) one of the following languages: French, German, or Greek.

Fees.—The composition fee for the College courses is £67 4s.

Further information can be obtained from the Dean, the Department of Medicine, Yorkshire College, Leeds, or from the Secretary of the Faculty, General Infirmary, Leeds.

UNIVERSITY COLLEGE, LIVERPOOL (VICTORIA UNIVERSITY): MEDICAL FACULTY.

New Medical Buildings are at present in course of erection, comprising departments of Anatomy, Surgery, Anatomical Museum, and laboratory and lecture room accommodation for the School of Dental Surgery, Materia Medica, Toxicology, etc., adjoining the Physiological and Pathological Laboratories, which were built and completely equipped by the generosity of the Rev. S. A. Thompson-Yates, at a cost of £30,000, and were opened by Lord Lister in October, 1898. This building includes theatres for physiology and pathology, laboratories for microscopic, physical, and chemical Physiology, for Morbid Anatomy, Bacteriology, and Chemical Pathology, special rooms for research, etc., private rooms, students' common room, and lavatories. The Chemical Laboratories have been extended, so as to provide *inter alia* more complete accommodation for medical students and those engaged in laboratory work for diplomas in Public Health. The Chair of Hygiene has secured adequate permanent accommodation in Ashton Hall, an institute adjacent to the College, which contains ample class-room and laboratory accommodation for study and research. The museums of Anatomy, Pathology, and Materia Medica are furnished with complete provision for the needs of students, and have recently been reorganised and revised. The museum of Hygiene, accommodated in Ashton Hall, has been recently established on the lines of the Parkes Museum. It contains meteorological instruments, and numerous models and specimens. Under the supervision of the Professor of Hygiene a course of lectures on Sanitary Science is given during the winter, suitable for candidates for sanitary inspectors' certificates.

Royal Infirmary.—The Royal Infirmary, which adjoins the School, contains 300 beds, with 40 special beds for the treatment of Diseases of Women. The Lock, Lying-in, Eye and Ear, Women's, Children's, and Dental Hospitals are in the immediate vicinity, and their practice is open to the students of the Medical Faculty.

Fees.—The composition fees are: £24 15s. for Preliminary Scientific Classes; £60 for the Medical Classes required for the Victoria, London, and other University Degrees; £70 for all the classes required for the diplomas of the Conjoint Boards. The medical composition fees are payable in two instalments, at intervals of twelve months. The fee for hospital attendance at the Royal Infirmary is 40 guineas, also payable in two annual instalments.

Appointments.—Three House-Surgeons, three House-Physicians, and one External House-Surgeon to the Thornton Wards, are appointed for six months, after (if necessary) competitive examination. Candidates must have a legal qualification. Clinical Clerks for each Physician, Dressers for each Surgeon, and Clerks to the Thornton Wards for Diseases of Women, are appointed every three months. *Post-mortem* Clerks are appointed for six weeks. All students are required to perform this duty before the schedule for the Final Examination is signed.

Fellowships and Scholarships.—Fellowships, Scholarships, and Prizes of over £600 are awarded annually. (*a*) A Holt Fellowship in Pathology and Surgery, of the value of £100 for one year, is awarded annually by the Medical Faculty to a senior student possessing a medical qualification. The successful candidate is required to devote a year to tutorial work and investigation in the Pathological Department. (*b*) A Holt Fellowship in Physiology awarded under similar conditions, of the value of £100 for one year. (*c*) A Robert Gee Fellowship in Anatomy, awarded under similar conditions, also of the value of £100 for one year. (*d*) An Alexander Fellowship for Research in Pathology, of the annual value of £100, renewable. (*e*) A Johnston Colonial Fellowship in Pathology and Bacteriology (£100 a year, renewable). (*f*) Two Lyon Jones Scholarships, of the value of £21 each for two years, are awarded annually—a Junior Scholarship, open at the end of the first year of study to Victoria University students, in the subjects of the First M.B. Examinations; and a Senior Scholarship, open to all students in the School at the end of the second or third year of study, on the subjects of Anatomy, Physiology, and Therapeutics. (*g*) The Derby Exhibition of £15 for one year is awarded in Clinical Medicine and Surgery in alternate years. Students may compete in their fourth and fifth years; in 1901 the subject will be Clinical Medicine. (*h*) The Torr Gold Medal in Anatomy and the George Holt Medal in Physiology, the Fletcher Prize in Physiology (£3 3s. in books), the Kanthack Medal in Pathology, the Robert Gee

Book Prize, of the value of £5, for Children's Diseases, and numerous Class Prizes are awarded annually.

Entrance Scholarships.—Four Robert Gee Entrance Scholarships of the value each of £25 for one year are offered annually for competition. The holder is required to take out the Science Course for the University Degree in Medicine.

Communications should be addressed to the Dean, Professor Paterson, M.D., University College, Liverpool.

School of Dental Surgery.—A new mechanical laboratory has recently been erected at the Dental Hospital; it is adequately equipped with all modern appliances, and is under the charge of a skilled mechanic. The fees for Dental education are £50 (payable in two instalments) for the Medical School curriculum; £21 payable in entrance for two years' Dental Hospital practice, £10 10s. for General Hospital practice (two winters). A limited number of apprentices are taken at the hospital: fee (for three years), £105. Numerous scholarships and prizes are offered: (*a*) A Fletcher Scholarship of £21 in Mechanical Dentistry; (*b*) a Phillips Scholarship of £10 10s. in Dental Surgery; a Councell Prize for Dental Mechanics (£5 5s. in books); Ash's Essay Prize (£2 2s.); Quinby Prizes (£20), etc.

[For particulars with regard to the School of Tropical Medicine see p. 509.]

Prospectuses and further information may be had on application to the Registrar, University College, Liverpool.

Owens College, Manchester (Victoria University): Medical Department.

The Royal Infirmary contains 300 beds; Associated with it are the Convalescent Hospital (156 beds) and the Royal Lunatic Asylum at Cheadle, which accommodates 260 patients.

Appointments.—The following appointments are made: A Surgical Registrar, at £80 per annum; a Pathological Registrar, at £100 per annum; a Medical Registrar, at £70 per annum; two Assistant Medical Officers, each at £80 per annum; an Anæsthetist, at £50 per annum; an Assistant Anæsthetist, at £50 per annum. Resident Medical Officer, one year, £150 per annum; ditto, at Cheadle, one year, £150 per annum. Resident Surgical Officer, one year, £150 per annum; two House-Surgeons and one House-Physician are appointed every three months for a term of six months; an Assistant to the Resident Medical Officer at Cheadle is appointed for six months. The House-Physicians and House-Surgeons must possess a qualification which can be registered. For the Resident Assistant at Cheadle a qualification is not absolutely necessary. Four or more Clinical Clerks are attached to each Physician or Assistant-Physician, and four or more Dressers to each Surgeon and Assistant-Surgeon, and to the Ophthalmic Surgeon, and four more Clerks to the Pathological Registrar. Accident Room Dressers will be appointed every three months, and will hold their appointment for three months; there will be three Senior Dressers and twelve or more Junior Dressers, the former selected from students who have acted as Dressers in the wards for a full period of six months. Additional Clinical Clerks are appointed to assist in the departments for the Diseases of the Ear and Throat, and to assist the Surgical Registrar.

Entrance Scholarships.—Rogers and Seaton Scholarships (in alternate years), £40 per annum, tenable for two years. Subjects: Greek and Latin. Credit given for knowledge of Geometry, Algebra, French, German, and English. Examination June 3rd, 4th, 5th, and 6th, 1901. Dalton (entrance), two of £40, one of which will be awarded annually, and tenable for two years. Examination June 3rd, 4th, 5th, and 6th, 1901. Subjects: Geometry (Euclid I—IV and VI, or the subjects thereof); Algebra (as far as the Binomial Theorem, inclusive); Plane Trigonometry (to Solution of Triangles); Elementary Analytical Geometry, the Conic Sections. Credit given for knowledge of Classics and Modern Languages (including English). Cartwright Scholarship, £35 per annum, tenable for three years; subjects as in Dalton. Examination in May, 1903. Hulme, three of £35, one of which will be awarded annually, tenable for three years. Examination on June 3rd, 4th, 5th, and 6th, 1901. Subjects: English Language (Grammatical Structure and Outlines of its History); English Literature (an Essay on some subject of English Literature); and Modern History (Outlines of English History and Geography); with at least two of the following: Latin (Translation at sight; Grammar and Easy Composition); Greek (ditto); French (ditto); German (ditto). Credit given for knowledge of Mathematics (Geometry and Algebra). James Gaskill, two of £40, one of which will be awarded annually, and tenable for two years. Examination on June 3rd, 4th, 5th, 6th, 7th, and 8th, 1901. Subjects: Mathematics—Geometry, the subjects of Euclid, I—IV and VI; Algebra, as far as the Binomial Theorem inclusive; Plane Trigonometry (to Solution of Triangles); Elementary Mechanics, including composition and resolution of forces in a plane, centre of gravity of simple bodies, uniform acceleration, direct impact, the elements of Hydrostatics, Boyle's Law. Chemistry: Inorganic Chemistry, Elementary Organic Chemistry; Practical work, including preparations, analysis of mixtures of inorganic salts, easy quantitative analysis. Credit given for knowledge of classics and Modern Languages (including English). Sir J. P. Kay-Shuttleworth Scholarship, £30 per annum, tenable for three years, open to the competition of scholars from Sedbergh School, Giggleswick School, and Burnley Grammar School, Examination in May, 1903. Subjects: Geometry, Algebra, Trigonometry, Chemistry. Practical Chemistry, and Mechanics, as in the James Gaskill. Two Dauntesey Medical Scholarships, value £35, tenable for one year. Candidates must not have attended lectures in a medical school. Subjects of examination: Zoology, Botany, and Chemistry. The successful candidates must enter for the full course of medical studies at the College. A Gilchrist Scholarship of £50 per annum, tenable for three years in the College, awarded annually upon the results of the June Preliminary Examination of the Victoria University. Grammar School Scholarship, value £18 per annum, tenable for three years, open to scholars of the Manchester Grammar School between the ages of 16 and 21. Subjects: Mathematics, with Classics and Physical Science in alternate years. A subject for an English Essay will be set each year.

Fees.—The composition fee for the College courses is £70.

Prospectuses may be obtained from the Registrar, Mr. S. Chaffers.

University College, Sheffield: Department of Medicine.

The Physiological Department, thanks to the generosity of anonymous donors, has been entirely reconstructed and equipped to fulfil the most modern requirements, in memory of the late President of the School, Mr. Wm. F. Favell. The department consists of a lecture and demonstration theatre, students' laboratory, professor's room, preparing room, and galvanometer room. In addition to the usual fittings, the theatre is provided with a projection lantern microscope for the demonstration of microscopic slides. Each student has his own laboratory bench, with gas, water, electric light, and the requisite apparatus. The department is lighted by electricity throughout.

A Laboratory of Bacteriology has been completely equipped by a "Sheffield citizen" in premises adjacent to the College. The laboratory is recognised by the Royal Colleges of Physicians and Surgeons, and by Cambridge University, and full courses of laboratory instruction are given for the D.P.H.

The Arthur Jackson Chair of Anatomy has been founded by Mrs. Arthur Jackson in memory of her late husband. The Anatomical Department has been improved by the addition of a new theatre and museum.

Dental Department.—A complete course of instruction in the subjects required for the L.D.S. has been inaugurated at the College, Dental Hospital practice being taken out at the Royal Hospital. Clinical instruction in Medicine and Surgery is given at Sheffield Royal Infirmary and the Royal Hospital, and in Midwifery and Gynæcology at the Jessop Hospital for Diseases of Women. Students are also admitted to the practice of the Borough Fever Hospitals and the South Yorkshire Asylum. The Royal Infirmary contains 240 beds, including Ophthalmic wards (30 beds) and Dermatological department. The Royal Hospital contains 125 beds, and Dental and Ophthalmic departments.

Scholarships, etc.—An entrance scholarship of the value of £110 is awarded annually to the best candidate, if of sufficient merit, in Latin, Mathematics, Elementary Physics, Inorganic Chemistry, and English. The "Kaye Scholarship" for second-

year students is awarded annually under certain regulations. Prizes in Clinical Medicine and Surgery, of £10 10s. each, awarded by the Clinical Committee. Certificate and Book Prizes are awarded annually.

Fees.—The composition fee, if paid at the commencement of medical study, is 60 guineas; or the fees may be paid 35 guineas at the commencement of the first and 30 guineas at the commencement of the second year. These fees do not include hospital practice or instruction. The composition fee for this is £45.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-ON-TYNE.

The Royal Infirmary contains 280 beds.

Appointments.—Assistant Demonstrators of Anatomy, Prosectors for the Professors of Anatomy, Assistant Physiologists, Pathological Assistants, Assistants to the Dental Surgeon, and Assistants in the Eye Department, Throat and Ear Department, and Department for Skin Diseases are elected annually. The Assistant Demonstrators of Anatomy receive £5 each; the others are unpaid. Four times in the year Clinical Clerks and dressers are appointed for three months.

Scholarships.—A University of Durham Scholarship, value £100, for proficiency in Arts, open annually at the beginning of the winter session to intending students, and to those who have attended only one winter and one summer session. The Dickinson Memorial Scholarship, interest of £400, with a gold medal, for Medicine, Surgery, Midwifery, and Pathology, open to perpetual students who have passed the primary examination of a licensing body. The Tulloch Scholarship, interest of £400 annually, for Anatomy, Physiology, and Chemistry. The Charlton Memorial Scholarship, interest of £700 annually, open to full students entered for the class of Medicine, at end of winter session. The Gibb Scholarship, interest of £500 annually, for Pathology, at end of summer session. The Goyder Memorial Scholarship, proceeds of £325; subjects: Clinical Medicine and Clinical Surgery. Luke Armstrong Memorial Scholarship, proceeds of £680, for best essay on some subject in Comparative Pathology. The Scholarship is open to all Graduates in Medicine or Hygiene, and candidates for these degrees who have spent at least six months at the University of Durham, and whose age does not exceed 30 years. The Stephen Scott Scholarship in Surgery, interest on £1,000 annually. The Heath Scholarship. The late George Y Heath, M.D., M.B., D.C.L., F R.C.S, President of the University of Durham College of Medicine, bequeathed the sum of £4,000 to found a scholarship in surgery, the interest to be awarded every second year. First award in 1896. The Gibson Prize in Midwifery and Diseases of Women and Children, interest on £225.

Fees.—The composition fee for the College courses is 70 guineas.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE SCHOOL OF MEDICINE, CARDIFF.

University College, Cardiff, has since its foundation prepared students for the Preliminary Scientific examination of the University of London, as well as for the corresponding examinations of other licensing bodies. Within more recent years the Council of the College has, by the foundation of Chairs of Anatomy and Physiology and of a Lectureship in Materia Medica and Pharmacy, rendered it possible for students of medicine to spend three out of the five years of prescribed study at Cardiff. Further, by an arrangement made with the Managing Committee of the Cardiff Infirmary, students of the College have the privilege of attending this large and well ordered hospital, which is situated within five minutes walk of University College. As the College provides an excellent training in the work of the first three years of the medical curriculum, many students, more especially from Wales and Monmouthshire, are glad to avail themselves of the opportunity to carry on their studies near home. The departments of Chemistry, Physics, Biology, Anatomy, Physiology, Materia Medica, and Pharmacy are furnished with the newest and best appliances for teaching and research.

All classes at the College and at the Infirmary are open alike to both men and women students.

The courses of instruction given at Cardiff are recognised as qualifying for the examinations of the Universities of London, Edinburgh, Cambridge, St. Andrews, Glasgow, Dublin, Aberdeen, and Durham, of Victoria University, of the Royal University of Ireland, of the Royal College of Physicians of London and of the Royal College of Surgeons of England, of the Royal Colleges of Physicians and Surgeons of Edinburgh, of the Faculty of Physicians and Surgeons of Glasgow, of the Royal Colleges of Physicians and Surgeons of Ireland, and for those of the Society of Apothecaries.

Having spent two or three years in study at Cardiff, and having passed the corresponding examinations, a student may proceed to London or elsewhere and complete his qualifying course for a University Degree or for a College Diploma.

Students preparing for the Preliminary Scientific and Intermediate Examination in Medicine of the University of London may compound for their classes by paying a composition fee of £57 10s. Students who are preparing for the examinations of the Conjoint Board or of the Society of Apothecaries, London, may compound for their classes by paying a composition fee of £40. In both cases the composition fees may be paid in two instalments.

Scholarships and Exhibitions.—A considerable number of scholarships and exhibitions are open to students of Medicine. The examinations for these take place in September (see Syllabus of Examination, which may be obtained on application to the College Registrar).

During the last year Lecturers in Bacteriology and Public Health and Hygiene have been appointed by the Council, and a Department of Public Health has been established. The Cardiff Corporation and the Glamorgan County Council have placed their Public Health Laboratory at the disposal of the College for teaching purposes.

Medical men from Cardiff and the neighbourhood wishing to prepare for a Diploma in Public Health can now take complete courses of Lectures and Laboratory work in this department, and study outdoor sanitary work under the Medical Officer of Health, Cardiff Urban and Port Districts, or under the Medical Officer to the Glamorgan County Council.

Further information may be obtained from Dr. A. F. Dixon, Dean of the Faculty of Medicine.

SCOTLAND.

UNIVERSITY OF ABERDEEN.

Special opportunities for practical instruction are afforded in the chemical, anatomical, physiological, pathological, and hygienic laboratories; and anatomical, pathological, botanical, materia medica, forensic medicine, midwifery, natural history, and surgical museums throughout the day, under the direction of the professors. Practical instruction is given also in the toxicological, pharmaceutical, botanical, and zoological laboratories, and in the surgical museum and laboratory. Courses of practical instruction are given in summer in Medical Jurisprudence and Hygiene; in Diseases of Children at the Sick Children's Hospital; in Fevers, at the Fever Hospital; in Insanity, at the Royal Asylum; in Diseases of the Ear and Larynx, at the Dispensary; in Diseases of the Eye, at the Infirmary and Eye Institution; in Diseases of the Skin, at the Royal Infirmary and Sick Children's Hospital. The General Dispensary and the Lying-in, Vaccine, and Eye Institutions, and the Sick Children's Hospital are open daily. Practical Pharmacy, Operative Surgery, Practical Medical Jurisprudence, and Hygiene, fee to each class, £3 3s., except Anatomical Demonstrations, Practical Natural History, Practical Midwifery, and Gynæcology, each £2 2s.: Practical Ophthalmology, Insanity, Public Health, Diseases of the Ear and Larynx, Diseases of the Skin, and Dental Surgery, each £1 1s.; Matriculation Fee, both sessions, £1: summer session alone, 10s.; Royal Infirmary, Perpetual fee, £6; or first year, £3 10s.; second year, £3. Clinical Medicine and Clinical Surgery, each £3 3s. The winter session begins on October 13th. Bursaries scholarships, and fellowships, to the number of forty-seven, and of the annual value of £1,028, may be held by students of medicine in this University. They range from £8 to £100 per annum, and are tenable in most cases for two years. The composition fee amounts to about £120.

Edinburgh University.

Practical Instruction.—The following means are afforded for practical instruction: Royal Botanic Garden, Herbarium, and Museum; Zoological Laboratory and Museum of Science and Art; Physical Laboratory; Chemical Laboratories; Dissecting Rooms, Bone Room, and Anatomical Museum; Physiological Laboratory; Medical Jurisprudence and Public Health Laboratories; Materia Medica Museum and Laboratory; *Post-mortem* Department of Royal Infirmary, and University Pathological and Bacteriological Laboratory; Royal Infirmary of nearly 800 beds; Royal Hospital for Sick Children, with nearly 100 beds; Maternity Hospital; City Fever Hospital, with nearly 400 beds; Mental Diseases at Royal Morningside Asylum; Tutorial Classes of Practice of Physic, of Clinical Medicine, and Clinical Surgery.

Fees.—The Sessional Fee for Zoology, Botany (Garden Fee, 5s.), Chemistry, Anatomy Lectures, Physiology, Pathology, Materia Medica, Medical Jurisprudence, Surgery, Medicine, Clinical Surgery (Winter), Clinical Medicine (Winter), is £4 4s. each. Second Course, £3 3s. Third Free. A perpetual ticket taken at the beginning of the first year is £66 6s. Physics, Practical Chemistry, Practical Physiology, Practical Pathology, Clinical Surgery (Summer), Clinical Medicine (Summer), Practical Anatomy (Winter), Operative Surgery, Obstetric Operations, Practical Materia Medica, including Pharmacy, Pathological Bacteriology, Experimental Pharmacology, Vertebrate Morphology, and Comparative Embryology are £3 3s. Practical Botany (besides Garden Fee of 5s.). Elementary Practical Zoology (besides charge of 10s. for Laboratory expenses), Practical Anatomy (Summer), Anthropology, Anatomy Demonstrations, Diseases of Children, Diseases of the Eye, Diseases of the Larynx, Ear, and Nose, Diseases of Tropical Climates, Clinical Instruction on Diseases of the Skin, Regional Anatomy, Physiological Chemistry, Invertebrate Zoology, Organic Chemistry, Mental Diseases, £2 2s. Vaccination, £1 1s. Matriculation Fee, £1 for each year, or 10s. for a Summer Session. Library open from 10 to 4; Saturdays, 10 to 1.

Fellowships, Scholarships, Bursaries, and Prizes open to competition in 1900-1901.

Fellowships.

1. *The Syme Surgical Fellowship* of £100 tenable for two years, open to M.B.'s of not more than three years' standing.
2. *The Goodsir Memorial Fellowship*, £100 for two years. Open to all graduates of medicine of not more than three years' standing, and to licentiates of the Edinburgh Colleges, anatomy and physiology.
3. *The Leckie-Mactier Fellowship*, £80 for three years, essentially the subjects of the final M.B. Open to the same as the Syme.
4. *The Allan Fellowship in Clinical Medicine and Clinical Surgery*, £40 annually.

Funds for Research, etc.

1. *The William Dickson Travelling Fund* of the annual value of £85, usually divided into grants of various amounts.
2. *Earl of Moray Fund* for the promotion of original research. The annual income is £570, available for payment of the actual expenses of the prosecution of original research, present or contemplated.

Scholarships.

1. *Vans Dunlop* of £100, tenable for three years. April, 1901. Subjects of the preliminary.
2. *The Mowat Scholarship* in Practice of Physic of about £55, awarded annually at the Graduation Ceremonial.
3. *The Murchison Memorial Scholarship*, annually in Edinburgh and London alternately. Proceeds of £1,000.
4. *The Buchanan Scholarship*, £40 annually for proficiency in midwifery and gynæcology.
5. *The James Scott Scholarship*, £32 10s. annually for proficiency in midwifery.
6. *The Ettles Scholarship*, £31 5s annually to the most distinguished M.B. of the year.
7. *Two Hope Prize Scholarships* in connection with the Chemical Laboratory of the University; £30 annually.
8. *Two Crichton Scholarships* for research, each £100 for one year, with power of reappointment.
9. *Sibbald Scholarship*, £40 for three years. Subjects of first professional.
10. *The Houldsworth Scholarship for Research in Pharmacology*; £46 for one year, with power of re-election for a second or even a third year if the scholar is doing good work.
11. *The Coldstream Memorial Medical Missionary Scholarship*; £20 a year for five years.

Bursaries.

1. *Town Council Bursaries*—A number are vacant. Apply to the City Clerk for particulars.
2. *Two Sibbald Bursaries* of £30 a year for three years.
3. *Two Thomson Bursaries* of £25 each for four years' subjects of Preliminary; one in March and one in October.
4. *Five Grierson Bursaries* to preforential candidates, one for each year of medical study.
5. *Two John Aitken Carlyle Bursaries*, each £28 for one year.
6. *Two Mackenzie Bursaries*, each £16 5s. annually.
7. *Renton Bursary* of £20 for one year.
8. *Two Crichton Bursaries*, each of £50, and tenable for four years.
9. *The M'Cosh Graduates' Bursary* of about £153, *M'Cosh Medica Bursary* of about £11 11s. 6d., each tenable for one year.
10. *Two Mackie Bursaries*, each £30 for two years.
11. *The Buchanan Society* gives four Bursaries annually in Arts, Science, and Medicine. That in Science is £30 for each of four years, and that in Medicine is £35 for five years.

Prizes.

1. *The Medical Faculty Gold Medals* to distinguished M.D.'s.
2. *The Neill Arnott Prize in Physics*; £37 10s. annually.
3. *The Beaney Prize in Anatomy and Surgery* to M.B.'s; £32 10s. annually.
4. *The Cameron Prize*: £80 annually for any highly important and valuable addition to practical therapeutics.
5. *Two Gunning Victoria Jubilee Prizes* in Public Health and Forensic Medicine and Anatomy, each of £50 annually.
6. *The Wightman Prize* of £12 annually in Clinical Medicine.
7. *The Pattison Prize* of £10 10s. annually in Clinical Surgery.
8. *The Ellis Prize in Physiology* of £75 for the best Essay on The Connections of the Central Cortex with Lower Level Centres.
9. *The Milner Fothergill Medal* in Therapeutics, £20 for one year.
10. *The Dobbie Smith Gold Medal* in Botany.
11. *The Robert Wilson Memorial Prize* (silver medal and about £7 16s. for one year).
12. *The Lord Rector's Prize* of 25 guineas.
13. *Straits Settlements Prize* in Tropical Diseases: £25 at the Graduation Ceremonial in July, 1901.
14. *The Trustees of Gray's Prize Essay Fund* offer three prizes of £15, £10, and £5.

Lectureship.

The Swiney Lectureship on Geology, £144 per annum, tenable for five years, is in the patronage of the Trustees of the British Museum.

Full particulars of all these will be found in the University *Calendar*, 3s., or in the Medical Slip, 2d., to be had from Mr. Thin, 55, South Bridge, Edinburgh.

Edinburgh Royal Infirmary.

Fees.—Six months, £4 4s.: one year, £6 6s.; perpetual, £12 in one sum, or separate payments, £12 12s.

Eight resident physicians and six surgeons are appointed every six months; they live in the house free of charge, save laundry. They must be registered. Many non-resident clinical clerks are also appointed for six months. The physicians and surgeons appoint their own clerks and dressers, and assistants in the Pathological Department are appointed by the pathologists. Instruction is given in all the special departments.

School of Medicine of the Royal Colleges, Edinburgh.

The teaching is similar to that of the Scottish Universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the School.

This School of Medicine is composed of lecturers licensed by the Royal Colleges of Physicians and Surgeons, and also recognised by the University through their *licentia docendi*, who, for the sake of convenience, lecture in several buildings near at hand to the Royal Infirmary. The lecturers form one body, are all subject to the same rules and regulations, and enjoy the same privileges. A new constitution and set of regulations have recently been drawn up, in virtue of which the government of the School is placed in the hands of a Governing Board consisting of five members elected by the Royal College of Physicians, of five members elected by the Royal College of Surgeons, and of five members elected by the Lecturers in the School. This Board, with the assistance of the Standing Committees of the School, supervises the whole management, and specially the maintenance of the efficiency and discipline of the school. The different buildings at present utilised for the purpose of lecturing are the following: 1. Surgeons' Hall, Nicolson Street; 2. Minto House, Chambers Street; 3. Nicolson Square; 4. Marshall Street; 5. the New School, Bristo Street; and other places.

Medical College for Women, Edinburgh.

Clinical instruction in the Royal Infirmary qualifies for graduation in the Universities. Precisely the same facilities for medical study are given as to male students in the School of Medicine, Edinburgh. Arrangements, fees, and regulations are similar. All the teachers are qualified lecturers of the School, and their courses admit to the various qualifying bodies for women. The lecturers are also recognised by the University of Edinburgh as giving courses admitting to the degrees of M.B., Ch.B. In the case of those proceeding to such degrees, the same fees as those in the University must be paid. The classes, with the exception of those in the Royal Infirmary, are open to all ladies, whether taking a full medical curriculum or not. Prospectus and all information from Miss H. F. Mackay, 20, Chambers Street (Minto House).

UNIVERSITY OF GLASGOW.

The whole course of study presented by the University of Glasgow (*q. v.*) can be passed in the Medical School of the University. For practical work there are available the Physical, Chemical (winter course, £10 10s.; summer, £5 5s.), Physiological, Zoological, and Botanical Laboratories; and the Botanic Gardens.

Partial Study elsewhere.—Only two of the five years need be spent at the University; the remaining three may be spent in such universities or schools, or under such teachers, as are recognised by the University Court.

Bursaries, etc.—Fourteen Bursaries and Prizes in Medicine are open to competition during session 1900-1901, the aggregate value of which is about £309, besides 15 in the Faculty of Science, and 5 in the Faculty of Arts open to medical students. Several of the bursaries are also open to women.

Hospitals.—The University is in the immediate neighbourhood of the Western Infirmary, with 400 beds, and near to the Lunatic Asylum, and Special Hospitals for Diseases of the Eye, Skin, etc.

Fees.—The class fees are, as a rule, £3 3s., excepting Practical Anatomy and Anatomical Lectures (in summer), Operative Surgery, Embryology, and Diseases of Women, which are £2 2s. A perpetual Hospital Ticket costs £21, payable £10 10s. in the first year, and the same the second, and this includes clinical instruction. The fee for the degree of M.D. is £10 10s. (exclusive of stamp duty, £10); for Ch.M., £10 10s. The total class and hospital fees for the five years' course amount to about £97 13s., to which add the annual matriculation fee (£1 1s.) and the fees for M.B., Ch.B. (£23 2s.) making a total of £126.

The Women's Department of the University (Queen Margaret College).—The course of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with class rooms, reading and writing rooms, drawing room, library, etc., and are taught in classes apart from male students, but have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards are reserved for their exclusive use, and in its dispensaries; also in the Royal Hospital for Sick Children; the Royal Asylum, Gartnavel; the city of Glasgow Fever Hospital, Belvidere; and the Glasgow Maternity Hospital.

Scholarships and Bursaries at Queen Margaret College.—The Arthur Scholarship, annual value £20, tenable for three years. Open to competition by medical students of first year (who begin their medical studies in October, 1900) at the First Professional Examination in October, 1901. This Scholarship is the gift of Mrs. Arthur, of Barshaw, and is restricted to women medical students. The Dr. Thomas Gibson Bursary, annual value about £30, tenable for four years. Open to medical students entering on their second winter session who are preparing for service as medical missionaries. It will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. One Logan Bursary, annual value £16, tenable four years; appointment by the Senate. Next vacancy, 1901. Mackintosh Mental Science Bursary in Medicine, of the value of £31, is awarded annually to the student (of either sex) attending the class of Insanity, who stands first in an examination in that subject, to be held in June—the Bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The University Commissioners have issued an Ordinance to make regulations for the admission of women to certain Bursaries, Scholarships, and Fellowships. It came into force on May 11th, 1895. Miss Galloway will supply details. See Prospectus for 1900-1901.

Class and Examination Fees.—The class and hospital fees for the subjects enjoined by Ordinance as constituting a five years' course of study and clinical work amount to about £95 11s. To this must be added £5 5s. for matriculation fees (£1 1s. for each of five years), £23 2s. for examination fees, and £5 1s. for registration as a medical practitioner,

Board for Students.—A House of Residence for women students, Queen Margaret Hall, is situated near the College. The cost for board and residence is £30 to £37 10s. for the College session of 30 weeks, according to accommodation. Students bring their own towels and dinner napkins. Full information can be obtained from Miss Galloway, Queen Margaret College; or from the Lady Superintendent, Queen Margaret Hall, Bute Gardens, Glasgow.

For further information male students may apply to Mr. W. Innes Addison, Matriculation Office, Glasgow University; women students to Miss Galloway, Queen Margaret College, Glasgow, W., from whom copies of the prospectus may be had.

ST. MUNGO'S COLLEGE, GLASGOW.

The College buildings are situated within the grounds of the Royal Infirmary, the wards and clinical instruction therein being available for students. Qualifying classes are held during the winter in Physics, Zoology, Embryology, Chemistry, Anatomy, Materia Medica, Physiology, Pathology, Medicine, Surgery, Ophthalmology, Gynæcology, Diseases of Throat and Nose, and in Public Health Laboratory Work. Instruction is also given daily in the Dispensary by the Assistant Physicians and Surgeons of the Royal Infirmary. During the summer the classes include Botany, Medical Chemistry, Practical Pathology, Practical Physiology, Anatomy, Operative Surgery, Diseases of Children, Clinical Medicine, Clinical Surgery, Medical Jurisprudence, Dermatology, Otology, Bacteriology and Psychological Medicine. All classes in this College qualify for the diplomas of the English, Scotch, and Irish Conjoint Boards.

Sessional Fees.—First year, £15 15s.; second year, £15 15s.; third year, £10 10s.; fourth year (and perpetual), £5 5s. Total cost of qualifying course, including Corporation Licence, about £100.

Class Fees.—£2 2s. for each class, except Anatomy, £4 4s.; Pathology, £4 4s.; Zoology, £4 4s.; Botany, £3 3s.; Otology, Throat and Nose, and Dermatology, £1 1s.

Hospital Fees.—First year, £10 10s.; second year (and perpetual), £10s. 10s.

GLASGOW: ANDERSON'S COLLEGE MEDICAL SCHOOL.

Lectures are delivered on all the subjects of the five years' curriculum. Hospital Practice and Clinical Lectures in Western or Royal Infirmary; Pathology in Western or Royal Infirmary; Vaccination and Dispensary Practice in Western or Royal Infirmary Dispensary. The above lectures qualify for all the Licensing Boards in the United Kingdom. They are also recognised by the Universities of London, Durham, Ireland, Glasgow, and Edinburgh (the latter two under certain conditions which are stated in the School *Calendar*).

The new buildings are situated in Dumbarton Road, immediately to the west of the entrance to the Western Infirmary, within two minutes' walk of that institution, and four minutes' walk of the University.

A *Calendar* containing full particulars of the School may be obtained from the Secretary to the Medical Faculty, Anderson's College Dumbarton Road, Partick, Glasgow.

Class Fees.—(Anatomy, Chemistry, Practical Physiology, Practical Materia Medica and Pharmacy, Zoology, Botany, and Mental Diseases excepted), first session, £2 2s.; second session, £1 1s.; afterwards free. Anatomy Class Fees: Winter, first session (including Practical Anatomy), £4 4s.; second session (including Practical Anatomy), £4 4s.; third session, £2 2s. To those who have had the necessary courses of Practical Anatomy the fee will be £1 1s. Summer—Lectures and Practical Anatomy, £2 12s. 6d.; Lectures alone, £1 11s. 6d.; Practical Anatomy alone, £1 1s.; Osteology and Practical Anatomy, £2 12s. 6d.; Osteology alone, £1 11s. 6d. Chemistry Class Fees: Winter, first course, £2 2s.; second course, £2 2s. Summer (Practical), first session, £2 2s.; second session, £2 2s. Practical Physiology Class Fees: first session, £2 2s.; second session, £2 2s. Practical Materia Medica and Pharmacy Fees: first session, £2 2s.; second session, £2 2s. Zoology, £1 11s. 6d. Practical Zoology, £1 1s. Botany. Reduced Joint Fee for Lectures and Practical Class when taken in the same summer, £3 3s.; for either course separately, £2 2s. Mental Diseases, £1 1s. Matriculation Fee: Winter, 10s. to those taking out two or more classes, which represents a combined fee for the winter and summer sessions; 5s. to those taking only one class. Summer, 5s., except to those who have paid a fee of 10s. for the winter session. Students who have attended classes at other schools, and who desire to pursue their studies at Anderson's College Medical School, will be admitted to such classes as they may have attended elsewhere at the reduced fees.

University College, Dundee.

Some information as to this College will be found under the head of University of St. Andrews.

Dundee Royal Infirmary.—The Infirmary contains 286 beds, with a special ward for the treatment of diseases of children. Three Resident Qualified Assistants are appointed annually. Clinical Clerks and Dressers are attached to the physicians and surgeons, and students are appointed to assist in the *post-mortem* room. Instruction in Practical Pharmacy is given in connection with the Dispensary. Out-patients are seen daily at 9 A.M. The instruction given at the infirmary is recognised for purposes of graduation by all the Scotch Universities, the University of London, the University of Cambridge, the Royal University of Ireland, and by the Royal Colleges of England and Scotland. Further information may be had on application to the Medical Superintendent.

Dundee Royal Asylum.—The appointments include a qualified Resident Assistant and two Resident Clinical Clerks. Clinical instruction is given.

Fees.—The fee in the case of most of the classes is 3 guineas. The hospital ticket is 3 guineas a year or 2 guineas a session. The total fees for the five years' curriculum amount to about 80 guineas.

IRELAND.

Students desirous of prosecuting their medical studies in Ireland may attend the School of Physic in the University of Dublin; the Schools of Surgery of the Royal College of Surgeons of Ireland; the Catholic University School of Medicine, Dublin; or the Schools of Medicine of the Queen's Colleges in Belfast, Cork, or Galway. The student will be guided in making his arrangements for clinical instruction by the advice of the teachers of the School which he may select to attend.

School of Physic in Ireland, Dublin.

This school is formed by an amalgamation of the medical school of Trinity College and of the Royal College of Physicians; the King's Professors of Institutes of Medicine, Practice of Medicine, Materia Medica, and Midwifery, being appointed by the latter.

Clinical instruction is given by the staff of Sir Patrick Dun's Hospital. The following Hospitals are also recognised by the Board of Trinity College: Adelaide Hospital, City of Dublin Hospital, Dr. Steevens's Hospital, House of Industry Hospitals, Jervis Street Infirmary, Mater Misericordiæ Hospital, Mercer's Hospital, Meath Hospital, the National Eye and Ear Infirmary, St. Mark's Ophthalmic Hospital, St. Vincent's Hospital, Richmond Asylum, St. Patrick's Hospital.

Catholic University Medical School.

Prospectuses and further information about this school, which provides complete courses of lectures as required by the examining bodies, may be obtained from the Registrar of the School, Cecilia Street, Dublin, who has written a very useful *Guide for Medical Students*. The total fees for school and hospital courses is £160, payable as the courses are taken out.

The Schools of Surgery of the Royal College of Surgeons in Ireland.

The Schools of Surgery are attached by Charter to the Royal College of Surgeons, Dublin, and have existed as a department of the College for over a century. They are carried on within the College buildings, and are specially subject to the supervision and control of the Council. The buildings have been reconstructed, the capacity of the Dissecting Room nearly trebled, and special Chemical, Pathological, Bacteriological, Public Health, and Pharmaceutical Laboratories fitted with the most approved appliances, in order that students may have the advantage of the most modern methods of instruction. There are special rooms set apart for lady students. The entire building is now heated by hot-water pipes, and lighted throughout by the electric light. A refreshment room is also open, where students can have luncheon. The certificates of this school are accepted by all the Universities and Colleges of Physicians and Surgeons throughout the kingdom. The winter session commences October 1st, and the summer session April 1st. All the lectures and courses of practical instruction may be attended by medical students who are otherwise unconnected with the College.

Prizes.—The Barker Anatomical Prize (£21). The Carmichael Scholarship (£15). The Mayne Scholarship (£15). The Gold Medal in Surgery, and the Stoney Memorial Medal in Anatomy. Class Prizes of £3 and £1, accompanied by medals, will also be given in each subject.

Fees.—The composition fee for the Licence in Medicine, Surgery, and Midwifery of the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland is £166 19s.

Prospectus and students' guide will be forwarded on written application to the Registrar, Royal College of Surgeons, Dublin.

Queen's College, Belfast.

The courses of study meet the requirements of the Royal University of Ireland and other examining bodies. The class fee is £2, except in a few cases. The total cost of the medical curriculum of the Royal University of Ireland, including examination fees and perpetual fee for the Royal Hospital, but not including fees for the special hospitals, is about £95. It amounts to about the same for the course of the Conjoint Board in Ireland.

Clinical instruction is given at the Royal Victoria Hospital. *Fees*, six months, £7 7s.; nine months, £9 9s.; Perpetual, £21 in two instalments. The Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, and the District Lunatic Asylum, are open to students.

Prizes.—(1) Ten medical scholarships each year, value £20 each; (2) two Dunville studentships (one each alternate year), value £145 each; (3) one Andrews studentship each alternate year, value £145; (4) numerous sessional prizes.

The College contains laboratories in connection with the departments of Chemistry, Physiology, and Pathology.

A Students' Union provides dining room, reading room, library, and various recreation rooms.

A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast.

Queen's College, Cork.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students can also attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglington Lunatic Asylum. The session at Queen's College extends from October to April inclusive (twenty-seven weeks), but arrangements have been made for the delivery of some of the three months' courses of lectures during the months of April, May, and June. The hospitals are open to students in May, June, and July also. The total fees for the College Lectures and Hospital Attendances required by the Royal University of Ireland amount to about £85.

Clinical Hospitals of Dublin.

Sir Patrick Dun's Hospital.

Appointments.—A House-Surgeon is appointed annually, and four Resident Pupils half-yearly.

Hospital Attendance and Clinical Lectures.—The payment of £12 12s. entitles a student to the benefits of Hospital attendance and Clinical teaching for the winter and summer sessions. *Fee* for winter session only, £8 8s. *Fee* for summer session only, £5 5s. The fees will be received by Dr. Taylor, Honorary Secretary, by any member of the staff, or by the Registrar of the School of Physic in Trinity College.

Richmond, Whitworth, and Hardwicke Hospitals.

These Hospitals contain 312 beds: 110 for surgical cases, 82 for medical cases; 120 for fevers and other epidemic diseases.

The Richmond Lunatic Asylum, containing over 1,200 patients, adjoins these hospitals, affording facility for the study of mental disease.

Appointments.—A Resident Surgeon and a Resident Physician are appointed every year, receive a salary, and hold

office for one year. Eight Residential Clinical Clerks are appointed each half year, and provided with furnished apartments, fuel, etc. These appointments are open not only to advanced students, but also to those who are qualified in Medicine and Surgery. The Dressers are selected from among the best qualified of the pupils, without the payment of any additional fee.

Further information can be obtained from the Honorary Secretary. Dr. J. O'Carroll, 43, Merrion Square, E., or the Honorary Treasurer, Sir William Thomson, 54, Stephen's Green, E.

Adelaide Medical and Surgical Hospitals.

The hospitals contain 140 beds. A House-Surgeon is appointed yearly, and three resident pupils are selected half-yearly.

Further particulars may be obtained from Mr. F. T. Heuston, 15, St. Stephen's Green, Dublin, N., or any of the members of the medical staff.

Royal City of Dublin Hospital.

This hospital, in addition to the general Medical and Surgical Wards, contains special wards for Ophthalmic and Aural Cases, Diseases of Women, and Diseases of Children. There is also an isolated building for the reception of infectious cases. An entirely new operation theatre has been constructed in accordance with the most modern surgical requirements.

Appointments.—Clinical Clerks to the Physicians and Dressers to the Surgeons are appointed from the most deserving of the class, and certificates awarded for the faithful performance of their duties. Medical and Surgical Resident Pupils are appointed, and Special Certificates awarded if merited. A Resident Medical Officer is appointed annually.

For detailed prospectus or further particulars apply to Mr. G. Jameson Johnston, F.R.C.S.I., Honorary Secretary, Medical Board, 13, Lower Fitzwilliam Street, or at the hospital.

Jervis Street Hospital, Dublin.

The hospital was founded in 1718, and was rebuilt in 1886.

Appointments.—Resident Pupils, Clinical Clerks, and Dressers are appointed every six months without additional fee, and are awarded special certificates if their duties have been satisfactorily performed. Six interns are appointed each half-year, and are provided with apartments, etc., free of expense. *Fees:* Winter session, £8 8s.; summer, £5 5s.; winter and summer, £12 12s.

The hospital prospectus and any further information can be obtained from Dr. Thos. G. Stevens, Hon. Secretary, Medical Board.

Mater Misericordiæ Hospital.

This hospital contains 335 beds. Fifty beds are reserved for the reception of patients suffering from fevers and other contagious diseases.

Appointments.—Four House-Physicians, eight House-Surgeons, and twelve Resident Pupils are elected from the most attentive of the class each year.

Entries are to be made with and fees paid to the Registrar, Dr. Joseph Redmond, 41, Merrion Square, Dublin.

A prospectus containing in detail the arrangements for clinical instruction, prizes, etc., may be obtained from the Secretary of the Medical Board, Mr. Arthur Chance, F.R.C.S., 90, Merrion Square, W., Dublin.

Mercer's Hospital.

This hospital, founded in 1707, is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork Street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution, and become eligible for the posts of Resident Pupil, etc. There is a large Out-Patient Department, and a Special Department for diseases peculiar to women and infants. During the last few years the hospital has undergone extensive alterations in order to bring it up to modern requirements.

Appointments.—A House-Surgeon is appointed annually, Five Resident Pupils are appointed, each for six months, and Clinical Clerks and Dressers monthly, from amongst the most deserving members of the class.

Fees.—Winter, six months, £8 8s.; Summer, three months, £5 5s.; nine months, £12 12s.

The certificates of this hospital are recognised by all licensing bodies.

For further particulars, apply to Mr. R. Charles B. Maunsell, M.B., etc., 32 Lower Baggot Street, Dublin.

Dr. Steevens' Hospital.

This hospital contains 200 beds. It affords exceptional advantages for clinical instruction; owing to its position a large number of casualties are always under treatment in the institution, while there are to be found occupying its beds at all times numerous cases of acute and chronic medical and surgical disease. There is a ward entirely devoted to syphilitic disease, and a detached building for fever cases; in connection with the hospital is an extensive out-patient department, with separate clinics for diseases of the eye and ear, skin, throat, teeth, and diseases of women. Every opportunity is afforded to the students to become thoroughly familiar with the modern appliances used in diagnosis and treatment of disease. There is accommodation in the hospital for four medical and eight surgical pupils, who are provided with separate furnished rooms, with coal and gas, and also a comfortable common sitting room for meals which can be obtained at a reasonable rate.

Fees.—Hospital practice: Nine months, 12 guineas; six months, 8 guineas; three months, 5 guineas. Residence: Each three months, 10 guineas, which includes fee for hospital practice.

A prospectus and particulars may be obtained from the Resident Surgeon at the hospital, or from Dr. Richard A. Hayes, Hon. Secretary, 82, Merrion Square South, Dublin.

St. Vincent's Hospital.

The hospital contains 160 beds, and is most conveniently situated for students. In consequence of the great success attending the combined practical and theoretical instruction given for the last few years to junior students, the Board has extended the system. In every department the teaching is now thoroughly systematised, the students are divided into classes, and a full course of theoretical instruction is given and illustrated by cases in the wards, thus bringing clinical teaching to its highest development. To the most efficient students in each class either valuable prizes (including two gold medals), or certificates of merit are awarded. Students are exercised as dressers, as clinical clerks, and in the recording of cases.

There are two special wards for the treatment of diseases of women. Two wards, under the care of the Ophthalmic Surgeon, are reserved for eye cases. Attached to the hospital is an extensive General Dispensary, and also a Dental Dispensary. To meet the requirements of undergraduates of the Royal University, a ward exclusively devoted to the treatment of diseases of children has been opened. Arrangements have been made for providing senior students without extra expense, with the special clinical instruction in infective fevers, required by the Conjoint Colleges, and by the Royal University.

Eight Resident Pupils are selected at the beginning of the winter and of the summer sessions; each pupil holds office for three months. Two Resident Medical Officers are appointed annually, each of whom receives £50 a year, with apartments, service, light, and fuel. In making these appointments preference is given to meritorious former pupils. Practical instruction in compounding medicines is given in the pharmacy of the hospital, and the certificates of attendance at this course are accepted by all Licensing Bodies. The certificates of the hospital are recognised by every University and Licensing Body in the United Kingdom.

Fees.—Winter and summer sessions, nine months, 12 guineas; winter session, six months, 8 guineas; summer session, three months, 5 guineas.

The Hospital Prospectus and further particulars can be obtained on application to the Honorary Secretary of the Medical Board, Mr. R. F. Tobin, F.R.C.S.I., 60, Stephen's Green, Dublin.

Meath Hospital and Co. Dublin Infirmary.

This hospital contains 150 beds available for clinical teaching. There is a separate building for the isolated treatment of Fevers. There are Accident Wards and an Operating Theatre, in connection with which all the modern requirements of surgical teaching have been provided. The certificates of this hospital are recognised by all the universities and licensing bodies of the United Kingdom.

Twelve Medical and Surgical Resident Pupils and Clinical Clerks and Dressers are appointed every session, and a House-Surgeon is elected annually.

A prospectus giving the complete arrangements for the Medical and Surgical Classes for the coming session may be obtained from the Secretary of the Medical Board, Mr. William Taylor, F.R.C.S.I, 32, Harcourt Street, Dublin.

Rotunda Hospital.

Master—Dr. R. D. Purefoy.

This institution consists of two distinct hospitals—namely, the Lying-in Hospital, into which 1,700 labour cases are, on an average, admitted annually, and the Auxiliary Hospital, set apart for the reception and treatment of patients suffering from the various forms of uterine and ovarian disease: about 500 patients are received into this hospital during each year.

There is also in connection with the hospital a large extern maternity (2,000 patients were in the past year attended at their own homes), and a Dispensary for Diseases Peculiar to Women, which is open daily.

Pupils are admitted to the practice of all these departments. Clinical instruction in Midwifery and the Diseases of Women is given daily, and lectures are delivered regularly during the session on the subjects. Pupils can enter at any time.

The diploma from this hospital is granted to pupils on their passing an examination before the Masters and Assistants after a period of six months' attendance on the practice of the hospital.

Accommodation is provided for a limited number of intern pupils.

Fees.—Intern pupils: Six months, £21; three months, £12 12s.; two months, £9 9s.; one month, £6 6s. Extern pupils: Six months, £10 10s.; three months, £6 6s.

CLINICAL HOSPITALS.[1]

Opportunities for clinical instruction and study are afforded by many hospitals which are not directly connected with any medical school, and the student will often find it to his advantage to resort to them, especially in the fifth year of the curriculum, as they offer great facilities for gaining practical clinical experience. The following pages contain brief particulars as to the most important of these.[2]

London.

Clinical instruction and appointments as Clinical Assistants can be obtained at many of the Special Hospitals in London, as well as at the General Hospitals to which medical schools are not attached. Resident appointments (Resident Medical Officer, House-Surgeon, House-Physician, etc.) are made from time to time, and vacancies are announced in our columns. The appointments are usually for stated periods of six or twelve months.

General Hospitals.

Great Northern Central Hospital, Holloway Road, N.—This hospital is now recognised by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum. The hospital contains 159 beds, all of which are at present occupied. The large rectangular and circular wards, each of which contains 20 beds, the operation theatre, out-patient department, general and special, and the pathological departments, have all been erected since 1887. Medical practitioners are invited to attend the general and special practice of the hospital. Clinical Assistants (qualified), Clinical Clerks, and Pathological Clerks are appointed in the general and special departments, and may receive certificates at the end of their terms of office. There are four Resident Medical Officers, Senior and Junior House-Surgeons, Senior and Junior House-Physicians; also Pathologist and Registrar, Casualty Officer, and Anæsthetists. Full particulars of and rules for these appointments can be obtained from Mr. Peyton T. B. Beale, F.R.C.S., Honorary Secretary of the Medical Committee.

London Temperance Hospital.—The hospital contains 100 beds. The medical and surgical practice is open to students and practitioners. Appointments (vacancies for which are advertised in the medical journals): Surgical and Medical Registrars, Resident Medical Officer, and one Assistant Resident Medical Officer. For particulars as to hospital practice and classes apply at the hospital.

Seamen's Hospital Society.—Dreadnought Hospital, Greenwich, 225 beds. Branch Hospital, Royal Victoria and Albert Docks; 50 beds. Dispensary at 51, East India Dock Road, and at Gravesend. The London School of Tropical Medicine is attached to the Seamen's Hospital Society and is situated within the grounds of their branch hospital in the Royal Victoria and Albert Docks. In this hospital are constantly to be found many cases of tropical disease and opportunities are afforded to students and others to study Practical Surgery and Diseases Incidental to Tropical Climates. Seventy-three students have joined the school since October last, of which number 8 were women graduates. See also page 508.

West London Hospital, Hammersmith Road, W. (West London Post-graduate College).—The hospital contains 175 beds of which 150 are now in occupation. Some 2,500 in-patients are treated in the hospital during the year. The teaching in the hospital is especially devoted to the requirements of post-graduates. The Physicians and Surgeons attend on Mondays, Tuesdays, Thursdays, and Fridays, at 2.30 P.M., and instruction is given by the Assistant Physicians and Surgeons in the out-patient department daily, at 2.15 P.M. A course of 18 special demonstrations is given in the wards by the Physicians and Surgeons each session. Operations are performed daily, except Saturdays, at 2.30 P.M. There are special departments for Diseases of the Eye, Skin, Ear, Throat, and Nose, Women, and for Orthopædic Surgery. Post-Graduate lectures are delivered on Mondays and Thursdays at 5 o'clock. The date of the commencement of each course is advertised in the medical journals. No Junior Students are admitted to the practice of the hospital. The course of Ophthalmology is recognised by the Army Medical Department. There is a pathological investigation laboratory attached to the hospital, at which instruction is given in practical pathology and elementary bacteriology. A large lecture room, together with reading and writing rooms, are provided for the use of post-graduates. The fee for the hospital practice, including Post-Graduate Lectures, is £3 3s. for three months, and £5 5s. for one year. For Post Graduate Lectures alone, £1 11s. 6d. for each course of 18 lectures. Full particulars of the next Post-Graduate Course and any other information about Post Graduate teaching, can be obtained on application to the Dean, Mr. L. A. Bidwell, at the hospital.

North-West London Hospital, Kentish Town Road.—The hospital, which was established in 1878, provides 53 beds. It is a general hospital. There are two spacious wards for men and women respectively. The children's wards contain 18 cots. The special departments include: (1) Diseases of women; (2) diseases of the eye; (3) diseases of the skin; (4) dental. There are two resident officers; an honorarium at the rate of £50 per annum attaches to each post. Operation day Thursday, at 2.30 o'clock. Further particulars from the Secretary at the hospital.

Children's Hospitals.

The Hospital for Sick Children, Great Ormond Street, W.C., contains 200 beds, divided into 102 medical, 73 surgical, and 25 for special and infectious cases, besides 52 beds at the Convalescent Branch, Highgate. The hospital having been recognised by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need, and is open to students who have completed four years of medical study, and also to qualified medical men. Appointments are made every three months to six medical clerkships and six surgical clerkships, which are open to students at the hospital. Lectures or Demonstrations, given once or twice

[1] Additions or corrections intended for future editions should be forwarded to the Editor not later than the end of July in each year.

[2] For Clinical Hospitals in Dublin see page 100

every week during both winter and summer sessions, are open, free of charge, to medical practitioners. The sessions are of ten weeks' duration, and begin in October, January, and March. Fees for hospital practice, three months, 2 guineas; perpetual ticket, 3 guineas. Prospectuses and further information will be forwarded on application to the Secretary, Mr. Adrian Hope, at the hospital.

East London Hospital for Children, Shadwell.—The hospital contains 107 cots, one-third being devoted to infants. Two House-Surgeons and two House-Physicians (holding office for six months) are appointed annually. This hospital is recognised by the Conjoint Board for England as a place of instruction for students, at which six months of their fifth year under the new regulations may be spent in clinical work. The following opportunities for the study of the diseases of childhood are offered to gentlemen who have completed four years of medical study, and to those who are already qualified: The practice of the hospital (in the out-patients' department) is open to students every day (except Saturdays), at such hours as the physicians or surgeons for the day are attending. The in-patient practice is open to students holding clerkships or dresserships in the hospital, and to students not holding appointments during the attendance of the physicians and surgeons. A certain number of Clinical Clerks and Dressers are appointed every three months to each physician and surgeon. Gentlemen who wish to hold these appointments must have completed their fourth year of medical study. They are eligible for reappointment at the end of three months. Practitioners and students are admitted to the practice of the hospital in both the wards and out-patient department, and clerkships and dresserships can be obtained. Any additional information may be obtained on applying to Mr. H. Betham Robinson, M.S., F.R.C.S., 1, Upper Wimpole Street, W., or to Mr. Thomas Hayes, the Secretary at the hospital.

North-Eastern Hospital for Children, Hackney Road, Shoreditch, E.—The hospital contains 57 beds. Patients in 1899: In-patients, 748 (206 under 2 years of age), out-patients, 16,665, new cases, 59,023 attendances. There are Special Dental, Eye, and Roentgen Rays Departments. Particulars of facilities for attending Medical and Surgical practice can be obtained on application to Mr. T. Glenton-Kerr, Secretary (City office), 27, Clement's Lane, E.C.

LYING-IN HOSPITALS AND HOSPITALS FOR WOMEN.

Queen Charlotte's Lying-in Hospital and Midwifery Training School.—This hospital receives over 1,100 patients annually, besides having a large out-patient department. Medical pupils are received at all times of the year. Pupils have unusual opportunities of seeing Obstetric complications and Operative Midwifery, on account of the very large number of primiparous cases—upwards of three-fourths of the total admissions. Clinical instruction is given. Certificates of attendance at this hospital are recognised by all Universities, Colleges, and Licensing Bodies. Pupil Midwives and Monthly Nurses are received and specially trained. *Fees.*—Medical Pupils, £8 8s. for four weeks, exclusive of board and lodging; Pupil Midwives, £26 5s. for three months; Pupil Nurses, £15 15s. for twelve weeks, inclusive of board and lodging. The new residence for Medical Pupils opposite, and in telephonic communication with, the hospital is now open. *Terms.*—Full board and residence, £1 15s. per week.

Hospital for Women, Soho Square.—There is an organised School for Gynæcology open to qualified medical men, and students after their fourth year. A limited number of Clinical Assistants to the Physicians and Surgeons in the Out-patient Department are appointed every three months. Clinical instruction is given also in the theatre and in the wards. *Fee* for the three months' course, £8 8s. Further information can be obtained by letter, addressed to the Dean at the hospital.

OPHTHALMIC HOSPITALS.

Royal London Ophthalmic Hospital (Moorfields Eye Hospital), City Road, E.C.—The hospital was founded in 1804 in Charterhouse Square; in 1821 it was moved to a larger building in Blomfield Street, where the work was carried on until 1899; in 1899 the present building in City Road was opened. It contains 138 beds for in-patients, which were occupied during last year by 1,919 persons: in the same year the out-patients were 37,832, and the attendances 93,280. Operations are performed daily, from 10 A.M. until 1 P.M., and four surgeons attend on each day. Students are admitted to the practice of the hospital. *Fees*, for six months, £3 3s.; perpetual, £5 5s. Courses of instruction in the following subjects are given at the hospital periodically: (1) The Use of the Ophthalmoscope; (2) Errors of Refraction; (3) External Diseases of the Eye; (4) Surgical Anatomy of the Eye. Systematic instruction is also given in the Laboratory of the hospital on the Pathology of the Eye. Perpetual Students are admitted to the lectures free. Students of the hospital are eligible for the offices of House-Surgeon, Out-patient Surgical Officer, or Clinical and Junior Assistants. Junior Assistants are appointed every three months. Any further information will be furnished by Mr. Robert J. Bland, Secretary.

Royal Westminster Ophthalmic Hospital, King William Street, West Strand.—The hospital contains 34 beds and an out-patient department. The practice is open to practitioners and students from 1 to 4 P.M. daily. Special instruction is given in the Diagnosis, Pathology, and Treatment of Eye Affections, including the Operations on the Eye, the Treatment of Errors of Refraction, and the Use of the Ophthalmoscope. *Fees:* Six months, £3 3s.; perpetual, £5 5s. For particulars, apply to Mr. Adams Frost, F.R.C.S., 30, Cavendish Square, or at the hospital.

Royal Eye Hospital, Southwark.—This hospital contains 40 beds and 2 cots. The new patients in the out-patient department number over 18,000 yearly. Operations are performed and patients seen daily at 2 P.M. Qualified practitioners and students are admitted to the practice of the hospital. *Fees:* For three months, £2 2s.; for six months, £3 3s.; perpetual, £5 5s. Courses on Ophthalmoscopy, Refraction, and Diseases of the Eye, each £1 1s. (perpetual students one course free); Pathology £1 1s., to cover cost of materials. Tutorial classes arranged to suit candidates for the various examinations. Qualified students of the hospital are eligible for the offices of Registrar and House-Surgeon, may also be appointed Clinical Assistants for six months, and are eligible for re-election. Further particulars may be obtained from Mr. Edwin Easton, Acting Secretary, at the hospital, Southwark, S.E.

Central London Ophthalmic Hospital, Gray's Inn Road, W.C.—This hospital has 28 beds, and possesses facilities for clinical teaching daily. Classes on the use of the Ophthalmoscope on Thursdays, at 8 P.M., commencing October 18th, continuing till March 14th, 1901: classes on Refraction on Fridays, at 5.30 P.M., commencing October 19th.

FEVER AND SMALL-POX HOSPITALS OF THE METROPOLITAN ASYLUMS BOARD.

Students are admitted to study at the Fever Hospitals and the Small-pox Hospital Ships of the Metropolitan Asylums Board after they have completed the third year of medical education, provided they have held the offices of clinical clerk and dresser, and have obtained the sanction of the authorities of the medical school to which they belong. The minimum duration of the course of study at the fever hospitals is two months; and the ordinary course of study at the small-pox ships is not less than two weeks and not more than four weeks, as the Board of Management may determine. At the fever hospitals the student may attend three days, and must attend two days, a week; at the small-pox ships he resides, paying 12s. a week for board and lodging. He must abide by the rules laid down as to disinfection and other matters, and must satisfy the Board of Management that he is sufficiently protected against small-pox by vaccination or otherwise. A certificate signed by the medical superintendent of the hospital at which attendance is made is granted to a student when he has satisfactorily completed the course of study. Qualified medical men are admitted under similar terms and conditions, except that the sanction of the authorities of the medical school is not required in their case.

Fees.—Fever hospitals, two months, £3 3s., and £1 1s. for every additional month; small-pox ships, two weeks, £2 2s., and £1 1s. for the remaining period.

Courses of instruction in the treatment of fevers are usually held three times a year, beginning in January, May, and October respectively; and information as to the classes is

furnished to each of the recognised medical schools in the metropolis. Courses in connection with small-pox are held from time to as circumstances permit.

Other Special Hospitals: London.

Bethlem Royal Hospital.—Two Resident House Physicians are appointed twice a year for six months from recently qualified medical students. Students of certain hospitals are allowed to attend for clinical instruction. Qualified medical men are allowed to attend for three months on payment of a fee. Post-graduate courses are given from time to time.

Hospital for Consumption and Diseases of the Chest, Brompton.—The hospital has been recognised by the Conjoint Board for England as a place where under the present curriculum six months of the fifth year may be spent in clinical work. There are 321 beds in the two buildings constituting the hospital, and a special throat department. Pupils are admitted to the in-patient and out-patient practice of the hospital. Three courses of lectures and demonstrations will be given during the year. The next course will commence in October, 1900. Clinical assistants are appointed to the Assistant Physicians in the out-patient department, and clinical clerks are appointed to the Physicians in the wards. These appointments are tenable from three to six months. The fee for the practice of the hospital is £1 1s. for each month, or £2 2s. for each period of three months, or a perpetual fee of £5 5s.

City of London Hospital for Diseases of the Chest, Victoria Park.—There are 164 beds. The practice of the hospital, both as regards in-patients and out-patients, is open to students and medical practitioners. Certificates of attendance in the medical practice of this hospital are recognised by the London University and London medical examining Boards. Information as to medical instruction can be obtained on application to the Secretary of the Clinical Subcommittee at the hospital.

National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury.—This hospital with the Finchley branch contains 200 beds and cots. The out patient practice and lectures are free to students and practitioners. Lectures and demonstrations are given on Tuesdays at 3 30 in three courses, spring, summer, and winter, and the physicians attend every Monday, Tuesday, Wednesday, and Friday for out-patients at 2.30. Surgical operations are performed on days and at hours of which notice will be posted at the hospital. The hospital has been recognised by the Conjoint Board for England as one of the places where part of the fifth year of study may be spent. Clinical Clerks are appointed to the Physicians for in-patients and out-patients. All communications regarding clinical clerkships, lectures, and hospital practice should be addressed to the Secretary and General Director at the hospital.

Central London Throat and Ear Hospital, Gray's Inn Road.—The hospital contains accommodation for seventeen in-patients, and has an extensive out-patient department, which is open to all medical practitioners and students for the purpose of Clinical Demonstration and Instruction. Fee for three months' attendance, 3 guineas; for six months, 5 guineas. A course of lectures on the special diseases treated at this hospital is delivered during both the winter and summer months by members of the staff. The date of these lectures is announced in the medical journals prior to their commencement. They are free to qualified practitioners and advanced students of medicine. Operations on in-patients are performed on Tuesdays at 2 P.M., and on out-patients on Tuesdays and Fridays at 2 P.M. Considerable attention is given to scientific work, particularly with regard to the bacteriology of the diseases of the ear and respiratory passages, for which a special department has been inaugurated.

St. Peter's Hospital for Stone and Urinary Diseases (Henrietta Street, Covent Garden).—Qualified medical men and students are admitted free to the practice of this hospital, which contains 27 beds, and has a large out-patient attendance (37,474 for 1899). New cases, 4,435. Operations are performed and consultations held on Wednesdays and Fridays at 2. Clinical lectures and demonstrations are given regularly by members of the staff.

Royal Ear Hospital, Frith Street, Soho Square, W.—Courses, of six weeks' duration, in Diseases of the Ear and Nose are given by the members of the staff throughout the teaching year. Students can attend one or more surgeons; the fee for each course (2 clinics a week) is 1 guinea. The teaching is of a practical character, and the number of students is limited. For information, address the Honorary Secretary of the Medical Board.

St. John's Hospital for Diseases of the Skin.—The Out-patient Practice (at 49, Leicester Square, W.C.) is open free to the medical profession every week day from 2 to 4 P.M., on presentation of their cards to the Medical Officer in attendance. Chesterfield Lectures are given free. The In-Patient Department with 50 beds is at 238, Uxbridge Road, W. Further particulars may be obtained from Mr. J. Dunlop Costine, Superintendent of the Hospital, 49, Leicester Square, W.C.

Liverpool.

The following hospitals, in addition to the Royal Infirmary (see page 494), have arrangements for Clinical instruction:

Royal Southern Hospital: Clinical School.—The hospital is situated within convenient distance of the School of Medicine, and contains 200 beds. There is a children's ward, and beds are appropriated to the diseases of women, and also for cases of tropical disease in connection with the Liverpool Tropical School. Clinical teaching is given in the hospital, and arrangements have been made to render it both thorough and systematic. The members of the staff visit the wards daily, and clinical lectures are given each week. Tutorial classes are also held each day, at which the junior students are instructed in the methods of diagnosis, and the seniors are prepared for their final examinations. The pathological department has a good laboratory attached, in which the students receive practical instruction. *Appointments:* In addition to the usual clinical and *post-mortem* clerkships, two resident posts of Ambulance Officer are awarded every three months to the students whom the Board may consider most suited to hold them. *Fees:* Perpetual, £26 5s.; one year, £10 10s.; six months, £7 7s.; three months, £4 4s. *Board* (exclusive of fees for Hospital Practice), £15 15s. per quarter. The practice of the hospital is recognised by all examining bodies. Further particulars may be obtained from the Dean, Mr. Robert Jones, 11, Nelson Street, Liverpool.

Eye and Ear Infirmary, Myrtle Street.—The infirmary contains 46 beds, to be shortly increased to 80. Evening courses of Lectures on Refraction and Medical Ophthalmoscopy and Diseases of the Ear are delivered at this infirmary during the winter months by the honorary medical staff. Students of medicine of University College, Liverpool, have free access to the practice of the infirmary. Out-patient dresserships may be obtained on application to the Secretary of the Medical Board. The infirmary is recognised by the Conjoint Board as a teaching institution.

Liverpool Infirmary for Children.—The infirmary contains 88 beds, and has a large out-patient department. In-patients (1899) 1,005; new out-patients, 13,969; out-patient attendances, 56,348. The practice of the hospital is free to students, and clinical instruction is given by the Medical Staff. For further particulars apply to the Secretary of the Medical Board.

Manchester.

In addition to the Royal Infirmary (see page 495) facilities for clinical instruction are afforded at the following hospitals:

The Manchester Children's Hospital, Pendlebury.—The hospital at Pendlebury contains 140 beds. The medical staff see out-patients daily at the Dispensary, Gartside Street, at 9.30 A.M., and visit the hospital at 10 A.M. and 5 P.M. The practice of the hospital and dispensary is free to students accompanying the medical staff.

Royal Eye Hospital.—The hospital contains 110 beds. The medical staff attend daily from 9.30 to 12. Clinical instruction is given to students. Further particulars can be obtained from the Secretary, Mr. W. S. Prophet.

St. Mary's Hospital for Diseases of Women and Children.—Sixty beds, including 12 for the reception of lying-in cases, especially those attended with difficulty or danger. In the out patient department students are taught the various methods of examination and diagnosis, and the use of

gynæcological apparatus; while, in the wards, they have an opportunity of becoming familiar with the diagnosis and treatment of graver cases, and of witnessing more important gynæcological operations. The number of maternity cases attended annually is 3,500. A student attends his first five cases under the immediate supervision of the House-Surgeon and Resident Obstetric Assistant Surgeon. The hospital possesses a library, presented by the late Dr. Radford, consisting of nearly 5,000 volumes, chiefly on subjects connected with obstetrics and gynæcology. There is also a museum, containing a large number of pathological specimens, and a valuable collection of deformed pelves, casts, obstetric instruments, and anatomical models. The gynæcological practice of the hospital is free to third and fourth years' students. The fee for the midwifery practice, which includes attendance upon 20 cases of labour, as required by the examining bodies, is £2 2s. Application must be made to the House-Surgeon at the hospital.

Manchester Clinical Hospital for Women and Children.—The hospital is situated in Cheetham Hill Road, near the centre of the town, and contains 70 beds. Out-patients are seen daily at 8.30, and the wards are visited at 9 A.M. Secretary, Mr. H. Teague, Barton Arcade, Manchester.

NEWCASTLE-ON-TYNE.

Hospital for Sick Children.—There are 60 beds in the hospital, besides an isolated block for infectious and doubtful cases. There is a large out-patient department. The practice of the hospital is open free to all students or qualified practitioners. There are 68 beds in the hospital, besides an isolated block for infectious and doubtful cases, with 4 beds. The number of in-patients in 1899 was 772. The out-patient department is carried on in buildings recently erected in the central part of the city, and the number of out-patients in 1899 was 7,839, with 18,637 attendances. A scheme for giving clinical instruction is at present under consideration.

SHEFFIELD.

Jessop Hospital for Diseases of Women.—The number of beds is 45; in the Diseases of Women Department 36, and in the Maternity Department 9. Students can attend the practice of the hospital, and be supplied with cases of midwifery. (See also p. 495).

BATH.

Royal United Hospital.—130 beds. The hospital is recognised by the Royal Colleges of Physicians, Surgeons, etc., and licensed for dissections. It contains a library and an excellent museum, in which are a large number of interesting specimens, both in Pathology and Comparative Anatomy. Fees for attendance: Twelve months, £10 10s.; six months, £5 5s. (temporary pupils can also, by permission of the honorary staff, attend the practice of the hospital by the payment of £1 1s. for each month). Instruction in Practical Pharmacy for three months, £3 3s. For further particulars apply to the Secretary, Mr. J. M. Sheppard.

BIRMINGHAM.

Birmingham and Midland Hospital for Skin and Urinary Diseases.—The practice of the hospital is open to medical students who have passed their anatomical and physiological examinations, and to registered medical practitioners. The fee for a course of three months is 5 guineas. Further particulars may be obtained from the Honorary Secretary at the hospital.

BRADFORD.

Bradford Royal Infirmary.—The hospital contains 220 beds. Non-resident pupils are received, and have every opportunity of acquiring a practical knowledge of their profession under the superintendence of a House-Surgeon and House-Physician. One year's attendance is recognised by the Examining Boards. *Fee:* Perpetual, £10 10s.

BRIGHTON.

Sussex County Hospital.—The hospital contains 190 beds, with separate wards for children and for cases requiring isolation; and the Out-patient Department is attended by 700 or 800 patients weekly. It is recognised by the College of Surgeons and by the Conjoint Board as a hospital where part of a course of Dispensing may be taken. Out-pupils are admitted to the clinical teaching at the fee of £21 for two years. Further information may be obtained from the House-Surgeon.

CANTERBURY.

Kent and Canterbury Hospital.—The hospital contains 106 beds. Over 700 in-patients and 1,200 out-patients attend every year. Lectures are delivered weekly during term time to the students of St. Augustine's Missionary College, on Practical Medicine by Dr. Gogarty, and on Surgery by Mr. T. W. Reid.

DERBY.

Derbyshire Royal Infirmary.—The infirmary has been rebuilt, and will accommodate 198 patients. Pupils are admitted to the practice of the infirmary at £10 10s. a year.

DEVONPORT.

Royal Albert Hospital.—The hospital contains on the Civil side 52 beds, and 6 additional for emergency cases only, and 45 on the Government side. A course of Practical Pharmacy is given by the dispenser on payment of a fee of £5 5s.; pupils of the medical staff can attend this course on payment of £2 2s.

EDINBURGH.

Victoria Hospital for Consumption and Diseases of the Chest.—Excellent opportunity is afforded for the clinical study of Diseases of the Chest. Special clinics by Drs. Philip and Lovell Gulland are arranged from time to time, both in the hospital itself, which contains 15 beds, and in the extensive outdoor department, which has its headquarters in Lauriston Place, close to the University. The number in attendance at these cliniques is limited. The fee is £2 2s. for a six weeks' course. Application for places has to be made some time in advance to Dr. R. W. Philip, 45, Charlotte Square. Two medical appointments in connection with the hospital are vacant every six months: (1) Resident Physicianship: (2) Non-resident Physicianship for the outdoor department. The vacancies occur usually in April and October.

Royal Edinburgh Hospital for Sick Children.—The hospital, which has been recently built, stands in Sciennes Road, about seven minutes' walk from the Medical School and Royal Infirmary, contains over 100 available beds, and is fitted up with modern improvements. There are some 1,200 in-patients and 1,500 out-patients yearly. No cases of infectious disease are admitted. The out-patient department (medical and surgical) is conducted in a building adjoining the hospital, and is well equipped. Systematic clinical courses of instruction, at a fee of £2 2s., which qualify for the University and other examinations, are given at various times throughout the year by the ordinary physicians and surgeon. These are Drs. T. Burn Murdoch, G. H. Melville Dunlop, and John Thomson, and Mr. Harold J. Stiles. Students may enter at any time. A limited number of clinical clerkships are available, and four resident appointments are made yearly. The Registrar of the hospital, Dr John W. Simpson, will supply particulars.

Edinburgh Eye, Ear, and Throat Infirmary.—Open daily at 6, Cambridge Street, at 1 P.M., for Eye Diseases; on Monday, Thursday, and Saturday at 12 for Ear Diseases; on Tuesday and Friday at 4 for Throat Diseases. There is a small infirmary of six beds in male and female wards. 2,500 patients are treated annually. Fee for three months, £1 1s.

Edinburgh Royal Maternity and Simpson Memorial Hospital has 40 beds, about 310 in-patients, and 610 out-patients yearly. Clinics are given by the physicians and their assistants. Fees for three months, £2 2s. Two House-Surgeons appointed for each quarter.

Edinburgh City Hospital for Infectious Diseases contains nearly 400 beds, a large number of which are available for teaching purposes. Short courses of instruction are given by the Visiting Physician and the Medical Superintendent during the winter and summer session at a fee of £2 2s.

Royal Asylum, Morningside, Edinburgh.—There is a clinical field of 500 beds, comprising all the wards except those for private patients. Students have the opportunity of personally

coming in contact with and examining the cases, so as to learn the modes of dealing with patients suffering from mental disease; they are exercised in diagnosis and the drawing up of certificates, the aim being to enable them to recognise its early stages, to distinguish its varieties, to adopt suitable treatment, and to advise the relatives as to sending the patient to an asylum. The course extends through the last month of the winter session and the most of the following summer session, and the fee is £2 2s. Dr. Clouston is the Lecturer on Insanity for the University of Edinburgh.

EXETER.

Royal Devon and Exeter Hospital.—The hospital contains 214 beds, including a Special Children's Ward. There are a good Library, Museum, Dissecting, and *Post-mortem* Rooms. Attendance on the Practice at this hospital qualifies for all the Examining Boards. Arrangements may be made by which students can attend Midwifery. For further particulars as to fees, etc., apply to the House-Surgeon.

West of England Eye Infirmary.—This infirmary contains 50 beds. Arrangements can be made for students of the Exeter Hospital to attend the practice of the Eye Infirmary.

GLASGOW.

Royal Hospital for Sick Children.—This hospital, containing 80 beds for the non-infectious diseases of children, is open for clinical instruction, as is the dispensary, or out-patient department. Students, by paying the fee of £1 1s., are entitled to the practice of the hospital and dispensary for twelve months from the term of entry. In-patients, 691; out, 6 402. Further particulars may be had by applying to the Resident Medical Officer, 45, Scott Street, Garnethill. The Dispensary is at 11, West Graham Street.

Glasgow Western Infirmary.—This hospital adjoins the University of Glasgow. Number of beds, 400. The Clinical Courses are given by the Physicians and Surgeons, each of whom conducts a separate class, and students may attend whichever they select at the beginning of the session. Special instruction is given to junior students by tutors or assistants, and clinical clerks and dressers are selected from the members of the class. Special wards are set apart for Diseases of Women and for Diseases of the Skin. In the Out-Patients' Department there are special clinics for Diseases of Women and for Diseases of the Throat, Ear, and Teeth. All the courses of clinical instruction are recognised at the University of Glasgow and other Boards in the kingdom. Nine resident assistants are appointed annually without fee from those who have completed their course. *Fees.*—For the hospital practice, including the various courses of clinical instruction in Medicine and Surgery, £21 in one payment, or in two equal instalments for the first and second years; for six months, £7 7s.; and for three months, £4 4s. In-patients, 4,718; out-patients, 15,574.

Glasgow Eye Infirmary.—This infirmary is situated at 174, Berkeley Street, and 80, Charlotte Street. During the year 1894, 17,264 patients were treated, and 3,130 operations performed. Dispensaries open daily at 1 P.M. Operations performed on Wednesday and Saturday at 2 P.M. Fee for six months, 1 guinea.

GLOUCESTER.

The General Infirmary and the Gloucestershire Eye Institution.—The hospital contains 156 beds. Resident and non-resident pupils are admitted by the General Committee on the recommendation of a member of the Medical Board. Each pupil pays in advance £10 for the first half-year, and £5 for every subsequent quarter, or portion of a quarter, of a year. Each resident pupil has board and lodging in the house, for which he pays in advance 26 guineas for the first half-year, and 13 guineas for every subsequent quarter, or portion of a quarter, of a year. Each pupil pays in advance to the House-Surgeon a fee of £5 5s. for instruction, and a further fee of £3 3s. for every subsequent year or portion of a year. One year spent at this hospital, after passing a preliminary examination, is recognised by the Royal College of Surgeons.

LINCOLN.

County Hospital.—The hospital contains 125a beds, and 5 isolation beds. The House-Surgeon is allowed to take two pupils, on terms arranged by the Weekly Board, himself, and the pupils. A fee of not less than £10 10s. is paid by every pupil to the hospital. The House-Surgeon is responsible for the conduct of his pupils. The pupils remain in the hospital only when occupied in performing or observing the actual work of the hospital.

NORWICH.

Norfolk and Norwich Hospital.—The hospital contains 220 beds. Students (non-resident) are admitted according to the following scale: For three months, £3 3s.; for six months, £5 5s.; as Permanent Students, £8 8s. The resident officers are a House-Physician, House-Surgeon, and Assistant House-Surgeon.

NORTHAMPTON.

General Infirmary.—There are 163 beds and a large out-patient department. Out-pupils are received, and have every opportunity of acquiring a practical knowledge of their profession. Instruction is also given by the House-Surgeon in Anatomy, Materia Medica, and Pharmacy. Non-resident pupils are taken at a fee of £10 10s. annually.

NOTTINGHAM.

General Hospital.—The hospital contains 193 beds. The Honorary Staff introduce pupils to witness the practice of the hospital on payment of £10 10s. annually in advance. The pupils receive instruction from the Resident Medical Officers.

PORTSMOUTH.

Royal Portsmouth Hospital.—150 beds. One year's attendance recognised by the Examining Board. For particulars as to fees apply to the Secretary of the Committee of Management.

SOUTHAMPTON.

Royal South Hants and Southampton Hospital.—This institution was established in 1838. The out-patients' building was erected in 1887. The number of beds is 130. The in-patients number about 1,050 a year, the out-patients about 4,500. Large additions to buildings, including new isolation wards, new operating room, a new ward block, and a steam laundry, have just been completed.

STAFFORDSHIRE.

Staffordshire General Infirmary.—There are 75 beds. The pupils of medical practitioners resident in the county of Stafford are allowed to witness the medical and surgical practice of the infirmary, and to be present at operations. The pupils of the officers of the institution are admitted to these privileges gratuitously, those of other practitioners on the payment of £10 10s. with each pupil.

North Staffordshire Infirmary and Eye Hospital.—The infirmary has accommodation for 216 patients, including children's wards, eye department, and special ovarian wards. The attendance of pupils at this infirmary is recognised by all the Examining Boards. Particulars as to fees, etc., may be obtained from the Secretary and House-Governor, Mr. Albert E. Boyce, Hartshill, Stoke-on-Trent.

WINCHESTER.

Royal Hants County Hospital.—The hospital contains 108 beds. The Physicians and Surgeons are allowed to introduce a certain number of pupils; the House-Surgeon may also receive a pupil, for whose maintenance a certain sum, to be fixed by the Committee, is payable in advance. Pupils of medical men not on the staff of the hospital may, with the consent of the Committee, become out pupils, and see the practice of the hospital, under the direction of the House-Surgeon, on the payment of £10 10s. for one year, or £21 for unlimited attendance. Out pupils are permitted daily (Sundays excepted) to read in the Library on payment of £1 1s.

WOLVERHAMPTON.

Wolverhampton and Staffordshire General Hospital.—The hospital contains 230 beds, and is a preparatory School of Medicine and Surgery. The pupils see the whole of the practice of the Physicians and Surgeons, and are trained in

clinical work by the medical and surgical staff. Attendance at this hospital is recognised by all the Examining Boards. *Fees:* Six months, £6 6s.; twelve months, £12 12s.; perpetual, £21.

INSTRUCTION IN PRELIMINARY SCIENCES.

The following institutions are recognised by the Conjoint Board in England for instruction in chemistry, including chemical physics, practical chemistry, and elementary biology. Certificates for Biology will only be accepted from those institutions marked with an asterisk.

Aberystwyth.—*University College of Wales.
Bangor.—*University College of North Wales.
Bath.—*Kingswood School.
Bedford.—The Grammar School.
Berkhamsted.—Berkhamsted School.
Birkenhead.—Holt Schools of Science and Art
Bishop's Stortford.—Noncomformist Grammar School.
Blackburn.—Stonyhurst College.
Bolton.—Central Higher Grade Board School.
Bournemouth.—School of Science and Art.
Bradford.—*The Grammar School; *Bradford Technical College.
Brighton.—*Municipal School of Science and Art.
Bristol.—*University College; *Merchant Venturers' Technical College; Bristol Grammar School.
Bromyard.—The Grammar School.
Burslem.—Wedgewood Institute.
Bury.—Technical School; Bury Grammar School.
Cardiff.—*University College of South Wales.
Cheltenham.—*Public School of Science and Technical School, Clarence Street; Cheltenham College.
Chester.—*School of Science and Art, Grosvenor Museum.
Clifton, Bristol.—Clifton Laboratory; Clifton College.
Darlington.—Technical College.
Devonport.—Municipal Science, Art, and Technical Schools.
Dover.—Municipal Technical School.
Dulwich.—*Dulwich College.
Epsom.—*Epsom College.
Eton.—*Eton College.
Exeter.—*Technical and University Extension College.
Felsted.—Felsted School.
Gloucester.—Municipal Schools of Science, Art, and Technology.
Godalming.—*Charterhouse School.
Hanley.—Higher Grade Board School.
Harrow.—*Harrow School
Huddersfield.—*Technical School.
Hull.—Royal Institution; Municipal Technical School; *Hymer's College.
Leicester.—*Wyggeston School.
Liverpool.—*School of Science, Technology, and Art.
London.—*The Department of Science and Art, South Kensington.
,, City of London School.
,, *St. Paul's School, West Kensington.
,, The Pharmaceutical Society.
,, *Birkbeck Literary and Scientific Institute.
,, *South-West Polytechnic Institute, Chelsea.
,, *City of London College.
,, Polytechnic Institute, Regent Street.
,, *Polytechnic Institute, Battersea.
,, *Northern Polytechnic Institute, Holloway.
,, East London Technical College, People's Palace.
,, Mercer's School, Holborn.
,, St. Olave's Grammar School, Tooley Street, S.E.
,, Merchant Taylors' School.
Maidstone.—Municipal Technical School.
Manchester.—Municipal Technical School.
Marlborough.—Marlborough College.
Middlesbrough.—Middlesbrough High School.
Newcastle-upon-Tyne.—*Durham College of Science; *Rutherford College.
Norwich.—Higher Grade Board School.
Nottingham.—*University College; The High School.
Oldham.—Municipal Technical School.
Plymouth.—*The Science, Art, and Technical School.
Portsmouth.—Higher Grade Board School; Grammar School; *Municipal Technical Institute.
Preston.—Harris Institute.
Reading.—*Reading College; Reading School.
Rochester.—Mathematical School.
Salford.—Royal Technical Institution.
Sheffield.—*Royal Grammar School.
Sherborne (Dorset)—Sherborne School.
Southampton.—*Hartley Institution.
Stafford.—County Technical School.
Stoke-upon-Trent.—School of Science and Art.
Swansea.—Municipal Technical College.
Swindon—Swindon and North Wilts Technical School.
Tonbridge.—*Tonbridge School.
Walthamstow.—Forest School.
Watford.—Watford Endowed Schools.
Wellington (Shropshire)—Wellington College.
Weston-super-Mare.—Grammar School.
Winchester.—Winchester College.
Wolverhampton.—*Science School in connection with the Free Library.
Woodford (Essex).—*Bancroft School.
Worcester.—Victoria Institute.

MEDICAL EDUCATION OF WOMEN.

QUALIFICATIONS FOR FEMALE PRACTITIONERS.

Degrees, Diplomas, and Schools.

The qualifying bodies in the United Kingdom which admit women as candidates for their degrees or diplomas are as follows: The University of London, the University of Durham, the University of Edinburgh, the University of Glasgow, the University of Aberdeen, the University of St. Andrews, and the Royal University of Ireland, the Society of Apothecaries, London, and the Conjoint Board of the Royal Colleges of Physicians and Surgeons in Scotland and Ireland. Women candidates for qualification are subject to the regulations of the General Medical Council as to education and examinations in precisely the same manner as men.

Women medical students can obtain a complete medical examination by becoming students of the London School of Medicine for Women, the Medical College for Women, Edinburgh; Queen Margaret College, Glasgow; the Schools of Surgery of the Royal College of Surgeons in Ireland, and the Queen's Colleges of Belfast, Cork, and Galway. The two first-named schools receive women only. In the Schools of Surgery of the Royal College of Surgeons in Ireland special rooms are set apart for lady students. They can also enter at the Universities of Edinburgh (see page 482), Aberdeen, and St. Andrews, and at the University of Durham, the Medical and Science Faculties of which are located in Newcastle-upon Tyne, the former in the College of Medicine, and the latter in the College of Science, where women students can receive instruction in the various subjects of these two Faculties.

For the University of Glasgow a complete medical education is given at Queen Margaret College, which is now an integral part of that University. The medical classes (systematic and practical) of the University of St. Andrews (United College, St. Andrews and University College, Dundee) are open to women on an equal footing with men. Two years of the medical curriculum can be taken at United College, St. Andrews, or the whole five years at University College, Dundee. Women are received as students at the Dundee Royal Infirmary and the Dundee Royal Lunatic Asylum. The medical degrees of the University are open to women.

Some further particulars as to the London School of Medicine for Women will be found on page 492, but intending students should write to the Secretary of the School, 30, Handel Street, Brunswick Square, London, W.C. The prospectus of this School contains an article of advice to students, which will be found very useful.

Before entering upon the career of a medical student a woman should consider well whether she is in a position to meet the serious calls which the career will make upon pocket and health. She must be prepared to spend at least five full years at a medical school (after passing a preliminary examination in Arts), and must remember that during this period she will find her time fully occupied, and should not attempt—in fact, if she does her duty, should have no time—to earn a penny. Further, the work, which is severe and prolonged, and of necessity sometimes performed under somewhat unhealthy conditions, makes a serious call upon any constitution not naturally robust.

University of London: Bedford College for Women.—The following students have passed the recent Intermediate Examinations of the University of London:—Intermediate in Science: Honours—Zoology, 2nd class, Z. Scrutz. Pass, 1st division—E. Canter, M. C. H. D. Skinner, I. Slater, L. M. Warwick, J. S. Young; 2nd division—E. Cyriax, N. S. Helm; exempted at Preliminary Scientific Examination from examination in Chemistry and Physics, C. E. L. Masche. Preliminary Scientific: 2nd division—V. A. Turkhud, S. C. E. Sommer; also R. Western, of Bedford and Westfield Colleges, 1st division. Students attend on Wednesday, October 3rd, 2 to 4, to interview the Principal and Lecturers. Courses in Arts and Science, Training Department, Hygiene Department and Art School open Thursday, October 4th, 10 A.M.

POST-GRADUATION STUDY.

London.

A result of the enormous growth of medical and surgical science and art in recent years is that a practitioner who is unable to keep himself practically acquainted with the details of that advance finds himself after a time quite "behind the times." The mere failure to advance places him and his patients at a positive disadvantage in the daily warfare against a large number of the injuries and diseases which he has to treat. Scarcely, too, can the best men in the medical schools, however diligent, find time to attain proficiency in every branch of modern medical and surgical diagnosis and treatment. Indeed, practitioners of all classes require occasional opportunities to keep themselves abreast of science, and to gain proficiency in the use of the newer instruments of precision, and in the interpretation of their indications. Below will be found some particulars as to the institutions which now provide such instruction.

A large number of medical practitioners educated in the United Kingdom every year leave its shores to settle in various parts of the British Empire which are within the tropics. They are at once brought into contact with diseases unknown in this country, and for the successful treatment of which special training is requisite. To supply this two schools of Tropical Medicine have been founded, and some account of the arrangements at each is given below.

Clinical Study for Qualified Medical Men.

The combination of nine of the London Schools of Medicine for provision of clinical teaching for qualified medical men is one which deserves attention. It is doubtful if a larger variety of cases can be seen anywhere in the world, and when this great amount of material is available for study for the moderate fee of 7 guineas for three months or 10 guineas for six months, it is not surprising to learn that a large number of practitioners have taken out tickets during the past year.

The holder of one of these tickets has the right to attend the clinical instruction, operations, and necropsies at each of the nine hospitals included in the scheme.

Full particulars of the arrangements can be obtained on application to the Honorary Secretary, Metropolitan Schools of Medicine, West Wing, Examination Hall of the Conjoint Examining Board, Victoria Embankment, London, W.C., between the hours of 12.30 and 3 P.M. daily, except on Saturdays.



The London Medical Graduates' College and Polyclinic.

The London Medical Graduates' College and Polyclinic.

The London Medical Graduates' College and Polyclinic, which was opened in May, 1899, has already attracted to itself large classes of practitioners, and its success fully justifies its foundation.

The College, which occupies premises formerly used as a High School, is situated in central London, being at the corner of Chenies and Ridgmount Streets, about 50 yards to the west of Gower Street. The building, with the additions now completed, is sufficiently commodious for all present purposes.

In the basement is a dark room, against the walls of which are placed 12 seats, each separated from the adjoining one by a partition, and each having its own electric light that can be used in varying strength, naked or shaded. In this room twelve patients can be examined simultaneously, but separately from each other, and the use of the ophthalmoscope, laryngoscope, or other instrument of precision, and their indications demonstrated. An adjoining room is fitted with appliances for instruction in ophthalmic cases, such as type tests, working models of eyes, stereoscopes, lenses, etc.

The ground floor contains the medical and surgical demonstrating rooms, which are furnished with black boards and various other appliances for clinical instruction. Upon a platform are placed chairs for those attending the classes, the patients and demonstrators occupying the area. For special occasions the partition dividing one room from the other can be removed, and the two rooms thus united will form a class-room of fine proportions.

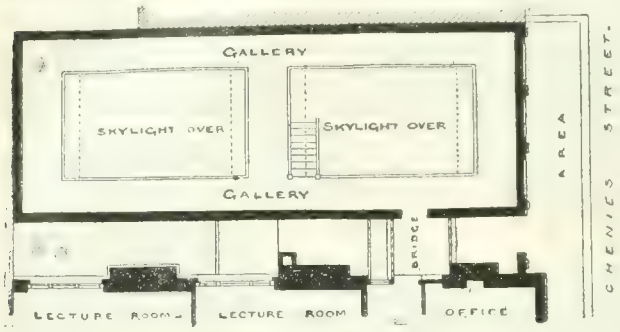
The first floor is nearly all occupied by the temporary library, reading room, and lecture room.

On the second floor are several rooms not yet allotted to specific purposes: one will probably be fitted with a Roentgen ray apparatus.

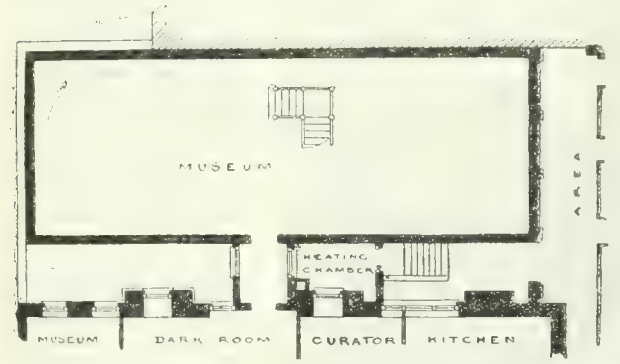
The third floor has an excellent laboratory for chemical pathology, each table having its Bunsen burner, set of reagents, test tubes, etc.

There is a lift to all the floors, and the whole College is fitted with electric light everywhere. At the side of the building is a vacant plot, formerly used as a playground, upon which have been constructed a permanent museum and library. The museum is devoted to clinical illustrations: portraits and models of diseased conditions find their place there, and the newest medical and surgical instruments and appliances of all kinds, which can be examined at any time, form a marked feature of this department of the College. The museum has been enriched by a unique collection of valuable pictures of disease, especially skin disease, most of which are painted from life, together with many other specimens of rare clinical

value, which have been placed at the service of the Polyclinic by Mr. Jonathan Hutchinson, F.R.S., and the museum has been appropriately named after him the Hutchinson Museum. A smoking room is being fitted up, and will be ready by the commencement of the autumn session.



Ground Floor plan



Basement plan.

One chief method of instruction provided for the medical men attending the classes is the system of consultations taking place every afternoon. These afford opportunities of studying exceptional forms of disease by the most recent methods of diagnosis. Notes are taken of the cases, and are supplemented on occasions by photographs or other portraits of the rarer morbid conditions.

WEST LONDON HOSPITAL.

The West London Hospital was the first General Hospital in London to organise a systematic scheme for post-graduate teaching, and is still the only one which devotes the clinical material in its wards and out-patient department solely to the instruction of qualified men. This scheme was started in 1895, and three years later its basis was enlarged by the provision of accommodation for the post-graduates in the shape of lecture, reading and writing rooms, etc.

For the proper organisation of post-graduate teaching, a general hospital is essential, and it is absolutely necessary that the practice of such hospital should be reserved exclusively for qualified men The proof of this statement is to be found in the success which has attended this college, so much so that the large number of post-graduates, who have been enrolled since its commencement (upwards of 300), taxed the accommodation resources of the hospital, especially in the out-patient department; but the much-needed enlargement of this department, carried out by the committee last year, now affords ample space for a large number of post-graduates.

The scheme of study includes the following: (1) Instruction is given daily in the medical and surgical out-patient rooms; (2) special demonstrations are given in the medical and surgical wards on fixed days in each week; (3) practical instruction is given in the special department for diseases of the eye, ear, throat and nose, and of women, and clinical assistants are appointed in connection therewith; (4) instruction is given in the *post-mortem* room and in the clinical investigation laboratory; (5) every facility is afforded to the post-graduates for seeing and following the operations which are performed daily in the operating theatre, and they are encouraged to render assistance thereat; (6) courses of practical lectures are held three or four times in the year, two lectures being given in each week.

A certificate signed by the staff is awarded after three months' attendance.

UNIVERSITY COLLEGE, LONDON.

Pathological Chemistry.—At University College, London, Dr. Vaughan Harley, Professor of Pathological Chemistry, holds classes in Pathological Chemistry intended for the advantage of qualified practitioners and advanced students. Each course is practical, and includes demonstrations and lectures on the principal points brought out by analysis in the diagnosis and prognosis of disease. Each member of the class is given the actual material to analyse, and from results obtained is required to make the diagnosis, which, is corrected if necessary. Thus each man not only does the ordinary class analysis, but he learns to apply his results to practice. Each course includes the analysis of the saliva, stomach contents, fæces, urine, calculi, and pathological fluids, and in the lectures the chemical changes which occur in disease are fully discussed and as far as possible explained. The laboratory is open from 9 A.M. to 5 P.M., so that the practical work can be done at the hours most convenient to those attending the class. The next class will commence in October, at a date to be fixed by mutual arrangement. The fee for the class, including apparatus and material, is £5 5s. A department is also fitted up for research work, and is open to all researchers at the fee of £1 1s. a month. Most excellent original research work has been and is being done in the laboratory, and in many instances the workers have received grants from the Scientific Grants Committee of the British Medical Association.

CHARING CROSS HOSPITAL, LONDON.

Post-Graduate Class and Lectures.—Special series of clinical lectures and practical demonstrations, exclusively arranged for the convenience of practitioners and post-graduate students, are given at the hospital throughout the year. The lectures for the year are arranged in three courses, each course consisting of ten meetings, and lasting ten weeks. Two of these courses are held during the winter and one during the summer. The class meets on each Thursday in the Board Room of the hospital, and the proceeds thence to the wards or to the department in which the demonstration may be held. The fee at present charged for each course of ten lectures is one guinea. The first of the two winter courses of the ensuing academical year will commence on October 11th next, and will be conducted by the following members of the medical and surgical staff: Drs. Green, Bruce, Eden, Willcocks, Murray, Galloway, and Messrs. Boyd, Waterhouse, Wallis, and Gibbs. Practitioners wishing to join the class can receive any further information as to the dates and subjects by communicating with the Honorary Secretary (Dr. Willcocks) at the hospital.

THE LONDON SCHOOL OF TROPICAL MEDICINE.

The Seamen's Hospital Society possesses two hospitals—the Dreadnought Hospital at Greenwich, 225 beds, and the Branch Hospital in the Royal Victoria and Albert Docks, E., 50 beds. It has also two Dispensaries—one in the East India Dock Road and the other at Gravesend, from which patients are transferred to the hospitals.

The School Buildings, Laboratories, Museum, Library, etc., are within the grounds of the Branch Hospital, Royal Victoria and Albert Dock Station, Connaught Road, Great Eastern Railway.

Opportunities are afforded to students and others who may be desirous of studying diseases incidental to Tropical Climates and also Practical Surgery before entering the services or going abroad. In the hospitals of the Society are to be found cases of Tropical Disease such as may be met with in actual practice in the tropics. There are three courses in the year, each lasting three months, the first course beginning on October 1st.

The Laboratory, Museum, Library, etc., are open daily, and

clinical instruction is given daily in the wards of the hospitals.

The Lecturers in the School are: Dr. P. Manson, F.R.S., Dr. Andrew Duncan, Dr. Oswald Baker, Dr. L. Westenra Sambon, Mr. Malcolm Morris, Dr. R. Tanner Hewlett, Mr. Jas. Cantlie, Mr. E. Treacher Collins, and Professor W. J. Simpson. The Medical Tutor is Mr. D. C. Rees.

Certificates are granted after examination to those who complete a full course.

Resident chambers are available for students, who must be qualified or in the fifth year of their medical studies.

Appointments.—There is a House-Physician and a House-Surgeon at the Dreadnought Hospital, Greenwich, and a Senior House-Surgeon and House-Surgeon at the Branch Hospital. The pay of these offices varies from £50 to £100.

Scholarships.—The Craggs Travelling Scholarship of £300 is in the gift of the school.

The Prospectus, Syllabus, and other particulars can be obtained on application to the Secretary, Mr. P. Michelli, Seamen's Hospital, Greenwich, S.E.

The Liverpool School of Tropical Medicine and Medical Parasitology.

This school has been established in conjunction with University College, Liverpool, and the Royal Southern Hospital. A special ward at the hospital has been set apart for the reception and treatment of Tropical Diseases, and all facilities for investigation and study are given in the Pathological Department of University College (Thompson-Yates Laboratories).

Major Ronald Ross, I.M.S., has been appointed Lecturer in Tropical Medicine and Consulting Physician to the hospital, and Dr. H. E. Annett and Dr. Fielding-Ould have been appointed Demonstrators.

West-End Hospital for Diseases of the Nervous System, London.

Clinical demonstrations of Diseases of the Nervous System are held at this hospital at 4 P.M. on each Tuesday afternoon throughout the winter session. Medical men are admitted on presentation of their visiting cards, but the fee for a course of three months is 1 guinea. Courses are sometimes held during the spring and autumn vacations. The demonstrations during the winter course are so arranged as to cover the main subjects of Neurology, and are designed for practitioners. Further particulars can be obtained from the Honorary Secretary, 73, Welbeck Street, W.

Cambridge.

Special arrangements for advanced study and research have been made recently in the University of Cambridge. Graduates of other Universities may be admitted to the University of Cambridge as advanced students. They may for one or more terms pursue courses of advance study or research, literary or scientific, under the direction of the University teachers, and may become members of certain colleges without fulfilling the same conditions as are imposed on junior students, their collegiate status being assimilated to that of students who have taken their first degree in the University. Advanced students may, if they wish, obtain a certificate certifying to their proficiency in research, or may proceed to the degree of B.A. or LL.B. under certain conditions. In their third or some subsequent term of residence they may become candidates for certain parts of the Tripos (Honour) Examinations, among others the Natural Science Tripos, Part II. Having satisfied the examiners, and after residence of six terms in all, they are admissible to the degree of B.A. or LL.B. The Certificate of Research may be obtained after residing for three terms (one academical year), and when the student has completed six terms' residence he is admissible to the degree of B.A. The facilities for advanced study and research offered by the University include the University Library and the Philosophical Library, while each of the seventeen Colleges possesses its own Library, as do also the respective Natural Science departments. The department of Zoology and Comparative Anatomy includes a museum of zoology and a laboratory for animal morphology and elementary biology. The department of Botany contains a comprehensive herbarium and a museum of specimens illustrating the morphology and life-history of plants. There are also laboratories and class-rooms fitted for experimental work, while the Botanic Garden contains a large and varied collection, with numerous plant houses and a botanic laboratory. The department of Human Anatomy contains a spacious dissecting room, a museum, osteological room, and a number of rooms for special study and research in anatomy, histology, and physical anthropology; upon the last-named subject a special course of lectures is given. The department of Physiology contains a number of rooms provided with electric light and motive power, and with abundant and complete appliances of all kinds for practical work. Special rooms are set apart for histology, chemical physiology and experimental inquiries, including psycho-physical researches. The department of Pathology is well equipped for the study of the processes and results of disease and for bacteriological teaching and investigation. There is also a museum containing a fine collection of specimens illustrative of morbid anatomy. The surgical portion is of special importance, and contains a large number of interesting specimens presented by the late Sir George Humphry. The Pharmacological Museum and Laboratory, at present lodged in Downing College, possesses a complete collection of the official materia medica and ample appliances for experimental and chemical research on the nature and uses of medicinal substances. Lectures on clinical medicine and surgery are given at Addenbrooke's Hospital by the staff. The department of Chemistry is very completely furnished, and several of the Colleges also possess chemical laboratories. Certain scholarships are open, including the John Lucas Walker Studentship for Pathology, the Balfour Studentship for Animal Morphology, and the Coutts Trotter Studentship (at Trinity College) for Physiology and Experimental Physics. Special arrangements for advanced students have been made already by King's College, Trinity College, St. John's College, Christ's College, and Emmanuel College. Further particulars may be obtained from the Registrary of the University, the Registry, Cambridge.[1]

Edinburgh.

Most of the post-graduate courses were given last year (1899) in July, and it is intended, provided due encouragement in numbers be given, that this shall be the arrangement in future. The following are the available courses, *those marked with an asterisk* are held frequently throughout the year:

1. *Anatomy: Medical and Surgical.*—A three weeks' course beginning in the last week of February and June, by Dr. Ryland Whitaker at Surgeon's Hall.

*2. *Practical Bacteriology.*—Three weeks' course daily at suitable times and hours by Dr. Shennan, at Surgeons' Hall.

*3. *Diseases of Chest.*—Short Courses at the Victoria Hospital for Consumption, and at the out-patient department of that hospital at 26, Lauriston Place, by Drs. R. W. Philip and G. L. Gulland.

*4. *Diseases of Children.*—A three weeks' course by the staff of the Children's Hospital.

*5. *Surgery in Children.*—Three weeks' course in the surgical wards and out-patient department of the Children's Hospital, by Mr. Stiles.

*6. *Diseases of Ear, Throat, and Nose.*—Three weeks' limited course by Dr. Hunter Mackenzie, at the Cambridge Street Infirmary, and a less limited course at the same place by Dr. Logan Turner.

7. *Electricity in Medicine and Surgery and Roentgen Rays.*—Four weeks' course by Dr. Dawson Turner, at Surgeons' Hall.

8. *Diseases of the Eye.*—A four weeks' course on common diseases and injury of the eye, and on eye operations, by Mr. George Berry, at the Royal Infirmary.

*9. *Opthalmoscopy.*—A three weeks' course (limited to 12) at the Eye Infirmary, 45, Lauriston Place, by Dr. George Mackay: a five weeks' course at 6, Cambridge Street, by Dr. W. G. Sym.

*10. *Diseases of the Skin.*—Three courses (each of 18 lectures) annually in the Royal Infirmary, beginning in October, January, and May, by Dr. W. Allan Jamieson; and three

[1] *A Guide for Advanced Students*, compiled by Dr. Donald [illegible], tutor of St. John's College, and University Lecturer in [illegible], has been printed by the Cambridge University Press, and can be obtained (price 6d. from any bookseller.

demonstrations, by Dr. Stewart Stirling, at 35, Lauriston Place.

*11. *Diseases of the Stomach.*—Three weeks' course on modern methods, by Dr. Lockhart Gillespie, at the new school.

*12. *Infectious Diseases.*—Six meetings at the City Hospital, limited to six members, by Dr. Claud B. Ker.

13. *Mental Diseases.*—Six meetings at Larbert Asylum.

*14. *Anatomy and Pathology of Central Nervous System.*—Six weeks' course at Surgeon's Hall, by Dr. Alexander Bruce.

15. *State Medicine, Sanitation, and Medical Police.*—Three weeks' course, by Dr. Harvey Littlejohn, 11, Stafford Street.

*16. *Clinical Surgery.*—Nine meetings at Leith Hospital at 9 A.M., by Mr. Miles.

*17. *Gynæcology.*—Twelve meetings, extending over three weeks, by Dr. Brewis, 23, Rutland Street.

The fee for No. 7 is 3 guineas; for Dr. Stirling's Skin Course, Infectious Diseases and Mental Diseases, the fee is 1 guinea; in all other cases the fee is 2 guineas. The Honorary Secretary is Dr. George Mackay, 20, Drumsheugh Gardens, from whom copies of the detailed syllabus can be had.

SPECIAL DEPARTMENTS.

At many of the special hospitals in London and at some of the general hospitals also, such as the West London, courses are given by the members of the staff specially arranged for post-graduate students. Some particulars as to the hospitals having such arrangements will be found under the head of Clinical Hospitals [pp. 501 *et seq.*] Details are usually published in the advertisement columns of the BRITISH MEDICAL JOURNAL from time to time. The facilities which exist for the practical study of diseases of the throat and ear are considerable. Special arrangements for the study of laryngology exist in London at St. Thomas's, Guy's, St. Mary's, Charing Cross, and the West London Hospital; for otology at the London Hospital and the Royal Ear Hospital; and for both subjects at the Golden Square Hospital, the London Throat Hospital, and the Central London Throat Hospital. In connection with Owens College, Manchester, a post-graduate course is held at the Ear Institute in June. Anderson's College, Glasgow, has special courses for ear diseases in November and May, and at the Aberdeen General Dispensary there is a course which extends from April to June. At many other hospitals clinical practice can be attended, and full particulars will be furnished by the Secretaries.

At many of these special hospitals, also, a certain number of appointments as clinical clerks or clinical assistants are available. No doubt these posts are mostly filled by senior students or newly-qualified men, but as the special hospitals are not connected with the schools, there is nothing to prevent senior men taking them up. The field is very large, and the opportunity for gaining technical knowledge is great, as the work is done in connection with, and under the eye of, a member of the staff. At the children's hospitals both at Great Ormond Street and at Shadwell, and also at the Evelina Hospital, appointments of this kind can be obtained.

PSYCHOLOGICAL MEDICINE.

THE facilities for the study of mental diseases are now vastly increased, and in addition to the regular lectures given in the different medical schools, post-graduate lectures are also given in the Bethlem Royal Hospital. The London County Council is proposing to throw open its large asylums, and contemplates applying to the Conjoint Medical Boards for the recognition of all of them as teaching hospitals. Dr. Savage at Guy's, and Dr. Rayner at St. Thomas's, have special classes, with clinical instruction, at Bethlem Royal Hospital; Professor E. W. White lectures at King's College, and gives clinical instruction at the City of London Asylum, near Dartford; Dr. Percy Smith is the Lecturer at Charing Cross, and gives clinical instruction at Bethlem; Dr. Claye Shaw at St. Bartholomew's; Dr. Mickle at Middlesex and University College; Dr. Hyslop at St. Mary's; Dr. C. Mercier at Westminster; Dr. J. K. Will at the London Hospital.

In the Provinces, also, each medical school has a Lecturer on Psychological Medicine, who gives clinical instruction in a neighbouring asylum; and in Scotland and Ireland similar arrangements exist.

The Royal University of Ireland grants a diploma for proficiency in the treatment of mental diseases under the following conditions:

The diploma is conferred only on Graduates in Medicine of the University.

Candidates must give notice, in writing, to the Secretaries of their intention to present themselves, and must pay the prescribed fee of £2 at least one month previous to the examination.

Candidates who satisfy the examiners will be required to pay a further fee of £3 before the diploma is conferred.

The subjects for this examination are those required for the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Diseases.

The Medico-Psychological Association of Great Britain and Ireland also grants a Certificate in Psychological Medicine after a course of training, according to the rules of the Association, to candidates registered under the medical Act The examinations are held in London, Scotland, and Ireland twice a year. The fee for the examination is £3 3s. Full particulars may be obtained from the General Secretary, Dr. R. Jones, Claybury Asylum, Woodford Bridge, Essex. The Medico-Psychological Association further gives a Bronze Medal and £10 10s. to Asylum Assistant Medical Officers for the best dissertation on any clinical or pathological subject relating to insanity, also the Gaskell Prize, value £30, and in 1899 it is expected the Hack Tuke Memorial Prize will be awarded for an essay on some subject connected with insanity.

DEGREES FOR PRACTITIONERS.

SINCE it was formerly the almost universal custom for medical students educated in London not to seek a University degree, and as that custom still prevails to a considerable extent, a very large proportion of medical men in actual practice in England possess diplomas to practise but not degrees in Medicine. The want of a degree and of the title of "Doctor" is often a subject of regret in after-life, and certain universities have issued special regulations under which the degree of M.D. is granted to practitioners of a certain standing under special conditions. The regulations of these universities are stated briefly in the following paragraphs. The University of Brussels also grants the degree of M D. to practitioners after examination, without restriction as to residence or curriculum; but this degree is not registrable on the *Medical Register* if obtained subsequently to June, 1886.

UNIVERSITY OF LONDON.

Registered medical practitioners of not less than three years' standing, and not less than 25 years of age, who shall pass, or have already passed, the Matriculation and Preliminary Scientific Examinations, may proceed to the Intermediate and M.B. Examinations without the intervals prescribed by the Regulations, on producing certificates that they have gone through the required course of training at any time previously (see p. 476).

UNIVERSITY OF DURHAM.

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice for that period, upon the following conditions without residence: the candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. If he have not passed previously to the professional examination in virtue of which his name was placed on the *Register* an examination in Arts, he is examined in classics and mathematics: if otherwise, he is required to translate into English passages from any one of the following Latin authors: Cæsar, *De Bello Gallico* (first three books), Virgil, *Æneid* (first three books), or Celsus (first three books).

Professional Examination.—The candidate must pass an examination in the following subjects: i. Principles and Practice of Medicine, including Psychological Medicine, Hygiene, and Therapeutics; ii. Principles and Practice of Surgery; iii. Midwifery and Diseases Peculiar to Women and Children; iv. Pathology, Medical and Surgical; v. Anatomy, Medical and Surgical; vi. Medical Jurisprudence and Toxicology. The examination is conducted by means of printed papers, clinically, in the Royal Infirmary, Newcastle, and *viva*

voce. The classical portion of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

Foreign and Colonial Practitioners.—Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India may produce evidence from an Indian university that they have passed within one year an examination in Latin and in Greek, Persian, or Sanskrit.

Fees.—The inclusive fee is fifty guineas; if a candidate fail to pass twenty guineas are retained, but if he present himself again forty guineas only are required.

Dates, etc.—The examinations are held twice a year, at the end of April and of September. Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Secretary of the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty-eight days before the commencement of the examination.

University of Brussels.

British practitioners of medicine holding medical and surgical qualifications are, in common with legally qualified practitioners in other countries, admissible without further curriculum to the examination for the degree of M.D. of the University of Brussels.

Examination.—The examination is divided into three parts. The "First Doctorate" includes Medicine, Pathology (with microscopical examination), Therapeutics, Mental Diseases, and Diseases of Women and Children. The "Second Doctorate" comprises Surgery, Midwifery, Hygiene, and Medical Jurisprudence. The "Third Doctorate" consists of clinical examination in Medicine and Surgery, examination in Midwifery with the *mannequin*, Ophthalmology, Operative Surgery (amputation, ligature of arteries in the dead subject), and Regional Anatomy with Dissections. Special importance is attached to practical knowledge. The examination is conducted in French through an official interpreter, but most of the examiners, it is stated, speak English fluently. The examination is *viva voce*, but a written examination may be obtained on paying a special fee of £1 for each part.

Dates.—The examinations take place on the first Tuesday in November, December, February, May, and June. It is desirable that the candidate should arrive in Brussels on the previous Saturday before 2 P.M. at latest. The whole examination (First, Second, and Third Doctorate) may be got through in about a week, and seldom exceeds eight to ten days.

Fees.—Candidates are required to leave their diplomas with the Registrar of the University prior to the examination. The fees are: For inscription of name, £8 12s.; for examination, £13; for legalisation of diploma, 8s.; total, £22. If a candidate fail in the first part of the examination the fees for the second and third are returned to him; if in the second, the fees for the third. A rejected candidate may present himself again in three months on paying the examination fees, provided his second appearance be in the same academic year (October 1st to June 30th); otherwise the matriculation fee must be renewed, that is, the fee for inscription of name.

Further particulars may be obtained from Dr. Major Greenwood, Hon. Sec. Brussels Medical Graduates' Association, 243, Hackney Road, London, N.E. An article containing a full description of everything concerning the degree was published in the British Medical Journal on September 15th, 1888.

A mutual aid society for medical practitioners and their families has been organised in Philadelphia. It has accumulated about 25,000 dollars (£5 000).

Hospitals for American Troops in China.—The American Government appears to be making liberal provision for the care of the sick with troops in China. In addition to other arrangements plans are being matured for a general hospital at Nagasaki, Japan, while Colonel J. V. R. Hoff, who was recently relieved from duty as chief surgeon in Puerto Rico, is to establish a hospital of 1,000 beds at some point in China not as yet definitely selected. Every possible precaution to anticipate any unusual strain upon the hospital facilities is being taken.

PUBLIC HEALTH OR STATE MEDICINE.

A medical officer of health of any county, or of any single or combined district with a population at the last census of 50,000 or more, or of any metropolitan district, or the deputy of any such officer, must be legally qualified for the practice of Medicine, Surgery, and Midwifery, and also either be registered in the *Medical Register* as the holder of a diploma in Sanitary Science, Public Health, or State Medicine, under Section xxi of the Medical Act, 1886, or have been, during three consecutive years preceding the year 1892, a medical officer of a district or combination of districts in London or elsewhere with a population, according to the last published census, of not less than 20,000, or have, before the passing of the Local Government Act, 1888, been for not less than three years a medical officer or inspector of the Local Government Board.

The following regulations for candidates for diplomas in Public Health have been laid down by the General Medical Council. These regulations are designed to ensure "the possession of a distinctly high proficiency, scientific and practical, in all the branches of study which concern the Public Health."

(1) A period of not less than twelve months shall elapse between the attainment of a registrable qualification in Medicine, Surgery, and Midwifery, and the admission of the candidate to any examination or any part thereof for a Diploma in Sanitary Science, Public Health, or State Medicine.

(2) Every candidate shall have produced evidence of having after obtaining a registrable qualification, attended during six months practical instruction in a laboratory or laboratories, British or foreign, approved of by the body granting the diploma, in which chemistry, bacteriology, and the pathology of the diseases of animals transmissible to man are taught.

(3) Every candidate shall have produced evidence that, during a period of six months after obtaining a registrable qualification, he has practically studied the duties of outdoor sanitary work, (*a*) in England and Wales, either under the medical officer of health of a county or of a single sanitary district having at the date of the last census a population of not less than 50,000 or the medical officer of health of a combination of two or more sanitary districts having collectively at the date of the last census a population of not less than 25,000; or (*b*) in Scotland or Ireland, under the medical officer of health of a county or of one or more sanitary districts having at the date of the last census a population of not less than 30,000; or (*c*) under a medical officer of health who is a teacher in the Department of Public Health of a recognised medical school. The certificate of an assistant officer of health of a county or a large urban district may be accepted, provided the medical officer of health of the county or district consents to the assistant officer giving such instruction.

*** Any candidate who shall produce evidence that he has himself held an appointment of medical officer of health under conditions not requiring the possession of a special sanitary diploma shall be exempt from this regulation.

(4) Every candidate shall have produced evidence that he has attended the clinical practice of a hospital for infectious diseases recognised by one of the licensing bodies; provided that such a course of instruction may have been taken as part of the curriculum for his registrable qualification in Medicine, Surgery, and Midwifery.

(5) The examination shall have been conducted by examiners specially qualified; it shall have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health.

*** The rules as to study shall not apply to medical practitioners registered, or entitled to be registered, on or before January 1st, 1800.

The examinations for diplomas in Public Health, granted by the various Universities and Medical Corporations, and the courses of study required, are adapted to meet the regulations of the General Medical Council, and, as a rule, to fulfil the recommendations issued by that body from time to time.

Books.

It is impossible to indicate all the books which may be consulted with advantage by candidates for the various examinations, but the following list of books includes those which are most generally read:

Whitelegge's *Hygiene and Public Health* (London: Cassell and Co., 7s. 6d.); Louis Parkes's *Hygiene and Public Health* (London: H. K. Lewis, 10s. 6d.); Wilson's *Handbook of Hygiene* (London: J. and A. Churchill, 12s. 6d.); *The Theory and Practice of Hygiene*, by Notter and Firth (London: J. and A. Churchill, 24s.); Stevenson and Murphy's *Treatise on Hygiene and Public Health*, 3 vols., for reference on special subjects (London: J. and A. Churchill, 80s.); Wynter Blyth's *Manual of Public Health* (London: Macmillan and Co., 1890, 17s.); Smith's *Laboratory Textbook of Public Health* (London: Henry Renshaw, 1896, 21s.); Kenwood's *Public Health* [illegible] (London: H. K. Lewis, 10s. 6d.); Wanklyn's *Water, Air, and Food Analysis*, four separate manuals (London: Kegan Paul, Trench, Trübner and Co., 4s. each); Fox's *Sanitary Examination of Water, Air, and Food* (London: J. and A. Churchill, 1886, 12s. 6d.); Woodhead's [illegible] *Products* (London: W. Scott, 2s. 6d.); Kanthack and [illegible]

Bacteriology (London: Macmillan and Co., 4s. 6d.); Muir and Ritchie's *Manual of Bacteriology* (London: Young J. Pentland, 12s. 6d.); Klein's *Micro-organisms and Disease* (London: Macmillan and Co., 1896, 10s. 6d.); Crookshank's *Manual of Bacteriology* (London: H. K. Lewis, 1896, 21s.); Daniell's *Textbook of the Principles of Physics* (London: Macmillan and Co., 1896, 4s. 6d.); Balfour Stewart's *Elementary Physics* (Oxford: Clarendon Press, 7s. 6d.); Newsholme's *Vital Statistics* (London: Swan Sonnenschein and Co., 1889, 7s. 6d.); McVail's *Vaccination Vindicated* (London: Cassell and Co., 1887, 5s.); J. W. Moore's *Meteorology: Practical and Applied* (Rebman and Co., 8s.); Scott's *Meteorology* (London: Kegan Paul, Trench, Trübner, and Co.); Statton's *Public Health Acts* (London: Knight and Co., 7s. 6d.); Knight's *Annotated Model By-laws* (London: Knight and Co., 12s.); Corfield's *Dwelling Houses: Their Sanitary Construction and Arrangements* (London: H. K. Lewis, 1894, 4s. 6d.)

It is also desirable to consult the text of the *Public Health Act, 1875*, or the *Public Health (London) Act, 1891*, the *Canal Boats Act*, the *Factory Acts*, the *Food and Drugs Acts*, several *Special Reports of the Local Government Board*, etc. (London: Eyre and Spottiswoode).

UNIVERSITY OF CAMBRIDGE.

A diploma in Public Health is granted by the University, and any person whose name is on the *Medical Register* may apply to be examined, provided that he can show that he has complied with the regulations laid down by the General Medical Council (see p. 511).

The examination, which is usually held twice a year, during parts of two successive weeks, and beginning on the first Tuesday in April and October respectively, is divided into two parts. A fee of £6 6s. must be paid before admission to either part.

The First Part will comprise Physics and Chemistry; the principles of chemistry and methods of analysis, with especial reference to analyses of air, water, and food; applications of the microscope, including the investigation of micro-organisms; the laws of heat, and the principles of pneumatics, hydrostatics, and hydraulics, with especial reference to ventilation, water supply, drainage, construction of dwellings, disposal of sewage and refuse, and sanitary engineering in general; meteorology in relation to health; sources of water supply; statistical methods in their application to public health.

The Second Part will comprise Laws and Statutes relating to public health; origin, propagation, pathology, and prevention of epidemic and infectious diseases, including those diseases of animals that are transmissible to man; effects of overcrowding, vitiated air, impure water, and bad or insufficient food; unhealthy occupations and the diseases to which they give rise; water supply and drainage in reference to health; nuisances injurious to health; distribution of diseases within the United Kingdom, and effects of soil, season, and climate.

The above schedule is not to be understood as limiting the scope of the examination, which will include every branch of Sanitary Science. No candidate will be approved by the Examiners who does not show a high proficiency in all the branches of study, scientific and practical, which concern the Public Health. The examination in both parts will be oral and practical as well as in writing. One day at least will be devoted to practical laboratory work, and one day to oral and practical examination in, and reporting on, subjects connected with outdoor sanitary work.

Applications for further information should be addressed to the Registrary, University Registry, Cambridge. Dr. Anningson, Walt-ham-sal, Cambridge, will supply particulars as to the course of instruction provided in the University.

A list of Colleges and Schools of Medicine at which the courses of laboratory instruction have, for the purposes of this examination, been already approved by the syndicate, can be obtained on application.

UNIVERSITY OF OXFORD.

A diploma in Public Health is granted after an examination held annually in Michaelmas Term. The examination begins November 22nd, and is conducted in two divisions: (1) First Division: The application of Chemistry and Physics to General Hygiene. (2) Second Division: (*a*) General Pathology, with special relation to Infectious Diseases; (*b*) Laws relating to Public Health; (*c*) Sanitary Engineering; (*d*) Vital Statistics. It is permissible to take the two divisions at the same or at different examinations. Candidates must comply with the regulations of the General Medical Council (see p. 511). The First Division may be passed at any time after registration, provided that the candidate has spent six months studying in a public-health laboratory approved by the Board of the Faculty of Medicine. The Second Division may not be taken until one year after registration, and candidates must have studied for six months under a Medical Officer of Health of a district containing at least 50,000 inhabitants unless they have themselves held the position of Medical Officer of Health to any County or Urban District of more than 20,000 inhabitants. Fee for each division, £5. Names to be sent to the Secretary to the Boards of Faculties not later than November 8th.

UNIVERSITY OF LONDON.

The university does not grant a Diploma in Public Health, but Sanitary Science is made a branch of the M.D. Examination, which is open to persons holding the degree of M.B.Lond. (see page 476).

VICTORIA UNIVERSITY.

A Diploma in Public Health is granted after an examination, which begins about the middle of July in each year. The candidate must fulfil the requirements laid down by the General Medical Council. The examination is divided into two parts; the subjects so nearly coincide with those of the University of Cambridge that it is unnecessary to reproduce them. Special mention is, however, made of the use of meteorological instruments, of the diseases of animals in relation to the health of man, and of "Sanitary Reporting," every candidate being expected to visit and report upon the sanitary condition of some actual locality assigned to him by the examiners.

Each part of the examination occupies two days, and the fee for each part is £5 5s. Application for admission to the examination must be made to the Registrar of the Victoria University, Manchester, not later than July 1st, and the fee must be paid on or before July 1st.

UNIVERSITY OF BIRMINGHAM.

The University grants the degree of B.Sc. in Public Health, and also a diploma in the same subject on the following conditions: Graduates in Medicine of this University may become candidates for the degree of Bachelor of Science in Public Health by conforming to all the requirements laid down for candidates for the Diploma in Public Health, except that after graduating in Medicine all courses of study must be taken out in the University, and they must, in addition, have attended a three months' course of Geology in the University.

The following are the regulations for the Diploma in Public Health:

General Conditions.—(1) All candidates must be registered under the Medical Act. (2) The examinations will be held in the months of January and July, and will consist of two parts. No candidate will be admitted to Part II until he has passed Part I. (3) Candidates may enter for Parts I and II separately or at the same time. (4) The examination in each part will be written, oral, and practical. (5) Candidates intending to present themselves for either part of the examination must give fourteen days' notice in writing to the Registrar of the University. (6) The fee for each part of the examination is £5.

Conditions of Admission to the Examinations.—(1) Candidates registered under the Medical Act on or *before* January 1st, 1890, will be allowed to sit for examination on producing certificate of registration. (2) Candidates registered under the Medical Act *after* January 1st, 1890, will be admitted to examination in Part I on producing evidence: (*a*) Of being at least 23 years of age, and of having been possessed of a registrable qualification in Medicine, Surgery, and Midwifery for a period of twelve months. (*b*) Of having attended, after obtaining such registrable qualification, a six months' practical course of Hygienic Chemistry in a laboratory recognised by the University. (*c*) Of having attended a course of Bacteriology. Candidates will be admitted to Part II of the examination on producing evidence: (*a*) Of being at least 24 years of age. (*b*) Of having, during a period of six months after obtaining a registrable qualification, practically studied outdoor sanitary work, under the medical officer of health of a county or large urban district with a population of at least 50,000, or under the medical officer of health of two or more combined districts with a similar population, or else held appointment as medical officer of health under conditions not requiring the possession of a diploma in Public Health. (*c*) Of having attended the practice of a hospital for infectious diseases, recognised by the University, either before or after obtaining his registrable qualification.

Conjoint Board in England.

The diploma in Public Health of the Royal College of Physicians of London and the Royal College of Surgeons of England is granted to persons whose names are on the *Medical Register*, or who are entitled to register. The examination is held in two parts, and Part I may be passed before fulfilling Clauses 1 and 2 under Part II. The subjects of the two parts of the examination are as follows:

Part I.—The first part of the Examination will have reference to the General Principles of Sanitary Science, and will comprise the following subjects: The elements of Chemistry, Physics, and Geology. Methods of examination of water and air for hygienic purposes, including a knowledge of analytical methods and the interpretation of results. The chemical composition of foods, and the usual forms of adulteration. The laws of heat and the elements of pneumatics, hyrostatics, and hydraulics, in their relation to warming, ventilation, water supply, and drainage. Principles of building construction in their application to dwellings, hospitals, and schools, etc. Meteorology in relation to health; meteorological instruments, their construction and use. The general principles of sanitary engineering, including the disposal of sewage and refuse. The reading and interpretation of geological and ordnance survey maps. The microscopical examination of foods and the detection thereby of the common forms of adulteration. The methods of bacteriological analysis, and the bacteriology of water, air, food, and soil. Disinfectants, their chemical and bacteriological efficacy and use. The general pathology of infection, and the diseases of animals that are transmissible to man. Nature of immunity and protection from infectious disease.

Part II.—The second part of the Examination will have reference to the application of the Principles of Sanitary Science, and will comprise the following subjects: Laws and statutes relating to Public Health, including the model by-laws of the Local Government Board. General Epidemiology with reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of epidemic, endemic, and other diseases at home and abroad. Unwholesome trades and the diseases to which they give rise, and the prevention of nuisances arising therefrom. Nature and origin of parasitic diseases. Nuisances injurious or dangerous to health. Causes and conditions which produce climate, general effects of climate, acclimatisation. Effects on health of overcrowding, vitiated air, impure water, polluted soil, and bad or insufficient food. Duties of sanitary authorities and their officers. Vital Statistics: Calculation of population, birth-rate, marriage-rate, and death-rate; mortality from zymotic diseases; sickness rates; relation between occupation and mortality; life tables, their construction and interpretation; the value of statistical facts, averages, and methods.

A candidate will be admissible to examination in Part I on producing evidence: (1) Of having been in possession of a registrable qualification in Medicine, Surgery, and Midwifery for at least 12 months. (2) Of having attended, after obtaining such registrable qualification, practical instruction in a Laboratory recognised by the Examining Board in England during a period of six months. (3) Of being at least 23 years of age. A candidate will be admitted to Part II of the examination on producing evidence: (1) Of having, during a period of six months after obtaining a registrable qualification, either practically studied the duties of outdoor sanitary work under the medical officer of health of a county or large urban district, or else held appointment as Medical Officer of Health under conditions not requiring the possession of a special Sanitary diploma. (2) Of having attended the clinical practice of a hospital for infectious diseases recognised by the Examining Board in England, either before or after obtaining his registrable qualification in Medicine, Surgery, and Midwifery.[1] (3) Of being at least 24 years of age.

The following laboratories are recognised:

London.—St. Bartholomew's, Guy's, London, University College, King's College, Charing Cross, St. George's, St. Mary's, Westminster, St. Thomas's, Middlesex, Jenner Institute of Preventive Medicine.
Birmingham.—Mason College.
Brighton.—Technical School.
Bristol.—Medical School.
Cardiff.—University College.
Leeds.—Yorkshire College.
Liverpool.—School of Science and Technology; University College.
Manchester.—Owens College.
Newcastle-on-Tyne.—University of Durham College of Medicine.
Sheffield.—University College.

The two parts may be passed separately or at the same time. The fee for each is £5 5s., and must be paid three days before the examination commences. Fourteen days' notice must be given to the Secretary at the Examination Hall, Victoria Embankment, from whom further particulars and the dates of the examinations (which are held in the months of January and July) may be obtained.

[1] This certificate is not required in the case of a candidate who produces evidence that he has commenced special study in Sanitary Science before January 1st, 1894.

University of Durham.

The University grants a Diploma in Public Health (D.P.H.) and the degree of Bachelor in Hygiene (B.Hy.) and Doctor in Hygiene (D.Hy.).

Degree of Bachelor in Hygiene (B Hy.).—The Candidate must be a Registered Medical Practitioner and a Graduate in Medicine of a recognised University. He must not be less than 22 years of age. A period of at least twelve months must have elapsed after the date when the Candidate obtained his first registrable qualification in Medicine, Surgery, and Midwifery before he presents himself for examination. He must have spent six months of professional study subsequent to the attainment of a first registrable qualification in Medicine, Surgery, and Midwifery, in attendance at the University of Durham Colleges, in Newcastle-upon-Tyne, in the following manner:—(*a*) Three months' course of lectures on Comparative Pathology with practical work in the Bacteriological Laboratory. (*b*) Three months' practical instruction in a Chemical and Physical Laboratory. This course must not be concurrent with the three months' course of lectures on Comparative Pathology with practical work in the Bacteriological Laboratory. *Outdoor Sanitary Work.*—(*c*) Six months' practical study of outdoor Sanitary Work, under a Medical Officer of Health, as required by the General Medical Council (see p. 511). Regulation (*c*) can be omitted in the case of a practitioner who has himself held an appointment as a Medical Officer of Health under conditions not requiring the possession of a sanitary diploma under the Local Government (England and Wales) Act, 1888. *Hospital for Infectious Diseases.*—(*d*) Three months' attendance on the Clinical Practice and Instruction of a Hospital for Infectious Diseases recognised by one of the licensing bodies. (*e*) Course of lectures on Public Health. Regulations (*d*) and (*e*) can be omitted in the case of a candidate who has already attended the courses before obtaining a registrable qualification. The candidate shall be required to pass an examination in the following subjects:—Sanitary Chemistry.—The Examination of Air for Sanitary Purposes; Detection of Noxious Gases and Atmospheric Impurities. Water for Sanitary Purposes; Detection of Metals in Water; the Action of Water on Metals. Milk and Food; Practical Examination in Chemistry as applied to Public Health. Physics.—The Principles of Physics in their Application to Warming, Ventilation, Water Supply, and Drainage; the Elements of Meteorology and the use of Meteorological instruments; *viva voce* examination in Chemistry and Physics. Comparative Pathology, etc.—Knowledge of the Comparative Pathology; Methods of Propagation and Prevention of Microbic and Parasitic Diseases Intertransmissible between Man and the Lower Animals; Morphology of Microbes and Animal Parasites; Methods of Microscopical Examination and Artificial Cultivation of Micro-organisms. The Bacteriological Examination of Water, Air, and Earth; the special Characteristics, Life History, Properties, and Natural and Artificial Modes of Inoculation of Pathogenic Micro-organisms and Animal Parasites. Practical Examination.—The candidate will be expected to show a practical acquaintance with the usual methods of Bacteriological examination, and to be able to recognise specimens of Animal Parasites and Pathogenic Bacteria; there will also be a *viva voce* examination in the above subjects. Sanitary Legislation.—Knowledge of the following Statutes and By-laws, namely, The Public Health Act, 1875; Rivers Pollution Prevention Act, 1876; The Public Health (Water) Act, 1878; The Infectious Diseases (Notification) Act, 1889; The Local Government Act, 1888; The Infectious Diseases (Prevention) Act, 1890; The Housing of the Working Classes Act, 1890; The Public Health Acts (Amendment) Act, 1890; The Model By-Laws of the Local Government Board relating to Cleansing, the Pre-

vention of Nuisances, New Streets and Buildings, Slaughter-houses, Common Lodging-houses, Houses Let in Lodgings, Offensive Trades. Most of the above-mentioned Statutes will be found in Knight and Co.'s *Public Health Acts* (latest edition), and the By-laws in the work under that title by the same publishers. Vital Statistics.—Rates of Birth, Death, and Marriage; Methods of Calculation, Classification, and Tabulation of Returns of Sickness and Mortality; Data required and Conclusions deducible therefrom. Nosology.—Definition, Nomenclature, and Classification of Diseases. Climatology, Meteorology, Geographical Distribution of Health and Disease over the Globe, and in different Urban and Rural Districts of the United Kingdom. Sanitary Medicine, in relation to the Origin, Propagation, Pathology, and Prevention of Epidemic, Endemic, Epizoötic, and other Communicable Diseases; Diseases attributable to Heat, Cold, or Dampness, Insufficiency or Impurity of Air, Food, or Drink; Parasitic and other Diseases affecting the Food and Drink of Man; Diseases due to Habitation in Cities, Towns, Villages, and separate Houses; Occupation and Trade Operations in relation to the Health of the Workers; Overwork, Intemperance, Heredity; Preventive Measures, Vaccination, Isolation, Disinfection; the Regulation of Noxious and Offensive Manufactures and Trades; the Removal of Nuisances. Practical Hygiene in reference to Sanitary Appliances, the Site, Materials, Construction, Capacity, Lighting, Ventilation, Warming, Dryness, Water Supply, Drainage, and Refuse Disposal, of Houses, Schools, Hospitals, Artisans' Dwellings, Workshops and Work-places, and other buildings of Public or Private Resort; the Construction of Dairies, Abattoirs, and Disinfecting Stations; Action with respect to Nuisances, and Outbreaks of Disease; the Examination of Butchers' Meat and other Food; the Preparation of Sanitary Reports, and other duties of a Medical Officer of Health. The candidate will also be required: (*a*) To pass an examination on medical clinical cases at the City Hospital for Infectious Diseases, or elsewhere. (*b*) To draw up outlines for annual or other reports of a medical officer of health. (*c*) To report upon the condition of some actual locality. (*d*) To describe the construction and use of Hygienic Apparatus, and Sanitary Appliances. (*e*) To examine submitted specimens with the Microscope. (*f*) To describe submitted specimens of Diseased Organs and Tissues (Human and other). (*g*) To inspect and describe specimens of Meat or other articles of food. The candidate will also be examined *viva voce*. Candidates may present themselves for either part of the examination, separately or both together, at their option. Every candidate wishing to present himself for examination for the degree of Bachelor in Hygiene must give at least 28 days' notice to Professor Howden, Secretary of the College, and must, at the same time, send the examination fee and the necessary certificates. The fee for the examination for the degree of B.Hy. is 10 guineas, and for the degree itself 6 guineas. Holders of the Licence in Sanitary Science of the University of Durham, prior to January, 1892, who are graduates in Medicine of the University of Durham, are entitled to admission to the examination for the Degree of Bachelor in Hygiene without residence.

Degree of Doctor in Hygiene (*D.Hy.*).—The candidate must be a Bachelor in Hygiene. The candidate must have been engaged for two years subsequent to the date of his acquirement of the Degree of Bachelor in Hygiene, in practice, as a medical officer of health. The candidate must write an Essay upon some practical Hygienic subject, selected by himself and approved by the Lecturer on Public Health, and shall be examined thereon, and upon questions relative to the subject of the Essay. The Essay should not exceed twenty pages in length. The Essays must be forwarded to the Lecturer on Public Health one month before the date of the Examination, and will be retained by the Faculty of Medicine. If the Essay of any candidate is not of sufficient merit, notice of the fact will be sent to the candidate, who will not be required to attend for examination. The fee for the examination for the degree of D.Hy. is £5, and for the degree £6 6s.

Diploma in Public Health (*D.P.H.*).—The regulations for Education and Examination for the Diploma of Public Health (D.P.H.) are the same as those for the Degree of Bachelor in Hygiene on p. 513, with the following exceptions, namely: (1) That the candidate is not required to be a Graduate in Medicine of a recognised University; (2) the course of study for the D.P.H. need not be spent at Newcastle-on-Tyne.

Diploma in Public Health for Medical Practitioners.—The following are the regulations for the Diploma in Public Health for Medical Practitioners, registered, or entitled to be registered, on or before January 1st, 1890. The candidate must be a Medical Practitioner, registered, or entitled to be registered, on or before January 1st, 1890. The candidate will be required to pass the same Examination as that for the ordinary Diploma in Public Health. Every candidate wishing to present himself for the Examination must give at least twenty-eight days' notice to Professor Howden, Secretary of the College, and must, at the same time, send the examination fee and the necessary certificates. The fee for the examination and diploma is 10 guineas.

University of Aberdeen.

The University grants a diploma in Public Health. Candidates for the diploma must have graduated in Medicine in the University, or in a University in the United Kingdom, one year before they received the diploma; and they must produce evidence of (1) having complied with the regulations of the General Medical Council (see p. 511); (2) of having attended a fever hospital, containing no fewer than 50 beds, for six months; (3) if not a graduate in Medicine of Aberdeen University, of having attended a course in the University in one or more of the subjects embraced in the examination for the diploma. The examination consists of two parts: Part I (*a*) Physics, Engineering, and Meteorology; (*b*) Chemistry, Microscopy, and Bacteriology. Part II (*a*) General Hygiene; (*b*) Sanitary Law and Vital Statistics. The examination (which is written and oral) is held in March and July, and notice must be given to the Secretary of the Medical Faculty two weeks before. A detailed synopsis can be obtained from the Dean of the Medical Faculty, or will be found in the University *Calendar* for 1900-1901. The fee, which must be paid at the time of giving notice, is £5 5s. The fee for re-examination, £1 1s.

University of Edinburgh.

This University confers two degrees in science in the department of Public Health, namely, Bachelor of Science (B.Sc.) and Doctor of Science (D.Sc.).

Bachelor of Science.—Two examinations must be passed, and the candidate must produce evidence of having complied with the regulations of the General Medical Council (see p. 511), and have taken a degree in Medicine in the University of Edinburgh or in a university recognised by it. The subjects of the First Examination are: (1) Laboratory work, practical, written, and oral; (2) Elements of Experimental Physics; (3) Geology, written and oral. The second examination cannot be taken sooner than six months after the first. The candidate must have attended a course of lectures (50 at least) in the University of Edinburgh, or in a university recognised by the Court. The subjects of the Second Examination are: (1) Sanitation; (2) Sanitary Law; (3) Vital Statistics; (4) Medicine in its bearings on Public Health; and the examinations in these subjects are taken at one time. (A detailed syllabus is given in the *Calendar*, pp. 250-254.) The examinations are held in March and July. The fee for each examination is £3 3s. Further particulars may be obtained on application to the Dean of the Faculty of science at the University Matriculation Office, where the schedules for examination are issued and the certificates of candidates examined.

Doctor of Science.—Bachelors of Science in the Department of Public Health may, after the lapse of five years, proceed to the degree of Doctor in the same Department on presenting a Thesis on some subject in the Department of Public Health, or a published memoir of works, and are required to pass an examination in Public Health, and in such of its special departments as may from time to time be determined. (Candidates for D.Sc. in Public Health may appear for examination in any one of the departments of knowledge required for the degree of B.Sc. in Public Health. They are required to submit the subject in which they propose to be examined for approval at least two months before the date of the examination). Every such Thesis must be certified by the candidate to have been composed by himself, and must be

approved by the examiners. The Thesis must be lodged with the Dean of the Faculty of Science on or before December 1st, and the subject of examination must be submitted before January 20th. The examination will take place about the end of March. The fee is £10 10s.

University of St. Andrews.

This University grants a Diploma in Public Health. Candidates must have been in possession of a Medical Degree of this University or of a University of the United Kingdom for at least twelve months previous to admittance to examination. There are two examinations: first, in Chemistry, Physics, Bacteriology, and Meteorology; secondly, in Sanitation, Sanitary Law, Vital Statistics, Epidemiology and Endemiology and Pathology of Infectious Diseases. Fee for each examination, £5 5s.

Further information will be given by the Dean of the Faculty of Medicine, University College, Dundee, or will be found in the *University Calendar* for 1900-1901, published by William Blackwood and Sons, 45, George Street, Edinburgh, price 2s. 6d., or post free 2s. 11d.

The Conjoint Board of Scotland.

The Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow will grant a conjoint diploma in Public Health, after examination by a Board on which these bodies are represented. Candidates qualified before 1890 will be admitted without evidence of special instruction (though even in their case such instruction is strongly recommended). Registered medical practitioners who have for a period of three years held the position of medical officer of health to any county or urban district of more than 20,000 inhabitants, or any entire rural sanitary district, are also exempt from courses of special instruction. Other candidates must produce evidence of attendance (subsequent to obtaining a registrable qualification) for six months at a Public Health Laboratory, and for six months under a Medical Officer of Health of a county or of a large urban district. There are two examinations, and candidates may present themselves for both of them at one period, or for either examination separately. The First Examination embraces the following subjects in their relation to Public Health: Chemistry, Laboratory Work, Physics, and Meteorology. The Second Examination includes: (*a*) Report on premises visited; (*b*) examination at fever hospital; (*c*) examination at public abattoir; (*d*) epidemiology and endemiology; (*e*) vital statistics and sanitary law; (*f*) practical sanitation. The various subjects of both examinations are detached and limited by synopses given. The laboratory work embraces not only Chemical Analyses, but also Microscopical Examination, Bacteriology, Parasites, etc. At the Second Examination each candidate is required to submit a report on the sanitary condition of premises to which he may be sent for the purpose, and is examined on the Acts of Parliament included under "Sanitary Law." The fee is £10 10s., or £5 5s. in respect of each examination; and candidates referred are readmitted on the fee of £3 3s. in respect of each examination. The examination is held in Edinburgh or in Glasgow, there being two periods of examination yearly—October and May. Application for examination in Edinburgh to be sent to Mr. James Robertson, 48, George Square, Edinburgh; and in Glasgow to Mr. Alexander Duncan, LL.D., 242, St. Vincent Street, Glasgow, not later than 14 days before the examination day. The regulations and synopsis of subjects will be found at page 229 of the 1899-1900 edition of the *Medical School Calendar for Scotland*, published by E. and S. Livingstone, 15, Teviot Place, Edinburgh, price 2s., post free 2s. 3d.

University of Dublin.

The diploma in State Medicine is conferred after examination upon M.D.'s or graduates in Medicine and Surgery of Dublin, Oxford, or Cambridge. The name of the candidate must have been on the *Medical Register* at least twelve months before the examination, and, subsequently to registration, the candidate must have completed six months' practical instruction in a laboratory approved by the University, and have studied practical outdoor sanitary work for six months, under an approved officer of health. [This condition does not apply to candidates registered or entitled to be registered on or before January 1st, 1890.] The examination is held in December, and candidates are required to send in their names at least a week before the first day of the examination to the Registrar of the School of Physic, from whom a full syllabus of the examination can be obtained. Candidates who have registered since January 1st, 1890, are required to make application for permission to present themselves for examination to the Board of Trinity College, submitting at the same time certificates of the required courses of study. The subjects of examination are: State Medicine and Hygiene (paper); Chemistry (paper and laboratory); Physics and Meteorology (oral); Engineering (paper); Sanitary Engineering (practical); Morbid Anatomy (oral); Vital Statistics (paper); Medical Jurisprudence (oral); Law (paper); Epidemiology and the Work and Duties of a Public Officer of Health.

Further particulars can be obtained on application to the Registrar of the School of Physic, Dublin.

Royal University of Ireland.

The University grants a diploma in Sanitary Science, but only to graduates in Medicine of the University. The fee is £2. Further particulars will be found in the *Calendar*.

Conjoint Examining Board in Ireland of the Royal College of Physicians and the Royal College of Surgeons.

A diploma in State Medicine is granted by these two Colleges after an examination conducted by them jointly. candidates are required to comply with the regulations of the General Medical Council (see page 511). The regulations as to study do not apply to practitioners registered or entitled to be registered on or before January 1st, 1890. The examination comprises the following subjects: State Medicine and Hygiene, Chemistry (including Chemical Physics), Meteorology and Climatology, Engineering, Vital Statistics, Law, and Bacteriology. In addition to written papers, the candidates will be examined orally in Hygiene, and practically in the reading of plans, sections, and scales, as well as in Analytical Chemistry, with special reference to air, water, and food, including the use of the Microscope, and in Bacteriology. They will also be required to read meteorological instruments, and to explain their construction; and they may be called upon to make a practical Sanitary Report.

The candidate must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College of Physicians, 6, Kildare Street, Dublin, three weeks before the examination, and lodge with him a testimonial of character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh. If he has been registered subsequent to January 1st, 1890, he must lodge, in addition, a schedule, setting forth that he has attended the necessary courses of instruction as laid down in the Regulations.

The examination is divided into two parts, which may be passed either together or separately, but no candidate can present himself for Part II who fails to satisfy the examiners in Part I. The examination occupies four days.

The fee for examination is £10 10s., for re-examination £5 5s.; the examinations begin on the first Tuesday of the months of February, May, and November.

A Special Examination for the diploma can be obtained on payment of £10 10s., in addition to the ordinary fees mentioned above—except during the months of August and September—and on giving notice at least one fortnight before the date of the proposed examination.

Detailed Regulations and Schedules can be obtained from the Secretary.

Instruction and Laboratory Classes.

Courses of lectures and laboratory instruction to suit the requirements of candidates for diplomas in Public Health have been organised at the following Schools, and could probably be arranged for at most of the other schools and colleges (see also p. 513). The chemical and bacteriological examinations for many of the health diplomas are now so practical, and the time allowed so short, that unless a candidate—even though familiar with the duties of an M.O.H.—has a certain amount of the manipulative dexterity only to be

acquired by work in a laboratory, he would not be likely to satisfy the examiners.

LONDON.

St. Bartholomew's Hospital.—Inclusive fee, 20 guineas.
Charing Cross Hospital.—Inclusive fee, 20 guineas.
St. George's Hospital.—Inclusive fee, 20 guineas; for candidates registered before January 1st, 1800, 12 guineas.
Guy's Hospital.—Inclusive fee for six months' course of Laboratory Instruction and Lectures, 20 guineas.
King's College.—Inclusive fee, 20 guineas.
London Hospital.—Inclusive fee, 20 guineas; three months' course, 12 guineas.
St. Mary's Hospital.—Inclusive fee for six months' course of Laboratory Instruction, 15 guineas.
St. Thomas's Hospital.—Inclusive fee, 20 guineas; short course, 6 guineas.
University College.—Inclusive fee, 20 guineas; for candidates registered before January 1st, 1890, 12 guineas.

PROVINCIAL.

Cambridge University.
University of Birmingham.
University College, Liverpool.
Yorkshire College, Leeds.
University of Durham College of Medicine, Newcastle-on-Tyne.
University College, Bristol.

IRELAND.

School of Physic, Dublin.
The Catholic University School of Medicine.
Royal College of Surgeons, Schools of Surgery, Dublin.

SCOTLAND.

University of Edinburgh.—Fees, winter session 10 guineas, summer session 6 guineas.
University of Glasgow.—Fee for course of instruction, 10 guineas.
University of Aberdeen.—Fee for course of instruction, 9 guineas.
St. Mungo's College, Glasgow.—Fees: Winter session of Lectures and six months' Laboratory instruction, 12 guineas; summer session of Lectures and 3 months' Laboratory instruction, 6 guineas.
The Conjoint Board in Scotland.—Inclusive fee for six months' course of Laboratory instruction, 18 guineas.

OPENING OF THE MEDICAL SCHOOLS.

The arrangement for the opening of the Winter Session in the Medical Schools and Colleges in the United Kingdom, as far as they are at present complete, are as follows:

LONDON.

St. Bartholomew's Hospital and College.

The Winter Session will begin on Monday, October 1st. The Old Students' Dinner will be held on the same evening in the Great Hall of the Hospital at 6.30 for 7 o'clock, Mr. H. T. Butlin, F.R.C.S., in the chair.

Charing Cross Hospital Medical School.

The Winter Session will commence on Tuesday, October 2nd, when Lord Lister will deliver the Huxley Lecture at 4 P.M. The Old Students' Dinner will be held at the Hotel Cecil on October 2nd.

St. George's Hospital Medical School.

The Winter Session will begin on Monday, October 1st, with an Introductory Address at 4 P.M. by Dr. Francis G. Penrose, Physician to the Hospital. The Annual Dinner will be held on the same evening at the Hotel Metropole at 6.30 for 7 o'clock.

Guy's Hospital Medical School.

The Winter Session will begin on Monday, October 1st. A house dinner of the Students' Club will take place at 7 o'clock on the same evening in the College Dining Hall. Application for tickets for the dinner should be made to A. W. Ormond, Esq., Secretary to the Students' Club. The first meeting of the Physical Society will be held on Saturday, October 6th, in the new Physiological Theatre at 8 P.M., when Sir Samuel Wilks, Bart, M.D. LL.D., F.R.S., will preside. After the meeting a *conversazione* will be held in the new laboratories and class rooms.

King's College, London.

The Winter Session will begin on Monday, October 1st. The Old Students' Dinner will be held in the evening at the Hotel Cecil.

The London Hospital Medical College.

The Winter Session will commence on Monday, October 1st. The annual dinner will be held in the College Library in the evening, when Dr. Gilbart Smith will take the chair.

St. Mary's Hospital Medical School.

The Winter Session will begin on October 1st, when an introductory address will be given at 3 P.M. by Mr. H. S. Collier, F.R.C.S. The annual dinner will be held in the evening at the Whitehall Rooms, Hôtel Métropole, when the chair will be taken by Dr. Sidney Phillips.

The Middlesex Hospital.

The Winter Session will commence on Monday, October 1st, when Professor T. Clifford Allbutt, M.D., F.R.S., will deliver an Introductory Address, after which the prizes gained during the previous year will be distributed. The annual dinner of past and present students will take place the same evening at 7 o'clock at the Trocadero Restaurant, under the presidency of Mr. W. Lang, F.R.C.S.

St. Thomas's Hospital Medical School.

The Winter Session will open on Tuesday, October 2nd, when the prizes will be distributed at 3 P.M. by Sir William MacCormac, Bart., K.C.V.O., in the Governors' Hall. The annual dinner, to which all former and present students are invited to join, will take place on the same evening in the Whitehall Rooms, Hotel Métropole, at 6.30, when Dr. C. Taylor Aveling will take the chair.

University College, London.

The Winter Session of the Medical Faculty will commence on Monday, October 1st, when an introductory lecture will be given at 4 P.M. by Professor G. Vivian Poore. The Old Students' Dinner will take place at 6.30 the same evening in the Victoria Rooms, Hotel Cecil.

Westminster Hospital Medical School.

The Winter Session will begin on Monday, October 1st. The annual dinner will take place in the evening at the Café Monico at 6.30 for 7 P.M., when the chair will be taken by Dr. W. H. Allchin, Senior Physician to the Hospital.

London School of Medicine for Women.

The Winter Session will open on Monday, October 1st. An introductory address will be given by Miss Aldrich Blake, M.S., M.D., after which the prizes for the past year will be distributed.

London School of Tropical Medicine.

The Winter Session will commence on Monday, October 1st.

PROVINCES.

University of Birmingham.—The Winter Session will commence on Thursday, October 18th, when Professor Windle will deliver the opening address.

University College, Bristol.—The Winter Session commences on Monday, October 1st.

University College of South Wales and Monmouthshire, Cardiff.—The Winter Session will begin on Monday, October 1st. An address will be given on Wednesday, October 10th, by Sir John Williams, Bart.

Yorkshire College, Leeds.—The Winter Session will open on October 1st, when the prizes will be distributed by Sir John Barran, Bart.

University College, Liverpool.—The Winter Session will begin on Monday, October 1st. The Right Rev. the Lord Bishop of Liverpool will deliver the opening address and distribute the prizes on Saturday, October 13th.

Owens College, Manchester.—The Winter Session begins on Monday, October 1st.

University of Durham College of Medicine, Newcastle-on-Tyne.—The Winter Session will commence on Monday, October 1st.

University College, Sheffield.—The Winter Session will commence on Monday, October 1st.

SCOTLAND.

University of Edinburgh.—The Winter Session will commence on Tuesday, October 16th.

The Medical College for Women, Edinburgh.—The Winter Session will commence on Tuesday, October 16th.

The Edinburgh Extra-Academical School.—The School will open on Tuesday, October 16th.

University of Aberdeen.—The Winter Session will commence on Tuesday, October 16th.

University of St. Andrews.—The Winter Session will open on Wednesday, October 10th.

University of Glasgow.—The Winter Session will be opened on Thursday, October 18th. The Winter Session of Queen Margaret College Medical School for Women will begin on Thursday, October 18th.

Anderson's College Medical School.—The Winter Session will open on Thursday, October 18th.

St. Mungo's College, Glasgow.—The Winter Session will open on Thursday, October, 18th, with an address to medical students by Sir Hector C. Cameron.

University College, Dundee.—The Winter Session will open on Thursday, October 10th.

IRELAND.

The University of Dublin: The School of Physics.—The Winter Session will commence on Monday, October 1st.

The Royal College of Surgeons in Ireland: Schools of Surgery.—The Winter Session will commence on Monday, October 1st.

Queen's College, Belfast.—The Winter Session will begin on Tuesday, October 16th.

Queen's College, Cork.—The examinations for the eight medical scholarships will begin on Thursday, October 18th, and the lectures on Monday, October 22nd. Particulars can be obtained from the Registrar, Mr. Alexander Jack, M.A.

Queen's College, Galway.—The Winter Session will begin on Tuesday, October 16th. The matriculation examination will be held on October 19th, and examinations for junior scholarships on October 22nd, for second and third years and for senior scholarships on October 18th.

THE PUBLIC SERVICES.

THE ROYAL NAVY AND ARMY AND THE INDIAN MEDICAL SERVICES.

General Regulations.

The following are the rules governing admission to these services:—

All candidates must submit to an examination by a medical Board into their physical fitness before being admitted to the entrance examination. Special attention is given to the candidate's power of vision. A moderate degree of myopia is not considered a disqualification, provided it does not necessitate the use of glasses during operations, and no organic disease of the eye exists.

Candidates for the Army and Indian Services may, before examination, elect to declare their intention to compete for one or other or both of these services; and their position will be determined according to the results of the examination.

As the prospect of a medical officer in one of these services attaining to the highest administrative grades depends to a large extent upon the regulations with regard to compulsory retirement at the age of 55, if below a certain grade at that age, there is a distinct advantage in entering the service at as early an age as possible.

THE ROYAL NAVY MEDICAL SERVICE.

A candidate for admission to the Royal Navy Medical Service must be between 21 and 28 years of age, age to be verified by a copy of birth registration, or by a declaration before a magistrate by parent or near relative. He must declare that he is of pure European descent, the son either of natural-born British subjects or of parents naturalised in the United Kingdom. His freedom from organic or other disease and physical fitness for sea service will be determined by a Board of medical officers.

The entrance examination consists of two parts; in Part I, *Compulsory*, the subjects are the same as in the Army Medical Staff, but the marks are: Medicine, 1,200; Surgery, 1,200; Anatomy and Physiology, 600; Chemistry and Materia Medica, 600. The examination in Medicine and Surgery will be in part clinical, and include the examination of pathological specimens and Operative Surgery to which great importance is attached. Part II, *Voluntary*, consists of two divisions: (*a*) French and German (200 marks each); a knowledge of modern languages being considered of great importance, all candidates are urged to qualify in them; (*b*) Natural Sciences (Zoology, Botany Physics, Geology, and Physical Geography) (300 marks each); the two latter subjects are combined for the 300 marks. Candidates will be examined in not more than two of these sciences. Candidates who qualify in the compulsory subjects by obtaining a minimum of one third of the maximum marks attainable will be allowed to count marks in those of the two *voluntary subjects* only in which they obtain one-third of the maximum marks for each.

Zoology.—The examination in Zoology will include the general principles of biology and a comparison of animals with plants; the distinctive character of the larger groups of animals—the protozoa, cœlenterata, vermes, arthropoda, mollusca, echinodermata, and vertebrata—as illustrated by common types; the elements of embryology; animal parasites.

Botany.—The examination in Botany will comprise the general principles of the morphology and physiology of low forms of life, for example, torula, bacteria, spirogyra, moss, fern; the general morphology of flowering plants; diagnosis of the important British natural orders; medicinal plants.

Physics.—The examination in physics will be limited to the principles of mechanics, acoustics, optics, heat, magnetism, and electricity, such as: the properties of solids, liquids, and gases; conservation of energy, specific gravity, propagation and reflection of sound and light, thermometers, properties of mirrors and lenses, chromatic dispersion of light, forms of batteries, galvanic and frictional electricity, general properties of magnets.

Physical Geography.—The examination in geology and physical geography will be limited to general principles, such as the relations of the earth to the rest of the solar system, nature of the earth's crust, and the chief kinds of rocks, general configuration of land and water, mountains, plains, lakes, rivers, islands, glaciers, and icebergs, the ocean currents, tides, winds and storms, dew, rain, climate, volcanoes, earthquakes, distribution of animal and vegetable life.

The order of merit is determined by the total number of marks obtained in the compulsory and voluntary subjects. Should, however, it be considered expedient to grant additional commissions, the Board of Admiralty is empowered to admit annually one candidate proposed by the governing bodies of public schools of medicine in the United Kingdom or attached to such Colonial universities as they may think proper. Such candidates must be qualified according to the rules in force for entry of candidates, and must be approved by the Director-General of the Medical Department of the Navy. He will also be compelled to pass a physical and test examination, and must on arrival in England register under the Medical Act in force as qualified to practise Medicine and Surgery in Great Britain and Ireland.

Copies of the Regulations for entry of candidates for commissions in the Medical Department of the Royal Navy will be furnished on application to the Medical Director-General, Admiralty, London, W.C.

Successful candidates immediately after passing the examination will receive commissions as Surgeons in the Royal Navy, and will undergo a course of practical instruction in Naval Hygiene, etc., at Haslar Hospital. Three prizes of the approximate value of £10 each will be awarded at the close of each session at Haslar to the students who have shown the greatest proficiency, and their seniority in the service will depend on the marks obtained at the examination in London, and at the termination of their studies at Haslar. Surgeons entered without competition will take seniority next after the last surgeon entered by competition.

Surgeons are only required to provide themselves with a regulation case of pocket instruments, a stethoscope, and three clinical thermometers. All other instruments, except eye instruments, microscope, laryngoscope, ophthalmoscope, and endoscope, are provided at the public expense, but the provision of the latter specified by surgeons is not compulsory. *Promotion.*—(1) An inspector-general of hospitals and fleets will be selected from amongst deputy-inspectors-general who have in that rank three years' full-pay service, and have not declined foreign service unless with the sanction of the Admiralty. (2) A deputy-inspector-general of hospitals and fleets will be selected for ability and merit from among the fleet-surgeons. (3) The rank of fleet-surgeon will be granted to staff-surgeons on completion of 20 years' service (namely, 20 years after entry) if recommended for promotion. Special promotions to this rank will be made at the discretion of the Admiralty in cases of distinguished service or conspicuous professional

merit. Such promotions will be exceptional, and not exceed the rate of one in two years, or a total number of six at any one time of fleet-surgeons so promoted. (4) The rank of staff-surgeon will be granted to surgeons at the expiration of 12 years from the date of entry, subject to the recommendation of the Medical Director-General and the passing of a qualifying examination after the completion of eight years from date of entry. Special promotions will be made at the discretion of the Admiralty to the rank of staff-surgeon in cases of distinguished service or conspicuous professional merit; such promotions not to exceed one a year, or a total of eight at one time on the staff surgeons list. These officers will attain the rank of fleet-surgeon after eight years full-pay service after their special promotion, if recommended for such promotion. Relative rank is accorded as laid down in the Queen's Regulations and Admiralty Instructions, and also in the official Quarterly Navy List. *Full Pay and Allowances.*—The rate of pay of surgeons is on entry £209 17s. 6d. a year; after four years' full pay service, £246 7s. 6d. a year; after eight years' full pay service, £282 17s. 6d. Staff-surgeons receive £383 5s. a year on promotion, special, or after 12 years in the service, after 4 years' full pay service in that rank £438. Fleet-surgeons on promotions, special, or after 20 years in the service, £492 15s. a year; after 4 years' full-pay service in that rank, £547 10s.; after 8 years full-pay service, £602 5s.; deputy inspector-general, £766 10s. a year; inspector-general, £1,003 15s. The senior medical officer—fleet or staff-surgeon—of the commander-in-chief's flag ship, on a foreign station, receives an allowance of 5s. a day; of the flag ship of the senior officer commanding the channel squadron, as also of the ship of a commodore or of a senior officer commanding a foreign station, 2s. 6d. a day. Medical officers conducting the course of instruction at Haslar Hospital will receive the following allowances:—The two senior officers employed upon this duty, £150 a year each; The junior officer assisting, £50 a year. Hospital allowances for naval medical officers at home and abroad, in lieu of provisions for themselves and servants, and for fuel and lights, granted to officers on board ship, or 1s. 6d. in lieu thereof, are as follows: Inspectors general of hospital, at home, £85; abroad, £130; deputy-inspectors-general, at home, £67; abroad, £112; fleet or staff surgeons, at home, £53; abroad, £112; surgeons, at home, £39; abroad, £108.

Retirement.—Compulsory retirement will be as follows:

Inspector and deputy-inspector-general of hospitals and fleets.	At the age of 60, or if unemployed for five years. The Admiralty reserve the right to extend the age of retirement of an inspector-general of hospitals and fleets, in the interests of the public service, to 62 years.	To be retired at any age if physically unfit for service.
Fleet-Surgeon, staff-surgeon, and surgeon.	At the age of 55, or at any age, if he has not served for five years.	

Gratuities and retired pay will be awarded on retirement and withdrawal on the undermentioned scale:—

Rank.	Gratuities.	Daily.	Yearly.
	£ s. d.	£ s. d.	£ s. d.
Surgeon and Staff-Surgeon:			
After 8 years' full-pay service	1,000 0 0	—	—
,, 12 ,, ,,	1,500 0 0	—	—
,, 16 ,, ,,	2,250 0 0	—	—
Fleet-Surgeon:			
After 20 years' service	—	*1 0 0	365 0 0
After 24 ,, ,, ...	—	*1 2 6	410 12 6
After 27 ,, ,, ...	—	*1 5 0	456 5 0
After 30 ,, ,, ...	—	*†1 10 0	547 10 0
Deputy-Inspector-General... ...	—	1 15 0	638 15 0
Inspector-General	—	2 0 0	730 0 0

*To obtain this rate an officer must hold the Commission of Fleet-Surgeon.

†Or on compulsory retirement at the age of 55.

Voluntary retirement and withdrawal will be allowed as follows:

(*a*) Every officer will have the option, subject to their Lordships' approval, of retiring after twenty years' full pay service on the scale of retired pay, or with a gratuity, as laid down above.

(*b*) At the expiration of 8, 12, or 16 years' full pay service, every officer will be permitted, subject to their Lordships' approval, to withdraw from the Naval service, receiving a gratuity on the scale laid down below.

The name of an officer so withdrawing will be removed from the lists of the Navy, with which all connection will then be severed.

(*c*) Voluntary retirement and withdrawal will be allowed, as a rule, only when an officer is unemployed or serving at home.

(*d*) Applications from officers, not entitled to retire or withdraw, to resign their commissions, will receive every consideration.

Half Pay.—Surgeons under 2 years' full pay service, 6s. per diem; after 2 years' full pay service, 7s. per diem; after 4 years, 8s.; after 6 years, 9s.; after 8 years, 10s.; after 10 years, 11s. Staff-surgeon on promotion, 12s.; after 2 years' full pay service in rank, 13s.; after 4 years, 14s.; after 6 years, 15s. Fleet-surgeon on promotion, 17s.; after 2 years, 18s.; after 6 years, 20s. Deputy-inspector-general on promotion, 25s.; after 2 years' full pay service in rank, 27s.; after 4 years, 29s.. Inspector-general, 38s.

REGULATIONS FOR TEMPORARY SERVICE IN THE MEDICAL DEPARTMENT OF THE ROYAL NAVY.

Surgeons who may be temporarily employed in the Royal Navy to meet the requirements of the Service will be appointed under the following regulations:

Qualifications.—They must be registered under the Medical Act as qualified to practise medicine and surgery in Great Britain and Ireland, produce certificates of good character, be reported physically fit after medical examination, and their age must not exceed 40 years.

Pay and Allowances.—Full pay: 15s. 6d. a day; £282 17s. 6d. a year. Half pay: 10s. a day; £182 10s. a year. Note.—Half pay is for sickness and extra leave only. They will be granted 30 days' advance of pay on joining a ship after appointment, and receive the same allowances as are payable to permanent officers of their rank. Lodging money at the rate of £50 a year is usually allowed when employed on shore without quarters in the United Kingdom, and 1s. 6d. day in lieu of rations. If employed in certain posts on shore, the provision allowance will be £24 per annum instead of 1s. 6d. a day. If quarters are provided in a medical establishment, an allowance is granted in lieu of provisions, for self and servant, and for fuel and lights, at the rate of £39 a year in the United Kingdom and £108 a year abroad.

Uniform.—Each Surgeon must provide himself as follows: Frock coat, waistcoat, and trousers; undress coat; uniform cap; mess jacket and waistcoat; sword and undress belt. All as specified in the Uniform Regulations. To cover the above each officer accepted for service will receive an equipment allowance of £20.

Messing.—Surgeons will be allowed, when attached to ships in commission, the ordinary ship's rations; but will have to pay about 2s. a day towards the maintenance of their mess as Ward-room Officers.

Pensions for Wounds and to Widows, etc.[1]—In the event of Surgeons engaged for temporary service being wounded in Her Majesty's service, gratuities or pensions, varying in amount according to the injuries sustained, will be granted, on the basis of the awards in similar cases of naval officers. Should temporary service Surgeons be killed in action, die within six months of wounds received in action, or meet their death by acts of the enemy, the following pensions and allowances will be granted to their widows, children, etc.:

—	Widows.		Children up to the Age of 18 for Boys and 21 for Girls.		Widowed Mothers dependent on their Sons, if the latter left no Widows or Children.	Orphan Sisters dependent on their Brothers, if the latter left no Mothers, Widows, or Children.
	Killed in Action	Drowned, etc., by Acts of the Enemy	Killed in Action	Drowned, etc., by Acts of the Enemy	Killed or Drowned, or suffered Violent Death by Acts of the Enemy.	Killed or Drowned, or suffered Violent Death by Acts of the Enemy.
	£	£	£	£	£	£
Surgeon ...	80	65	12 to 16	10 to 14	50	50

In addition to the foregoing pensions, the widows and children of officers killed in action will be granted the following gratuities: Widows—One year's pay of their husband's corresponding rank in the Royal Navy. Each unmarried child, under the age of 21, one-third of the gratuity paid to

[1] Unmarried candidates will be preferred.

the widow. These pensions and gratuities can be given only in cases of injury or death caused by acts of the enemy, and not on account of injury, disability or death which may result from carrying on the ordinary duties of the Service.

Conditions of Service.—They must engage for six months certain; serve when and where required; be liable to immediate discharge for misconduct or incompetency; rank with, but subordinate to, Surgeons in the permanent service, and be under the general rules of the Service as regards discipline, etc. They will receive two calendar months' notice of services being no longer required, and be granted a gratuity of two calendar months' pay on discharge, if not discharged for misconduct or incompetency. It is to be distinctly understood that Surgeons engaged for temporary service will not be entitled to be placed on the permanent list or to promotion. Resignation of appointment will be allowed subject to the convenience of the Service, but the gratuity of two calendar months' pay on discharge will be thereby forfeited.

Copies of the form of declaration and of schedule of qualifications which will be required from candidates can be obtained at the Admiralty.

THE ROYAL ARMY MEDICAL CORPS.

A candidate for a commission in the corps must be over 21 and not over 28 years of age at the date of the commencement of the competitive examination. He must be of unmixed European birth, and registered under the Medical Act.[1] He must produce a certificate of moral character, and a certificate to the effect that he is of steady habits, and likely to prove creditable to the corps. Before admission to the examination his physical fitness will be determined by a Board of Medical Officers. These and some additional facts of minor importance must be embodied in a "declaration" upon a special form, which may be obtained upon application to the Director-General, Army Medical Service, War Office, London, S.W., who will also forward a memorandum on conditions of admission, pay, etc.

A competitive entrance examination is held twice a year, generally in February and August. Announcement of the date and of the number of vacancies is made in advance by advertisement in the medical and some other papers, and in the *Monthly Army List*.

Entrance Examination.

The examination consists of two parts:

I. *Compulsory*, the subjects of which are (*a*) Anatomy and Physiology, (*b*) Surgery, (*c*) Medicine, including Therapeutics and the Diseases of Women and Children, (*d*) Chemistry and Pharmacy, and the Practical Knowledge of Drugs; Medicine 1,200 marks; Surgery, 1,200 marks; Anatomy and Physiology, 600 marks; Chemistry and Pharmacy, 600 marks. The examination in medicine and surgery is in part practical, and includes operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients, at the bedside. The examination in Chemistry is limited to the elements of the science, and to its application to medicine, pharmacy, and practical hygiene.

II. *Voluntary.*—A candidate may be examined in the following voluntary subjects: (*a*) French, German, and Hindustani (200 marks each), (*b*) Natural Sciences, two subjects (300 marks each). Competitors are urged to qualify in French and German, as a knowledge of modern languages is considered of much importance. The Natural Sciences include Physics, Zoology, Geology, and Physical Geography, and Botany. A number less than one-third of the marks obtainable will not be allowed to count. An entrance fee of £1 is payable.

The Secretary of State reserves the right to reject any candidate who shows a deficiency in general education as evidenced by bad spelling or composition.

Successful candidates are arranged in order of merit, and are required to proceed to the Army Medical School at Netley on probation; they receive an allowance of 8s. a day.

Final Examination.

Candidates on probation at Netley attend courses in: (1) Hygiene; (2) Clinical and Military Medicine; (3) Clinical and Military Surgery; (4) Pathology of Diseases and Injuries incident to Military Service. At the conclusion of the Netley course a further examination in the subjects there taught is held, for which marks are awarded, and the final position of the candidate is determined by the number of the marks obtained at the Entrance and Final Examinations.

Pay.—On leaving Netley the candidate on probation receives a commission of Lieutenant, the pay of which rank is £200 a year. The next grade is Captain, and after five years' service the pay is £250 a year. A Captain may be promoted to the rank of Major after twelve years' full pay service; to qualify himself for this promotion he must at any time after his seventh year of service pass a special examination in Surgery, Medicine, Hygiene, the Duties of Medical Officers, Hospital Organisation, Military Law and the Administration of the Royal Army Medical Corps.

Retired Pay.—All officers under the rank of Colonel must retire on pension at the age of 55; above this rank at the age of 60, unless specially extended. An officer of ten years' service on full pay may be permitted to retire on a gratuity of £1,250: after fifteen years' service, £1,800; after eighteen years' service, £2,500. Officers retired on gratuity, or on retired pay, are liable to recall to service on great national emergency. Executive officers on the retired list are eligible for certain army appointments, with the consolidated salary of £150 a year in addition to their retired pay; and such appointment can be held up to the age of 65 years.

INDIAN MEDICAL SERVICE.

All natural-born subjects of Her Majesty between 21 and 28 years of age may be candidates; the conditions are otherwise the same as for the Royal Army Medical Corps (see above), but there is an additional voluntary subject (Hindustani), for which 150 marks are allowed.[1] All particulars regarding condition of admission and subjects of examination are contained in the "Regulations for the Examination of Candidates for Admission to Her Majesty's Indian Medical Service," issued by the India Office and obtainable by application to the Military Secretary. The following is the present scale of marks: Surgery and Medicine, each 1,200; Anatomy with Physiology, and Chemistry with Pharmacy, each 600; French, German, and Hindustani, each 200: Physics, Zoology, Geological and Physical Geography, and Botany, each 300. A certificate of three months' attendance at an Ophthalmic Hospital is required. Selected candidates are required to undergo a course of four months' instruction in the Army Medical School, Netley.

The final order of merit is determined, as in the case of the Royal Army Medical Corps, by the combined results of the Preliminary (London) and of the Final (Netley) Examinations, and, so far as the requirements of the Service will permit, candidates will have the choice of commands in India (that is, Bengal, Punjab, Madras, or Bombay), according to their position in that list. The examinations are held, as a rule, twice a year, in February and August.

Free passage to India is provided. The rate of pay at Netley is 8s. a day, and on leaving Netley until arrival in India 10s. a day. The minimum rate of pay in India is stated to be Rs. 350 a month. After seventeen years' service for pension, the rate of retired pension is £292 a year; after twenty, £365; after twenty-five, £500; after thirty years, £700. Extra pensions of £250 and £350 are given after five years' service in the administrative grades, with rank of Colonel and Surgeon-General. Further particulars as to rates of pay, promotion, pensions, and half-pay will be found in Military Department Form 124, which can be obtained on application to the Under-Secretary of State, India Office, London, S.W.

[1] He must have a diploma in Medicine and in Surgery, but the diploma of the Society of Apothecaries in London, obtained under the conditions of the Medical Act of 1886, is accepted as a double qualification. A candidate is required to produce also the following certificates: (1) Of having discharged the duties of a medical clinical clerk during six months, and of a surgical dresser during another period of six months, of which, in each case, not less than three months must have been spent in the wards of a hospital. (2) Of having attended a course of instruction during not less than three months at an ophthalmic hospital, or the ophthalmic department of a general hospital, which course shall include instruction in the errors of refraction.

[1] Candidates presenting themselves for examination in Hindustani are recommended to study some recognised textbook, such as the annotated edition of the *Tauhut-un-Nasuk*, which is the text used by candidates for the Indian Civil Service.

EXAMINATION PAPERS

The following are the Papers set at the Examination of Candidates for Her Majesty's Army and Indian Medical Services in August, 1900.

SURGERY.—SIR WILLIAM MACCORMAC, BART., K.C.V.O.

1. In a case of gunshot through the middle of the thigh an arterio-venous aneurysm has formed. Describe how this takes place, and give the diagnosis and treatment.
2. What are the causes of perineal abscess? Give the symptoms and treatment of a case.
3. What forms of malignant disease affect the anus and rectum? Give the diagnosis, symptoms, and treatment of a case of cancer of the rectum.
4. What are the varieties of umbilical hernia? Give the treatment of a case where strangulation has taken place.

ANATOMY AND PHYSIOLOGY.—MR. EDWARD H. TAYLOR, F.R.C.S.

1. Describe the blood vessels and nerves which lie in immediate relation to the lower jaw. The description is to be confined strictly to the region of the bone, and the value of the answer will be largely determined by the appreciation shown of the surgical bearings of the question.
2. Give the distribution of the musculo-spiral nerve, and indicate the effects which would follow division of that nerve in the musculo-spiral groove.
3. Describe the minute structure of the mucous membrane of the small intestine, and state the part which an intestinal villus plays in intestinal absorption.
4. Describe the appearance presented by a transverse section through the middle of the cervical swelling of the spinal cord when examined with a low power of the microscope.

CHEMISTRY AND MATERIA MEDICA—DR. NORMAN MOORE.

1. How could you best make oxygen for therapeutic purposes? Mention the chief characteristics of this element.
2. What is the composition of coal gas, and how is it prepared?
3. Mention the chief diuretics and the chief anthelmintics of the *Pharmacopœia*, and give the full dose of each.
4. What are the official preparations of (1) sulphuric acid, (2) the salts of zinc, (3) opium, (4) colocynth, (5) cantharides? Give in each case the dose of those intended for internal use.

How are the following forms of preparation made: (1) Tinctures, (2) extracts, (3) confections.

MEDICINE AND PATHOLOGY—PROFESSOR MCCALL ANDERSON.

1. A young man, aged 20, was admitted into hospital on June 1st, 1900. He was suffering from hemiplegia and anæsthesia of the right side, accompanied by aphasia, which set in suddenly without unconsciousness six months before admission. There was also evidence of descending sclerosis of the crossed pyramidal tract. (*a*) Give the probable diagnosis as to the seat and nature of the lesion, with the grounds for your opinion. (*b*) Give an outline of the kind of history probable in such a case. (*c*) What symptoms indicate descending sclerosis of the crossed pyramidal tract? (*d*) What anatomical lesions would you probably find in the event of a fatal issue?
2. Write down a list of the enlargements of the liver, dividing them into A uniform, and B irregular, enlargements. Underline those in which the enlargement *may be* very great, and put an asterisk opposite those which are likely to be tender.
3. (*a*) Describe the characters of urine containing pus. (*b*) What would lead you to conclude that it came from the pelvis of the kidney? How would you treat an attack of pyelitis?
4. Give, in tabular form, the diagnosis of amyloid disease from hypertrophic cirrhosis of the liver.

PRISON MEDICAL SERVICE.

THE prison department consists of two branches—the convict service and the local prison service. These are now practically amalgamated, and the officers of each branch are freely interchangeable. In the case of the smaller prisons the medical officer is usually a local practitioner, but in the case of the larger prisons the medical officers are appointed by the Convict Prison Board or the Prison Commission, and form practically a special service. The Chairman of the Boards is Mr. Evelyn Ruggles-Brise. Application for employment may be made to the Board on a special form, which, we understand, can be obtained from the Secretary, Major E. G. Clayton, Prison Commission, Home Office, London, S.W.

The number of vacancies is not large, and the prospects of promotion are bad. This is due in part to the fact that the rate of pay of the higher appointments depends upon the number of prisoners in the particular prison, and that the total number of prisoners in the country is decreasing.[1]

The following is the authorised staff with scales of pay laid down in the official estimates for 1900-1901.

Convict Service.—Five deputy medical officers at £250, rising to £300; four medical officers at incomes ranging from £300 to £550.

Local Prison Service.—Nine deputy medical officers at £250, rising to £300; eight medical officers at £200; two medical officers at £250; three medical officers at £300, rising to £390; six medical officers at £400, rising to £500. Quarters, or an allowance in lieu, are granted to those who give their whole time to the service.

MEDICAL APPOINTMENTS IN THE COLONIES.

1. Medical appointments are from time to time filled up by the Colonial Office in the following Colonies: British Guiana, Jamaica, Trinidad, Windward Islands, Leeward Islands, British Honduras, Fiji, Sierra Leone, Gambia, Gold Coast, Lagos, Niger Territories, Ceylon, Straits Settlements, Hong Kong, Cyprus, Gibraltar, St. Helena, and the Falkland Islands. In Ceylon and Jamaica vacancies are almost always filled locally by the appointment of qualified native candidates.

It is for the West Indies and the West African Colonies that medical officers are chiefly required.

2. The majority of the West Indian appointments involve medical charge of a district, including, as a rule, the care of a hospital, poor-house, asylum, or other institution, and free attendance on the aged and children.

In West Africa the medical officers are also required to take charge of any hospital, public dispensary, lunatic asylum, or other Government institution at their respective stations, to supervise the sanitation of the district, to perform vaccination, and to give gratuitous attendance to all Government officials, and, in most cases, the families of such officials also.

N.B.—Passage money on first appointment, and leave of absence on half-pay (in case of sickness, or after six years' service, if the medical officer has given satisfaction in the discharge of his duties), are granted to medical officers in the cases specified in the Colonial Regulations; and those serving in West Africa are allowed six months' leave with full pay and free passages home and out again, after every twelve or fifteen months of continuous residential service. With regard to pension, medical officers are usually on the same footing as other Government servants; but in cases where private practice is allowed, the rule is that they are not entitled to pension, except in West Africa.

3. The following is a short account of the appointments in the separate Colonies:

British Guiana.—Thirty-nine appointments. Candidates must have held for at least six months a resident medical appointment in some public institution. Officers are appointed on two years' probation as supernumeraries, and are paid a salary at the rate of £300 per annum with quarters, without the right to private practice. Supernumerary officers, married or single, who obtain leave to reside out of the quarters provided for them, will not be entitled to lodging allowance. After serving for two years, if appointed to the permanent staff, the officer will receive £400 per annum, rising by increments of £25 annually up to £700 per annum. A Government medical officer on being appointed to a district, and a supernumerary on being appointed to act in charge of a district, will receive a salary of £500 per annum, but will not receive any increments thereto until entitled to such increments by length of actual service. Every medical officer appointed to a district or to act in charge of a district will receive a travelling allowance at a rate varying from £100 to £150 per annum as the extent of the district may require. He is allowed private practice. No more than £30 is allowed for passage money on first appointment. There is a Widows' and Orphans' Fund in the Colony to which all Government servants are compelled to subscribe at the rate of 4 per cent. on their salaries.

Jamaica.—The appointments, 45 in number, are mainly district appointments with private practice allowed; the salary paid by Government varies from £150 to £250 per annum, and in most cases is £200. Newcomers are in some cases attached for a while to the public hospital in Kingston, and given an allowance at the rate of £200 per annum, but not permitted to undertake private practice. There is a Civil Service Widows' and Orphans' Fund established by law, to which all medical officers are obliged to subscribe at the rate of 4 per cent. on their salaries.

[1] Intending applicants would do well to consult a memorandum prepared for the use of the Parliamentary Bills Committee of the British Medical Association, and published in the BRITISH MEDICAL JOURNAL on April 23rd, 1892.

Trinidad and Tobago.—In Trinidad there are 32 appointments. Officers are appointed in the first instance on two years' probation as supernumeraries. They will receive a salary of £250 per annum, with furnished quarters, and are usually attached to the Government Hospital; the salary assigned to the district appointments, to which they are promoted as vacancies occur, is £300, which is increased to £400 and upwards by various allowances for horse, house, or otherwise; these posts carry the right to private practice; after every five years' service an officer is given an additional personal allowance at the rate of £50 per annum. All officers hereafter appointed are required to contribute 4 per cent. of their salaries to the Widows' and Orphans' Fund. In the Island of Tobago there are 3 district appointments, with salary of £200 per annum attached.

Windward Islands (Grenada, St. Lucia, St. Vincent).—The 20 appointments are, with few exceptions, district appointments with the right to private practice attached; the salaries paid by Government vary from £200 to £400, with allowances in certain cases.

Leeward Islands (Antigua, St. Christopher, and Nevis, Dominica, Montserrat, Virgin Islands).—The 21 appointments are of the same nature as in the Windward Islands. An officer when first sent out is not appointed to a particular colony, but to the service of the Leeward Islands, with a salary of £200, and the Governor decides as to the district which is to be allotted to him. As a rule, £30 only is allowed for passage money. The medical officers receive fees for successful vaccinations, *post-mortem* examinations, attendance and giving evidence at courts of justice, certificates of lunacy, and, in the larger islands, for burial certificates. They are also allowed private practice.

British Honduras.—There are 5 medical appointments, in all of which private practice are allowed, if it does not interfere with the public duties of the officer; the pay is $720 to $1,050. The Colonial Surgeon and District Surgeon are public vaccinators, and as such receive a fee for every successful case. Four of the medical officers are also district magistrates, and receive an additional $720 in the latter capacity. Unless they already possess a diploma of Public Health, medical officers before they join the Colony are liable to be required to undergo a course of instruction at a laboratory of public health or analogous institution.

Fiji.—There are at present 8 medical officers, of whom the Chief Medical Officer receives £600 per annum, the Senior Medical Officer £450 per annum and £50 allowance for house rent, the others receiving £300 per annum with quarters, or £50 house allowance at the option of the Government. District Medical Officers receive in addition capitation fees upon all the indentured labourers in their respective districts. These amount usually to sums ranging between £60 and £150 per annum. Government medical officers are entitled to the private practice of their profession in all districts, on the understanding that their official duties are not made subservient to it. There are also 3 Provincial Medical Officers, who are to take charge of 3 small hospitals which will shortly be established. Salary £300, rising by £10 to £450 and quarters, no private practice, no pensions, but the doctors are eligible for appointment as chief or senior medical officer. Each doctor will be in charge of the hospital, with a native dresser. Candidates should be unmarried, midwifery necessary, knowledge of eye diseases desirable. The doctors are at first attached to Suva Hospital and will afterwards accompany the provincial inspectors on tours.

Sierra Leone.—There are 10 Government medical officers. The pay of the Colonial Surgeon is £500 a year. The Assistant Colonial Surgeons receive salaries varying from £200 to £400, and the District Surgeons in the Protectorate £350, rising to £400. The Senior Assistant Colonial Surgeon is in charge of the lunatic asylum and the incurable and small-pox hospitals at Kissy, and is situated in Freetown. Quarters are not provided.

Gambia.—There are 2 medical officers paid respectively £400 and £300 per annum and allowed private practice. Quarters are provided, or an allowance in lieu thereof.

Gold Coast.—The pay of the Chief Medical Officer is £800, rising to £1,000 by £50 per annum, with consultation practice only. The Colonial Surgeon, the next officer, receives £600 with annual increments of £25 to £700, and there are two Assistant Colonial Surgeons receiving £500 with annual increments of £25 up to £600. The other Assistant Colonial Surgeons, 31 in number, are paid at the rate of £350 per annum for three years. After three years, if the officer has performed his duties in a satisfactory manner and is continued in his appointment, the salary will be increased to £400, rising by annual increments of £20 to £500. Private practice is allowed, but the right of withdrawing this is reserved; there is very little to be had, and it cannot be counted upon, as the medical officers are liable to frequent change of station. Free quarters are provided.

Lagos.—The pay of the Chief Medical Officer is £800 per annum, rising to £1,000 by increments of £50. The Senior Assistant Colonial Surgeon receives a salary of £400 a year, rising by annual increments of £20 to £500. Eleven other Assistant Colonial Surgeons receive £350, rising by triennial increments of £25 to £400. Private practice is not allowed, except when granted by special permission of the Governor. Free quarters, or allowance in lieu thereof, are granted to the Colonial Surgeon and to the European Assistant Colonial Surgeons. (N.B.—It is not considered desirable that anyone under 25 should be appointed to any medical post in West Africa. The special rules as to leave and pension in the case of Government servants on the West Coast of Africa apply also to medical officers.)

Northern Nigeria.—In Northern Nigeria there are at present two medical services, which it is proposed to amalgamate shortly (1) the medical department of the West African Frontier Force stationed in Northern Nigeria, and (2) the civil medical department of Northern Nigeria. The staff of the former consists of one Principal Medical Officer, with pay at the rate of £700 a year, and duty pay at the rate of £132 a year: 3 Senior Medical Officers, with pay at the rate of £650 a year, and duty pay at the rate of £96 a year, and 8 Assistant Medical Officers with pay from £400 to £450 a year. The staff of the civil medical department of Northern Nigeria consists of 1 Senior Medical Officer, with pay at the rate of £700 a year, rising by annual increments of £50 to £900 a year and duty allowance of £100 a year; 2 Senior Assistant Medical Officers, with pay at the rate of £450 a year, rising by annual increments of £25 to £500 a year; and 5 Junior Assistant Medical Officers with pay at the rate of £350 a year, rising by annual increments of £20 to £450 a year. The civil medical staff also includes 2 Dressers, with pay at the rate of £200 a year, rising by annual increments of £10 to £250 a year, and 8 Male Nurses, with pay at the rate of £150 a year, rising by annual increments of £10 to £200 a year. Officers employed in Northern Nigeria receive at present a local allowance of 5s. a day in addition to their pay.

Southern Nigeria.—The medical staff consists of one Principal Medical Officer, with pay at the rate of £1,000 per annum, and 21 District Medical Officers, with salary at the rate of £350 per annum, rising to £500 per annum by biennial increments of £50.

Ceylon.—The (9) Deputy Assistant Colonial Surgeons receive Rs. 1,500 to Rs. 2,500 per annum. The pay of the (36) Sub-Assistant Colonial Surgeons and (8) other subordinate medical officers is at the rate of from Rs. 900 to Rs. 1,600 per annum. The (23) Assistant Colonial Surgeons are paid at a rate of from Rs. 3,000 to Rs. 5,000 per annum, and the (4) Colonial Surgeons and (3) other superior medical officers at a rate of from Rs. 5,000 to Rs. 8,000 per annum. The Principal Civil Medical Officer receives Rs. 12,000 per annum, rising by biennial increments of Rs. 1,000 to Rs. 15,000 per annum. Private practice is allowed to the subordinate officers, but the Colonial Surgeons may take only consultation practice. The Medical Service is recruited mainly from gentlemen born in the island, but possessing British diplomas.

Straits Settlements.—The pay of the (11) different medical appointments is not uniform in value, but the salary of a Colonial Surgeon varies from 2,100dols. to 7,200dols. per annum, with quarters in some cases, private practice being generally not allowed.

Hong Kong.—The pay of the (7) Government medical appointments varies from 2,400 dols. to 6,000 dols. per annum, besides rent and carriage allowances in some cases, but private practice is in general not allowed.

Mauritius.—There are 24 medical appointments: these, 14 are minor appointments, with salaries

Rs. 1,000 to Rs. 1,500 per annum. The other 10 appointments have salaries varying from Rs. 2,000 to Rs. 9,000. Free quarters are not given in most cases; and private practice is not allowed. The service is mainly recruited from gentlemen born in the island.

N.B.—Exchange compensation is granted to officers appointed from this country to medical posts in Hong Kong and the Straits Settlements, that is, an allowance of dollars, in respect of one-half, and one-half only, of an officer's salary, sufficient to make up the difference between the market value of the dollar and a dollar equivalent to 3s. The sterling value of the dollar from day to day is to be found in the market quotations. The value of the rupee is now approximately 1s. 4d., but an exchange compensation allowance is at present granted in Ceylon to make up half the salary to the equivalent of 1s. 6d. the rupee. There are Widows' and Orphans' Pensions Funds in Ceylon, Straits Settlements, Mauritius, and Hong Kong, to which all permanent Government servants are called upon to subscribe at the rate of 4 per cent. on their salaries.

Seychelles.—There are four medical appointments. The Government Medical Officer receives Rs. 4,000; the Assistant Government Medical Officer receives Rs. 3,000. The holder of the latter appointment has free quarters. Private practice is not allowed. There are also two Assistant Government Medical Officers for the southern part of Mahé at Rs. 2,500.

Gibraltar.—There is a surgeon of the Colonial Hospital receiving £250, and an assistant surgeon receiving £87 10s. The surgeon of the hospital as medical officer of the civil prison and lunatic asylum receives £50, and house allowance of £42. The assistant surgeon is also police surgeon, port surgeon (£100), and public vaccinator.

Cyprus.—There is a Chief Medical Officer paid at the rate of £500 per annum, and two District Medical Officers paid at the rate of £250 per annum; all enjoying private practice; these are the only medical appointments in the island which are open to English candidates.

St. Helena.—The Colonial Surgeon receives £200 per annum, and £30 horse allowance. Private practice is allowed.

Falkland Islands.—There are two appointments, one of which is paid at the rate of £300 per annum, and the other at the rate of £200 per annum. Private practice is allowed in both cases.

4. All applicants for ordinary medical employment in these Colonies must be between the ages of 23 and 30 (in the case of the West African Colonies 25 and 32), and must be doubly qualified; preference will be given to those who have attended a course of lectures on tropical diseases, or have held hospital appointments as house-physicians and house-surgeons; certificates of moral character and of sobriety will be required, and every officer before being appointed will be medically examined by one of the consulting physicians of the Colonial Office—Dr. Patrick Manson, 21, Queen Anne Street, Cavendish Square, London, W.; Dr. Andrew Davidson, 30, Morningside Drive, Edinburgh; or Dr. Hawtrey Benson, 57, Fitzwilliam Square, Dublin.

5. In addition to the ordinary medical appointments in these Colonies vacancies also occasionally, though very rarely, occur for which specialists are required, as, for example, to take charge of a lunatic asylum, and the particulars of chief medical officer in some of the larger Colonies have not been given, as the headship of the medical department in such Colonies, requiring administrative as well as professional qualifications, is not reserved to the ordinary medical staff of the same Colony, but is often filled up directly by transfer, and sometimes from outside the service.

6. Applications for medical employment in these Colonies from persons in the United Kingdom must be addressed to the Assistant Private Secretary, Colonial Office, Downing Street, S.W. Out of the total number so applying, a list of candidates will be made, who will be eligible to fill any vacancies which may occur, but no promise whatever can be held out that candidates will eventually receive an appointment. It is not possible to forecast either the number or the nature of the vacancies which will arise in the course of any given year and it is not expected that candidates should hold themselves in readiness by refraining from other employment, as usually, when selected for an appointment, they can be allowed sufficient time to make their preparations and to terminate their existing employment. There have been on the average 15 vacancies a year during the last ten years to which appointments have been made from this country. During recent years the vacancies have been more numerous, owing to the increases of medical staff in the West African Colonies.

In the course of the year April, 1887, to April, 1888, there were in all 15 vacancies to which appointments were made from this country. They occurred in the following colonies: British Guiana, British Honduras, Falklands, Gambia, Gold Coast, Hong Kong, Straits Settlements. In the course of the year 1888-1889 there were 8 vacancies (British Guiana, Fiji, Gold Coast, Straits Settlements, Trinidad). In 1889-1890 there were 12 vacancies (British Guiana, Fiji, Gibraltar, Gold Coast, Hong Kong, Lagos, St. Helena). In the year 1890-1891 there were 17 vacancies (British Guiana, British Honduras, Gambia, Gold Coast, Leeward Islands, Straits Settlements, Windward Islands). In the year 1891-1892 there were 12 vacancies vacancies (British Guiana, British Honduras, Fiji, Gold Coast, Leeward Islands, Windward Islands). In the year 1892-93 there were 18 vacancies (British Guiana, British Honduras, Fiji, Gold Coast, Jamaica, Leeward Islands, Trinidad). In the year 1893-1894 there were 18 vacancies (British Guiana, British Honduras, Falklands, Fiji, Gambia, Gold Coast, Jamaica, Lagos, Leeward Islands, Straits Settlements, Trinidad). In the year 1894-1895 there were 14 vacancies (British Guiana, Cyprus, Fiji, Gold Coast, Lagos, Leeward Islands, Trinidad, Windward Islands). In the year 1895-96 there were 15 vacancies (Gold Coast, Lagos, Gambia, Jamaica, St. Vincent, Straits Settlement, Cyprus, and Zululand). The list of candidates applying in April, 1897, comprised about 90 names.

In addition to the above, the Colonial Office and Foreign Office, through the Crown Agents for the Colonies, sent out every year an increasing number of medical men to fill temporarily, appointments in connection with railway and other large public works in the Crown Colonies and Protectorates.

Applications for further information should be made at the Colonial Office, Downing Street, S.W.

BRITISH PRACTITIONERS ABROAD.

FOREIGN practitioners who do not possess additional medical qualifications entitling them to be registered under the Medical Acts in England cannot practise medicine in the United Kingdom without danger of infringing the Apothecaries Act, and cannot recover fees by legal process or give medical evidence in courts of law or hold public appointments of a professional character. Under the Medical Act of 1886 it is enacted that the General Medical Council may recognise equivalent qualifications granted in countries which permit reciprocal medical practice; after certain formalities such qualifications so recognised are registrable. The only country which, up to the present, has taken any steps to claim that its medical degrees should be recognised as entitling to registration here is Italy. Owing to a movement set in motion by English medical practitioners in Rome, who were threatened with prohibition in Italy, the Privy Council was approached, and communications made with the General Medical Council. A draft order in Council was brought up before the Medical Council at the May Session, which the British Government was prepared to place before Her Majesty for her signature. By this order it is declared that as Italy affords to medical practitioners of the United Kingdom such privileges of practising in Italy as Her Majesty deems just under certain conditions specified in the Medical Act 1886, practitioners holding Italian degrees shall be allowed to practise in the United Kingdom and become registered as holders of such degrees.

The proposed order has not up to the present time been formally signed by Her Majesty, owing perhaps to the action of the General Medical Council. When the draft came up for consideration at the Council in May, it was pointed out by Mr. Horsley and Sir John Batty Tuke, M.P., that Italy did not provide such a basis of equal reciprocity of practice between the United Kingdom and Italy as was required by the Medical Act. It was further pointed out that if Italians were admitted under the proposed order in Council to our *Medical Register* they would have equal rights to privileges with British practitioners in England, whereas British practitioners

in Italy could only attend their own countrymen or other foreigners, and not Italians. It is hoped that this opinion of the General Medical Council, which has been communicated to Her Majesty's Privy Council, will have the effect of staying precipitate action, so that the privileges granted to Italians enabling them to practise medicine in England may not be greater than those granted to Englishmen practising in Italy.

The following is a summary of the regulations of the British Colonies, as well as of foreign countries. The information in reference to the latter has been brought up to date from the report issued by the General Medical Council in relation to the question of reciprocity of medical practice. (Minutes, vol. xxxvii.)

BRITISH COLONIES AND DEPENDENCIES.

AUSTRALASIA.

New South Wales.—British qualifications, if verified, admit holders to practise as duly qualified medical practitioners here. By Order in Council the second part of the Imperial Medical Act, 1886, now applies to New South Wales.

Victoria.—Local registration compulsory. British qualifications entitle holder to registration here.

South Australia.—Registration not compulsory here, and persons can practise without it. British qualifications entitle to registration here. Part II of the Imperial Medical Act, 1886, now applies to South Australia.

Queensland.—All medical practitioners must be registered by the Queensland Medical Board. British qualifications subject to verification entitle holder to registration. Persons registered under Medical Act, 1858, can claim registration, but such registration must be legally proved.

Western Australia.—Persons registered under Medical Act, 1858, can claim to be registered by the Medical Board after legal proof of identity and registration.

Tasmania.—Registration compulsory by Local Medical Council, but any person entitled to be registered under Medical Act, 1858, can after legal proof obtain from the Court of Medical Examiners a certificate entitling him to practise in this Colony.

New Zealand.—Medical practitioners must be registered here, paying a fee of £1 5s. All persons entitled to be registered under Medical Act, 1858, can after legal proof be entitled to registration, but have to pay the fee.

SOUTH AFRICA.

Cape Colony.—No person can practise here without a licence signed by the Colonial Secretary on the recommendation of the Colonial Medical Council. Women are eligible for registration. The fee payable is £5. All persons entitled to be registered under the Medical Act, 1858, can, after legal proof, claim to be registered in the Colony, but the fee has to be paid. The following foreign degrees are made by Order in Council qualifications entitled to local registration—The Staats-Examen of Austria, Germany, Holland, Russia, and Switzerland. A further fee of £1 1s. is required for registration of any additional diplomas or degrees after the first registration. Midwives are also registered by the Colonial Medical Council.

Natal.—No unlicensed person can either practise in Natal or recover fees. All persons entitled to be registered under the Medical Act, 1858, can, after legal proof, claim to be registered by the Natal Medical Board upon payment of fees from one to three guineas. An annual licence has also to be taken out, fee £5.

DOMINION OF CANADA.

All British degrees and diplomas are registered by the Provincial Medical Board.

Prince Edward Island.—No one may practise here unless registered and licensed by the Colonial Medical Committee. All persons entitled to be registered under the Medical Act, 1858, can claim, after legal proof and the payment of fees not exceeding $20, registration.

New Brunswick.—All practitioners must be locally registered by the Colonial Medical Council under conditions which vary from time to time according to the direction of the Council. Each medical practitioner has to pay an annual fee of $1 to $2.

Nova Scotia.—Local registration compulsory by Provincial Medical Board.

Quebec.—Local registration compulsory by Provincial Board.

Ontario.—No one may practise Medicine, Surgery, or Midwifery who is not registered by the Council of the College of Physicians and Surgeons of Ontario. An examination must be passed.

Manitoba.—No person may practise Medicine, Surgery, or Midwifery unless registered by the Council of the College of Physicians and Surgeons of Manitoba. Persons on the *Medical Register* can claim to be registered locally upon legal proofs.

North West Territories.—No one may practise here unless registered by the Medical Council which sits at present at Regina, under a penalty of not exceeding $100. All persons entitled to be on the *Medical Register* can claim registration after legal proof and payment of $50, and an annual fee of $1 to $2.

British Columbia.—An Act has recently been passed respecting the profession of medicine and surgery, by which Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, which enacts as follows: (1) This Act may be cited as the Medical Act, 1898. (2) The members of the medical profession of British Columbia heretofore incorporated under the name of "The Medical Council of British Columbia" shall be deemed to be and to have been from its first establishment a body corporate by the name aforesaid, and the said name is hereby changed to that of "The College of Physicians and Surgeons of British Columbia." (3) Every person registered according to the provisions of the "Medical Act" and any other Act of the Legislature of British Columbia relating to the medical profession shall be a member of the said "College of Physicians and Surgeons of British Columbia." 4. Every person hereafter registered under the provisions of this Act shall also be a member of the said College. 24. The Council shall admit upon the *Register* any person who shall produce from any college or school of medicine and surgery requiring at least four years' course of study a diploma of qualification, provided also that the applicant shall furnish to the Council satisfactory evidence of identification and pass before the members thereof a satisfactory examination touching his fitness and capacity to practise as a physician and surgeon. 63. If any person not registered pursuant to this Act, for hire, gain, or hope of reward, practise or profess to practise medicine, surgery, or midwifery, he shall, upon summary conviction thereof before any justice of the peace, for any and every such offence, pay a penalty not exceeding one hundred dollars.

WEST INDIES.

Jamaica.—Local registration compulsory. Persons entitled to be upon the *Medical Register* can claim registration here after legal proof.

British Guiana.—Registration necessary. Medical Board accepts after legal proof any person who is registered under the provisions of the Medical Act of 1858.

FIJI.

Practitioners must be registered in Fiji. The *Register* is kept by the principal medical officer, and any person entitled to be registered under the Medical Act can after legal proof claim to be registered in the Colony. The principal medical officer has power of erasing the name of any registered person for felony, misdemeanour, or unprofessional conduct.

GOLD COAST COLONY.

Registration before the Licensing Board compulsory here, but proof of being upon the *Register* under the Medical Act, 1858, establishes right to practise.

GIBRALTAR.

Registration under local law necessary, but right to practise conferred after legal proof upon persons registered under the Medical Act, 1858.

LEEWARD ISLANDS.

Registration under local law necessary, and licence to be obtained from the Governor. Persons registered under the Medical Act, 1858, can after legal proof claim registration.

VIRGIN ISLANDS.

No person not entitled to practise in the United Kingdom is allowed to practise medicine or surgery here.

EUROPE.

Austria.—It is necessary to pass the State examination, or to obtain a University Degree in Medicine, a necessary preliminary to which is naturalisation as an Austrian subject. Recognition of foreign diplomas may be obtained on passing certain examinations.

Belgium.—Permission to practise must be obtained by foreign practitioners through a duly appointed Medical Board. So stringent are the formalities that it is held by Her Majesty's Minister at Brussels that the difficulties are prohibitive. No foreigner has as a matter of fact received permission to practise since 1893.

Denmark.—Foreigners are allowed no privilege in respect of exemption from examination.

France.—The degree of M.D. obtained by examination before a French faculty (Paris, Montpelier, Nancy, Bordeaux, Lyons, Lille, or Toulouse) is required. This regulation applies to Algiers. The degree, however, confers the right to practise only if it has been obtained on precisely the same conditions as those to which French students are subject—that is to say, before registration as medical students they must produce evidence of having passed the examination for the French diploma of Bachelor in classical education (Arts and Philosophy) and the certificate in Physical, Chemical, and Natural Science, and they must go through the regular curriculum of professional study, and must pass all the five professional examinations required of French students. The degree of M.D. is still obtainable by holders of British diplomas under the old conditions of exemption, at the discretion of the Minister of Public Instruction, from any preliminary examination in Arts or Sciences and from portions of the professional curriculum and examinations. The degree obtained in this way will not, however, confer the right to practise in France. The wards of hospitals and laboratories are still freely open to foreigners; and for those who may wish to obtain the purely honorary M.D. degree the facilities offered in the way of dispensation from preliminary examinations are even greater than heretofore. Application for such exemption must be addressed to the Minister of Public Instruction, to whom the documents showing the examinations passed by the candidate in his own country and the degrees or qualifications possessed by him must be submitted. Fees to the amount of £69 must be paid. The *Progrès Médical* (14, Rue des Carmes, Paris) publishes a "Students' Number" every year about November, in which full information is given as to teaching and examinations in every medical school in France.

Germany.—Any person may practise medicine, but if he has not passed the State examination he does so at his own peril, and is liable to fine and imprisonment if convicted of a mistake. The right to practise is obtained only by passing the German *Staats-Examen*. A lad who intends to enter the profession of medicine must attend a gymnasium (upper school), and pass an examination in general knowledge—Latin, Greek, German, French, divinity, mathematics, physics, history, and geography. After passing this examination he may be accepted as an ordinary full student of a university. At the end of the fourth semester (second year) he can pass the first State Examination (*Tentamen Physicum*), which embraces anatomy, physiology and physics, chemistry, botany and zoology. In the tenth semester he may pass the Final State Examination. In some universities the degree of M.D. can be obtained at the end of the eighth semester (fourth year)—that is, before the *Staats-Examen* can be passed. The degree of M.D. does not in itself confer a licence to practise in the German Empire. By a recent ordinance the Universities of Prussia will not in future grant the degree of M.D. except to persons who have passed the State examination. The fee for the *Tentamen Physicum* is £1 10s.; for the Final State Examination, £10 6s. The fee to the University for the M.D. degree varies between £15 and £95.

Greece.—A State examination must be passed, but graduates of foreign schools may take their examination in French or German.

Holland.—Foreigners are required to pass the State examination.

Hungary.—An English diploma does not entitle one to practise in Hungary without certain formalities of confirmation, owing to the fact that there is no International Convention between England and that country.

Italy.—A foreigner must (*a*) obtain an authorisation (*abilitazione*) from one of the Royal Universities of Italy; or (*b*) if he desires to practise only among foreigners, he is at liberty to do so. New legislation is, however, threatened, by which it is proposed to restrict the right to practise in Italy to citizens of countries granting reciprocity to Italian practitioners. In Italy medical studies are conducted in Government Universities under the immediate supervision of the Ministry of Public Instruction in Rome. There are several universities, one in each of the most important centres of the kingdom, such as Rome, Turin, Naples, Genoa, Palermo, Pavia, Pisa. There is only one medical degree in Italy, and it is that of Doctor in Medicine and Surgery. The title is conferred (by the Rector of each Unisity) in the name of the King. The examination can be passed at any of the universities, and the students can transfer themselves from one to the other. An original thesis must be presented.

Monaco.—The following British qualifications are, for the purposes of medical practice in the Principality of Monaco, considered equivalent to the French Diploma of Doctor of Medicine; the degree of Doctor of Medicine of the universities of "the United Kingdom of Great Britain," and the diplomas of Fellow of the Royal Colleges of Surgeons and Physicians of London, Edinburgh, Dublin, and of the Faculty of Physicians and Surgeons of Glasgow. Every application for leave to practise must be accompanied by the diplomas of the applicant or by copies of those documents certified as correct either by a consul of the Principality or by the Mayor of Monaco. The applicants must enter into an undertaking to live in the Principality and to practise their profession during the whole or part of the months of May, June, July, August, September, and October, agreeably to Article 1 of the Ordinance of May 29th, 1894.

Portugal.—The State examination must be passed.

Roumania.—The State examination must be passed (*vivâ voce*).

Russia.—Foreign medical men must pass a comprehensive examination at the Medical Academy of St. Petersburg or one of the Universities of Russia, and must know Russian. Those who have not a B.A. degree must pass an examination in general education, and in Greek and Latin.

Norway.—The State examination must be passed. The Government may, however, grant permission in individual cases to persons who produce satisfactory evidence that they possess the requisite knowledge.

Spain.—The State examination must be passed, but exemptions are sometimes granted on application through the British Ambassador. A licence costing from £1 to £24 must be taken out every year. This regulation applies to the Canary Islands and other Spanish Colonies.

Sweden.—The State examination must be passed. Some reduction in curriculum may be granted.

Switzerland.—A qualified English practitioner desiring to practise in Switzerland, even if he desire to practise only among his own countrymen, is required to pass the Federal examination in that country. The degree of Doctor of Medicine does not give the right to practise. The Federal examination may be passed at Basle, Zürich, or Berne in German, and at Geneva or Lausanne in French. The applicant is advised to obtain from one of his teachers in this country an introduction to a professor at the university at which he proposes to pass the examination. His proper course would be to call upon the Rector of the University. We are informed that every information would be afforded, and that no difficulties are placed in the way of cadidates. At the University of Zürich, the three examinations which it is necessary to pass are held as a rule at the following periods of the year:—*First Examination:* End of January and mid September. *Second Examination:* End of January and mid-September. *Third Examination:* Beginning of January, end of May, and beginning of October. At Basle the next examinations are in October. At Geneva the examinations are held in the third week of October, and in the second week of July, at the opening and conclusion respectively of the winter and summer session. At Lausanne the examinations take place as follows:—*First and Second Examinations:* April and October. *Final Examinations:* February and March, and June and July.

Turkey.—An examination in the chief branches of medicine and surgery must be passed at Constantinople (fee, £4 10s.). Before being admitted to the examination the candidate must present a diploma from a medical school recognised by the Government of the country in which it is situated.

SOUTH AMERICA.

Argentine Republic.—The applicant's diplomas must be verified by the Argentine Consul in this country (fee £1 4s.). This should be done before leaving this country. On arriving at Buenos Ayres the endorsement of the Argentine Consul in this country must be verified by the Argentine Foreign Office. Three examinations must be passed in the University of Buenos Ayres or Cordova. First Examination: Anatomy and Dissections, Physiology, Pathology, Ophthalmology, and Gynæcology. Second Examination: Clinical and Operative Surgery, Histology, Materia Medica, and Mental Diseases. Third Examination: Clinical Medicine, Pathology, Midwifery, and Toxicology. The fee for examination is $300, half of which is retained in case of rejection. The examinations can be passed consecutively at a few short intervals or separately; a rejected candidate is not readmitted to examination until after the lapse of six months. The examination is conducted *vivâ voce* in Spanish. Temporary authorisations to practise for six months may be obtained from the Governor of a province, and the applicant may utilise this time to improve his knowledge of Spanish. The regulations for graduates of Spanish Universities are less onerous.

Brazil.—A State examination must be passed which is conducted in Portuguese or French. The Faculties of Medicine are at Rio de Janeiro and Bahia.

Chili.—The regulations resemble those in the Argentine Republic; examination by the University of Santiago.

Peru.—Five examinations must be passed. Spanish is the official language. Applications to be made to Dean of Medical Faculty, Lima

Uruguay.—An examination conducted in Spanish, at the University of Monte Video, must be passed.

NORTH AMERICA.

The laws regulating the practice of medicine differ in the different States and Territories. The requirements, corrected up to a comparatively recent date, are as follows:—

A. In some States the possession of a diploma does not convey the right to practise, an examination being required in all cases. The following States make this demand:

Florida	Montana	North Dakota
Delaware	Washington	Oregon
Georgia	Idaho	Pennsylvania
Louisiana	Indian Territory	South Carolina
Maine	New Hampshire	Texas
Maryland	New Jersey	Utah
Minnesota	New York	Virginia
Mississipi	North Carolina	West Virginia

B. The following States require an examination by a duly qualified Board, or the approval thereby of the presented diploma:

California	Rhode Island	South Dakota
Connecticut	New Mexico Territory	Vermont
Illinois	Colorado	Indian Territory
Indiana	Iowa	Oklahama
Kentucky	Missouri	Wisconsin
Tennessee	Nebraska	

C. In a few States the presentation of diploma or other certificate of qualification is the only requirement. This is the case in:

Arkansas	Wyoming	Ohio
Michigan	Arizona Territory	Alaska Territory
Nevada	Kansas	District of Columbia

PRACTICE IN KLONDYKE.

Medical men desirous of legally practising in the Klondyke region may do so (1) if they hold a British qualification and pay a registration fee of $50.00; (2) not having such qualifications, they must pass an examination and pay the same fee. Dr. H. N. Bain, Prince Albert, N.W.T., is the Registrar of the Territories. The examinations are similar in character to those in British Columbia, the subjects of which and the British Columbia regulations are here appended:

Section 1.—Section 29 of the Consolidated Statutes of British Columbia provides: "The Council shall admit upon the register any person who shall produce from any college or school of medicine or surgery, requiring a three years' course of study, a diploma of qualification; provided, also, that the applicant shall furnish to the Council satisfactory evidence of identification, and pass before the members thereof, or such of them as may be appointed for the purpose, a satisfactory examination, touching his fitness and capacity to practise as a physician and surgeon." 1886, C. 13, S. 28.

Section 3.—Every person applying for registration under Section 2 of the Medical Act Amendment Act, 1893, shall on appearing in person before the Registrar of the Council, and paying a fee to the Registrar of $100.00, be entitled to be registered, on producing to such Registrar a certificate duly authenticated under the hand and seal of the Registrar of Medical Practitioners in England, Ireland, and Scotland, as the case may be (or other legal evidence), that such applicant is a duly registered medical practitioner, and that he was duly registered under the Medical Act (Imperial) on or before the 30th day of June, 1887. Such applicant will also be required to produce a certificate of good standing in the profession of medicine from the Registrar or other officer of the medical body having jurisdiction where such applicant last practised his profession, and evidence by statutory declaration that he has not lost the benefit of his said registration under the Medical Act (Imperial) by misconduct or otherwise.

Section 4.—The examination shall be orally and in writing, upon the following subjects: (1) Anatomy, (2) Chemistry, (3) Physiology, (4) Pathology, (5) Materia Medica, (6) Medical Jurisprudence, (7) Theory and Practice of Medicine, (8) Surgery, (9) Clinical Medicine, (10) Clinical Surgery, (11) Obstetrics, and Diseases of Women and Children. Marks required: 50 per cent. in first six branches, 75 per cent. in others.

Section 7.—During the year there will be three regular meetings, and three examinations held, beginning on the first Tuesday of May and September, and the second Tuesday of January, in Victoria, B.C.

Section 8.—Permits are not granted by the Council.

DENTAL SURGERY.

REGULATIONS OF THE GENERAL MEDICAL COUNCIL.

CANDIDATES for a diploma in Dental Surgery are required to produce certificates of having been engaged during four years in professional studies, and of having received three years' instruction in Mechanical Dentistry from a registered practitioner, or at some dental hospital where instruction is given in this subject. One year's *bonâ fide* apprenticeship with a registered dental practitioner, or one year's instruction at a dental hospital, after being registered as a dental student, may be counted one of the four years of professional study. The three years of instruction in Mechanical Dentistry, or any part of them, may be taken by the dental student, either before or after his registration as a student; but no year of such mechanical instruction shall be counted as one of the four years of professional study unless taken after registration.

A Register of Dental Students is kept by the Registrar of the General Medical Council, 299, Oxford Street, London.

Preliminary Education.—Dental students are subject to the same regulations as regards preliminary examination as medical students, but professional study may commence by pupilage with a registered dental practitioner.

Diplomas.

The Royal College of Surgeons of England, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow, each grant a licence in Dental Surgery, and the Royal College of Surgeons in Ireland grants a licence in Dentistry, in all cases after the student has produced evidence of passing through the stated curriculum and prescribed examinations. Particulars can be obtained upon application to the Secretary of the Conjoint Board in England, Examination Hall, Victoria Embankment, London, W.C.; to Mr James Robertson, Clerk to the Royal College of Surgeons, Edinburgh, 48, George Square, Edinburgh; to the Secretary of the Royal College of Surgeons in Ireland, Dublin; and as to the Faculty of Physicians and Surgeons, to Mr. Alexander Duncan, B.A., 242, St. Vincent Street, Glasgow.

Education.

A candidate for the Diploma in Dentistry can obtain the necessary instruction in special dental subjects (the general subjects being attended at some general hospital) at the Dental Hospital of London (apply to the Dean at the Hospital, Leicester Square, W.); or at the National Dental Hospital and College, London (apply to the Dean, the National Dental Hospital, Great Portland Street, London, W.); at the Dental School of Guy's Hospital (apply to the Dean at the Medical School, Guy's Hospital, S.E.); at the University of Birmingham (apply to the Dean of the Medical Faculty, University of Birmingham); at Owens College, Manchester (apply to the Registrar, Owens College, Manchester); at the Liverpool Dental Hospital and School of Dental Surgery (apply to the Dean of the Medical Faculty, University College, Liverpool); and at the Devon and Exeter Dental Hospital (apply to the Honorary Secretary of the Hospital). The Scottish Schools of Dentistry are the Incorporated Edinburgh Dental Hospital and School (apply to the Dean, 31, Chambers Street, Edinburgh); the Glasgow Royal Infirmary, Dental Department (apply to the Dean of the Faculty of Medicine, Mr. R. T. Kent, St. Mungo's College, Glasgow); and Anderson's College Medical School, Glasgow (apply to the Secretary, Mr. D. M. Alexander, 97, West Regent Street, Glasgow).

University of Birmingham.

Degrees in Dentistry—namely, Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.)—are granted by the University of Birmingham. All candidates for these degrees must pass the same Matriculation Examination as that required from candidates for medical degrees. The Degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained a Licence in Dental Surgery from some body legally entitled to confer such qualification. The candidate is not eligible for the degree until a period of twelve months has elapsed from the passing of his examination for the Licence in Dental Surgery. Of this period at least six months must be spent in the dental department of a general hospital approved by the University. *A.* In addition to the Licence in Dental Surgery the candidate must produce evidence that he has attended the courses required by medical students of the University in the following subjects, and passed the examinations held in the same for medical and surgical degrees: (*a*) Chemistry and Practical Chemistry, (*b*) Physics and Practical Physics, (*c*) Biology, (*d*) Anatomy and Practical Anatomy, (*e*) Physiology and Practical Physiology. *B.* That he has attended the following courses: (*f*) One Course of Lectures on Medicine, (*g*) One Course of Lectures on Surgery, (*h*) Special Courses of Lectures on the Surgery and Medicine of the Mouth, (*i*) Pathology and Bacteriology. And has passed the examinations for candidates for Dental degrees held in each of these subjects. *C.* That he has attended courses in: (*k*) Dental Histology and Patho-Histology; (*l*) Comparative Dental Anatomy; (*m*) Dental Surgery and Prosthetic Dentistry. *D.* That he has received instruction in the Clinical Examination of living cases at the dental department of a general hospital for a period of not less than six months. The Final Examination will deal with the subjects in Classes *C* and *D*. On the expiration of twelve months from the date of passing the examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery. For this degree candidates will be required to submit a Thesis containing original work and investigations in some subject connected with Dentistry, which thesis shall be submitted to examiners to be nominated by the Board of Dental Studies. The degree will be awarded or withheld according to the report of these examiners.

UNIVERSITIES AND COLLEGES.

Scholarships, Prizes, Etc., in the Medical Schools.

The following is a list of the scholarships, prizes, etc., awarded for the session 1899-1900:—

Middlesex Hospital.—Entrance scholarship—first, W. N. Kingsbury; second, T. R. Felix; University scholarship, L. Courtauld; Broderip scholarship—first, F. D. Blandy; second, W. P. Pancknidge; Governors' prize, F. D. Blandy; Hetley prize, F. D. Blandy; Lyell medal, R. F. C. Ward; Leopold Hudson prize, T. W. Scott; second year's exhibition, P. G. Foulkes, W. Gilhtt (*prox. acc.*); first year's exhibition, W. G. Taylor, medicine—prize, J. S. Goodall; surgery—prize, J. S. Goodall; certificate, N. Black; practical medicine—prize, E. R. Griffiths; certificates, H. R. Dutton and T. W. Scott (equal), G. P. Duprey, G. H. K. Young; practical surgery—prize, L. F. Lovell-Keays: certificates, G. P. Duprey, D. Smith, E. R. Griffiths, S. Hastings, R. Phillips, and C. W. Rowntree; forensic medicine and public health—prize, R. A. Pitter; certificate, C. E. Lakin: mental diseases—prize, C. E. Lakin; pathology—prize, A. E. Pinniger; certificate, S. Hastings; midwifery—prize, D. J. Thomas; certificate, H. B. Smith; practical midwifery—prize, G. E. Froggatt; certificates, T. W. Scott, D. T. Jones, C. E. Blackstone, and F. B. Penfold; pharmacology and therapeutics—prize, D. J. Thomas: certificates, T. Rose and J. W. Hele; anatomy—prize, W. Gillitt: certificates, F. G. Foulkes, J. D. Jones, and T. Rose; dissections—prize, W. Gillitt; certificates, J. W. Hele and J. D. Jones; physiology—prize, F. G. Foulkes: certificate, W. Gillitt; histology—prize, W. C. Macaulay; certificates, H. W. Perkins and W. G. Taylor: chemistry, winter session—prize, C. H. B. Thompson; summer session—prize, F. L. Dickson; certificate, J. C. L. Hingston; practical pharmacy—prize, T. R. Felix; certificates, F. L. Dickson and W. C. Macaulay.

King's College, London.—Faculty of Medicine.—Samtrooke exhibitions, E. L. Holland, T. H. Jones, and J. Jones; medical entrance scholarship, A. J. Wigmore; Warneford scholarships, J. A. Drake and M. R. C. MacWatters; senior scholarship, A. Edmunds; second year scholarship, H. B. Day; junior scholarships, T. H. Jones and E. L. Holland; Rabbeth scholarship, F. C. McCombie; Leathes prize, H. Balme and C. J. Galbraith; Warneford—first prize, H. Balme; second prize, E. A. Bell; Barry (divinity), A. D. Griffith; Tanner prize, E. W. F. Dolman; Todd prize, A. Edmunds; hygiene prize, J. D. Clay; pathological anatomy prize, A. H. Brebaut; obstetric medicine prize, forensic medicine prize, and medicine prize, A. P. Reid; surgery prize, F. C. Carle; clinical surgery prize, H. L. Willcox; anatomy prize, physiology prize, chemistry prize, and materia medica prize, A. A. Myers.

University College, London.—Faculty of Medicine—Entrance scholarships—Bucknill scholarship, £120, G. Hall; int. med. course, £57 15s. each, J. A. Ferrière, E. Mapother; final M.B. course, £79 16s. each, C. S. Parker, T. L. Llewellyn; Atchison scholarship (£55 per annum for two years), R. E. Lloyd; Bruce medal, R. E. Lloyd; physiology, senior class, gold medal, A. M. H. Gray; third class, G. S. Hett; junior class, silver medal, R. A. Greeves; certificates, 2* (equal), J. A. Ferrière, G. Hall, 4*, R. S. Woods, 5*, E. G. Perodeau; second class, A. G. C. Findlay; third class, N. S. Finzi, P. M. Roberts, C. S. White; anatomy, senior class, first silver medal, A. M. H. Gray; second silver medal G. S. Hett; third class, C. H. Berry, M. W. Stewart Smith; junior class, silver medal, R. A. Greeves; certificates, 2*, G. Hall, 3*, C. D. Holdsworth; second class, J. A. Ferrière, G. E. O. Williams, R. S. Woods; third class, W. Appleyard, A. J. Blaxland, H. Farncombe, A. G. C. Findlay; medicine, second class, L. G. Hopkins, A. E. Jones, R. E. Lloyd; surgery, gold medal, R. E. Lloyd; silver medal, L. G. Hopkins; second class, A. E. Jones; pathology, morbid histology and bacteriology, Tuke silver medal, T. L. Llewellyn; third class, C. S. Parker; practical surgery, Erichsen prize, L. G. Hopkins; certificates, 2*, S. H. Bown, 3*, O. L. Addison, 4*, T. C. Savage; second class, S. Brec, R. E. Lloyd, H. W. Reynolds, A. N. Stevens; clinical medicine, senior class, Fellowes gold medal, H. W. Reynolds; Fellowes silver medal, A. E. Jones; certificate, 3*, T. C. Savage; second class, D. L. Davies, A. Emerson, L. G. Hopkins, R. E. Lloyd, G. A. Upcott Gill; junior class, Fellowes silver medal, A. F. Horn; certificates, 2*, G. E. Waugh, 3*, C. S. Parker, 4*, J. E. Stratton; second class, J. B. Burt, W. T. Crawford, L. A. E. de Zilwa, T. L. Llewellyn, W. Parsons; third class, J. C. Flemine, F. J. Lawson; clinical dental surgery, silver medal, L. G. Hopkins, certificates, 2*, equal, A. E. Jones, R. E. Lloyd. *Obtained the number of marks qualifying for a prize.

London Hospital.—Price scholarship in science—£100, R. Milne Price scholarship in anatomy and physiology—£60, A. W. S. Fisher. Entrance science scholarships—£60 scholarship, £35 scholarship (equal scholarships divided), T. D. Smith and G. A. Soltau. Buxton scholarships—Arts, £30 scholarship, J. A. Mulvany; £20 scholarship, J. E. Hoar. Epsom scholarship, for students of Epsom College—L. Warren. Clinical medicine—£20 scholarship (equal, scholarship divided), A. B. Soltau and J. H. Philbrick; honorary certificate, H. P. Bradley. Clinical surgery—£20 scholarship, A. B. Soltau; honorary certificates, A. L. Matthews, G. F. Barham, W. Steen. Clinical obstetrics—£20 scholarship, W. E. Ellis; honorary certificates, A. L. Matthews, F. Challans, I. Stusser, H. Balcan. Duckworth Nelson prize biennial, £10, awarded 1899, Andrew Clark

prize—biennial, £26, H. P. Bradley; honorary certificate, A. B. Soltau. Letheby prizes—senior, £20, M. Culpin; honorary certificate, J. A. Milne; junior, £10, T. D. Smith; honorary certificates, R. Milne, A. G. Tresidder, V. E. Ridewood. Hutchinson prize—triennial, £35, next award 1902. Anatomy and physiology—£25 scholarship; M. T. Williams; honorary certificates, H. B. W. Smith, H. R. Cran, R. V. Dolbey. Anatomy and biology—£20 scholarship, R. Milne; honorary certificate, D. T. Smith. Minor surgery prizes—£15 prize, C. D. Walsh; £10 prizes, J. Avery, H. B. W. Smith; £5 prizes; A. C. Dixon, N. W. Hill, H. W. B. Dancher, R. V. Dolbey, N. C. Wallis; honorary certificates, F. H. Rotherham, F. Todd. Practical anatomy—£6 prize, R. L. Ridge; £4 prize, E. S. Molyneux; honorary certificates, F. W. Jones, H. H. Bashford, T. S. Dudding. Anderson prizes—£2, A. Simey, C. E. Ham, R. A. Eastmonde; £1, A. J. Couzens, A. W. S. Fisher, W. B. Vaile; honorary certificates, C. V. Bulstrode, R. Burges, E. M. Clarke, L. C. Coode, H. P. Croby, E. F. Fisher, H. R. Jeremy, H. E. Ridewood, A. M. Simpson, J. E. Spicer, I. Stusser, E. Weatherhead.

ST. THOMAS'S HOSPITAL.—Entrance science scholarships—L. Bathurst, first scholarship, £150, and certificate of honour; L. Craske, scholarship, £60, and certificate of honour. University scholarship—A. C. Hudson, scholarship, £50, and certificate of honour. First year's students—K. Takaki, the William Tite Scholarship, £27 10s., and certificate of honour. Second years' students—(equal) H. S. Bennett, the Peacock Scholarship, £38 10s., and certificate of honour; F. W. W. Smith, college prize, £20, and certificate of honour. Third years' students—C. U. Ind, second tenure of Musgrove Scholarship and certificate of honour. Fifth year's students—F. C. Eve, College prize, £10 (medicine); W. H. O. Woods, college prize, £10 (surgery); T. S. Taylor, college prize, £10 (midwifery); J. E. H. Sawyer, Hadden prize, £10 (pathology); J. L. Lock, college prize, £10 (pharmacology); R. B. Kinloch, college prize, £10 (forensic medicine and insanity); W. B. Fry, college prize, £10 (public health). Practical medicine—R. B. Kinloch, the Mead medal, founded by Mr. and Mrs. Newman Smith, and F. C. Eve, certificate of honour. Surgery and surgical anatomy—T. H. Edwards, the Cheselden medal, founded by the late George Vaughan, Esq. Pathology and morbid anatomy—C. L. Hawkins, the Bristowe medal; A. E. Martin, certificate of honour; L. S Dudgeon, certificate of honour. Grainger testimonial prize—F. C. Eve, prize, £15. For reports on Surgical cases—J. E. H. Sawyer, the Solly medal and prize. For general proficiency and good conduct—F. B. Skerrett, the treasurer's gold medal.

ST. MARY'S HOSPITAL.—Entrance scholarships—In natural science of £144, J. N. Kilner, £78 15s., C. J. Singer, £78 15s. (not awarded); exhibition in natural science of £26 5s., U. Marks; University scholarships of £37 15s., A. H. Thomas and Gnoh Lean Tuck, B.A.; exhibitions of £26 5s., B. H. Spilsbury, B.A., A. G. Bate, B.A., and H. M. Wilson, B.A. General proficiency scholarships (£20 each)—For proficiency in anatomy, physiology (including histology), biology, chemistry, and physics (not awarded); for proficiency in anatomy and physiology (including histology), M. F. Kelly; for proficiency in midwifery, pathology, medical jurisprudence, and materia medica, H. J. Van-Praagh; for proficiency in medicine and surgery (including operative surgery), W. H. Willcox, B.Sc. Special prizes—gold medal in clinical medicine W. H. Willcox, B.Sc.; Kerslake scholarship in pathology and bacteriology, W. V. Shaw, B.A.; Meadows memorial prize in obstetrics, H. J. Van-Praagh; clinical medicine, H. J. Van-Praagh, B. F. Hussey; clinical surgery, W. V. Shaw, B.A., J. F. E. Bridger, Æeq.; opthalmology, R. R. Cruise, R. Hobbs; dermatology, W. Sass, H. T. Doble; prosectors, W. L. M. Goldie, J. H. Burgess. Class examinations, summer session, 1889—Hygiene prize, B. F. Hussey; certificate, J. Klein; materia medica prize, W. J. Morrish; obstetrics prize, E. W. Holyoak; certificate, A. Whitmore, B.A.; medical jurisprudence prize, B. F. Hussey; certificate, E. L. Jenkins; psychological medicine prize, W. H. Wilcox, B.Sc.; practical chemistry prize, E. G. R. Lithgow; certificate, H. E. Batten; chemistry prize, U. Marks; certificate, G. E. Peachell. Winter session, 1899-1900—Medicine prize, not awarded; certificates, J. Tattersall, E. R. Clarke, B.A., J. C. Matthews, B.A.; surgery prize, W. H. Clayton-Greene, B.A.; certificates, C. H. Brodribb, R. R. Cruise; practical surgery prize, C. H. Brodribb; certificates, W. H. Clayton-Greene, B.A., J. F. E. Bridger, T. H. J. E. Hughes; pathology prize, J. C. Matthews, B.A.; certificates, F. M. G. Tulloch, E. R. Clarke, B.A.; physiology (senior) prize, not awarded; certificate, E. L Ash; physiology (junior) prize, W. K. D. Breton; certificates, G. E. Peachell, A. F. Cole; histology prize, J. H. Burgess; certificate, E. L. Ash; anatomy (senior) prize, W. L. M. Goldie; certificates, A. C. Motta, J. H. Burgess; anatomy (junior) prize, G. E. Peachell; certificate, J. N. Kilner; biology prize, S. H. Kilroe; certificates, E. C. Young, F. C. Lloyd.

WESTMINSTER HOSPITAL.—Entrance scholarships, E. H. Bennett-Bailey (110 guineas), C. G. Browne (£50), H. C. Hocken (£40), L. White (£40), P. Farrant (£40), H. G. L. Haynes (£40), C. D. Fox (£40), W. B. France (£30); Chadwick Prize (value 20 guineas), W. Payne (prize), F. W. W. Dawson (certificate); Bird prize and medal (value £14), W. Payne; medicine, F. W. W. Dawson (prize); surgery, W. Payne (prize), F. W. W. Dawson (certificate); clinical surgery, W. Payne.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—Anatomy (senior)—prize, Miss Slater; certificates, Miss Hill, Miss E. Watts, Miss Parson, Miss Francis, Miss Townsend, Miss Whitlock, Miss Chambers, and Miss Whittingham (equal). Miss Lamb, Miss Iredell; anatomy (junior)—prize, Miss Bolton; certificates, Miss Kensington, Miss Fraser, Miss Elgood; practical anatomy—first prize, Miss Whitlock; second prize, Miss Slater; physiology (senior)—prize, Miss Slater; certificates, Miss Chambers, Miss Elgood, Miss Iredell, Miss Thin, Miss Parson, Miss Sexton, Miss Watts, Miss Whitlock; physiology (junior)—prize, Miss Bolton; certificate, Miss Payne; organic chemistry—prize, Miss Chambers; certificates, Miss Hill, Miss Iredell, Miss Slater, Miss Watts, Miss Thin, Miss Kidd, and Miss Woodward (equal); inorganic chemistry—prize, Miss Board; biology—prize, Miss Gibbon; certificates, Miss Schiele and Miss Waller (equal), Miss O'Brien; physics (for prel. sci. students)—prize, Miss Hall; certificate, Miss O'Brien; physics (for I. S.A. students)—prize, Miss Board and Miss Mann (equal); certificates, Miss Kellgren, Miss Renouf; medicine—prize, Mrs. Willey; certificates Miss E. M. Sharp, Miss H. G. Jones and Miss Woodcock (equal); midwifery—first Evans prize, Miss Shepheard; second Evans prize, Miss Scharlieb; third Evans prize, Miss Walters; certificates, Miss Hickman, Miss Woodcock; Miss Fraser, Miss McDougall, and Miss Kate Vaughan (equal). Mrs. Willey, Miss E. M. Sharp, Miss Gregg, Miss Chamberlain, Miss H. G. Jones, Miss Ivens, Miss A. E. Brown, Miss Mecklenburg, Miss Thorp, Miss Burgess; operative midwifery—Evans prize of five guineas, Miss McDougall; certificates, Mrs. Willey, Miss Hamilton, Miss Fraser, Miss Ivens, Miss Shepheard, and Miss S. Smith (equal). No certificate is given under 66 per cent. of marks. Entrance scholarship for October, 1899, given by the Executive Council, value £30, awarded to Miss Sommer. Mackay prizes, October, 1899—first prize (value £20), Miss Maude Smith; second prize (value £20), Miss Hooper.

ST. GEORGE'S HOSPITAL.—£150 entrance scholarship in arts, H. W. Haward,; £50 ditto, M. L. Maitland; the Henry Charles Johnson prize in anatomy, D. Brodie; the Brackenbury prize in surgery, T. C. English; the Thompson medal, W. F. Fedden; the Pollock prize in physiology, H. St. Faber; the Treasurer's prize, W. F. Fedden; the Webb prize in bacteriology, H. R. D. Spitta; proficiency prizes:—1st year, W. Byam; 2nd year, L. E. Ellis; 3rd year, D. Brodie; 4th year, A. Coddy; the Brackenbury prize in medicine, T. C. English. The William Brown £40 exhibition has not been awarded.

CORRESPONDENCE.

THE MEDICAL DEFENCE UNION.

SIR,—In reference to the letter which appeared anonymously in the BRITISH MEDICAL JOURNAL of August 18th, I am directed to reply as follows: It is difficult to understand that the writer could possibly be a member of the Union, or if so that he has ever taken the trouble to read the annual reports, as he has made such inaccurate statements in reference to the financial progress of the Union.

For instance, the balance at the end of last year was £602 11s., and in the preceding year, as detailed in the audited accounts, was £581 16s. 11d., showing an increase of £21 4s. 1d., whereas your correspondent states that there was a decrease of £447 9s. There has been a steady increase of income ever since the reconstruction some years back, as a careful perusal of the reports show. It is the practice of the Union to spend its income as far as is required for the legitimate purpose of defending its members, and not to refuse to take up cases requiring defence for the mere purpose of forming a reserve.

It is a matter of regret that a member should seek to criticise the Union without first verifying his statements. Such verification or the reverse could easily have been accomplished either by reference to the reports or by seeing the Treasurer or Secretary at the offices. The question of payment for valuable services rendered to the Union has been decided by the Council and confirmed by the members in general meeting assembled.—I am, etc.,

A. G. BATEMAN, General Secretary.

Medical Defence Union, 4, Trafalgar Square, W.C.,
Aug. 21st.

MEDICAL NEWS.

OPEN-AIR TREATMENT FOR CONSUMPTIVE PAUPERS.—Acting on the suggestion of the Local Government Board, the managers of the Poplar and Stepney Sick Asylum have convened a conference of representatives of all metropolitan unions to consider the question of providing for the treatment of pauper consumptives by the new open-air method.

LIVINGSTONE COLLEGE.—Livingstone College, which has been established for the past seven years for the purpose of training foreign Missionaries in the elements of Medicine and Surgery, has recently become an incorporated society under the title of "Livingstone College (Incorporated 1900)." As has already been announced, new premises have been acquired for the college at Knott's Green, Leyton, and it is intended that this building should be a permanent memorial in London to the work of Dr. Livingstone. The sum of £2,000 has already been contributed to the Livingstone Memorial Fund by two friends who have been connected with the work since its foundation, and £1,000 has been given by the Atchison Trust. Mr. Robert Barclay has given £500, and other sums have been subscribed, amounting in all to about £4 000. It is believed that another £4,000 will be required to complete the work. The Principal of the College, Dr. Harford Battersby, is particularly anxious to obtain the names of all the late Dr. Livingstone's friends and associates, in order that an invitation may be sent to them to the opening ceremony of the new premises. He may be addressed at 133, Salisbury Square, E.C.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, AUGUST 25TH, 1900.

DEATH OF SIR WILLIAM STOKES.

The whole profession will unite in deep regret for the untimely death of Sir William Stokes, Consulting Surgeon to the Field Force in South Africa, who fell a victim to pneumonia at Durban on August 18th. In him surgery has lost one of its most eminent professors, and the world of medicine one of its most conspicuous figures. This week, owing to the pressure of other matter, we can give only a brief sketch of his career, but we hope to publish a full notice in an early issue. Sir William, who was the son of the famous "Stokes of Dublin," was born in that city in 1839, and was educated at the Royal School, Armagh, at Trinity College, and the Carmichael School of Medicine, Dublin. Afterwards he worked in the medical schools of London, Berlin, Vienna, and Paris. He graduated in the University of Dublin, B.A. in 1859, and M.D. and M.Ch. in 1863. In 1874 he became a Fellow of the Royal College of Surgeons of Ireland. He was Surgeon to the Meath Hospital and the County Dublin Infirmary and was formerly Senior Surgeon to the Richmond Surgical Hospital. He was also Professor of Surgery at the College of Surgeons, and in 1886 was elected its President. In the same year the honour of knighthood was conferred upon him, and in 1892 he was appointed Surgeon to the Queen in Ireland. He delivered the Address in Surgery at the Jubilee meeting of the British Medical Association in 1882, and was the author of numerous other contributions to medical literature, and of an interesting life of his distinguished father, which forms one of the "Masters of Medicine" series. Sir William Stokes was a past President of the Pathological Society of Ireland and an Honorary President of the International Medical Congress at Berlin in 1890, at Rome in 1894, at Moscow in 1897, and at Paris in 1900. Sir William Stokes was a surgeon of the highest distinction. His work speaks for itself. His scientific attainments commanded the admiration of the profession, and his personal character gained for him the respect of all. To us his death has come almost as a personal loss, for he was one of our correspondents in South Africa, and the letters from him which have appeared in the British Medical Journal form a most valuable record of his splendid work in the field. Sir William Stokes has fallen on the field of duty and of honour as distinctly as if he had been killed in battle, and his country owes his memory a heavy debt of gratitude. The sympathy of the nation as well as of the medical profession will go out to Lady Stokes in her bereavement.

ANOTHER SOUTH AFRICAN COMMISSION.

The Government has appointed a Commission "to inquire into the nature, causation, pathology, and modes of prevention (more particularly as affecting armies in the field) of dysentery, and its connection, if any, with enteric fever. The Commissioners are Professor Notter, of Netley, Professor W. J. Simpson, of King's College, and Major Bruce, R.A.M.C. Professor Notter and Professor Simpson are recognised as authorities on hygiene, and Major Bruce, who is now in South Africa, is an expert bacteriologist, who has done good service in the investigation of horse sickness. We understand that a complete laboratory equipment is being sent out.

EPSOM COLLEGE.

We have several times had occasion in recent years to call attention to the remarkably successful results of the educational system pursued at Epsom College, as shown by the scholarships and distinctions won by its pupils at the universities and in the medical schools. This year the results have exceeded even the average of success to which we are accustomed in the case of this excellent school. At the recent Matriculation Examination of the University of London, of 20 candidates sent up from Epsom, 16 passed, 10 being placed in the first and 6 in the second division. At the Preliminary Scientific Examination of the same University, out of 14 candidates from Epsom 12 were successful, 4 passing in the first, 3 in the second division, while 1 passed in Chemistry and Physics, and 4 in Biology. At the first examination of the Conjoint Board in England, 2 passed, 1 in all and 1 in part of the subjects. For the Intermediate Science Examination 2 entered, both of whom passed, 1 in the first, and 1 in the second division. We think the Headmaster, the Rev. T. N. Hart-Smith, and his staff are to be heartily congratulated on a result which may fairly be called brilliant. Acknowledgment must also be made of the work of the Governing Body, to whose fostering care and enlightened direction the school largely owes its prosperity.

THE JENNER INSTITUTE OF PREVENTIVE MEDICINE.

The Governing Body of the Jenner Institute announce their intention of awarding three studentships of £150 each, tenable by British subjects for one year from January 1st next, and renewable for a second year at the option of the Governing Body, for the purposes of research at the Institute. Applications from candidates must be sent in by November 1st.

SHORTHAND FOR MEDICAL STUDENTS.

With reference to the Shorthand Examination announced by the Society of Medical Phonographers in the British Medical Journal of July 7th, p 72, we are requested to state that the Executive Committee hereby gives notice, that unless a minimum total of 12 candidates send in their names to the Examination Secretary (Dr. Gray, Oxford) by September 30th the examination will not be held.

The *London Gazette* of the 21st inst. announces that the Queen has been pleased to appoint George William Balfour, Esq., M.D., to be one of Her Majesty's Physicians in Ordinary for Scotland, in the room of Sir Thomas Grainger Stewart, M.D., deceased.

The Prince of Wales has been pleased to appoint Dr. W. J. Collins, F.R.C.S., L.C.C., Surgeon to the Royal Eye Hospital, to be a member of the Council of His Royal Highness's Hospital Fund.

At a recent meeting of the Council of the Poor-Law Medical Officers' Association Dr. Major Greenwood was elected Honorary Secretary of the Association.

Mr. Raymond Johnson returned last week from South Africa in the transport *Canada*, after having served six months with the Imperial Yeomanry Hospital.

Several letters and other communications of great interest and importance are unavoidably held over this week owing to want of space.

MEDICAL VACANCIES.

The following vacancies are announced:

BATH: ROYAL UNITED HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board, lodging, and washing. Applications to the Secretary by September 3rd.

BODMIN: CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer; unmarried. Salary, £120 per annum, with board, furnished apartments, etc. Applications to the Medical Superintendent.

BOMBAY CITY.—Executive Health Officer. Monthly salary, minimum Rs. 1,200, maximum Rs. 1,500. Applications to be addressed to the Municipal Commissioner for the city of Bombay, c.o. Mr. John Lithiby, Local Government Board Office, Whitehall, London, by August 25th.

BOURNEMOUTH ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £80 per annum, with board. Applications to the Chairman of the Committee by September 6th.

BRADFORD ROYAL INFIRMARY.—(1) Dispensary Surgeon. (2) Junior House-Surgeon. Candidates must be unmarried. Salary, £100 and £50 per annum respectively, with board and residence. Applications, endorsed "Dispensary Surgeon" and "Junior House-Surgeon," to be sent to the Secretary by August 28th.

BRECON INFIRMARY.—Resident House-Surgeon, unmarried. Salary, £100 per annum, with furnished apartments, board, etc. Applications to the Secretary, 6, Bulwark, Brecon.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House-Surgeon. Salary, £120 per annum, with board and residence. Applications to the Assistant Secretary, 113, Queen's Road, Brighton, by August 28th.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon. Applications to the Secretary by September 10th.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant House-Surgeon," to the secretary.

CARDIFF: UNIVERSITY COLLEGE.—(1) Demonstrator and Assistant Lecturer in Anatomy; (2) Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120. Applications to the Secretary by September 8th.

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary, £80 per annum, with residence and maintenance in the house. Applications to the Chairman of the Board of Management, 29, Eastgate Row, Chester.

CHORLEY HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board and lodging. Applications to the Honorary Secretary.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary, £100 per annum, with board, etc. Applications to the Secretary by September 8th.

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—District Surgeons. Applications to the Secretary by September 18th.

CITY OF SHEFFIELD HOSPITALS.—Assistant Resident Medical Officer. Salary, £150 per annum, with board, lodging, and washing. Applications to the Town Clerk by August 28th.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Dispenser and Assistant to House-Surgeon. Honorarium, 20 guineas per annum, with board, lodging, and washing. Applications to the Honorary Secretary by September 2nd.

DOUGLAS, ISLE OF MAN: NOBLE'S GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon, unmarried. Salary, £72 per annum, with board and washing. Applications to the Honorary Secretary, 25 Athol Street, Douglas, by September 7th.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—(1) House-Surgeon. Honorarium of £25 at end of six months, with board, residence, etc. (2) Resident Medical Officer. Salary, £80 per annum, with board, residence, and washing. (3) Medical Officer for casualty department. Appointment for six months. Salary, £100 per annum, with luncheon. Applications in each case to the Secretary by September 15th.

EDINBURGH: VICTORIA HOSPITAL FOR CONSUMPTION.—(1) Resident Physician. Residence, board, and nominal honorarium provided. (2) Non-resident Clinical Assistant. Honorarium, £60 per annum. Applications to the Honorary Secretaries, Messrs. Wallace and Guthrie, W.S., 1, North Charlotte Street, Edinburgh, by August 27th.

GLASGOW UNIVERSITY.—Professor of Clinical Medicine. Salary about £112 and share in fees. Applications to the Secretary of the Glasgow University Court, 91, West Regent Street, Glasgow by September 12th.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Anæsthetist. Applications to the Secretary by September 10th.

HAMPSTEAD HOSPITAL, N.W.—Resident Medical Officer. Salary at the rate of £120 per annum, with rooms, coals, and gas. Applications to the Honorary Secretary by September 10th.

HORTON INFIRMARY, Banbury.—House-Surgeon and Dispenser. Salary, £80 per annum, with board and lodging. Applications to the Honorary Secretary.

HUDDERSFIELD INFIRMARY.—Junior House-Surgeon. Salary, £60 per annum, with board, residence, and washing. Applications to Mr. J. Bate, the Infirmary, by September 1st.

KENT AND CANTERBURY HOSPITAL.—Assistant House-Surgeon; unmarried. Salary, £60 per annum, with board and lodging. Applications to the Secretary by August 30th.

LIVERPOOL EYE AND EAR INFIRMARY.—House-Surgeon. Salary, £80 per annum with residence and maintenance. Applications to the Honorary Secretary by September 1st.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) House-Physician. Salary, £40 per annum. (2) House-Surgeon. Salary, £40 per annum. (3) Assistant House-Physician. Salary, £25 per annum. (4) Assistant House-Surgeon. Salary, £25 per annum. Appointment for six months. Applications to the Secretary by September 15th.

NORTH-WEST LONDON HOSPITAL, Kentish Town Road, N.W.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum, with board, residence, and washing. Junior officer, eligible for election to senior post when vacant. Applications to the secretary by September 4th.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Unmarried. Salary, £140 per annum, with all found except board. Applications to the Secretary.

ROTHERHAM HOSPITAL.—Senior House-Surgeon. Salary, £105, all found. Candidates should have ophthalmic experience. Applications to Mr. E. S. Bayliss, Moorgate, Rotherham.

ROYAL ORTHOPÆDIC HOSPITAL, Oxford Street.—House-Surgeon and Registrar. Appointment for six months but eligible for re-election. Salary at the rate of £100 per annum, with residence and partial board. Applications to the Secretary by September 1st.

SHREWSBURY: EAR AND THROAT HOSPITAL FOR SHROPSHIRE AND WALES.—Surgeon, must be F.R.C.S.Eng. Honorarium, £150 per annum. Applications to the Secretary by August 27th.

STOCKPORT INFIRMARY. Junior Assistant House-Surgeon. Appointment for six months. Salary at the rate of £24 per annum, with board, washing, and residence. Applications to the Secretary by August 28th.

VICTORIA HOSPITAL FOR CHILDREN, Queen's Road, Chelsea, S.W.—Resident Medical Officer. Appointment for six months. Honorarium, £25, with board and lodging. Applications to the Secretary by September 1st.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum, with board, lodging, washing, and attendance. Applications to the Secretary.

WEST HAM HOSPITAL, Stratford, E.—Junior House-Surgeon. Appointment for one year. Salary, £75 per annum, with board, residence, etc. Applications to the Secretary by August 28th.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician. (2) House-Surgeon. Appointment for six months. Board and lodging provided. Applications to the Secretary Superintendent by September 26th.

WEST NORFOLK AND LYNN HOSPITAL, King's Lynn.—House-Surgeon. Salary, £100 per annum, with board, residence, and washing. Applications to the Chairman of the Weekly Board by August 31st.

MEDICAL APPOINTMENTS.

BISSET, Alex., M.B., Ch.B., appointed Resident Physician and Surgeon to the Aberdeen Royal Infirmary (correction).

COURTENAY, F. W. E., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., appointed Surgeon on board the Allan Mail steamship "Numidian," for Canada.

FORSYTH, Charles E. P., M.B., Ch.B., appointed Assistant Medical Officer, Metropolitan Asylums Board, to the Eastern Hospital, Homerton, N.E.

FRAZER-TOOVEY, Thos. E., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., L.M.Rotunda, appointed House-Surgeon to the Teignmouth Hospital, S. Devon.

HATTRAY, A. M., M.B., C.M.Edin., appointed Senior Assistant Medical Officer to the Newcastle City Asylum, Gosforth, *vice* D. Hunter, M.B., B.C.Cantab, resigned.

SYKES, William, M.D., appointed Honorary Medical Officer to the Woking Victoria Cottage Hospital.

DIARY FOR NEXT WEEK.

MONDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Seymour Taylor: The Diagnosis of Chest Cases. Lecture I.

THURSDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Seymour Taylor: The Diagnosis of Spinal Cord Cases. Lecture II.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

HELME.—On July 25th, at 337, Oxford Road, Manchester, the wife of T. Arthur Helme, M.D., M.R.C.P.Lond., F.R.S.E., of a son.

HOUGHTON.—On August 14th, at Bridgend House, West Looe, Cornwall, the wife of Leonard F. Houghton, M.R.C.S., L.R.C.P., of a son.

TONKING.—On August 19th, at Stanmore, Camborne, Cornwall, the wife of John Herbert Tonking, M.B.Lond., of a son.

DEATH.

BARKER.—On July 7th, 1900, at Kuching, Sarawak, Constance, the dearly-beloved wife of A. J. G. Barker, Principal Medical Officer, Sarawak, Borneo.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Messrs. Arnold and Sons; Accuracy; A. Ashby, M.B., Reading; Mr. R. G. Allen, Belper; Aggrieved. **B** Messrs. Browne and Sayer, London; Mr. E. J. Beards, Birmingham; A. G. Bateman, M.B., London. **C** Dr. C. M. Chadwick, Leeds; Contract Practice; T. Campbell, M.B., Bridge of Weir; Mr. W. R. E. Coles, London. **D** Messrs. Down Bros. **E** Mr. R. S. Edwards, London. **F** W. W. Fyfe, M.B., Johnstone; F. G. H. **G** Sir J. A. Grant, Ottawa; Dr. E. B. Gray, Oxford. **H** Dr. I. Hunt, Sheffield; Mr. G. C. Hall, Ilsip; Dr. Harford-Battersby, London; Mr. W. H. Hall, Tunbridge Wells; Dr. T. Hayes, Rathkeale; Mr. T. G. Horder, Cardiff; E. H. Houlton, M.B., Shirebrook; Dr. V. Harley, London; Dr. J. H. Hunter, South Shields. **J** J. L. **K** Dr. C. P. Kennard, George Town. **L** Mr. T. Laffan, Cashel. **M** Dr. E. P. Manby, London; Dr. J. Murphy, Sunderland. **N** Never Again; Dr. E. N. Nason, Nuneaton; Northerner; Mr. P. Newell, Crowborough. **P** Mr. J. H. Potter, Porlock; Mr. J. H. Parsons, London; Dr. I. D. Poole, Wolverhampton; P. M. E; E. Phillips, M.B., Coventry. **R** A. C. Rendle, M.B., Liverpool; Dr. J. Reid, Redhill; Mr. H. Rees, Glan-Garnant. **S** Subscriber; Messrs. Southall Bros. and Barclay, Birmingham; Mr. R. J. H. Scott, Bath; Dr. D. W. Samways, London; Surgeon; Somerset. **T** Dr. R. Turner, Liverpool; Tropicus; T. C. **U** Mr. J. Unsworth, Liverpool. **W** J. Walters, M.B., Reigate; Dr. J. W. Washbourn, Deelfontein; Mrs. Warden, London; A. C. Waters, M.B., Southend; Wrangle; W. Williams, M.B., Portmadoc, etc.

BOOKS, ETC., RECEIVED.

An Atlas of Illustrations of Pathology compiled for the New Sydenham Society. Fasciculus xiii. London: New Sydenham Society. 1900.

L'Examen Clinique des Fonctions Rénales par l'Elimination Provoquée. Par C. Achard et J. Castaigne. Paris: Masson et Cie. 1900. Fr. 1.25.

*** In forwarding books the publishers are requested to state the selling price.

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SIXTY-EIGHTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at IPSWICH, July 31st, August 1st, 2nd, and 3rd, 1900.

PROCEEDINGS OF SECTIONS.

SECTION OF TROPICAL DISEASES.

Colonel Kenneth Macleod, M.D. (ret. I.M.S.), President.

A DISCUSSION ON THE TREATMENT OF MALARIA BY QUININE.

I.—Andrew Duncan, M.D., B.S.Lond., M.R.C.P., F.R.C.S., Lieutenant-Colonel I.M.S. (ret.).

Physician to the Seamen's Hospital, Royal Albert Docks, London.

In opening the discussion on the treatment of malaria by quinine, I fear I cannot offer you many new facts as to its relation in this respect. I can but corroborate those already produced on its behalf. Owing, however, to the kindness of Dr. Manson—a name which I am sure you will agree with me is imperishably connected with the subject of malaria—I am enabled to adduce some fresh evidence in contradistinction to that previously in vogue as to its value in Africa.

The Prophylactic Action of Quinine.

In regard to its prophylactic action I may perhaps be permitted to recapitulate some of the evidence already in our possession. Amongst French physicians M. Corré holds that the daily exhibition of quinine or tea given at the beginning of the malarious season, or whenever troops are operating in malarious countries, will diminish the chance of infection, but will not be of any avail against the more pernicious form. M. Marvaud states that quinine gave good results during the Niger expedition, except as regards the gravest forms of the disease. MM. Kelsch and Kiener state that the officers of the French marines favour the exhibition of quinine, but again except the graver forms. M. Thorel had success in Mekong. M. Bizardel has found it successful in warding off attacks of pernicious ague. The Austrian and Russian surgeons, however, found no advantage in its use. M. Pola experimented on 736 soldiers, 500 of whom took quinine with attacks of malaria of 18 per cent; the remainder not taking it were attacked in the proportion of 28 per cent. The American physician, Dr. Bryan found quinine and cinchona to be sure prophylactics.

Coming now to our own countrymen, Dr. Bryson was in its favour. My friend the late Surgeon-Major Parke, ten days before entering the mouth of the Congo, gave the officers 4 grs. daily. There were only 2 cases of slight intermittent fever, although 350 miles of the most unhealthy region were passed through. At Peshawar in 1866, during the autumn 1,203 men took quinine with an admission of 10.22 per cent. for malarial fever; 1,202 men who had no quinine had an admission rate of 27.28 per cent. for fever.

As regards my own results, they are gathered from the Sikhs and Goorkhas, so that no disturbing elements of race or station were involved. In 1889, whilst in charge of the 14th Sikhs at Peshawar, the regiment having suffered to an unusual extent from malarial fever during the preceding year at Jhelum, A Company took from August 2nd to October 31st 3 grs., increased to 5 grs. during the last week. B Company similarly took the same quantity of cinchona. C and D Companies took arsenic, of which more anon presently. The results were as follows:

A Company,	taking quinine,	10	cases of	malarial fever
B "	taking cinchona,	11	"	"
E "	taking no drugs	4	"	"
F "		18	"	"
G "		4	"	"
H "		13	"	"

In 1896 50 men of the 2nd Prince of Wales' Own Goorkha Rifles took 3 grs. of quinine, and had not a single case of fever. The men taking no drug had 0.5 per cent. of malaria.

In 1897, 50 men taking 3 grs. of quinine had no malaria. The men of the regiment who took no drug had 9.8 per cent. of malaria.

In the Malay war no benefit was observed, or only a very slight one. As regards the West Regions of Africa, Harvey found that the blue-jackets who took quinine had just as much fever as the men who did not. In the Ashanti wars of 1893 and 1896 it proved of no benefit.

Last year the results of an inquiry promoted by Mr. Chamberlain and Dr. Patrick Manson came to hand—133 answers were obtained, proving beyond a doubt that quinine does exert a prophylactic action. Amongst the items that come out are the following:

Of 42 persons who took it regularly 5 had no benefit, and 37 had.
Of 16 persons who took it irregularly 1 had no benefit, and 15 had.
2 recommend it for newcomers.
2 do not recommend it.
2 recommend it before the rains.
1 recommends it when feeling depressed.
1 preferred arsenic.
Of the whole number it was efficacious in 87.7 per cent.; there was no result in 12.3 per cent.

Comparison of Quinine Salts with Other Drugs.

Arsenic.—The evidence in regard to this is conflicting. In Italy Dr. Ricchi in 1883 gave it to 39 persons in the district of Borino, where malaria is very rife. Of these 36 escaped entirely, whilst the 3 remaining had very slight attacks. Of 39 people who did not take it the majority had severe attacks. In 1885 657 persons were experimented upon, 402 gave good results, 119 pretty good, whilst not much effect was obtained in 136.

Dr. Ralph Leslie, whilst acting as Government Medical Officer in the Congo Free State, administered it during fifteen days every six weeks. This rendered everyone immune who took it regularly.

I, however, have obtained in India no benefit from its employment. In 1886 half of the 23rd Pioneers from August to December took liq. arsenicalis, and had 28 cases of ague; the other half not taking it had 26 cases.

In 1887 from September 20th to November 16th, the right wing of the 14th Sikhs took it and had 8 cases of ague; the left wing not taking it had 9.

In 1896 two companies of the 12th Sikhs took it from August 16th to October 30th. They had 24 and 16 cases respectively; 4 companies not taking it had respectively 24, 17, 21, and 13 cases.

Narcotine was recommended a few years ago at the meeting of the British Medical Association by the late Sir W. Roberts. In 1896, 50 men of the 2nd Goorkhas took 2 grs. daily of the drug; they had 3 per cent. of malaria cases. In 1897, 50 men taking a like dose had 6 per cent. The men taking quinine as just mentioned had no fever.

Curative Action of Quinine.

For the last three years of my service in India I have notes of 367 cases. As regards the value of certain remedies, my plan was to place each patient on a *placebo* for a week, and then, if the fever had not abated, to give an antimalarial drug. Considering only the cases in which the drug in question was given in attacks 20, and upwards, quinine comes out best of all as regards the smallest time necessary for administration to stop the attacks, and as regards the number of failures.

In 78 cases quinine required on an average 2.11 days for the cessation of the fever, and had only 2.05 per cent. of failure.

Nim bark was given either powdered in 1-drachm doses three times a day, or as 2 ounces of a decoction prepared by boiling 2 ounces of the bruised inner layer of the bark in a pint and a half of water for a quarter of an hour. This was the most successful after quinine. In 21 cases, the average duration of time in which the fever resisted treatment was 2.30 days, and its failures amounted to 18 per cent.

Berberis in 25 cases required 2.66 days for cure and had 50 per cent. of failures.

Narcotine in 66 cases, in doses 2 to 3 gr., required 2.77 days for treatment, and had 1.06 per cent. of failures.

Kreat, a tincture of the kreat halviva, is much recommended by the Bombay physicians. In 42 cases it required 3.26 days for cure, and had 50 per cent. of failures.

Indergao was vaunted by a Bombay native physician for its "marvellous effect as a prophylactic of malaria." This may

be so. As curative it stands lowest on the list. In 20 cases, it required 4.6 days for cure, and had 5 per cent. of failures.

METHOD OF ADMINISTRATION AND MODE OF ACTION OF QUININE.

In most cases it was given by the mouth. In those cases, however, where after several days no result occurred, it was given by the rectum in 20-gr. doses as well. Here a cure in nearly all cases resulted. This plan of administration I can certify is most successful.

Quinine probably acts by destroying the organism. Dr. Richards, of Philipville, some years ago described this action. Some hold that its action is chiefly on the small intracorpuscular forms and free spores, and so give it early; others, again, give it late, urging that it acts only on the large intracorpuscular forms. Another view is that it stimulates the phagocytes, the enemies of the parasite; but in whatever way it does act, it destroys the parasite.

II.—W. J. BUCHANAN, B.A., M.B., D.P.H., Major I.M.S.,
Superintendent Central Gaol, Bhagalpur, Bengal.

THE PROPHYLACTIC ISSUE OF QUININE. A SYNOPSIS OF AN EXPERIMENT ON A LARGE SCALE IN INDIAN GAOLS.

THE following is a statement of the case for and against the so-called "prophylactic issue" of quinine or other preparations of cinchona against malarial fever, as tried on a very large scale in the prisons of India during the past five years. In 1894 the experiment of giving daily, or several times a week, a dose of quinine or cinchonidine to every prisoner was tried in the Punjab. The sickness and mortality rates for the Punjab gaols in that year were so good and presented such a marked contrast to those of the other provinces in that very exceptionally unhealthy and malarial year that it seemed as if the good results must be to a great extent due to the issue of quinine. The Government of India therefore called the attention of the other provinces to the system, with the result that a trial of the drug in this way was ordered in all gaols. The following account chiefly applies to Bengal, about which I happen to know most.

It so happened that the years 1895 and 1896 were healthy non-malarial years even for the general population. The result was that at the end of the year a large number of most favourable reports were made on the use of the prophylactic. Most medical officers were however careful to point out that the general health of the public was in those years better than usual. My own experience of the prophylactic in the next year (1897) was in the Central Gaol at Buxar during a very malarious year, and I had no hesitation in stating that it had the effect of certainly reducing the severity of each fever case, though it did not prevent a large number of cases from coming to hospital. Also that the incidence of fever was much less than among an unprotected community of railway officials in the neighbourhood, and was decidedly less than in a village outside the gaol walls. Although in the gaol there were during the season about 500 cases of fever out of a daily average strength of 1,100, yet this proportion was, I was able to show, considerably exceeded by both the railway community and by the neighbouring village. Moreover, an examination of the nominal roll of those admitted showed that very few prisoners were admitted for more than once, and there were no deaths from fever or its sequelæ during the season. In 1898 I issued a series of questions on this subject to medical men in India, and got 51 replies. The details of this inquiry were given in the *Journal of Tropical Medicine* for March, 1899. Out of the 51 replies, no fewer than 47 gave their verdict in favour of the prophylactic issue of quinine. In the remaining cases the replies stated that the writers could see no appreciable difference between the health of prisoners in years when the prophylactic was issued and when it was not issued, but several answers specially noted that there certainly appeared to be a distinct reduction in the severity of the attacks. In 1898 the Director-General I.M.S., in his annual review of the state of health of the prisoners in the gaols of India, pointed out that the results could only be inconclusive so long as no control experiments were undertaken, and an editorial in the *Indian Medical Gazette*, September, 1899, strongly criticised the results up to date, and showed the necessity for regular control experiments, with the result that the following five papers giving details of such experiments were published in the *Indian Medical Gazette*.

These papers can only be very briefly summarised here.

1. By Dr. R. S. Ashe, Superintendent of the District Gaol at Mymensingh. In this experiment both cinchonidine sulphate and *Wrightia antidysenterica* were used for the double purpose of holding in check both fevers and bowel complaints. Dr. Ashe concluded from the figures obtained that there was "a diminished fever and dysentery prevalence," and this Dr. Ashe attributed to the use of these drugs.[1]

2. By Captain C. J. Fearnside, I.M.S., Superintendent of the Central Gaol, Rajahmundri, Madras. This paper is specially important in that it gives for the first time an examination of the question from the point of view of the effect of the quinine on the malarial parasite in the blood. He points out from a series of blood examinations that quinine had no effect on crescents once formed, but that it had apparently an action on the prevention of crescent formation. He writes: "To conclude, quinine as a prophylactic is useful in those persons who have not been exposed to malaria, and, with one or two exceptions, I think the fever following the use of the drug is of a milder type and of shorter duration (due probably to an arrest of sporulation), and the readmissions of the same individual for fever have been less numerous." It may be added that Rajahmundri had a reputation, before Captain Fearnside took charge, of being one of the most malarious gaols in India; so much so, that the numerous cases of malaria cachexia, with dropsy and anæmia, were even at one time considered as beri-beri.[2]

3. By Lieutenant-Colonel Ffrench Mullen, I.M.S., then Superintendent of the Central Gaol, Rajshaye. He notes that in 1896 and 1897 he had reported strongly on the beneficial results of the issue of quinine, but that in 1898 he had to change his opinion, and that it appeared to him that the use of the quinine had little or no prophylactic effect, and that it even seemed to increase the liability to bowel complaints. It may be noted, however, that the goal in 1898 certainly suffered from a widespread outbreak of influenza, and moreover there were no control experiments made.[3]

4. By Major C. R. M. Green, F.R.C.S., I.M.S. This is a record of a control experiment made by Major Green, in Bankura Goal, in 1896. A gang of 145 men were kept under the prophylactic treatment, and a gang of 180 were not under treatment: the other conditions were equal. The table quoted in the article shows that those under the treatment furnished fewer cases of fever than those not under treatment, and Major Green concluded that the prophylactic issue of quinine had "distinctly beneficial results."[4]

5. By Major F. P. Maynard, I.M.S., then Superintendent of the Central Gaol at Hazaribagh. This paper gives the results of a very careful control experiment on a large scale. There were over 400 in each of the two gangs. Major Maynard gives tables to show the incidence of fever in the two gangs, and draws the following conclusions: (1) Cinchonidine does act as a prophylactic against fever when used in daily doses of 6 grs.; the frequency of the fever cases is reduced; more than one and a half times as many (7.72 : 4.88) cases of "fever" came to hospital from those not getting the drug, as from those getting it. (2) The severity of the cases is less; the proportion of cases admitted to hospital was nearly twice as great (5.82 : 2.85), and the proportion of admissions for remittent types was also nearly twice as great (58.8 : 30) among the prisoners not receiving cinchonidine, while their stay in hospital was decidedly longer. (3) Given in combination with dilute sulphuric acid and sulphate of iron the mixture has a useful effect in reducing the number of cases of diarrhœa and dysentery among the prisoners.[5]

To these may be added the following figures taken from the annual report of my own gaol (Bhagalpur Central) for the past year: A control experiment was carried out from July till November, 1899. In the cinchonidine gang there was a daily average strength of 1,050 prisoners and in the non-cinchonidine gang a daily average of 675. All cases coming to hospital for fever were recorded, with the unexpected result that an exactly equal proportion came from both gangs, namely, 222 cases of malarial fever, or 22 per cent., of the cinchonidine gang, of 1,050, and 150 cases or 22 per cent. of the non-cinchonidine gang. Still more strange the results were also identical with regard to the numbers coming to hospital from both gangs for diarrhœa and dysentery. This showed that as far as these figures went no special benefit accrued to those taking the drug.

In conclusion, an examination of the above reports of an experiment on a very large scale is, on the whole, strongly in favour of the prophylactic issue of the drug as a preventive of of malarial fevers. If Captain Fearnside's opinion that the prophylactic issue of this drug prevents the formation of crescents be further confirmed, an important argument in favour of such issue will be established. In the nature of things control experiments are more difficult to carry out over considerable periods than might at first be thought. Another point our Indian gaol experience has certainly settled, that is that it is possible to daily administer preparations of quinine for many months at a time without the slightest mischief resulting. I have for the past five years been daily administering quinine or cinchonidine to, on the average, over 1,600 prisoners for the four months of the rainy season, and I have never met with a single bad result, even severe cases of quininism are conspicuous only by their rarity. It is needless to say that in spite of Professor Koch's alarmist views on the subject of quinine and hæmoglobinuria

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[1] *Ind. Med. Gaz.*, September, 1899.
[2] *Ind. Med. Gaz.*, September, 1899.
[3] *Ind. Med. Gaz.*, October, 1899, p. 361.
[4] *Ind. Med. Gaz.*, November, 1899, p. 401.
[5] *Ind. Med. Gaz.*, March, 1900, p. 91.

there has not been a single case in my experience, nor have I, after inquiry, ever been able to even hear of such a case since the practice was introduced into the prisons of India.

III.—Robert Fielding-Ould, M.A., M.B., B.Ch. (Oxon).

Liverpool.

There is no subject, it seems, about which there is more difference of opinion in tropical countries than the value of quinine in malaria and the best mode of its administration. It was my lot last year to pass several months in the west coast of Africa, which has long been notorious as the most malarious district of the world. During my tour I had frequently the opportunity of hearing this subject discussed by medical men, but nowhere in the three colonies I visited did I meet with an even approximate consensus of opinion. That quinine is sometimes beneficial in malaria was generally freely admitted, but some were sceptical even on this point. As to the dose to be employed and the best mode of its administration there was, I found, an extraordinary diversity of opinion. This Section of the British Medical Association by affording an opportunity for discussion of the various questions in their different aspects is doing a good work which will, I feel sure, prove of great benefit to practitioners generally, and indeed to all white men living in malarious countries.

The question of quinine administration is still an important one and has lost none of its importance in consequence of the recent discoveries which culminated in the conviction of mosquitos as agents in the propagation of the fevers. Fortunately malaria is one of the few infectious diseases which, as is now universally conceded, possess a specific remedy; but its *modus operandi* has been the cause of debate ever since its first introduction into Europe by Del Cinchon. Since the discovery of the malaria parasites by Laveran, however, we have had many investigations made with the object of ascertaining the exact action of quinine on the hæmatozoa. Before this epoch-making discovery that malaria was due to a parasitic animal organism, it was known that quinine was very fatal to the infusoria, and indeed to all forms of lowly organised life; but even now we cannot go further than this, though in the case of the hæmatozoa I cannot help thinking that their death and subsequent disintegration are inseparably connected with the changes produced by quinine on the oxygenation processes normally going on in the circulation.

We know that these organisms low in the animal scale are greatly dependent on oxygen for the continuance of their life, and further we know that one of the most important actions of quinine is to bind more closely to the hæmoglobin of the blood the oxygen present in it. The facility and readiness with which the oxygen is set free from the hæmoglobin is much diminished by the action of a dose of quinine. It is noteworthy too that quinine has a much more powerful influence on the hæmatozoa when they are young and in a phase during which they are chiefly concerned with their nutrition. This may be seen at any time by making continuous observations on the blood of a malaria patient after a full dose of quinine.

The unpigmented amœbulæ remain unpigmented, while those already containing pigment do not increase their pigment showing that their nutritive processes are at a standstill.

A proof that the amœbulæ are incapable of development, though they may be morphologically unchanged, is afforded by the fact that blood rich in such parasites but strongly impregnated with quinine is incapable of reproducing malarial infection when injected into a healthy patient. This has been done by Bignami.

By many regular daily doses of quinine are administered as a prophylaxis against malaria. In India certain workers at the subject have made observations as to the value of this method and report in its favour. For my own part, however, I entirely disagree. It is obviously wrong to speak of the prophylactic effect of quinine, the alkaloids of cinchona do not *prevent* malaria, they only attack the parasites when they are in a certain stage of their development.

A patient has not always young amœbulæ in his blood yet he continues to take large doses of quinine thereby often doing great damage to his digestion, the function of all others it is most difficult and most important to keep in good working order. Tropical climates are notoriously trying to the digestive organs, and certainly on the West Coast of Africa this is especially the case, where food is sometimes scarce and often most unsuitable; it is therefore highly undesirable that this habit of constantly taking quinine should be recommended.

Wordsworth Poole, of the West African Frontier Force, made certain experiments in Nigeria to test this method, and in his latest report says: "I am unable to satisfy myself that the advantages of quinine taken as a prophylactic outweighed the disadvantages of the dyspeptic symptoms produced by its prolonged use."

Nevertheless, there are many who hold a contrary opinion, and are able to take quinine with impunity. I have under observation a gentleman who has taken 5 grs. of sulphate of quinine daily for the last three years. He has had neither fever nor dyspeptic symptoms. I may add, however, that during the four years previously, when he did not take quinine, he was also free from both these troubles. He is an exception.

In addition to disturbing the peptic digestion quinine is very apt to lead to congestion and torpidity of the liver, and it is precisely patients who exhibit hepatic symptoms who go down, when invaded by malaria parasites, with the pernicious forms of malaria, the bilious remittent and hæmoglobinuric fever. Except in cases of actual fever, and on exceptional occasions (such as after great fatigue, or during a march) quinine should be avoided, as it is useless as a rule, and often dangerous.

The time and method of administration of quinine are also questions which have led to much difference of opinion. Microscopical investigations give in ordinary cases the best indications as to time, and it may be laid down that in such a full dose of 15 grs. should be given when the parasites are about to sporulate or are in their youngest phase as sporocytes. So long as the absence of vomiting or digestive disturbance permits it is best given by the month, but in other cases the hypodermic method must be employed. On the West Coast of Africa this method is not employed as much as one would have expected, though this is often due merely to the absence of the necessary syringe. Up to 3 grs. of the hydrochloride may be considered a full dose for this method though very much more is often given with success. Some medical men in West Africa complain of the frequency with which suppuration follows this method of administration. I can only say that if proper aseptic precautions are taken this complication seldom occurs. In one case, however, of extreme cachexia, though every care was taken, suppuration followed. I am inclined to think this was due to the feeble condition of the patient. Of the intravenous method of Baccelli I have no experience, though it is difficult to see what advantages it possesses over those already mentioned. Lastly, I would draw attention to the great value of rectal administration. In West Africa this is not frequently employed, but in some cases it is most efficacious. After an enema 30 or 40 grs. may be injected with a little water or mucilage of starch, when it is rapidly absorbed, appearing in the blood in ten or twelve minutes. It is a pity, I think, further use is not made of this simple method.

In the treatment of malaria regard should be had, I think, for healthy persons in contact with the patient. So long as a malaria patient has parasites in his peripheral circulation, so long is he a standing menace to the health of the whole community. The administration then of quinine should be continued for some weeks after the cessation of all febrile symptoms, and until repeated microscopic investigations show the blood to be free from parasites. In many cases, however, it is the custom to stop giving quinine too soon, leaving the gamotocytes free to be taken up by the mosquitos and so propagate their species.

I make no mention of quinine hæmoglobinuria, of which many cases are on record. There is no doubt, however, that misapprehension and an imperfect knowledge of Koch's work has done much to revive in West Africa a dread of quinine which had begun to disappear.

IV.—Patrick Manson, C.M.G., F.R.S., LL.D., M.D.,

Physician to the Seamen's Hospital Society, Greenwich.

Dr. Manson said: The reputed prophylactic action of quinine

is but a phase of its therapeutic action; it is the application of the drug to the parasite and not an immunising of the body against the entrance of the parasite we have to deal with; therefore, we may confidently expect that if it will cure a malarial infection it will prevent its development—the development though not the introduction of the germ. Further, that as some types of the parasite are highly amenable to the drug given therapeutically, similarly its prophylactic power will be greater against such; thus we may confidently expect it to be a timely prophylactic as against the benign tertian but less active against the malignant tertian. The value of the drug is apt to be underrated in consequence of its being given in too routine a fashion, and often under conditions in which it cannot be absorbed, as in states of severe gastro-intestinal catarrh. Such failures should be eliminated in assessing its prophylactic value. I should recommend that in future experiments in prophylaxis be made with the aid of the microscope, and in reference to the particular type of malarial parasite it is used against, and also that the gastro-intestinal condition of the individual experimented upon be investigated and recorded.

V.—Lieutenant-Colonel James Cort Marsden, I.M.S., Madras.

Lieutenant-Colonel Marsden said: I have invariably given quinine both as a prophylactic and as a therapeutic agent for the last twenty years, and the results have nearly always been satisfactory; but in reference to hæmoglobinuria, one case I had under my care some years ago made an impression on my mind. It was a private case, of which I have unfortunately lost the notes, and I speak from memory.

The patient was treated at Rajahmundri, the headquarters of a very malarious district; he was a German missionary who had been brought down from the Rumpa Hills. It was a case of malarial fever of the remittent type with the usual symptoms. He was put on quinine as a matter of course, though much against his own wish, as he informed me that the drug had on a previous occasion produced bloody urine. I rather scouted the idea, but the urine shown to me at my next visit was undoubtedly hæmoglobinuric, blood being found by the usual clinical tests, and corpuscles apparent under the microscope. Each time the drug was repeated this symptom was observed; when the drug was omitted the urine was non-hæmoglobinuric. The case did not improve in spite of treatment, cold packing, ice, etc., and the patient died from hyperpyrexia with a temperature of 106° before death.

I may observe that this is the only case in all my service that I have ever observed such an effect produced by quinine. I myself still consider quinine our sheet anchor in malaria in all its manifestations.

VI.—David C. Rees, M.R.C.S., L.R.C.P., Superintendent of the London School of Tropical Medicine.

Mr. Rees said: Quinine was used as a prophylactic on a large scale in Nigeria by the West African Frontier Force in 1898. Unfortunately I have not the figures at hand, but as the quinine was not given under supervision on account of the force being divided into small detachments the figures would not be very valuable. I, however, arrived at the following conclusion, namely, that 5 grs. of quinine administered daily, although that amount does not markedly reduce the number of attacks of fever, lessens their severity and also the case mortality. I do not agree with Dr. Fielding-Ould's experience with regard to the sloughing caused by hypodermic injections of quinine; personally I have never produced sloughing by these injections, but the injection should be administered intra-muscularly not hypodermically, and with careful antiseptic precautions. When I proceed to a malarious country again I shall take 2 grs. of quinine three times a day, as I believe a small quantity of the drug circulating in the blood is more likely to act beneficially than one large single dose.

VII.—C. F. Harford-Battersby, B.A., M.D.Camb., Principal, Livingstone College, London.

Dr. Harford-Battersby stated that from personal experience he believed strongly in the prophylactic action of quinine. He and many others whom he had known had on early visits suffered severely from malaria, but on taking quinine prophylactically he had been free from fever, and others had been greatly benefited. He quoted the case of Mrs. Bishop, the well-known traveller, who in travelling in malarial districts had stated that she took personally and gave to each of her servants a pill containing 1 gr. of quinine daily. None of them had ever suffered from malaria even when they had travelled in company with other expeditions which had suffered severely. As regards the curative effects he urged the importance of giving quinine at the right time. He believed it to be the best course to see that the bowels were opened, and then to give 10 grs. of quinine at the commencement of the sweating stage, but in no case should the administration be delayed for more than four hours after the onset of the disease. He believed that the heroic doses formerly given were a mistake, and brought the medicine into discredit. With reference to possible evil effects of administering the drug, he alluded to the supposed tolerance of quinine, which was believed by some to result from its prophylactic use, and therefore to interfere with its curative use; this he considered to be without foundation. As to the suggestion that quinine produced hæmoglobinuria, whilst this might be possible, he did not believe that it could be regarded as a cause of hæmoglobinuric fever. The fact that quinine was given and had been given in large doses in all parts of the world, whilst West Africa appeared to be the home of hæmoglobinuric fever, which was seldom found in India, was a powerful argument in favour of this view. He regarded the view that quinine caused this fever as a most mischievous doctrine. He related a case in which quinine had cured severe vomiting in malaria and believed that it could be found effectual in curing many symptoms which were malarial in origin although not so commonly associated with malaria. In conclusion he dealt with the method of administration. He had employed Burroughs and Wellcome's tabloids with good results and had never known them pass unchanged by the bowel. He considered it to be of some importance to disguise the taste of quinine as the more nauseous methods of prescribing it might interfere with its toleration.

VIII.—Major E. M. Wilson, R.A.M.C., C.M.G., D.S.O.

Major Wilson said he did not think quinine had much prophylactic effect. In the Ashanti expedition of 1895-6 it was tried and discarded. In Sierra Leone, also, it did not seem to have much effect; in illustration of this he mentioned the case of a white non-commissioned officer to whom quinine was administered by mistake by an orderly for fourteen days, and afterwards the man had fever. He had not found that the subcutaneous injection of quinine caused inflammation, and he had used it in many cases. No doubt Burroughs and Wellcome's tabloids were sometimes passed unaltered. No heroic doses were advisable; 10 grs. at a time were quite enough. He had never seen quinine cause blood to appear in the urine.

IX.—B. S. Ringer, M.D., Canton, China.

Dr. B. S. Ringer narrated a case of blindness due to quinine. A Spanish Roman Catholic priest, living amongst the Chinese up the country, near Amoy in the Tokien Province, had suffered from a severe and prolonged attack of malarial fever, for which he had taken large and frequent, but indefinite, doses of quinine. On arrival in Amoy he found him suffering from dimness of sight, and on the second visit he found him to be quite blind. The fever had, however, disappeared. Ten-grain doses of potassium iodide were then administered, and the sight gradually returned, and was eventually quite restored.

X.—Lieutenant-Colonel C. B. Maitland, I.M.S., Professor of Surgery, Madras Medical College; Senior Surgeon, Madras General Hospital.

Lieutenant-Colonel Maitland asked for information on the result of giving methylene blue in malarial fever. He gave it, in one epidemic, with even better results than from quinine. The drugs were given to alternate cases. No bad effects resulted from the blue, but the men's clothes and sheets became blue, and as the drug was procured with some trouble it was given up. The dose used was 3 grs. three times daily. In regard to the action of quinine on the pregnant uterus, and the teaching that the drug would either set up contraction or would keep it going when once it had begun naturally, his experience was that it could be safely given at any period of pregnancy, both in cases of ague complicating threatened abortion; and in cases

of malaria in pregnant women suffering from some other disease—for example, enteric fever. With reference to the giving of tabloids he had found that the hardest and most thickly-coated tabloid was effectual if broken first and given with a meal. When swallowed rapidly with water there was no taste.

XI.—James Cantlie, M.B., F.R.C.S.,
Surgeon, Seamen's Hospital, Royal Albert Docks, London.

Mr. Cantlie said: We know so little concerning malaria in infants, and the action of quinine upon the suckling child when administered to the mother, that the following case may be instructive:

A child 3½ months old, born of parents who had long resided in the South of China, but who at the time of the child's birth and afterwards resided in England, contracted a "feverish" attack which lasted 6 weeks, and defied all the usual drugs, change of residence, etc. The child was not teething; the mother was feeding the child wholly until well on in the illness, when cow's milk was given as well as the breast. A rise in temperature occurred every evening, followed by sweating during the night or early morning. As other plans of treatment had proved useless, the mother was put on 4 grs. of quinine thrice daily, and the child on ½ gr. quinine thrice daily. By the third day the child lost the fever and had no return. Examination of the mother's milk for the malarial parasite proved negative.

XII.—Edward Henderson, M.D.,
Shanghai, China.

Dr. Henderson said: In the European population of Shanghai the benign forms of malarial poisoning are almost solely represented. No experiments in prophylaxis by the administration of quinine can be quoted as the cases are not sufficiently numerous. A dose of 15 gr. of quinine given in the sweating stage after the temperature had fallen, if followed by a few smaller (5 gr.) doses, is usually sufficient to put an end to an attack. With these small doses cinchonism is rarely troublesome. I have never seen any degree of permanent deafness nor any amblyopia follow the administration of quinine. Children suffer from cinchonism much as adults do if equivalent doses are given, but the effect may easily pass unnoticed from the child's inability to describe sensations. I think quinine decidedly a dangerous drug to give to pregnant women. In the old days I can recall two miscarriages which were produced, apparently directly from large doses of quinine. Neither of the patients—they were both multiparæ—had ever had an accident of the kind before, and in neither case was any tendency shown before the drug was given. I think the effect of quinine can be prevented, or at least lessened, by guarding it with some preparation of opium, or, better still, chlorodyne. Chlorodyne possibly owes part of its value to the Indian hemp it contains besides the morphine. The effect of Indian hemp in checking uterine hæmorrhage is, of course, well known. Hydrobromic acid or one of the bromides might be tried. If, as some believe, these drugs prevent tinnitus, supposed to be due to congestion of the labyrinth, they may conceivably exercise some influence over the circulation in the uterus. Personally I should not care to trust to them alone; they would need to be given in large doses.

XIII.—Major Ronald Ross, I.M.S. (Ret.),
Liverpool School of Tropical Medicine.

Major Ross pointed out that in old cases of malaria there might be a secondary form due probably to enlargement of the liver and spleen—a form of a continued type not directly due to the parasites, and not amenable to quinine. This form had been noticed also by Vandyke Carter, Kelsch, Kiener and others, and was observed by the speaker while studying kala-azar. Torti was the first to point out that quinine should be given before the access, and Major Ross cited an example in favour of the view with which he agreed. He considered that the drug should be continued for three months after infection, and that it was best given in solution.

XIV.—Guthrie Rankin, M.D., M.R.C.P.,
Physician to the Seamen's Hospital Society, Greenwich.

Dr. Rankin related a case where hæmoglobinuric fever was contracted about fourteen months after settlement in Central Africa by a young man who, during that time, took no prophylactic. The patient was invalided home, and experienced a mild attack after his return to England. He returned to Africa after four months perfectly well, and during the following two and a half years he suffered no return of malarial trouble. During the whole of his second residence he took quinine daily, in saltspoonful doses. He was now at home in excellent health, but had suffered for some months from a persistent dermatitis of both hands, which he ascribed to the long use of quinine.

Dr. Rankin wished to inquire whether, in the experience of those who had largely used quinine in the tropics, the widely expressed experience of the absence of cinchonism could be accounted for by the fact of its administration to patients suffering from malaria, because in the practice of every physician at home cinchonism, coming after comparatively small doses of the drug, was not uncommon.

XV.—Oswald Baker, M.D. (Lieutenant-Colonel I.M.S., ret.),
Physician, Seamen's Hospital, Royal Albert Docks, London.

Dr. Baker stated that quinine was given in this country in conditions other than malarial fever in doses aggregating 15 gr. daily, extending over long periods of time without any prejudicial effect whatever. He thought the reason quinine so often failed as a prophylactic was because it was not administered in sufficient quantities. He thought it would be desirable to elicit the opinion of this meeting on the subject. He was of opinion the prophylactic dose was the same as the curative dose.

XVI.—Colonel Kenneth Macleod, LL.D., M.A., M.D.,
Professor of Clinical and Military Medicine, Army Medical School, Netley.

Colonel Macleod remarked that Dr. Manson had pointed out the importance of using the microscope during the administration of quinine as a guide and check. This was, when practicable, obviously desirable. But the practice involved considerable labour, and in cases in which the parasite was not present in the peripheral circulation might be accompanied with doubt and disappointment. In these cases as Dr. Manson had now reminded them pigment and pigmented leucocytes might be seen. Koch recommended another and more extended use of the microscope as a means of detecting malarious infection in a community. This system of exhaustive examination of the blood of a community, he contended was necessary, because parasites might exist without any pyrexia or other overt indication of malarial infection. This mode of using the microscope was still more laborious, and could only be possible under special circumstances in small communities; but if the extirpation of malaria by means of quinine was attempted it must be resorted to. The use of the microscope in this matter, however important, had its restrictions. Dr. Harford-Battersby had drawn a very important distinction between hæmoglobinuria and hæmoglobinuric fever. It was known that hæmoglobinuria was caused by the administration of many poisons, inorganic and organic, and it was quite possible that quinine might, under certain circumstances and in certain persons, give rise to hæmoglobinuria; but that was a very different matter from quinine giving rise to hæmoglobinuric fever, which was a disease of very definite type, of which the presence of hæmoglobin in the urine was but one of several very characteristic features.

ON THE METAMORPHOSIS OF THE FILARIA SANGUINIS HOMINIS IN MOSQUITOS.

ESPECIALLY WITH REFERENCE TO ITS METAMORPHOSIS IN THE ANOPHELES ROSSII AND OTHER MOSQUITOS OF THE ANOPHELES GENUS.

By S. P. James, M.B.Lond.,
Captain I.M.S., Quilon, Travancore, India.

Dr. Patrick Manson's discovery of the metamorphosis which the filaria sanguinis hominis (the embryo of the filaria Bancrofti) undergoes in the bodies of certain mosquitos, has recently been confirmed by Dr. Bancroft in Australia; and I desire in this paper first to make some remarks on the time necessary for this metamorphosis in different mosquitos; and afterwards to describe briefly the experiments which I have carried out on feeding mosquitos on the blood of filariated persons, which prove that mosquitos of the *Anopheles* genus are capable of acting as efficient intermediary hosts for this parasite.

Dr. Bancroft discovered that mosquitos can be kept alive

in confinement for many days by feeding them on bananas; and having thus overcome the chief difficulty which has, up till now, prevented the confirmation of Manson's discovery, he was able to prove that in a certain species of the *Culex* genus of mosquito (*Culex ciliaris*, Linn:), the metamorphosis of the filaria required seventeen to twenty days for its accomplishment.

The important difference between his results and those of Dr. Manson is, that whereas Manson stated that only seven days are required for the metamorphosis of the filaria in the mosquito, Bancroft found that in his mosquitos more than double that time was necessary, and he comes to the conclusion, therefore, that Manson must have been in error in his estimate of seven days, and is of opinion that Manson's mosquitos must have fed on the blood of a filariated man some weeks before he began his experiments with them. I do not think that this conclusion is justifiable. If it is correct, it means that Manson employed any mosquitos that came by chance into his filariated patients' room, and was not careful to ensure that they had not fed on an animal or on man before they entered the room.

But Manson wrote distinctly as follows:

In experimenting with the mosquito there are two points I was careful in attending to; I employed the proper species of insect, and I took care that its only food was the blood of a filariated man. Those who would repeat my experiments must bear these two points in mind,[1]

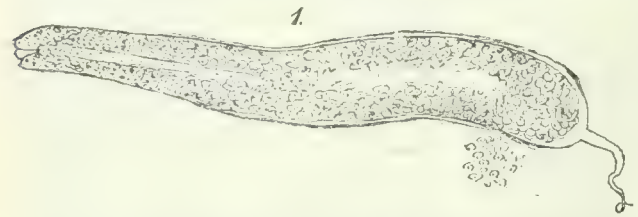
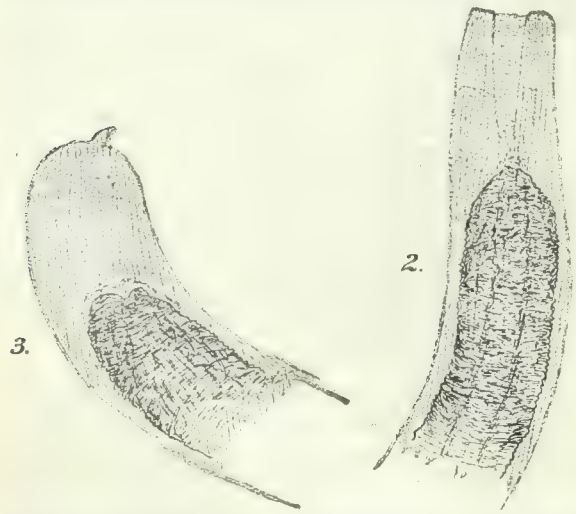


Fig. 1.—From a mosquito seven days after feeding, showing especially a long and curled "tail" continuous with the "integument" which surrounds the body. Granules escaping from anus.



Figs. 2 and 3.—The head (Fig. 2) and tail (Fig. 3) ends of filariæ after they have been immersed in water for some time, showing the "integument" or "sheath" widely separated from the bodies of the filariæ which have contracted within it. In the filaria of Fig. 3 the projections of the tail are beginning to form.

Thinking as I do that Manson would not have said this unless he was sure that the mosquitos he employed had not fed at all previous to their meal of filariated blood from his own patient; and because I have myself found that in the *Anopheles Rossii* and in another species of the *Anopheles* genus of mosquito, only twelve to fourteen days are required for the same metamorphosis, I do not believe it impossible that there may be, in a place where filariasis abounds, a species of mosquito in which even in seven days the metamorphosis can be effected. It will be seen later in this paper, and it has been shown by other observers, that several different kinds of mosquitos are probably efficient hosts for the filaria nocturna, but it is probable that those kinds are not all equally efficient—in some the metamorphosis would take longer than in others.

The most efficient kind of mosquito would very probably be found in a place where filariasis is exceedingly prevalent, for it is reasonable to suppose that the capacity for acting as an intermediary host for this parasite would increase, from generation to generation, in a favourable species of mosquito in a place where these mosquitos were always acting as intermediary hosts.

Thus it is likely that in the place where Dr. Manson carried out his experiments a very favourable—perhaps the most favourable—species of mosquito would be found, for filariasis is exceeding common there. One does not know how common the parasite is in the place where Dr. Bancroft's experiments were made; but, from his statement that he only knew of one person in whose blood filaria embryos were present, one judges that it cannot be very prevalent there.

It would appear probable that if the "common house mosquito" of Australia were the usual intermediary host of the filaria nocturna, filariasis would be more prevalent there than it apparently is. One must remember, too, that climate, and probably other factors, have an important influence on the time taken by parasites to develop in their intermediary hosts; and it is possible that, as some of Dr. Manson's mosquitos were kept at a uniformly high temperature (80° to 85° F.), in an incubator, they were more favourably placed, in respect to climate at any rate, than Dr. Bancroft's, for the latter states that when the weather was cold as long a time as 35 days was required for the metamorphosis to be effected in some of his mosquitos.

For the above reasons I think that the time required for the metamorphosis of the filaria nocturna in the mosquito cannot be stated definitely, and I consider that the "filaria-bearing" mosquito of Dr. Manson was probably a more favourable species than the *Culex ciliaris* of Dr. Bancroft.

The following is an account of my experiments on feeding mosquitos in filariated blood. All the experiments with *Culex* mosquitos, and many of those with *Anopheles* mosquitos were carried out before I was aware that Dr. Bancroft was also working at this subject.

The mosquito which Manson found to be an efficient intermediary host for the filaria nocturna belonged to the *Culex* genus, and for this reason I commenced my experiments last year on mosquitos of this genus. At that time I employed the following method:

A number of female *culex* mosquitos bred from larvæ were placed at night under the mosquito curtains of the bed of a man in whose blood filaria embryos abounded. In the morning these mosquitos which had fed were transferred to large glass vessels in which bananas were hung. These bottles were kept in the open air in a shady place, and each day the mosquitos which died were removed and examined in the manner recommended by Dr. Manson. Thus from day to day I watched the progress of development of the filariæ. Probably owing to my not renewing the bananas sufficiently frequently none of the mosquitos used in these experiments lived more than twelve days, and out of over 200 mosquitos that I fed in batches on different nights for this series of experiments, only 12 or 13 lived that length of time. Among these, however, there were specimens of two species in which the filariæ had reached an advanced stage of development. They measured from $\frac{1}{50}$ to $\frac{1}{75}$ of an inch in length; the alimentary canal was very distinct, and the head and anterior part of the bodies exhibited lively side-to-side movements, together with quivering movements of the whole body and constant flicking movements of the tail. Intermediate forms of the filariæ between these and the initial stages were found in abundance in other mosquitos of these two species which had died or been killed on earlier dates. I think it probable therefore that, had these mosquitos lived some days longer, the final stage of the parasite would have been reached in them, and they would have proved to be capable of acting as efficient intermediary hosts of the filaria.

Specimens of these mosquitos were sent to the British Museum and to Major Giles, I.M.S., for identification, and have been pronounced to be (1) *Culex microannulatus;* (2) *Culex albopictus* (Skuse).

These experiments, though satisfactory as far as they went, can not be said to have been quite successful, for the mosquitos died before the final stage of the filariæ was reached, but they proved that in two species of *Culex* mosquitos the filaria nocturna can live and develop to an advanced stage.

I was influenced, however, by Manson's statement that seven days only were required for the metamorphosis in the proper species of insect, and having noted that in the district of Shertully (where over 40 per cent. of the inhabitants are

"filariated"[2]) mosquitos of the *Anopheles* genus are very prevalent in houses, I now commenced feeding *Anopheles* mosquitos on filariated blood.

I found, however, that it was even more difficult to keep these mosquitos alive in confinement than *Culex* mosquitos; they do not readily feed on bananas, and it was not permissible to keep them alive by feeding them on animals or birds, lest some other parasite might be introduced as well as the particular filaria one wished to study.

After many trials, I adopted the following plan, which also has the advantage that different stages of the parasite are present in the mosquito at the same time, and the connection between the stages is clearly seen.

A number of female *Anopheles* mosquitos bred from larvæ were placed at night under the mosquito curtains of the filariated man's bed. In the morning all that were full of blood were transferred to bottles in which ripe bananas were hung. In the evening they were replaced inside the curtains with the filariated man, and the next morning collected again into the bottles. This practice was continued for the first five days and nights, so that each mosquito had at least four or five meals of filariated blood. After the first five days the mosquitos were taken to my bungalow, where I fed them for the first three or four nights by liberating them under the mosquito curtains of my own bed, so that they obtained meals of ordinary blood instead of filariated blood. In the daytime they were kept in the bottles with bananas. After the ninth or tenth day they obtained no more meals of blood, but were kept in the bottles with bananas until they died.

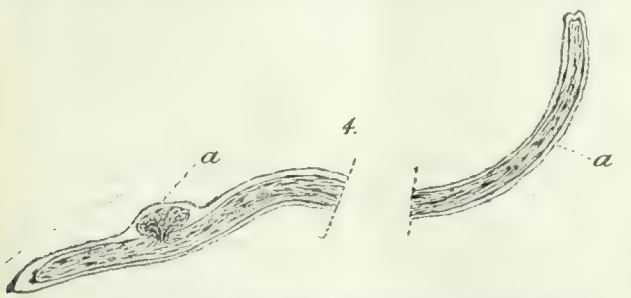


Fig. 4.—From a nine days' *Anopheles Rossii*, showing "integument" completely encircling the filaria. Within this "integument" the filaria lies as if in a sac. A hernia from the anus has occurred; *a*, integument.



Fig. 5.—Head of the filaria of Fig. 4.

In this method a good many die or are lost in the curtains, but as when fed on bananas alone none of my *Anopheles* mosquitos lived more than five or six days, it is, I think, the only way by which they can be kept alive for any length of time. It was possible in this way to keep them alive for at least fourteen or fifteen days, and some lived to the seventeenth and eighteenth days. Each day the mosquitos that died were examined by breaking up the thorax and abdomen on separate slides with needles in a weak saline solution, and examining with a $\frac{2}{3}$ inch and $\frac{1}{6}$ inch objective without applying a cover-glass.

By this method I have been able to trace the metamorphosis of the filaria to its final stage in the *Anopheles Rossii*, and in one other species of the *Anopheles* genus of mosquito, the name of which I have not yet ascertained.

Before I had read Dr. Bancroft's paper suggesting that the filariæ may be introduced into man while the mosquito bearing them is in the act of biting, I constantly omitted (as I think previous observers had also done) to examine carefully the head and proboscis of my mosquitos. Lately, however, I have been careful to do this, and the result shows that an examination of these parts is, from the point of view of the method of infection, exceedingly important.

To attain the final actively-moving stage of the metamorphosis requires in the *Anopheles Rossii* from twelve to fourteen days. The filariæ which were present in seventeen and eighteen-day mosquitos were not different in size or any other respect to those in thirteen-day mosquitos.

The young filariæ are found in the tissues of the thorax, in those of the head and neck, and in fewer numbers in those of the abdomen. The tissues of the head are examined by cutting through the neck with a sharp knife and placing the head, with the proboscis attached, on a separate slide. By carefully dissecting with needles the tissues of the head, and separating the parts of the proboscis, two or three filariæ will almost invariably be found in this situation, and I have lately on two occasions found a filaria lying stretched out lengthwise partly within the tissues of the labrum of the proboscis, the remainder of its body being curled up in the tissues of the head. Without dissecting up the tissues of the labrum these filariæ could be plainly seen with a $\frac{1}{6}$ inch objective through its fairly transparent tissues indulging in sinuous undulatory movements, and a very little manipulation with the needles sufficed to free the filariæ, when their movements changed from the snake-like undulatory character to the vigorous, purposeless lashing and twisting which are characteristic of the final stage of the metamorphosis of the parasite in the mosquito.



Fig. 6.—From an *Anopheles Rossii* mosquito on the eleventh day after feeding: showing the separate parts of the alimentary canal, the tripartite tail, and differentiation of body substance to form reproductive organs.

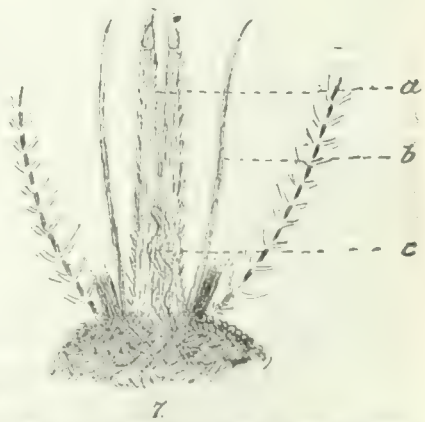


Fig. 7.—Proboscis and part of head of mosquito showing a filaria lying partly within the tissues of the labrum. *a*, Labrum or proboscis; *b*, mandible; *c*, filaria.

In the diagram I have shown the appearance of the filaria as it lies partly within the labrum (Fig. 7). Once having seen these large and vigorous filariæ actively moving in this situation, one can scarcely fail to agree with Dr. Bancroft that "young filariæ may gain entrance to the human host whilst mosquitos bearing them are in the act of biting," and I take this opportunity of correcting the contrary view which I expressed in the *Indian Medical Gazette* for May, 1900, which was written before I had begun to examine the head and the proboscis of my filaria-bearing mosquitos.

The young filariæ in their final stage are from $\frac{1}{75}$ to $\frac{1}{72}$ of an inch in length and $\frac{1}{850}$ of an inch in the greatest breadth, and

they can be fairly easily seen with the naked eye (or better with a small magnifying glass), as they twist and wriggle about on the slide. They taper towards the head and towards the tail, and the latter is provided with three projections which can be spread out or drawn closely together in the animal's movements. The head end is rounded, and the mouth, which is very extensile, can be pushed out to form a little cone-like projection which sways from side to side and is drawn in and pushed out as if searching for food.

The filariæ are provided with an alimentary canal, which, at a somewhat earlier stage, can be seen to be very freely movable within the animal's body, and to be of varying shape in the different parts of its course (Fig. 6). Near the anus it is wide and then narrows quickly to open at a short distance from the tail. On each side of the alimentary canal near the head, and again at a point about the middle of the body the protoplasm is differentiated into other organs—probably reproductive organs.

In the tissues of the mosquito the filariæ can, I believe, move about by boring their way from one place to the another; for on a slide, filariæ, which are almost completely imbedded in a piece of tissue, can be seen to gradually protrude themselves from the tissue until they are quite free. In water, however, their powers of locomotion are very limited, but though they do not change their position on the slide, they indulge in the most vigorous lashing and twisting movements incessantly. If left in water for some time these movements gradually slow down, and in from two to three hours the filariæ die. The following experiment, however, would appear to show that in serum or blood they find a more congenial medium:—

A mosquito (*Anopheles Rossii*) which had fed on filariated blood on May 21th contained the final stage of the filariæ on May 24th. These filariæ were first examined in water, and after they had been on the slide for over an hour their movements began to slow down. I succeeded in moving one to the other end of the slide without injuring it, and, having pricked my finger, introduced the blood beneath the cover glass, and surrounded it with vaseline. The movements of the filaria at once became more active, and it tossed the corpuscles about in every direction. The filariæ that were in water alone died in two hours and a-half, but this one continued vigorously active for over six hours. Its movements then became slower, and it died in seven hours.

If this experiment can be confirmed, it will, I think, afford a strong proof in favour of the suggestion that the filariæ pass directly from the mosquito to man without first having to exist for some time in water.

The object of the experiments described above was not so much to study the minute changes which occur during the metamorphosis of the filaria, as to prove, by obtaining on repeated occasions the final stage of the parasite in *Anopheles* mosquitos, that members of this genus of mosquito are capable of acting as efficient intermediary hosts, and I believe that, in Travancore at least, the *Anopheles Rossii* and at least one other species of this genus are the usual intermediary hosts of the filaria nocturna. I have, however, copied from my notes a few diagrams which differ from, or are not figured in, Manson's original drawings. The notes attached to them are sufficiently explanatory.

I have not as a rule examined my mosquitos at a sufficiently early stage to form an opinion as to whether a "casting of the sheath" occurs prior to the migration of the parasite to the tissues of the body. A fine "integument" continuous with the characteristic tail, and completely encircling the body, is however visible from an early stage of the development of the parasite; and in the later stages, after the filaria has been immersed in water for a time, this integument forms a perfect "sheath" surrounding the animal. Had Dr. Manson not definitely stated that a "casting of the sheath" occurred, one would have probably considered this integument to be the original sheath (see figures 1, 2, 3 and 4). The escape of granular matter from the anus is not due to pressure of the cover glass as suggested by Dr. Bancroft. It occurred almost invariably in the "sausage-shaped" stages of my filariæ, which were examined without applying a cover-glass.

I do not consider that the filariæ specially select the muscles of the thorax to migrate to. The fact that so many more are found developing in the thoracic tissues may be due to the ease with which they can pass from the crop—which is a pouch of the œsophagus lying in the thorax and serving as a reservoir for food[3], and from the œsophagus into the thoracic muscles, before they are acted upon by the digestive juices. The majority of the filariæ which reach the stomach are probably digested; a few, however, succeed in migrating into the abdominal tissues and undergo the metamorphosis there just as do those in the thorax.

REFERENCES.

1 *Transactions* of the Linnean Society of London, Series II, vol. ii. 2 See Article by the author in *Indian Medical Gazette* of 1900. 3 Woldert, *Journal of American Medical Association*, February 10th, 1900.

DR. PATRICK MANSON said: This important paper by Major James coming on the top of a recent paper in the JOURNAL by Dr. George Low, of the London School of Tropical Medicine may give rise to questions as regards priority of discovery. I am in a position to state that both observers were working independently, that their observations were made practically simultaneously, that one confirms the other, and that therefore both share the merit of making an important contribution to tropical medicine. The observations I made on the life history of the filaria were made twenty years ago, and before the duration of the life of the mosquito had been ascertained. I took the description current in books on natural history at that time, assigning a limit of about one week to the life of the mosquito as correct. I now know this to be wrong. My feeling is that Bancroft is approximately correct when he states that a period of about three weeks is necessary to the completion of the metamorphosis of a filaria in the mosquito. Still it is quite possible that in particular species of mosquitos and in the presence of high atmospheric temperature the process, as Major James suggests, may be completed in the time I originally assigned to it. I do not thing so, but it is possible. We know that temperature has an important influence on the development of the malaria parasite in the same class of insects. The fact of the presence of the filaria in the proboscis of the mosquito suggests, without actually proving, that the parasite is directly inoculated into man by mosquito bite. At the same time we must remember that the fully metamorphosed filaria is sometimes found around the stomach, about the viscera, and elsewhere than in the head of the mosquito. It is quite possible, therefore, that it may leave the insect by some other channel than the proboscis, and that it may be passed into water with the fæces, the eggs, or even by the proboscis. We know the young filaria can live for several hours in water. It dies therein after a time, possibly from want of food. It may be that, as with the embryo of dracunculus, it would live longer in dirty water—that is water containing food. Experiments to test this should be made. If anyone is foolhardy enough to submit to be bitten by filariated mosquitos, and if subsequently no young filariæ be found in the blood, it must not be concluded from this that mosquito bite is not the medium of infection. My belief is that before embryos can be found in the blood by ordinary microscopic observation large numbers of parent filaræ must be present in the lymphatics. In many cases we know that hundreds of parent filariæ are present. Thus in one case only two or three embryo filariæ are found in each drop of blood; in other instances as many as 600 or more are found in a drop, that is, 300 times as many; implying the presence of 300 times as many parental worms. Assuming that one male and one female produce an infection of two embryos to the drop, there must be 600 parents to produce 600 embryos to the drop. It is by no means certain that two embryos per drop is the minimum of infection: if the minimum infection is less than this, we may infer that to produce a recognisable infection by mosquito bite it may require dozens of inoculations, on the assumption that the filaria is conveyed by mosquito bite. One can easily understand how it is that high degrees of filarial infection occur in natives, and how rarely filarial infection is detectable in Europeans. The native sleeping constantly in the same house without a mosquito net is month after month, and year after year, infected by his own filaria-charged mosquitos, whereas the European, though he may be bitten by filariated mosquitos once or twice, is less likely, in consequence of his superior hygienic surroundings, and his use of the mosquito net, to be repeatedly and richly infected. It is much the same in this respect with the filaria as with the malaria parasite. The subject of filariasis is by no means worked out. It is of great importance on its own account, but even more on account of the remarkable analogy that obtains between it and malaria. The analogy runs through the entire histories of both parasites, extending even to their patho-

logical effects. Both are removed from the human blood by the mosquito, both develop in the mosquito's tissues, both probably quit the mosquito *viâ* the proboscis, both are inoculated by mosquito bite, both exhibit a remarkable periodicity in the human blood, and both give rise to recurring fevers. The further study of the filaria is therefore highly desirable as being calculated to throw yet additional light on the more important malaria parasite.

Major Ronald Ross, I.M.S., referred to the case of an Englishman living in the West Indies, a patient of his, who suffered from elephantiasis of the right leg, and who had long ascribed the disease to the bite of a mosquito on the right ankle.

Mr. D. C. Rees brought forward a fact tending to prove that some species of mosquito serve better as hosts for the filaria than others. He said: I have recently infected a number of *Culex taeniatus* with filaria nocturna. Unfortunately they all died by the twelfth day. On examining the filaria were all observed in the thoracic muscle of the mosquito, but in a very immature condition, and at about the stage found in Bancroft's mosquitos at the sixth day. The temperature at which I kept these mosquitos was 80° F., and which seemed favourable to them, for they bred freely. Both Bancroft and James seem disinclined to believe that filaria nocturna casts its sheath in the mosquito's stomach. I think there can be little doubt it does do so. We have specimens in the London School of Tropical Medicine of the blood exuded from the stomach of the mosquito, which show that ecdysis has taken place, for the filaria and its sheath can be seen side by side.

NOTE ON THE ETIOLOGY OF FILARIASIS.

By Lieutenant-Colonel J. Maitland, M.D.,
Professor of Surgery, Madras Medical College.

Without desiring in any way to attempt to minimise the importance of the remarkable observations made by Mr. G. C. Low, and published in the British Medical Journal of June 16th last, it is necessary to point out that all the information that has hitherto been gathered from clinical research appears to be opposed to the correctness of the theory propounded by him. There can be no doubt that the phenomena observed by Mr. Low afford strong presumptive evidence in favour of a theory of direct inoculation, but, on the other hand, many well-attested facts afford evidence of an opposite character.

One of the most important items of evidence opposed to the inoculation theory lies in the well-known fact of the comparative immunity to the disease enjoyed by the white races. It is true that in certain isolated localities (the Friendly Islands is one, I believe) a certain proportion of the white population have suffered, but such instances are very rare. In the littoral districts of India, where filariasis is extremely common, and where a very large proportion of the natives and a considerable number of half castes become affected, it is extremely rare for Europeans to acquire the disease. The very few cases that are met with amongst the latter race are generally found amongst the poor classes, and the victims are usually so-called "country-born" Europeans, that is, Europeans born and bred in India. After an extensive experience of this disease lasting about twenty-four years, I have never met with or heard of a case in a well-to-do European in India. If the inoculation theory be correct, what is the explanation of the extraordinary immunity enjoyed by Europeans, especially those who belong to the well-to-do classes. It is true that the latter usually, but by no means universally, sleep under the protection of a mosquito net or a punkah, yet between the hour of sunset and the time of retiring to rest the European is freely exposed to the bites of mosquitos. During the times that mosquitos are plentiful probably few, if any, Europeans escape being vigorously attacked by these insects; indeed, they appear to attack the white man with greater avidity than they do those with dark skins. Then again the punkah, under which many Europeans sleep, being, as it generally is, propelled by human agency, is but a poor protection against mosquito bites. Yet in places like Madras we find white people, unaffected by filariasis, living in close proximity to native houses where infected persons reside; in fact, it is not uncommon to find native servants suffering from the disease residing in the same houses as their masters and mistresses.

The fact that the embryo filariæ do not enter the general circulation in any number until past midnight does not affect the theory of inoculation one way or the other. If it be true that the worm enters the human body directly from the mosquito's proboscis, the presumption is that the parasite is always prepared for immediate action the moment that the mosquito commences its suctorial operations. If the worm were not thus prepared, its opportunity of escape would in all probability be lost, as the time occupied by the mosquito in completing its meal is a comparatively short one.

In connection with this question of the immunity of white people to filariasis it is a noteworthy fact, and one which deserves the attention of those engaged in the study of malaria, that well-to-do Europeans in Madras also enjoy an extraordinary immunity against malarial fevers as compared with natives. A very large proportion of the European residents of Madras never suffer from malaria, yet the disease is very prevalent amongst the native population.

In connection with this subject certain observations made by Captain S. P. James, of the Madras Medical Service, and published in the *Indian Medical Gazette* of May last, are of interest. Captain James, for reasons detailed in his paper, states his belief that "the *Anopheles* mosquitos, rather than the *Culex* mosquitos, are the usual efficient hosts of the parasites." He admits, however (and it is a matter concerning which there is no doubt), that the *Culex* does frequently act as the intermediary host. I have myself followed the process of metamorphosis of the filaria in great numbers of mosquitos, and have always used the *Culex* as the host in these experiments.

Water has hitherto been considered to be the probable medium by means of which the parasite reaches the interior of the human host, and there are several arguments in favour of this assumption. It has frequently been noticed that certain communities, having a common supply of drinking water, have suffered severely from the disease, whereas neighbouring communities, obtaining their drinking water from a different source, have suffered to a much less severe extent.

A notable example of this occurs in the neighbourhood of Madras, where a very large proportion of the inhabitants of a certain village are affected with filariasis, whilst those who reside in the adjacent part of the city itself suffer to a very much smaller degree. The inhabitants of the latter district obtain their drinking water from the supply common to the whole city of Madras, whereas the inhabitants of the village depend upon water obtained from shallow wells. One of these wells is found at the back of nearly every house in the village, and in the evenings mosquitos may be seen in great numbers flying to and fro between the interior of the houses and the adjacent wells.

Water derived from shallow wells and pools is believed to be a much more fertile source of the disease than that which is derived from rivers or running streams or conveyed by means of pipes from large reservoirs. The immunity enjoyed by the European in India is believed to be due to his drinking only boiled or filtered water. A very interesting circumstance in connection with this question came under my notice a short time ago. Four Eurasian lads who took to bathing in and drinking the water from a certain pond, all became simultaneously affected with filariasis, and from one of them, who came into hospital, I succeeded in removing several mature worms.

It must be remembered that so far as Mr. Low's observations have gone there is nothing in them to negative the theory that filariasis is a waterborne disease. It is quite possible that when the young filaria reaches the mosquito's proboscis it may pass from thence into the water, and not, as Mr. Low supposes, directly into the blood of human beings. Manson's belief in an intermediate aquatic existence may after all be correct.

Captain James, in the paper already alluded to, points to another fact which is opposed to the inoculation theory—namely, that persons affected with filariasis may live in intimate association with others without the latter becoming affected. If Mr. Low's theory be correct, how does it come about that any of the other persons living in the same house

with a case of filarial disease escape infection? The presumption is that the whole community would become affected sooner or later. Yet many escape.

THE HOT WEATHER DIARRHŒA OF INDIA,

By Major W. J. BUCHANAN, I.M.S.,
Superintendent, Central Prison, Bhagalpur.

My object in writing this paper is to call attention to a very severe form of diarrhœa with watery stools, which is certainly not cholera, but in many cases somewhat resembles it. It is not difficult to understand that as hot weather in Europe is an important, if not the chief, factor in the production of "summer" diarrhœa the extreme heat of India should be *a priori* even more so.

Bowel complaints of all kinds are common in Bengal, but it is here intended to refer only to one particular form. It might be called thermic diarrhœa, and it has been called "choleraic diarrhœa." It bears, however, the same relation to cholera Asiatica as does English summer diarrhœa or "cholera nostras." Clinically though it is very common in adults it has a strong resemblance to what is called "cholera infantum."

Before going further it may be well to give a short account of the clinical features of an acute case: The onset of the attack is always sudden, the patient having been apparently in his usual health up till a few hours before, then suddenly at night or in the early hours of the morning he is attacked with violent purging and vomiting, at first the stools are loose and fæculent, and the vomit contains the remains of the last meal; soon, however, the stools become abundant more or less colourless, and pour out from the rectum as if from a tap. The patient becomes collapsed with a shrunken cyanotic appearance, resembling, but in a somewhat less degree, that of cholera. The urine may be suppressed for several hours, the stools may number ten, twenty, or even fifty in the first half-dozen hours. In old or feeble persons the result may even be rapidly fatal. More usually the violence of the attack grows less in the course of the day; a reaction sets in, which, however, is not so marked as is the reaction stage of cholera, the temperature may rise from 101° or 102°F., the stools become fæculent and only loose or semi-solid, and in uncomplicated cases the recovery is usually rapid. In a few instances the inflammation of the small intestine goes on to an ileo-colitis and stools resembling dysentery persist for a few days. This is especially liable to occur if the patient has formerly suffered from dysentery. One might quote dozens of cases, but the following three will illustrate the different degrees of severity:

1. *Mild.*—J. S., aged 24, weight 107 lbs. On April 6th, 1899, admitted to hospital at 5 A.M., with violent loose watery diarrhœa—10 to 15 stools in the hour. Urine passed, no cramps, no collapse; voice good, recovery rapid in the course of about six hours.

2. *Severe.*—B. D., aged 38, came to hospital on March 23rd, at 5 A.M., passing thin, very watery stools with urine, vomiting frequent, partially collapsed and cold. When seen by me at 6 A.M. he was in this state: no urine for the past hour, but frequent scanty stools; very restless, face shrunken, voice clear, pulse rapid but perceptible; no cramps, tongue clean, urine remained suppressed for 21 hours. On second day the stools were semi-solid, and next day he was practically convalescent.

3. *Fatal.*—N. K., an old man, came to hospital at the same time as No. 2 above. Stools very watery, vomiting and nausea frequent; no urine passed, body cold, but pulse was just perceptible. In a few hours he was quite collapsed passing frequent watery brown-coloured stools. Tongue soon became dry, the thirst was great. The stools never resembled "rice water." The diarrhœa continued, and he died at 4 P.M., after about 12 hours' illness. At the necropsy old pleural adhesions were found. The spleen was enlarged (8 by 5 by 2 in.), no rice water stools in the intestine, but drab-coloured fæcal matter; one old patch of ulceration at the sigmoid flexure.

Albuminuria is often found in these cases, but does not last usually longer than a few days, where the kidneys have been previously sound. Constipation for a few days after recovery is common. Microscopic examination of the stools shows abundance of epithelium, starch grains, particles of grain and husk and numerous bacteria.

Treatment.—The treatment of these cases is not difficult, for attacks lasting only for a day food is not urgent, but boiled milk or milk and Mellin's food may be given. Brandy or rum will often be necessary. As regards drugs, it is unwise to interfere with Nature during the early stage of the diarrhœa, but by the time a patient is usually seen by a medical man many watery stools have been passed, so I usually at once give chlorodyne or camphoridyne (the tinct. chloroformi et morphinæ co. of the new *British Pharmacopœia*), sometimes with small doses of brandy, enough to control the diarrhœa. Then when the diarrhœa has become much less a dose of castor oil will set the patient aright. Care should to be taken with the diet till the stools have become solid.

Etiology.—As regards the etiology of the disease this resolves itself into (1) bacterial and (2) predisposing causes. I have nothing certain to say about the bacterial cause. It is believed by many that the specific micro-organism of what Dr. Newsholme calls "epidemic diarrhœa" in England is the bacillus enteritidis, but as this micro-organism has already had attributed to it two diseases so entirely different as the well-known "rice pudding" epidemic of St. Bartholomew's (a sudden widespread and non-fatal diarrhœa), and the so-called colitis of English asylums (a fatal disease which anyone with tropical experience would not hesitate to call dysentery), it is clear that one should hesitate to attribute such a widespread disease as summer diarrhœa to it also. We are on safer ground in discussing the predisposing, or rather the "exciting," causes. Granted the presence of the organisms of decomposition and of fermentation in the intestinal tract the actual exciting causes are as follows: (1) Badly cooked food; (2) hastily eaten food, or over-eating; (3) unripe or over-ripe food; (4) raw grain, eaten either carelessly or on purpose; (5) drinking too much water after or before food; (6) too rich food, curried and spiced; (7) badly prepared grain, especially maize when weevil-eaten, as it usually becomes by the end of March in India; (8) over indulgence in alcohol, especially drinking freely at a big dinner by one usually abstemious, or a mixture of liquors—what is often called "upsetting the liver"; (9) excessive use of inferior fibrous vegetables, and many other similar causes. I have actually seen cases which were attributed to one or other of all the above causes. Some of them apply only to European habits and others to the habits of natives of India. In gaols I am always on the look-out for bad cooking when such cases occur, for example, on one occasion in Midnapur Central Gaol I remember finding, one morning in May, no fewer than 125 such cases of violent diarrhœa admitted in one night; the cause was not far to seek. On the afternoon before a very violent cyclone had raged, with the result that the cooks were driven out of the cookhouse and the fires had to be put out, so that the evening meal of about 1,000 prisoners was issued in a half cooked or rather half raw condition. On another occasion I had a series of 25 such cases admitted to hospital, owing, as I believed, to the temporary use of some bags of weevil-eaten maize, which were far worse than was expected. On this occasion it was remarkable that the cases only occurred from those on maize-flour diet, and not a single case among a large number of Bengali prisoners who got rice at all meals. Cases due to the use of over-ripe or half ripe fruit must have occurred in the experience of all who have lived in the tropics. One case I well remember. The patient confessed to having eaten the raw seeds of the jack-fruit tree, he suffered severely, having had suppression of urine for 36 hours and after the bowel complaint was over he suffered from successive crops of boils and his whole outer skin peeled off in handfuls, which symptoms I attributed to the endeavour made by the irritant poison to escape by the skin.

But while such factors as unripe fruit, raw grain, etc., are certainly important, I do not think that they are the whole cause, something more is necessary, and this something is the influence which is exerted by the hot weather on putrefaction or fermentation in the intestines. My reason for so concluding is as follows: I have seen all the above exciting causes in operation in cold season, but it is seldom or never that this violent form of diarrhœa is then produced, food may be badly cooked in the cold weather as in the hot, grain may be as badly husked, unripe fruit may be eaten, idle prisoners will eat raw grain in the cold weather as well as in the hot, but it is very rare for us to meet with these cases of diarrhœa in the cold weather. The same remarks apply to summer diarrhœa in England.

Diagnosis.—It is obvious that these cases in India must often need to be diagnosed from cholera. In cases where a bacteriological examination is not possible one must rely on the following considerations: (1) The presence or absence of cholera in the neighbourhood; (2) the low death-rate for the diarrhœa, and the usually high initial death-rate for cholera;

(3) clinically by the fact that cramps are seldom present in diarrhœa, or if present, rarely severe, the collapse is not so complete as in cholera, the voice is never so low and weak as in cholera, the pulse though weak and small is never so low as in cholera, the stools are never the pure "rice water" of the graver malady, but always somewhat stained with fæcal matter. The reaction stage is less marked than in cholera cases, and some irritant cause is also usually to be found. I am strongly inclined to believe that in this form of "hot weather diarrhœa" the clue will be found to many of those mysterious cases of isolated sporadic attacks of "cholera." If "summer diarrhœa" can occasionally kill adults in Europe, I am certain that "hot weather diarrhœa" in India can do so.

Colonel KENNETH MACLEOD said: This paper on hot weather diarrhœa raised two important questions; first as regards the distinction between cholera nostras and cholera Asiatica, and secondly, assuming that these are essentially different, or at any rate differently caused diseases, what the organism or toxin is which gives rise to the former. In the absence of bacteriological investigation the question of diagnosis is often very doubtful in India; but experience confirms the view taken by Major Buchanan in this paper, that these cases which are very common both in Europeans and natives, adults and infants, in the hot weather are not cases of cholera Asiatica. We are ignorant of what the precise causation is, and it is best that we should acknowledge this, and content ourselves to await further research, which is urgently desirable.

THE DISEASES OF GOORKHAS.

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DURING the last year of my service in India, I had the good fortune to be associated with many Goorkha regiments, and as the result of this experience I found certain facts in their medical history to exist which I had not previously noticed in connection with the men of other native regiments. These facts I propose to briefly put before you.

Malarial Fevers.—Shortly after taking over medical charge of the 2nd (P.W.O.) Goorkha Rifles I was struck with the intractable character of the malarial fever in many cases amongst the men. The fever proved to be peculiarly resistant to the usual anti-malarial remedies, so much so that in no other race in India have I experienced such difficulty in combatting the disease. A number of drugs were tried, and I came to the conclusion that two methods of treatment only were of avail in these cases. First, the treatment by the rectal injection of 15 to 20 grs. of quinine. Should this not avail, then the only measure left was sick-leave to another district. Cases in which for three or four weeks 30 grs. of quinine had been taken by the mouth without avail would often yield at once to 20 grs. by the rectum. Next to quinine, kreat gave the best success in these severe cases.

Phthisis.—The manner in which phthisis occurs and its course, is also somewhat peculiar. Cases of an irregular fever used to come into hospital. Repeated examination of the lungs, which I was taught by experience never to omit, for many weeks would show no physical sign. Suddenly, one morning I would find sub-crepitant *râles* commencing at the apex. The early symptoms then almost invariably advanced with great rapidity. In fact, I have never seen such rapid cases of tuberculous disease of the lung as I have seen in Goorkhas. And in reference to this I may perhaps mention an extraordinary case I once had under my care. A Goorkha had been for three or four weeks in hospital when the signs of rapid disintegration of the lung appeared. Subcrepitant *râles* were succeeded by humid crackling *râles*, and a large mass of tuberculous glands appeared above the clavicle. So ill was he that for two or three days I went to the hospital fully expecting he had died in the night. But one morning, to my astonishment, he appeared much better, and, to cut a long story short, the signs abated, the gland enlargement disappeared, and eventually the man went out perfectly well. The treatment was by inhalation of creosote. I do not think there could be any doubt as to the accuracy of the diagnosis.

Mumps.—Goorkhas are very prone to mumps in their native country. Nearly always in the few weeks immediately subsequent to the joining of the new recruits, mumps would occur in the regiment. And the same remark must be made with regard to measles.

Ophthalmia.—Shortly after joining my regiment I was struck with the comparatively large number of cases of ophthalmia met with. I was at first inclined to suppose that the Goorkhas were in some peculiar way predisposed to this disease. However, I was called in one day to attend the wife of a Goorkha Rifle officer for phthisis, and was at once struck with the bad ventilation of her hut. Examination of the huts of the married and bachelor lines now showed the following important differences: Bachelor huts had no doors, had large airy windows opposite one another, fully 2 feet square and kept open; the food was cooked in separate buildings. The married huts were irregular in shape, windows smaller and not opposite one another, and generally closed with articles of dress, and the food was cooked in the huts. The inner room was dark and the atmosphere not fresh.

Next the incidence of ophthalmia was as follows:

1895	Married, 30	...	Single, 11 cases.
1896	,, 68	...	,, 7 ,,
1897 up to Aug. 28th.	,, 50	...	,, 12 ,,

On August 28th the regiment went on service and ophthalmia at once disappeared. I inquired of the medical officers of the other Goorkha regiments and found no such incidence of ophthalmia, with the exception of the 3rd Goorkha Rifles. Here the lines consisted of four airy double-storeyed barracks for a certain number of bachelors; the remainder of the latter and all the married men living in a series of tents closely aggregated under the brow of a hill. Twenty-one cases of ophthalmia occurred in 1896, of these 20 came from the latter barracks.

Enteric.—It has been often stated that the Goorkha soldier is prone to enteric. This has not been my experience. I have only seen one case of enteric (and this was judged to be enteric from the typical nature of the temperature chart chiefly) during my service in India amongst native troops. The case was however in a Goorkha. Surgeon-Major Armstrong, the Residency Surgeon in Nepaul, informed me that in his experience the Goorkha race is by no means prone to the disease. He has never had a case in hospital, civil or military in Nepaul, and has only seen 2 cases in females.

A DISCUSSION ON ANKYLOSTOMIASIS.

I.—Major G. M. GILES, M.B., F.R.C.S., I.M.S.,
Sanitary Commissioner N.W. Provinces and Oudh, India.

THE phenomenon of parasitism is so widely diffused throughout the animal kingdom that it is more than probable that the evolution of the parasite has commonly coincided with that of the host, so that it is by no means surprising to find Dr. Sandwith, of Cairo, quoting a translation of a Hieratic papyrus 3,450 years old, which shows that even then ankylostomiasis was known as the A A A disease, though the writers assumed that the worms were the effect instead of the cause of the disease.

Quoting still from Dr. Sandwith's paper (written for the eleventh International Medical Congress held at Rome in 1894) we find that the earliest mention of this special anæmia in modern times was from Brazil in 1648, and in Guiana in the beginning of the eighteenth century, but it was not till 1843 that Dubini, of Milan, first discovered the parasitic cause of the disease. After this Pruner (1847), Grasinger (1851), and Bilharz found it to be very common in Egypt, but these discoveries attracted no particular attention until the memorable outbreak of this disease amongst the workmen engaged on the construction of the St. Gothard tunnel brought its importance prominently to the notice of the medical world.

A few years later Leichtenstern and Lutz demonstrated the existence of a free stage, but owing possibly to climatic difficulties did not succeed in rearing the so-called rhabdites to sexual maturity; Lutz describing the still immature worms as becoming "encapsuled" and subsequently calcified. I believe myself that this is really a death and not a life history, and that the appearances described relate merely to the slow destruction of the embryos placed under conditions unsuitable to their well being.

Since the St. Gothard outbreak the disease has been recog-

nised in all the warmer parts of the old and new world wherever civilisation and sanitation are so little developed as to admit of its progress. It has however not yet been certainly found above latitude 52° N., and above 47° N. the parasite apparently can only flourish in the sheltering warmth of mines.

This was then the state of our knowledge in 1889. As to the serious effects of the parasite on its human host all were fully agreed, for no one had then advanced the fantastic notion that it was a mere harmless tenant of the human bowel.

It was at this date the Indian Government became alarmed at the very high mortality prevailing in Assam, alike among the indigenous population and among labourers brought from other parts of India to work in the extensive tea-gardens of that province. In the case of the latter, the causation of the mortality had already been made out to be ankylostomiasis by Dr. Ruddock, though it had unfortunately come to be known by the erroneous denomination of beri-beri, while among the indigenous population the mortality was called kala-azar. I will not here enter into the old controversy as to whether this increased mortality known by that name is due, as I maintain, to ankylostomiasis *plus* malaria, or to malaria *plus* ankylostomiasis, as advanced by Captain Rogers and Major Ross. We are all agreed that both these causes of cachexia are present in Assam, and it is probable that our real differences are of less dimensions than the volume of the controversy would suggest. It is, however, obvious that, from my particular point of view, the exact ascertainment of the life-history of the worm was the first importance. In the course of the investigation I was enabled to bring to light many entirely new points. Of these by far the most important was the demonstration of the fact that the full life history of ankylostoma doudenale is an example of dimorphism or heterogenesis.

My attention was first drawn to this by my finding sexually mature nematodes, the females heavy with eggs, which were absolutely identical in form and dimensions with those of the parasitic form, in ordure contained in a small pit such as is common in Assamese villages. I then set myself to see if I could breed a similar sexually mature free form in the laboratory, and after a few experiments hit upon the following method: A layer about an inch in depth of clean white river sand is spread over the bottom of a crystallising dish or other suitable vessel. Nematode worms are extremely rare in river sand, but it is well, before employing an apparatus so prepared, to moisten the sand and examine it for several successive days to ensure that no such organisms are present.

Having selected a suitable case of ankylostomiasis—that is, a case in which repeated examination of the dejecta has demonstrated the absence of other parasites or their ova, such as the embryo of anguillula stercoralis or the ova of oxyuris, etc., a small quantity of the dejecta is mixed with about three or four times its bulk of water, and poured on to the surface of the sand. The dish is then covered with a sheet of window glass, and placed on a shelf in the laboratory, in ordinary diffused light. Every day a small portion of the thin upper fæcal layer is removed on a spatula, and mixed with water in a shallow glass tray and examined, either under the simple microscope or under a low power of the compound; but the former is preferable, and suffices for all but the study of the minute anatomy of the worms. Working in this way it will be found that the embryos hatch out in the course of a few days, the time varying with the air temperature from five days at a temperature of 60° F. to the next day at 84° F.; at 70° usually on third or fourth day.

As found in the fresh dejecta the ova are usually 2-4 segmented, but unsegmented ova may often be found. Day by day it will be found that the specimens are more advanced, the segmentation gets finer, till a morula and finally a fully-formed embryo is developed. It is useless to attempt to observe the further development of these embryos in clear water, for in this they cannot thrive, and slowly die for want of nourishment; but by taking samples from the cultivation at intervals and placing in water, the process can be can be followed with ease. On emerging from the egg the embryo measures 0.085 inch in length by 0.005 inch in diameter. At this stage they show little else than an intestine and œsophageal bulb. Within the next forty-eight hours (at 70° F.) they have increased to three times their original length and have undergone several ecdyses, the exact number of which I am unable to state, owing to the difficulty of keeping an individual properly nourished while under continuous observation, but roughly about twice in the twenty-four hours. In large fæcal masses under natural conditions, in the plains (temperature 80° to 90° F.), the embryos may develop into free sexually-mature worms in as little as four days, but under the somewhat less favourable conditions of my laboratory they occupied from six to ten days. As far as I could make out, the sexual organs were first clearly distinguishable in the last ecdysis but one, at which period the male measures about $\frac{1}{30}$ inch in length by $\frac{1}{1000}$ inch. When completely grown up, he may reach $\frac{1}{24}$ inch in length by $\frac{1}{300}$ in diameter, while the females may attain $\frac{1}{12}$ inch in length by $\frac{1}{200}$ in thickness. It would occupy too much of your time to enter into the details of the anatomy and development of these free forms, for which I must refer you to my report on the subject, published by the Assam Secretariat Press, Shillong, 1890—but it may be well to meet here objections that have been advanced as to the validity of the above-mentioned observations, and as far as I have been able to follow the literature of these subject, these objections are all based on a short paper by Dr. Sonsino [L. Anchylostoma E. La Sua Profilassi, 1889], the other criticisms I have met with being apparently mere mechanical transcripts of this paper, by commentators who obviously have not been at the pains to consult my report of the original. Dr. Sonsino's criticism throws doubt on the accuracy of my observations on the two following grounds:—

(*a*) That the organisms described by me are rhabdites terricola or other free nematodes; (*b*) that the appearances were really the free form of rhabdomena intestinale.

The first objection is obviously quite untenable in view of the method of examination adopted. Owing to the absence of suitable nourishment, clean river sand is, at best, an unlikely habitat for rhabdites terricola, but, as already noted, the sand used was always carefully examined, in a manner that entirely excluded the presence of such intruders, before being used for the cultivations. Moreover I have, on more than one occasion, made successful cultivations in which the sand as well as the water used for dilution of the infected fæcal matter was sterilised by boiling.

That experiments conducted in this way do not succeed so uniformly as those in which the sand has merely been previously examined by the biological test of moistening and examining on several successive days, and the water simply filtered, is probably owing to the destruction of bacteria suitable to bring about the decomposition of the fæcal matter surrounding the eggs, as the rhabdites of the ankylostoma can thrive only in decomposed fœces. As to the second objection, I can only say that the absence of anguillula stercoralis, that is, of the embryos of rhabdomena intestinale was carefully noted in the case of each specimen of dejecta used for experiment: Had the so-called anguillula stercoralis been present it is inconceivable that it should have been overlooked in any examination that detected the presence of the ova of ankylostoma.

Assam is a paradise for the helminthologist, and I was therefore greatly surprised at never once meeting with this particular human parasite in any of the many hundreds of examinations that I made of human dejecta. Further, at the same time as I was conducting these observations of ankylostoma rhabdites I did a good deal of general helminthological work on animals, detecting many parasites at least as insignificant as the rhabdomena intestinale, and had that parasite been present in the duodenum it could not have been overlooked in the specially minute examinations I made of the human intestine in all cases in which a necropsy was obtainable.

It is true that the adult parasite (rhabdomena intestinale) was not known at the time of my investigation, that the embryos (anguillula) had been met with in Africa and in China, and being anxious to compare them with my ankylostoma rhabdites, I was keenly on the look-out for them; but they did not exist in the parts of Assam I visited, nor have I heard that they have been met with by any other observer in any part of Continental India, though I gather that Macdonald has met with them in Ceylon.

In addition to this it is to be noted that it is stated that

anguillula stercoralis can only mature in foul water, and rapidly dies in decomposing fæces. The rhabdites of ankylostoma, on the other hand, mature rapidly and best in the decomposing fæcal matter which is their natural habitat. Up to the time of my leaving Assam I had never once succeeded in bringing them to maturity in water; but since then when repeating my experiments at Saharanpore in the N.W.P. I succeeded on one occasion in rearing them in water containing a considerable amount of fæcal matter. From these considerations it is evident that these suggested sources of fallacy are entirely excluded by the method of observation adopted, and I may add that the mere fact of their being suggested shows that my critics had not been at the pains to read my report with any approach to attention. As a matter of fact, all these three nematode forms under discussion do very closely resemble each other, though doubtless if one could place them side by side it would be easy to find specific differences, for example, the males of the ankylostomua rhabdites and of rhabdites terricola have a caudal membrane supported by seven or eight ribs, but Sonsino's figures of mature anguillula do not show any such structure. This, however, may be merely a matter of careless drawing, or, as I should judge from the figure, the selection of a not quite mature specimen, as this structure only appears in the last ecdyses. As a matter of fact, however, any other life-history for ankylostoma is becoming increasingly improbable.

Ralliet has demonstrated a similar dimorphism in strongylus strigosus and in s. retortie-formis, while I myself have done so in two other sclerostomes, and am strongly inclined to suspect that a large proportion of the so-called free nematodes will ultimately be demonstrated to be nothing more than dimorphic representatives of known parasites.

On no occasion have I found these rhabdites in drinking, or, indeed, in any natural collection of, water. On the other hand, the fouled soil round infected villages and among the crops, where the natives resort for purposes of Nature, teems with them, and hence I am inclined to believe that soil carried to food by unwashed hands is the commonest vehicle of infection. In this connection I am inclined to think that it matters not whether the embryo swallowed is the progeny of a parasite or free form, provided only it be swallowed when young. The progeny of both, in other words, develop into parasites or rhabdites, according to the environment in which they find themselves.

Prolonged exposure to the direct rays of the sun kills the free stage worms, probably because they are thus often brought to a temperature exceeding 140°. The prolonged desiccation of even a Punjab summer will not do so, as after a lapse of over twelve months some of the cultivations I had brought from Assam with me to the Punjab were easily revived by moistening; and on being fed with normal fæcal matter were through several generations easily brought to maturity. Burying the embryos also destroys them, and they are easily killed by most of the ordinary disinfectants, such as perchloride of mercury or carbolic acid in moderately strong solution.

I will not take up your time by discussing the clinical side of the question, but will merely express a hope that some of those present at this meeting from various parts of the world, will give us the benefit of their experience as to the harmfulness of the parasite. My own impression is that it is responsible for a formidable mortality and even greater amount of chronic sickness wherever it exists, but a small group of medical men in Assam are inclined to regard this view as, to say the least of it, exaggerated, while their leader, Major Dobson, of Dhulia, regards the worm as rather beneficial than otherwise, in fact a sign of robust health.

Major Dobson's duties for many years included the examination of large numbers of coolies coming from various parts of India. I had myself demonstrated to him the then new fact that a very considerable proportion harboured the ankylostoma. I also did my best to show him how to diagnose such cases by means of the microscope, but mistrusting an instrument with which he was unfamiliar, he adopted the somewhat heroic course of dosing all comers, healthy and sickly, with thymol, and then examining their dejecta for worms, and subsequently to my visit demonstrated what might have been easily predicted by anyone familiar with the general phenomena of helminthology, namely, that the worm was present not only in those who exhibited perceptible symptoms, but also in a large proportion of the really or apparently healthy.

My object in instituting these examinations of immigrants at Dhulia was to ascertain if the disease existed in the coolies brought from other parts of India, because if this were the case it would explain the fact that the appearance of kala-azar and beri-beri in Assam is coincident with introduction on large scale of the system of imported labour. The fact that the disease existed amongst these immigrants sufficed for my purposes. I therefore examined only such cases as presented some symptoms of ankylostomiasis, though necessarily none were at all advanced cases, as the labour recruiters knew too well that no obviously sickly coolie would pass Major Dobson's critical eye.

Wherever this disease is common, it necessarily follows that a large proportion of the healthy population will harbour the worm also. The presently healthy people may be either severely-infected early cases or slightly-infected cases of any duration; but overlooking the fact that the men he saw had already been selected because they were healthy, and that on this account no really advanced cases could possibly come before him, Major Dobson fell into the fallacy of proclaiming to the world that the presence of ankylostoma was a sign of health rather than disease.

Added to this, I am convinced that the wish to escape the disagreeable and almost insoluble problem of the introduction into Assam of measures of "conservancy" which obviously alone can be of any avail in preventing the disease has much to say in the genesis of the thought that these worms are after all harmless.

A second point on which our knowledge of the subject is incomplete is the way in which the parasite brings about the characteristic anæmia. It may, I think, be conceded that the mere loss of blood is insufficient in the majority of cases, only when enormous numbers are present can the drain be adequate.

Personally I am convinced that dyspepsia due to the damage brought to the mucous membrane (a point which I verified *post mortem*) has much to say in the matter, but a further hypothesis is that the parasite produces a poisonous excretion. So far as I am aware, no one has as yet advanced proof of this; but it has been established for certain other entozoa. Lastly, the experience of any gentlemen who may have met with the disease in non-malarious localities would be specially valuable and interesting.

II.—Captain C. F. Fearnside, I.M.S.,

Superintendent of the Central Prison, Rajahmundri.

A systematic search for the ova of this parasite amongst the convicts and new arrivals in the Central Prison, Rajahmundri, was commenced in February last. Those examined came from the Northern Circars (Ganjam, Godaveri, Vizagapatam, Krishna), also Kurnool and the hilly tracts of the East Coast. The microscopic examination of the stools of new admissions was carried out within a few days after their arrival, and on an average three slides were carefully gone over.

At the end of a year it is intended to publish the full results, and the information furnished is still incomplete. From February 22nd to June 13th, 1900, 678 new arrivals were examined. In addition to these, more than 300 convicts, who have been confined over six months in the prison, have also been scrutinised. Having a limited time at my disposal, it was only possible, as I mentioned before, to examine three slides. So I feel certain that had more time been devoted to the work the percentages would be higher.

Of the 678 new arrivals, 462, or 68.1 per cent., harboured this parasite. Of 100 of these, taken haphazard between April 20th and May 3rd, the percentage affected is 72, a figure somewhat higher than that of the total 678 persons. The percentage of round worms is the same—36—and thus, for the purpose of comparison, the 100 cases may be taken as a standard. Of the 72 persons affected with ankylostoma, 50 (or nearly 70 per cent.) were in good health, 12 (or 16.6 per cent) were in indifferent health, and 10 (or 13.9 per cent.) were in bad health. Thus 72 per cent. of persons in the Northern Circars harbour this parasite and remain in good health. Nearly 35 per cent. harbour in the bowel simultaneously both ankylostoma duodenale and ascaris lumbricoides.

It is interesting now to compare what are the effects on these entozoa of better hygiene and cleaner food in our prisons. I have attached the analysis of 200 convicts who have served over six months in prison. The percentage of ankylostoma has dropped from 72 per cent. to 58 per cent., and that of ascaris lumbricoides from 36 per cent to 18.5 per cent. When the inquiry is finished at the end of a year, I am of opinion that the results will be much the same as those just mentioned.

Of the 105 *post-mortem* examinations made by me in the prison, 74.3 per cent. revealed the presence of this worm; 57.9 per cent. showed congested areas, from one to several centimetres in diameter, in the bowel; and 11.4 per cent. disclosed small erosions and ulcers about 1 mm. to 2 mm. in diameter.

These figures, as well as the experience gained in the gaol after 3½ years, go to show that the effects of the ankylostoma are for the most part secondary and not primary. They seldom occur in such numbers as to cause true ankylostomiasis, are not the result of the ankylostoma primarily, but of such disorders as malaria, dysentery, etc. The presence of ankylostoma in malarial or other cachectic states is of great importance. It bleeds the patient who can ill afford to lose more blood; it sets up local congestions and erosions of the bowel which cause a catarrh and thus retard the proper assimilation of the food and recovery of the patient. It is this secondary effect of ankylostoma that I look upon as most injurious.

A word now about thymol. Many are enthusiastic about this drug, and think that it acts like a charm. Observers speak of washing the stools and finding hundreds of dead ankylostomata after its administration. I have seen dead ankylostoma in the bowel, and it is by no means easy to say that they are dead ankylostoma, so like are they to decomposed tissues of meat, vegetables or husk of grain. I do not trust this form of investigation of stools by washing them, etc. I prefer the simple plan of microscopic examination of the motions a few days after the administration of the drug. I attach notes of 13 cases who have been consuming large doses of thymol for varying periods from 10 to 60 days, who were frequently purged and who at the end had as many ova of ankylostoma in their stools as at the beginning.

For the diagnosis of ankylostomiasis, therefore, it is necessary to exclude all other blood-destroying diseases rather than depend on the mere presence of the parasite in the bowel.

Table I.—*Analysis of 678 Convicts whose Motions were Examined on Arrival from February 22nd to June 13th, 1900.*

—	Ankylostoma Duodenale.	Ascaris Lumbricoides.	Trichocephalus Dispar.
Number of cases in which ova was present	462	245	51
Percentage... ...	68.1	36.1	7.3

Table II.—*Analysis of 100 Convicts whose Motions were Examined on Arrival from April 20th to May 3rd, 1900.*

—	Ankylostoma Duodenale.	Ascaris Lumbricoides.	Trichocephalus Dispar.	Ankylostoma Duodenale and Ascaris Lumbricoides associated in the same Individual.
Number of cases in which ova was present	72	36	12	25

Table III.—*State of Health of 100 Convicts in whose Motions Ova of Ankylostoma were Found.*

—	Good Health.	Indifferent Health.	Bad Health.
No. of cases in which ova was present	50	12	10

Table IV.—*State of Health of Convicts Unaffected by Ankylostoma Duodenale.*

—	Good Health.	Indifferent Health.	Bad Health.	Number Unaffected by any Parasite.
Number	14	10	4	17

Table V.—*Analysis of 200 Convicts who have Served 6 Months and upwards.*

—	Ankylostoma Duodenale.	Ascaris Lumbricoides.	Trichocephalus Dispar.
No. of cases in which ova was present	116	37	10
Percentage	58.0	18.5	5

Table VI.—*Necropsies carried out in Rajahmundri Central Gaol.*

Cause of death.	Number of Deaths.	Ankylostoma Duodenale	Hæmorrhagic spots.	Erosions
Dysentery	29	25	18	8
Diarrhœa	12	11	7	8
Ague	14	2	9	2
Pneumonia	17	14	10	2
Tubercle of lungs	8	7	5	2
Valvular disease of heart...	5	4	3	1
Disease of liver	3	2	2	1
Disease of kidney	13	11	9	1
General diseases	4	2	2	1
Total	105	78	65	12
Percentage	105	74.3	51.9	11.4

Table VII.—*List of Convicts Affected with Ankylostoma, Treated by Thymol and Occasional Purgatives.*

Number of Convict.	Period Treated by Thymol.	Dose of Thymol Daily.	Remarks.
994	10 days	20 grains	Ova as numerous at the end of treatment as at the beginning.
970	17 ,,	20 ,,	
9,635	27 ,,	20 ,,	
767	24 ,,	20 ,,	
1,305	15 ,,	30 ,,	
9,708	30 ,,	20 ,,	Ova still numerous.
629	30 ,,	20 ,,	
774	30 ,,	20 ,,	
743	30 ,,	20 ,,	
9,708	30 ,,	30 ,,	Second period of treatment } Ova still numerous.
9,711	30 ,,	30 ,,	
774	30 ,,	30 ,,	Second period of treatment }
743	30 ,,	30 ,,	,, ,, ,, }

III.—Leonard Rogers, M.D., M.R.C.P., I.M.S.,
Officiating Professor of Pathology, Medical College, Calcutta.

The very great differences of opinion on the subject of ankylostomiasis which the recent literature of the subject reveals affords ample reason for this debate. For example, while Mr. Thornhill[1] has frequently written most eloquently on the terrible ravages caused by this parasite in Ceylon, that careful observer, the late Dr. Macdonald,[1] wrote of the same colony that in a great number of cases the worm does very little harm, although capable under certain conditions of destroying life. Unfortunately Dr. Thornhill gives very few figures in his extensive writings, and on turning to the Ceylon medical reports for from 1886 to 1893 I was astonished to find very little reference to the disease in them, while, as I have elsewhere shown,[2] the figures given indicate a great decrease of the disease during recent years in that colony, while in Thornhill's own district, among a population of 160,000 persons, the recorded

death-rate from this disease in the hospitals was but 32 in 1894, so that the evidence of these reports strongly supports the moderate views of Macdonald rather than the extreme ones of Thornhill. The same thing is seen in Assam, where ankylostomiasis was first discovered by Dr. Ruddock, who is of the opinion that a healthy person can support a fairly numerous colony of them (ankylostoma) without damage, and the parasite only assumes importance when the patient is lowered by some other disease,[3] while Dobson has recorded instances of perfectly healthy men harbouring from one to two hundred of the worms, and finding small numbers in over 60 per cent. of healthy Assamese, and in upwards of 80 per cent. of healthy natives from Bengal and other parts of India, asks, "At what stage does the parasite become injurious?" On the other hand, Major Giles wrote with regard to the terrible disease kala-azar, which has certainly carried off at least one-fifth of the population of a tract of country 200 miles in length, "All I wish to convey is that the increased mortality is due to ankylostomiasis and to no other cause."[7] And again, "What, then, is kala-azar? Kala-azar is ankylostomiasis," with no qualification whatever. In another passage he wrote that the disease was ankylostomiasis, acting in a population which "has for generations been continuously poisoned by malaria," but fortunately it is unnecessary to discuss this question now that so high an authority on malaria as Major Ross[4], after a short personal investigation of kala-azar in Assam, has recorded his opinion that "I think, then, with Rogers, that kala-azar is malarial fever," and further "that in the latter epidemics studied by Rogers this fever is also communicable from the sick to the healthy," and again, "I agree with him (Rogers) that kala-azar is not ankylostomiasis," although he adds that in several instances these words amounted to a serious complication, as I had previously stated was sometimes the case. Moreover, since Ross's confirmation of my conclusions on the subject, Major Giles has admitted[8] "as I am thus reduced to the conclusion that the disease now called kala-azar is something quite different from what was shown me," which should be read in connection with the following statement in my original report: "Dr. Giles's opinion that fever was not a common or a marked feature of the disease, is accounted for by the fact that he was unfortunate enough to happen to commence his clinical work in Gauhati late in November, which is just the very time when the fever is at a minimum, and remains so until the commencement of the next rains, by which time Dr. Giles was engaged on microscopical work in Shillong" (a hill station which kala-azar never reached) "so that he only studied the disease at the season when most of the cases which have survived the previous rains, have lost their fever, and fresh infections are at a minimum." As far as I know, Mr. Thornhill remains the only advocate of the view that ankylostomiasis is the essential factor in the cause of kala-azar; and as he admits he has never seen a case of the disease, and his extreme views on the ravages of the disease in Ceylon are not accepted by his colleagues there, his opinion cannot be allowed any weight against the accumulated positive evidence, and now practically unanimous opinion, of all who have seen the disease in Assam, that it is purely malarial, while the successful eradication of the disease from tea gardens by the methods advocated in my report, which have been recorded elsewhere, may also be fairly claimed as evidence as to the soundness of my conclusions.[11] [12]

The Sources of Fallacy.

How can the above differences of opinion be explained? This question has been answered by the researches of Dobson,[1] for Giles furnished no evidence in his report that he ever controlled his observations by examining healthy persons for the ankylostoma, and appears to have been quite ignorant of its nearly universal prevalence of the worm in them (although previous to his investigation Dr. McConnel of Calcutta had found the worms in the great majority of necropsies in Calcutta as far back as 1882), and he gives no evidence to show that these parasites were met with in larger numbers in kala-azar cases than in healthy persons in Assam (which I subsequently showed they were not); yet soon after Giles's report was published, Major Dobson,[1] as a result of examining over 1,000 persons for the worms by the thymol method, showed that they were present in some 67 per cent. of healthy Assamese, and 84 per cent. of several hundred healthy coolies who had been passed by medical officers as fit for emigration from Bengal, Madras, Chotta Nagpur, the Central Provinces, and the North-West Provinces; in short, a large part of India. I also found them in 66 per cent. of healthy Assamese, in slightly larger numbers than in kala-azar cases, and showed that in the latter disease less than 20 of the worms were present in upwards of 80 per cent. of the patients, while Thornhill[1] admits that "50 of these worms is a number altogether too small to have any deleterious effect," and the same writer agrees with others in considering that in order to produce anæmia at least 500 of the worms must be present for from six months to a year; with which I also agree. Another writer[1] has recorded "Short notes of 130 cases of ankylostomiasis," in which it appears probable that only 8 cases passed more than 50 worms after thymol, while certainly three-quarters of them had less than that number present. The cases were admitted to hospital for all causes, from measles to locomotor ataxy, while 31 of them were admitted for malaria, and 19 more had malarial symptoms. Yet because they passed a few worms after thymol they are called cases of ankylostomiasis! At this rate upwards of 80 per cent. of the healthy inhabitants of large provinces of India suffer from ankylostomiasis! I have no hesitation in saying that nearly all the confusion with regard to this disease has arisen owing to the loose way in which the term ankylostomiasis has been frequently used.

Definition and Classification of Ankylostomiasis.

In order to avoid this source of confusion, I shall in this paper use the term "ankylostomiasis" to indicate a disease characterised by anæmia produced by long-continued small losses of blood through the gastro-intestinal mucous membrane caused by the presence of several hundreds of ankylostoma acting for many months; or by a still larger number acting for a shorter time. The very fact that in the St. Gothard tunnel outbreak as many as 2,000 to 3,000 of these worms were found in some cases which had suffered from anæmia for several months is alone enough to show that very small numbers of the worms cannot produce any appreciable effect on the system. That the abuse of the term ankylostomiasis is a matter of practical importance is shown by an instance, which I have elsewhere recorded,[6] in which out of 72 consecutive cases which were treated by thymol for anæmia in an Assam dispensary, 17 died, no fewer than 8 of which succumbed within six days of the last dose of thymol, although the average number of worms passed by them was but 5 and the maximum 10 in these 8 cases, while not one out of the 72 cases passed over 50. The fatal cases, as well as the great majority of the others, were suffering from malarial cachexia, while many had diarrhœa or dysentery. Yet because they were anæmic, all were given drastic doses of thymol, and the end of some at least who might otherwise have recovered was certainly hastened by the treatment.

Most writers on this subject admit that in order to produce anæmia, at least 500 ankylostomata must be present for from six months to a year, although several thousands would doubtless produce symptoms in a shorter time, but the latter are rare. It is to these classes of cases that I would limit the term ankylostomiasis, and using it as defined above I may say that the disease is rare in Assam villages apart from tea gardens or railway coolies, in the Nowgong district at any rate. I have met with several cases in which I at first sight took the anæmia to be of this class, but which close investigation showed other causes, such as Bright's disease, bad feeding, malarial fever, syphilis, etc., to have been responsible for the condition.

On the other hand, there is another class of cases in which anæmia due to some other cause is complicated by the presence of from one to three hundred ankylostomata, the drain caused by which alone might be withstood by a healthy person under favourable circumstances for a long time, (instances of these I have recorded in a previous paper),[5] but which when added to other debilitating and anæmia-producing causes becomes an important pathological factor. These constitute the greater number of cases in which the parasite is seriously injurious in my experience, but they should be classed under the heading of the primary disease, malaria, dysentery, syphilis, etc., with the qualification that they are

complicated by a harmful number of ankylostomata. Lastly, healthy men or those suffering from common diseases should not be classed as ankylostomiasis just because they happen to harbour a few of these parasites, the very small loss of blood caused by them, amounting to but a few drops daily, is repaired by the system without any ill-effect whatever, for I have shown elsewhere[1] that there is no reduction in the hæmoglobin or red corpuscles in such cases.

THE DIFFERENTIAL DIAGNOSIS OF ANKYLOSTOMIASIS.

In advocating above the careful restriction of the term ankylostomiasis to its proper meaning of disease produced by this parasite, it is very far from my wish to minimise the importance of the *rôle* played by the worm in various parts of the world, of which I am fully convinced, but rather desire to lessen the confusion which hampers efficient action to lessen the scourge, for such a disastrous result as that referred to above can only bring discredit on the thymol treatment, and so lead to its being omitted in suitable cases. What is wanted is more careful diagnosis, a matter of no small difficulty as experience has taught me for although the number of ova in the fæces is a sure guide to the presence of large numbers of these parasites, the absence of them does not prove that the anæmia has not been caused by previously present worms, for they may have dropped off, but in that case thymol will be unnecessary. Moreover, I have found that ova can be easily found in a single cover-glass preparation of the fæces when but five to fifteen worms are present; but, on the other hand, if they are met with in nearly every field of the microscope, then it is certain that the parasites are present in large numbers, and thymol is indicated if the patient is in a condition to stand it. But the mere discovery of one or two ova is not an indication for thymol unless it is quite certain that the drug will do no harm, or much greater injury may be inflicted than will be compensated for by the removal of the very few worms which may be present. This remark applies especially to cases of chronic malaria, in which I have recently found a condition of pigmented atrophy of the mucous membrane of the small intestine, which I am convinced is a very important factor in fatal cases with intractable diarrhœa, and which very probably accounts for the low fever seen in these cases, which my be caused by the absorption through the thinned intestinal mucous membrane of more poisonous material than the liver can adequately deal with. It is in these cases that thymol is so dangerous.

The clinical features of ankylostomiasis are too well known by workers in tropical diseases to need description, but they may be very closely simulated by Bright's disease, the œdema in which is so similar, while albuminuaria not infrequently appears in the most advanced stages of ankylostomiasis. Very similar, too, is the anæmia produced by bad feeding, more especially a deficiency of nitrogenous foods, an example of which I have elsewhere recorded[2]. Cases of both these diseases I have myself mistaken for ankylostomiasis until I made the blood examination to be mentioned immediately. In the anæmia of dysentery the patient is usually very wasted as opposed to the fat appearance in the worm disease. Most important of all is the differentiation of malarial anæmia from that due to ankylostomiasis, and although in typical cases the clinical pictures are in marked contrast (a table of the differences between which I have published in a previous paper[2]), yet in certain cases, more especially when the two diseases complicate each other in various degrees, it is well nigh impossible to solve the problem of their relative importance by clinical means alone. Yet it is just in these very cases that it is most important to do so, for not only is thymol particularly dangerous in advanced malarial cachexia but the treatment of the anæmia of the two conditions is quite distinct. Fortunately a way of differentiating them has been discovered in the essentially different type of anæmia in the two conditions, which I found to be of the greatest value in the solving of the difficult problems surrounding the mysterious kala-azar, which largely resolved itself into deciding whether malaria, or ankylostomiasis, or both together were the cause of the anæmia, which all workers acknowledged to be present in the disease.

THE TYPES OF ANÆMIA IN ANKYLOSTOMIASIS AND MALARIA.

In such a country as Assam, in which the majority of healthy persons harbour a certain number of ankylostomata, while in the latter stages of ankylostomiasis few or none of these parasites may be present, it is exceedingly difficult, if not altogether impossible, to decide from the number of worms found in a given case what part they have played in the production of the anæmia, while I have just shown that clinical evidence may also be at fault in these cases. The problem, then, was a very difficult one, but it appeared to me that the type of the anæmia produced by chronic malaria, in which the red and the white corpuscles of the blood are destroyed, but the hæmoglobin is largely retained in the body in the form of pigment in the liver, spleen, etc., might be expected to differ from that produced by the slow hæmorrhage, which is the essential feature of ankylostomiasis. The examination of such literature as I could obtain in the Calcutta Medical College Library, however, revealed such a hopeless difference of opinion as to the type of the anæmia of more especially ankylostomiasis, that I determined to make as full an examination of the blood as possible in both diseases. The results exceeded my most sanguine expectations, for not only did the type of the anæmia in the two diseases prove to be essentially different but the differences were found to be so constant as to furnish a certain means of diagnosis between the two diseases, and even served to indicate the presence of an injurious number of ankylostomata in a case of typical malarial fever when the anæmia was so slight as to be only detected by a quantitative examination of the blood.

The details of this research have already been published,[14], but their practical importance is so great that I gladly avail myself of this opportunity of bringing them before a larger audience, so will briefly describe them. In the first place it must be mentioned that I found the blood of healthy inhabitants of Assam to be very different from the European standard. Thus, although the numbers of the red and white corpuscles were about the normal, the percentage of hæmoglobin averaged only 62 per cent. of Gowers's standard, in spite of all cases in which ankylostoma might have been a disturbing factor having been carefully excluded. The colour index in these healthy cases (men) worked out at 0.65, which must be borne in mind in studying the figures in the different forms of anæmia, which are given in the accompanying table:

—	Percentage of Hæmoglobin.	Red Corpuscles per Cubic Millimetre.	White Corpuscles per Cubic Millimetre.	Ratio of White to Red.	Specific Gravity.	Hæmoglobin Value or Colour Index.
Healthy Assamese	62.00	4,734,000	7,325	1 : 684	1054	0.65
Epidemic malaria of Assam (Kala azar)	33.45	2,462,000	2,600	1 : 1170	1048	0.65
Ordinary chronic malaria ...	31.60	2,000,000	1,600	1 : 1400	1042	0.73
Ankylostomiasis	15.20	1,145,000	5,338	1 : 524	1034	0.38
Malaria + ankylostomiasis ...	27.40	3,120,000	3,200	1 : 975	1039	0.43

Secondly, the average blood estimation in ordinary cases of malarial cachexia in a part of Assam which was unaffected by the epidemic, malarial fever, or kala-azar, which are given in the third line of the table, show a nearly equal reduction of the red corpuscles and the hæmoglobin, so that the colour index is 0 73, or slightly higher than in healthy Assamese. Further, the white corpuscles are greatly reduced, both absolutely and relatively, to the red, so that there is only 1 white to 1,400 red, or about half the number in healthy people. The specific gravity is also reduced but only to a slight degree in proportion to the anæmia. Precisely similar conditions were met with in a large number of cases of the epidemic malarial fever of Assam, as is shown in the second line of the table, which fact alone, contrasting as it does with the condition met with in ankylostomiasis, is sufficient to indicate that kala-azar is essentially malarial. In these cases the colour index is precisely the same as in the healthy people of the province, showing that the hæmoglobin and the red corpuscles are equally reduced, and the colour index is 1, allowing for the low amount of hæmoglobin met with in these people. Again,

the white corpuscles are reduced much more than the red, so that there the proportion is 1 to 1,170. The specific gravity is but slightly reduced in proportion to the anæmia. The figures given by Cabot and by Waddell[2] in India in cases of chronic malarial anæmia agree very closely with those recorded above, so that it is evident that the anæmia of the Assam epidemic is identical with that of malaria in other places.

We may now turn to the conditions met with in ankylostomiasis, with regard to which there is so much difference of opinion and positive error in even the most recent works on tropical diseases. A glance at the fourth line of the table shows at once the contrast between the type of the anæmia in the worm disease and that of malarial cachexia. The most important distinction is that in ankylostomiasis the hæmoglobin is reduced twice as much as the number of the red corpuscles, so that the colour index sinks to 0.31, or about one-half of the normal in healthy people of Assam. Again, the white corpuscles, although absolutely reduced in numbers, are relatively less reduced than are the red, so that the proportion rises to 1 to 524 against 1 to 684 in the healthy controls; a change which I subsequently found had also been noted by Lutz. Once more the specific gravity of the blood is greatly reduced having averaged only 1034, the reduction being greater in proportion to the degree of the anæmia, as estimated by the percentage of hæmoglobin, than it was in malarial cases of an equal degree. Thus in every point the type of the anæmia of the two diseases is radically different. But this is not all, for it is not sufficient from the diagnostic point of view to show that the average changes differ unless it can also be proved that the extremes met with in either condition do not overlap to any extent those met with in the other. As a matter of fact I have found that they do not overlap at all in the case of the essential point, namely, the colour index, for the lowest point met with in uncomplicated cases of malarial anæmia was always over 0.5, while the highest encountered in ankylostomiasis was always under 0.4 in Assam, so that this point serves as a certain means of differential diagnosis between the two forms of anæmia. In view of the statement in recent textbooks on tropical diseases that the hæmoglobin value of the corpuscles is not depressed correspondingly to the fall in numbers—a statement which appears to have been copied from one book to another—I may be asked if there is any confirmation to form the results recorded above. There is, for Dr. Sandwith of Cairo, in a valuable paper on ankylostomiasis in Egypt, gives estimations of the hæmoglobin and the number of the red corpuscles in 173 cases of the disease, which show the percentage of hæmoglobin to be reduced nearly twice as much as that of the red corpuscles, so that the colour index was reduced to about one-half, just as it was in my own cases, allowing for the abnormally low hæmoglobin value of healthy Assamese. Further, I have received communications from several workers in India to the effect that they had been able to confirm my observations on these points.

Lastly, in a few instances of malarial cachexia (under 7 per cent. of kala-azar cases) there were sufficient of the worms present to constitute a definite factor in the production of the anæmia, and in all of them the blood changes were found to be intermediate between those of the two primary conditions, as is shown in the fifth line of the table. One of these cases is of particular interest. It was an early case of the epidemic malarial fever in which no clinically evident anæmia had yet appeared, but in which the spleen and liver were enlarged. On examining the blood the hæmoglobin value or colour index was lower than usual in pure malarial anæmia, so that I at once told the medical man in charge of the case that I suspected the patient to harbour an active number of ankylostomata, and proposed to give him thymol. This was done and 159 of the worms were passed. In this case, then, the blood test was found to be delicate enough to detect the presence of a not very large number of the parasites before even clinically evident anæmia was present. Further, I have found the characteristic alterations to persist for many months after the removal of the worms, especially in the absence of proper treatment by complete rest and iron, and in one case in which a patient had been successfully treated for ankylostomiasis, but was subsequently attacked by kala-azar, a colour index intermediate between those typical of either disease was found although no worms were present, showing that the effect of the previous attack of ankylostomiasis on the blood had not completely passed away. Now the duration average of kala-azar cases is but seven months (against several years in ankylostomiasis as a rule), so that it is evident that in any case of the epidemic fever in which ankylostomata have played a definite part in the production of the anæmia, their action will be at once revealed by the approximation of the type of the anæmia to that of ankylostomiasis, as evidenced by a low colour index, even if all the worms have already dropped off. Yet in less than 7 per cent. of the cases was this found to be the case, which alone is complete proof that ankylostomiasis is not an essential or even a common factor in the production of the anæmia, which is found by all observers to be a constant feature of kala-azar, and hence the worms cannot be a primary cause of the disease itself. Other examples of the value of the blood examination in differentiating forms of anæmia are given in my report.[3] One was a man who had a large liver and spleen, but who said he had not suffered from fever recently, while in some respects he resembled a case of ankylostomiasis, so that it was impossible by clinical means to decide by which disease his anæmia had been caused, the blood estimations showed the ankylostomiasis type, which was therefore diagnosed and subsequently was found to be correct and successfully treated.

It only remains to briefly explain the differences of type in the anæmia of the two diseases, and to point out the therapeutical indications to be derived from them. First, with regard to the colour index, it will be at once evident that the differences noted are just such as might be expected, for in the case of ankylostomiasis the hæmoglobin is being continually slowly drained out of the system, and while it can only be replaced with great difficulty, especially in the case of people who are living on purely vegetable diet, on the other hand the red corpuscles are being rapidly formed in the bone marrow, for I have found the yellow marrow of the shafts of the long bones to be converted into red marrow both in ankylostomiasis and in malarial anæmia, just as it is in pernicious anæmia. The red corpuscles being more easily and rapidly replaced than the hæmoglobin, the colour index or amount of this substance in each corpuscle must necessarily fall, just as it does in all forms of slow hæmorrhage. In malaria, on the other hand, the hæmoglobin is not lost to the system, but is stored up in an organic combination in the liver and spleen, etc., from whence it can be absorbed to restock the red corpuscles as they are turned out. This process probably accounts for the occasional disappearance of the black pigment from these organs in the later stages of the more chronic cases of kala-azar, which has been pointed out by Ross,[4] especially those who are tending toward recovery. The decrease of the white corpuscles in the malarial anæmia is doubtless due to to the constant fight that they are carrying on with the parasites in the blood, as indicated by the slight leucocytosis which may occur, while in ankylostomiasis, on the other hand, they are not especially destroyed, while they are more easily replaced than are the red corpuscles, and hence a relative increase of the white cells occurs. It should be mentioned that in malaria the white corpuscles should be counted during the absence of fever, or else they may appear to be normal when greatly deficient, owing to the occurrence of a relative temporary leucocytosis during fever. The lower specific gravity of the blood, relatively to the degree of anæmia in ankylostomiasis, than in malarial anæmia is explicable on the ground that in the former disease there is a steady loss of albuminous constituents of the blood, so that the blood becomes more watery. In this connection it is worthy of notice that I found hæmic murmurs to be much more common in the anæmia of ankylostomiasis than in that due to malaria of similar degrees—a fact which supports the theory which attributes these murmurs to alterations in the specific gravity of the blood. All the changes met with, then, are just those which might have been expected to result in either case.

Finally, the correct treatment of these two diametrically opposite forms of anæmia should obviously be different, for in that due to ankylostomiasis iron is urgently indicated in order to assist in the production of hæmoglobin, while arsenic will be of less importance, as it is not much use stimulating the output of red corpuscles when there is no hæmoglobin with which to stock them. In the anæmia of malaria pre-

cisely the opposite holds, for there is no urgent necessity to pour iron into the stomach, very little of which will be absorbed (Burge), when there is already a large stock in an organic combination ready to hand in the liver and spleen, while on the other hand arsenic and bone-marrow tabloids (the latter of which more especially I have found to be of extreme value in malarial cachexia) are strongly indicated in order to increase the output of the red corpuscles which are being or have been destroyed by the fever. These indications I have followed with great success in many cases, and although they are often carried out as a result of empirical knowledge, a rational basis is afforded them by the research which I have described.

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THE contribution to the discussion of this subject which I wish to make relates entirely to a consideration of the prevalence of ankylostomiasis in Burmah. My attention was first drawn to this question by the perusal of Dr., now Sir William, Kynsey's report on anæmia in Ceylon, issued by the Ceylon Government in 1887, of which I was fortunate enough to obtain a copy shortly after its publication. It appeared to me on reading this report that the anæmia so common in Burmah might also, as in Ceylon, be the result of ankylostomiasis. Although the ankylostoma duodenale was not at that time known to exist in Burmah, it seemed highly probable that on investigation this parasite would be found to be very prevalent throughout the province, for both the habits of the people and the climatic features of the country were in the highest degree favourable to its existence and dissemination.

In returning to Burmah, therefore, I lost no time in making an inquiry into the matter; nor had I long to wait, for within a few days of resuming charge of my duties a Hindu lad was admitted into the civil hospital suffering from anæmia in a profound degree, for the production of which there was no obvious explanation. The condition of this patient was practically identical with that of a person who had bled to the verge of death, and the symptoms he presented were precisely those and those only which result from great loss of blood from whatever cause arising. Ankylostoma ova in abundance were at once found in his stools, and on the day following this discovery two of the worms, both dead, were seen in his evacuations.

While the existence of the ankylostoma in Burmah was thus proved, the fact that this blood-sucking parasite was extremely prevalent throughout the provinces was soon afterwards established beyond doubt. In the Moulmein Gaol, of which I held medical charge, so prevalent was the ankylostoma among the prisoners that I seldom failed to detect its ova in cases not only of simple anæmia, but also of anæmia associated with specific diseases. As, however, an investigation limited to convicts already inhabiting the gaol, was open to the objection that the prisoners in question might have acquired the parasite subsequent to their admission, it was resolved to examine the stools of a large number of prisoners at the time of admission. Now, the gaol at Moulmein is what is known as a central gaol, and as such receives within its walls, criminals sent not only from the town but also many who are brought in from different parts of the province. Obviously, if large numbers of newly admitted prisoners were found infected with ankylostomata, my belief that the parasite was extensively disseminated would receive substantial confirmation. I determined, therefore, with the aid of a trained assistant, to examine microscopically the stools of 100 prisoners admitted consecutively into the gaol, as soon as possible after their reception.

Before the observations were fully completed, however, I was transferred from Moulmein to an appointment elsewhere, but the transfer did not take effect until 89 of the proposed examinations had been made. The results obtained may I think be accepted as representing the degree of prevalence of helminthiasis among the lower classes of the adult population of British Burmah.

Of the 89 prisoners, 17 were natives of India, and 3 were Chinamen. Taking the natives of Burmah alone, of whom there were 69, it was found that no fewer than 38, or 55 per cent., were infected with ankylostomata; that 33, or 49 per cent., had whip worms; and 30, or 43 per cent, had round worms; while the stools of 2 contained the ova of the tapeworm. Only 10 out of the 69 were without some species of entozoon. So that whilst 55 per cent. harboured ankylostomata, as many as 86 per cent. were the subjects of helminthiasis of some form or another. It may, I think, therefore, from these observations be safely concluded that the ankylostoma duodenale is present in the intestines of at least half of the poorer classes of the inhabitants of Burmah.

That a high prevalence of ankylostomiasis is both directly and indirectly responsible for much mortality there can be no question, but the extent of this mortality unfortunately cannot be ascertained. Numerous deaths take place annually, especially among the lower orders, from "unknown causes;" and in hospitals and gaols the mortality from anæmia and general debility of uncertain origin is often high. Much of this loss of life, set down to unknown causes, to anæmia and to general debility, is, I think, unquestionably due to ankylostomiasis.

I drew attention to this mortality in a short paper on Ankylostomiasis in Burmah, which was published in the *Indian Medical Gazette* some twelve years ago. I further pointed out that an infection with ankylostomata, unless adequate to the production of pronounced anæmia, would probably altogether escape recognition. I also explained that the reason ankylostomata were not always found *post mortem* in fatal cases of ankylostomiasis was due to the circumstance that these nematodes, subsisting on human blood, often abandoned their impoverished and anæmic victims before death, owing to want of sufficient or suitable nourishment. Subsequent observers, amongst whom I would mention Giles, have expressed very similar views.

That ankylostomiasis should obtain so high a degree of prevalence in Burmah can, when the habits and customs of its population are considered, hardly cause surprise. There is practically no night soil sanitation in the out-lying villages of Burmah, and most of the inhabitants defæcate on to the ground through holes in the floors of their dwellings. Left on the surface of the soil, exposed to wind and rain, a portion of this excrement becomes spread broadcast over the land, whilst some of it, in the form of mud, is carried into the houses of the people, and is deposited on their floors.

Now the majority of the Burmese do not use chairs and tables at their meals, but squat on the floors and eat their food with their fingers out of plates and bowls set down on the floor in front of them. When travelling they often dispense altogether with feeding utensils, and sometimes substitute the leaves of certain trees.

Under such circumstances, the general prevalence of intestinal entozoa is, I would affirm, inevitable.

Kynsey has maintained that water is undoubtedly the chief source of infection in ankylostomiasis, and has stated that the prevention of this disease consists essentially in the use of pure water. I do not think that such is the case. On the contrary, I believe the infection is conveyed through the medium of contaminated food, and that water has but little to do with the matter. In support of this opinion I would point out that among the 89 prisoners already referred to there were, as stated, 17 natives of India and 3 Chinese. Now these men, both Indians and Chinese, are far cleaner feeders than the Burmese, although the source of their water supply is the same.

Of these 20 aliens only two were found infected with ankylostomata being 10 per cent., as against 55 per cent. of the Burmese. Moreover, Giles has shown that water retards and finally arrests the development of ankylostoma embryos. There is, Giles states, "no condition more hostile to them than when immersed in water."

I would take this opportunity of pointing out that I believe the spread of many other entozoa is effected in precisely the same manner, that is through the medium of food and not of water. In the town of Moulmein, which in regard to sanitation is probably the most neglected town in the whole of Burmah, infection with ascarides is almost universal. About every third person applying for treatment in the outdoor department of the Civil Hospital is an applicant for worm medicine. The water supply is mainly derived from uncovered shallow wells, of which many are without parapets, and in seasons of drought often run dry. I have taken water from one of the dirtiest of these wells when nearly dry, have filtered it and subjected the residue to microscopical examination without finding therein a single ovum or embryo of any entozoon.

It would seem, therefore, from a consideration of these data, that no marked diminution in the prevalence of and mortality from ankylostomiasis in Burmah can be looked for until some system of sanitation has been generally adopted which will obviate the broadcast distribution of infective night soil. And to this question of night soil conservancy the attention of the authorities concerned should, I think, be given.

V.—Patrick Manson, C.M.G., F.R.S., LL.D., M.D.,
Physician to the Seamen's Hospital Society, Greenwich.

Dr. Patrick Manson said: It is somewhat singular that rhabdomena intestinale was so seldom found by Giles in Assam, considering that it is so frequently associated elsewhere with the ankylostoma, and that the climate and other physical conditions closely resemble those of Cochin China, where the parasite is extremely common, and where, indeed, it was first discovered by Normand. I have frequently met with it in the stools of Indians. I have twice encountered the ankylostoma in dangerous profusion in Englishmen from abroad. One case came from the West Indies. He had been in hospital for many months, and had been discharged as hopelessly all with pernicious anæmia. Fortunately after his discharge as an incurable he consulted a practitioner in the country, Uho found ova recognised to be those of the ankylostoma. sender treatment with thymol the patient got quite well. A dicond case came from Singapore. Ankylostomiasis had been diagnosed, but specific treatment was postponed until it could be undertaken under more favourable climatic conditions. When I saw the patient he was profoundly anæmic, as in advanced Bright's disease, with vertigo, tinnitus, palpitation, and all the symptoms of advanced anæmia. Every slide of his fæces showed numerous ankylostoma ova. Under thymol he rapidly recovered, and left for the East again quite well. I am astonished at Dr. Fearnside's statements as to the therapentic impotence of thymol. In my experience it rarely fails, provided it be given in adequate and rapidly repeated doses, say 30 grs. every hour, for four times. The diagnosis of malaria from ankylostomiasis by hæmocytometric methods, though inseresting and valuable from a pathological point of view, is impracticable under ordinary circumstances. Dr. Rogers's statements as to the presence of a leucocytosis during the acute stage of malarial infection are not in accordance with recent observation. Perhaps I misunderstood his meaning; but the presence of a leucocytosis is generally held nowadays to exclude a diagnosis of malaria. I am disappointed that none of the papers have alluded to Powell's interesting observation that betel nut chewing is possibly a protective habit in the natives of Assam, Burmah, and the Eastern Peninsula, acquired instinctively in consequence of its prophylactic virtues against the ankylostoma. I agree with Colonel Baker's remark that the parasite is generally acquired in food and dirt rather than in water, and that improved methods of night soil conservancy are much to be desired on this account in the East. I believe the Chinese method of dealing with night soil to be a good one on sanitary grounds. The soil is stored in cemented tanks, where it rots and ferments for months before it is used as a fertiliser. During this period of storage it is probable that the ova and embryos of the intestinal entozoa it may contain are killed.

VI.—Major Ronald Ross, I.M.S.(Ret.).
Liverpool School of Tropical Medicine.

Major Ronald Ross remarked regarding the life-history of the parasite, that he had carefully studied Major Giles's experiments on a rhabditiform stage, had partly followed them and considered that they were sound. He thought that Sonsino's criticism of these experiments was unsound. Sonsino said that Giles had mistaken rhabdomena for ankylostoma; Major Ross supported Giles in stating that the former were uncommon in Assam—at least in Nowgong, and thought that such a mistake was too obvious a one to be easily made by a competent observer. He held that the well-known fact of the disease being so commonly an earthworker's disease supported Giles's discovery. He had long maintained the opinion regarding its mode of infection just given by Colonel Baker, and thought that there was little to be said in favour of infection by the route of drinking water. Regarding the clinical effects of the parasite, he scouted the idea that it was always harmless. It was impossible to fix the exact number of parasites required to produce pathological reaction. Rogers's estimate of 500 was probably much above the mark in many cases. Obviously, numbers required to produce reaction must vary inversely as the strength of the host. Fifty ankylostoma might destroy a patient already debilitated by other disease or starvation. The speaker considered that the parasites might also produce a toxic effect, and referred to Daniel's discovery of yellow pigment in the organs of cases of ankylostomiasis—examples of which he had seen. He concurred with the observers in thinking that the worms might leave the patient in the last stages of the disease. He entered a plea for the much more general use of the microscope for the detection of the ova in the localities where the worms were prevalent, and cited the instance of a hospital assistant in charge of a dispensary full of cases of ankylostomiasis who had not even heard of the disease, and who was treating the cases for malarial cachexia.

VII.—James Cantlie, M.B., F.R.C.S.,
Surgeon, Seamen's Hospital, Royal Albert Docks, London.

Mr. James Cantlie stated that, stimulated by the researches of Dr. Walker in Borneo in connection with the presence of the ankylostoma in beri-beri, he had carried out a careful investigation on the subject in Hong Kong in 1893, but failed to find either the ova or the fully-grown parasite amongst Chinese coolies suffering from beri-beri.

TROPICAL LIVER ABSCESS.

THE MANAGEMENT OF LUNG LESIONS CONSEQUENT ON LIVER ABSCESS.

By Colonel Kenneth Macleod, L.L.D., M.D.,
Professor of Clinical and Military Medicine, Army Medical School, Netley.

Of all the routes by which spontaneous evacuation of abscesses of the liver takes place the pulmonary route is the most common. Randus's statistics show that among 159 cases in which liver abscesses discharged spontaneously, 59, or 10 5 per cent., opened into and through the right lung, and 31, or 5.5 per cent. into the right pleural cavity; or, taken together, in 16 per cent. of these cases the pointing of the abscess took place upwards, through the diaphragm and into the thoracic cavity. The selection of this route in preference to others depends mainly upon the situation of the abscess, the principle of progress in the direction of least resistance coming into play. Whether the abscess bursts into the pleural cavity or irrupts into or erodes the lung, so as to establish a secondary abscess in that organ, must depend upon the extent and strength of protective pleuritis to which the progress of the pointing has given rise.

When the discharge into the pleural cavity is primary, the event is indicated by characteristic physical signs, and can be very readily and safely certified by exploration. In such cases there is but one indication and rule of treatment, which is to make a free opening into the pleural cavity, removing, if necessary, a bit of rib, and to establish efficient drainage. The opening must be made and the drainage conducted under strict antiseptic precautions. It happens occasionally that the discharge of a hepatic abscess into the right pleural cavity is a secondary event caused by the bursting into it of a lung abscess of hepatic origin, or by a wound of the pleural fold in exploring or cutting into a liver abscess. In these cases the cavity and its contained material are apt to be septic. The

same rule of practice governs them; but the drainage must be made as efficient and free as possible, and for this purpose resection of a portion of rib is advisable. A case in which this practice was attended with success under very critical circumstances is related in the *Indian Medical Gazette* for January, 1892 (p. 19).

When the abscess finds its way into the substance of the lung, symptoms indicative of diaphragmatic pleurisy and consolidation of the lower lobe of the right lung accompany, or are superimposed upon, the hepatic symptoms. Should the latter be well marked, exploration through the liver and direct drainage by incision, and the insertion of a tube on ascertaining the presence and situation of an abscess constitute the proper treatment; but frequently the expectoration of a large quantity of pus is the first positive indication of the existence of an abscess, the preceding hepatic symptoms being masked or obscure, and the exploration delayed. This event may occur after some severe exertion, or in consequence of a bad fit of coughing. The material first coughed up may be very bloody, like an emulsion of brick dust; but sooner or later its character undergoes a change, and it presents the appearance of the flaky, chocolate-coloured stuff known as "hepatic pus." The discharge is generally sudden and profuse. The event is usually preceded by a tickling cough and basal lung symptoms, and is succeeded by an improvement in the hepatic symptoms, a fall of temperature, and a feeling of considerable relief. In favourable cases the expectoration gradually diminishes in quantity—becomes scanty and finally ceases; the physical signs indicate amendment of the lung lesion, and the patient makes a complete recovery. In other cases the expectoration increases rather than diminishes; or, having decreased, it suddenly increases in quantity as if the abscess cavity had refilled or a new abscess had burst and sought escape through the old channel. This occurrence may take place after an interval, long or short, of apparent recovery, and the second bursting may be preceded by a renewal of hepatic symptoms, hectic fever, etc. The material in such cases is apt to be browner than before, and there is often a considerable admixture of blood. Examination of the sputum gives evidence of disorganisation of the lung, and physical examination discloses a cavity, which may be very large and partly filled with air so as to give an area of tympanic resonance. Fever of a hectic or septic type sets in or becomes intensified, and great emaciation and weakness ensue. The exhaustion is increased by the incessant cough and profuse expectoration, depriving the patient of rest and sleep. Death eventually occurs from blood poisoning, asthenia, and choking. A similar sequence and result often arise from a neglected empyema eroding and excavating the lung.

The question arises—what should be done in these persistent, recurrent, or aggravated cases? The reply given in the textbooks is—Establish a direct external drain by incision and insertion of a tube after localising the abscess cavity by aspiratory exploration. The instruction is to search for the cavity in the liver and to make the incision and insert the drainage tube through the liver substance. The indication appears to me to be sound, but the method of fulfilling it faulty, and the object of this paper is to urge that the case should be treated as one of lung cavity, and the exploration and incision made into the chest. I found this opinion upon two grounds, namely, (1) that while the pulmonary symptoms are undergoing aggravation, and the lung progressive destruction and excavation, the abscess of the liver is undergoing reparative changes—becoming encysted and contracted and shut off from the rest of the organ by a cicatricial capsule; and (2) that I have frequently seen exploration of the liver resorted to in such cases and invariably without success. I have had an opportunity of examining several cases of fatal pulmonary lesion consecutive to and consequent on liver abscess, and have observed the conditions which I have mentioned, namely, active and aggravated lung destruction associated with hepatic abscess exhibiting signs of reparation. In these cases the abscess cavity in the liver had become globular, contracted, and encysted; a well-defined capsule or cyst wall of cicatricial tissue enclosing it, surrounded by apparently healthy liver substance. I have detailed two such cases at length in a paper published as an appendix to the Army Medical Department report for the year 1897. In one of these cases the cavity of the liver abscess still communicated with the secondary lung cavity and contained grumous pus; in the other the communication between the two cavities had been closed, and the liver cavity was completely encysted and its contents consisted of caseated pus. The condition in this case resembled what happens sometimes, though very rarely, as a spontaneous method of cure in liver abscess, encysting of the cavity and caseation and finally calcification of its contents. This encapsulation of the liver abscess explains why in these cases it is vain to expect to find in the expectorated material evidences, such as amœbæ, hepatic cells or bile reaction, indicating its hepatic origin, and why microscopic examination of the sputum gives proof of active lung destruction. The stuff coughed up may, indeed, continue to resemble what is clinically recognised as "hepatic pus"; but I have known material expectorated from lung cavities resulting from empyema pronounced to be hepatic pus when there was no lesion of the liver at all. Too much reliance must not therefore be placed, in diagnosis, on the mere physical characters of the sputum. The contraction of the abscess cavity, in conjunction with its original position, explains why exploration of and through the liver fails in these cases to reach or discover it.

In one of the cases to which I have referred no fewer than seven explorations had been made without success, and I have repeatedly seen similar failures occur in other cases. Indeed, I cannot recall any instance in which success attended an attempt to reach the abscess cavity through the liver when it was evident from the history and symptoms that profuse and sustained expectoration of a muco-purulent, grumous, or sanious character resulted from a liver abscess bursting into the lung, and being evacuated through the air passages. On the other hand, in such cases, physical signs of a cavity in the lung will generally be found, and exploration by an aspirator through the chest wall will give positive proof of its existence. This is exemplified by one of these cases, and great relief of symptoms resulted from making a free opening and inserting a large drainage tube. This is the practice which I advocate in cases of this description, in place of vain efforts to broach the abscess cavity through the liver. It has the additional advantage of being the correct and only possible means of surgical relief in cases of encysted empyema eroding and discharging through the lung. When this condition has been established in the right chest it is often difficult, especially in persons who have lived in India and had liver trouble, to exclude the possibility of origin from liver abscess.

My contention is, to sum up the matter in a few words, that in old standing cases of lung lesion consequent on hepatic abscess, the pathological burden has been transferred from the abdomen to the chest; and that relief measures must be applied on that understanding, the lung lesion being treated according to the special indications of the case, and the liver left to take care of itself.

SUBHEPATIC ABSCESS.

By JAMES CANTLIE, M.B., F.R.C.S.,
Surgeon, Seamen's Hospital Society.

By a subhepatic abscess is meant a collection of pus on the under-surface of the liver, between the liver and its capsule, commencing most probably in the lymphatics of this region. The terms I employ in the differentiation of abscess of the liver are three in number: (1) Intrahepatic abscesses mostly of dysenteric origin; (2) suprahepatic abscesses situated between the layers of the broad ligament of the liver, commencing as a lymphangitis; (3) sub (or infra) hepatic abscesses, in which the pus lies between the liver substance and the capsule commencing probably as a lymphangitis. The second and third are independent of intestinal lesions, their pus is "sterile," and amœbæ coli do not appear in them until some days after the abscess is opened. In one case of suprahepatic abscess empty sheaths of filaria nocturna were found; it is possible the lymphangitis may in some instances be due to the results of filarial infection.

I am not prepared to state the cause of, nor to assert why, the pus should select this region. The few cases I am conversant with occurred either in persons who resided in the tropics, or in persons who had visited the tropics at some

time shortly before being attacked. It is, so far as I know, not dependent upon dysentery or any ulcerative state of the intestines. It may be malarial in origin, but I have no reason to assert that it is.

Any derangement of the liver may be a possible cause. The lymphatic glands at the gate of the liver become affected by material absorbed into them from the liver above and the neighbouring viscera below. Even the melanin deposited in the liver during malarial hepatic infiltration collects in these glands, and thereby hinders their action and chokes their interstices. In such a state it requires but a slight derangement to set up irritation, inflammation, and subsequent suppuration, either in the glands or the lymphatics leading towards them. In subhepatic abscess we have a counterpart of suprahepatic abscess.

At the last meeting of this Association I brought forward clinical evidence of suprahepatic abscess, and I then advanced the theory, and I see no reason for departing from it, after a year's further experience, that it was caused by an inflammation of the lymphatics received from the upper surface of the liver between the layers of the coronary ligament. I ascribe similar pathological changes as the cause for subhepatic abscess—namely, inflammation of the lymphatics, and possibly the lymphatic glands on the under surface of the liver.

The only single definite feature which can serve as a guide to subhepatic abscess is the presence of a tumour in the epigastrium (along the costal margin) which is found to contain pus, and has for its boundaries the liver above and an inflammatory thickening of the perihepatic tissues around. As this condition can only be exactly elucidated during an operation, clinical evidence can at best do little more than suggest the possibility of such a condition.

In the two or three cases of which I have definite knowledge, the situation of pus was as indicated above. Previous to operation the local signs and symptoms were:

1. A tumour projecting from the anterior margin of the liver to the left of the fundus of the gall bladder and behind the right rectus muscle. The tumour formed a distinct prominence below the edge of the liver and felt like a full gall bladder, although situated to the right of the position where the gall bladder is usually found.

2. Perihepatitis with friction sounds showing an increased area from day to day. As the area extends, friction sounds disappear from the centre of the dull area, but continue to spread at the margin, showing the formation of central adhesions, and a widening in the perihepatic inflammatory area.

3. Hepatitis not marked, nor is the area of the liver dulness much, if at all, increased.

4. The general symptoms are: Increase of temperature by three or four degrees, occasional rigors, generally paresis of the intestine, or, on the other hand, loose bile-stained stools, disturbance of the circulation and of the thoracic movements commonly met with in inflammatory changes in the neighbourhood of the liver.

The positive evidence, however, can only be established during an operation. After an incision into the abscess and the escape of pus, by passing a probe or the finger into the wound the liver can readily be made out above, and also the complete absence of any resistance below which could suggest liver being there. In case this evidence is not considered satisfactory, I have, however, more convincing proof of the situation of the pus being what I have described. Whilst discussing this matter with Sir Lauder Brunton, not only did he say he was convinced of the possibility of a subhepatic abscess, but had actually seen one in his own practice where, during a laraparotomy made for diagnostic purposes, a large subhepatic mass of pus was found to extend along the under surface of the liver from the anterior to the posterior border. The pus lay between the peritoneum and the liver substance, and had only peritoneal and inflammatory thickening around it except above.

The diagnosis of subhepatic abscess is not unattended with difficulty. Gall bladder inflammation is most likely to be mistaken for the abscess, seeing that the relation of both to the anterior abdominal wall is almost identical, and that the hepatic symptoms in both are pretty similar. The diagnosis must rest for the most part on the history of the case, but when this is unobtainable the surgeon must be prepared when about to operate to deal with either condition. The pus from the abscess possesses but little resemblance to liver pus; it resembles rather ordinary creamy pus from an abscess elsewhere in the body.

Prognosis.—Of the few cases I have seen, the prognosis is good, no death having occurred. One man, the captain of a ship sailing between Hong Kong and New York, left nine days after the abscess was opened with a drainage tube in the cavity of the abscess. In the case mentioned by Sir Lauder Brunton the pus was so extensive that an opening was made behind as well as front to ensure proper drainage. This has not been necessary in the cases within my personal experience.

Treatment.—The treatment of this form of abscess presents nothing peculiar, tapping by a large trocar and drainage by a large tube has proved satisfactory in my hands; but incision when adhesions are known to have formed is free from danger, and in the one case in which I have seen it practised it proved eminently satisfactory.

The Depth to which it is safe to Puncture the Liver.

Mr. Cantlie demonstrated the position of the inferior vena cava in reference to its distance from the surface of the body. He stated that by a study of frozen sections it is possible to ascertain how deep the needle of the aspirator or the trocar and cannula can be carried into the liver without causing untoward consequences from hæmorrhage. He finds in a body with a circumference over the hepatic area of 32 inches that the centre of the inferior vena cava is from 4½ to 5 inches off the surface, in a line drawn horizontally from the neighbourhood of the xipho-sternal articulation to the angles of the ribs behind. Before commencing an exploratory puncture of the liver, therefore, Mr. Cantlie recommends that the circumference of the body be taken, and, starting with the above measurement as a basis, a fairly accurate idea of how deep the puncture may be carried is ascertainable. In a body measuring 32 inches in circumference, it is not safe to penetrate deeper than 3¾ inches in a horizontal direction from anywhere in the line mentioned. For every inch of circumferential measurement above or below the 32 inches, a quarter of an inch may be added to or subtracted from the depth it is safe to penetrate. Abstraction of blood in inflammatory hepatic derangements Mr. Cantlie regards as most salutary. When the needle enters a large vessel in the liver substance, as judged by the free flow of blood in the bottle, he allows the needle to remain until 6 to 10 ozs. of blood are withdrawn. No ill effects follow tapping a vein in this position: it is only when the inferior vena cava, or the trunk of the portal vein before it breaks up in the liver, is wounded that dangerous hæmorrhage is likely to follow. Every puncture of the liver by a needle causes a slight or even considerable flow of blood subsequently into the peritoneal cavity, as he had been able to prove clinically; but in all probability it is this very flow of blood which contribute to the marked benefits usually following liver puncture. The dangers of hepatic hæmorrhage are confined to puncturing the inferior vena cava, the extrahepatic portion of the portal vein, or penetrating a mass of malignant tissue occupying the liver.

THE DIAGNOSIS AND SURGICAL TREATMENT OF TROPICAL LIVER ABSCESS.

By W. Johnson Smith, F.R.C.S.,
Surgeon, Seamen's Hospital Society.

It can hardly be questioned that during the last quarter of a century the prognosis of certain morbid conditions of the liver has been much improved, and with regard especially to the so-called tropical abscess of this organ, operative treatment by the increased efficiency of its results may be regarded as a satisfactory example, amongst many, of the recent development and advance of abdominal surgery. Moreover, there can be no doubt that of late years not only has the surgical treatment of hepatic abscess improved, but that also, in consequence of a better appreciation and a more active application of surgical methods of diagnosis, the proportion of such cases brought under the surgeon's care whilst still in favourable conditions for operative treatment has considerably increased. Waring's well-known analytical work published in 1854 is a pathological rather than a clinical record of most of the 300 cases with which this author dealt. In only 81 of these cases had any

operation been performed, and in a large proportion of these cases, notwithstanding the very elementary and simple nature of such treatment, the mortality was not less than 81 per cent. Such results as these would certainly justify the very unfavourable judgment of Lafleur on surgical intervention summed up in the sentence that in amœbic abscess of the liver there is slender hope of recovery after operation; but surely so recent and able an authority on this subject might be induced to reconsider this statement by the much more favourable records of later statistics. As a fair example of these, I might allude to a recent communication on the treatment of hepatic abscess by Malbot, a French surgeon, who has had much experience of this disease in Algeria. This author at the end of last year published 19 cases under his own observation, 8 of which were treated by transpleural incision and 11 by laparotomy, with a total mortality after both methods of 33 per cent. In a report I drew up about five years ago of the cases of hepatic abscess treated in the Seamen's Hospital from 1870 to 1895, I found clear indications of the increasing tendency during late years to submit such cases to surgical attention. Whilst during the first twenty years of this quarter of a century 8 cases only out of 37 were treated by an operation which in most instances consisted in a simple incision of a prominent swelling on the right hypochondrium, in the course of the last five years 9 out of 13 were surgically treated, 8 by transpleural incision with resection of a portion of a rib, the remaining single case by laparotomy. There is no necessity, I believe, at the present day to anticipate any serious questioning of the absolute necessity of bringing under surgical notice any case of supposed tropical or amœbic abscess of the liver. The spontaneous cure of such a condition, even though the collection be a very small one, is very problematical, and though perhaps for the subject of such disease spontaneous rupture through the lung may be the happiest event, one must not forget that while waiting for such not improbable result the abscess may extend in a much less favourable direction. The need for surgical aid in cases of supposed liver abscess is urgent, not only for strictly therapeutical purposes, but also in a large proportion of cases for the sake of obtaining a certain and precise diagnosis. Except in those cases, I believe, a small minority, in which the abscess forms a well-marked tumour in the right hypochondrium, the determination in the first place of hepatic suppuration, and in the second place, if this be assured, of the localisation of the disease and also of the existence of one or a plurality of collections, is almost always attended with more or less difficulty. There can be no doubt that most subjects of hepatic abscess present a collection of very suggestive symptoms but such symptoms are usually not more than suggestive, and may be regarded as signs of probability and not of precision.

The physician, and especially one who has had a large experience of such cases abroad, cannot as a rule say more after a review of strictly clinical symptoms than that the patient ought to have an abscess of the liver; but still, on the strength of such an opinion, however authoritative it may be, one would naturally hesitate before exposing the patient to an operation involving exposure of the pleural or abdominal cavity, or both these cavities together. This uncertainty in the clinical diagnosis of hepatic abscess is mainly due to two causes: in the first place, most of the symptoms given in the textbooks as indicative of this affection are met with in other morbid conditions of the liver, and, in the second place, they are often associated with and marked by those of dysentery and malaria. The temperature is not a good guide, as it is often very irregular, and in severe and advanced forms of the disease is low and even subnormal. Shoulder-tip pain, though more frequently present than seems to be generally supposed in cases of liver abscess, may be absent and, moreover, when present cannot be relied upon. Rigidity of the rectus may be due to disease of the intestine or some other abdominal organ, or even of the muscle itself. Of all the suggestive signs of the disease localised tenderness over some part of the surface of the liver is perhaps the least unsatisfactory. The results of chemical examination of the urine do not seem to have given any reliable results, even in cases in which a considerable amount of liver structure has been destroyed.

Fresh aids to diagnosis have been brought under notice from time to time, but hitherto these have failed to afford much help. Attention has of late been directed to the occurrence in cases of liver abscess, especially when involving the posterior and upper part of the right lobe and encroaching on the diaphragm, of what is called functional dyspnœa, by which term is implied exaggerated movement of the thoracic wall without any other indications of intra-thoracic mischief. Such a condition, however, even though of frequent occurrence in association with liver abscess which, I am inclined to think is far from being the case, may be due to direct irritation of the diaphragm or any painful affection in or about the liver, and thus will fall into the list of indications that are more or less uncertain. Then, again, help has been invoked from a rather unexpected quarter, and an attempt made to extend in this direction the utility of the Roentgen rays. Loison, of Paris, in a recent paper on the treatment of hepatic abscess states that in several cases of this affection he has gained much assistance from skiagraphy. If, this surgeon states, a healthy subject be placed before the fluorescent screen, the shadow presented by the diaphragm will be seen undergoing rhythmical movements of rise and fall under the influence of respiration. This shadow, it is asserted, shows a difference of level on the two sides, the most elevated part of the vault of the diaphragm being about 1½ inch higher on the right than on the left side. In cases of hepatic enlargement this difference is still further increased and the right half of the diaphragm no longer moves. In effusion into the right pleural cavity, on the other hand, the convex shadow of the corresponding half of the diaphragm is no longer visible, and all that can be discerned is a horizontal line indicating the level of the effusion. This diagnostic method surely requires the aid of an expert, and cannot, it seems to me, do more under the most favourable conditions than assist the not very difficult diagnosis between pleural effusion and an enlarged liver.

The strictly clinical signs of liver abscess as given in textbooks vary considerably in diagnostic importance. Whilst some can give very little, if any, certain help, others, especially when present in full force, might fairly justify the conviction that there ought to be an abscess somewhere in the liver. The key-note, of course, to our diagnostic scale is previous residence in a hot country and a previous history of dysentery or chronic diarrhœa is of much importance. From my own experience, which though relatively very small has been extended over a long period of time, I have been led to look upon an association of most or all of the following clinical data and signs as urgent indications for prompt investigation by surgical means of the condition of the liver. The patient, whom we will assume is between 25 and 45 years of age, has resided in a hot country, and has suffered whilst there from dysentery. There is tenderness over the liver varying in extent from time to time, but always most marked at one spot. There is decided and troublesome shoulder-tip pain, and well-marked signs of gastric irritation. The patient is emaciated, presents a peculiar sallow, though not jaundiced hue, and is depressed in spirits and mentally torpid. The temperature is irregular, though showing more or less tendency to the remittent type. There is, I believe, in cases of liver abscess a decidedly characteristic position, the patient lying on his back with the chest raised and the lower limbs slightly flexed. Of course we must expect to find a more or less extended area of hepatic dulness, but, except with large abscess, this may not be readily appreciable. The difficulties in diagnosis by medical methods of observation, as might be anticipated, vary in accordance with the situation of the abscess. If, together with other clinical indications, the patient presents in the right hypochondrium a fluctuating swelling over the most prominent part of which the skin is œdematous and congested, nothing can be more simple, but, unfortunately, such cases are in a minority. The most difficult of all are the very rare instances in which a small single abscess is situated in the left lobe of the liver.

There are two further methods of diagnosis by which alone, in most cases of liver abscess, the uncertain can be made certain, and the indications hitherto regarded as uncertain and merely suggestive can be surely confirmed. The surgeon when called upon to assist in justifying any steps for operative and radical treatment, has to decide between exploratory puncture and exploratory laparotomy. For my own part I prefer the former, as I have almost always seen it applied with suc-

cess in cases of abscess, and have never witnessed any bad results from its use. Objections have, however, been made to the needle and the syringe from time to time, and there seems now to be a tendency in some quarters to resort at once and exclusively to exploratory abdominal section. The latter procedure, there can be no doubt, if performed with proper precautions and with proper care, is a safe operation, but surely the same may be said of the much less alarming and troublesome procedure of exploratory puncture. Laparotomy under the most favourable conditions has certain inconveniences and after-troubles—I am speaking of it now simply as an aid to diagnosis and as an alleviative measure—which ought to be taken into consideration. It necessitates the administration of an anæsthetic, causes much anxiety to the patient and to the patient's friends, and may result sooner or later in a tendency to ventral hernia. I am much disposed to question whether laparotomy can in the majority of cases afford us more help than simple puncture. The liver, from our present point of view, is to be regarded rather as a thoracic than as an abdominal organ. The posterior part and upper part of the right lobe may be felt but cannot be seen, and the route to the seat of the supposed abscess may be barred by adhesions which it would be imprudent, if not dangerous, to break down. Even if this exploratory procedure reveal to us the situation of the abscess, it will usually fail to give any further assistance, as in the subsequent plan of treatment it will be found necessary to attack the seat of the disease by the same methods and the same direction as when the presence of pus has been revealed by a simple puncture. Moreover, and this I take to be a strong, though it may be a sentimental, objection to laparotomy as an exploratory measure, is the probability that the exposed and handled liver may be found to be quite healthy.

I must confess that I see no good grounds for opening the abdomen simply as an exploratory measure unless, notwithstanding the presence of high fever and localised pain and other very suggestive symptoms of abscess, the repeated use of the needle and syringe has failed to reveal the presence of purulent fluid. It would be difficult, I think, without laparotomy to find out a small abscess in the left lobe, and it is in a condition of this kind only is met with only in about 1 case in 50, that I have myself opened the abdomen and seen it done by one of my colleagues. Exploratory puncture by needle and aspirating syringe is, I believe, an almost perfectly safe procedure, provided that in this as in other operations, whether minor or major, we use a suitable instrument that is in proper working order and has been thoroughly sterilised. I have generally seen used a syringe capable of taking from 60 to 120 minims of fluid, and a hollow needle from 3 to 6 inches in length. I see no advantage in using any of the larger aspirators, such as Dieulafoy's or Potain's, as they are more complicated than the simple needle and syringe, and are liable to break down at the most critical point of our exploration. Simple puncture with aspiration is, I feel sure, not only a safe but a very efficient aid to diagnosis. If the needle be introduced at a bulging spot over any part in front of the liver, or at some point of extreme tenderness, or into a widened and œdematous intercostal space, it will seldom fail to reveal the presence of pus; and if a series of from two to half a dozen punctures made within the area of hepatic dulness from the front to the back of the chest give no result, there will be a strong probability that the right lobe of the liver at least is not the seat of any purulent cavity. In case of failure, should the symptoms of liver abscess with high fever, sweating, and exhaustion still persist, we may after an interval of a few days again try the needle and syringe, and, if these still fail, resort at last to an exploratory laparotomy. If, as is usually the result after two or three punctures, the characteristic fluid of a liver abscess be drawn up into the syringe, an operation for giving free discharge to such fluid and exposing and draining the interior of the cavity should be practised immediately. If the patient be anæsthetised during the puncturing process, it would be very advisable to complete the operative treatment at what the French call the same sitting. This I believe to be a point of much practical importance with regard to the safety of the method of exploratory puncture. The soft parts between a liver abscess and the surface of the body may be œdematous and congested, or in consequence of some leakage of pus either antecedent to or actually caused by the introduction of the needle may be sodden by the discharge, and, in consequence of either of these conditions, may, if not relieved by free incision, become the starting point of serious septic mischief. Moreover, if we have struck an abscess in the liver, it would be well to take full advantage of the information thus obtained, and follow at once the track of the needle. I have known instances in which a second puncture made at the same spot after an intermission of some hours has, in consequence probably of some difference in the position of the patient, failed to give the same result, a cause of some embarrassment to the surgeon, who, in operating for liver abscess, ought I think to make it an invariable rule never to make a deep and free incision unless he is quite sure of the existence and precise situation of his object. The existence of an abscess having been determined it is the usual practice to substitute the scalpel for any variety of puncturing apparatus and to have recourse according to the situation of the cavity either to thoracotomy or some form of abdominal section. Thoracotomy, I believe, almost always implies a transpleural incision. When we have to deal with a large cavity at the upper and back part of the right lobe I cannot see how in the absence of adhesions it is possible to approach the cavity without opening the pleural sac on the right side. The methods devised by Lannelongue and other French surgeons of attacking the upper surface of the liver by a partial resection of the lower margin of the thoracic cage are not, I think, very satisfactory. I have tried tried Lannelongue's operation repeatedly on the dead subject and found it very difficult to carry it out without making a free communication between the pleural and peritoneal cavities. Every surgeon who has had experience in the treatment of hepatic abscess must, I have no doubt, have often wished to discover a direct passage to the back of the liver. The transpleural operation is theoretically a most unpromising and indeed a risky one. In my experience, whilst with an abscess in front necessitating an abdominal operation we usually meet with adhesions, in attacking the more frequent form of posterior abscess from behind we so often find both the lung and the liver quite free and their respective serous cavities quite open. Consequently in this operation we expose two large serous cavities and so double the risks of infection. Then, again, there is usually, though not always, a difficulty in preventing ingress of air into the pleural sac and collapse of the lung. Still, notwithstanding these causes of danger the transpleural operation in suitable and favourable cases has, on the whole, been a satisfactory one, perhaps more satisfactory than any other operation for liver abscess. In Malbot's list of cases to which I have already referred, whilst 4 deaths occurred in 11 instances of abdominal or anterior operation, a mortality of about 36 per cent., of 8 cases of transpleural operation, 2 only were fatal. In the transpleural operation after removal of a portion of the seventh or eighth rib the diaphagm is often found so much elevated and pressed upwards as to bulge into the wound and thus to prevent the passage of external air into the chest. The surgeon's chief care at this stage is to guard against the risks of subsequent infection of pleura and peritoneum. I have myself usually followed the not infrequent practice of making a free incision in both diaphragm and liver so as to allow a full and uninterrupted discharge of the fluid contents of the abscess. Such a course has, I believe, been very frequently followed by many surgeons without bad results, and it is one that, from a strictly technical point of view, has its advantages. Sooner or later, however, one might have to regret a constant and indiscriminate practice of this kind, and meet with an unfortunate exception to the rule that the contents of a liver abscess are absolutely sterile. Great caution ought naturally to be exercised in cases of mixed infection, and when the patient presents symptoms suggestive of some form of septic poisoning. It would be well, I think, in every case of doubt—and, indeed, in every case of liver abscess—to apply our tests for both general and local leucocytosis. The puriform fluid withdrawn at the exploratory puncture should be examined under the microscope before further steps are taken by the surgeon, who, if he learns that leucocytes are present, should make it his endeavour to shut off both the right pleural and the abdominal cavities before he opens and

empties the cavity in the liver. This stage of the operation has, I venture to suggest, both difficulties and uncertainty. I have not much faith in suturing. This is not only a long and tedious, but also, I believe, a very unsatisfactory procedure. After the most careful stitching—whether of parietal pleura to diaphragm or of diaphragm to liver—one often sees gaps here and there, and even the closest application of two margins or two narrow zones of serous or muscular tissue may, if the contents of the liver abscess be very virulent, fail to prevent an infective pleurisy or peritonitis. The course I would myself prefer in any doubtful case would be an application of Volkmann's method by plugging the open wounds in the chest wall and diaphragm with sterilised or antiseptic gauze, and postponing for two or three days—if such delay were free from risk—the final stage of the operation.

I will not say much concerning the operative treatment of a liver abscess revealed by puncture of the anterior wall of the abdomen. In such cases most surgeons, I believe, would practise abdominal section which would usually be one of a somewhat limited extent. This, from a technical point of view, would be a simpler and more satisfactory operation than transpleural section, as we need not open more than one serous cavity, and very probably in consequence of the frequent if not almost invariable presence of adhesions, may pass the knife directly into the abscess without any exposure of the peritoneal cavity.

Before concluding I might state that the surgeon has a free and wide range in the treatment of abscess of the liver. I see no reason why he should not operate in cases in which the patient is still suffering from dysentery, but this is a question for the physician to decide. The coexistence of two or more tropical abscesses need not be a contra-indication, as instances have been recorded, and I have had one such under my own care, successful operations on three distinct cavities. The only cases in which I would refrain from operating, excluding those in which the patient is much exhausted and almost moribund, would be cases in which there were clear indications of a spontaneous rupture of the abscess into the right lung.

In concluding this paper I think that I may fairly assert that surgeons in this country, by adopting the methods and following the teaching of their much more experienced colleagues abroad, have succeeded in improving to a considerable extent the prospects of operative treatment in cases of tropical abscess of the liver.

ABSCESS OF THE LEFT LOBE OF THE LIVER, WITH PARTICULAR REFERENCE TO ITS AMŒBIC CAUSATION.

By Staff-Surgeon P. W. BASSETT-SMITH, R.N.,
Lecturer on Tropical Diseases and Bacteriologist, Haslar Hospital.

ALL cases of abscess of the liver are of great interest owing to the diversity of opinions held with regard to their causation, the difficulties of diagnosis often present, and the great variety of symptoms during the course.

Of late years the theory that many of these abscesses are directly due to the presence and products of the amœba coli so ably advocated by Kartulis and Lafleur has been gaining ground. Any cases, therefore, which have a direct bearing on this are of importance; I have accordingly ventured to bring before the Association a case which has lately been under my treatment, and which seems to me to point strongly to the validity of this theory. The case is the more interesting as occurring in England, in a man who had not been abroad for two years, and also that systematic and scientific observations were carried out in the new and well-equipped laboratory attached to the Royal Naval Hospital, Haslar. In this case the hepatic abscess followed quickly after an attack of dysentery; amœbæ were abundantly found in the abscess fluid to the complete exclusion of pyogenic bacteria. After death recent shallow (probably amœbic) ulcers were found in the cæcum.

Three chief views are held as to the pathogenic action of the amœba coli.

1. That of Kartulis, who believes that they play a principal part, by their active movements causing rupture of the capillaries, etc., but that they also act as carriers of bacteria which cause the suppuration of the liver.

2. That of Kruse and Pasquale, who think that none of the bacteria are sufficiently constantly found to be considered specific, but that with some of these pyogenic organisms the amœbæ assist in the disintegration of the liver substance.

3. That of Councilman and Lafleur, who consider the amœba coli alone as active agents in the production of these abscesses, which view is strongly favoured by the character of the local lesions and the frequent absence of any pyogenic organisms, even when carefully looked for.

The subject of the present case was a petty officer in Her Majesty's Navy, of robust constitution and healthy habits. He had not been further than the Mediterranean for a long time, having been back over two years. He had not out there suffered from malaria or dysentery. In November, 1899, when at his own home in Portsmouth he had an attack of semi-acute dysentery lasting a month. In December he was feverish and was said to have influenza; having some lung systems he was in January sent into Haslar Hospital. After admission he had high fever with marked rigors; a diagnosis of malaria was made. In February he was transferred to the ward for tropical diseases. There I utterly failed to find any evidence of malarial infection, but a leucocytosis with an increase of fibrin threads in the blood was very marked. From this I gathered that there was an acute inflammatory condition going on. Serum diagnosis observations for Malta fever and typhoid gave negative results. No tubercle were present in the scanty sputum.

With the history of recent dysentery the probability of hepatic abscess was evident; but though constitutional symptoms were very marked, rigors, irregular fever, profuse sweats, and increasing anæmia, yet there were absolutely no liver symptoms, this organ appearing smaller than normal. A consultation was held, operative measures being deferred. The condition did not improve, a short irritating cough came on, the sputa being scanty and mucoid. Finding some impaired resonance at the left base, I explored there with negative results. The next day he was placed under an anæsthetic, and though no signs of hepatic enlargement were present, the right lobe was carefully explored with a large needle, three punctures being made from the side and three from the back. No pus was however found. The signs of septic poisoning continued, the rigors being less marked, but the cough more troublesome, the sputa still remaining scanty, mucoid, and free from tubercle. Diaphragmatic pleurisy was undoubtedly present; later a localised pain was felt in the right hypochondrium. I again explored without result. Signs of cardiac disease now became apparent, fleeting *bruits*, diffused and displaced impulse, with fast and soft pulse.

A bacteriological examination of the blood from the finger tip was made, but in spite of great care an impure culture of staphylococcus epidermidis albus and sarcina rutea was only obtained. The rigors were now very intense, the temperature rising to 106°-108°. He, however, continued to eat well in the apyrexial periods. Antistreptococcus injections were given, but they did not reduce the fever. Muttering delirium came on at night, and he appeared losing power rapidly. On April 13th I noticed his legs drawn up, and found some fulness in the left hypochondriac region. It was immediately explored, a little reddish pus being drawn off from which an agar tube was inoculated. The next morning he was anæsthetised, the part opened (by Fleet-Surgeon Gimlette, R.N.) through the adhesions, a quantity of red curdy fluid escaping. His temperature fell considerably after the operation, but he only lived three days. On the day of his death amœbæ were abundantly found in the discharge, but no pyogenic organisms were obtained, either from the first pus drawn off, or from that at the time of the operation, though cultures were made in broth, on agar, and on blood serum. The *post-mortem* examination showed firm adhesions of the liver at the seat of the incision, but none elsewhere. The liver was enlarged, weighing 70 oz., the left half was deeply congested, the left lobe was very slightly enlarged though entirely excavated by the abscess, the walls being in a shreddy, grey, necrotic condition. There was no secondary abscess of the liver. The left lung was healthy, the right was attached by adhesions to the diaphragm but could be easily peeled off, showing no loss of continuity there; the lower lobe was firm, having in the centre a large ragged grey abscess cavity, very like that in the liver. There was marked recent pericarditis, the surface being coated with rough lymph. The valves and endocardium were healthy. The whole of the cæcum showed evidence of recent ulceration; these ulcers were oval with thickened edges, having for their floor the submucosa. The surrounding mucous membrane was congested but there was no marked thickening of the gut. A few ulcers were also found in the ascending colon.

Cases of abscess of the left lobe of the liver are rare, they are also difficult to diagnose. Here the evidence of an inflammatory process was early marked, the hepatic origin being strongly suspected; but the absence of enlargement, local pain, and the negative results of exploratory punctures were all very puzzling. The diaphragmatic implication pointed to the abscess being in the upper and back part, the position where these abscesses are so commonly found. When cardiac symptoms became marked a septic endocarditis was suspected.

The points of special interest I think are:

1. The occurrence of dysentery in England, years after leaving a foreign station.

2. The position of the abscess in the left lobe.

3. The abscess in the right lung which did not directly communicate with that of the liver.

The infection of the lung through the serous membrane without perforation is important. It is stated by Lafleur to occur, but rarely. A certain amount of aërated tissue surrounded it, hence causing the masked pulmonary physical signs. The cutting off of this necrotic portion of the lung

tissue by blocking of the surrounding bronchi is proved by the entire absence of any purulent expectoration, which was carefully looked for throughout.

Considering the length of the case, and the great destruction of lung tissue, the absence of any such evidence was very unusual, emphasising the fact stated by Lafleur, that the physical signs of hepato-pulmonary abscess are even more indefinite than those of a deep-seated hepatic one, often remaining so for a longer time. He says "that it is surprising after death to find extensive lesions of lung and liver, where physical examinations and exploratory aspirations had afforded but inconclusive evidence of suppurations of these organs."

4. The pericarditis.

5. The presence of amœbæ coli in the abscess fluid two days after the operation and the sterile condition of this pus.

It is difficult to understand how, with an absence of pyogenic bacteria, such excessive clinical evidence of septic infection is to be explained, and in what way the secondary abscess of the lung and the pericarditis originated.

It seems probable that the dysentery was directly due to the amœbæ coli, that these were conveyed to the liver, setting up the necrotic change there, and from there passing through the serous membrane to the lung, and that these amœbæ are able to secrete some toxin able to produce intense rigors, etc. The secretion from the lung tissue was not examined for amœbæ, the *post-mortem* examination being made too long a time after death.

In cases of this kind the diagnosis has to be made by a process of exclusion. Liver abscess was recognised, but the position in the left lobe was not suspected. It was not until quite late in the case that there were any symptoms pointing to this, indicating the necessity of frequent and systematic exploration of the whole organ.

Dr. Manson stated that under ordinary circumstances there was often great difficulty in the diagnosis of pus in the liver by needle punctures, but when the abscess had opened into the lung and the pus was being expectorated the difficulties in the way of finding the seat of the liver abscess by puncture with the needle of an aspirator were increased manifold. Fluid resembling liver pus he had known to be drawn off by the aspirator, and yet the pus had been coughed up afterwards. He regarded the operation practised by most British surgeons as altogether too heroic. Unless the thorax were involved it was not necessary nor was it good surgery to treat a liver abscess as one would an empyema. He had relied upon the trocar and cannula in the treatment of pus confined to the liver, and he had seen it used with excellent results by others. He had not met with the amœba coli in the sputum of patients suffering from abscess of the liver discharging through the lungs. Dr. Manson regarded leucocytosis not as liver abscess, but merely as an indication of an inflammatory process. Dr. Manson was at a loss to understand the serious hæmorrhage that had so frequently occurred in Bombay from puncture of the liver by the needle of an aspirator.

Major Ronald Ross mentioned a case of hepatic abscess he had seen in Liverpool in which leucocythæmia, but no evidence of malaria, was present.

Mr. Cantlie said he had followed Dr. Manson's plan of treating liver abscesses by the trocar and cannula, and the subsequent insertion of a large drainage tube into the cavity, with success. He had also seen it used many times by Turnbull, Cowie, and Stedman with conspicuous success in Hong Kong. Mr. Cantlie urged the use of the trocar and cannula as a method of treatment, as it could be used with safety and at an early stage of the disease. In out-of-the-way parts of the world it frequently occurred that the surgeon could have no skilled help, and under the circumstances to render a laparotomy or a transthoracic path to the pus in the liver, was an undertaking that was apt to be deferred or put off altogether until it was too late. No surgeon would, however, hesitate to first put the needle of an aspirator into the liver, and having found pus to thrust a large trocar and cannula along the track of the needle towards the seat of the abscess. Mr. Cantlie believed that with this instrument in the hands of a practioner in the tropics, especially when no skilled assistance was obtainable, early search would be made for the pus, and many lives saved. He regarded the formation of an abscess in the lung or pleura subsequent to a liver abscess as a sign that the medical practitioner had delayed operation too long; it was a sequel to liver abscess which he would not say should never be allowed to occur, but it was one which, as the adoption of the use of the trocar and cannula came to be general, would be quite exceptional.

Colonel Kenneth Macleod said: I quite agree with Dr. Manson's remark on the subject of heroic surgery in cases of liver abscess. I also consider that in the great majority of cases resection of rib is unnecessary, or stitching of the edges of serous membranes. In lung cases in which filling of the pleural cavity or destructive abscess of lung has arisen as a secondary event, resection of rib is advisable. I may mention that in one case I derived assistance in diagnosis from the intercostal impulse caused by gentle coughing. This physical sign may be useful in many diseased conditions of lung and pleura.

SOME SUGGESTIONS FOR THE IMPROVEMENT OF SANITARY AND MEDICAL PRACTICE IN THE TROPICS.

By Ronald Ross, D.P.H., M.R.C.S.,

Lecturer in Tropical Medicine, University College, Liverpool.

I propose to suggest in this brief paper some improvements in medical organisation in the tropics—improvements which have long been required, and which I think could very easily be made. Many of the points have already been mooted by Ernest Hart, Manson, and others; and most of them seem to be so obvious as scarcely to require lengthy comment. I recall them now in the hope that something may shortly be done in the directions indicated.

1. *Instruction in Animal Parasitology.*—Several of the principal tropical diseases, malarial fever, dysentery, ankylostomiasis, elephantiasis, endemic hæmaturia, and others, are, or may be, caused by animal parasites; yet, in my experience, few medical men have made any particular study of such organisms. One does not often meet men who are quite familiar with the parasites of malaria, for instance. Few are able even to detect the presence of worms by the microscope. I once met a hospital assistant—a man who had recently received his diploma—who was in charge of a hospital full of cases of ankylostomiasis; he had never even heard of the disease, and was treating his cases for malarial cachexia! Even in our leading medical literature one often sees zoological names improperly written—a fault often committed, I fear, by myself amongst others. A knowledge of comparative parasitology is still more rare, leading many medical men to adopt a sceptical attitude toward ideas which have long been commonplaces among zoologists. Thus one controversialist refuses to believe that that the *Hæmamœbidæ* possess two cycles of development, because, he says, it is impossible for an organism to have two methods of propagation! The remedy is to give more attention to animal parasites in the ordinary pathological curriculum.

2. *Instruction in Tropical Medicine.*—I need not discuss this question, which has already received much attention. I must point out, however, that it is not sufficient to instruct only those who have joined the medical services. Hundreds of medical men are called to serve as ships' doctors or as private practitioners in the tropics, or may be suddenly enlisted in our wars, as at present in South Africa. Special attention to tropical medicine should always be given in the ordinary medical curriculum.

3. *Special Questions in Examinations.*—Such results are not likely to be fully attained until every examination paper on pathology and medicine contains at least one question on animal parasitology and one in tropical medicine.

4. *Literature.*—In my experience it is generally very difficult to obtain in the tropics any literature except that which is contained in the most popular textbooks and periodicals. Application to booksellers at home for even the most important monographs is often a fruitless procedure and is always a slow one; while it is hard for medical men, especially for those who belong to the services, to drag about with them several hundredweight of books. Yet no one can deny that the perusal of the leading medical literature is an absolute essential to medical proficiency. Small but up-to-

date libraries should exist in all the leading towns in our tropical possessions, especially in connection with our principal Government hospitals. It is impossible to understand why such a want has not been attended to long ago. As an instance of the urgency of the want I may mention that I once found it impossible to obtain, even in the capital of India, a classical memoir on amœba coli, which one would think should have been read by every medical man in the country. Perhaps it would be possible to arrange, through the Library of the British Medical Association, an agency for the supply of monographs to the tropics, either by loan or sale.

5. *Microscopes.*—It is also impossible to understand why the larger hospitals in the tropics are—or were a little while ago—so seldom supplied with microscopes with oil-immersion lenses. There can be no doubt that every large hospital, and indeed, every medical man in the tropics, should have them. The smaller hospitals in localities where ankylostoma duodenale abounds should possess instruments for the detection of the ova.

6. *Other Apparatus.*—Antitoxins, antivenene, and apparatus for bacteriological diagnosis, such as material for the Grünbaum-Widal test, should exist in the principal towns. Where such apparatus belongs to Government, it should be open for the use of private practitioners on payment. The same should hold in the case of Government medical libraries.

7. *Medical Regulations.*—These should be compiled and issued with the greatest care. It is impossible to conceive worse regulations than, for instance, those which held sway when I was in India. Ill-arranged, spread over many publications, confused, ill-worded, and often unintelligible—if not contradictory—they were the despair of most executive medical officers. They were, moreover, scarcely up to date from the scientific point of view.

8. *Municipal Sanitary Regulations.*—The same must be said of most municipal laws and regulations which I have studied—and I have studied many. They are also often *ultra vires*, or impracticable in the law courts. It seems to me that these regulations should be in the charge of a skilled central authority.

9. *Organisation of Research.* If the medical profession wishes itself to be considered a scientific profession, it must ever maintain it to be its highest obligation to make strenuous organised efforts towards discovering the natural laws which govern the progress, propagation, and treatment of disease; it is not right for us to content ourselves merely with the efforts of a few private enthusiasts. The country confides in us to preserve it as much as possible from disease; if we do not, as a body, take the trouble even to ascertain the nature of disease, we shall end by losing that confidence—that is all. It cannot be said that in the past the profession has done all it should have done in this line—at least in regard to tropical diseases. The way in which the discoveries of Laveran and Manson have been neglected by us for years has become a by-word. Giles's work on the life-history of so important a parasite as the ankylostoma doudenale, done many years ago, has not even yet received confirmation or rejection. Cunningham's important work on the life-history of amœba coli and cercomonas intestinalis seems to have been absolutely forgotten. Our public researches, even on such diseases as cholera, tropical typhoid, dysentery, and beri-beri, have been small indeed when compared with the havoc wrought by these maladies.

It seems to me that research can be organised in three ways: By the foundation of research laboratories, by the appointment of specialists to prosecute certain definite lines of investigation, and by the encouragement of private research. Though a great clamour for the foundation of research laboratories has arisen, and though I quite agree that bacteriological institutes should exist in all our principal colonies—if only for current executive pathological work—I think that this costly method is not likely to give the best results for the least money. Many such laboratories already exist without yielding much profit, while bricks and mortar, expensive appliances, and fixed appointments are not required for many important investigations. The second method—that of delegating certain researches to certain men—seems to me a better one; but even this method is somewhat costly, and is often likely to fail on account of the difficulty of selecting the suitable man. In my own humble opinion the best way of dealing with the subject is to encourage private research by large pecuniary rewards.

On the whole the man who has the best opportunities for studying disease is the medical practitioner. In the tropics, especially in the medical services, numbers of men have the most admirable opportunities for research as well as abundance of leisure to prosecute it. Few attempt it, and the rest are blamed for their neglect. The blame is quite unjust, because, as a matter of fact, scientific investigation is no part of a doctor's duty. We did not enter the medical profession for philanthropical purposes, but in order to make a living; we are not justifiably called upon to spend our leisure in laborious pursuits for nothing. Observation, clinical study, the study of treatment, indeed, are remunerative, as they ought to be; they bring advancement and often wealth by way of private practice. But it is otherwise with the laborious and highly specialised kind of investigations to which I refer. Although they are of the highest value to mankind, experience—such for instance as that of the great Vandyke Carter—shows that they generally bring no remuneration—at least, none which will compensate for the loss of money, time, and opportunity which they often occasion. Under the present conditions it is impossible to recommend men who have to live by their profession to undertake such studies.

Of course many men will undertake such studies for nothing; but if we wish to stimulate a large number of men to undertake them we must make it worth their while. In my opinion the occasional donation of a prize of some thousands of pounds for really notable investigations is probably the best way—though it need not be the only way—to ensure rapid scientific advance in the profession. The money can be found if the proper effort be made, and I think that the British Medical Association is the most suitable body to undertake the task of considering the matter.

10. *A Central Scientific Authority.*—I think that we have long felt the need of some strong central authority to encourage and support medical scientific research in the tropics, and to insist on those reforms in medical and sanitary practice which the progress of science continually demands. The instances already cited seem sufficient to establish the necessity for some force of this kind. Experience shows not only that investigation has not been adequate, but that even when important researches are made they are apt to be lost sight of, while the authority of individuals of the highest scientific distinction often fails for years to break down the inertia and scepticism which oppose new ideas. In matters of life and death, which medical science has to deal with, this sluggishness of thought and action is scarcely justifiable.

How a central authority of the kind I refer to is to be constituted I need not discuss at present. Perhaps we already possess the necessary organisation. The Royal College of Physicians and the Royal Society are already stirring in the matter of tropical medical science; we may hope that these and other societies will soon "force the running" still more.

Dr. SARAT K. MULLICK (London) stated that there was urgent necessity for the appointment of specially-trained investigators to fill the chairs in the medical schools of India. Until that was done the best interests of the schools would not be served, and there was little example or encouragement to students to take up special investigations.

Colonel KENNETH MACLEOD pointed out the difference between a teacher and one who devoted his attention principally to original investigations. Now and again an investigator was a good teacher but it was quite the exception, and the first essential to be sought for in one who held a lectureship was that he was a good teacher and exponent of the science and practice of medicine.

NOTES ON A CASE OF BLACKWATER FEVER, WITH A DESCRIPTION OF THE MICROSCOPICAL APPEARANCES.

By GEORGE THIN, M.D.,
London.

DR. DOUGLAS GRAY, Principal Medical Officer of the Government of British Central Africa, wrote me from Zomba on March 27th, 1899, advising me that he had sent me pieces

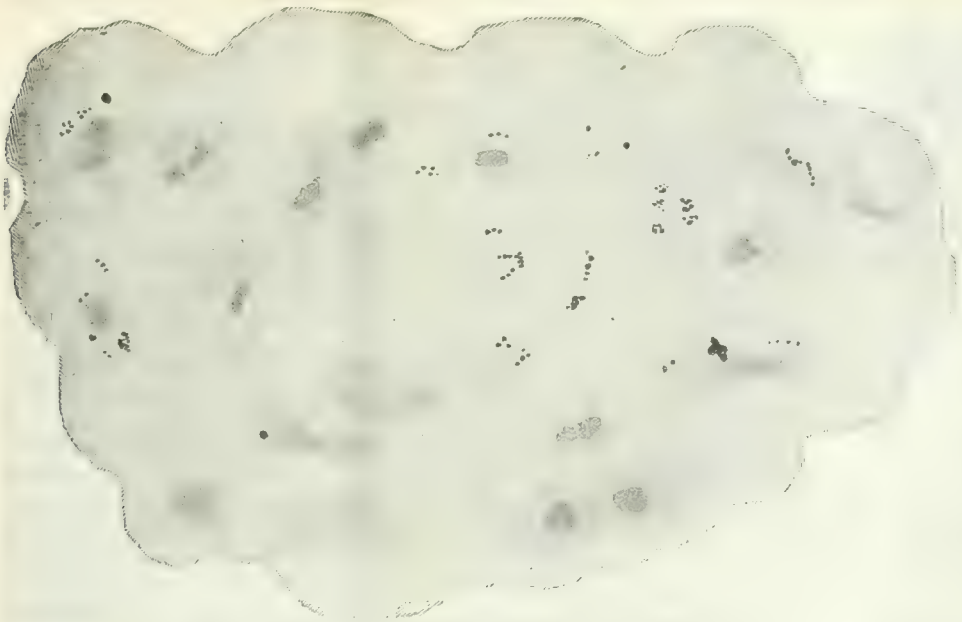


Fig. 1.—Malpighian corpuscles. Pigment in leucocytes. × 1500.



Fig. 9.—Cross sections of contiguous kidney tubules. In one the epithelium is scarcely changed. In the other the cells are separated from the wall of the tubule. × 500.

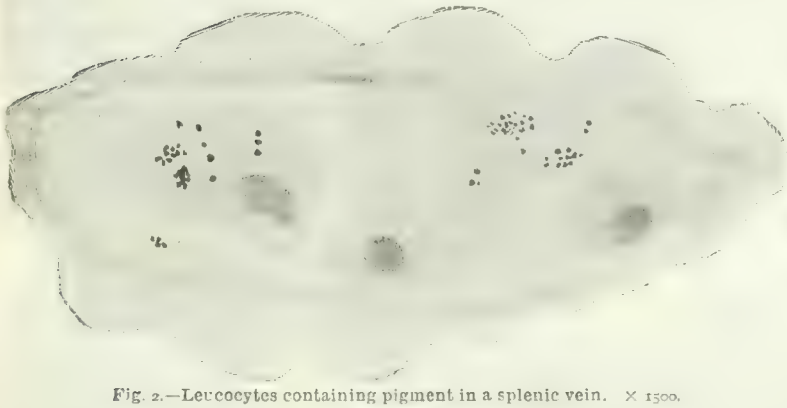


Fig. 2.—Leucocytes containing pigment in a splenic vein. × 1500.

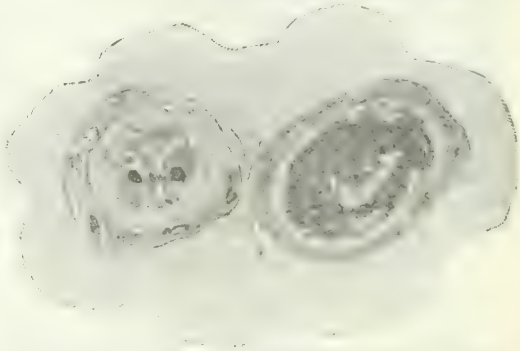


Fig. 10.—Cross sections of adjacent kidney tubules. That on the right shows an early stage of disintegration of the epithelium; that on the left shows a mass of epithelial *débris*. × 500.



Fig. 3.—Leucocytes outside a vein in the spleen. × 1500



Fig. 11.—Cross sections of adjacent kidney tubules. In the lower one the epithelium is unaltered. The lumen of the upper one is filled with a mass of fine rounded granules, the product of the disintegrated epithelium. × 500.



Fig. 5.—Pigment in leucocytes in hepatic capillary. × 1500.



Fig. 4.—Leucocyte in splenic palp. × 1500.

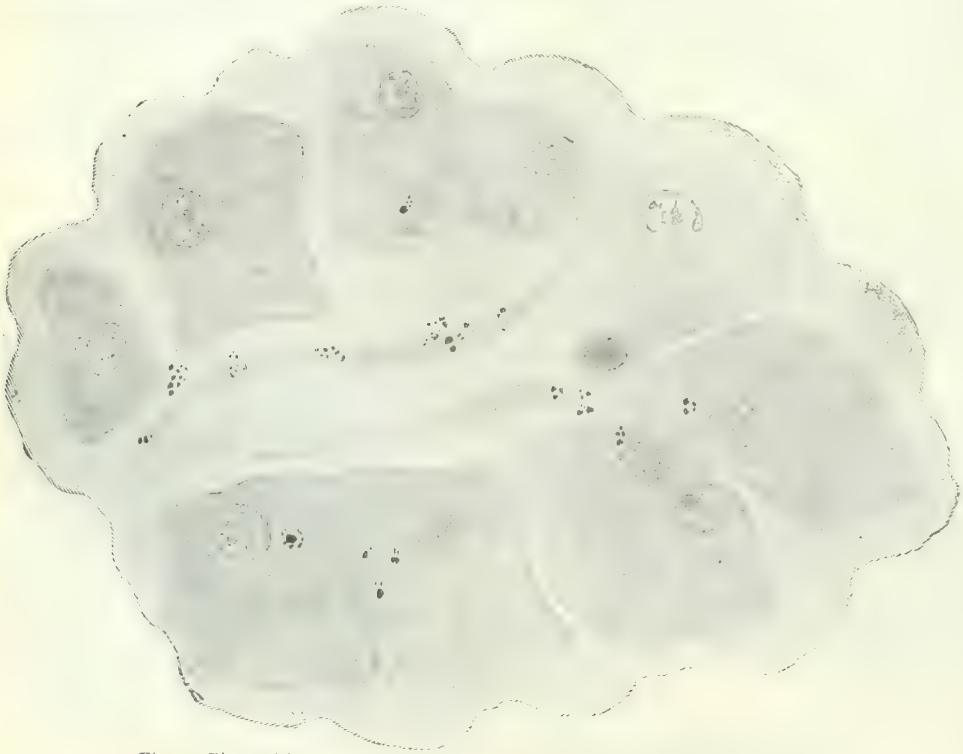


Fig. 7.—Pigment in space between hepatic capillary and hepatic cells. × 1500.



Fig. 8.—Hepatic cells containing much pigment. × 1500.

of liver, spleen, kidney, and bone marrow from a very acute case of hæmoglobinuric fever, "our British Central Africa urinary suppression form." The case, he remarked, "was seen and studied by the Malaria Commission on the spot, and is referred to in their report;" and for this reason I should not have considered it necessary or useful to publish the results of my examinations of the tissues sent me by Dr. Gray if I had not been asked to do so by Dr. Stephens, a member of the Commission.

When Dr. Stephens called on me after his return from British Central Africa, I offered to place my specimens at his disposal for any use he might wish to make of them, but he considered it would be more useful if I published a description of them myself; and, writing me from Sierra Leone in December, 1899, whither he had gone on a second expedition, he remarked: "With regard to the specimens of the blackwater case, I think it will be of great value if you should describe them independently." This explanation is needed to explain how I come to take public notice of a case which is already in the hands of the Malaria Commission, and there is probably no more suitable medium for this supplementary addition to the account of the case than the Tropical Section of this meeting.

The following account of the case is an extract from Dr. Douglas Gray's letter to me:

J. R., aged 27, marine engineer, been in British Central Africa eighteen months. On the whole enjoyed good health, occasional slight attacks of fever; rarely took quinine; strong, well-built man. On Sunday, the 16th inst., was walking about, but towards evening felt seedy. At 2 A.M. the following morning he suddenly vomited, and passed hæmoglobinuric urine two hours later. That day he passed about 8 ounces of urine, and never again, with the exception of 1 ounce about forty-eight hours later. He had violent hiccough and retching throughout, but very little vomit. He died on Thursday morning (the 23rd inst.), at 5.25 A.M.—that is, three days and three hours from the first prominent symptom.

Post-mortem examination revealed nothing special; liver, spleen, and kidneys were all congested. Careful blood examination showed no malarial plasmodia. Intense anæmia (2,500,000). He lived ten yards from the bank of the Shire river. There were plenty of mosquitos at some times of the year, few at others, notably at present; but they did not trouble him much, the bite and mark was very slight. He always used a mosquito net, and lived in the same house with two other healthy men. The previous death in the same locality was that of a gunboat captain, who also died of the suppressionary form of blackwater fever about ten months before. This case had certainly nothing to do with the abuse of quinine, as the patient very rarely took it.

The examination of sections made from the tissues showed the following appearances:

Spleen.—White corpuscles containing malarial pigment in minute granules and very small spheres were found in the tissues of the spleen. They were comparatively most numerous in the Malpighian bodies, and were present in the large white corpuscles in the splenic pulp. They were also found in white corpuscles lying external to the walls of the small veins, and in the lumen of the veins; the number associated with the veins being larger than those found scattered sparsely through the pulp.

Liver.—In the liver white corpuscles containing pigment were found in the capillaries, and in small numbers in the veins. Most of the pigment was found in the endothelium of the capillaries, the course of many of the capillaries being marked out by the pigment accumulated in the swollen and degenerated endothelial cells. Occasionally small particles of pigment were found between the capillary vessel and the contiguous liver cells. In many of the liver cells the pigment was found in minute granules in the substance of the cells.



Fig. 6.—Pigment in endothelial cells of hepatic capillary. A little pigment in some of the hepatic cells. × 1500.

Bone Marrow.—I did not find pigment in the sections of the bone marrow which I examined.

Kidney.—The sections of the kidney show the same degenerative and destructive effects on the secreting epithelium of the tubules that I found in a previous case from British Central Africa which was sent me by Dr. Kerr Cross, and which I described in detail in the BRITISH MEDICAL JOURNAL of June 3rd, 1899, and, as in that case, there are great differences in the degree in which various tubules are affected, one in which the changes are in their extreme form being often found near a tubule in which the changes were scarcely observable. All the changes noticed are referable to the different stages of destruction of the epithelium.

The epithelial cells first become swollen and granular, then are detached from the basement membrane and block the tubule. The epithelial blocks gradually disintegrate until the final stage is reached, when the lumen of the tubule is found filled with a mass of minute rounded granules not unlike groups of large cocci. Every stage between the first and last change in the epithelial cell can be observed.

During the process of breaking up of the kidney epithelium the *débris* acquires the property of assuming different tints when stained with eosin. After the mass has become agglomerated, but before it breaks up, it shows, under the influence of this dye, a well-marked greenish tint, which still exists, but to a less extent, in the final stage of subdivision.

In the liver and spleen the dark colour of the pigment was accompanied with a distinct greenish-yellow tinge, and nowhere was it accumulated in large blocks. Its appearance and distribution in these organs was identical with that found in the tissues in the four fatal cases of acute pernicious

malarial fever sent me from Sierra Leone by Captain Duggan, R.A.M.C., and in the previous blackwater case referred to.

The appearances in this case satisfy me that the patient died of acute malarial fever, in which the hæmoglobinuria was a concomitant symptom. The localisation and distribution of the pigment are evidences that it had only been recently thrown into the blood circulation. The absence of the parasite in the tissues of the spleen, liver, and kidneys does not militate against this view. The same absence held good in the previous cases to which I have referred, but in them the brain tissue was available for examination, and in it the parasites were found in great numbers. Had the brain in this case been available for examination, there is the analogy of the five previous cases to show that there is little doubt that it was in the cerebral vessels the parasites would have been found. The presence, condition, and extent of the pigment in the liver and spleen are sufficient to show the recent existence of the parasite in great numbers at some point of the blood circulation.

The changes in the epithelial cells of the kidneys illustrate the very powerful effect in these cases of blackwater fever of a toxin generated by the parasite. A reasonable explanation of the phenomena of hæmoglobinuria is that, in certain parts of the world, the parasite of malaria possesses the property of generating a toxin of such a virulent character that destruction of the red corpuscles and the setting free of hæmoglobin in the blood take place on a large scale, while there is also a concomitant destructive effect on the epithelium of the kidney tubules.

I have now to express my thanks to Mr. E. E. Henderson, who was kind enough to execute the drawings which illustrate the paper, and which are drawn carefully to scale.

Dr. PATRICK MANSON said: It may be quite true that hæmoglobinuric fever is an expression of malarial infection (indeed, my own opinion, based however on considerations of probability rather than on logical deduction from demonstrated fact, is that it is), still I would protest against jumping to the conclusion that hæmoglobinuric fever is a form of malaria merely on the strength of the discovery of the malarial parasite in the hæmoglobinuric patient's blood, or of melanin in his viscera; concurrence of two facts by no means implies a cause and effect relationship of the two facts. Indeed, it would be strange if we did not find the *post-mortem* evidences of recent malarial infection in a large proportion of all cadavers of Europeans who die in such highly malarial countries as British Central Africa. It would not be justifiable to conclude because we found melanin in the liver or spleen in a case of cut-throat in British Central Africa that the suicide was caused by malaria; neither is it justifiable to interpret its presence in hæmoglobinuric fever in a similar sense. Such rashness in accepting the concurrence of certain facts as being conclusive evidence is not likely to lead, I may say is likely to retard, the unravelling of the mistery of blackwater fever.

Mr. D. C. REES said: We received the same tissue at the London School of Tropical Medicine from another source. I came to the conclusion that death was not due to an ordinary malarial infection. The amount of hæmoglobin in the kidneys and other organs was in such amount that if the case had been one of malaria, melanin would have been in much larger amount. I came to the conclusion that the melanin that was present was due to previous malarial infections. Other sets of tissues which we have examined lately tend to show that Blackwater fever is not of ordinary malarial origin.

THE CYPRUS SPHALANGI AND ITS CONNECTION WITH ANTHRAX

(CALLED LOCALLY "SPHALANGI BITE").

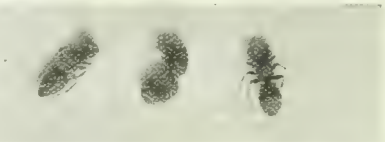
By GEORGE A. WILLIAMSON, M.B., C.M.Aberd.,
Cyprus.

THE so-called sphalangi of Cyprus is an insect, in general appearance resembling an ant of medium size, as shown in figs. 1 and 2. The body is divided into three segments, the head and the thorax being dull red in colour, and each about half the size of the abdomen, which latter is black, marked with spots or bands (amalgamated spots) of yellow. The abdominal segment in some carries at its extremity an elongated process, the "sting." Others do not have this process. The sting-bearers are apparently the females, the sting being a modified ovipositor. Those without stings are males. The length of the insect is one-third to one-half an inch, and the whole body is covered with fine hairs, visible under a magnifying glass. These hairs appear important, as they may carry infective material, for example anthrax spores, to an abraded surface. In early summer winged individuals are met with. All seem to lead a semi-subterranean existence and to be omnivorous, with, if anything, a preference for foul material. The sphalangi is met with only during the hot weather, from June to November.

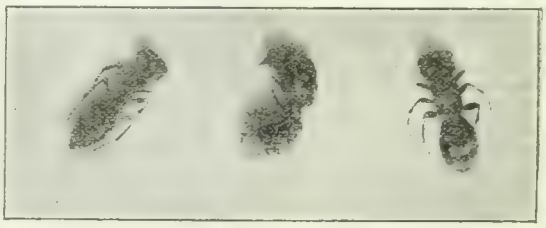
IDENTIFICATION, ETC., OF THE SPHALANGI.

Professor Trail, of Aberdeen University, to whom I sent a few specimens for identification, kindly sent me the following account:

"1. The insects all belong to a genus of *Aculeati* (sting-bearing) *Hymenoptera*, called *Mutille*. About 1,000 species have been distinguished, often by very slight characters, so that it is scarcely possible to determine the species except by comparison of good series with accurately named collections. There are not more than perhaps five or six specialists in Europe that could do so with certainty. The species are scattered over the world, especially in warm countries, and there are probably a good many species in Cyprus. I think there are three species represented in your tube—namely, the large one with sting hidden, the small one with sting out, being distinct; and the other two probably belonging to one species, despite difference in size.



Sphalangi (*Mutille*) actual size of specimens photographed.



Sphalangi (*Mutille*) enlaged to actual size of the largest specimens observed.

"2. Life histories are alike in all species of *Mutille* so far as is known. Thus the specific names are of little importance from your point of view, except for completeness, and that would require an accurate and detailed study of the genus in Cyprus. All species whose life-history is accurately known live as larvæ—their metamorphosis being complete—in the cells of the true bees—some in those of honey bees, others in those of the very numerous kinds of solitary bees—eating the food prepared by the bees for their own larvæ. When fully fed they become pupæ in the cells, and the perfect insects emerge from the nests of the social bees or the burrows of the solitary species.

"3. The females are always wingless. The males are winged of all except a few species. I think those sent by you are all females, the sting being pushed out in two and retracted in the other two.

"4. The females can and do sting in self defence. The effect produced probably would differ greatly, the sting of some species being much more severe than that of others; but I am not aware of any accurate records of the comparative severity of insect stings. The effects would vary also with the state of health and vigour of the person stung and with the part stung, just as with other poisoned wounds. I should not expect that in itself a sting, though painful, would be dangerous to a person in good health, unless by the mechanical effects due to swelling around the wound—for example, in the throat. Certainly the sting as such could



Fig. 3.—Aspasia Nicolaon, September 23rd. 1899.



Fig. 5.—Mehmed Ali Bilal, July, 1899.



Fig. 4.—Aspasia Nicolaor, February, 1900.



Fig. 6.—Mehmed Ali Bilal, July, 1900.

not cause anthrax, though the bacteria might conceivably be carried in by the sting; that would be on the sting, not in the poison. A slight abrasion of the surface would be a more probable mode of access. The bodies and limbs of the insects, like all that crawl on the soil or live in burrows in it, might easily chance to bear the anthrax bacteria where the soil is infected, and might carry them to abrasions or cuts on the skin."

Belief as to Effects of "Sphalangi Bite."

It is firmly believed throughout the island that the sphalangi can sting or "bite" (as the literal translation of the Greek word makes it), and that the effects are generally serious and may be fatal; many cases are on record, and deformities as the results of the sting are frequently met with. I was unable to accept the story that the sting of itself could cause such terrible results, and subsequent experience of cases has led me to what seems to be the correct explanation of the injuries caused by the sting.



Fig. 7.—Disfigurement after sphalangi sting.

Existence of Anthrax.

Before going further I should like to point out that the disease known in the island as "phlangari" (φλαγγάρι) in sheep is really anthrax. This I have no hesitation in stating, having examined the blood of animals suffering from phlangari, and finding it crowded with unmistakeable anthrax bacilli. I have also found the disease in horses, two cases, both fatal Unfortunately, the carcasses of animals dying of phlangari are too often left to lie where the animal died, the skin being removed.

Symptoms of a Typical Severe Case of "Sphalangi Bite."

Reference to Fig. 3 will show the effects in a severe case of "sphalangi bite." The patient, Aspasia Nicolaon, aged 50, was sent to me on September 22nd, 1899. On the night of September 18th, while sleeping on a trestle bed placed against the wall in the yard of the house, she was wakened by feeling at the right temple a pain like the prick of a needle; she at once concluded that she had been bitten by a sphalangi, especially as there were many insects on the wall. On getting up in the morning she noticed a small pimple at the spot where she had felt the pain during the night—she was sure this pimple had not been there when she went to bed. Swelling rapidly set in till both eyes became closed, and her general appearance was as shown in Fig. 3. The central eschar was very slightly raised, dark brown, and about the size of a sixpence, having a slight, clear odourless discharge. Ten small secondary vesicles were counted round the eschar; the swollen parts were indurated, not "boggy."

On microscopical examination of the discharge large numbers of anthrax bacilli were discovered, as well as numerous lymphocytes.

The treatment adopted was cauterisation by thermo-cautery and the injection hypodermically at different spots round the eschar of a solution of mercuric chloride and potassium iodide in water.

The case went on to complete recovery, as will be seen from Fig. 4, which was taken in February, 1900.

Source of Infection.

The source of infection here appeared to be a sheep, which died of phlangari, and whose carcass had been thrown, a week before Aspasia Nicolaon took ill, into a field adjoining the yard of the house she occupied. The woman had not been engaged on any work, such as hide dressing, etc., by which infection might have been got.

Remarks on Other Cases.

Fig. 5 was taken while the patient, Mehmed Ali Bilal, was in hospital in July, 1899, and Fig. 6 shows the same man in March, 1900; he actually felt the sphalangi on his face, and the swelling, which began almost at once, became severe next day. It is interesting to learn that during the week preceding his illness two of his sheep died of "phlangari." Unfortunately he allowed eight days to elapse before he presented himself at hospital, so that Dr. Cleveland (under whose care he was) had great difficulties to contend with in the treatment, and the delay probably accounts for the severe ectropion and loss of sight from which he now suffers. He declined to have the ectropion operated on.

A similar case, ending in severe ectropion also, occurred at the same time in the same village, and probably due to infection from the same carcass of sheep as in Mehmed's case; here, after some weeks' suffering, the patient recovered. She ascribed the disease to the bite of sphalangi sustained while she was sleeping in the open at night.

Fig. 7 shows a typical case of disfigurement after sphalangi sting with inoculation of anthrax; there is here, besides ectropion, a salivary fistula on the left side.

A few other cases came under my notice, but were not so marked as the foregoing.

Simple Sphalangi Sting.

Three cases where the persons were supposed to be bitten by sphalangi were also observed (in one of which the insect was actually picked off the face) where the resulting symptoms were slight or, in other words, such as one would expect to find from the sting of an insect like the *Mutille* and in accordance with the zoological fact stated by Professor Trail. One of these cases is of sufficient interest to be quoted—a woman came in a great state of fear, saying that she had been bitten by a sphalangi the night before while collecting brushwood in her yard (the brushwood had no prickles); she said that she saw an insect like a sphalangi run off her hand after "biting" her, but, it being dusk at the time, she could not describe its appearance more accurately. On the back of the hand a dark red spot about the size of a threepenny piece was distinctly evident and round this the hand was swollen and red up to the wrist; the arm was tightly bound with a piece of cord in the hope of stopping the spread of inflammation—on microscopical examination of the exudate no bacilli were to be discovered and I ventured to tell her that, by applying carbolic fomentations, she would be well in a day or so, as, indeed, happened.

Reasoning on these cases the conclusion seemed justifiable that the sphalangi sting in itself is no serious matter, but if at the same time anthrax is inoculated the results may be very serious indeed, and perhaps a fatal issue may ensue.

DIAGNOSIS.

To distinguish between these two conditions (simple sting and inoculation of anthrax), a microscopical examination appears to enable one to come to an absolutely sure decision, as shown in the last-mentioned case, which had all the external appearances that one would expect to find about ten hours after the inoculation of anthrax by the sting.

TIME WHEN SPHALANGI IS FOUND AND "SPHALANGI DISEASE" OCCURS.

Sphalangi are found and cases of sphalangi disease occur only during the hot months of the year, when also "phlangari" is most prevalent. This concurrence seems important as pointing to a connection between the three; and the fact that the sting has generally happened to persons while they have been sleeping in the open suggests the idea that their instinctively, before properly awake, trying to rub off the insect, whose movements on their face or other exposed parts they have felt, is regarded by the sphalangi as an attack, to be met by its only means of self-defence—its sting.

ADVANTAGES RESULTING FROM IDENTIFICATION OF SPHALANGI, ETC.

I venture to claim that the beneficial results from a clear recognition of the sphalangi and its power of causing inflammation and transferring diseases are the following:

1. By the recognition of the anthrax bacillus in cases which are typically "sphalangi disease," it is now certain that the disease is anthrax.
2. Being sure, by the discovery of the anthrax bacillus, of the nature of the disease, the correct treatment may be at once begun.
3. By the microscopical examination of the exudation at the seat of inoculation a certain diagnosis is without difficulty made.
4. Greater certainty in prognosis is possible, the cause of the disease being known.
5. The certainty with which, in the absence of anthrax bacilli in a supposed case of "sphalangi disease," the patient may be told that no serious results will follow.
6. The explosion of the idea, which caused so much fear amongst the people generally, that in Cyprus an insect existed having such a powerful poison in itself as that attributed to the sphalangi.

CONCLUSION.

In a few words, the explanation I offer of the nature of sphalangi disease is as follows:—The severe symptoms are due to anthrax which has been inoculated by the sphalangi's sting, or by the insect carrying on its body (probably on the fine hairs) anthrax infective material to an abraded surface, the sphalangi being a foul feeder, and carcasses of animals dying of "phlangari" (anthrax) being too often left exposed or buried without precautions being taken to prevent the spread of the disease.

A DISCUSSION ON YAWS.

I.—JONATHAN HUTCHINSON, F.R.C.S., LL.D., F.R.S.,

Consulting Surgeon to the London Hospital.

MR. HUTCHINSON, who opened the discussion upon yaws, brought to the meeting a young man, an Englishman, from the West Coast of Africa, who he believed was the subject of yaws. The patient had been seen by medical men well acquainted with the disease in Western Africa, who had pronounced that he was suffering from yaws, and he had also been seen by an old tropical practitioner in Liverpool shortly after he landed, who also agreed with the diagnosis. The patient, when stripped, presented a large number of scars and pigment-stained patches in his lower extremities, and also some less-marked lesions on his forearms and wrists. Mr. Hutchinson stated his firm conviction that yaws was syphilis modified by race and climate. He considered that syphilis found its way into this country not from America but from the African coast. In fact, when traffic commenced between the West African coast and Western Europe syphilis appeared. In Fiji syphilis was unknown, but yaws prevailed there most extensively. He considered this a strong argument in favour of his theory, as where the poison of yaws existed there it was impossible that the poison of syphilis could prevail, as the population was already protected by the fact of their having yaws. He knew his opinion was contrary to that of many who had carefully studied this disease, such as Sir William Kynsey, Dr. Daniels, Dr. Nicholls, and others. He had had many pictures and photographs of cases of yaws sent him from many parts of the world; but he drew opposite conclusions from these pictures to what those who sent them did. They were mostly sent to prove the diversity between yaws and syphilis; but in place of that, when pictures of cases of yaws and syphilis were placed side by side, the similarity of the two diseases seemed most striking, and these pictures, to his mind, confirmed his theory. Why yaws was not seen in England was because any European who contracted the disease in the tropics came back with syphilitic signs and symptoms. The granulomatous nature of many tropical ailments was most marked, and in the case of yaws the granulomatous excrescences disappeared when a more temperate climate was reached. The idea that there was no primary sore in yaws he did not accept. Yaws was frequently contracted by a skin abrasion, and it was a common matter of clinical observation that many cases of blood poisoning occurred without the development of any marked local sore or inflammatory area. When, however, in yaws an enlarged group of glands occurred, and careful search was made for either a local sore or for signs of inflammation in the lymphatics leading towards the group of glands, he had little doubt then, in the early stages of the disease, a sore would be found. Mr. Hutchinson mentioned the case of a surgeon who pricked his finger doing a *post-mortem* examination on a case of yaws and who developed typical syphilis when he came to this country. The tradition that the Fijians were liable to a peculiar liver disease—thickening, etc.—seemed to point to a syphilitic form of disease, and Mr. Hutchinson had no doubt that they were late and congenital effects of yaws. Sibbens in Scotland and the frambœsia that occurred in Cromwell's army in Scotland were no doubt examples of local outbreaks of yaws, that was syphilis misnamed or neglected. In Dublin a number of cases with raspberry-like eruption occurred in young men and one woman, and, although the eruption was styled frambœsia, it was cured by mercury.

II.—E. DAVIES, M.D.,

Samoa.

DR. DAVIES said that he had seen yaws in Fiji and in Samoa, but that it always occurred in children, and he failed to see how sailors could become affected from children. Yaws was carried to Samoa by Fiji immigrants. Yaws did not exist in the Ellis group of Polynesian islands. He found calomel the best treatment for yaws.

III.—PATRICK MANSON, M.D., C.M.G., LL.D., F.R.S.

Physician to the Seamen's Hospital Society, Greenwich.

DR. MANSON thought that Mr. Hutchinson's views on the relation yaws bore to syphilis were open to doubt. The case he had just shown rested for diagnosis on the opinion of others, and he thought Mr. Hutchinson was too credulous. Although the two diseases resembled each other in a few points, that was no more conclusive as to their identity than was a similar circumstance conclusive as to the identity of leprosy and tubercle. Inoculation by yaws would not protect against syphilis nor *vice versâ*, and it was strange if the two diseases were identical that this should be so. If sailors got infected by females affected by yaws one ought to meet with transition stages of the disease in this country. Yaws, like many parasitic diseases peculiar to the tropics, could not be imported to colder climates owing to the death of the parasite, on account of the absence of a continued high temperature.

IV.—D. C. REES, M.R.C.S., L.R.C.P.,

Superintendent of the London School of Tropical Medicine.

MR. D. C. REES stated that he had seen many cases of syphilis and yaws in the hospitals at Cape Coast Castle. In the hinterland yaws were prevalent but not syphilis, and the natives on the Coast looked upon syphilis as a new disease.

V.—KENNETH MACLEOD, M.A., M.D., LL.D.,
Professor of Clinical and Military Medicine in the Army Medical School, Netley.

COLONEL MACLEOD said that the case exhibited by Mr. Hutchinson was undoubtedly one of syphilitic infection. Whether the lesions were tertiary manifestations of yaws, or whether syphilitic infection was admitted through the breach of surface caused by yaws, or otherwise contracted, was a question admitting of difference of opinion. Mr. Hutchinson had referred to a serpiginous ulceration of the genitals in Fiji as a tertiary syphilitic manifestation. If this was the same disease as was first observed and described in India many years ago, and Dr. Daniels had seen in British Guiana, he was of opinion that it was in no sense syphilitic. As regards a solitary initial lesion produced by inoculation this was not peculiar to yaws, but occurred in other diseases—cow-pox and small-pox, for example—in which inoculated lesions were apt to be single, and the lesions resulting from natural infection multiple. When the micro-organisms causing syphilis and frambœsia were discovered, and found to be identical or distinct, the question raised by Mr. Hutchinson would be finally settled, but meantime the issue presented by him must remain very debatable.

SECTION OF DISEASES OF CHILDREN.

FREDERICK TAYLOR, M.D., President.

INTRODUCTORY REMARKS BY THE PRESIDENT.

THE PRESIDENT on opening the Section said that he did not intend to deliver a presidential address. He did not know whether it had been decided by the Council or by the annual meeting that the President's remarks should only take up a quarter of an hour, but he should certainly not transgress the regulation. He wished to call the attention of members to the Society recently formed in London for the study of disease in children. It differed from some other societies. Amongst its rules was one enacting that one-third of the Council should not reside in London, but the Secretary must reside in London. The discussions of the Society were to be on clinical cases. He then invited Dr. Nestor Tirard to open the first discussion.

A DISCUSSION ON THE NATURE AND VARIETIES OF PNEUMONIA IN CHILDREN.

I.—NESTOR TIRARD, M.D., F.R.C.P.,
Senior Physician to the Evelina Hospital for Children; Physician to King's College Hospital.

ACUTE pneumonia, the lobar or croupous form, is perhaps one of the most satisfactory diseases upon which to deliver a lecture addressed to students. When occurring in adults it generally follows a typical course, marked by its abrupt onset and by well-defined physical signs; the course of the temperature, the abrupt defervescence, the alterations of the pulse respiration ratio, and the characteristic changes of the expectoration afford opportunities for the lecturer to sketch the picture of a typical case with a free hand and a bold outline. Modifications of the typical variety are, in adults, usually the result of the area involved in the pneumonic process, or they depend upon some individual characteristic, as, for example, the impairment of vitality by alcoholic habits, or enfeeblement due to age or to some protracted disease.

In children the nature and varieties of pneumonia frequently present greater difficulties, but these are, I think, often overrated by those who have not had opportunities of study in the wards of a children's hospital. There is, perhaps, a tendency to assume that most cases of pneumonia in children are of the type of broncho-pneumonia in which the finer bronchi throughout the lungs are affected, and the pneumonic process only attacks scattered patches of irregular size. This is the form commonly described as lobular pneumonia or catarrhal pneumonia, and the distinction between this and capillary bronchitis—if there is any distinction—is by no means well defined. This form of pneumonia is more frequent amongst infants, or at least amongst those under 2 or 3 years of age. After this age, however, the tendency to assume the adult type is increased rapidly, and a large proportion of the cases ordinarily admitted into the wards of a hospital conform in general character and in physical signs with cases of true lobar or croupous pneumonia. One or more lobes present the indications of consolidation, while over the rest of the chest the signs of engorgement may be well marked, and perhaps more generally diffused than in adults. It is this extensive engorgement which has, in my opinion, led to too great stress being laid upon the frequency in children of broncho-pneumonia as compared with lobar pneumonia.

Regarding the nature of pneumonia, all evidence—clinical and bacteriological—tends to show that it is the result of a general infection, comparable to one of the infectious fevers. The abrupt departure from the condition of health and the alteration of the temperature, and of the distress of breathing as the signs of consolidation reach their limit, point to the presence and the elimination of a toxic agent. Bacteriologists have described numerous organisms, such as the pneumococcus of Fraenkel, which has been found in a large percentage of cases, and the bacillus of Friedlaender, the streptococcus pyogenes, and staphylococci have frequently been demonstrated, and have led to the employment of various forms of antipneumonic serum for which much benefit has been claimed. These questions I do not, knowever, propose to dilate upon, since there are others which are more definite and to me more attractive to be dealt with, such as the question of the contagious character of the disease, and that of the various forms which may be assumed by cases of lobar pneumonia in children.

With regard to contagion, I feel extremely doubtful whether pneumonia is ever contagious in the ordinary sense of the term, that is, whether without the intervention of any other disease, a child with pneumonia can form a focus of danger to other children or nurses in the ward. This has been maintained by Dr. William Pepper, of Philadelphia, who says he has seen "a local epidemic in a children's hospital in which the disease crept from bed to bed around the ward." The nearest approach to this in my experience has been the prevalence of pneumonia as a sequel to an epidemic of influenza; but although during this time the number of cases of pneumonia admitted to the ward has increased, fortunately the occurrence of fresh influenza in the wards has generally been marked by slight temporary oscillations of temperature without any definite signs of pneumonia.

Of the varieties or abnormal forms of pneumonia in children which have recently come under my notice, the departure from the normal may affect (*a*) the temperature; (*b*) the initial symptoms; (*c*) the physical signs. Some cases exhibit an abnormally high temperature—one case came into hospital with a temperature of 106°, but in other patients this symptom only occurred immediately before the crisis.

Other cases exhibit an unusually sharp crisis with a fall of 9°, 10°, or 11½°, for instance, in one case under my observation the temperature fell from above 106° to below 95°. Other cases exhibit curious oscillations of temperature which may render the diagnosis doubtful. For instance, in one child wide oscillations continued for nearly three months, while the pneumonic process involved successive lobes; in another, aged 13 months, the great oscillations were apparently the result of diarrhœa. Other cases showed an abnormal mode of onset from which tuberculous meningitis or cerebral tumour might be diagnosed. One such case was in a child four years old, simulating tuberculous meningitis with headache, retraction of the head, squint, sickness, pulse 176, respiration 44 (never above 56), temperature 103°; the true character was shown by very slight physical signs three days after admission, and the temperature fell by crisis on the seventh day.

Another child, 7½ years old, was admitted to hospital with severe sickness and noisy delirium. Four days later some doubtful signs of pneumonia were found—three days later the crisis occurred. This marked absence of physical signs until the crisis is reached is not uncommon.

Abnormalities are scarcely to be explained or accounted for. Assuming that pneumonia is due to germ influence, the high temperatures may perhaps be due to the retention of a toxin rather than its elimination in the exudate which causes consolidation. This appears to me to be a reasonable hypothesis, more particularly for those forms of pneumonia which have

been described as "cerebral"; in these cases all indications of pulmonary trouble may be wanting, while the chief symptoms are great pyrexia with nervous symptoms.

Cerebral cases are said to be more common when the changes affect the upper lobes, but the clinical course is more suggestive of retention. It is possible that the different varieties may depend upon the presence of different organisms. Certainly the post-influenzal pneumonia is of a low type and apt to follow a prolonged course.

Some prolonged pneumonias appear to be secondary to tuberculous changes. In many cases a single examination may leave some doubt in the mind of the observer, and it is only when the case drags on with rapid loss of weight and strength and characteristic changes in the skin that the tuberculous character is reluctantly admitted.

II.—F. J. LORIMER HART, M.B., C.M.,

Sydenham.

Assistant Surgeon to the Infirmary for Sick Children and to the South London Dispensary for Women.

DR. LORIMER HART said he believed that the two chief forms of pneumonia could be subdivided into etiological and clinical varieties due to different poisons. In the case of the nurse mentioned by Dr. Tirard, who contracted a fatal pneumonia after nursing a case of diphtheria, probably diphtheria of the lung and not pneumococcic infection accounted for this case. Just as the throat was attacked by other poisons than diphtheria, causing pharyngitis, so probably pneumonia might be caused by direct infection of the lung by any poison such as influenza, diphtheria, or streptococcus. Apart from the occurrence of isolated cases which pointed to direct contagion, distinct epidemics, generally of a most fatal character, were known to occur. He had himself known one in which all the cases, 6 in number, had died. That several poisons might be present and acting at the same time was, he thought, proved both bacteriologically and from clinical experience. In those cases in which complicating infection of a septic character was present much good might be done by the use of anti-streptococcus serum which had given evidence in favour of its employment of a much stronger character than that given by the antipneumococcus serum. The cases which Dr. Tirard had mentioned in which physical signs were absent even until the crisis might perhaps be explained by the fact that the disease had been deeply situated, and had only by degrees crept to the surface. Those cases, not uncommonly confused at first with meningitis, had almost always proved in his experience cases of apical pneumonia.

III.—H. OLIPHANT NICHOLSON, M.B., C.M.,

Edinburgh.

DR. OLIPHANT NICHOLSON said that a study of the precise character of the pulse and of the blood pressure, as estimated by the sphygmograph and sphygmometer, might bring out some points of considerable interest bearing upon the nature of pneumonia in children, and might afford useful indications for the therapeutic treatment of the disease. The observations he quoted were made on children whose ages ranged from 1 to 5 years. In all forms of pneumonia in children the pulse tracing taken after the third day of the disease was dicrotic and the blood pressure low. The percussion wave was generally well formed; the tidal wave if present was very poorly developed, and was often absent altogether, having coalesced with the dicrotic wave which was always well marked and approached near the respiratory line, occasionally even passing below this line. These were the characters of what was generally called a low tension pulse, and while it was just as well to know that this was the state of matters when the pneumonic attacks of young children were fully developed, still graphic records taken throughout a severe case often showed other points which had a more important bearing upon successful treatment. The subject might be considered under three heads: (1) The character of the pulse and blood pressure in croupous pneumonia; (2) the character of the pulse and blood pressure in broncho-pneumonia; (3) indications thus afforded for general treatment. In acute croupous pneumonia at the onset and for the first forty-eight hours or so, the pulse was probably very generally of higher tension than normal, the curve having a slanting upstroke, a small ill-developed percussion wave, a large well-sustained tidal wave, and the aortic notch coming in high up in the line of descent, while the dicrotic wave was small and often hardly noticeable. The blood pressure at this stage as tested by the large Hill-Barnard sphygmometer might be unusually high. After two or three days, when the disease was working up towards the crisis, the pulse curve was found to be of the low-tension type already described, and what was more interesting, the tracing became markedly irregular and unequal in the force of the individual beats. The pulse was now very rapid, and if there was much dyspnœa the respiratory line was undulating instead of straight, but the curious type of irregular irregularity—this inequality of the curves in an irregular pulse was, to the speaker's mind, remarkably suggestive of a falling arterial blood pressure and a failure of the heart muscle from insufficient blood supply. The character of the pulse was very similar to the kind of tracing one sometimes got in advanced cases of mitral stenosis, and also sometimes in auto intoxication from the intestinal canal. (2) In the broncho-pneumonia of children the same characteristics of pulse and blood pressure were found, but he did not think the blood pressure was ever so high at the commencement of the attack. There seemed to be no temporary initial increase of blood pressure such as was found in the croupous variety. Moreover, the pressure had a greater tendency to fall persistently, and this, leading to insufficient nutrition of the cardiac muscle, made the prognosis incomparably worse than in the croupous form, in which a falling pressure seemed to respond much more readily to suitable treatment. Cases of both varieties of pneumonia brought to a successful issue emerged with a very different form of pulse curve from the one just described. In a favourable case, shortly after the crisis, the pulse was much slower, and the tracing showed a series of regular waves characteristic of a rather high-tension pulse—large and well sustained tidal wave, and dicrotic wave ill-developed; while in many cases, notably after the use of strophanthus the diastolic part of the curve was distinctly prolonged. (3) The chief indication for treatment suggested by the condition of the pulse seemed to be that one should look after the arterial pressure. Its tendency to fall should be anticipated, and all therapeutic measures should aim at maintaining a pressure sufficient to give the cardiac muscle an adequate blood supply through the coronary arteries to enable it to hold out. The newer methods of treatment by the abdominal icebag and by saline infusions fulfilled this indication, the latter plan might be useful in another way if they believed that a special toxin was responsible in some way for the fall of blood pressure. Of drugs used to maintain a good blood pressure digitalis, though theoretically ideal, was peculiarly disappointing in children, and strophanthus, strychnine, and ammonium carbonate were much more useful—the last remedy should be given in very much larger doses than was usual and the strychnine used at frequent internals, hypodermically in urgent cases. In croupous pneumonia this tendency to failure of blood pressure did not contraindicate the use of antimony and opium in the first two or three days of the disease—in children a little over a year old these remedies were sometimes invaluable and might aid to a satisfactory recovery. If one regarded the fatal fall of blood pressure and the corresponding heart failure as due to a toxin developed by certain micro-organisms, then it would be rational to allow the child to drink as freely as possible. Small enemata of tepid water should be given at intervals and saline infusions might be used if diuresis was not satisfactorily established.

IV.—ALFRED MILNE GOSSAGE, M.B. (Oxon), F.R.C.P.

Assistant Physician to the East London Hospital for Children and to the Westminster Hospital.

DR. GOSSAGE spoke of the relation between lobar and lobular pneumonia. Clinical cases of these two diseases were very distinct, but there were cases that came between the two types in which the diagnosis might be doubtful. Recently the pneumococcus of Fraenkel had been found in a large number of cases of broncho-pneumonia. If this organism was the cause of the disease it was obvious that it attacked the lungs by a different mode of entry than in the case of lobar pneumonia. In broncho-pneumonia the infection came from the bronchial tubes, while in lobar pneumonia it came by way of the blood. The presence of the pneumococcus in the lungs did not, how-

ever, prove that it was the cause of the disease, although its presence in pure culture rendered this probable. Lobar pneumonia was, perhaps, more frequently than was supposed a cause of broncho-pneumonia. Lobar pneumonia, an acute infectious disease, could, like many other acute infections, cause an acute bronchitis as might be seen even in adults. Bronchitis as a complication of lobar pneumonia was commoner in children than in adults. One would, therefore, expect that lobular pneumonia would not uncommonly follow lobar pneumonia. One found as a fact that *post-mortem* lobar pneumonia and lobular pneumonia were sometimes found together. Clinically, too, many cases might be explained by an attack of bronchitis and lobular pneumonia succeeding an attack of lobar pneumonia. We might thus arrive at an explanation of some of those difficult cases which, in their clinical aspect, lay between lobar and lobular pneumonia. There were certainly several different diseases included in the term lobar pneumonia, although these diseases were not yet sufficiently differentiated from one another. One type had been proved to be very contagious. In this type Dr. Klein had found a special micro-organism which was pathogenic to mice. This organism had given rise to several epidemics, notably at Middlesbrough. The village epidemic mentioned by Dr. Lorimer Hart was probably of the same character.

V.—W. SOLTAU FENWICK, M.D., M.R.C.P.,

Physician to the Evelina Hospital for Sick Children, and to the London Temperance Hospital,

DR. SOLTAU FENWICK drew attention to the occasional occurrence of severe abdominal pain at the onset of acute pneumonia. It appeared to him to be due to reflection along the lower intercostal nerves from the inflamed area of the lung, such as often occurred in diaphragmatic pleurisy. The speaker also referred to the development of acute distension of the intestine during the course of the disease from the point of view of prognosis, the paralysis of the gastro-intestinal tract being usually followed by death within twenty-four hours.

VI.—FREDERICK TAYLOR, M.D., F.R.C.P.,

Consulting Physician to the Evelina Hospital for Sick Children; Physician to Guy's Hospital.

DR. FREDERICK TAYLOR thought that the presence of a toxin made it easy to understand the variations in this as in any other infective disease. Abdominal pain was of course not peculiar to children, but it was well marked in their case. He recalled two cases of pneumonia in adults in which there was severe pain in the right side, in one case accompanied by jaundice. Previous speakers had considered that there was no direct contagion in pneumonia, and it would be interesting to know in what sense the series of cases reported as epidemic or infective were really to be considered so. He had seen three or four children in one family ill with pneumonia at the same time, and this in days before the epidemics of influenza, as we now knew it, had occurred. He was interested in Dr. Tirard's explanation of the cerebral symptoms in some cases of pneumonia, but he was not prepared to believe that the real explanation could be so simple. Was there any proof that in ordinary cases the toxins were eliminated by the lung? If they were in the fibrin in the alveoli, which he believed was not proved, they would not be eliminated because the exudation was absorbed and not expectorated.

VII.—THOMAS DAVID LISTER, M.D., M.R.C.P.,

Pathologist to the East London Hospital for Children.

DR. LISTER said that he had occasion to examine a number of cases of broncho-pneumonia in children *post mortem*. In making cultures from some of these cases he had never failed to find the pneumococcus. In prolonged cases he had found staphylococci also, and in one case in which the child had died early of diphtheria and broncho-pneumonia he found the Klebs Loeffler bacillus associated with the pneumococcus. As regarded the anatomy he had examined microscopically about 20 cases of lobar pleuro-pneumonia in children under two years, in all of which the alveolar exudation had been of the catarrhal type. But in one instance he had found a section showing exudation on the pleura, an inflamed pleura, fibrinous exudation in the alveoli immediately contiguous to the pleura and catarrhal exudation in the deeper part of the lung. In attempting to explain this anatomical character of lobar broncho-pneumonia or catarrhal pneumonia, it had suggested itself to him that the infection by the pneumococcus as causing specific pneumonia was a blood infection picking out the lung for its chief anatomical lesion, but that in broncho-pneumonia it was by way of the air passages, causing inflammation either by direct extension or through the wall or, as suggested by Dr. Gossage, the catarrhal condition of the alveoli was sometimes due to the extension of inflammation from alveoli containing fibrinous exudation in the neighbourhood. The anatomical characters of a child's lung normally were also in favour of a catarrhal process being readily set up.

REPLY.

DR. TIRARD, in thanking the members present for the interesting discussion, referred first to Dr. Taylor's questions. He thought the term "capillary bronchitis" was misleading, and that this disease really had no separate existence. Children who were said to die of capillary bronchitis really died before there had been time for the development of pneumonic changes. He thought Dr. Taylor had misunderstood his remarks about the elimination of the toxin. His suggestion was that the toxin which was ordinarily thrown out by the lung might be retained in the system to a large extent, and might thus produce cerebral symptoms. Dr. Tirard thought Dr. Nicholson's observations upon the pulse were particularly valuable, as they justified not only the use of strophanthus and ammonium carbonate, but also that of alcohol, which so frequently caused great improvement. He thought the course of the discussion confirmed his contention, that although epidemics of pneumonia had been mentioned, they were apparently secondary complications of an infectious disease like influenza. He maintained that, so far as his present experience extended, he could not consider pneumonia to be contagious.

HYPERTROPHY AND DILATATION OF THE COLON IN INFANCY.

By W. SOLTAU FENWICK, M.D.Lond., M.R.C.P.,

Senior Physician to the London Temperance Hospital; Physician to the Evelina Hospital for Sick Children.

I HAVE ventured to bring this case before your notice because I believe it to be a good example of a very rare complaint. Although most writers upon the diseases of childhood mention the occasional occurrence of an idiopathic dilatation of the colon, I have only been able to find a detailed description of about 12 cases, and in only one of these was the patient less than three years of age. Moreover, the *post-mortem* records of the London Hospital for the last 60 years, which comprise nearly 30,000 necropsies, only contain 3 examples of hypertrophy and dilatation of the colon in early life.

A male child, 1 year and 5 months old, was admitted into the London Temperance Hospital under my care on May 13th last, for swelling of the abdomen and constipation. The mother stated that the patient was her second child, the elder one being alive and in good health. For the first few weeks after its birth the infant had seemed perfectly well, but the bowels then became confined, and the passage of hard, clay coloured stools caused great pain. From this time onwards the constipation gradually increased, so that castor oil or enemata had to be administered in order to secure an evacuation. Until the age of 9 months the abdomen appeared natural in size, but about that period it began to swell. At first the distension was intermittent in character, and disappeared almost completely after the bowels had been relieved, but subsequently it became constant, and the girth steadily increased. Two months later the movements of the intestines became visible through the abdominal parietes, and loud borborygmi were often audible. The child also lost flesh and strength, grew irritable and restless, and seemed to be always hungry. It was nourished solely by the breast. The bowels never acted spontaneously, but responded to an enema about twice a week. Twelve days before admission the belly became more distended, the bowels refused to act, and vomiting occurred several times

On examination the child appeared to be greatly emaciated and only weighed 21 lbs. The epiphyses of the long bones were enlarged, the ribs showed signs of beading, and the anterior fontanelle was widely open. Only the two lower central incisors were visible above the gums. The eyes were sunken, the complexion was sallow, and the skin was moist and greasy. The abdomen was enormously distended and almost globular in shape. It was most prominent above the umbilicus where its circumferential measurement amounted to 27 in., while at the level of the navel the girth was 24 in. The abdominal wall was flaccid, and the dough-like consistency of the intestines permitted deep palpation to be practised without difficulty. No tumour could be detected, nor did pressure over any part appear to occasion pain. There was no ascites, nor were the superficial veins markedly dilated; the percussion note was

tympanitic all over. From time to time strong peristaltic contractions were observed, and it then became obvious that the prominence above the umbilicus was due to a single piece of bowel which came into relief like a man's arm slightly bent at the elbow, and slowly contracted from right to left. The lower left half of the belly appeared at the same time to contain two perpendicular cylinders which moved in opposite directions. The patient did not seem to suffer any inconvenience during the continuance of the intestinal spasm. Some difficulty was encountered at first in inserting the finger through the anus owing to a strong contraction of the sphincter, and the child screamed lustily during the operation. No fissure could be seen nor could any stricture be felt. The rectum was voluminous and contained a quantity of liquid fæces, very little of which, however, escaped when the finger was withdrawn.

The chronic distension of the abdomen had produced a marked alteration in the shape of the chest, and had seriously reduced its cubic capacity. The lower half of the thorax was much expanded, its margins everted, and the intercostal angle almost obliterated. The breathing was superficial and hurried (32 per minute), and became embarrassed when the child was excited or exerted itself. No movements of the diaphragm



Case of hypertrophy of colon during life.

were observed. The percussion note over the front of the chest was tympanitic as far as the third rib on the left side, while on the right a small subtympanitic area between the third and fifth ribs was the only indication of the position of the liver. Posteriorly the note was hyper-resonant all over, and the breath sounds were diminished. The apex of the heart could be felt in the third left costal interspace in the nipple line, but the sounds were scarcely audible. The pulse was feeble, and varied in frequency from 104 to 112 per minute; the tongue was clean and moist; the temperature of the body subnormal, and the urine was scanty, and contained a trace of albumen. The bowels were freely opened after a dose of 2 drachms of castor oil, the stool being yellow, liquid, and extremely foul.

The history of the case combined with the physical signs just narrated seemed to point to chronic hypertrophy and dilatation of the large intestine chiefly affecting the transverse colon, sigmoid flexure, and the rectum; and since there was no obvious cause of obstruction to account for the condition, the case was regarded as an example of the so-called "congenital idiopathic dilatation of the colon."

During the first fortnight in the hospital the general condition of the child improved considerably, and the bowels responded each day to a dose of 60 minims of the liquid extract of cascara. Subsequently the aperient was omitted, and the patient passed three or four liquid motions daily until his death. Five days before the end the temperature began to rise, and eventually reached 103° F. The abdomen grew more distended, and pressure over the left iliac region gave rise to pain. Death took place somewhat suddenly on July 10th.

Necropsy.—When the belly was opened its contents appeared to consist of three distended pieces of intestine. Its right half was occupied by the transverse colon, which passed from the right iliac fossa obliquely upwards and to the left towards the hypochondrium, filling up the epigastrium and giving rise to the protuberance there observed during life. The left half of the abdominal cavity contained two sacs which lay side by side in its long axis, and reached from above the level of the navel to the brim of the pelvis. Subsequent examination showed that this latter appearance was due to enormous dilatation of the sigmoid flexure, while the pelvis was completely filled by the distended rectum. Measurements made with the bowels *in situ* gave the transverse colon a circumference of 14½ inches and the sigmoid one of 12½ inches. When the sigmoid was drawn forwards some yellow fæcal matter escaped from a small hole in the descending colon, which had been closed during life by adhesion to the parietal peritoneum below the left kidney. The descending colon itself was firmly adherent posteriorly throughout its entire course, and was sharply bent upon itself at its junction with the sigmoid flexure. The ascending colon was dilated and adherent in the lumbar region, and the cæcum was the size of a small orange. The small intestines were quite collapsed. After the large bowel had been removed from the body and opened it was found to contain a considerable amount of gas and about 8 ounces of liquid yellow fæces. Its total length from the ileo-cæcal



Case of hypertrophy of colon after death.

valve to the anus was 40⅝ inches. There were no signs of sacculation, and the wall of the gut was greatly thickened throughout, and felt like leather. The anus admitted the forefinger easily, and its sphinc[ter] was well developed. Just inside the gut the mucous m[embrane] intensely congested and superficially ulcerated, but no [other signs] of disease could be detected. The rectum measured [about 6] in length and presented the appearance of a funnel, be[ing] circumference at its junction with the sigmoid, but only [3] above the anus. The sigmoid flexure was 11 inches [in] girth, and presented a small transverse ulcer at [its] mesentery was apparently normal. The descend[ing] inches long and 4⅝ inches in circumference. The [sigmoid] its posterior surface presented a curious worme[d] the existence of a large number of irregular [sinuses] another by irregular tracts of thickened [tissue]. The ulcers only extended as far as the submucos[a]; muscular tunic was seen to be exposed, w[here] moid the peritoneum had been laid bare. The [mucous membrane] neighbourhood were somewhat enlarged. The [appendix] inches in length and ⅞ inches round. The mucous [membrane] and devoid of ulceration. The ascending port[ion] measured 5 inches long and 3⅛ in circumference. Its mucous [membrane] thickened, pigmented, and closely studded with small cir[cular] The cæcum showed similar signs of chronic inflammation, but [the ileum] was quite healthy. On microscopic examination both the [circular] longitudinal layers of muscle were found to be greatly h[ypertrophied] throughout the large intestine, and the mucous and submucous coats presented the usual phenomena of chronic inflammation. The liver had been

so compressed between the bowel and the chest wall that it was perfectly flat, and was deeply marked by the ribs. The kidneys were dark in colour, their substance abnormally tough, but their pelves were not dilated. The ureters and bladder were normal. The tissue of the diaphragm was very thin and the organ so displaced that on the right side it reached the level of the third rib and on the left the third costal interspace. The heart was small in size, its cavities contracted, and its muscular tissue affected with fatty degeneration. The lower lobes of the lungs were quite collapsed, but the upper portions were somewhat emphysematous.

The following remarks are based upon an analysis of these sixteen cases:

Males appear to be far more liable to the complaint than females, the ratio of the two sexes being rather more than four to one (13 : 3). In every instance where a correct history could be obtained constipation was stated to have declared itself soon after birth and to have continued throughout life. Distension of the abdomen was observed during the first month in two instances, but in the majority it did not become apparent until some period between the third and the ninth month. At first the tendency to constipation could be overcome by the use of aperient medicines, but after a time it was necessary to have recourse to enemata. Even the latter often failed to secure an evacuation, and it was recorded in several cases that a tube had to be inserted some way up the bowel before the sigmoid could be evacuated, the rectum having apparently lost all power of contraction. From time to time attacks of subacute intestinal obstruction supervened and lasted from ten to twenty days. During these attacks the belly grew more distended and retching and vomiting became troublesome. Towards the latter end of life the constipation was often replaced by diarrhœa, but hæmorrhage was never observed. Among the minor symptoms of the disease loss of flesh, a foul tongue, great thirst, and enormous appetite, and a strong disinclination to mental or physical exertion were frequently present.

The physical signs were essentially the same as those already described. The abdomen was greatly enlarged and tumid; the percussion note was resonant all over; and in long standing cases there was often enlargement of the superficial veins with œdema of the legs and scrotum. Active movements of the colon could always be observed, and the dilated parts were thrown into prominent relief during the period of contraction. On rectal examination the lower end of the bowel could be felt to be greatly distended, but there was no stricture within reach of the finger. In two instances a hard tumour formed by an impacted fæcal mass was detected during life in one of the iliac fossæ.

ETIOLOGY.

Although it is the custom to allude to the disease as a "dilatation of the colon," its most important and significant feature is undoubtedly the hypertrophied state of the muscular wall. This is evidenced by the fact that while the dilatation varies greatly in degree, and affects different portions of the bowel in different cases, the muscular hypertrophy is present in every instance, and exists throughout the whole length of the intestine from the cæcum to the anus. Pathology teaches that the hypertrophy of a hollow viscus is due to a protracted effort to overcome some increased resistance to the propulsion of its contents; and we may consequently infer that in the present case the walls of the gut had become thickened as a measure of compensation. Concerning the nature of the primary lesion which calls into existence this increase of force, opinion appears to be much divided. It has been suggested that the disease is really a congenital idiopathic dilatation of the colon, the muscular coat of which undergoes secondary hypertrophy in order to secure the propulsion of the fæces through the abnormally spacious channel. This view, however, would seem to be negatived by at least three considerations. In the first place, unlike other congenital abnormalities, this supposititious dilatation of the large intestine has never been observed either in the fœtus or in necropsies made upon newborn children, 15 months, in fact, being the earliest age at which the complaint has been recorded. Again, if dilatation of the colon was really present at birth, it might reasonably be expected that some visible indication of its presence should be immediately forthcoming. As a matter of fact, however, the abdomen does not usually become enlarged until the constipation has existed for some time, and in the case I have cited at length no swelling was observed until the ninth month. Lastly, the very term "congenital dilatation" implies that there is a natural deficiency of contractile tissue in the wall of the bowel; nevertheless, we are asked to believe that within the space of a few months this minus quantity becomes converted into an excess, and the crippled gut acquires the power of a giant. The general appearance of the colon is so strikingly like that of a piece of intestine above an organic stricture that one is forced to the conclusion that some form of mechanical obstruction must have been present during life in these cases. This obstruction might be of three kinds: (1) A twisting or kinking of the sigmoid flexure or rectum; (2) a congenital narrowing of a portion of the gut; (3) a spasmodic contraction of the lower end of the bowel.

With regard to the first-named variety, it should be noticed that Edsall, Göppert, and others discovered abnormal flexions of the colon and rectum in their cases which they considered responsible for the dilatation of the large bowel. It must be remembered, however, that whenever the intestine becomes dilated it also becomes displaced, and consequently after death kinking may be observed in positions which are normally free from flexion. Thus, while one is obliged to admit that such twists may exercise an important influence upon the course of the disease, it does not follow that they were the cause of the original symptoms found; nor, indeed, is it at all clear how a kink of the sigmoid could possibly induce hypertrophy and dilatation of the rectum.

Congenital strictures of the large intestine are extremely rare. That they may occur and give rise to chronic hypertrophy and dilatation of the bowel is well shown by a case recorded by Hand and Stewart, where a boy who died at the age of 6 was found to have a fibrous contraction of the rectum 30 cm. above the anus, and also one of the ileum just above the valve. In the case operated upon by Treves a congenital narrowing of the rectum was said to have been the cause of the enlargement of the colon, and in one of those I have excerpted from the records of the London Hospital it is stated that the last 2 inches of the rectum were extremely small and thin-walled, while the rest of the gut was enormously thickened and dilated.

Spasm of the sphincter ani is a common cause of constipation in infants, and that this condition was responsible for the condition of the colon in my case appears probable for the following reasons: From the commencement of the disease the infant exhibited the greatest reluctance to pass a motion, and always screamed during defæcation, as though the act was accompanied by much pain. When in hospital the anal spasm was quite perceptible on digital exploration, and although the rectum was found to contain fluid fæces, very little escaped when the finger was withdrawn; a most significant fact when it is remembered that a rectal examination in an infant with diarrhœa always excites an immediate evacuation. Finally, the necropsy showed that the thickening and dilatation of the bowel extended right down to the anus, and since the latter was not abnormally small it is obvious that the obstruction of the orifice during life must have been due to muscular contraction. If this view be correct, the condition must be regarded as analogous to that form of chronic spasm of the cardiac orifice of the stomach which is followed by great hypertrophy and dilatation of the œsophagus.

COMPLICATIONS.

Every case of hypertrophy and dilatation of the colon is accompanied by chronic inflammation of the mucous coat. This condition is probably due to the local irritation produced by the retention and decomposition of the intestinal contents, and is one of the causes of the diarrhœa which so frequently appears towards the end of life. Occasionally an acute inflammatory process becomes engrafted upon the chronic complaint and leads to extensive sloughing of the bowel wall. This complication was the immediate cause of death in the case reported by Hughes. Simple ulceration of a chronic character is another important sequela of the disease, and was observed in 12 out of the 14 cases which were examined after death. It is usually situated in the descending colon, but the ascending portion of the bowel as well as the flexures, the sigmoid and the cæcum are also apt to suffer. The ulcers may be small, discrete, and superficial, or they may penetrate deeply into the intestinal wall and be so closely set as to involve extensive areas of the mucous membrane. When this

secondary ulceration is severe the motions are usually frequent and liquid in character. Hæmorrhage is rarely observed, but fatal perforation occurred in 2 of the cases I have collected. In rare instances a fæcal accumulation occurs in the upper part of the rectum and acquires a stony hardness from admixture with phosphatic salts derived from the secretion of the inflamed mucous surface. This mass, which can often be felt through the abdominal wall, may act for some time like a ball valve, but finally gives rise to intestinal obstruction.

The dilatation of the sigmoid and rectum is apt to exercise dangerous pressure upon the ureters and to produce secondary disease of the kidneys. Thus in one of the cases where death was precededed by an attack of hæmaturia, both the ureters and pelves of the kidneys were found to be greatly dilated from this cause. Pressure upon the inferior vena cava gives rise to the œdema of the legs and thighs and distension of the superficial veins, which are so frequently observed in the later stages of the disease. Displacement of the heart and fatty degeneration of its tissue is responsible for the inordinate frequency of fatal syncope in these cases, while occasionally the embarrassment of the respiration invites an attack of broncho-pneumonia.

Prognosis.

If left to itself the disease appears to be invariably fatal, though its actual duration varies greatly in different cases. When the symptoms develop insidiously and care is taken to procure a regular evacuation of the bowels the fatal termination may be postponed until the twelfth year or even later; indeed, there is reason to believe that the similar affection which is occasionally met with in young adults usually originates during infancy. Out of the fourteen fatal cases no fewer than eight, or 57 per cent., died between 8 and 12 years of age. Of this number death was attributable in two instances to perforation of the bowel, in one to subacute intestinal obstruction, and in the remainder to somewhat sudden failure of the heart.

Among the poorer classes the complaint is apt to run a more rapid course owing to lack of sufficient nourishment and want of care in the treatment of the constipation. In such cases life may be destroyed at any period between the age of fifteen months and five years, the usual cause of death being either secondary ulceration of the bowel, fæcal impaction, or an attack of broncho-pneumonia.

Treatment.

The fact that the complaint always terminates fatally renders it essential that it should be recognised as early as possible, and submitted to a rational line of treatment. In all cases where obstinate constipation sets in soon after birth, and is followed by increasing distension of the abdomen, the rectum should be carefully examined, and if fissure of the anus or spasmodic contraction of its sphincter can be detected, these conditions require to be dealt with at once. The constant employment of large enemata tends to aggravate the complaint, and should therefore be discarded in favour of suitable aperients and glycerine suppositories, combined with gentle massage along the line of the colon, and the application of a well-fitting belt. If signs of hypertrophy of the bowel are already present these measures are practically valueless, and the only hope of a cure lies in surgical interference. In the case recorded by Osler, the distended sigmoid was opened with great relief, while Treves has successfully excised the descending colon and the rectum. With regard to the question of colotomy, it should be remembered that the descending colon is usually affected with extensive ulceration; while not infrequently the transverse or ascending portions of the gut are as much dilated as the sigmoid. An opening made into the bowel on the left side is consequently apt to prove too low down. In all cases of doubt, therefore, the colotomy should be performed upon the right side. After the general health has been restored, the question of excision of the bowel may be considered, but at the present time too little is known about the after-effects of the radical operation to allow of its being lightly undertaken.

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A DISCUSSION ON ENLARGEMENTS OF THE SPLEEN IN CHILDREN.

I.—Samuel West, M.D., F.R.C.P.,

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The choice of a subject for discussion suitable to a meeting such as this is determined by several considerations. First, the subject should deal with a condition common enough to be familiar to all. Secondly, it should be one upon which there is room for much difference of opinion. Lastly, it should be one upon which there have been recent additions to our knowledge. The subject chosen for this discussion fulfils well the first two conditions. If it fails somewhat in the the third, this very defect may give to the selection of it its chief value, for by directing attention to the gaps in our knowledge it may stimulate research to fill them.

Children are subject to the same enlargements of the spleen as the adult, but with a frequency which varies according to the degree to which they are exposed to the common exciting causes.

In childhood growth is active; this presumes active growth in the blood and blood-making organs in order to keep pace with the general demands of the body. Active growth implies instability of structure, so that slight causes produce great disturbing effects. This is well illustrated by the lymphatic glands, which in children so easily enlarge and inflame under irritation which in the adult would have little or no effect. The same is probably true of the spleen, and we might therefore, *a priori*, expect that children would be subject to enlargements of the spleen of a kind and with a frequency uncommon in the adult. Besides this, enlargements of the spleen are more easy to detect in the child, for the thinness and softness of the thoracic and abdominal walls render examination simpler.

The spleen consists of a loose connective tissue containing the main blood vessels and lymphatics. The meshwork which is thus formed is largely occupied by lymphoid or adenoid tissue with irregular spaces with which the blood vessels are peculiarly connected. These peculiarities of structure and function have an important bearing upon the pathology of the spleen. They render the spleen a resting place for the blood, which is thus enabled to carry on its own development within itself, as well as to derive new elements from the spleen. In this way it is closely connected with hæmogenesis, that is, with the making of blood, and we should *a priori* expect the spleen to be affected in a number of so-called blood diseases, of which leucocythæmia may be taken as the type. In the same way it would be a common seat for the development of pathogenic microbes when they are present in the blood, for they might then form independent colonies and grow in the splenic tissue, as we see in tubercle, anthrax, pyæmia, and typhoid fever.

The great degree in which lymphatic tissue enters into the composition of the spleen renders it liable to the same affections as involve the lymphatic tissue in all parts of the body, for example, all general septic diseases; but these changes depend probably as much, or even more, upon the action of the toxins produced by the bacilli as by the actual presence of the bacilli themselves.

Lastly, the connective tissue of the spleen serves as a filter, and thus separates from the blood any extraneous particles present in it, for instance, pigmentary particles, iron residues where there has been actual blood destruction, etc. But it is possible that the spleen has in some degree an independent hæmolytic action.

Being so largely composed of blood vessels, it might be expected that the spleen would be affected frequently in the course of general vascular degenerations, for example, syphilis and atheroma, but, with the one exception of amyloid disease, this is not the case.

But if not specially subject to the effects of vascular degeneration, its distensile nature renders it peculiarly prone

to feel the effects of mechanical obstructions to the circulation. Thus enlargements of the spleen follow morbis cordis and hepatic cirrhosis, and it is not unlikely that the enlargement with infarcts and embolism is also in great part of a mechanical nature.

Of tumours of various kinds it will not be necessary to treat, but it is remarkable that the spleen should be so rarely the seat of growth of any kind, either primary or secondary.

In what now follows I shall address myself to enlargement of the spleen as it is met with in children, drawing attention to the points in which adults and children differ, and finally dealing fully with the forms of splenic enlargement which are more or less peculiar to children and infants.

The Specific Fevers and the Septic Diseases.– Of the former group typhoid fever and diphtheria are the most familiar instances; of the latter the various forms of septicæmia and pyæmia. In all alike *post-mortem* observation proves the spleen to be almost without exception enlarged, though it is by no means always easy to demonstrate this enlargement during life.

I do not know that there are any *post-mortem* statistics to prove that enlargements of the spleen are more common in these fevers in the child than in the adult, but it might well be so; at any rate, it is, as stated, more easy to demonstrate the enlargement during life in children than in adults.

Malaria.—Malarial enlargement of the spleen in children is certainly rare in this country, for ague is rare; but not so in countries where malaria is common. It may then be found where there is little or no evidence of definite malarial attacks.

Quinine has the usual specific action, and may be of diagnostic value. In doubtful cases more careful examination of the blood than has usually been made would probably assist the diagnosis. Those whose practice lies in parts of England where ague is still not infrequent may possibly have some personal experiences to offer upon this point.

Of the splenic enlargements due to *morbus cordis*, *infarcts*, and *embolism*, as well as to that found in *amyloid disease*, there is nothing special to say. *New growths*, rare as they are in the adult, are still rarer in the child.

Portal obstruction is but an occasional cause of splenic enlargement in the child, and then chiefly in connection with enlarged glands in the portal fissure, for cirrhosis of the liver is fortunately but a rare affection.

Leucocythæmia.—Leucocythæmia is usually met with in the middle periods of life, and is comparatively uncommon in children and very rare in the very young; yet well-marked instances have been recorded even in infants of a few weeks, for example, 8 to 10 weeks old. The diagnosis is easily made from the character of the blood. The only cases in which some difficulty might arise are those of general lymphadenitis associated with fever, where there is an increase of the leucocytes which may be considerable. The clinical history and the course of the case in time removes every difficulty.

Hodgkin's Disease.—With Hodgkin's disease there are difficulties of diagnosis, but they arise chiefly from the indefinite character of the disease itself. I agree with those who hold that the name should be restricted to those cases in which there is enlargement of the lymphatic glands in general associated usually with enlargement of the spleen and sometimes of the liver as well. Such cases resemble in all respects leucocythæmia except in so far that the characteristic blood changes are absent. Hodgkin's disease occurs fairly frequently in children, but it is very rare before the age of 8 years, and is, I believe, unknown in infants.

Hodgkin's disease is often called lymphadenoma, a term which renders confusion worse confounded, for the name is not infrequently applied to affections of the glands which are quite local. Thus, in the neck, enlargements of the lymphatic glands which are not tuberculous and not sarcomatous are often called lymphadenoma. I do not believe that these local enlargements belong to the same category as Hodgkin's disease, and I wish they were distinguished by another name. In any case, the diagnosis from tuberculous adenitis is not easy, and that both in the local form which is more common as well as in the generalised form which, though rare, is more frequently associated with enlargement of the spleen.

Regarded as the cause of splenic enlargement, the difficulty of diagnosis as between Hodgkin's disease and other forms is not nearly so great as it might seem, for the spleen becomes enlarged as a rule subsequently to the enlargement of the lymphatic glands in general, so that there is the general glandular enlargement to assist the diagnosis.

Tubercle.—The spleen is almost the favourite seat of tubercle and rarely, if ever, escapes when tubercle is disseminated either in the acute or chronic form. In acute general miliary tuberculosis the spleen plays quite a subordinate and unimportant part in relation to the other effects of the disease and rarely reaches a large size. In the chronic form the enlargement may be considerable, for the spleen may be stuffed with caseous nodules each as large as a cob-nut.

Some of the forms of chronic tuberculosis are by no means easy to diagnose, and it is not altogether rare for an enlargement which has been diagnosed as Hodgkin's disease or some other form of splenic anæmia to prove on *post-mortem* examination to be of tuberculous nature.

Syphilis.—Syphilitic enlargement of the spleen is of clinical importance in one class of case only, namely, that of infants and very young children, and to this reference will be made again.

All that has been hitherto said has been somewhat of a preliminary and introductory nature leading up to the important group of cases which we have now more especially to consider, namely, that in which the enlargement of the spleen is associated with profound anæmia and which has been named *splenic anæmia*. The name is unfortunate for two reasons; first, that it seems to imply or assume what really is not yet proved, that the anæmia in some way depends upon and is caused by the affection of the spleen; secondly, because the same term is applied to two entirely different clinical affections, the one a rare disease affecting adults chiefly and very rarely children, and one which so far as I know in very young children and infants is not recorded at all; the other a not uncommon disease to which infants are especially liable, though it may continue from infancy through the first two or three years of life.

In either case, splenic anæmia has many synonyms, for example, splenic cachexia, splenic pseudo-leucocythæmia, lymphadenoma splenica, splenomegalie primitive, etc., names which, on the one hand, indicate the difficulties of diagnosis and on the other show how much there is still to be learnt of the real nature of the disease.

If the term splenic anæmia be retained we must distinguish the two groups as splenic anæmia of the adult and splenic anæmia of the infant.

SPLENIC ANÆMIA OF THE ADULT (SPLENOMEGALIE PRIMITIVE).

The features of the disease are extreme and progressive anæmia, usually without emaciation; early and progressive enlargement of the spleen, without enlargement of the lymphatic glands; attacks of severe pain in the splenic region, ending fatally sooner or later with the usual symptoms, namely, profound anæmia, repeated hemorrhage and extreme asthenia.

I do not think it is necessary in this connection to enter into any details of the cases for they are so rare in children. Of the 24 cases on which my articles in the *Medico-Chirurgical Transactions* and in Clifford Allbutt's *Medicine* are based only one occurred in a child of 11; of the rest, 22 were between the ages of 20 and 50 and one was aged 72. Since that paper was written I have seen what I believe to have been another case in a child of 12, but there was no *post-mortem* examination. The spleen in this case reached nearly to the pubes.

SPLENIC ANÆMIA IN THE INFANT.

The nature of the case is often clearly indicated by the peculiar anæmia and the enlargement of the abdomen. The anæmia is profound and the pallor very striking. The complexion has a peculiar, waxy, ivory-like colour, with a tinge of olive green in it which is very characteristic. The abdomen is tumid, and the enlargement of the spleen often obvious to the eye. The child is usually not emaciated, and may be plump, but is very feeble. The blood shows no changes but those of simple anæmia, and there is little or no general enlargement of the lymphatic glands.

The child is brought under observation usually on account of its general ill-health, weakness, or pallor; occasionally on account of respiratory catarrh or gastro-intestinal disturbance or some other accidental complication, but only rarely because the abdomen is enlarged.

Most of the other symptoms are accounted for by the extreme anæmia; many of them are cardiac, for the breath is short, the pulse rapid and feeble, the heart dilated, and there are the usual hæmic murmurs, there is often much palpitation, and in some instances much general œdema.

Lastly, as in other cases of profound anæmia, there is a general tendency to bleeding; epistaxis may be considerable and recurrent; petechiæ occur and recur in the legs, and in the later stages a hæmophilic condition may develop, and bleeding take place from the mucous membranes, especially the gums or nose, or from a slight scratch or cut, and may be very difficult to control.

The digestive system is usually much disturbed, the appetite is capricious or lost; but sometimes there is an almost insatiable craving for food; the action of the stomach and bowels is very irregular, and diarrhœa is frequent.

The liver is enlarged in about half the cases. In the rest the enlargement if any is apparent only, for it is not verified *post mortem*. It is due to displacement consequent on the laxity of the abdominal walls and enlargement of the spleen. The lymph glands may be perfectly normal, but sometimes they may be slightly enlarged both in the abdomen or in general, and are then generally associated with leucocytosis and pyrexia.

The splenic enlargement is easy to make out: it may be enormous, so that the organ may extend forward beyond the umbilicus and downwards as far as the anterior superior iliac spine. It moves freely on respiration, is smooth on the surface, and even when much enlarged is not tender to palpation.

The urine is usually unaltered, sometimes contains a little albumen, but this is accidental, and of no special importance.

There may be pyrexia of moderate degree and of an irregularly hectic type. Usually there is none at all. It is to the fever that any leucocytosis observed is due.

Many of the children are rickety and some syphilitic.

Histologically the enlargement of the spleen is found to be a simple hyperplasia with slight fibrosis, nothing more.

The changes in the blood are those of simple anæmia, the cells being greatly reduced in number, but retaining their relative proportion to each other. The number of red cells may fall as low as 40 per cent. of the normal; below this the result is almost invariably fatal. The red cells retain their normal amount of hæmoglobin, but some writers maintain that it is reduced as in chlorosis. Nucleated red cells and megalocytes are often present in small numbers, but the eosinophile cells do not vary.

If there be any increase in the number of white cells it affects only the lymphocytes, and this stands in direct relation, it appears, with the fever.

Course, Duration, and Prognosis.

The affection runs a chronic course, lasting some months, but in the end many cases get quite well.

On the ultimate prognosis very varying opinions are held by different writers. Some, like Henoch, state that most of the children die ultimately of asthenia. Others, that permanent cure is rare unless the enlargement is due to syphilis or rickets, while, on the other hand, others believe that the association with either of these diseases renders prognosis more unfavourable than it would otherwise be. Colcott Fox, Carr, and Eustace Smith take a much more favourable view, and with these authorities my own experience leads me to agree. Of Carr's 30 cases, 10 only were fatal, giving a mortality-rate of about 33 per cent.

Hospital statistics, upon which most of the returns are based, are likely to be misleading. The in-patients would obviously yield a larger percentage of fatal cases, for only the severe cases would have been admitted, and among the out-patients many cases pass out of observation so soon as they begin to improve.

Of Carr's 33 cases 13 made a complete recovery; in one case the spleen was enormous and reached to the anterior superior iliac spine, yet in five months had returned to its normal size. In another case, where the enlargement was not so great, recovery was complete in 3 months. In most the enlargement took more than 12 months to disappear.

In other cases there are periods during which the spleen is much reduced in size and the health nearly restored, but then the trouble recurs, so that although recovery may in the end be complete, the duration may be extended by the relapses over many months. On the other hand, splenic enlargement may continue with little or no change for some two or three years.

In most of the fatal cases the anæmia steadily progresses and the child dies of asthenia. In the rest the fatal result is due to intercurrent disease, such as weakly infants are specially prone to, for example, bronchitis, broncho-pneumonia, or diarrhœa.

This affection commences almost invariably in infants or in very young children, and when discovered for the first time in older children has probably dated from infancy. Cases have been observed to persist up to the age of 2 or 3 years. Friedreich records one at the age of 5, and Carr another at the age of 7.

The liability of the sexes appears equal.

The condition is common enough, for Carr collected 30 cases in the course of three years and Thursfield 10 cases in six months.

The treatment is that of anæmia, and consists of good food, plenty of air and light, cod-liver oil, hypophosphates, iron, and such-like remedies. Quinine is useful in malarial cases, mercury and potassium iodide in syphilitic cases, but the specific remedies, especially mercury, not only do no good but are actually harmful where the specific cause is absent. Arsenic is a favourite remedy as in other forms of anæmia, but is far inferior to iron.

The association of enlargement of the spleen with rickets and syphilis has been frequently mentioned, and it is important to consider the relation in which these conditions really stand to one another.

Its Relation to Syphilis.

Enlargement of the spleen is almost constant in active syphilis of the child; among infants with congenital syphilis it is found in at least 50 per cent., and in a yet larger percentage among stillborn syphilitic fœtuses.

In 155 cases of infantile syphilis Starr's per[illegible]
In Carr's 30 cases of splenic anæmia syphilis was certain in 6, and probable in 6 more, that is, in 40 per cent., and this agrees closely with Starr's figures for 63 cases, which show a percentage of 41.

Histologically the spleen in undoubtedly syphilitic cases shows simple hyperplasia associated with a slight degree of interstitial fibrosis. Gummata are very rare in infants, but may be met with in older children.

The association of syphilis with enlargement of the spleen is, as already stated, held by many to be unfavourable, and it is only in the syphilitic cases that antisyphilitic remedies do good.

Its Relation to Rickets.

The relation to rickets is a question of more importance. No doubt the two conditions are often associated, but the figures given by different authors vary. Thus:

Colcott Fox and Ball out of 63 cases found rickets in all
Gerhardt out of 54 cases found rickets in 35.
Carr out of 30 cases found rickets in 27.
Güttner out of 46 cases found rickets in [illegible]

These figures collectively (193 cases) give an average of 80 per cent., but other writers put the percentage much lower, namely, 40.

On the other hand, enlargement of the spleen is not constant in rickets. Thus:

Enlargement of the spleen was found in 15 out of 105 cases (C. Fox).
" " " 34 " 84 "
" " " 68 " 100 " (Starr).

This gives an average of 60 per cent. in which it was not present.

Finally, there is no relation between the degree of rickets and the size of the spleen.

Further, it must be borne in mind that most of the children of the poor attending hospitals are rickety, irrespective of the complaint for which they present themselves, and it is difficult to make due allowance for this in statistics.

The facts, then, bearing on the relation between syphilis, rickets, and enlargement of the spleen appear to be these:

1. That syphilis is occasionally, and rickets frequently, associated with splenic anæmia.
2. That in neither case is the association constant.
3. That they can neither of them be the sole cause, and are probably not the cause of all, except, perhaps, indirectly by means of the ill-health to which either leads.

Another question of interest remains, namely, the relation which exists between the anæmia and the splenic enlargement. There are three possible alternatives: (1) the enlarged spleen may be the cause of the anæmia; (2) the anæmia may be the cause of the enlarged spleen; (3) both the anæmia and the splenic enlargement may be joint results of some common cause.

If in the splenic anæmia of the infant, like that of the adult, it is the enlargement of the spleen which is the primary cause and the essential change, it has to be explained why they are clinically such different diseases and run such an utterly different course. The theory that the disease is primarily of splenic origin seems to assume that the spleen has an internal secretion, and not only so, but that different parts of the spleen have different functions in this respect, for in the adult the changes are referred to a peculiar cirrhosis or fibrosis of the organ which affects mainly the capsules of the Malphigian bodies, and leads to their atrophy. If this be the true explanation in the adult—and it is open to question—it can hardly be at the same time a sufficient explanation in the infant, in whom no pathological change of this kind is found.

If neither of the earlier explanations be correct, it would seem to follow that the third explanation must be the true one, namely, that both conditions depend upon some common cause. It may be, as some hold, that any condition of ill-health serious enough to lead to profound anæmia in infants may be associated with splenic enlargement. If this be true, it would follow as a corollary that when the ill-health is cured the splenic enlargement would disappear. At the same time, there are many objections to so wide a view as this, and it follows that if there be a common cause we do not yet know what it is.

The points to which I would especially invite attention in the discussion which is to follow are:—

1. In the splenic anæmia of infants:
   - *a*. To its course and duration.
   - *b*. To its prognosis as regards life and recovery.
   - *c*. To the relation which it bears to
     - (1) Rickets.
     - (2) Syphilis.
   - *d*. To the relation in which the syphilitic enlargement and the anæmia stand to one another.
   - *e*. To its treatment.
2. In other forms of splenic enlargement in children:
   - To the frequency in the very young of
     - *a*. Malaria.
     - *b*. Leucocythæmia.
     - *c*. Hodgkin's disease.

II.—R. MURRAY LESLIE, M.B., M.R.C.P.,
Assistant Physician to the Royal Hospital for Diseases of the Chest, City Road.

DR. MURRAY LESLIE said that he did not quite understand the essential distinction insisted on by Dr. West, between splenic anæmia in the adult and that occurring in infants. The symptoms detailed by Dr. West appeared to apply in the main to both conditions. Dr. Leslie described a case recently under his own observation, and referred to the irregular pyrexia, the profound anæmia with earthy pallor, the enormously enlarged spleen, and other symptoms so characteristic of the condition. He was of opinion that the anæmia and splenic enlargement had no causal relationship, and that it was much more probable that there was a common cause, at present undiscovered, which would account for both conditions. Rickets and syphilis probably simply acted as predisposing causes by impairing the general health. He would like to know if Dr. West had known of any cases occurring in children such as one occasionally met with in adults, in which were present all the features of this disease, including the enormous enlargement of the spleen, with little or no anæmia. He had published two such cases in the *Edinburgh Hospital Reports*, under the name "oligo-leucocythæmia," as early as 1893, before the present knowledge of splenic anæmia had been obtained.

III.—ALFRED MILNE GOSSAGE, M.B., B.Ch.,
Assistant Physician, East London Hospital for Children.

DR. GOSSAGE quoted some cases in children in which there had been a slight leucocytosis with splenic anæmia. The leucocytes were increased to 30,000 per mm., as found by Mr. Hayes, house-surgeon at the Shadwell Hospital, and the increase affected the eosinophile cells as well as the lymphagocytes. There were also a very few myelocytes. One of the cases died and showed simple hyperplasia of the spleen. In his experience syphilis was a commoner cause than Dr. West considered. Some cases of splenic anæmia occurred without pre-existing syphilis or rickets. His experience of the prognosis coincided with that of Dr. West, that the majority of cases in children recovered after a shorter or longer interval. The anæmia was not proportional to the splenic enlargement.

IV.—THEODORE FISHER, M.D.,
Pathologist to the Bristol Royal Infirmary.

DR. FISHER said that he had not intended to make any remarks, but Dr. West's paper had suggested a few points to him. As to the great frequency of the occurrence of enlarged spleen in children as compared with the frequency in adults, while clinical experience suggested a slight increase in size to be more common in children, he thought that *post-mortem* evidence showed that idiosyncrasy played a more important part than age in determining the enlargement. It was remarkable how the spleen varied in size in adults in such diseases as typhoid fever and pneumonia; he had seen a spleen weighing only 2½ ounces in typhoid fever, and one weighing 20 ounces in acute lobar pneumonia. That anæmia alone, occurring in a child, was not sufficient to cause enlargement was obvious, from the fact that cases of chronic anæmia were not uncommonly seen, in which the aspect of so-called splenic anæmia existed, but no enlargement of the spleen. The large number of cases met with by Dr. Carr in the space of three years seemed to indicate that the disease was more frequent in London than in Bristol, and suggested that locality had something to do with the production of the disease. Not only might enlargement of the spleen be present in young children who were members of the same family, but in the Bristol Royal Infirmary there had been two cases of splenic anæmia in brothers, both over the age of 15 years. He had seen anæmia in congenital syphilis, with enlarged spleen, rapidly get well. In two cases of splenic anæmia in which he had examined the blood, the red blood cells presented morbid changes.

V.—JOHN THOMSON, M.D.,
Extra Physician, Royal Hospital for Sick Children, Edinburgh.

DR THOMSON said he had observed some symptoms of rickets in nearly all his cases of infantile splenic anæmia. He had seen very large spleens frequently associated with rickets which severely affected the cranial bones. He had also been struck by the frequency with which great enlargement of the spleen occurred in twins. He had seen at least six instances of this association in recent years. He thought that the enlargement of the spleen was not usually in proportion to the severity of the anæmia. The prognosis was bad in proportion to the degree of the anæmia rather than to the mere degree of enlargement of the spleen. He thought that in syphilitic cases 50 per cent. had some enlargement of the spleen. Out of 83 cases of congenital syphilis there was enlargement in 20.48 per cent.

THE PRESIDENT (Dr. Frederick Taylor) said he thought that in these cases there was a fair prognosis, and that the majority recovered. As regarded the observations of Dr. Thomson in the cases of twins, it reminded him of a case reported in the *Clinical Society's Transactions* of a family of children and young adults, of whom several suffered at the same time from enlargement of the spleen.

Dr. Gossage asked if Dr. West could not suggest a better name for splenic anæmia in the child?

Reply.

Dr. West, in reply, said that as regards the name this was doubtless an opportunity to invent a new name, but he did not see how it could be done without leading to confusion. There was at the present day a tendency to group cases together which the facts did not really warrant. For instance, the names "hyperpyrexia" and "tachycardia" represented definite clinical groups, but they had been so added to, and improved upon that they had no longer their original meaning. It might easily be the same with the term "splenic anæmia." The difference drawn between the splenic anæmia of the child and of the adult, though difficult to make clear in words, was justified by the course and duration and prognosis of the disease in the two cases, as well as by the pathology if the morbid changes in the Malpighian bodies were the characteristic and essential lesion. The various changes in the blood were such as were found in severe anæmia from any cause and were not constant, that is, different changes had been found by different observers and regarded as characteristic. If the splenic anæmia of infants were due to some general cause it might be that it was to the result of absorption of some chemical toxin from the intestines, and this might explain the frequent association of the condition with diarrhœa and dyspepsia as well as with rickets. This might also explain the occurrence of such cases in twins or in the members of the same family, in which some common condition, such as rickets, bad feeding, etc., might be present. As regarded the definition of enlarged spleen one theory was that any spleen that could be felt was enlarged, but the spleen could normally be felt in a large number of persons, and should not be considered enlarged unless it could be felt when the patient was lying in bed and *not* taking a deep breath. He thought that a large number of children recovered from the disease whereas in the adult it was a very serious disease, and a large number of the patients died.

CONGENITAL HYPERTROPHIC STENOSIS OF PYLORUS:

WITH AN ACCOUNT OF A CASE SUCCESSFULLY TREATED BY OPERATION.

By Jas. H. Nicoll, M.B,

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The following is the clinical history of the case:

On July 18th, 1899, I was asked by Dr. Ritchie to see in consultation Baby P., then aged 5 weeks, suffering from "congenital obstruction of the pylorus." The facts of the case, as observed by Dr. Ritchie, led me to agree with him in what I had been at first inclined to regard as a somewhat "speculative diagnosis." These facts were that the child had been born healthy, and had for a week remained so, except in that from fifteen to twenty minutes after each meal (he was at first "on the breast") he vomited the entire contents of his stomach. The vomiting was a prompt and complete ejectment of the milk previously taken, in large part clotted, but not otherwise changed. It was not preceded or accompanied by hiccough, nausea, pain, or difficulty; and, the act accomplished, the infant appeared to be perfectly comfortable, until hunger induced another meal, which, in turn, was in due time vomited. This persisted, and its effect became evident in progressive emaciation. Ultimately, through the attenuated abdominal parietes there stood out the form of a considerably dilated stomach, across the anterior wall of which there passed from time to time marked peristaltic waves.

Operation, which Dr. Ritchie had in view in requesting the consultation, was proposed to the parents, who, naturally enough, postponed resort to what in the circumstances appeared to be an exploratory and tentative proceeding. A week later, the infant having become exceedingly emaciated and feeble, the parents requested operation, which was accordingly performed at the age of 6 weeks.

The pylorus was found represented by a bulky ring of muscular (or fibromyomatous?) tissue. In the child's wasted and enfeebled condition a pylorectomy appeared hopeless. I therefore carried out an operation which was practically a Lorota's. The illustration represents diagrammatically the state of matters existing. Between 1 and 1′ is the dense and bulky ring of (fibromyomatous?) tissue, arranged in the form of a funnel, tapering to its densest part at 3. I opened the stomach by the incision (2), passed in a pair of dressing forceps, forced this with a screwing motion down through the constriction into the free intestine below 3, and then expanded its blades till the peritoneal coats at 3 ruptured, thus widely dilating the thickened and practically completely stenosed pylorus. Suture of the stomach wall, followed by suture of the parietes, completed the operation.

The infant made a perfect recovery from the operation, the effect of which has been complete relief of the previous obstruction. Vomiting has disappeared, digestion is satisfactory, and the bowels (previously, of necessity, obstinately constipated because empty) now act regularly. The result is evident in the infant's condition. The change from extreme emaciation to the present plump condition has been very striking. Whether the relief obtained by the operation is to prove permanent



Diagrammatic representation of conditions found at the operation.—1. 1′ Bulky firm ring of (fibromyomatous?) tissue constituting a funnel at the pyloric end of the stomach, and tapering to its densest and narrowest part at 3. 2. Incision in stomach wall during operation.

remains to be seen. The operation was intended as a temporary measure adopted in face of the extreme debility of the infant. Up to now, however, there has not been the slightest indication of that recontraction which was feared, and for which I had reserved pylorectomy in the event of the infant gaining strength as the result of the palliative measure.

At the present date (12½ months after operation), except that he is slightly rickety, the child remains in perfect health, taking milk and farinaceous foods daily.

The case would appear to be probably the first successful case of operation for this affection.

Remarks.

So called "congenital hypertrophic stenosis of the pylorus" has been gradually claiming attention of late years. There are now on record some 30 or more cases in which sufficient evidence exists to establish the diagnosis; and the impression is gaining ground that the affection is considerably more common than has been supposed. The symptoms are such as to lead to some difficulty in the diagnosis; and it is not improbable that the terms "infantile marasmus," "gastric catarrh," and "gastric myasthenia," may have covered such cases.

Symptoms.

These have been present in certain cases from the date of birth. In others they have begun to manifest themselves only after an interval of days or weeks. (This probably is dependent on the degree of stenosis present, absolute or partial.) They are as follows:

1. *Vomiting.*—This is seemingly causeless, is unaccompanied by other symptoms of dyspepsia, and is ultimately persistent, despite ordinary appropriate treatment; though, in certain cases, it has been for a time diminished or abolished by dieting and washing out the stomach. These three characteristics of the vomiting have been fairly constant in recorded cases. In other features of the vomiting, cases have varied widely. Thus in regard to—

(*a*) *Reaction.*—In certain cases this has been found normal, while in others acidity has been found increased, and in others, again, diminished.

(*b*) *Period.*—In certain cases vomiting has occurred after each meal, either soon after or hours after. In others, vomiting has only occurred after several meals have been taken.

(*c*) *Nature.*—In certain cases the milk has been returned unaltered; in others, coagulated; in others, accompanied by evidence of fermentative processes in the stomach; and in a few accompanied by small quantities of bile (partial stenosis only?).

2. *Constipation.*—This is a constant feature; and, inasmuch

as the intestines have been invariably found empty, its presence is not extraordinary.

3. *Emaciation.*—Progressive, and ultimately extreme.

4. *Physical Signs.*—In the early stages, while the body is well-nourished, and dilatation has not commenced in the stomach, there may be none. Later, when the emaciation of the abdominal parietes makes their detection the more easy, the following may be evident: (1) Peristaltic gastric waves; (2) periods of normal dilatation of the stomach (after a meal?), alternating with periods (after vomiting?) during which the organ may be felt like a ball, firmly contracted (spastic contraction?); (3) marked abnormal dilatation of the stomach, associated with, and rendered the more prominent by, a collapsed condition of the rest of the abdomen, consequent upon the empty state of the intestine; (4) pyloric tumour, detectable by palpation. This has been present in a few cases only, cases in which the hypertrophy of the pyloric tissues has been marked and the abdominal parietes very thin. In the large majority of recorded cases, it has not been present.

PROGNOSIS.

Broadly stated, the affection is fatal, unless relieved by surgical treatment. It is suggested, by at least one writer on the subject, that cases of the affection have been reared by careful dieting (presumably cases where the stenosis was of low degree). It is not, however, suggested that this is other than exceptional; and, as there exists no actual evidence that any given case surviving gastric symptoms in infancy has been a case of congenital hypertrophic pyloric stenosis, this exception to the general rule of fatal issue cannot be held as proved.

MORBID ANATOMY.

At least 20 cases have been subjected to *post-mortem* examination. In all of these no lesions of importance other than those connected with the stomach would appear to have been found. In connection with the essential lesion, the following parts have been investigated in different cases:

Œsophagus.—In several this is noted as having been dilated. In the large majority it has been unaltered.

Stomach.—In certain cases the organ has been found little, if at all, altered. In others, marked hypertrophy has existed. In others still, abnormal dilatation (in a few to an extreme degree) has been present. In a number, hypertrophy and dilatation have coexisted.

In no case, apparently, has any distinct evidence of gastritis been found.

Pylorus.—The same funnel-shaped circular thickening of the pyloric end of the stomach has existed in all. This has varied in extent from half an inch to two inches, and has tapered to an apex at or beyond the pylorus. In several cases it is noted that the pyloric end or apex projected into the duodenum, as does the cervix uteri into the vagina. The lumen has varied from that of a "No. 4 catheter" to complete impermeability. In no case of congenital hypertrophic pyloric stenosis has any actual atresia been found. The mucous membrane of the pylorus has been described as absolutely normal, as exhibiting evidence of catarrhal inflammation, and as being puckered into longitudinal folds in different cases. Microscopically the examination of the tissues of the thickened pyloric ring has yielded various results in different cases. These have included hypertrophy of both muscular coats, hypertrophy of the circular coat alone, fibrous hyperplasia of the sub-mucous coat, and a combination of muscular hypertrophy with fibrous thickening of the submucosa.

Intestine.—This has in all cases been found empty and collapsed.

TREATMENT.

There would appear to be a general consensus of opinion that the only hope of saving the lives of these infants lies in surgical intervention. At the date of the operation in the case of Baby P. this would appear to have been carried out in three cases in all. That of Baby P. resulted in relief of the obstruction (by dilatation of the pylorus) which relief has been maintained for over one year and promises to prove permanent. Dr. Willy Meyer of New York (quoted by Meltzer, New York *Medical Record*, August 20th, 1898) performed gastro-enterostomy in an infant for congenital pyloric obstruction, the case terminating fatally at the end of thirty hours through obstruction caused by the Murphy button employed. Stern (see p. 573) performed gastro-enterostomy for pyloric obstruction in an infant of five weeks with fatal result. Sonnenburg (see p. 573) successfully performed pyloroplasty in a boy of five years. From the symptoms and from the anatomical conditions found during operation Sonnenburg suggests that the case may be one of congenital obstruction of the pylorus. It is obvious, however, that such a case, both in clinical aspects and in prognosis, is not on all fours with the cases which have been generally included under the title congenital hypertrophic stenosis of the pylorus, and, indeed, in the history of the case it is not easy to see on what Sonnenburg founds his suggestion. Within the year which has passed since the date of operation in baby P.'s case several further cases have been published, one at least of which has been subjected to operation.

CAUSATION.

Various theories have been advanced. As, however, their consideration lies within the provinces of the physiologist and pathologist, it must suffice here to enumerate the different views at present held. These are as follows:

1. That the condition is the result of a primary congenital developmental aberration, possibly connected with the junction at the pylorus of "two different processes of development."

2. That the condition is the result of a congenital hypertrophy of the muscular walls of the pylorus, secondary to antagonistic and inco-ordinated action of the muscles of the stomach on the one hand and the pylorus on the other, this inco-ordination being dependent on functional disorders of the gastric nervous system, and ultimately resulting in "congenital gastric spasm."

3. That the condition is the result of spasmodic contraction arising from gastric (dyspeptic?) irritation after birth, and, therefore, not congenital.

4. That the condition is the result of chronic inflammatory processess.

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It would appear (Meltzer) that Williamson in 1841, and Davoski in 1842, each recorded a case, and that for forty-six years thereafter the subject lapsed from notice. In 1888 Hirschsprung, of Copenhagen, recorded a third case, and since then cases have been recorded from time to time.

Of the more important of the readily accessible communications on the subject may be mentioned recent papers by Meltzer, of New York (New York *Medical Record*, August 20th, 1898), Thomson, of Edinburgh (*Edinburgh Hospital Reports*, 1896, vol. iv, and *Scottish Medical and Surgical Journal*, June, 1897), and Rolleston and Hayne, of London (BRITISH MEDICAL JOURNAL, April 23rd, 1898).

Thomson's papers contain a statement of the "congenital gastric spasm" theory which he has put forward in explanation of the origin of the pyloric stenosis, along with accounts of 3 cases. The paper of Rolleston and Hayne is devoted to an analysis of the published accounts of cases which they have collected, with the record of a case under their care. Meltzer's paper contains, along with particulars of a case, a wide review of the subject, embracing a discussion of the symptomatology, pathology, and treatment of the affection, and a criticism of Thomson's theory.

REFERENCES.

The following bibliographical list is taken from Meltzer's paper, and succeeding it are the further references I have been able to find: 1. Ashby, *Archives of Pædiatry*, 1897. 2. Finkelstein, *Jahrbuch für Kinderheilkunde*, 1896, vol. xliii, p. 105. 3. Thomson, *Scottish Medical and Surgical Journal*, 1897. 4. Heuschel, *Archiv für Kinderheilkunde*, 1891, vol. xiii, p. 32. 5. Schwyzer, *New York Medical Journal*, 1897. 6. Rolleston and Hayne, BRITISH MEDICAL JOURNAL, 1898. 7. Williamson, *London and Edinburgh Monthly Journal of Medical Science*, 1841, p. 23. 8. Davoski, *Caspar's Wochenschrift*, 1842, No. 7. 9. Hirschsprung, *Jahrbuch für Kinderheilkunde*, 1888, vol. xxiii, p. 61. 10. Gran, *Jahrbuch für Kinderheilkunde*. 1896, xliii, p. 118. 11. Landerer, Angeborene Stenose des Pylorus, *Dissertation*, Tubingen, 1879. 12. Maier, *Virchow's Archiv*, 1885, vol. cii, p. 413. 13. Huebner, quoted by Finkelstein. 14. Peden, *Glasgow Medical Journal*, 1889, p. 416. 15. Pitt *Transactions* of the Pathological Society of London, 1892, p. 63. 16. De Brun Kops, *Nederlandsch Tijdschrift voor Geneeskunde*, 1896, No. 19 (after Thomson). 17. Thomson, *Edinburgh Hospital Reports*, 1896, vol. iv. 18. Schwyzer, *New York Medical Journal*, 1896, November 21st. 19. Fenwick, S., *The Disorders of Digestion in Infancy and Childhood*, London, 1897. 20. Leesschaft, *Jahrbuch für Kinderheilkunde*, vol. xxii, p. 164. 21. Brandt, Die Stenose des Pylorus, *Dissertation*, June, 1851.

List of references after Meltzer, New York *Medical Record*, 20th August, 1898. The succeeding references fall to be added:—

(*a*) Cantlie, BRITISH MEDICAL JOURNAL, 1898, ii, 1490; and *Lancet*, 1898, 12th November, 1264. (*b*) Hartman, *North American Journal of Homœopathy*, 1899, 3, s. xiv, p. 41. (*c*) Still, BRITISH MEDICAL JOURNAL, 1899, 11th

February. (*d*) Pfaundler, *Wien. klin. Woch.*, 1898, p. 1025. (*e*) Edsall, *Journal of American Medical Association*, 1899. (*f*) Champneys and D'Arcy Power, British Medical Journal, 1897, 20th March. (*g*) Emerson, *New York Medical Journal*, 1890, 9th August. (*h*) Stern, *Wien. klin. Woch.*, 1898, ii, p. 1024. (*i*) Hammer, *Prager med. Woch.*, 1899, xxiv, p. 25. (*j*) Van Valzah and Nisbet, *Diseases of the Stomach*, New York, 1899. (*k*) Sonnenburg, *Centralblatt für Chirurgie*, 1898, No. 1, p. 25.

Hammer (*i*) insists on the distinction between congenital stenosis (characterised by the hypertrophic thickening so constantly found) and congenital atresia (in which no such thickening exists). Both conditions give rise to the same symptoms. He fully describes a case of congenital atresia in which the pyloric end of the stomach and the upper end of the duodenum formed *culs-de-sac* abutting on one another and united by a fibrous band, in which there was ultimately found an exceedingly fine channel, which, however, had proved impervious to fluid under pressure used as a test. He refers to two cases of congenital obstruction of similar nature previously published by Leesschaft and De Brun Kops [Nos. 16 and 20 in Meltzer's list (p. 572)?] Emerson's case (*g*) must be regarded also as one of atresia. In the description of this case it is stated that the pylorus itself was dilated, while just beyond it the lumen of the duodenum terminated abruptly, owing to "a gathering together of all the tissues of the gut at that point, much as a bag is drawn together by a string." In the case recorded by Champneys and D'Arcy Power (*f*) circular thickening of the pylorus coexisted with a complete transverse septum occluding the duodenum at the orifice of the bile duct. The recently-published treatise by Van Valzah and Nisbet (*j*) contains (with the exception of mention in *Keating's Cyclopædia* and Fenwick's treatise, p. 572) the only reference of any note to the subject which I have been able to find in current textbooks. These authors carefully distinguish between congenital atresia and congenital stenosis, and point out that, whilst the symptoms of the two are similar, those of the former necessarily run a rapidly fatal course.

Sonnenburg (*k*) records the case of a boy, aged 5 years, suffering from symptoms of pyloric obstruction which were relieved by pyloroplasty. Sonnenburg suggests from the conditions he found during operation that the case is really one of congenital hypertrophic stenosis. It is evident, however, that clinically the case does not fall into the same group as those recorded.

Pfaundler (*d*) arguing apparently for the most part from appearances he has noted in *post-mortem* examinations, holds that "stenosis" of the pylorus in infants is not necessarily congenital in origin, but is often developed in the early days or weeks of life. He regards it as not being a stenosis, in the sense of organic narrowing, but a spasmodic condition, or fixation of a normal functional phase of the stomach; and he states that such fixation of a normal functional phase is common at the moment of death, and is found at the necropsy.

Stern (*h*) records the case of an infant of 5 weeks, in which for symptoms of congenital pyloric obstruction he performed gastro-enterostomy. Death followed at the end of 24 hours. *Post mortem*, the usual funnel-shaped thickening of the pylorus was found.

Apart from the questions of treatment, on which opinion appears to be fairly formed, and of causation and nature, on which speculation is busy, the important aspect of the subject is that of diagnosis. The symptoms are well defined and vary but little. Unless examined in detail, however, they present a clinical picture which, as a whole, possesses a strong superficial resemblance to that of infantile marasmus, associated, as it so frequently is, with various forms of gastric disturbance. That it may be easy to fall into such error will be evident to those seeing much of the disorders of infancy; and it is somewhat striking that for forty-six years the significance of the combination of symptoms characteristic of the disease should have been forgotten or overlooked. In the case of Baby P. (*vide supra*) Dr. Ritchie stated that what prompted him to observe the infant's symptoms closely and ultimately to feel a considerable degree of confidence of his diagnosis was the presence in his recollection of the particulars of Dr. Peden's case (14), published in Glasgow in 1889.

Dr. John Thomson (Edinburgh) said that he had seen six cases of this condition in which the diagnosis had been confirmed *post mortem*. Two of these had been operated on, one pylorectomy and one gastro-enterostomy, but in neither was the operation successful.

Dr. Theodore Fisher (Bristol) said that he had seen a similar case to that described by Dr. Nicoll four years ago *post mortem*. He had not recognised the importance of the case until Dr. Thomson's specimens in the Edinburgh Museum had come before his notice.

AN EXPLANATION OF THE CAUSE OF INFANTILE SCURVY, WITH SUGGESTIONS AS TO ITS PREVENTION.

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[From the Department of Pathological Chemistry, University College, London.]

It seems to be generally admitted by those who have devoted special attention to the subject that infantile scurvy ("scurvy rickets") is the result ultimately of some deficiency existing in the diet of the patient. But, up to the present, the defaulting element has not been traced out, nor has there been furnished a satisfactory explanation of the origin of the fault. It is known that the disease is usually found to occur in infants belonging to the better class, where the diet has been carefully restricted to boiled milk, or boiled milk supplemented by the various cooked infants' foods. It does not occur when a sufficient quantity of fresh milk has been present in the dietary, though it seems to have occurred occasionally, even when fresh milk has been given, if that has been insufficient in quantity. The disease also appears to be less likely to occur, if it occurs at all, when the milk has been pasteurised only, and not boiled. Further, it is known that the disease is cured by the administration of orange juice, lime juice, or similar preparations, containing citric acid, and also by a return to a dietary containing a sufficiency of fresh, unboiled milk.

These facts being granted, it has seemed to me that the results of a little consideration of the subject on my own part might perhaps be thought worth recording.

I may say at once that it is my opinion that the defaulting factor is none other than citric acid itself, and on this hypothesis the explanation of the etiology becomes as simple as any reasonable person could desire. Indeed, it is not a little curious that the phenomena of its causation should never before have had such an explanation offered.

Citric acid is a normal constituent of fresh milk. The credit of showing that it is constantly present in cow's milk is due to Henkel.[1] Henkel, working in Soxhlet's laboratory, found that milk contained 0·9 to 1·1 gram per litre (½ gr. per ounce). Göldner,[2] in a communication on the salts of milk, deduced that the citric acid was present as a calcium salt, together with a small amount of potassium and magnesium citrate. At a later period Henkel[3] showed conclusively that the citric acid was a really normal constituent of milk, and he showed also that it existed as the calcium salt. Citric acid was first shown to be present in human milk by Scheibe,[4] but in the samples he examined it was in less amount than in cow's milk, being approximately ½ gram per litre (⅓ gr. per ounce); he also found it in goat's milk in quantities of from 1 to 1·5 gram per litre. Pappel and Richmond[5] have shown that the milk of the gamoose, or Egyptian buffalo, contains about 3 grams of citric acid per litre. Results which have been published by L. Vaudin[6] show cow's milk examined by him to contain 1 to 1·5 gram per litre. He also showed that the calcium phosphate of the milk was held in solution by the influence of the citric acid.

All authorities agree that the citric acid is a true gland product. This being so it is unfortunate that we do not yet know anything about the causes of variation in individuals, or whether the percentage is constant throughout a milking, or rises or falls in strength. Such knowledge might help us to determine whether the percentages obtained in human milk can be relied upon for accurate statements of an average. Otherwise the conditions under which the milk is obtained are such as to render average statements unsafe and subject to a sensible amount of fallacy.

Taking the citric acid in cow's milk at about 1 gram per litre we find that a quart of milk contains about as much citric acid as a large lemon. Three pints of fresh milk contain the same amount of citric acid as an ounce of lime juice, which is the Board of Trade regulation allowance for sailors when at sea. One pint of gamoose milk contains as much as do three pints of cow's milk.

There are several compounds known of calcium with citric acid, which is tribasic, and has the empirical formula $C_6H_8O_7$. The normal salt is the common one, and is assumed to be that existing in milk; it has the rational formula $(C_6H_5O_7)_2Ca_3$. It exists in two forms, the amorphous and the crystalline; the crystals contain four molecules of water of crystallisation. H. Kämmerer[7] describes also crystals containing $7\,H_2O$, and Grupe and Tollens[8] believed the crystals examined by them to contain $3\,H_2O$. The amorphous is the form contained in ordinary solutions of the salt, prepared in the cold, but by boiling for a sufficient length of time the amorphous is converted into the crystallisable. Calcium citrate is at best only sparingly soluble in water, it is markedly more soluble in cold than in boiling water, and what is important to note, the amorphous is more soluble in either than the crystalline.

From some figures given by R. Warington[9], I have calculated out a table of relative solubi ities, and the amount of citric acid which the solution represents. Allowance has been made for four molecules of water of crystallisation in the case of the crystalline form, since Warington appears to have given actual weighings only:

1,000 c. cm. distilled water will dissolve
1.41 gram amorphous Ca citrate at 14° C. = 1.08 gram citric acid.
0.90 gram " " at 100° C. = 0.69 gram "
0.84 gram crystalline " at 14° C = 0.56 gram "
0.57 gram " " at 90° C. = 0 38 gram "

It thus appears that if held as amorphous calcium citrate in the cold, nearly twice as much citric acid can be held in solution as would be the case if it were held in the form of crystallisable citrate at the same temperature, and nearly three times as much as can be held in the form of crystallisable citrate by water near the boiling point.

Since the amorphous citrate is converted by boiling into the crystallisable form, the former becomes less and less soluble as it boils, till it is all converted into the crystallisable form, and much of it may be precipitated. On cooling a solution which has deposited its surplus crystals on boiling, these are only slowly and partially redissolved, although the cold solution may be quite sufficiently below saturation point. In such a case a better solution is obtainable on agitation. This also occurs in the case of milk. When milk is raised to boiling point its power of holding citric acid as calcium citrate is greatly diminished, and by so much the more as the citrate is converted into the crystallisable variety; and in proportion to the degree of saturation existing in the fresh milk, so is the tendency of the salt to precipitate out, and be more or less lost.

If it be true, as seems to be the case, that the organic acid of milk is, for all practical purposes, there present as calcium citrate, a little consideration will show that cow's milk very nearly contains more citric acid than could be held in solution by the same amount of distilled water. Gamoose milk contains much more. This would be true even for amorphous citrate in cold water, and so much the more would it be true if the citrate were held as the crystallisable salt. The calcium salt, if in solution, must therefore either be present as a saturated or supersaturated solution, as the case may be, or milk must be a better solvent of the salt than is water owing to the presence of other chemical substances which increase its power of taking up the citrate. According to the experiments and reasoning of A. Grufe and B. Tollens,[10] calcium citrate is soluble in excess of ammonium phosphate. But, according to Göldner,[11] milk contains a certain amount of potassium phosphate, and the analogies between the various alkaline phosphates are close enough to make deductively probable that potassium phosphate would also favour the solubility of calcium citrate And some work published by A. Terriel[12] shows that in experiments of a similar type to those of Grufe and Tollens, analogous physical results are obtained if potassium or sodium salts be substituted for ammonium salt, though, it is true, the solubility was in that case by no means so great. So far as it goes, therefore, this seems to me a possible reason why so much citrate can be held in milk But, notwithstanding, the solution must be fairly close to saturation point, for it is known that crystals of calcium citrate are deposited and found on the sides of a vessel in which milk has been boiled.[13]

Now, since the sterilisation of milk involves boiling, it is easily seen how the restriction of diet to sterilised milk may cause a deficiency in the supply of citric acid to an infant, and if deficiency of citric acid be a cause of infantile scurvy, its origin can thus be very easily explained.

It has been noticed already that infantile scurvy, though apt to arise in children fed largely on sterilised milk, does not occur in those who have been fed on pasteurised milk. Adopting the citric acid theory as a working hypothesis, a reason for this can be easily found. The process of pasteurising on the large scale is such that as the milk flows on in a constant forward stream it is raised to the temperature required, and for the period required, and then artificially cooled. The temperature reached is comparatively low, and the solvent power of the milk proportionately less interfered with. Further, the temperature and the time occupied can have but a minimal power of converting the citrate from the more soluble amorphous into the less soluble crystallisable form. If, however, we suppose a certain amount to be perhaps precipitated, it would, owing to the persistent onward current, be swept on and reach the cooling stage with everything favourable to its being there redissolved by its agitation in the now cold milk.

Milk pasteurised on the small scale at home is necessarily subject to somewhat other conditions, but it is scarcely necessary to examine them here, since home-pasteurised milk has not yet become sufficiently common.

To recapitulate. In citric acid we have a substance which is present in fresh milk, notably diminished in sterilised milk, but which, on deductive grounds, we may assume to be much less diminished in pasteurised milk. It is also abundant in lime juice. Side by side with this we find that infantile scurvy does not occur under a sufficiency of fresh milk, does occur with sterilised milk, and does not occur, or very rarely so, with pasteurised milk. We find, moreover, that the disease can be prevented or cured by the administration of lime juice and similar preparations. We have here a phenomenon of concomitant variation bearing a quantitative relation to the citric acid taken in the food. If there is no other acceptable factor of the same quantitative distribution, the presumption that citric acid is the operative agent seems sufficiently proved. The logical validity of the argument would remain unaffected if, say, malic or tartaric acid could replace citric acid as a curative agent, a circumstance which would justify a particular affirmative in regard to those substances but could go no further. It remains now to discover whether there be any other acceptable factor of the same distribution. According to Vaudin, as we have already noticed, the calcium phosphate depends for its solubility on the presence of the citric acid, and would therefore vary concomitantly with it, to some extent, in the milk. As to lime juice, etc., a study of the composition of the ash of oranges and lemons shows,[14] as we should expect, that calcium phosphate exists in the fruit taken as a whole, though, of course, not necessarily in the juice. But since calcium phosphate does not cure infantile scurvy, it cannot in any case be an acceptable factor, and it is therefore excluded from the argument. There being no other conceivable factor citric acid alone remains, and, other things being equal, upon the abundance or lack of this in the milk must depend the liability to infantile scurvy. The reservation "other things being equal" must be borne in mind. It would be absurd, for instance, if the absence of other food containing an antiscorbutic were not a condition; and the possibility of there being really more than one kind of disease at present bearing the name of scurvy must be recognised.

Our next stage is to consider, in the light of the foregoing explanation, the rational means of preventing the occurrence of scurvy in milk-fed infants. There is, first of all, the expedient of giving a sufficient allowance of fresh milk. But if there be special reasons for not giving fresh milk, one may use pasteurised milk, prepared in the way described, which is the method adopted by large dairy companies so far as I am acquainted with them. If, however, it be not expedient or not possible to give anything but boiled milk, we could get over the difficulty by the contemporaneous administration of lime juice or a citrate, remembering as a guide to quantity that three pints of fresh cow's milk contain the same amount of citric acid as one ounce of lime juice, or roughly speaking, 50 to 60 grs. of a citrate. The percentage of the citric acid which may be lost by boiling milk is at present an unknown quantity.

The following precautions seem to me the most rational means of diminishing as far as possible the loss of citric acid in the boiled milk: Any water used as a diluent to the milk should be added, not after, but before the boiling, thereby making the fresh mixture a less concentrated solution of citrate than the undiluted milk, and therefore, probably, less likely to suffer loss of the salt by its comparative insolubility on boiling and thereafter. Further, the milk should not be boiled a moment longer than the occasion requires, so as to minimise the formation of the more insoluble crystallisable citrate. Also, the milk should not be poured off when hot, but should be allowed to cool in the vessel in which it was boiled, and be well stirred when cool enough, in order to redissolve the citrate as far as possible.

Lastly, there is the possible expedient of making the milk a

better holder of citrate by other means. It is conceivable that the addition of a substance of gummy consistency like gelatine, isinglass, dextrin, or gum-arabic before boiling might make the milk better able to hold precipitated crystals in suspension, and thus prevent their loss. It seems possible also that milk could be made a better solvent of calcium citrate. We have seen that this citrate is soluble in excess of ammonium phosphate, and that there is evidence to show that potassium and sodium phosphates exert an analogous influence. It has been also suggested that the small amount of potassium phosphate present in milk may be one of the factors helping to make milk a better solvent of calcium citrate than is water. It may therefore be that an artificial increase of alkaline phosphate would increase its power of dissolving the citrate; 10 or 15 grs. to the pint, added before boiling, could be tried. But though the method I have suggested seems feasible on deductive grounds, its effect has not been determined experimentally.

Whether the addition of alkaline phosphate should or should not be condemned on other grounds is a question that deserves a little consideration. We have seen that if calcium citrate is precipitated, calcium phosphate is also thrown down, and so the boiled milk probably loses a certain amount of both these substances. On the other hand, if the calcium citrate can be retained by adding a little potassium or sodium phosphate, there is no loss of either of those substances, but there is a surplusage of so much alkaline phosphate. Seeing that this latter is in small quantity a normal constituent of human foodstuffs, a moderate increase of it, at least of the sodium salt, so long as no undesirable effect on intestinal peristalsis be noticed, can scarcely have much pharmacological importance, no more, that is, than the added sodium carbonate which is administered in peptonised milk without demur, and certainly less in comparison with those innately foreign substances—boracic acid, borax, and formaldehyde—which are so constantly found in milk.

As to the prevention of scurvy by the special addition of citric acid to the food, this is nothing new. It might, however, be worth while suggesting that as the acid is normally taken as a salt there is no reason why we should confine the purposeful administration to free acid, where it may be more convenient to give it as a salt, whether it be of calcium or some other base. I commend this suggestion to the makers of artificial infants' foods as a ready means of making their preparations more perfect and satisfactory foods, and more free from the danger of inducing scurvy.

In conclusion, may I say that if the foregoing chain of reasoning should turn out to be sound, it adds one more instance of a practical application of what some might have called "useless" abstract facts relating to the composition of milk and the properties of various chemical substances? The work of those men who have from time to time discovered and published these facts does not receive the appreciation which its worth deserves.

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A DISCUSSION ON LATERAL CURVATURE OF THE SPINE, FLAT-FOOT, AND KNOCK-KNEE.

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The familiar conditions that have been announced as the subject of this discussion appear to have been chosen because they represent a wider group of deformities, and not with a view to suggest that there is some necessary association among them to the exclusion of other deformities. These three deformities afford ample material for debate, and I will endeavour to sketch the chief subdivisions into which the subject appears to fall naturally.

Terminology and Definitions.—At the outset of any discussion it is advisable to settle as far as may be the meaning of the terms we employ. The term "lateral curvature" is so well established as signifying a familiar type of spinal distortion, that it would be useless to attempt to uproot it; at the same time it may be remembered that there are cases of lateral curvature in which rotation without any appreciable lateral displacement of the spine is present; hence I think for scientific purposes the term "scoliosis" is really preferable, since it does not commit us either to a too narrow anatomical view of the condition, or refer exclusively to any one factor in the causation of the deformity.

Genu valgum is a well-understood expression that we need not object to, although in classical Latin it applies to the opposite deformity.

Flat-foot.—This term has been strongly objected to, like another term—"weak ankles;" but the expressions are too useful to be discarded, though the term "pes valgus" is preferable for strictly scientific use.

Some writers differentiate between lateral "deviation" and lateral "curvature" of the spine. The former term they would restrict to cases in which there is in the spine a scoliotic bend that disappears when the patient lies down or when the spine is flexed. These same authors, however, regard the corresponding phase of flat foot as the first stage of pes valgus, and they are careful to point out that the degree of genu valgum should be measured when the patient is standing up in order that the part of the deformity that is due to relaxation of ligaments—the part that corresponds to "lateral deviation" of the spine—may not be overlooked. For the sake of uniformity my own view is that the term "lateral deviation" in this sense had better be abolished, the condition being the first stage of scoliosis.

Scope of the Discussion: Etiology.—The inclusion of three deformities in the subject for debate makes it, I think, desirable to keep the discussion within limits that allow of the deformities being considered upon common ground. A special Committee sitting for a year would hardly exhaust the questions that would arise if each deformity were considered in detail, and unless the knowledge of every member of such a committee were much less or very much greater than that possessed by anyone at the present time, they would not come to a unanimous decision in every point. Complete ignorance and the fullest knowledge are extremes which meet in this, that they enable their possessors to give expression to dogmatic statements. Complete knowledge of the deformities under consideration has even yet to be attained. Thus, I think, save for purposes of comparison, we need not consider certain forms of lateral curvature, for example, that of congenital origin, that due to infantile paralysis, to loss or paralysis of an arm, that secondary to empyema, Friedreich's disease, or ocular defects, etc.; nor need we specially consider congenital or traumatic genu valgum, or that caused by severe arthritis of the knee: similarly, congenital pes valgus, traumatic and severe pathological flat-foot need not specially detain us. It is only when the three deformities that are now under notice are considered as *habitual pressure deformities* that they can profitably be compared and considered together. It is now well recognised that any attitude assumed too frequently and persisted in too long—any *habitual* attitude that is not what I will venture to call a mean posture, that is, one which serves as a point of departure for every movement of a joint or part of the body—is liable to become a deformity; and it may be added that when a mean attitude is not departed from sufficiently often by general exercises there is likely to result a limitation of mobility which, physiologically considered, is much the same thing as a deformity. Annandale has drawn attention to what he has termed the "attitude of rest," as seen in the apprentice who stands at his work with the feet apart to widen the base of support, the toes turned out from rotation at the hips and from eversion of the feet. In this posture strain is taken from the muscles and is transferred to the ligaments and bones, and knock-knee and flat-foot are predisposed to.

Lateral Curvature.—It is now well recognised that the great majority of cases of scoliosis arise from faulty attitudes adopted by school children during writing. Tilting of the

pelvis is not a necessary, or even a very common, precursor of lateral curvature. Many surgical works still lay more stress on the so-called "static" scoliosis, that is, lateral curvature due to tilting of the pelvis owing to shortness or other defect in one of the lower limbs, or due to a habitual assumption of the stand-at-ease position. We must remember that for one case in which the deformity arises in this way I believe there are fifty in which it arises from faulty writing postures.

Knock-knee.—The symmetrical resting posture already alluded to accounts for the common bilateral cases of genu valgum. There are, however, cases of unilateral genu valgum, and those in which genu valgum is present in one side and genu varum on the other to be explained. In my experience these are found only in markedly rachitic subjects, and are explicable by reference to the irregularity of intensity in the local lesions of this disease, and so need not be dwelt on here.

Flat-foot.—Before passing to consider the onset of flat-foot a few facts and terms may be cleared up. I have frequently found reviewers helpful in correcting errors of my own, and not less frequently in exposing ignorance of their own. One reviewer, a duly qualified medical practitioner, I presume, has taken me to task for stating the fact that in regard to the movements of the foot the terms "eversion," "adduction," and "pronation" are used synonymously by the most credible writers on the surgery of deformities. I will quote the passage in order to make clear what fantastic notions of the movements of the foot that at least one medical man has entertained and one editor has printed. This gentleman writes: "By inversion and eversion is usually meant rotation of the foot on an antero posterior horizontal axis passing through the length of the foot, while by adduction or abduction is meant movement of the foot around a vertical axis passing through the region of the ankle." I do not ask you to try to picture the kind of skeleton foot that would permit of these movements, but to attempt to execute them. I merely quote this as a contrast to the realities of the case. The normal foot when placed upon the ground and made to bear weights, undergoes, as von Meyer has shown, some eversion (or abduction or pronation); but since the sole of the foot is fixed by its contact with the ground this eversion results in a change of position of the bones of the leg and the tarsus without any obvious movement of the foot. The malleoli move inwards and are rotated inwards on an axis near the inner edge of the tibia, this inward movement of the ankle being permitted by sliding movements in the tarsal joints. When this yielding of the foot to weight exceeds the normal amount, the condition constitutes the first stage of flat-foot, commonly known as "weak ankles." Similarly, the first stages of genu valgum and scoliosis are excessive degrees of normal postures. The points for discussion are not these well-ascertained facts, but the factors in the production of the abnormal degrees of yielding. Before I pass to sketch what in my opinion are these various factors, I may briefly note the succeeding stages. In many cases after a time part of, or the whole, deformity becomes permanent; it persists after the superincumbent weight is removed.

At first this persistent deformity can be removed by manual or other passive correction; after a time, however, the whole deformity becomes rigid, and is no longer to be corrected save by rupture of ligaments or fracture of bone, and in inveterate cases the bones become so altered in external form and internal structure that complete effacement of deformity is impossible.

For instance, in a severe case of genu valgum of old standing the intimate structural changes in the whole length of the bones of the legs so fully described by Julius Wolff have taken place, and though by a Macewen's osteotomy the feet can be brought into their proper position when the patient stands, it must by no means be supposed that all deformity has been removed. On the contrary, though the legs appear to be straight after this operation, there may be such a change in the joint surfaces at the knee that the patient walks little if at all better with his straightened than he did with his deformed legs. I mention this to enable me to lay stress on the importance of the prevention of deformities, and for this purpose a clear understanding of their etiology is essential. One factor in their causation—posture-habit—has already been sufficiently mentioned. Again, as to the immediate effective cause—that is, the force of gravity—all are agreed. Muscular tone and traction also play a part that need not be further insisted on. The point I would put before this meeting for especial consideration is this—To what extent in pressure deformities are pathological factors at work? My own opinion is decidedly in favour of this proposition. Looking through my last casebook of patients who have come to me in private practice, I find 23 cases of lateral curvature of the spine. Of these, 6 had active and fairly well-marked rickets; in one instance this was very severe; 10 had definite rheumatoid arthritis, and in 3 cases one or both parents suffered from severe rheumatoid arthritis or gout; 1 was a patient with sporadic cretinism in whom the deformity developed when she was under thyroid treatment; in 3 cases no affection is noted. Out of 13 cases of flat-foot, 3 had rickets, 3 rheumatoid arthritis, 2 gout, 1 gonorrhœal rheumatism, 1 hæmophilia; 1 was traumatic, and in the remainder no disease is noted. Out of 9 cases of knock-knee, 6 had rickets; of 2, both parents suffered from rheumatoid arthritis. Two knock-knee patients had also flat-foot. I believe that if carefully sought for at the time of the development of deformity, whether lateral curvature, knock-knee, or flat-foot, evidence of rickets or arthritic tendencies will usually be forthcoming. The frequent association of pressure deformities with post-nasal vegetations calls for comment. The majority of children who are brought to me, both in private practice and also at the hospitals for scoliosis, etc., either have had adenoids removed or have symptoms of nasal obstruction. I have elsewhere expressed my opinion that in rickets there is a general hyperplasia of lymphoid tissue, and that adenoids are often merely one symptom of rickets; a study of adenoids in the *post-mortem* room first led me to this conclusion, and it has been amply confirmed by clinical experience. In rheumatoid arthritis and gout also hyperplastic tonsils and adenoids are very common, and if general measures do not suffice they call for local treatment. Other observers have probably formed similar views, and I have only ventured to digress thus far from the scope of this discussion in order to emphasise the importance of this close association of pressure deformities with adenoids, and at the same time I may venture to point out that the treatment required by a patient who has severe adenoids is not limited to operative measures, but the underlying cause requires dietetic and medicinal management for a considerable period after the growths have been removed.

Diagnosis.—I need not dwell on this topic in the present assembly, but the importance of early diagnosis and early treatment is so great that I may perhaps say that I feel strongly that the teaching of these matters in medical schools generally calls for more organisation and attention. One still sees cases of lateral curvature that have been overlooked so long that severe deformity and grave physiological changes have taken place. It is not uncommon in severe scoliosis to find a pulse-rate of 130 and a respiratory rhythm of 30 or more to the minute. In a case of high dorsal scoliosis I have known a diagnosis of tumour to be made and the respiratory disturbance to be described as hysterical. The delay in diagnosis is not by any means to be always attributed to the doctor. Parents who do not arrange to have their children inspected by a medical man periodically are, I consider, lacking in proper parental care.

Prophylaxis.—In harmony with the views I have expressed above of the etiology of pressure deformities, I maintain that rational feeding is the most important element in the prevention. In difficult cases the aid of a physician experienced in dietetics should be sought. Generally for children I insist on the avoidance of artificial foods and the use of plenty of fresh, that is raw, milk; and failing a safe milk supply raw egg or raw meat are required. Proper clothing by ensuring free respiration helps in the preservation of health, and hence in the prevention of all pressure deformity. Children require good tailoring and dressmaking as well as adults. Girls' stays should be reduced to a minimum, being little more than light hip-belts worn for convenience in dressing. Proper boots are of the first importance in the prevention of flat-foot. General hygiene is also of importance. School teachers should be trained in the essentials of good ventilation and the need of frequent change of occupation for children. The proper

lighting and furnishing of school-rooms is also of importance. School seats and desks have in this country not received the amount of attention that they demand. When the development of any of the deformities has actually commenced the preventive measures must still be enforced as a preventive against further increase of deformity.

Gymnastic and Postural Measures.—These are of great importance in all three deformities. They should be employed in every case, and they should be under strict medical supervision, for very much harm and much unnecessary trouble and expense are incurred by persons untrained in medicine prescribing and directing exercises. In all cases proper respiratory exercises are called for. Adenoids, if present in a degree sufficient to impair respiration during sleep, should in my opinion always be thoroughly removed. Free inspiration through the nose is the chief part of respiratory exercises, and if there is any obstruction, instead of a full expansion of lung inspiration, causes congestion. Some patients who have come to me on account of lateral curvature, besides a number of useless exercise for the trunk and limbs have been subjected to long courses of exercises in which forced expiration formed the chief element. The patients were taught to fill the chest till it ached, and then either to hold the breath or slowly and forcibly to let it go whilst counting aloud. Such proceedings are calculated to distend the chest by producing emphysema of the lung. Whether for lateral curvature, knock-knee, or flat-foot, the exercises must be designed for each patient, and a few lessons usually suffice to teach the patient all that is required beyond a little supervision during the course of the case. To subject nearly all scoliotics to the same daily course of exercises, extending over two or three months, is irrational, and in most cases unnecessary. The average length of time that an ordinary case of adolescent pressure deformity requires supervision and treatment is two years. During this time regular exercising should be kept up. The effects of even a simple exercise such as the useful tip-toe exercise, require supervision. I have known it to change pes valgus into slight talipes equinus, with pes cavus and claw-toes—a worse deformity than the other. I have also known severe flat-foot develop suddenly during the use of this exercise.

Mechanical Treatment.—Under this heading I should include rest in the horizontal or semi-horizontal position. A firm couch or bed acts as a splint. Seeing that the weight of the body plays a large part in the production of all these three deformities, it might be urged that putting the patient to bed would at least stop their progress. The problems are not so simple as this. The tendency to deformity in delicate children lasts for years, sometimes for the whole period of growth. The subjects of slight rickets or rheumatoid arthritis lose tone rapidly if they are kept in bed for more than a few days. At some of the hospitals for children in London it is still recommended that children with knock knee or weak spines should be kept either upon their backs or prevented from walking for upwards of two years. This is partly on account of a supposed danger of the pelvis becoming deformed, a danger that does not greatly affect male children; and for my part, I think that the loss of health entailed by keeping a child off its feet will rather tend to increase the danger of pelvic changes taking place by prolonging the duration of the disease. Given proper food, children that can run about in the open air, in my experience, recover from rickets or malnutrition much more rapidly than those that are kept recumbent. When instruments are required, I think all the necessary indications can be met by the ambulant plan of treatment, which can be carried out without interfering with the course of education. The type of instrument that I have found most serviceable is the simple rigid splint.

For Flat-foot.—The outside iron and T-strap, together with a rubber valgus pad; for *knock knee*, a simple external splint; for lateral curvature a median antero-posterior support with adjustable lateral plates, and, if necessary, an anterior pad, is what I find most useful. Plaster-of-paris, poroplastic, and other enveloping splints are, like recumbency, to be avoided save as temporary measures to meet temporary requirements. Just as there is danger in submitting patients to gymnasts who are not qualified medical practitioners, so there is danger in submitting patients who suffer from deformities directly to instrument makers. The surgeon should prescribe and adjust the instrument himself.

Operative Treatment.—Operations include forcible manipulation, wrenching—manual or mechanical—osteotomy, etc. All these measures are useful in suitable cases. It is in the selection of cases that knowledge and experience alone can guide us. How many a flat-foot has been wrenched, enveloped in plaster-of-paris, and, so corrected, then sent forth to become worse than before for want of the adaptation of a proper support and the teaching of suitable exercises?

An excellent operation is Macewen's osteotomy for genu valgum, but in many thousands of cases it has been done unnecessarily in childhood and during the progress of disease; and not a few patients have been left worse than before from the recurrence of a deformity that could easily have been corrected by the use of splints that would have cost but a few shillings. How often, too, has a lateral curvature been allowed to become severe, and to ruin the health and prospects of a patient for want of proper instrumental treatment. On the other hand, the use of instruments in cases that do not require them must be sedulously guarded against. Many a patient with old lateral curvature due to causes that have long since ceased to act, and that has been comfortably compensated for by Nature by a secondary curve, has been unnecessarily pestered with instruments.

I would end by repeating that in my opinion these deformities are usually the outcome of slight disease. They are to be treated with a full consideration of the stage of evolution of the deformity, the means and interests of the patient. Routine measures are the bane of practice in the surgery of deformities, which embraces the major part of the surgery of childhood.

II.—Chisholm Williams, F.R.C.S.Edin., etc.,
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I present the results of an analysis of 500 consecutive cases of lateral curvature of the spine: in 18 cases, although the spinous processes were perfectly straight, there was evidence of rotation in the dorsal and lumbar regions. Cases of simple weak back are not included. The great majority were hospital patients, as will be readily noticed in the sex, there being 4 females to 1 male.

But in private cases I record 7 females to 1 male; the difference probably being due to the females in the latter position not having such freedom of action as their sisters in a lower grade of life. The greatest number of cases occur between the ages of 16 and 20, as will be seen by the following table:

From	1 year	to	6	...	33 cases.
,,	6 years	to	10	...	66 ,,
,,	11 ,,		15	...	121 ,,
,,	16 ,,		20	...	175 ,,
	Over		21	...	105 ,,

I can always find out a cause for the condition, but it may not be the only cause.

Heredity, 121; rickets, 92; general weakness, associated with, as a rule, rapid growth, or after specific fevers, 81; bad postural habits in youth, 111; and occupations in adult life, 63; rheumatoid arthritis, 18; inequality in length of legs, 124; flat foot, 131; knock-knee, 46; infantile paralysis, 32; chest diseases, 13; old empyema, 4; defective sight, 13; adenoids, 23; torticollis, 1; one arm only, 1; amesial pelvis, 23 out of 113 tested.

Of the above in some, several causes could be traced; thus one girl, aged 18, had a history of mother, sister, a paternal aunt who had had lateral curvature. She had had rickets when about 2½ years old, and had well marked traces still left in the lower limbs. The left leg was ½ inch short owing to greater curvature of the left femur. She had severe flat foot on the left side. She was short-sighted, had been a childrens' nurse at a *crèche* for three years and was very anæmic.

The most common form was right dorsal convex and left lumbar convex, there being 257 out of the 500; 90 had right total convex curves; 84 had left dorsal convex and right lumbar convex curves; 64 had left total convex; 5 had triple curve, right upper left middle and right lower convex curves. I have had no case of triple curve the reverse of the above.

In 101 cases pain or backache was constant, and in 82 the pain was variable.

The greater number of patients, that is 333, had received no previous treatment; 118 had used auxiliary crutched back supports with laced side plates (average price 6 guineas), 4 spring supports, 5 cogwheel plate apparatus, 13 corsets of

various patterns, 24 porcoplastic felt jackets, 3 plaster of-paris jackets. On inquiry I found that these had been applied on the supposition of early caries. When taken off by me they presented well-marked lateral curvature. The Swedish movement cure had "moved" 19 with, from the parents' account, disastrous results. It may be taken as a fact that no lateral curvature which is improving to the patient's parents' understanding will want a "change of treatment," unless it be on the score of inordinate length of treatment and possibly expense. Twenty-six had been treated by "special exercises and postures" and were in a more or less degree, if I may use the expression, "muscle-bound,"—that is, the whole of the muscular system had been brought up to an equal stage of power, so that the weak convexity muscles were strong, and the strong concavity muscles were stronger than they had been at the start; the curves, therefore, were either stationary or worse, and much valuable time had been wasted during which the resisting structures had become naturally more dense, necessitating much trouble and power to overcome. Prolonged recumbency for long periods combined with some form of instrumental treatment had produced the converse of the "special exercises and posture" treatment; that is, the convexity muscles were almost absent and the concavity muscles were not much better, whilst the ligamentous structures had remained in about the same condition. Only seven of the cases were wearing shoulder braces or straps, the so-called "stoop-cures," but from inquiries in five cases I was informed that there was no lateral curvature at the time, so that it must have been developed after the use of the braces.

Putting aside those cases affected with short leg or flat-foot, or some easily-remedied cause, where the treatment by mechanical or other means would be sufficiently obvious, I can safely say that no five of these consecutive cases were treated alike from "start to finish." I had no case of whatever degree of so called osseous deformity under the age of 25 years, in whom I was not able to effect some amelioration. By this I mean not only a stronger (if weak) back but a more straight line of the vertebral bodies. It is reasonable to suppose that the intervertebral cartilages must become very "wedge-shaped" before the bodies are much affected, and if the pressure of the bodies on them can be relieved by any means the discs will become thicker and the shortened ligaments longer, and the long lax ligaments shorter, and so help to cure.

Believing that direct general muscular exercises alone do positive harm to the great majority of cases my treatment was directed to:

1. The patient's general condition: Improved by means of fresh air, fresh food, and as a rule fresh clothing made to allow of, more particularly, chest development; medicinally by means of the hypophosphites, cod-liver oil, and bland preparations of iron, etc.

2. Getting the spinal column straighter by means of: manual pressure, mechanical pressure, Barwell's rhachilysis,[1] Barwell's lateral sling,[1] and Volkman's sloping seat,[2] weight pressure[3].

3. Keeping up the improved position by means of the apparatus prescribed at the City Orthopædic Hospital, devised by the late E. T. Chance. It is an adaptable metal splint, and acts chiefly as a spinal extension. Between the shoulders is a metal plate, having attached to it two straps which pass through the axillæ and brace back the shoulders; it is joined to a perpendicular slotted rod, which passes downwards to a crescent-shaped metal band (pelvic girdle), joined in front by a strap, and situated on a level between the crest of ilium and great trochanter. Over the convexity of each curve a plate is accurately adjusted by means of short metal arms, which connect the plates to the perpendicular rod. A broad abdominal belt completes the splint. All parts in connection with the skin are thickly padded. Accurate adjustments is made by means of wrenches and a key for the nuts. The curved plates can be moved up and down and laterally, and then fixed by the key, whilst greater nicety of position can be obtained by wrenching the short arms of the rod. At the first sitting the splint must fit perfectly, and from time to time be altered as improvement progresses, readjusted, and the better position kept up. It does not fix the column as in a vice, but always allows of a slight amount of muscular action, which is sufficient to quickly bring about a lessening of the curves in the great majority of cases, more especially when combined with other means. The patient should be directed to "get away from the plates," as every time she does so, she is in a better position, and when she drops back cannot resume a more faulty position than the splint will allow. When this becomes somewhat habitual, the splint must be again readjusted and so on, till the cure is complete. It should be worn as a rule at all times night and day, and only taken off for douching and exercises. In extremely severe cases where cure is out of the question, the splint is of the greatest comfort to the patient and prevents any increase of the deformity. Adaptability, lightness, cleanliness, durability, and great efficiency are its chief merits. Under the age of 5 years a leather or guttapercha splint, suitably padded, is sufficient to overcome the curves.

4. Special exercises were ordered for each weak muscle or group of muscles until the spine was straight, then general muscular exercises were given to assist in keeping it in position.

5. Other aids were massage, galvanism, and rubber exercisers.

The ease with which any case of lateral curvature of spine is treated depends on the following:

(*a*) Intelligence and willingness on the part of the patient,
(*b*) The care and help of parents or friends, and
(*c*) The assistance of the surgeon.

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[1] BRITISH MEDICAL JOURNAL, February 28th, 1891, pp. 461, 462. [2] A. H. Tubby, *Orthopædic Surgery*, p. 169. [3] Bradford and Lovett, p. 136.

III.—NOBLE SMITH, F.R.C.S.Lond.,

Senior Surgeon to the City Orthopædic Hospital.

MR. NOBLE SMITH referred to the importance of studying scoliosis from its pathological aspect, urging that if this were carried out there would be less difference of opinion as regarded treatment. He had many years ago pointed out that one of the chief pathological elements underlying these cases was the softness of the bones of the spine and laxity of the ligaments. Whether this softness of bone was due to rickets, as stated, he was not prepared to say, but he had ample evidence that this pathological condition had more influence in the production of scoliosis than muscular weakness alone. As regarded treatment, he had advocated exercises for more than twenty years, and he had come to recognise more and more the importance of systematising these exercises. It was not sufficient, nor was it of much use as a cure of scoliosis, to recommend exercises, as unless these exercises were carried out very carefully and accurately under the occasional observation of the surgeon, they were likely to do as much harm as good. For instance, the exercise which he himself had devised for correcting rotation of the spine required great accuracy, but if properly carried out it was most effective in its results.

IV.—E. MUIRHEAD LITTLE, F.R.C.S.,

Surgeon to the National Orthopædic Hospital.

MR MUIRHEAD LITTLE said that one great difficulty lay in the fact that there was no means of accurately recording the condition of the curvature and degree of rotation at any given time. The American Orthopedic Association had appointed a committee to investigate this matter, but they had reported that while certain methods were useful, for instance, photography, they could not recommend any method as simple and effective in determining the results of treatment. As regarded the pathology of scoliosis, obviously there must be a combination of causes. One-sided occupations, habitual posture, or short limb could not alone cause it, or it would be present much oftener. In his experience flat-foot and genu valgum were not more common in scoliotics than in healthy people. They would all rather not put girls into supports, and some slight and slowly developing cases could be treated by exercises and rest without supports. But in other cases patients could not carry out rest and exercises and instruments became necessary as a *pis-aller*. The function of an instrument was more to keep the patient from falling into the bad position than to actually correct it, which he believed was not possible. Exer-

cises and massage must be relied upon to prevent muscular atrophy and to develop the muscles so that they might support the spinal column.

V.—James Green, L.R.C.P., M.R.C.S.,
Portsmouth.

Mr. Green asked how those cases could be diagnosed which presented a slightly prominent vertebra with a lateral curvature above and below.

VI.—Frederick Taylor, M.D., F.R.C.S.,
Consulting Physician to the Evelina Hospital for Sick Children; Physician to Guy's Hospital; President of the Section.

Dr. Taylor said that he had heard that the excellent exercise of fencing sometimes produced lateral curvature. He should like to know if there was any evidence of this. He had heard heredity alluded to as a cause among others of the condition; but would not this assertion commit them to the transmission of acquired deformities?

In regard to Dr. Taylor's remarks on fencing, Mr. Noble Smith said that he thought all one-sided exercises tended to have a detrimental action on the spine. He had seen a few cases attributed to fencing, but though occurring in association, he questioned if they were really cause and effect. He had seen one case in which there was a weak back from which a lateral curvature had not long disappeared. The patient took up fencing, and the curvature immediately appeared again, but was again cured when fencing, at any rate with the right hand, had been forbidden.

Replies.

Mr. Jackson Clarke, in reply, said that he was in entire agreement with Mr. Chisholm Williams and Mr. Noble Smith in their views of treatment, and especially with the latter on the question of the systematic teaching of the proper exercises. Mr. Green had spoken of projecting spine associated with lateral curvature. It was often a question as to whether there was angular curvature present, but the diagnosis was not really difficult. The rigidity present in tuberculous disease of the bones was absent in such cases, and though there was a certain degree of rigidity present in cases of rheumatoid arthritis, there was more pain than there was in tuberculous disease. Mr. Little admitted the pathological predisposition which underlay such cases of curvature, but seemed to doubt its being due to rickets. He thought there was generally some slight evidence of rickets. He had known a case in which all the other hygenic conditions were excellent which had been cured by having raw instead of boiled milk added to his diet and a few simple exercises. The instrument he advocated (Chance's) guided the muscles, but did not restrain their movements. He did not think fencing a better or worse form of exercise than any other, but he had not known of a case in which the deformity could be attributed to this cause. Perhaps Mr. Little had rather more fear of instruments in such cases than he felt himself, but he always dispensed with this part of the treatment when an equally good result could be obtained without their use. In answer to the President's remarks as to "heredity," he thought it was the tendency to pressure-deformities of all kinds rather than the particular deformity which was inherited.

Mr. Chisholm Williams said that "instrument" was the wrong word to apply to the apparatus shown by Mr. Jackson Clarke. It was in reality a splint, and no scientific man should hesitate to apply a splint whenever it was necessary. As a typical instance of flat-foot coming on immediately and acutely the following was a case in point. A professional cyclist, aged 19, who had been cycling hard for many years, and so presumably had the muscles and ligaments of his legs and feet in perfect order, took part in a race to Brighton and back. Half-way on the return journey "his feet gave way." His feet swelled very largely underneath, after a few days in bed the swelling went partially down and typical flat-foot was found to be present. The plantar arch could be restored by manipulation but not voluntarily by the patient himself. The feet were put up in plaster-of paris bandages and kept so for five weeks. The feet became normal and remained so. Concerning Mr. Jackson Clarke's remarks about instrument makers treating cases, he was sorry to say that the custom was very common. Even medical men sent cases to them to be so treated. This practice was strongly to be condemned, as owing to the lack of anatomical knowledge they might and to his knowledge had done, actual harm. There was no panacea for actual lateral curvature of the spine, each case would probably need treating by various methods. To be biassed against any one method, for instance, to deny the patient the use of a properly-adjusted splint was very wrong, although it was unfortunately a somewhat common thing in the medical profession at the present day.

AMBIDEXTERITY: A PLEA FOR ITS GENERAL ADOPTION.

By E. Noble Smith, F.R.C.S.Edin,
Senior Surgeon to the City Orthopædic Hospital, London.

We occasionally hear it stated as a remarkable fact that someone is able to use his left hand equally well with his right. For instance, the special correspondent of the *Pall Mall Gazette*, writing from Mafeking (February 3d) referred to General Baden-Powell writing his dairy with his left hand. "For," adds the correspondent, "with his wonderful foresight he has recognised that in pursuing his trade he may lose his right, and he does not want to be left in the lurch." I believe that General Baden-Powell is ambidextrous in everything.

We all know how valuable ambidexterity is in every kind of manual work, but although a certain number of men of various occupations have learnt to use the left hand fairly well, there is a total absence in this country of a systematic teaching of ambidexterity.

It must be obvious to anyone giving the subject consideration, that enormous benefits would be gained in every manual undertaking by bringing the two hands equally into use.

In America, the Public Education Board of Philadelphia has adopted the system of teaching ambidexterity as devised by Professor L. Tadd, and about 2,000 girls and boys attend regularly to undergo this course of training. In Great Britain, however, nothing practical has been done in this direction.

Some attempt is, however, now being made to introduce ambidexterity into English schools, and I would strongly urge all those interested in tuition not to allow prejudices or old traditions to stand in the way of so important a reform as this will probably prove to be.

One argument in favour of encouraging the use of the right hand to the detriment of the left is the popular idea that right-handedness is a natural acquirement.

The late Sir John Struthers and others endeavoured to show that a natural tendency to use the right side of the body in preference to the left is due to the greater weight of the contents of the chest and abdomen on the right side. Struthers found from experiments in the dissecting room and the *post-mortem* room that the viscera gave a preponderance of weight to the right side of 2½ ozs. (presumably in the adult), and he considered that we thus have a natural physical cause:

> The greater weight on the right side leads to resting most on the right leg, and from this pillar of support we naturally use the right upper limb preferentially.

The same writer continues:

> On the hypothesis of the unity or origin the explanation of right-handedness is easy. One hand would naturally be fixed upon: the young would be trained to use the same hand, and the influence of that on the left hemisphere of the brain would ere long give an hereditary or "instinctive" tendency to prefer the right hand. But from the beginning there has been the natural physical cause of visceral preponderance on the right side.

That people who happen to have transposition of the viscera, in which case the heavier organs would be on the left, are not left-handed, does not necessarily upset this theory, because it is contended that hereditary influence will remain, but no one has satisfactorily explained the occasional occurrence of "instinctive and inveterate tendency to left-handedness of which Sir Daniel Wilson was an example."

Another theory of the cause of a preferential use of the right hand attributes it to a difference in the two sides of the brain, and there seems more evidence in favour of such a

view. One fact alone may be mentioned here—it is that the centre for speech is situated in the left lobe, and this doubtless influences righthandedness.

Professor Struthers remarked that:

The preferential use of the right hand does not, according to my observation, show itself in very young children, but only after they have assumed the erect posture and begun active exertion. Nor does it follow that the part heredity plays will operate from the very beginning. Heredities have their periods in showing themselves. The visceral preponderance hypothesis applies to a much less degree in the quadruped, but leather merchants tell us that the right side of the hide is known as the "lying" side. ... In regard to the use of our feet, relatively there is not much difference, but we use the right preferentially in vigorous acts.

This observer further referred to the right lower limb becoming the stronger from being the chief pillar of support under visceral preponderance, and to the consequent greater development of the left side of the brain. He thought that most persons who have never had an injury to either lower limb will find that "the sole of the right shoe wears before that of the left."

Although right-handedness is probably a natural acquirement, I doubt if it is as strongly implanted in our nature as some observers believe. A right-handed tendency is not universal. It is stated that although there is no race of people who are entirely left-handed, yet the natives of the Punjab approach very closely to this condition, for 70 per cent. of them are said to use the left hand by preference. A similar preference is found among the majority of Hottentots and Bushmen in South Africa.

Most careful observers of children agree with Sir John Struthers, that the very young are often inclined to use the left hand as much as the right, but the teaching of mothers and nurses is always to encourage them to prefer the right. How many children will give the left hand to be shaken, but are promptly corrected to substitute the right? And so it is all through life, there seems to be a great dislike, amounting almost to a horror, against the use of the left hand for any important purpose.

Mr. J. Jackson contends that of every hundred persons born, about 3 will be strongly left handed, 17 emphatically right handed, and 80 will have "no particular bias in one direction or the other." All these persons can, he thinks, be so educated that they may use their two hands almost equally well.

A member of the Association tells me that during his infancy he was so markedly left handed that attempts were made to correct (?) him. The left hand was bound to his side more or less for a few years. He now uses the two hands almost equally well, but has become used to prefer the right slightly.

Preference to use the right side also occurs in respect to the legs. If we walk in the dark, we generally walk in a circle towards the left, because the right side predominates and is brought forwards more than the left. Where double doors exist in any place used by the public I have noticed that the left door is used most on entering, because people are inclined to turn to the left.

As regards animals I have already referred to their habit of lying on the right side. Flies, I think, must be left handed or left-sided, if I may judge by their tendency (in my own experience when I am cycling) to get into the left eye. It would seem that in meeting a rapidly-moving body they try to avoid it by turning to the right.

A great deal might be said about the advantages of ambidexterity, but I now wish to draw attention to some of the disadvantages of the preponderating use of the right side of the body, especially the right arm. As the nerves that supply the right side of the body emanate from the left side of the brain, and *vice-versa*, it follows that the excessive use of the right side of this nerve centre is left undeveloped, while the left side of the brain is overworked. As a proof that it is better for individuals to have both sides of the brain worked equally, it has been shown by Professor Tadd in America that children who are taught to use the left hand equally with the right become more facile with the right itself, or, in other words, the use of the left hand improves the action of the right to a greater degree than seems to occur when the right alone is used. This is markedly the case in drawing and writing. Moreover, these children are said to become relatively sharper and more intelligent than others.

The subject to which I have paid most attention in this respect has been the production of deformity from the excessive one-sided use of the body. The enormous number of deformed spines which exist may be gauged by the statistics of the City Orthopædic Hospital in Hatton Garden, where during the last year of which I have a report 603 cases of lateral curvature were admitted as new patients, that is to say, at the rate of about 2 every day, not including Sundays. A large number of these cases had become very severe deformities. There are doubtless many causes of lateral curvature of the spine, but it is generally admitted that unevenness of posture has a great influence in this respect, and the preponderating use of the right side necessarily bears upon the spine unequally. It is a further remarkable fact that a large majority of these curvatures consist in a bending of the upper part of the spine to the right exactly in the direction produced by the excessive use of the right arm.

The deforming influence of various trades is well known. The compositor in a printing house, for instance, is recognised by his high right shoulder. The custom of selecting the type with the right hand and setting it on the "stick" held in the left hand brings about this deformity. Where the linotype machine is used it has done away with this particular influence, and the postures of the workers are consequently much improved, as they use both hands more equally. This is only one occupation amongst a great many which produce deformity of this kind.

In describing the various causes of lateral curvature certain postures are generally referred to as having a detrimental influence, but if we go further we shall find that nearly all these postures are the outcome of the preference for using the right arm and the right side of the body generally.

The following are some of the exciting influences of curvature of the spine:

Standing on one leg (the right being generally selected).

Postures in drawing and writing, and other occupations.

The use of various musical instruments, especially the violin.

Sitting for various purposes in limp postures without proper rest for the back, when the customary preponderating use of the right arm tends to make the individual rest with that arm protruded more forward than the left.

It may be urged in favour of ambidexterity that its introduction would improve the ability for all kinds of work, develop the two sides of the brain more equally, and remove a very potent cause of a very common and distressing deformity.

I have condensed this subject into as small a compass as possible, with the view of simply drawing attention to its importance, and have left for a future time the consideration of a great many arguments and facts bearing upon ambidexterity. Mr. John Jackson, the great advocate of upright handwriting is, I understand, preparing an elaborate paper upon this method of teaching, and I feel sure that the subject as a whole will receive at his hands far more attention than I can pretend to have bestowed upon it.

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AN ANALYSIS OF A SERIES OF CASES OF INFANTILE PARALYSIS, WITH SOME NOTES ON TREATMENT.

By MUIRHEAD LITTLE, F.R.C.S.,

Surgeon to the National Orthopædic Hospital

THE paper that I have the honour to lay before you deals with all the cases of infantile paralysis of which I have notes that have during the last three years been under my care at the National Orthopædic Hospital or in private practice, or which I have seen at the Surgical Aid Society. By far the greater number have been patients at the hospital. Such cases are not

curable, and constantly need attention, and therefore they remain patients often for many years, and hence errors may arise in statistics from individual cases being reckoned more than once. In compiling my analysis, I have avoided this error by entering each patient's name, and by careful indexing. It will be observed that out of 147 deformities, in 115 patients only 4 affected the upper extremity. It by no means follows that this is a true proportion of the incidence of the disease, as probably more patients would apply for relief of deformity of the legs and feet than of the upper extremity, the former, generally speaking, being more amenable to surgical treatment.

Moreover, those cases in which the cervical portion of the cord has been affected are less likely to survive. Of 115 patients, 60 were females and 55 males. Of the 147 limbs affected, 75 were of females and 72 of males. The incidence in the sexes is nearly equal, girls being slightly more liable; on the other hand, palsies were more often severe in boys. Thus two limbs were affected in 18 boys and in only 14 girls; of these, in 8 boys and 7 girls the palsy was what I should call extensive. The left side was more often affected than the right, the figures being left 78, right 68, side not stated 1. In 98 cases the age of onset was ascertained. Two were said by the friends to be congenital, otherwise the limit of age were 6 weeks to 11 years. Nearly one-third of the cases occurred in the second year, and in 78 cases before the end of the third year.

The following are the details:

24	6 cases occurred in the first	6 months.
7	,, between	6 months and 1 year.
1	,, ,,	12 and 18 months.
7	,, ,,	18 months and 2 years.
8	,, ,,	3rd year.
11	,, ,,	4th ,,
4	,, ,,	5th ,,
3	,, ,,	6th ,,
1	,, ,,	10th ,,
1	,, ,,	11th ,,

In 17 cases the age of onset was not ascertained. In 7 cases nothing wrong was noticed until the child began to walk. No obvious connection could be traced between the age at onset and the severity of the attack. In 41 cases there was either no definite attack, so that the friends could only say that the child lost the use of its muscles between certain dates, or else the loss of power was seen to come on gradually. In 43 cases paralysis came on suddenly, and in 19 of these the child, which was put to bed apparently well, was found in the morning palsied. In the remaining 31 cases no history of the mode of onset was obtained. "Convulsions," "fits," and "teething," although so popular among mothers of the hospital class, and even with some practitioners, were very seldom mentioned in connection with the onset of paralysis in this series of cases. Convulsions were said to have preceded the attack in 4 cases only, unconsciousness lasting 9 to 48 hours in 4 others, but in 2 of these no paralysis was suspected at the time until the child walked, and "fits" only 3 times. Considering that the disease is commonest during the period of active eruption of the milk teeth, it is surprising that "teething" should be hardly ever invoked as a cause. Pain was noticed in only one case, and fever or feverishness twice.

As regards injury also, the histories are mostly negative—surprisingly so when one considers how often the children of the hospital classes are exposed to accidental violence. In only 9 cases were "falls" mentioned, but in one of these the child, aged 16 months, was knocked down by a horse, and three days afterwards became insensible and was taken to a hospital, where he was said to have remained unconscious for 14 days. This was a typical case of infantile paralysis, 2½ inches shortening, and talipes calcaneo-valgus with atrophy of the opposite arm. Influenza, vaccination, and diphtheria were each once assigned as causes. In only one case was palsy said to have been caused by sitting on damp grass. In this instance the child, previously well, could not walk indoors. In 15 cases it was stated that the paralysis, which was at first extensive, was to a great extent recovered from in the course of some weeks or even months. For example, both legs might be extensively palsied, but one almost entirely recovered.

Tabular statement of Deformities observed in 115 Cases.

	55 Males.	60 Females.	Totals.
Talipes equinus	9	1	10
,, equino-varus	11	9	20 (54)
,, ,, valgus...	7	7	14
,, calcaneus	2	3	5 (23)
,, calcaneo-valgus	12	6	18
,, valgus	7	12	19
,, varus	1	0	1
Pes cavus, etc.	1	0	1
Flail foot	1	1	2
Weak foot	1	0	1
Weak knee	0	1	1
Contracted knee	1	1	2
Upper extremity	2	2	4
Total	75	72	147

There are thus 54 cases in the equinus and 23 in the calcaneus group. Arranging the deformities according to the abduction or adduction of the foot there will be found 53 cases in the valgus, and 46 in the varus group, including pes cavus. As regards the upper extremity, in one case the right arm was one inch shorter than its fellow and weak, but no definite palsy could be made out. In a second case the muscles of the left upper arm and shoulder were almost all paralysed, although some of the muscles of the left forearm and hand were active. In a third there was palsy of the flexors of the fingers, the interosse and short muscles of the thumb, and the triceps and latissimus dorsi and lower half of the pectoralis major on the left side. In a fourth case there was palsy of the extensors of the fingers.

Scoliosis was recorded in four cases and lordosis in two.

Tabular Statement of the Principal Muscles and Groups of Muscles Affected in 148 Lower Limbs of 111 Patients.

	Complete Palsy.	Very Feeble.	Weak.	Totals.
Flexors of great toe	39	17	8	64
Flexors of four outer toes	37	21	8	66
Tibialis posticus	77	[illegible]	10	90
Tibialis anticus	83	6	11	100
Extensor proprius pollicis	51	9	19	79
Extensors of four outer toes	57	15	16	88
Peroneus longus	53	12	[illegible]	74
Triceps cruris (gastrocnemius and soleus)	33	[illegible]	[illegible]	35
Flexors of knee	18	[illegible]	[illegible]	20
Quadriceps extensor	38	1	13	52
Adductors of thigh	13	1	4	18
Abductors of thigh	12	[illegible]	4	18
External rotators of thigh	14	1	3	[illegible]
Internal rotators of thigh	15	[illegible]	3	[illegible]
Flexors of hip	15	1	[illegible]	[illegible]
Extensors of hip	13	0	[illegible]	15
Erector spinæ	3	0	[illegible]	[illegible]

As might be expected the frequency of the occurrence of palsy generally diminishes from the periphery towards the centre, with one striking exception. In two cases the rather unusual occurrence of marked palsy in the proximal segment of a limb without actual palsy of any muscle in the distal segments was noted. The quadriceps was completely palsied without any of the leg and ankle muscles being similarly affected. The contrast between the wasted thigh and the fairly well developed leg in these cases is very striking.

The two tibial muscles, and especially the tibialis anticus, as will be seen in the table, are especially vulnerable. Next to them in order of frequency come the extensors of the toes (dorsi-flexors of the ankle) and then the calf muscles and flexors of the toes (plantar flexors of the ankle). In the upper part of the lower limb the quadriceps extensor is especially vulnerable. It was affected nearly as often as the great calf muscles and twice as often as the hamstrings, or any other group in the thigh. The remaining groups of muscles were comparatively seldom affected.

Treatment.

The majority of these cases were treated by subcutaneous section of contracted tendons and fasciæ by correcting

splints, etc., by exercises and massage, manipulations, and were then supplied with retentive apparatus to enable them to walk with their feet in good position.

One case of extreme palsy of the shoulder was benefited by an apparatus that enabled him to fix that joint in various positions and so better avail himself of those muscles of the forearm that remained active.

In only 12 feet was any open operation thought necessary. Tendon transplantation or tenoplasty was performed 8 times and arthrodesis 5 times. Details of these operations are given below.

Cases of Tenoplasty and Arthrodesis

Case I.—H. W., aged 14, was admitted to the National Orthopædic Hospital on November 1st, 1897. He was attacked by infantile paralysis when 8 months old, the right leg being affected. No further details of history obtained. The right lower limb was 2 inches shorter than the left, and he has talipes calcaneo-valgus of the right foot, and the whole limb was smaller than its fellow. The hamstrings and ilio-psoas acted well. The right quadriceps was rather weak. Below the knee only the peronei longus and brevis and perhaps the extensor minimi digiti were capable of voluntary action. Nicoladoni's operation was performed. An incision was made along the posterior border of the fibula for some 3 inches, curving inwards below across the tendo Achillis about 1½ inch above its insertion. The flap was turned up and the two peronei tendons exposed. They were then divided subcutaneously below the ankle, and their ends pulled up into the wound. The tendo Achillis was then divided, and its lower end split transversely. The foot being held in a position of equino-varus and the peroneus longus tendon well drawn down, the peronei were laid between the flaps of the tendo Achillis and securely sutured with kangaroo tendon. In February, 1898, this patient was recorded as having good voluntary extension power. When seen about a year later, however, he had lost ground somewhat, probably owing to neglect of exercises. Still he was much improved.

Case II.—Bessie B., aged 6, was admitted on March 28th, 1898. She was attacked with infantile paralysis when two years old. She went to bed well, and was found to be paralysed in both lower limbs in the morning. She recovered power in the right limb in the course of two or three months, but the left remained badly palsied. It is 1½ in. short. She has now talipes calcaneo-valgus of the left foot. There was no voluntary power over the flexors of the toes or the extensors, except some power in the extensor proprius pollicis. The tibialis anticus and the peroneus longus acted well. There was very feeble voluntary action of the muscles forming the tendo Achillis. There was no knee-jerk on the left side. A similar operation to that in Case I was performed. In the spring of this year this patient was seen. The operation had been almost too successful. There was no calcaneous deformity, but the foot was somewhat inverted owing to the action of the tibialis anticus. There was good extension power.

Case III.—Ethel S., aged 16, was admitted on May 24th, 1898. The paralysis was believed to have come on between 2 and 3 years of age. There was talipes calcaneus of the left foot and very slight valgus, the leg being 1 inch shorter than the right. The short flexors of the toes and peroneus were the only active muscles below the knee. Nicoladoni's operation was performed with catgut sutures and the wound suppurated. The result in 1900 was found to be good. Since then the use of catgut in these cases has been discontinued.

Case IV.—Francis C., aged 7, admitted September 4th, 1899, for paralysis of both limbs dating from 1 year and 10 months previously. The right leg showed a flail-like foot, all muscles except extensor communis digitalis being paralysed. The left foot showed talipes calcaneo-valgus with paralysis of the tibials and tendo Achillis. Nicoladoni's operation was done with silk sutures. Arthrodesis was performed on the right side.

Case V.—Harold W., 5 years. Admitted October 12th, 1899. Dropping of the left foot was noticed suddenly when 2 years old. On admission there was talipes varus of left foot, with ½ inch shortening. Palsy of the extensors of the toes and peronei; operation. The distal end of the peroneus longus was inserted into the tendo Achillis, and the extensor communis digitorum into the tibialis anticus.

Case VI.—Ruth S., aged 15, was admitted in 1900, with right talipes equino-valgus, and ¾ inch of shortening. Nothing had been noticed until the patient began to walk. There was palsy of the flexors of the toes and tibialis posticus. The peronei were inserted into the palsied tibialis posticus.

Case VII.—Alice P., aged 14, was admitted in 1900 for talipes equino-valgus of right foot with ½ inch of shortening. She had had a sudden attack at 2 years of age, ascribed to "teething," and accompanied by pain and uselessness. Paralysis of the tibials and weakness of the flexors of the toes was found. The operation was the same as in Case VI.

Case VIII.—William C. B., aged 22, was admitted in July, 1900. The paralysis came on gradually when 3 years old. There was left talipes valgus, and 1½ inches of shortening. There was paralysis of the anterior and posterior tibials, and weakness of the extensors of the four outer toes. Some feeble voluntary power over the gastrocnemius and soleus muscles was present. The knee-jerks were absent on both sides. Nicoladoni's operation was performed.

In 4 cases arthrodesis of the ankle was performed, and in one of these the knee was also stiffened. Case VIII was only operated upon a fortnight ago and nothing can be said as to results. The other cases were all benefited and the results may be described as encouraging, although it is, in many cases, difficult to say how much of the improvement is due to the removal of the deforming muscle and how much to the newly-constituted muscle or muscles, also in the cases of calcaneus a good deal of the improved plantar flexion movement is due to the flexors of the toes when these muscles were not palsied. The cases were all first treated by the correction of all contractions as far as possible, and all were sent out of hospital with instruments to support the joint.

Mr. Noble Smith made some remarks upon the transplantation of tendons, and urged the necessity of removing any deformity resulting from permanent contraction of muscles before endeavouring to improve movement by transferring the action of one muscle or set of muscles. He referred to a case in which he had operated with good effect. As regarded the examination of paralysed or partially paralysed muscles, he referred to his experiments of section of the tendons of such muscles as proving that these operations had a beneficial influence in restoring any power which remained. These experiments also showed that the so-called reaction of degeneration did not prove that the muscles giving such reaction were absolutely paralysed.

Mr. Jackson Clarke said that the recent advances in the surgery of tendons had been well introduced by Mr. Little. In his own practice tendon-elongation by plastic operation had almost entirely replaced simple tenotomy. With regard to tendon transplantation he had had very good results with Nicoladoni's operation, which might now be regarded as firmly established in surgery. With regard to the extension of tendon transplantation to other paralytic conditions, it was advisable to make haste slowly. Thus when it was a question of transplantation of flexors to act as extensors he thought it was questionable whether the patient would be really better off than he would be with a simple correction of deformity.

Mr. Muirhead Little, in reply, said that certainly all contractions should be corrected before going further in a plastic operation. He agreed that instruments were necessary after operation until the muscles had adapted themselves to their new work. He had not had much experience of the operation for lengthening the tendo Achillis, but he had seen one case in which it had been made too long. He had operated to change the abductors into adductors.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

APATHY FOLLOWING USE OF THYROIDIN.

The following case will perhaps be of interest as showing some of the effects following the administration of thyroidin, the symptoms being altogether different from those given in textbooks and my previous experience with this drug:

M. H., aged 16 years, a bright, healthy-looking girl, consulted me on account of a slight goitre; one other member of the family, also a girl, had previously suffered in the same way, but the tumour rapidly cleared under the thyroidin treatment. I gave the patient tablets of thyroidin, 5 gr. each, three to be taken daily, one after each meal, making a dose of 15 gr. in the twenty-four hours. She continued taking them for about three weeks, when her mother stopped them on account of the unusual symptoms set up. These were as follows:

Objective (as described by the mother): She was in a sleepy condition; the least exertion induced copious perspiration: fickle memory, forgetting what she was told to do, and when sent on an errand she forgot when in the shop what she had gone for; when out for a walk in the park she went to sleep on the first seat available, was always heavy and drowsy, sleeping over her meals; in her sleep she would start up and cry out. The bowels were normal and the appetite good, but she ate only because she was told to do so. She would do any kind of housework when requested. Though usually fond of reading, she complained that it made her head ache; sight and hearing were normal; she complained of frontal headache, and was glad to go to bed whenever her parents would let her. Up to last April she was a pupil teacher, and has passed her candidates' examination for her first year. She walked very slowly, turning her feet in. It was noticed that she had quite a quantity of mucus, which she parted with easily without coughing.

Subjective Symptoms (explained by the patient): She felt listless, had no interest in anything, did her work automatically. She usually led an active life, but at this time she did not care who did her work; felt great difficulty in rousing herself and getting up; did not realise what she was eating, nor that she was eating at all; noticed herself that she dragged and turned in her left foot; perspired on the least exertion, noticed her face was flushed and drawn.

I have mentioned in detail the symptoms as told to me, because both mother and daughter are very intelligent.

Darwen. F. G. Haworth, M.B., C.M.

ANTISTREPTOCOCCUS SERUM IN A CASE OF PUERPERAL SEPTICÆMIA.

As the value of antistreptococcus serum in the treatment of puerperal fever is a question still to a certain extent *sub judice*, I think the following case may be worth recording:

Mrs. A., a healthy, plucky, young primipara was delivered at 6 A.M. on June 7th by forceps, through an imperfectly dilated os, after an exhausting labour of twenty-eight hours' duration. There was considerable hæmorrhage, but the uterus eventually contracted fairly well, and she was more comfortable in the evening, though still a good deal exhausted. The pulse kept high—132—and remained very rapid, though of fairly good quality, until the twelfth day. The temperature steadily rose, reaching 100.8° on the second day, 102 8° on the third, 103.2° on the fourth, 103.6° on the fifth, and 104.2° on the sixth, after which it ranged slightly lower on the seventh, eighth, and ninth, though there was no day on which it did not reach 103° at some time of the day or night. There never was any distinct rigor. There was no attempt at secretion of milk, and scarcely any lochial discharge. Vaginal douching was, however, kept up, and on three occasions the uterine cavity was washed out. Abdominal distension began on the third day, and was a source of some distress, but was kept under by free action of the bowels, which was maintained by medicine with a view to promote elimination and keep up peristalsis. Sweating also began about the same time, and was very profuse, leading to a copious eruption of sudamina. On the ninth day she began to wander a little on first waking from sleep, but she kept her head wonderfully, and there never was any actual delirium. On the tenth day temperature was at 103 6° all the morning, but dropped rapidly to 99.2° in the early part of the night, and, though it rose again to 103.6° on the morning of the eleventh day, there was certainly a slight improvement in the symptoms on those days. The temperature fell again to 100.6° in the evening. In the middle of the night, however, it rose to 105.2°, and remained there some hours, in spite of severe sweating, ice-cap, and sponging. By 9 A.M. the next day—the twelfth—it had fallen to 103.4°, but rose slightly to 104° by midday. Her pulse was 130, of bad quality. Up to this time her respirations had not, except on one occasion, corresponded in frequency to the pulse, her aspect had generally been good, and often even bright, and her appetite and digestion good, notwithstanding the high fever, but this morning she lay rather in a stupor, with flushed cheeks and respiration 24 to 28, and was evidently not so well.

In view of this and of the pyæmic type which the temperature seemed to be assuming, I decided to try the serum, and about midday I injected 20 c.cm. of a specimen prepared on February 12th by the Jenner Institute. Her temperature fell steadily all day, and was 100° at 9 P.M., when I injected another 10 c.cm of date June 12th. The purging continued much as usual, the sweating was more moderate, and she felt more comfortable. Next morning (thirteenth day) I again injected 10 c.cm. of the recent serum. Her temperature never rose again, but declined rapidly to 97.6° by the evening of that day. It touched normal for a few hours on the next, the fourteenth, day, and then remained about 98° for several days, again reaching normal on the twentieth day. The symptoms meanwhile were subsiding. The pulse fell below 100, the respiration returned to 16-18, the sweating moderated into a gentle perspiration; the bowels continued to act two or three times a day. A slight discharge appeared for a few days, the sudamina disappeared, but there was an itching papular rash allied to urticaria, apparently starting from one of the punctures, which inflamed a little on the nineteenth and twentieth days. She was got out of bed for the first time on the twenty-sixth day, and is now practically convalescent, though still weak.

I can scarcely doubt that the serum saved her life. The case, though not perhaps one of the very worst type, was of a sufficiently formidable character, and could not be classed as sapræmia The severe constitutional struggle which she had successfully carried on for twelve days could hardly have been maintained much longer; indeed, there seemed evident signs that another and worse stage was being entered on. Elimination certainly continued, but up to the time of the injection there was nothing to suggest that it was getting the better of the processes which generated the poison. From the moment, however, of the first injection steady improvement set in, as if by magic, and carried her in two or three days into a condition of comparative safety. My only regret is that I did not resort to it earlier.

Kilburn, N.W. T. Morton, M.D.

ANOPHELES IN ST. LUCIA.

The experience of Mr. C. V. Ladds, M.R.C.V.S.,[1] in his search for *Anopheles* in Hong Kong, is almost an exact counterpart of my own experience in the same direction in St. Lucia.

I sent several collections of mosquitos to the British Museum, but could never find any specimens of *Anopheles* until I read the accounts of Major Ross's expedition to Sierra Leone in the British Medical Journal. There I at once recognised in the description of a typical *Anopheles* pool several pools with which I was acquainted in St. Lucia. I went to the nearest of these armed with a small tin dish about 3 inches in diameter, a teaspoon, and a few wide mouthed bottles. I was rewarded by finding in the first dish of water scooped up three very active greenish larvæ, which lay flat upon the surface of the water and moved about by jerks. In other respects they were not unlike the larvæ of *Culex*. I met with the same success in several other pools. In some apparently typical pools in which I did not find these larvæ I found larvæ of dragon flies or other insects which would be likely to prey upon mosquito larvæ.

Two days later the larvæ became pupæ, hardly distinguishable from the pupæ of *Culex*, and two days afterwards the perfect insects emerged. They were mosquitos, unlike others I had seen, with spotted wings and long palpi in both sexes, and the proboscis formed a straight line with the body, while the proboscis and body together formed an angle with the surface upon which the insect rested, instead of the body lying parallel with it, as is the case with *Culex*.

It is evident that the *Anopheles* found in this colony do not deposit their eggs upon the surface of the water, as many species of *Culex* do, but on the grass or ground near the pool, to be washed into it by the next heavy rain.

I first found the larvæ on a Monday. On that day I found larvæ only in that particular pool, although I examined it carefully. On the following Friday I visited the same pool, and found only pupæ. The next Monday I examined that pool once more, and found a few empty pupa skins, but neither larvæ nor pupæ. During this time there had been no rain. The following week there were several heavy showers, and I was able to find both larvæ and pupæ in the same pool on several occasions.

The larvæ that I took from the pool on the first Monday and the pupæ that I took on the Friday became adult mosquitos on the same Friday. The larvæ of *Anopheles* are not entirely vegetable feeders, for I have on more than one occasion seen them feasting on the dead bodies of drowned mosquitos.

Mr. C. V. Creagh, C.M.G., states[2] "that many species of mosquitos (if not all of them) refuse to feed on human blood for some days (about six or generally eight) after emerging from the larva." This is not true of the *Anopheles* found in St. Lucia, for one sucked blood from my finger less than six hours after the transformation was complete.

I have found kerosene to be the best larvicide that I have used so far. It has one advantage over Jeyes' fluid in that it is found in every house—even the poorest. I would suggest that, in addition to putting kerosene or Jeyes' fluid in the

[1] British Medical Journal, May 12th, 1900, p. 1186.
[2] British Medical Journal, April 28th, 1900, p. 1062.

pools where mosquitos breed, the grass surrounding them (where it can be done without danger) be burned, so as to destroy any ova that may have been deposited there.

ST. GEO. GRAY, M.B., B.Ch.(Univ. Dub.),
Castries, St. Lucia. Colonial Assistant Surgeon.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

STATIONARY HOSPITAL (No. 2), EAST LONDON, CAPE COLONY.

NOTES ON TWO CASES OF EXOPHTHALMIC GOÎTRE APPEARING SUDDENLY IN MEN WHO HAVE BEEN IN ACTION.

(By W. H. HARLAND, M.R.C.S., L.R.C.P., Civil Surgeon.)

CASE I.

History.—Private W., aged 29, North Staffordshire Regiment, was admitted into hospital on April 4th suffering from enlargement of the thyroid gland, weakness, and nervousness. He was present at the battle of Elandslaagte, and received a scalp wound, on the left side, which was not severe, and healed up rapidly a few days after it was inflicted.

Anamnesis.—He was an anæmic, nervous-looking man, complaining of weakness and nervousness, and enlargement of the thyroid gland. There was a cicatrix of an oblique wound about 2 inches long over the left parietal bone. The thyroid gland was uniformly enlarged and pulsated visibly, the pulsation being expansile. The patient was continually swallowing, and stated that "he felt as if the lump in his throat were going to choke him." The eyeballs were prominent, ocular tension was increased, and the conjunctivæ were anæmic. The pupils were equal, and Von Graefe's sign was well marked. The pulse was 115, irregular and of low tension; the cardiac impulse forcible, and the heart's action rapid and irregular. A soft-blowing systolic murmur was audible at the apex; there was no increase of the cardiac dulness. There were marked tremors in the upper limbs, and the tongue was very tremulous.

CASE II.

History.—Private R., aged 30, Railway Pioneers, was admitted into hospital on April 24th convalescent from dysentery of three weeks' duration. The stools were normal on admission. Two days after admission he noticed a swelling in his neck, which throbbed at night, caused difficulty in swallowing, and a tickling sensation in his throat, leading to cough. Two days previous to that—that is, on the day of admission, he complained of a slight aching pain in the eyeballs, of "fluttering" and dull aching pain in the heart and palpitation. Previous to his attack of dysentery he had been in several skirmishes near Jacobsdal and Modder River, and he had previously seen a good deal of fighting in Cuba, as a volunteer, during the Spanish-American war, but had never been wounded.

Anamnesis.—The thyroid gland was enlarged, especially the right lobe; the whole gland pulsated visibly, the pulsation being expansile. A systolic murmur was heard over the gland. The patient occasionally gave a slight cough, due, he stated, to a "tickling in the throat." The eyeballs were prominent, the ocular tension increased, and the conjunctivæ injected. The pupils were equal, and Von Graefe's sign was well marked. The pulse was 120, of low tension, and regular. The cardiac dulness was slightly increased downwards and to the left. The cardiac sounds were rapid and accentuated, but no murmur was audible. No tremors were present. The patient stated that his mother suffered from goître, which was removed by operation.

REMARKS.

Both cases were under treatment in this hospital for about a fortnight, their condition remaining about the same as on admission, except Private W., whose nervous condition improved upon administration of iron combined with potassium. Both cases were transferred—one to Wynberg, and the other to England.

These cases are interesting from an etiological point of view, both illustrating forcibly the possible nervous origin of the disease, both cases occurring in men who had been exposed to severe nervous excitement. Private R., although he has been in action several times, states that he always felt cool and composed, although there was the greatest noise and excitement around him. In his case, also, an interesting factor is the pre-existence of goitre in his mother. Several cases have been observed and recorded in which a hereditary tendency to thyroid disturbance has been transmitted from mother to son. Private W., on the contrary, stated that he always felt very excited and nervous whilst he was in action, and the shock caused by the slight scalp wound, occurring at such a time of extreme nervous excitement, was most probably the cause of the commencement of the disease in his case.

KASHMIR MISSION HOSPITAL.

A CASE OF RENAL CALCULUS: NEPHROLITHOTOMY.

(Under the care of Dr. ERNEST F. NEVE.)

R. U., male, aged 30, was admitted June 25th, 1897. He had pain in both loins, sometimes acute and paroxysmal; the urine was acid and contained a trace of pus and blood, but no crystals. No calculus in bladder. The patient looked ill.

He was kept under observation and treatment for three weeks; no improvement. There was some doubt whether both kidneys might not be affected. There was some tenderness on deep pressure on both sides; rather more distinct on left.

On July 15th, 1897, I made a 5-inch incision parallel with and ½ inch below the left last rib ending at a point 2½ inches external to the spine. The operation was difficult and tedious. The kidney was high, its lower border corresponding with the edge of the rib. Grasping the organ and bringing it down, I could feel a stone in the substance. Removing this through a small incision, it proved to be of pyramidal shape with four angles; the weight was 24 grs. The base measured a little over ½ inch.

Convalescence was protracted. The wound did not heal by first intention. About a fortnight after the operation the urine suddenly became very scanty and there was pain in the right loin. I thought at the time that possibly a calculus was passing down the right ureter. The symptoms subsided. No bladder trouble was noted until the end of August, when there was some difficulty in micturition.

As this continued, on October 21st, 1897, I injected 1 gr. of cocaine in 2 ounces of boracic lotion, and, passing a lithotrite, caught a small stone ¾ inch in diameter, crushed and evacuated; the weight, 15 gr; it had a nucleus of oxalate, with phosphatic coating.

The patient was dismissed on November 12th, 1897. There was till a sinus in left lumbar region. He returned on June 12th, 1900, with a stone in the prostatic urethra. As this could not be dislodged, Mr. A. Neve cut down and removed it. The patient was finally dismissed on June 30th cured.

He is now free of pain and can walk ten miles. There is, however, a distinct bulging of the colon at the site of the old lumbar incision.

AN ISOLATION HOSPITAL FOR TRING.—According to the *Daily Telegraph*, Lady Rothschild has offered to contribute £300 towards the provision of an isolation hospital at Tring, where the Urban District Council are applying to the Local Government Board for sanction to the borrowing of £3,000 for the purpose. Her ladyship also promised to furnish the building throughout when it is erected. The offer has been gratefully accepted.

The Princess of Wales recently paid a visit to The Gables private military hospital at Surbiton, which is maintained by Mr. Alfred Cooper, F.R.C.S., as an adjunct to Her Royal Highness's hospital ship *Princess of Wales*. The Princess was shown round the wards by Mr. and Mrs. Alfred Cooper, and the medical and surgical staff were presented to Her Royal Highness. The Princess had prepared and brought with her a present for each of the men, 21 in number. On each memento was engraved the name of the recipient and the battle in which he was wounded. Her Royal Highness personally presented each gift.

REVIEWS.

RECENT WORKS ON THE NATURE AND TREATMENT OF DIABETES MELLITUS.

The Conservation of Energy and the Regimen of Diabetes.

One of the latest of the excellent series of clinical monographs in elucidation of various question of the day, which are being published by Masson and Co., of Paris, is Dr. Dufourt's on *The Laws of the Conservation of Energy in the Regimen of Saccharine Diabetes*.[1] Without pretending to be original Dr Dufourt has a competent knowledge of his subject, and has contrived to lay it before his readers with commendable clearness.

Amongst the many uncertainties and obscurities which surround the problem of diabetes he regards it as certainly proved that glycosuria is caused by an inability of the cells of the body to destroy sugar, and he assumes that they are compelled to consume albumen and fat in its place. Therefore, in the dietetic treatment of diabetes we have first to determine what is the precise amount of food, whether in the form of albumen, fat or sugar, which the body requires. This he shows has been determined by Rübner as follows:—

At rest	32.9 heat units.
With light work	34.9 ,,
With medium work	41 ,,
With hard work	48 ,,

for one kilogram (2 lbs.) of body weight.

so that a diabetic performing only slight work and weighing 140 lbs. requires daily the alimentary value of 2,450 heat units (calories). The combustion value of the various alimentary principles has been established by the labours of Berthélot, Frankland, Rübner, and others, and the following are generally accepted:—

1 gram of albumen in being transformed into urea, water, and carbonic acid furnishes 4.1 heat units.

1 gram of carbohydrates in being transformed into water and carbonic acid also furnishes 4.1 heat units.

1 gram of fat affords 9.3 heat units.

Experience has shown that these substances are not absolutely interchangeable—that is to say, it is desirable to combine the three. Albumen is indispensable on account of the nitrogen which it alone can furnish, while experiments upon animals have shown that fat cannot altogether replace sugar. A diabetic must ingest sufficient albumen to supply the quantity of urea he is excreting, and, as is well known in this disease, the amount of urea is generally increased. According to Weintraud, a diabetic requires from 1 to 1.50 gram of albumen per kilogram of body weight—that is to say, a man weighing 140 lbs. would require from 2½ to 4 oz. of albumen daily, which would be represented by from 12½ to 20 oz. of lean meat.

The author gives some useful tables of the chemical composition of the principal articles of vegetable diet and of fruits. According to these tables potatoes, carrots, and turnips contain much less carbohydrates than the various farinaceous substances, or beans and lentils, while of fruits, peaches, apricots, and prunes occupy the lowest rank. He refers to the method recommended by Kraus, jun., of preparing fruit for diabetics by repeated boiling in different waters, which must be thrown away on each occasion. The fruit is then sweetened with saccharine and flavoured with a little cinnamon, and affords an addition to the diabetic diet which is much appreciated. Such preserved fruits are now made in London as well as in Germany. Dr. Dufourt agrees with most modern writers in finding the various bread substitutes more or less unsatisfactory, and considers that it is best to allow a very small quantity of ordinary bread or to do without it altogether. He recommends the use of definitely limited quantities of potato. He does not approve of any of the modern sweetening agents which have been introduced, but we think he is unnecessarily strict in objecting on the score of possible gastric disturbance to the use of saccharine. This substitute has been employed very largely in England during the last fifteen years by many persons besides those who are diabetic, but we do not know that it is abused or that any ill-effects are traced to it.

With respect to mineral salts, the usual quantity taken in food is so much in excess of what is needed by the body that there is not usually any reason to consider the subject specially, but we may remind our readers of some observations by Grube on the administration of powdered egg shell as a popular remedy in diabetes, and upon his own observations of the benefit to nutrition which followed the administration of powdered phosphate and carbonate of lime in imitation of this substance. Cabbage, spinach, lettuce, and mushrooms Dr. Dufourt recommends on account of the small quantity of sugar which they contain, and he sanctions the use of vegetable marrows, melons, and cucumbers, but the melon in England contains far too much sugar to be safely used. He also recommends endive, salsify, and ground artichokes. He says the sugar of tomatoes has been found to be almost entirely composed of lævulose, which is generally assimilated by diabetics. He speaks of the value of vegetables as a means of giving a suitable quantity of fat, but unfortunately in England our cooks do not understand how to add butter or oil in cooking them. He recommends 4 ounces of butter daily with an ounce of olive oil in salad, or this may be varied by fat bacon, brains, and yolks of egg. He is not a strong advocate for the use of alcohol, and in any case he thinks it better to give wine rather than spirits, red wine being preferable to white—that is to say, he would give his patients about a bottle of ordinary claret daily. He allows tea and coffee, but has some prejudice against mineral waters. He prefers ordinary water, which he quite properly says should be pure. He condemns beer and cider, and is disposed to proscribe milk, but he allows that there has been a good deal of testimony in its favour, and he admits that it may suit some patients, and that it may be especially suitable to those with disease of the liver, heart, or kidneys, or with digestive troubles. He will not allow that strict diabetic diet ever caused coma, except by being so improperly calculated as not to supply a sufficient amount of nourishment. He recommends that the diet should be carefully arranged to suit each individual case, and that, where it is possible to do so, a certain amount of carbohydrates should be allowed. He thinks it advisable for such patients who are taking carbohydrates to submit from time to time to a course of strict diet for a fortnight, and he very properly insists all through upon the importance of the quantity of carbohydrates being strictly defined by weight. This essay is of considerable practical value, and should enhance the reputation of Messrs. Masson's series.

The Nature and Causes of Diabetes Mellitus.

Dr. Leo is well known as an able contributor to the important subject of the physiology and chemistry of nutrition; he has, therefore, acquired the right to be heard respectfully when he has anything to say about the pathogenesis of diabetes. In his essay on the Nature and Cause of Diabetes Mellitus,[2] after passing in review recent additions to our knowledge, he concludes that true diabetes depends upon the inability of the tissues to destroy sugar, and that this inability is not explained by any hitherto observed or imagined changes in the organs or the blood; he has therefore thought it necessary to invent another hypothesis which he has endeavoured to support by the series of experiments detailed in this work. This theory supposes the presence of an unknown poison in the blood, differing from any of those hitherto recognised such as acetone, diacetic acid, oxybutyric acid, etc., which inhibits the oxidation of sugar by the tissues. He appeals to Bremer's well-known blood reaction as evidence that there is something present not yet explained, for he considers that this reaction cannot be properly attributed to diminished alkalescence of the blood. He attempted some years ago to prove his theory by injecting blood or blood serum derived from diabetic patients into the bodies of dogs, but the amount of material he was able to deal with was necessarily very limited, and he was unable to obtain any satisfactory results. His recent experiments have been made with diabetic urine, which he regards as in all probability containing whatever poison is to be found in the blood. He has experimented with such urine taken from ten cases of diabetes of varying severity. The urine was sometimes injected unchanged, sometimes merely neutralised, some-

[1] *Les Lois de l'Energétique dans le Régime du Diabète Sucré.* Par Dr. E. Dufourt. Paris: Masson et Cie. 1899. (Roy. 8vo, pp. 44. F. 1.25.)

[2] *Ueber Wesen und Ursache der Zuckerkrankheit.* Von Dr. med. et phil. Hans Leo. Berlin: A. Hirschwald. 1900. (Demy 8vo, pp. 110. M. 2.80).

times after fermentation and neutralisation, and sometimes concentrated. In eight out of ten cases he obtained positive results; that is to say, the urine passed by the dogs after these injections contained sugar. Control experiments made with normal urine gave generally a negative result, but glycosuria was observed twice. The author has not hitherto been able to isolate the poisonous substance, but he points out that it is something which is soluble in alcohol and water, not precipitated by oxalic acid nor destroyed by the temperature of boiling water. The second part of his work deals with the question of infection. Dr. Leo endeavoured to determine whether the growth of micro-organisms gave rise to a poison which could produce glycosuria, and he found that in fluid in which ordinary beer yeast had grown such a poison exists which is neither alcohol nor succinic acid, and is not affected by neutralisation. Attempts to isolate an organism in the blood of diabetics failed, as did attempts to produce glycosuria in dogs by diabetic fæces. The analogy of glycosuria with cystinuria has made him look for ptomaines in diabetic urine, but with negative results. So many poisons have been shown to be capable of producing glycosuria that hesitation is only right and proper before we regard Leo's experiments as affording any fresh point of departure for our study of diabetes. We hope, however, this indefatigable investigator will continue his researches.

SOME QUESTIONABLE VIEWS ON DIET.

Etiology and Pathology.

Dr. EMIL KLEEN, who is a Swedish physician practising at Carlsbad, has had the courage and ability to write in English a book on *Diabetes Mellitus and Glycosuria*.[3] He acknowledges the assistance he has received from Dr. Eshner, of Philadelphia, to whom, however, we fear he owes the American spelling and phraseology, which to readers on this side of the Atlantic rather detract from the pleasure of reading the book. The author is wrong in seeking to explain the absence of diabetes on the sugar plantations of Mauritius, British Guiana, and Venezuela on the ground that the labourers belong to those races among which diabetes is uncommon, because certainly in the two first-named places the labourers are imported Indian coolies; and on the previous page Dr. Kleen has properly said "the Hindu is most susceptible to diabetes." On the other hand, the author attempts to explain the singular absence of the disease among the African race by saying that it is merely the immunity which is general among people beyond "the pale of culture." It is certainly true that diabetes is most common among the educated classes, but it is not unknown among the less cultivated classes, and the negro in the United States is not on a lower level of general culture than the Cingalese or Maltese shopkeeper among whom the disease is so prevalent. We do not know what ground the author has for saying that high altitude tends to increase the frequency of diabetes. We know no facts except those adduced by Purdy in support of this, and against them is to be reckoned the very important consideration that Maine and Vermont, which have high altitudes, are also busy manufacturing States, full of cities with just the sort of population in which diabetes would be likely to occur; nor do we know on what ground the author states that the English reports of the Registrar-General cannot be used as they include both diabetes mellitus and insipidus under one heading. Diabetes mellitus, as everyone knows who is familiar with the published tables of the Registrar-General, is a separate and distinct heading, and, although diabetes insipidus does not appear by itself, we have the express assurance of Dr. Tatham for stating that the alleged confusion does not exist. We cannot agree with Dr. Kleen that small hæmorrhages into the brain are commonly observed in diabetes or that it is probable that the small cysts mentioned by certain authors are the residual products of such hæmorrhages, as it is generally held that cysts which are the result of hæmorrhages and the absorption of hæmorrhagic effusion betray their origin by hæmatoidin staining. The cysts in question are absolutely and strikingly free from any traces of pigment. The tendency to hæmorrhage upon which he lays stress is after all not such a very marked phenomenon in diabetes apart from gouty or other complications.

[3] *Diabetes Mellitus and Glycosuria.* By Emil Kleen, Ph.D., M.D. London: Baillière, Tindall, and Cox. 1900. (Royal 8vo, pp. 314. 10s. 6d.)

As to the saliva of diabetics being often acid, if Dr. Kleen had made a practice of examining the saliva of adult persons, we think he would have found few whose saliva does not turn blue litmus paper slightly pink. Considering the indigestible articles of food upon which diabetic patients are so frequently fed it is surprising that so few suffer from symptoms of dyspepsia, but *post mortem* it is the exception to find a diabetic stomach in a healthy state, this organ almost invariably showing some degree of dilatation with chronic catarrh of its mucosa. This does not agree with Dr. Kleen's view that gastro-intestinal derangements are rare in diabetes; but if we are to look to clinical symptoms alone he is right. There is no doubt that the failure to absorb fat becomes very pronounced in advanced diabetes.

Diet.

In the clinical portion of the book the author shows that he possesses a considerable experience of the disease as seen at Carlsbad. There is much in his views of treatment with which we agree; thus he is doubtful of the specific value of drugs and anxious to give his patients all the carbohydrates they are able to assimilate. In the latter respect we think he goes further than is prudent, and that if we accept, for example, what he tells us about Professor Forsell, whose dictum he quotes, "By avoiding diet, watering places, and medicines I have kept in very fair health since 1873," our patients would be encouraged to discard all that experience has taught us as to the value of diet in the treatment of diabetes, and would probably despise the attentions of members of the medical profession. Professor Forsell was not a physician, nor was he a patient of Dr. Kleen. We are told that his diabetes began quite suddenly in 1866, and that the daily average of urine was 6½ litres, and of sugar 425 grams (6,375 gr.). His physician had at first put him upon strict diet, but having found that this always made him weak and ill Professor Forsell adopted the opposite extreme, consuming "a considerable amount of bread and vegetables and every day drinking from six to eight pints of Bavarian beer." When Professor Forsell died he had suffered from "most pronounced diabetes" for about twenty years. It may be noted that we are not told the age of the patient. Dr. Kleen goes on to say, "I am particularly anxious not to be accused of approving of Forsell's *régime*; it is far from being a good *régime*, but I feel convinced that if I had to choose for my patients, as a rule for years, between his *régime* and an exclusive or severe restriction of carbohydrates I should act wisely in choosing the former." Dr. Kleen fails to see that it is not a question between strict diet and a moderate amount of carbohydrates, but the propriety or advantage of the use of a diet containing a considerable amount of bread and vegetables with six to eight pints of Bavarian beer. The quantity of beer alone would contain over three thousand grains of sugar, and the bread and vegetables at least as much more, so that Professor Forsell must have been taking an excessive quantity of carbohydrate food. We have no hesitation in saying that it is quite contrary to daily experience for a diabetic patient to be able to live even comfortably upon such a diet, which as a rule, would cause intense thirst, excessive polyuria, and all the signs of grave diabetic cachexia. It would have been far better to have avoided quoting a case of which Dr. Kleen had no personal knowledge, and which must be regarded as so exceptional as to form no guide for the treatment of others. It is very curious that Dr. Kleen, while strongly advocating the use of carbohydrates, objects to potatoes, although he admits that they contain only a small quantity of starch, and he does not seem to recognise the value they possess as substitutes for bread. Besides the peculiarities of American spelling to which we have already referred, the pages are disfigured by a great many distortions of well-known medical names, for example, Chrichton-Browne, Toralbi, Kutz, Raynor, Althans, Dieulafoi, Godbe (for Godlee), etc. The book contains a great deal of information of value to anyone already well acquainted with the subject of diabetes, but cannot be recommended as a safe guide to the inexperienced.

Dr. MAGNUS-LEVY'S pamphlet on oxybutyric acid and its relation to diabetic coma[4] is chiefly important as an able

[4] *Die Oxy-Buttersaure und ihre Beziehungen zum Coma diabeticum.* Von A. Magnus-Levy. Leipzig: F. C. W. Vogel. 1899. (Roy. 8vo. Pp. 96. M .)

advocacy of the theory that the formation of an excess of oxybutyric acid in the blood is the principal, if not the sole, cause of diabetic coma, and that its rational treatment is the introduction into the blood of very large quantities of alkalies. The quantity he recommends is a litre or a litre and a half of 3 per cent. solution of sodium bicarbonate introduced into a vein twice in the twenty-four hours, while at the same time sodium bicarbonate is given by the mouth in doses of 50 to 60 grs. every hour. Whether it is possible to give advantageously such enormous quantities is left uncertain. Of the author's few cases only one recovered, and that is not a very convincing illustration.

INOCULATION AGAINST CHOLERA AND TYPHOID FEVER.

A RETURN of correspondence relating to preventive inoculation against cholera and typhoid in India has been issued as a Parliamentary paper.[1]

Cholera.

With regard to cholera, M. Haffkine's inoculations were carried on in 1896 in Bengal, at first under his own superintendence, and subsequently by Surgeon-Captain J. C. Vaughan, Deputy Sanitary Commissioner of the Western Bengal Circle, and two assistant surgeons, G. C. Mukerji and S. B. Banerji, acting under his general supervision. The total number of persons inoculated in Bengal, exclusive of Calcutta and its suburbs, was 4,413, most of whom were coolie emigrants proceeding to Assam. Surgeon-Captain Vaughan says in his report on the inoculations performed under his supervision in Purulia and in the Manbhum district and in Kandra:

> The operation of protective inoculation was at first done in two stages—that is, the inoculation with what used to be termed the "first vaccine" to begin with, then later on inoculation with the "second vaccine." For various reasons this was found to work inconveniently in practice, and as it came to be ascertained that it was quite practicable to omit the inoculation with the "first vaccine," the operation is now limited to inoculation with the "second vaccine" only. Anticholeraic inoculation, as far as I have known it and of it, has always been strictly voluntary, and the work has increased. A large part of what has been done has been among coolies bound for the tea gardens. The conditions of emigrant travel are such that cholera is very frequent and often very destructive of life. It appears that the impression has gradually gained ground that the inoculated are not nearly so liable to be attacked as the uninoculated. When we first began work in Purulia, we had to go round the coolie depôts and inoculate whom we could persuade. Since then Messrs. Driver and Stainforth, the principal forwarding agents in Purulia, have given expression to a decided preference for inoculated coolies: and a few days ago a tea planter from the Kalain tea estate in Cachar arrived in Purulia, selected 200 coolies, and quite spontaneously had every one of them inoculated. This gentleman declared to me that most of the coolies on the garden are inoculated, and that the place is practically free from cholera. Coolies are now brought to my workroom regularly and daily, and last month in this way we inoculated no fewer than 1,776 emigrants. These details do not all strictly belong to the work of 1896, but are quoted to show how it has grown.

The results, as tabulated by Surgeon-Captain Vaughan, show that there is not only a reduction in the incidence of cholera among the inoculated, but that after inoculations have been done in any community, the incidence and death-rate among the uninoculated are apparently also reduced.

M. Haffkine's notes on a series of experiments carried out in Calcutta show that the results, considered as a whole, were as follows: 654 uninoculated, 71 deaths (10.86 per cent.); 402 inoculated, 12 deaths (2.99 per cent.). Proportion, 3.63 to 1; reduction of mortality by 72.47 per cent.; or for every 11 deaths amongst the uninoculated there were only three deaths amongst the inoculated.

An extract from the report of the Sanitary Commissioner with the Government of India for 1897 states that preventive inoculation against cholera was carried on in Bengal throughout the year, and 10,950 persons were operated on, mostly coolies on their way to the tea districts of Assam and Cachar. No complete statistics regarding the efficacy of the inoculation have been obtained, but such facts as were recorded are in favour of inoculation. Cholera was extraordinarily prevalent in 1897, among the coolies on their way to the labour districts in Assam and Cachar, and the Sanitary Commissioner says it is possible to compare roughly the mortality among the inoculated and uninoculated among the general body of immigrants on their way to the former. Confining the calculations to deaths which occurred between the ports of embarkation and the tea gardens, it appears that the general cholera death-rate was 16.7 per mille, and the death-rate among inoculated coolies was 4.9 per mille. There are probably other circumstances besides inoculation to be taken into account.

An extract from the report of the same Commissioner for 1898 states that anticholera inoculations were continued at the coolie depôt at Purulia in Bengal, but it is not possible to say how far the inoculation was protective, as there are no complete statistics. The Commissioner, however, adds: "If any conclusion is permissible from such figures as are available, it is decidedly in favour of the operation."

Typhoid Fever.

The correspondence relative to inoculation against typhoid fever shows that in 1897 the Government of India proposed to the Secretary of State for India that the treatment strongly advocated by Dr. A. E. Wright, Professor of Pathology at the Army Medical School, Netley, should be tried experimentally on such British officers and soldiers in India, and about to embark for that country, as might be willing to submit to the operation, Professor Wright's services being lent to the Government of India for four months to carry out the experiment. Owing however to the diversity of opinions held at that time by the leading medical authorities as to the value of Professor Wright's treatment, the Secretary of State for War was unable to assent to the proposal. It was understood, however, from the concluding portion of the War Office letter of January 24th, 1898, that the objection of Lord Lansdowne to the introduction of the treatment applied rather to the formal authorisation of inoculation at the public expense than to voluntary operations at private cost. Under this supposition the latter were carried out at certain stations (advantage being taken of the presence of Professor Wright in India as a member of the Plague Commission), though without the sanction of the Government of India or of the Commander-in-Chief. On the facts becoming known, however, orders were issued to stop further inoculations, and the treatment has accordingly been abandoned. The results of the inoculations were nevertheless so satisfactory that the Commander-in-Chief strongly recommended the adoption of the treatment in the interests of the health and efficiency of the British army in India. No official records were kept, and therefore exact figures as to the number of persons inoculated and the results cannot be given. It is known, however, that over 2,000 men were inoculated, and that in no case did any bad or unfavourable symptoms follow the operation. Only a very few (5 or 6) of those inoculated contracted typhoid fever subsequently, and, except in 1 case, the disease was of a mild character, while in 2 the disease was actually in the incubation stage when the operation was performed. In the letter to the Secretary of State for India dated May 25th, 1899, stating these facts, the Government of India says:

> The annual admissions per mille for enteric fever amongst British troops in India have risen from 18.5 in 1890 to 32.4 in 1897, while the death-rate has increased from 4.91 to 6.01, and we are of opinion that every practicable means should be tried to guard against the ravages made by this disease. The antityphoid inoculations have been, we believe, on a sufficiently large scale to show the actual value of the treatment, while the results appear to afford satisfactory proof that the inoculat[illegible] properly carried out, affords an immunity equal to or gre[illegible] at obtained by a person who has undergone an attack of the d[illegible]er. the operation is one which does not cause any risk to h[illegible] ese circumstances we are very strongly of opinion that a more [illegible] trial should be made of the treatment, and we trust that yo[illegible] will permit us to approve the inoculation, at the public exp[illegible] British officers and soldiers who may voluntarily submit the[illegible] he operation. We have already telegraphed to your lordship [illegible]

Enclosed in this letter from the Government of India was a communication from the Principal Medical Officer to Her Majesty's Forces in India, in which he suggested that Her Majesty's Government should be moved to reconsider its objection to the operation. He goes on to say:

> From experiments which have been carefully made, it has been conclusively proved to the satisfaction of those who are best competent to judge of the matter, that antityphoid inoculation, when properly carried out, achieves an immunity equal to or greater than that which accrues to a person who undergoes and recovers from an attack of that disease

[1] East India (Inoculation against Cholera and Typhoid) Return to an Address of the Honourable the House of Commons dated June 29th, 1900. Copies may be purchased, either directly or through any bookseller from Eyre and Spottiswoode, East Harding Street, Fleet Street, E.C., and 32, Abingdon Street, Westminster, S.W.; or John Menzies and Co., 12, Hanover Street, Edinburgh, and 90, West Nile Street, Glasgow; or Hodges, Figgis, and Co., Limited, 104, Grafton Street, Dublin.

The correspondence further shows that in August, 1899, the Secretary of State for India approved of the resumption of inoculation at the public expense, and that since then the measure has been widely resorted to, the Government of India having "hopes that the results will be satisfactory in securing some considerable degree of immunity, especially to young soldiers during the first years of their service." In a final despatch, dated May 10th, 1900, the Secretary of State for India informs the Government of India that he will "be glad to be furnished with returns, as soon as there are sufficient data available, showing the comparative prevalence and intensity of the disease among inoculated and uninoculated soldiers."

STATISTICS OF THE FOUR MEDICAL SCHOOLS IN AUSTRALIA AND NEW ZEALAND.

The following interesting statistics are reprinted in the *Australasian Medical Gazette* of July 20th, by permission of Mr. Bruck, from the forthcoming fifth edition of the *Australian Medical Directory and Handbook*, now in the press:

Number of Graduates in Medicine up to 1899 of the Universities in Australia and New Zealand.

University of	Medical School Opened in	M.D.	M.D., *a.e.f.*	M.B.	M.B., *a.e.f.*	Ch.B.	Ch.B., *a.e.f.*	Ch.M.	Ch.M., *a.e.f.*
Sydney	1883	16	17	128	7	—	—	107	—
Melbourne	1862	44	44	387	11	335	—	6	—
Adelaide	1885	1	25	31	22	29	4	—	1
Otago	1884	5	16	33	4	33	—	—	—
Total Number ...		66	102	579	44	397	4	113	1

The number of medical men who have taken their degrees at these four Universities up to 1889 corresponds with the numbers of Bachelors of Medicine, namely, 579, and of these 504 have taken a degree in Surgery, and 66 the degree of Doctor of Medicine. Forty-nine of these gentlemen have registered their names and qualifications upon the Colonial List of the British *Medical Register* under Section XIII of the Imperial Act of 1886, namely, University of Sydney, 10; University of Melbourne, 32; University of Adelaide, 5; and University of New Zealand, 2.

Number of Undergraduates in Medicine in 1899.

Sydney	177
Melbourne	256
Adelaide	37
Otago	105
Total Number	575

VACCINATION STATISTICS.

A RETURN dated August 6th, which has been issued as a Parliamentary paper[1] gives some interesting statistics as to vaccination. The return shows "in respect of each Poor Law Union in England and Wales (1) the number of certificates of conscientious objection under Section 2 of the Vaccination Act, 1898, received by the vaccination officers, which were dated between the first day of January and the 31st day of March, the first day of April and the 30th day of June, the first day of July and the 30th day of September, and the first day of October and the 31st day of December respectively in the year 1899; and (2) the number of certificates of successful primary vaccinations received by the vaccination officers during the periods from the first day of January and the 30th day of June, and the first day of July and the 31st day of December respectively in 1898 and 1899."

The return is prefaced by the following memorandum: Section 2 (1) of the Vaccination Act, 1898, provides that no parent or other person having the custody of a child shall be liable to a penalty under the Vaccination Act, 1867, if, within four months of the birth of the child, he satisfies two Justices, or a stipendiary or metropolitan police magistrate, that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justice or magistrate of such conscientious objection. The section came into operation on the passing of the Act, that is, August 12th, 1898, but in its application to a child born before the passing of the Act there was substituted for the period of four months from the birth of the child the period of four months from the passing of the Act.

A Parliamentary Return (No. 89, H. C., Session 1899) showed that between the date of the passing of the Act and December 31st, 1898, the number of certificates of conscientious objection received by the vaccination officers was 203,413, and that the number of children to whom such certificates related was 230,147.

The present return (Part I) shows that the numbers of certificates of conscientious objection received by the vaccination officers and dated between January 1st and March 31st, April 1st and June 30th, July 1st and September 30th, and October 1st and December 31st in the year 1899, were 6,703, 8,403, 9,082, and 8,153 respectively, making a total of 32,341 certificates. They related to 32,357 children.

The following is an analysis of the figures in the return:—

Unions in which the Children exempted from Vaccination on Certificates of Conscientious Objection Numbered	Number of Unions.	Per cent. of Unions in England and Wales.	Populations of Unions (1891).
Less than 100	*565	87.2	21,280,431
100–500	77	11.9	6,827,220
Above 500	6	0.9	892,963
Total	648	100.0	†29,000,614

* These 565 unions include 21 in which no certificates of conscientious objection were given.

† The population of England and Wales in the middle of 1899 was estimated by the Registrar-General was 31,742,588.

Unions in which the Children exempted from Vaccination on Certificates of Conscientious Objection Numbered	Percentage of Total Population of England and Wales.	Total Number of Children exempted.	Number of Children exempted per cent. of births in the year 1899
Less than 100	73.4	13,435	1.99
100–500	23.5	14,450	6.28
Above 500	3.1	4,472	16.88
Total	100.0	32,357	3.48

The return (Part II.) shows that the total numbers of certificates of successful primary vaccinations received by the vaccination officers during the periods January 1st to June 30th, and July 1st to December 31st, in the years 1898 and 1899 respectively, were as follows:

January 1st-June 30th, 1898.	July 1st-December 31st, 1898.	January 1st-June 30th, 1899.	July 1st-December 31st, 1899.	Totals. 1898.	Totals. 1899.
277,839	222,475	355,552	313,797	500,314	669,349

The increases in the numbers of vaccinations for the half-years of 1899 as compared with the corresponding half-years of 1898 were, therefore, 77,713 and 91,322 respectively, a total increase for the year of 169,035, or 33.8 per cent.

The number of births registered in England and Wales during 1898 was 923,265, and during 1899 was 928,640. The ratio per cent. of successful primary vaccinations to births registered were 54.2 in 1898 and 72.1 in 1899, an increase in ratio of 33 per cent. in 1899 as compared with 1898.

[1] To be purchased either directly or through any bookseller from Eyre and Spottiswoode, East Harding Street, Fleet Street, E.C., and 32, Abingdon Street, Westminster, S.W.; or John Menzies and Co., Rose Street, Edinburgh, and 90, West Nile Street, Glasgow; or Hodges, Figgis and Co., Limited, 104, Grafton Street, Dublin.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, SEPTEMBER 1st, 1900.

THE CONGRESS OF DEONTOLOGY AND MEDICAL ETHICS.

Those who followed the reports of our Special Commissioner on the Paris Congress of Deontology must have been struck by the number of subjects discussed in which English practitioners are as deeply interested as their foreign brethren. The organisation of the profession, hospital abuse, club practice, medical defence, medical sickness and assurance societies are all subjects on which, as our columns have borne witness, the mind of the profession has been much exercised of late years, and the fact that such subjects have been discussed by experts from different countries cannot fail to be productive of much benefit by showing how matters which are of interest to us are being treated elsewhere.

The Congress was fortunate in its President, Dr. Lereboullet, who filled the presidential chair with a dignity and firmness which easily checked any tendency to disorder. It was fortunate, too, in its General Secretary, Dr. Jules Glover, himself the life and soul of the whole movement, whose energy and courtesy never seemed to flag even during the trying weather in which the Congress was held. We should have liked, had space permitted, to have given both the President's address and the General Secretary's report in full, since a summary does but scant justice to the clearness of thought and grace of expression of the French originals.

Elsewhere we refer to Dr. Cuylitz's report on medical men in their relations to clubs and trade unions, which seems to have been misunderstood by one of our London contemporaries. The subject of hospital abuse naturally received a good deal of attention, the abuse being, if possible, greater in Paris than in London, even the Assistance Publique, it was said, transforming a portion of its hospitals, intended for the very poor, into veritable *maisons de santé* or private hospitals for the well-to-do; while Colonel Montefiore's paper with reference to London hospitals showed to what an extent such abuse has grown here, and contained some valuable suggestions for remedying it. The illegal practice of medicine was shown to be as extensive in France as in England, it being estimated that from 15,000 to 20,000 consultations are given daily by unqualified persons in Paris alone, and the need of union against quacks of all sorts was strongly insisted on. The want of sufficient provision by medical men against sickness and old age, as well as for their widows and orphans, was clearly shown, and a mass of information was collected as to the societies which undertake this important work in civilised countries.

But perhaps the papers of most immediate interest to us at the present time were those dealing with the organisation of the profession in Continental countries. It was shown in regard to Austria and Hungary that while in the former country Medical Chambers established by law had been tried, and had failed to accomplish what was expected of them, in Hungary the choice had been made in favour of a voluntary association, and that in the course of a few years this had secured the adhesion of five-sixths of the members of the profession in that country. In France, too, a large professional association has been formed by the union of ninety-four local bodies having for their primary object the assistance of medical men, their widows and children. With regard to medical defence, the great thing advocated was a thorough union of medical men to maintain their rights in opposition to all forms of quackery.

There can be no doubt that practitioners in Great Britain will find much in the papers and reports read before the Congress which it will be useful to them to know, and while we may possibly have something to learn from other countries on the subject of professional organisation, they on their part might usefully study the development of the British Medical Association as far as it has yet proceeded. The first thing necessary, of course, was to unite the great majority of the profession in one body with local branches, and this has already been done. Among the questions which press for solution in the near future is this—How shall the united force thus generated be utilised for the general good? As to the best modes of accomplishing this object, and as to the scope and direction of the efforts to be made towards its attainment, some useful hints may perhaps be derived from a careful study of the facts and arguments brought before the Paris Congress of Medical Deontology.

LUNG DISEASE IN THE ROYAL NAVY.

Captain Rason, R.N., has recently drawn attention to the amount and progressive increase of diseases of the respiratory organs, as evidenced by the Statistical Reports of the Health of the Navy for the years 1868, 1883, and 1898, the last issued. In our opinion he has, as a layman, underestimated the gravity of this matter, as since Koch's discovery of the tubercle bacillus the classification of lung disease has slowly been modified in the Statistical Reports referred to, and cases, formerly classed as diseases of the respiratory organs, are more and more appearing under tuberculous diseases, contagious tubercle being the cause of the lung disease in many cases. In support of this view, the statistics of the last decade of the Reports mentioned may be quoted, where we find the ratio per 1,000 of the total force of the Navy thus given: In 1888, tuberculous diseases, cases 0.43, invalided 0.19, deaths 0.09. In 1898 the ratios are respectively 2.68, 1.67, 0.35. Diseases of the respiratory system: In 1885 the ratios are 81.32, 3.99, 0.91. In 1898, 103.59, 3.79, 0.98.

The latter ratios are those quoted by Captain Rason, in his letter to the *Times* of August 16th. He there appears to suggest that the virtual abolition of sails in our present navy, and the consequent absence of night-watches

with about half the seamen employed frequently in making, furling, and trimming sail, in all weathers, should have led to a diminution of lung disease. May not this, however, have had the opposite effect? The available space for the berthing of the crew in men-of-war at all times is limited—in modern vessels possibly more so than formerly, owing to the space occupied with engines, coal bunkers, etc. In the days of the sailing ships at sea, the men employed on watch on deck left more space available for those berthed below. Further, may not their extra "open-air" life have tended to check the development of the tubercle bacillus, even though their diet was hardly equal to that required by the Nordrach system?

The familiar expression, "catching cold," is better understood in these days of recognised microbic diseases, and it can hardly be doubted that overcrowding in berthing favours the propagation of colds or "catarrh" according to official nomenclature. It is stated that Nansen's crew suffered from colds only when they returned to civilisation, and there are other well-authenticated cases of colds being communicated to previously immune populations.

In view of the startling fact of the increased and increasing amount of lung disease in the navy, its prevention is worthy of serious consideration, and we are not devoid of hope that much may be effected to this end.

Already attention is given to the ventilation of the berthing space for the crews in the navy, though here further measures are requisite to prevent the men tampering with it; but in our opinion much may yet be done to check the dissemination of the most serious lung disease met with among our sailors—namely, tubercle.

Bacteriology has recently been introduced into the course of instruction for surgeons entering the navy, though, as far as we are aware, no means have been provided for their pursuing such research on board ship. Were medical officers provided with microscopes of adequate power, and the staining reagents requisite to detect the tubercle bacillus in the early stages of pulmonary phthisis, the patient could be removed from the possibility of disseminating the disease among his shipmates, and his own hope of recovery from incipient tubercle of the lung would be greatly favoured.

As regards the construction of ships, we would only refer to the improved health returns from the depôt ship at Port Royal, Jamaica, when an iron ship was substituted for a wooden one.

THE ACTION OF HÆMOLYSINS.

IT is a matter of general knowledge that when living micro-organisms gain access to the circulating blood, among other protective substances elaborated by the system in consequence, are those which cause disintegration of the bacteria and have therefore been called "bacteriolysins." Similarly when the blood of one animal is introduced into the circulation of another of a different species analogous bodies are produced which cause disintegration of the foreign red blood corpuscles, and these are usually known as "hæmolysins."

The first step in our knowledge of the nature of hæmolysins was gained when Belfanti and Carbone found that if the blood of rabbits were injected into the blood stream of the horse its blood serum became toxic for the rabbit, while normal blood serum from the horse was harmless. Bordet then discovered that this toxicity was due to a specific substance which dissolved the red blood corpuscle—a hæmolysin. He later proved that the blood disintegration or hæmolysis depended on the mutual action of two bodies, one a very stable body developed by the system after the introduction of the foreign blood, and the other an unstable body invariably present in healthy blood serum. He showed in fact that the hæmolytic power could be destroyed by heat, and made to reappear by the addition of normal serum. It will be remembered that almost precisely the same facts appertain to the activity of bacteriolysins. Ehrlich and Morgenroth have since proved that the former stable body existed under certain conditions of temperature in the red blood corpuscles themselves, while the unstable body was always in the serum. It has also been ascertained that the serum of some animals can dissolve the blood corpuscles of animals of different species; thus the serum of the dog can dissolve the corpuscles of the rabbit, guinea-pig, rat, goat, and sheep; and Ehrlich and Morgenroth have produced evidence which seems to indicate that there is a specific stable hæmolytic substance in the blood of the dog for each of the various kinds of foreign blood.

Quite recently Metchnikoff has pointed out that these abstract discoveries may have a definite influence on the treatment of disease. He has performed experiments which appear to show that by the injection of small quantities of hæmolysins into the circulation both of the lower animals and of man blood formation is actually stimulated. Without venturing to suggest a similarity in the *modus operandi* of cause and effect it is to be remembered that the possibility of stimulating blood formation by the withdrawal of a portion of the circulating blood in the lower animals is no new fact, and, indeed, venesection has been advocated as a means of treating anæmia in the human subject. But cellular toxins other than those acting on the red blood corpuscles—other than the hæmolysins—are now recognised. Thus, by injecting the substance of lymph glands into the blood a serum is obtained which dissolves leucocytes, and the same thing obtains for ciliated and renal epithelium. Metchnikoff, therefore, makes a wider generalisation, and asks if it is possible that the tissues of the body generally may be favourably influenced by the injection of small quantities of appropriate serums, just as small injections of hæmolysins favourably influence blood formation. In bringing the matter to experiment it was in the first place demonstrated by Drs. Cantacuzene and Besredka that the hæmolytic poison for the red blood corpuscles of the rabbit and the leucotoxic substance for the white blood corpuscles of the rabbit and guinea-pig markedly increased the number of the corresponding cellular elements of the blood, when injected in small amounts, and that for a comparatively prolonged period.

Similar observations in regard to man were already on record—they were the result of attempts to treat leprosy by a serum method. Carrasquilla and Laverde (Columbia) and several other leprologists have attempted to obtain a curative serum for leprosy by injecting the blood of leprous patients into animals. The serum obtained was unques-

tionably hæmolytic for man, as was proved by the hæmoglobinuria which followed the injection of a large dose, and it certainly seemed to exert in several of the cases a distinctly beneficial effect on the course of the disease. It may be taken as sure, we are told, that the particular serum employed contained the hæmolysins and leucotoxins in question, together with doubtless other cellular poisons. In Metchnikoff's experiments, which were conducted with the assistance of Dr. Besredka, of the Pasteur Institute, goats were used, into which defibrinated human blood had been several times injected, to furnish a serum that rapidly dissolved the red blood corpuscles of man. On injecting very small doses of this hæmolytic serum into three leprous patients they found after each injection a definite increase both in the number of the red blood corpuscles and in the amount of the hæmoglobin. This increase, which lasted several days, became more marked as the dose of the serum was increased. It was found that the injection of 5, 7, or even 8 c.cm. of the serum was quite well tolerated.

When for four months four lepers had been treated on these lines, it was decided to institute control observations on two other patients afflicted with leprosy who gladly submitted themselves to the treatment. In one of these who received an injection of only 0.5 c.cm. of a strongly hæmolytic goat's serum, there was an increase in the number of red blood corpuscles, and also in their hæmoglobin, manifested over a period which could only be measured by hours, while in the other patient who received an injection of 5 c.cm. of the same serum, the increase in both directions was evident during a period of three weeks. As a subsequent step, five days after the blood of the first patient had returned to its original condition, 3 c.cm. of serum were injected when, after a slight fall, the number of the red blood corpuscles rose greatly, and the amount of the hæmoglobin increased to 120 or 125 per cent. of its previous value. Before the blood of the second leper had returned to its former state, three weeks after the first injection, 3 c.cm. of serum were injected with a corresponding rise in the richness of the blood. Not only, it is stated, were no untoward effects observed, but the neuralgic pains from which the patients had previously suffered were distinctly relieved.

The good effects in these cases the investigators seem to be inclined to attribute rather to the leucotoxins than to the hæmolysins; whether this be so or not, and whether, indeed, the improvement in the corpuscular and hæmoglobin richness of the blood was in reality quite what it appeared to be—the occurrence in particular of a definite increase which can be measured as regards time only by hours, seems to us to need great safeguard against fallacy before it can be substantiated—it appears to be fairly well established that when a hæmolytic serum in small but increasing doses is injected in animals and in man, or at any rate in leprous persons, blood formation is stimulated more or less energetically, and for a more or less prolonged period of time, the degree of the stimulation and its duration depending on the magnitude of the dose. In any case, the evidence adduced goes to swell the body of probability that small quantities of cellular toxins may exert a stimulating influence on their corresponding cellular elements, and that they may possibly be effective in augmenting the resistance of the tissues, an end which would be of infinite service, particularly, as Metchnikoff points out, in those diseases whose pathological cause is uncertain, and those in which it cannot be reached by available therapeutics.

PLAGUE IN GLASGOW.

Our Glasgow correspondent, telegraphing on August 30th, says: "Some cases of supposed plague have occurred here. There have been two deaths. Nine suspected cases are now in the Belvidere Fever Hospital, and 50 persons are isolated in reception house for observation. Professor R. Muir's report expected to-day." The first suspicious case seems to have occurred on August 20th, when a child sickened and died within forty-eight hours in a dwelling-house at Thistle Street, South Side. The illness was at first thought to be acute pneumonia, but on the second day the mother of the child also sickened, and subsequently the father likewise became ill. The parents, along with another person residing in the same tenement, all three supposed to be suffering from enteric fever, were removed to Belvidere Hospital, where the medical staff detected symptoms which led them to suspect bubonic plague. According to the *Times*, the authorities are fully convinced that the disease was contracted at a "wake" over the body of the wife of a quay labourer named Hugh Bogie. This man has been removed to the hospital for observation. The isolated families, except for the three new cases, all report a clean bill of health. Professor Muir is carrying out a series of experiments the results of which will be communicated to the authorities. If the plague spreads Glasgow shipping will be put in quarantine. The Scotch Office is in communication with the Scottish Local Government Board in reference to the outbreak of alleged bubonic plague in Glasgow, but has not yet received any official report thereon. All precautionary measures will be left in the hands of the Scottish Local Government Board in Edinburgh, and the local authorities will be assisted in every way in their efforts to isolate the cases and prevent the spread of infection in the event of the outbreak developing and proving to be true bubonic plague or other virulent contagious disease. The Paris Correspondent of the *Standard* telegraphs that the outbreak of bubonic plague in Glasgow is causing the French authorities some anxiety, and instructions have been issued to the medical officers at the various ports concerning the measures which are to be taken in case the epidemic should declare itself. The Pasteur Institute in Paris was during the night advised of the outbreak, and the Medical Officer of Health of Glasgow sent a request to the Institute that they would at once forward a quantity of anti-pestiferous serum sufficient to inoculate about fifty persons. The serum was despatched at once to Glasgow. The Press Association's Glasgow correspondent, telegraphing at 3 P.M. on August 30th, states that Professor Muir's report upon the alleged bubonic plague has not yet been presented, and in all likelihood will not be available for publication. The number of cases has increased to 11, but 5 out of the 11 patients are presumably suffering from enteric fever, with some symptoms of the plague. Most of the cases are, however, serious. As we go to press we learn by special telegram from Glasgow that one of the cases in hospital, in which death occurred, is now definitely regarded as due to plague.

THE SANITARY AUTHORITY AND THE PLAGUE.

Several newspapers are commenting upon the methods adopted by the Sanitary Authority of the Port of London, and whilst criticising unfavourably what they think they have actually seen amiss, mention the Medical Officer by name. We would remind these critics that

Dr. Collingridge has for many years so carefully guarded our chief port against the inroads of disease from abroad, and especially from tropical countries, that we have never had an outbreak of any of the many diseases which so frequently reach our shores. The public may have the fullest confidence that the safety of the country is being well looked after by the experienced medical officer of the Port of London. Comment is also made upon the tardiness with which plague is being recognised by the sanitary authority, and the fact that the disease has not been instantly diagnosed is considered matter for acrimonious notices and comments. We would remind those who are interesting themselves in this matter that the signs and symptoms of plague are not of such a character as to lend themselves to speedy diagnosis. One man may have pneumonia; another a swelling in the neck; a third may be delirious as from heatstroke: whilst a fourth may suffer from intestinal flux. That these diverse ailments should suggest a common origin and infection is improbable; and in this the inherent danger of the importation of plague exists. Were plague stamped with symptoms as definite as, say, smallpox, there would be but little chance of infected persons getting ashore from ships; it is owing to the insidious and complex nature of the disease that plague finds its way over the world. We are not inclined to cavil at the non-recognition of the disease; in the present state of our knowledge it is only by the microscope and by bacteriological investigation that a suspected case can be proved. And as plague simulates almost any and every well-known disease it would come to this—that were an invasion of plague threatened, even sick persons from our ships would have to be tested for plague. What we do want to be assured of is this: Given a case, or a number of cases, of plague, what is to be done with them? Have we provision for their accommodation? have we quarters for the "contacts" other than the dock sheds on our wharves where, we gather, suspects have been quartered? Do medical men know what to do with a case of plague should they meet with one? The usual medium—the Metropolitan Asylums Board in London—is not available or equipped for such an emergency, and we know of no other organisation by which cases of plague and those who have been in contact with them can be instantly dealt with.

THE LONDON COUNTY COUNCIL'S INEBRIATE REFORMATORY.

LAST week the Inebriate Reformatory for Females, established by the London County Council at Farmfield, near Horley, was opened for the reception of inmates. This, we hope, marks the dawn of a new era of increased energy in combating drunkenness on the lines indicated in the report of the Select Committee of 1894, and in pursuance of the statutory powers conferred on county councils by the Act of 1898. Despite abundant criticism from magistrates and others, we are disposed to think that the London County Council has acted wisely and prudently in dealing with this matter. It has, we understand, utilised so far as practicable existing agencies for the treatment of inebriates within the meaning of the Act. It entered into contracts with two out of the three certified reformatories in England, namely, Lady Henry Somerset's Home at Duxhurst, and the Roman Catholic Reformatory at Ashford. The Council contributes one shilling a day per head for the maintenance of London cases sent to these institutions, and this carries with it the half-guinea grant per head per week authorised by the Treasury from April, 1899, for three years. Some nineteen female cases are now under treatment at Duxhurst, and some forty at Ashford, for whom the London County Council contributes maintenance grants, and we understand that the contracts with these homes, which were entered into for one year from July, 1899, have been recently renewed. Time and experience alone can show the scope and value of the social betterment contemplated by recent legislation. The object aimed at is nothing less than the rehabilitation of the human will, and the period mentioned in the Act of 1898, namely, "a term not exceeding three years" even at its maximum, is probably not too long for the achievement of the end in view. In regard to the number of persons for whom it may be desirable in the interests alike of society at large and the ratepayer in particular to provide and maintain these reformatories it is not possible to speak with precision. Section 3 of the Act under which the new reformatory at Farmfield has been established provides that any person who commits any one of certain scheduled offences in which drunkenness is the main ingredient, and who within twelve months previously has been convicted summarily at least three times of any such offences, and who is an habitual drunkard, shall be liable upon conviction upon indictment, or if he consents to be dealt with summarily on summary conviction, to be detained for a term not exceeding three years in any certified inebriate reformatory, the managers of which are willing to receive him. It is manifestly intended that the new system is to provide a welcome alternative to the futile and discredited system of attempting to cure drunkenness by short terms of imprisonment. However sanguine or sceptical one may feel inclined to be as to the prospects of the reformatory plan, competent opinion is practically unanimous as to the dismal failure of that system, which has hitherto been almost exclusively resorted to. It is stated on the authority of those who have had most experience in regard to voluntary retreats for inebriates, that some 50 per cent. of the cases treated are reclaimed to habitual sobriety. Much, however, necessarily depends on the age, disposition, and environment of the individual, to say nothing of the hereditary factor. Managers of reformatories will not only be justified but will be well advised in exercising the greatest care in selecting suitable cases on which to try the influences of the new system. The enhanced amenities of a well-contrived reformatory over the prison cell must secure not merely the advantage to society of the segregation of the drunkard, but must reform the individual; the object of the reformatory must ever be not penal but remedial. We observe that the Act of 1898 enables a Secretary of State to establish a "State" reformatory for criminals who, under the influence of drink, have committed offences punishable with penal servitude. We are not aware of any action which has yet been taken under this power. It may well be that the Imperial Government is not unwilling to watch the experiments which county councils are invited and indeed incited to take under the same statute. In this as in other directions the intermediate agency of county councils is invoked where an initiative might have been expected from the fountain head. The reformatory at Farmfield is intended for females, although, we understand, the question of providing a male reformatory on the same estate is engaging the active attention of the committee which has the matter in hand. There are more than 300 acres of land attached to the estate, and we gather from the committee's reports that this was purposely acquired with a view to considerable expansion as their experiment develops and with especial regard to the great advantage to men and women alike of active outdoor work in overcoming the craving for alcohol. The new reformatory is pleasantly situated midway between London and Brighton, about two miles from Horley station, in the midst of a beautiful country. Two mansions on the estate have been modified to suit the purpose for which they are intended, and their appearance belies the usual barrack-like structure which the very name "reformatory" is apt to call up in the mind. A large and well-stocked kitchen

garden is attached to Farmfield House, and at the home farm, some 300 yards off, is a dairy farm with a well-appointed cowhouse, dairy, and bakehouse. A fruit farm is shortly to be laid out and the electric light installation, a costly item, is nearing completion. Mrs. Matthias, formerly of Bath, is the lady superintendent, and is assisted by a staff of five sisters. The accommodation already available is for 30 inmates, but we anticipate the work will develop and a rapid expansion may very soon be necessitated. We know there are those of the temperance party who regard reformatory work of this kind with suspicion—if not with dislike—as a tinkering with the drink evil at the wrong end. The restriction or the extinction of public-houses is with such the only panacea. While, however, the attainment of that goal does not appear as yet to be within measurable distance—and its advent is not accelerated by recent dissensions within the temperance party itself—we who have learnt the inter-dependence of mental and physical disease with habits of drunkenness, who are convinced by reports innumerable from medical officers of asylums and gaols, to say nothing of the domestic tragedies to which every practitioner can bear witness, are profoundly convinced of the value to the body politic of this new departure in municipal philanthropy, which is in our opinion alike demanded by a sense of public duty and justified by scientific knowledge.

RED CROSS WORK IN SOUTH AFRICA.

In a letter published in the *Times* of August 27th Lord Wantage gives some extracts from letters received from the Red Cross Commission in South Africa which show the good work being done by the Society and also throw light on the difficulties encountered in pushing up stores and supplies along the lines of communication. The Head Commissioner, Sir John Furley, writing from Capetown on July 30th, quotes as a specimen of the requisitions they sometimes receive, and with which it is not expedient to comply, the following telegram from Bloemfontein: "Urgently required: 50 small reading lamps, 50 packs of cards, 72 tumblers, 36 small jugs, 50 spittoons, 100 ash trays, 48 easy chairs, all sizes; Pears' and fancy toilet soaps, 24 Beatrice stoves, 24 small saucepans, 72 teaspoons, etc." He says it cannot be too strongly insisted on that the Red Cross Society acts only as a supplement to the R.A.M.C., to supply such comforts as the doctors recommend, but which do not come within the catalogue of army supplies, and that only under the stress of special circumstances can they step in and furnish those which official means are unable to give. He hopes that a time is rapidly approaching when War Office forms will be of a more simple character, and when an item of 2s. 6d. will not cause more trouble than one of £3,000 in a well-ordered commercial house. He has travelled about 9,000 miles in South Africa, and in his visits to stationary and field hospitals, including those maintained as private undertakings, he has naturally noticed considerable difference; but it is not a fair comparison to make a hospital at the base the standard for those close up to the fighting line. He recognises that the first duty of a Commander-in-Chief is to get his forces to the front, the second to see that they are provided with food and ammunition, and that hospitals and the transport of sick and wounded must occupy the third place. He has never expected, immediately after a battle, to find hospitals ready furnished with bedsteads and bedding for the reception of patients. There are, he says, military hospitals now in South Africa which for luxury surpass anything that has ever before been seen in war. It is, however, unfortunate that an ideal standard has been created which cannot be maintained throughout a campaign, carried on over such a vast extent of country as in the present war, and at a distance of more than 6,000 miles from home. He acknowledges that cases can be mentioned in which things ought to have been better, but he has no sympathy with the abuse which has been so freely, and often so ignorantly, bestowed on the medical branch of the British army. His intimate acquaintance with the work of the Red Cross enables him to appreciate the efforts of those who are responsible for the hospital arrangements of the Army. It has often happened that they have had truckloads of stores ready to send forward to places where they were urgently required, but have been compelled to yield the road to the pressing exigencies of the combatant portion of the army. Their supplementary aid has on every occasion of great necessity been as rapidly put at the disposal of the army medical officers as circumstances would admit; and more than once the agents of the Red Cross Committee have been the first to place hospital comforts where most needed at the front simultaneously with military stores. Mr. Kenworthy, acting agent of the Society at the front, writing from Bloemfontein on July 18th and 19th, says that on arriving there he found that for four or five days there had been no railway communication with Johannesburg and Pretoria. When it was again open he tried to get permission to send a truck-load of stores through to Pretoria, etc. The line was completely blocked. He adds that he knows it is with the greatest difficulty they can keep the troops supplied with food and necessities, and it is much worse than it was, as there are so many more troops being fed from the line north of there. A good many small hospitals at Senekal, Ficksburg, Ladybrand, and other places, have been applying for stores, but it is very difficult to find ways and means of getting the things sent out to them. Every convoy has to have an escort, so they only send them where absolutely necessary, and then they often are loaded with food supplies. Mr. G. Bonham-Carter, the second Commissioner, now acting in Natal, writing on July 14th from Durban, says that among the many hospitals he had visited was the 7th Brigade Hospital at Newcastle, which was in charge of Major Cator-Jones, R.A.M.C., who struck him as being a very good and efficient officer. He was much interested in this hospital, which has an Indian equipment and transport, "tonga" ambulances and "dhoolies." Everything Indian seems, he says, more practical than the home productions. Coming down he stopped at Mooi River and went over No. 4 General Hospital most thoroughly. This is a tent hospital with huts for stores, operating theatre, etc. The hospital is most complete, and, apart from the extreme cold at night, even luxurious. The water supply from the Mooi River was of fair quality, and it passed through a large Pasteur-Chamberland filter before use. They had a plentiful supply of stores of all sorts, which they assured him they could get without delay from Medical Store Depôt, Ordnance and Army Service Corps, and they could think of nothing to ask for from the Society except some things for their recreation room and some garden seats. Mr. Bonham-Carter adds that he had gone into some detail in view of the rather hysterical talk in the newspapers as to "hospital scandals." As far as Natal is now concerned, at any rate, these complaints are not justified.

THIRST, REAL AND ARTIFICIAL.

Either Mr. Barlow or one of his interesting pupils probably Master Sandford, said that he ate when he was hungry and drank when he was dry, and, by implication, at no other time. Some correspondents of the *Times* have recently been endeavouring to show, if we do not misrepresent them, that Master Sandford probably felt dry more often than was necessary or right. The desire for food, air, and water is doubtless a primitive instinct of animal life depending primarily on the condition of the blood, but the sensation popularly called "feeling hungry" or "thirsty" is something different. That the urgent need of the

organism for nutrient material and these specific sensations are not identical may be proved by temporarily removing the sensation without supplying food substances. A piece of sponge introduced into the stomach would conceivably relieve the sensation of hunger for a time, that is the desire but not the need for food; so would drinking a little water, or eating some indigestible sweetmeat, or even tightening up a waist belt. Conversely, the desire for food may be produced by other than natural causes, as by the action of stimulating or gently irritating substances on the lining of the stomach. Or the habit of overeating may be developed, when the victim is said to be gluttonous; or the appetite may taken a morbid direction, as for chalk or earth or hair, and the patient is said to suffer from a depraved appetite; or in a not quite parallel case he may acquire the habit of eating solid opium, and may properly be classed as a morphinomaniac. The correspondence alluded to deals mainly with the desire to drink—either water or watery fluids in excess of the needs of the organism. The writer of the first letter referred to the risks run by our soldiers in South Africa of acquiring typhoid fever from drinking infected water, and he argued that the longer a soldier could keep from drinking water the better was his chance of escaping the disease, and that the frequent drinking, being unnecessary for the requirements of the body, was an "artificial thirst." A second correspondent emphasised the supposed evil of drinking anything between meals, and advanced the opinion that the free drinking of water was an important contributing cause of sunstroke, and that the drinking of water between meals was the chief forerunner of drinking alcoholic liquors at irregular times. Another correspondent—an experienced traveller in tropical countries—maintained that with an external temperature of 100° F. a man needed a gallon of water a day, and that the proper time to drink it was after sunset, when the products of muscular waste could be washed out, during the time that perspiration was not excessive. As in the case of hunger, so thirst for water depends essentially on the state of the blood and the tissues, of which it forms a very large part in actual bulk. The specific sensation of thirst is a roughness or dryness referred to the back of the throat, which can also be produced by other conditions than a deficiency of water, as, for example, by the habit of breathing through the mouth rather than the nose, the proper respiratory channel, particularly in a hot, dry, and dusty atmosphere, or by eating a large and indigestible meal. In such case frequent drinking will probably be the rule so long as the unnatural conditions persist. But in those natural conditions of heat and exercise which conduce to profuse perspiration, whereby pints of water may be lost through the skin in the course of a few hours, there is obvious need for the replacement of the fluid which is necessary to metabolism. To withhold it is, in fact, nothing short of torture to animals. It is futile to say that because all water in a district may be infected with typhoid germs, therefore the private soldier should drink little or none. It might as well be said, seeing that typhoid is spread largely by the air, that the longer he holds his breath, or the less frequent and shallow his respiration during violent exertion, the less will be his risk of contracting the disease. The man cannot rightly drink less than he really needs, and he must take his chance of his bodily resistance being adequate to cope with the disease germs. Typhoid patients and their friends have not the infected water to blame, but the solid infective particles which it contains. Similarly, in the case of alcoholics, it is not the drinking which is dangerous, but the drinking of adventitious complex chemical substances. As hunger is no essential part of morphinomania, so thirst is no essential part of typhoid fever or of dipsomania. The good effect of large quantities of water taken at night in tropical countries alluded to by Dr. Flinders Petrie as a proper means of removing the soluble waste products from the system has its parallel in the effect of drinking diuretic waters, usually in the morning, at the various spas. To those who think that drinking at irregular times leads to alcoholism, it might be pointed out that an alcoholic does not drink because he is in any sense thirsty; it is not the water but the toxic alcohol that it contains which he craves, any more than an opium eater prefers to take it solid in order to satisfy his hunger. Practical indications brought out by the discussion among others are that water for the troops should be supplied in ample quantities, and if it can be boiled or filtered so much the better; that it is not well to drink copiously with meals; that it is no gain to drink largely of cold water when greatly heated. To do so acts deleteriously in at least two ways: first, it may increase the sensation of thirst, just as ice allowed to dissolve in the mouth often does, presumably by increasing the vascularity of the fauces by a sort of reaction; and secondly, it may increase the "dryness" of the tissues by directly stimulating perspiration. Under all conditions of virtual or throat thirst, perhaps the best plan is to sip warm water or take it in teaspoonful doses. But where water is not needed by the system, the throat dryness may be relieved by substances that will increase the flow of the saliva, either by sucking a pebble, or by taking acid fruit, or by washing out the mouth with water and using it as a gargle, or in either case by adding oatmeal or some other demulcent to the drinking water, and by avoiding mouth breathing. A bibulous Scotchman once complained that people "talked and talked" about his drinking, but never talked about his "drought." To avoid this reproach, it might be advisable to study the conditions which govern the dryness, say, of Master Sandford.

THE SALT LAKE CURE.

AN interesting account is given by Dr. A. Baginsky in the *Deutsche medicinische Wochenschrift* (Nos. 32 and 33, 1900) of a visit he paid recently to the limans near Odessa. "Limans" are sheets of water originally connected with the sea, but which, by a process of gradually silting up, have been isolated and converted into salt lakes. Owing to evaporation their waters have become concentrated, and are found to possess considerable therapeutic value. At Odessa there are three of these limans, the Kujalnitzki, the Chadjebeiski, and the Liebenthal, the two former being the more important. They lie near the sea, surrounded by sand dunes. The temperature of their waters ranges in summer (June to August) from 56.7° to 88.2° F. The principal salts they contain are the chlorides of sodium, potassium, magnesium, calcium sulphate, and magnesium or sodium bromide. The Chadjebeiski liman contains in addition considerable quantities of magnesium sulphate. Their floors are covered by a black slimy substance about the consistence of cold cream, alkaline in reaction, and having a strong smell of sulphuretted hydrogen. It is composed of a sponge of animal and vegetable matter impregnated with salt water, and contains iodine, bromine, sulphur, sulphuretted hydrogen, oleic and valerianic acids, etc. Patients bathe either in the open air or in baths with the water at various temperatures and degrees of concentration. They also have slime baths and sand baths. The slime and salt water are also used for local applications, compresses, etc. The slime baths are employed heated by the sun or by steam, the former being considered the more efficacious. Their chief action seems to be the induction of a profuse perspiration. Headache, palpitation, and dyspnœa are sometimes set up. The diseases treated at the limans are chronic rheumatic affections, scrofula, rickets, traumatic contracture and stiffness of the limbs, and certain chronic skin diseases. The treatment is contraindicated in cases of phthisis, arterio-sclerosis, serious

heart disease, etc. Considerable discomfort (depression of spirits, digestive disturbances, palpitations, etc.) is frequently experienced at the beginning of the cure, but soon passes off. The "liman cure" is becoming increasingly popular. At the Kujalnitzki, five or six miles out of Odessa, elaborate bathing establishments have been erected, where last season no fewer than 232,318 baths were taken. Thirty-three per cent. of the patients suffered from chronic articular rheumatism, 495 were scrofulous, 254 anæmic. The Chadjebeiski liman is about an hour's rail from Odessa, and possesses, in addition to the ordinary bathing accommodation, a sanatorium for children. How much the latter benefit by the treatment is shown by a table appended to his article by Dr. Baginsky.

UNIVERSITY OF LONDON GRADUATES' UNION.

The fact that under the new constitution of the University of London the registered graduates have a larger share than before in the government of the University has (as we learn from the *Times*) led to the formation of the University of London Graduates' Union, the objects of which are to support and strengthen the reconstituted University as a whole; to promote its interests; to keep the graduates who are members of Convocation in touch with the University and informed of all important movements concerning it. The management of the union will be in the hands of a general committee, advised by committees representing each of the groups of graduates as divided for electoral purposes (arts, law, science, music, and medicine) and by local branch committees now in course of formation. The officers are: *President:* P. H. Pye-Smith, M.D., F.R.S.; *Secretaries:* H. J. Harris, B.A. (Arts); C. F. T. Blyth, LL.B., B.Sc. (Laws); F. W. Oliver, D.Sc. (Science); W. H. Sampson, B.A., B.Mus. (Music); L. E. Shaw, M.D., and W. Pasteur, M.D. (Medicine); *General Secretary:* T. Gregory Foster, B.A., Ph.D.

MEDICAL MEN AND CLUBS.

In the London *Recorder* for August 18th will be found an article on the relations of medical men to clubs, which commences under an apparent misconception of a paper read by Dr. Cuylitz of Brussels before the Paris Congress of Medical Deontology, and ends with some very questionable conclusions. The writer's idea appears to have been that Dr. Cuylitz's design was to treat the wounded dignity of the medical profession in the matter of small fees, whereas if he read through the abstract of the paper from which he quotes, he ought to have seen that Dr. Cuylitz's object was rather to define the terms on which concessions might rightly be made by the profession to clubs exclusively composed of working men, so as to prevent the abuse which now prevails extensively both in England and on the Continent, of mean well-to-do people taking advantage of such clubs in order to save doctors' fees which they could well afford to pay. Dr. Cuylitz's proposal is that under no circumstances should annual club payments such as we are accustomed to in this country be accepted by the profession. He recommends that the system, practically the same as that adopted by the National Deposit Friendly Society in this country, of paying separate fees on a reduced scale for each visit or consultation, should be the only one, and even this only on condition that the medical benefits of the club are restricted to the working classes. We are not sure that all club surgeons in this country would agree with Dr. Cuylitz's views, especially in his assertion of the right of clubs to reduced fees. The *Recorder* goes on to say that trade societies and clubs do not want charity from the profession, nor do they get it, and that the payments made to doctors by clubs are made on ordinary business principles. From this one might gather that the writer imagined that a rate of half a crown a year is fair payment for a doctor's services at all hours of the day or night from men earning two or three pounds a week; but a few sentences further on we are told that the medical profession would like to raise the minimum limit for fees, and so give the doctor the value of his attendance. That is precisely the object which Dr. Cuylitz had in view, and whether we agree with the means he proposes or not, we shall all agree that the principle is right, nor shall we be frightened by the *Recorder's* prophecies of the ill effects of trades unionism on the profession from seeking means to get the principle carried out.

THE UNIVERSITY OF BIRMINGHAM.

We have received a letter from Sir James Sawyer complaining that the University of Birmingham was omitted from our enumeration of the British Universities in our article on Medicine as a Career in the British Medical Journal of August 25th; and also that the University of Birmingham was not awarded a full and separate description among the provincial schools of medicine, Birmingham figuring under the antiquated heading of the amalgamated "General and Queen's Hospitals." In consequence of the comparatively recent date at which the new University received its charter and became empowered by Act of Parliament to give degrees in medicine, we failed to give an adequate presentment of the actual state of things in Birmingham. While expressing regret for this we wish to point that the failure was accidental as is shown by the account of the University which we printed on page 479, and the references in the summary of the provincial medical schools in the paragraphs preceding their detailed description. We are fully aware that no school has made, or is making, greater efforts to bring itself abreast of all that is required in equipment and organisation, in order to provide the best modern education in medicine, and at Mason University College, now merged as a corporation in the University of Birmingham, at the General and Queen's Hospitals, and at theo ther special hospitals in the city splendid facilities exist for obtaining every kind of professional instruction.

THE TEMPERATURE OF UNDERGROUND RAILWAY TUNNELS.

Not very long ago it was gravely suggested that certain stations on the Underground Metropolitan Railway, where the air is most sulphurous and the general conditions simply Stygian, were useful as sanatoria for convalescent railway porters and for those suffering from phthisis and "delicate chests." It seems now that the latest accession to our underground railway system has hygienic properties of a different kind. It has been stated that a person who had suffered from anorexia for 18 months suddenly developed ravenous appetite after a single journey by the new underground electric railway, popularly known as the "twopenny tube." From the repetition of a similar therapeutic journey every two or three days this satisfactory state of affairs has been so well maintained that in his case an actual pecuniary profit has been achieved from the discontinuance of tonic remedies which have become needless. The two facts—the journey and the appetite—certainly seem conceivably connected when it is possible that the passenger went from an above ground atmosphere with a temperature of perhaps 80° F. to a tubal air of, say, 50°, thus adopting a convenient and expeditious method of counteracting any tendency to heat prostration that may have been present. But the more general opinion seems to be rather in the other direction, that the abrupt change in temperature together with the gale of wind, maintained as is probable by a system of fans, acts injuriously on persons who descend the lifts in a condition of profuse perspiration. In any case, it is probable that the ideal which the company is reported to have set before it of keeping the tube at a constant temperature of, say, 55° F. winter and summer is not a wise one. The harmfulness of temperature variations depends in great measure on their abruptness, and it is arguable that a system of keeping the

underground temperature a few degrees below the outside temperature in summer and a few degrees above it in winter would, if feasible, be a more excellent way.

EMPLOYMENT FOR CONSUMPTIVES.

AT a recent meeting of the members of the Holbeck and Hunslet Social and Sanitary Association, Dr. Woodcock, the President, delivered a short address on the subject of finding suitable employment for consumptives. Dr. Woodcock said they could not permit those who were cured or partially cured of consumption to return to their former conditions of life and labour if such conditions were deemed inimical to health. In many cases they would be but sending patients to a grave from which they had been endeavouring to rescue them. No consumptive could be absolutely cured under two years' treatment, and they did not propose to keep their patients at their public sanatoria such a length of time. What he wished to see established was a fund to enable experiments to be made. He had recently visited Norfolk and Suffolk, and a cottage had been put at his disposal for this purpose in Norfolk. Other offers of help had been made, and it was hoped that the undertaking thus started would speedily be put upon a proper footing. There was no infection to be feared in the case of a cured patient. At Nordrach no case of infection arising from the aggregation of consumptives had been observed, and the chances of infection could always be readily minimised. As for suitable work, there was turnip hoeing, stacking, gardening, wood cutting, and other outdoor occupations, about which little reservation was necessary. That was agricultural work. They, however, wished to find work of a suitable character nearer home. It was informally decided that the project should have the warm support of the Association.

A PROPOSED EPILEPTIC COLONY NEAR MANCHESTER.

THE David Lewis Trustees are engaged in completing arrangements for another munificent gift to the public, representing a sum which may possibly approach £100,000. There were negotiations a year or two ago between the trustees and authorities of the Southern and St. Mary's Hospitals, Manchester, with a view to the presentation to the city of a hospital for women, which was to cost about £60,000. These negotiations, for reasons stated in the BRITISH MEDICAL JOURNAL at the time, fell through. The Trustees have now decided to purchase a considerable estate at Warford, which is close to Chelford and Alderley Edge. Here preparations are being made for the erection of extensive buildings for the accommodation and treatment of epileptics. It is said that the sum of £50,000 is to be expended on the buildings; but the probability is that this amount will be exceeded. Every effort is being made to produce a thoroughly up-to-date and efficient modern institution in which the most advanced scientific treatment may be given. The Trustees have had the advantage of the cordial co-operation and advice of Dr. Rhodes. The new colony will not be designed for the reception of pauper patients, and the scheme must not be confounded with that of the Joint Committee of the Manchester and Chorlton Unions, which is said to contemplate the erection of a hospital to accommodate about 1,000 epileptics and imbeciles under the care of the Boards.

AN ASSOCIATION OF INSURANCE MEDICAL OFFICERS.

AN Association of American Insurance Surgeons and Examiners has recently been formed. A meeting was held at Vincennes, Indianopolis, which was attended by about 400 medical men engaged in insurance work. As the result of this meeting, the new Association was formed. The number of medical insurance examiners in the United States is variously estimated at 40,000 to 54,000. The "old line" of regular insurance offices paid during 1899 about 3,000,000 dollars (£500,000) in fees for medical examinations. Other companies, such as stipulated premium life insurance companies, casualty companies, co-operative insurance associations or societies, fraternal beneficiary orders or associations, etc., in the same year paid an amount running into hundreds of thousands of dollars. Some first-class companies in the States pay three or four hundred thousand dollars for medical examinations, and even second-class companies pay from twenty-five to thirty-five thousand dollars.

LEPROSY IN CHINA.

DR. WITTENBERG,[1] writing on the subject of leprosy in China, states that the pure nerve form is the least common. In such cases, as is well known, the patients may go on for years. As to the mixed form, it is fairly common, but it is a difficult matter to estimate the number of lepers in any given district. The sufferers lead the common life so long as they remain free from destructive lesions. When these occur to any marked degree, the leper is either segregated in a hut or he is allowed to wander about the country sustaining life by begging. At other times the relatives get rid of him by burying him alive, a proceeding to which the patient readily consents. He is given a good meal as a farewell banquet, possibly joins in the funeral procession following his own coffin, and, after partaking of a generous draught of laudanum, philosophically settles down comfortably in his grave. This is Dr. Wittenberg's account, and, as it accords with the fatalism of the Chinese, there need be no hesitation it accepting it as accurate. The German observer also records cases of direct contagion —for instance, from mother-in-law to daughter-in-law; but no further details in this connection are given.

MEDICAL IMMORTALS IN THE NEW YORK HALL OF FAME.

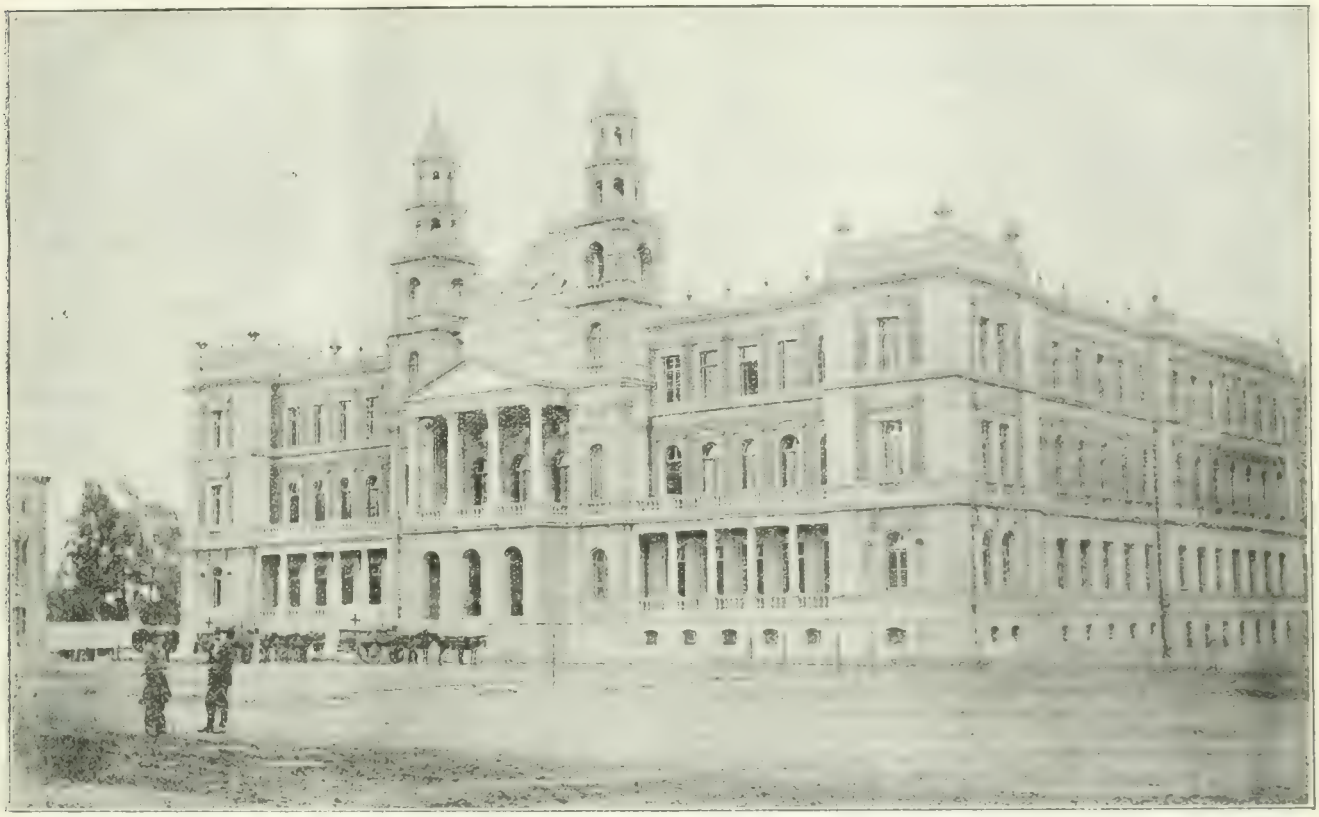
THE Senate of the New York University has submitted to the judges of the Hall of Fame a list of 234 names, from which a final selection of 100 "Immortals" is to be made. The physicians and surgeons whose names are in the list are Valentine Mott, Benjamin Rush, James Marion Sims, Ephraim McDowell, and John Collins Warren.

WE are informed that previous to their departure for South Africa, where, as already stated in the BRITISH MEDICAL JOURNAL, they are to investigate dysentery and its relation, if any, to enteric fever, Colonel Notter and Professor W. J. Simpson were inoculated against typhoid by Professor Wright.

SIR W. MCGREGOR, K.C.M.G., C.B., Governor of Lagos, will deliver the opening address at the London School of Tropical Medicine in October. Sir W. McGregor is a Doctor of Medicine of the University of Aberdeen, and his double character of physician and Colonial Governor makes him peculiarly qualified to speak with authority on the importance, from a national as well as a scientific point of view, of a special study of tropical diseases. The profession will look forward with interest to Sir William McGregor's address.

THE King of Portugal has conferred the honour of "Knighthood of the Royal Military Order of our Lord Jesus Christ" on Dr. de Montbrun, Consul for Portugal and Brazil in Trinidad, British West Indies, "for valuable services rendered to Portugal and to the Portuguese subjects in Trinidad."

[1] *Arch. f. Schiffs. u. Tropenhygiene*, vol. iv, 1900, No. 1, p. 10. *Vide Lepra*, vol. i, Fasc. 3, p. 131.



Palace of Justice, Pretoria, now used as a hospital by the Irish Hospital Corps.

THE WAR IN SOUTH AFRICA.

THE IRISH HOSPITAL AT PRETORIA.

By Sir William Thomson, F.R.C.S.I.,
Surgeon-in-Chief.

Pretoria, July 24th.

When I sent you my last letter we had just begun our work in the new domicile which we were fortunate enough to acquire. We had set up house on a very large scale, without deliberate preparation, and we were suffering all the inconveniences of such an enterprise. Still, no patient suffered. Those upon whom the strain and stress fell were the few who had undertaken the work, determined that it should succeed. The Hospital Board took over the building on June 15th.

The Medical and Nursing Staff.

On the 19th I transferred all the patients (83) remaining in the Irish hospital on the field. It was a hard day's work. We had no nurses; there were five orderlies, one dresser (Mr. Thomson), Dr. Coleman, and myself. Each man had to be undressed and washed before being put into clean sheets. But we took off our coats to it, helped to arrange the beds, and generally did orderly work all round. Dr. Coleman, distinguished physician as he is, never appeared to greater advantage, and I give to him and to the rest of my small party not only my own thanks but those of the sick, whom they so tenderly managed that day. Since then the rest of our establishment has come up from Bloemfontein, and now consists of Dr. George Stoker, Dr. J. B. Coleman, Dr. Friel, Dr. Counihan, Dr. Pounden; and the following extra physicians, Dr. Von Gernet and Dr. Haylett; registrar, Mr. Rhodes; dressers, Messrs. Stewart, MacIlwaine, Thomson, and Edwards; matron, Miss MacDonnell; assistant matron, Miss Walker, both of the Richmond Hospital, Dublin. In addition I have succeeded in getting twenty nursing sisters, and I have supplemented our own Irish orderlies by a number of convalescents. In this way we have got into harness. But as our medical staff is less than half that deemed necessary in an army 520-bed general hospital, it will be seen that the work is arduous.

Several of the residents—Messrs. Heys, Bechett, Marks, Lewis, and Johnston—have selected wards to equip, and the Hon. Rupert Guinness has especially furnished the "Iveagh" ward, named after his father. We have got as a result sick quarters which would be the envy of many a hospital managed at home. The furniture and bedding are of the best; on the walls are engravings of excellent quality, giving to the wards rather the aspect of comfortable dwelling rooms than anything else.

We have erected a fine kitchen with five "ranges" and as many boilers for soup, etc. The sanitary arrangements I have already described in a previous letter. Altogether things work with the smoothness of an old-established hospital.

Opening of the Hospital by Lord Roberts.

On July 11th Field Marshal Lord Roberts formally opened the hospital. He was accompanied by Lady Roberts, Lady Settrington, and the Hon. Aileen Roberts. There were also present the Military Governor (General Maxwell), Lord Kitchener, General Kelly-Kenny, Colonel Stevenson, P.M.O., Mrs. Louis Botha and Mrs. Lucas Meyer, Lord Stanley, the Burgomaster (Mr. Loveday), Mr. Leigh Wood, Hon. Rupert Guinness (members of the Hospital Board), and a large number of the civilians of Pretoria.

After many of the wards had been visited Lord Roberts made a short speech, in which he eulogised the work done and, as an Irishman, he said he was glad that the Irish Hospital had been the first to open there. He thanked Mr. Leigh Wood for the aid he had given to the British prisoners at Waterval in securing for them medical attendance and comforts. Subsequently tea was served in the Board room and the visitors' book was signed, the first signature being Lord Roberts, Lady

Roberts, Hon. Aileen Roberts, Mrs. Louis Botha and Mrs. Lucas Meyer. It was an interesting incident of the proceedings to see this little party in conversation, representing as it did the opposed forces of the war.

A Deluge of Enteric.

When we opened we were deluged with enteric cases. Every field hospital naturally sent in its worst cases, for all these men were lying on the veld with only the covering of a tent, and crowded to the number of eight in a "bell." Some of them were really moribund when they arrived, and these and many more died. On one day we had nine deaths. It was disheartening work, for there was very little margin of hope. Gradually, however, there has been an improvement, and we do not receive so large a proportion of bad cases. There have been a few wounded. Two of these—one shot through the spine, with complete division of the cord; the other through the colon and liver—have died. Another, an officer, shot through the left kidney, has made excellent progress, and, although there is still slight hæmaturia, he has no other symptoms.

Death of a Doctor.

We have now received into this building 765 patients, of whom 248 have been discharged and 49 have died, leaving 468 at present under treatment. I am sorry to report the death of Dr. Teufel, a German physician, who had rendered service to our sick prisoners at Waterval, with Dr. Von Gernet. He acquired the disease there and was admitted here, but he was unhappily unable to resist the virulence of the attack. He received a military funeral.

The Medical Commission.

The Medical Commission still exists, and has been of the greatest service. Some day I shall tell you more fully what it has done, but I think I may say that in the absence of medical supplies and the frequent interruptions of railway communication it has saved the situation. We have practically equipped all the stationary hospitals with blankets, sheets, mattresses, underclothing, bedsteads, pyjamas, and all kinds of drugs and dressings. In some cases our difficulties were enormous. Some articles could only be had by the half-dozen. Clinical thermometers had almost vanished from the town. Between this and Johannesburg we could only get a few bedpans. We had to pay £16 for 24, and then we got some made at a pound a piece. Some of the "indents" are amusing. One wanted several dozen thermometers when only half a dozen were available in the district, and then wanted 30 ear syringes. We have furnished hospitals and nurses' houses, and we are asked to supply khaki uniforms and overcoats when there is not one to be had in the Transvaal. The Commission is a universal provider, and it has borne the strain very well. Foremost in the work are Mr. Leigh Wood (the Chairman), and Mr. Rupert Guinness, who try to meet every demand now that Mr. Murray Guthrie has gone home. The Commander-in-Chief has given every facility for the important work, and in this way, as in others, he has encouraged the efforts of the Commission. His solicitude for his men who are enduring hardships is constant and untiring.

The Treatment of the Sick in South African Hospitals.

Rumours regarding the agitation on the treatment of the sick had reached us from time to time, but it is only now that I have had a chance of reading some of what has been said. I have not had any duty outside my own hospital. I am not in a position to express an opinion from actual personal knowledge. I do not doubt that great hardships have been suffered. I know that. But there is a want of judicial calmness in the indictment which has swept public feeling with the force of a whirlwind. It is so easy to make us "creep." I have already said that the Army Medical Department must be reorganised; that more nurses and physicians should have been sent out; that sanitarians should be part of the force on the field. There is much to find fault with and improve. But it is fair to the department to say that at present its mouth is shut, and that no member of it may come forward now and state his case. There was a grave miscalculation as to the requirements of the campaign, but that miscalculation was not confined to the R.A.M.C. I think the department is strangled by rules and regulations; that it is not progressive, if you like; but all these are matters to be considered calmly at the close of the war, and corrected. It is not the only department that will be improved by experience. Some weeks ago Lord Roberts appointed a Committee here, under the presidency of Colonel Gormley, R.A.M.C., to collect evidence regarding the treatment of wounded and sick in the field. I was invited to state my views, and I have done so in a few notes. When the Commission of Inquiry comes out I shall probably give evidence. I shall have faults to find. But meantime there should be some moderation, and it ought to be remembered that the army is engaged in war, and not in the peaceful pleasures of life at home.

A VISIT TO NO. 7 GENERAL HOSPITAL, ESTCOURT, NATAL.

By Sir William Stokes, F.R.C.S.I.,

Surgeon in Ordinary to H.M. the Queen in Ireland; Consulting Surgeon to the Field Forces, South Africa.

[We received the following letter from the late Sir William Stokes just a week after his lamented death. The covering letter, dated August 2nd, expressed the distinguished writer's intention to leave for home on August 24th.]

On July 16th, while at Ladysmith, I received a telegram from Colonel McNeece, R.A.M.C., the able Principal Medical Officer of the General Hospital, Estcourt, asking me to visit Estcourt with the object of seeing some surgical cases of interest and importance, and for some of which operative interference it was thought might be indicated. I accordingly started the day following, and reached my destination at about 12.30 P.M.

Estcourt, which is the seat of magistracy of Weenan County, is situated at a high altitude, 3,833 feet above the sea level. Though a small provincial town it is one of some commercial importance, and is situated close to the junction of the Bushman's and the Little Bushman's river, the former of which is crossed by a railway bridge of five spans. The climate, which has the reputation of being one of the most equable in Natal, is dry and invigorating, and it was no small relief to inhale the pure air of the district after the choking dust and pestilential atmosphere of Ladysmith. There is little tillage to be seen, the district being mainly pastoral. Like most Natal villages it is situated in a hollow surrounded by partly-wooded hills which form a charming contrast to the bare inhospitable mountains and hills which surround Ladysmith.

The site for the General Hospital, No. 7, was judiciously selected by Colonel Gallwey, C.B., the Principal Medical Officer of Natal, and is situated about half a mile from the Estcourt railway station on the Ladysmith side. The area of the hospital covers about 60 acres on the crest and side of a gently-sloping hill. It had never been camped on or fouled, and water from the town reservoir was easily laid on.

On April 5th orders were received from the principal medical officer to increase the accommodation from 500 to 920 beds, all of which were soon occupied, chiefly with enteric cases, a large proportion of cases of dysentery being also under treatment.

The Hospital Staff.

The hospital is divided into two divisions, medical and surgical, with subdivisions attached to each for convalescents. Major Barker, R.A.M.C., is in charge of the medical, and Major Porter, R.A.M.C., of the surgical division. These officers are ably assisted by the civil medical officers, who have done most excellent work. The same may be said of the nursing sisters, army, army reserve, and colonial.

Major Hayes, R.A.M.C., acts as Registrar and Secretary. The other officers originally connected with the hospital were Captains Beveridge, Waring, and Kelly. Of these, Captain Beveridge has been ordered to the front, Captain Waring to a field hospital, and Captain Kelly has been invalided.

Cases of Gunshot Wound.

Major Porter, R.A.M.C., showed me several cases of gunshot injuries of exceptional interest, most of them having been received in the engagement at Almond's Nek on June 11th. The first was one in which a bullet penetrated the right thigh and left knee-joint. There was no suppuration in the wounds, but a somewhat rigid ankylosis of the knee

supervened. The limb, however, was in a good, perfectly straight position. Another case was one in which a bullet passed through the cheek into the mouth, through the tongue, and finally emerged in the submaxillary region. The hæmorrhage in this case was very great, and with difficulty controlled; but ultimately the patient did well. I also saw two cases of chest wounds, in both of which the lung was perforated. The bullet in the first case entered an inch to the left of the right nipple, and emerged below the angle of the left scapula; and in the second case the wound of entrance was two and a-half inches below the centre of the right clavicle, and the exit three inches below the angle of the scapula on the same side. There was copious hæmoptysis immediately after the wounds were received, which happily, however, did not recur. Both cases have done well. I also observed an interesting head injury. A "pom-pom" shell exploded close to the patient, and one fragment entered the right mastoid and apparently destroyed the auditory apparatus, as the patient was perfectly deaf on that side. Another fragment of the "pom-pom" inflicted a severe flesh wound of the right arm. The last case that struck me as of interest was an arterio venous aneurysm of the right femoral artery and vein, the bullet having entered the inside of the thigh, and, passing behind the femur, emerged on the outside of the limb. I thought the case a suitable one for operation.

Operating Room and Laboratory.

The operating theatre was built quite on the same lines as that at the Mooi River General Hospital, and possessed all the essentials for successful operation work, which was mainly undertaken by Major Porter, R.A.M.C. The *x*-ray room adjoins the operating theatre, and hard by are a well-furnished dispensary and a laboratory with every requisite for carrying out bacteriological research.

Dieting.

This is carried out on the same principle as in a large general hospital at home, but more liberally — Brand's essence Bovril, champagne, etc., being freely issued at the discretion of medical officers. The cooking staff is frequently tried to the utmost to provide all extras ordered, such as custard puddings, rice and sago puddings, etc. It must be remembered that each patient gets a separate pudding, not a helping from a large one. The dieting of patients convalescing from enteric fever is very carefully looked after, and they get numerous extras, and minced chicken after 14 days' normal temperature; but frequently patients persuade their friends to give them solid food when nurses or orderlies are out of the wards, and the consequences are relapses which are sometimes fatal.

Treatment of Enteric Fever.

No hard-and-fast rule was followed. In bad cases of hæmorrhage, transfusion of a saline solution at a temperature of 100° F. either into subcutaneous tissue over the abdomen (lumbar regions) or into the cephalic veins was employed with excellent results.

Widal's test was carried out in the great majority of the cases, also in doubtful ones. It was found in certain cases of dysentery that enteric fever coexisted, and that moreover as a patient convalesced from dysentery (say from ten to fifteen days after admission) symptoms of enteric appeared. Careful records have been kept of cases inoculated and not inoculated against enteric fever. It is impossible at present to give a decided opinion on the adequacy of its protection. Undoubtedly many cases inoculated contracted the disease, but as a rule the type was milder. Unfortunately those who had been inoculated had unbounded confidence in its efficacy, and consequently did not take as many precautions against contracting the disease as they should.

Sanitation.

The water supply is from the town reservoirs, and is filtered by means of the Pasteur-Chamberland pressure filter and Berkefeld's handpump filters.

The dry earth and pan system is in use for ordinary and convalescent patients, the pans being emptied and cleaned out four or five times a day, dusted with McDougall's or chloride of lime powder. There are two sanitary attendants in each latrine, whose duty it is after a pan has been used to put in a little dry earth and chloride of lime or McDougall's powder, thus disinfecting each stool. Strong iron watertight carts remove the fæcal matter and urine to deep pits some mile and a half off. These pits are 10 feet deep, and every morning the fæcal matter of the day previous is covered with a layer of dry earth and chloride of lime.

Enteric stools and urine, night stools and bedpans are kept outside the tents at one special corner, the space occupied being sprinkled with chloride of lime every day. When a bedpan is required the orderly on duty in the tent brings it to the patient, first ascertaining that it is clean externally and internally. On being used he replaces it outside the tent, calling the conservancy man (Indian sweeper), who removes it to the special latrine set apart for enteric stools. The contents are placed in a covered receptacle. The bedpan is then washed in a 1 in 1,000 solution of perchloride of mercury, dried, and a small quantity of izal 1 in 20 poured in, just sufficient to cover the bottom.

The same process is carried out with urinals. About 50 yards from the enteric stool shed is a large oblong shallow boiler placed on a brick furnace; into this boiler the enteric stools, urine and disinfectants previously used are poured, sawdust is mixed with the same fluid and the whole boiled until almost dry from evaporation; the contents are then shovelled out, placed on the fire beneath and burnt, a little petroleum being added. Thus the whole fæcal matter, sawdust, etc., are turned into ashes. There are 60 conservancy coolies, a certain number being told off to each row of tents, latrines, lavatories, etc.

The water used in the tents for the washing of patients, etc., is poured into pails kept in the same place as the bedpans, night-stools, etc., and removed to sanitary pails on wheels, also two large iron receptacles (tilt-carts); these, when three-quarters full, are wheeled to deep tanks 500 yards from the camp and below it. Outside the cookhouse and washhouses are large galvanised iron tanks capable of holding 100 gallons; these are constantly being emptied by conservancy men by means of the large pails on wheels. No water of any sort is allowed to run over into drains, etc. There are no drains in camp, all fluid being removed to the tanks.

The tank principle—devised, I understand, by Col. McNeece—is as follows:—Two large pits are dug out of the soil, 40 by 20 feet and 10 feet deep; these are connected by a pipe 4 feet from the top, and at the lower end of the further one is a wire grating fixed in on the principle of a sluice, which prevents any matter running into the drain, which follows a devious course for 300 yards until the water is thoroughly clear; it is then allowed to flow over the veld, where it is absorbed in the course of 100 yards or less. The principle of the tank is as follows: All slop water from tents, wash-houses, cookhouse, etc., is poured into the first tank, also all orange skins, empty milk tins, egg shells, etc., etc., are put into the tank. Each day a layer of earth is thrown in and the whole surface sprinkled with chloride of lime. The capacity of the tank is about 1,000 gallons; it soon fills and the supernatant water flows into the second tank, where it settles, is sprinkled over with chloride of lime daily, and when it reaches the level of the drain flows off. As soon as the first tank is filled to within four feet of the top it is closed and filled up, the other being filled up also, and the same process again begun with fresh tanks.

Disposal of Enteric and Dysenteric Bed Linen and Clothing.

This is brought direct from the wards to the disinfecting shed. All linen soiled with fæces or blood is first washed in a solution of izal and water, then boiled in a similar solution, and then placed in Thresh's steam portable disinfector, as is all linen and clothing used in enteric tents. It is then dried and handed over to the washing contractor direct.

The impression left on me by all I saw at the Estcourt General Hospital was most favourable, and the greatest credit is I think due to Colonel McNeece R.A.M.C., and the officers, military and civil, who are working under him, for the unremitting industry, care, and attention to the minutest details which has characterised their work, by which they have succeeded in bring the hospital to its present state of high efficiency.

STATISTICS.

The following are the statistics of the work of the hospital up to July 18th:

	Per Cent.	Deaths.	
Admissions to hospital	3.28	75	1,960
Enteric fever	8.50	59	694
Including simple continued fever, remittent fever, and intermittent fever	6.25	60	965
Dysentery	2.62	10	385
*Gunshot wounds	1.75	2	114

* Of these, one was a Boer with septic abscesses of the lungs who had been left for dead by the Boers beyond Laing's Nek. The other was the case of an abscess connected with the cervical vertebræ (also septic on admission).

The above figures are subject to correction, but fairly accurate; 17 deaths from enteric fever occurred between one and forty-eight hours after admission.

MEDICAL ARRANGEMENTS IN ST. HELENA.

By WILBERFORCE J. J. ARNOLD, B.A., M.B., B.Ch.,
St. Helena.

NOT since the days of Napoleon has St. Helena loomed so largely before the eyes of the world. A brief sketch, therefore, of the medical aspects of the island in its present *rôle* of military prison may be of interest. The staff appointed to look after the 2,000 odd prisoners of war, and 1,000 British troops, comprises two officers of the R.A.M.C. and three civil surgeons. Two of the latter were appointed direct from England; the third came in medical charge of the prisoners on board the *Milwaukee*, and has remained on the island. The Senior Medical Officer, Major Mosse, R.A.M.C., had a task of no little difficulty in organising the hospital arrangements to meet the sudden influx of so many sick among the prisoners. The great difficulty at first was the transport service, which was lamentably deficient, the island being almost totally wanting in the means of coping with the large quantity of medical and other stores which had been discharged from ships in profusion on the wharf. This difficulty had to be met by the importation of a large number of mules, waggons, and native drivers from the Cape.



The Boer Hospital.

The *personnel* of the Hospital Corps was largely made up of recruits of a few months' training, who naturally could not be expected to understand their duties perfectly. The obstacles in the way of efficient nursing and the carrying out of orders generally will be obvious to anyone acquainted with the hospital orderly even in his finished condition. The tact, patience, and administrative ability shown by the Senior Medical Officer, however, rapidly brought everything into smooth working order.

It was at first intended by the military authorities to establish a field hospital at Deadwood Plain, where the Boer enclosure is, and marquees had been sent out for that purpose. Acting on the advice of the Senior Medical Officer, who deemed the site unsuitable for a marquee hospital owing to the long continuance of heavy rains during the wet season, the situation was changed to Jamestown. The block of buildings there which has been transformed into the Boer hospital was formerly the officers' quarters of the 3rd West India Regiment, and is admirably suited for its purpose, the supply of light and air being abundant. The British Government has sent out the complete equipment for a field hospital of 100 beds. Everything has been furnished on a generous scale, and certainly the prisoners have nothing to complain of in the measures that have been taken to provide for the needs of their sick. It fortunately has not been necessary as yet to put all these beds into occupation.

On the first arrival of the Boers the numbers admitted to hospital were considerable. There were numerous cases of typhoid and dysentery, and large numbers of patients suffering from bronchial affections. All the prisoners both in and out of hospital bore evident traces of the privations and hardships of war; but as a result of two months' stay on the island the amount of sickness has greatly decreased, and the mass of the prisoners look in splendid condition. At the Boer Hospital Civil Surgeon Roe is doing duty, and I am myself on duty at the Station Hospital. The latter is now reserved exclusively for the troops, though at first the prisoners shared some of the beds before their own hospital could be got ready. It is a square building at the head of the town, and is arranged for 28 beds, but this accommodation is supplemented by a marquee in the hospital precincts, so that admission can now be granted to 44 patients. Numerous cases of dysentery and several of enteric fever occurred amongst the troops, especially those whose duties lay in the immediate vicinity of the Boer encampment. At an early stage of their stay on the island the condition of the prisoners' enclosure gave rise to some anxiety owing to the objectionable habits of the motley crowd composing the prisoners, including besides Boers, French, German, Irish, Portuguese, Italians, Scandinavians, and others who, especially at night, neglected to use the trenches and other conveniences. The place in consequence became dangerously unwholesome. Stringent measures were quickly taken to correct this, and now the sanitary condition of the camp is all that could be desired.

The site of the Boer encampment is an ideally healthy one. It is distant about six miles from Jamestown, and occupies a grassy plateau, reached by a steep and circuitous road, 1,700 feet above the sea, whose blue expanse is spread below, and over which the fresh wind constantly sweeps. The only drawback to the position as a hospital site in the abstract is the heavy rainfall that often occurs at this time of the year, but the wind and sunshine exert wonderful drying properties, and so far the rains have produced no injurious results. The present season so far has been remarkable for its small rainfall and abundant sunshine.

Jamestown, which lies near the sea level, closely shut in a narrow valley, has just been visited by a very severe epidemic of influenza, in which fully 70 per cent. of the cases were complicated with pneumonia, and that, with few exceptions, of the lobar type. The death-rate amongst the natives of St. Helena has been unprecedented. Although Deadwood Camp during the time of the epidemic was in daily communication with the town, yet no case of any severity occurred amongst the prisoners; in fact, the ordinary amount of sickness was not appreciably augmented. This fact says much for the healthiness of their surroundings, and should remove from their friends in South Africa any concern as to the nature of the climate, about which so many erroneous reports were circulated. Major Austin, R.A.M.C., is in medical charge at Deadwood, and is assisted by Civil Surgeon Price, whose more especial duty is the medical care of the prisoners. Major

Austin has himself special charge over the British troops, comprising the 4th Gloucester Regiment, and a detachment of the West India Regiment. Two marquees have been set apart as temporary hospitals, but all cases requiring more than a few days' detention, whether amongst prisoners or troops, are sent down at once in covered ambulances, the former to the Boer hospital and the latter to the station hospital in Jamestown.

SOUTH AFRICAN HOSPITALS.

SCOTTISH HOSPITAL, KROONSTADT.

DR. ROBERT STIRLING, writing under date July 27th, has sent us the following notes of the surroundings and work of the Scottish Hospital, Kroonstadt:

As there was very little to do surgically and our staff of medical officers much more than sufficient, I came on to the Simmer and Jack Hospital, Germiston, Johannesburg, on loan from the Scottish till the authorities can send up a staff to work it, consequently I am not in a position to say much regarding the recent work of the Scottish Hospital, nor have I access at present to past records.

The site of the hospital is excellent—on sloping ground, near the railway station but outside the town. The water supply is abundant, obtained from the town supply by tapping the main which skirts the eastern boundary of the camp.

The double-lined tortoise tents have proved most satisfactory and the Docker huts are very comfortable. Despite the ingenious packing and light materials of the latter, however, the size and weight of the cases will probably prevent the use of the Docker hut except in base hospitals. The equipment of the hospital is all that could be desired, and is quite equal to that of our civil hospital so far as essentials are concerned. The climate in the month of June and early July was delightful if one can stand cold nights. The temperature frequently fell below freezing point inside the tents at night, and those who dared the morning tub had to break the ice. During the day we had ten hours usually of continuous sunshine, allowing free opening of tents and much sitting out of convalescent patients; indeed, the sick in beds were occasionally taken out into the sun with great benefit. Through the kindness of the commanding officers the bands of the Buffs and Oxfords and the Pipers of the 4th Argyll and Sutherland Highlanders frequently enlivened our afternoons in camp with music. A large proportion of the cases were surgical. The wounded came by train and bullock waggon from Honing Spruit, Lindley, and other places, most frequently semi-convalescent.

Many of the Mauser bullet wounds were remarkable from the absence of symptoms following the apparent penetration of important structures, as inferred from the wounds of entrance and exit. Such wounds required little treatment beyond the first dressing. Shell wounds, on the other hand, from the bruising and sloughing of the soft parts, and their infection from jagged ricocheting fragments, were prone to suppurate. Attempts to secure primary union of such wounds invariably failed so far as my observation went, but all did well, with free opening of the wound and drainage and antiseptic irrigation. Major operations were not numerous, but amputations, trephinings, bullet extractions, aided by the use of the *x* rays, etc., were all successfully performed, while Mr. Tuke successfully employed Murphy's button in a case requiring the union of injured bowel.

The medical wards were mostly filled with cases of enteric fever, dysentery, rheumatism, and debility. Thanks to the energy of the Quartermaster's department, food was excellent and abundant and the cooking good.

Sisters and orderlies tackled their duties with zeal and good humour. The combined efforts of all members of the staff and the excellence of the equipment have earned a very good reputation for the Scottish hospital. The health of the staff could not be better.

THE LANGMAN HOSPITAL.

WE are informed that the equipment of this hospital, which is now at Pretoria, has been doubled; the staff increased to seventy-five, including ten sisters; and Mr. Archie L. Langman, Lieut. Middlesex Yeomanry, who has been acting as secretary and treasurer, has been appointed by the authorities Military Officer in Charge, to succeed Major Drury, R.A.M.C., transferred to General Hospital, Bloemfontein. Mr. C. Gibbs and Mr. H. Scharlieb, the senior medical officers who did such excellent work with the hospital in Bloemfontein, are continuing their services at Pretoria.

SOUTH AFRICAN HOSPITALS COMMISSION.

THE South African Hospitals Commission, which sailed for Capetown on August 4th, resumed its labours immediately on arriving there on August 21st. We are mainly indebted to the *Times* for the following reports of the evidence taken. The first witness examined was Major MacMahon, a volunteer surgeon attached to the Army Medical Reserve, who was on duty in Bloemfontein for three months, and who said the sanitary and other arrangements were satisfactory and there was an efficient supply of nurses. No complaints had been made in Pretoria. Early in July there was an abundance of food and a sufficient number of orderlies and nurses. The hospitals at Johannesburg and Kroonstadt were well conducted. Beds were commandeered from the town, and medical officers were free to purchase requirements pending the arrival of supplies. The Edinburgh Hospital at Norvals Pont and the Yeomanry Hospital at Deelfontein were perfect. He advocated the use of field hospitals possessing independent transports. The St. John Ambulance men and volunteers rapidly got into their work. At the base hospitals it was advisable to have more nurses. The returns which the medical officers had to make were too numerous, and bookwork should be delegated to clerks. The sites of the general hospitals were selected by the Principal Medical Officer in consultation with the military authorities.

WOODSTOCK HOSPITAL.

On August 22nd the Commissioners visited Woodstock. Colonel Williamson admitted that occasionally there were smells from the foreshore, but denied that they had ill-effects on the patients. Miss Thomas, nursing superintendent, said she considered the hospital healthy and satisfactory. The patients progressed remarkably well. Twenty soldiers were also examined, but they made practically no complaints, except in regard to a lack of orderlies and doctors.

GREEN POINT AND OTHER HOSPITALS.

The Commissioners next inspected the hospital accommodation at Green Point. Two of the Imperial Yeomanry who were with General Carrington's force, which went up to Rhodesia through Beira, gave evidence to the effect that no proper provision was made for the sick at the camps on the march to Umtali, but that the accommodation at that place was satisfactory.

On August 23rd the evidence given by the witnesses examined agreed that the management of the Woodstock, Maitland and Green Point Hospitals was all that could be desired. Dr. Scholtz, who was a physician at the Langman Hospital in Bloemfontein in April, stated that he had found the hospital in an excellent condition. There was no overcrowding. There had, indeed, been a scarcity of fresh milk, but the condensed milk supplied had answered admirably. He had visited all the hospitals and had seen nothing to complain of, nor had the patients complained to him. He had also visited three hospitals at Kroonstadt, where he found everything necessary being done for the patients. At Pretoria, undoubtedly, there had been some difficulty in obtaining buildings for the accommodation of the sick and wounded, and there had also been difficulty in getting up supplies. The number of orderlies was insufficient, but he was not aware that there had been any deficiency of drugs. The difficulty experienced in remedying any scarcity of such articles as blankets was due to red-tapeism in the Medical Department, whose rules were most arbitrary and superfluous. The medical officers would have ordered such necessaries direct if they had had the power. The classification of cases by the Royal Army Medical Corps could not be depended upon, and if the doctors mentioned a case which was not in their classification the schedule was returned. He expressed the opinion that enteric fever had been contracted in the field. Colonel Trotter said great difficulty had been experienced owing to the scarcity of rolling stock, and Hospitals 9 and 10 and the Scottish Hospital had been unable for some time to

do their work because an essential portion of their equipment was detained at the coast.

Wynberg Hospital.

On August 24th the Commissioners visited Wynberg Hospital. Colonel Anthonisz, who has been in charge of the hospital for ten months, denies certain statements made by Mrs. Richard Chamberlain as to alleged mismanagement, and attributes the charges to spite. Four privates who were examined testified to the good treatment they received at Wynberg.

Professor Dunlop, of the Glasgow Royal Infirmary, stated that he had given his services gratuitously. He was at Wynberg Hospital for six months. There were plentiful supplies, but there was excessive red tape. The transport arrangements at Capetown Docks were excellent. He thought the Army Medical Department was not sufficiently advanced in modern surgery, and leave for the purposes of study should be given to army doctors.

Railway Transport.

The chief railway officials were next examined, and gave an account of the railway arrangements made for the military authorities, who, they said, had a monopoly of two-thirds of the rolling stock. Mr. Elliott, General Manager of the Cape Government Railways, described the railway arrangements for the conveyance of stores, and said the work of the department was greatly appreciated by the military authorities, who used 400 trucks daily. Colonel Supple declared that there was no difficulty on obtaining medical supplies from England, and that all requisitions from the front had been met. At the base hospitals, 31,305 patients had been treated and there had been 362 deaths, most of which were caused by pneumonia. Seven hundred and forty-eight officers, 17,171 men, and 569 Colonials had been sent home in transports, of whom 60 had died during the voyage. Mr. Rudyard Kipling had never visited the Woodstock Hospital. Surgeon-Major Thacker admitted that in times of exceptional pressure there might have been a delay of a few days in forwarding supplies that had been requisitioned.

Colonel Richardson, Deputy Adjutant-General for Supplies and Transports, explained the arrangements for the supply of medical requirements, and said that medicines, drugs, and instruments had been bought locally when necessary. Priority of despatch was determined by the report of the medical officer as to urgency. There had never been a deficiency of medical comforts at the base. All the local nurses and doctors were interviewed before being engaged.

Evidence of Chaplains.

The Rev. Rice Thomas, Chaplain to the troops at Capetown and Wynberg during the last twenty years, gave evidence, and stated that at Wynberg Hospital there was no heavy work until November. The patients from Modder River and Natal seemed fairly satisfied with their treatment on the journey to the hospital. The condition of the hospital was good, though there was occasional pressure. There was no reason to complain of insufficiency of comforts or of staff. The arrangements at Woodstock Hospital were of an excellent character before the war. Smells arose from decayed seaweed, but not from drainage. Father O'Reilly said the attacks in the newspapers on Woodstock Hospital were cruel and uncalled-for. They were not made by those who knew the place. He was forcibly struck by the devotion of the orderlies.

Praise for the Railway Department.

One of the commissioners, Mr. Frederick Harrison, has examined matters relating to the Railway Department, and reported to the Commission that the greatest praise was due to all the officials for the work accomplished.

Bugs in Splints.

A lady residing in Pietermaritzburg alleged that bugs were found in patients' splints at the Fort Napier Hospital. She attributed the fact to want of attention on the part of the orderlies. This is considered to be one of the most serious charges yet brought before the Commission.

The Red Cross Society.

Sir John Furley, Chief Commissioner to the Red Cross Society, stated that nearly £50,000 had been spent in South Africa by the Society to supplement the medical supplies. In addition to a large quantity of surgical appliances received from the colonies, the Society had established a hospital ship and provided a hospital train. In no previous war had such care been taken of the sick and wounded. Colonel Cooper, base commandant in Capetown, advocated the relegation of the administrative work of hospitals from the medical officers to laymen. The Commission also visited Maitland Hospital and the magnificent hospital ship *Simla*.

Undermanning of R.A.M.C.

On August 25th the principal witnesses were Colonel Richardson, of the Army Service Corps, and Surgeon-Colonel O'Connor, both of whom stated that every arrangement had been made to forward medical comforts to the front and to purchase necessaries. The Medical Corps was undermanned in time of peace, but since the war broke out the deficiency had been provided for by the employment of civil surgeons. Colonel O'Connor further stated that few complaints had been received by him. He thought that more opportunities to walk the hospitals and to study the work carried on there should be afforded to army doctors.

On August 27th, Colonel Macnamara, R.A.M.C., stated that there were not sufficient trained army medical men available at the commencement of the war, when it was only intended to put one army corps in the field. When Lord Wolseley notified the despatch of a second army corps, the Royal Army Medical Corps contended that they were unable to make the necessary medical provision. As a matter of fact, they had had to provide for five corps. Colonel Macnamara maintained, however, that the arrangements were better than in previous campaigns. Owing to the insufficiency of R.A.M.C. men, discipline suffered, and he was convinced that, with a more adequately-trained staff, a greater proportion of the men might have been kept in the fighting line. The wounded were in many instances deprived of their money before reaching hospital. He admitted that patients travelling in ordinary trains suffered a good deal of hardship, while at the base, owing to the pressure, convalescents had occasionally to sleep on mattresses placed on the floor. Colonel Herbert, another witness, reiterated the complaints against the management of the Wynberg Hospital.

On August 28th the Commission concluded its sittings in Capetown. The evidence given covered the ground previously traversed. Mr. Bowlby stated that many sick officers and men failed to report themselves until absolutely compelled to do so, and those wounded in the field included officers and men who were already suffering from enteric fever. In this way infection was spread. Generally speaking the troops had suffered owing to the hardships they had had to endure, and comparatively few had escaped touches of fever. Mr. Bowlby also declared that the epidemic that broke out after the Paardeberg affair could not possibly have been anticipated by the authorities. He controverted Mr. Burdett-Coutts's statement regarding the insufficiency of milk.

A Tour of Inspection.

On August 29th the Commissioners left Capetown by special train for Deelfontein, Kimberley, Norvals Pont, Kroonstadt, Bloemfontein, and Pretoria. They expect to arrive in Pretoria on September 10th, and to proceed thence to Newcastle, Ladysmith, Maritzburg, and Durban. The duration of the tour will probably be shorter than was anticipated.

DR. KENDAL FRANKS ON MR. BURDETT-COUTTS'S CHARGES.

The *Daily Telegraph* has received from Dr. Kendal Franks, one of the Consulting Surgeons to the Forces in South Africa, a lengthy communication, dated Capetown, August 7th, in which he replies in detail to Mr. Burdett-Coutts's statements as to the treatment of the wounded in Lord Roberts's campaign. Dr. Franks admits at the outset that the feelings of any man with a pretence to a humanitarian heart must over and over again have been wrung by what he has seen. But war is war, and he adds: "We realise that the sufferings and anxieties of those at home are necessarily acute enough

without the exaggerations and the hysterical word-painting" of Mr. Burdett-Coutts's letters to the *Times*. Dr. Franks was attached to the Army headquarters, accompanied Lord Roberts in his march to Bloemfontein, was in that capital till May 10th, shared in the march to Johannesburg, and finally was kept busy in the various hospitals at Pretoria. On the strength of this experience Dr. Franks states: "I can only say that though I have seen overcrowding, which to my unbiassed mind was clearly unavoidable, though I have seen men lying on the ground because every available bed and stretcher was already in use, I have never seen in any hospital, field or otherwise, anything resembling the state of affairs described by Mr. Burdett-Coutts. Dealing with Mr. Burdett-Coutts's insinuations that private houses could not be given to the wounded, because they were occupied by staff officers and military authorities, Dr. Franks answers that it was imperative so to house the sick and wounded that the greatest advantage should be taken of the limited *personnel*. Then is quoted, as an example of hysterical word-painting, the passage in which Mr. Burdett-Coutts pictured, as incidental to the victorious occupation of Bloemfontein, the "long trail of yellow, hollow-cheeked, enfeebled men, in every stage of physical suffering and depression, who disperse silently into such quarters as they may find, like moles into the ground." On this Dr. Franks's comments run as follows:

"I saw the troops come in. I saw no such sight; but if these 'yellow, hollow-cheeked, enfeebled men' mean the sick, as the beginning of the next paragraph would lead us to suppose, then the picture Mr. Burdett-Coutts draws is not a true picture. It is not exaggerated—it is false." Then comes the question of the use of the ox-waggon, of which Mr. Coutts declared, "We can all imagine the excruciating suffering caused by such method of conveyance." These imaginings, says Dr. Franks, are not facts. "I prefer the bullock-waggon to the ambulance waggon," and he quotes the experience of a civil surgeon shot through the knee-joint with a Mauser bullet, whose sufferings in the ox-waggon on the road to Kroonstadt were nothing to be compared to his sufferings in the ambulance waggon. This same surgeon, it is mentioned, dressed all the wounded during the engagement, sitting on the ground and ignoring his own grievous hurt.

In reply to Mr. Burdett-Coutts's picture of "2,000 sick and 200 wounded," the former borne along in the field hospitals, Dr. Franks denies the story *in toto*. The total in the Bloemfontein hospitals on the night of the entry into the town was exactly 302, and Mr. Burdett-Coutts omits to say that the 2,000 sick men he saw a month after the occupation were made up mostly of men who were taken ill in the town itself. As to the gloomy description of the funerals to be seen "from morning to night," Dr. Franks makes the facts appear very different. "The funerals took place between 2 and 5 P.M., and I have it on the authority of the Chaplain to the Forces on the Headquarters Staff, who performed his share in these sad ceremonies, that every body had its own grave and every grave was numbered, and the numbers and the names registered in the Cathedral books."

Finally, Dr. Franks denies that there was any "lack of adequate provision for the sick and wounded" sent out by the War Office, and points out that had Lord Roberts's great march been delayed so as to provide a full complement of ambulance waggons—or animals to draw them—we might have witnessed a prolongation of the war, which would have cost far more lives than those already sacrificed. And when Bloemfontein was occupied it was at first "more important, from every point of view, to bring up food for the healthy than beds for the sick. It was a question of what should take precedence."

A Consumption Hospital in Toronto.—The Canadian National Sanatorium Association has agreed to give 20,000 dollars (£4,000) towards the erection and equipment of a free sanatorium for the treatment of consumption in Toronto, provided that the city gives an equal amount.

Presentation.—On August 24th Dr. Neech (Tyldesley) was presented with a handsome silver-mounted set of game and meat carvers by the staff of the Leigh Joint Fever Hospital, Astley, on resigning his appointment as medical officer to the institution to take up the duties of Medical Officer of Health to the County Borough of Halifax.

THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

[From our Special Correspondent.]

The International Congress of Hygiene which was held in Paris from August 10th to 17th was most successful in every way. More than 1,600 members of different professions and nationalities took part in the proceedings, and the discussions in the sections were most animated. The Secretary's office was placed in the Faculty of Medicine, and already on Thursday afternoon, August 9th, after the concluding meeting of the Medical Congress the hall was full of members registering their presence, receiving the various publications, which included the reports on the subjects to be discussed in the different sections, a guide to the hygienist in Paris and in the Exhibition, and an illustrated volume of the baths and watering places in Germany. Each member also received as a badge an enamelled representation of the arms of the city of Paris.

Foreign Honorary Presidents.

A preliminary general meeting was held on Friday morning, August 10th, when amongst other business the following were elected Foreign Honorary Presidents of the Congress: Dr. Calleja (Spain), Dr. Köhler (Germany), Dr. Pagliani (Italy), Professor Corfield (Great Britain), Dr. Van Trama-Sternegg (Austria), Dr. Bartolette (United States), Dr. Borup (Denmark).

Opening Meeting.

The opening general meeting took place at 2.30 P.M. in the large amphitheatre of the School of Medicine, which was crowded when M. Waldeck-Rousseau, the President of the Ministerial Council and Minister of the Interior, took the chair. Professor Brouardel, the Dean of the Faculty of Medicine in Paris and President of the Congress, opened the meeting by thanking the Minister for presiding and welcoming the foreign members of the Congress.

President's Address.

The President then rapidly reviewed the progress accomplished in hygiene during the last ten years, as indisputably proved by the exhibits of different nations in the Exhibition. Germany shows a map of Europe on which in different shades are graphically shown the comparative ravages caused by small-pox in the countries where vaccination is compulsory, in those where it is recommended by all physicians, and last in those where it is not or scarcely at all in vogue. In looking at that map one cannot forget the phrase pronounced forty years ago by Lorrain in his eulogy of Jenner: "In a century from now the civilisation of a people will be judged by the number of its small-pox death-rate." The same can be said of typhoid fever as shown by the maps in which Germany and Italy demonstrate the results of fresh water supplies. These are not the only preventable diseases. Thanks to disinfection, when applied well and immediately after the notification of the earliest cases, the mortality of all contagious diseases has fallen—in Paris by at least 25 per cent. during the last ten years. Professor Brouardel went on to say:

During the last ten years hygiene can also count other victories. The genius of Pasteur had shown that certain virus can undergo attenuation, acquiring an immunising or even curative property. Some years later Behring and Roux simultaneously discovered the antidiphtherial serum, with the result in Paris, where the method has been almost unanimously adopted, that one of the two services in the children's hospital reserved for diphtheria cases will shortly be closed for lack of patients. Mothers now know that their children are exposed to the disease only half as frequently as five years ago, and that if they are attacked the chances of death have been diminished by four-fifths. During the last ten years another progress has been accomplished. Quarantine has been abolished, the horrible quarantine during which passengers, healthy and sick, coming from a contaminated port were shut up for fifteen, twenty, forty days at a time. Quarantine was of service in the days when boats carried at the most 100 passengers, but nowadays they sometimes carry 1,000 or 1,500 souls, and are five or six times more numerous than in the days of sailing vessels. These huge structures sometimes contain 50,000, even 80,000, packages. It is not possible to find a port lazaretto in which 8,000 or 10,000 people could be crowded into a confined space and there lodged and fed. Plague centres would thus quickly be created, where the dreaded disease would develop with an intensity proportionate to the overcrowding. At Venice, at Dresden, at Paris, it was clearly evident that for the old empirical measures, with their doubtful results and their ruin to commerce, should now be substituted scientific methods, more particularly disinfection on shipboard, medical inspection, etc. Theoretically such a system is incontestable; practically it shows a weak spot. To obtain security by this means, it is necessary that many agree to the principle. We are convinced that recalcitrants will lend their help when they have

been once for all enlightened as to their duty. It is essential—and that is the basis of the whole system—that the doctor declare the first cases of every contagious disease. This is the fundamental article of the Convention. We have in the old Continent a scourge which causes more persistent ravages than the most terrible plagues. A fourth part of humanity succumbs to tuberculosis. Thanks to the work of Villemin, of the Val-de-Grâce Hospital, we know that the disease is contagious; thanks to Koch, we know its germ. We know equally that it is curable. In England you have, by a series of laws, of which the first dates from 1837, and which a hygienist has called "the Victorian era," rendered more healthy your houses, your streets, your workshops, your schools; you have spent hundreds of millions on this object, and you have been largely repaid for your sacrifices. In thirty years your tubercle death-rate has diminished by one-half, you are the nation in Europe of whom phthisis demands the smallest amount of tribute money. In Germany you have built more than one hundred sanatoria for the cure of those affected with tubercle. In the Salon Pasteur at the Exhibition you can point with pride to the plans of eighty-three of these sanatoria. At the dawn of the nineteenth century we can inscribe the name of Jenner, at its close that of Pasteur. Humanity may well rejoice; during the last one hundred years more has been done for it against misery, disease, and death than in any preceding century. The twentieth century will register similar successes I am confident. At the present time success depends more on public opinion and on the action of the different Governments than on our own personal will. Thanks to them, we shall succeed for the great good of humanity.

General Secretary's Report.

Dr. A. J. MARTIN, the General Secretary, then read his report, stating that already more than 1,500 members had enrolled, representatives of every country in Europe and in America where hygiene is honoured. Seventy-five per cent. of the members are delegates with a special mission from states, towns, sanitary administrations, the public services, institutions, etc., representing every kind of social position and occupation, including statesmen, administrators, physicians, engineers, and manufacturers of every kind. The Committee submit 56 reports for discussion in the 9 sections, and anticipate that, even if no new facts are forthcoming, at least the happy results already achieved will be confirmed. The General Secretary then reviewed the work done at the previous international conferences, which had invariably been followed by material progress in hygiene in each country.

Official Welcome to the Congress.

M. Waldeck-Rousseau then read his speech welcoming the members of the Congress in the name of the French Government. The theories of hygienists could only be realised with State help, and they had a right to demand such help. The rights of the individual had for too long a period outbalanced the good which would accrue to the community by the passing of indispensable sanitary laws and preventive measures. This short speech was greatly applauded, and then the foreign delegates each spoke in turn.

Speech by Professor Corfield.

Professor Corfield, spoke in French on behalf of Great Britain.

I feel much honoured at being called on to speak on behalf of my country. I should naturally, of course, speak in English; but Dr. Martin has particularly asked me to speak in French, and as he, and indeed all of you, did what I told you when you were in London in 1891, I think it my duty to obey Dr. Martin here. The representation of the British Government at these Congresses has undergone a remarkable change for the better. For many years no Government representative was sent; then the War Office sent a delegate, but now we are five. Besides myself, who represent H. M. Office of Works, there is my distinguished friend Colonel Notter, Professor of Hygiene at the Army Medical School, the successor of De Chaumont and of Edmund Parkes, representing the War Office, Dr. Kirker for the Admiralty, Dr. Theodore Thomson for the Local Government Board, and Mr. Cowan for the Irish Local Government Board. Why this is so I do not know. Perhaps the British Government has awakened to the fact that there is after all a serious side to these Congresses. Perhaps, as has been suggested, the great sanitary improvements, especially the provision of improved model dwellings—I may almost say palaces—for the working classes, which followed the London Congress of 1891 have had something to do with it, but anyhow the fact remains. We have five times the representation that we had before, and if we go on at the same rate you may expect twenty-five of us next year. I am sure that it will interest you if I tell you that I am well acquainted with the amphitheatre in which we are now assembled. Thirty-two years ago I was a student in the Faculty of Medicine of Paris, and attended the clinics and courses of lectures of the great masters of that time; among others I worked at hygienic chemistry in the laboratory of Professor Berthelot at the Collège de France, and attended Professor Bouchardat's lectures on hygiene here in this very room. When I say here, I do not mean that I was where I am now (on the platform). No, I was up on one of those top benches there. It was while I was attending the lectures of the renowned Bouchardat that I was elected to the first Chair of Hygiene established in London—the one at University College. Dr. Brouardel has mentioned the great reduction in the mortality from phthisis in England and Wales; that is a fact, and in that connection I wish to announce that there will be a great Congress on Tuberculosis in London next year under the effective presidency of H.R.H. the Prince of Wales, and that we hope to see many of you present at it.

M. Waldeck-Rousseau briefly returned thanks for the kind words of the foreign delegates, so many of whom had studied in Paris.

The proceedings then terminated, everybody hurrying off to the *fête* at the Elysée described on page 605.

Fête at the Ministry of the Interior.

On Monday evening, August 13th, M. Waldeck-Rousseau at his official residence in the Place Beauveau gave a dinner to 80 of the delegates from foreign Governments to the International Congress of Hygiene. This was followed at 10 P.M. by a general reception to which all the members of the Congress were bidden. The gardens were illuminated and afforded a pleasant and cool retreat for smoking and conversation. A stage too had been erected in one of the fine salons and an excellent programme was provided, including Andalusian dances and a selection of the more popular airs and songs from Offenbach's operettas. There was no crowding and every guest was able to enjoy in comfort the entertainment and refreshments provided.

Reception at the Hôtel de Ville.

On Tuesday afternoon, August 14th, the President of the Municipal Council received the members of the Congress at the Hôtel de Ville. Professor Brouardel, the President of the Congress, introduced the members to M. Grébauval, the President of the Council, remarking that as far as sanitary questions were concerned the resolutions of the Congress agreed with the policy of the Municipal Council. M. Grébauval returned thanks in a very happy speech, and expressed the hope that in time the people would be as careful as hygienists in their attention to the details of everyday life necessary to a healthy and prosperous existence, and concluded by toasting the prosperity of the good work. The members remained for some time in the magnificent salons, partaking of refreshments and admiring the many historical pictures and paintings of the City of Paris.

THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

[FROM OUR SPECIAL CORRESONDENT.]

THIRD GENERAL MEETING.

THE third general meeting, which took place on August 9th, was also the closing ceremonial of the Thirteenth International Medical Congress. The large amphitheatre of the Sorbonne, containing Puvis de Chavanne's masterpiece, a large allegorical painting representing "The Sacred Grove," was well filled, when, soon after 2 o'clock, the band of the 115th Regiment of the Line began the stirring strains of the *Marseillaise*. The audience instantly stood up and cheered when the band stopped playing.

Architecture of the Bones.

The President of the Congress, Professor LANNELONGUE, who had on his right hand Professor Julian Calleja, the Dean of the Faculty of Madrid, and on his left Professor Virchow, then rose, and having declared the meeting open, introduced Professor ALBERT (Vienna), who read his paper on The Architecture of Bones in Man and Animals. The extemporised pulpit from which the Professor delivered his address was placed at the end of the platform, close to the gallery in which the regimental band was seated, the seats reserved for the press being near the far end of the platform. The members of the band were doubtless highly edified by the words of the learned scientist; the medical men in the body of the hall moved along opposite the speaker: the press, unfortunately could not do likewise, and consequently heard not a word.

Award of the City of Moscow Prize.

After the address of Professor Albert, the PRESIDENT rose and called to the minds of his audience that at the last International Congress the city of Moscow had offered a prize of £200, to be given at the Paris Congress, to the author of the best work in recent years in the domain of medicine and hygiene. After a careful consideration of the merits of the various candidates, the Committee had decided that it would

be preferable to award the prize to one of the younger generation, and thus stimulate the work of those who had not yet reached the highest position. The Committee had finally unanimously selected M. Ramon y Cajal, Professor of Histology and Pathological Anatomy in Madrid for his magnificent work on the nervous system.

THE NEXT CONGRESS.

When the applause had subsided, the PRESIDENT announced that the Committee of the Honorary Presidents had accepted the invitation of the Spanish Government, and that the Fourteenth International Congress would be held in Madrid. Owing to climatic reasons the Congress will meet about Easter, 1903, and will be under the presidency of M. Calleja, Dean of the Faculty of Medicine, with M. Fernandez Caro, Inspector-General of the Spanish Navy, as General Secretary. The regimental band at once played the Spanish National Hymn, which was listened to by the entire audience standing, and was greeted with great applause.

PRESIDENT'S FAREWELL ADDRESS.

M. LANNELONGUE then rose and delivered a somewhat lengthy speech of farewell. He thanked his collaborators who had helped to bring the work to such a successful conclusion, naming especially M. Chauffard (the General Secretary) and M. Duflocq (the Treasurer), and MM. Weber and de Massary (the Secretaries), adding the name of the regretted editor, M. Georges Masson, who had always considered the publication of the Congress as an honour for his house. After thanking the French Committee and the foreign national committees, he emphasised the fact that during the last century the idea of nationality had been growing in importance. He said: The result has been a certain isolation of the different States, each with its own distinct life. The *rôle* of the International Congresses is counter to those isolating tendencies; they throw into relief the simple truth that science should have no territorial limits, and also another important fact that there are a certain number of productive forces that one can only study by seeing them at their seat of origin. But in addition to the scientific work and communications which appear to be the basis of these meetings, there is also the need for the workers in different countries to know each other. Contact alone enables us to see that after all there is everywhere less coldness and egotism than one believes, that the notion of ingratitude does not exist between us, and that there is an absolute equality in our mutual intercourse. One might perhaps discuss the advisability of continuing this enormous collection of medical sciences as a composite whole, or whether it would not be preferable to hold a certain number of congressess of specialists. A certain number of sections have such an independent existence, and are with difficulty persuaded to form part of the general scheme. Specialisation is certainly a narrowed domain, but it is none the less certain that the era of specialisation has produced a much more rapid advance in the number and precision of the results obtained, especially in the matter of technique. One might in fact say that specialists contribute the most to the advance of science. But this is not a sufficient motive for the specialists to remain isolated. As it is, the sections retain their autonomy. Many of them, even of their own initiative, meet in sub-sections. We must not forget that all specialities have a common origin, and the field would soon be exhausted did they not from time to time receive general ideas, doctrines coming from a wider and different source, without whose influence false doctrine might creep in. Special sections such as physiology, chemistry, comparative anatomy, which seem so far away from us in their origin and methods, have none the less the most useful *rôle* in our knowledge, just as we, too, place at their disposal a field of application which contributes largely to their development. Electricity, which began so modestly, is now called upon to take an important part in the *rôle* of nervous transmissions, and perhaps in the cure of many diseases, even those of an infectious nature. The separation of the so-called specialities would quickly create an isolation, which would ere long be harmful to their progress, and unfavourable to the genesis of new ideas in them all. In a few moments this Congress will have concluded its task. Whatever may be the opinion or feelings you carry away of France and of us, whether for political or national reasons you judge us with generosity and cordiality, or rather with strict equity, be certain that, faithful to our historical traditions, we keep a lasting souvenir of your visit. We shall never forget that in spite of the difficult times in which we live, with war and massacres in China, and war in South Africa more than 6,000 of you have come and brought your work which will be the honour of the Congress. If in the future circumstances lead us in our turn to visit you, we shall be happy to renew again old friendships, and we shall go as one goes to visit those who are bound and united to us by a common bond. This bond is the love of science, for itself firstly, and then for its higher and nobler application to the common weal, I mean the material and moral amelioration of the lot of the people to whom we wish to devote ourselves without reserve. Gentlemen, I only bid you "adieu," the better to say to you "au revoir."

CLOSE OF THE CONGRESS.

When the applause had ceased, Professor JULIAN CALLEJA, the President of the next Congress, rose amid great cheering. In the sonorous Spanish tongue and with the deepest emotion, he thanked the President and the members of the Committee for the honour conferred on him, saying also how greatly he had been touched by the compliment of the playing of the Spanish National Anthem, when Madrid was announced the next place of meeting. He assured everybody a hearty welcome.

M. CORTEJARENA, the National Director of Health, and member of the Royal Academy of Medicine in Madrid, reading in French, then briefly thanked France, the President and organisers of the Congress, in the name of the foreign nations, and congratulated them on the great success they had achieved.

The PRESIDENT then declared the meeting closed, and everybody went away with regret to the strains of the military band.

GREAT FÊTE GIVEN BY THE PRESIDENT OF THE FRENCH REPUBLIC AT THE PALACE OF THE ELYSÉE.

On Friday afternoon, August 10th, at 4.30 P.M., the President of the Republic and Madame Loubet received the members of the International Medical Congress in the salons and gardens of the Elysée. Invitations were also issued to members of the Congress of Hygiene and Demography, to members of the International Congress of the Medical Press, and of the Congress of Medical Ethics and Deontology. The members of the Congress of Students were also invited, and it is estimated that 10,000 invitations had been sent out. Before 4 P.M. the guests began to arrive, and soon a long single file of carriages and cabs lined the Faubourg St. Honoré. As progress was slow by this means, many got out and walked to the gate of the Elysée, where they found the street filled with guests awaiting admission. Batches of about fifty were allowed in at a time, and after passing through one of the two cloak rooms, they entered the salons of the Palace, where, after being greeted by the President, they passed out into the large garden. The guests, however, arrived more quickly than the early arrivals could gain admittance, and soon the street was filled with guests on foot. This was the state of affairs when, just before 5 o'clock, the Shah of Persia arrived with his suite, and the escort of cuirassiers which always accompanies him since the attempt on His Majesty's life. The guests before the Palace gateway had to make room, and there was much crushing and expression of feeling, mingled with the screams of the ladies. Some of the horses were frightened, and for a few minutes the position of affairs was distinctly dangerous. The afternoon was fine on the whole, though two little showers caused some temporary anxiety, without, however, having the effect of driving the guests indoors. The stage was set up under the stately trees at the far end of the lawn which, being concave in shape, allowed the guests to get a splendid view of the stage. The arrangements were in exquisite taste, and the stage flanked with porticoes of green trellis-work, bearing large ornamental vases filled with flowering plants had a most harmonious and pleasing effect. At the foot of the stage, behind a bank of shrubs and flowers, was seated the entire orchestra from the Grand Opera House.

The lawn was covered with carpet, and in the front row of

the seats sat the Shah of Persia on the right hand of the President, Madame Loubet being next His Majesty, while behind the crimson and gold chair stood one of the Persian officials in his high astrakhan cap, holding an umbrella; his only duty during the afternoon was to hand his master a glass of iced orangeade.

The performance had been arranged by M. Gaillard, the director of the National Academy of Music. The programme, which was illustrated by Jules Chevet, consisted of four acts, representing barbarian, Greek, French, and modern dances, executed by members of the corps de ballet from the Grand Opera. Before each act one of the actors or actresses of the Comédie Française, dressed in appropriate costume, recited verses describing the dance that was to follow. M. Leitner described the barbaric dance, Madame Bartet in Greek costume followed, the scene represented being Athens with the Acropolis and the blue Mediterranean in the distance. This was certainly the most beautiful and effective act. M. Bouchier, with powdered wig and in the dress of a "petit marquis," introduced the minuet and French dances of the seventeenth and eighteenth centuries. The last scene represented the views in the Champ de Mars portion of the Exhibition looking from the Eiffel Tower to the Chateau d'Eau. Madame Brandes recited the verses introducing modern ballet dancing, which terminated the performance. Everybody, including the Shah, who often led the applause, was delighted with the performance, which was beautifully conceived and carried out.

The Shah, with the President and Madame Loubet, walked slowly back to the Palace, and it was 6 30 P.M. before the band in the courtyard, playing the Persian National Anthem, announced the departure of His Majesty. The numerous guests, however, lingered much longer in the beautiful gardens, or wandered through the salons, admiring the carved wood and gilded panelling, the fine bronzes, and the priceless tapestries. A picturesque note in the crowd was provided by the variety of the costumes of the guests: at night evening dress is obligatory, but during the afternoon, some wore evening dress, many frock coats, others the military uniforms of different nations, with numerous orders and decorations. The members of the Students' Congress wore every variety of national dress; Hungarians in velvet coats, etc., and each nation seemed to have a different headgear, including the mortar board, velvet students' caps with coloured ribbons of different faculties, the Turkish fez, and the peaked cap of the Scandinavian, with white linen crown, being among them. The Cambogian princes wore white pith helmets, coats of cloth of gold, and black silk stockings. In fact, every nation on earth seemed to be represented except the Chinese.

RECEPTION BY THE MUNICIPAL COUNCIL.

On Saturday afternoon, August 11th, the members of the International Medical Congress were received in the Hotel de Ville by the Municipal Council of the City of Paris. The saloon on the first floor had been reserved for the members of the Congress and their wives. Two orchestras played and numerous buffets were provided. M. Gribaudal, the President of the City Council received the guests, who had a delightful afternoon looking at the numerous pictures by modern French artists and listening to the music.

STATE BANQUET AT THE ELYSÉE.

The President of the Republic invited the Presidents of Sections and the foreign official delegates to the International Congress to a State banquet at the Elysée on Wednesday, August 8th. The President and Madame Loubet received the guests, who numbered 250. The dinner was served in the large dining room hung with beautiful Gobelins tapestry, the table being beautifully decorated with flowers. There were no speeches, and the band of the 29th Regiment of Line performed a selection of music during the evening. The dinner was followed by a reception.

PRESENTATION.—On August 25th Miss Louisa Garrett. Anderson, M.B., B.S.Lond., was presented with a silver bowl by the medical and nursing staff of the Camberwell Infirmary as a token of their admiration and regard for her. Dr. Anderson's resignation is regretted by every one connected with the infirmary.

GERMAN MALARIA EXPEDITION.*

PROFESSOR KOCH, head of the German Malaria Commission, has sent a fifth report of their researches in New Guinea to the German Imperial Health Bureau. It is dated Stephansort (New Guinea), June 15th, 1900. The following is a translation of the report, which appeared in the *Deutsche medicinische Wochenschrift* of August 23rd:

MALARIA AT STEPHANSORT.

During the last two months malaria at Stephansort has continued to remain at the low level described in my last report, although the climatic conditions have been particularly favourable for the development of the disease. Malaria in the tropics, as we know, is especially prevalent at the change of the seasons, both that from the dry to the rainy season and *vice versâ*. This year the transition from the wet to the dry has been unduly protracted. As mentioned in the last report, the rains apparently ended at the beginning of April, but this proved not to be the case. A dry April (with only six rainy days and a rainfall of 139 mm.) was followed by a wet May (fourteen rainy days and a rainfall of 299 mm.). Rain also fell on the first two days of June; after that, however, continuously dry weather set in. This changeable weather has been attended by no increase in the malaria; on the contrary, only isolated cases of relapse were met with. In May only 3 cases of malaria were admitted to the hospital, and in the first half of June only 1. All 4 were relapses of quartan fever, the mildest but most obstinate form of the disease.

The results of our experiment, which has lasted nearly six months, have been so uniform and unequivocal that they cannot be regarded as accidental. We may assume that it is directly owing to the measures we have adopted that malaria here has, in a comparatively short time, almost disappeared. We may also expect this fortunate state of things to continue if the path we have indicated is pursued.

PRINCIPLES OF CAMPAIGN AGAINST MALARIA.

For reasons given in my last report, further progress than has been made is not to be looked for, but the results already achieved are quite enough to prove that the hypotheses on which I entered upon these researches are correct. They indicate the principles on which a campaign against malaria is to be conducted. This does not imply that some good may not be effected in other ways and by other means. One may imagine an immunity against malaria, which under ordinary conditions is acquired only in four to six years and after repeated attacks, to be conferred artificially and in a short time. Seeing, however, that as yet we have no idea how to obtain the toxin necessary for the immunising process, chances of progress in this direction are small.

MEANS OF DEFENCE AGAINST MOSQUITOS.

The prospect of exterminating the mosquitos—a radical measure were it feasible—seems to me remote. It is, perhaps, possible to kill the mosquitos in small districts, but to free large tracts of land of them, especially in the tropics, is beyond the means at our disposal. We could also try to protect people from being bitten, as is done to some extent by mosquito nets. None of the substances which have to be applied to the skin, in the hope of keeping off mosquitos, that I have tried have proved successful. Their effect is transient, and some—for example, essential oils—are injurious if used for a long time. We have left then only the plan I have followed, which, to recapitulate briefly, is to search out all cases of malaria (the concealed ones in particular) and to render them harmless, not by improving their condition a little, as has been the practice hitherto, but by curing them. This method of procedure is no new thing. It is precisely that which is followed successfully in cases of cholera, plague, typhus, etc. The novelty lies in adopting it in the case of malaria, for which, regarded as a miasmatic disease, it was considered unsuitable.

LINES OF FUTURE INVESTIGATION.

It might be assumed that the tasks set the Commission were now completed. This is, in fact, the case, but I should not think it right to be satisfied with the progress we have

* Translations of the second, third, and fourth reports appeared in the BRITISH MEDICAL JOURNAL of February 10th, 1900, p. 325; May 12th, 1900, p. 1183; and June 30th, 1900, p. 1597.

made. In my opinion the experiment we have made perhaps under specially favourable circumstances should be repeated under other climatic and social conditions, if possible, in an easily accessible region, where an eye could be kept continually on the experiment, and the result watched for a long time, years perhaps.

Such places, I have no doubt, are to be found in Germany. I hope to begin the next research on these lines on German soil. Further investigations could then be carried out at any time in the German colonies.

My intention now is to leave Stephansort and proceed by the next steamer to Herbertshöhe, partly to give ourselves a much-needed rest after our hard work, partly to extend our knowledge of the spread of malaria in the Protectorate. In this direction interesting material has been collected by Dr. Ollwigg at Potsdamhafen and at the mouth of the Ramu river, and by myself in the Archipelago. I will report next on this and on what we expect to obtain from the Gazelle peninsula.

THE PLAGUE.

Prevalence of the Disease.

India.

During the week ending August 4th, 252 deaths from plague were reported for all India. This is a slight increase upon the returns for the previous week, when 198 deaths occurred from the disease. In the city of Bombay the deaths ascribed to plague numbered 45, showing a considerable diminution upon the previous week, when a slight recrudescence occurred, and 81 deaths were reported. In the Bombay Presidency, exclusive of the metropolitan city, the number of deaths from plague were 21, against 10 for the previous week. In Calcutta, for the week ending July 31st, 41 cases of plague occurred, and 41 deaths from the disease. In the Central Provinces a pronounced increase is apparent, the deaths during the week ending July 27th and August 3rd being respectively 20 and 57.

Australia.

New South Wales.—According to a telegram from Lord Beauchamp to Mr. Chamberlain received at the Colonial Office on August 22nd, the following was the incidence of bubonic plague at Sydney up to August 18th, 1900: Remaining for treatment August 11th, 13; admitted during the week, none; discharged recovered during the week, 5; died during the week, 1; remaining for treatment August 18th, 7; total cases, 303; total deaths, 103; total discharged recovered, 193; total contacts isolated, 1,707; total contacts remaining, 7; total Chinese attacked, 10; total deaths among Chinese patients, 8. On August 11th, there remained for treatment in Sydney 13 cases of plague. This marks a considerable abatement in the disease since July 28th, when 34 plague cases were in hospital for treatment. Since the commencement of the outbreak there have been 303 cases of plague in Sydney, and 103 deaths from the disease.

Hong Kong.

Twenty-six cases of plague occurred during the week ending August 20th, and 26 deaths from the disease.

ASSOCIATION INTELLIGENCE.

NOTICE OF NEXT MEETING OF COUNCIL.

A meeting of the Council will be held on October 10th, 1900. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before the meeting—namely, September 27th, 1900.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Border Counties Branch.—The next meeting of this Branch will be held in the Infirmary, Workington, on Friday, September 21st, at 3.15 P.M. Members intending to read papers, show cases, etc., and gentlemen desirous of joining the Branch, are requested to communicate as early as possible with the Honorary Secretary, W. F. Farquharson, M.D., Garlands, Carlisle.

South Midland Branch.—The autumnal meeting of this Branch will be held at Stamford on Thursday, September 20th. Gentlemen desirous of joining the Association or Branch, and members wishing to read papers or contribute cases to the meeting, are requested to communicate at once with the undersigned. The following papers have been promised:—Mr. Hailey: The Provision of Isolation Hospitals for Rural Districts. Dr. Jones: Chorea, especially in its Complicated Forms. Mr. Kinsey will give a brief summary of the work at the Ipswich meeting. Luncheon will be provided at 2s. 6d. per head.—C. J. Evans, Northampton, Honorary Secretary.

CORRESPONDENCE.

COVENTRY PROVIDENT DISPENSARY.

Sir,—Though I have almost ceased to hope for reform until a wiser generation shall have arisen, I think it is only fair to those who have tried to modify medical abuses in this city, that members of the Association should not be misled by the remarks of Dr. Saundby at the general meeting. The benefits of the Coventry Dispensary are not confined to working men as in the case of friendly societies, but are extended to anyone who cares to join. I do not think that any friendly society has erected a great building for the purpose of doctoring in the most public part of a city, nor have I heard that it is a custom of such societies to publicly extol their medical staff and the drugs they supply.

It was even the custom a few years ago to publish the number of bottles of medicine that had been made up at the dispensary week by week in the local papers. I know of no friendly society that has so absolutely disregarded the ordinary rules of professional conduct. But though we have had a very real grievance against this institution regarding professional interests, I think there is still a more serious objection to be made to a system which hands over the medical care of over twenty thousand people to six practitioners who have also private practices to attend to.—I am, etc.,

Coventry, Aug. 21st. F. Faulder White.

Sir,—I am very glad to see the letter from Dr. Saundby in the British Medical Journal of August 18th, for I am more convinced than ever that he has not grasped the state of affairs at the Coventry Dispensary.

In comparing this institution with the great friendly societies Dr. Saundby has chosen one only of the serious grievances—that of the wage limit. There are others quite as serious which he seems to ignore, and for that reason I still maintain that, if a special delegate were appointed by the Council of the Association to inquire into and report upon the glaring abuses of this institution, no one with any sense of fairness could defend it, or even seek to compare it with friendly societies.

It is true that the latter have no wage limit, but the fact that bodies of men constituting such societies should band themselves together to obtain their medical attendance at the cheapest possible rate does not alter the abuse of a dispensary such as Coventry, which, in the first instance, was established as a charitable institution for relieving the sufferings of the sick poor at a small remuneration, and to which charitable people have left legacies.

Is it reasonable to suppose that legacies would have been left to an institution which should cater for anyone, irrespective of their means or social position? Is it reasonable, too, to suppose that 25,000 people out of a population of 52,000 should have belonged to this dispensary if active canvassing had not been carried on?

The so-called "great friendly societies," always on the lookout for the cheapest market for their doctors, are to-day actually taken into this dispensary at a cheaper rate of payment than doctors in the town would accept, and it should be understood that the profession in Coventry is prepared to insist upon reform of these societies were it not for the fact that the dispensary blocks the way.

In conclusion, I would like to point out the rule in the Coventry dispensary as to consultations. If a patient requires a consultation he is told that there are six doctors on the staff, he can have any of these without remuneration, but no other doctor in the town even upon payment, though a doctor from a neighbouring town can be called in. I have instances and can mention names where 10, 15, and 25 guineas have been paid to consultants in Birmingham by these dispensary patients, and, what is more important, this rule as to consultations was forced upon the Dispensary Committee by the doctors upon its staff.

I am glad to know that Dr. Saundby is now prepared to aid and assist a scheme to abolish the abuses which have steadily crept into the profession in Coventry, and to help to restore the rights and privileges of a learned profession. As the Birmingham branch of the Association (to which Dr. Saundby is so closely united), has been able to render such

valuable assistance in the past in checking medical abuses—at Kidderminster, I believe—Coventry will soon appeal to it for protection against the abuses of its local dispensary.—I am, etc.,

Coventry, Aug. 21st. EDWARD PHILLIPS.

*** Dr. Saundby, to whom we thought it right to submit a proof of Dr. Phillips's letter, writes:

SIR,—Dr. Phillips misrepresents my position in connection with this matter. Because I protested at Ipswich against the speech in which the Coventry dispensary was condemned for having no wage limit—a fault which it shares, as I have pointed out, with those great friendly societies which are served by such a large number of medical practitioners throughout the kingdom that to condemn them would open up a question from which even the British Medical Association may well shrink—he writes of me as if I were a defender of the dispensary, whereas I have taken an active part in securing its condemnation by the Association. Dr. Phillips does not seem able to understand that it is possible to condemn the Coventry dispensary and yet be unable entirely to approve the actions, speeches, and letters of everyone who is opposed to it. The British Medical Association has formally expressed its opinion of the dispensary, and brought this under the notice of the medical staff. Having done so, it is right that a reasonable time should elapse before any further action is taken. What that should be may be a proper matter for discussion, but it seems to me that to be effective we must seek the aid of the General Medical Council. If, as has been suggested, we were to threaten the members of the staff with expulsion from the Association, they would undoubtedly resign, not their offices, but their membership of the Association, and it is difficult to see that the cause which Dr. Phillips champions would be advanced at all. We might certainly try the effect of such a refusal of professional co-operation as was effective in another case, but if it is to succeed, the medical practitioners in Coventry opposed to the dispensary must formulate the reforms they are prepared to accept as satisfactory, and which the Birmingham Branch can be asked to support. It is no use coming to Birmingham with a general appeal for support unless we know what it is we are being asked to do. If Dr. Phillips and his friends will address themselves to formulating such proposals, and will lay them officially before the Branch, I am sure they will have fair and favourable consideration.—I am, etc.,

ROBERT SAUNDBY.

THE ADELAIDE HOSPITAL.

SIR,—In your issue of the 16th June, now to hand, you refer to us as intruders in the Adelaide Hospital who, in the rearrangement of positions, are not now on the staff, but have probably been provided for elsewhere outside the hospital.

As a matter of fact one of us has a term of four years to run as senior surgeon and gynæcologist, all surgeons appointed being required to act under him; the other has a three years' term as honorary physician. The negotiations which culminated in the appointments you refer to were begun, carried on, and terminated on the basis that the nominees, for whom positions would be made, were to come in and work along with us and our colleagues amicably and unconditionally, and that they and we and all other physicians and surgeons on the senior staff, whether at the time or afterwards appointed, should be clinical lecturers for the Adelaide University at the Adelaide Hospital, as we are at the present moment by due appointment.

Your leaderette does the recently appointed members of the staff an injustice in assuming they would not work with us. Not one of them has as yet given any indication of declining to work with us for any reason whatever. At the same time, they have allowed all their share of the work to fall on us and our colleagues.—We are, etc.,

A. D. LEITH NAPIER, M.D., M.R.C.P.,
Senior Surgeon, Adelaide Hospital.
W. RAMSAY SMITH, B.Sc., M.B.Edin.,
Honorary Physician, Adelaide Hospital.

Adelaide Hospital, Adelaide, S.A., July 24th.

We, the undersigned, members of the honorary staff of the Adelaide Hospital, declare that the statement above made regarding the basis of the negotiations referred to, is correct, and that it was on this basis that we were prepared to make room for the additions to the hospital staff in the interests of the Adelaide University.

F. W. NIESCHE, M.D.Edin.,
Honorary Physician, Adelaide Hospital.
R. S. ROGERS, M.D.Edin.,
Honorary Physician, Adelaide Hospital.
A. F. A. LYNCH, M.B., Ch.B.,
Honorary Pathologist, Adelaide Hospital.
ARTHUR E. SHEPHERD, L.R.C.S.,
Honorary Surgeon, Adelaide Hospital.
LEONARD W. BICKLE, F.R.C.S.E.,
Honorary Surgeon, Adelaide Hospital.
ALFRED W. HILL, M.D.,
Ophthalmic Surgeon, Adelaide Hospital.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: JAMES C. DOW, Fleet-Surgeon, to the *Dædalus*, August 30th; WILLIAM J. MAILLARD, Staff-Surgeon, to the *Archer*, August 30th; HERBERT CANTON, Staff-Surgeon, to the *Tamar*, August 20th; DONALD T. HOSKYN, Staff-Surgeon, to the *Jupiter*, August 20th; JOHN ACHESON, Staff-Surgeon, to the *Warspite* from the *Phaeton*, September 1st; RICHARD MILLER, Staff-Surgeon, to the *Arrogant*, September 1st. JOHN W. SLAUGHTER, B.A., M.B., Staff-Surgeon to the *Hyacinth*, September 3rd, and to the *Amphion*, September 20th; WILLIAM A. WHITELEGGE, B.A., M.D., Staff-Surgeon, to the *Hyacinth*, September 20th; FREDERICK J. BURNS, M.D., Staff-Surgeon to the *Tauranga*, September 7th; CHARLES M. BEADNELL, Staff-Surgeon, to the *Scylla* for the *Barracouta*, undated; JOHN E. COAD, Staff-Surgeon, to the *Scylla*, undated; CYRIL SHEPHERD, Surgeon to the *Royal Arthur*, for disposal, August 23rd; CHARLES R. NICHOLSON, Surgeon, to the *Nile*, August 23rd; REGINALD WATERFIELD, Surgeon, to the *Nymphe*, September 4th; JEROME BARRY, M.D., Staff-Surgeon, to the *Sappho*, August 18th.

ROYAL ARMY MEDICAL CORPS.

THE following are returning from South Africa: Major W. S. DOWMAN, Lieutenant A. O. B. WROUGHTON, Civil Surgeon ISHERWOOD.

Captain GREEN, of the New South Wales Medical Staff Corps, is reported convalescent.

The following officers have been discharged from hospital to duty: Captain A. A. WATSON, Lieutenants P. H. FAULKNER and R. D. JEPHSON, Civil-Surgeons BETTS, WATSON, STEELE, EKINS, BARLEY, RUSBY, and A. GRANVILLE, Lieutenant A. H. BENSON, Militia Medical Staff Corps; Major G. W. BRAZIER-CREAGH and D. BRUCE, Lieutenants M. H. BABINGTON, and W. J. P. ADYE-CURRAN.

Lieutenant NICKERSON was taken prisoner at Klipfontein on August 16th.

Civil-Surgeon H. A. SCOTT died of enteric fever at Pretoria on August 24th.

Lieutenant-Colonel G. F. POYNDER retires on retired pay, August 29th. He was appointed Surgeon March 6th, 1880, Surgeon-Major March 6th, 1892, and Lieutenant-Colonel March 6th, 1900.

ARMY MEDICAL SERVICE.

THE following is the list of successful candidates for commissions in the Royal Army Medical Corps at the recent examination in London:

Name.	Marks.	Name.	Marks.
H. J. McGrigor	2,779	C. D. Myles	2,040
W. R. P. Goodwin	2,612	R. N. Hunt	1,986
J. H. Brunskill	2,303	H. E. Howley	1,916
A. H. Duffey	2,231	R. F. M. Fawcett	1,855
A. W. Gibson	2,205		

INDIAN MEDICAL SERVICE.

THE following is the list of candidates for the Indian Medical Service who were successful in recent examinations:—

Name.	Marks.	Name.	Marks.
C. W. Melville	3,476	W. H. Leonard	2,786
N. S. Wells	3,033	J. E. G. Swan	2,737
R. McCarrison	3,005	R. McL. Dalziel	2,548
J. Masson	3,000	A. W. C. Young	2,500
W. M. Anderson	2,991	J. J. Robb	2,430
W. D. Pringle	2,985	S. A. Ruzzak	2,425
E. H. B. Stanley	2,870	R. B. B. Foster	2,385

VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

WE are requested to publish the following announcement:

The autumn classes for the training of stretcher bearers will commence on October 4th, 1900, at 7.40 P.M., at the headquarters of the London Rifle Brigade, 130, Bunhill Row, E.C., by permission of Lieutenant-Colonel E. Matthey, commanding the London Rifle Brigade.

There will be the usual class for new members, and also a class for passed members under the charge of Surgeon-Captain E. M. Callender, M.D., Prince of Wales's Own, 12th Middlesex (Civil Service) V.R., and Surgeon-Lieutenant G. Cohen, M.B., 1st Volunteer Battalion, Middlesex Regiment. Officers, non-commissioned officers and men will be admitted to the classes on presentation of application forms properly endorsed by their adjutant or captain.

Application forms can be obtained of the Honorary Secretaries, Ambulance Sergeant H. J. Bussell, 13, Gower Street, W.C.; or of Ambulance-Corporal E. G. Davies, 1, Lombard Court, E.C.; or at the office of the school, 8, Portman Street, W.

(By order) P. B. GILES, F.R.C.S., Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer-Instructor.

OBITUARY.

Sir WILLIAM STOKES, M.D., F.R.C.S.I.,

Surgeon to the Queen in Ireland; Professor of Surgery R.C.S.I.; Surgeon to the Meath Hospital and Co. Dublin Infirmary, etc.

The South African war has been responsible for the lives of so many brilliant and illustrious men that the public have become in a sense accustomed to accept any news with forced equanimity; but among all classes in Ireland the melancholy intelligence that Sir William Stokes had succumbed to an attack of pleurisy in the base hospital at Pietermaritzburg on Saturday, August 18th, came as a rude shock; and, indeed, all over the world, in every large centre of medical education, sorrow will be felt for the loss of the eminent surgeon who has paid the forfeit of his life in his loyal devotion to his Queen and country.



Sir William was appointed Consulting Surgeon to the Forces in South Africa on December 29th, and on January 4th he departed from Dublin *en route* for Capetown. Arriving there about March 1st, he at once proceeded to Natal, and took up his duties at No. 9 General Hospital at the Mooi River. From time to time accounts of the work in which he was engaged appeared in the British Medical Journal, all of them written in the forcible, graceful, and easy style of which he was a master. These brief articles, it is true, gave small conception of the great amount of surgical work which fell to his share to perform; but, busy as he was from morning to night, for him the hardest of surgical work was only a pleasure, and never a subject of complaint. He was full of enthusiasm, and as keen to display his marvellous handicraft as if he were still on the threshold of his career. In his private communications he expressed himself well satisfied with the results of his amputations and his ligation of vessels, but he was not quite so pleased with his achievements in the surgery of the abdomen and of the brain.

There are no details yet to hand as to the causes which led up to his death, but probably exposure acting on a constitution never very robust, and at the time weakened by overwork, was accountable for the fatal issue. On account of severe illness in his family, Sir William had passed through several months of great anxiety prior to his departure from Dublin, and when to this was added the effects of a troublesome chronic winter cough, his courage in facing the onerous duties which awaited him in South Africa may be the better appreciated.

He was born on March 10th, 1839. His father—William Stokes—was the illustrious physician whose classical works on diseases of the heart and lungs are still read by every educated physician. Young Stokes received his early education at the Armagh Royal School, and later on in Trinity College, finishing up his undergraduate career by obtaining his Arts degree in Dublin University in 1859. Four years later he proceeded to the degrees of M.B., M.D., and M.Ch. In 1862 he became a licentiate of the R.C.S.I., and in 1874 gained the Fellowship of that College. In 1864 he was elected Surgeon to the Meath Hospital, but four years later he transferred his labours to the House of Industry Hospitals, where the greater part of that operative work was accomplished which justly placed him at the head of the surgical profession in Ireland. He had been fortunate in adding to the knowledge acquired at home what could be gained by lengthened visits to the Continental schools of Paris, Berlin, Vienna, and Prague, and while studying abroad he made what proved to be a lifelong friendship with Professor Ogston, of Aberdeen. It is not surprising that having lectured on surgery for several years in the old Carmichael College, he was elected in 1872 to the Professorship of Surgery in the Royal College of Surgeons in Ireland. On the completion of his twenty-five years in this chair—a quarter of a century of brilliant teaching—he was entertained at a complimentary dinner, and was the recipient of a large silver bowl and handsome chandeliers subscribed for by his old pupils and admirers.

In 1886 Stokes was elected to the Presidential Chair of the Royal College of Surgeons in Ireland, and in the same year the honour of knighthood was conferred upon him, a circumstance which brought into prominence the fact that such a distinction had never been offered to his illustrious father. In the following year—the Golden Jubilee of Her Majesty—Sir William, as President, gave a magnificent banquet in the Hall of the College, where he was honoured by the presence of many distinguished guests.

In 1882 Stokes delivered the Address in Surgery at the jubilee meeting of the British Medical Association which was held in Worcester. The *Boston Medical and Surgical Journal* said of it: "There was an unmixed expression of admiration and delight at the Address on Surgery, in the delivery of which Professor Stokes proved a medical orator scarcely if at all second to Sir James Paget. The address, as a matter of fact, was recognised as perfect in style and finish, and solid and illuminating in its contents and added to, if indeed anything could have increased, the reputation of the great Irish surgeon."

In 1888, on the death of Mr. Wharton, Stokes returned to the Meath Hospital to occupy the surgical vacancy thus created on the staff, and during the years which have passed since then he fitly maintained the reputation which he had already won of being the finest clinical teacher in Ireland. The delightful voice, the impressive, earnest manner, the Socratic method, and the assurance of accuracy in the knowledge which was being imparted, all combined to make him an attractive teacher, whose class filled the wards and was generally partly drawn from other less fortunate hospitals. His loss must be heavily felt in that institution, where his reputation as a skilful operator did much to enhance its prestige in the eyes of the public.

Stokes contributed largely to surgical literature, having written at least 100 standard papers on various subjects. His earliest effort—an essay on Diagnosis and Pathology of Diseases of the Testis—was awarded the gold medal of the

Dublin Pathological Society. His communication on Fractures of the Neck of the Femur, made at the annual meeting of the British Medical Association in London in 1895, was listened to with uncommon interest. He was the author of several papers on the treatment of urethral stricture, and among his most recent productions are those on Excision of the Tongue, Excision of the Jaw, Nephrectomy and Fixation of Movable Kidney, Excision of the Thyroid Gland for Exophthalmic Goître, and A New Method of Treating Fractured Patella.

When Sir William resigned his position as Surgeon to the House of Industry Hospitals he retained his seat on the Board of Governors, of which he was an active member. He was a Governor of the Westmorland Lock Hospital, a Consulting Surgeon to the National Children's Hospital, a member of Council of the Royal College of Surgeons, and for a number of years one of the representatives of the College on the Conjoint Committee which managed the examinations conducted by that College and the sister College of Physicians. He took a lively interest in the Royal Academy of Medicine, and for many years occupied a seat on the Surgical Council of the Society, in addition to which for several years he has acted in the capacity of secretary for its foreign correspondence. In the welfare of the Dublin Branch of the British Medical Association he was peculiarly interested. He was one of the most regular members at the meetings of the Council and filled the position of President of the Branch with conspicuous ability. As an examiner Sir William had a large experience, and was in this respect universally popular. He formed one of the Surgical Court of Examiners in the late Queen's University, in the Royal Colleges of Physicians and Surgeons, and for a number of years in the University of Oxford.

Of his many honours probably the one which he valued most highly was that of Surgeon in Ordinary to the Queen in Ireland, to which he was appointed in 1892. It was also a source of pride and pleasure to find himself placed in a high official position at the International Medical Congress in Berlin, Rome, and Moscow. Sir William was exceedingly happy in his family relations, and was a devoted husband and father. In 1869 he married Elizabeth, daughter of the late Rev. J. L. Moore, D.D., Vice-Provost of Trinity College, Dublin, who survives him. The issue of the marriage consists of a son and daughter, the former of whom is a lieutenant in the Royal Artillery.

Sir William was not only the orator of the medical profession in Dublin, but he was undoubtedly also one of its most cultured members. His father had afforded him the amplest means of gaining a thorough education, of which the son had fully availed himself, but all through life he was a reader with wide and literary sympathies. His sister, Miss Margaret Stokes, is a renowned archæologist, and Lady Stokes is an accomplished student of modern literature, so that Sir William's surroundings were such as make for refinement and culture. His death will cause a great gap in the medical societies and social circles in Dublin. As a host Sir William had few equals, and in this position he was probably seen at his best. Few people in a casual conversation with him could have been prepared for the fervid heat of passion and the thrilling, ringing words of eloquence with which Sir William delivered himself when the occasion demanded something above the commonplace in the making of a speech.

> . . . A willing ear
> We lent him, who but hung to hear
> The rapt oration flowing free
> From point to point with power and grace
> And music in the bounds of law.

SIR WILLIAM GAIRDNER, K.C.B., writes: My impressions of Sir William Stokes, as requested for the BRITISH MEDICAL JOURNAL, will have no reference at all to his surgical merits or his early history and training, being founded almost entirely on the close and intimate converse I had with him and Mr. T. Pridgin Teale, of Leeds, when, at the earnest request of Sir Henry Acland, we were associated in the first general inspection and visitation of the examinations of the Corporations. At that time we three had many meetings and much pleasant intercourse in Edinburgh, Glasgow, Dublin, and London, resulting in a report to the General Medical Council, of which it is not necessary to say anything here. It was not possible, of course, in thus becoming at a comparatively late period a personal friend of the younger Stokes, to forget that I had been at a very much earlier date admitted in some degree to the intimacy of that older generation of Irishmen, of whom his great and admirable father stood out to all Europe as the most distinguished representative. I had known the elder Stokes as a young man may come to know a much older one, when under the influence of like enthusiasms, and a certain amount of community in professional occupations and pursuits. That Sir William Stokes inherited many of his father's intellectual and moral qualities was evident to me from the first; but at the same time comparison between the two, in any invidious sense, was easily avoided, owing to the difference in the direction of the life-work of each. It was not until Sir William Stokes sent me, many years afterwards, an early copy of that most touching, simple, and dignified memoir of his father, that I fully appreciated how much the two men were built, as it were, on similar lines, though differing so greatly in their career. The simple manliness which could be at once loving and undemonstrative; the perfect sincerity which, in the case of a loved parent, could tell the truth without fear of exaggeration or of misconstruction; the saving grace of humour, which protected the son, as much as the father, from "the falsehood of extremes," I recognised at once as points of character common to the two men. I read that memoir not only with approbation, but with surprise at not feeling obliged to discount, as it were, any considerable amount of the estimate formed of the elder man, in view of the fact that his son was the author of the biography. And it needs scarcely to be added that my own regard for both is now much enhanced by the perfect veracity, above all things, that shines out from this admirable

little volume, as inherent in the character of both men, now, alas, alike enshrined in the memory as members of a too numerous and rapidly-increasing list of friends who have, prematurely or otherwise, gone over "to the majority."

Of Sir William Stokes I can only say here that my recollections of him, at the time of our chief joint occupation, and since, are such as leave no taint upon the mind of anything short of the highest ideals; the best all-round culture, the most luminous and quick apprehension of essential facts, a critical and at the same time kindly spirit in weighing evidence, and above all the love of justice, tempered by delicate consideration for human frailties—qualities which made him, no doubt, in his own city as elsewhere the pleasant companion and steadfast friend which I, personally, knew him to be.

Professor Ogston writes: It is with the deepest regret for a good man gone, and under the sense of a loss that can never be made good, that those who knew him will pay a tribute to the memory of Sir William Stokes. Probably no man ever possessed in a greater degree the qualities which inspire affection and esteem in the hearts of friends than he who is gone from amongst us for ever.

He was the famous son of a famous sire, his father having been one of the best known British physicians of his day, and holding, among many other high honours, that of Physician to the Queen of Greece.

Sir William Stokes's light shone bright from the very beginning of his medical career, and, when he graduated in Dublin University, his thesis on Disease and Injuries of the Knee-joint was admitted to be one of the most masterly treatises of the kind ever produced by an undergraduate.

The example of his father and of his uncle, Robert Adams, early awakened in him an interest in medicine and surgery that never suffered any abatement, and the personal love and veneration he felt for these two men, both so well worthy of his deepest attachment, fixed deeply in his mind the determination that his own career, like theirs, should be marked by the stamp of the highest aims and the most unswerving rectitude. Worthily he carried out this resolve, so that he became likewise one of those great and upright men in the medical profession whose influence for good was widely felt, and intensely felt by many: a man whom it was good to have known, and whose life was a bright example of all that was great and noble and true.

As a young graduate Sir William Stokes was a valued friend of the late Professor von Langenbeck, Surgeon to the Emperor William I. of Germany, and Surgeon-General of the German army, a man who in Germany occupied a position in the esteem of his colleagues as a scientific investigator, as the founder of the modern school of pathological surgery, and as a man of the highest and noblest life, like to that occupied in our own country by the late Sir James Paget. Sir William studied in Berlin under Langenbeck, and also under Virchow, von Graefe, Wilms, and others.

In Vienna, which after some time spent in travelling in Italy, Switzerland, and the Tyrol with his father, he next visited, he prosecuted his studies under such teachers as Skoda, Oppolzer, Dumreicher, Hebra, Czermak, Türck, and Jaeger, and then returned to Berlin for a further period of some months.

Ranke, the historian of the Popes, who had married an Irish lady, was a friend at whose house in Berlin Sir William Stokes passed many an evening. There he became known to many of the celebrities of the North German capital; and among his fellow student in that city were many who afterwards rose to eminence, such as H. Heiberg, subsequently Professor in Christiania, Leber the ophthalmologist, and others.

His one great relaxation and delight was music, and keen was his appreciation of Wagner, then only a doubtful candidate for recognition as the great musical genius he has since been confessed to be. Sir William himself was a cultivated musician, and possessed a lovely tenor voice, often heard in private society in Dublin.

Paris was visited after leaving Berlin, and there, under Richet, Guérin, and others, he devoted himself exclusively to the study of surgery, as he had been in the meantime, although absent, elected as a Surgeon to the Richmond Hospital in Dublin, and had to return to take up the duties of the post.

From the date of his return to Dublin in the autumn of 1864 his career has been before the public, and the series of monographs and essays upon various surgical matters he published at intervals ever since have given lustre to his name and worthily maintained the worldwide renown of the Dublin School of Surgery. He was one of the very few men who have dared to tie the abdominal aorta, which he did, though unsuccessfully, by Porter's artery compressor, a species of pressure by wire against a slender metal frame acting for a time without obliterating the lumen of the vessel. He will be known to posterity, as he is to his contemporaries, chiefly by this and by his invention of an amputation above the femur condyles, an improvement upon that of Gritti. But his eminence did not rest on these alone. He published from time to time a large series of practical monographs on surgical subjects that are of great value, and are delightful to read owing to their cultured literary style and finish.

His work during his whole life was carried on under some disadvantages. His health was never very robust, a tendency to bronchitis giving himself and his friends much anxiety now and then, and even as lately as June last he wrote that it was troubling him seriously even in the favourable climate of South Africa.

Appreciated in his own country, he was not less so in England, Scotland, the Colonies, America, and the Continent; and he occupied many posts of high honour, and delivered many charming and interesting addresses at representative medical gatherings. Indeed, Sir William Stokes was a born orator, and possessed the Irish gifts of eloquence and sympathy which fascinated his hearers in the Address in Surgery which he delivered at the jubilee meeting of the British Medical Association in 1882, in his Cavendish Lecture in London, and on many another occasion. It was always delightful to hear him speak.

He also held many honourable posts, being President or Vice-President of many societies and of international congresses abroad, as at Copenhagen, St. Petersburg, Paris, etc., posts for which his perfect knowledge of both French and German superlatively qualified him. He was last year elected a member of the Russian Imperial Medical Academy of Military Medicine of St. Petersburg, though the diploma never reached him.

As a teacher his heart was in his work, and his students spoke of him with enthusiasm. His hospital was his delight, and he had completed the fitting up of a new and splendid operation theatre in the Meath Hospital, where his father also taught for many years, just before he left for the seat of war in South Africa.

The one great cloud in Sir William's life occurred during the Fenian troubles, when a constable Talbot (I think that was the name, but I am writing remote from references) was shot in the neck by one of these assassins, and at the trial for his murder the counsel for the defence attempted to fix on Stokes the responsibility for Talbot's death, as he had endeavoured without success to extract the revolver bullet from the vicinity of the occipital bone. Stokes felt this deeply, though consoled by knowing that the best men in his profession were on his side and in sympathy with him, as was shown by the great number of letters he received from them on that occasion. Yet his sensitive and kind nature long felt the hurt and the attitude some members of his profession took up at the time.

In his home and family he was the very happiest of men, and those privileged to enter that inner circle could not but reverently appreciate the Temple of Love he always found in the society of his wife, daughter, and son, to all of whom he was most tenderly attached. His brothers and sisters were as accomplished and amiable as himself and his father. A sister is an author of great ability, chiefly on the subject of ecclesiastical archæology: a brother distinguished himself greatly in Oriental studies, and occupied one of the highest positions open to a civilian in India, and his cousin, Sir George Gabriel Stokes, is revered, loved, and honoured throughout the whole world.

The spirit of this home happiness breathes in the life of his father, written by Sir William Stokes for the series of volumes on *Masters in Medicine*. It was a dangerous thing for a son to write his father's life, but in his hands it was an eminent success, so tenderly, sympathetically, and beautifully was the

life told of that famous man, and yet with such exquisite reserve and impartiality.

Sir William Stokes was appointed Surgeon-in-Ordinary to Her Majesty the Queen for Ireland some twelve years ago, and had long previously, during the Viceroyalty of the Earl of Aberdeen, been invested with the honour of knighthood. Both of these were honours he greatly valued, and spoke of as being, with his marriage to Lady Stokes, the brightest and happiest events of his life.

When the war-cry lately sounded and stirred every patriotic heart in the country, it was enthusiastically responded to by Sir William Stokes. In spite of his somewhat delicate health and the fears of his relations and friends that it might not stand the test of a rude campaign, he offered his services to Government, and we know that his doing so was appreciated in high quarters. At first it was thought these might not be required, but as the contest developed in extent and seriousness he was, at its most critical period, summoned to take his share in it as one of the Consultants to the Forces in South Africa. The summons reached him while he was recovering from an attack of influenza, which had left him weak and anæmic, but he at once responded to it, and proceeded to London to see the Director-General. That officer was exceedingly kind and sympathetic, and gave him the option of deferring his departure to the Cape until his health should be somewhat restored. But his sense of duty and his love of his country led Stokes to brave the risks he was incurring and proceed by the earliest steamer. He suffered accordingly, and was very ill, almost dying, during the earlier part of the voyage, though later he regained strength, and arrived at Table Bay in comparatively good health.

After spending a few days there he was ordered to Natal, somewhat to his disappointment, as he hoped to be stationed at Capetown. Later, however, he wrote enthusiastically of the climate of Natal and its suitability to his health. But war is rude, and charming as the Natal climate may be, it cannot neutralise the pestiferous atmosphere of camp life, nor the strain and fatigues of service in military hospitals into which he was plunged at Frere Camp, Colenso, and Mooi River. His work there he vastly appreciated and liked, regretting only the impossibility of finding time to make full records of the many cases he saw and treated. His experience and skill were of such true service to our army as would have brought joy to him had he known of it as well as others knew.

His defence of the surgical arrangements of the Royal Army Medical Corps is so recent that no one can have forgotten it.

But, alas! the strain was too great for the silver cord, and it gave way. Attacked by bronchitis and jaundice he had to retire to Berea, a Natal health resort, to seek for the restoration of his strength.

No further details have reached the writer. All he knows is the announcement that Sir William died suddenly in Natal—a patriot's death—his life given away for his Queen and country as truly as if a rifle-shot had ended it.

And all that remains to his many attached friends is to look back with love to his memory, and perhaps to envy him his beautiful life and noble death. He was truly, in the classical tongue he loved sometimes to quote—

Integer vitæ scelerisque purus.

Writing in the *Dublin Journal of Medical Science*, Sir John W. Moore, President, Royal College of Physicians of Ireland, says:—Shortly before his departure for South Africa at the beginning of last January, Sir William Stokes had been unwell, suffering from an attack of catarrhal pneumonia supervening on a chronic left interstitial pneumonia. The voyage to the Cape proved most beneficial, and he continued in good health until the beginning of June, when he was in hospital for a fortnight with cough and jaundice, the result—in his own opinion—"of overwork, cold, and the 'bully beef' diet." He was then sent down to Durban to recruit. Under date June 28th, 1900, he wrote home: "Thanks to the ideal climate we have here (that is, at Durban) and the very good food I am getting quite well again, though still weak and easily tired. But next week I hope to get back as there are cases waiting for me both at Maritzburg and at Newcastle." He added: "Next month (that is, July) I hope to return home, as I am confident the war will be over then, and the journey home will—I am sure—make me as well as ever." Alas! for the uncertainty of human hopes and aspirations—all that was mortal of William Stokes finds a last resting place in that distant land which has cost the British Empire so much in blood and treasure to win it as a jewel in the Imperial crown.....

Stokes was a classical writer. His introductory addresses on surgery were models of English composition. He was the author of probably one hundred contributions on clinical and operative surgery which enriched the pages of this Journal as well as those of the *Lancet*, the *Medical Press and Circular*, and the *Transactions* of the Royal Academy of Medicine in Ireland, the Clinical Society of London, and the Royal Medical and Chirurgical Society of London, of all of which bodies he was a Fellow. His last published work was a touching and truthful memoir of his father, which appeared in 1898, as one of a series of volumes, entitled, *Masters of Medicine*.

In private and social life Stokes had a personality which was all his own. His favourite recreations were music and travelling, the latter assuming a pathetic interest when we remember that he sleeps well more than eight thousand miles from his native land, to which he was so devotedly attached, and of which he was so faithful and loyal a son. Yet be it so,

Awake him not, surely he takes his fill
Of deep and liquid rest, forgetful of all ill.

A short eight months ago Stokes, like a soldier, responded to the call of Queen and country to serve as Consulting Surgeon to Her Majesty's Forces in South Africa, and now, like a soldier, he has fallen at the post of duty.

We deeply mourn him whom we have lost. We treasure as a priceless heirloom the record of a noble life spent in the relief of human suffering and disease. As we ponder on the heroism and devotion of such a life, the famous words of Cicero come into mind:

Homines ad Deos nullâ re proprius accedunt quam salutem hominibus dando.

Dr. James Murphy (Sunderland) writes: It is with the most profound feeling of deep sorrow that I have just heard of the death of my old chief, Sir William Stokes. I was his Resident at the Richmond Hospital, Dublin, in 1873-74. It is said that no man is a hero to his valet, and it may be that few of us are looked upon as "surgeons" by our residents, but to me Sir William Stokes was an ideal surgeon and teacher. He knew and taught the science, and practised the art of surgery.

His distinguished father set him an example, and gave him every opportunity, in the University of Dublin, and in the hospitals of Paris, Vienna, Berlin, and London, of making himself master of his subject and he did so. He was the most excellent master that one could learn one's work under; there was always plenty of material in his wards for study, cases being sent to him from all Ireland and even from England, Wales, and Scotland. He was most enthusiastic in his work, and a most perfect clinical teacher, thorough in everything, and explaining to his students the most minute details of the symptoms of each case, and the reason for the treatment. He was an excellent diagnostician, and would do every operation that he thought was justifiable, so one had the advantage of seeing most of the great operations done by a master hand, while he left all the minor operations to his Resident.

As an operator, he was not only brilliant, but he was also successful. His operations were carefully designed and rapidly performed; he never hesitated; he knew what he wanted to do, and did it. And many a time have I, in thinking out how I could best do some big operation, put the question to myself, "How would Stokes tackle this"?

As a lecturer on systematic surgery he was without an equal; his lectures are classical; as an orator his eloquence was of the highest order, and his language so clear and concise that the most junior student could understand it. *Vide*—*inter alia*—his Address in Surgery (Jubilee meeting, British Medical Association, 1882), and his Cavendish Lecture, 1888, on The Altered Relations between Surgery and Medicine.

A Monument to Lavoisier.—A bronze statue of Lavoisier, the great chemist, was recently erected in the Place de la Madeleine, Paris. The cost of the statue which is from the chisel of the distinguished sculptor, M. Barrias, was defrayed by a national subscription, and the Minister of Public Instruction presided at its unveiling.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE FUNCTIONS OF NURSES.

MEMBER, B.M.A.—Our correspondent describes the state of things in a small provincial hospital where there is no house-surgeon, and the matron sews up cut heads, etc. As a member of the governing body he wishes to know whether this is not unqualified practice, and whether the General Medical Council is likely to censure the staff for covering? It is very undesirable that nurses should be employed in such work, but we do not think the General Medical Council is likely to take action against the members of the staff.

REMUNERATION OF *LOCUM TENENTES* AND SALE OF PRACTICES.

EXCEPTION has been taken by a correspondent to the accuracy of certain answers in our columns *re* Remuneration of *Locum Tenentes* and the Sale of Practices. It is said that the minimum at the present time is 4 guineas a week, and that it is very commonly 5 guineas, and that travelling expenses are always paid in addition. It is further stated that on the sale of a practice during the introduction of the successor expenses and receipts are always shared equally, in the absence of an agreement to the contrary. With regard to the remuneration of *locum tenentes*, the scale is liable to so much variation that it is almost impossible to fix it with any accuracy. Our estimate may have been a little too low, but at the same time it is possible that our correspondent's estimate may be too high. As to the sale of practices we are advised that at law the custom our correspondent contends for is unsound, and that in all sales of practices, where the receipts and expenses are shared during the introduction of the successor, this should be specially stipulated in the contract of sale.

PRACTITIONERS AND PATIENTS.

AGGRIEVED.—As A. had never attended Mrs. C., he had no reasonable cause to regard himself as her doctor, nor can we see that he has any right to complain of any of the parties to whose actions he draws our attention.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 7,074 births and 4,346 deaths were registered during the week ending Saturday last, August 18th. The annual rate of mortality in these towns, which had been 20.5 and 20.3per 1,000 in the two preceding weeks, further declined to 19.5 last week. The rates in the several towns ranged from 12.7 in Bristol, 13.0 in Huddersfield, 13.8 in Burnley, and 14.0 in Cardiff, to 23.6 in Salford, 23.9 in Sheffield, 24.2 in Manchester, and 25.0 in Norwich and in Liverpool. In the thirty-two provincial towns the mean death-rate was 19.6 per 1,000, and exceeded by 0.2 the rate recorded in London, which was 19.4 per 1,000. The zymotic death-rate in the thirty-three towns averaged 4.8 per 1,000; in London this death-rate was equal to 4.4 per 1,000, while it averaged 5.0 in the thirty-two provincial towns, among which the highest zymotic death-rates were 7.9 in Hull, 8.3 in West Ham, 8.8 in Leicester, and 9.0 in Sheffield. Measles caused a death-rate of 1.0 in Swansea and 1.7 in Brighton; whooping-cough of 1.0 in West Ham and in Derby, and 1.1 in Nottingham; "fever" of 1.0 in Swansea and in Halifax, and 1.1 in Portsmouth; and diarrhœa of 5.7 in Salford, 5.8 in West Ham, 6.7 in Leicester, 6.8 in Sheffield, and 7.2 in Hull. The mortality from scarlet fever showed no marked excess in any of the large towns. The 59 deaths deaths from diphtheria in the thirty-three towns included 17 in London, 8 in Leicester, 7 in Leeds, and 6 in in Sheffield. No fatal case of small-pox was registered last week, either in London or in any of the thirty-two provincial towns; and only 3 small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last, August 18th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,827 and 1,838 at the end of the two preceding weeks, had further declined to 1,793 on Saturday last; 157 new cases were admitted during the week, against 207, 156, and 155 in the three preceding weeks.

In thirty-three of the largest English towns, including London, 6,832 births and 4,504 deaths were registered during the week ending Saturday last, August 25th. The annual rate of mortality in these towns, which had declined from 20.5 to 19.5 per 1,000 in the three preceding weeks, rose again to 19.8. The rates ranged from 11.3 in Cardiff, 11.4 in Swansea, 13.2 in Bradford, and 13.5 in Croydon to 25.9 in Sheffield, 28.5 in Wolverhampton, 28.6 in Plymouth, and 30.7 in Preston. In the thirty-two provincial towns the mean death-rate was 20.1 per 1,000, or 0.9 more than the rate recorded in London, which was 19.2 per 1,000. The zymotic death-rate in the thirty-three towns averaged 5.3 per 1,000; in London this death-rate was equal to 4.7 per 1,000, while it averaged 5.7 in the thirty-two provincial towns, among which the highest zymotic death-rates were 9.6 in Preston, 10.5 in Wolverhampton, and 10.7 in Plymouth and in Hull. Measles caused a death-rate of 1.3 in Brighton and 1.4 in Oldham; whooping-cough of 1.5 in Nottingham and 1.6 in Derby; "fever" of 1.1 in Portsmouth; and diarrhœa 8.3 in Preston, 8.7 in Wolverhampton, 10.2 in Plymouth, and 10.5 in Hull. The mortality from scarlet fever showed no marked excess in any of the large towns. The 50 deaths from diphtheria in the thirty-three towns included 14 in London, 7 in Leicester, 7 in Leeds, 3 in Sheffield, and 3 in Salford. No fatal case of small-pox was registered last week either in London or in any of the thirty-two large provincial towns; and only 1 small-pox patient was under treatment on Saturday last, August 25th, in the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,827, 1,838, and 1,793 at the end of the three preceding weeks, fell again to 1,726 on Saturday last; 140 new cases were admitted during the week, against 156, 155, and 157 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, August 18th, 948 births and 523 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had declined from 19.0 to 17.0 per 1,000 in the four preceding weeks, further fell to 16.9 last week, and was 2.1 per 1,000 below the mean-rate during the same period in the thirty-three large English towns. Among these Scotch towns the death rates ranged from 13.7 in Dundee and 13.9 in Leith, to 19.1 in Glasgow and 21.9 in Perth. The zymotic death-rate in these towns averaged 3.5 per 1,000, the highest rates being recorded in Glasgow and Paisley. The 273 deaths registered in Glasgow included 13 from measles, 4 from scarlet fever, 13 from whooping-cough, 5 from "fever," and 31 from diarrhœa. Two fatal cases of measles, 3 of diphtheria, and 6 of diarrhœa were recorded in Edinburgh; seven deaths from diarrhœa occurred in Dundee; and 2 from diphtheria, 2 from whooping-cough, and 5 from diarrhœa in Aberdeen.

During the week ending Saturday last, August 25th, 909 births and 554 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.0 and 16.9 in the two preceding weeks, rose again to 17.9 last week, and was 1.9 per 1000 less than the mean-rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 11.8 in Perth and 16.6 in Leith to 23.3 in Paisley and 24.9 in Greenock. The zymotic death-rate in these town averaged 3.3 per 1,000, the highest rates being recorded in Paisley and Greencck. The 251 deaths registered in Glasgow included 4 from measles, 3 from scarlet fever, 3 from diphtheria, 15 from whooping cough, 4 from "fever," and 17 from diarrhœa. Four deaths from diarrhœa and 4 from measles were recorded in Edinburgh; 3 deaths from whooping cough and 4 from diarrhœa occurred in Dundee, and 2 deaths from diphtheria, 4 from whooping cough, and 7 from diarrhœa in Greenock. Diarrhœa caused 7 deaths in Paisley and 6 in Aberdeen.

MEDICAL NEWS.

MEDICAL MAGISTRATE.—Dr. Walter M. Hamilton, of Patricroft, Lancashire, has been appointed a magistrate for Eccles.

MANCHESTER CHILDREN'S HOSPITAL.—At the last monthly meeting of the Board of Governors of this hospital, the Honorary Treasurer reported that £3,000 had been received from the residuary legatees of the will of the late Mr. John Harling, and £1,000 from Messrs. Yates for the endowment of a cot in memory of their father, the late Mr. William Yates, Castleton (formerly of Swinton).

PRIZES AT THE PARIS EXHIBITION.—Messrs. Down Brothers have been awarded the Grand Prix in Class 16, Medicine and Surgery, Paris Exhibition, for their exhibit of surgical instruments and aseptic hospital furniture. The jury was an international one, composed entirely of foreigners, including several foreign medical men. Messrs. Armour and Co. have been awarded a gold medal for their display of extract of beef, vigoral, pepsin, and pharmaceutical products.

MEDICAL VACANCIES.

The following vacancies are announced:

BATH: ROYAL UNITED HOSPITAL.—H[illegible]n. Salary, £[illegible] with board, lodging, and washing. Appl[illegible] Secretary, [illegible]

BERKSHIRE ASYLUM, Wallingford [illegible] Medical [illegible] ed and not more than 30 years of age. Salary, £[illegible] board, attendance, apartments, attendance, and allowances. [Applicati[illegible] the Medical [illegible]

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary, £[illegible] per annum, with £30 allowance for cab hire and furnished rooms, etc. Applications to the Secretary by September 24th.

BOURNEMOUTH: ROSCOMBE HOSPITAL.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Secretary by September 3rd.

BOURNEMOUTH ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £80 per annum, with board. Applications to the Chairman of the Committee by September 6th.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon. Applications to the Secretary by September 10th.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant House-Surgeon," to the Secretary.

CARDIFF: UNIVERSITY COLLEGE.—(1) Demonstrator and Assistant Lecturer in Anatomy; (2) Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120. Applications to the Secretary by September 8th.

CARLISLE DISPENSARY.—House-Surgeon. Salary, £150 per annum, with apartments. Applications to the Honorary Secretary, Mr. G. A. Lightfoot, 23, Lowther Street, Carlisle.

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary, £80 per annum, with residence and maintenance in the house. Applications to the Chairman of the Board [illegible] M[illegible]

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary, £100 per annum, [illegible] board, etc. Appl[illegible]ons to [illegible]

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—District Surgeons.

CROYDON UNION.—Medical Officer for the No. [illegible] District. Salary, £[illegible] per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—(1) House-Surgeon. Honorarium of £25 at end of six months, with board, residence, etc. (2) Resident Medical Officer. Salary, £80 per annum, with board, residence, and washing. (3) Medical Officer for casualty department. Appointment for six months. Salary, £100 per annum, with luncheon. Applications in each case to the Secretary by September 15th.

EAST SUSSEX COUNTY ASYLUM, Hayward's Heath.—Second Assistant Medical Officer and Pathologist, unmarried. Salary, £175 per annum, with board, lodging, and washing. Applications to the Medical Superintendent by September 25th.

GLASGOW UNIVERSITY.—Professor of Clinical Medicine. Salary about £112 and share in fees. Applications to the Secretary of the Glasgow University Court, 91, West Regent Street, Glasgow, by September 12th.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—(1) Anæsthetist. Honorarium, 10 guineas per annum. (2) Junior House-Surgeon. Appointment for six months. Salary at the rate of £30 per annum, with board, lodging, and washing. Applications to the Secretary by September 10th and 17th respectively.

HAMPSTEAD HOSPITAL, N.W.—Resident Medical Officer. Salary at the rate of £120 per annum, with rooms, coals, and gas. Applications to the Honorary Secretary by September 10th.

ISLE OF WIGHT ASYLUM.—Locum Tenens for a month or more. Salary, 3 guineas a week and travelling allowance. Applications to the Medical Superintendent.

LANCASTER COUNTY ASYLUM.—Assistant Medical Officer. Salary commencing at £125 per annum, with usual allowances. Applications to the Medical Superintendent.

LEITH HOSPITAL.—(1) House-Physician; (2) Assistant House-Physician; (3) Assistant House-Surgeon; (4) Surgeon in Outdoor Department. Applications to Mr. G. V. Mann, Secretary, 33, Bernard Street, Leith, by September 15th.

LONDON THROAT HOSPITAL, 204, Great Portland Street, W.—Non-resident House-Surgeon. Appointment for six months. Honorarium at the rate of £25 per annum. Applications to the Secretary of the Medical Committee by September 21st.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee.

MANCHESTER: CANCER PAVILION AND HOME.—Surgical Officer. Applications to Mr. E. W. Marshall, 38, Barton Arcade, Manchester, by September 2nd.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer; unmarried. Appointment for six months, but eligible for re-election as Senior. Salary at the rate of £80 per annum as Junior and £100 as Senior, with board and lodging. Applications to the Secretary, Dispensary, Gartside Street, Manchester, by September 12th.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) House-Physician. Salary, £40 per annum. (2) House-Surgeon. Salary, £40 per annum. (3) Assistant House-Physician. Salary, £25 per annum. (4) Assistant House-Surgeon. Salary, £25 per annum. Appointment for six months. Applications to the Secretary by September 15th.

NORTH SHIELDS AND TYNEMOUTH DISPENSARY.—House-Surgeon and Dispenser. Salary, £150 per annum, with an allowance of £20 towards house, etc. Applications to the Honorary Secretary, 99, Howard Street, North Shields, by September 24th.

NORTH-WEST LONDON HOSPITAL, Kentish Town Road, N.W.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum, with board, residence, and washing. Junior Officer, eligible for election to senior post when vacant. Applications to the Secretary by September 4th.

NOTTINGHAM GENERAL DISPENSARY.—(1) Resident Surgeon. Salary, £200 per annum. (2) Assistant Resident Surgeon. Salary, £140 per annum, with all found except board in both cases. Applications to the Secretary.

PRESTON ROYAL INFIRMARY.—Assistant House-Surgeon. Salary, £60 per annum, with board, lodging, washing, etc. Applications to the Secretary, 5, Winckley Square, Preston, by September 5th.

ROCHDALE INFIRMARY.—Resident Medical Officer; unmarried. Salary, £100 per annum, with board, residence, and washing. Applications to the Honorary Secretary by September 18th.

ROTHERHAM HOSPITAL.—Senior House-Surgeon. Salary, £105, all found. Candidates should have ophthalmic experience. Applications to Mr. E. S. Bayliss, Moorgate, Rotherham.

RYDE: ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £50 and fee of £10 10s. for lectures to nurses. Applications to the Secretary.

ST. GEORGE THE-MARTYR, Southwark.—Lady Sanitary Officer and Health Inspector, not less than 25 years of age. Salary to commence at £110 per annum, rising to £150. Applications (on forms provided), endorsed "Lady Sanitary Officer and Health Inspector," to the Vestry Clerk, 81, Borough Road, S.E., by September 10th.

ST. PETER'S HOSPITAL FOR STONE, Etc.—Henrietta Street, W.C.—House-Surgeon. Appointment for six months, but eligible for re-election. Salary at the rate of £100 per annum, with board, lodging, and washing. Applications to the Secretary by September 12th.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon. Appointment for six months. Salary at the rate of £24 per annum, with board, washing, and residence. Applications to the Secretary by September 4th.

STOKE-UPON-TRENT UNION.—Resident Medical Officer of the Workhouse. Salary, £130 per annum, rising to £175, with board, washing, and furnished apartments. Applications to the Clerk of the Guardians, Union Offices, Stoke-upon-Trent, by September 10th.

TOTTENHAM HOSPITAL.—House-Surgeon. Salary, £50 per annum, with board, residence, and laundry. Applications to the Chairman of the Joint Committee, The Green, Tottenham, by September 10th.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum, with board, lodging, washing, and attendance. Applications to the Secretary.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician. (2) House-Surgeon. Appointment for six months. Board and lodging provided. Applications to the Secretary Superintendent by September 26th.

WEST RIDING ASYLUM, Wadsley, near Sheffield.—Temporary Fifth Assistant Medical Officer for six months. Salary at the rate of £140 per annum, with apartments, board, and attendance. Applications to the Medical Superintendent by September 13th.

MEDICAL APPOINTMENTS.

ADDISON, E. A., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer of the Workhouse and Coddenham District of the Bosmere and Claydon Union, *vice* M. T. Kelly, M.B., resigned.

ADYE, W. J. A., M.R.C.S.Eng., appointed Medical Officer of Health for the Bradford-on-Avon Urban and Rural Districts, *vice* J. A. M. Thomson, L.R.C.P., L.R.C.S.I., resigned.

BATHURST, Lancelot, M.R.C.S., L.R.C.P.Lond., appointed Certifying Factory Surgeon for the Urban District of Ellesmere and the Civil Parishes of Ellesmere Rural, Welshampton, Cockshutt, and Hordley in Ellesmere Rural District.

BLAND, M., M.D.Glasg., appointed Medical Officer for the Guisborough District of the Guisborough Union, *vice* J. Merryweather, M.R.C.S.Eng.

BURNET, Robert, M.B., Ch.B., B.Sc., appointed House-Surgeon to the Chorley Dispensary and Cottage Hospital.

CALDWELL, M., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Brotton District of the Guisborough Union, *vice* F. W. D. McGachen, L.F.P.S.Glasg., D.P.H.Eng., resigned.

CLARK, Dr. J., appointed Medical Officer for the Osmotherley District of the Northallerton Union, *vice* A. Bourne, L.R.C.P., L.R.C.S.Edin.

CLARK, R. D., M.B., appointed Assistant Medical Officer to the Mill Road Infirmary of the West Derby Union, *vice* F. S. Pitt-Taylor, M.B., Ch.B.Vict., resigned.

CONNOLLY, T. J., M.B., appointed Medical Officer for the Kinvara District of the Gort Union, *vice* C. J. Nally, L.R.C.P., L.R.C.S.I., resigned.

EATON, O., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer of Health to the Exmouth Urban District, *vice* A. Kempe, M.D.Brux., M.R.C.P.Edin., M.R.C.S.Eng., resigned.

FERGUSSON, James Hugh, F.R.C.S.I., D.P.H., appointed Medical Superintendent Officer of Health for the County Borough of Londonderry.

GRAY, James, M.B., C.M.Edin., appointed Medical Officer for the Middle Dispensary District of the Dundee Royal Infirmary.

GREENWOOD, Alfred, M.D., Ch.B., L.R.C.P., L.R.C.S., D.P.H., appointed Medical Officer of Health for the Borough of Crewe, and Medical Superintendent to the Crewe Isolation Hospitals, *vice* Meredith Young, M.D., resigned.

HANLEY, T. F., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer and Public Vaccinator for the Gillingham District of the Shaftesbury Union, *vice* T. Wood, L.R.C.P.Lond., L.R.C.S.I., resigned.

HAYWARD, W. Curling, M.B., B.S.Durh., M.R.C.S., L.R.C.P., appointed Resident Medical Officer to the Kasr-el-Ainy Hospital, Cairo.

INGRAM, A. G. R., M.B.Aberd., appointed Certifying Factory Surgeon for the Helensburgh District.

JONES, John Harris, M.B., C.M.Glasg., appointed Certifying Factory Surgeon for the Maesteg District of Glamorganshire.

KENDALL, W. B., L.R.C.P.Edin., M.R.C.S.Eng., appointed Medical Officer for the Kingswear District of the Totnes Union, *vice* R. W. Soper, M.R.C.S.Eng.

KENNEDY, W., M.B.Lond., D.P.H.Camb., appointed Medical Officer for the Beaconsfield District of the Amersham Union, *vice* F. Johnson, L.R.C.P.I., M.R.C.S.Eng.

KING, A., M.B., C.M.Edin., appointed Medical Officer of Health for the Watford Urban District, *vice* D. H. Attfield, M.B., B.C.Camb.

LITTLER, R. M., F.R.C.S.Eng., D.P.H.Vict., appointed Certifying Factory Surgeon for the Borough of Southport, Birkdale Urban District and the Civil Parishes of Ainsdale and North Meols in Ormskirk Rural District.

MCCOY, W. J., M.R.C.S., L.R.C.P.Lond., appointed Second Assistant Medical Officer to the Poplar and Stepney Sick Asylum District, *vice* R. R. Sutter, M.D.Aberd.

MCKEITH, John, M.B., C.M.Glasg., appointed Medical Officer to the Exeter Postal Staff, *vice* J. Moone, M.R.C.S., L.R.C.P.Lond., resigned.

MACKENZIE, D. J., M.D.Aberd., reappointed Medical Officer of Health for the Borough of Glossop.

MANSON, R. H., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer of Health for the Darlington District of the Darlington Union, *vice* R. T. Manson, L.R.C.P.Edin., M.R.C.S.Eng.

PANTING, John, M.D.Camb., M.R.C.S.Eng., appointed Certifying Factory Surgeon for the Watton District of Norfolk.

RAMSDEN, H., M.D.Lond., appointed Medical Officer of Health for the Saddleworth Urban District, *vice* W. H. F. Ramsden, L.R.C.P.Edin., M.R.C.S.Eng.

RHYS, W. L., L.R.C.P.Lond., M.R.C.S.Eng., appointed Certifying Factory Surgeon for the Urban Districts of Aberdare and Mountain Ash.

ROBINSON, W. H., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer of Health for the Presall-with-Hackinsall Urban District.

SPOONER, C. A., L.R.C.P., L.R.C.S.Edin., appointed Assistant Medical Officer of the Mile End Infirmary, Workhouse, and Schools, *vice* H. Herbert, resigned.

SUMPTER, E. W., M.B., B.S.Durh., appointed Medical Officer for the Cley District of the Erpingham Union, *vice* W. Sumpter, M.D.St.And., resigned.

SUTHERLAND, Dr. E. A., appointed Honorary Physician to the City Orthopædic Hospital.

THORNEY, J., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Skelton District of the Guisborough Union, *vice* S. Merryweather, L.R.C.P., L.R.C.S.Edin., resigned.

TODD, Charles, M.D., D.P.H.Camb., appointed Assistant Bacteriologist to the Antitoxin Department of the Jenner Institute of Preventive Medicine at Sudbury, Harrow.

WAGSTAFF, J. P., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer for the No. 6 District of the Romford Union, *vice* A. R. Oakley, L.R.C.P., L.R.C.S.Edin., resigned.

WATTS, E. C., M.D.Edin., appointed Medical Officer for the Guisborough Union Workhouse, *vice* J. Merryweather, M.R.C.S.Eng.

WILLIAMS, W. R. E., M.B., Ch.B.Edin., appointed Assistant Medical Officer to the West Derby Union Infirmary, *vice* J. Hay, M.B., Ch.B.Vict., resigned.

WINGRAVE, Wyatt, M.D., appointed Physician to the Central London Throat and Ear Hospital.

WYNNE, W., M.B., C.M.Edin., appointed Medical Officer of Health for the Rye Rural District, *vice* E. W. Skinner, M.D.Edin., resigned.

DIARY FOR NEXT WEEK.

MONDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Ball: Throat and Nose Cases.

TUESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Ewart: Consultation. (Skin.)

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. James Berry: Consultation. (Medical.)

THURSDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Mr. Baldwin: The Treatment of Fractured Jaw.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Griffith: Consultation. (Eye.)

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGES.

FARNCOMBE—BINNIAN.—On August 23rd, at Harborne Parish Church, by the Rev. W. J. Price, M.A., Vicar and Rural Dean, assisted by the Rev. H. Jesson, Vicar of St. Peter's, West Bromwich, cousin of the bridegroom, William Turberville Farncombe, M.D., second son of Richard Farncombe, M.R.C.S., Belgrave Road, Birmingham, to Isabel Maud Binnian, niece and adopted daughter of Albert Edwin Bayliss, Belmont, Harborne. At home Bishopstone, Harborne, September 19th, 20th, and 21st. No cards.

JEAFFRESON—JONES.—On August 29th, at St. Mark's, Hamilton Terrace, N.W., by the Rev. Wm. Taylor Jones, M.A., and the Rev. Edward Taylor Jones, George Cordy Jeaffreson, M.R.C.S., L.R.C.P., L.S.A., eldest son of George Edwards Jeaffreson, M.R.C.S., L.S.A., to Florence Alice Muriel, youngest daughter of the late Dr. George Jones, of Framlingham.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Rontgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, 1.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.-p., daily, 1.30; o.-p., M., W. Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Th., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, i.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, i.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, i.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations.*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; i.-p., Tu. Th., 2.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, W., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; i.p., 1; o.p., 12; Obstetric, i.p., Tu. F. 1.45; o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females, W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9 *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., F., W. 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 3; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attalogy, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

CRISTA GALLI asks for the formula of "Dr. Watson's mixture" for summer diarrhœa.

CLIMATE would be glad to know of a place in Italy, Germany, or France where a gentleman could live quietly in lodgings at about 30s. a week. As the gentleman is rheumatic the climate should be warm and dry.

NORTHERNER asks if any reader can tell him (1) of a book on museum specimen preserving; (2) of an account describing the "formalin method"; (3) of a cement for glass jars which will resist glycerine solutions.

"MARRIED," whose wife has early pulmonary tuberculosis, and whom he wishes to take for a long sea voyage, would like to know if there are any sailing ships to the Colonies, of which he could obtain medical charge, and be allowed to take his wife.

HYPERICUM would be obliged by information on the following: He has been asked whether, in the event of marriage, a woman with the following history would have any chance of having a child. She is 51 years of age, unmarried, and has never had a child. For the last two years she has menstruated occasionally at long intervals. She menstruated last September, next in March, and last in June. Hypericum has answered that, taking into consideration her age and her menstrual history, it is impossible that she could have a child. Is he right?

*** It is not impossible that the woman under the circumstances described should have a child; but it is in the highest degree improbable.

ANSWERS.

"KOUMISS" can be obtained from Mr. Martindale, 10, New Cavendish Street, W.; and doubtless from most pharmaceutical chemists.

E.—We are advised that in the circumstances described half a guinea would be a moderate charge if the attendance was extended over some time; and one guinea, all told, if for a single visit.

ACCURACY.—The text of Miss Kingsley's letter was taken from the *Times*, where the passage appears exactly as printed in the BRITISH MEDICAL JOURNAL. We think it probable, however, that, as our correspondent suggests, Miss Kingsley wrote "on the mend," not "on the mud."

A.B. might refer to the section on Diseases of the Penis in the first volume of Bangs and Hardaway's *Genito-Urinary and Skin Diseases.* Also to the work on *Impotence, Sterility, and Allied Disorders* by the late Dr. S. W. Gross, of Philadelphia.

SURGEON.—Our correspondent hardly gives us sufficient information for a definite reply to his questions. In the case of a tenant-farmer with a moderate farm, £5 5s. would be as much as he could pay. If he farms on a larger scale, there should be a proportionate increase in the fee. In the case of the servant-girl, we think (with the same reservations as above stated) that £3 3s. would be a proper fee.

THE following books may be recommended for the Preliminary Scientific Examination of the University of London: *Analytical Chemistry*, by A. J. Bernays (London: J. and A. Churchill, 1889, 4s. 6d.); *Manual of Chemistry*, by W. A. Tilden (London: J. and A. Churchill, 1897, 10s.); *Practical Organic Chemistry*, by S. Rideal (London: H. K. Lewis, 1889, 2s. 6d.); *Organic Chemistry*, by I. Remsen (London: Macmillan and Company, 1893, 6s. 6d.); *Textbook of Physics*, by A. Daniell (London: Macmillan and Company, 1895, 21s.); *Textbook of Sound*, by E. Catchpool (London: Clive and Company, 1894, 3s. 6d.); *Lowson's Botany* (London: Clive and Company, 6s. 6d.); *Natural Philosophy*, by A. P. Deschanel; *Wells and Davies's Zoology* (London: Clive and Company, 6s. 6d.); *Structural Botany*, by D. H. Scott, 2 parts (London: A. and C. Black, 1894-6, 3s. 6d. each).

CYCLOPS.—The following books may be recommended for the Primary Examination for the Fellowship of the Royal College of Surgeons of England: *Quain's Anatomy* (tenth edition (London: Longmans, Green, and Co.); Cunningham's or Ellis's *Manual of Dissections* (London: Smith, Elder, and Co. 1876); Stowart's *Textbook of Physiology* (London: Baillière, Tindall, and Cox, 1895. 15s.); Foster's *Textbook of Physiology* (London: Macmillan and Co. 1898); Stirling's *Manual of Physiology* (London: C. Griffin and Co. 1895. 9s.); Wiederheim's, *Structure of Man* (London: Macmillan and Co. 1895. 8s.); and Flower's *Osteology of the Mammalia* (the chapters referring to man only). It is advisable to go through a practical course of physiology and also of anatomy if these subjects have not been done recently. Our correspondent would, we fear, find it difficult to prepare for the examination without giving up his practice for some months, but we are not prepared to say that it could not be done otherwise. When Napoleon was told that something was "impossible," he replied "Ne me dites jamais cette bête de mot." But certainly it would be a big undertaking to attempt to take the F.R.C.S.Eng. while in active practice.

HOME FOR INEBRIATE WORKING WOMAN.

OUR correspondent would probably obtain what he requires on communicating with the Matron, The Grove, Fallowfield, near Manchester.

THE INEBRIATE ACTS

L.H.—Under the Inebriate Acts retreats may be kept for the voluntary use of habitual drunkards. In addition inebriate reformatories may be established for criminal inebriates. Persons who are habitual drunkards when convicted of crimes to which drunkenness has been contributory and those who have been merely convicted of drunkenness four times within twelve months may be detained in such a reformatory for a period not longer than three years.

NERVOUS DEBILITY.

WE presume our correspondent wishes to ascertain where the Weir-Mitchell treatment for neurasthenia can be carried out. Any good nursing institution in Lancashire or Yorkshire would probably be able to supply the requisite nursing, which should be conducted under medical supervision. He might communicate with the Superintendent of the Hospital Trained Nurses' Institution, 70, Hope Street, Liverpool.

BOOKS FOR FEVER NURSES.

PHYSICIAN SUPERINTENDENT.—*Fevers and Infectious Diseases, their Nursing and Practical Management*, W. Harding, M.D. Published by the Scientific Press (1s.). *On Fevers, etc.*, by Alex. Collie, M.D. Published by Lewis (8s. 6d.). *Treatise on Continued Fevers of Great Britain*, C. Murchison, M.D. Longman and Green (18s).

CONSANGUINEOUS MARRIAGES.

T. W.—It cannot be said that a consanguineous marriage such as our correspondent refers to is ever "advisable." Whether or not it is permissible would depend on the individual hereditary tendencies of the parties concerned. If they are likely to neutralise each other a favourable answer might be returned, but if the morbid proclivities would probably be intensified, then the reverse. Before a categorical answer could be given in regard to the case in point it would be necessary to know the family and personal history, not only of A., B., and C., but also of C.'s first husband; and it would be well to know what are the respective ages of H. and L.

NOTES, LETTERS, Etc.

EDUCATIONAL NUMBER: CORRECTIONS.

IN the notice of the opening of the medical schools, published in the BRITISH MEDICAL JOURNAL of August 25th, p. 516, it should have been stated that Dr. W. B. Cheadle will preside at the annual dinner of St. Mary's Hospital Medical School, to be given at the Whiteball Rooms, Hôtel Métropole, on October 3rd. The winter session of the University of Birmingham and the University College of South Wales will open on Monday, October 1st and 8th respectively, and not October 18th and 1st as printed last week. By an error in making up the JOURNAL the University of Durham was placed after the Victoria University instead of in its proper order of historical precedence after the University of London.

ERRATA.—In a paragraph entitled The University of London, published in the BRITISH MEDICAL JOURNAL of August 18th, p. 440, "Mr." should have been "Mrs." Bryant. In a letter on the Medical Service in the Highlands and Islands of Scotland, published in the same issue, p. 457, the signature should have been "Jas. F. D. Macara," not "Jos." as printed. We take this opportunity of reminding correspondents that they will greatly assist us by writing their names as distinctly as possible.

TREATMENT OF CORNS.

DR. F. SMITH (Hove) returns best thanks for suggested remedies for corns on sole of foot. Most of the suggestions have been tried. The corns being over the metatarso-phalangeal joints of the great and little toes of each foot seems to increase the difficulty, and lead to the conclusion that of the suggested remedies operation would be the most efficacious.

DR. THOMAS HAYES (Rathkeale, Co. Limerick), writes: It may interest your readers to add one more remedy to the list of "Cure for Corns." After an experience of thirty years I can recommend it for universal application, a boon especially to the soldier, a radical remedy if diligently persevered in, producing on its first application relief from pain and pressure a pulpy condition of the corn, and by occasional gentle scraping its ultimate disappearance. The remedy consists in the application of a fold or two of wet lint next the corn covered with a piece of sheet gutta-percha or oiled silk over which the stocking can be drawn. This may be removed at night and the pulpy corn scraped with a blunt knife and the application renewed every morning. It may be used also by soldiers on long marches to anticipate undue pressure and the development of corns. The remedy was suggested to me 30 years ago by the following incident. A poor woman came to the dispensary suffering from severe bronchitis. She got cold from wearing goloshes as she could not wear shoes or boots in consequence of many corns on both feet. The corns were cured, but the cold feet led to bronchitis. I was impressed by the fact and adopted the suggestion, applying lint and guttapercha tissue to keep the corn soft and pulpy, and its total disappearance by occasional scraping. I find, after all, that I cannot lay claim to this as an original remedy, for among many remedies mentioned in "Cooper's Dictionary" "a piece of green oilskin" is recommended.

THE ARTHUR DAVIS TESTIMONIAL.

DR. GARRETT HORDER (Cardiff) writes: You were good enough to insert a letter from me with regard to a testimonial to Dr. D. Arthur Davies (the late Honorary Secretary of the South Wales and Monmouthshire Branch), and perhaps you will allow me to mention that it is proposed to close the fund at the end of the present month.

PREVENTION OF FLOODING.

P. M. writes: In midwifery practice I have for many years given extract of ergot and laudanum, half a drachm of each, just before or after the birth of the child. I believe flooding has never occurred except when this dose has been accidentally omitted. The opium is probably as important in securing contraction as the ergot, and prevents after-pains, at least partially. I have never known any harm result. "Zephyr" need have no hesitation in adopting the practice.

EGG FLIP.

DR. T. DOBSON POOLE (Wolverhampton) writes): There are quite a number of medical men and nurses who do not know the following method of making egg flip. It has advantages over the method of using a fork, both as to time and the fact that there is no after-taste of egg due to the imperfect beating up.

Take a recently-deposited egg and, after breaking it, remove the chalazæ. This is easily done by first breaking the egg into a saucer. The contents of the egg are then poured into a tumbler, or the egg may at first be broken into the tumbler, but in this case the chalazæ are less easily removed. Now take a clean sheet of note paper and place it over the top of the tumbler as if to seal its contents, after the fashion of sealing a glass of marmalade, then with a serviette keep the note paper tightly in position over the tumbler which is thus enveloped by the serviette. The contents of the tumbler being now perfectly secure are shaken quickly and forcibly upwards and downwards for about a minute, after which the serviette and note paper are removed, when it will be found that the egg is thoroughly disintegrated. Sugar, milk, and some alcoholic flavouring agent, such as whisky or wine, are then added and stirred up with a spoon.

ORAL SEPSIS.

DR. E. P. HARDEY (Hull) writes: As an illustration of the truth insisted upon in Dr. Hunter's paper in the BRITISH MEDICAL JOURNAL of July 28th, I may relate briefly a case lately seen by me: A peculiarly strong woman, whom I had known for years, the wife of a cabman, came to me with pyorrhœa alveolaris. I urged the removal of the offending tooth, and prescribed for the pain, with temporary relief. After a short time I was asked to see her, and found the whole of the gums red, spongy, and acutely painful. Remedies seemed but of small benefit. The condition passed gradually into gangrene; the whole of the margin of the gums, upper and lower, turned black; there was horrible fœtor, the submaxillary glands were greatly swollen, and the general condition one of septic poisoning. After a while, hæmorrhage occurred and the sloughs separated. Recovery was tedious, but she was ultimately able to go out. I again urged the removal of the tooth. In about a fortnight she came to me looking ill, and complaining of a sore on the edge of the tongue near the tooth. A few days after I was urgently sent for, and found her with a temperature of 104°, pulse over 130, and very rapid respiration. On looking in the mouth, the whole of the right side of the tongue was black with gangrene, also a corresponding portion of gum, with a patch on the inner surface of the cheek. She died in two days with symptoms of septic pneumonia.

LETTERS, COMMUNICATIONS, ETC., have been received from

A A. M. R.; Mr. N. Alcock, Ballybrack. **B** Mr. W. F. Brook, Swansea; Mr. L. A. Bidwell, London. **C** Mr. A. Cooper, London; Dr. W. Calwell, Belfast; Dr. D. Carmichael, Boddam; Mr. R. Charnley, Morecombe; Climate; Dr. W. H. Corfield, Bexhill. **D** Messrs. Down Bros., London; Dr. T. Dutton, London; Dr. R. Davies, Cheltenham; Director-General A.M.S., London. **E** Enquirer; Dr. John Edgar, Glasgow; Examiner. **F** Mr. J. S. Ferns, Uxbridge; Dr. J. T. Fox, Strathpeffer Spa; W. W. Fyfe, M.B., Johnstone; Dr. W. F. Farquharson, Carlisle. **G** Mr. J. T. M. Giffen, Chester; Dr. F. W. Goodbody, London. **H** Dr. T. A. Helme, Manchester; Mr. E. Hurwatt, London; Dr. R. H. Hill, London; Miss Henderson, London; W. H. Heard, M.B., Wynberg; Mr. J. T. Harthill, Willenhall; Dr. W. M. Hamilton, Patricroft; Mr. J. J. Hemming, Margate. **I** In Indis. **J** Mr. R. Johnson, London; J. D. **K** Mr. W. J. C. Keats, London. **L** Dr. J. A. Lindsay, Belfast; Lieutenant-Colonel A.M.S.; Mr. P. A. Longhurst, London; Levite; Mr. A. Leche, Axbridge; Lafleur; Dr. T. Ligertwood, London; Mr. J. L. Langman, London. **M** M.D.; M.O., R.N.; Mexico; Dr. A. Macphail, Montreal; Mr. P. E. Miall, Bradford; Dr. W. E. Miller, London; Dr. J. E. Moorhouse, Stirling; Military Secretary, India Office, London; T. C. Mackenzie, M.B., Edinburgh; A. J. McCallum, M.B., Kendal; Member; Member of the London and Counties Medical Protection Society, Limited. **N** Mr. H. F. Nolan, Charing. **O** Observer. **P** Mr. R. H. D. Pope, Belfast; Mr. C. Y. Pearson, Cork; Dr. J. Priestley, Lee-on-the-Solent; Dr. C. B. Plowright, King's Lynn; Dr. J. F. Payne, London; Mr. J. Plummer, Sydney; Dr. L. H. Pegler, London; Dr. W. H. Park, Soochow; Dr. W. R. Parker, Kendal. **R** Dr. Rorie, Cardenden; Mrs. A. Robinson, London. **S** Mr. W. Stewart, Lymington; Dr. F. N. G. Starr, Toronto; Mr. R. Stirling, Johannesburg; Mr. W. A. Satchell, Ealing; Sir J. Sawyer, Birmingham; Mildred E. Staley, M.B., Delhi; The Scientific Press, London; W. R. Smith, M.B., Adelaide; Surgeon-Major A.M.R. (retired), London; Mr. F. Smith, Hove; Surgeon-General Stewart, Lymington; Scalpel; Somerset; Messrs. Street and Co., London. **V** Mr. G. Vickers, London. **W** Mr. F. F. White, Coventry; Mrs. Warden, St. Leonards; Dr. J. Wheatley, Blackburn; Dr. J. Wyllie, Hull; Mr. T. B. Whitelaw, Tyldesley, etc.

BOOKS, ETC., RECEIVED.

Transactions of the Sixth International Otological Congress, London, August 8th to 12th, 1899. Edited by E. Cresswell Baber. London: Southern Publishing Company. 1900.

Uber die Behandlung der Kinderkrankheiten. Von Dr. H. Neumann. Zweite Auflage. Berlin: O. Coblentz. 1900. M. S.

Assouan as a Health Resort. By W. E. Kingsford. Second Edition. London: Simpkin, Marshall, Hamilton, Kent, and Co. 1900. 1s. 6d.

Selected Essays and Monographs (from foreign sources). By various authors. London: The New Sydenham Society. 1900.

*** In forwarding books the publishers are requested to state the selling price.

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BRITISH MEDICAL ASSOCIATION.

Held at IPSWICH, July 31st, August 1st, 2nd, and 3rd, 1900.

PROCEEDINGS OF SECTIONS.

SECTION OF NAVY, ARMY, AND AMBULANCE.

Inspector-General BELGRAVE NINNIS, M.D., R.N., President.

THE PRESIDENT made some introductory remarks which were published in the BRITISH MEDICAL JOURNAL of August 4th, p. 296.

THE AUGMENTATION OF THE ROYAL ARMY MEDICAL CORPS IN WAR.

By J. EDWARD SQUIRE, M.D.,
Surgeon-Lieutenant-Colonel, Commanding London Companies, Volunteer Medical Staff Corps; formerly Senior Medical Officer, Red Cross Society, Suakin Field Force, 1885.

IT is essential for the success of a campaign that an army should be able to move rapidly, unhampered by the sick, who must be moved to the rear as quickly as their condition will permit. The medical service of an army in the field must therefore be able to collect all sick and wounded, and be responsible for their care and removal, whilst the advancing force must also be provided with adequate medical assistance. This requires a large *personnel* and adequate transport both for medical stores and for the sick. A very much larger *personnel* is thus necessary in war than will be required for the medical care of an equal number of troops in garrison and during peace. To keep up during peace the numbers required for war would entail the expense of maintenance of many medical officers, whilst there is no means of keeping them employed in the special duties of their branch of the service. The medical men can get their professional practice in civil life, and with the exception of a necessary *personnel* to look after the troops there is no need to keep them on full pay in the army. So with the other ranks, it would be wasteful to keep on army service more than are required during peace. But the conditions of field service require special qualifications—medical skill alone is not sufficient. An army is an organised body, and its organisation must be preserved on active service or the force loses strength.

All who work in such a force require to understand something of the scheme of organisation and the methods by which the details are carried out, otherwise they can hardly take their places in the scheme and are weak links in the chain. To gain the necessary knowledge takes time, and as an army which has to train its units when it takes the field risks defeat at the outset, so a department unprepared risks a breakdown. Men must therefore be trained during peace, so that they may be immediately available when war breaks out. Only thus can a severe blow be given quickly and be rapidly followed up.

In the present war in South Africa for the first time the outbreak of war found us with an organisation by means of which a large addition to the medical service of the army could be quickly obtained. This organisation, however, provided for obtaining men, but not for their previous training. There has been a step in the right direction, but it has not carried us very far towards an efficient medical service for war.

Civilian medical men and nurses (male or female), however skilled, are a hindrance to the army, until they have learned something of army organisation and methods, and, above all, have come to understand the meaning of discipline. It may, however, be questioned whether, apart from any question of their military training, the civilian orderlies sent out have any knowledge or experience in the care of the sick.

The teaching of first aid, in which the St. John Ambulance Association has done such excellent service, is intended to help unskilled persons to do what is necessary until the arrival of the doctor in the somewhat rare event of an accident in civil life, and for this purpose the scheme of instruction is excellent. The scheme was never drawn up as a training for the work on a battlefield, and few, if any, of those who have taught and examined candidates for these first-aid certificates would pretend that these certificates in themselves indicated that the holders were competent to carry out the necessary duties of bearers on the field. Still less should we consider that the nursing certificate in itself indicated any practical training in nursing—it was never intended to be so understood.

The mere addition of men to the R.A.M.C. is not sufficient. We require the addition of *trained* men, and to ensure this the Medical Department of the War Office must not only make such arrangements during peace as will give them a claim on the men if required for service, but must have some control over their training. A true reserve is required of officers and men who can fall into their places in the army at once when called out. This reserve should be kept in touch with the army, and the military authorities should be able to satisfy themselves that each officer and man keeps up to a certain standard of efficiency in the duties he would be required to carry out in case of war.

The volunteer force could be utilised in order to keep the reserve in touch with the army, and to ensure a certain training in discipline and in the special duties. The reservists should be additional to the medical details necessary for the volunteer force itself, as otherwise there would be no medical aid for this force when embodied. Companies of the Volunteer Medical Staff Corps—which would be more correctly described as volunteer companies, R.A.M.C.—should be formed throughout the country (organised into divisions), and detailed as bearer companies or hospital companies. An establishment according to the requirements of the volunteer force would be laid down, but all officers, non-commissioned officers, and men who joined the reserve would be borne on the roll as supernumeraries, so that, without exceeding the establishment, any number of reservists could be enrolled.

The standard of efficiency of the whole corps would be regulated by the efficiency required of the reservists, so that the whole corps would be kept up to a useful standard. There is an Army Postal Reserve in the 24th Middlesex, R.V., so that there is no radical innovation in the suggestion.

To draw men into the reserve it might be advisable to give some small retaining fee yearly to every efficient member of the reserve, or to grant pay according to rank for a certain period each year (for example, 14 to 28 days), if the men spent the time in a military hospital, or with troops on manœuvres. This annual training need not be compulsory.

A further reserve of medical officers might be ensured by allowing officers of the Volunteer Medical Staff Corps after five years' service to remain in the corps without being required to fulfil all the duties of company officers, so long as they attend the necessary drills, etc., to earn their efficiency. Such officers would, of course, be seconded in the Corps so far as regards appointments to command.

No purely civilian organisation should be incorporated with the military units, as the military discipline of the unit must suffer for a time. Any civilian organisation utilised in the field should be kept distinct, and though necessarily under the orders of the military authorities and perhaps having a military officer attached—should be self-contained. The civilian hospitals sent out to South Africa exemplify this point.

I am of opinion that to attempt to work a hospital or bearer company with military officers and men and civilians mixed together is to risk the efficiency of the unit. With tact the officer in command will in time succeed in getting all to work in harmony, but it will generally result in a relaxation of discipline which tends to spoil the military element, or in driving the civilians to the verge of insubordination by a strict discipline which they do not understand. This is, of course, only theory on my part, but experience is being accumulated in South Africa which will show whether or not there are any grounds for my supposition.

[cont.]

Though I have in this paper advanced the opinion that the members of a civilian organisation such as the St. John Ambulance Brigade should not be incorporated into military units because of their lack of training in military methods, I think that these organisations may be usefully employed as such with an army in the field. At a meeting of the British (now Royal) Association of Public Health held in London in 1894 I read a paper advocating some scheme whereby the Red Cross Society, the St. John Ambulance, and similar civilian aid should be brought into touch with the Army Medical Service to be utilised in war, and I see no reason to alter the views I then expressed.

In criticising the inadequacy of the training of the men of the St. John Ambulance Brigade for service in hospitals or bearer companies I am anxious that I should not be thought to attempt to minimise the services of the men themselves. In common with the whole nation I honour the patriotism and self sacrifice which has urged these men voluntarily to risk their lives in serving the country to the best of their ability. They are doing good work and doing it well, but I believe that the system which has put them, as civilians, into a military organisation is one which has serious disadvantages and is open to improvement.

VOLUNTEER MEDICAL ORGANISATION.

By Brigade Surgeon Lieutenant-Colonel Peter Broome Giles, V.D., F.R.C.S., S.M.O., W.B B.V.I.

The Influence of the Present War.—The campaign has taught us at least two lessons:—(1) That the ground covered by a regiment when advancing to attack is so much wider than heretofore that it is evident the stretcher squads must be more numerous and further apart, and, therefore, require more commanders; the number of squads must be increased and the squads forming a section be lessened. (2) That the stretcher squads must advance to succour the wounded with the greatest caution, taking advantage of all natural cover, working by signals. A lecture I published in September, 1899, gives all requisite detail.

The Regimental Unit.—The *personnel* must be increased to (1) 3 men per company instead of 2, which will give a unit of 24 divided into two sections of 12, or three squads instead of four to the section; (2) a corporal and an orderly; (3) a sergeant detailed from the brigade unit for purposes of drill, and to take command of one section while the corporal does the other. This detailed sergeant, except on field days during brigade camp, would drill, and with the unit to which he belongs. This sergeant would take the place of the regimental hospital sergeant, and not deplete the regiment of a non commissioned officer at the time when every sergeant is most wanted in his own company; and as all these detail sergeants would belong to the brigade unit, the whole stretcher drill would be identical throughout the brigade, which under the present system it is not.

Brigade Organisation.—In order to meet the increased duties: (1) In supplying sergeants to each regimental medical unit; (2) in supplying more stretcher squads because the ground occupied by the brigade is more than formerly; (3) in supplying *personnel* for the administration of the field hospital the establishment of the bearer company or brigade medical unit must be increased on peace footing. For the brigade camp one more medical officer is required, and 40 rank and file, (1) will take one sergeant to each regiment in the brigade; (2) 12 stretcher squads instead of 8 divided into 4 sections of 3 squads each, every section under the command of a sergeant; (3) the field hospital will require one medical officer, one ward master, and the remainder as orderlies.

In each brigade unit there should be either a sergeant instructor detailed from the R.A.M.C., or the warrant officer of the brigade unit should receive some pay. I find after ten years' experience my sergeant-major, exclusive of drill, devotes 30 hours a week at the orderly room.

The Senior Medical Officer should be allowed to examine and pass all the men, whether regimental stretcher bearers or brigade for A. F. E596, being paid his expenses and relative rank pay when so occupied, and should report to the P.M.O. on the efficiency of the brigade unit and the regimental units in the brigade.

District.—In each district a S.M.O. should be appointed who can appoint a Board to examine for sergeants' proficiency, and to report the results to the P.M.O.

War Office.—At the Medical Department of the War Office there should be a volunteer medical officer, with the rank of colonel, drawing the pay of his rank. His duties should be, under the Director-General, to supervise the Volunteer Medical Service, visit all brigade camps, and pay surprise visits when examining Boards were sitting.

Equipment.—All equipment should be found by the Government. Every squad, regimental or brigade, should have a stretcher, a surgical haversack (complete), and a water bottle.

Every Brigade Unit should have 1 ambulance waggon and harness, 1 hospital marquee, 1 bell tent, distinguishing flags, and lamps.

Clothing.—All uniform and equipment should be found by the Government.

Efficiency.—If it were regulation that no regiment were allowed to draw its efficiency grant unless it had its regimental medical unit, the opposition of the combatant officers would be overcome.

The Brigade Medical Unit should be raised on the establishment of one regiment in the brigade, but as supplementary and with separate finance, but all accounts should be passed through the head of the department at the War Office.

Medical Officers.—All medical officers should be regimental, but all medical officers should be detailed to the brigade unit for at least one year in order to acquire discipline, drill, and qualification to instruct the manual only.

In discussing the papers, Mr. Frederick Treves said: Transport for field hospitals has been questioned. In answer, I would mention that all field hospitals have their own transport, and that transport is admirable. The present campaign has shown the value of a large mobile field hospital (taking 300 to 600 patients) to immediately follow the colours. This hospital should have its own transport. We had it in Natal, and it made the efficiency of the hospital perfect. In the advance to Ladysmith I and my colleagues followed the column with a field hospital having a capacity for 300 beds, and this hospital, after Colenso and Spion Kop, was augmented to receive 800 beds. By ordinary arrangements, this hospital would not have had its own transport, but, as a matter of fact, it did have it, and its efficiency was due largely to the liberal way in which its requirements were met, so that it was able to move anywhere at any time. At Spearman's Farm, though twenty-six miles away from any railway, the whole of this hospital moved without difficulty. The R.A.M.C. and the civil surgeons worked in perfect harmony throughout, a fact largely due to the unselfish attitude taken by the R.A.M.C. officers, a very striking figure of the South African campaign. They did not "stand on their dignity" at all, and their generosity and unselfishness has been a very striking feature of the South African campaign. Throughout the whole operations in Natal nothing could have been more amiable than the way in which the R.A.M.C. and the civilian surgeons worked together, both at the base and in the field. Another point was the almost incredible difficulty with regard to orderlies. The question of orderlies is a difficult one. The present campaign showed that nurses—keenly as their services were appreciated—could not work in field hospitals. In the base hospitals their number could be greatly increased with advantage. What they would have done without the nurses they had at Colenso he did not know, and their work on the two days and nights after the battle called for the very highest possible praise. He believed that the field hospital to which he was attached was the only one carrying nurses, and they were allowed up by special permission of General Buller. They did splendid work, and that work was rendered possible because the War Office very liberally gave him the most magnificent transport. He never left it until he left the colony. That lavish preparation for one individual one could hardly expect to find repeated, but it enabled him to take two nurses up to the front, and he believed these were the only ones in that campaign employed in a field hospital; every wounded man appreciated the services they rendered and felt that they did the work almost as well as men. But one must fall back on the orderly, and he was almost an impossible person. It was

indeed, in fact, very difficult to know what his position was. He had to pitch tents, dig trenches, and then nurse complicated cases. It was almost an impossible position. In a district like the veld water was exceedingly scarce, and it was almost impossible for anyone to be surgically clean. It might be said why not come on the Army Service Corps and keep the hospital orderlies to their proper duties. That sounded all very well, but the question was, Where were they to be got? What encouragement was there for them (the hospital orderlies) to enter the service? Those who criticised the hospital orderly had no knowledge of the extreme difficulty of this subject. It seemed to him that there would be a very great difficulty in getting a reserve of orderlies. The formation of an Army Medical Reserve was one of importance, and such a reserve could well be formed by recently qualified medical men, who could agree to serve for three years—one year with the colours and two in the reserve. After a surgeon had qualified, two or three years generally elapsed during which he was free from the work of the medical school, though not, perhaps, quite bold enough to engage in private practice. Thus an enormous number of men took to travelling appointments, and became ship's surgeons, etc. The one year with the army would give them an acquaintance with the routine of the R.A.M.C., and would be no mean training for the members of the reserve themselves. This reserve would help the Army Medical Department to meet the emergencies of war, and at the same time give no grounds for lessening the personnel of the R.A.M.C. when on its peace strength. The reserve would be called upon only in times of war and would enable the Army Medical Department to avail themselves of a body of specially trained medical men, who from their point of view would have the advantage of such a training as the army provided. He thought the services of such men would be more valuable than those of a number of civilian surgeons selected to a great extent at haphazard. The liberal way in which the whole matter had been done made every medical man who took an interest in the subject feel that the R.A.M.C. would be made as nearly perfect as human beings could make anything.

Surgeon-Major G. A. Hutton, J.P., said forty-six years ago he landed in South Africa in company with that gallant officer, Sir George White. It had been stated that the system pursued in the Transvaal war was inelastic. If anything had been proved, he thought it had been that the system was most elastic. In a very short time after the outbreak of the war, the Director-General of the Army Medical Department was able to command the services of between 400 and 500 qualified civilian medical men and close upon 1,500 St. John Ambulance men to act as orderlies, etc., in the military hospitals in South Africa and on board the hospital ships, and on all sides most satisfactory accounts had been received how well all this additional staff had done its onerous work. He could himself corroborate these reports from questioning men who had returned from the war. With regard to the statements that had been made as to the hospitals, he felt strongly as an old army medical officer, but he did not fear any inquiry—some people evidently, from what had been said, wanted a superhuman institution, but he would remind these critics that they, like all other institutions, were a human institution. One thing was certain, and he was glad to follow Mr. Treves in that direction, that the spirit in which the Director General of the Army Medical Department had entered into the subject of additional assistance in time of war augured well for the future of the R.A.M.C. and the assistance they would be able to give to the sick and wounded in war.

Dr. F. W. Forbes Ross, at present attached to the R.A.M.C., said he found everything satisfactory in the R.A.M.C. He thought it ridiculous to propose that the War Office should call up a reserve of young medical men whose surgical knowlege was at a discount. Let them call on men like Mr. Treves, whose stretcher-bearing capacities might be at a discount, but whose surgical skill was unequalled. A half-trained man was worse than an untrained man. The Boers who abused the white flag were quite capable of having poisoned the river with enteric dejecta. As a colonist, he advocated the treatment of enteric fever cases, when epidemic in a campaign, on low mounds of recently-dug soft earth, covered with a waterproof sheet, as conducive to their comfort, and to the non-spreading of the disease by infected bedding.

HOW TO LINK THE MEDICAL SERVICE OF THE AUXILIARY FORCES WITH THE ROYAL ARMY MEDICAL CORPS.

By James Cantlie, F.R.C.S.,
Surgeon-Captain, London Scottish R.V.

This subject is so extensive and the time at my disposal—fifteen minutes—so short, that I will but give the outline of a scheme for blending the possible military medical resources of Great Britain into one useful and manageable whole.

At the present moment the different systems in vogue in the three great departments of our national military service are as follows:

(1) In the regular army, the Royal Army Medical Corps includes the officers, non-commissioned officers and men of the medical service doing duty with the army. There is but the one unit now, whereas up to quite recently we had a complex organisation that worked with considerable friction.

It is unnecessary to go into the past, how from being regimental surgeons the officers were placed upon a staff. When the Medical Staff Corps was created the officers were not medical men, but captains and lieutenants of orderlies, quartermasters in fact, raised from the ranks for the most part. Now the medical officers are given substantive rank in their corps, and the name Staff Corps has disappeared, and the whole are organised, on the basis of other corps troops, such as the Royal Engineers and the Royal Artillery, as a medical corps.

In the militia the regimental system has been done away with, and a Militia Medical Staff Corps has supplanted it. The officers are upon a staff without substantive rank, and the corps is divided into companies with officers told off from the staff to do duty with the companies.

In the volunteers two systems obtain, neither of which resembles the organisation followed in the regular army or in the militia. The regimental system is in vogue for the most part, the medical officers being gazetted as officers to a particular regiment, and they are dressed in the uniform of that regiment, and have no official connection with any organisation beyond it.

In addition the volunteers possess the Volunteer Medical Staff Corps, with headquarters at several towns. The officers of this corps are gazetted to the different companies as officers of the corps; they are not upon a staff, but are part and parcel of the companies they command.

It is plain that, with so wide a divergence in system, to fit in the one service with the other is an impossibility. The volunteer medical officer, if taken on for service in the army, is employed as a civilian, for the organisation permits of no relative transition grade from the one service to the other.

In regard to the training and organisation, what do we find?

A medical man appointed to a volunteer battalion is without executive power to provide for even "first aid" assistance for the men in the regiment, not to speak of further ambulance work. By the courtesy of the commanding officer he may be allowed to teach and drill regimental stretcher bearers, and to even parade them with stretchers; but as they are so many bayonets less to the effective strength, the bearers may at any moment be ordered to join the ranks.

A further step has even been taken; brigade bearer companies have been formed by several active volunteer surgeons. They, however, maintain a precarious existence dependent for the most part on the good will of the commanding officer or the personal relationship that happens to exist between the commanding officer of the moment and the surgeon. These brigade bearer companies have no official standing, they are mere paper brigades, without official recognition, and have no position in the military organisation of the country, and would disappear at once were the volunteers to be organised as an army on a war footing.

The question comes to be: Should official recognition be sought for on these brigade-bearer-company lines? If so, one basis of organisation must be allowed for the R.A.M.C. and another for the militia and volunteers. Such a scheme would lead to confusion in time of need, and there is no precedent for an organisation of the kind in any other branch of our army, or in the army of any country in the world that pos-

sesses a medical department. Why should the scheme developed after all these years of experience and hard struggles in the army be departed from? The regimental medical system in the army was got rid of owing to the bitter experience of the Crimean war; the Army Medical Corps has become a workable machine, and it is on these lines it behoves us to organise. When brought together for work in the field the volunteer medical system and the army medical system should be found to be similarly organised, so that the work of the one can dovetail into the work of the other.

In the line regiments this system, although not completely developed, is, however, on a basis which tends towards consummation. In the *Army List* the first and second battalions of a regiment are composed of the regular battalions, the third and fourth may be militia battalions, and volunteer battalions have their place on the list as part of the regimental unit. It is a great step in organisation to have introduced this into the *Army List*. It may be but partly a paper organisation, yet it is a step in the right direction and one that familiarises the association of the militia and volunteers with the regulars, and is sure to bear fruit in time.

It should be our endeavour to carry out this idea in the volunteer medical system. To bring it about, however, some radical changes are necessary, even although we have the nucleus of such an organisation already.

The Volunteer Medical Staff Corps, although of small dimensions so far as the needs of the volunteer service go, is the basis of the system to work upon. At present it is too much a corps apart from the daily wants of the service of which it forms a part. The volunteer regimental surgeon appears with perhaps a few regimental bearers to the officer commanding a volunteer battalion as the be-all and the end-all of the necessary medical equipment. We know now, every layman knows, that an army whose medical arrangements are on purely regimental lines is a useless machine. We want, an extended Medical Staff Corps. The extension of the system, therefore, means that every medical officer joining the volunteers ought to be appointed as an officer of the Medical Staff Corps, or, better still, to a volunteer medical corps, and that companies be formed in every county or in every military district, and their number increased until the needs of the auxiliary forces are satisfied.

There should be no other portal for medical men to the medical department of the auxiliary forces. I can hear remonstrances from regimental surgeons; remonstrances based on interference with their rank in the regiment, and with their social relations. There need be no such alarm. By being gazetted to the medical corps that does not imply that the officer is to be removed from his battalion. His place of residence would determine his belonging to the local corps as much then as now. He would be merely told off for duty with that corps, and become as much a part and parcel of the regiment, if he so wished, as at present.

Each battalion of the volunteers should have its regimental stretcher bearers as at present. They should be placed officially at the disposal of the medical officer when required by him, and not merely lent for service when it suited the whim of the officer commanding. In country corps, where a company, or even half a company, has an isolated existence, a minimum of four men should be trained and be officially at the disposal of the medical officer, so that a stretcher may be fully manned by trained men when required. Men so trained and employed should, at the rate of two per company, be qualified to earn the Government grant.

On no account, however, should battalion bearers be removed from their battalion. They are part and parcel of their battalion as much as the men in the ranks, whether they carry stretcher or rifle. As brigade bearers they are out of place, and no organisation can exist with so anomalous a body as just now are mustered for parade under the name of brigade bearer companies.

Behind the regimental or battalion bearers should be the volunteer medical corps. In every military district a volunteer medical corps should have its headquarters, and attached for service to each brigade there should be a complement of a company of the volunteer medical corps.

At present a large number of the men in the Volunteer Medical Staff Corps consist of medical students. It is no doubt an excellent school for training in some ways, but in others it is unsatisfactory. It is subservient of discipline when, say, the Volunteer Medical Staff Corps proceeds to Aldershot, that these young gentlemen should be thrown into intimate association with the privates in the Army Medical Corps. It is subservient of discipline that the future officers of the R.A.M.C. should be compelled to go through such an ordeal. In no other branch of the service is such a step tolerated. The young medical men serving with the Volunteer Medical Staff Corps are as much cadets of the R.A.M.C. as the Woolwich cadets are of the corps of Royal Engineers and the corps of Royal Artillery, although they are not officially declared to be such, as it is from amongst these students that the future officers of the R.A.M.C. are recruited. My idea is—and it is one originated by Surgeon-General Evatt—that the medical students in the medical schools should be formed into cadet corps, with full organisation and Government allowance and equipment.

This is neither the time nor the place to discuss the details of such a corps; but by the formation of a cadet corps the instruction of the future medical officer of the auxiliary forces would be ensured and the position of this valuable material for the national good fully developed. It may be objected by the R.A.M.C. that for them to be linked with a militia or volunteer medical corps would lower their prestige and position; that in the *Army List* to have placed along with their corps a number of volunteer corps that have none of their traditions or records of service would be bestowing lustre upon officers and men who have done nothing to deserve it. This, however, is done in every battalion of the army.

At the head of the list of battalions, including the regulars, militia, and volunteers is an account of the battles they have fought and where they have gained honour. As a rule the 1st and 2nd battalions—the regulars, that is—have alone gained such distinction, but they do not hesitate to have the names of their battalions linked with the professedly home dwelling battalions. How much less, therefore, is it necessary to draw a hard-and-fast line between the R.A.M.C. and a volunteer medical corps. Surgery is surgery and medicine is medicine, whether with an army on the field or in a dispensary at home, and it wants but the magic hand of the organiser to bring the enormous medical reserve of the country into line so that the volunteer surgeon may be fitted for and considered part and parcel of the available military medical *personnel* of the country.

Besides, in time of war, the medical student might be drafted from the Volunteer Medical Staff Corps into the R.A.M.C. as a bearer that happens to be in the ranks as a private is a waste of valuable material. The engineer and artillery cadets at Woolwich are not drafted into the ranks as privates, let the stress of war be ever so severe. The money expended upon them and the long training they undergo is not intended to fit them for only the work of a private soldier; no more should it be the case with young medical men. The nation is not getting its value out of men so trained; they are experts, and to send such men into the field as bearers is pure waste. A reserve for the army with such material in the ranks of the Volunteer Medical Staff Corps is not commercially sound, and therefore inadvisable.

The question of rank in a medical service composed of regulars and auxiliaries is an important one. When officers of the R.A.M.C. are associated with volunteer officers in the field, there ought to be, there must be, if the War Office is to hope for help in the future from officers of the auxiliary forces, a definite understanding as to rank. We must have no repetitions of what has been going on in South Africa.

A number of well trained volunteer medical officers in this country hesitate to go to the front when they know that their rank in the volunteer service avails them nothing. Senior men, well versed in the duties of medical officers in the field, held back rather than be under the orders of a newly-joined surgeon-captain of the R.A.M.C. The War Office will never get the best men—I mean men well up in army medical work and in good positions as consulting surgeons and physicians at home—to take up work on such a basis. If a military medical auxiliary force is wanted and it can be got from among the best men in the country, the rank they have attained in the

auxiliary forces must be made to count when called into the field. I would grade them thus: In the rank of, say, majors when, should a regular, a militia, and a volunteer medical officer be acting together irrespective of seniority, I would place the R.A.M.C. officer in command, the militia officer next, and then the volunteer, and so with captains and lieutenants, but I would not allow a captain of the R.A.M.C. to take command over a major in the auxiliary forces. It may be said it is a question of substantive rank; if so, that question must be got rid of, and promptly. It is what is best for the country we have to think of, and not the trivial details of rank between one medical man and another. A medical officer, be he militiaman or volunteer, ought to regard the medical officers of the R.A.M.C. of the same rank as his superior officers; but if R.A.M.C. officers of junior rank are placed over him, then he feels that the time and money he has devoted to perfecting himself in his military medical duties is but as naught in the eyes of the War Office. The spirit of the volunteer generally has been a long-suffering one, but the day for his suppression is past, and the country looks more closely into such matters than it did some twelve months ago. And it would be well did the medical man, both in military and civil life, take the lesson to heart.

Suggestions for Reform.

My propositions, therefore, are:

1. That the militia and volunteer medical services be organised on the same footing as the Army Medical Service.
2. That there be a Militia Medical Corps and a Volunteer Medical Corps.
3. That in the *Army List* the Army Medical Service should appear thus:
   - Division I.—Royal Army Medical Corps.
   - Division II.—Militia Medical Corps, affiliated with the R.A.M.C.
   - Division III.—Volunteer Medical Corps, affiliated with the R.A.M.C.
4. That all medical officers joining the auxiliary forces be gazetted to one or other of their respective corps.
5. That a medical officer of volunteer corps be seconded or told off for special (it may be permanent) duty with the volunteer battalion in his district.
6. That in the event of war or of national emergency the officers and men of the auxiliary forces corps be considered the first line of medical reserve for the regular army.
7. That a cadet corps of medical students be formed from amongst the medical students of every medical school of the kingdom.
8. That it be urged upon the surgeons and physicians in our hospitals to attach themselves officially or to take up duty in, either the cadet corps of their university or school, or in the volunteer medical corps.
9. That the services of no civil surgeon or physician who has not attached himself for duty or professional training in either of these corps be accepted for service in the field or during national emergency.

Resolution.

I would move as a resolution:

That the Navy, Army, and Ambulance Section request the Council of the British Medical Association to appoint a committee to draw up a scheme to be forwarded to Government for the reorganisation of the medical services of the auxiliary forces on the basis of the system in the Royal Army Medical Corps, and for the purpose of bringing the medical services of the regular and auxiliary forces into unison.

Surgeon-Captain James Harper, M.D., V.M.S.C., seconded the motion.

Surgeon-General Muir thought they would be quite safe in passing the resolution, which was an abstract one offering assistance in reorganisation. He might say, on behalf of the Director-General, that he was grateful for suggestions of this kind. If this resolution helped the department to solve the problem of raising a reserve corps that would always work in harmony with the Royal Army Medical Corps, it would lead to great good.

The resolution was passed unanimously.

VOLUNTEER BRIGADE BEARER COMPANIES.

By Brigade-Surgeon-Lieutenant-Colonel G. S. Elliston, V.D., V.M.S.

The title of this paper is a subject in which I have been much interested for upwards of twenty years, and I should like here to give a brief sketch of their origin and my early efforts to introduce ambulance work into the Volunteer Medical Service.

When I received my first commission as assistant-surgeon twenty-eight years ago, the medical officer had no recognised position in the volunteer forces; we were allowed to join the annual brigade camp, and assist in attending to the sick at the hospital tent, but beyond that we had no status; the adjutants looked upon us as in the way, and only grudgingly allowed a separate tent.

At that time the medical officers provided their own drugs and instruments; there was no hospital equipment; and although the camp contained an average of 1,800 men, there was not even an old regulation stretcher.

This was about the position of affairs in the Eastern District until the end of 1879, when by the invitation of my old ambulance friend, Major Maclure, the present President of the Volunteer Ambulance School of Instruction, I attended the inspection of the first volunteer ambulance corps in the Guildhall, London. The corps was a mixed one of members of the Victoria and London Scottish Rifle Volunteers, and was under the command of the instructor, the late Surgeon-Major Shepherd, of the Victorias. For the first time the new bearer company drill was demonstrated, and afterwards a display of bandaging and carrying wounded was carried out in the presence of a distinguished gathering, including the Lord Mayor and Surgeon-General Sir W. Mackinnon, V.C.

Shortly after this, with the assistance of the Colonel and my brother officers of the 1st Suffolk Rifles, half a dozen Maclure stretchers and a box of ambulance material were purchased, and in January, 1880, a detachment of 30 non-commissioned officers and men were instructed, drilled, and in the following May officially inspected and examined by the P.M.O. of the Eastern District. At the Brigade Camp at Lowestoft, held in July, 1880, this detachment was recognised as a separate unit, and allowed to work with the brigade in the field as well as serve the brigade hospital.

In the following July (1881) this ambulance detachment fully equipped with stretchers, haversacks and water bottles, accompanied the 1st Suffolk Battalion, and took part in the great Volunteer Review held in Windsor Park. The weather was exceptionally hot, and a heavy amount of "first aid" work fell to their share. By a special order issued by the Adjutant-General, the detachment marched past in rear of the 1st Brigade, and it is a historical fact that this was the first instance on record where a medical officer and stretcher party marched past the Queen.

The formation of this ambulance corps was doubtless the means of stimulating ambulance work amongst the volunteer battalions in the Eastern district, and within the next three or four years my colleagues, Surgeon-Lieutenant-Colonel Holden of the 2nd Suffolk Battalion, and the late Surgeon-Major Grove of the 3rd Cambridgeshire, each instructed and equipped 16 men in their respective battalions, being the complement of regimental stretcher bearers allowed, at the rate of two per company.

At the annual brigade camps which were subsequently held, we were in the habit of amalgamating these stretcher bearers, and so forming them into one complete bearer company, with three medical officers and seven sergeants, but there was always a difficulty with the sergeants, as often on field days just when they were most wanted, the adjutants sent for them for special duty. However, we managed to get through a fair amount of useful work, accompanied the brigade in field movements, formed collecting and dressing stations, and by rendering first aid to the real as well as imaginary casualties, not only justified our existence, but demonstrated to many senior regular and volunteer officers the necessity of officially recognising bearer companies in the near future.

About this period many changes took place in the constitution of the Volunteer Medical Service. A most important one was an Army Order in 1888, which gave acting surgeons the right to be recommended by their commanding officers to the

proper military authorities for promotion to surgeon with the rank of captain when they had qualified by passing the proficiency examination.

Another important departure was the appointment of brigade-surgeons to volunteer infantry brigades, and in April, 1890, an Army Order was issued, calling upon these officers to form brigade bearer companies. By an amended order the composition of the company was to be 3 medical officers, 7 sergeants, 1 bugler, and 53 rank and file. The company was not to be supernumerary to the existing regimental establishment, or in other words, no extra capitation grant would be allowed, it being clearly intended that the men should be drawn from the existing complement of regimental stretcher bearers. The great difficulty in carrying out this order was with regard to the sergeants and corporals; the Army Order distinctly stated that the bearer company was to be composed of men not supernumerary to the existing regimental establishment, and to have obtained the requisite number would have been creating supernumerary sergeants contrary to the regulations.

The company was duly formed for the Harwich Volunteer Brigade, and for the next five years the routine duties and establishment were carried out much on the same lines as the old company, the rank and file being dressed in the uniforms of their various battalions, namely, scarlet, grey, and rifle green. As to the transport or medical and surgical equipment, all that the regulations allowed was contained in an Army Order which empowered brigade-surgeons of volunteers to draw eight stretchers on requisition to the principal medical officers of the district. Transport, such as ambulance waggons, cacolets, or litters was not mentioned, neither was medical or surgical equipment.

We now pass on to June, 1894 when a letter from the Horse Guards was sent to all officers commanding volunteer brigades informing them that an Order in Council had been obtained to sanction important alterations in the existing rules with reference to volunteer brigade bearer companies.

1. Members of brigade bearer companies will in future be allowed to qualify for efficiency in a similar manner to men of the Volunteer Medical Staff Corps, instead of as ordinary rifle volunteers as at present; the drills and requirements being in all respects the same for both. They will also be allowed to wear a distinctive uniform.

2. Then follows the unsatisfactory part. Members of brigade bearer companies will continue on the establishment of the corps forming the brigade as at present, and no increase to the establishment of a corps will be allowed in consequence of some of its enrolled members belonging to a bearer company. The question of whether all the men for a bearer company shall belong to the same battalion or be spread over several is left to the discretion of the brigadier commanding the brigade.

In the case of the Harwich Volunteer Brigade the bearer company was formed half at Ipswich and half at Cambridge, the uniform of the Volunteer Medical Staff Corps being adopted. They went into camp with the brigade at Colchester in August, 1895, and during the week took part in field days and outpost work with both regulars and volunteers.

For the first time by order of the general officer commanding, ambulance waggons and field equipment were taken out of stores and, horsed by the Army Service Corps, were placed at the disposal of the bearer company.

After five years' experience of working the bearer company on these lines, during which time, thanks to the brigadier, we have had many successful camps, I feel bound to admit that the present organisation has proved unsatisfactory. I consider they require to be placed upon a different basis, and for that purpose would suggest the following as the chief points:

First and foremost brigade bearer companies should be distinct units with their own officers, capitation grant, and other allowances.

They should be converted into companies similar to the Volunteer Medical Staff Corps, but should be affiliated to their present brigade for mobilisation, camp, and other purposes.

These independent units should not only have their own headquarters, but a paid sergeant instructor, who should act as orderly room clerk and keep up the various forms.

I regret that this scheme would disestablish those companies whose officers and men are drawn from two or more battalions, but I am strongly of opinion they should have only one headquarters, and that they should be raised in the most convenient or populous town in the district belonging to the brigade.

In discussing Surgeon-Captain Cantlie and Brigade-Surgeon-Lieutenant-Colonel G. S. Elliston's papers, Surgeon-Major HUTTON said he regarded any return to the regimental system impossible, and that a reserve of medical officers would not stand the test of time. He favoured the employment of civilian medical men to supplement the R.A.M.C. at the time of national emergency, as was now done.

Major WILSON, R.A.M.C., C.M.G., D.S.O., suggested that the amalgamation of the R.A.M.C., the M.M.S.C., the V.M.S.C., and the V.B.B.C. had been much assisted by the war. The M.M.S.C. had been embodied, and was doing duty in the various hospitals in the United Kingdom. Nearly all the officers and 120 men were serving in South Africa. About 300 men of the Volunteer Medical Staff Corps were employed, and about the same number of the volunteer brigade bearer companies, in South Africa; also several officers of both organisations—not as many as they would like—but it was very difficult for them to leave their practices. These officers had temporary rank in the R.A.M.C., as other volunteer officers had who were serving with their line regiments. They were very glad to avail themselves of the St. John Ambulance Brigade, and they had excellent reports of them, but they did not employ them in preference to the volunteers. If they had employed the total number of both the Volunteer Medical Staff Corps and the volunteer brigade bearers companies they would not have had enough. They were employing 1,400 men of the St. John Ambulance Brigade. The present organisation of the volunteer brigade bearer companies made it excessively difficult to obtain any men for South Africa, or to train the men thoroughly at home. It would be better if these companies were organised as independent units, and he did not think they would be thoroughly effective until this was done.

Surgeon-Lieutenant-Colonel KING (Ches. Vol. In. Brigade) thought that the difficulties in the organisation of brigade bearer companies were more apparent than real. The brigadier in command would always be glad to have an efficient bearer company, and to have a good report from the principal medical officer of his district. He had been appointed in charge of the medical arrangements of the Cheshire volunteer brigade, and had formed a provisional bearer company from the ambulance classes of four of the battalions. They were carefully trained and drilled in camp, and passed a satisfactory inspection by the Principal Medical Officer of Salisbury Plain. He hoped to organise a bearer company from one (the headquarter) battalion, and to obtain recruits from those young men in Chester interested in ambulance work. They would be passed through the battalion into the bearer company, and would, although on the strength of the battalion, form a separate unit of the brigade bearer company. Next year he hoped, when the brigade went into camp, to form a separate camp (close to the Brigade Staff Camp) in which all the usual duties, guard, fatigue, etc., as well as its special duties, would be performed by the bearer company. It would be financed through its parent battalion. This would much increase its efficiency and the *esprit de corps* of the individual units. He might add that he had found that the members of his bearer company had gladly availed themselves of the opportunity for further instruction by doing duty in the stationary hospital on Salisbury Plain, to which they were detailed at the request of the principal medical officer of the district. They received also extra corps pay.

Surgeon-General O'DWYER, P.M.O., Aldershot, said:—The bearer company has a definite position according to operations, but it has not a satisfactory position and the training is not altogether satisfactory. It ought to have more hospital training. There is not much use in bringing a wounded man to a field hospital unless the bearers can assist in nursing him if required. The bearer companies who come to Aldershot for five days' training in the year are given the option of being attached to and encamped near the depôt R.A.M.C., but they do not take up the subject with enthusiasm, as I fear because they would be detached for the

time being from their units. Volunteer majors are not commanded by captains of the R.A.M.C. It is suggested that the capitation grant to members of the hospital bearer companies should be granted for their efficiency, correct dress, etc. Militia surgeons would be a useful body but ought to be better trained in hospital administration.

Brigade-Surgeon-Lieutenant-Colonel Elliston, in reply, said: With regard to the remarks of Surgeon-General O'Dwyer on the nursing qualifications of members of volunteer brigade bearer companies, I should like just to say that the members of the Harwich bearer company are instructed as orderly nurses during the winter, and at the brigade camp in July or August they put this instruction into practice, as they act as hospital orderlies, nurse the sick by day and night, and attend the dressing of minor cases at the dispensary tent. My bearer company have just finished fourteen days in camp at Great Yarmouth, and on the very hot day of last week as many as 16 men were brought to hospital on stretchers suffering from heat stroke. Fortunately an orderly can be detailed to apply remedies to each patient with a very satisfactory result.

Surgeon-General Hamilton said that the loss of the militia medical officers was a great blow to the army. From April 1st, 1873, no more militia surgeons were appointed, and they now had died out. They were country gentlemen, well trained and most useful in every way. He held that the militia surgeons ought to be reappointed, and would prove a most valuable and real reserve. He said that he viewed the Army Medical Reserve as a perfect fraud and a mere paper army. They could not be utilised outside their district, and were in no sense a real reserve. Years ago he had advocated the formation of volunteer bearer companies quite distinct from regimental bearers. He also advocated the registration of nurses willing to serve in emergencies years ago, but this was not carried out. He also held that all civilians employed on active service should have acting commissions and be dressed in a simple uniform, as this was necessary for discipline in the hospitals. In conclusion, he advocated the welding together of the R.A.M.C. and the reserves in one workable and harmonious whole.

FIRST AID AND TRANSPORT OF SICK AND WOUNDED IN CIVIL LIFE IN LARGE TOWNS.

By Surgeon-Major George A. Hutton, J.P.,

Organising Commissioner, St. John Ambulance Association.

Fifty years ago, how did we aid our sick and injured in the first instance, and how did we move them to their homes or to the hospital? Engaged, as I was at that time, as the pupil of a distinguished surgeon, the late Professor G. Yeoman Heath, of Newcastle-on-Tyne, and brought into contact frequently with accidents of all kinds in that great mining and manufacturing district, I have a vivid recollection of the want of all first aid assistance and ambulance service. An ordinary wheelbarrow, a springless coal cart, a shutter or a hurdle, were usually employed, and for a longer journey a street cab was considered the best conveyance without reference to the actual state of the patient. I have known a high dog-cart used to move a man with a badly broken thigh four miles. Stretchers of the most primitive construction were kept at police stations, but these were intended rather for the use of inebriated persons than for the victims of accident or disease.

It was not until 1877 that any great effort was made to establish first aid and ambulance work on a sure foundation. In that year the St. John Ambulance Association came into existence as a department of the Order of St. John of Jerusalem. It is quite true that spasmodic efforts had been made by members of the Order in this direction. In 1872 a sum of £100 was given by a member of the Order to establish an ambulance service in the mining and pottery districts, and this was followed by the purchase of two litters made in Berlin, which were placed at Burslem and Wolverhampton, and in a short time a large number of these litters were purchased for the use of the Metropolitan Police. Other efforts were made in 1874 and 1876 to extend the work of the Order, and in 1877 the St. John Ambulance Association started its humane work. The first centre was established at Woolwich, and was quickly followed by other places taking up the work in Derbyshire, Nottingham, and elsewhere. A depôt was also established at St. John's Gate, Clerkenwell, London, for the supply of stretchers and other ambulance material. Up to this time the litters and stretchers had been obtained from Germany and France, but it was felt that these should now be made in England, and to the hard work and efforts of that veteran in all ambulance work—Sir John Furley—belongs the credit for all the improvements in the design of our stretchers, wheeled litters, and horse ambulances. But as the title of this paper indicates, I must now pass on to the transport of the sick and injured in towns. As showing the importance of this subject, in the year 1890 the Prime Minister, the Marquis of Salisbury, called for reports from Her Majesty's representatives at Vienna, Copenhagen, Paris, Berlin, Stockholm, St. Petersburg, and Washington, and from the Consular officers at Baltimore, Boston, Chicago, New Orleans, New York, Philadelphia, and San Francisco, as to the means adopted in these various cities for the ambulance transport of civilian sick and injured from their homes or place of injury to the hospitals, or from the place of injury to their own homes. These reports were presented to both Houses of Parliament by command of Her Majesty in August, 1890.[1] Time will not allow me to enter into any detailed account of these instructive reports. I may, however, briefly relate the system carried out in the great city of New York, containing some two million of inhabitants. Broadly speaking, the transport of sick (non-infectious) and injured is undertaken by the city police, infectious cases being looked after by the Health Department. The city is divided into thirty five police districts, and these are apportioned to the different hospitals, so that the nearest hospital may be called upon when necessary for an ambulance, and an expeditious response assured. The cost of the ambulances and their maintenance is defrayed by the city in the case of the public hospitals, or by the private hospitals owning them. Strict rules are laid down for the right of way and progress of the ambulances through the streets, and telephone communication is established between the different stations and the hospitals. The superintendent of police says:

> The ambulance service of the City of New York is regarded as most efficient, and has been the means of saving many endangered lives. Every call upon the hospitals is promptly answered and has excited favourable comment on all sides.

I must now pass on to what has been done in this country with reference to an ambulance service for towns. In Birkenhead, as in New York, the municipal authorities have taken up the duty through the borough fire brigade and also the police. A horse ambulance is kept at the fire brigade station, and is ready at all hours for calls to cases of accident. Last year (1899) the brigade received 433 calls, all of which were responded to. The time occupied journeying was 362 hours, or an average of about 50 minutes per journey—the distance travelled 1,304 miles, or an average of three miles per journey. The superintendent reports:

> The work is still increasing, owing to the public recognising the advantages of obtaining the services of the horse ambulance when accidents occur. The members of the brigade who accompany the ambulance have received instruction and passed the examination of the St. John Ambulance Association, and have proved themselves useful in rendering first aid.

In Liverpool the ambulance service has been remodelled on much the same lines as in New York, under the city police. There are five police ambulances attached to the Royal Infirmary, the Northern Hospital, Stanley Hospital, and two others at fire brigade stations, besides a private ambulance at the Southern Hospital. They are all under the police headquarters and in telephone communication with it, and under special rules adapted to the requirements of the city. The cost of these police ambulances is borne by the City Council (Watch Committee). The conveyance of private persons who are in a position to pay is not encouraged, as there is a firm in the city which has a well-equipped horse ambulance for hire. An eminent Liverpool surgeon, Mr. R. Harrison, said:

> These ambulance carriages were doing a most admirable work. Patients were now brought from the docks and steamships and from the suburbs, who had been subjected to severe injuries, in a far better condition than formerly, and in consequence far less amputation took place than before

[1] Reports from Her Majesty's Diplomatic and Consular Officers abroad on the Regulations at the places where they reside, respecting the Ambulance Transport of Civilian Sick. Commercial, No. 21 (1890). Presented to both Houses of Parliament by command of Her Majesty, August, 1890. Eyre and Spottiswoode. Price 2½d.

the ambulance movement, simply because the hospital treatment began, so to speak, at the time of the accident, and the patients were not brought doubled up in cabs, or conveyed on the backs of their comrades, causing fractured bones to take a course he should not like to describe. He was quite sure it had been the means of giving not only great comfort to these people, but had saved not only many limbs, but many lives.

If we go to smaller, and yet important, towns like Halifax, York, Wellingborough, and Northampton, we find that Halifax and York work their ambulance through the fire brigade, and, of course, under the municipalities. At Wellingborough, through the Local Board, the governing body of the town, and in Northampton it is carried on by an ambulance corps under the St. John Ambulance Association, independent of the corporation. The attendants in all these cases, however, require to have undergone the course of instruction of the St. John Ambulance Association. It may be well for me to mention the practical work done in these several places in the last year (1899). At Halifax the ambulance carriage was out 198 times and travelled 620 miles, and one of the principal surgeons says: "I don't know what we should do without it at the infirmary now." In York, the horse ambulance was used on 17 occasions. In 12 cases a fee was charged for the services, and in 5 cases no charge was made. At Wellingborough the horse ambulance was out 31 times, the distance travelled 548 miles. In addition to this the hand-wheeled litter was out 36 times, and travelled 638 miles. At Northampton the ambulance carriage undertook 64 cases of invalid transport, involving journeys amounting to 666 miles at all hours of the day and night. From the foregoing account, it seems that the proper authority to carry out an efficient ambulance service in large towns is the municipal authority, through the police force. The police are always on duty night and day, and therefore are available at all times and hours. It has been recognised now for some years, both by the Home Office and the chief constables throughout the country, that instruction in first aid and ambulance is an essential part of a policeman's education and drill, as by this means they are capable of rendering skilled assistance in case of accident. I would therefore recommend that in large towns the ambulance service should be controlled by the municipalities, the police being required to pass through the course of instruction, and hold the certificate of the St. John Ambulance Association, and also that they should be re-examined annually by a medical officer appointed by the Association. In smaller towns, where there are Local Boards, it would be well for these bodies to control the ambulance service, getting assistance, as they may require from the members of the St. John Ambulance Brigade, when such a body exists in the locality. In country villages it is advisable that a St. John stretcher should be kept for use at the village police station, and in large villages a wheeled litter with stretcher. As far as possible the St. John Ambulance instruction should be carried on by means of classes in first aid into all villages, so that ready and practical assistance may be at hand in case of accident or the removal of the sick and injured.

I remember very well at a conference in which I took part at the International Health Exhibition in London in 1884, the late eminent surgeon, Sir James Paget, said:

> As surgeon to a large hospital he had constantly seen the need there was for a better transfer of patients, whether sick or wounded, into the hospital wards. They might have arranged a system of ambulance close by, but the patients in large hospitals were brought from the narrowest streets and the most distant villages, and from every part of the country, and it needed the enterprise and co-operation of the St. John Ambulance Association to be able to take in hand a work of which the design would be, to spread the system of ambulance far and wide to every village in the kingdom. The work was not one-half, nor one tenth accomplished, when an ambulance was established in that great city, whilst they did not exist in places ten, fifteen, or hundreds of miles off.

I must not close this short paper without directing special attention to the Invalid Transport Corps, established mainly by the advice and assistance of Sir John Furley some years ago at St. John's Gate, Clerkenwell, London. This corps is prepared to move invalids, on payment, to any part of the United Kingdom and also abroad. Some years ago the late Lord Cardwell was removed by this corps all the way from the Mediterranean to Eaton Square, London, without a change, his lordship remaining during the whole journey on a bed made upon one of the stretchers of the St. John Ambulance Association. I find in the last return that in the year 1898 the number of removals by this service was 859, as against 710 in the previous year, and these figures show how much this service is appreciated.

My desire in bringing this transport service before this meeting is to draw the attention of the members of the British Medical Association to the practical use of this ambulance service, for no people are so closely in intercourse with the sick and injured as the members of the medical profession. I feel sure also they will find this ambulance service of immense assistance, especially in difficult cases, not only in our large towns but everywhere throughout the country.

Brigade-Surgeon-Lieutenant-Colonel ELLISTON could quite endorse all Surgeon-Major Hutton said in his interesting paper. They were now only at the commencement of this movement for rendering first aid and transporting sick and injured in large towns, and he would specially draw attention to what Major Hutton said with regard to the instruction of the police force in large centres. They required more help and encouragement from the local authorities so as to keep up their ambulance knowledge from year to year, otherwise they failed to keep up their efficiency. What Major Hutton said about certain towns in Northamptonshire and the Midlands was quite correct. In Northampton, Leicester, Wellingborough, Kettering, and many townships in Northamptonshire, horse ambulance and litter stations were established, and at Wellingborough, by the help of the local authority, a headquarter building containing the ambulance had been built. Brigade-Surgeon-Lieutenant-Colonel Elliston then described the excellent work of the Wellingborough Transport and Ambulance Corps at the disastrous railway accident at the Midland station there two years ago, when the injured were attended to within twenty minutes of the accident. Local authorities ought to subsidise more liberally the police classes, and encourage their men to keep up their knowledge by repeatedly meeting together for practice.

The PRESIDENT OF THE SECTION advocated the desirability of ambulance centres in every town near hospitals where the litters could be kept, which would necessitate a house for them and attendance at a cost, he estimated, of about £100 for each installation. In the metropolis he described the magnitude of the work, and stated that on an ordinary Bank Holiday the inspecting officer of stations required to travel some 60 miles on his rounds. The efficient provision of ambulance centres was largely a question of money.

Surgeon-Captain JAMES HARPER, M.D., V.M.S.C., drew attention to a litter in the room, the invention of members of the St. John Brigade at Ipswich, which he considered a modification and improvement of the Ashford litter, the wheels were lighter and it was provided with a tin case fitted under the litter containing first aid appliances, the canvas hood was also provided with a side flap furnishing an observation aperture which enabled the patient to be supervised if desirable.

A lady interested in first aid relief at Ipswich dwelt on their financial difficulties, and extolled the working men's practical interest in the work while the police of Ipswich failed to maintain their efficiency.

FIRST AID IN CIVIL LIFE.

By JOHN J. DE ZOUCHE MARSHALL, L.R.C.S.I.,
Hon. Assoc. Ord. St. John of Jerusalem in England: Surgeon-Major 3rd Volunteer Battalion East Surrey Regiment and A.M.R.

DIVIDING the community into those who are very unlikely to be on the scene of an accident and those most likely to be, or to be called to such a scene, one may be pardoned for designating the former when they go in for first aid instruction and certificates as "amateur" and the latter under similar circumstances "professional" ambulancers.

The amateur ambulancers (mostly ladies) invariably pay good fees for instruction and are entitled to get the best—the fees, however, being seldom of benefit to the instructor.

Professional ambulancers are of real importance to the public, and should be carefully selected by the local authorities. Not on the existing "technical education" system, whereby scores of idlers join a class on anything just to see if they would like it and invariably drop it when they find it requires brains and pains. The same local authority should pay the fees of instructors for such men and should remunerate

the pupils for the time spent in training. Owing to the lamentable fact that, as every man thinks he can manage a farm—so every surgeon, newly fledged or otherwise, thinks he can instruct an ambulance class, it is consequently recommended so as to make sure of always securing the services of experienced instructors that the St. John Ambulance Association should call together and establish a council from the most experienced ambulance instructors and examiners, to edit a fresh edition of Shepherd's handbook as the official manual, to form a school of instruction in first aid for surgeons desirous of undertaking the instruction of classes, to examine such candidates and issue surgeon instructors' certificates of efficiency, without which no medical man could be appointed to instruct a class. Branches of the St. John Ambulance Association school of instruction should be established in large cities. I beg to offer the following suggestions:

That the St. John Ambulance Association Council consider and report on the best steps to be taken, so that the police force in every district be thoroughly trained in first aid and stretcher work. That an addition be made by the authority under which they serve to each man's pay according to the class, third, second, or first, which he maintains efficiency to be tested by regular periodical examinations. Third-class to receive in addition to pay, say, 3d. daily on passing for the St. John Ambulance Association certificate; second-class more difficult examination and to carry 6d. daily extra pay; and first-class men to pass for the army medical certificate and be entitled to 9d. a day.

Similar extra pay to be due to all public servants or professional ambulancers.

If the authorities continue to excuse the police as "having very little time" for such work, that the risk be no longer run of bringing ambulance work into discredit by hurried and imperfect teaching, and that the St. John Ambulance Brigade takes the entire ambulance protection of the people into their hands, and that they be organised and paid accordingly.

That other public servants be properly educated in ambulance work and receive proportionate pay, including the men of those splendid forces—the coastguard, fire brigade men railway men.

That all officers of the mercantile marine ships which do not carry a surgeon be also instructed, classified, and paid. That special courses of instruction for these sailors be granted by the St. John Ambulance Association so as to enable them to compete for the certificate after five lectures in one week, or while their ships are in port. That a modified course of instruction on the resuscitation of the apparently drowned be held for all lock-keepers on rivers and canals and for boatmen on the same or coasts. That intelligent men of good physique be enrolled all over the country under the banner of the St. John Ambulance Brigade, so that every village may have its squad and every town its company.

That medical students be thoroughly instructed in first aid. Several suggestions to be introduced into first aid teaching, especially in the resuscitation of the apparently drowned.

A lady lecturer for the National Health Society pleaded for the benefits of technical instruction to a more or less degree, and instanced the benefits that had been obtained in this way in rendering first-aid.

Lieutenant-Colonel John Ince, M.D., I.M.S., referred to the Ambulance Association having introduced the first public ambulance in London, and noted with satisfaction the interest shown by the press in this new Section of the British Medical Association's annual meeting.

Surgeon-Major Hutton, J.P., suggested that there should be an ambulance examination by a medical man associated with the usual inspection of the police as to their efficiency in first-aid work.

CAVALRY AMBULANCE SERVICE.

By Surgeon-Major T. F. S. Caverhill,

The Lothians and Berwickshire Yeomanry Cavalry.

When a British Army Corps takes the field it has attached to its divisions for the care of its sick and wounded the bearer companies of the Royal Army Medical Corps. These bearers are on foot, and are supposed to keep up with the cavalry to which they are attached. This system has been condemned by experienced cavalry commanders and army surgeons, notably by the late Major-General Sir Herbert Stewart, who, from his experience as Adjutant-General of the Cavalry in Egypt, described the system as "absolutely unsuitable." He improvised a mounted bearer company which did excellent service.

Surgeon-General Evatt, after his experience in Egypt in 1881, stated that the ambulance arrangements for cavalry were practically non-existent, and that an infantry bearer company could not keep pace with a cavalry brigade in the field.

Lord Morley's Committee (the Army Hospital Services Inquiry Committee) in 1883 unanimously recommended that in the medical organisation of cavalry brigades in the field, provision be made for mounted bearer companies.

In a review of the mounted ambulance service of New South Wales, February 18th, 1899, the British Medical Journal declared: "It is almost incredible that some such cavalry ambulance has never been organised for the British army, where the requirements must be infinitely greater than in a military force such as New South Wales is possessed of."

At the beginning of the South African war, 6,000 cavalry were mobilised and sent out. These, with about other 35,000 cavalry and mounted infantry have been fighting in South Africa provided with a system of ambulance against which such a heavy indictment has been laid.

In the *Times* of July 23rd, 1900, Professor Watson Cheyne, who has recently returned from South Africa, writes:

> The field hospital which has done the greatest amount of good work during the campaign is the New South Wales ambulance ..... Without this field hospital the Army Medical Department would very often have been in serious difficulties during the course of the campaign. It is not the least of the debts which we owe to the Colonies that Australia has sent us such an excellent medical equipment, which has performed invaluable services in the field, and which is an excellent object-lesson for our own field hospitals.

The Imperial Yeomanry Hospital Committee equipped and sent out to the front a flying hospital, and also a light ambulance waggon designed by Dr. Horace Manders on the ground "that under the present organisation it was impossible to render that immediate aid to the wounded now given to the infantry and the field artillery."

The objections to the present system are: (1) Tactical; (2) humanitarian; (3) surgical and medical; (4) administrative.

A cavalry general is hampered and crippled in his movements if he has no means of disposing of his sick and wounded during or after a forced march, or when fighting 60 miles from the main body. His mobility, the essence of cavalry work, is diminished or lost. Our wounded cavalry soldiers ought to have the assurance that they will not die unrelieved, and that they will as soon as possible be brought to the field hospital under the care of the surgeons of the Royal Army Medical Corps.

The antiseptic system has revolutionised civil and military surgery. Epidemics of erysipelas, blood poisoning, and hospital gangrene, which decimated the hospitals in every campaign, are no longer seen where it can be carried out. But, as Esmarch says, "It is a necessity that the patient should have a dressing applied, and that he be brought to the dressing station to be further treated as soon as possible."

In the Bulgarian war it was found that the brilliant results of antiseptic surgery were not obtained unless it was applied within two or three hours, that in order to diminish the mortality in operation cases, especially in joint injuries and amputations, it was necessary to have operations carried out at the earliest possible moment. Fitzgerald noted that in the Franco-German war (without antiseptic treatment) there was an increasing mortality when the amputations were delayed more than two or three hours. All died if there was a delay of over eight hours.

The care of a sick man on the line of march must also be provided for. Some light ambulance is necessary to carry him along, perhaps only for a few hours, until he is able to sit on his horse.

The *materiel* should be divided into (1) indispensable and (2) reserve. With each squadron the indispensable articles for emergencies should be carried in saddle bags after the Russian cavalry pattern.

It is difficult to propose anything definite, for many changes

must be made in cavalry equipment and waggon *materiel*. Eighteen stone is a crushing weight to be carried by our troop horses. Much of that can be carried in squadron carts. Cavalry would then be more mobile; the troop horses would have greater staying power, and they would not be so quickly worn out. The cavalry troop horse is a highly-trained, expensive animal, and cannot be easily replaced.

To provide an efficient medical service for the mounted forces the following points are suggested:

1. The addition of a second surgeon to all cavalry regiments in the field. For surgical and physical reasons this is necessary.

2. That the regimental ambulance detachment of a cavalry regiment be specially trained and equipped for its duties in improvising rough dressings and means of transport, mounting and dismounting wounded, etc.

3. That a certain proportion of cacolets and litters should be carried in the regimental transport for conveying the sick and wounded either sitting or lying; that these be improved, made lighter and more comfortable, and that they be carried when required on properly-trained horses or suitable mules.

4. That each cavalry regiment should have a special pattern of light ambulance as recommended by the Commander-in-Chief after the cavalry manœuvres last year.

5. That the regimental ambulance detachment be annually inspected by the Inspector-General of Cavalry.

6. That mounted bearer companies of the R.A.M.C. be formed to act with mounted infantry or cavalry divisions. The nature of the country will determine whether the bearers ride on horseback or are carried on special ambulance waggons.

7. That where the stretcher bearers are not present in sufficient numbers or where the wheeled transport is unsuitable or insufficient for the wounded of an infantry division after a great battle the cacolets and litters of the Mounted Bearer Company be made use of. De Preval stated that 750 men with these can do the work of 15,000 stretcher bearers.

8. That experienced operating surgeons and assistants (with suitable transport and sufficient dressings) be always close in rear of the fighting line in greater numbers to carry out at once the demands of the antiseptic system.

It has been decided that no auxiliary help is to be allowed at the front. The Red Cross Society is therefore limited in its beneficent work to the lines of communication and to the base. The cavalry soldier has to depend entirely to a rigid and inelastic official system.

Proposals for cavalry and other mounted services should be considered under two heads:

1. Regimental medical aid, that is, that given by the trained ambulance men in each regiment.

2. Non-regimental medical aid, that is, that given by a Mounted Bearer Company of the Royal Army Medical Corps attached for duty to a cavalry regiment.

Surgeon-Major Caverhill described in great detail the special training he had suggested for the regimental stretcher bearers and for the Mounted Bearer Company,[1] laying special stress on instruction for improvising rough first dressings and means of transport by horseback, country carts, waggons, etc.

Concerning *materiel* and equipment he advocated the use of cacolets and litters which could be made more efficient and comfortable, and instanced the Norwegian two wheeled ambulance waggon as a good model for a light ambulance cart. He stated that the horse equipment for the Russian cavalry could not be improved on for carrying emergency drugs and dressings in the field. He showed that from experience in South Africa the Army Medical Corps was undermanned and that the maximum height for our stretcher bearers was fixed at 5 feet 5 inches—much too low for the heavy and exacting nature of their duties. It was no unusual thing for cavalry troopers to be carried 12 miles by hand.

Surgeon Major Caverhill concluded by declaring that in the future we must adopt a standard for the care of the sick and wounded of our cavalry more in keeping with the sympathies of the people and with the practical philanthropy of our social and civil life.

REFERENCE.
[1] British Medical Journal, January 13th and 27th, 1900.

NOTE ON AMBULANCE SERVICE FOR MOUNTED TROOPS.

By Surgeon-Major Valentine Matthews, V.M.S.C.

The question of the mobility of troops has assumed the greatest importance of late, and attention is at once called to the necessity of providing the more mobile units such as cavalry, mounted infantry, etc., with a medical service capable of accompanying and keeping touch with them in their rapid movements.

Hitherto no special provision has been made for mounted services beyond the issue of a pair of special surgical bags for cavalry in addition to the pair of field medical panniers issued regimentally to all branches, while the next lines of medical aid, namely, bearer companies and field hospitals, are the same as those laid down for infantry.

It is hardly a matter for controversy to say that the present arrangements for the mounted services are inadequate. The only point I wish to touch upon is to what extent it is desirable to specialise in the way of medical equipment and transport for those services. If the desired end can be attained by some slight modification of the scale and arrangements laid down for all branches of the army, I think it would be more advantageous than the adoption of too special methods for the mounted services only.

Special instruments have a way of not being available when required, while the easy interchange and replacement of parts add materially to the efficiency of a machine, especially if it be one liable to sudden strains and throwing out of gear. It is mainly when mounted units are on the march or advancing that increased mobility of the medical services belonging to them is required, for as soon as patients are placed in ambulance transport they cannot well be carried either on animals or in vehicles except at a walk. The chief aim, therefore, in the increase of mobility of the medical unit is to keep pace with the mounted unit to which it is attached, and to rejoin with rapidity after the patients have been conveyed to the rear.

It has been proposed to form bearer companies of mounted bearers, the objection to which is in my mind that either the bearers have to look after their own horses, and so take up much of the time which they should devote to the patients, or else an equal number of mounted men must be attached to look after the bearers' horses—that is, each man looking after his own horse and that of one of the bearers. It would no doubt be an advantage if every bearer, whether attached to mounted or dismounted services, were able to ride, as he might, by riding behind a patient on a horse, support him and so bring him back to a place where he would be cared for; but to give a bearer the sole responsibility and charge of a horse in addition to looking after patients would mean either that the patients would not receive the undivided attention of the bearer, which is undesirable, or that the horse would be neglected and soon become non-effective from being left too long without forage and water, and the mounted bearer at once turned into a dismounted bearer. The alternative of having additional men to look after the bearers' horses would add too much to the establishment, and would hardly, I think, be entertained for a moment by the military authorities.

If, then, the bearers are not to be mounted, how are they to keep up with mounted troops?

Mounted troops are accompanied by waggons and carts containing supplies, ammunition, forage, etc. Why should they not be accompanied by ambulance waggons? The present ambulance waggon is strong, and capable of much rough work. In any future pattern these characteristics will no doubt be preserved. I would suggest that each mounted unit be accompanied by ambulance waggons (the precise number of each unit might be fixed when the experiences of the present war are collected), and in these the bearers might be carried. The present pattern, Mark v, would easily carry eight bearers in each, and if the present scale of four horses is insufficient to enable them to keep up, let them be horsed with six horses, or an equivalent of other animals. These bearers and the waggon or waggons carrying them should be regimental, but the bearers of the bearer company of a cavalry brigade could easily be carried in the same way. The unit contains 57 dismounted men who might very easily

be distributed among the 10 ambulance waggons of the company without materially increasing the load of each. In this way the bearers and bearer company could keep touch with the mounted units and arrive upon the scene of action comparatively fresh for their work.

I think that it would be an advantage if the regimental ambulance waggons at least were provided with some form of curtain, something with the nature of a light sunblind and readily detachable which might be supported by light poles, say 2 feet high, and put over the patients in the ditch or other shelter to which they have been temporarily brought, or to which they may have crawled. It has occurred to me, and I mention this at the risk of exciting some ridicule, that some temporary shelter might be obtained by the use of umbrellas—a large umbrella of suitable colour marked conspicuously with the Geneva Cross and with a flap or curtain, forming an article something between a carriage umbrella and an umbrella tent might, I believe, be employed. If one (or more) were strapped to the outside of each waggon it could be detached at the beginning of an engagement and easily carried by one bearer to be pitched at a suitable place. It should have a spike at the end of the stick to thrust into the ground and be pitched under cover, not upright but obliquely, anchorwise. I believe that shelter could thus be provided for two or three men, and by the use of a certain number of such articles some of the suffering due to prolonged exposure to the weather might be averted.

I would also suggest that a cart containing medical equipment, dressings, comforts, etc., be also attached regimentally. The effect of this would be to multiply collecting stations all over the field instead of only one per brigade. I believe that in this way assistance could more readily be given to the wounded, and that it is more in keeping with the system of collecting the wounded into groups all over the field which seems to be the present tendency.

The frontage and depth occupied by troops in action now is so great that some development in the direction indicated would appear necessary.

The only other point to which I wish specially to refer is the weight and load of the waggons of bearer companies and field hospitals attached to mounted units. The weight of the waggons and loads amount to about 36 cwt. each, which I cannot help thinking too heavy for rapid movements. I would suggest that these loads be reduced—that is, that the number of waggons be increased by at least one half, to procure greater mobility of these units, and to the field hospitals and ambulance waggons, say, four should be added for the conveyance of the bearers and to supplement those of the bearer companies. The same system of regimental ambulance waggon and medical store carts might be applied to infantry units, the only difference being a possibly different number of waggons, and that with the infantry unit it would not be necessary to carry the bearers.

I have not referred in any way to the use of cacolets, litters, or other contrivances used where wheeled transport cannot be employed. Their use is more specially directed to mountainous districts, where cavalry and mounted services are not likely to be used as such. Nor have I alluded to the possible use of cycle ambulances, which I believe will be found of great use in the future, as my object in this note was to confine myself absolutely to the point I have discussed. I have given some thought to the subject, although I have no war experience, and hope that this Section of the British Medical Association will not consider that I have occupied their valuable time without excuse.

Lieutenant-Colonel C. B. Maitland, F.R.C.P.Edin., I.M.S., said he would like to supplement the excellent paper of Surgeon-Major Caverhill by trying to suggest something in the way of wheeled carriage for a wounded cavalryman. It was not the man wounded in a general engagement who was so likely to be reported missing as the poor devil who fell while doing duty in the cavalry screen, say 15 miles to the front. If this man were fighting in the Soudan, Afghanistan, etc., unless he was quickly picked up when wounded, it was enough to say he would not be entire when he was found. He thought a 4-mule cart, to carry 4 slung stretchers and 1 man sitting down, ought to be attached to every squadron; 2 of the mules would be ridden, and 2 orderlies would sit behind. This cart could go wherever horse artillery could. The stretchers in the cart should be slung by wire ropes over spring hooks, thus doing away with the necessity of springs to the cart. The cart must be rather heavy, have big wheels and a broad track, and carry water, brandy, a few bandages and splints, and hypodermic syringes. The main hospital marched with the headquarters of the cavalry screen, and must be prepared to carry wounded forward till a good opportunity occurred of sending them back. He had worked out details of this cart which would give an idea of it. It had an oblong floor with skeleton sides and top, a roll-up canvas cover over all. There were four wheels and no springs. The stretchers could be easily taken out and replaced, and were made narrower at the foot than the head, thus allowing room for an orderly to move between them and for a wounded man to sit. They were slung two on each side in double tiers, and had straps for fixing the wounded in. These carts could carry wounded at all usual paces with fair comfort.

After some remarks by Major E. M. Wilson, R.A.M.C.,

Surgeon-General O'Dwyer, A.M.S. (P.M.O., Aldershot), said: I think a bearer company with mountain equipment would be better adapted for cavalry than the present bearer company with wheeled transports, although even with that in its present condition lying down sick cannot be carried. To deal with such cases a lighter kind of ambulance, somewhat on the American lines, would be better than our present vehicle. It was my duty to see that a camel bearer company with mountain equipment was got ready for the desert march to rescue Gordon. The litters were, of course, terribly uncomfortable, but they were better than nothing; and although they caused the patients terrible suffering, that was better than to leave them behind to be slaughtered by the Dervishes. I do not recommend the introduction of the litter to the exclusion of hand transport, which is the best of all for serious cases of wounds or sickness. Cacolets carried by horses were with General Drury Lowe's cavalry division sent forward to seize Cairo after the battle of Tel-el-Kebir. It would be desirable for the R.A.M.C. to have its own transport allotted to it in a campaign, and then it could not be urged that horses employed under the Geneva Cross one day were used for combatant duties the next. If the country wishes to mount bearers of cavalry bearer company on horses, it will cost money, but it could be done; but I think the utility of the bicycle for this purpose might be considered.

Surgeon-Major Caverhill, in reply, pointed out his desire was to direct attention to this important and difficult question, in the hope that reforms might in time be arrived at.

THE CYCLE IN THE FIELD FOR MEDICAL SERVICE.

By Surgeon-Major F. L. Stephenson, V.M.S.C.

I feel myself happy in having the affix "for medical service" added to the subject I have been asked to write about. For the larger subject, the cycle in the field, is at present occupying the keen attention of Major General Sir F. Maurice, and his experiments at Brighton and Woolwich will doubtless tend to solve the larger and more difficult questions, such as the best number for such rapidly mobile units, the proper type of machine, and the best means of transmitting orders. I have ridden with a column of about 220 rifle cyclists under Major (now Colonel) Lloyd, of the Grenadiers, and learnt practically that the transmission of orders with such a column is not easy. I got into trouble because an order did not reach me.

From my experience of this and other rides I have determined to suggest (*vide* Appendix I, p. 629) that the medical unit should consist of 4 officers and 53 non-commissioned officers and men. Such a medical unit could act either as a bearer company or as a temporary field hospital, as you will readily see by noting the equipment and materials carried (Appendices I and II, p. 629) I would add that the whole of this equipment, etc., including the bath, has been actually carried on fairly long rides extending over from two to four days.

My view is that these medical units should be kept well in rear of the fighting line, and be stationed, and massed if necessary, in such a position that they could receive orders by flag or lamp or field wire. When fighting occurred they

could be sent to any point where medical aid was needed, and distance would be no great detriment, seeing that such a unit as I propose, with its full equipment, has been able to cover twelve miles in the hour at the end of a long day's work. Nor must we omit the fact that such a unit would not block the road with slowly-moving waggons; further, it would be able to worm its way through a block created by an ammunition or supply train.

I think that with the medical units the question of speed is of importance. For not only will they need to keep pace with the long and rapid movements of cyclist infantry, but also, having been delayed by "work" at one point, they should be able to hand over their wounded to a more stationary body, and proceed at once to rejoin the fighting line perhaps 50 miles ahead or more.

The section I have organised and equipped has been practically testing such points for the last four years, and these are some of the results, each officer and man carrying his full kit and equipment.

Against a south-west gale of wind with rain we rode from Woolwich to Aldershot, 50 odd miles, under 9 hours. This included two short halts and two long halts of an hour, one at Leatherhead for tea the other at Guildford for a guide who failed to turn up, the weather was so bad. We then lost our way in the dark on the Hog's Back, but got in all right about 10.30 P.M. ready for supper. On the other hand, with good weather, we have done the same journey in 5¾ hours, including three halts for rest and tea.

In very hot weather, August 1897, we rode from Woolwich to Netley. Starting overnight at the end of our day's work, we rode 30 miles to Effingham, where I fed the men and billetted them for the night. After breakfast next morning we started again, and, making three good halts to rest and feed the men, we reached Netley at 4 P.M., the men in good condition and fit for work if necessary.

The amateur who rides from London to Brighton and back for his pleasure may say these "data" are not much; but let me point out that to ride in a light knicker suit, with light cycling shoes on a light roadster is one thing, and to ride in uniform with full kit and equipment on a strong military machine loaded up with stretcher poles and other gear is quite another matter. Nor must we forget our axiom, that with military riding the men must always, even to the end of the journey, be fit and ready for hard work if necessary.

Now let me say a few words about my proposed medical unit. You will note that it is divided into four parts, three stretcher sections and a party of supers—for I prefer to ride my column in sections at intervals of 30 or 40 yards. This takes more room on the road, but intervals of 30 or 40 yards are not of much importance in a 12-mile run. The advantages are these. With a column riding in close order, the men in rear are often blinded and choked with dust, and are unable to see orders by signal which it is sometimes necessary to give from the head of the column. Riding in sections the dust cloud raised is comparatively slight, and it is quite easy to see from section to section, and transmit messages or orders.

Again, with a company riding in close order, an accident to a leading man will throw the whole column into confusion, and sometimes a "heap." I was once in a heap of this sort, resulting from one man coming to grief suddenly, and when we sorted ourselves out we found not only one but several machines dead lame. Riding in sections, the rear sections have plenty of time to avoid the heap. Riding in sections, too, gains time. The men ride more comfortably, and so are able to ride faster; and when the halt comes, by the time the leading section has "stacked" machines, or laid them in the hedgerow, the next section has arrived, and there is much less confusion, a matter of some importance when you have to "unload" stretchers and put them together.

A few words as to orders. I prefer when riding to issue and transmit them by signal—namely, whistle sounds, made up of longs and shorts, and certain semaphore signals made by the arm. In practice I find quite a few signals work all that is necessary while riding.

Before I quit this subject of sections, let me remind you that the sectional division of a company is a great gain in some cases. My proposed medical unit acting as a bearer company may have collected, say, some 200 wounded in a village or hamlet. Having done so, it could leave one section behind for temporary nursing duties, while the other two sections rode on to some other point where further aid was needed.

Now let me say something about the equipment of the unit as detailed in Appendices I and II. Each man carries sufficient clothing to make him independent of the base. Of the ambulance material, the stretcher calls for most notice. It is a bamboo folding stretcher, divided into three parts—namely, two folding poles and a canvas with traverse bars. With trained men it takes just under sixty seconds to put it together. Though light, it is very strong. It has carried Mr. Bennet Burleigh, of the *Daily Telegraph*, when not campaigning—a very good test. The breaking strain is converted into a tension strain, "taken" by a thin rod of Bessemer steel, and this plan works well. We have had these stretchers in use for four years, doing rough work in camps, knocking about in baggage waggons and railway vans, and they continue sound and useful. They are easily converted into hospital beds, and they are made of a pattern to fit the service waggons. It is fair to say that this stretcher is an invention of my 1st Class Staff-Sergeant B. Hardcastle: and this man has recently designed a very portable apparatus by which as many as twelve bicycles can be stacked in one tent, leaving just room enough "on emergency" for the men to lie on the ground between the machines. We are going to test this practically on Salisbury Plain.

The rest of the ambulance equipment does not call for any special description, but I would say that we find the "frame carrier" the best means of carrying the large quantities of dressings and comforts detailed—enough for nearly 300 wounded.

There is a point in the personal equipment worth a little notice. The men complained on long rides of the water bottle and haversack carried across the chest. These articles are now slung on the waist belt, supported by hooks on the serge frock; and the men say this is much easier for riding.

At this point I may be expected to say something about the type of bicycle, but this is one of the larger questions, and cannot be dealt with only from the medical unit point of view. It is true that our equipment is more bulky and awkward to carry than that of the rifleman, but if military cycling is to come to any good, I think there must be a uniform pattern of machine suitable for all. My personal view is that the machine should have a 7-inch or 9-inch head at least. It should have as few parts as possible, but amongst them must be an efficient front wheel mud guard. It is from the front wheel the mud is thrown which clogs the chain in wet weather. I have seen this happen, and the fault remedied by a bit of leather. I would add that my experience with the folding or rotating handle bar and the folding pedal has been very satisfactory, especially in camp. I do not believe in the folding bicycle. We have had most of our machines from Coventry, but Coventry failed me when I wanted an ambulance. Here Birmingham readily stepped in. The ambulance consists of two bicycles side by side, held rigidly together by a framework between them which carries the stretcher. It has to be very strong to stand driving not only on rough roads but occasionally over rough ground. The machine as built has stood the test very well, though we have had to make some alterations of minor details. We had to design new clips or holders to take our regulation stretcher; we had to design a stronger stearing gear, and we had to strengthen the driving wheels. It has one great advantage; it can be taken along ordinary roads at a fair pace—6 to 7 miles an hour—without jolting the patient, and the patient is constantly in view of the riders, one of whom can constantly attend to him while the other steers.

I think these ambulances would be of great service in running the wounded back to the field hospitals. There could be at least four of them in each medical unit ridden by the supers. We have used ours in camps to fetch supplies, food, etc., and have found it very useful and always ready. They might as well be used for fetching supplies of dressings and comforts on a campaign. I have omitted one of the alterations. We had to alter our handle bars so as to readily lift in and out—this facilitates loading and unloading the stretcher, and makes no difference to the riding or steering.

I have taken it for granted that the bicycle is now admitted to be an available adjunct in field operations as a means of transporting men and their equipment over long distances

Appendix I.—*Detail of a Cyclist Bearer Company.*

SECTIONS.		
Each Sectio	1 Medical Officer	Medicines, instruments, chloroform, etc.
	1 Commander (Staff-Sergeant)	Medical comforts.
	2 Guides (Sergeants)	Surgical dressings.
	2 Stretcher Squads, 5 in each Squad ... No. 1 pole man, No. 2 ,, ,, }	One stretcher.
	No. 3 canvas man }	
	No. 4 haversack man,	Field dressings, etc.
	No. 5 spare ,, ,, ,, ,,	
	Total in 1 Section ... ... 1 Medical Officer, 13 N.C.O.'s and men.	
	Total in 3 Sections.	3 Medical Officers, 39 N.C.O.'s and men.
Supernumeraries	1 Signaller ... ... 2 Red Cross flags.	
	1 Repairer ... ... Tools and materials.	
	1 Assistant Repairer ... ... ,, ,,	
	2 Servants ... ... Baths, brushes, etc.	
	2 Company Cooks ... ... Spare mess tins, tea, coffee, etc.	Total ... ... 7 N.C.O.'s and men
Runners for Supply Purpose ...	1 Quartermaster, 1 Sergeant, 6 men to fetch water for wounded and supplies from base	Total 1 Officer ... ... 7 N.C.O.'s and men
	Total 1 Bearer Company	4 Officers ... ... 53 N.C.O.'s and men.

The Ambulance Equipment is divided as follows:

3 Medical Officers	3 medical cases and instruments.
3 Section Commanders	3 frame carriers medical comforts.
6 Guides	6 ,, ,, surgical dressings.
12 Pole Men	6 stretchers.
6 Canvas Men	
6 Nos. 4	12 haversacks with field dressings.
6 Nos. 5	
Total	3 Medical Officers, 39 N.C.O.'s and men.

N.B.—Each officer non-commissioned officer, and man carries a personal kit on his handle bar, namely, spare shirt and socks, 1 pair trousers, towel, soap, blue cloth cape, and pouch.

Appendix II.—*Detail of Dressings, etc., Carried by a Cyclist Bearer Company.*

—	Triangular Bandages.	Roller Bandages.	6 × 6 Wool Pads.	Sponges.	Bottles, Antiseptic Soloids.	Carbolic Vaseline.	Scissors.	Wire Splints.	Screw Tourniquets.	Army Book, 166.	½ oz. Bot. Sal Volat.	Bottles, Thirst Tab. loids.
12 Haversacks, in each	6	3	3	1	1 small	1 tin	1 pair	1 pair	1	1	1	1 small
Total in 12 Haversacks	6 doz.	3 doz.	3 doz.	12	12 small	12 tins	12 pairs	12 pairs	12	12	18 oz.	12 small

—	Triangular Bandages.	Roller Bandages.	Gauze Tissue.	Sponges.	Bottles, Antiseptic Soloids.	Wire Splints.
6 Frame Carriers, in each	1 doz.	2 doz.	3 yds.	2	1 large	2 pairs.
Total in 6 Frame Carriers ...	6 doz.	12 doz.	18 yds.	12	6 large	12 pairs.

—	Brandy.	Brand's Essence.	Oatmeal.	Bottles, Thirst Tabloids	Tea Tabloids.	Condensed Milk.	Saxin.
3 Frame Carriers in each	½ pint	4 tins	1 lb.	4 large	3 tins	4 tins	2 bots.
Total in 3 Frame Carriers ...	2½ pints	12 tins	3 lbs.	12 large	9 tins	12 tins	6 bots.

Total List of Ambulance Materials Carried by a Cyclist Bearer Company.

Antiseptic Triangular Bandages	12 doz.	Stretchers	3
,, Roller Bandages	15 doz.	Red Cross Flags	6
,, Wool Pads, 6 × 6	3 doz.	Sal Volatile	18 ozs.
,, Gauze Tissue	18 yards.	Thirst Tabloids	12 small bottles.
Sponges	2 doz.	,, ,, ...	12 large bottles.
Antiseptic Soloids (Corros. Sublimate)	12 small bottles.	Brandy	2½ pints.
,, ,, ,, ,, ...	6 large bottles.	Brand's Essence	12 tins.
Carbolic Vaseline	12 tins.	Oatmeal	3 lbs.
Scissors	12 pairs.	Tea Tabloids	9 tins.
Wire Splints	24 pairs.	Condensed Milk	12 tins.
Screw Tourniquets	12.	Saxin	6 bottles.
Army Books, 166	12		

and at great speed. I need not repeat the old thread-worn arguments in its favour—but as regards its latest competitor, the autocar, I would remind you that it needs no storage of electricity and no motor fuel in the shape of benzol, coal, etc.

The cycle can go wherever a horse and cart or waggon, often with greater ease—and sometimes where the latter could not go. Add this consideration to the fact that up to now there is practically no provision whatever for supplying medical aid in the field to rapidly moving bodies like cyclists, infantry, and cavalry, etc., this proposed medical unit would fill this

gap, and I think our tests show it could do so with great efficiency.

There is one more point I would put forward. I have said that there should be one type of machine suitable to all; I will go further, and say that military cyclists should be selected of one type, that is, the same height, or nearly so, so that on emergency any man could ride any machine. This is particularly advisable as regards the ambulance. Cyclists must always be selected men; why should not the selection include a height of 5ft. 5ins. to 5ft. 6ins.?

In conclusion, I must thank you for giving me this opportunity of putting forward the results of our experience; these are results. Many experiments and changes had to be made before we arrived at workable ideas. I do not say these are necessarily perfect; but they are practical and workable. Time, no doubt, will suggest further improvements.

Surgeon-General O'DWYER, P.M.O., Aldershot, said: Surgeon-Major Stephenson was good enough to bring 30 or 40 of his company from Woolwich to Aldershot equipped as a cycle-bearer company, each man carrying some kit and surgical appliances for sick and wounded. I thought the unit might be useful for mounted troops, especially if accompanied by light ambulances in countries where there are roads, and I reported in that sense to the authorities, and I have no doubt it will be duly considered now that the cycle and cyclists training forms officially part of the army organisation.

THE ROYAL ARMY MEDICAL CORPS, PAST, PRESENT, AND FUTURE.

By Surgeon-General J. B. HAMILTON, M.D.

BY the Warrant of 1858, promulgated as a result of the Commission presided over by the late Lord Herbert, medical officers were granted increased relative rank, better pay, a higher scale of allowances, and larger pensions, indeed this warrant was known as the Magna Charta of the service. The ink of this warrant, however, was hardly dry before the military element, supported, if not actually instigated, by the War Office, began to whittle away many of its items, and a system of attack on the medical service was carried out by the military authorities. For example medical officers were made "junior of the rank," thus depriving them of choice of quarters, precedence at mess, etc., and when their rank was restored, the Commander-in-Chief issued an order that no second place at mess was to be recognised. Field officers (surgeon-majors) were by some commanding officers ordered to appear on parade on foot. Forage was withdrawn from medical officers unless they could clearly prove their duties necessitated their being mounted. In many cases the proper salutes of rank were withheld with the knowledge and connivance of commanding officers.

As a consequence of this treatment it became almost impossible to obtain candidates, and several warrants were issued increasing the pay and pension of the service, but so disgusted had the schools become that it was most difficult to get good men to compete.

In 1873 Lord (then Mr.) Cardwell abolished the regimental system with a stroke of his pen; and though a circular had been issued just before intimating that if this change was brought out it would not affect those in regiments for at least five years, on April 1st every medical officer was removed from his corps without even the courtesy of a gazette. No compensation for change of uniform was granted, and heavy pecuniary loss was inflicted on all concerned, to be increased when medical officers were ordered to wear blue instead of scarlet. To make matters worse no medical officers were for the future appointed to militia regiments, those actually serving being allowed to die out. At the present time the Militia Medical Service has practically ceased to exist, and the care of some 120,000 militia has devolved on the depleted ranks of the R.A.M.C. So disgusted were the regimental medical officers at their treatment that they left the service in numbers, and in 1879 matters culminated in an absolute dearth of candidates. When 50 places were advertised but 5 candidates came forward and no examination was held.

The next attempt to obtain recruits was by the introduction of the Warrant of 1879, known as the "thousand-pounder." By this arrangement medical officers were admitted up to the age of 32, married or unmarried, and after 10 years' service they were liable to discharge with a gratuity of £1,000, a selected few being retained to fill the higher ranks. At the same time the age for the retirement of surgeon-generals was reduced from 65 to 60, an extra pension of £90 a year being given to the actual incumbents of the rank only, while all others who had entered under the express condition of serving till 65 received nothing, and many never attained the higher grade in consequence of the reduction of the administrative ranks. This scheme having been found (as was generally predicted) an utter failure, another warrant was brought out going back to the old system and abolishing the "thousand-pounder."

Meanwhile, in India the establishment was reduced by 50 executive officers, thus throwing extra work on those left, beside making leave most difficult to obtain. In addition to this numerical reduction a pecuniary loss was also inflicted—charge money for regiments and for hill stations (Rs. 150 per mensem) was abolished, as also was horse allowance for medical officers of Cavalry and Horse Artillery, though at the same time it was promised that the money thus saved should be given back in the form of an allowance to officers in charge of station hospitals. Suffice it to say this promise was never carried out, and in addition to losing 50 officers, the department in India was deprived of over Rs. 40,000 a year by the above breach of faith.

The question of rank next became a burning one. In all the departmental warrants the rank held by medical officers was defined as "relative," which clearly laid down their positions and gave them their proper precedence, choice of quarters, allowances, etc. This, however, was soon to be attacked, the first commencement being the grant of "honorary" (titular) rank to the Commissariat, Pay, Ordnance, and Educational Departments, so that these purely civil officers suddenly blossomed out as Colonels, Majors, Captains, etc., while the medical and veterinary services were left as they were.

The amusing part of this new warrant was the action of these purely civil officers who, while insisting on their always being addressed by their honorary military titles, delighted in calling medical officers "doctors," and attempting to take precedence of them when members of mixed Boards, etc. The injustice was soon, however, to culminate, and on January 1st, 1887, a new Royal warrant was issued, by which but two ranks in the army were recognised, "substantive" and "honorary," and while all the departments but the medical and veterinary were granted the second—that is, "honorary"—these two were left out in the cold, and granted no rank whatever, in substitution for a clearly defined position, a position the Department had uninterruptedly enjoyed from time immemorial. Medical officers were set down as "ranking with" other officers of various grades; in fact, they were reduced to the position of civilian camp followers, without rank of any kind.

A storm of indignation burst forth from the entire medical service. From the highest to the lowest there was but one opinion—that the authorities had again broken faith with the Service, and that there must be an instant and imperative demand for a restoration of these privileges. The Secretary of State for War (Mr. Stanhope) attempted, most foolishly, to justify his action, and explained that status was substituted for rank, and that medical officers had really lost nothing.

The medical schools, headed by the powerful British Medical Association, took the matter up most warmly, and finally the Secretary of State gave way and issued the warrant, giving what are known as compound titles—that is, the word surgeon was prefixed to the various military ranks—surgeon-lieutenant, surgeon-captain, etc., and substantive army rank was granted. This important change was, however, marred by the introduction of the ridiculous title of brigade-surgeon-lieutenant-colonel, an utterly unnecessary rank, but one to which the War Office clung through thick and thin till the issue of the final warrant of 1898, when pure military titles were granted to all ranks, excepting only that of surgeon-general.

To these general officers the military advisers of the Secretary of State for War absolutely refused the title of major-general, and it became known that if the Service would not

accept the warrant without it the whole scheme would be dropped. The incongruity of the arrangement was marked by the fact that all officers of the R.A.M.C. hold substantive rank from lieutenant to colonel in the corps, while the surgeon-generals remained Army Medical Staff.

If it was right that the surgeon-generals should belong to the A.M.S., by a parity of argument the colonels should also do so, as in no other corps is there any higher rank than that of lieutenant-colonel. To further show the animus of the War Office the medical officers of volunteers were obliged to retain their old titles of surgeon-lieutenant, surgeon-captain, etc.

In the Guards, also, a similar arrangement was made, due, no doubt, to the jealousy of the combatant branch, and medical officers appointed to the Guards from the R.A.M.C. have now to drop their military titles and take up the compound ones.

In many ways the authorities both at home and in India treat the medical service differentially, especially in the matter of leave, foreign service, and allowances. It will be in the remembrance of most of those present that the period of foreign service in India was altered from five to six years, and in the unhealthy colonies—Ceylon, China, etc.—from three to five years, but after a long struggle the Indian rule of five years was reintroduced.

Leave has always been a difficulty, and as sickness is generally more prevalent among the troops in the hot season in India, the services of medical officers are more in demand, and few get anything like a fair proportion of that leave so necessary for health in such a climate.

As an example of the differential treatment meted out to medical officers, I may mention two analogous instances, one in India and one at home.

Some years ago a rule was introduced that all subalterns and captains travelling by train with troops in India were to receive a daily allowance of Rs. 3; but this was refused to medical officers. Thus a surgeon-captain taking invalids down from Peshawur to Bombay and returning with drafts from home, absent from his station for three weeks to a month, received nothing, while the captain or lieutenant in command on doing duty drew Rs. 3 per diem for his travelling expenses.

In a similar way at home a sum of 4s. daily was granted to every officer doing duty in a militia camp, with the single exception of the medical officer, and though this injustice was frequently brought before Parliament the Secretary of State would not give way, till finally Lord Lansdowne remedied the matter. I am glad to say that, after a struggle lasting for years, the Indian Government now gives the same travelling allowance to medical as to combatant officers.

The question of Indian pay has for many years been a burning one, and there is little doubt but that it largely influences the influx of suitable candidates. When station hospitals were introduced in India in 1881, the Government made an immense saving. As I before said, 50 medical officers were reduced, charge allowances and forage allowances were taken away, large savings were made by the abolition of small regimental hospitals and their consolidation into larger station hospitals, but not one rupee extra was granted to the medical officer who had all the responsibility and pecuniary risk of these larger charges. As an instance, in the station of Lucknow there had been two infantry, one cavalry, and one artillery hospital. These were consolidated and placed under the charge of a brigade-surgeon, who was solely responsible for the treatment of the sick of 3,000 men, and the whole of the equipment was at his personal debit. He was commanding officer and paymaster of the native army hospital corps, and in addition performed all the duties hitherto carried on by four surgeon-majors; yet, instead of getting any increase of pay, he actually drew Rs. 90 per mensem less than either of the surgeon-majors of the cavalry or Royal Horse Artillery, as the Government of India refused to recognise the rank of brigade-surgeon, and would not give him the extra horse allowance. Indeed, as has often been said, the Secretary of State for War enlists medical officers under certain conditions, and then hands them over to the Government of India like a flock of sheep, not protecting their interests or seeing that the contracts under which they agreed to serve are honourably carried out.

After much agitation, the Government of India did grant a small increase of pay to the R.A.M.C., but how inadequate that increase is may be judged from the fact that lieutenant-colonels R.A.M.C. draw but Rs. 1,150 for command and charge of the largest station hospitals in India, while lieutenant-colonels of regiments draw Rs. 1,450.

Again, a captain R.A.M.C. between three and five years' service draws but Rs. 350, while the captain of a line regiment draws Rs. 415, and of a native regiment from Rs. 600 to 800.

More remarkable, again, a veterinary lieutenant in charge of the horses of a regiment draws a minimum of Rs. 400, while the medical officer in charge of the officers, men, and families only receives Rs. 350, though he may be a captain, if under five years' service. These facts become known in the medical schools, and largely influence the lately passed student in his choice of a career.

The Indian medical service is also suffering, though, perhaps, not to quite the same extent, and even the Royal Navy, I am told, is fast losing favour with the profession. There are also other causes at work to make the service unpopular.

Medical officers, even though members of the Queen's household, which all her honorary physicians and surgeons are, are never invited to State functions, and while Her Majesty's aide-de-camps are invited in turn, her honorary physicians and surgeons are invariably left out.

In a similar way medical officers are given the cold shoulder in most of the leading military clubs. In the United Service Club no medical officer under the rank of major general can have his name put down on the list of candidates, though captains in the army and lieutenants in the navy are eligible.

In two out of the other three leading military clubs to be a medical officer is almost certain to entail rejection, and this not on personal grounds, but through what is called "class blackballing," one of the most contemptible acts a body of gentlemen can be guilty of.

In a paper of this kind it is of course impossible to go further into detail, but after an intimate knowledge of the medical department, extending over forty years, I assert that what might be a splendid public service if justly treated is being ruined by injustice and neglect.

The present strength of the R.A.M.C. is wholly inadequate, and in proof of this let me state that forty years ago there were nearly 1,200 medical officers on full pay, whereas now there are only about 880 effectives.

Since 1860 the whole of the H. E. I. Co.'s white troops, some 20,000 men, have been placed under the medical care of the R.A.M.C., and about 100,000 men have been added to the strength of the army. Thus, while the R.A.M.C. has been reduced quite one-fourth, the army has been doubled.

The appointment of medical officers to the Militia was abolished in 1873, and these officers have now practically died out, thus adding 120,000 more men to be taken charge of by the R.A.M.C. The number of administrative appointments has been largely reduced, and in the Headquarter office the staff has been cut down by nearly one half. The position of P.M.O.s on the staff of general officers is very unsatisfactory, and in South Africa at present the P.M.O. of the Army, instead of being at Lord Roberts's elbow, is under the General Officer Commanding Lines of Communication, 1,000 miles from headquarters.

In a similar way the P.M.O.s of army corps and divisions were refused local rank. In the regulations it is laid down that there shall be a surgeon-general on the staff of each Army corps, that is, with 35,000 men. In South Africa at present there are nearly quarter of a million of men, demanding at least six surgeon-generals, while there is but one (this has been just remedied by the promotion locally of four colonels to be surgeon-generals). In a similar way several of the P.M.O.s of divisions are lieutenant-colonels, each of whom should have the local rank of colonel.

Not only is the influence and authority of these officers diminished by the absence of their proper rank, but they also lose considerably in the matter of pay and allowances, and in the event of death their families are deprived of the extra pensions. I may point out that in the case of so-called combatant officers the appointment of a colonel to the command of a brigade at once carries the rank of major-general. I have heard lately from what I must regard as excellent authority that the present pay and emoluments of the R.A.M.C. do not hold out sufficient inducements for a good class of candidates to come forward.

The law by which the employment of unqualified assistants has been made illegal has naturally raised the demand for qualified medical men, and the numerous openings, official and otherwise, in the Colonies have further drained the supply. The introduction of the five years' curriculum, with the consequent increase in the expense of education, must also influence the rate of income required to attract good candidates. This is not a point on which I can speak with authority, but it is well worthy of consideration.

In conclusion, I consider the chief points necessary to place the R.A.M.C. on a proper footing and secure a good class of candidates are: (1) Increase of pay at home and in the colonies. (2) The pay in India to be brought up to the level of combatant officers at least. (3) The strength of the R.A.M.C. to be increased to at least 1,000 executive officers with the formation of an adequate reserve. (4) The reappointment of medical officers to militia re iments. (5) The extension of military titles to militia and volunteer medical officers. (6) A guarantee of a fair amount of leave for study and also for recreation. (7) Surgeon-generals should be granted the title of major-general, and be graded with the rest of the general officers of the army. (8) The proper recognition of major-generals and colonels on the staff of the army and on the staff of the general officers commanding districts. (9) A more equable distribution of honours and rewards.

Surgeon-General O'Dwyer, P.M.O., Aldershot, advocated the desirability of the P.M.O. on active service being on the staff of the General Commanding-in Chief in order that he might be enabled to administer his department under the most favourable circumstances. He also advocated that this P.M.O. should have executive powers *re* sanitary matters, and instanced many advantages which would result if it were so; he remarked that there were not many Generals who now sanctioned this.

Surgeon-Major Caverhill, M.B. (Lothians and Berwickshire Yeomanry) considered that the authorities would have great difficulty in getting suitable candidates for the R.A.M.C. in the future. First, there were fewer entrants to the medical profession owing to the greater expense attending the extended curriculum of five years' study; and, secondly, the increased number of appointments in civil life caused by the abolition of the unqualified assistant conducting branch practices. The R.A.M.C. was undermanned even in peace time; in an emergency their places could not be efficiently filled by undisciplined civil practitioners. The deficiency of medical officers was the cause of great dissatisfaction as regards leave with its opportunities for study and keeping abreast of recent advances in medical science. In the German army, completely equipped bacteriological laboratories accompanied each army corps. They were also to be found in the Russian army both in the medical and veterinary departments. These were not provided for in our regulations. The time had now come for the formation of a special sanitary organisation evolved from the ranks of the R.A.M.C. This body could be reinforced, if need be, by men of special training and great practical experience such as our county medical officers. These medical officers of health as inspecting officers or as consultants would be of equal, if not greater, importance to the well-being of the army than the consulting surgeons appointed in the recent campaign.

Surgeon-Captain Harper, M.D., V.M.S.C., said that, in consequence of the drain of medical officers of the R.A.M.C. to South Africa many civilian practitioners had been called in to assist or take charge of military hospitals or troops at home. A most important matter for consideration in this connection was the Volunteer Bill at present before the House of Commons, which, by substituting the words "sudden emergency" for the words "actual or apprehended invasion," altered the whole position of the volunteer force. "Sudden emergency" was far too elastic a term, and practically meant nothing. Sir Howard Vincent's statement in the House that the volunteers on the whole were in favour of the change was, so far as he could gather, quite incorrect. It was impossible that any large proportion of officers or men with families depending on them for support could remain in a force under the proposed new conditions. If the Bill became law, it would be followed by a very large number of resignations, and those of many of the best and keenest officers and men. The matter was one of vital importance, both to the medical and combatant branches of the volunteer force.

Surgeon-General Hamilton, in reply, said that the position of P.M.O.s on lines of communication was all wrong. They ought to be with the general in command and under his instructions should issue orders to the subordinate P.M.O.s In the same way P.M.O.s should be on the immediate staff of the G O C., and under his instructions correspond "by order." The future supply of candidates was a most important question, which must be gone into by the British Medical Association. Volunteer medical officers would be in a very difficult position under the new Act, if passed, and men could not be expected to give up their practices to go off on a small salary to distant military stations.

MODERN SMALL-BORE RIFLE WOUNDS.

By Clinton Dent, F.R.C.S.,
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So much has been written during the past few months on the subject of small-bore rifle wounds that it is well nigh impossible to break new ground. The surgeons who have been working in this campaign seem on the whole to be fairly well agreed as to the general lines for practice. It may not be unprofitable if I endeavour to summarise some of the conclusions on surgical points, so far as they appear to be justified by the evidence already collected. This campaign has given us valuable experience of the effects of small-bore bullets travelling at high velocities. Between the Mauser and the Lee-Metford rifle there does not appear to me to be really anything to choose, if we regard solely the destructive effects of the weapon. There can be little doubt, I think, that our service rifle has shown itself to be a thoroughly good weapon and one that deteriorates very slowly from hard work. My experience was almost wholly derived from wounds inflicted by the Mauser bullet, but the same views really must hold good for both weapons. One difference perhaps of importance in the Lee-Metford and Mauser bullet is the steel sheath of the latter, which breaks up worse. It may still be a question for military experts to determine whether the small-bore rifle, as at present adopted, is suitable for every sort of warfare. It is pretty clear that for the South African campaign it was eminently fitted and has proved altogether a success. At the same time I believe that the tendency in the future will not be in the direction of further diminution of bore, increase in rapidity of twist, and diminution of weight of bullet, thereby securing higher velocity and longer range. Already it would seem that the range of modern rifles is longer than is really absolutely necessary. Efforts will be made, no doubt, to increase the flatness of trajectory, and the frequency of short range wounds will increase. Much has been said as to the importance of the stopping action of bullets, and it is asserted that the small high velocity bullet does not compare favourably with the older weapon in this respect. For civilised warfare, however, the stopping action is certainly quite adequate, and as warfare with savage tribes is likely to become less frequent, and as moreover commercial enterprise tends to provide belligerents in every part of the globe with modern weapons, long-range warfare is likely to become more and more the rule. For some time to come, therefore, bullet wounds—and these still constitute the huge majority of wounds received in warfare—are likely to be of the class that we have had to deal with in the Boer war. Broadly speaking, in the South African campaign bullet wounds of all kinds have done well. Recoveries from very severe wounds have been numerous, and many of these recoveries have been most remarkable. The percentage of wounded men who have been fit to return to duty has been unusually high. Wounds causing permanent disability are less frequent than was formerly the case. Injuries of the limbs necessitating amputation are, it will be found, fewer proportionately than in any previous war. Conservative surgery has—and most properly—been carried further, and with highly successful results, than in former campaigns. These satisfactory results have been ascribed mainly to the so-called humanity of the modern small-bore bullets, and it would seem to follow from this that, from the military point of view, the modern weapons do not fulfil the prime conditions of warfare. If the victory is to rest with the

side that can most quickly kill or efficiently disable a large number of its adversaries, then wars are likely to be prolonged and the humanity of the bullet would prove to be but a curse in disguise. I think the so-called humanity of a small-bore bullet a great deal exaggerated. There are other conditions to be reckoned with. In the South African campaign I believe that the surgical healthiness of the climate and the wide adoption of the open-air method of treatment have had quite as great a share in bringing about the favourable statistics as the character of the weapons employed. The idea is far too prevalent that the injury inflicted by a small-bore bullet is almost trifling, whatever part be hit. It is largely a question of whether the wound becomes septic or not, and septic complications attacking either bullet or operation wounds have been very rare. Indeed, in South Africa operation wounds of all kinds have done exceptionally well. This possibly may be ascribed to the efficiency with which the antiseptic system has been carried out in military surgery. But truly aseptic surgery is practically impossible under the conditions of active service. It is a matter of the faithful observance of elaborate detail by all, and they are many, concerned in the operation. Surgeons have to do the best they can in base as well as field hospitals, and they have to work with orderlies: a hard working and highly septic body of men. The want of dressers in a military hospital is, to my mind, more felt than in a civil hospital. Certain views that have recently obtained with regard to bullet wounds have now, I think, been finally exploded, but these cherished traditions die rather hard, and one still sees reference to them. One of these is that the heating of the bullet sears the track of the wound, and so destroys any germs that might lodge, favouring thus the immediate union and preventing any septic complications. The bullets, as a matter of fact, fired from modern small-bore rifles, are, in the first place, usually sterile, for they have a hard smooth surface, and in the next place they are not heated; but even if white hot, the time that they occupy in passing through the body is so extremely short that no cauterising action could possibly be exerted. The arrest of movement might heat the bullet, but a bullet that can travel a couple of miles and hit hard at the end of it does not have much movement arrested, and thereby converted into heat. A bullet making a flesh wound 6 or 8 inches long, occupies at a range of 800 to 1,000 yards somewhere about $\frac{1}{2000}$ of a second. A bullet that strikes a bone and lodges has its forward movement and its rotation arrested, but no cauterising action is found in the neighbourhood of such, and the energy is really dissipated in other directions, of which the effect is very manifest; and this brings me to another theory that is now, I think, pretty generally discarded; the so-called hydrodynamic or hydraulic theory has been held to explain the extending or explosive effects of rifle bullets on animal tissues. Those who believe in this theory look upon a limb as a closed vessel containing fluid, and account for the destruction which is undoubtedly seen sometimes at short range as due to the enormous increase of pressure caused by the ingress of the bullet on the incompressible contents of the part hit. This theory, though abandoned for the most part with regard to the greater part of the body, is still considered by some to hold good for penetrating wounds of the skull. Experiments, however, do not bear out the hydraulic view, and the explosive or expanding effects are now held to be due to the energy of the bullet, which radiates out in lines from the long axis of the bullet track. The hydraulic theory is now almost as wholly discarded as the projectile air theory. This imagines that a cushion of highly compressed air is carried in in front of the bullet and exercises the explosive effect. This is an old theory which has been recently revived. It may be heard of again, but it is hardly worth while at present to administer the *coup de grâce* to what is already defunct. So again wind contusions from large projectiles are no longer believed in. They disappeared when round shot ceased to be used. For round shot would strike a part and inflict the most grievous injury on the deeper tissues, though as they glanced off the skin might show no mark whatever.

As instances of cases in which military surgery is now much more conservative may be cited penetrating abdominal wounds, compound fractures, wounds of joint, and nerve injuries. There is a general consensus of agreement that the great bulk of penetrating abdominal wounds are best left alone. The hopes that recent advance in abdominal surgery might lead to great improvement in the treatment of these serious injuries has been altogether falsified. Patients operated on, generally speaking, do not do well, or in other words, the majority die. It is impossible to make a thorough examination of the viscera and to ensure that every wound of the intestine—and the wounds may be very numerous indeed from a single shot—is dealt with without inflicting the most grievous damage on the abdominal contents. Adhesions, which form with great rapidity, are likely to be broken down, hæmorrhage set up, and extravasation of the intestinal contents brought about by manipulation. On the other hand a remarkable number of cases in which the intestines have been undoubtedly perforated, perhaps in many places, have recovered. The patients can seldom if ever be operated on early enough, or get the lengthy and undivided attention that their condition would require in the field hospitals; and even if they could secure this, their chances of recovery would probably be little increased. A large proportion of cases of wound of the large intestines do well. Patients with these injuries have their best chance if they have been long fasting, and if they abstain for a long time after from any sort of drink; even a glass of water if given too early may bring about a fatal result in a man who might otherwise recover, The shock of small-bore bullets in abdominal wounds is very much less than might be expected; indeed, former views as to shock from all kinds of bullet wounds must now be greatly modified. The ingenious view has been put forward that the wound of the intestine produces a sort of tetanus of the gut, and that the arrest of the peristaltic action allows time for lymph to be exuded while the slits in the intestine are sealed up. Wounds of joints perhaps show the most remarkable contrast of any class of injuries compared with former experience. Very few cases have gone wrong where the knee-joint has been wounded by bullets, and I can recall a number of cases of wounds of joints, such as the elbow, which have done perfectly well without any complication or operation. Primary excisions have been excessively rare. Formerly it was considered highly conservative surgery to save the limb by operating on the joint, now the joint can be left alone. Wounds of the ankle joint have on the whole done worse than any others. Of nerve injuries, which are very common indeed, it need only be said here that the expectant treatment has proved the best. Many cases were operated on at the outset in which it was imagined that the nerve had been wholly or partially divided in which it was found that the trunk was quite intact, and that the bullet track had only been near it. While the extent of recovery in these cases is very great, it is seldom in my experience altogether complete, but the main point is that it is not likely to be rendered more complete by operation, even when a mechanical lesion that can be dealt with is found.

Surgeon-General O'Dwyer wanted to know how the more frequent nerve injuries with the small-bore bullet when contrasted with those caused by larger bullets could be explained. In wounds through the lungs, even though the patient might be fit to resume his duties, he always when questioned complained of a little shortness of breath. Why if the South African climate was so effective in healing wounds, was not civil surgery more successful there? He thought the prompt use of the first field dressing and instructing men how to do so had had much to do with the success mentioned. He was glad to know that it was now an established fact that abdominal wounds from small-bore bullets had better be left alone. What was the proportion of wounds from field guns? "Septic orderlies" on field service were difficult to avoid.

Surgeon-General Hamilton said that flat trajectory was what the military authorities aimed at, and that it was a convertible term with velocity. The great object, of course, was that any mistake in judging distance was remedied by the flatness of the trajectory. He assisted Mr. John Rigby years ago in experiments with express bullets, and they found that bullets propelled by small charges penetrated into sawdust much further than when fired with large charges. This was, of course, caused by the bullet not "setting up" or mushrooming as it did when fired with

heavy charges. The larger the bullet the greater the shock, and when shooting big game in India he found that a spherical bullet from a smooth bore stopped the charge of a tiger or a bear better than smaller bore express bullets. The smaller the bullet the less the shock, and in this way the modern bullet was more merciful.

Mr. CLINTON DENT, in reply, said he knew many cases of joint wounds in which this field dressing was not employed for many hours; one especially, a wound of the knee-joint and popliteal artery, which made an excellent recovery. He considered it was now proved that nerves and tendons might be pushed aside by small-bore bullets, but thought the high velocity accounted for some nerve injuries, the nerve not being visibly injured. He considered the South African climate more favourable for wound treatment than that of this country. According to Mr. Cecil Rhodes artillery fire demoralised; "it gets on your nerves, though it may not kill much." The effect of artillery fire at Paardeberg was lessened by Lord Roberts's humanity, the fire being directed mainly on the commissariat; at Magersfontein the trenches indicated great effects from shrapnel. He was satisfied that the expectant treatment in abdominal wounds from small-bore bullets was best.

Surgeon-General HENRY SKEY MUIR, C.B., M.D., War Office, mentioned a case of a small-bore bullet in South Africa striking the cervical spine and carrying away two teeth in its exit, the patient now being in fair health.

INFECTIOUS DISEASE ON BOARD SHIP.

By W. J. COLBORNE,
Staff-Surgeon, R.N.

THE ships of Her Majesty's Navy are now such complicated engines of war, and so filled with machinery, that the space that can be allotted to the sick is necessarily limited, but although limited, it is sufficient for all the ordinary ailments and diseases met with; yet provision cannot be made for isolation and observation wards, and so it behoves the medical officer to take such measures as he can to prevent the onset of infectious diseases, and, when they do arise, to combat them with the means at his disposal, so as to limit their spread and to safeguard the health of the patient and that of the ship's company.

Our ships now carry many men; they visit ports in all parts of the world; a large amount of leave is given to visit the shore; and the crew consists of young men; and therefore the possibility of infectious disease being contracted is very considerable. Remembering all this, one of the first duties of the medical officer on visiting a port is to make inquiries from the port authorities as to the prevalence or absence of infectious disease, its extent, and the district affected, and, should it be necessary, report the same to the proper authorities of the ship, so that they may take the necessary steps to either warn the men from visiting a particular district or restrict the leave. Circumstances alone can be a guide as to the necessity of curtailing the leave and the length of time the ship remains in the port.

The medical officer will also have to pay attention to the people who are allowed on board the ship—particularly washer-women, bumboatmen, etc. Knowing of the existence of infectious disease on shore, particular attention must be paid to all minor ailments that may occur amongst the men, and endeavour should be made to detect the premonitory symptoms, and on the slightest doubt arising the patient should be immediately isolated from his fellows for as long as necessary, and carefully watched; a careful watch must also be kept on those who are his more immediate neighbours, both at mess and at night. To isolate the patient is not always an easy matter on board ship, and diligent search will have to be made for a spare cabin, small watertight compartment, or such other suitable place, and if none are to be found below decks, a suitable structure of canvas, if the weather will permit, will have to be built on the upper deck.

Should the case develop into one of an infectious nature, steps must be taken to isolate the patient and his nurse or attendant at once; and, having obtained a spare cabin or compartment, it should be prepared for their reception by removing all movable articles, swinging service cots and bedding, as well as utensils taken to the place, and the ventilation attended to, particular care being taken that the ventilating trunk opens direct on the upper deck, so as to avoid the possibility of the infection being carried to other parts of the ship by means of these trunks; if necessary, the ventilation openings in this compartment should be closed and sealed. The patient and attendant should be kept strictly to this compartment, and neither of them allowed to leave it till opportunity occurs to send the patient to hospital. Should no cabin or compartment be available, and it be impossible to erect a temporary place on deck, part of the sick bay must be screened off, and this can be done by making a canvas screen, which can be so fitted by the carpenters with battens so as to reach from the beams above and to the deck beneath, and effectually cut off this part of the sick bay, and be used for the isolation of both patient and nurse. During the treatment of the case the screen should be kept moist or damp by spraying or other means with perchloride of mercury solution 1 in 1,000, and the deck frequently washed with the same. The food should be placed outside and taken thence by the nurse, and all excreta mixed with disinfectants before removal. The medical officer in attendance should wear a linen overall on visiting his patient, and be particular as to the disinfection of his hands and face, etc., and should go straight from the patient on deck, and remain there some time before mixing with his messmates and others. On the opportunity occurring for the patient to be sent to hospital, the patient's bed and bedding as well as the attendant and his clothes should be sent, and the boat washed with perchloride of mercury solution 1 in 1,000 afterwards. The attendant can be left to nurse the patient, or can be disinfected and kept under observation for a short period; the men who have carried the patient to hospital should also be disinfected. The bed, bedding, and clothing must be disinfected by moist heat in a disinfector before being received on board again. The place occupied by the patient on board the ship should now be disinfected. The compartment should be sealed, the screen made wet with perchloride of mercury solution and sulphur burnt, not less than 3lbs. of sulphur to each 1,000 cubic feet of space being used. The compartment and its contents should then be thoroughly scrubbed with perchloride solution 1 in 1,000, the screen taken down and soaked for twenty-four hours in perchloride solution, and then scrubbed and hung in the air, the wooden battens burnt, and the paint work should be repainted or limewashed.

During the presence of infectious disease on board ship, all men should be warned to report every slight ailment to the medical officer, who will watch every case, and endeavour by every means in his power to discover the onset of the disease, and by early isolation check the spread of the disease. Should a case of small pox occur every man on board the ship must be vaccinated. Should the ship be in a port where there is hospital accommodation cases should be landed immediately, and should the case be one of suspicion only, it is better that the patient should be landed for isolation and observation for a few days than run any risk of the disease occurring on board. If care is taken to isolate cases immediately on the appearance of the disease and attention be paid to details, the spread of the disease is practically limited, and the chance of an epidemic on board is reduced to a minimum. Whether any good result would accrue from the use of aërial disinfection, such as carbolic vapour or spray, which could be used during the treatment of the disease and at the same time be innocuous and pleasant to the patient, I must leave to those who have had some experience of their use.

SANITATION IN CAMPS.

By Major JAMES, R.A.M.C.

A SUBJECT which covers too much ground to be more than touched in one paper, which therefore consists of a series of suggestions, cannot pretend to be complete on any one point. But its importance cannot be exaggerated when one considers the proportion of deaths from disease in armies to those from wounds.

The conditions of camps are so various and depend upon so many circumstances that there are few points that apply to all in the matter of detail. The objects, however, to be kept in view in all cases are:

1. Protection of troops from weather and climate.

2. Feeding them, and prevention of disease communicated by food.
3. Disposal of excreta and refuse.
4. Prevention of local and endemic disease.
5. Prevention of spread of communicable diseases.

The possibility of carrying out sanitation properly must depend upon several circumstances:

1. As to choice of site of camp; whether this is governed primarily by strategic or hygienic considerations, and whether the first consideration is to make it a defensible or healthy camp.
2. Whether the camp is a standing or temporary one.
3. Whether the supplies can be obtained locally, wholly or in part, or whether the transport is sufficient to make available plenty of food, tentage, and stores.
4. Upon the climate.

In any case the art of camping is one which demands ingenuity, and the longer troops are in the field the better accustomed they become to making themselves comfortable on very slender means. The following remarks apply to camps where some stores are locally obtainable, and the class of country—China and South Africa—where our troops are now and may be shortly engaged.

Necessity of Good Police and Discipline.

The primary essentials for properly carrying out measures of sanitation in camp are:

1. Discipline and intelligence among occupants.
2. An efficient and well-instructed sanitary staff.

It is to be remembered that while troops are doing hard work under exciting circumstances they are generally fairly healthy, and that it is when they are idle or the excitement is passing that they get sick.

Choice of Site.

Therefore this has to be the time at which greater care has to be and can be taken of their health. Setting aside, then, the cases in which the choice of site of camp is governed by purely strategic considerations, the following points should be given prominence:

1. *Topographical.*—Avoid ground which is low-lying, damp, or periodically flooded, the neighbourhood of marshes, especially in malarious climates, the neighbourhood of villages (if this be unavoidable, and villages are generally near a stream, then camp above and not below the village); old graveyards, irrigated lands; if in hilly country avoid the gullies between mountain spurs, or any place where the general ventilation of the camp would be hindered. Choose a site with a slight slope which favours the drying of the ground, if in a hilly country the side and not the top or foot of the hill, the aspect to be chosen according to whether the climate be hot or cold. The surface should be fairly even and grass is the best, rank vegetation or very rocky surface objectionable.

2. *Geological.*—Clay, loose sand and loose gravel, recent alluvial soil and distintegrating rock are not good. Chalk, gravel and limestone are the best subsoils. The site should be cleared of rushes and very long grass as contributing to hide dirt and harbour noxious reptiles, etc. The camp should be carefully laid out, and, if possible, marked out by the staff officer on the advice of the medical officer before the arrival of troops.

Protection of Troops from Weather.

Housing.—Tents are, I think, preferable to huts, and if good can be made very comfortable; they can be shifted and the ground dried. The best tents are Indian tents. They are far preferable to the flax tents with hempen ropes used in this country. They are warmer, they do not shrink, nor do the cotton ropes shrink in rain, and they keep the sun out much better. They are made of several layers of coloured cotton, white, red, and yellow as a rule, and the poles are of bamboo. The only objection is that the large ones are less portable than the English tent; this does not apply to the mountain pattern tent, which is most portable and the best possible.

The ground over which the tent is pitched should be cleared of stones, etc., and trampled, and a trench should be dug round the tent at once. This favours drying of the floor, as well as carrying off the rain and water from the eaves. Straw or reed mats and waterproof sheets I think are better than tent floors.

For bivouacking, *tentes d'abri* are no doubt a protection. Recently blankets with eyelet holes for lacing have been issued and would be probably good with a rifle for a pole as a shelter from rain, wind, or sun.

Dug-out huts or sunken floors are, perhaps, comfortable in a cold climate, but they must be damp and liable to flooding in rain. The suitable clothing of the troops is a vital point in personal sanitation, but cannot be touched upon in this paper.

Supervision of Supply of Food and Water.

Wherever food can be obtained locally it should be done, or the rations should be supplemented by a fresh supply. Markets should be formed, and the inhabitants encouraged to come and sell. The supervision of goods offered for sale is a most important duty of the medical officer and sanitary staff, who should inspect all foodstuffs before they are taken in.

(The troops should be instructed by the medical officer in charge in the avoidance of local dangers of food and climate, and such orders should be issued on these points as the medical officer may advise. There should be a body of sanitary police in every unit to ensure the carrying out of all sanitary measures. They should have some intelligent and trustworthy non-commissioned officers, and the regimental stretcher bearers might be most usefully employed in this way. They should superintend fatigue parties in cleaning, and be posted at all places where refuse is brought—at the market and water source, etc.)

The food should be as varied and as variously cooked as possible. The effect upon health of a continuous course of bully-beef and biscuit is too well known to need mention. There is room for much ingenuity in making field-ovens, etc., and whenever it can be done the mode of cooking should be varied.

The inspection of cooking utensils and water receptacles, and the source of the water in which they are washed, must not escape attention. Should fresh milk be used, it should always be sterilised. In the case of preserved milk and soup, a common plan to get the most out of the tin is to open the tin and throw it into the boiler and stir it round till it is washed empty. This is unsafe, as dirt and septic matters on the outside are thus introduced.

Water.—Water supply is one of the most important things to supervise, and most of the commonest camp pests in the shape of enteric fever, dysentery perhaps, and cholera are waterborne. Water which may be good at its source may so easily become poisonous between that and the consumer's stomach that the distribution must be as closely watched as the origin, and this in camp is a great difficulty. When men are thirsty they will drink anything and anywhere. I believe something could be done by education to restrain a man at ordinary times, but when the weather is hot and water scarce reason has to give way to impulse. If, however, water is plentiful and good and obtained from a stream, a spot above the camp should be marked for drinking; lower down for horses, and lower for washing and washing clothes. The point of obtaining the drinking water should be policed, and the stream above put out of bounds and the area draining into it also. The water should be delivered from a spout or pump, and no dipping of vessels into it allowed. It may be dammed up so as to accumulate and allow sediment to fall, and if the camp be standing there sheltered or roofed over. In the case of water being obtained from a large river it should be rough filtered or a Norton's tube pump sunk in the shore to stop out the grosser impurities, then boiled or filtered, or both. The use of alum to throw down suspended matters is universal among Chinese on the Peiho, and might take the place of rough filtering as a prelude to boiling, etc. For use in the men's water bottles tea should be made on a large scale where water is not above suspicion. A steriliser with a coiled tube heated at one point was, I believe, tried, but is not yet very portable. Where hawkers sell drinks to the men they should be supplied with water at the drinking-water source, and always the greatest care must be taken to have the vessels in which drinking water is carried or stored periodically scalded out and always clean. The use of aërated waters or the water obtained at the authorised source may be encouraged. Where the camp is a standing one it may be possible to dig wells. This should be done if water is near the surface, and the alternative source is a stream, liable to

pollution. Distilling on a large scale can only be done at a base.

DISPOSAL OF EXCRETA AND REFUSE.

Everything combustible should be burned, and liquid refuse (other than urine perhaps) be poured upon the ground where space permits, on a fresh spot each day, to prevent saturation of any one area. Where pits are used for this purpose they very soon become a nuisance. Latrines and urine trenches should be ready for the men if not before as soon as possible after they arrive in camp. The usual pattern, of a trench with a pole seat, is good, and in standing camps the pail system is sometimes used, but wants careful construction, so that the ground on which the pail stands does not get urine spilled upon it. The final disposal of fæces and urine should be by burial in trenches, each day's accumulation being covered with earth; any disinfectant used should be without smell—quicklime and water are the best, and it is too often the habit to use disinfectants, such as carbolic powder and chloride of lime, instead of keeping places clean, the smell caused by them masking the smell of the excreta.

The ground in front of the latrine trench should be trampled hard, and a little dry earth or straw laid there to catch any urine projected forward, and daily shovelled into the trench with the excreta. The best time to cover the accumulation is about 12 o'clock noon, and again in the evening.

At Salisbury Plain the plan was tried of laying down a good deal of straw, on which the men defæcated. It was exposed to the sun, turned, used again, and finally burned. It seemed to be a good plan, but is capable of only limited application.

The French form of trench, across which the men straddle, and which ensures the urine falling into the trench instead of striking the ground in front, which is apt to happen in the ordinary pattern, is good from a utilitarian point of view.

The latrines should be near the lines, and if possible should be lighted at night, or the way and place marked by luminous painted boards and pegs, which will not draw fire, as otherwise men will not be induced to use them, and will urinate, etc., near the tents, preferring not to take a long and perhaps dangerous journey, with the possibility of falling themselves into the trench at the end of it in the dark.

Urine trenches should be prepared in the proportion to latrine trenches of three to one, or two to one at least.

The selection of site should be made with great care, and with regard to any watercourse, so as not to percolate or get washed down into it in case of rain, and should be to leeward of camp in prevailing wind. The trenches must be renewed when the deposits arrive to 2 feet 6 inches from the top, or according to the nature of the soil; and moderately dry and porous soil is best.

There should be maps made of the camp, and the position of latrine trenches, etc., noted, for the information of possible succeeding occupants; and after the site of the camp has been cleaned up—a work of great importance—the places where refuse, etc., is buried should be pegged out.

PREVENTION OF DISEASE PERTAINING TO LOCALITY OR CLIMATE.

The intercourse of the men with the inhabitants should be regulated, and the medical officer should be acquainted with the prevalence of any disease among the inhabitants of a communicable or endemic nature. Should there be native camp followers, their camp should be distinct from that occupied by the men, and should be regularly policed to ensure sanitation and the exclusion of infected persons. This applies especially to natives employed as washermen, and any hawkers of food or any who come into contact with the troops and who might be agents in communicating disease. Women should be kept away, and native villages be put out of bounds altogether.

PREVENTION OF SPREAD OF COMMUNICABLE DISEASES.

Frequent health inspections are essential, and where any complaint of an infectious nature is discovered the prompt segregation of the affected person is the first step, and the removal of him to a tent where the sterilisation of his excreta, etc., can be carried out to the last degree. Any person showing suspicious symptoms, or unaccountably sick, should be removed at once from his comrades, and put under observation. It would be well on discovery of one case to have an isolation establishment ready. Particular care should be taken in tracing up the cause of any such case, and in at once taking measures to stop any supply or practice which may have been a cause. Should more cases crop up, the camp should be moved.

In epidemics of cholera, enteric fever, etc., change the water supply or the mode of issue or preparation; change the site of the latrines, and, better still, shift the camp; sterilise every cooking and drinking vessel, spot down every case of diarrhœa, pay rigid attention to cleanliness of the camp, march out and encourage amusements within the camp, and control the use of alcohol. If it be possible, enlarge the accommodation in the tents, and prevent any tendency to avoid overcrowding. The usual distance between the tents is three yards (peg to peg). This might be increased with advantage so as to make it possible to shift the tents completely, which might be done with advantage once a week.

Notes.—The presence of horse lines in the middle of a camp may be a source of danger, as it is quite possible that the men in charge may micturate there and so, if they should be the bearers of germs of infectious disease, deposit those germs in the camp to the dissemination of the disease. Too much attention cannot be paid to the thorough cleaning of the camp, and anything such as long grass, bushes, etc., which tend to conceal dirt should be removed. Each company should sweep up its own lines daily, and it is a convenience to have an old tin or some such receptacle near each tent into which scraps of paper and rubbish can be put and emptied daily by the pioneers. If straw bedding is used it can be, when beds are changed, utilised in helping to burn other rubbish.

Lieutenant-Colonel J. C. MARSDEN, I.M.S., said with reference to the paper on camp sanitation one point might be referred to in connection with the purification of the drinking water. Permanganate of potash was a most useful agent, particularly when cholera was prevalent. A few grains of it might be served out to each man with instructions as to its use. The method of disinfecting wells with permanganate of potash known in India as "hankinisation" had proved most useful in arresting the spread of cholera, as well as in preventing the disease. As regarded conservancy, what was known as the "Jewish system" of conservancy might be tried with advantage in temporary camps when access was easy to the adjoining open country.

SECTION OF LARYNGOLOGY AND OTOLOGY.

SCANES SPICER, M.D., President.

THE President delivered an address, which was published in the BRITISH MEDICAL JOURNAL of August 11th, p. 345.

A DISCUSSION ON THE INDICATIONS FOR THE INTRANASAL TREATMENT IN DISEASES OF THE EAR.

I.—PETER MCBRIDE, M.D., F.R.C.P., F.R.S.E.,

Surgeon to the Ear and Throat Department of the Edinburgh Royal Infirmary, and Lecturer on Diseases of the Ear, Nose, and Throat in the University of Edinburgh.

THE subject before us for discussion may be approached from two points of view—namely, (1) the conditions of the ear liable to be affected by nasal changes, (2) pathological conditions of the nose which may tend to involve the ear. It must be understood that under the term "nose" the nasopharynx is also included. It almost follows that from adopting this method of dealing with our subject a certain amount of repetition must ensue. I shall, however, endeavour to keep it so far as possible within bounds. It is, I presume, generally admitted that many forms of middle-ear disease may, under certain circumstances, be markedly benefited by treatment directed to the naso pharynx. Thus previously recurrent attacks of acute otitis media may be made to cease by the removal of adenoids. The same operation may also materially improve certain cases of chronic suppuration, although, as might be expected, the results will be much more uncertain, and will depend upon many other factors. In the

chronic non-suppurative middle-ear deafness of children, if the case has not gone too far and if there be no complication such as hereditary syphilis, the effects of removing adenoids are often little short of marvellous. In these cases we have a history of repeated colds, each leaving the patient more deaf than before. The drum membranes are usually much indrawn, and in advanced cases thickened. Inflation is generally followed by marked improvement, but removal of adenoids may produce great benefit even where the use of Politzer's bag has failed even temporarily to restore the hearing.

So far, I think, we are all agreed, but when we come to chronic non-suppurative inflammation of the middle ear as it commonly occurs in adults the position is by no means so clear. As you are aware, grown-up and even middle-aged persons may suffer from adenoids just as children do; they may have the same train of symptoms, and, in exceptional cases, similar satisfactory results may be attained. There is, however, another, and unfortunately very common, form of progressive deafness met with.

The patient comes with the oft-told tale of gradually-increasing hardness of hearing. In advanced cases he hears better in a noisy place, the tuning fork is well perceived by bone conduction, and tinnitus is a common symptom. The drum membranes may be found somewhat indrawn, or they may be normal in position. Again, sometimes there are patches of thickening, but together with these there may exist dark atrophic areas. Finally, with almost the same symptoms and history you may discover either quite normal membranes or there may be a delicate flamingo-red shade, most marked in the posterior part. Occasionally the only abnormality detectable is a slight irregularity in the outline of the malleus. In all these cases there may be a degree of Eustachian obstruction, but again the tubes may be freely pervious. From experience I should be inclined to say that the more marked the changes in the membrane the more likely are we to find the tube narrowed. Again, many of the patients state that they hear worse when they catch cold, and I think that you will most commonly find this connection with nasal catarrh in those who have evidence of thickening and indrawing of the drum membranes.

It is my practice to examine carefully the anterior and posterior nares of all my ear patients, and I have been rather struck by the fact that it is not very common to find what may be termed gross nasal lesions in many of them. At the same time, in the form of progressive middle ear deafness we are considering, two types are undoubtedly distinguishable, namely:

1. Those in which the anterior and posterior nares are either normal or somewhat anæmic, with a very sharp differentiation of parts; that is, the Eustachian tubes standing out with great prominence, but without a trace of swelling or congestion, the outline being sharply defined.

2. Those in which we have some congestion of the whole naso-pharyngeal tract, including the Eustachian orifices. We may also find some amount of hypertrophy of the turbinate, a degree of deviation of the septum, or spurs; but, as a rule, these conditions are not sufficient to attract the patient's attention to the nose. Of course, I do not for a moment wish to contend that we do not also sometimes encounter very marked nasal conditions causing distinct obstruction—be they hypertrophic, septal, or adenoid. I merely desire to suggest that they are not found frequently.

Another rather interesting point is, that while the normal or nearly normal membrane is usually associated with a normal or nearly normal naso-pharynx, the cases in which there is diffuse congestion of the upper respiratory tract often exhibit evidences of indrawing, thickening, and atrophy of the drumhead. Of course you are aware that progressive deafness of one type is now known to be commonly due to changes in the region of the stapes often associated with a lesion of the osseous capsule of the labyrinth, while the other is ascribed to chronic middle-ear catarrh. This, I think, is correct as far as it goes, but whether this chronic catarrhal form can often be cured by intranasal operation is another question. Obviously, if there be a gross lesion leading to nasal symptoms, operative treatment will be indicated on general principles, but from what I have seen of this class of cases—both in those who have come to me at first and those who had been previously treated by others—I am inclined to let this be the test. In other words, I feel disinclined to operate where no obvious nasal symptoms are experienced. In those instances in which the weight of evidence is in favour of ankylosis of the stapes, with or without implication of the labyrinth, it is important to remember that they may be made worse by fatigue, nervous shock, hæmorrhage, and the like. This is well instanced by the known effect of childbirth on many such cases. It is, therefore, a very open question whether we should not always think once and again before operating under this combination of circumstances, for every operation produces some degree of shock.

I would, therefore, contend (1) that the aurist is now in a position to separate the two classes of cases—to wit, (*a*) the so-called sclerotic; (*b*) the catarrhal. (2) That in the former it is questionable whether operating on the nose can ever be of benefit, but it may do harm. (3) That in the latter it is better to operate on a gross nasal lesion which is causing nasal symptoms, and upon a naso-pharyngeal condition if it be present—for example, adenoids—for, as we shall see, these may involve the ear without causing other local symptoms.

Of course, I am aware that the sclerotic and catarrhal forms of middle-ear deafness are often mixed, but time does not permit of my going into this interesting point. Here is exactly where experience comes in, and I trust that in the subsequent discussion the various authorities present will add to our information. I have spoken so far from considerations based chiefly on the aural aspects of the subject—if, indeed, such subdivision be justified. Let us now turn to a review of the various changes in the nose and naso-pharynx which are usually believed to be causes of deafness.

Beginning with the conditions capable of diagnosis by anterior rhinoscopy, it must be a somewhat difficult matter for those who believe that nasal obstruction *per se* is capable of producing progressive deafness to account for its rare occurrence in cases of nasal polypus. We all know how seldom such patients complain of gradually increasing hardness of hearing, although, of course, we often find them suffering from slight blocking of the Eustachian tubes. It may be argued that the obstruction has not lasted long enough, but this will hardly hold water, for not uncommonly the victims of nasal polypus allow their trouble to continue for years before endeavouring to have it removed. Again, how frequently do we meet with very marked hypertrophic nasal catarrh, and how frequently does it exist without any marked impairment of hearing. It is very much the same with stenosis of the nostrils due to the septum. It seems to me that if we admit that nasal obstruction may very frequently exist without involving the ear, it almost follows that, in persons who suffer from progressive catarrhal deafness, even if a more or less marked nasal obstruction be also present, we are not entitled to assume the relation of effect and cause between these two conditions. Here, however, the controversialist may ask, How, if we put the nasal factor out of count, are we to explain those cases in which the history distinctly points to repeated head colds as causes of deafness, and how are the cases where rational treatment directed to a nasal catarrh has exerted a beneficial effect upon hearing to be accounted for? I am quite willing to admit the difficulty, but I much question whether any really acceptable explanation is at hand. It appears to me that in certain persons there is a marked inclination to catarrh of the upper respiratory tract, and that in some cases there is a tendency to involve the middle ear, while in others this organ escapes. As we are yet somewhat in the dark on this point, it will therefore be well in such instances to remedy any condition which is causing definite discomfort. At the same time I would deprecate the operative removal of small deviations and spurs which cause no symptoms appreciable to the patient.

Turning now to the naso-pharynx, let us consider what information may be derived from posterior rhinoscopy. As we all know in certain cases of middle-ear catarrh we may find more or less marked diffuse congestion of the naso-pharynx. Obviously this may depend upon the previously suggested general catarrhal tendency, but it may also arise mechanically as a result of obstruction in the anterior nares. It appears to me that in certain doubtful cases the presence or absence of redness about the Eustachian orifices may be a useful indication as to whether or not an operation on the anterior nares be desirable. Thus, if a moderate degree of obstruction exists it is obvious that it may affect the ear either by acting as a

focus of irritation or by causing diminished air pressure in the postnasal space. In either case there will result congestion, and if this be absent I think we may assume that the nasal condition is not the cause of the ear symptoms. With regard to the presence of gross lesions in the naso-pharynx, to some extent the same difficulties encounter us which we have already discussed in considering the anterior nares. Of course, in slowly-increasing sessile tumours we meet with deafness, but I think that those who have had a large experience will agree with me that it is not of the same type as that which we are accustomed to call progressive chronic catarrh. Again, most of us have encountered instances of single pedunculated tumours, and in these deafness is rarely, if ever, in my experience, a pronounced symptom. I do not think we are at all in a position to explain this fully, but a consideration of what can be observed in studying adenoids as a cause of deafness may throw a little light upon the matter.

I need not enter into the form of deafness which is so frequently met with in adenoid hypertrophy. You are all familiar with it and also know that in this case the relation of cause and effect is usually demonstrable because after the adenoids have been removed the deafness disappears. It is also well known that a very considerable amount of adenoid hypertrophy may exist without causing any impairment of hearing. The question here again arises, Can this apparent anomaly be explained? I am inclined to think that it can. Of course where the naso-pharyngeal space is filled in its upper part we cannot usually localise the base of the mass with any attempt at exactness. It is different, however, when we meet with examples in which the hypertrophy is of smaller extent. In these cases we meet with two forms of rhinoscopic image. In one we see a mass of tissue occupying the vault of the naso-pharynx, but we can observe that a relatively clear space remains between its margins and the Eustachian orifices. When this state of matters exists I have, as a rule, found that removal of the mass does not materially influence the ear if it be affected, and, conversely, that it is relatively seldom associated with ear trouble. In the other the adenoid tissue may be very small in amount, but the mirror shows it to reach right across from one Eustachian orifice to the other. Indeed, it almost looks as if the tubal openings were compressed. I have seen a good many examples in which the result of operation showed how a small amount of adenoid tissue so placed may affect the ear. Not uncommonly the patients complain of recurrent attacks of acute middle-ear inflammation, and so long as the adenoids remain these continue to recur periodically, while after their removal they cease. In other persons chronic middle-ear catarrh is kept up, and this again is usually much benefited by operation. A consideration of these facts will naturally lead us to the conclusion that direct mechanical interference with the Eustachian orifices has a very marked effect in producing deafness, and to some extent probably the converse holds. In other words, where this mechanical effect is absent we often do not find deafness caused, even although there be a considerable amount of adenoid tissue in the centre of the naso-pharynx. It is possible that the deafness resulting from pressure on the Eustachian tube may not depend only upon deficient ventilation of the tympanum. It must be remembered that the veins of the middle ear return the blood to a considerable extent by way of the pharynx,[1] and that there is a similar connection as to lymphatics.[2] It is therefore conceivable that interference with circulation may play an important part in certain cases of deafness from adenoids. In some instances the posterior extremities of the inferior turbinates become very much enlarged, and I can conceive that they may lead to deafness by interfering with the Eustachian tubes directly or indirectly, although I have not met with cases in which their removal has given anything approaching the results frequently obtained by means of operating on adenoids.

I have already occupied so much time that I shall not detain you by any reference to non-operative treatment of the nose, interesting and tempting as the subject is. If at this meeting we can formulate the indications for intranasal operation on a scientific basis, the Section will not have met in vain.

[1] Gruber, *Lehrbuch der Ohrenheilkunde*, p. 95.
[2] *Ibid.*, p. 96.

II.—E. Cresswell Baber, M.B.,

Surgeon to the Brighton, Hove, and Sussex Throat and Ear Hospital.

It may be said, speaking generally, that diseases and abnormalities of the nose (including under this term the nasal cavities and the naso-pharynx) affect the ears chiefly in four ways:—

(1) By interfering with the proper ventilation of the tympanic cavity, either from obstruction in the nasal cavities (producing exhaustion of air in the tympanum), from closure of the mouth of the Eustachian tube by secretion or swelling of its walls, or from actual blocking of the tube by a new growth or the pathological enlargement of a normal structure. Obstruction of the nasal cavities also renders the ears more liable to sudden injury from currents of air passing up into the naso-pharynx, such as occurs in violent expiratory efforts, as coughing or sneezing. (2) By catarrh or other inflammatory affections of the nose or naso-pharynx spreading along the Eustachian tube. (3) By the actual passage of pathogenic organisms, such as those of tubercle, diphtheria, etc., up the Eustachian tube. (4) By interference with the normal action of the tubal muscles, either from paresis or paralysis of the palatal muscles, or general thickening of the mucous membrane of that part. It behoves us obviously, in order to keep the ears in a healthy state, to prevent as far as possible the occurrence of any of these conditions. This is a very different thing from saying that when the ears are already affected we are always justified in remedying nasal defects with a view of improving the state of the ears, or at least preventing it from becoming worse.

As the subject is entirely practical the best plan will, I think, be to take the different diseases of the ears *seriatim* very briefly, stating my own views on the indications for intranasal treatment in order to elicit those of members present.

(1) External Ear: In diseases of the auricle and external auditory meatus there are, as far as I am aware, no indications for intranasal treatment. (2) Middle Ear: Acute inflammation of the middle ear, whether catarrhal or suppurative, requires, as a rule, no intranasal treatment during the attack, except careful cleansing of the nose with a saline solution, indeed any other would be harmful. Exceptions might, however, arise in which obstruction of the Eustachian tube might require immediate intranasal treatment on the lines to be laid down in cases of chronic middle-ear disease. Chronic affections of the middle ear may be divided into non-purulent and purulent. In non-purulent cases, simple means, which it is unnecessary to describe in detail, should be taken to relieve catarrh, and to remove any specific organisms from the nose and naso-pharynx.

In considering the question of operative treatment in the nasal cavities for obstruction produced by deflection, spurs, ridges, enlargement of the turbinated bodies, etc., it must be borne in mind that obstruction in the nasal cavities exerts a pernicious influence on the middle ear in three different ways—by producing exhaustion of the air from the tympanum as already mentioned, by maintaining catarrh of the naso-pharynx, and by the direct irritation of the Eustachian orifices or pressure upon them by means of hypertrophied posterior ends of the turbinated bodies, polypi, etc. To assist in deciding when an operation is indicated on account of the ears it is convenient to divide the cases of chronic non-purulent middle-ear disease into two classes (1) those in which inflation (either by Politzer's method or the catheter, if necessary a post-nasal one such as I have described),[3] improves the hearing, (2) those in which repeated inflation has no effect. In the former class the nasal obstruction may usually be relieved with benefit to the hearing power; in the latter operation is not to be recommended for the sake of the ears, although it may be and often is required for other reasons. The most it could do would be to prevent the deafness from increasing. It may sometimes be desirable for this purpose, but this is a difficult point on which to obtain reliable data. Exceptions of course occur, but by following this general rule for some years past I have avoided the disappointment of operating on the nose for the sake of the ears without producing any distinct benefit to the latter.

[3] Further Remarks on the Self-retaining Palate Hook, including its Use in Postnasal Catheterism, British Medical Journal, June 28th, 1890.

It is astonishing, as we all know, to what an extent the nasal cavities may be obstructed and yet the impairment of hearing be very slight. In the treatment of the naso-pharynx the same general rule holds good as in the nasal cavities with regard to the removal of obstruction and relief of catarrh, the latter, however, in this instance forms the more prominent feature, and therefore deserves our especial attention. It is hardly necessary to describe the numerous methods of treating catarrh and obstruction of the naso-pharynx, but a word or two seems advisable on the subject of adenoid vegetations.

The removal of these growths, even if small and not sufficient to produce nasal obstruction, is indicated in cases of chronic non-suppurative middle-ear disease, but here again the improvement in hearing likely to accrue from the operation depends on the result of previous inflation. Although I am of opinion that adenoids should often be removed with a view to preventing any increase of deafness in cases which are unimprovable by inflation, the prognosis must be modified accordingly. In attacks of tympanic catarrh in children, the removal of adenoids and of any nasal obstruction, between the attacks, often exerts a beneficial effect.

Paresis of the palatal muscles affecting the Eustachian tubes of course requires appropriate treatment with galvanism, etc. In chronic suppurative disease of the middle ear the indications for treatment of the nasal cavities and naso-pharynx are similar, but in these cases the nasal treatment occupies a place secondary to that of the ear itself through the meatus.

Personally I prefer if possible to arrest the purulent discharge from the middle ear before operating on the nose and naso-pharynx. (3) Internal Ear: Diseases of the internal ear require intranasal treatment only as far as they are dependent on middle-ear lesions, and to them the previous remarks are applicable. I have found no benefit from intranasal treatment either to auditory vertigo or tinnitus, excepting when these depended on tympanic troubles.

In these few remarks, the point which I wish to emphasise is the importance, from an otological point of view, of ascertaining the effects, in chronic cases, of inflation of the tympanum before any nasal or naso pharyngeal operations are undertaken; this, not only for the purpose of throwing light on the prognosis of the ear trouble after operation, but also for deciding on the necessity for any operation at all.

III.—Dundas Grant, M.A., M.D., F.R.C.S.,

Surgeon to the Central London Ear and Throat Hospital.

That inflammatory or other obstructive conditions in the nose have an injurious effect upon the middle ear is accepted as a fact by all except a very few, among whom I am obliged to include at least one most able practitioner of laryngology and rhinology, who, while expressing himself as most desirous of being able to believe that nasal obstructions can affect the hearing power injuriously, is unable to do so because he cannot find any reason why they should have this effect.

As regards the causal relation between the affections of the nasal passages and disease of the middle ear, it is so constantly before the eyes of the practitioner of otology and rhinology as to seem hardly to call for restatement. Some investigations made by myself at the time of the meeting of the British Medical Association in Glasgow seemed sufficiently definite; a very large proportion of the patients affected with nasal obstruction were at the same time the subjects of catarrh of the middle ear, and inversely out of a number of cases of catarrh of the middle ear a large proportion were affected with nasal obstruction to a very definite degree; the exceptions are sufficiently small in number not to invalidate the rule. One who treats the two organs simultaneously is not often in a position to judge of the effect of nasal treatment alone, but a very striking instance has come before my notice in the case of a gentleman whose singing voice was impaired owing to a congestion of the pharynx and larynx associated with a deviation of the septum blocking up the left nostril. I proposed to him that he should allow me to remove the obstruction, and without further delay I did so; when he saw me again about a fortnight later he expressed his surprise and delight to find that the left ear, which had always been what he considered a deaf one, had improved immensely, and was now almost as good as the other. In this case the condition in the nose was as purely an obstruction as it was possible to find; such a case seems to be absolutely convincing.

As to the question of why a nasal obstruction should have this injurious effect, it has been pointed out that behind any obstruction in the nose there is during inspiration a condition of negative pressure or suction acting upon the liquids in the soft distensible tissues, thereby causing increase of turgescence, both in the posterior part of the nasal cavities, in the naso-pharynx, in the Eustachian tube and tympanum, leading at the same time to indrawing of the membrana tympani itself. It is not difficult to realise how these conditions may be kept up by continuance of the presence of the nasal obstruction and how their removal may lead to an improvement in the condition of the ear. In well-marked cases, then, there seems to me to be no room for a diversity of opinion, and it will, I think, be admitted that a large number of cases—I do not say all—of catarrhal disease of the middle ear are favourably influenced by the removal of nasal obstructions. In order to arrive at our proper limitations we must form some estimate as to whether in any given case the degree of nasal obstruction is such as to bring about the changes described in the middle ear. In the next place, how are we to recognise in any given case that the disturbance in the middle ear is of the nature described, and that its cause may be kept up by nasal obstruction? In regard to the first, there is no doubt some necessary proportion between the transverse section of the nasal channels and the amount of air to be drawn into the lungs with each inspiration, but in practice we may be guided by the sensation of the patient, the amount of the visible departure from the normal calibre, and the capacity of the patient for breathing with the mouth shut, so that in reality, if we are too much biassed, we may make a very reasonable approach to accuracy in our determination as to whether nasal obstruction is or is not present. It is absurd to suppose that a slight degree of obstruction affecting one nostril can produce any considerable degree of negative pressure.

With regard to the forms of disease of the middle ear attributable to nasal obstruction, they are chiefly those characterised by congestion and indrawing of the boundaries of the tympanum, and in especial the various forms of moist catarrh. From these we must carefully distinguish the typical cases of dry catarrh which constitute the opprobria of aural surgery; in these the essence of the disease is a thickening of the tissues and ossification of the tissues surrounding the footplate of the stapes in the fenestra ovalis, which is essentially of an osteo-arthritic nature, and, like chronic osteo-arthritis of other joints, almost inexplicable as regards its etiology. It is necessary to be able to identify this class of case, so that we may not imperil the reputation of oto-rhinology by promising results from the removal of nasal obstructions which, from the nature of things, cannot be attained. The features of these cases are no doubt well known to all who practise aural surgery; but I may briefly recall that the disease when present is characterised by the great diminution or even loss of hearing for low-pitched tones, and a negative reaction to Rinne's test, increased normal or (in the advanced stages) diminished bone conduction. There is comparative absence of change in the position of the membrana tympani, and a fairly or absolutely normal degree of patency of the Eustachian tube, and little or no improvement in the symptoms on inflation. The onset of the disease is gradual, and usually attended with tinnitus aurium; it is more common in females than in males, and is influenced injuriously by gestation and parturition; the removal of a spur from the septum is not in the least likely to improve the patient's hearing nor the operator's reputation. On the other hand, in a case in which, with similar tuning-fork reactions, there is a distinct indrawing of the membrane with more or less evidence of thickening, or, on the contrary, extreme thinning with narrowing of the Eustachian tube, and improvement on inflation, the condition having arisen more or less acutely as the result of one or several distinct catarrhal attacks, the removal of a nasal obstruction is not merely justifiable, but necessary. The most typical cases are those of chronic Eustachian catarrh associated with adenoid vegetations in the naso-pharynx, and the indication admits of no dispute.

There is another class of cases altogether, in which the

question of treating a nasal obstruction becomes a very important one, and as an illustration I may quote the case of the daughter of a medical friend; the patient was 14 years of age, somewhat pale, the menses were not yet established, and there was a considerable degree of deafness with diminished bone conduction and positive Rinne, therefore purely a nerve deafness without any implication of the middle ear; no improvement followed inflation; there was, however, a collection of adenoids in the naso pharynx which interfered to some extent with nasal respiration, and on this account it was decided that they should be removed, it being pointed out to the father that the operation, by improving the general condition of the patient, might indirectly lead to an increase in the functional activity of the auditory nerve, although no absolute promise of improvement was made. The result was strikingly satisfactory; the young lady speedily acquired a healthy appearance, and the improvement in her hearing was most marked. In deafness attributable to a lowering of the nerve tone, we may, therefore, sometimes find it justifiable to remove a nasal obstruction, there being no question that when this exists to any extent it has a most depressing effect upon the general nervous system. In chronic suppurative affections of the middle ear the persistence of an obstruction whether in the nose, or especially in the naso-pharynx, has a baneful influence in perpetuating the trouble, and the removal of such an obstruction is often followed by the best results as regards curability of the aural affection.

In the majority of cases any obstruction of the nose sufficient to affect injuriously the organ of hearing produces at the same time other symptoms which, quite apart from the ear disease, indicate its removal, and when such indications are not present it is right to hesitate very seriously before carrying out the operation in the nose. Another serious consideration presents itself with operations in the nose, whether in the nature of cautery or cutting; though as a rule quite innocent, they are at times followed by suppurative inflammation in the middle ear, and nothing could be more distressing than for this to take place as the result of an operation intended for the cure of a non-suppurative affection of the middle ear. In the writer's opinion the great safeguard against the propagation of inflammation to the middle ear is the avoidance of any form of plugging after nasal operations; for this purpose it is advisable that after the operation the bleeding should be allowed to expend its violence before the patient gets beyond the reach of the surgeon. Again, in view of the possibility that the nasal mucus possesses some bactericidal properties, it is advisable that the smallest amount of mucous membrane possible should be removed compatible with the relief to the obstruction. Despite some reports to the contrary, the writer is quite convinced that in the extract of suprarenal capsule we have a means of reducing the chances of hæmorrhage during or after an operation to the minimum; in the first place the absence of hæmorrhage during the operation enables the manipulation of instruments to be carried out with greater accuracy than when the nasal cavity is flooded with blood. In using the galvanic cautery for the reduction of turgidity of the inferior turbinated body, the most common form of obstruction, whether we look upon it as a disease in itself or as a reflex erection of these parts, a few details help greatly to diminish the chances of inflammatory reaction. They are as follows: The part should be thoroughly reduced and anæsthetised by means of cocaine applied on a cotton-wool pledget, left *in situ* for from ten to twenty minutes, and reapplied if by that time the anæsthetisation is not complete. Should the turgescence not be completely reduced, a 10 per cent. solution of suprarenal extract may be applied. The electrical current should be reduced to such an extent as to produce heating of the cautery point to a cherry red only, and before its use the mucous membrane of the nasal cavity should be carefully dried by means of absorbent wool; the cautery employed should be a fine point introduced through the mucous membrane till it touches the bone, and then pushed along underneath the mucous membrane and not over its surface; it should not be withdrawn while cold, but while still in a condition of red heat; the site of the cauterisation should then be painted with deliquescent trichloracetic acid, which appears to form an aseptic seal; the turbinated body should then be sprayed or brushed with a 10 per cent. solution of antipyrin, which will keep it in a contracted condition for several hours; it is advisable to finish up with the insufflation of aristol or europhen powder; the patient should be strictly enjoined to avoid exposure to cold or physical exertion for twenty-four hours, during which he may with advantage take a mixture containing sodium salicylate and potassium bromide. Four days later, when seen, it will generally be found that there is an extremely thin dry scale on the cauterised surface, though in some instances there is a thick scab which may be either dry or pultaceous; if this occasions any discomfort or obstruction it may be removed at once by means of forceps or a probe coated with cotton wool. The removal of outgrowths from the septum need not here be discussed, but I seldom use any other instrument than a curved probe-pointed bistoury and a saw, which as a rule is preferable to the rotating trephine. Deflections of the septum, usually accompanied by a certain amount of thickening, offer very considerable difficulty. I find the best results generally obtained by shaving off with the bistoury, followed, if necessary, by the saw, as much of the projection as can be done without causing a perforation; I then allow sufficient time for the raw surface to become completely healed, and then usually in from six weeks to two months, I employ forcible dilatation and replacement by means of Bendelack Hewetson's "glove stretcher" and Adams's straightening forceps; at this stage I introduce a vulcanite nasal tube through the narrow nostril, finding it much better borne than immediately after any cutting or punching operations. I admit to being somewhat prejudiced against the combination of cutting and plugging recommended by Ash, but I hope to receive encouragement to practise it from those who have had more experience of its results. The removal of polypi or swellings of the soft parts associated with disease of the sinuses of the nose, necessarily calls for the appropriate treatment, just as it would do apart from the condition of the middle ear. Chronic atrophic rhinitis sometimes gives rise to a catarrhal condition of the middle ear and to subjective noises which only yield as the "ozæna" is satisfactorily treated.

To resume: there is a causal association between nasal obstruction and some forms of disease of the middle ear, especially the moist catarrh; but not the typical sclerotic catarrh. In some cases of nerve deafness good results may follow the improvement in nerve tone produced by removal nasal obstruction. In operations in the nose all precautions should be taken which diminish the possibility of the occurrence of suppurative inflammation of the middle ear. In doubtful cases nasal operations should be avoided, unless there areother indications apart from the affection of the middle ear.

IV.—SCANES SPICER, M.D., B.Sc.,

Surgeon in Charge of the Throat Department at St. Mary's Hospital.

DR. SPICER, President of the Section, said there was in need of some standard of measurement of nasal obstruction. Was it the fact of nasal obstruction *per se*, or did the results depend upon the nature of the obstruction? Was the essential fact the reduction of pressure? Practically, it was important to know what they were to tell their patients. Under what circumstances could improvement in hearing be promised, or even arrest of progressive deafness as the result of intranasal operations? It was important to settle these points.

V.—HERBERT TILLEY, M.D., F.R.C.S.,

Surgeon to the Throat Hospital, Golden Square.

DR. TILLEY said that nasal obstruction alone, however marked, could not be regarded as the factor of greatest importance in the causation of the great majority of cases of deafness. In the recorded cases of complete congenital occlusion of the choanæ (9 cases in all) deafness was conspicuous by its absence. His own experience was that intranasal operations for the removal of obstruction in cases of so-called "dry catarrh" were almost invariably failures; he could not recall a single success as regarded hearing power, although the patient might feel great benefit otherwise from relief of the nasal obstruction. He had long since given up advising intranasal operations in such cases, and if pressed to operate was careful to explain that the chance of relief to deafness was very remote. On the

other hand, in the moister forms of aural catarrh which varied from time to time and were associated with moist sounds on auscultation, excellent results might often be obtained by the removal of nasal obstruction due to hypertrophic catarrh, polypi, septal spurs, deflections, etc.

VI.—Walter Jobson Horne, M.A., M.B., M.R.C.P.,
Surgeon to the Metropolitan Ear, Nose, and Throat Hospital, London.

Dr. Horne pointed out the importance of age as a factor. In childhood the inferior meatus and Eustachian tube formed practically one continuous channel, and at the same time the naso-pharynx was small. Hence the danger of infection of the middle ear. With growth the naso-pharynx developed and an increased interval separated the posterior nares and Eustachian tubes, so that there was less danger of infection, and at the same time the effect of nasal obstruction of the ears was diminished. This, he thought, to some extent explained why certain forms of nasal obstruction, such as polypi, which were chiefly found in adults, were comparatively seldom associated with ear disease, in contrast with the frequency with which such disease was found in connection with adenoids, which was essentially a disease of early life. Change to a dry climate was preferable to intranasal treatment after removal of adenoids.

VII.—Patrick Watson Williams, M.D.,
Physician in Charge of the Throat Department of the Bristol Royal Infirmary.

Dr. Watson Williams said that catarrh rather than nasal obstruction was generally the essential factor causing disease of the middle ear in cases where there was a direct connection between the nasal disease and the aural affection: and though it was true that a certain measure of nasal obstruction would be found in a large proportion of such cases, yet the nasal stenosis *per se* had no causal effect in either setting up or maintaining the catarrhal condition. He had frequently observed that the most obvious and rapid subsidence of Eustachian catarrh had followed the removal of post-nasal adenoids, which either from their relatively small size or from their position were certainly not directly causing nasal obstruction; and on the other hand cases with most pronounced adenoid hypertrophy had not seldom been free from aural complications. Similarly marked nasal stenosis due to large pedunculated polypi was rarely productive of middle-ear disease, while the diffuse multiple polypi or polypoid granulations associated with ethmoidal disease and consequent catarrh of the upper air passages were more disposed to aural complications. He was convinced that the effect of "negative pressure" both in the production of nasal catarrh and hypertrophy, and Eustachian catarrh and middle-ear disease was largely, if not entirely, hypothetical, and that the presence of minor degrees of nasal obstruction were *per se* of little clinical importance from the aural standpoint.

VIII.—Richard Lake, F.R.C.S.,
Assistant Surgeon to the Royal Ear Hospital and Surgeon to the Metropolitan Ear, Nose, and Throat Hospital, London.

Mr. Lake said the point was not what should constitute nasal obstruction, but what forms of ear disease could be relieved by intranasal measures. He believed that almost all cases of chronic dry catarrh were nasal in origin; the question was, what cases would benefit by an obstruction being removed, and what guides had we to aid us? They were, he thought, (1) the duration of air conduction; (2) the mobility of the malleus; (3) the effects of inflation. Short air conduction, immobility of the malleus, and no improvement after inflation left but little hope of aid from intranasal treatment. With reference to such treatment, he thought the most useful work was done in the posterior half of the nose, as in removal of enlarged ends of inferior turbinals, which acted as a direct irritant to the Eustachian tube. In cases of flaccidity of the membrana tympani it was usually found that the nose on that side was stenosed, and it was better to remove the obstruction before treating the ear directly. As to "negative pressure" in the naso-pharynx in cases of nasal obstruction, with all due deference to Dr. Dundas Grant, who had stated that they were all practically agreed on its presence, he wished to say that he was not. He considered that the effects of nasal obstruction were due to the mucous catarrh set up in the naso-pharynx, and that the indrawing of the membrane, etc., should be ascribed in great part to the attempts on the patient's part to clear the naso-pharynx by hawking, thereby constantly sucking the air out of the middle ear without subsequent inflation. Personally, he did not find the tuning-fork tests of any help in these cases.

IX.—Dr. Holbrook Curtis (U.S.A.).

Dr. Curtis objected to the term "negative pressure" as unscientific. One might just as well describe vomiting as "negative swallowing." The general systemic improvement due to the relief of a nasal stenosis and consequent improvement in the quality of the blood had been rather lost sight of in the discussion. Improvement might be due to this rather than to the nasal operation affecting the pharyngeal air supply. His experience had been that quite a large ear practice had come to him as the direct result of intranasal work without reference to the ear, the improvement in hearing following intranasal operations causing a natural evolution of otological work. This alone would be convincing to him. Sclerotic ear cases demanded less surgical work in the nose, and more instillations of vaseline, etc., in the Eustachian tube. He regretted that the bougie and electrolytic treatment of strictures of the Eustachian tube had not been discussed, for he considered it an important adjunct to treatment.

X.—L. Hemington Pegler, M.D.,
Surgeon to the Metropolitan Ear, Nose, and Throat Hospital.

Dr. Pegler thought it was often difficult to draw a distinct line of demarcation between catarrhal and sclerotic cases of middle-ear deafness. Most of them must, he thought, have been agreeably surprised at times by improvement in hearing in cases which had been operated upon for nasal obstruction only. He thought one could not promise improvement, or even arrest of progressive deafness.

XI.—Scanes Spicer, M.D., B.Sc.,
Surgeon in Charge of the Throat Department at St. Mary's Hospital; President of the Section.

Dr. Spicer said he thought many of the cases were mixed, and with such no doubt there was some difficulty. What about the cases, say, with obstruction much worse during a cold or at night? Personally he would not promise improvement if the aural condition had existed over a year. In recent cases he advised nasal operation.

Replies.

Dr. McBride referred to Dr. Jobson Horne's remarks on the size of the naso-pharynx as a factor. That idea was not in accordance with his experience. With regard to adenoids, the distribution of the tissue was of great importance. A large central cushion on the vault might be quite harmless to the ears, while quite a small amount laterally might compress the tubes and cause deafness. He had frequently observed this and was quite certain of it. With regard to Dr. Holbrook Curtis's views, we must have chapter and verse, precise details of cases tested before and after operation; pious opinions were not sufficient.

Mr. Cresswell Baber agreed that the adenoid operation was often only the first step in treatment, and on the other hand no doubt cases were sometimes operated on unnecessarily. With regard to the measure of nasal obstruction, he had used Kayser's rhinometer, but it was not very satisfactory. The rule for inflation he suggested for doubtful cases. He would not operate with a view to prevention. If there was negative pressure during inspiration, there must be positive pressure during attempted expiration through the nose. The negative pressure theory was, he thought, rather unsubstantiated.

Dr. Dundas Grant differed from Mr. Lake with regard to the tuning fork. He thought it supplied very valuable data if carefully used. The bulging of the membrane referred to by Mr. Lake suggested the possibility of a perverted action of the tubal muscles causing air to enter the middle ear during the act of swallowing.

A DISCUSSION ON THE PATHOLOGY AND TREATMENT OF TOXIC PARALYSIS OF THE LARYNX.

I.—PATRICK WATSON WILLIAMS, M.D.,

Physician in Charge of the Department for Diseases of the Throat, Bristol Royal Infirmary; Physician to the Deaf and Dumb Institute, and to Clifton College.

WHEN I was honoured by the invitation to introduce the subject of toxic paralysis for discussion in this Section, I realised that, interesting as the topic should be, my task was somewhat a difficult one owing to the relatively few reliable clinical and pathological observations bearing on the question hitherto recorded. But for these same reasons it appeared all the more desirable to classify the facts at our disposal in the belief that my distinguished *confrères* assembled here would add much that is valuable and of practical interest, and tend to place on a better footing one of the most obscure and least known subjects in laryngeal pathology.

There are, of course, many drugs and toxic substances which, by their influence on the cerebral cortex, along with other symptoms, may cause a paresis or paralysis of all voluntary muscles, and, therefore, may paralyse voluntary phonatory movements of the vocal cords, without going so far as to paralyse the reflex adductor or abductor movements of organic life. But using the term "organic paralysis" as implying involvements of both volitional and organic movements, for the purposes of our discussion the term "paralysis" may be assumed to imply organic paresis or paralysis of one or more of the laryngeal muscles as distinguished from mere loss of voluntary movement, because we know that so long as the reflex centres in the medulla, the peripheral nerves, and the muscles of the larynx are intact, there is no true laryngeal paralysis, the reflex movements of phonation, respiration, and deglutition being unimpaired. We may, therefore, exclude from all consideration paralysis of cortical origin, the scope of our inquiry extending to laryngeal paralysis resulting from the direct bio chemical influence on the lower neurones and the muscles they subserve, of substances in the blood or tissues, whether due to auto-intoxication, to the toxins resulting from invading micro-organisms, or to the pathological action of various drugs or other poisonous substances introduced from without.

There are two distinct possible methods by which the laryngeal paralysis may arise: (1) From the direct application of the toxic substance to the larynx, (2) from the selective affinity of various poisons in the blood for the laryngeal nerves or their bulbar nuclei. The entry of the poison directly through the laryngeal mucous membrane may, in some cases, account for the occurrence of varieties of myopathic laryngeal paralysis which are either never, or at least very rarely, observed in purely neuropathic laryngeal paralyses, for example, isolated paralysis of the adductors, the interarytenoideus, or of the thyro-arytenoidei interni, while the latter obtains in most of the neuropathic paralyses.

We cannot altogether pass without notice recent researches on the influence of various toxic matters on nerve fibres, and a point of some importance is the evidence tending to show that the axon does not receive all its nutrient material from the ganglion cell, but rather that it depends on local processes of diffusion, governed, it may be, to some extent, by the influence of the ganglion cell, but nevertheless being essentially a local process in the area of peripheral nerve distribution.

> Every one must grant that the peripheral nerve fibre takes care in large part of its own nutrition; the presence of vasa nervorum affords sufficient warrant for the belief. Further, the evidence for its subordination to local processes of diffusion is to be found in the local injuries to peripheral nerves resulting from the circulation in the blood of soluble substances of a toxic nature—as, for example, diphtheria. (Barker.)

Hence we shall find that toxic paralysis of the larynx is more prone to follow toxic infections of the larynx itself than general toxic infections. Thus such affections as diphtheria and typhoid fever supply the larger number of instances of toxic laryngeal paralysis. Probably the frequency with which diphtherial neuritis primarily attacks the fauces is partly determined by the presence of the local lesion, just as the toxic agents of rheumatism or gout attack particular nerve fibres which are exposed to cold or injury.

The fact that in diphtherial paralysis the paralysis of motion usually declares itself first in the palatal muscles and is often confined to the fauces and spreads no further, and sometimes declares itself quite early in the course of the disease, even as early as the fourth day, suggests very strongly that the faucial paralysis is due to the local influence of the toxin absorbed at the seat of the membranous deposit, and that the occurrence of diphtherial laryngeal paralysis arises in a similar manner. Yet although doubtless this is true in a measure, and applies to those cases in which the muscles are paretic owing to inflammatory changes such as occur in the tissues in the immediate neighbourhood of the primary diphtherial lesion, other clinically observed facts seem to indicate that the majority of cases even of faucial paralysis are neuropathic, and due to the selective affinity of the diphtherial toxin for certain portions of the nervous system. Thus, in 494 cases of post-diphtherial paralysis observed by Miller at the South-Eastern Hospital only 185 were primary paralysis of the palate. Again, although the bulk of the palatal paralyses occurred between the fifth and fifteenth day, the bulk of the oculomotor paralyses, 197 in number, occurred likewise between the fourth and the seventeenth days. Moreover, cases of primary paralysis of the palate do occur long after the angina, there is no proportion between the severity of the primary faucial disease and the severity of the paralysis; indeed, paralysis not seldom develops when the primary infection has been very slight, even so slight as to escape detection.

True toxic paralysis of the larynx may occur in typhoid fever, especially during the third or fourth week; it usually takes the form of abductor or total recurrent paralysis; and in a very few cases it appears to have been due to a bulbar nervous lesion rather than a peripheral neuritis, according in this respect with post-typhoid paralysis in other regions.

Boulay and Mendel reported seventeen cases of laryngeal paralysis, coming on usually during the period of convalescence (namely, paralysis of the dilators, six cases; of the constrictors, four cases; of one recurrent nerve, five cases; of both recurrents, two cases); but the authors do not offer sufficient evidence as to the number of cases that might be properly attributed to direct implication of the laryngeal muscles by inflammatory exudation, or to compression of the recurrent nerve by glandular enlargement.

Lublinsky reports six cases of post-typhoid laryngeal paralysis; in one severe case paralysis came on in the fourth week, in the others during defervescence. The abductors were paralysed in two cases, one recurrent in three cases, and both recurrents in one case. In one paralysis of the recurrent nerve the soft palate was paralysed also, and in another there was paraplegia and lost reflexes, but no anæsthesia.

Another case of special interest was reported by Bernoud, in which stridor and inspiratory dyspnœa developed during the third week of typhoid fever. Laryngoscopic examination revealed complete double abductor paralysis, and there was no appearance of laryngitis. The diagnosis of typhoid fever was determined to the exclusion of all other affections, especially diphtheria, and confirmed by Widal's reaction being positive, and by the existence of all the usual symptoms and the occurrence of a typical relapse. In this case, too, paralysis of the soft palate supervened on the laryngeal paralysis.

From personal investigation and a view of the recorded cases, Przedborski concludes that paralysis of the laryngeal muscles in typhoid fever is more frequent than supposed, and this he considers to be capable of proof if the larynx be examined in all cases at different periods of the disease; and he further states that such paralysis is equally frequent during the febrile period, as in the convalescent stage. Moreover, he finds that all the muscles, adductors as well as abductors, are attacked with equal frequency, and that at first only one adductor is attacked, the abductors being later involved, and that paralysis beginning in the dilators of the glottis may disappear and the constrictors then be attacked.

It seems probable that several of this author's cases, especially those observed during the febrile stages of the disease, were myopathic paralyses due to local inflammatory changes. I have examined a large number of cases of enteric fever laryngoscopically, and have not observed frequent occurrence

of paralysis in the larynx, while true toxic paralysis is undoubtedly rare.

The same writer describes several cases of laryngeal paralysis in typhus fever, to which the foregoing remarks are also applied, but he considers that the prognosis as regards recovery from the laryngeal paralysis is much less favourable in typhus than in typhoid fever.

Similarly, abductor or recurrent laryngeal paralysis may arise in the course of influenza, and possibly in measles. Of the latter, the only observation that I have been able to trace is the record of three cases by Surgeon-Captain Smith, in which total bilateral recurrent paralysis of the cords set in a few days after the subsistence of the fever, but it only lasted from six to ten days, and therefore, although it is stated that there was no indication of laryngitis, nor of congestion or inflammation in laryngoscopic examination, I feel some doubt as to these being instances of true neuropathic paralysis. Syphilis has been known to cause laryngeal paralysis, and if we may rightly attribute the central nervous lesions characteristic of tabes dorsalis to the remote influence of the syphilitic virus, it must be reckoned about the most prolific cause of neuropathic laryngeal paralysis.

Botey has recorded five cases of apparently neuropathic laryngeal paralysis directly traceable to syphillis, and he considers that syphilis is the most frequent cause of bilateral and especially unilateral recurrent paralysis, going so far as to declare that one ought always to regard a paralysis of one posticus muscle as syphilitic, when other recognised sources of pressure on the recurrent do not appear to exist. Botey further observes that these paralyses are but rarely associated with gross syphilitic lesions in the larynx, and it is worthy of note that the paralysis takes the form of a unilateral or bilateral paralysis of the posticus fibres or of the whole recurrent.

True rheumatic paralysis is rare, if we exclude the cases due to perineuritis induced by exposure to cold, the rheumatic toxin not showing a proclivity for attacking the nervous system like that of diphtheria. I think two of my own cases, however, are perhaps instances of true rheumatic neuritis.

The first was a young male adult who had peritonsillitis, and a week after the quinsy broke he began to complain of difficulty in swallowing fluids, which returned through the nose. The soft palate was completely paralysed. The larynx showed only marked bilateral paralysis of the internal thyro-arytenoidei, abduction and adduction, and the general appearance of the larynx being otherwise normal. A culture from the throat showed the presence of staphylococci and diplococci, but no diphtheria bacilli.

Another example was the case of a medical student, whom I showed at the meeting of the London Laryngological Society in January, 1897. He had a severe attack of acute lacunar tonsillitis, and when he came to me shortly after laryngoscopical examination showed that the left posticus was paralysed and the lateralis paretic. Bacteriological culture from the throat showed no evidence of diphtherial infection, and I attributed it to rheumatic neuritis, there being a distinct history of previous rheumatic attacks. The laryngeal paralysis was cured by local faradisation and the administration of strychnine internally.

Other cases of rheumatic laryngeal paralysis are recorded by Procter Hutchinson. In one case, at any rate, facial erysipelas has been followed by paralysis of the soft palate and of the postici muscles (Feith), and a case of posticus paralysis due to gonorrhœa is described by Lazarus.

I have recently observed the development of laryngeal paralysis in a case of multiple peripheral neuritis under my colleague, Dr. Shingleton Smith.

In its earlier manifestations the general symptoms were attributed to subacute rheumatism, beginning with feelings of general weakness, pins and needles in the hands and feet, followed in two days' time by sharp pain in the left sciatic nerve, and the next day by sharp pain in the right shoulder, in the region of the circumflex nerve. Two days later the voice, which had been strong and normal, became weak and bitonal.

Laryngoscopic examination revealed left abductor paralysis with weakened adduction; the thyroarytenoideus internus being weak also. There was no other abnormal appearance in the larynx, and the left arytenoid cartilage was freely movable. He was complaining of a relaxed throat, but a swab culture yielded only abundance of staphylococcus albus and aureus. By June 18th the left vocal cord was in the cadaveric position, the right being unaffected. The palatal reflex was weak, but there was no laryngeal anæsthesia.

Now he has marked wasting of the right deltoid of the calves of both legs, and general progressive muscular weakness, with obviously diminished tactile and electrical sensibility in the extremities; absence of knee-jerks, but no reaction of degeneration in the muscles, and the left vocal cord paralysis still persists. There is no suspicion of alcohol, arsenic, lead, or syphilis in this case.

Turning now to the inorganic poisons which have been stated to cause laryngeal paralysis, we find that the majority of the recorded cases refer to lead poisoning. Heymann describes three cases of his own: two showed double posticus paresis, and one complete paralysis of both recurrents. Heymann considers that only four of the various cases recorded are clearly attributable to lead—namely, those of Mackenzie and Sajous, and Seifert's first and third cases, all occurring in painters working with white lead. Either posticus or complete paralysis was present in all these cases, except that of Mackenzie, who reports that his case, that of a painter, aged 35 years, suffered from complete paralysis of the right crico-arytenoideus lateralis.

Tanquerel des Planches relates that horses working in red lead factories suffer from paralysis of the muscles of the larynx, often necessitating tracheotomy, and Heymann refers to statements in several veterinary works on this subject. Thus, Hurtel d'Arboval relates the same fact concerning horses working in white lead factories: and Ranque also, in reference to the red lead factories at Tours, while the more precise and later observations of Schmidt, Krichels, and Beckmann prove that horses suffer from posticus paralysis due to lead poisoning, and that they are usually otherwise in good health, and able to work again after tracheotomy.

Arsenic has been stated to cause vocal cord paralysis, but I have not been able to trace a reliable instance in point, except one case in which Heymann observed laryngeal paralysis distinctly attributable to arsenic.

The patient, a male, aged 53, was on his first appearance completely aphonic, and complained of difficulty in swallowing, loss of appetite, constipation, and sickness. Laryngoscopic examination showed that the left vocal cord was in the cadaveric position, the right moved slowly, the whole larynx was slightly hyperæmic and swollen; there was also angina and a slight conjunctivitis. He had worked for years in a brass factory, galvanising and gilding objects, using in his work cyanide of potassium and stuff called "Schwatzbrenne" made by dissolving arsenic in hydrochloric acid. After fourteen weeks' treatment with iodine and electricity, while he was kept on a milk diet, the laryngeal paralysis disappeared, and he spoke with a loud voice. But again, nine months later, the patient reappeared with the same symptoms, and the right vocal cord was also paralysed, and again similar treatment, with strychnine injections superadded, cured him in fourteen weeks. Two subsequent relapses occurred, each time cured.

Atropine, morphine, copper, and phosphorus have been said to cause laryngeal paralysis. Trévelot relates a case of aphonia quickly following a morphine injection. But Günther relates instances of paralysis of the vocal cords in horses, observed by different authors, especially paralysis of the abductors, caused by different kinds of peas, lathyrus sativus and cicer, pisum umbellatum, etc.

Very interesting and germane to the subject under discussion are the experimental observations of Hooper, of Boston, and of Semon and Horsley, on the apparently peripheral and differential action of ether on the laryngeal muscles, which showed that when various animals were deeply narcotised by ether, stimulation of the peripheral end of the divided (as well as of the undivided) recurrent nerve resulted invariably in abduction of the vocal cord, in contradistinction to the adduction which was invariably produced by the similar stimulation of the recurrent in animals not deeply under the influence of anæsthetics, or when the recurrent is stimulated in the recently-excised larynx.

These facts point to the selective action of the ether on certain muscles of the larynx, namely, the adductors rather than the abductors, or, to use the words of Semon and Horsley, "we are driven to conclude that ether must act specifically on either the nerve fibres, their endings in the adductor muscles, or on the muscular substance itself." We are all aware of the proclivity of the postici muscles to succumb earlier than the adductors of the vocal cords in all progressive organic lesions of the centres or trunks of the motor laryngeal nerves, but in the case of this toxic substance, ether, owing to the specific selective action, the adductors succumb before the abductors.

We at once realise that the specific selective affinity of a toxic substance may, theoretically at any rate, lead to its pathological action being spent mainly on any particular muscle or group of muscles. There may be some foundation in fact for Morell Mackenzie's dictum that "in cases of toxic poisoning the adductors alone are affected, just as in lead poisoning the extensors of the forearm always suffer, the flexors never." As I have mentioned already, Mackenzie himself diagnosed isolated paralysis of one crico-arytenoideus lateralis apparently from lead poisoning.

Yet it is remarkable that in true toxic laryngeal paralysis

the postici, with few exceptions, have succumbed either earlier than or concurrently with the adductors of the cords. Without entering into the large questions of the pathological changes in the nervous system resulting from diphtheria, I think the evidence is in favour of the view that the toxin acts on the whole neurone but especially upon the terminal arborisations of the dendron and end plates, and perhaps the early palatal paralysis, like early cardiac failure, is partly determined by the effect of stress. Though very early and possibly the primary alteration in the neurone occurs in the cells of the anterior horns, the most obvious and probably the earliest changes due to diphtherial poisoning consist in a parenchymatous degeneration of the finer branches of the peripheral nerves, and Gombault found very similar alterations of the peripheral nerves in artificially-induced lead poisoning.

The present state of knowledge hardly warrants definite generalisation, but it seems probable that the majority of cases of toxic laryngeal paralyses have their foundations in peripheral neuritis, a view which has been recently expressed by Semon. This would afford an explanation of the varying localisation of the paralysis in different territories supplied by the recurrent laryngeal nerve. Thus, excluding the purely myopathic paralyses, toxic paralyses are due to inflammatory generation of the neurone, that is, in its widest sense, neuritis, and may be conveniently divided into two distinct pathogenic groups:

1. Infective neuritis, commonly occurring in the course of diphtheria and less frequently observed in typhoid fever, typhus fever, scarlatina, morbilli, influenza, rheumatism, tuberculosis, syphilis, cholera, and malaria.

2. Toxic neuritis, most frequently due to lead poisoning but also reported to have occurred in poisoning by arsenic, copper, antimony, phosphorus, alcohol, atropine, and morphine.

We see that laryngeal paralysis of toxic origin has been reported as resulting from much the same poisons and infectious diseases as are known to cause paralysis in other regions. But, notwithstanding the considerable variety of toxins and poisons that have been stated to cause laryngeal paralysis, one must accept with caution many of the cases recorded—cases in which the presumed laryngeal paralysis has not been actually observed by laryngoscopic examinations; others in which the history does not definitely point to the particular toxin being the sole possible cause of the paralysis; and others again where various concomitant complications in various regions, and especially from laryngeal disease, render doubtful the so-called toxic source of the observed laryngeal paralysis. Indeed, it is remarkable how many of the recorded cases of toxic laryngeal paralysis come under such a category of doubtful pathogenesis. Of organic poisons causing laryngeal paralysis, alcohol alone appears to be the subject of reliable observations. Dundas Grant records two cases:

In one, a male aged 40, complaining of vocal weakness and of sciatica with considerable anæsthesia (?) of the affected limb, laryngoscopic examination revealed complete left-sided recurrent paralysis. There was no indication of intrathoracic disease and no history of syphilis, but there was a history of alcoholic excess. Complete abstinence from alcohol, fairly large doses of tincture of nux vomica, together with a rest of some weeks, resulted in complete restoration.

Grant attributed both the sciatica and the laryngeal paralysis to neuritis of alcoholic origin.

The other case was that of a female with paresis of the left vocal cord. There was a distinct history of alcoholism, and in two weeks' time the left vocal cord became completely paralysed; but after the amount of alcohol had been strictly limited for a month the paralysed cord was greatly improved.

Atropine, morphine, and phosphorus have been said to cause laryngeal paralysis.

The treatment of these toxic laryngeal paralyses may be summed up in:

(*a*) The resort to appropriate general treatment of the infective disease when that is the cause of the paralysis; and measures directed to the removal of the poison in the circulation and tissues in the case of organic or metallic poisons.

(*b*) Intralaryngeal applications of the faradic or galvanic current, combined with the internal exhibition of strychnine in considerable doses, either by the mouth, or directly into the affected muscles, when feasible.

(*c*) The relief of dyspnœa and threatened asphyxia in cases of bilateral abductor paralysis by intubation or tracheotomy—measures which have frequently been necessary in diphtherial and typhoid laryngeal paralysis.

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II.—SAMUEL LODGE, M.D.,

Honorary Surgeon to the Eye, Ear, Throat, and Nose Departments of the Halifax Royal Infirmary.

DR. LODGE described two cases of adductor paralysis of the larynx, due to lead poisoning, which had occurred in his practice. The first case was that of a youth, aged 19, who awoke one morning and found himself hoarse. On laryngoscopic examination double adductor palsy was evident. Hysteria was excluded, and there was a blue line on the gums and other evidence of plumbism. Prophylactic and other treatment was adopted. Faradism was applied intralaryngeally. Recovery was complete in about six months. The second case was that of a youth, aged 18, who showed bilateral adductor palsy. He had a blue line on the gums, and his mother, who lived with him, also suffered from well-marked lead poisoning. He recovered rapidly in two or three months under general treatment and faradism applied intralaryngeally.

III.—HERBERT TILLEY, M.D., F.R.C.S.,

Surgeon to the Throat Hospital, Golden Square.

DR. TILLEY said the introducer had treated the subject so fully as to leave little more to be said. He narrated a case of septic or "hospital" sore throat from his own practice, in which there were no signs of diphtheria, but soon afterwards abductor paralysis of the left cord developed, due, no doubt, to a poison absorbed from the throat, causing peripheral neuritis. Practically it seemed that any poison might produce a peripheral neuritis of the larynx, just as it might do in other parts.

IV.—SCANES SPICER, M.D., B.Sc.,

Surgeon in charge of the Throat Department, St. Mary's Hospital, London, President of the Section.

DR. SPICER remarked that the subject was one which stood much in need of elucidation, and he was sure the Section was much indebted to Dr. Watson Williams and the other speakers. His own experience had not enabled him to form a connected view of the subject. He had noticed cases of paresis after tonsillitis, but he could not be sure whether they were due to inflammatory changes or to absorption of toxins. There seems to be a sort of stiffness of the cords, so that both

abduction and adduction were defective. He had experienced this in his own person after influenza.

REPLY.

Dr. WATSON WILLIAMS remarked that adductor paralysis from lead was very rare, and Dr. Lodge's contribution was all the more valuable on that account. Morell Mackenzie's dictum that the adductors were specially prone to be affected was not true; the abductors were much more frequently affected, and often they alone suffered. This was so also in the case of horses.

AUDITORY RESULTS OF THE REMOVAL OF POST-NASAL ADENOIDS: MODIFIED OPERATION.

By DAVID MCKEOWN, M.A., M.D., M.Ch.,
Honorary Surgeon to the Manchester Eye and Ear Hospital.

THE hearing is found within a few days after operation to be improving, and it appears to be taken for granted that the improvement is continuously progressive until the final result is reached, and that the final result is the best.

In regard to the early post-operative period, that is, the interval between the operation and the commencement of the commonly-recognised improvement, Semon and Williams, in the article contributed by them to Allbutt's *System of Medicine*, say: "For the first two or three days, owing to the irritation and inflammation set up by the operation, the nasal obstruction and deafness may be but little improved." This is an inference vitiated by non-observation.

The teaching in regard to the influence of the operation upon the hearing is incomplete, incomplete at both ends, both as to the immediate and the ultimate result. In a large number of cases the hearing is found immediately after operation to be much improved, indeed, so much so in some instances that the immediate result does not differ greatly from the ultimate. Many of my operations have been performed without anæsthetics, and in these cases the testing has been done when the emotional disturbance caused by the operation has subsided, say within half an hour, and I have frequently found similar improvement as soon as the patient left the chair. Where chloroform has been administered the patient has been tested as soon as he has recovered consciousness sufficiently to exercise his attention. This fact—the immediate improvement in the hearing—came under my observation about seven years ago, and few weeks pass without affording me fresh instances. It would be easy to compile a long series of cases showing the immediate change in hearing, but it is unnecessary, as each surgeon will have frequent opportunities to investigate for himself; I therefore mention only a few cases to give some idea of what actually takes place. The first three operations were under chloroform and the second three without anæsthetics.

No.	Name.	Age.	Hearing Distance Before Operation.	Hearing Distance After Operation.
1.	Jessie F.	19	Right, 2 feet Left*	Right, 10 feet
2.	Wilfred S.	6	Left, 1 foot Right, 2 feet	Left, 2 feet Right, 10 feet
3.	John S.	7	Left, 1 foot Right, 6 inches	Left, 14 feet Right, 8 feet
4.	Albert W.	24	Left, at ear Right, 3 inches	Left, 8 feet Right, 9 feet
5.	Joseph A.	18	Left, at ear Right, 1 foot	Left, 9 feet Right, 11 feet
6.	Edward T.	6	Left, at ear Right, at ear	Left, 10 feet Right, 8 feet

* There was chronic otorrhœa of the left ear.

The testing has been by questions addressed to the patient, and the two distances here given for each ear, refer to the same qualities of voice—low whisper, loud whisper, moderate conversational voice, loud voice.

It will be observed that the differences between the distances before and after operation are so great as to leave a large balance to the credit of the operation after making liberal allowance for discrepancies incident to lack of precision in the method of testing. The immediate improvement is in many if not in all cases followed by some temporary loss due to the irritation consequent upon the operation.

Believers in the commonly-accepted explanation of adenoid deafness may say that immediate improvement is an impossibility; that the suspension of the ventilating function of the Eustachian tubes being the first stage in the causation of the deafness, we should look to its re-establishment as the essential point for the improvement of hearing; that the tubes were functionless either because they were obstructed by catarrh in the naso-pharynx, or because there was paresis and interference with the action of the levatorpalati and salpingo-pharyngeus muscles: that these morbid conditions, with their consequences—depression of the membrane and ossicles—had been in existence for long periods, and that our pathological knowledge teaches us that for recovery from them considerable time is required.

The answer is that a fact is not the less a fact because we cannot explain it; that the question is to be decided by observation alone; that the "time for recovery" argument also applies with much (although not so much) force to the generally admitted improvement taking place within a few days, for no great recovery could be expected within the time from the paresis or catarrhal obstruction; that the want of harmony between the facts and the theory proves that the theory is at the best imperfect, and that, as the case to be mentioned presently shows, the theory covers only part of the ground.

What has been said applies to only one class of case—namely, those in which there is no perforation of the membrane. As regards the cases of chronic otorrhœa with perforation, I have had reason for thinking that in these also the removal of adenoids is sometimes attended by immediate improvement in hearing, but up till recently the cases which I had tested were open to objection. The procedure followed was to syringe the ear, test, operate, and then again test. It might be urged that all results obtained in this way were unreliable, inasmuch as the distance in the first testing was less than it should be, in consequence of disturbance caused by the syringing. On the 23rd of last February, however, I had a case which was unexceptionable.

Robert P., aged 13, had a perforation of about one-third the area of a threepenny-piece in the right membrana tympani behind the handle of the malleus; there was a history of otorrhœa dating from an attack of scarlet fever about six years previously, but the ear had been dry for a long time, and was not interfered with at the time of operation. The adenoids were of considerable bulk. A moderate voice was heard with this ear immediately before operation at a distance of about 1 foot, and half an hour after operation at a distance of about 13 feet.

This marked improvement was not consequent upon any change effected by the operation in the intratympanic air tension, in the position of the membrane or in the position of the ossicles; owing to the perforation these factors would not be affected by the operation. So much of the impairment of hearing caused by the adenoids as was immediately removed by the operation was not directly dependent upon diminished intratympanic air tension, depression of the membrane and consequent depression of the ossicles, which are generally regarded as covering the whole ground, and it is evident that another cause is at work. A consideration of this cause would lead to a discussion of the various theories of adenoid deafness—an extensive and complicated task. It has for a long time appeared to me that the immediate improvement after operation was causally related to the relief afforded by the operation to the circulatory mechanism. The pathological conditions existing in adenoids would naturally lead to disorder of the local circulation, and this disorder would be removed or mitigated by the operation, which is attended by profuse hæmorrhage, and in many cases by great and immediate improvement in hearing. Dench attaches great importance to obstruction of the venous return current from the tympanum and labyrinth, and dwells upon the labyrinthine conditions—irritative and inflammatory—which may result. The difficulties of our subject are not diminished by invoking irritative and inflammatory affections of the labyrinth as a common result. There is ground for believing that there is also a cerebral factor at work.

The final degree of improvement from the operation may not be the best obtained. It was so in some of my patients, and on examining the post-nasal space I found adhesions between the posterior wall of the pharynx and the Eustachian tubes; a rupture of these adhesions led to im-

provement in the hearing. The morbid condition was re-established several times; the patients dropped out of observation, and there is good reason for thinking that the unfavourable cicatrisation would be permanent. In many cases the raw surface left by the operation—and the consequent area of cicatricial tissue—is extensive. The local conditions are also often unfavourable. The degree of projection in the median line, the width of the fossæ of Rosenmüller, and the size and position of the termination of the Eustachian tubes have to be borne in mind. The latter presents great variety as regards size, shape, projection in the post-nasal space, and the size and character of the opening. In some cases the end is large, trumpet-shaped, projecting considerably into the naso-pharynx, and admitting the tip of the finger; in others the lips constitute a prominence in the naso-pharyngeal wall, and the orifice can be felt as a slit, but too narrow to admit of digital separation. These considerations suggest the possibility, if not the probability, of a cicatricial impairment. To counteract such an agency is difficult, if not impossible.

Two questions arise: (1) Can the influence of cicatrisation be lessened by a division of the operation into stages, for example, by limiting the first sitting to the posterior wall, and after cicatrisation completing the operation? (2) Can a condition of parts more favourable to innocuous cicatrisation than that hitherto obtained be secured at a single sitting by a modification of the method of operating? At present complete eradication is the aim of the operation; cutting instruments—forceps, curettes, and rings—are generally employed, and the fossæ of Rosenmüller receive special a tention. The mucous membrane covering the adenoids is removed by the forceps, and probably also by the curettes and rings; hence the surface for cicatrisation. Of this surface the parts of most importance are the fossæ of Rosenmüller, because faulty cicatrisation here may lead to a permanent impairment of hearing—to a loss, partial or complete, of what had been gained by the operation. If the lymphoid tissue in the fossæ could be enucleated or pressed out, leaving the mucous membrane *in situ*, although ruptured, torn, or lacerated, a great advance would be made. The ease with which adenoids may in many cases be broken up and expelled by the finger is well known, and this fact, coupled with the further fact of the difficulty of removing a piece of the mucous membrane by the finger nail, suggests that the fossæ of Rosenmüller should be reserved for digital manipulation, and should be regarded as lying outside the domain of cutting instruments, except where the finger is insufficient. The finger may be used in two ways: (1) To crush; (2) to scrape. Crushing is preferable, and should be tried in every instance, scraping where thought desirable completing the manipulation. I am now in my practice giving effect to these views. A considerable time must elapse before it would be possible to compare the results of the modified operation with those hitherto obtained. It may be said that if the finger prove satisfactory for the fossæ of Rosenmüller, it may be used for the entire operation. Experience and the data as to conformation of the post-nasal space and the softness or toughness of the adenoids afforded by digital examination must be our guides.

It may be urged that the proposed digital manipulation would not be satisfactory, as it would not be likely to lead to what has been regarded as an essential of the operation—namely, the thorough removal of the lymphoid tissue. The chief reason for thoroughness has been the desire to avoid the possibility of a return of the adenoids; but may the fear of this issue not be a groundless one? Presence of lymphoid tissue in the naso-pharynx is the normal condition, and after operation various circumstances are against reproduction: (1) the devascularisation of the naso-pharynx and its neighbourhood; (2) the establishment of respiration by the physiological channel; (3) the development of the region involved; (4) the antagonistic influences of time on lymphoid structures; and (5) the improved general health following operation.

Impairment of hearing from a reproduction of the adenoids is remediable, but impairment of hearing from faulty cicatrisation is practically irremediable. There is no difficulty in choosing.

Statements made by two patients suggest that cicatrisation, in addition to impairment of hearing, may lead to other disadvantages: (*a*) respiratory troubles not due to naso-pharyngeal obstruction, but probably dependent on involvement of nerves in the cicatrix; (*b*) tinnitus.

Dr. Watson Williams (Bristol) said the point of immediate improvement of hearing was of great interest. He had never directly tested it, but would take an early opportunity of doing so. It was difficult to see the reason, but it must be borne in mind that the cases of adenoids in which deafness was most marked often had the least amount of growth. He had never observed any extensive area of cicatricial tissue after the operation, and he should be sorry to return to the finger nail, which he thought could only do superficial crushing, leaving almost the certainty of recurrence. The adenoid tissue removed by operation was, he must remark, diseased and not healthy adenoid tissue, and the circulatory changes referred to as perhaps explaining the immediate improvement were the consequence and not the cause of the adenoid growth.

Dr. Logan Turner (Edinburgh) had examined cases of adenoids within four or five hours of operation, and had obtained similar results to Dr. McKeown. The explanation was difficult. He had never noticed in such cases any change in the position of the membrana tympani—lessened retraction—such as might account for the improved hearing. With regard to adhesions, as described by Dr. McKeown, they would tend rather to keep the tube open. The danger would be, he thought, of tearing the tube, which might cause obstruction. Hypertrophic adenoid tissue in the naso-pharynx was not normal, and gave rise to catarrh.

Dr. Jobson Horne (London) thought the imperfect crushing of diseased adenoid tissue would be much more likely to lead to infection of the middle ear, as the bruised tissue would form a suitable nidus for bacteria. Digital examination enabled the surgeon to judge of the completeness of his operation. The immediate improvement in hearing was, he thought, mainly due to relief of venous congestion.

Dr. Pegler (London) did not think the bridges and synechiæ so often seen spreading from the upper border of the Eustachian cushion to the roof of the naso-pharynx could be regarded as other than masses of lymphoid tissue. The point had been recently discussed and practically settled by the Laryngological Society. Personally, on finding this condition after an operation, he concluded that the operation was incomplete. Instances of great and immediate improvement of hearing had occurred to him after adenoid operations.

Dr. Scanes Spicer thought the finger nail was very useful for completing an operation. Dr. McKeown's explanation was rather an attractive one and helped to render intelligible the undoubted improvement in hearing obtained by the older operators with the finger nail. The temporary alteration of the circulatory conditions produced by the finger-nail operation would account for a temporary improvement, followed, of course, by relapse after some weeks. Probably most of them had noticed great improvement in hearing, say, the morning after operation, but as a rule, he thought the improvement was gradual and due to the subsidence of catarrh and improved ventilation of the tympanum.

Dr. McKeown, in reply, said that testing the hearing immediately after operation was quite unobjectionable. He did not advocate a "finger-nail operation," but the finger might well be employed to break up and detach soft adenoids in the fossæ of Rosenmüller in order to avoid risk of harmful cicatrisation, which was a much more serious matter than recurrence. Immediate improvement and ultimate impairment of hearing power were determined by observation.

TWO CASES OF THROMBOSIS OF THE LATERAL SINUS.

By Samuel Lodge, Jun., M.D.,
Surgeon to the Eye, Ear, Throat, and Nose Department of the Royal Halifax Infirmary.

In the second of the two cases now recorded the etiology and pathology remained obscure.

Case I.—A schoolboy, aged 14, was sent on January 26th, 1900, to the Royal Halifax Infirmary for operative treatment by my colleague, Dr. Mantle. The lad's mother said that he had never suffered from earache or discharge until after having his "tonsils cut" last summer. A discharge from his right ear then appeared but gave rise to practically no inconvenience.

Shortly before Christmas the "running stopped." The boy complained of headache and "vomited everything" for ten or twelve days. He was not put to bed. He improved slightly up to about the middle of the first week in new year, when he became much worse, and it was thought advisable to call in a doctor.

For fourteen days prior to his admission he had had repeated shivering fits, with high temperatures. A concomitant convergent strabismus had existed since childhood on the left side.

On admission, patient complained of severe pain all over right side of head. Slight purulent discharge from right ear. No pain or tenderness over jugular vein in neck. No facial palsy. Pupillary reflexes normal. No paresis of extraocular muscles. Right optic neuritis. Temperature 101.8°; the same day he had a rigor and temperature reached 104.4°. Ear syringed with lotio boracis, four-hourly. At 6 A.M. the next day had another rigor. The same afternoon under chloroform, the auricle was detached above and behind and retracted downwards and forwards, and Stacke's modification of tympano-mastoid exenteration was performed. The mastoid cells were carious and contained much foul pus. An erosion in posterior wall of mastoid antrum extended into sigmoid groove of lateral sinus. This was enlarged and pus cleared from groove. The sinus appeared not to be thrombosed, so it was determined to keep the wound lightly packed with gauze so as to be able to operate on a bloodless field in a day or two if the condition did not improve satisfactorily. Whilst removing the outer wall of the tympanic attic, in spite of the use of a Stacke's protector, owing to a low-lying middle cranial fossa, the dura mater was exposed. There were no signs of extradural abscess.

The boy's temperature after the operation was subnormal. He appeared much better, but complained of pain in the abdomen. On the morning of the 30th he passed a round worm. The temperature, which had gone up the previous evening, became subnormal again. On the 31st he had another rigor, temperature going up to 105°. Temperature normal again at 2 A.M. on February 1st, but three-quarters of an hour later had another rigor, temperature 103.2. The same afternoon the bony wall of the sigmoid groove to the apex of the mastoid was fully exposed. The sinus was denuded of pulsating granulation tissue with a curette and then appeared as a rigid whitish grey cylinder, presenting much the same consistence as a femoral artery injected with lead for dissection purposes. It did not pulsate, and exploratory aspiration withdrew no blood. An incision in the long axis about an inch long was made through its wall. The thrombus was very fœtid, of the consistence and colour of dryish putty. A Volkmann's spoon cleared away the thrombus upwards and had to be passed along the horizontal portion of the lateral sinus well towards the torcular, before the blood current was re-established. The hæmorrhage was controlled, as is recommended, by gauze tampon and inversion of edges of sinus. The spoon then cleared the thrombus from below until the current flowed freely. The tamponnade was repeated here, and the wound left to granulate. The temperature next day rose again to 102.2°, 20 c.cm. of antistreptococcus serum injected. When gauze was removed some pus escaped from above. The neck, beyond enlargement and tenderness of cervical glands, appeared normal. The temperature gradually sank during the next three or four days, but his face became œdematous. No œdema elsewhere; no albuminuria; no exophthalmos; no chemosis. No paresis of ocular muscles. The facial œdema was considered to be of a passive character, due to some interference with the orbito-facial venous communication, probably set up by a non-infective thrombotic extension. The œdema disappeared in a day or two. Serum injections were not continued, as the house-surgeon reported the absence of streptococci in a cover-glass preparation. Before the removal of the thrombus the boy was wasting rapidly, afterwards he constantly complained of hunger, and commenced to put on flesh. On February 6th the temperature rose to 105° at 2 P.M. No physical signs discoverable anywhere suggestive of embolic mischief. At 10 P.M. temperature 98.2°. From this period his progress was uneventful.

On April 6th the patient was shown at the Leeds and West Riding Medical Society.

CASE II.—On January 5th, 1900, J. T., aged 59, a foreman mechanic, was referred to me by Dr. Strickland. He appeared to be a strong healthy man, and stated that he had never had a day's illness in his life. No history of injury to head or ear, or syphilis. No rheumatism or gout. He had always been strictly temperate and practically teetotal. There was no history of discharge from the ears. About six months previously the right ear became deaf, and shooting pains were often felt in it. Gradually the shooting pains came on at shorter intervals, there was also a loud noise in his ear, which kept time with his pulse. For 6 weeks past the symptoms had been especially bad. The last 2 or 3 days his head was swollen on that side, and the previous night, owing to the pain, he had only slept 3 hours. Up to this time he had kept at work. On examination the right ear was seen to stand off, and there was a non-inflammatory-looking œdema roughly limited to the area covered by temporal fascia in front of ear and to posterior border of mastoid process behind. The œdematous area felt boggy on pressure, and did not resemble in appearance or consistence any condition set up by the complications of suppurative middle-ear disease with which one was familiar. Right hearing distance—watch not heard. Rinné's test negative. C. 4 heard well. Left hearing distance—watch heard at half a metre. The membrane was easily seen. There were no signs of old perforation or important gross changes.

The condition was quite puzzling, and I sent him to the Royal Halifax Infirmary for exploratory operation the next day. On admission (January 6th, 1900), temperature 100°, pulse 80, respirations 24. The same afternoon Stacke's operation was done. Mastoid area sclerosed; antrum at great depth. No signs of pus in tympanum or its adnexa. On visiting him the next day in the ward one was struck by the apparently complete relief, since the exploratory operation had afforded only negative information. The patient was sitting up in bed, and declared he felt quite well. About the 20th he was allowed to be up. On the 25th he wrote home, saying how well he felt, and that he would be returning home the next day. Shortly after tea (4.30 P.M.) he became rapidly very ill, and was semi-unconscious, pulse-rate unaltered, no vomiting. At 6 P.M. he had a rigor, temperature 100°; quite unconscious, pupils equal, no deviation of eyes, no retraction of head, no localising symptoms. At 8 P.M. another rigor, temperature 103.6°. On January 26th condition generally unaltered. 2 A.M. Temperature 100.2°. 6 A.M. Temperature 103°. 10 A.M. Temperature 101°. At 3.30 P.M. further exploratory operation was decided on. The old wound was reopened and extended. The lateral sinus could not be found, there were no signs of extradural abscess; in searching for pus in the temporo-sphenoidal lobe Macewen's searcher tapped the left lateral ventricle, and a fair amount of clear serum came away; the quantity was not measured. We stitched up dura mater in trephine opening, hoping that his intracranial pressure being relieved his condition might perhaps improve, as it had done previously, so as to give time for a definite plan of campaign to be drawn up. Patient gradually grew worse, and died about 10 o'clock on the 27th, with a rectal temperature of 103.6°.

Necropsy Eighteen Hours after Death.—Trephine opening and mastoid region aseptic in appearance; superior longitudinal sinus healthy. On opening dura mater much fluid escaped, not unlike very thin custard in consistence and colour. Veins of pia mater greatly engorged: arachnoid and pia felt waterlogged. Brain removed dripping with above fluid. Cerebral sulci full of this yellowish green lympho-pus. Section of brain: Lateral ventricles full of similar fluid, no sign of abscess, tracks of Macewen's pus searcher aseptic-looking. Brain felt on its removal like a mass of putty ready for use. On examining the remaining sinuses the right lateral sinus could be traced with difficulty, as its walls were adherent and the bony groove for the sinus was almost obliterated; this condition extended from the torcular to the bulb. From the bulb to its junction with the subclavian the internal jugular was an impervious fibrous cord. The left lateral sinus was of normal size, and the groove in the bone was very well marked, but the sinus was occluded almost to the commencement of the sigmoid portion by *ante-mortem* thrombus. The thrombus was sent to the Clinical Research Society for a report. The report stated that "The white clot from the lateral sinus consists of partly decolorised fibrin mingled with recent blood clot. The fibrin has contracted into layers, and is undoubtedly *ante-mortem* in formation." The remaining sinuses were quite patent; opposite ear normal. There were no signs of old or recent fracture of skull: no extracranial or intracranial tumour; no traces of infection extending from septic wounds or ulcers on head, neck, or mastoid regions. The history excluded a marasmic thrombosis. Permission for a complete necropsy was not obtained.

REMARKS.

Death in this case was presumably due to an extension thrombus forming in the left lateral sinus throwing a greater strain on the collateral intracranial venous circulation than it could bear, on account of the right jugular and lateral sinus being already occluded. As Dr. Hawkins[1] puts it "Upon ligature of the vein (internal jugular) complete stagnation probably occurs in the lateral and petrosal sinuses but not in the cavernous sinus; sufficient exit is provided by the communication between superior and inferior cerebral veins, between the cavernous sinus and its fellow, between the lateral sinuses across the occipital protuberance, between the torcular, the occipital sinus and the posterior spinal veins, and possibly between the basilar sinus and the anterior spinal veins. No nervous symptoms have been observed to follow."

After the patient's death I elicited from his wife the following additional information:—About fifteen years ago he had suffered from a very severe neuralgia for three weeks on right side of his neck, which "shot from his neck to the top of his head." He was kept in bed by his medical attendant for perhaps three days and off his work about a week. Neither he nor his wife were able to account for it. His ear was not affected at that time. So far I have been unable to communicate with the doctor who attended him at that time. Our impression is that the process of venous obliteration commenced in the neck at that time and gradually extended without symptoms until the left lateral sinus became involved. In this, as in the previous case, my best thanks are due to Mr. W. E. Jones, our Senior House-Surgeon.

TWO CASES OF CHRONIC FRONTAL SINUS EMPYEMA PRESENTING FEATURES OF UNUSUAL INTEREST.

By HERBERT TILLEY, M.D., F.R.C.S.,
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THE following cases illustrate some of the difficulties of diagnosis and the obstacles met with in the successful treatment of the disease under consideration:

F. W., female, aged 10, applied to the Golden Square Throat Hospital on account of left nasal obstruction and severe frontal headaches of twelve months' duration. Examination showed the left nasal cavity full of large polypi bathed in pus. The postnasal space was occupied by a large adenoid mass, and hypertrophied faucial tonsils were present. The anterior wall of the left frontal sinus was distended over an area the size of a five-shilling piece. The right nasal cavity was in all respects normal. The polypi, adenoids, and tonsils were removed. Exploration showed the left antrum to be free from pus, while irrigation of the left frontal sinus proved that pus was present in the cavity in considerable quantity. The anterior half of the left middle turbinal was removed, and the ethmoidal,

[1] Pyæmic Complications of Ear Disease.—*St. Thomas's Hospital Reports*, 1888.

region cleared as far as possible of all pathological products. In the course of a few days the left sinus was freely opened from the outside, and its cavity, which was a very extensive one, was curetted free from all degenerate mucous membrane, a free opening was made into the nose, and the sinus cavity packed with a strip of iodoform gauze 2 inches wide and 3 feet 10 inches long. It was noted during the operation that a curette could be passed well beyond the middle line towards the right sinus, but, as no pus was ever seen in the right nasal cavity, it was thought that the extension referred to was a diverticulum of the left sinus, and this surmise was strengthened by the sensation of a blind end given to the curette during the operation. The continuance of free suppuration from the left sinus showed, however, that some suppurating focus remained, and a week after the first operation I opened the right sinus only to find it equally diseased as the left had been. Both cavities were packed and irrigated every day for three weeks until they were covered with a healthy mucous membrane, when the external wounds were allowed to close. The patient has completely recovered, and now, two months after the operation, is perfectly free from any nasal discharge.

The case illustrates that although a frontal sinus may contain pus, it does not necessarily demonstrate the fact by a purulent discharge into the corresponding nasal cavity. The explanation in this case being that a pathological opening through the sinus septum allowed the two cavities to communicate and discharge into one nasal cavity only. As it was impossible to explore the right sinus from the nose, a diagnosis of empyema could only be arrived at by an external operation. It would be interesting to know the course of events in this instance. If the left sinus was primarily diseased, are we to ascribe the left ethmoiditis to the irritation of pus flowing constantly from the higher sinus? Since there was no disease in the right ethmoid, but advanced disease in its corresponding frontal sinus, the view that pus may set up chronic inflammation of the ethmoid, with its associated polypi, seems a probable one.

The second case illustrates a difficulty met with in the successful treatment of chronic frontal sinus suppuration. When all has been done to remove intranasal disease as a preliminary to the external operation, and when in the latter the diseased products have been carefully removed from the sinus, a free passage into the nose ensured, and careful after-treatment carried out, yet, in spite of this, a small quantity of pus sometimes continues to flow from the sinus.

E. B., aged 30, applied for relief from offensive nasal discharge of two years' duration. The frontal sinuses were both found to be diseased and also the left antrum, which was drained by the alveolar method. The external radical operation was performed on the left side, a free passage made into the nose, and a healthy granulating surface covered the walls of the sinus cavity before the external wound was allowed to close. The case did fairly well, but there was always a slight discharge of pus into the nose, and a month after the operation an external fistula formed leading into the sinus. This would close for a few days, then discharge for a similar period, only to close and open again. Three months later I explored the sinus and found the cause of trouble in an extension of suppurating anterior ethmoidal cells outward and between the floor of the sinus and the orbit. These cells communicated with the sinus proper by a small aperture, and thus the cavity was infected, although its greater part was obliterated by cicatricial tissue. By free removal of the partition walls of these outlying ethmoidal cells, they and the overlying frontal sinus were thrown into one cavity, which a week later I epidermised by Thiersch's method. The plan adopted was the same as is carried out in the mastoid operation.

It is at present too early to speak of the result of this last treatment, but as far as can be seen it will be eminently satisfactory, and in future I purpose adopting this method of dealing with frontal sinuses, in the hope that by its means we shall gain as successful and ideal results, with such great saving of time to the patient as we are able to secure in the case of skin grafting for chronic suppuration of the mastoid antrum.

THE VOCAL RESONATOR.

By William A. Aikin, M.D.,
London.

There can be no doubt that much time might be saved if those who occupy themselves with the physiological problems of the voice would limit their remarks to facts capable of demonstration. For this reason alone I would attempt to do so in this paper, but I have also the conviction that much good may be done from the side of laryngology by simply investigating and noting the functions of the vocal organs as they really are without reference to the theories and conjectures which choke the discussion of the subject.

To review the whole voice would take too long. I confine myself here to a part of it only, that concerned in the pronunciation of language.

Anatomically the organ which I wish to call the resonator is a tube or series of cavities extending from the vocal cords to the lips and nostrils. It has a posterior or inferior portion which is vertical, corresponding to the cavities of the larynx and pharynx, and its shape in the individual is influenced by the erect position of the neck, the expansion of the chest, and the position of the base of the tongue. The upper or front portion corresponding with the cavity of the mouth is horizontal. Its shape and capacity depend upon the positions of the tongue, lips, palate, and jaw. The nasal cavity above this is movable only near its posterior orifice, which is regulated by the soft palate. The nose is concerned in producing certain nasal consonants and some nasal vowels in foreign languages, and must be considered as an accessory cavity. It is in the mouth that all the movements of pronunciation take place.

The resonator owes its effect upon the voice to the cavities it encloses. This applies especially to the vowel sounds. The consonants may be regarded acoustically as the noises occasioned by various methods of approaching and departing from from the vowels.

According to the position the resonator assumes its contained cavities are capable of emitting certain resonances, or rather groups of resonant notes, when the air is agitated within them.

When the resonator is still and the breath passed through it, as in whispering, the resonant notes of the cavity are heard alone. Similarly when the vocal cords vibrate the same vowel sound is heard with it, so long as the position of the resonator is maintained. A scale of two octaves may be performed by the cords, but the vowel sound continues the same upon any note. The vocal note can have no influence upon the vowel sound, and we are therefore justified in regarding it as a group of resonant notes belonging to the resonator added to the vocal note. The difference between the whispered vowel and sung or spoken vowel being that in one case the agitation is brought about by the rushing of expired air through the glottis, and in the other by the passage through the cavities of the vocal vibrations. The vowel vibrations are mixed in their nature, having besides their primary note many overtones or harmonics. As we shall presently see, the resonant notes of the cavities are altogether above the pitch of a man's vocal notes, and only in quite the upper ones of a woman's. The vowel resonances must be awakened by different harmonies of the vocal notes in the scale, but that they are awakened we hear clearly enough.

The determination of the vowel depends upon the cavity of the mouth, influenced by the movements of lips, tongue, palate, and jaw, but its sonority depends upon the dimensions of the cavity and the share in the resonance taken by the rest of the resonator.

In all examples the Italian pronounciation of the vowels is used exclusively. U (oo) O (or) A (ah) E (eh) I (ee). Thus A requires little more than an open mouth to be recognised as A, but to be a richly sonorous A it requires all the resonance it can get out of the entire resonator at its roundest and fullest. All the vowel sounds can be closely studied in the whispering voice, for then only the resonant notes are heard.

We must remember this about resonators in general. The pitch of their note depends upon their size, the clearness upon their smoothness and roundness. Constrictions break up their vibrations into fractional waves or destroy them altogether. The effect of one resonant cavity upon another neighbouring one is but imperfectly understood.

The resonances of U, O, A, E, I, when whispered have been observed by most of the great physiologists as the accompanying table taken from Helmholtz will show:—

	U.	O.	A.	E.	I.
Reiher	c	a♯	a♭ e♭	f′	c″
Helweg	c	c♯	f♯	b	c′
Flörcke	c	g	c′	a′	c″
Donders (Helmholtz)	1	d	b♯	c″♯	f‴
Donders (Merkel	e♭ f♭	e	b	c′	f″
Helmholtz	f‴	b♭	b♭	b‴♭ f′	d‴♭ f♭
Merkel	d	f♯	a	a″	a‴
Koenig	b	b♭	b′♭	b″♭	b‴♭
Trautman	1	c‴	f‴	a‴	f‴

In this state of confusion has the investigation been left.

You will notice that no conditions are laid down for the production of any of these vowels. We will make no use of

artificial resonators which might lead us into error, but simply examine with the ear. Our object is to make the most of the resonator we possess, on well known acoustic principles. I suggest the following as a good position for A. The jaw is open about 1 inch between the teeth. The lips are at rest upon the teeth. The tongue lies flat on the floor of the mouth, with its margin against the lower teeth. The palate is raised enough to prevent the sound being nasal. The head is erect, and the whole chest, especially the lower ribs, expanded.

In this position a good resonant note is heard in whispering In my own voice it is C″, and a tuning-fork of that pitch powerfully excites the resonance of the cavity.

Examining this position, the whole resonator appears to be dilated to the full extent without undue strain, but the narrow place, between the base of the tongue and the cervical vertebræ, is a definite division of the resonator into its two anatomical positions. The resonance C″ belongs to the almost spherical cavity of the mouth, for if I introduce the fork into the pharynx the resonance is again excited. This must suggest the presence of a node at the opening of the mouth into the pharynx. Whether the same resonant note belongs also to the lower portion I am as yet unable to say. The superimposition of one resonant cavity above another is not yet clearly worked out by the physicists, but when two cavities of the same or some related resonance are combined, they reinforce one another. Anyhow, when the whole resonator is dilated, the resonant note C″ is very distinctly heard in my own voice.

This is a point of some importance because every one who whispers A will not have the same resonant note for it. If the directions are closely followed there will be found to exist differences among men or among women of a few semi tones only, and between men and women of a few tones. Men will vary within the range of from b♭ to d″. Women between d″ and f″ or g″. The difference between man and woman is on an average about a minor third, say for example, c″ and e♭.

These differences are due entirely to difference of growth in size of our resonant cavities. I have called this the basic resonance (= the best possible for A) as all the other vowels are found by variation from it. It is the normal resonance of the tube the variation of which enables us to pronounce language. When A is once fixed the other vowels are formed by the movements either of the lips or the tongue. By diminishing the buccal orifice with the lips to about one-fourth its former diameter, the resonance assumes a hollow character and its note falls about a fifth. The acoustic effect is that of the vowel U.

It is convenient that U should be a fifth lower than A, as there are three kinds of O between them, each with its degree of closure of the lips. They are the round O as in *owe*, the open O as in *or* (= Italian O), the short O as in *hot*. When the jaw remains open and the change is made entirely with the lips, these vowels have for their resonances the first five notes of a scale, which I number I-V.

	I	II	III	IV	V
	U	O	O	O	A
Example:	Who	owe	or	on	are

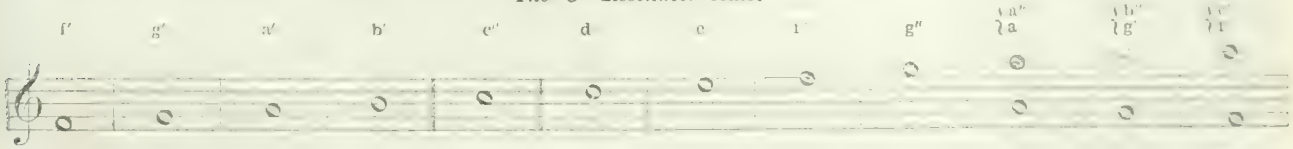
The closure of the orifice is not the only factor in the lowering of the resonances. At the same time the corners of the mouth come forwards and slightly elongate the tube, also the larynx is slightly depressed, which elongates the resonator at the other end. In pronouncing U the base of the tongue rises slightly. These movements tend either to make the resonance lower, or to promote the equality of the two parts of the resonator.

The other vowels require the turning of the mouth upwards. When the jaw remains open and the lips stationary, the whole change is effected by the movement upwards and forwards of the dorsum of the tongue. Its tip remains behind the front lower teeth, but the middle of the tongue rises into a broad ridge which, by the time its lateral margins have reached the upper back teeth, raises the resonant pitch of the mouth cavity as much as a whole sixth. At the same time the posterior segment behind the ridge has become much larger, and its pitch has fallen to a major third lower than the note we heard for A. This position belongs to the vowel E, and it is of great acoustical interest that the resonances for the front and back segments are an octave apart.

By raising the tongue still more, all else remaining the same, the front resonance rises a third higher, that is to say, the octave of A and the back resonance falls to the fifth below A. This is a suitable position for the vowel I, and its front and back resonances stand in the relation to one another of a twelfth. I am not pretending that these related resonances are essential to the pronunciation of E and I; I only wish to emphasise the acoustical advantages of such an arrangement.

I has the highest resonance of any of the vowels, and all the vowel sounds therefore possess resonances intermediate between U and I. The former is a fifth below and the latter

The C″ Resonator Scale.



	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	U		O		A				e	E	i	I
Italian.	fino	—	mŏrto	bŏcca	ācqua	ānno	—	—	bĕlla	bēne	in	io
French.	ou	eau (na sal)	or on	botte eu	âme an	halle un	je in	VIII III heure	elle	est (ai me) une I X	il	vit
German.	Muth	Noth	Wort	Wonne	Rath	Mann	Liebe (Wer)den höre VII III	Werth	Bett Hühne IX I	weh	will	wie
English.	who	owe	or	on	art	ă(lone) up	earth her	air	end	aim	ill	eat

an octave above the basic resonance of A. So we obtain a scale of twelve notes within the limits of which all the vowel sounds in language must arrange themselves.

This is the resonator scale, which is shown on the accompanying table. Every vowel sound has there its place. I am aware that the places I have given to some of the rather indefinite sounds between A and E may be open to doubt, but believe that the sounds E and I in all languages are fixed upon X and XII, and that the related double resonances play an important part in the pure tone of those vowels. The short *i* on XI has a double resonance a tenth apart, and the short *e* on IX has a back resonance, but I find it difficult to catch, although I believe it to be on the sixth below the front resonance—that is, in the above scale on *b*. It must not be forgotten that the one condition upon which all this depends is the maintenance of the open jaw.

The Italian masters taught it, and the Italian language requires much opening of the mouth. I do not wish to insist upon the performance of these resonances at all times in speaking or in singing, but I believe that when it is required of anyone to make the most of his resonator, he can do so by following the acoustical scheme I have described. One thing I have been struck by, and that is that by practising these resonances in the whispering voice the strength and tone of the singing and speaking voice will greatly improve. Whether the cavities increase in size I have not been able to measure, but the resonances have a tendency to get lower and clearer.

I need hardly mention the great saving of the vocal cords caused by improved resonation. I am convinced that fewer voices would be ruined if more attention were paid to this part of the subject. In the first place we should do our part, and set forth in the physiological books what the true principles of the vocal instruments are, so that those concerned may make them the foundation of their teaching.

Dr. Scanes Spicer thanked Dr. Aikin for his valuable paper. He thought all laryngologists owed him a debt of gratitude for his attempt to elucidate the physiology of the voice. The working out of this subject must of necessity fall to the laryngologist.

Dr. Logan Turner remarked that in Malays and Australian aborigines some of the resonating cavities, such as the frontal sinuses, were absent in a large proportion of cases. Did Dr. Aikin think that accounted for the vocal peculiarities of the races in question?

Dr. Lambert Lack ventured to ask the precise meaning of the terms "falsetto," "head," and "chest" register. He had read many books on the subject without receiving much enlightenment.

Dr. Aikin, in reply, explained that the part played by the nose in resonation of the voice was of great importance to the sonority of the voice, but the nose being a cavity enclosed by bony walls was beyond control with regard to movements, and therefore did not take part in the formation of the vowels. The terms "falsetto," "head," and "chest" register were not sufficiently precise for accurate definition.

A CASE OF BEZOLD'S COMPLICATION OF SUPPURATIVE MASTOIDITIS.

By Ernest Waggett, M.A.Camb., M.B.,
Surgeon to the London Throat Hospital.

The escape of pus from the mastoid cells into the digastric groove is not an exceedingly rare occurrence, and yet in my experience of this complication a diagnosis is not usually arrived at until the physical signs have become well established, and the case is far advanced. If the present instance has any claims upon your interest, they will depend upon the early stage at which the condition was recognised, and also upon certain diagnostic features which are important because conflicting.

The case was that of a male, aged 30, who came to me on March 9th complaining of a mucopurulent discharge from the right ear, which had persisted, with short intermissions, since an attack of influenza three months previously. Pain had been experienced at the onset, but not since. On examination a minute volcano-like perforation was seen in the anterior inferior quadrant and a quantity of odourless muco-pus was expelled on politzerisation. The case seemed to be one belonging to that simple category which only requires a free exit for the discharge in order to end speedily in arrest. I therefore freely incised the membrane, and asked his medical attendant to carry out the usual antiseptic treatment, coupled with politzerisation for a time, in order to prevent reunion of the edges of my incision. On the twentieth day the patient returned, complaining that within a week of his former visit he commenced to experience slight pain in the mastoid region, and that for the last few nights he had been kept awake by pain in the occipital region.

Examination showed that my incision had healed leaving only a minute aperture for the escape of the discharge which was now pure pus. His doctor reported that politzerisation had been carried out as suggested. Gross evidence of mastoid disease was wanting. No rigors, nausea, or vertigo had been experienced, and the general condition was good, but a "gas-engine" tinnitus was present, and there was marked indistinctness of the edge of the right optic disc. After an unavoidable delay of twenty-four hours he came under constant supervision, when for the first time very slight œdema and tenderness could be made out over an area the size of a threepenny bit exactly corresponding with the usual site of the exit of the mastoid vein from the bone. The temperature was slightly raised, and though the jugular vein in the neck was free from tenderness, I felt fairly confident in making a diagnosis of sinus phlebitis. Pressure and percussion over the mastoid antrum gave rise to no abnormal sensation. The membrane had been again freely incised. On the following day Dr. Law kindly saw the patient with me. By this time a very distinct swelling had developed over the site of the infra-auricular gland immediately behind the ramus of the jaw, and it now seemed fairly evident that the patient was after all merely suffering from an adenitis secondary to the disease, or surgical interference with the membrana tympani. It transpired that he was subject to frequent nocturnal emissions, a phenomena which is often accompanied in neurasthenic subjects with marked occipital headache. It was therefore decided to await developments, making use merely of the simplest antiseptic remedies coupled with sedatives.

During the three following days the infra-auricular swelling increased in size, became œdematous and finally red, and presented all the characters of suppurative adenitis in this situation, as seen so often in young children. The small area of œdema at the posterior edge of the mastoid had either disappeared or become merged in the more widespread cutaneous œdema. The temperature never rose above 100°, and the patient was decidedly relieved of pain and distress. On the next day I made a final examination before preparing to open the supposed glandular abscess. Bezold's phenomenon had been in my mind, and I had examined with this object in view on more than one occasion with negative result. The swelling limited anteriorly by the ramus of the jaw was roughly circular and an inch in diameter. Keeping my eye upon the membrana tympani through the speculum, I exercised firm pressure over the swelling, and not until I had done so for perhaps 20 seconds did the pus spurt out with considerable force through the perforation, leaving no question as to the nature of the case. It is, I presume, needless to insist upon the necessity of keeping an eye upon the drumhead while performing this experiment, for pus may be made to well freely from the orifice of the meatus in those cases which occur—in my experience only in young children—where an external collection of pus communicates with the lumen of the meatus through a dehiscence in the floor of the latter. The history being comparatively short, and the low-lying position of the perforation indicating an absence of ossicular caries I decided to spare the contents of the tympanum and to perform the simple Schwartze operation as far as the base of the mastoid was concerned. The antrum proved to be very small and to lie a full inch from the surface, an explanation of the absence of tenderness and cortical periostitis. It contained a milky inodorous pus, together with pale œdematous mucous membrane. Evidence of caries of the bone was completely wanting. I opened and cleaned the aditus without disturbing the tympanic ring, and washed the tympanum with biniodide lotion through this route. After erasing the attachment of the sternomastoid muscle I removed the whole of the mastoid process piecemeal with the exception of its posterior edge. The cells contained pus, but no carious bone. A fistula about 3 millimetres in diameter was discovered leading into the upper part of the digastric groove. There was no evidence pointing to caries or necrosis as the cause of this perforation of the roof of the fossa. The periosteal outer wall of the groove corresponding to the insertion of the digastric muscle was incised and an abscess into which a director had been passed through the fistula was laid open and cleaned out. The abscess cavity was not larger than a filbert, and its long axis was directed forward into the parotid region where a counter opening was made. The posterior part of the abscess occupied a plane immediately internal to the digastric muscle. The usual precautions as to immediate cleansing and provision for subsequent drainage were taken, and on changing the dressing for the second time on the tenth day after operation a healthy healing wound was found. Although under the circumstances it was not very surprising, still it is perhaps worth while to note in these days of radicalism in surgery that not only was the hearing normal, but the tympanic membrane was practically normal in appearance. Within a month of operation the chasm produced by so extensive a removal of bone had healed by granulation and skinned over, and with the exception of an unsightly scar the ear is now none the worse for its disease and operation. The movements of the head seemed to be very little affected by the removal of the sternomastoid insertion.

I must apologise for troubling you with the details of a case apparently so banal. My first excuse will be to make the proposition that it is undesirable to perform repeated politzerisation in cases of muco-purulent otorrhœa where only a linear incision or a perforation other than an extensive one is the sole guarantee against the injection of the discharge into the mastoid antrum.

I am fully aware that the communication between the tympanum and the attic is usually minute and frequently absent. I confess that it has been my habit to make use of this manipulation in simple muco-purulent cases, but I was glad to hear Mr. Horsley condemn the practice a few weeks

ago. In the case I have reported I am quite certain that the external attic at all events was free from disease before the politzerisation was instituted, and I have no doubt that the repeated inflation coupled with an untimely reunion of the tympanic incision was the cause of the mastoid infection which followed.

In the second place I would suggest that the early development of extra-mastoid suppuration without any evidence of caries or necrosis of the bone should keep the surgeon alive to the fact that the outer wall of some of the mastoid cells may be defective, or so thin as to be ruptured very readily under the pressure of retained pus, or possibly even by that induced during politzerisation, where some part of the tortuous channel leading to the middle ear acts in a valvular manner.

A third point of interest is the occurrence of œdema and tenderness at the posterior border of the mastoid, which simulated phlebitis of the mastoid vein and led to an erroneous diagnosis. Events proved its occurrence to have been due to œdema spreading backwards along the digastric groove, and I believe I am not incorrect in saying that aurists are not in the habit of looking for early indications of infection in this groove. I would venture to reiterate that the diagnosis of Bezold's phenomena, as far as I have met with it in practice or in literature, is not usually founded on early signs such as this, and it would, I think, be valuable if statistics could be collected as to the frequency of the occurrence of this posterior œdema in the early stages of this complication.

A fourth point of interest in this case depends upon the close simulation of infra-auricular adenitis, which is, I believe, extremely uncommon, if not unique. As a rule, the pus is found tracking downwards along the course of the great vessels, and in the few cases I have had the good fortune to see has produced a swelling under the upper third of the sterno-mastoid muscle. In the present instance the pus made its way directly forwards in close contiguity with the branches of the facial nerve and the infra-auricular gland, and had Bezold's experiment given a negative result on a final trial, the abscess would no doubt have been opened merely through the external route and regarded as a suppurative adenitis. In this connection I would again draw your attention to the fact that no pus could be expelled from the tympanum until external pressure had been exerted for a considerable number of seconds. The question arises, as to how long and with what degree of force such pressure may be exerted with safety. That considerable caution is necessary is proved by a case in Dr. Law's practice which I had an opportunity of examining. In that case one cell or group of cells had opened both into the sigmoid groove and externally, thus causing a large collection of pus in the neck to be in free communication both with mastoid antrum and a large extradural abscess which extended inwards along the sigmoid groove as far as the jugular bulb. Undue external pressure under these circumstances might have been attended with serious consequences.

Finally, I would venture to enumerate the following points raised by the case as worthy of discussion :

1. The question of politzerisation in muco-purulent otorrhœa. 2. The escape of pus into the digastric groove in the absence of caries or necrosis. 3. Œdema and tenderness at the posterior extremity of the digastric groove, simulating phlebitis of the emissary vein. 4. The simulation of infra-auricular adenitis. 5. The necessity of observing the perforation while making Bezold's experiment. 6. The question as to the duration and degree of the external pressure to be exercised.

ON THE SURGICAL TREATMENT OF CERTAIN FORMS OF NASAL INSUFFICIENCY.

By L. Heminoton Pegler, M.D.Edin., M.R.C.S.,
Surgeon to the Metropolitan Ear, Nose, and Throat Hospital.

By the term "nasal insufficiency" I wish to imply a continuous or intermittent inability to breathe satisfactorily through the nose, varying in degree from a comparatively slight inconvenience to anything short of actual obstruction. Regarded from this standpoint the symptom is almost purely subjective, but, at the risk of detracting from the value of the definition, I must also include for the purposes of this paper unilateral insufficiency, for though the amount of compensation in the opposite side may be ample enough to render the individual unconscious of any defect in his nasal respiration, he may nevertheless be totally unable to clear and ventilate the obstructed chamber, and, therefore, be the subject either of some catarrhal process in one or other of the ramifications of the upper respiratory tract, or of partial loss of the sense of olfaction.

Further, the variableness of the personal equation is such that the term "insufficiency" must be to a certain extent a relative one, since an air current voluminous enough for one person might be complained of as inadequate by another. As regards the constancy or intermittency of the defect, a nose that, performing properly through the day—making allowance for slight catarrhal or reflex turgescence that must occasionally occur—is so habitually diminished in lumen in the recumbent posture at night as to have occasioned mouth-breathing and consequently a dry mouth in the morning, may be fairly considered incompetent and in a quasi-pathological condition.

Lastly, I understand the term to apply to states depending upon an exaggeration of anatomical features, as opposed to those resulting from morbific processes in the nose, or of obstructive agents of any kind in the naso-pharynx; hence I conceive "nasal insufficiency," in the language of the rhinologist, to be distinct from absolute and permanent stenosis—such as one meets with, for instance, in valvular closure of the posterior choanæ by actual tumours of the naso-pharynx. In fact, owing to the ever-varying contraction and dilatation of the erectile tissue in the mucous surfaces of the nasal chambers, there can hardly ever be continuous obstruction from such causes as I am here concerned with.

It is singular that there should be any divergence of opinion amongst laryngologists as to the importance to the human economy of free, well-drained, and properly-ventilated nasal cavities. I have heard this essential endowment described as a luxury; but surely it ought not to be so regarded. We must all have observed how frequently a patient partially relieved of nasal obstruction by operation returns to the surgeon subsequently with the request that every vestige of the hindrance to his breathing may be removed. Many people continue a whole lifetime nasally insufficient, breathing through open mouth, and advertising their condition by the complete absence of nasal resonance in their voices, entirely through an exaggerated fear of an operation and of the suffering it is supposed to entail; in this belief they are too often encouraged by their lay and professional advisers, who are uninformed as to the nature and details of the operation required. It is remarkable, on the other hand, what an intense degree of mental disturbance and nervous erethism are sometimes set up and maintained by really slight forms of nasal insufficiency in neurotic individuals. This phenomenon has been described as "nose on the brain," and it seems to bear some analogy to the common neurotic pharynx. Such an example as the following has probably occurred in the practice of every rhinologist some time or other.

An elderly gentleman had been in the habit of taking snuff during the earlier part of his career, and probably from this cause an irritable condition of the nasal mucous membrane had gradually become established. Some one had prescribed him an ointment containing cocaine with carbolic acid, which only aggravated the mischief, since the temporary relief derived from its use had resulted in his making too free with it. This unhealthy condition of the nasal mucous membrane, superadded to a slight degree of obstruction, combined to create a state of things that reacted upon the patient's mind, and rendered his nose the veritable bane of his existence. He gave up his house, his club, his correspondence, and almost all social engagements. So great was his aversion to lying in bed and breathing through his mouth, that he frequently passed the whole night in his chair, and he rarely went to bed till 5 or 6 o'clock in the morning. I found in this case a spur in the right chamber and some [illegible] thickening of the mucous membrane in the left; both chambers narrow, the nose being of the aquiline type. When these [illegible] were remedied and the nose cleared up, this gentleman's health improved rapidly; he became practically a new man, and I still hear a good account of him from time to time.

Coming now to discuss the causative factors of nasal insufficiency, and commencing with the vestibules, one thinks first of the congenitally narrow orifice and of collapse of the ala nasi (for which Roe has a special operation), but I pass over these in order to particularise a form of encroachment upon the lumen of the vestibule depending on an abnormal condition of the opposite, namely, the internal wall. I refer to displacement outwards from the middle line, of the mesial

crus of the lower lateral cartilage, or "cartilage of the aperture" (see Fig. 1). There is usually, but not necessarily,



Fig. 1.—Lower lateral cartilages, (*a*) from below, (*b*) in profile (the right)+placed on mesial crus; S, septum. (After Quain.)

a corresponding displacement of the lower border of the anterior extremity of the triangular cartilage of the septum, accompanied by a sigmoid distortion of the columella (Figs. 2 and 3). This is a defect of considerable importance, for it



Fig. 2.—Displacement of mesial crus (from below).



Fig. 3.—Same with protrusion of septal margin (projected by pressure from below).

frequently reduces the nostril to a mere slit which practically closes altogether on drawing in the breath, not to mention the fact that it is an unquestionable disfigurement. The removal of this anomaly is a little troublesome, but the result fully repays all the pains that are taken over it. After first ascertaining whether the lower border of the septum participates in the obstruction, and to what extent it does so, by projecting it as a thin white line from the opposite nostril (Fig. 3), I commenced the operation by subcutaneously injecting a few minims of freshly-made solution of cocaine containing one sixth of a grain into the cellular layer between the cartilage and the skin. This anæsthetises the part, helps to minimise the bleeding, and raises the bulla, which, when an incision is made through it, greatly assists in exposing the underlying dislocated crus. The patient being placed upon an operating couch, a free incision is now carried over the prominence through the entire length of the columella parallel with its free border, but not too close to it for æsthetic reasons. The skin is then dissected up in two flaps, one above and another below, and the displaced cartilage exposed. In order to excise this to the required extent, I get an assistant to project it for me the whole time by introducing his index finger into the opposite nostril. The bleeding is usually very troublesome, but dabbing with small pledgets of cotton wool moistened with suprarenal capsule or a weak solution of cocaine helps to control this, whilst at the same time maintaining the anæsthesia. The cartilage being seized with forceps, is snipped off with curved scissors up to a point in the anterior angle well in front of the prominence. The septal cartilage, as I have said, often participates, and when this is the case the assistant projects it in a similar manner whilst holding the upper flap aloof with forceps; the free lower edge of the septum is then shaved off with a sharp tenotomy knife; to do this smoothly and evenly, and without cutting the flaps or injuring the lining of the opposite nostril, requires a great deal of care. As regards the amount of cartilage to be removed, I have found myself more liable to err on the side of insufficient excision. When the flaps are allowed to fall back in their places, unless the prominence has been very slight, it is usually necessary to snip away neatly a small portion of the upper one, or some disfigurement through bulging of the redundant tissue will remain; the edges then come together very satisfactorily, and leave no scar; sutures are quite inadvisable.

The vestibule may be occluded by the triangular cartilage alone, every gradation being encountered from slight to severe degrees of encroachment; slight degrees with eversion of the lower border much resemble the condition just described. In severe forms it will generally be found that the obtruded body is the extremity of a sigmoid curvature of the septum in the horizontal plane. This should be sliced off with a sharp knife, sufficient being taken to clear the nostril without injury to the mucous surface of the opposite side. No flaps are necessary in this case.

In studying the causes of nasal insufficiency located in the mucous chambers posterior to the vestibule, we find they are of such a nature as to admit of a classification of our cases into two main divisions:—

1. Those in which the bony nasal fossæ are of normal width or even slightly in excess of this, the obstructing elements consisting in a hypertrophic condition of the inferior turbinate or its mucous investment, or in fact of the mucous membrane of any portion of the air-way. (Fig. 4.)



Fig. 4.—Bony and mucous hypertrophy of inferior turbinal in roomy chambers. (After a drawing by Zuckerkandl.)

2. Those in which the nasal fossæ are structurally narrow (an independent source of insufficiency in itself), or, being narrowish, are rendered inefficient by slight or extensive departures from the normal in either wall, but almost invariably and of necessity in the septal (Fig. 5). These two classes, though clearly distinguishable in the main, pass into each other by insensible gradations, so that of course no hard or fast line can be drawn between them.

There is also the very frequent unilateral or mixed case in which the two conditions occur in the same individual, an encroachment upon one chamber by the septum giving rise to abnormal roominess in the opposite one, which in its turn is perhaps partly supposed by compensatory hypertrophy of its inferior, or even middle, turbinal, or both.

I notice that a recent author denies the enlargement of the bony framework of the inferior turbinal. This is quite contrary to my belief, but I think it is important to note that in the narrow class of nose that body is usually ill developed,

just as sometimes one finds it actually pinned close to the outer wall by the pressure of a septal spur. This is the kind of organ which, whilst barely capable of performing its functions with the co-operation of that rare condition, a perfectly straight and flat septum, is rendered more or less seriously stenotic by the slightest degree of thickening, buttressing, or deviation of the latter, or by erectile tumefaction in the mucous investment of either chamber. Fortunately for the individual whose nasal organ is of this character, of two narrow chambers one is usually rather less at fault than the other, since one rarely finds the two sides alike.



Fig. 5. Contracted nasal chambers; middle turbinal cystic. (After Zuckerkandl.)



Fig. 6.—Vertical deflection of septum to right, without redundance.



Fig. 7.—Vertically deflected and thickened septum, creating unilateral insufficiency. The straight line indicates path of saw. (N.B.—All the above sectional drawings are semi-diagrammatic.)

1. The treatment of the roomy class of nose in a state of insufficiency need not detain me long because it practically resolves itself into that of so-called hypertrophic rhinitis in some form or another. Furthermore it is one that is not usually confronted with much difficulty, and I only pause to insist that the surgeon should be careful not to err by doing too much; it is the broad and easy way! It was, I believe, for the treatment of this condition that Carmalt Jones invented his spoke-shave; but it is just the one for which I never use the instrument myself, and, judging from past experience, I rather question the advisability in these cases of applying any cutting instrument to the turbinal body at all. One not infrequently hears a man boast nowadays that he scarcely ever uses the electro-cautery in a nose from one year's end to another, and without doubt this agent has been a great deal misused, but here is a condition in which I think it ought to find a legitimate application. The process of reduction by cauterisation is slow perhaps, and a patient may have to return three or four or more times at considerable intervals, seeing that some space must elapse before the lately-inflamed surface can be anæsthetised again with cocaine or its substitutes and the clearing up completed, but, on the other hand, we have no troublesome granulations to get rid of, by subsequent cauterisations the nervous patient is spared a great deal of mental perturbation by the bloodless character of the procedure, and I think the result is permanent if the searings have been thorough; I prefer to make them on the surface. If, on the other hand, partial turbinectomy is performed, to say nothing of complete ablation, there may follow in due course that unaccountable change in the character, consistence, and amount of the mucous secretion, with a general state of matters somewhat corresponding to that described originally by Greville Macdonald under the title of "turbinal collapse," and for which there seems to be no satisfactory and permanent remedy. It is of this, just as much as of the oft-spoken-of dry pharynx, that I have so much dread in my practice. Undoubtedly the snare may have to be requisitioned first in these cases, especially if there are terminal moriform hypertrophies, or if the whole length of the inferior turbinal is bordered with fimbriated hyperplasiæ, but such a case does not properly fall under my definition at the head of this paper.

The conclusion at which I have arrived is that, roughly speaking, if on applying cocaine the mucous tumefaction contracts up to such a degree as to enable one to see the naso-pharyngeal wall, no excision of tissue should be performed, but if the hypertrophy of the turbinal is mainly of bone, partial abscission of its anterior end may be advisable, though even then only to a limited extent. Border cases must be treated according to their own particular indications, keeping the above principle, however, always in view. In some, a useful additional space can be gained by snipping off mucous membrane alone with very little bone included, the bared part of the latter healing quickly and kindly in a healthy subject. If a considerable portion of bone has been excised, we have to take care that the proximal end is not too abruptly truncate, in which case an arch is formed which has been likened to a secondary septum, subdividing the chamber nearly to the floor. After the nose has had time to clear up it should be examined for this condition and if necessary the lower free border tapered off with cutting forceps, otherwise subsequent trouble may arise from stagnation of the secretions; an expert operator will, however, attend to this point at the initial sitting.

Not infrequently in the roomy division obstruction is augmented by hyperplasia of the erectile tissue of the floor of the meatus or of the septum, and I have had an opportunity of drawing the attention of members at a former meeting to the occurrence of what may be termed septal tonsils consisting of definitely shaped out-growth of the lymphoid elements of the septal mucous membrane, projecting as tumours from near the free border of the vomer into the naso-pharynx. The erectile hyperplasiæ usually occur in the region of the so-called "tubercle of the septum," a body which I think might much more aptly be termed the cushion or pulvinus, to save misconception, considering that though not an anatomical constant it is always when present a soft diffuse swelling and never either nodular or tuberculous in character. All these protrusions are best shaved off with a sharp knife such as one or other of those I hold in my hand (Fig. 8). In doing so it is very important not to leave an elevated border or crater-like surface, as adhesions will afterwards bridge across from this to the opposite wall close to the receding anterior angle of the roof of the nose where they are particularly troublesome to extirpate.



Fig. 8.—Author's probe-pointed septum knife.

2. In entering upon the question how best to deal with the various factors of insufficiency in the contracted nasal chamber, I think one is met by one of the more difficult problems of surgery; no two cases are ever seen alike, so that no very definite rules of treatment can be laid down, and a lengthened experience is the only reliable guide. There was

a time, I believe, when great things were expected from the method of forcible dilatation of the inferior meatuses—to judge from the manner in which the various patterns of dilating instruments were faithfully and persistently copied from one manual to another. I have no personal knowledge of this rough and ready treatment, which always appeared to me to be thoroughly unsurgical, though I should be glad to hear whether others have favourable results to report. But if the method were really commendable, no doubt it would be more in vogue; my impression is that the resiliency of both the septal and turbinal walls would ensure their return to the old positions sooner or later. In direct opposition to this I advise a most painstaking preliminary examination of the nasal cavities to be made. Such a course can alone engender an accurate and precise diagnosis, and dictate in a difficult or exceptional case a skilful and intelligent treatment. Cocaine, which to the rhinologist is as a mydriatic to the ophthalmic surgeon, is here indispensable whether tumefaction of the mucous membrane is present or not. I prefer Dr. De Havilland Hall's solution of 20 per cent. cocaine with 10 per cent. resorcin, applied in every instance on a pledget of cotton wool, preferably non-absorbent, all superfluous fluid being previously pressed out so as to avoid any toxic symptoms in susceptible patients; the resorcin leaves a thin whitish deposit on the mucous surface, but this is of no consequence. The various curves and deflections of the septum, in the horizontal, vertical, or oblique plane, the length and position of spurs or projections, whether buttress-like or sutural, hard or soft, must then be accurately determined, together with the all-important point as to the presence of thickening or redundancy of the septal wall in addition to deflection. I use a long, blunt-pointed, bayonet-handled probe for this purpose, straight or slightly bent close to the tip (Fig. 9), and need hardly add that a brilliant illu-

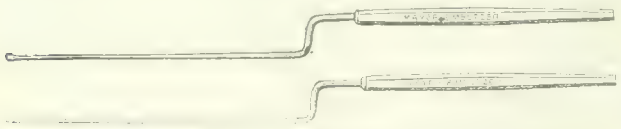


Fig. 9.—Author's nasal probe and cotton wool applicator (latter not probe-ended but slightly roughened at extremity).

mination and well-elevated seat are essential adjuvants. Passing over those comparatively simple cases in which the breath-way is manifestly obstructed by a spur of the buttress or crest pattern close to the floor, anteriorly, time only permits me to mention the much more troublesome bony projections at the junction of the middle and posterior thirds close to the ethmoido-vomerine suture; the indication is obviously to remove these latter if they give rise to symptoms. I come, then, to that almost equally frequent source of insufficiency in which a structurally contracted nasal chamber is still further stenosed by a deflection of the septal wall most commonly in the vertical, but perhaps also in the horizontal, plane, narrowing up the main respiratory channel in one or more situations to a very detrimental extent. The desideratum here being an increase in the capacity of the inferior meatus, the question is, Shall we attack the outer wall or both in succession? And in the latter case which one first?

On the whole, I recommend operation upon the inferior turbinal in the first place as being the simpler procedure, and as enabling one to ascertain the condition of the septal wall and of the meatus generally, posterior to the ablated portion; there is also the chance that as sometimes happens the posterior two-thirds or so of the meatus may prove to be considerably less contracted than the anterior, thus rendering further measures less urgent. This is the class of case in which the spokeshave may most legitimately be employed, and I know that many surgeons here perform complete or posterior turbinectomy as a routine treatment and make it suffice. It must however be conceded that spokeshaving an ill-developed turbinal with a taper posterior extremity is not always an easy matter, and unless the case is subsequently managed with extreme care I cannot think of anything more unfortunate than an incomplete operation of this kind in which the mucous membrane alone is shaved off and the bone left intact. Rightly or wrongly, but chiefly on these grounds I have almost abandoned this method in favour of the more artistic one of partial turbinectomy already alluded to, and originally advised by my colleague, Richard Lake. The success of this operation depends very much upon the choice of instruments. Various forms of scissors are used and recommended by different surgeons, but nothing is more efficient and less likely to create disappointment than a pair of stout nasal shears (Fig. 10). In operating they should be pressed close up to the

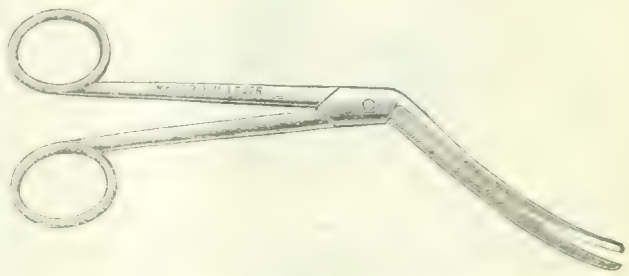


Fig. 10.—Nasal shears for partial turbinectomy.

junction of the inferior turbinal with the outer wall, and an incision made not less than three-quarters of an inch in length. Sometimes the turbinate thins away anteriorly, but approximates the septum an inch back in the meatus; if so, the incision must be adapted to this circumstance. The first cut should be the final one whenever possible, followed by the immediate encirclement of the semi-detached fragment or "peninsula" with the snare, an attempt having been made to cut in obliquely with a view to a better shape of the stump. It is important to engage the loose piece in the loop of the snare without delay, and before the seat of operation is obscured by the free bleeding that generally follows. The narrower the chamber the more difficult anterior turbinectomy becomes, especially in regard to the extraction of the fragment, and, of course, the less obliquity can be given to the incision. If free bleeding overtake us before the operation is completed, the chamber must be plugged with wool saturated with a thick solution of suprarenal capsule for a short space, after which the position of the loose piece can usually be ascertained. If for some reason the snare should not answer, Grünwald's invaluable conchotome must be our main dependence, and we proceed to remove the lost fragment piecemeal. When using the snare, the loop of wire (No. 6) must not be larger than necessary, it must be deftly applied, its farther extremity pointing outwards, and it must be pushed thoroughly home to the end of the incision before attempting to cut through. Lastly, if suitable punch forceps are not available, or fail in his hands, let me caution the inexperienced operator, as well for humanity's sake, against endeavouring to complete with the spokeshave (which can hardly be induced to engage a plain surface, as he will find), and on no account to twist the piece off roughly with powerful forceps. The wiser course under these circumstances is to cleanse with an antiseptic or plug if need be, and leave the case for at least twenty-four hours, when hæmorrhage having stopped and the parts settled down, the situation can be viewed and the operation concluded *secundum artem*. The second stage of the operation, as I am in the habit of performing it, consists in the insertion of a solid splint of soft rubber cut out of a square piece such as is here exhibited, and specially shaped to adapt it to the case in hand. This material was introduced a short time since, and is also a suggestion of Lake's. As soon as bleeding has been controlled, the splint may be introduced and the case left until sufficient time has elapsed to allow of our judging as to the amount of space gained by the operation. The advantage of this indiarubber splinting is very great; it is absolutely non-absorbent and therefore aseptic, and it can be easily taken out, cleansed, and replaced by the patient as often as necessary. Its reinsertion is not painful if the operation to widen the meatus has been rendered adequate by excising a sufficient length and proportion of the inferior turbinate, otherwise the tension is considerable and will cause headache. When the

splint fits properly, patients make no great objection to wearing it for a very considerable time, and one great recommendation for this practice is the certain prevention of adhesions, the opposed surfaces being thereby kept apart till quite healed. During insertion the splint must be kept strictly parallel to the floor of the meatus, and must be long enough to extend beyond its narrowest point.

Under the gentle pressure thus occasioned, tags of mucous membrane and little rough prominences become absorbed and disappear, and a great deal of time and trouble in trimming up are saved during the after-treatment. If preferred, a moulded rubber splint can be obtained of definite form as this example (Fig. 11); these are supplied by the

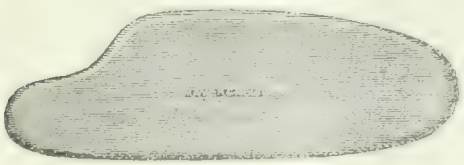


Fig. 11.—Lake's moulded india-rubber splint.

instrument makers in four different lengths, and vary in thickness from $\frac{1}{32}$ to $\frac{3}{32}$ of an inch, so that by their means the width of the narrowest part of the meatus can be gauged.

Having thus attempted to gain space by sacrificing the whole or a part of the inferior turbinate in a narrow chamber, any deflection of the septum can be dealt with or left, according to the exigencies of the case. A bony spur not hitherto visible may now possibly be detected posteriorly and removed, or a shaving of cartilage may be taken from the convexity of a slightly-deflected septum with a suitable knife, and thus a very fair amount of additional space obtained. It is in fact on the value of cutting operations upon the septum (illustrated by a special case about to be detailed) that I shall close this paper. It would be outside my purpose to discuss the surgery of extreme deviations of the septum, and I have to concede that when that body is deflected without any attendant thickening (Fig. 6), the knife or saw can only be used to a very limited extent; one or other of the cutting, *plus* forcible straightening operations on Asch's principle seems then to be the only alternative, though none of these have proved quite satisfactory in my hands.

The usual experience is, however, that some thickening or redundance of the septal wall very frequently accompanies deflection (Fig. 7), and in the following case I took advantage of this fact for a method of treatment which answered extremely well, and which therefore I can recommend to those who have not already adopted it.

A gentleman, aged 58, complained of deafness of the right ear, of inability to clear and breathe through the right side of the nose, and constant tendency to colds and headaches. The right nasal chamber was partially obliterated by a curvature of the septum in the vertical plane which, descending from the level of the middle meatus, came into close apposition with the upper border of the inferior turbinate, leaving but just sufficient room in the inferior meatus for the passage of a probe. A deep groove on the left side running antero-posteriorly marked the position of the angle of convexity; there was also some deflection in the horizontal plane, and it was therefore a crumpled septum, but the obtuseness of the right-sided projection caused me to judge that there was a great deal of thickening. I accordingly sawed off a portion of the principal convexity in the right chamber about $1\frac{1}{2}$ inch long and $\frac{3}{4}$ of an inch in the vertical direction, carefully watching the opposite side all the time to make sure that no perforation was being made. On examining afterwards, I found that periosteum and mucous membrane alone remained to fill up the gap, but these were absolutely intact. Owing to the age of the patient, ossification had taken place to a considerable extent in the triangular cartilage; I therefore could only commence with the septum knife, and had to complete with the saw. As soon as the bleeding was sufficiently staunched I discovered three large mucous polypi depending from the middle turbinal which were before absolutely unsuspected and undetectable, and which may easily have accounted for the headaches and catarrhs to which the patient was subject. These polypi were removed at the next sitting.

The saw used was Curtis's, which I prefer on account of its convenient length and strength, and the "crank" or bayonet angle in the handle of the blade—a feature which should distinguish every instrument of the kind for use in nasal work, in order that the eye may always direct every manipulation. Sawing operations are preferably commenced and can often be completed with the lower blade alone. The curved scissors of Beckmann (Fig. 12) are the best for snipping through

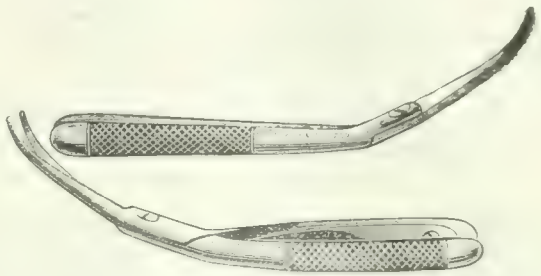


Fig. 12.—Beckmann's curved scissors for nasal operations.

any undetached flaps of mucous membrane. The chief delay in the after-treatment of the foregoing case was caused by the free borders of the gap made in the bony as well as cartilaginous part of the septum, but the rubber splint (which I find equally indispensable after operations on this body) pressed these edges back into position, and what could not be thus rectified I trimmed off with the snare or angular punch forceps (Fig. 13). The membranous

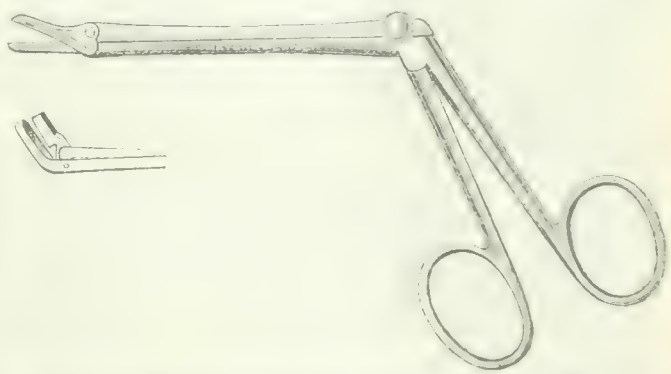


Fig. 13.—Nasal scissors and punch forceps with upturned beak.

septum appears to be consolidating by deposition of new material, and the breath-way is perfectly free, but in any case there would not be the faintest probability of any falling in of the nose. This was a typical case of unilateral insufficiency, and serves to emphasise the importance of treating this condition if symptoms are manifested. The patient complained chiefly of the deafness, which was greatly relieved, it is true, but never having been used to breathe through the right nostril he had grown somewhat accustomed to the anomaly with all its attendant inconveniences. The splint was inserted as soon as bleeding had ceased, and worn continuously for about three weeks. At the end of that period it was dispensed with at night, and after five weeks discarded altogether. The shape was modified once or twice as the case progressed. The importance of preserving strict cleanliness in such cases as the above, and indeed in all operations of this character, is very great, for, if this precaution be neglected, aural complications of a most troublesome character are likely to ensue. The insufflation of iodoform in fine powder, however disagreeable the odour may be, is, in my opinion, too valuable a measure to be replaced in most cases by substitutes, and if bleeding has been free, finely powdered tannic acid or tannic and gallic acids in equal parts may be insufflated first. The rejection of the gauze plug is usual now, unless severe hæmorrhage compel one to adopt it, and this is one of the best safeguards against septic absorption. I conclude these cursory observations by remarking that they are the embodiment of personal experience gained in my clinic at the Metropolitan Ear, Nose, and Throat Hospital and in private practice.

They are presented at this meeting with a full recognition of their meagreness in comparison with the wide area of the field that has lain before me, but my aim has been to advocate the more artistic method when such an alternative has been available, and speaking generally I trust I have in some degree strengthened the hands of those who inculcate conservative principles in the minor surgery of the nose.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE: YELLOW FEVER EXPEDITION.

SOME PRELIMINARY NOTES

BY

HERBERT E. DURHAM and WALTER MYERS,
F.R.C.S. M.B., B.C.Camb.

NOTWITHSTANDING the acumen and the number of those who have attacked the question of the prevalence of yellow fever, much mystery and uncertainty still enshroud the epidemiology of the disease. The etiology, also, is not yet determined with certainty; the claim of Sanarelli that his so-called "bacillus icteroides" is the true cause of yellow fever has not found favour with several workers who have made search in this direction. By the kind invitation of Dr. Sternberg, Surgeon-General of the U.S. Army, we had the opportunity of conferring with the commission (Drs. Reed, Carroll and Lazear) appointed by him to study the question in Cuba. We may here express our gratitude to these gentlemen for the most kind and courteous reception that they extended towards us, as well as to Major Gorgas (U.S. Army), the head of the bureau of inspection of infectious diseases in the city of Havana. We also had the pleasure and advantage of meeting Dr. Carter (of the U.S. Maine Hospital Service), Dr. Guiteras (now Professor in the Havana School of Tropical Diseases), Dr. Finlay, and Drs. Bango and Martinez (practitioners in the city.)

Amongst the many conflicting opinions and statements concerning the disease it appears certain that neither the handling of or contact with yellow fever patients nor the performance of necropsies is capable *per se* of conveying the disease to non-immunes. It also appears probable that general ship's cargoes and the fomites of patients are also not directly infective; here, however, the evidence is not conclusive, and the present quarantine regulations require disinfection of all clothes and personal effects before they may be introduced into the United States.

It seems to be fairly definitely established that a yellow-fever patient may become a danger by "infecting the house" in which he is placed. Given that a house is "infected," a visit by a non-immune person entails considerable risk of contracting the malady. It is alleged by some that visits made at night are more dangerous than those made during the daytime; but here the evidence is not very clear, and is more of the nature of an opinion. The nature of the essential factor present in an "infected house" is as yet mysterious. One house after another in a street may become "infected" without any apparent intercommunication of the inmates; the infection may skip over one or more houses and reappear at some distance. There are those who are bold enough to predict in a village that such and such a house will yield one or more cases of the fever on or about a certain day; and naturally they claim to be true prophets.

Of the interesting and important facts which have been ascertained, those elucidated by Dr. Carter in his study of outbreaks at Orwood and Taylor (Miss) in 1898 are second to none.[1] The conditions were such that the intervals between the introduction of "infecting" cases and the onset of secondary cases could be followed with accuracy. Dr. Carter finds that an interval of about fourteen to twenty-one days obtains before the first secondary cases occur. The house is then in an "infected" condition, and exposure for a few hours (for example, in one case four hours and a half) can lead to infection, with the incubation interval up to the normal four or five days. This was exemplified to us by the history of a case at Quemados, for which we are indebted to Dr. Reed. In a house which had been occupied by non-immune officers all last year, two cases of yellow fever occurred this summer; one of these was unfortunately fatal. However, a male and a female nurse who had been occupied in tending the patients did not acquire the disease until about a fortnight after the death occurred. Other sources of infection could be excluded in these cases. No further cases occurred, as the house was cleared and liberally treated with perchloride. The slight epidemic, however, spread to other houses down the street, although they were detached and surrounded by a small amount of garden space.

This curious and somewhat prolonged interval is suggestive of a development of the infecting factor in or about some agent or matter in the domicile. What may be the nature of this supposed agent is not yet demonstrated, but the suggestion propounded by Dr. C. Finlay, of Havana, some twenty years ago, that the disease was spread by means of mosquitos hardly appears so fanciful in the light of recent discoveries in ague convection as appeared in the days when the idea was first broached. Dr. Finlay's hypothesis is able to account for several curious points which obtain with yellow fever. Thus the limitation of the disease to the "yellow fever zone," where frost is unknown, the coincidence of yellow fever and rainy seasons, the cessation of the disease when the temperature falls below a certain point, and its non-recrudescence in an infected locality after a frost, are all compatible with an agency, such as a gnat, which becomes too sluggish to bite, or indeed which dies out in unfavourable climatic conditions. Such a theory also explains the curious spread of the disease from house to house, which has already been referred to. Another point is that the sanitary condition of a house may be good, and yet it may be severely "infected." An example of this was shown by the case of one of the leading hotels in Havana, of good sanitary repute, but the source of many fever cases this summer. The above sketch will suffice to show that some means of transmission by the aid of an intermediate host—a town-loving host for this town-loving disease—is to some extent more plausible than might be anticipated. Whether that hypothetical host is of the nature of a gnat remains unknown.

It is commonly stated that one attack of the fever confers a long and lasting immunity against further attacks. The completeness of this immunity, however, is called in question by the cases which we had the opportunity of seeing. Thus out of the two or three dozen cases we saw, no fewer than four were reputed to have had previous attacks; the previous attacks were not believed in as genuine yellow fever by those physicians who accept a rigid immunity as the fact. A few words may be said of one of these cases as illustrative of several points.

A lady had an attack of yellow fever in New Orleans, at the age of 19, in 1866; her account of the symptoms she experienced, and the fact that her sister had a "typical" attack at the same time tend to the conclusion that the illness was indeed yellow fever. Last year she was occupied as an "immune" in nursing yellow fever cases in Cuba during July and August, and then remained in the outskirts of Havana (Cerro) for the winter and spring. This summer she went to live in an insanitary house close to the hotel we have already alluded to as an infected house, situated in an "infected" neighbourhood. She soon contracted an illness of the nature of which there could be no doubt—a severe and prolonged attack of yellow fever.

But our knowledge of infectious diseases all goes to show that a complete and absolute immunity is never acquired by a single attack, though second attacks are usually of a comparatively mild, or at any rate recoverable, type.

The coloured people and natives are also supposed to escape the disease, but we are informed that this is a statement which is not true, although so frequently repeated in text-books. We were lucky enough to see one negro during the course of a typical attack. The Cubans and the Cuban doctors are in the habit of asserting that the Cuban system is not capable of having yellow fever. It appears, however, that they are not unknown to suffer from a disease called "borras." Clinically "borras" is like yellow fever—sometimes with black vomit and death with suppression of urine; pathologically the lesions of yellow fever are said to be present in fatal cases. The Cubans also suffer and die from "pernicious malarial fever," the symptomatology and pathological anatomy of which are very suggestive of yellow fever. We were informed that the Cuban children frequently suffer from mild attacks of fever, which our informants believe are really mild attacks of yellow fever, and which give a comparative immunity in after-life.

It has already been mentioned that a sojourn of a non-immune

for some hours in an infected house is very liable to lead to an attack; and that this is supposed to be especially the case at night. Since many of the cases we saw were soldiers, their movements could be traced to some extent, and in more than one instance there was evidence of a single exposure after breaking bounds for a single night. Similar experiences are told of ship's crews under similar circumstances; another example is to be found in the case of 100 American military prisoners who were confined in a barrack in which there had been several hundred deaths through yellow fever during the previous year of Spanish occupation; none of these prisoners acquired the disease, but some 25 of their custodians fell ill or died of the fever.

Through the courtesy of Major Gorgas we were enabled to see the distribution of the fatal cases of yellow fever in the city for the past ten years. In these it was rather striking that the more disreputable quarters of the town were free from deaths from this cause. Immigrant women are few, and presumably the inhabitants are all "immunes;" still it is not improbable that the infective agent is harboured amongst them.

These few notes on some epidemiological points are submitted in the hope that they may be of some interest to students of the perplexing questions and of the unravelled natural history of yellow fever.

Reference.

[1] *New Orleans Medical and Surgical Journal*, May, 1900.

TWO CASES OF AMPUTATION AT THE HIP-JOINT FOR GUNSHOT FRACTURE OF THE THIGH DURING THE INTERMEDIATE STAGE, FOLLOWED BY RECOVERY IN ONE.

By Captain F. J. W. PORTER,

Royal Army Medical Corps.

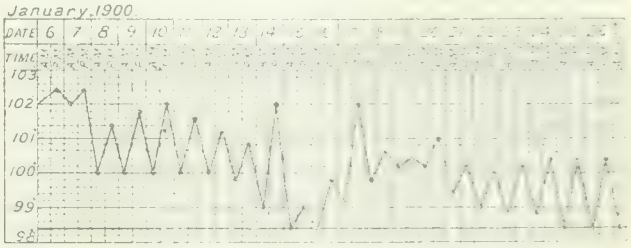
The rarity of recovery after amputation at the hip-joint in the intermediate stage after gunshot injury induces me to report the following cases.

Case I.—A private in the 10th Hussars was admitted to No. 11 Field Hospital, at Rensburg, on January 5th, 1900, suffering from gunshot fracture of the left thigh. A few hours afterwards he was transferred to the hospital train which happened to be at Rensburg. Whilst there he had two severe attacks of hæmorrhage from the exit wound, and was plugged under an anæsthetic. He continued to bleed, so about 4 P.M. on January 6th he was taken back to the field hospital, placed under chloroform, and the wound examined. The bullet (a Mauser most probably) had entered at the middle line of the left thigh, posteriorly, passed in an upward and outward direction, and had come out on the outer side of the thigh near the great trochanter. There was a large ragged cavity, studded by small spicules of bone, and there seemed to be loss of bone to the extent of about an inch. The examination was followed by free oozing, and it was considered that the best treatment would be amputation at the hip-joint. The patient had received his injury fifty-seven hours before, his pulse was very feeble; he had a very blanched appearance and an elevated temperature.

The anæsthetic (chloroform) was administered by Captain Fawssett, R.A.M.C., and my assistant was Major A. E. Tate, R.A.M.C., who was in command of this half of the house. As it was obvious that the patient would not stand a prolonged operation, the transfixion method was adopted. Owing to the high position of the fracture, and consequent loss of leverage, considerable difficulty was experienced in disarticulating. The thickness of the anterior flap and quivering of the muscles made the satisfactory controlling of the hæmorrhage difficult. The posterior part of the wound was therefore packed with gauze and wool sponges, and firm pressure was kept up by an orderly while all the vessels in the anterior flap were secured. At this point the pulse was hardly perceptible. Liq. strych., mv, was injected, and the operation rapidly completed. There was extraordinarily little hæmorrhage during the cutting of the posterior flap. Liq. strych., mx, was injected at this stage, the flaps were united by interrupted silkworm gut sutures, and a dry dressing applied. The patient was removed to a tent in a condition of great shock. Liq. strych. mxv was then injected, hot bottles were applied, and a hot salt and water enema given, which was retained. In the space of one hour liq. strych., mxxx, had been given, and the effect on the pulse was marvellous. He had no signs of poisoning by the drug. Anæsthetic vomiting was very troublesome and rendered the administration of stimulants by the mouth impossible. By 9 P.M. this had ceased, the pulse was strong and full, and patient was quite rational. Very little blood was lost during the operation. During the night he took a large amount of nourishment, but refused champagne and brandy: next morning he had a temperature of 102°, but there was no sign of shock.

From January 7th until the night of January 12th he did very well, then there was rather a severe hæmorrhage from the upper and outer angle of the wound, with a suspicious increase of tension and feeling of fulness in the stump. As the line of incision had passed at this point the exit wound caused by the bullet, it was thought that perhaps the hæmorrhage was due to necrosis of some tissue here, and that local styptics might stop it. The dressings were therefore removed and the stump watched carefully. Collodion and cotton wool was applied over the bleeding point and seemed to act effectually.

On January 14th, about 6 P.M., there was a very severe hæmorrhage. Pressure was applied and arrangements made to open up the stump. Liq. strych. mx was injected and chloroform administered. The sutures were removed from the outer side of the incision, and about a handful of blood clot, partly organised in places, removed. The parts were thoroughly swabbed out, but no definite bleeding point could be seen. A large drainage tube was placed across the stump, and three deep silkworm-gut sutures applied, so as to bring the muscles on the outer side into close apposition. In spite of his bloodless condition he rallied very well. Up to this time there had been no suppuration, but now there was a free discharge of sanious pus and broken down blood clot.



On January 16th the patient was drowsy and irritable all day, and would not take his food. At about 5 P.M. he became violently delirious, and tore his dressing partly off. He was given a hypodermic injection of morphine gr. $\frac{1}{4}$, and liq. strych. mv. When he fell asleep a strong nutrient enema was given and retained. This was repeated at 8.30 P.M., by which time he was awake, and had become quite rational again.

On the evening of January 18th his temperature had risen to 102°, and pocketing of pus was suspected. This was found next day to be towards the posterior edge of the gluteus maximus. The patient was seen in the afternoon by Sir William Mac Cormac, who agreed as to the place of incision, and kindly helped me to put in a drainage tube. This was done under chloroform, and the parts were well irrigated with Condy's fluid.

On January 20th, owing to the hospital moving forwards, the case was handed over to Captain Dowse, R.A.M.C., Sixth Field Hospital. I rode over and saw the patient twice afterwards, but Captain Dowse looked after his treatment until he was sent to De Aar, on the route for Wynberg, on January 27th, exactly three weeks after the operation. At this time the lower margin of the wound had almost healed; there was still a free discharge of healthy pus; a normal morning temperature, with a rise to 100° in the evening.

The patient had had rather a severe attack of diarrhœa for a couple of days previously, but in spite of that looked well and in good spirits. I heard from one of our medical officers who saw the man at De Aar some days subsequently that he was then doing well. He completely recovered and was sent to the Herbert Hospital, Woolwich. There, unfortunately he contracted pneumonia, of which he died.

The risks from this dangerous operation were considerably increased by the occurrence of secondary hæmorrhage and diarrhœa, also by the administration of chloroform on two occasions after the original operation. The occurrence of the violent delirium on the 16th is also peculiar. The patient was treated for three weeks in a bell tent. Dust storms were almost a daily occurrence. His bed consisted of an ambulance stretcher over which several folded blankets were laid. No sheets were available, and yet on his transfer to De Aar he only had two very superficial bedsores over the sacrum, each about as large as a threepenny piece. I think this reflects great credit on the nursing bestowed on him by the men of the R.A.M.C., of whom I should like to mention Corporal Glenny, who looked after him most of the time.

Case II.—On April 24th, 1900, Sergeant G., of the 9th Lancers, was shot in the right thigh by an express bullet about 11 A.M. The bone was badly fractured about the middle third, and there was a very large exit wound on the front of the thigh. Owing to the exigencies of the [illegible] tion could not be carried out in the primary stage. On the evening of the 26th there was found to be spreading gangrene. Mr. Watson [illegible] pened to pass near where my temporary hospital was, and saw the case with me. He advised amputation at the hip-joint, and kindly helped me with the operation, which was carried out by the racquet-shaped incision. It was thought that the line of incision had just passed above the line of the gangrenous invasion. The patient had a hypodermic injection of liq. strych. miij before the operation, and mij immediately after. Very little blood was lost, but the condition of shock was most intense. The usual remedies were applied, and another mij of liq. strych. given. His condition continued so bad that I gave him mx of liq. strych. in one injection. Mr. Cheyne then infused about a pint of saline solution into the median basilic vein. Shortly afterwards his condition improved, and by next morning he was free from shock, and felt very well. We had then to retire towards Bloemfontein, so he was carried on a stretcher by twelve guardsmen, who had volunteered for the purpose. He bore the journey extremely well, and at the midday halt the stump was dressed and found to look very well. Towards evening he became delirious, and died at 8 P.M. of acute septic absorption. I consider that his death was not due in any way to shock, and that he would have recovered but for

the infection of the stump by some very bad type of micro-organism. In this case infusion of saline solution with brandy was used in addition to the hypodermic injection of strychnine, but my own opinion is that the strychnine really enabled him to rally from the shock of the operation.

DIPHTHERIA AND ITS TREATMENT BY ANTITOXIN.

By R. W. MARSDEN, M.D., M.R.C.P., etc.,
Medical Superintendent, Monsall Fever Hospital.

It is in these days a mere waste of time to bring forward facts solely with the idea of proving the inestimable value of antitoxin in the treatment of diphtheria. Its detractors are few, and of necessity largely inexperienced in its practical utility, for no one who has treated diphtheria by the old method of local disinfectants and general tonics, and then observed the marvellously regular improvement after the early administration of antitoxin, could for a moment doubt its specific nature. So long, however, as there are people whose knowledge is sufficiently deep to teach their fellow-creatures merely upon the information (*sic*) gained by misreading statistics compiled by others, so long may there be found opponents to its use, and one can only pity their ignorance, and pray not only that their number may be small, but that no one may be led into needless suffering by heeding them.

Yet, though the efficacy of the treatment by antitoxin no longer needs substantiation, a good story will always bear repetition, and moreover under different circumstances, it may be possible to bring into greater prominence certain details of the highest importance. It is with this object that I have ventured to tabulate the results in 105 cases of diphtheria observed by myself throughout their course. The cases have all occurred in this hospital between November, 1898, and March, 1900, and have been derived from two sources: (1) attacks amongst the nursing staff, (2) attacks in patients suffering from, or convalescing from, scarlet fever.

The clinical diagnosis has in almost all instances been verified by the cultivation of the Klebs-Loeffler bacillus from swabs sent to the bacteriological laboratory at Owens College. In the remaining cases not examined by Professor Delépine or his assistants the cultivations were made at the hospital. The age of the patients has varied from 18 months to 36 years, no fewer than 85 being under 12 years of age. Of the 20 adult patients 16 were members of the hospital staff.

Early Symptoms.

In such a series of cases it is interesting to inquire, What was the earliest indication of the onset of diphtheria? Naturally in patients who are intelligent and old enough to be capable of expressing their feelings, one would expect a subjective sensation to be the first indication, and one finds that of the 20 adults 16 complained of sore throat or pain with deglutition, and 2 of sore throat accompanied by shivering. Of the other 2 cases one had a slight elevation of temperature without complaint on the previous day, whilst in the other patient pyrexia was first noted, and then inquiry elicited the information that the throat felt sore.

But turning now to the other 85 cases, in no fewer than 28 instances the thermometer revealed the onset by showing the presence of pyrexia before any complaint had been made. In 16 instances the patient complained of sore throat, in 5 there was first observed croupiness or hoarseness, in 3 others a discharge from the nose occurred for which no account could be given, and they were therefore examined bacteriologically, whilst in the remaining cases the attack was usually observed in the routine examination of the throat, which is practically universal in such a hospital as this. Without doubt, had they been adult intelligent patients, as already noted, most of the latter would have complained of sore throat, yet I am thoroughly satisfied that in a not inconsiderable number of cases general *malaise* or pyrexia is to be observed before the local symptoms have attracted the individual's attention.

Temperature.

Of course in many instances, where pyrexia was the first indication, an examination of the throat showed either congestion or definite membrane, and similarly, when sore throat was complained of, the thermometer would often reveal the presence of pyrexia. On the other hand, in no fewer than 25 instances the temperature was throughout either normal or not above 99° F. Thus the presence or absence of pyrexia at

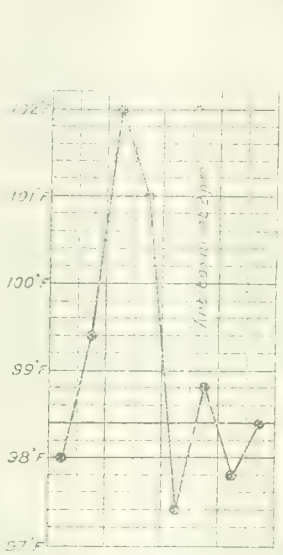


Chart I.

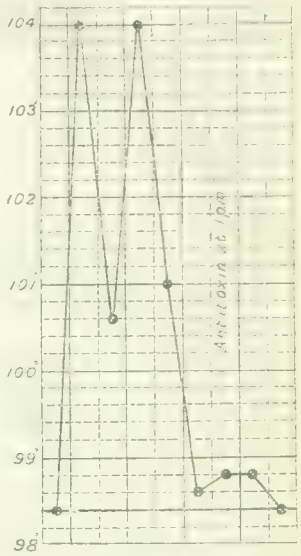


Chart II.

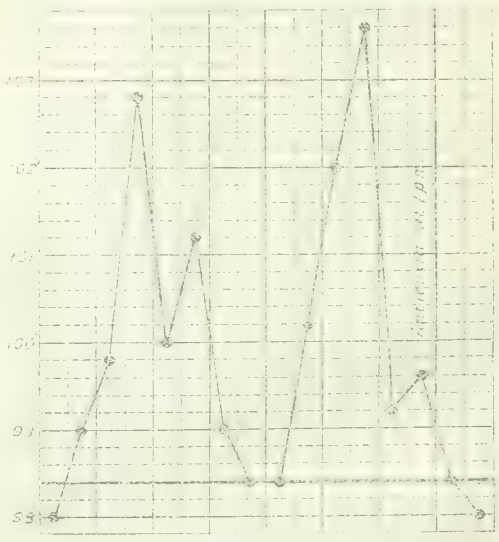


Chart III.

the beginning of an attack of diphtheria is extremely variable, and even when present its degree is no less variable, for in 41 cases when first observed it was between 101.2° and 105.2° F. and in 5 only was it below 101° F. Further, in 20 cases with pyrexia, owing to a delay in being able to make a clinical diagnosis of diphtheria, the course of the temperature could be observed for a longer or shorter period before the administration of the antitoxin, and the impression gained from these cases is that not only does it vary at its onset, but in its further course it is either very evanescent or very irregular, though occasionally the temperature may steadily ascend as the local symptoms become aggravated. Thus in 13 instances it had fallen to normal, or nearly so, before the antitoxin was given, in 7 of these the fall was very abrupt, and in 4 by large remissions. In the other 2 the injection of antitoxin was still further delayed, and a more gradual secondary increase in pyrexia was taking place. I believe that during the early period of an attack of diphtheria (especially the pharyngeal or

tonsillar form accompanied by congestion and inflammation swelling) the temperature not infrequently describes a curve similar to one of the charts (IV) here displayed, and that we may thus obtain valuable assistance in the diagnosis. Personally, whenever the temperature subsides in a case of

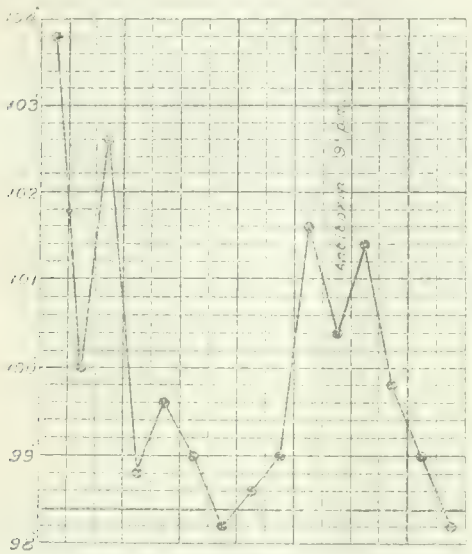


Chart IV.

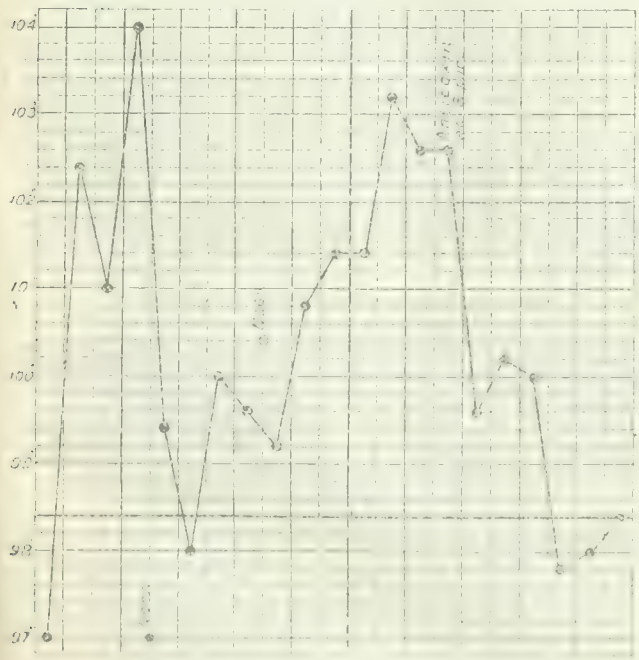


Chart V.

sore throat, while the local signs remain stationary, or get worse, I suspect diphtheria, and on several occasions not included in my series (example, see Chart V), where the bacteriological examination has not confirmed the suspicion I have still not regretted the injection of antitoxin.

Rhinitis.

It is well known that in hospitals diphtheria is unfortunately only too common after attacks of scarlet fever, and it is to this fact that I especially owe the present collection of cases. Without entering into the consideration of the probable factors in this prevalence, I feel compelled to state that the endeavour to trace the origin of the different cases has impressed me with the frequency with which a bacteriological examination of the discharge from the nose has shown the presence of the Klebs-Loeffler bacillus. Three of the earliest cases detected are included in my series. Of course I refer to rhinitis occurring in cases in which the attack of scarlet fever *per se* does not explain its presence, especially noticeable when a discharge from the nose arises for the first time late in the course of the disease. In these cases there is usually very little or no pyrexia; the discharge remains apparently unaltered for days, or in other cases may steadily increase, and be later accompanied by signs of diphtheria in the pharynx or in the fauces, and in all the injection of antitoxin causes rapid improvement.

Period at which Antitoxin was Injected.

But to return to the main subject—namely, the results of the treatment by antitoxin, it is first of all necessary to show the date on which it was given. For this purpose I have tabulated the cases under two headings: in each instance there were a few cases in which the exact point could not be stated with any degree of certainty, so that these are omitted.

Table I.—Time which elapsed from the first indication of illness (that is, temperature, complaint of sore throat, etc.):

During 1st day	... ...	59 cases
,, 2nd ,,	... ...	26 ,,
,, 3rd ,,	... ...	3 ,,
,, 4th ,,	... ...	7 ,,
,, 5th ,,	... ...	1 case
,, 6th ,,	... ...	3 cases
Total	... ...	99

Table II.—Time which elapsed after diphtheria was first suspected from the clinical symptoms:

During 1st day	... ...	90 cases
,, 2nd ,,	... ...	9 ,,
,, 3rd ,,	... ...	4 ,,
Total	... ...	103

It is thus seen that in over one-half of the cases antitoxin was injected on the first day of illness, and in the vast majority during the first two days.

I have already stated that the bacteriological examination has usually been made away from the hospital, so that in this respect we have been as unfavourably situated as the average medical practitioner. It is thus evident that the antitoxin has been injected, as a rule, upon the clinical diagnosis, bacteriological confirmation being obtained later. Now, in this series of 105 cases, only one terminated fatally; and there can be no doubt that this extremely favourable result is due to the early period at which the remedy was administered. All advocates of antitoxin are agreed upon the necessity of injecting it as early as possible, but I wish especially to urge that the advisability of withholding the injection until the result of a bacteriological examination has been obtained must depend upon the clinical symptoms and the length of time which is likely to elapse. I am of opinion that it should always be given upon making the clinical diagnosis, unless the medical practitioner, from his knowlege and experience, can with a reasonable degree of certainty conclude that no serious consequences will arise from the necessary delay. When, from the proximity of the means of examination, a bacteriological report can be obtained in twelve to eighteen hours, it is probable that in nearly all instances the practitioner can wait with impunity; but when a period of one or two days at least must elapse before its reception, then I maintain that the advisability or non-advisability of injecting antitoxin must rest with the clinical diagnosis, and depend upon the severity of the attack, the presence of urgent symptoms, and the rapidity of its progress as observed at frequent short intervals.

The only objections which can be brought against this procedure are unnecessary expense and pain in cases which are not diphtherial. In the first place it must be remembered that a negative result from a single bacteriological examination is by no means a proof of the non-diphtherial nature of the disease. By the method in use here, that is, the taking of swabs, a not inconsiderable number of cases undoubtedly diphtherial, or of convalescent patients whom subsequent events showed to have been infectious, have been returned as "negative." On several occasions also, cases diagnosed clinically as diphtheria have occurred in the same wards and

about the same time as some of the cases in my series in which no diphtheria bacilli were found. On this account they have not been included, yet I am still unconvinced that all were not diphtherial, and, observing the marked improvement which occurred in some as the result apparently of the injection of antitoxin, I have never regretted its administration. It seems to me that as diphtheria is the one acute disease affecting the nose, throat, and larynx for which we possess a specific remedy, and in which neglect of early treatment may be followed by serious and irredeemable consequences, it is our duty, when in doubt, to exclude it by administering its antidote, and thus save ourselves much future worry, anxiety, and even sorrow.

But as regards the unnecessary pain of an injection in non-diphtherial cases this is surely too trivial an objection, and the only point which requires consideration is the expense. It is well known that small doses only are, as a rule, necessary at the beginning of an attack, whereas when the toxins have been absorbed for some time the dose must be doubled, trebled, and even quadrupled; and, moreover, if left too long, these and larger doses are unavailing. It is more than aggravating, in a hospital such as this, to observe the necessary waste of antitoxin owing to the disease being too far advanced, and one cannot help feeling that the lives saved would more than counterbalance all the occasions on which the remedy may have been given needlessly.

I have purposely admitted the objection that the friends may later have to be told that the bacteriological examination was negative, since this difficulty can be readily surmounted by informing them that the test is not infallible.

DOSE OF ANTITOXIN.

It will be noted that in general the amount of antitoxin given has been comparatively small, thus 750, 1,000, and 1,500 units have been sufficient in a few cases where the local and general symptoms were very mild and the advance very slow, or where it was evident that the disease was only of a few hours' standing.

As a rule all ordinary cases with well-marked local symptoms and moderate constitutional disturbance when observed early have received 2,000 units, whereas the doses over this amount have been reserved for the cases in which the congestion and swelling in the throat, the amount of membrane formed, the degree of glandular infiltration, or the rapidity in the advance of the symptoms has denoted the probability of a severe case. A few cases also have received the larger amounts when rapidity in the production of immunity was specially urgent, for example, indications of involvement of the larynx. A repetition of the injection was only necessary in 4 cases, where the absence of a fall in the temperature or pulse-rate, or a continued advance in the local signs showed that the first dose had been insufficient.

Table III.—Dosage.

Units of Anti-toxin Given.	No. of Cases.	Remarks.
750	1	Solely nasal discharge.
1,000	14	
1,500	3	
2,000	72	
3,000	1	Two injections on successive days.
3,500	2	Two injections, in each after 36 hours' interval.
4,000	11	
14,000	1	Severe naso-pharyneal, 3 injections, 1st dose after 3 days' illness. Fatal.
	Total, 105	

It is interesting to note that in 9 of the cases which recovered the administration of antitoxin was delayed for a longer time than in the fatal case. The latter, however, was specially remarkable for its severity. Owing to the limitation of the disease at first to the nose and naso-pharynx, I was in error as to the diagnosis until the formation of membrane showed itself on the septum nasi and fauces. By this time, however, the cervical glands had become much infiltrated, and there was a considerable deposit of albumen in the urine; 6,000 units were then injected, and on successive days further doses of 4,000 units given, yet, though the local signs steadily improved, the patient died of cardiac paralysis at the end of the third week.

TIME AFTER INJECTION OF ANTITOXIN BEFORE PYREXIA DISAPPEARS.

I have already stated that in 25 instances pyrexia was absent throughout, and that in 13 the temperature was normal before antitoxin was given. Under these circumstances one would expect that the date of the subsidence after antitoxin, *per se*, would not give any very definite information. Still in cases with pyrexia, when the antitoxin is injected during the early stages, there is no doubt that the temperature steadily diminishes after a sufficient dose, and not only reaches, but retains, the normal height within a fairly definite time.

TABLE IV.—*Fall of Temperature.*

Number of Cases.	Time before Temperature Settled.
5	Immediately.
12	Within 24 hours.
31	,, 48 ,,
11	,, 72 ,,
Total... 59	

As showing the relationship between the pyrexia and the date of injection, it is only necessary to state that of the above 59 cases where the temperature became settled within three days, in 52 instances antitoxin was injected during the first two days of illness, whereas of the remaining 8 cases, which took a longer time, the injection was more delayed in 3, and in 3 others where the injection was given on the first day, a fall in the temperature began at once, but took four days in 2 of them, and six days in the other, before the normal was reached. Of the remaining 2 cases, in 1 the injection was given after thirty-six hours' illness; lysis occurred, as in the cases just mentioned, but took seven days, whilst in the other the pyrexia was due to an intercurrent disease. I believe that in the 4 cases where the subsidence occurred slowly, a larger dose would have given a more rapid fall, but, as each day showed satisfactory progress, the injection of antitoxin was not repeated.

IMPROVEMENT IN THE LOCAL CONDITIONS.

Since the introduction of antitoxin in the treatment of diphtheria, probably no fact is more remarkable than the regularity with which the local inflammatory signs subside and the membranous formation disappears after immunity has been produced by counteracting the toxins absorbed.

Changes in the membrane being most readily noted, the results in the 99 cases where observation of these changes was possible are given in the following table:

TABLE V.—*Disappearance of Membrane.*

Time before Throat was Free from Membrane.	Number of Cases.
Within 2 days	18
,, 3 ,,	45
,, 4 ,,	20
,, 5 ,,	11
,, 6 ,,	4
,, 7 ,,	1 (fatal).
Total ... 99	

The regularity, as shown in the above table, with which the membrane disappears—that is, within four days in 83 out of 99 cases—is too evidently consequent upon the treatment to need further comment.

Albuminuria.

The occurrence of albuminuria usually takes place early in the course of the disease. The time which elapses before it makes its appearance, the rapidity of its increase, and the amount to which it attains, however, depend largely on the type of attack, the severity of the toxæmia, and possibly, to a slight extent, on individual predisposition or vulnerability of the kidneys.

In dealing with such a large proportion of children as is contained in my series, there have of necessity been a few occasions on which the urine was not or could not be examined. However, in 96 out of the 105 the examination was made, and in no fewer than 47 instances either no albumen, or the merest trace, could be detected. This very favourable occurrence is no doubt due to the early period at which the antitoxin was injected. Of the remaining cases, in 19 there was a very marked trace of albumen, and in 23 it was in sufficient amount to give a distinct coagulum on boiling the whole column of fluid. Excluding the fatal case, in only 3 of the latter did the coagulum attain to any marked degree.

But in connection with the injection of antitoxin, a most important question is the probability, or possibility, of the production of albuminuria or nephritis by its agency. In the first place, the above-mentioned 47 cases, where at most the merest trace of albumen could be found, allow one to infer that the probability is not great. Considering, however, the other cases, in the 19 where a trace was well marked it first appeared in 9 instances during the first or second week after the antitoxin had been given, whilst in 1 case an interval of three weeks elapsed. Similarly in the 23 cases where a deposit occurred, in 3 this was first detected three days after the antitoxin, in 1 at the end of the first week, and in 8 during the second week. It is possible that this late appearance of albumen in the urine was due to the injection of antitoxin. In every one of these instances it was only of temporary duration, the longest period being about three weeks, and it must be remembered that as a rule the patients were convalescent from scarlet fever.

There were, however, 7 cases of special interest, in that the patients at the time were suffering from nephritis due to the previous attack of scarlet fever, or had recently recovered from this complication. The details of these 7 cases are as follows:

Case I.—Male, aged 26 years. Hæmorrhagic nephritis during sixth week of scarlet fever. Gradual but very slow improvement during next thirteen weeks, then very mild attack of diphtheria, which was detected at once, and 2,000 units of antitoxin injected. Six days later marked increase in blood and albumen, accompanied by urticaria. Getting worse for three days, then improvement, and after a week return to previous condition.

Case II.—Female, aged 2 years. Admitted with hæmorrhagic nephritis following scarlet fever. Five weeks later urine free from blood and only a trace of albumen, after another four weeks diphtheria; 2,000 units of antitoxin after four days' illness, when a slight deposit of albumen. No return of blood, and urine cleared gradually.

Case III.—Female, aged 3 years. Hæmorrhagic nephritis fifth week of scarlet fever; seventh week no blood and only a trace of albumen; nine days later diphtheria; 2,000 units of antitoxin injected at once. No signs of any change in urine.

Case IV.—Female, aged 8 years. Hæmorrhagic nephritis end of third week of scarlet fever. After three weeks and a half greatly improved, when diphtheria contracted: 2,000 units of antitoxin given within twenty-four hours of onset. No signs of change in urine.

Case V.—Female, aged 4 years. Albuminuria forming slight deposit on boiling during third week of scarlet fever; return of albuminuria eighth to tenth week, when mild attack of diphtheria: 1,000 units of antitoxin given at once; amount of albumen slightly increased for next fortnight then quickly disappeared.

Case VI.—Female, aged 9 years. Hæmorrhagic nephritis end of third week of scarlet fever. Quite recovered after three weeks. Two and a half weeks later sudden onset of diphtheria, accompanied by return of blood and considerable deposit of albumen in urine: 2,000 units of antitoxin injected at once; rapid improvement in urine. Early in second week slight increase in albumen; quite recovered before end of third week.

Case VII.—Male, aged 5 years. Nephritis end of third week of scarlet fever; large deposit of albumen in urine; next day slight laryngitis; following day œdematous swelling behind each angle of jaw, and "croupiness" no better; nasal discharge, accompanied by very offensive smell; 2,000 units of antitoxin injected. Examination of nasal discharge showed Klebs Loeffler's bacillus. Gradual improvement in symptoms and urine; three weeks later albumen still present and blood detected. Nephritis lasted several weeks.

An examination of the above 7 cases shows that in at least 4 there was not the slightest evidence that the antitoxin had any deleterious effect upon the kidney, while in only 1 was there an exacerbation of the condition due probably to its influence alone. One must therefore conclude that though it may have an irritant effect upon the kidney, yet this is by no means the rule, and in any case its action is only temporary.

Post-diphtherial Paralysis.

In the report of the Committee on the Antitoxin of Diphtheria[1] the incidence of paralysis in different groups of cases varies from 21.7 per cent. in those receiving under 5,000 units to 27.3 per cent. in those cases which received over 10,000 units. The cases were classed according to the number of units of antitoxin given, in the belief that this would give the best means of obtaining a gauge as to the probable severity of the different cases.

Now, in considering the prevalence of paralysis, it is important to note that the first and possibly the only symptom may be a difficulty in accommodating for near objects or a slight nasal speech, and that it is precisely these two symptoms which may not be observed in very young infants. In them strabismus, coughing on each attempt at deglutition, or irregularity in cardiac rhythm may be the only signs noted, so that in a series including a number of children the actual percentage found may not be strictly accurate. Still after making every allowance for this possibility, and excluding the fatal case, the fact that paralysis was only observed in 7 out of 104 cases shows that its incidence was more than usually slight, and the explanation must again be sought in the early stage at which the antitoxin was injected. The 7 cases comprise 3 of cardiac irregularity (on the eleventh, thirteenth, and eighteenth days of illness), 1 of palatal paralysis with strabismus, 1 of paralysis of accommodation for near vision, and 2 of strabismus. In the tabulated results at the conclusion of the report quoted, it is stated that "the frequency of the occurrence of paralysis is not diminished," the statement being made upon a comparison of its incidence in the cases collected by the Committee with that occurring in a number of non-antitoxin cases admitted to the Eastern Hospital in 1894. The Committee, however, further say that "paralysis is only one of the symptoms the result of toxæmia of diphtheria," and, as would be theoretically expected, found that the earlier the toxæmia was counteracted, the less was the incidence of paralysis. Thus in 20 cases treated on the first day of the disease it was only 5 per cent., whilst in 92 cases treated on the second day it was 16.3 per cent.

My own cases support this conclusion, for only 2 of the 7 belong to the 59 cases injected on the first day, and 1 to the 26 injected on the second day, whereas the remaining 4 belong to the 19 cases in which the injection was longer delayed.

Laryngeal Diphtheria.

Laryngeal symptoms were present in 6 cases. In 5 the onset of croupiness, hoarseness, or stridor, on crying or coughing, first attracted attention, and, on examination, in 3 of these small patches of membrane could be seen on the fauces or pharynx, whilst in 1 the disease was apparently limited to the larnyx, and in the other the occurrence of croupiness was quickly followed by a serous nasal discharge. The remaining case suffered from chronic hypertrophy of the tonsils, and for a short time previously these had been acutely inflamed. They did not, however, show any signs of a membranous deposit on the surface, so that when laryngitis supervened its possible connection with diphtheria was not suspected until a rapid increase in stridor had taken place. Tracheotomy was therefore necessary, but, as in the fatal cases recorded, the break in an otherwise perfect series is to be solely attributed to the inability to diagnose the nature of the disease in its earliest stages.

In each of the other 5 cases the laryngeal symptoms had completely disappeared three days after the injection of antitoxin.

The temperature in these 6 cases is deserving of mention, for in 3 it was normal throughout, in 1 it did not exceed 99.8° F., in another being normal at first it rose to 101° F. coincidently with the appearance of a nasal discharge, whilst in the only case where pyrexia was a marked feature it was accounted for by a pre-existing tonsillitis.

Symptoms Attributable to the Antitoxin.

The symptoms attributable to the antitoxin (that is, erythemata, pyrexia, joint pains) have not differed materially from those so frequently described. They have been present with various doses, and have appeared chiefly from the sixth to the eighteenth day after the injection. An erythema (morbilliform, urticarial, or mixed) was most common, and

was found in 20 cases. Occasionally it was accompanied by pyrexia, and on two occasions by pains in the joints. There were also 2 cases with joint pains not accompanied by an erythema, and 1 case with pain over the lower third of the right femur.

Probably the most unusual case was that of a boy, 4 years of age, who received 2,000 units on the first day of illness. Eleven days later he had pyrexia, with slight cardiac irregularity, and a crop of wheals developed on the front of both legs, chiefly below the middle of the tibia. The wheals subsided, leaving round purplish hæmorrhagic stains, each about the size of a threepenny-piece. The stains gradually faded in two or three days.

REFERENCE.
[1] *Transactions of the Clinical Society of London*, vol. xxxi.

CERVELLO'S TREATMENT OF PHTHISIS.

BY NEVELL E. NORWAY, M.R.C.S., L.R.C.P.,
Newquay.

A PRELIMINARY note on results obtained in England by the use of Cervello's "igazol," though it may seem somewhat premature, may be of interest to those who meditate giving it a trial. I saw the treatment being carried out under Professor Cervello's own direction at Palermo, and was not enthusiastic about it. A trial in three cases has, however, convinced me that it is a valuable aid to open-air treatment, especially where it is necessary to treat the patient at home, and in the following case it effected a result not possible in any other way:—

M. M., a girl telegraphist, age 25, unmarried, hip-joint disease twenty years, pulmonary tuberculosis ten years, large cavity below left clavicle, sudden pyrexia, 103° mornings to 105° in evenings, fine crepitations all over both lungs, intense cyanosis, respirations 60, pulse 120. No food beyond a little liquid to moisten the mouth had been taken for three days, and no medicine of any sort could be administered, as any attempt induced distressing vomiting and hiccough. The patient's hands were cold and clammy and she had apparently only a few hours to live, when, yielding to the wishes of the relatives, I allowed them to use a vaporiser. After it had burnt for two hours the patient slept for half an hour (the first sleep for nearly a week) and then took a little milk and water. Vomiting ceased forthwith, temperature gradually fell to 100°, and in a week was normal in the mornings. Appetite came by degrees, and the patient invariably slept when the vaporiser was used. It was used at first (on May 31st) for two hours three times a day. At the end of three weeks the girl was out of doors as much as possible, and the vaporiser was only used twice a day.

On July 16th it was noticed that she had gained 6 lbs. in three weeks and very much more altogether. The temperature was now hardly ever 100°, the respirations were 18. Crepitations had almost disappeared from the right side, and were much less in area on the left side. The cavity seemed more contracted on each examination. The girl was able to take a little outdoor exercise, and was in much the same health as before she suffered from acute miliary tuberculosis.

I have used "igazol" in two other cases, namely:

"B.," a schoolmaster, was picked up in the street with profuse hæmoptysis. Hamamelis, opium, and calomel were given to control hæmorrhage, but the chest condition was treated with "igazol." Gradual but steady improvement has taken place, but an attempt to keep the patient out of doors all day has failed, as he feels that he must have the vaporiser at least twice a day to relieve his breathing and cough.

"M. P." is not tuberculous, but I name the case to show that the treatment is a popular one with patients, and as illustrating the soothing effects of "igazol." The patient is gouty and asthmatical, with a laryngeal spasm which awakened him every night after about an hour's sleep. He is very tired of drugs. The use of the vaporiser for two hours each evening has greatly lessened cough and laryngeal spasm. The patient uses the vaporiser regularly, and expresses himself as feeling better after doing so. The result is probably in this case due rather to the iodine than to the formalin, of which the "igazol" is composed.

This small experience is of no value in itself, except as confirming Professor Cervello's statements, but it has convinced me that "igazol" is a valuable aid to our methods of treating phthisis, and is a popular and agreeable remedy to patients.

PROFESSOR TH. ESCHERICH has been elected Dean of the Medical Faculty of the University of Graz for the academic year 1900-1901.

PRESENTATION.—Dr. Deeping, J.P., of Southend, was recently presented with a handsome silver epergne, a gold hunter watch, and an illuminated address. The inscription on the first-named was as follows: "Presented to G. D. Deeping, Esq., J.P., in appreciation of his many services to the town of Southend-on-Sea and as a token of their respect and esteem, by the residents, July 21st, 1900.—F. F. Ramuz, Mayor."

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

SPLINT FOR FRACTURED HUMERUS.

I HAVE found the splint shown in the accompanying diagram useful in cases of fracture of upper end of humerus. It is easily made from a flat piece of poroplastic felt of the shape here shown, and of a size suited to the patient. The dotted lines regulate the shape and size of the flaps that extend upwards round the joint, and may be varied according to the requirements of the case. The body-piece should be securely



fixed to the trunk by broad bands of stout plaster; and if great immobility of the arm is desired a band may be passed through holes made in the lower border of the arm-piece and the adjoining body piece. It is my custom to mould the appliance in the first instance to the sound side; it then, when transferred, requires only a slight refitting.

Dublin. R. F. TOBIN.

ON THE TREATMENT OF BLISTERS.

At this season, when heavy boots and rough stockings blister unaccustomed heels, the following method of treatment may be of service to many crippled sportsmen. It may not be new, but the writer invented it for his personal relief, and has used it with success in several instances. The blister is incised, and the raised epidermis cut completely away with sharp scissors; no overlapping fragment beneath which microbes might develop is left. The surface is then carefully dried and painted with several layers of salicylated collodion. A circular piece of linen—a bit of old pocket handkerchief is best—is cut rather larger than the exposed surface; this is plastered on with more collodion, which is well worked into the meshes of the material. Several more coats of collodion are put on over all. This makes a strong and intimately adherent protection to the abraded surface; the patient can immediately walk with comfort, and the epidermis reforms underneath with unimpeded rapidity. A large blister may require several applications, since one lasts only two or three days. There is some smarting when the first layer of collodion is put on. The treatment should be applied early; a blistered surface which has been irritated into the hæmorrhagic condition had better be exposed and treated with antiseptic lotions for a day or two, till the inflammation has subsided, before the above method is applied.

Grosvenor Street, W. ARTHUR H. WARD, F.R.C.S.

HAY FEVER.

WHETHER *post hoc* or *propter hoc* I cannot say, but I have this year been apparently immune, I will not say *by* the use, but *after* the use of an ointment of the liq. carbonis detergens as strong as it can be made, with benzoated lard, and not too thick to be easily painted on the inside of the nostrils and snuffed up well from the loaded brush. At least, I have had, for the first time for many years, a summer in which I have not nearly sneezed my head off and looked the most lachrymose of mortals; and as I appear to owe it to the above application, I give it *faute de mieux* the benefit of my good opinion and fair gratitude.

Shanklin, Isle of Wight. GEORGE H. R. DABBS, M.D.

OBSTRUCTION OF STENO'S DUCT CAUSED BY STOMATITIS.

Not long ago I was consulted by a lady, aged 32, on account of a swelling of the left parotid gland, with difficulty in opening the mouth and some pain, which had been coming on for several days. The swelling was uniform, soft, and not tender, nor was it accompanied by any constitutional disturbance. A week later it was larger, and the pain more intense, especially during meals. The patient described how, when taking food, the gland increased in size, and the pain became worse; she said that even the thought of food increased her distress, and on one occasion the sight of a dish of cooked gooseberries caused intense suffering.

Careful examination revealed no concretion in Steno's duct, but the mucous membrane inside the cheek was found to be swelled, tooth-indented and sodden, with red patches here and there. This condition appeared to be the only discoverable cause to account for the evident obstruction of the duct. An astringent and antiseptic mouth lotion was ordered, and the patient was directed to disinfect her plate of artificial teeth by boiling it. In three days the distension of the gland and the pain had completely subsided, but a sensation of stiffness remained for nearly a fortnight.

Abchurch House, E.C. CHICHELE NOURSE.

A CASE OF SUPPOSED FOREIGN BODY IN THE PHARYNX.

The note on ossified stylo-hyoid ligament, by Mr. C. F. Wightman in the British Medical Journal of June 30th, 1900, recalls to my mind a case which I saw some three months ago, in which the upper end of the great cornu of the hyoid bone was mistaken for a foreign body.

I was called to see Mrs. T., aged 65, at 2 A.M. on April 2nd, 1900. She had swallowed a piece of pork "crackling," and this she stated had stuck in her throat on the right side. A vigorous attempt on her part to extract this ended in a profuse hæmorrhage. A medical man was then called in, and I saw the patient later on in consultation with him. On introducing the finger I was able to touch a rough body on the right side of the pharynx, which might easily have been the end of a foreign body. As she would not allow me to examine again chloroform was administered, and on introducing my finger I was able to make out that the body felt was the bare upper end of the great cornu of the hyoid bone, which was exposed in the pharynx evidently by the attempt of the patient to dislodge what she took to be a foreign body. On the opposite side the left cornu of the hyoid bone normally covered with mucous membrane could be felt.

Of course I made no attempt to proceed further, and a fortnight later the patient was well. For some days after her accident there was œdema and crepitation on the right side of the neck, and all attempts at swallowing were painful.

G. P. NEWBOLT, F.R.C.S.,
Honorary Surgeon, Royal Southern Hospital, Liverpool.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL UNITED HOSPITAL, BATH.

A SUCCESSFUL CASE OF ENTERECTOMY FOR MALIGNANT DISEAS OF THE TRANSVERSE COLON CAUSING INTESTINAL OBSTRUCTION.

(By RICHARD J. H. SCOTT, F.R.C.S.E., Senior Surgeon to the Hospital.)

S. B., aged 40, first noticed gnawing pains in the lower part of the abdomen in November, 1898. She had suffered from obstinate constipation since May, 1899 (six months), and she noticed her abdomen commencing to swell in October, 1899; and since November 17th she had had nausea, retching, and vomiting. Her last attack of vomiting occurred on November 24th, three days before her admission into the hospital on the 27th, and no fæcal odour was then detected in the vomited matter.

On admission she was found to be a poorly-nourished woman, with an anxious expression and flushed cheeks. Her tongue was furred; her breathing was distressed. The abdomen was very large, hard, and tense; but it was resonant all over, even in the flanks. No definite tumour could be felt owing to the extreme distension; but *per rectum* a hard mass could be felt in the lower part of the pelvis. The uterus was pushed forward, and the cervix directed backwards. Her temperature on the day of admission was 99 5°.

On November 28th, the patient's condition not having improved under medicinal treatment, on consultation with my colleague, Dr. Cave, it was decided to perform left inguinal colotomy. An anæsthetic having been administered, the abdomen was opened in the usual position, when several coils of distended small intestine presented at the opening. Two fingers were introduced to feel for the descending colon, which appeared to be empty. On examining further towards the middle line a hard mass was felt in a portion of bowel; this was gradually and carefully dragged down to the opening in the abdomen, when it was found to be a malignant hard growth of the transverse colon causing a stricture, with the bowel greatly distended behind it. It was brought outside the wound, and the bowel having been fixed with a few sutures to the skin, a Paul's tube was introduced and fixed into the distended portion of the bowel, and the contents allowed to escape through the tube. The patient for the next few days passed quantities of liquid fæces through the tube, and the abdomen became quite flat.

The temperature, which had reached 101°, became normal by the sixth day after the operation and the patient felt very comfortable. On the tenth day an anæsthetic was again administered, and the bowel, which had become adherent to the edges of the wound, was separated and brought well outside the abdomen, and a V-shaped piece of mesentery was removed which contained several enlarged glands. Sharp hæmorrhage followed division of the bowel, the bleeding vessels were

secured by catgut ligatures, the mesentery was sutured first with fine silk, next the mucous membrane of the bowel, the muscular and peritoneal coats were accurately adjusted with fine silk Lembert sutures. The contents of the bowel were controlled by elastic ligatures during the operation, aided by the fingers of the assistant. The bowel having been washed was returned into the abdomen. The wound was then closed; its three layers by separate sutures. On the next day the temperature rose to 100° in the evening, but fell to normal next morning and continued so till the patient was convalescent. The bowels were opened naturally two days after the operation and continued to be so every day. The patient had no sickness or pain. There was slight diarrhœa on the eighth and ninth days after the operation, but this was controlled with a simple bismuth mixture. The wound was dressed on the fourth day and a small stitch abscess was discovered. The wound healed without any further trouble. The remaining sutures were removed on the eleventh day, when the wound looked healthy and was quite healed. Liquid food was given till the eighth day, when boiled fish was allowed, and on the twelfth chicken diet. She left the hospital quite well one month after the excision of the growth. At the present time—six months since the operation—she is quite well and has put on flesh.

KENT COUNTY ASYLUM, CHARTHAM DOWN, CANTERBURY.

DISPLACEMENT OF THE HEART: THE APEX BEAT BELOW THE ANGLE OF THE RIGHT SCAPULA.

[Under the care of G. C. FITZGERALD, B.A., M.D., Medical Superintendent to the Asylum].

(Reported by WILLIAM EVERETT, M.D., Senior Assistant Medical Officer.)

M.C., aged 60, was admitted on May 12th, 1890, when the heart's action was found to be weak and irregular. On March 22nd, 1894, when in bed for a trifling illness, she was examined, and it was discovered that on the left side of the chest, anteriorly and posteriorly, the percussion note was resonant all over and the breath sounds normal in character, and no heart sounds were audible anywhere on the left side. On the right side the note was resonant anteriorly, the breath sounds faint in character in the mammary region, the heart could be heard beating, but the sounds were not distinctly audible. Posteriorly this side was dull all over. Immediately below the angle of the scapula, on palpation, there could be felt what appeared to be a normal apex beat, and in a good light pulsation was visible. The heart sounds were plainly audible here and all over the area below the spine of the scapula. Above this loud bronchial breathing was heard with a few coarse *râles* and occasional coarse rubbing. Subsequently the patient had fairly good health, although she complained of shortness of breath on going upstairs or on walking fast. She contracted bronchitis on March 26th, 1900, from which she died on April 9th with œdema of the legs and signs of cardiac failure.

At the necropsy on April 10th it was found that the left side of the thorax was occupied by the left lung, the upper lobe of which extended across the front of the chest, and was adherent to the costal pleura on the right side in the mid-axillary line. The lobes of the left lung instead of being upper and lower were anterior and posterior to each other. The posterior (lower) lobe occupied the back of the cavity extending from the thoracic surface of the diaphragm, which it covered, to the apex, where it was slightly adherent behind; the upper lobe was slightly adherent to the apex in front and covered the posterior (lower) lobe, except for a strip along the border of the diaphragm and outwards in the left hypochondrium. This anterior (upper) lobe extended also across the front of the right half of the thorax and was adherent by its edge to the costal pleura on the right side in the mid-axillary line entirely covering the other contents of this half of the thorax. The line of division between the two lobes of the left lung ran from the apex in the anterior axillary line almost directly downwards, coming a little forwards and inwards as it descended towards the diaphragm. The apex of the left side of the thorax, therefore, was occupied in front by the anterior (upper) lobe and behind by the posterior (lower) lobe. This lung showed the usual appearances of bronchitis. On separating the anterior (upper) lobe of the left lung from its adhesions to the right costal pleura, and raising it from some adhesions beneath it, the pericardium with the heart was exposed on the right side occupying the lower part of the right half of the thorax and resting on the diaphragm. The heart was considerably altered in shape and resembled a partially-filled bag or bladder flattened where it rested on the diaphragm. The line of demarcation between the ventricles ran downwards, dividing the organ into about two equal halves. The left side of the heart was forwards and a little to the left, the right half being backwards and a little to the right, so that the pulsation felt during life below the angle of the right scapula was probably that of the right ventricle. Both the right auricle and ventricle were dilated. The valves were competent. It weighed 11½ ozs. The pulmonary artery was large, and continued so to the left lung, being 1 3/8-inch broad when flattened out. The right pulmonary artery came off like a branch, and was ¾-inch broad. The aorta ascended slightly from the left ventricle, and then passed directly from right to left across the spinal column, the thoracic aorta being in its usual position. At the upper and back part of the right side of the thorax was the right lung, adherent to the apex and costal pleura over the necks and adjoining portions of the ribs, and pressed flat against the right side of the spinal column. It was firmly adherent, and when separated from its adhesions was a tongue-like piece of substance, 6 inches by 1½ inch, with its thickest part at the apex, and the vessels and bronchial tube entering midway down. It was hard, and apparently consisted of connective tissue and bronchi. The posterior surface of the pericardium was slightly adherent over its lower end. The right half of the thorax was distinctly smaller than the left, due to the ribs being much less arched. The patient was well nourished and fat, and this difference was not noticed during life.

In 1894 an endeavour was made to obtain a satisfactory history of the patient, but without success. She herself, however, stated that just before coming in she was very ill with pleurisy.

REVIEWS.

SOME RECENT WORKS ON MEDICAL PSYCHOLOGY.

DR. STEEN'S pamphlet on *The Evolution of Asylum Architecture*[1] deals with the growth of asylum architecture during the present century, especially during its latter half. He describes types of asylum buildings, beginning with the Derby County Asylum, opened in 1851, and points out what he regards as errors inherent in their designs. He next refers to the systems at present advocated in this and other countries; and he concludes by indicating his own views as to the most suitable form of asylum for pauper patients. The author goes over nearly the same ground as was traversed by Sir John Sibbald in his pamphlet on *The Plans of Modern Asylums*, and there is necessarily a good deal of similarity in the arrangements of the two. In addition, however, to the plans given by Sir John Sibbald, which he reproduces, he gives those of the new West Sussex Asylum at Chichester, the new London County Asylum at Bexley Heath, and the State Asylum at Toledo, Ohio. He differs from Sir John in the conclusion at which he arrives as to the best type of asylum. Sir John is the advocate of the village type, and Dr. Steen favours a plan "made up of distinct pavilions, each complete in its details, connected together and with the administrative offices by means of corridors." Probably neither of the authors wishes to claim that he has spoken the last word upon the respective merits of the two types. It may indeed ultimately be found that one of them may be the best for certain localities, while the other is preferable for other localities. At present we have no example of the village type in this country; and, as Dr. Steen says, the experience of the Edinburgh Board, which is providing one, can hardly fail to be instructive. Dr. Steen's paper is on the whole an intelligent and temperate contribu-

[1] *The Evolution of Asylum Architecture, and the Principles which ought to Control Modern Construction.* By R. H. Steen, M.D. Reprinted from the *Journal of Mental Science.* London: Adlard and Son. 1900. (Demy 8vo. pp. 23.)

tion to the study of the question, and will repay perusal, though the way in which he puts some things is open to objection. In discussing the merits of the village type of asylum he refers to the well-known example at Alt-Scherbitz in Prussia, and to the praise which, he says, "is given to this institution by Sir John Sibbald," and immediately draws attention to several of its defects—"for example, want of separate accommodation for staff, small proportion of staff to patients, absence of internal decoration, and primitive sanitary arrangements. One writer," he says, without naming him, "describes his visit as 'a disappointment,' and he found 'ten patients locked in seclusion in the only ten single rooms of the asylum.'" He admits that it is true that these are "disadvantages apart from those of the system." Further, when summarising the disadvantages of the system, he mentions that "in Alt-Scherbitz the attendants sleep in the dormitories with the patients," an arrangement which, he should recognise, is also apart from the system. Two objections may be made to these statements: (1) They are quite irrelevant to a discussion of the merits of the village type of asylum; the same defects might be found in a corridor asylum, but it would be out of place to mention them in a discussion of the merits of the corridor type; and (2) Sir John Sibbald did not praise these features in the arrangements of Alt-Scherbitz.

Mr. GURNHILL'S book on the *Morals of Suicide*[2] does not profess to be a scientific work. He tells us that he approaches the subject from the standpoint of a Christian Socialist, and the nature of the book will be understood by the following quotation from the preface: "My purpose has been not to write a metaphysical essay, but only to offer to earnest-minded Christians a few thoughts and suggestions which by God's blessing may help to abate some of those evils from which society is suffering, and which so frequently lead the sufferers to the awful act of self-destruction as the only means of escaping them." The author assumes as an established fact that "our growing civilisation is accompanied by an alarming increase in suicide," though there seems to be reason to think that this view ought not to be accepted as incontrovertible. Whatever may be the truth as to the alleged increase of suicide, we should, however, welcome any suggestions which would help to abate the evil. But we do not think that Mr. Gurnhill's suggestions are of practical use. He bases what he has to say chiefly on a study of 100 cases of suicide "reported in such daily papers as he had access to." From this study he concludes that 63 per cent. of suicides are due to moral, psychical, and social causes, and he looks for the removal of these causes by the "raising of our civilisation out of the ruts of mere secularism" by the teaching of what he calls Christian Socialism. It will be evident from what we have said that the book does not offer much material that can be properly dealt with in the pages of a medical journal.

In his book on the rational education of the will Dr. P. E. LÉVY[3] proposes to show that it is possible to preserve ourselves from attacks on our moral and physical life, and that if anything of an injurious nature should happen to the one or to the other, it is in our power to relieve the evil or remove it. The treatment of functional diseases by suggestion, here called hetero-suggestion, has long been known and practised, but Dr. Lévy endeavours to prove that by auto-suggestion we can relieve or cure ourselves. To learn to will a thing, the author says, is to learn to put in action not only auto-suggestion, but the suggestion of others on himself. That is to say, if by the persevering use of the proceedings treated of in the book, the will does not succeed in taking possession of itself, then it is necessary to appeal to hetero-suggestive therapeutics. These views were applied by the author to himself and by some friends of the author on themselves, and he describes the treatment by auto-suggestion of insomnia, somnolence, want of energy and fatigue, paresis, cramp, trembling of the limbs, headache, neuralgia, odontalgia, and troubles connected with the eye, the circulation, respiration and digestion. The author says that the patient must have faith; and so, we may add, must his readers.

M. A. HAMON has written a book—a bewildering kind of book—on *Free Will*.[4] He tells us that a man must be in an independent position, or of a very independent character, to give free expression to the views which he serves out as scientific truths. Apart from matter, M. Hamon cannot conceive force. He says that force is that quality of matter which causes its combinations to be infinitely variable, that the conservation of matter is a principle which results from the observation of all phenomena, and that the hypothesis of free will is in absolute contradiction to the law of the conservation of matter, and contradicts also the great principle of causality. Dr. Johnson said, "We know that we possess free will, and there's an end of it." What is consciousness that it should stand in the way of M. Hamon's opinions? Consciousness may be wrong. All of us, he observes, are conscious that the sun goes from east to west, and this was long believed to be the case. Then we may be conscious of hallucinations. A man who sets out with an attack upon consciousness must stand the reply. If consciousness be deceptive, nothing is to be trusted. The truth is we are not conscious that the sun goes from east to west. All that we are conscious of is certain reflections and refractions of light in time and space from which we infer that the sun moves westward. But the data of consciousness are quite correct; it is the inference which was wrong. A belief that the sun moves is grounded upon the assumption that the earth stands still. When stopping at a railway station we sometimes think that our train is moving on looking at another train; but we correct our false inference by looking at some fixed bodies near. With the earth and the sun we have not this criterion. The case of hallucinations is more complex, but in general we easily succeed in distinguishing between subjective and objective modifications of consciousness. For a speculator who decides dogmatically a question which has been the subject of debate to the acutest intellects, and which a great philosopher has declared to be beyond the powers of the human mind to solve, M. Hamon exhibits deplorably little analytical power. Having fortified himself by reading the books of many writers of the materialistic school, he rushes upon his conclusions without any misgiving. Apparently he finds no difficulty in conceiving that thought is the product of the "vibrations" of matter, and that the cells of the brain at once receive, read, and register in the memory the changes in the arrangement of their particles. No one should be praised for doing right or blamed for doing wrong, for everyone is fatally impelled to do what he has done. Thus the sane are quite as irresponsible as the insane, though M. Hamon is zealous against the latter being treated as criminals. Not only does he think that "the mad or partially mad" should be treated as irresponsible, but he tells us that epileptics are considered by alienists as always irresponsible—a striking instance of ignorance of practical medicine, for there are not a few patients subject to epileptic fits who do not appear to be affected in mind, and who lead good and orderly lives. The author admits that retaliation against offences is a necessity for society, but he would substitute the term "social reactivity" for responsibility or penalty. There is still remaining in the wide field of the world the practical difficulty of keeping wrong-doing in check without showing any moral indignation against the base and bad. How can we bring up children, or educate and govern societies, letting them know at the same time it is foolish either to praise or blame them for their conduct? M. Hamon thinks that he has refuted Fénélon's arguments on this point. Our opinion is different. In conclusion we may quote the observation of Brunetière: "Were you sure that man is not free you ought not to say so, since the social polity and the entire ethics rest on free will as on their only foundation."

Mr. HIRAM M. STANLEY is of opinion that psychology should be a subject for the high school, academy, and secondary school, and he backs his opinion by writing *An Outline Sketch*

[2] *The Morals of Suicide.* By Rev. J. Gurnhill, B.A. London: Longmans, Green, and Co. 1900. (Crown 8vo, pp. 238. 6s.)

[3] *L'Education Rationnelle de la Volonté son, Emploi Thérapeutique.* Par Dr. P. E. Levy. Paris: Felix Alcan. 1899. (Crown 8vo., p. 278. Frs. 4.)

[4] *The Universal Illusion of Free Will and Criminal Responsibility.* By A. Hamon. Lecturer in the New University of Brussels, etc. Watford: University Press. 1899. (Royal 8vo, p. 138. 3s. 6d.)

of Psychology[5] for use in such institutions. It is a preposterous attempt to achieve the impossible. For scores of generations pedagogues have attempted to teach grammar to children—a knowledge of abstractions to minds capable of comprehending the concrete only. The experience of scores of generations has failed to bring home the absurdity of the attempt to—if we may postulate such an entity—the pedagogic intelligence. But to teach psychology as well as grammar—to add absinthe as well as gin to the mother's milk of these helpless babes—is an outrage of which only an arch-pedagogue could be capable. No; let us leave the poor brats to their tops and their skipping-ropes, their alley tors and their commoneys, and do not seek to reproduce in their little minds the muddle about the consciousness of consciousness that exists in those of some philosophers.

The design of Dr. CHRISTISON'S book on *Brain in Relation to Mind*[6] is better than the execution. It was a happy thought to satirise certain books upon the subject by presenting their peculiarities exaggerated into more manifest absurdity, and, so far as mere caricature goes, he has succeeded. But in satire something more is wanted than mere exaggeration. It should have "wit enough to keep it sweet." It should be permeated by the saving grace of humour, and of humour Dr. Christison possesses a most plentiful lack. He gives us faithfully enough the bewildering disconnection of thought; he succeeds—and the feat is no small one—in constructing sentences more portentous even than his models; he brings in the same array of authorities, testifying with the same irrelevance and chosen with the same want of discrimination, Virchow being put cheek by jowl with Luys and Hughlings Jackson with Hammond; but beyond mere exaggerations he gives us nothing to raise a smile. It is not until the glossary is reached that any approach to humour is discernible, and, although there may be humour in including "calcified," "pyramidal," "motor," and "pigmented" in a glossary of psychologico-biological terms from which "brachycephalic," "par-occipital," and many other special terms are excluded; in attaching two discrepant meanings to "neuroglia," and various incorrect meanings to other words; it is so slight that a cursory reader might fail altogether to appreciate the irony.

THE PREVENTION AND TREATMENT OF OBESITY.

To laugh and grow fat is the aim of one-half of the world; the other half-haunted by the proverb that "Un bon coq n'est jamais gras," strives to become less fat. In an admirable book Dr. von NOORDEN[7] shows us how by the regulation of diet and exercise we may preserve to our fellowmen the happy mean. Each species of animal has a fat the composition of which is peculiar to itself. Each animal strives to maintain this normal composition and to burn rather than to store up the ingested fats which are foreign to it. The normal composition can be disturbed it is true, but only temporarily, by pressing a foreign fat into the diet. The feeding experiments of Chaniewski are quoted by the author as showing that 86.7 per cent. of the body fat deposited in young animals can be formed from the ingested carbohydrates. As to the theory of the formation of fat from proteid von Noorden sums up in its favour. "Everyone admits," he says, "that glycogen is stored in the liver of an animal fed on a pure proteid diet, and everyone equally admits that fat can be formed from such a carbohydrate as glycogen." The average normal diet, according to the author, should have the following values: 30 calories per kilo of bodyweight for a man resting in bed; 35 to 40 calories for light work; 45 to 50 calories for hard work.[8] The diet must contain at least 1.3 to 1.5 gram of proteid (weighed dry) per kilo of bodyweight. The store of N-holding compounds in the body of an adult cannot be sensibly increased by merely altering the nature or increasing the amount of the ingested food. There must also be an increase in functional exercise to promote the formation of flesh. Excess of food runs to fat. The thin man requires more food than the fat man, not only because in him the skin surface, and therefore the loss of heat, is greater in proportion to the mass, but because the cells of his body, untrammelled by the deposition of fat, expend more energy. In estimating corpulency, the question of race is of importance. The Mecklenburg merchant is naturally of stouter habit than a Celt or a Latin. The muscular man can without harm become fatter than a man of feeble physique. For instance, the more muscular the heart the more can it stand the impediment of being loaded with fat. The record cases of corpulency quoted by von Noorden almost surpass belief. A child of 15 months weighed 57 lbs., a girl of 10 years 240 lbs., and a man (recorded by Wadd) 1,080 lbs. He points out how slight an increase in food or decrease in exercise may, in the course of the year, lead to the deposition of a large quantity of fat. Supposing that per diem 200 calories worth of food were taken in excess of the needs, and the whole were changed into fat, this, in the whole year would add 11 kilos. to the body weight. The 200 calories would be contained in $\frac{1}{3}$ of a litre of milk, or 25 grams of butter, or 100 grams of fat meat, or $\frac{1}{10}$ of a litre of beer; 50 grams of alcohol contained in a bottle of wine or $2\frac{1}{2}$ pints of beer spares the combustion of 35 grams of fat or 85 grams of carbohydrate. In discussing exercise von Noorden gives the following case. Suppose a man, weighing 70 kilos., lived in a flat of an elevation of 15 metres, and went up to his dwelling four times daily. This would mean an expenditure of energy equalling 4,200 kilogram-metres, and an expenditure of muscular energy equal to 1,400 kilogram-metres, because only 30 per cent. of muscular energy is expended in the performance of work. If a man changed his flat to that on the ground floor and otherwise continued to eat and work exactly as before he might put on 1,870 grams adipose tissue in a year (1 cal. = 425 kilogram-metres). For von Noorden the cure of corpulency depends on two factors; (1) Reduction of diet; (2) increase of exercise. Reducing the amount of liquid taken, just as separating the times of eating and drinking, reduces fat by lessening appetite. A reduction of water equal to 1 litre may lessen the total calories taken per diem by 100. In the quick cure the calories are lowered to $\frac{2}{3}$ or even $\frac{1}{2}$ of the normal amount. This treatment includes severe exercise, such as mountain-climbing. A man uses ten times as much oxygen in climbing one mile as in walking the same distance on the flat. The severe treatment is dangerous for weak patients, owing to the risk of heart failure. It is suitable for muscular, active men. In ordering the diet it must be borne in mind how greatly different modes of cooking influence the number of calories obtained from a given quantity of meat. For example: 200 grams veal when grilled contains 18.2 albumin, 5.1 fat = 122 cal.; when fried contains 18.2 grams albumin, 14.2 fat = 206 cal.; as a ragout contains 18.2 grams albumin, 20.1 fat = 261 cal. Von Noorden considers that the thyroid treatment for the cure of corpulency is neither good nor necessary. It produces loss of nitrogen, often glycosuria, nervous or heart symptoms, and is untrustworthy. Von Noorden fully discusses the etiology of corpulency. The influence of heredity and castration are dealt with and also the connection between corpulency and diabetes mellitus, anæmia, and diseases of the circulatory system, and the loss of the power of muscular activity. The special symptomatology is likewise detailed, and the methods of cure lucidly described. The book forms a valuable monograph on a most important subject.

DR. VON HOESSLIN has described the course of treatment for corpulence followed at the Kuranstalt, Neuwittelsbach, Munich, in a small book.[9] In the matter of diet proteids and much fat are given, and carbohydrates are especially excluded. The thyroid treatment is used in suitable cases, and cold or Turkish baths. Light, but not sweet, wines are allowed, and no beer. The processes of oxidation are increased by exercise. Some useful tables are added concerning the analysis of food stuffs, and the *menus* for the complete diet of a corpulent man for one month are also given.

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[5] *An Outline Sketch of Psychology for Beginners.* By Hiram M. Stanley. Chicago: The Open Court Publishing Co. London: Kegan Paul, Trench, Trübner, and Co. 1899. (Cr. 8vo, pp. 44. 1s.)

[6] *Brain in Relation to Mind.* By J. Sanderson Christison, M.D. Chicago: published by the Author. 1899. (Cr. 8vo, pp. 142. 1.25 dollar.).

[7] *Die Fettsucht* (Obesity). Von Professor Dr. K. V. Noorden. (*Nothnagel's specielle Pathologie und Therapie.* Bd. vii, iv theil.) Wien: Alfred Hölder. 1900. (Royal 8vo, pp. 166. M. 3.50.)

[8] 1 gram of dry proteid = 4.1; of fat = 9.3; of carbohydrate = 4.1 calories.

[9] *Ueber die Behandlung der Fettleibigkeit* (The Treatment of Corpulence). By Dr. Rudolf von Hoesslin. Munich: J. F. Lehmann. 1900. (Demy 8vo, pp. 39. M. 0.80.)

NOTES ON BOOKS.

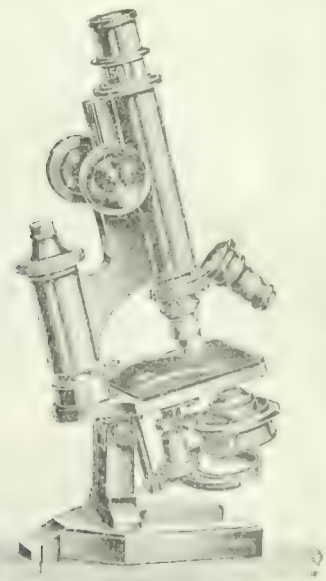
Mr. C. J. Cutcliffe Hyne has edited a collection of short stories published under the title *For Britain's Soldiers* (London: Methuen and Co., crown 8vo, pp. 322), and dedicated it "to the officers and men of the British army in South Africa and their Colonial brothers who fight for the honour of the Empire, knowing that they will get remarkably little in return." The book is intended to increase this little, for the proceeds are to be given "to the War Fund," by which we presume is to be understood the Mansion House Fund. As the authors give their stories, and as the publishers resign all their profits, the contribution should be substantial. The contributors include most of the best-known writers of short stories of the day, among others Mr Rudyard Kipling, Mr. S. R. Crockett, Mr. Morley Roberts, Sir Walter Besant, and Mr. Cutcliffe Hyne himself. The stories are good, and, as the book is to be on sale for three months only, it should be purchased without delay.

The third edition of Dr. Dudley W. Buxton's book, *Anæsthetics, their Uses and Administration* (London: H. K. Lewis. 1900. Crown 8vo, pp. 293. 6s.), presents several changes calculated to make the book more useful to the student. There is an introductory chapter which serves as a guide to the beginner, pointing out the order in which he should read the book, and emphasising the most important points. Several new illustrations of different forms of inhalers appear, even such as have only a local vogue. Special mention is made of the methods of giving nitrous oxide or ether in combination with oxygen, Flux's open method for nitrous oxide, and Schleich's solutions for general anæsthesia. The section on local anæsthetics includes a description of Bier's intrathecal cocainisation, and of the infiltration method.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

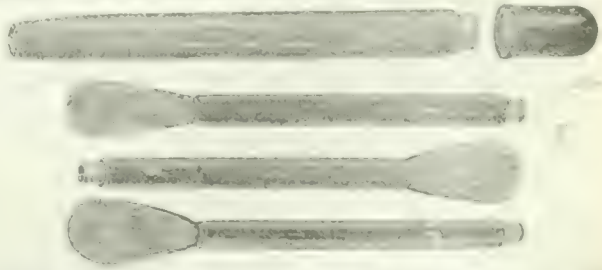
A Students' Microscope.—For many years it has been assumed that cheap and efficient students' microscopes are to be looked for chiefly from German sources. This has not been an entirely fair assumption, as of late English opticians have been supplying microscopes at the prices of foreign instruments which have compared favourably with them. We learn that in the course of a few weeks a microscope called the "London" microscope will be introduced at a much lower price than any German instrument. Messrs. R and J. Beck, Limited, have during the last two years equipped their factory with a complete plant of new machinery imported from America and Germany, and after a year's work have produced a microscope on the model of the Continental instrument at a price much below its foreign rival. The accompanying block shows the general build of the instrument, and a personal examination has led us to form a high opinion of it. The instrument is also made on a somewhat larger model for bacteriological and pathological work.



Vaginal Speculum with Detachable Weight and Blades.—Dr. John Edgar, Glasgow, writes: This instrument I devised about two years ago, and have thoroughly tested since then. The following are some of its advantages: 1. In such minor operations as curettage, if a couch be used to support the patient's legs the use of this speculum dispenses with the necessity of an assistant, a matter of importance in private cases. 2. In operations such as vaginal hysterectomy, in which skilled aid is indispensable, the assistants are allowed the use of both hands. In this way the operator gains the help of another hand, and in addition the assistant, who would otherwise require to hold the speculum, is saved in a long operation much unnecessary fatigue. 3. The weight can be detached by simply sliding it upwards. The speculum can then be used in the ordinary way when desired. In such a case the shape and weight of the handle, which is solid, and the marked inclination of the blade to the handle allow the instrument to be held with less fatigue than can be done with the customary patterns. 4. Blades of various lengths and breadths are supplied to suit all cases. 5. The blades and weight can be attached and detached in an instant. 6. Perfect asepticity is obtainable, because the instrument is constructed entirely of metal, and there are no angles where dirt can lodge. I have to thank Messrs. Gardner and Son, 32, Forrest Road, Edinburgh, for the care they have bestowed on the construction of the instrument.



A Pocket Camel Hair Surgical Brush.—Mr. W. L'Heureux Blenkarne, L.S.A., M.R.C.S., Worthing, writes:—Many practitioners, in common with myself, must have often found the unsuitableness of the ordinary camel hair brush (for painting throats, etc.) for being carried in the pocket when on one's round. I have designed one on the principle of the pocket



penholder, the use of which will be at once apparent. There are two extra brush ends adaptable to the vulcanite holder, and each one is numerically marked so that when used for infectious cases, etc., they can easily be differentiated and "put in quarantine" till thoroughly disinfected. Messrs. Arnold and Sons, of West Smithfield, have carried out my directions *secundum artem*, and a most useful and handy little instrument is the result.

The Queen has sanctioned the following appointment to the Order of the Hospital of St. John of Jerusalem in England: Robert John Collie, M.D., to be a Knight of Grace.

THE WAR IN SOUTH AFRICA.

A FIRST FIELD DRESSING.

By G. Lenthal Cheatle, F.R.C.S.

Late Consulting Surgeon to H.M. Forces in South Africa, and Assistant Surgeon to King's College Hospital.

Whenever I saw wounds not of recent infliction the following description explains the usual relationship that existed between them and infective or non-infective processes:—

1. The small wound caused by a Mauser or Lee-Metford bullet covered by a scab of dry blood clot, under which healing had practically taken place.

2. A small moist ulcer, from which there was a slight seropurulent discharge which contained cocci and obviously infected. This wound represented a septic condition of 1. The sepsis remaining superficial and not extending to deeper parts.

3. A small moist infected ulcer communicating with the deep parts which were also septic and from which pus could be squeezed.

4. The superficial wound was healed, but the deep parts were infected as was seen to be the case in some chest or abdominal wounds.

In some of the above cases the wounds of entrance or of exit might be represented by the dry scab and the other by one of the effects of infection just described.

5. All the larger wounds, that is to say, those caused by shell or expanding bullets, were almost without exception infected either superficially and deeply, or only superficially.

I cannot give the exact proportion between infected and non-infected cases, but my own experience is that the cases which were quite free from infection were in the minority, perhaps a large minority. The average of cases free from infection was lowered by those from Jacobsdal, Paardeberg and Osfontein, but even without them the statement holds good. It is a well known fact that all wounds in military or civil surgery become infected at the time of their infliction or within a few hours afterwards. This is therefore the most critical time of a wound from the point of view of asepsis. Hence, one concluded that it might be possible to add some precautionary measure to the already valuable first field dressing which is stitched into the jacket of every soldier's uniform in which he fights. Without entering into details this first field dressing consists of antiseptic gauze and wool, together with a strip of bandage, the whole being contained in a little bag of mackintosh or parchment. This dressing is often placed upon the wounds by the patient himself, by his nearest neighbour, officer, or private, or by a medical officer. By whomever it is applied, under the exigencies of circumstances, it is almost invariably put on in the absence of a purifying lotion, and hence apart from what the bullet or portion of shell takes into the wound, the patient's skin, fingers and clothes or the fingers of his dresser are the chief sources from which infection is derived.

It is quite evident that a first field dressing cannot include all the paraphernalia we deem necessary to establish asepsis in hospital practice, but at the same time I venture to hope that something might be included with very little additional complication that could inhibit bacterial growth and which could also exert some germicidal action.

After trying iodoform made into a paste with a 1 in 20 watery solution of carbolic acid—which, however, proved unsatisfactory—I used the double cyanide of zinc and mercury salt in the form of powder, with which Lord Lister had kindly supplied me on leaving this country. I found, however, that when applying it to a wound in the open air the wind blew more of it over myself than over the area for which it was intended. Besides this, any powder is difficult to apply to the posterior aspects of the trunk and limbs without greatly disturbing a patient by rolling him over on his face.

Then I employed this same double cyanide of zinc and mercury powder made into a paste with a 1 in 20 watery solution of carbolic acid. This paste had the advantage of the germicidal action of the carbolic acid added to the great inhibitory power exerted over bacterial growth by the double salt. It could be applied anywhere and in any wind, and further, in spite of using it in large quantities and in large wounds, I have not seen any poisonous effects nor any signs of local irritation. In fact, this paste proved most satisfactory. In using it I rubbed some over my fingers, over the skin around the wound, and upon the wound itself before putting on the first field dressing. It was, of course, difficult to carefully observe cases that were being left behind or sent away by convoy, but every now and then I was able to see them again, and they were all doing well, the wounds being all represented by a dry scab, in which by careful inspection the double salt could be seen.

Since I have returned home I have worked out the amount that would be necessary for each field dressing and the method by which it can be carried. A tin collapsible tube, the same as artists use for their oils, is the best carrier for the paste, which does not chemically act upon the tin. By applying vaseline to the possible outlets for evaporation the paste will remain as such for years, even in hot climates. The best proportion of the double cyanide of zinc and mercury powder to the carbolic acid solution has been worked out by Mr. William Martindale and myself, and is as follows: Mercury and zinc cyanide, 400 grs.; tragacanth in powder, 1 gr.; carbolic acid, 40 grs.; sterilised water, 800 grs. Mix and fill 12 collapsible tin tubes.

The tragacanth helps to keep the powder in suspension. The addition of glycerine is not to be recommended, as it might interfere with the rapidity with which the wounds become scabbed over. The tube and paste weigh 110 grains. Its presence does not appreciably increase the dressing by weight or bulk.

In my opinion this paste proves an invaluable addition to a first field dressing, and its value cannot be over-estimated in in those instances where water cannot be found to make the necessary lotions in the field hospitals.

All that is required in the way of direction for its use is that the dresser should squeeze out some of the paste upon his own fingers before applying it around and on the wound, and after this apply the outer dressings and bandage.

It may be said that these precautions are too intricate for the surgical instincts of the ordinary soldier, but if he is carefully taught the use of the dressing I cannot see that this objection is insuperable.

To sum up: A first field dressing should consist of a collapsible tube containing this paste, double cyanide gauze, and double cyanide wool, each in sufficient quantity for two wounds and a bandage with four safety pins, the whole being enclosed in a mackintosh bag.

NOTES ON DYSENTERY:

FROM THE IMPERIAL YEOMANRY HOSPITAL, SOUTH AFRICA.

BY

Owen Richards, M.A., Fellow of New College, Oxford. and J. W. Washbourn, M.D., Physician to Guy's Hospital; Physician to the London Fever Hospital; etc.

Up to the present date 250 cases of dysentery have been treated in this hospital. Most of these cases were admitted some time after the beginning of the attack, and by themselves are of little value in forming a clinical picture of the disease. We have, however, notes of 20 cases which have been treated here from the commencement, and the following description is based partly upon these cases and partly upon an analysis of the cases admitted at various stages of the disease. For convenience of description we will divide our cases into four classes, A, B, C, and D.

Class A.

These cases are unattended by pyrexia; the other symptoms are similar to those in Class B—that is, the passage of blood and slime. Four of our 20 cases belonged to this class; they were readily amenable to treatment, 3 of the patients recovering in 3, 5, and 6 days respectively, while in the fourth case, which was of longer duration, the patient was twice discovered taking improper food. In a fifth case, which recovered in 5 days, there was pyrexia for one night only, the temperature reaching 101.4°.

Class B.

Of our 20 cases, 14 belonged to this class, which is character-

ised by a fairly definite pyrexial stage, reminding one of the course of a specific fever. The pyrexia, which is irregular in type, reaching 101° to 103°, with morning remissions, starts at the commencement of the attack, and lasts about 6 days—in the 14 cases 4, 3, 6, 4, 6, 4, 5, 8, 8, 8, 6, 8, 5, 6, 8 days respectively. The onset is frequently preceded by ordinary diarrhœa lasting a day or two. The principal symptoms of the attack are tenesmus with repeated calls to stool, and the replacement of the normal fæcal evacuations by blood and slime. In favourable cases, as the temperature falls the evacuations gradually assume a more fæcal character, and an ordinary diarrhœa persists for a day or two longer, the whole attack lasting about 9 days.

Chart I shows the course of the temperature and the number of evacuations in a typical case of this class ending in recovery. The patient, Private S., a previously healthy man, was under the care of Dr. Brecks, and was treated with magnesium sulphate.

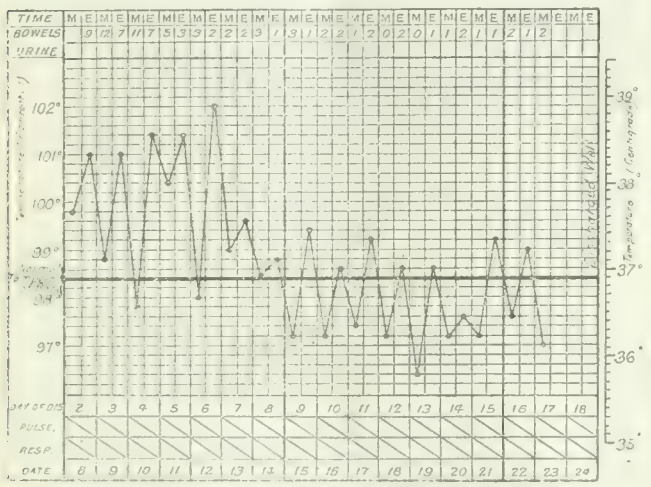


Chart I.

Of these 14 cases, in 5 who were convalescing from disease other than enteric, the course of the attack corresponded very closely with the above case. In two others who were convalescent from enteric, diarrhœa continued for 17 and 21 days. In the ninth case, Private A., under the care of Dr. Brecks, the symptoms began in the usual way, with pyrexia lasting for 7 days. Shortly after the fall of the temperature the motions became fæcal. The diarrhœa, instead of subsiding, continued for five weeks, the bowels being open on an average nine times a day. He became much emaciated, and the abdomen was retracted. Recovery ultimately ensued. He was treated with ipecacuanha, magnesium sulphate, opium, and bismuth. This patient was convalescent from enteric fever at the time when he was attacked, which probably was the cause of the protracted course of the disease. The remaining 5 cases in this class, who were all convalescent from enteric fever, ended fatally.

The attack began with the usual pyrexial stage. In one case death occurred on the 7th day, before the fall of temperature, and in the others after the temperature had subsided, on the 11th, 12th, 13th, and 14th days of the attack respectively.

This unfavourable course was, we believe, due to the lowered resistance consequent on the attack of enteric fever. In two of the cases typhoid ulcers were found at the necropsy, in another there was still evidence of enteric in the enlargement of the spleen and mesenteric glands, and in the other two the patients were much enfeebled before the dysentery commenced. The Charts II, III, IV, and the following brief notes, illustrate these cases.

Private T. S., under the care of Dr. Richmond, admitted on May 13th, convalescent from enteric, temperature having been normal for four days. On May 19th he suffered from diarrhœa, and on May 20th he began to pass blood and slime, the temperature rising to 101·4°. In spite of treatment the dysenteric symptoms continued, and the pulse gradually failed. He died on May 26th. At the *post-mortem* examination, dysenteric ulceration was found in the rectum, sigmoid flexure, and cæcum, together with small patches in the rest of the colon. The lower end of the ileum was inflamed; the spleen and mesenteric glands were enlarged. The patient was treated with ipecacuanha, opium, and astringents.

Private O., under care of Dr. Handson. Admitted on May 5th suffering from relapse of enteric. The relapse was severe, temperature varying between 103° and 104°. It became normal on May 23rd, and continued so until June 10th, when it rose to 99.6° in the evening. On this day the patient suffered from diarrhœa. On the 11th it reached 102.2° in the evening; diarrhœa continued. The motions were at first fæcal and subsequently consisted of nothing but blood and slime. The temperature became normal on June 16th; the dysentery continued; hiccough developed, and persisted during the last five days of life. The patient died on the 23rd. No *post-mortem* examination was made. This patient was treated with opium, bismuth, ipecacuanha, and magnesium sulphate.

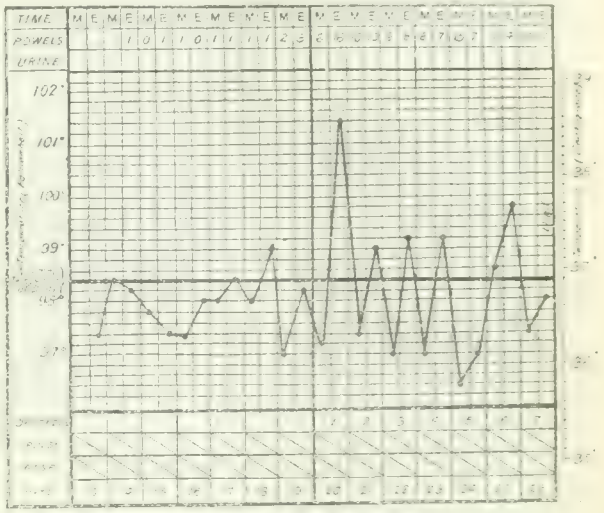


Chart II.

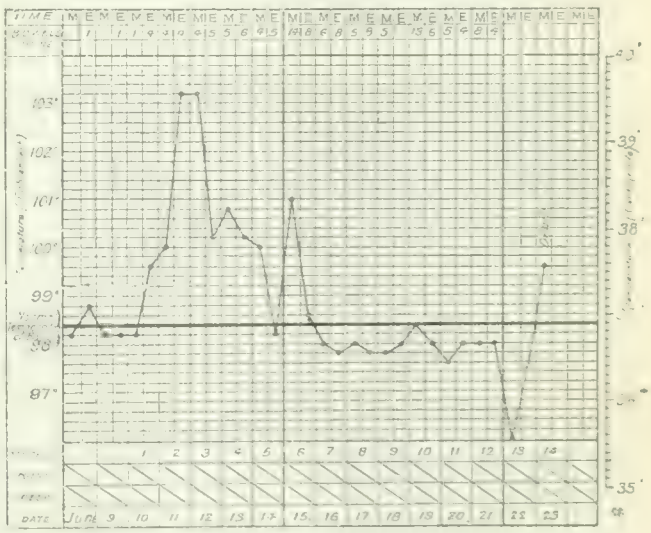


Chart III.

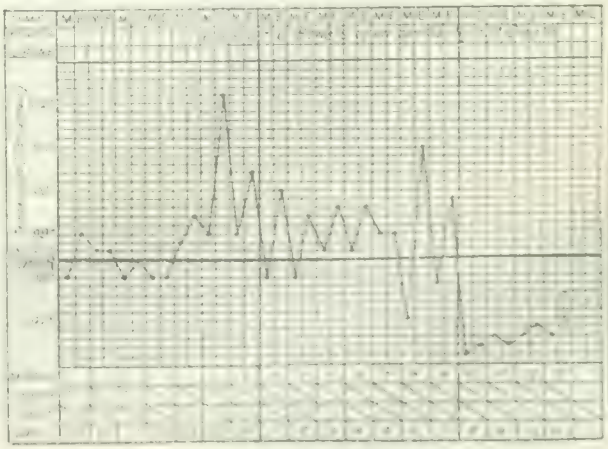


Chart IV.

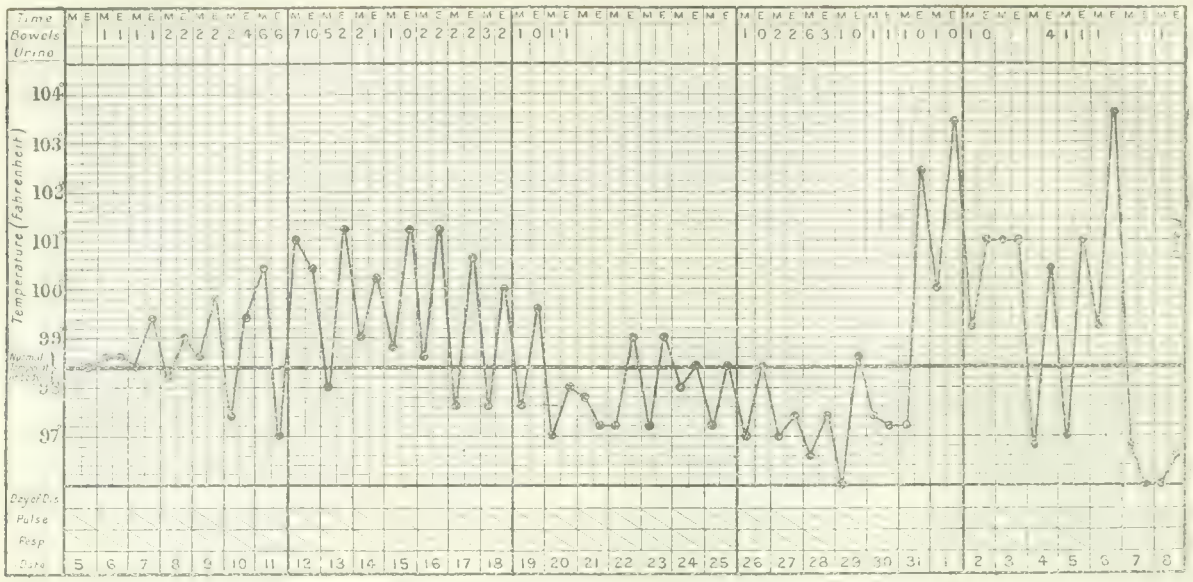


Chart V.

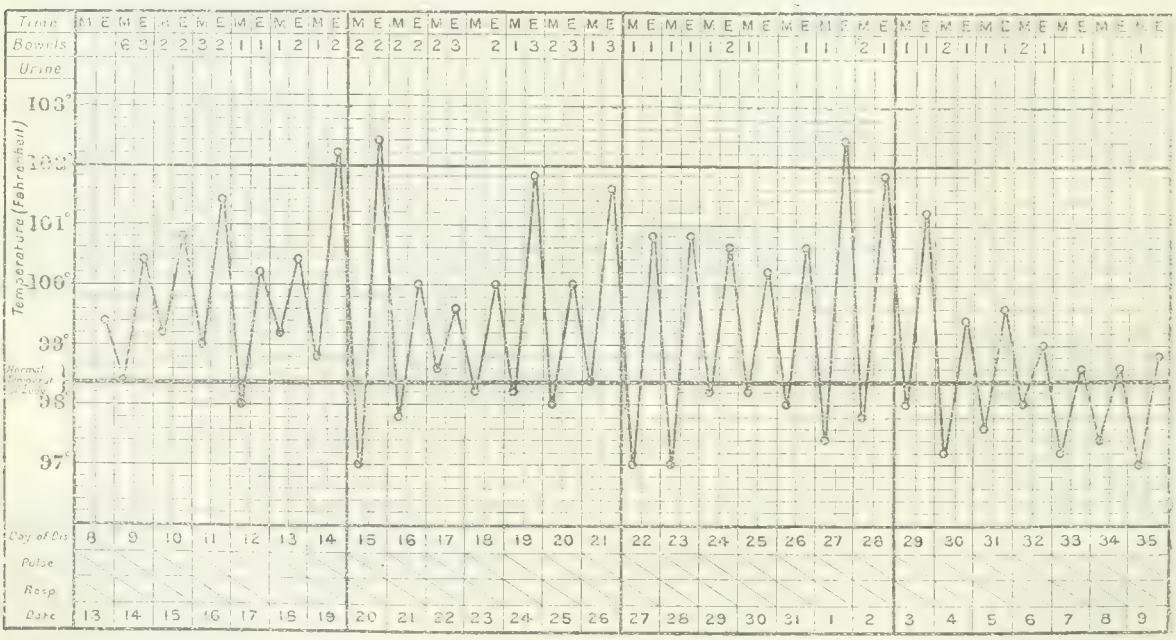


Chart VI.

Private P., admitted May 24th, under the care of Dr. Handson. Had been ill 24 days with enteric, temperature having been normal for more than a week. His temperature remained normal till May 29th. On May 30th, his bowels were open twelve times, and he passed blood and mucus. On June 2nd, the bowels were opened constantly, with passage of blood and slime, which continued till he died. On June 3rd, his pulse was very feeble. On the 4th, he suffered from great thirst, and the abdomen became retracted. He rapidly emaciated, and died on June 11th. At the *post-mortem* examination, the whole of the large intestine and the lower two feet of the ileum were acutely congested and thickened, and there was severe dysenteric ulceration, most marked in the rectum. On the first day of the attack he was treated with ipecacuanha (two doses, 30 gr. each), followed by opium and bismuth; on the fourth day with magnesium sulphate; and on the fifth day ipecacuanha was again tried. At various times morphine suppositories, copper sulphate, and different preparations of opium were administered.

COMPLICATIONS.

In the case of Private A. above quoted the diarrhœa, instead of ceasing about the tenth day, continued for five weeks, and it is probable that many of the numerous cases admitted into the hospital some time after the commencement of the attack were cases of this nature reaching us after the pyrexial stage had passed. In some of these latter cases, however, the prolongation of the dysentery was due to a distinct relapse attended by the usual pyrexia—for example, the case of Private J. W. below quoted. In others it was due to a relapse unattended by pyrexia.

As regards other complications, perforation of the intestine and consequent peritonitis has occurred in several cases, and

in one or two a temporary enlargement of the liver with pyrexia has occurred during convalescence. In another case, previously quoted in the British Medical Journal of June 16th, 1900, p. 1455, the enlargement of the liver was followed by hemiplegia. This was supposed to be due to a cerebral embolism.

As these cases were not seen from the commencement, we are uncertain to which of our classes they belong. In the following case, however, which from the nature of the relapse appeared to belong to Class B, the enlargement of the liver was due to the formation of an abscess. (See Chart V.)

Private J. W., admitted May 5th, under the care of Dr. Elliott. He had had dysentery twice before during the last six months. The present attack began on March 26th with passage of blood and slime, at which time he stated that his temperature was raised, on one occasion to 101°. For ten days before admission the bowels had been normal. On May 10th, five days after admission, he had a relapse of dysentery, his temperature being raised to 101°. The temperature continued raised till May 19th, by which time the dysentery had ceased. The temperature then fell, and remained nearly normal till May 31st, when it rose to 102.6°. The liver subsequently became enlarged, and pleurisy developed on the right side. On June 8th Mr. Raymond Johnson opened an abscess in the upper part of the right lobe of the liver. This, however, did not relieve the patient, who died on the same day. At the *post-mortem* examination extensive dysenteric ulceration was found in the large intestine, and a second abscess was discovered in the lower part of the same lobe.

This is the only case of hepatic abscess which has been observed in this hospital.

Class C.

We have notes of only 3 cases of this class, none of which were seen from the beginning. From the accounts given by the patients the attacks began with the usual symptoms of dysentery, namely, the passage of blood and slime.

The patients had been ill 7, 10, and 12 days before admission. Subsequently to admission the symptoms were diarrhœa, with motions of a brown colour, accompanied by pyrexia, and lasting for 24, 25, and 19 days respectively. In each case the course of the temperature and the character of the diarrhœa raised the suspicion of enteric. In 2 of these cases this view was strengthened by the enlargement of the spleen. None of the cases, however, gave a reaction with the typhoid bacillus in a dilution of 1 in 20, and the general condition of the patient and the appearance of the abdomen were not like those found in enteric; in fact, in two of the cases the abdomen was distinctly retracted.

Chart VI and the following short notes illustrate this type:

Quartermaster-Sergeant L. was admitted on May 13th under care of Dr. Elliott. He had been ill for a week with abdominal pain and straining, and the passage of blood and slime. The onset was marked by continued vomiting. On admission the temperature was raised, and pyrexia continued for over three weeks (*vide* chart). He suffered from diarrhœa, the motions being of a brownish colour, but neither blood nor slime were passed. On May 22nd a sausage-shaped swelling, probably due to thickening of the intestine, was to be felt in the situation of the sigmoid flexure, and continued to be felt for a week. On June 4th the temperature began to fall, and on June 7th it was normal. As the temperature fell the motions became formed and the patient became convalescent. On June 9th his blood was tested, and failed to give the Widal reaction in a dilution of 1 in 20. He was treated with opium, bismuth, ipecacuanha, and salol.

Class D.

We have only seen one case of this class, but as it was seen from the beginning of the attack, and a *post-mortem* examination was made, it is especially instructive. During life the case was considered to be one of enteric fever. This diagnosis was supported by the fact that his blood gave the typhoid reaction.

He was in hospital for 19 days, having suffered for a week previously from *malaise*. The pyrexia was similar to that of a case of enteric fever: the bowels were at first constipated; subsequently there was diarrhœa; the motions were of a brown colour. At no time was blood or slime observed in them. He died of peritonitis caused by perforation of the large intestine, and at the *post-mortem* examination typical dysenteric lesions were found. The following are brief notes with Chart (VII) of this case:

Orderly H., admitted into hospital May 13th, under care of Dr. Fitzhugh and Dr. Richmond. Had been ill for a week with cold in the head, aches and pains and feverishness. Two days ago there was slight diarrhœa and tenderness of the abdomen. Temperature was 101° on admission. The spleen was not felt. The tongue was thickly coated with yellowish fur.

May 15th.—Bowels have not been opened since admission. An enema given. There is retention of urine requiring the use of a catheter. Patient's blood gave an immediate Widal reaction to-day with a dilution of 1 in 20.

May 18th.—Abdomen tumid. Enteric fever diagnosed.

May 20th.—Complains of headache and pains in the back. Still retention of urine.

May 21st.—Still abdominal pain.

May 24th.—Has had diarrhœa for several days. There is a rash over the trunk and arms, probably due to administration of urotropin.

May 26th.—Rash gone. Still diarrhœa. The patient frequently vomits. Low muttering delirium.

May 28th.—Abdomen distended.

May 31st.—Distension of abdomen enormously increased. Liver dulness absent. Continues to vomit.

The pulse gradually failed, and the patient died on June 1st. He was treated with bismuth, urotropin, morphine, nux vomica, and digitalis.

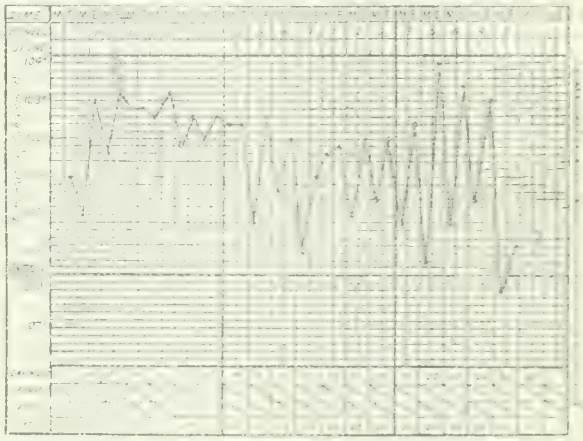


Chart VII.

At the *post-mortem* examination, which was performed by Dr. Handson the peritoneum was covered with lymph, there was a large quantity of liquid fæcal matter and purulent fluid in the peritoneal cavity. Perforations were found in the sigmoid flexure, descending and transverse colon. The intestines were matted together. The mesenteric glands of the small intestine were normal, whilst those of the large intestine were slightly enlarged. The large intestine was slightly thickened, the mucous membrane congested, of a greenish black colour, with numerous petechiæ. There were a great number of minute punctate ulcers with sharply-cut edges and several large ulcers from half to one inch in diameter with ragged edges and gangrenous bases. About half-a-dozen of these large ulcers had perforated, the perforations being circular and about an eighth of an inch in diameter. The whole of the large intestine was more or less affected, but the rectum, sigmoid flexure, and transverse colour had suffered more severely than the rest. The mucous membrane of the small intestine was pale, except the Peyer's patches which were stained a purplish colour. Except for this coloration there was no evidence that Peyer's patches had been affected. The liver was large, soft, and pale; the spleen was small.

Treatment.

From our experience here we have no doubt that both ipecacuanha and magnesium sulphate have a specific action. The method adopted here for administering these drugs has been described by one of us already.[1] We believe ipecacuanha to be the most efficacious, for we have seen cases which have resisted the action of magnesium sulphate cured by ipecacuanha. De-emetinised ipecacuanha is not so valuable as the ordinary ipecacuanha, and we do not recommend its use.

The diet is of the greatest importance. As a rule it should be restricted to milk until the motions have become normal. Meat appears to be especially harmful, and it is a common experience to find diarrhœa recurring when a meat diet is commenced.

After the acute symptoms have subsided bismuth, morphine, and astringents are of great value. In some cases where there has been frequent tenesmus morphine suppositories have apparently saved the patient's life.

Pathology.

We have examined microscopically the excreta in numerous cases of dysentery, and have never discovered amœbæ. The pus removed during life from the hepatic abscess above quoted contained no amœbæ. It contained, however, a large number of bacteria, of which some were bacilli belonging to the coli group, while others were streptococci.

Dr. Handson has made *post-mortem* examinations of 9 cases of dysentery dying in the hospital. In 3 cases death was due to peritonitis from perforation; in 1 case death was due to hepatic abscess; in 2 cases, in addition to the dysenteric ulceration of the large intestine, there was recent typhoid

[1] British Medical Journal, June 16th, 1900, p. 1455.

ulceration in Peyer's patches; in the remaining 3 the patients had recently suffered from enteric, though there was no ulceration of Peyer's patches obvious at the necropsy. The lesions in the large intestine were such as are usually described in dysentery, thickening of the wall with, in all cases, considerable ulceration. In some cases the whole of the large intestine was affected. In all cases the rectum was the part most severely ulcerated, and next to that the cæcum.

Remarks.

In the above description we have distinguished four clinical types of dysentery. And the question arises whether these types are simply clinical varieties of the same disease, or whether they are distinct diseases due to different causes.

The first type (Class A) appear to be simply mild forms, without much constitutional disturbance. The second type (Class B) seem to be a distinct clinical entity, with a definite pyrexial stage, like that of a specific fever. In the cases which died the fatal event appear to have been due to the lowering of resistance caused by recent enteric. Except for the result, the clinical course was similar in the whole of the cases forming this class. This view is supported by the fact that of the 9 non-fatal cases the 3 most severe occurred in patients convalescent from enteric.

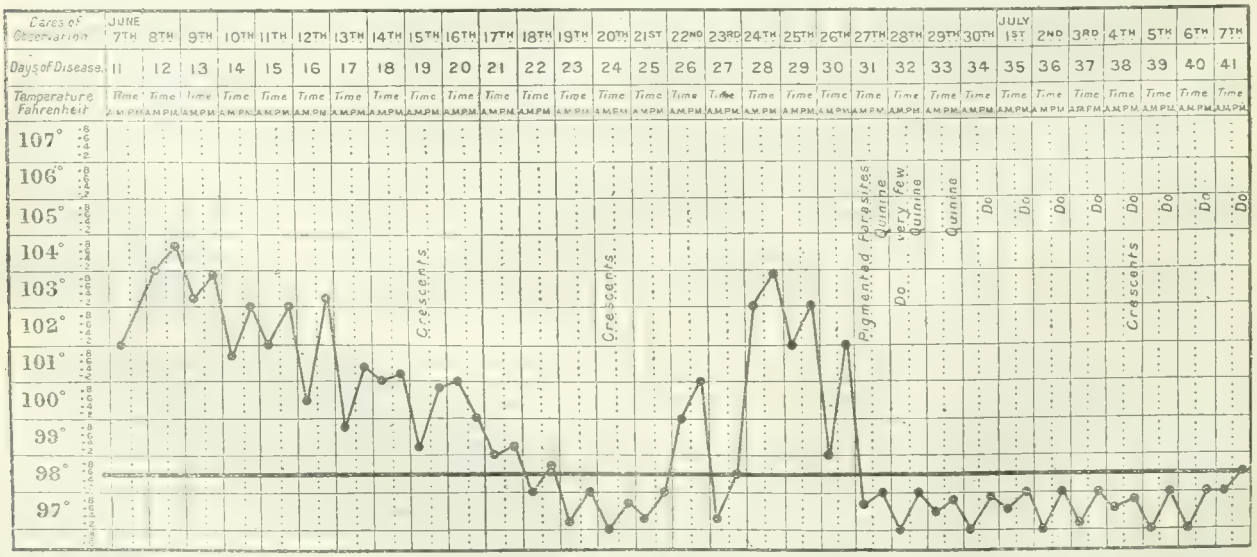
The single case in Class D ran a very different course to that of Class B. The symptoms were so similar to those of enteric fever, that a mistake in the diagnosis was made. The usual dysenteric symptoms—tenesmus and the passage of blood and mucus—were absent. The patient had not been inoculated, nor had he a previous attack of enteric. His blood, nevertheless, gave the typhoid reaction. Unfortunately the highest dilution used was 1 in 20, and we know that with diseases other than enteric the reaction is sometimes obtained with this low dilution. There was no evidence of enteric at the *post mortem* examination, and the Peyer's patches, except for a slight discoloration, appeared to be normal; the mesenteric glands and spleen were not enlarged. As the patient belonged to our detachment, we knew that there was no recent history of enteric. We have seen sporadic cases of ulcerative colitis in England running a precisely similar course.

The cases in Class C while under observation ran a somewhat similar course to the above case, and, indeed, in all of them the question of enteric was raised. The history of these cases, however, showed that they began with the usual dysenteric symptoms, and, viewed from a purely clinical standpoint, they would appear to form a link between Classes C and D. Without actual pathological evidence of the causation of dysentery it is impossible to assert whether these different clinical types belong to the same disease. Nevertheless, we have thought that an attempt to distinguish between clinical types may be of some assistance when the true pathology of this disease is more thoroughly investigated.

A CASE OF ENTERIC FEVER ASSOCIATED WITH MALARIA.

By Major M. T. Yarr, F.R.C.S.I., R.A.M.C.,
No. 9 General Hospital, Bloemfontein.

The following case should prove of interest, more especially to students of tropical medicine. So far as I know—I have no opportunity of consulting works of reference here—no case has previously been recorded of the discovery of the malarial plasmodium in the blood of a patient suffering from typhoid fever. Dr. Osler, in the chapter on typhoid fever in his work on *The Principles and Practice of Medicine*—a chapter so exhaustive that it amounts to a monograph on the subject—writes as follows (page 33, 1898 edition): "Malarial and typhoid fevers may be associated, but a majority of the cases of so-called typho-malarial fever are either remittent malarial fever or true typhoid. *It is interesting to note that among my 685 cases of typhoid fever, in not a single instance were the plasmodia found in the blood during the course of the disease.* Many of our typhoid fever cases came from malarious regions." Again (page 39), he adds: "Typhoid fever and malarial fever *in rare instances* may coexist in the same patient. Of 685 cases of typhoid fever, almost all with blood examinations, and a majority of them coming from malarious regions, in not a single instance were the malarial parasites found in the blood during the fever. There is now no excuse whatever for the continued use by practitioners of the term 'typho-malarial' fever, and still less for the falsification of vital statistics by death certificates signed with this diagnosis. The principle is bad and the practice worse, since it gives a false sense of security, and may prevent proper measures of prophylaxis." The italics are mine. On the other hand, Dr. Manson (*Tropical Diseases*, page 109) remarks: "Well-marked fluctuations of temperature and the appearance of the plasmodium in the blood in the course of a continued fever do not exclude typhoid. These cases are typho-malarial, and have to be treated as such—as typhoid with a malarial complication." I have had many conversations with Dr. Manson on malaria; in fact, the knowledge I have of the subject is mainly due to his teaching and direction; but I have no recollection of his ever alluding to a specific instance of plasmodia in the blood of a typhoid patient. Kelsch and



Major Yarr's Case of Enteric Fever with Malaria.

Kiener have described a modification of bilious remittent fever under the name of "typhoid remittent," but this designation is somewhat unfortunate, as the disease called by this name is remittent fever associated with the so-called "typhoid state," and characterised by a low delirium, brown tongue, prostration, etc.; it is undoubtedly a convenient term, but is wanting in scientific accuracy, and liable to convey a false impression.

I am bound to add that in the following case I was unfortunately unable to employ Widal's serum test, and that I am well aware that it is occasionally difficult to diagnose typhoid from malarial fever. The class of cases of malarial fever, however, which sometimes presents difficulties as regards diagnosis, belong to the category of Kelsch and Kiener's "typhoid remittents"; at least, such is my experience, and do not present any points of resemblance to the comparatively mild case of typhoid fever which I am about to relate.

Lieutenant H., aged 23, who arrived in South Africa from Burmah last February, was admitted to this hospital from the Vaal River on June 7th, suffering from enteric fever. He was very thin and weak, and stated he had been suffering from "diarrhœa and weakness" for the previous ten days. He had not been inoculated. During the year in which he had been stationed in Burmah he had had three attacks of malarial fever, which confined him to bed for periods varying from four to seven days. A month after his arrival in Africa—in March last—he had another attack, but only stayed in bed one day. In each instance the illness came on suddenly with a violent rigor, followed by fever and profuse sweating. His present illness began so insidiously that he could not fix the day of onset, but thought that, roughly speaking, he had been "seedy" for at least ten days; he had had no shivering, no sweating, and was not aware that he was feverish. He said he just felt "tired," and annoyed by the persistent diarrhœa.

The disease ran the usual course of a mild attack of enteric fever (*vide* chart on p. 672); diarrhœa with clay-coloured stools, continued fever, rose spots, enlarged spleen, brown fissured tongue sordes—in fact all the characteristic signs—being present. Within a week of admission the temperature began to fall, and on June 18th—eleven days after admission, and probably about the twenty-first day of the disease—it had reached normal. On June 15th I began examining the blood of enteric fever patients who had previously had malaria (they were very few in number), and prepared six slides, two from him and one each from four others. In five of the slides I could find nothing, but in the sixth, taken from Lieutenant H., there were unmistakeable crescent bodies, although very small numbers: I could only find three in the whole slide. This was three days before the temperature fell to normal. On June 20th, I again examined his blood, this time finding only two crescents. Early on the morning of the 22nd, he had slight shivering, followed by heat and sweating; and again in the evening the temperature at 10 P.M. being 100°: next day his temperature was subnormal in the morning and normal in the evening. Next day and the two following days it showed the fluctuations traced in the chart, each rise being preceded by rigors and followed by very profuse sweating. I suspected malaria, and again examined the blood on June 27th, when the temperature was subnormal morning and evening, and was rewarded by finding numerous pigmented parasites of the kind figured by Marchiafava and Bignami as "pigmented malignant quotidian"—intracorpuscular pigmented parasites occupying from one to two-thirds of the area of the corpuscles; there were also a few pigmented leucocytes. Next day the parasites were much fewer, but the number of pigmented leucocytes had increased. Since then I have been unable to detect anything abnormal in the blood with the exception of a few crescents on July 4th. The patient's temperature remained subnormal till July 7th, when it became normal, and has since remained so. He is now (July 14th) convalescent, taking chicken and fish diet, is allowed up half the day, and is only waiting the arrival of a hospital train to be invalided to England. His spleen continues enlarged, and there is a certain amount of melanæmia, but all enteric symptoms have disappeared, and he is gaining flesh and colour daily. I did not give quinine until June 27th, since which date he has taken 5 grs. morning and evening. After each sweating the temperature fell from one to three degrees; these falls are not shown on the chart, as the nursing sister only took temperatures twice daily, morning and evening. The malarial fever appears to have been of a "double quotidian" type, as there were two distinct paroxysms daily on June 26th, 28th, and 29th.

THE IMPERIAL YEOMANRY HOSPITAL.

Mr. A. D. Fripp, writing from Deelfontein on July 30th, says: From accounts of officers just down from Pretoria there seems to be very little enteric there or at Johannesburg, and the opinion of those who know the climate and place is that there will not be any increase in that disease until the spring weather sets in at the end of September, when they say we ought to anticipate an even heavier epidemic than the one which is just dying out, unless, as we all hope, the war has ceased, and the bulk of the army has been got out of the country by that time. . . . . Dr. Washbourn has been confined to his bed for a good many days, but is about again now. Mr. Parker has been back at work some time, and Mr. Blathwayt has just returned after several weeks' imprisonment in the scarlet fever camp, but Dr. Elliott and Mr. Greenfield, though quite convalescent, have not yet recovered sufficient strength to return to work. . . . . A smart epidemic of what has now become known as "karroo-itis," has been going the round of the new-comers from England, with just the same symptoms as were presented by those of our own staff who were attacked when we first came. One at least of the many reputed causes of this complaint has disappeared since then, namely, the hot weather, and if a similar process of exclusion can, by comparing notes with other places—for the disease has affected a very wide area—be applied to some of the other theories, we shall perhaps arrive at a true explanation of its cause, and then I hope we shall know how to prevent these distressing symptoms; at present we certainly do not know.

Writing again on August 6th, Mr. Fripp says: This is really little more now than a large convalescent camp. It is extraordinary what a tremendous change has come over the place since a fortnight ago when we were still very busy. We have had no deaths for two whole weeks, and we have not taken in an ambulance trainload for three weeks. Very nearly a hundred Yeomen have been admitted during the week, but they are almost without exception convalescents from other hospitals. For instance, all the wounded, consisting of Warwicks, Gloucesters, and Lancashires, from the action nine weeks ago at Kheis, have come on here from the Orange River Hospital. Just over six hundred officers and men of the Yeomanry have been passed through the hospital since it was opened. Of course, a very large number of Yeomanry have been laid up in other hospitals, it having been found impossible from one cause and another to have them sent here. Thus many in the acute stages of illness it would not be safe to move. Others are laid up in parts of the Free State almost inaccessible to proper hospital transport; but the facilities of collecting in this hospital all those Yeomen who are in a fit condition to travel have been progressively increased daily, and the arrangements to that end are now, I believe, as nearly perfect as the complicated conditions of the case permit. There is, for instance, a standing order at De Aar (which is the next station north of us, and through which all patients going down country must pass), ensuring that every train is warned to stop at Deelfontein and discharge any Yeomanry it may contain. Also directly we hear there are any Yeomanry in a hospital up-country we telegraph to the commandant of that hospital and ask him to send them to us as soon as they are fit to travel. But if we are right in supposing that the number of Yeomanry in South Africa is about ten thousand, we have already had through our hands not less than 6 per cent. of them, a heavy proportion when you consider that none of that limb of the service have been out here for more than five months.

Out of this 600 already treated here, there have only been 4 deaths, while out of the total number of admissions to the hospital of 2,515 there have been in all 59 deaths, a mortality of 2⅓ per cent., which is attributable almost entirely to enteric. . . .

I was very glad indeed to see that Dr. Conan Doyle had been calling attention in the London press to the arduous and dangerous nature of the work done—and done cheerfully—throughout this war by the hospital orderlies. Among all the brave deeds and hard work done by the various branches of the army during the last ten months, I do not believe that any body of men in Her Majesty's service has excelled, even if it has equalled, in bravery and pluck and continuous, even monotonous laboriousness, the behaviour of thousands of men who have been employed in the hospitals. They have been called upon to do, in addition to a full day's work every day, a full night's work every fourth or third, or even at times of stress every second night. Their work has gone on month after month quietly and unostentatiously without any of the glamour attaching to deeds which catch the public eye. Many of them have died at their work, but very few indeed have grumbled. The service they have rendered to their country has indeed, in the fullest sense of the word, been splendid. Several people have been asking what is to become of this hospital when the war is over. We have not yet heard that any decision has been arrived at, but as I told you many weeks ago my own hope is that it will be taken over as a going concern by the military authorities for the permanent use of the army of occupation, or, failing that, by the civil authorities, in which case it might be worked as a sanatorium

with great advantage to the colony, if not even to the empire. It is a most perfect site for a large hospital, and its establishment is of such a substantial nature that without any but current expenses it could continue its useful work for many years. Every single thing that could be wanted (except, of course, consumable stores) even to the bacteriological laboratory, which is essential nowadays to any such large institution, is to be found here in full working order. . . . We have had, among other visitors, Major Read, R.A.M.C., and Major MacMunn, of the Volunteer Medical Staff Corps, who have been detailed by Lord Roberts to go over and prepare the ground for the investigations of the Medical Inquiry Commission, the members of which will arrive in South Africa on the 21st inst. Major Kilkelly, Grenadier Guards, who has been most fortunately secured to act as commandant of our branch hospital in Pretoria, was stopping here at the time on his way up from Capetown. With these six visitors I spent the whole day, making a complete tour of inspection of the hospital. They went very minutely into details and statistics and seemed very pleased with everything they saw, particularly with the sanitary arrangements, and with the laundry and disinfector and destructor.

In a private letter Mr. Fripp says: I have got a laminectomy doing splendidly—ten weeks' compression of cord by bullet and bone fragments. To-day is the eighth day and I removed all stitches. Wound healed. Much recovery of bladder and of sensation and motion already. Sickness is diminishing persistently and steadily throughout the country.

YEOMANRY BRANCH HOSPITAL, MAITLAND.

Lady Georgiana Curzon has received the following cable in respect to the Imperial Yeomanry Branch Hospital at Maitland: "Have visited Maitland; everything progressing satisfactorily; there are 63 patients under treatment, and 30 others are expected immediately from Beira. All the patients arriving at this hospital belong to the Imperial Yeomanry."

THE EXEMPTION OF HOSPITALS FROM RATING.

The Report of the Select Committee appointed to consider the operation of the law by which hospitals and other institutions for the care and treatment of the sick or of those afflicted in mind or body, are liable to local rates has been issued, with the proceedings of the Committee, the minutes of evidence, and appendices, as a Bluebook.[1]

The Legal View.

It is pointed out that generally exemption was the rule until 1865, when the House of Lords, by a decision in the case of Jones and others *v.* The Mersey Docks and Harbour Board, held that properties producing no profit to the owners were, under the Statute 43 Elizabeth c. 2, rateable to the relief of the poor. A decision relating to St. Thomas's Hospital established that the principles upon which the Mersey Dock case had been decided applied to the hospital. Hospitals and other charitable institutions thus became in point of law rateable to the poor. Up to the time of the decision in the Mersey Dock case it had always been assumed that hospitals and other similar institutions were exempt.

Since the decision of the House of Lords, although in many cases the rating authorities have acted with great consideration, going so far in some cases as to leave hospitals off the rating book entirely, yet these institutions have been rated for the relief of the poor, for school rates, and also for general purposes. In some instances, such as the London Hospital, and in certain localities such as Birmingham, Shrewsbury, and Halifax, hospitals are exempted from rates by local statutes, and the Royal Infirmary at Edinburgh is exempt from municipal rates by statute. In Ireland all hospitals and other charitable institutions are exempt. It thus appears that numerous anomalies exist in the rating of hospitals, and that in different localities the various rating authorities take diametrically different views as to the obligation of hospitals to pay rates.

The Argument for Exemption.

The Committee is of opinion that there can be no doubt as to the force of the claim for exemption set up by the hospital authorities when viewed from a philanthropic standpoint. Hospitals are everywhere doing a great work in relief of human suffering. They are almost always hard pressed for funds. They to a great extent relieve the rates, and it was established by evidence that were the exemption from rates granted in London, several hundred additional beds could be provided, while the increase thrown upon the ratepayer would be merely nominal. Evidence to this effect was also given from Liverpool.

It has been suggested that if relief were granted to hospitals and similar institutions, it would be impossible to resist the claims of other charitable institutions of a different kind, and that consequently there would be no logical stopping place short of the principle adopted by the Legislature in Ireland by which relief is granted to all charitable institutions as well as hospitals. With regard to this the Committee points out that there are considerations which distinguish voluntary medical hospitals from all other charitable institutions; they are absolutely necessary everywhere; they assist all classes; they are generally open at all hours for the admission of the suffering without inquiry or recommendation; they prevent the spread of disease; they advance the cause of education and science. Hence the Committee has been led to regard this difficulty as not of itself sufficient to prevent it from recommending that exemption should be granted.

Recommendations.

The Committee recommends that the principle of exemption from rates should be applied to all medical hospitals, infirmaries, or other institutions for the care and treatment of persons suffering from sickness or injury, or afflicted in mind or body, not carried on for profit or gain, and supported wholly or in part by voluntary contributions or endowments and directly benefiting the rates in the county or district in which they are located to a greater extent than they pay rates. It is further recommended that any Bill introduced to give effect to this principle should confer power upon the rating authorities to deal with the question either wholly or in part, and that where the rating authority does not act under this provision such institutions may appeal to the County Council, or such body as is the central rating authority, and that these bodies should exempt such hospitals or hospital from rates provided that they come within the above-named definition.

It is also recommended that the central rating authority should be empowered to arrange for the distribution of the loss inflicted by exemption in any one rating area over those areas which are directly benefited by the hospital or other institution, or to make good the loss out of the county fund, and should be allowed to make any grant out of the county fund to relieve the rates assessed upon hospitals or other institutions which in their discretion they may think proper.

[1] To be purchased, either directly or through any bookseller, from Eyre and Spottiswoode, East Harding Street, Fleet Street, E.C., and 32, Abingdon Street, Westminster, S.W.; or John Menzies and Co., Rose Street, Edinburgh, and 90, West Nile Street, Glasgow; or Hodges, Figgis and Co., Limited, 104, Grafton Street, Dublin.

At the midsummer meeting of the Austin-Flint Medical Association at Clear Lake, Iowa, U.S.A., a vote of thanks was passed to Dr. C. Y. Pearson, of Cork, for his services to the son of a member of the Association. Dr. Pearson was at the same time elected an honorary member of the Association.

Prince of Wales's Hospital Fund.—Among the latest contributions received at the Bank of England for the Prince of Wales's Hospital Fund for London is the annual subscription of £1,000 from the Drapers' Company. The clerk to the company, Mr. W. P. Sawyer, when forwarding the cheque, wrote that "the Company learnt with much satisfaction from the last report of the Prince of Wales's Hospital Fund that the committee have appointed visiting subcommittees consisting of persons practically acquainted with hospital management with the object of obtaining information as to the merits and needs of the various institutions. The Company regard this as a most important step towards promoting the well-being of metropolitan medical charities and strengthening their claims on public benevolence."

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, SEPTEMBER 8th, 1900.

PLAGUE IN GLASGOW.

The outbreak of plague in Glasgow is a calamity which has very wide bearings. The city of Glasgow is not in such direct communication by sea with plague-infected ports or countries as some of our other seaports, and the appearance of the disease there is, perhaps, all the more alarming. The fact that the registered tonnage of the port of Glasgow is over 6,000,000 tons annually, equal, in fact, to the entire tonnage of France, conveys but a meagre idea of its commercial importance. Its trade is largely with America, but ships from almost every country find their way thither. The effect of the dislocation and the paralysis of traffic consequent upon such a centre being placed in quarantine is almost incalculable, and the probable financial loss to the country of a continuance of plague in Glasgow, even for a month or two, must be enormous. The worst feature of the outbreak is that the disease occurred at some distance from the harbour; not only is the locality some way inland from the Clyde, but it is above that part of the river where the ocean-going ships lie.

In London during the past twelve months, 6 cases of plague have been diagnosed, but they all occurred in ships coming from the East, and no case occurred beyond the docks. Not so in Glasgow; direct connection with the harbour has not been traced, and the cases of plague have occurred in the city at some distance from the shore and from ships.

The most favourable feature in connection with the Glasgow outbreak is that all the cases so far have been traced to a single focus, a house in Rose Street, on the south side of the city. The "contacts," as far as they are known, have been all placed under observation, and the sick removed to special hospitals. The care and vigilance exercised by the sanitary authority, and by the medical officer of health, when the disease was as yet unconfirmed by bacteriological investigations, are well calculated to allay public alarm by proving how carefully the public health is being watched. It is not only now that precautions have been taken. Ever since August, 1899, the medical officer of health in Glasgow has been on the alert against the introduction of plague.

It is satisfactory to know that for thirteen months past Dr. Chalmers has been in communication with the port medical officers of London, Liverpool, Bristol, and wherever ships arrive from plague-infected seaports. A schedule has been kept in Glasgow of the arrival of all ships possibly infected with plague since August, 1899.

In the scheduled report information as to the source of the drinking water used on board ship is given; the source of the tank water, of the water used as ballast, and when and where the bilge water was emptied, are all set forth. Particulars as to cargo, as to the death of rats on the voyage, as to the condition of the crew and passengers, are also carefully recorded.

The destination of the passengers landing from *possibly* infected ships has been noted, and their names and addresses sent to the medical officer of health of the town or district whither they were proceeding, with directions that the people should be kept under observation for at least fourteen days. Nor is it only those ships that arrive direct in Glasgow that have been so dealt with. Indeed, few ships from plague-infected centres come direct to Glasgow; they call usually first at southern ports, and it is satisfactory to know that every ship arriving in, say, an English port from a plague-infected centre and leaving for Glasgow has been, and is being, watched. A ship with such a record, on leaving, say, London for Glasgow, is notified by the London Port officer of health to the Glasgow sanitary authority, and when the vessel arrives in the Clyde a further inspection is carried out, and all the precautions already mentioned are adopted.

We in this country are so much kept in the dark—or is it that we do not take the trouble to inquire?—as to the methods of our officials, that it is only when an alarm occurs that we know anything of the work done by our Government. Certainly the care taken by the medical officers of our ports will come as a surprise to many, and must bring comfort and satisfaction to all. Scare and alarm are mostly fomented through ignorance, and were the work of the health departments of our ports generally known, as here set forth, and were it seen how carefully it is being, and has been, carried out, alarm would largely abate, and confidence in our health department would be established.

It is significant of the way we manage our affairs that the first information that inoculation by prophylactic and curative serum was to be adopted in Glasgow, came from Paris. We are so accustomed to hear of the promptitude with which our Continental neighbours deal with infection in their ports, that because our affairs are conducted more quietly, but none the less effectively, we are apt to believe that nothing is being done. We must remember that this country is the pioneer in all matters of sanitation, and that it is our national peculiarity that what is done is done quietly and as a matter of duty, and not for public acclamation.

There is, however, an urgent need for improvement in one direction. It appears that there is no medical officer of health for the Port of Glasgow. At first sight this seems a grave omission, but it comes about in this way. The Clyde presents a succession of ports—Gourock, Greenock, Dumbarton, Govan, etc., all of which have to be passed before the vessel reaches Glasgow. At every one of these a medical officer is available for the duty of ship inspection, and therefore any vessel approaching the Clyde and flying the flag indicative of disease on board may be boarded, and the crew, passengers, ship, and cargo dealt with before Glasgow is reached. It is this peculiar situation of Glasgow that accounts for the absence of a port health officer, but we would seriously urge that this condition

of affairs should no longer exist. There ought to be—and in the public interest this must be insisted on—a health officer for the Clyde, whose exclusive duty it shall be to deal with the shipping. In the meantime the medical officers of health doing duty on shore along the Clyde banks have to inspect the shipping, while some firms engage private medical practitioners to look after the health of their ships in the river. This is not sufficient; and so urgent do we consider this matter that we hope before a week is over to see the omission remedied, and to learn that a medical officer of health has been appointed to deal with the Clyde shipping, not merely during the present emergency, but permanently. He will have plenty of work, and the gain to the shipping community on the Clyde and to the country at large will amply repay the few hundred pounds expended upon so necessary an officer.

THE SECTION OF THE NAVY, ARMY, AND AMBULANCE.

The wide scope of this new Section is well shown in the proceedings which we publish in full in this week's issue of the British Medical Journal. The papers read chiefly related to the army medical services, but the navy came in for a share of attention, while under the head of ambulance were included problems connected with the sick and injured in civil life, especially in our great towns.

It is hardly possible to urge too strongly on the attention of the War Office the importance of the papers concerning the regular and auxiliary medical services, contributed as they are by officers of ripe experience and judgment, and discussed by others possessing the same qualifications. The discussions can hardly fail to be of considerable assistance to those who may have to deal with the serious problem of the future reorganisation of these services, which, we trust, will be taken in hand immediately after the termination of the Boer war. We hope the scheme foreshadowed in the resolution following Mr. Cantlie's paper will be worked out without undue delay, and placed in the hands of the Minister for War.

Brigade-Surgeon-Lieutenant-Colonel J. E. Squire grappled with the difficult problem how best to augment medical *personnel* in the field, which of course hinges on the question of reserves. He condemned the hand-to-mouth system of mixing up untrained civil surgeons and ambulance men with the regular establishments on the eve of a war; and insisted that all reserves of officers and nurses, male and female, should be taught in peace something of army organisation and methods, and especially should learn the meaning of discipline. He expressed a strong suspicion that inattention to these essentials in *personnel* has had much to do with the grounds on which the alleged failures and scandals in the South African military hospitals have been based. Civil units in their proper place may be of great service, but should not be recklessly mixed up with the regular army units.

Brigade Surgeon-Lieutenant-Colonel Peter Giles expressed similar views in his scheme for the organisation of volunteer medical units. He urged that a volunteer medical officer of sufficient rank should be attached to the office of the Director-General, and under him should inspect and supervise the volunteer medical services.

In the discussion which followed this paper, Mr. Frederick Treves, as the outcome of his experience during the war, advocated that field hospitals should be larger units, say 300 instead of 100 (so-called) beds; this would certainly facilitate their subdivision into more efficient sections when necessary. He mentioned that the military and civil surgeons at the theatre of war, worked together in great harmony, owing largely to the liberal and unselfish way in which the former treated the latter; this testimony is all the more welcome, considering there have been attempts by the enemies of the medical service to sow discord between them. The question of orderlies Mr. Treves declared to be surrounded with almost incredible difficulty, inasmuch as their duties do not only lie in nursing but in pitching and striking tents, digging water trenches, and in every way handling the impedimenta of the hospital; he declared that female nurses—whose services otherwise are deeply appreciated—cannot take the place of the male orderly in the field hospitals. This will appear to be common sense to all who have any experience of military life or of war. He recognised that the formation of a reserve of medical officers is full of difficulty; they must necessarily be young men, for it is useless to expect medical men in settled practice to hold themselves available for war services.

Mr. Cantlie's paper on how to link the regular and auxiliary forces deserves special attention, as coming from a man who is always thoroughly practical in his suggestions. He would organise the militia and volunteer medical services on lines, if not identical, at all events parallel with those of the regular forces; and would link the three branches of the service together, just as the several battalions of them are already linked in the *Army List*. His views are likely to be largely embodied in the scheme which is being prepared for submission to the War Office.

Brigade-Surgeon-Lieutenant-Colonel G. S. Elliston, in his remarks on volunteer brigade companies, gave some interesting reminiscences of how the floating volunteer regimental medical atoms began to be drawn together into some sort of combination. It is liable to be forgotten that their first cohesion was in the Volunteer Ambulance Association, which some two-and-twenty years ago originated in the enterprise of Major Maclure of the London Scottish, who enlisted the aid and sympathies of such well-known officers in the War Office as Surgeon-Generals Munro and Mackinnon, and their two assistants Surgeon-Majors Don and McNalty.

The papers on how to adapt bearer companies and field hospitals so as to act with cavalry or other mounted troops by Surgeon-Major J. F. S. Caverhill, of the Lothian Yeomanry, and Surgeon-Major V. Matthews, V.M.S.C., as well as that by Surgeon-Major F. L. Stephenson, V.M.S.C, on the use of the cycle in rendering first aid, grapple with subjects of no little difficulty. To enable the hospital service to keep up with rapidly-moving cavalry means that it must itself have powers of rapid locomotion; it must be mounted or equipped with light carts; on the whole the latter mode seems to commend itself most.

Surgeon-General J. B. Hamilton dealt trenchantly with the condition of the Royal Army Medical Corps, and we commend his outspoken criticisms to the earnest attention of those on whom will fall the work of reform.

The other papers read in the Section are well worth

study. Those relating to Infectious Diseases on Board Ship by Staff-Surgeon W. J. Colborne, R.N.; on Small-bore Rifle Wounds, by Mr. Clinton Dent, ; and on Sanitation in Camps, by Major James, R.A.M.C., all relate to the services. Those on First Aid and Transport of Sick and Wounded in Civil Life in Large Towns, by Surgeon-Major G. A. Hutton (retired); and on First Aid in Civil Life, by Surgeon-Major J. J. de Zouche Marshall, are also of importance, and indicate how wide an area of medical work is embraced in the Section.

THE PRESIDENT OF THE BRITISH ASSOCIATION.

The medical profession has reason to be proud of the fact that two of its members have in successive years occupied the distinguished position of President of the British Association for the Advancement of Science. The Association is also to be congratulated on having chosen two such representatives of medical science to preside over its meetings as Sir Michael Foster and Sir William Turner. Sir William Turner was born at Lancaster in 1832, and received his medical education at St. Bartholomew's Hospital, London, where he had a distinguished career as a student. He became a member of the Royal College of Surgeons of England in 1853, and four years later he took the degree of M.B. in the University of London. At the age of 22, he was appointed Demonstrator of Anatomy in the University of Edinburgh, and on the death of Professor John Goodsir in 1867 he succeeded to the chair. Sir William Turner's work as an anatomist has placed him in the front rank of workers in that branch of science. The *Transactions* of various learned societies contain many communications from him, and he was also a contributor to the reports of H.M.S. *Challenger*. He is one of the founders and editors of the *Journal of Anatomy and Physiology*. He has been Dean of the Faculty of Medicine in the University of Edinburgh, and President of the Royal College of Surgeons of Edinburgh. In 1889 he was President of the Anthropological Section of the British Association. In 1898 he was elected to the Presidency of the General Council of Medical Education, on which he had for many years previously represented the University of Edinburgh. He was a member of the Royal Commission appointed in 1881 to inquire into the working of the Acts affecting the medical profession. Honours have been showered upon him from many and diverse quarters. The Neill medal of the Royal Society of Edinburgh was awarded him for his contributions to Scottish natural history. The Royal Irish Academy has conferred its honorary membership upon him, and amongst other bodies which have bestowed a like distinction are the Anthropological Societies of Berlin, Rome, and Paris, the Royal Medical and Chirurgical Society of London, the Royal Academy of Science of Berlin, the Literary and Philosophical Society of Manchester and the Obstetrical Societies of London and Edinburgh. The Universities of Oxford, Glasgow, Dublin, Montreal, Toronto, and Durham have conferred upon him honorary degrees, and he has been elected a member of the Athenæum Club under the rule allowing the Committee to elect men who have attained eminence in science, literature, the arts, or public service. In December, 1898, on the occasion of the celebration of the Jubilee of the St. Petersburg Academy of Medicine, Sir William Turner was made an honorary member of the Academy. The honour of knighthood was conferred upon him in 1886. Sir William Turner is a Deputy-Lieutenant of the City and County of Edinburgh. He has also shown a keen interest in the Volunteer movement. He joined the force at its institution in 1859, and for thirty years he held a commission in the Queen's Rifle Volunteer Brigade (Royal Scots), retiring in 1889 with the rank of Lieutenant-Colonel. His presidential address delivered this week at Bradford, an abstract of which appears at p. 690, was worthy of the man and of the occasion.

THE UNIVERSITY OF LONDON.

The first meeting of the reconstituted Senate of the University is fixed for October 24th, and the last day for sending in nominations to the Clerk of Convocation of candidates for the sixteen seats to be filled by election from that body is the 17th of this month. It is anticipated that the election of the new Senate will be completed by October 12th, but two more meetings of the old Senate will not improbably be summoned early next month to transact formal business. There appears to be every prospect of a keen competition for the Convocation seats on the new Senate. Two rival organisations are engaged in pressing the claims of their nominees. The Association of University of London Graduates, which was first in the field with a complete list of candidates in every faculty, with the exception of that of music, is now confronted by the Union of University of London Graduates, which during the past week has put forward candidates in Law and Medicine. Thus, Mr. Joseph Walton, Q.C., is to be opposed by Sir H. H. Cozens-Hardy, who preceded Mr. Walton as Chairman of the General Council of the Bar and was before his elevation to the Bench the representative of North Norfolk in the Liberal and Radical interest. Sir H. H. Cozens-Hardy was also the active chairman of the committee of graduates who supported legislation in general accordance with the report of the Gresham Commission. In medicine Dr. Ringer, F.R.S., and Mr. A. Q. Silcock, F.R.C.S., are to be opposed on behalf of the Union by Dr. J. F. Payne, B.Sc.Lond., M.D.Oxon., a member of the present Senate, and Dr. T. Barlow, B.S., B.Sc. Dr. Barlow's candidature is interesting because he was a member of the Statutory Commission which framed the new statutes for the government of the University. Considerable discussion has already arisen, and is likely to increase as the election approaches, in reference to the proposal of the Commissioners to "concentrate" the preliminary and intermediate teaching, hitherto carried on at each medical school. In their final report the Commissioners stated that they had "come to the conclusion that some kind of concentration is desirable," and they only hesitated to frame a statute themselves for the immediate consummation of the end they so devoutly desired out of respect to the absence of "such consensus of opinion in regard to the mode in which concentration should be carried out" as would enable them to do it. Representations made to the Commissioners on behalf of the metropolitan medical schools were sufficient to indicate that there are strong objections to such wholesale "concentration" as is foreshadowed by the Commissioners; and graduates, especially those connected with the teaching staffs of the London hospitals, will do well to study this question attentively. In the musical faculty it is possible that a harmonious arrangement may be arrived at, and the handful of musical graduates may be spared the rancour of a contested election. Mr. J. W. Sidebotham, we understand, commands the confidence of a majority of the musical graduates, and as he regards the external work of the University as of vital importance, and accepts the formula of the Association as to keeping open to all comers on terms of equality and impartiality all the degrees and distinctions of the University, he is pretty sure of election.

THE PLAGUE IN GLASGOW.

Our Glasgow correspondent, telegraphing on September 6th, says: "Plague situation improving. No new cases in Glasgow or Govan. Patients in hospital doing well. Of

16 cases, 13 undoubted, 1 still doubtful, 2 now declared free. 'Contacts' under observation, 111. One case suspected in Govan yesterday not plague."

THE PLAGUE SCARE IN LONDON.

DURING the past week considerable alarm has been caused in London by the announcement in some of the daily papers that there were cases of plague at the docks. The report was absolutely unfounded, but nevertheless the scare spread, and the denial of the fact by the authorities was believed to be of a diplomatic character. It is quite true that cases of have occurred on ships coming to the Port of London, but plague they have never been beyond the precincts of the docks. Some twelve months ago 2 cases were diagnosed, but there was no attempt on the part of the sanitary authorities to hide the fact. Some seven weeks ago 4 cases developed on board the P. and O. ss. *Rome*. All 4 cases were brought to the Seamen's Hospital at the Albert Dock, and from the fact of the laboratory of the London School of Tropical Medicine being at the disposal of the hospital authorities, the diagnosis of plague was established. Two of the cases died, 1 before admission and the other shortly after. The other 2 had slight attacks and were immediately removed to the Government Detention Hospital and speedily became convalescent. No case of plague, however, has been seen for six weeks. It is perfectly certain that any case of plague eluding the vigilance of the Port sanitary authorities will be brought to the Seamen's Hospitals. The staff of the hospitals is not only on the alert, but the members of the staff consist of men who have experience of tropical diseases, and with the Tropical School at hand there is no danger of plague getting beyond the confines of the docks. When the London School of Tropical Medicine was founded there was a well-founded belief that it would prove of benefit to our tropical possessions; now it is brought home to us that the School is of direct benefit to ourselves, for there is but little doubt that if the hospital authorities had not had the advantage of its assistance these cases would have escaped diagnosis. With the hospitals at the docks so placed and equipped, and with a highly-efficient Port sanitary authority, the public may rest assured that their welfare is being guarded, and that the enormous interests of the Port of London are in safe keeping.

RATS AND THE PLAGUE.

THE rat is so commonly associated with the spread of plague, if not with its actual incidence, that the destruction of the animal seems distinctly to be called for as a measure of precaution. The method of getting rid of the rodent is, however, of primary importance. Should poison or fumigation be resorted to, one common effect is to scare the rats in the neighbourhood from the locality, and, if they are infected with plague, the consequence will be an increase of the infected area. Another plan is to offer a reward for each rat destroyed. When this plan is adopted the rats are caught and carried to some authorised place, where they are counted and the ratcatcher rewarded. This plan necessitates handling of the rats, and it is possible that the persons who do this become themselves the subjects of plague, or contribute towards the spread of the disease. There is some evidence that it is not the rat itself that is the major source of infection when a diseased rat is handled, but that the vermin which inhabit the rat are themselves inoculated with plague, and as vermin quickly leave a dead rat, the impregnated parasites getting on the clothing of the ratcatcher tend to the diffusion of the disease. It would therefore seem that the only method of killing rats which will do away with dread of their becoming a source of infection is by trapping them. This, however, is a slow process, and one which does not recommend itself to the ratcatcher, who is paid by "piecework." Even when the rat is trapped the trap should be immersed in a disinfecting fluid if the ratcatcher is being paid according to results, or the rat should be removed from the trap by tongs and burned immediately. The latter process, however, annuls payment by results, as even if the tail is kept as proof of the number caught it will become a possible source of infection by the vermin inhabiting it. The rats, however, might be immersed in a disinfecting fluid, provided the ratcatcher does not handle the animal. It is not safe to attempt to exterminate plague-infected rats by hunting them with dogs or cats, as these animals may catch the disease, or the vermin in the rats may cling to their coats. It might be worth while trying the plan proposed by M. J. Danysz of the Paris Pasteur Institute, of which an account was given in the BRITISH MEDICAL JOURNAL of May 19th, 1900 (p. 1244). Briefly stated, this consists in the introduction into a given rat population of a cocco-bacillus presenting the general characters of B. coli, and thus resembling Loeffler's B. typhi murium. The plan has been tried with considerable success at Lille, Hamburg, Copenhagen, and Tunis, as well as in Paris.

A CAMPAIGN OF CALUMNY.

THE campaign of calumny against the Royal Army Medical Corps, which has been actively carried on for some time in the press, has received a severe check from Sir Redvers Buller. Mr. Lees Knowles, M.P., having thought fit to send to the *Times* some extracts from a letter written by a person in high position who wished his name to be kept secret, Sir Redvers, in a letter published in the same newspaper, has brought the anonymous slanderer to book. He says:

> It is true that about six months ago the military hospitals at Maritzburg were attacked by a writer in the *Times of Natal*. It is also true that the author of those letters, having been induced to give particulars of his allegations, was confronted before a Court of Inquiry, presided over by Sir William Stokes, with each patient concerned, when every tangible accusation was proved to be groundless.

Mr. Lees Knowles had quoted and endorsed the following statement from his correspondent:

> I am given to understand that the senior officers Royal Army Medical Corps, with few exceptions, are so taken up with their own importance as combatant officers, and their rank as colonels and majors that they leave much to be desired.

With regard to this Sir Redvers Buller justly asks, "Was ever a more shameful accusation more shamelessly published?" He goes on to point out that there were then but three colonels of the Royal Army Medical Corps in Natal outside Ladysmith. Colonel Gallwey, P.M.O., has procured for the Natal Field Force the most complete hospital system ever provided for an army in the field. He is, Sir Redvers Buller believes, the first P.M.O. who has ever provided nurses in the hospitals receiving wounded on the battlefield. His organising power and untiring energy, with assistance from home, added 4,700 improvised beds to the hospital accommodation of the force, and provided nurses, doctors, and attendants, some of them from Johannesburg. Colonel Clery, again, was in charge of No. 4 General Hospital of 520 beds, which was expanded into Mooi River Hospital of 920 beds; it was justly referred to by the writer of the articles in the *Times of Natal* as a model of what a hospital should be. Colonel Allin was Senior Medical Officer of the Field Army, and superintended the collection and subsequent removal of the wounded and sick from the front. Sir Redvers Buller believes this duty has been accomplished by him more rapidly, and with less discomfort to the sufferers than has been the case in any previous campaign. Sir Redvers Buller concluded by challenging Mr. Lees Knowles and his "correspondent of high position" to say which colonels they referred to, and either prove their accusations or withdraw their slander. Mr. Lees Knowles has prudently chosen the latter alternative. In the *Times* of September 5th, after a singularly feeble attempt to

explain his action in publishing these charges, he meekly withdraws them and expresses his regret for having published them. We commend his example to other traducers of the medical service of the army. Among these we may mention particularly Lady Sykes who, some little time ago, published a book entitled *Sidelights on the War*, in which she indulged in miscellaneous abuse of those in charge of the hospitals which she visited in South Africa, and she has since written to the *Daily News* repeating her charges in a more offensive form. Another lady, Mrs. Richard Chamberlain, has lost no opportunity of vilifying the officers of the Royal Army Medical Corps, bringing monstrous accusations of ignorance, incapacity, obstructiveness, and even drunkenness against them. We hope that, among other things that will be fully laid bare by the Hospital Commission, the conduct of these and other ladies who have attempted to thrust their possibly well-meant but certainly mischievous ministrations on the sick in the military hospitals of South Africa will be fully inquired into. We think, too, that newspapers ought in common fairness to refuse—at least while the Commission is sitting—to allow their columns to be made the medium of spiteful and venomous slanders against men who have tried to do their duty under most difficult circumstances. By all means let us have the truth and the whole truth; but it is scandalous that the public should be misled and prejudiced by nameless witnesses whose charges cannot be submitted to the recognised tests of evidence.

THE SOUTH AFRICAN WAR HOSPITALS.

THE question of the South African war hospitals continues to be discussed by writers of greater or less knowledge and authority in the monthly magazines. In the *Nineteenth Century* for September Mr. Murray Guthrie, M.P., supplements the evidence which he gave before the Royal Commission. He gives a full account of what he saw at Bloemfontein and at Pretoria, and introduces some gruesome tales calculated to make the flesh of the public creep, but he adds little of importance to the testimony which he gave before Sir Robert Romer and his colleagues. The general purport of his article may be gathered from its concluding sentences, in which he says it can scarcely be questioned that the Government and Lord Roberts did everything in their power to meet and even to foresee the difficulties that occurred, fulfilling every demand that was made upon them in the most generous spirit, and even giving more than they were asked for. Mr. Murray Guthrie therefore feels compelled to argue that the deficiency of doctors, orderlies, and nursing sisters was due to a lack of foresight, and that the blame rests on the heads of the Medical Department in South Africa. This being so, he is reluctantly brought to the conclusion that the local military authorities were unfitted for the task they had to perform. He is good enough to admit that the task was one of the greatest difficulty and magnitude, but he vouchsafes the opinion that the previous training of the medical officers did not in any way fit them to cope with the situation with which they were confronted. "There was," he says, "apparent at headquarters, where most of the sickness prevailed, an obvious lack of energy and organisation; initiative was non-existent. Had the Royal Army Medical Corps had at headquarters some men of capacity and determination who would have grasped the whole problem and worked it out in time, I believe there would have been no occasion for a Royal Commission." Mr. Murray Guthrie's article calls for no further comment from us than that it is written in a confident tone which his knowledge of the subject with which he deals scarcely seems to justify. A writer more deserving of attention—Surgeon-Colonel Francis H. Welch, —goes, in the *Fortnightly Review*, to the root of the matter. He says the South African campaign has, as far as the care of the sick and wounded is concerned, only brought about that repetition of complaints of negligence which seems inseparable from any war on a large scale of some months' duration in which England may be engaged. This was the case in the Crimean War and in Egypt, and even the highly successful operations leading to the capture of Khartoum were not free from hints and suggestions of similar import. He points out that the experience of this and former wars concurs in demonstrating the supreme importance of health preservation in maintaining the efficiency of an army in the field. Despite object lesson after object lesson, he says, we have failed to grasp the import of the facts, or failed to profit fully by them; in point of fact, in sanitary precautions we have receded from the position taken up after the Crimean war arising out of the disasters then fresh in the memory of the nation. The Egyptian campaign of 1882 showed very clearly the necessity of a special sanitary body with an army in the field, and Continental nations have it in practice. In October, 1899, Sir Walter Foster, M.P., pointed out to the Secretary of State for War that "in all human probability there will be great loss of life from fever and other maladies more or less preventable by careful sanitary work," and volunteered to form one of a small commission to go out in a sanitary capacity, his offer being declined. Surgeon-Colonel Welch goes on to say: "No doubt the officers of the Royal Army Medical Corps are, as stated by Mr. Wyndham, trained in this capacity on entry into the service, and by subsequent experience in army hygiene, but in war time their hours and energies are fully occupied in the urgent necessities of the sick and wounded: what we want are special sanitary officers with an executive sanitary corps in the garrisons and camps, and a reversion to the decision of the Royal Crimean Commission that a sanitary officer should always be one of the headquarter staff." In conclusion, Surgeon-Colonel Welch says: "One point is absolutely certain, and that is that nothing short of a revolution in the attitude and action of the War Office (especially its military section) will avail if future good is to come out of the present evil, and the Royal Army Medical Corps is to be so organised, systematised, and worked as to render the experience of the years since 1858 but a memory of the past." He adds that nothing but a corps thoroughly prepared for war in every sense, with an efficient reserve, will meet the wants of the sick and wounded during war, and reduce their hardships to those which are unavoidable, besides curtailing the great devastating disease factors to a minimum of potency.

FATAL RESULTS FROM STINGS BY INSECTS.

CASES of a fatal result from stings by bees, wasps, and even gad-flies are by no means very rare. A case is recorded in the daily papers on a rough estimate about once every month during the summer and autumn. Three cases which have been reported in the JOURNAL during the last four years, two of which were fatal, may be taken as typical of others. One was that of a strong and healthy but neurotic girl, aged 27, who, having been stung by a wasp on the neck, fainted; on regaining consciousness she complained of a general feeling of numbness and of partial blindness. She vomited violently and suffered from severe abdominal pain. She recovered under treatment in the course of a few hours. But two months later she was again stung, this time on the hand. Her face became very red, she again complained of feeling numb all over and of losing her sight. Then her face suddenly became very pale, she fainted and died twenty-five minutes after she was stung. The second case was that of a girl, aged 23, who was stung by a wasp behind the angle of the jaw. The sting was at once extracted and ammonia was applied. After a few minutes she complained of faintness and would have fallen if she had not been supported. Her face assumed an expression of great anxiety; a few minutes later she was tossing on the

bed complaining of a horrible feeling of choking and of agonising pains referred to the abdomen and chest. Two drachms of brandy by the mouth gave no relief. There was nausea without vomiting, but she passed a loose motion. She became insensible and died fifteen minutes after receiving the sting. She was said to be of an excitable, nervous temperament, and to have suffered from weak action of the heart. A still more instructive case, because it occurred in the person of a trained observer, was that of a medical man who had often been stung by bees without any particular ill effect, until at a time when not in his usually robust health he received five stings in quick succession on the hands. The stings were at once removed, but soon afterwards he began to shiver, and, as he describes in his own words,

> a running from the eyes and nose came on, accompanied by an intolerable itching over the shoulders and upper part of the chest and back. I then found myself getting short of breath, and was forced to relinquish the work and lie down. These symptoms then became rapidly worse; the heart became very slow and irregular, though the pulse at the wrist could not be felt on account of the œdema. Respiration was rapid, shallow, and laboured, and the involuntary muscles seemed to be paralysed, as the respiration was entirely thoracic, and I seemed unable to force the diaphragm downward, though I remember trying to do so. There were also symptoms of partial paralysis of other involuntary muscles, as it was with the greatest difficulty I prevented myself from voiding urine and fæces. I did not at any time lose consciousness, and was able to speak and walk, though with difficulty. These unpleasant symptoms lasted 1½ to 2 hours, after which respiration became easier and the heart beat more regular, while the other symptoms lessened in severity, though the feeling of cold, accompanied by vague pains in various parts of the body, continued for many hours. The only treatment adopted was rest in the recumbent position and stimulants. At night I found the parts which had been subject to the itching—the chest and back—covered by a papular rash, which had disappeared by morning.

Except for the suggestion of lowered health in the latter case, the only indication of an explanation of these serious effects was given in regard to the second patient. Her mother was said to be remarkably susceptible to the action of certain medicines. Allowing for the possibility that the poison may have been injected directly into the veins by some of the stings, it yet seems that the most probable explanation is one based on what in our ignorance we term idiosyncrasy. A study of comparative pharmacology shows that belladonna can be taken in enormous quantities by rabbits without toxic effects, and the same observation applies in a less degree to children as compared with adult persons; hedgehogs as a class can resist the action of large quantities of very active poisons; pigeons can take huge quantities of opium, and some persons are naturally possessed of the same power, while others are dangerously susceptible to its action. Mercury in a dose sufficient to act as a gentle aperient for one person may violently salivate another. Other instances of intolerance are the almost toxic effects produced by strawberries and gooseberries in some persons, and the production of gastro-intestinal disturbance and urticaria on the ingestion of shellfish by others. It has been suggested that these peculiarities are instances of reversion to type, that at some ancestral period normal function was ordinarily interfered with by particular substances. The active agent of bee stings is generally believed to be formic acid; it would be interesting, and possibly also helpful to know what effect the intravenous injection of minute doses of formic acid has in different species of the lower animals.

VACANCIES IN THE SURGICAL PROFESSION IN DUBLIN.

CONSIDERABLE interest among the surgical profession in Dublin is being evinced in regard to the filling up of the various positions rendered vacant by the lamented death of Sir William Stokes. The Surgeoncy in Ordinary to the Queen in Ireland, although only in the nature of an ornamental distinction, is none the less an office highly prized by those who have already won their way to the higher ranks of the profession. There will be no difficulty in finding suitable aspirants for the honour, but the trouble will be for Her Majesty to decide in in favour of the most deserving. The election to the Chair of Surgery in the Royal College of Surgeons rests with the Council, and in view of the merit of the gifted teacher whose loss is a serious matter to the College, their task will not be a light one. The candidates already mentioned in connection with the appointment are Mr. Henry Gray Croly, ex-President, and Senior Surgeon to the Royal City of Dublin Hospital; Mr. Francis T. Heuston, ex-Professor of Anatomy and Senior Surgeon to the Adelaide Hospital; and Mr. William Taylor, Demonstrator of Anatomy and Surgery in the School, and Surgeon to the Meath Hospital. The chair is a dual one, and Mr. William Stoker now becomes the Senior Professor of Surgery. The surgical vacancy created in the Meath Hospital will probably be filled towards the end of the present month. The election rests with the medical and surgical staff of the hospital, who were called upon only a few months ago to make good the loss they had sustained in the death of Mr. Glasgow Patteson. Now, however, the duty devolving upon them of finding a worthy successor to a teacher with the aptitude and reputation of Stokes must be no light task. The position is an enviable one to obtain, and whether the staff will select an able and tried teacher from another hospital or make a new move in appointing a specialist either for the treatment of diseases of women or of the eye is a matter of conjecture; but so far the only candidate mentioned is Dr. Lane Joynt, who has been assistant-surgeon to the hospital for a number of years. Around these three appointments the chief interest will centre, and in each case it is to be hoped that the best man will prove to be the successful one.

A MEDICAL GOVERNOR IN BRAZIL.

To the fairly long list of members of the medical profession who have found a new sphere of activity in political life must be added the name of His Excellency Dr. José Paes De Carvalho, the present Governor of the State of Para in the Republic of Brazil. Dr. de Carvalho was born in Para in 1850, was educated at Lisbon, and took the M.D. degree with honours in the Lisbon School of Medicine. After being incorporated into the Faculty of Medicine of Bahia, he made a tour of the European capitals, where he worked for some time under leading teachers, and then returned to Para to practise his profession, in which he soon gained a leading position. When the proclamation of the Brazilian Republic took place on November 15th, 1889, Dr. Paes de Carvalho was hailed by his fellow citizens as the man to be entrusted with the direction of the political affairs of the State. It was mainly owing to his energy and ability that the new institutions proved successful in their working. Elected Federal Senator in the Constitutional Congress, he was chosen by his colleagues as Secretary, in which capacity he rendered most valuable service. After the *coup d'état* of Marshal Deodoro da Fonseca, Dr. Paes de Carvalho desired to withdraw from public life. He resigned his seat in the Senate, and went to Europe. On his return his name was again put forward as Governor. To avoid his candidature Dr. Paes de Carvalho came again to Europe, but in the election which followed he was unanimously elected Governor. It is said to be not unlikely that at the next Presidential election Dr. Paes de Carvalho will be voted to the supreme office of the Republic of Brazil.

OPERATIVE SEPARATION OF CONJOINED TWINS.

ACCORDING to the American medical journals, a Brazilian surgeon, Dr. Chapot Prevost, not long ago performed a re-

markable if not unique operation for the separation of conjoined twins. The children, both girls, named respectively Maria and Rosalina, were 8 years old. A photograph shows them to be well developed and apparently bright and happy. They belonged to the teratological class of xiphophagi—that is, they were joined together anteriorly from the navel to the xiphoid cartilage. Nearly a year before the operation another surgeon had attempted to separate the twins, but desisted when he found the livers of the two children were continuous. In October, 1899, the children were admitted into St. Sebastian's Hospital, Rio de Janeiro, where, with the help of the Roentgen rays, Dr. Prevost was able to satisfy himself that the two livers were united almost for their whole extent. By experiments on dogs he ascertained that the liver would bear extensive cutting, and how traumatic hæmorrhage from that organ could be effectually controlled. The operation was performed on May 30th. Knowing that until the separation was complete the two children would have to lie on the same operating table, facing each other, the one on her right and the other on her left side, but that as soon as the separation was completed it would be almost a necessity to have each of them lying on her own table, Dr. Prevost had an ingenious table constructed which consisted of two parts so joined together as to admit of instantaneous detachment. Not only the livers, but also the pleuræ, the pericardial sacs, and the mesenteries of the two children were found to be continuous. The operation, including the induction of anæsthesia, lasted from 9 15 to 11.45 A.M. Rosalina made an uninterrupted recovery, and was quite well up to June 7th, the date of the report. Maria, however, died of pleurisy and pericarditis on the sixth day. At the *post mortem* examination, made by the police surgeon at Dr. Prevost's request, the liver and the external wound were found completely healed. This shows that the fatal result was not a necessary result of the operation, a view which is further confirmed by the survival of the other child. It may be remembered that in the case of the famous Siamese twins, the fact that the livers were united deterred surgeons from attempting to separate them during life.

HOUSING OF THE WORKING CLASSES.

The Council of the Borough of Southend-on-Sea has recently decided to take a step in the direction of housing the working classes, and it has been largely influenced in arriving at this decision by the special report of Dr. Waters, the medical officer of health. The scheme adopted allows for the erection of sixty houses, which it is proposed shall be semi-detached and of two classes as to size and accommodation; the larger houses are to be let at a rental of 7s. 9d. per week (including rates and taxes), and the smaller class at 6s. 3d. The former houses will be provided with three bedrooms, a living room, parlour, and scullery, while the latter will have two bedrooms, a good living room, and scullery; and the distinctive feature of both classes of house will be the provision of a bathroom. In their report to the Council the Special Committee point out that the scheme can be carried out without entailing any charge upon the rates, and that an annual profit, estimated by the surveyor at about £117, may be expected. The scheme will, we have little doubt, prove acceptable. In a population of 27,000 there will be found many who will readily avail themselves of the accommodation offered, and who will be the better off for having done so; but, like most of such schemes, it leaves much to be desired. It is very generally conceded that those in humble circumstances cannot afford to pay more for rent than one-sixth of the income earned. and Dr. Waters certainly does not overstate requirements when he says that what is required in the borough is houses affording suitable accommodation at a rental of from 4s. 6d. to 6s. 6d. per week. Supposing we take the rentals recommended in the above scheme for the two classes of houses, and calculate from these the wages which the families occupying them should earn in order to pay a rental amounting to one-sixth of their income, then in the first-class houses, rented at 7s. 9d., the weekly wage would have to amount to £2 6s. 6d., and for the second-class houses at 6s. 3d. to £1 17s. 6d. Now the class which stands most in need of municipal help in the direction of housing is the class which does not earn more than from 20s. to 25s. a week on an average, and these want accommodation at not more than 3s. 6d. to 4s. 6d. a week. If they are going to meet this most real want local authorities must not dream of an "annual profit," but will have in many cases to subsidise such provision to some small extent out of the rates. The much-desired extension of the period of repayment of loans for land purchase to a hundred years would do much to reduce the financial difficulties attending the great problem of the housing of the working classes.

CLAMS AND ENTERIC FEVER.

In a recent report to the Freebridge Lynn Rural District Council Dr. Plowright points out that the clam (*Mya arenaria*) is frequently eaten by the inhabitants of those towns and villages on our sea coasts. When consumed raw like an oyster it may be the means of causing enteric fever. Thus, in the village of North Lynn out of a population of 70 persons no fewer than 30 ate clams on two occasions during the month of May and June last; of these 15 ate them raw and 10 had enteric fever. None of those who ate them only after being cooked were affected, nor were any cases observed amongst those who did not partake of them at all. The clams in question were obtained from the mud flats at the mouth of the Great Ouse, about three miles below the point at which the town of King's Lynn discharges its untreated sewage. Similar cases of enteric fever following the consumption of uncooked clams have simultaneously been observed in the town itself and in other surrounding villages. *Mya arenaria* is a shellfish about 3 inches long. It is the clam of Boston and the Massachusetts coast, where it is a more popular article of diet than it is with us, entering into the composition of clam cake. clam soup, etc. The clam of New York is a different species (*Venus marcenaria*).

LEAD POISONING IN THE POTTERIES.

Since Parliament rose the Home Secretary has issued amended special rules for lead poisoning in potteries. As the manufacturers had previously complained that sufficiently stringent rules were already in force, representatives of 140 china and earthenware firms held a meeting at Stoke to discuss the merits of the rules and their applicability. Important results would certainly follow if the Home Office and manufacturers could work in unison. Any suggestions made by the manufacturers that would place their industry in a better hygienic position would be worth carrying into effect. Fritting of lead compounds may have been practised, as the chairman said at the Stoke meeting, for the last fifty years, but it was neither generally adopted nor was it systematically carried out by the very few firms who made use of it, otherwise we should have heard less of plumbism in the Potteries. The manufacturers claim that it was they who proposed periodical medical examination of all workers in lead, though the suggestion was not acted upon by the Home Office. They therefore maintain that in this and other items they are in advance of the Home Office. There is danger in self-adulation Pottery manufacturers are not given to reform. Experience has shown that they are a conservative body, and move but slowly. Had they been more amenable to external influence, and put into operation the recommendation of the Pottery Commission of five or six years ago, in all probability there

would have been no necessity for the recent inquiry. Statistics show that there has been a marked declension in the amount of plumbism in the Potteries within the last three years. In 1897 there were 469 cases reported, 463 in 1898, 249 in 1899, and up till July of 1900 only 123. Because there has been a falling off there must be no staying of preventive measures. The Home Secretary has established a standard of lead solubility which he proposes to bring into effect in 1902. The manufacturers, on the other hand, propose that during the next two years they should be allowed to make experiments bearing upon this question of solubilities, and that at the end of two years such practical information as the potters may have shall be placed at the disposal of the Home Office to enable it to fix a standard of solubility. On one point we are thoroughly in accord with the manufacturers, and that is, in insisting that the chewing of tobacco in their workrooms should be placed on the same footing as food, and not allowed inside a factory. Workpeople have an impression that chewing tobacco prevents lead poisoning, but while, in our opinion there is nothing to support this opinion, there is very much to controvert it.

CONGRESS OF GERMAN NATURALISTS AND MEDICAL MEN.

THE Congress of German Naturalists and Medical Men will hold its 72nd annual meeting this year at Aix la Chapelle from September 16th to 22nd. A series of addresses on the development of Scientific Medicine will be delivered by Professor J. H. Van t'Hoff of Berlin (On the Development of the Exact Sciences—Physics, Chemistry, and the branches connected with them); Professor G. Hertwig of Berlin (On the Development of Biology); Professor Naunyn, of Strassburg (On the Development of Internal Medicine, together with Bacteriology and Hygiene); and Professor Chiari, of Prague (On the Development of Pathology, with reference to External Medicine). General addresses will also be delivered by Professor Verworn, of Jena (The Neuron in Anatomy and Physiology); and Nissl, of Heidelberg (The Neuron Doctrine from the Pathologico-anatomical and Clinical Standpoints). The programmes of the various medical sections (medicine and pharmacology, physiology, pathology, surgery, obstetrics and gynæcology, children's diseases, neurology and psychiatry, ophthalmology, otology, laryngology, dermatology and syphilography, forensic medicine, military hygiene, balneology and hydrotherapy, hygiene and bacteriology, accidents and ambulance, history of medicine and medical geography) are full and varied, including most of the subjects now prominently before the medical world.

MEDICAL DEONTOLOGY.

EVIDENTLY the medical profession is everywhere awaking to the need of bettering its condition. Portugal is about to follow the example of France by holding a Congress on the subject. At a recent meeting of the Portuguese Medical Association a resolution was passed that the Association should take the initiative in organising a national congress of medical deontology, and what Carlyle would have called the condition of the profession in question, to be held in Lisbon.

MOSQUITOS AND ELEPHANTIASIS.

IN the BRITISH MEDICAL JOURNAL of August 18th, p. 443, it was stated that a telegram had been received on August 7th by the Liverpool School of Tropical Medicine from its second malaria expedition, then at Bonny, on the West Coast of Africa, to the effect that they had found the filaria nocturna in the proboscis of *Anopheles*. It was added that it was believed that the discovery had been made independently of that made simultaneously by Dr. Low in England, as announced in the JOURNAL of June 16th, p. 1456, and by Captain James in India. We are requested to state that, according to definite information since received, the discovery was made by the Liverpool Expedition, not independently but in consequence of Dr. Low's discovery.

DR. DOMINGO FREIRE, whose name is known by his researches in yellow fever, died recently at Rio de Janeiro.

DR. HOWARD H. TOOTH has returned to England after eight months' service in South Africa as Physician to the Portland Hospital.

THE offer of the Marquis of Bute to give £20,000 for the endowment of a chair of anatomy in the University of St. Andrews, particulars of which were given in the BRITISH MEDICAL JOURNAL of August 11th, p. 377, has been accepted, and Dr. Musgrove has been appointed to the professorship.

THE Queen has sent a message of gracious sympathy to Lady Stokes upon the death of her husband, the late Sir William Stokes, expressing her appreciation of his noble, self-sacrificing work on behalf of her troops in South Africa, and of the loss sustained by the distinguished profession to which he belonged in the death of one of its most eminent representatives.

THE Pasteur Institute, which was opened at Kasauli, 32 miles to the south-west of Simla, on August 9th, is said to be proving a marked success. It is under the direction of Major Semple, R.A.M.C., and is now treating daily 34 patients, including 19 British and 9 native soldiers. The effects of the treatment are similar to those observed in Paris.

WE learn that it is proposed by the three medical societies of Victoria, the local Branch of the British Medical Association, the Medical Society of Victoria, and the Melbourne Graduates' Society, to entertain Sir Thomas Fitzgerald on his return from South Africa where he has done such good work. A week or two ago we gave an account of a complimentary dinner given to him in conjunction with the lamented Sir William Stokes by the medical profession of Durban.

BEQUESTS.—Captain William Boare Brocklehurst, of Butley Hall, Prestbury, Chester, formerly M.P. for Macclesfield and for Cheshire (Macclesfield Division) who left estate valued at £517,240 gross, including personalty of the net value of £463,096, in addition to many other bequests for charitable purposes, bequeathed to the Macclesfield Infirmary in aid of the endowment fund, £1,000, and to the Devonshire Hospital and Buxton Charity, Macclesfield, £300. Mr. Arthur Albright, of Mariemount, Edgbaston, a director of the Montserrat Company, Limited, who left estate valued at £112,305 9s. 5d. net, bequeathed to the Birmingham University, £1,000; to the Queen's Hospital and General Hospital at Birmingham, £1,000 each; to the Birmingham and Midland Institute, the Children's Hospital, and the Hospital for Women at Birmingham, £500 each; to the Middlemore Emigration Homes, the Eye Hospital, and the Homœopathic Hospital at Birmingham, £250 each; to the Royal Orthopædic Hospital for club-foot, spinal, and other deformities, each £250; and for the benefit of a Cottage Sanatorium at Bromsgrove, belonging to the testator, £250; to the General Dispensary, the Deaf and Dumb Institution, the Ear and Throat Hospital, the Dental Hospital the Lying-in Charity, the District Nursing Society, the General Institute for the Blind, the Skin Hospital, the Moseley Convalescent Home, and the Midland Counties' Sanatorium, all at Birmingham, £150 each.

THE PLAGUE.

SPECIAL REPORT ON THE PLAGUE IN GLASGOW.

[By Our Special Commissioner.]

I.—HISTORY OF THE INITIAL CASES, AND HOW THE DISEASE HAS BEEN TRACED TO ONE COMMON FOCUS OF INFECTION.

On August 3rd, 1900, at 71, Rose Street, South Side, Glasgow, a child (illegitimate) and its grandmother (Mrs. B.) were taken seriously ill. The child died on August 7th, and the grandmother on the 9th. The causes of death were certified as being due to "zymotic enteritis" and "acute gastro-enteritis" respectively. A wake was held on both corpses, and the grandmother was buried on August 11th.

The husband of the grandmother (B.) fell ill on the day following the funeral, August 12th. He was not, however, removed to hospital until August 27th, when he was supposed to be suffering from "enteric fever;" but afterwards his illness was diagnosed as plague.

At 57, Thistle Street, South Side, Glasgow, a street adjacent to Rose Street, amongst the members of a family named M. sudden illness developed on August 19th. The M. family had visited at 71, Rose Street, either during the illness of the B. family or were present at the wake. Christina M., a child of 10 years of age, was taken ill on August 19th and died on the 21st. The doctor, however, was called in only some ten minutes before the child died, but he was able to diagnose "acute pneumonia" and certified the case accordingly. A wake was also held upon this child. On August 20th Mrs. M., the mother of Christina, was seized with sudden illness; on August 22nd a son became ill; on the 23rd a half-brother, a child of 3 years of age, sickened.

The M. family were attended in their illness by Dr. Robertson, and subsequently by Dr. Colvin, two local practitioners. The nature of the illness was so indefinite that Dr. Colvin visited and compared notes with Dr. Robertson, and the result of their conference is thus described by Dr. Robertson:

> We were satisfied that they were cases demanding the attention of the sanitary authorities, and I agreed with Dr. Colvin that, having seen them independently, we should both notify them as cases of enteric fever, with a mark of interrogation after it to imply that the diagnosis was not definite, but that the cases were evidently of an infectious nature, and should be removed at once.

The result of this timely and judicious notification was that the patients were removed on August 25th to the hospital, the same day on which the notification was sent in.

On August 25th, at 23, Oxford Lane, a lane adjacent to Rose and Thistle Streets, a Mrs. T, who had lately been confined, was taken ill with symptoms resembling typhus fever. She was removed to hospital, but the diagnosis of typhus was not established, and owing to the presence of an inflammatory condition in the neighbourhood of the left groin a provisional diagnosis of pelvic cellulitis was entertained. A closer investigation of the history of the case (Mrs. T.'s) showed that she also had associated with the B. family during their illness, and on further examination the diagnosis of plague was established in her case.



The infected area. The crosses indicate the houses in which cases were found.

It was on Saturday, August 25th, that the possibility of the disease being plague first occurred to the resident staff of the city hospital for epidemic disease, the Belvidere Hospital. During a consultation at which Dr. J. Knight, Assistant Professor of Forensic Medicine and Public Health, University of Glasgow, Dr. Brownlee and Dr. McClure, Assistant Medical Officers in the Fever Hospital were present, the question of plague was suggested, and a microscopic examination of the fluid from a bubo gave evidence of the bacillus pestis. Bacteriological investigations were undertaken by Dr. Muir, Professor of Pathology in the University of Glasgow, and later by Dr. Buchanan, Pathologist to the Sanitary Department. When the idea that the disease was plague was entertained, Dr. A. K. Chalmers, the Medical Officer of Public Health for the City of Glasgow, took the following steps:

1. A careful search was made for cases of illness in the houses from which the plague patients had been removed and there were found: (*a*) Two sons of Mrs. T. (already in the plague hospital) at 23, Oxford Lane, suffering from illness, one of whom was proved to have plague; (*b*) at 57, Thistle Street (the M.'s house) a girl McK. was also found to be suffering from the disease.

2. All persons who had visited one or other of the houses where plague patients were found, and who were not obviously ill, in all 89 persons, were removed to one of the reception houses belonging to the sanitary department. There a careful watch was kept upon the "contacts." Four of the "contacts" have subsequently developed plague and are now in the plague hospital.

Only two cases have been found in dwellings other than those mentioned. One case was that of a man, F., a jobbing shoemaker, living at 77, Rose Street, in a house next door to

the B. family, and the other case was that of a man (C.) living on the north of the Clyde, at 1, Well Street, Calton. C., however, had visited and slept at a tenement in the same house and on the same floor in which the B. family dwelt.

It is thus seen that the sanitary authorities have with exemplary care and patience traced the commencement of the illness to a focus, namely, a tenement in 71, Rose Street, where the B. family resided.

II.—THE INFECTED AREA.

The locality in which plague appeared is situated on the south side of the river Clyde immediately above Glasgow Bridge. The infected area is therefore above the harbour, which practically has its upper limit at Glasgow Bridge, and a considerable distance above the principal docks. The first impression conveyed by a visit to the neighbourhood is that the streets are wide, well paved, and the houses lofty and substantially built; especially is this the case in respect to Rose and Thistle Streets, where the plague cases were first discovered. A closer inspection, however, does not bear out the favourable impression. The houses where plague appeared are let out in small tenements; they are entered by narrow passages from the main street, and the ground floor premises are dark and ill-ventilated. The occupants and their abodes, even in the comparatively improved state which a week of active sanitary interference had brought them to, were squalid to a degree, and neglect and uncleanliness were evident on all hands. This unenviable state of things seems to be more the result of personal and domestic uncleanliness than of poverty, for many inmates, at the time they were visited, were enjoying a dinner of meat, vegetables, etc. Except for the untidiness of the people there was no evidence of lack of public sanitation. Water in abundant supply is laid on in every tenement, and flush waterclosets, in good order, are on every floor. On the other hand, the houses are very old; some parts of the ground floor have been shut up as unfit for habitation; the ashpits in the back yards are not filled with house refuse only, but are frequently used as latrines, or chamber excreta are emptied into them. The cellars of one of the infected houses opens only by apertures through which cats, rats, etc., could enter, and which therefore have never been examined or cleansed since the houses were built. The houses, however, although insanitary to a degree, are neither in themselves, or their occupants, nor their surroundings so low in the scale of sanitation as those in many of our principal cities.

III.—ORIGIN OF THE DISEASE.

How plague reached the tenement occupied by the B. family on the ground floor of 71, Rose Street has not as yet been ascertained. The husband works at a dock some two miles off, but he does not seem to have contracted plague until after all the other members of his household. Visitors from ships have not been proved to have come to the house, although prostitution in the neighbourhood is no doubt a factor to be considered. There has been no evidence of disease amongst rats, nor do the inmates of the houses state that they have observed dead rats about. Rats are, no doubt, plentiful in the neighbourhood, more especially in the stables, where they are stated to abound.

IV.—STEPS TAKEN BY THE SANITARY AUTHORITY.

The following is an outline of the special action already begun, or which will be taken, in consequence of the existence of plague cases:

DELIMITATION OF INFECTED AREA.

1. A district on the south side of the river, which may be generally described as extending from the river southwards to Cumberland Street, and lying between Eglinton Street and South Wellington Street, has been defined for the purposes of Section 254 of the Glasgow Police Act, 1866.[1]

2. Within this district special cleansing operations will be conducted in the following detail:

(*a*) Ashpits will be (1) emptied three times a week, and (2) washed once weekly with "chloride of lime whitewash" (1 lb. "chloride of lime" added to 12 gallons of freshly slacked lime solution to the consistency of milk).

(*b*) Back courts in dirty condition to be hosed every night with "chloride of lime" solution, 1 in 100 (1 lb. "chloride of lime" to 10 gallons of water).

(3) A special inspection of the district will be organised for the detection of dirty houses, closets, etc., and for overcrowding of houses.

4. Infected tenements and, if necessary, those where "contacts" reside, will be dealt with as in 9.

5. Medical inspection of the district will be organised. The occupants of the infected tenements and all "contacts" will be offered inoculation with Yersin's serum, others in the neighbourhood with Haffkine's prophylactic. Suspected cases will be seen with the medical attendant.

6. Plague will be added to the Infectious Diseases (Notification) Act, 1889.

7. Handbills will be distributed offering the services of the medical staff at any time on application to the nearest police office.

8. Efforts will be made through co-operation with the surgeons of the shipping companies to arrange for medical inspection of lascars and other crews of ships from infected countries.

9. The detailed arrangements for the removal of cases and disinfection of infected tenements will be under the personal supervision of one of the medical staff, and may be detailed as follows:

(*a*) Removal of patient to hospital.

(*b*) Removal of "contacts" to reception house.

(*c*) Fumigation of infected house by liquefied sulphur dioxide from 12 to 24 hours, the disinfectant being used in proportion to the cubic space dealt with.

(*d*) After the fumigation the house will be entered; all articles of clothing, etc., to be removed will be first of all thoroughly wetted with a 2 per cent. solution of formalin—1 gallon (40 per cent. solution of formaldehyde) to 50 gallons water—then wrapped up in sheets soaked in the same fluid and removed to the sanitary washhouse. There all articles which cannot be boiled or steamed, or treated with formaldehyde, will be burned.

(*e*) The walls, ceiling, flooring, woodwork, etc., of the infected house will also be sprayed with the formalin solution (1 gallon to 50 gallons water).

(*f*) All houses in the infected tenement will be cleansed by the department; the lobbies, stairs, and closets being dealt with by formaldehyde or "chloride of lime" solution.

(*g*) Courts of such tenements will be watered with "chloride of lime" solution.

(*h*) Ashpits will have their contents watered with the same and then removed and burned.

10. Clinical demonstrations of such cases in hospital are being given daily.

11. A pamphlet descriptive of the varieties of the disease, etc., is in preparation for circulation among practitioners.

12. The co-operation of hospital and other dispensaries for detection of doubtful glandular affections will be invited.

13. *Rats.*—The question of dealing with rats is being considered.

V.—THE SANITARY AUTHORITY IN GLASGOW.

The local sanitary authority in Glasgow (under the Local Government Board for Scotland) is the health committee of the Town Council. The medical officer of health, Dr. A. K. Chalmers, has his offices located at the Sanitary Offices in Munro Street. At the Sanitary Offices are chemical and bacteriological laboratories, a well-appointed library, and every requisite that modern scientific hygienic requirements can suggest. Dr. Chalmers, owing to an epidemic of small-

[1] Section 254 of the Glasgow Police Act, 1866, runs as follows: "On a report by the medical officer that in any district, street, or court it would be desirable to use special sanitary measures in order to mitigate the severity or prevent the spread of epidemic, endemic, contagious, or other disease, or that any such disease prevails or exists and threatens to prevail in such part of the city, the Magistrates' Committee may approve thereof, and on such approval it shall be lawful for the medical officer to give notice, in manner hereinafter provided, to the proprietor or occupier of any dwelling-house situated in the part of the city in which the medical officer has reported that it appears to him desirable to use special sanitary measures requiring such proprietor to cleanse and limewash the outside thereof, and the common stair and lobbies and staircases, and requiring such occupier to cleanse and whitewash the interior thereof, and to purify, ventilate, and disinfect the said dwelling-house, or any apartment or apartments or bedding or clothes therein.

pox, requested three months ago that Dr. Knight should be temporarily appointed to assist him in his public duties. This was granted, and Dr. Knight is now engaged on plague duty. Two other medical men (Dr. Webster and Dr. Ditmar) have also been appointed for duty with the medical officer of health to assist in plague work. An ample staff of inspectors and subordinates belong to the Health Department, and the equipment seems all that can be desired.

The Belvidere Fever Hospital in Glasgow covers a large area of ground, and is built on the pavilion system. Two pavilions of the hospital are at present devoted to the reception of plague cases, and are fenced off from the adjacent buildings so that there is no communication between the plague hospital and other sections, excepting by authorised persons.

VI.—INOCULATION.

The doctors and nurses who have to deal with plague are being inoculated either with the Haffkine or the Calmette-Yersin serum. The supply obtained from Paris is sufficient to inoculate all the "contacts."

VII.—THE EFFICACY OF THE SANITARY MEASURES.

There seems to be nothing but praise due to the sanitary authorities in Glasgow for the manner in which they have dealt with the outbreak of plague. There has been no attempt at hushing up the fact that plague had broken out, and the steps they have taken are wise, expedient, and precise. From the moment that microscopic examination revealed the possibility that the disease was plague, and without waiting for the confirmation of further bacteriological investigations, the medical officers proceeded to deal with the situation in a most business-like fashion. To Drs. Robertson and Colvin the city of Glasgow owes a debt of gratitude for the professional acumen with which they recognised the fact that they were dealing with an unfamiliar disease; and the medical officers of the Fever Hospital displayed diagnostic ability in establishing the fact that the disease was plague, and commendable courage in pronouncing their as yet unconfirmed belief that it was plague they had to do with.

The public may rest assured that their interests are being well looked after, and may confidently place every reliance upon Dr. Chalmers and his capable staff to do all that is possible to limit the area of infection and to stamp out the disease.

On September 5th, 1900, the returns of the Medical Officer of Health for Glasgow in connection with plague are as follows:

Cases of plague in hospital	13
Suspect cases in hospital	3
Persons under observation, "contacts" ...	103

NOTES ON THE CIRCUMSTANCES SO FAR AS AT PRESENT KNOWN ATTENDING THE EXISTENCE OF CASES OF PLAGUE IN GLASGOW.

By A. K. Chalmers, M.D.,
Medical Officer of Health for the City of Glasgsw.

The value of the present communication depends entirely on the clinical history of the cases of plague which are contained in Dr. Brownlee's report (see p. 686), and the following narrative is introduced solely for the purpose of making clear the association in which they occur.

An illegitimate child and its grandmother (Mrs. B.), living in the same house at 71, Rose Street, South Side, Glasgow, sickened suddenly on the evening of August 3rd, the child dying on the 7th and the grandmother on the 9th, the cause of death of the child being certified as "zymotic enteritis" and of the grandmother "acute gastro-enteritis." In both cases a "wake" was held, and the grandmother was buried on the 11th. Although the husband of this latter patient sickened on the 12th, he was only admitted to hospital on Monday, August 27th, certified "enteric fever," when he was recognised to be suffering from plague.

Concurrently with the later developments in this household the following illnesses were appearing in the members of a family, M., 57, Thistle Street, some of whom had either attended Mrs. B.'s wake, or were present during the illnesses in her house.

On the evening of Sunday, August 19th, a child, Christina M., aged ten years, sickened with acute symptoms, which ended fatally at midday on the 21st. She was only medically visited, however, within ten minutes of her death. The symptoms were those of pneumonia, and the cause of death was certified as "acute pneumonia."

Before the child died the mother had already sickened (20th); a son (since dead) sickened on the 22nd; and a half-brother, a young child of three years, sickened on Thursday, the 23rd. These three were first seen by Dr. Robertson, who had also seen the child Christina M., and later by Dr. Colvin, who, on discovering that Dr. Robertson had already visited, went to confer with him regarding the symptoms. The action in which this conversation ended is thus described by Dr. Robertson:

"We were satisfied that they were cases demanding the attention of the sanitary authorities, and I agreed with Dr. Colvin that, having both seen them independently, we should both notify them as cases of enteric fever, with a mark of interrogation after it to imply that the diagnosis was not definite, but that they were evidently of an infectious nature and should be removed at once."

They were accordingly notified on August 25th, and removed to hospital same day.

On admission, Dr. Brownlee, the Physician-Superintendent, made a careful examination of the cases, which resulted in his coming to the conclusion that the patients were suffering from bubonic plague, although they were inhabitants of Glasgow and there was no known case of bubonic plague in Britain. Dr. Weir, Senior Assistant Physician at the hospital, and Dr. Knight, my assistant, concurred in the diagnosis. Dr. McClure, Acting Superintendent of the Small-pox Hospital, immediately examined blood films obtained by hypodermic puncture of the buboes, with the result that the typical form of the bacillus pestis were observed.

Immediately on this conclusion being arrived at, Dr. Knight visited the patient's house, verified the story of the illnesses and death, and arranged the removal of the other members of the family to the reception house for observation. Cultures taken on glycerine agar showed by the evening of August 26th and the morning of August 27th, the typical appearances both macroscopical and microscopical of the bacillus pestis. Later in the week they were fully confirmed by animal experiments by Dr. Muir, Professor of Pathology in the University of Glasgow, in the absence of our own bacteriologist, Dr. R. M. Buchanan.

On the same day that these three cases were admitted (August 25th) another woman, Mrs. T., 23, Oxford Lane, had been admitted certified typhus fever. This disease was excluded on examination, and owing to the presence of an inflammatory condition in the left groin, and a history of recent confinement, the provisional diagnosis of pelvic cellulitis was entertained. Later, her association with the B. family was discovered, and the diagnosis revised in the light of the symptoms presented by these others.

Immediately the suspicion of plague was created, a medical examination was made of all persons who could be discovered as having attended either the B. wake, or the wake of the child M., with the following result:

I. Discovered ill in their own houses: (1) Two children T., sons of Mrs. T., already referred to. One of these is not plague. (2) A girl McK., residing at 57, Thistle Street.

II. Removed to reception house. In all fully one hundred persons who were not obviously ill, but had visited one or other of the houses named, were removed to a reception house for observation, and three of them have since sickened (M., McG., and D.).

Two further cases—F., 77, Rose Street, and C., 1, Well Street, Calton—were afterwards brought under the notice of the department by medical practitioners, presenting symptoms of plague, and, after examination, removed to hospital. C. has an indirect connection in respect of having slept in a house next door to that of the B. family, on August 15th, and F. is a jobbing shoemaker living in the adjoining tenement.

Till September 2nd, 14 cases had been placed in hospital: 1 died, and of those then remaining 12 presented the clinical symptoms of plague. In 8 the diagnosis was microscopically

GLASGOW.—Plague Cases with Dates of Sickening and Exposure as Presently Known.

Deaths at Home (assumed to be due to Plague).

Name.	Address.	Sickened.	Died.	Wake held.
1. Baby in B. family	71, Rose Street	August 3rd	August 7th	—
2. Mrs. B.	,,	,, 3rd	,, 9th	August 9th and 10th
3. *Tina M.	57, Thistle Street	,, 19th	,, 21st	,, 21st and 22nd

* Attended the B. wake.

Cases Removed from their Homes.

Name.	Age.	Address.	Sickened.	Removed to Hospital.	Where exposed, etc.
1. †James B.	60	71, Rose Street	August 12th	August 27th	Wife died August 9th.
2. †Pat. Ford	56	77, ,, ,,	,, 13th	,, 29th	A jobbing shoemaker near B.'s, but definite contact not traced.
3. †John C.	24	1, Well Street, Calton	,, 17th	,, 30th	Slept in house adjoining B.'s on August 13th.
4. †Mrs. T.	—	23, Oxford Lane	,, 12th	,, 25th	Relations and visitors at B.'s. James has not plague, but a gluteal abscess.
5. James T.	9	,,	,, 21st	,, 29th	
6. Dennis T.	6	,,	,, 21st	,, 29th	
7. †Mrs. M.	—	57, Thistle Street	,, 20th	,, 25th	Attended B.'s wake: child died at home on August 21st. (See above.)
8. †Pat. M.	—	,,	,, 22nd	,, 25th	Pat M. died in hospital.
9. William M.	3	,,	,, 23rd	,, 25th	At B.'s wake and afterwards in house.
10. Annie McK. ...	12	,,	,, 28th	,, 29th	At M.'s on August 20th.
11. †Thomas H. ...	14	6, South Coburg Street	,, 23rd	,, 29th	,, ,, ,,

† Bacillus obtained]

Cases Among "Contacts," and Sickening in Reception House.

Name.	Age.	Address.	Sickened.	Removed to Hospital.	Where Exposed, etc.
12. Jane M. ...	14	—	August 29th	August 29th	At M.'s Wake
13. Arch. D. ...	—	—	,, 29th	—	,, ,,
14. Patrick McG....	18	—	,, 31st	August 29th	,, ,,
15. Agnes R. ...	—	—	,, 31st	—	,, ,,

verified, and 1 remained doubtful, but is now excluded. Since that date 4 others who had been in contact were admitted on suspicion, 2 were afterwards definitely excluded, 1 is regarded as pestis minor, and 1 still remains doubtful.

Source of Infection.

At the present moment it is impossible to make any definite statement as to the source of the infection of the first 2 cases in the B. family. The husband of the elder patient was in the service of a local shipping company as a dock labourer, and employed by them at their wharves on the south side of the river. He was engaged exclusively on vessels trading between home ports. His illness only developed after his wife died, and may be regarded as resulting from this or from his grandchild's illness. His daughter—the mother of the child who first died—is said by her father to have been ill for two days shortly before her child sickened. She now displays, one month afterwards, very slight enlargement of the cervical and axillary glands on both sides, which, compared with the glands of a normal girl—definitely non-infected—of corresponding age, indicates some irritative process recently active. This girl meanwhile stoutly denies any illness, and it must be remembered that she had nursed her baby for some time. The father of the child is an ironworker in constant employment. He has had no illness, and presents no evidence of glandular enlargement.

NOTES ON THE CLINICAL ASPECT OF THE CASES OF THE BUBONIC PLAGUE

At Present under Treatment in the City of Glasgow Fever Hospital, Belvidere.

BY

John Brownlee, M.A., M.D., Physician-Superintendent, City of Glasgow Small-pox Hospital. and J. C. M'Clure, M.B., Acting Superintendent, City of Glasgow Small pox Hospital.

The patients admitted to this hospital suffering from plague may be divided into three classes (1) those who had solitary bubo, (2) those who had the more generalised form of the disease, where several groups of glands were involved, and (3) those very mild infections which it would be quite impossible to recognise apart from the history of infection, but which undoubtedly correspond to those cases of sore throat which represent the mildest form of scarlatinal infection, or to those cases of slight febricula noticed among children who have been exposed to the infection of typhus where the fever aborts prior to the appearance of the eruption, and where association affords the only certain means of forming an opinion.

All the cases, however, have had certain groups of symptoms in common. The initial symptoms of headache and general *malaise* with nausea and vomiting have occurred with remarkable uniformity, even although the fever may be very slight. Following on these there was an almost uniform complaint of pain in some one or another group of the lymphatic glands. As far as observations have as yet gone the facies of all the patients has been characteristic. In severe cases, and in the earlier stages of even the milder cases, the expression of the face has been dull and yet apprehensive, the degree of stupor depending on the gravity of the illness. In the milder cases the patients have looked ill, out of all proportion to the amount of fever present and the degree of enlargement of the lymphatic glands, and have retained the facies for some days after all constitutional symptoms have disappeared.

The buboes have exhibited all degrees of severity from the single slightly enlarged gland of the abortive type of the fever, through the fairly large and very tender buboes of the generalised type with or without the reddening and œdema of the skin, to the large and intensely inflamed mass of glands seen in the cases of solitary bubo, where the redness of the skin and the œdema of the neighbouring tissues might extend to about 9 inches, or even more, from the centre of the disturbance.

The duration of the fever has varied from the slight febricula of the abortive type, where the temperature may not have exceeded 100°F., to the severe fever of the generalised and true bubonic types. In the latter the fever has run a course resembling that of the better-known typhus and enteric fevers.

Crisis has been present in all our severe cases and it has occurred from the twelfth to the twentieth day. The tongue has been a very marked feature of the illness; for except in the two most protracted cases where the fever has run a course of about twenty days there was no tendency to dryness. It has been usually moist, covered on the dorsum with a greyish fur with the edges clean and red.

In our reports given below will be found a record of some of the more notable cases which have been under our care. It may be noted as of interest that the two first in order are those on which the diagnosis was originally based.

Patrick M., aged 21 years, 47, Thistle Street, Glasgow; admitted August 25th, certified enteric (?) Patient has been living in the same room as his sister who sickened on the 19th of August and died on the 21st, of what was presumably plague. There is no other known source of infection. The incubation period is, therefore, probably under four days. As the patient is not in a condition to give an account of himself, the information was obtained from his mother, who volunteered the following history: Until three days prior to admission the patient appeared in his normal state of health. On that date (August 22nd) he suddenly experienced a shivering associated with sickness, vomiting, diarrhœa, and pain in the abdomen. During the night he was evidently delirious, and delirium had been a noticeable feature of his illness until the time of admission. With the exception of measles and whooping cough, the patient has suffered from no other infectious disease.

Condition on Admission.—On admission the patient looked extremely ill. He was clearly in a state of semi-coma. The face generally was of a greyish colour, with a more marked circumoral pallor. In spite of the stupor in which the patient lay the expression of the face was distinctly anxious. There was marked knitting of the eyebrows; the eyes were widely open and the conjunctivæ were slightly congested. The respirations were slow and sighing, numbering 18 per minute. The skin generally was hot and dry: it was covered with a faint purplish mottling, most marked across the lower part of the abdomen, the arms, and the buttocks. The characters of this eruption somewhat resembled those of typhus. The tongue was moist, and covered in the centre with a thick greyish fur, while the edges were clean and red. There was no congestion of the fauces. There was in the upper part of the deep cervical chain a swelling composed of one moderately enlarged, and several slightly enlarged, lymphatic glands. The tissues surrounding these were markedly infiltrated, and the skin was reddened and œdematous. Manipulation of this swelling was evidently very painful. There was no enlargement of glands in the right cervical region, nor of the superficial chain on the left side. The right axilla was filled with a large mass evidently composed of lymphatic glands embedded in œdematous cellular tissue. Here, again, the skin was red and œdematous, and movement of the arm or even the lightest palpation gave rise to exquisite pain, evidenced by the wincing of the patient even in his semi-comatose condition. In the left axilla a few glands were slightly enlarged, but not tender. No enlargement of glands was apparent in either groin. The temperature was 103.6°, the pulse was very soft and easily compressible, and numbered 128 per minute. The lungs revealed nothing noteworthy on physical examination. The cardiac sounds were pure; the first sound was rather weak. The abdomen was not distended, and was neither painful nor tender. There was no apparent enlargement of either liver or spleen. Exploratory puncture of the glands of the axilla was performed, and an immediate examination of films prepared from the blood withdrawn, revealed the presence of a considerable number of bacilli morphologically identical with the bacillus pestis of Kitasato. On August 26th the general condition of the patient remained much the same, though respirations were more rapid, numbering 28 per minute. But the local conditions had undergone marked alteration. In particular the lymphatic glands on the left side of the neck before mentioned were much more enlarged, and the superficial glands on the left side were now considerably involved. Late in the afternoon the glands in the left groin were easily palpable and slightly tender. The œdema in the right axilla was more extensive, involving the anterior border. The spleen was found to be enlarged by percussion, though not palpable below the costal margin. The temperature at 6 A.M. was 102.4°, and at 6 P.M., 104.4°. The pulse in the morning was 112 and in the evening 132 and even softer than on the previous day. On this evening the glycerine-agar cultures made after puncture of the glands on August 25th, and incubated for twenty-four hours at 37° C., were examined. There was a faint surface growth composed of minute whitish translucent colonies. Cover-glass preparations were made from this growth and stained with an aqueous solution of gentian violet. These showed the presence in pure culture of a short bacillus, with rounded ends tending to run in pairs, and showing well-marked bipolar staining. The bacillus was decolorised by Gram's method. The character of the culture and the morphological appearances of the bacillus and its staining reactions confirmed the diagnosis made from the examination of the films on August 25th that the organism under consideration was the bacillus pestis. On August 27th the local conditions had, if anything, advanced, but the general condition of the patient was, if anything, rather better. There was a little less mental obtuseness, though it was still with great difficulty that he could be got to show his tongue. This improvement, however, was not maintained. By midday the patient was cyanosed, and the pulse was notably weaker. He sank rapidly, and died at 3.35 P.M.

Necropsy.—The body is that of a fairly well nourished though rather slightly-built man. There is a distinct swelling in the right axilla, and also a well-marked swelling in the left side of the neck. In the left groin there is a fairly distinct swelling, and also a very slight one in the right groin. Well marked hypostasis and diffuse congestion exists in the region of the neck. Thorax.—Pericardium contains about half an ounce of blood stained serum. Right side of heart is greatly distended with dark-coloured, partially clotted blood, while the left side is rather contracted and empty. The cavities are of normal size, and the valves appear healthy. The heart muscle is rather paler than normal, but not specially soft. Over the apex of the left lung are a few old adhesions, no fluid in the pleural cavity. The lungs show marked hypostatic congestion, also some collapse but no pneumonia. The glands at the root are not affected. The bronchi contain some purulent mucus. The right lung is adherent all over, especially over the lower lobe. There is an old cicatrix on the chest-wall over this part (resection of rib ?) This lung is otherwise in a practically similar condition to the other. Abdomen: The peritoneum is normal. The spleen is considerably enlarged, weighing 12½ ozs; the increase being chiefly in breadth. The consistence is softer than normal, but by no means diffluent. The pulp presents a pale and mottled appearance and the Malphigian bodies are small and indistinct. The liver is somewhat swollen, pale and soft, and evidently the seat of cloudy swelling in a marked degree. Both kidneys are somewhat swollen and soft owing to cloudy swelling of the cortex. No hæmorrhages exist. The pancreas is slightly swollen and softer than normal. The suprarenal bodies are rather swollen and softened. Lymphatic glands: The glands in both groins show enlargement, especially in the vertical group along the vessels. They are somewhat irregular on the surface, extremely tense, much congested, and show small hæmorrhagic points. The substance is rather softer than normal, and there is no evidence of suppuration. The enlargement also affects the glands along the inguinal vessels, and some of them are distinctly hæmorrhagic. The retroperitoneal glands along the aorta show great swelling, but none of them reach great size. In the right axilla there was a large swelling almost as large as a closed fist, composed of a mass of enlarged glands bound together by infiltrated tissue. The largest single glands are about the size of a small plum. They are of a dark red colour owing to the diffuse hæmorrhages into the substance, and here and there show partial softening. The periglandular tissue is the seat of a gelatinous œdema with diffuse hæmorrhages. The involvement of the glands extends upwards behind the clavicle. On the right side there was great enlargement of the cervical glands below the sterno-mastoid muscle, where there is a large irregular mass. The amount of hæmorrhage is extreme, some of the glands presenting a deep crimson colour, and being also much softened. Here also there is much inflammation. The glands in the upper mediastinum are also enlarged and surrounded by inflammatory œdema. A scraping from one of the inguinal glands shows enormous quantity of the bacillus pestis. (Examination of cultures made at the time on glycerine agar by Dr. McClure showed pure cultures of the bacillis pestis from the liver, kidneys, and lymphatic glands, while from the spleen a mixed culture of bacillus pestis and bacillus coli communis was obtained).

Mrs. M., aged 40, 57, Thistle Street, Glasgow; admitted August 25th, certified enteric (?). Patient was at the wake of Mrs. B., subsequently mentioned, on the night of August 10th who died of what was presumably plague. There is no other known source of infection. The incubation period is therefore presumably ten days in this case. Patient stated on admission on August 25th that she had been first taken ill on August 20th, with shivering, vomiting, severe headache, diarrhœa, and slight pain in the abdomen. Next day she felt uneasiness in the right groin, and on examination she found a small swelling which was very tender. The general symptoms became more urgent, and the swelling in the right groin increased rapidly in size and in tenderness. During the whole of her illness she was confined to bed. On admission patient was quite intelligent, but looked very ill. The face was slightly flushed, and wore a rather anxious expression. The pupils were moderately dilated, but there was no injection of the conjunctivæ. The tongue was moist, and only slightly coated in the centre with a whitish fur. The skin was hot and dry, and no eruption was noticed on any part of its surface. In the right groin there was a mass evidently composed of enlarged lymphatic glands surrounded with inflammatory tissue to the extent of obliterating the fold of the groin. The skin over the mass and for a considerable area round about, especially laterally, was deeply reddened and œdematous. Over this area the tenderness was extreme, much exceeding that usually elicited in ordinary infective buboes. At the upper border of the swelling deep palpation showed that numerous glands in the deep group of lymphatics were also enlarged and tender, but there was practically no infiltration of the cellular tissue of this region. The skin over the right iliac region was normal in appearance. The glands in the left groin and in the axillary and cervical regions were not palpable. Nothing noteworthy was discovered in the heart or the lungs. There was no enlargement of the liver or the spleen. The temperature was 102°. The pulse was soft and full, numbering 92 per minute. The respirations were easy and numbered 28. In the evening the patient complained of very severe headache confined to the frontal region, the temperature was 103.4° and the pulse 112, while the respirations had increased to 30. On August 26th there was practically no change in the patient's condition. The morning and evening temperatures were respectively 102° and 101.8°, and the corresponding pulse rates 72 and 80. On August 27th the morning and evening temperatures were 102° and 100.4°, and the pulse rates 76 and 80. Though the respiration rates corresponding to these were respectively 30 and 26, there was no evidence of any pulmonary lesion. August 28th was the day of the crisis. The temperature fell during the day from 101.4° to 98.6°, the pulse showing a corresponding drop from 78 to 64. At the same date the headache, which had been a clamant symptom up till that date, disappeared, and although no obvious change had occurred in the bubo in the right groin, the tenderness was distinctly less. The patient also expressed herself as feeling much better. Since the occurrence of the crisis there has been up to this date continuous improvement in the patient's general condition, while at the same time most of the redness and œdema have disappeared from the right groin, though a small hard swelling still remains.

Bacteriological Examination.—Four hours after admission puncture was made into the glandular mass in the right groin and some blood withdrawn. From this cover glass films were made and glycerine agar tubes inoculated. Immediate examination of the films after staining with gentian violet showed the presence of considerable numbers of short bacilli morphologically identical with the bacillus pestis. The inoculated tubes were incubated at 37° C., and twenty-four hours later a faint white surface growth had appeared composed of small translucent colonies. Microscopical examination of cover-glass preparations made from these colonies stained with gentian violet showed as in the previous case that

they were composed of short thick bacilli with rounded ends, showing for the most part well-marked bipolar staining and occurring frequently as diplobacilli. When treated by Gram's method the bacillus was decolorised. The appearance of the cultures and stained films placed the diagnosis of the organism as bacillus pestis practically beyond a doubt.

William M., aged 3 years, 57, Thistle Street. Admitted August 25th. This child, who is the son of Mrs. M. before mentioned, is stated by his mother to have become ill on August 21st. His symptoms appear to have been very slight. They consisted solely of slight pain in the abdomen and general *malaise*. On admission the temperature was 99.6° F., pulse 106, and respirations 22. The child's expression was dull, and the face was very pale. There was a markedly enlarged gland in the submental region about the size of a large marble. This gland seemed hard and adherent, and the skin above it was slightly red. This gland, the mother distinctly stated, was not present prior to this illness. The glands in the axillæ, neck, and groins was palpably but not markedly enlarged. Those in the right groin were the most obvious. Nothing noteworthy was detected in either lungs, heart, liver, or spleen. On August 26th the temperature reached 100.6°, but without any aggravation of the symptoms. Since then the temperature has been normal, and the child fairly well. The submental gland above noted has decreased steadily in size till it is now barely palpable. No bacteriological examination was made in this case.

James B., aged 60, 71, Rose Street; admitted August 28th, certified enteric fever. Patient's grandchild and wife died on August 7th and August 9th respectively, of a disease certified as "zymotic enteritis," but which had as symptoms high fever and delirium of a nature not usually associated with that disease. The patient sickened on August 15th, on which day he was suddenly seized with shivering, nausea, and vomiting, associated with severe headache and slight abdominal pain. The symptoms from their onset were so severe as to make him take to bed, where he remained till his removal to hospital. From August 23th he suffered from diarrhœa and for the twenty-four hours preceding admission he was delirious. On admission, patient's face was seen to have the same dull, heavy, and yet anxious look as described in the case of Patrick M. The pupils were moderately dilated, and the conjunctivæ slightly injected. The tongue was coated with a thick greyish fur in the centre, while the edges were moist and clean. There was no congestion of the fauces. The skin presented the same mottling noted before in P. M., with the difference that over the abdomen it was much more profuse. In the right groin was a very large, tense, red, and œdematous swelling, occupying the situation of the vertical group of glands. This swelling was exquisitely tender, and the tissues surrounding it were so infiltrated as to make the appreciation of individual glands by palpation impossible. The lymphatic glands above Poupart's ligament were also palpable and slightly tender, while the skin over the right iliac region, although not reddened, was distinctly œdematous; elsewhere the lymphatic glands were not palpable. The temperature was 102.8°, the pulse was soft and weak, and numbered 72, while the respirations were at the rate of 24 per minute. The abdomen was slightly distended and rather tense. Nothing noteworthy was detected in the heart and lungs; the spleen and liver were not enlarged. Since admission patient's condition has been very precarious. Delirium has been almost continuous although slight and at no time violent. The pulse has been very feeble and its rate under 100. Hiccough has been present since August 30th, though not in a distressing degree. It is of interest to note in this case that without any evidence of pulmonary lesion the respiration rate has varied between between 24 and 30. Until the morning of September 2nd the temperature ran a febrile course varying between 100.6° and 103°. On that morning patient had a distinct crisis, and the temperature fell to 97.6° F. There was improved tension in the patient's pulse, and he expressed himself as feeling better. After admission the redness and œdema surrounding the swelling in the groin slowly spread until it extended downwards almost to the mid-thigh, and backwards over the buttock. At the same time œdema without redness spread from the right iliac region until nearly the whole of the abdominal wall pitted readily on pressure. This was associated with a distinct increase in the abdominal distension. The inflammatory process reached its height on September 2st, and since then there has been a slow but distinct subsidence of the redness and œdema around the bubo, although little difference can be appreciated in the œdema of the abdominal wall. A pure culture of the bacillus pestis was obtained from puncture of the bubo on the night of admission.

Thomas H., aged 14, 6, South Coburg Street; admitted August 29th, certified enteric (?). Patient was at the house of Mrs. M., above reported, on either August 20th or 21st. He sickened on August 23rd. The incubation period in this case is therefore two or three days. On August 23rd patient was seized with headache, retching, pain in the back and right axilla. He was feverish, restless, and delirious at nights after the onset of illness. The pain in the right axilla rapidly became worse, and was followed by pain in the left side of the neck and in the right groin. On admission the patient's face was flushed, and the expression dull and heavy. He had the same apprehensive expression described in previous reports. The pupils were dilated, but the conjunctivæ fairly clear. The lips were dry, and there was well defined circumoral pallor. The tongue was coated in the centre with a greyish white fur, but clean and moist at the tip and edges. The skin was hot and dry. It presented a faint mottling, most marked on the back, flanks, and buttocks. As the patient lay in the dorsal decubitus the right thigh was slightly abducted and the leg semiflexed. There was a general enlargement of the glands in the groins, the axillæ, and the neck. The glands in the right axilla and the right groin were distinctly the largest, and exceedingly tender. No complaint of pain was made on palpation of the glands of the left groin, the left axilla, or the neck. The skin over the right axilla and the right groin was slightly reddened, but not œdematous. The temperature was 104.6°, pulse 140, respirations 26. The pulse was easily compressible, but quite regular. The respirations were easy. Examination of the lungs revealed nothing except a few sub crepitant *râles* in the left baso-lateral region. On auscultation over the cardiac area, a faint systolic murmur was heard both at the apex and in the pulmonic region. The abdomen was slightly tympanitic to percussion, especially in the right iliac region. The spleen was enlarged both in its longitudinal and its transverse diameters. Until September 2nd, patient's general condition remained much the same. There was no visible increase in the size of the enlarged glands. He was very restless at nights, having delirium with delusions. Fever was high, the temperature ranging from 103° F. to 105° F. The pulse was rapid and feeble. Considering the stress and duration of the fever, there was a notable absence of some of the commoner symptoms of high fever, namely, subsultus tendinum and dryness of the mouth and tongue. Headache was constantly present. On August 31st a marked injection of the right eye was observed, with slight prominence of the eyeball. On September 2nd a consignment of Yersin's antiplague serum was received. It was decided after consultation that this patient was a suitable subject for serum treatment. Accordingly at 12 midnight an intravenous injection of 15 c.cm., and at the same time a subcutaneous injection of 25 c.cm. of the serum were made. The patient slept well after the injections, and perspired freely for the first time since admission. Next day brought no remission of the temperature, but the buboes in the right groin, which had been extremely tender on the previous day, could now be touched without the patient experiencing more than a slight sense of pain. A like lessening in the tenderness of the axillary bubo was also quite manifest. Crisis occurred on the night of September 3rd, and since then the improvement has been maintained. A pure culture of bacillus pestis was obtained after puncture of the axillary bubo on the day after admission.

A few general remarks may be made in conclusion. The precautions taken in the hospital merit notice. The plague patients are isolated in a separate pavilion, which is surrounded by a high wall preventing the access of all but those whose business it is to attend to the sick. All the discharges, fæces, urine, sputa, etc., are placed in vessels containing a suitable amount of 5 per cent. solution of phenol while kept in the ward. They are removed twice a day and boiled in the cholera autoclave before being passed into the drains. All the soiled linen, bedding, etc., are boiled for two hours in a steam boiler before being removed from the plague enclosure. The bulk of the patients' clothes is burned on admission, only the most valuable articles of apparel being retained for disinfection by superheated steam. The nurses have special overalls for use in the wards.

All the nurses and persons who are in immediate attention on the sick, as well as the resident medical staff, have received an inoculation of Yersin's antiplague serum. This has been used in place of Haffkine's, as the epidemic broke upon the hospital with a suddenness which necessitated the employment of the whole staff at present required. As it is considered unsafe to inoculate persons who have been exposed to the plague with this serum, we have had to be content with the lesser protection afforded by the antiplague serum of Yersin.

It may be stated to the credit of the nursing staff that we have had no lack of volunteers to attend on the infected persons.

NOVA ET VETERA.

PLAGUE VISITATIONS IN GLASGOW IN THE PAST.

It is rather more than two centuries and-a-half ago since plague, the appearance of which in Glasgow is now justly causing so much anxiety, last visited that city. An account of the principal outbreaks in the past is given by Mr. Alexander Duncan, Secretary and Librarian of the Faculty of Physicians and Surgeons, in his valuable *Memorials of the Faculty of Physicians and Surgeons of Glasgow, 1599-1850* (Glasgow: James Maclehose and Sons, 1896). A summary of his researches among old records of past outbreaks may be of interest to some of our readers.

Early Sanitary Statutes.

In 1330 plague seems to have visited the burgh, while the *Chartulary of Glasgow* shows that it appeared again in 1350, and returned in 1380. The *Records* of the burgh show that it visited Scotland in 1574, and that the townsmen were on the watch, especially as regards the eastern seaports. The Town Council made "statutes" of a drastic character as to searching, visitation, isolation, and quarantine, but the only approach to measures of sanitation was the following:

Item: Ordanis ye sculehouss wynd, and all ye vennallis to be simply condampnit and stekit up.

In 1584 the burghs on the Fife coast were again under suspicion, and men were appointed to watch all entries to the town. In 1588 the plague ravaged Paisley, and the Glasgow authorities in alarm had again recourse to energetic quarantine, completely stopping all communication with the infected district. They also passed ordinances showing that they had some rudimentary ideas of sanitary precautions. By these measures the danger for the time appears to have been averted.

Prophylactic Fasts.

From the records of the Presbytery of Glasgow it appears that on August 8th, 1598, a fast day was ordered "to be proponit.....for eschewing of the pest within this cuntrey." In 1602 the scourge is spoken of as in the town, and it may be gathered that the citizens were by way of absenting themselves from church for fear of infection.

From the records of the Presbytery marriages were authorised to take place when the parties had not been proclaimed in the parish church of Glasgow, but in Govan; the reason alleged being that "thro' ye not convening of ye people in yir perellous tymes of Godis judgements, threatened throut ye feir of ye pest."

In 1604 a fast of a week's duration was again tried by way of preventive:

And yt for avoiding of God his jugementis threatened on yis country be ye plague of pestilence for avoiding his jugmentis qlk for ye sins of yis land he may send on ye fruitt of ye grund qlk he has blassit in manis apperace abundatie.

Even the most stringent rules of ecclesiastical discipline were relaxed in presence of the awful pest. Thus in 1605 the Presbytery accepted as a sufficient reason for granting baptism to an illegitimate child, instead of remitting the mother back to be dealt with by her own presbytery,

because scho durst not resort to Lytgow qr scho offendit for feir of ye pest of wh ye burt of Lytgow is pntlie (presently) visited.

In the following year it is recorded that "tryell being tane of the seiknes in Archibald Muiris hous and Marioune Walker, his mother, and fund to be the plaige," an order was given to ascertain "quha last frequentit with hir and quhat scheraris schewr with hir" (what reapers reaped with her).

Enclosure and Segregation.

Pestiferous persons who declined to be "enclosit" were to be transported with the plague-stricken to the "Muir." Dogs and cats were to be kept fast or hung, and strangers were to leave the town on pain of being "enclosit" with the persons harbouring them. The Council voted

ane hunderithe pundis of the reddiest of the taxatioune that is in his (a bailie's) handis

for the sustenance of those on the Muir.

The most memorable epidemic occurred 1645-46, and raged during two or three years. Among the measures daily house-to-house visitation was adopted, and daily reports sent to the magistrates of the sick. When these measures failed, recourse was had to isolation. Infected persons were transported out of the town to the Muir. This Muir is believed to have comprised the waste lands of Sighthill, Seggieholm, and others in the district to the north of the burgh. Intimation was to be made

be touk of drum that na manner of persone goe out to the muir quher the foull persones are without leave of the magistratis, and to certify that those whon on the contraire schall be put out to the muir with the haill families they are in.

Migration of the University.

The University authorities migrated in a body to Irvine, where the Principal, the Regents, and the Bursars of the College were boarded in 1645 and part of 1646. Trade was paralysed and all who could do so fled from the town. The burgh tollmen and tacksmen had to beg off from the payments of their rents.

Comperit the haill takisman of the mylne, laidells, tron; and brig, and intimat to the Councell that in respect of the seiknes and visitatioune they could get nathing of ther deuties.

The dead were buried with maimed rites. On December 12th, 1646, it was ordained

That ther be na meitting at lykwakes nor efter burrialls and that this be intimat by touk of drume.

The Muir.

If such (says Mr. Duncan) was the state of things in the burgh, who can imagine the horrors of the plague-stricken banished to the bleak moor? The time was the depth of winter, their only shelter was "ludges made daills and spairs," with straw for their bedding. By February 20th, 1647, the visitation of this miserable colony had assumed a systematic form:

James Roblesoune, baxter, is maid choyce of to be visitour of the muire quhair the oncleane fokes ar, and to set doune in a registor all occurantes daylie anent the infectioune . . . and to tak notice of the graves.

Frequent entries also appear in the treasurer's accounts at this time of disbursements for supply of the poor on the Muir, and for "coals, peitts, and stra," furnished to them. On July 17th, the councillors are appointed by turns for a week to visit the Muir, each selecting "another honest man" to receive a list of all in the Muir, and to "disburse to James Robiesoune such money as he sall requyre to sustean the puire on the muir, and to viseit the muir tweiss or thryiss in the week," with other necessary duties of a similar kind. Dr. Rae, possibly a physician reputed to have skill in the treatment of the plague, is written for, but apparently in vain, for Dr. M Cluir is engaged, and on July 26th gets ten dollars "for bygane service to incouradge him." From a subsequent minute it appears that John Hall, the principal surgeon in Glasgow at that period, by arrangement with the magistrates, gave his services to all and sundry gratuitously, being subsequently paid by them as well for inspecting the bodies of the dead as for his care of the living. Within the burgh sanitary measures appear to have been rigorously enforced. There is a minute of March 10th, 1647, in which the bailies, with the aid of a hired man, are charged with the duty of removing "suspect fulyie." One result of the compulsory removal of so large a number of the population to the Muir was that the magistrates found themselves compelled *pro tempore* to make payment of their plague patients' debts! The honour of being a magistrate was clearly not without its dangers and disadvantages in those days From subsequent minutes it may be inferred that some amount of imposition had been practised by the "unclean" or their friends. Thus on March 13th two men were appointed to revise "the compts debursit for honest men the tyme they closit up for fear of infectioune." Had Diogenes been a Glasgow magistrate in that day he would apparently have had particular need of a lantern to aid him in his legendary search.

Through the whole summer and autumn of 1647 the plague appears to have been raging with virulence. As the College session drew near it was necessary to make some arrangement in regard to a temporary local habitation till the scourge abated. Paisley was selected for the purpose, and there the College authorities spent part of the winter.

On July 22nd, 1648, the pestilence still increasing, a daily inspection of all the inhabitants was again ordered, and a proclamation was made by "touk of drum" prohibiting the frequenting of taverns or even idle wandering through the streets. From the Town Council records for August 12th, 1648, it may be gathered that the city was in sore straits for money for the maintenance of the stricken poor. It was decided to call in a sum of 2,000 marks, collected but not expended some years before for a similar purpose and lent to the Earl of Wigtown. Glasgow did not finally get rid of the scourge till the following year.

In 1665, when the Great Plague was devastating London, the *Town Council Records* (September 3rd) show that the people of Glasgow were alarmed and on the watch. Already in the previous year they had been on the alert, for the Master of Works had been ordered to repair the ports, as was always done when there was reason to fear an outbreak. On that occasion, however, Glasgow escaped, and the city on the Clyde remained unvisited by the plague till the other day.

Hotbeds of Disease.

Mr. Duncan points out that the parts of the burgh which are still, or were recently, the most obnoxious in a sanitary point of view had even in these early days acquired the unenviable notoriety as the hotbeds of disease which has since given them a bad pre-eminence. Thus by minute of the Town Council, October 29th, 1574, we find an order, already quoted, condemning and shutting up the Scrulehouse Wynd, which is referred to in the earliest sanitary ordinance already quoted. By a subsequent minute (October 31st, 1588) "the Scuile Wynd, Lindsay's Port, the Stinking Vennail," are specifically indicated as bad localities on the occasion of an anticipated infection from Paisley.

SOUTH AFRICAN HOSPITALS COMMISSION.

After leaving Deelfontein the Commission made a short stay at De Aar, where it inspected the hospital but took little evidence. Immediately on arriving at Bloemfontein on August 31st, a sitting was held. Major Bedford detailed the disposition of the various hospitals. He admitted a shortage of ten

field hospitals, and said that it was most difficult to meet requirements as the operations extended. When the army landed everything was practically upset. In Natal things were such that whenever a unit arrived it was sent where it was required, with the result that the bearer companies and the field hospitals got very mixed. During Lord Roberts's advance, the usual medical unit was not kept up, and the number of ambulances was reduced. Enteric fever assumed large proportions in the latter part of March, and the number of cases quite exceeded all anticipation. The witness could not say whether the provision for sick and wounded had been sufficient.

Lieutenant-Colonel Beamish, R.A.M C., in charge of No. 3 General Hospital, testified that it was never overcrowded or undermanned. The patients never suffered, although the orderlies were overworked. During the months of April, May, June, July, and August there were 213 deaths in a total of 5,321 patients, a percentage of 4.4. The total number of wounded was 234, among whom there were no deaths.

Major Hosie, R.A M.C., gave similar evidence about No. 9 General Hospital, admitting, however, that for three days in April part of the stores were mislaid and part delayed at the base.

Major Watson, R.A.M.C., of the Industrial School Hospital, referred to the desirability of improving the ambulance arrangements. In India the ambulances carrying six men with two horses were greatly superior to the army ambulances carrying two patients with ten mules.

Colonel Exham, R.A.M.C., said he became the Principal Medical Officer at Bloemfontein when Colonel Stevenson left on May 1st, and supervised everything. The rush commenced when the advance began. On arrrival at Bloemfontein he found General Hospitals Nos. 8 and 9 getting into working order and extending greatly the already ample accommodation for patients. Colonel Stevenson informed him that all the suitable buildings had been utilised for hospital purposes and therefore he did not inquire further. The Town Hall and the Cathedral were quite unsuitable. The largest number in hospital at one time was 178 officers and 4,098 men, and including all never exceeded 5,000. The maximum number of patients sent down to the base in one fortnight was 2,000. Bloemfontein never suffered from lack of medical officers or equipment. While waiting for equipment the *personnel* of Hospital No. 9 were distributed through the other hospitals, both field and general. Six thousand pints of milk were required per day for the patients, and it was impossible to obtain that quantity. Corridor carriages were utilised when possible to convey patients, but ordinary carriages had also to be used. There was no lack of disinfectants. The hospitals here in one month dealt with 13,000 sick, a number which would tax the resources of London. No further provision for the care of the sick than had been made was possible. He denied the statements of Mr. Burdett-Coutts regarding lack of accommodation, equipment, and supervision, saying that, in spite of pressure, the stationary hospitals worked well, and every attention was paid to patients. He was not aware that there was friction between the military and civil surgeons in No. 8 General Hospital.

According to the *Daily Mail* correspondent, Dr. Kirkman declared that every necessary was wanting in No. 8 Hospital, where there were only two commodes, one feeding-cup, eight marquees, and no bedpans. Dying patients were obliged to vacate their beds. He condemned the lack of fresh milk and the insufficiency of orderlies.

Dr. Whittington gave evidence to the same effect.

Dr. Fitchett declared that there were a number of cases of drunkenness among the orderlies, sometimes when they were on duty. There was no fresh milk at times of pressure, though it was always available for afternoon tea. He felt strongly the indifference of the senior officers in regard to the condition of the patients, but had seen the Principal Medical Officer inspecting the tents. A cook employed at a large salary was monopolised by the officers' mess. There was friction between the Army Medical and civil surgeons.

Dr. Stott gave confirmatory evidence.

Dr. Leon, in charge of the enteric division of No. 8 General Hospital, said requisitions for more nurses, orderlies, and utensils were not complied with for a fortnight. There was a shortage of utensils, and the beds got dirty through not being changed. Typhoid patients were obliged to do everything for themselves except clean the wards. The condition of the bell tents was awful. There were no organised preparations to meet convoys, and new arrivals were frequently compelled to sleep in their greatcoats on the ground.

Captain Berkeley endorsed the statements regarding friction between the military and civil surgeons.

Major Clarke, of the Edinburgh Hospital, said there was no lack of necessaries in his hospital, which was equipped by the people of Edinburgh, and consisted of huts built in blocks, and easily put together. He considered it was more mobile than the ordinary military tent hospitals.

Colonel Butcher, Ordnance Officer, attributed the delay in supplying necessaries to the exigencies of railway transport. He was never short of blankets, and there was an ample supply of all articles except bed pans, bedding, and mattresses. The shortage lasted for five weeks, and was partly due to the excessive number of patients and partly to interruption of transport.

Dr. Johnstone, for ten years a practitioner in Bloemfontein, said a considerable amount of typhoid existed during the Boers' stay at Colesberg, Modder River, round Kimberley, and at Jacobsdal, and the disease accompanied them to Paardeberg, where it was contracted by the British troops. He thought the Principal Medical Officer was too sparing in the matter of bedding. Material was obtainable at the stores, and ladies were willing to assist in making it up. The Principal Medical Officer, however, regarded the expense as unduly great. He had heard of cases of patients lying in mud and water close to the ground.

According to the *Times* correspondent, other witnesses denied all allegations whatever against the Bloemfontein hospitals. The faults, they said, were due to the exigencies of the time. The nursing and the doctors here were highly commended. No serious case had been allowed to remain in a bell tent, but was transferred immediately to a marquee, where better attention was possible. Enteric fever cases were not mixed with the wounded. Nurse Holland said she had seen veld sores, which were very prevalent, but no bedsores arising from inattention. The Commission have visited General Hospitals Nos. 8 and 9, St. Michael's Home, Dame's Institute, Grey College, the Raadzaal Hospital, and the Convent.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE seventieth meeting of the British Association, which is this year being held at Bradford under the presidency of Sir WILLIAM TURNER, M.B., D.C.L., LL.D., D.Sc., F.R.S., President of the General Medical Council, opened on Wednesday evening, September 5th. The number of members' and associates' tickets issued was on that day about 1,600. In the absence of the retiring President, Sir Michael Foster, M.P., who is at present in America, the chair was taken by Sir Henry Roscoe, who introduced the new President. Sir William Turner, after being duly installed, proceeded to deliver his address.

PRESIDENT'S ADDRESS.

After some introductory remarks, in the course of which he referred to the fact that 27 years ago the British Association had held a very successful meeting in Bradford, which was attended by about 2,000 persons, Sir WILLIAM TURNER went on to speak of

SCIENTIFIC METHOD.

Edward Gibbon had said that diligence and accuracy were the only merits which a historical writer could ascribe to himself. In scientific research, also, diligence and accuracy were fundamental qualities. By their application new facts were discovered and tabulated, their order of succession ascertained, and a wider and more intimate knowledge of the processes of Nature acquired. But to decide on their true significance a well-balanced mind and the

exercise of prolonged thought and reflection were needed. William Harvey in his memorable work *De Motu Cordis et Sanguinis*, published more than two centuries ago, told of the great and daily diligence which he exercised in the course of his investigations and the numerous observations and experiments which he collated. At the same time he referred repeatedly to his cogitations and reflections on the meaning of what he had observed, without which the complicated movements of the heart could not have been analysed, their significance determined, or the circulation of the blood in a continuous stream definitely established. Early in the present century Carl Ernst von Baer, the father of embryological research, showed the importance which he attached to the combination of observation with meditation by placing side by side on the title page of his famous treatise *Ueber Entwickelungsgeschichte der Thiere* (1828) the words "Beobachtung und Reflexion." Though these illustrations of the need of this combination were drawn from biological science it must not be inferred that it applied exclusively to one branch of scientific inquiry. The conjunction influenced and determined progress in all the sciences, and when associated with a sufficient touch of imagination, when the power of seeing was conjoined with the faculty of foreseeing, of projecting the mind into the future, something more than the discovery of isolated facts might be expected; their co-ordination and the enunciation of new principles and laws would necessarily follow. Scientific method consisted, therefore, in close observation, frequently repeated so as to eliminate the possibility of erroneous seeing; in experiments checked and controlled in every direction in which fallacies might arise; a continuous reflection on the appearances and phenomena observed, and in logically reasoning out their meaning and the conclusions to be drawn from them. Were the method followed out in its integrity by all engaged in scientific investigations, the time and labour expended in correcting errors committed by themselves or by other observers and experimentalists would be saved, and the volumes devoted annually to scientific literature would be materially diminished in size.

Improvements in Means of Observation.

Whilst certain principles of research were common to all the sciences, each great division required for its investigation specialised arrangements to ensure its progress. Nothing contributed so much to the advancement of knowledge as improvements in the means of observation, either by the discovery of new adjuncts to research, or by fresh adaptation of old methods. In science the invention and employment of new and more precise instruments and appliances made it possible to appreciate more clearly the significance of facts and phenomena which were previously obscure, and to penetrate more deeply into the mysteries of Nature. They marked fresh departures in the history of science, and provided a firm base of support from which a continuous advance might be made and fresh conceptions of Nature could be evolved. The President said that as his occupation in life had required him to give attention to the science dealing with the structure and organisation of the bodies of man and animals—a science which either included within its scope or had intimate and widespread relations with comparative anatomy, embryology, morphology, zoology, physiology, and anthropology, he would limit himself to the attempt to bring before them some of the more important observations and conclusions which had a bearing on the present position of the subject. In this closing year of the century it would not be out of place to refer to the changes which a hundred years had brought about in our fundamental conceptions of the structure of animals. So far back as the time of the ancient Greeks it was known that the human body and those of the more highly-organised animals were not homogeneous, but were built up of parts, the *partes dissimilares* of Aristotle, which differed from each other in form, colour, texture, consistency, and properties. These parts were familiarly known as the bones, muscles, sinews, blood vessels, glands, brain, nerves, and so on. During the concluding years of the last and the earlier part of the present century, the Hunters, William and John, in this country, the Meckels in Germany, Cuvier and St. Hilaire in France, gave an enormous impetus to anatomical studies, and contributed largely to our knowledge of the construction of the bodies of animals. But whilst by these and other observers the most salient and grosser characters of animal organisation had been recognised, little was known of the more intimate structure or texture of the parts. Early in the present century Xavier Bichat published his *Anatomie Générale*, in which he formulated important general principles. Every animal was an assemblage of different organs, each of which discharged a function, and, acting together, each in its own way assisted in the preservation of the whole. The organs were, so to speak, special machines situated in the general building which constituted the factory or body of the individual. Further, each organ or special machine was itself formed of tissues possessing different properties. Some, as the blood vessels, nerves, fibrous tissues, etc., were generally distributed throughout the animal body; whilst others, as bones, muscles, cartilage, etc., were found only in certain definite localities. Attempts were made in the third decennium of this century to improve the methods of examining minute objects by the manufacture of compound lenses, and, by doing away with chromatic and spherical aberration, to obtain, in addition to magnification of the object, a relatively large flat field of vision with clearness and sharpness of definition. When in January, 1830, Joseph Jackson Lister read to the Royal Society his memoir on some properties in achromatic object glasses applicable to the improvement of microscopes, he announced the principles on which combinations of lenses could be arranged which would possess these qualities. By the skill of opticians, microscopes had now for more than half a century been constructed which, in the hands of competent observers, had influenced and extended biological science with results comparable to those obtained by the astronomer through improvements in the telescope. In the study of the minute structure or plants and animals the observer had frequently to deal with tissues and organs most of which possessed such softness and delicacy of substance and outline that, even when microscopes of the best construction were employed, the determination of the intimate nature of the tissue, and the precise relation which one element of an organ bore to the other constituent elements, was in many instances a matter of difficulty. Hence additional methods had to be devised in order to facilitate study and to give precision and accuracy to observations. It was difficult for one of the younger generation of biologists, with all the appliances of a well-equipped laboratory at his command, with experienced teachers to direct him in his work, and with excellent textbooks in which the modern methods were described, to realise the condition under which his predecessors worked half a century ago. Laboratories for minute biological research had not been constructed, the practical teaching of histology and embryology had not been organised, experience in methods of work had not accumulated. Staining and hardening reagents were unknown. The double-bladed knife invented by Valentin, held in the hand, was the only improvement on the scapel or razor for cutting thin, more or less translucent, slices suitable for microscopic examination; mechanical section cutters and freezing arrangements had not been devised. The tools at the disposal of the microscopist were little more than the knife, forceps, scissors, needles; with acetic acid, glycerine, and canada balsam as reagents. But in the employment of the newer methods of research care had to be taken, more especially when hardening and staining reagents were used, to discriminate between appearances which were to be interpreted as indicating natural characters, and those which were only artificial productions. Notwithstanding the difficulties attendant on the study of the more delicate tissues, the compound achromatic microscope provided anatomists with an instrument of great penetrative power. Between the years 1830 and 1850 a number of acute observers applied themselves with great energy and enthusiasm to the examination of the minute structure of the tissues and organs in plants and animals.

Cell Theory.

It had, indeed, long been recognised that the tissues of plants were, to a large extent, composed of minute vesicular bodies, technically called cells (Hooke, Malpighi, Grew). In 1831 the discovery was made by Robert Brown that in many families of plants a circular spot, which he named areola or

nucleus, was present in each cell; and in 1838 M. J. Schleiden published the fact that a similar spot or nucleus was a universal elementary organ in vegetables. In the tissues of animals also structures had begun to be recognised comparable with the cells and nuclei of the vegetable tissues, and in 1839 Theodore Schwann announced the important generalisation that there was one universal principle of development for the elementary part of organisms, however different they might be in appearance, and that this principle was the formation of cells. The enunciation of the fundamental principle that the elementary tissues consisted of cells constituted a step in the progress of biological science which would for ever stamp the century now drawing to a close with a character and renown equalling those which it has derived from the most brilliant discoveries in the physical sciences. It provided biologists with the visible anatomical units through which the external forces operating on, and the energy generated in, living matter came into play. It dispelled for ever the old mystical idea of the influence exercised by vapours or spirits in living organisms. It supplied the physiologist and pathologist with the specific structures through the agency of which the function of organisms were discharged in health and disease. It exerted an enormous influence on the progress of practical medicine. The President proceeded to review the progress of knowledge of the cell, dealing with its structure and multiplication, karyokinesis, and cell plasm. He then passed to the consideration of

Nerve Cells.

Of recent years great attention had been paid to the intimate structure of nerve cells, and to the appearance which they presented when in the exercise of their functional activity. A nerve cell was not a secreting cell; that is, it did not derive from the blood or surrounding fluid a pabulum which it elaborated into a visible, palpable secretion characteristic of the organ of which the cell was a constituent element, to be in due course discharged into a duct which conveyed the secretion out of the gland. Nerve cells, through the metabolic changes which took place in them in connection with their nutrition, were associated with the production of the form of energy specially exhibited by animals which possess a nervous system, termed nerve energy. It had long been known that every nerve cell had a body in which a relatively large nucleus was situated. A most important discovery was the recognition that the body of every nerve cell had one or more processes growing out from it. More recently it had been proved, chiefly through the researches of Schultze, His, Golgi, and Ramón y Cajal, that at least one of the processes, the axon of the nerve cell, was continued into the axial cylinder of a nerve fibre, and that in the multipolar nerve cell the other processes, or dendrites, branched and ramified for some distance away from the body. A nerve fibre was therefore an essential part of the cell with which it was continuous, and the cell, its processes, and nerve fibre and the collaterals which arose from the nerve fibre collectively formed a neurone or structural nerve unit (Waldeyer). The nucleated body of the nerve cell was the physiological centre of the unit. After giving an account of recent researches on the intimate structure of the nerve cell plasm, Sir William Turner said there was evidence that in the nerve cell the nucleus, as well as the cell plasm, was an effective agent in nutrition. When the cell was functionally active, both the cell body and the nucleus increased in size (Vas, G. Mann, Lugaro); on the other hand, when nerve cells were fatigued through excessive use, the nucleus decreased in size and shrivelled; the cell plasm also shrank, and its coloured or chromophile constituent became diminished in quantity as if it had been consumed during the prolonged use of the cell (Hodge, Mann, Lugaro). It would appear that nerve cells were so highly specialised in their association with the evolution of nerve energy, that they had ceased to have the power of reproducing their kind, and the metabolic changes both in cell plasm and nucleus were needed to enable them to discharge their very peculiar function. Hence it followed that when a portion of the brain or nerve centre was destroyed, the injury was not repaired by the production of fresh specimens of their characteristic cells, as would be the case in injuries to bones and tendons. A few years ago the tendency amongst biologists was to ignore or attach but little importance to the physiological use of the nucleus in the nucleated cell, and to regard the protoplasm as the essential and active constituent of living matter; so much, indeed, was this the case that independent organisms regarded as distinct species were described as consisting of protoplasm destitute of a nucleus; also that scraps of protoplasm separated from larger nucleated masses could, when isolated, exhibit vital phenomena. There was reason to believe that a fragment of protoplasm, when isolated from the nucleus of a cell, though retaining its contractility and capable of nourishing itself for a short time, could not increase in amount, act as a secreting structure, or reproduce its kind; it soon lost its activity, withered, and died. In order that these qualities of living matter should be retained, a nucleus was by most observers regarded as necessary (Nüssbaum, Gruber, Haberlandt, Korschelt), and for the complete manifestation of vital activity both nucleus and cell plasm were required.

Bacteria.

The observations of Cohn, made about thirty years ago, and those of De Bary shortly afterwards, brought into notice a group of organisms to which the name "bacterium" or "microbe" was given. Through the researches of Pasteur, Lord Lister, Koch, and other observers bacteria had been shown to play an important part in Nature. They exercised a very remarkable power over organic substances, especially those which were complex in chemical constitution, and could resolve them into simpler combinations. Owing to this property some bacteria were of great economic value, and without their agency many industries could not be pursued; others, again, exercised a malign influence in the production of the most deadly diseases which afflicted man and domestic animals. Bacteria cells multiplied by simple fission, probably with an ingrowth of the cell wall, but without the karyokinetic phenomena observed in nucleated cells. Each cell gave rise to two daughter cells, which might for a time remain attached to each other and form a cluster or a chain, or they might separate and become independent isolated cells. The multiplication, under favourable conditions of light, air, temperature, moisture, and food, went on with extraordinary rapidity, so that in a few hours many thousand new individuals might arise from a parent bacterium. The time had gone by to search for the origin of living organisms by a spontaneous aggregation of molecules in vegetable or other infusions, or from a layer of formless primordial slime diffused over the bed of the ocean. Living matter during our epoch had been, and continued to be, derived from pre-existing living matter, even when it possessed the simplicity of structure of a bacterium, and the morphological unit is the cell.

Hereditary Transmission of Specific Characters.

The President next reviewed the development of the egg, and then passed on to general morphology. He said the morphological characters exhibited by a plant or animal tended to be hereditarily transmitted from parents to offspring, and the species was perpetuated. In each species the evolution of an individual through the developmental changes in the egg followed the same lines in all the individuals of the same species, which possessed therefore in common the features called specific characters. The transmission of these characters was due, according to the theory of Weismann, to certain properties possessed by the chromosome constituents of the segmentation nucleus in the fertilised ovum, named by him the germ plasm, which was continued from one generation to another, and impressed its specific character on the egg, and on the plant or animal developed from it. During the evolution of the individual cells became modified or differentiated in structure and function, and so long as the differentiation followed certain prescribed lines the morphological characters of the species were preserved. It could readily be conceived that, as the process of specialisation was going on, modifications or variations in groups of cells and the tissues derived from them, notwithstanding the influence of heredity, might in an individual diverge so far from that which was characteristic of the species as to assume the arrangements found in another species, or even in another order. Anatomists had long recognised that variations from the customary arrangement of parts occasionally appeared, and they described such deviations from the current description as irregularities.

DARWINIAN THEORY.

The signification of the variations which arose in plants and animals had not been apprehended until a flood of light was thrown on the entire subject by the genius of Charles Darwin, who formulated the wide-reaching theory that variations could be transmitted by heredity to younger generations. In this manner he conceived new characters would arise, accumulate, and be perpetuated which would in the course of time assume specific importance. New species might thus be evolved out of organisms originally distinct from them, and their specific characters would in turn be transmitted to their descendants. By a continuance of this process new species would multiply in many directions, until at length from one or more originally simple forms the earth would become peopled by the infinite varieties of plant and animal organisms which have in past ages inhabited, or do at present inhabit, our globe. The circumstances which, according to the Darwinian theory, determined the perpetuation of hereditary transmission of a variety, and its assumption of a specific character depended, it was argued, on whether it possessed such properties as enabled the plant or animal in which it appeared to adapt itself more readily to its environment, that is, to the surrounding conditions. In the study of the transmission of variations which might arise in the course of development it should be kept in mind that morphological characters could be transmitted by hereditary descent, which, though doubtless of service in some bygone ancestor, were in the new conditions of life of the species of no physiological value. Our knowledge of the structural and functional modifications to be found in the human body in connection with abnormalities and with tendencies of predisposition to diseases of various kinds taught us that characters which were of no use, and indeed detrimental to the individual, might be hereditarily transmitted from parents to offspring through a succession of generations. Since the conception of the possibility of the evolution of new species from pre-existing forms took possession of the minds of naturalists, attempts had been made to trace out the lines on which it has proceeded. The first to give a systematic account of what he conceived to be the order of succession in the evolution of animals was Ernst Haeckel, of Jena. The problem had been attacked along two different lines; the one by embryologists, of whom might be named Kowalewsky, Gegenbaur, Dohrn, Ray Lankester, Balfour, and Gaskell, who with many others had conducted careful and methodical inquiries into the stages of development of numerous forms belonging to the two great divisions of the animal kingdom. Invertebrates as well as vertebrates had been carefully compared with each other in the bearing of their development and structure on their affinities and descent, and the possible sequence in the evolution of the vertebrata and the invertebrata had been discussed. The other method pursued by palæontologists, of whom Huxley, Marsh, Cope, Osborne, and Traquair were prominent authorities, had been the study of the extinct forms preserved in the rocks, and the comparison of their structure with each other and with that of existing organisms. In the attempts to trace the line of descent, the imagination had not infrequently been called into play in constructing various conflicting hypotheses. Though from the nature of things the order of descent was and without doubt would continue to be, ever a matter of speculation and not of demonstration, the study of the subject had been a valuable intellectual exercise and a powerful stimulant to research.

GREAT IS SCIENCE AND IT WILL PREVAIL.

In conclusion, the President said: We know not as regards time when the fiat went forth, "Let there be Life and there was Life." All we can say is that it must have been in the far-distant past, at a period so remote from the present that the mind fails to grasp the duration of the interval. Prior to its genesis our earth consisted of barren rock and desolate ocean. When matter became endowed with life, and the capacity of self-maintenance and of resisting external disintegrating forces, the face of Nature began to undergo a momentous change. Living organisms multiplied, the land became covered with vegetation, and multitudinous varieties of plants, from the humble fungus and moss to the stately palm and oak, beautify its surface and fitted it to sustain higher kinds of living things. Animal forms appeared, in the first instance simple in structure, to be followed by others more complex until the mammalian type was produced. The ocean also became peopled with plant and animal organisms, from the microscopic diatom to the hugh leviathan. Plants and animals acted and reacted on each other, on the atmosphere which surrounded them, and on the earth on which they dwelt, the surface of which became modified in character and aspect. At last man came into existence. His nerve energy, in addition to regulating the processes in his economy which he possesses in common with animals, was endowed with higher powers. When translated into psychical activity it has enabled him throughout the ages to progress from the condition of a rude savage to an advanced stage of civilisation; to produce works in literature, art, and the moral sciences which have exerted, and must continue to exert, a lasting influence on the development of his higher being; to make discoveries in physical science; to acquire a knowledge of the structure of the earth, of the ocean in its changing aspects, of the atmosphere and the stellar universe, of the chemical composition and physical properties of the matter in its various forms, and to analyse, comprehend, and subdue the forces of Nature. By the application of these discoveries to his own progress man has to a large extent overcome time and space; he has studded the ocean with steamships, girdled the earth with electric wire, tunnelled the lofty Alps, spanned the Forth with a bridge of steel, invented machines, and founded industries of all kinds for the promotion of his material welfare, elaborated systems of government fitted for the management of great communities, formulated economic principles, obtained an insight into the laws of health, the causes of infective diseases, and the means of controlling and preventing them. When we reflect that many of the most important discoveries in abstract science and in its applications have been made during the present century, and indeed since the British Association held its first meeting in the ancient capital of our country sixty-nine years ago, we may look forward with confidence to the future. Every advance in science provides a fresh platform from which a new start can be made. The human intellect is still in process of evolution. The power of application and of concentration of thought for the elucidation of scientific problems is by no means exhausted. In science is no hereditary aristocracy. The army of workers is recruited from all classes. The natural ambition of even the private in the ranks to maintain and increase the reputation of the branch of knowledge which he cultivates affords an ample guarantee that the march of science is ever onwards, and justifies us in proclaiming for the next century, as in the one fast ebbing to a close, that Great is Science, and it will prevail.

ASSOCIATION INTELLIGENCE.

BRANCH MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH.—The next meeting of this Branch will be held in the Infirmary, Workington, on Friday, September 21st, at 3.15 P.M. Members intending to read papers, show cases, etc., and gentlemen desirous of joining the Branch, are requested to communicate as early as possible with the Honorary Secretary, W. F. FARQUHARSON, M.D., Garlands, Carlisle.

SOUTH MIDLAND BRANCH.—The autumnal meeting of this Branch will be held at Stamford on Thursday, September 20th. Gentlemen of joining the Association or Branch, and members who papers or contribute cases to the meeting, are requested at once with the undersigned. The following papers have been promised:—Mr. Halley: The Provision of Isolation Hospitals for Rural Districts. Dr. Jones: Chorea, especially in its Complicated Forms. Mr. Kinsey will give a brief summary of the work at the Ipswich meeting. Luncheon will be provided at 2s. 6d. per head.—C. J. EVANS, Northampton, Honorary Secretary.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.—The next meeting of this District will be held at the Grand Hotel, Eastbourne, on October 10th. Mr. C. O'Brien Harding will preside. All notices of resolutions, communications, etc., should be sent to the Honorary District Secretary, J. W. BATTERHAM, M.B., Bank House, Grand Parade, St. Leonards.

TYPHOID FEVER IN PARIS.—Within the last seven weeks more than 800 cases of typhoid fever, of which 160 have been fatal, have occurred in Paris. The cause is traced to the water of the Vanne. Twenty-nine deaths were registered last week.

SPECIAL CORRESPONDENCE.

BRISTOL.

Report of Medical Officer of Health.—The City Hospital, Ham Green.

THE report of the Medical Officer of Health has recently been distributed, and contains the usual amount of interesting information on the health of the city during the past year. The population of Bristol is now calculated at 320,911, on an acreage of 11,682, the density being 27.47, against 48.93 in 1891, due to the inclusion of large outlying districts by the Extension Act of 1897. The new supply of water, which we have reason to believe will be made use of as soon as the necessary pumping machinery is completed, will give an addition of over one thousand million gallons of water, and as the supply is already 22 gallons per head, Bristol will be one of the most favoured cities in the kingdom. No important changes have been made during the year in the matter of sewage disposal, but the question is one which is constantly engaging attention, and rightly so, as at present the sewage of the whole city is discharged untreated into the Avon. The report says that the rapid scour of the tide generally results in the removal of the sewage without offence, although in remarkably dry summers, when fresh water is deficient in the river, some nuisance is complained of. Dr. Davies points out that the new fever hospital at Ham Green, though supplying 76 new beds for the treatment of cases, has resulted in a nett gain of only 20, as 56 temporary ones have been put out of use, a proportion of only one bed to 2,300 persons, which would lead to some difficulties in the event of an epidemic. A table is given to show the cost of erection per bed in hospitals in various cities, that of Bristol being £363. It is pointed out that with a larger city no additional medical supervision has been provided, so that the control hitherto held over epidemic invasion is *pro tanto* less fully guarded against.

Coming to the vital statistics, the birth-rate (29.0) is slightly increased over that of 1898, and the actual increase is placed at 4,011; but no comparison can be made with former years, on account of the extension of the city. The death-rate (18.21) is slightly higher than that of 1898, which was 17.17. The infant mortality rate was 157.13, this high figure being due to measles and summer diarrhœa, though Bristol compares favourably with some of the large towns. The returns for vaccination are for 1898, when the percentage of successful vaccination to births was 40.55. No cases of small-pox or cholera occurred during 1899, but there were 345 cases of fatal diarrhœa, 275 being children; this rate is the highest but one since accurate records have been kept. As diphtheria, or membranous croup, 215 cases were notified, of which 33 died—a case mortality of 15.3. During the year 319 bacteriological examinations were made from suspected throats, an increase from 244 in 1898; and, as many of the cases were examined several times, as large a number as 970 cultures were made, involving 1,455 microscopical examinations. Dr. Davies remarks that in place of the nutrient tubes sterilised swabs only are supplied, and that the cultures are made on nutrient agar and Kanthack's ascitic serum, for comparison; 215 cases of diphtheria were notified; 142 examined bacteriologically, of which 109 showed the bacillus; 15 died, and 41 suffered from a severe form of the disease; 177 suspected cases were examined and the bacillus not discovered. In 16 houses multiple cases of diphtheria occurred. Of erysipelas 337 cases were notified, and of puerperal fever 36. During the year 697 cases of scarlet fever were notified, with 13 deaths—a percentage of 1.8, the lowest ever recorded in the city, a fact which Dr. Davies comments on and ascribes to early notification and isolation. He calls attention to the fact that in 1863 925 deaths occurred from this disease alone. Of enteric fever 219 cases were notified, which is above the average; of these 35 terminated fatally. A small epidemic in St. Philips Marsh in November called for special attention, and, both the milk and water supply being found satisfactory, the drainage system was examined and proved faulty, and is being renovated. The Widal-Grüber test has been made use of in 290 cases, of which 143 gave a positive result. There were 38 deaths from measles, 118 from whooping-cough, and 119 from influenza.

For the first time there is a report of the City Hospital, Ham Green, which was opened in July, 1899, and received the first patient on July 24th. Up to December 30th there had been 226 admissions, with 5 deaths, the diseases being scarlet fever 194, enteric 21, diphtheria 4, doubtful 7. The inspector of nuisances' report contains full details of his work during the year, and the usual meteorological report is appended.

BELFAST.

Queen's College, Belfast: President's Report.

THE President of Queen's College, Belfast, has issued his report for 1899 1900. The number of students shows little variation, and the medical is still the preponderating element. The library has received 654 new volumes, and its total is estimated at 56,000. The Students' Union and the various associations in connection with the College continue to flourish. As regards the medical school, the chief items of interest are the deaths of two of its oldest and most respected teachers, Dr. Cuming and Dr. Hodges, whose loss has been so deeply deplored; the success of its students, and the work in the laboratories. The vacancies have been filled by the appointment of Dr. J. A. Lindsay to the Chair of Medicine, and of Dr. J. Lorrain Smith, the present lecturer on pathology, and Dr. John Tennant, as joint lecturers in medical jurisprudence. At the time many of the profession in the town and district, including college and hospital men, expressed considerable dissatisfaction that an alumnus of the school was not appointed to this latter post, or as co-lecturer with Dr. Lorrain Smith; this practice had been so eminently successful in the case of Dr. Lindsay in the Chair of Medicine, and also in the Chairs of Surgery, Materia Medica, and Midwifery, that it was thought unwise, if nothing else, to risk the popularity of the College by passing over so many distinguished juniors whose names had been so frequently put forward as showing what the College could produce. Much heat was displayed, and many contradictory statements made. The President's authoritative report, however, puts at rest the question of Dr. Tennant's position, that is, that of "co-lecturer," not that of "assistant," as was stated at the time; it is satisfactory to record that Dr. Tennant has the best wishes of all, and that his abilities and powers of work will render him a valuable addition to the teaching staff. The election of Professor Thompson as an Honorary Member of the Imperial Military Academy of Medicine, St Petersburg, and of his old pupil, Dr. W. A. Osborne, an Assistant Professor of Physiology in University College, London, will be recognised with pleasure. Medical graduates have entered the various home and foreign services, the Home and Indian Army Medical, the Chinese Imperial Customs, and the President and Council have exercised their powers of nomination in four instances in the medical services. The Belfast medical students still continue to gain over 50 per cent. of the places in the Royal University of Ireland, so that the youth of Ulster back up the efforts of their teachers in a very satisfactory manner. The Museum of Hygiene or Sanitary Science, which was initiated a short time ago by Dr. Henry O'Neill, has been still further advanced by his personal energy. There will be few, however, who will not sympathise with President Hamilton as regards the inefficiency of endowments, and join him in the hope that private generosity may still assist materially in the proper equipment of the College. The physiological, pathological, anatomical, and chemical laboratories continue, however, to turn out good work, which is even now bearing fruit.

CORRESPONDENCE.

COVENTRY PROVIDENT DISPENSARY.

SIR,—In the agitation against this institution which has now been raging, at intervals, for eight years, a persistent attempt has been made to obscure the real issue by "drawing a red herring across the path," to wit, the registered Friendly Societies. In a communication which I drew up for the Council of the Association during the presidency of Dr. Saundby, just prior to the annual meeting at Edinburgh, I made the following statements regarding these societies:

It is true that some of the outside medical men hold these appointments, but we have never asked the Dispensary Committee to apply a

wage limit to these selected members, as it was felt that the time was not ripe to attack these societies. Moreover, the outside doctors fear at present to attempt any reform in this direction, as the dispensary blocks the way, and, as has repeatedly occurred, it immediately absorbs at a lower rate of payment any friendly society which may be relinquished.

I do not wish to retrace further the thread of the argument used in this controversy, but merely to emphasise the fact that these societies have always been regarded as distinct combinations, and I have yet to learn that any official censure has been passed on men holding these appointments, by the medical press, the Medical Societies, or the British Medical Association. It is no doubt true that great abuses exist in the term of their contract with the profession, but being registered by Act of Parliament they present peculiar difficulties, and in the opinion of some the solution of the difficulty involves some knotty points of law.

We are now asked by Dr. Saundby to "formulate the reforms we are prepared to accept as satisfactory." Accepting the challenge, we hope soon to give the consultants of Birmingham at a Branch meeting the opportunity of deciding whether in the future they are prepared to uphold the honour of their profession or the interests of their pocket. In the first place, we must insist on some reasonable wage limit, whereby it may become impossible for the rich to monopolise an institution founded to meet the necessities of the poor or the wage-earning section of the community. This must be not only prospective but retrospective, not necessarily to apply to members of registered friendly societies. We insist on the rule being abolished that the medical officers should not hold consultations with anyone outside their staff, except those from other towns.

We object to the system of touting encouraged by the rule that anyone can join even when ill "if he or she can procure two healthy persons to enter at the same time and pay one year's subscription in advance." We also object strongly to a condition of things whereby the medical profession is exploited for pecuniary gain. This is proved from the fact that surplus funds are not all divided up amongst the profession, but money has been invested on mortgage, and property in addition purchased. We object to the idea of professional men administering medical relief in accordance with the dictates of a lay committee controlling funds collected from the members or left to the institution by philanthropists. The doctors have no power over the disposal of these funds, which may be diverted to any purpose. Their position is somewhat analogous to that of the practitioner who covers an unqualified assistant—that is, an individual who receives money by virtue of his connection with a registered practitioner of medicine. We propose to ask the members of the Birmingham Branch to refuse these men professional recognition until some reasonable reforms are introduced. If they carry such a resolution the power of this lay committee is paralysed; reforms must then come which will be for the interests of the profession in general as well as the medical staff of this institution in particular.—I am, etc.,

Coventry, Sept. 3rd. W. RICHARDSON RICE, M.D.

THE COUNTESS OF DUFFERIN'S FUND.

SIR,—Your criticism of the report of the Countess of Dufferin's Fund, published in the BRITISH MEDICAL JOURNAL of July 7th, p. 41, touches on points most vital to the real success of the work in which that body is engaged, and it should be noted that if this association, closely connected as it is with Government officials, fails in the task it has set itself, that is, of supplying skilled medical aid to the respectable women of this country, not only the "name of medical women," as you remark, but the whole cause of European medicine is brought into disrepute in this country.

The adoption of your suggestions would be one step towards lifting the whole work of the fund to a higher level of efficiency, and if money is required expenses could be curtailed by closing some of the small and inefficient centres of work, especially where another Zenana hospital exists already, and refusing to sanction the expenditure of large sums of money on new and unnecessarily large buildings, or to start new hospitals in connection with the fund at present.

It would be sound policy if the association recognised the wisdom of having good base hospitals fully staffed and properly equipped, from each of which as a centre the surrounding district could be marked, and all the branch dispensaries could be efficiently superintended, serious cases being brought up from these latter wherever possible.

To such a hospital, as the experience of mission hospitals for women has proved, plenty of girls from respectable families would be attracted, by personal influence very often, for training as nurses, midwives, and hospital assistants, though if it had involved a journey into some strange far country as the first step they would never have had the courage to offer, nor even the desire to go. Thus the association would no longer have to bewail the scarcity of material offering for such training, which is the result of ignoring natural conditions and the characteristics of the people.

Again, it strikes an independent observer whose sympathies are keenly with the Indian woman, that it is impolitic if not positively cruel to attempt to exclude from the wards and even out-patient rooms of these hospitals the great mass of respectable women, forcing them in consequence to consult men at the general hospitals or else die unrelieved.

The wives of rich and prominent men never will attend these hospitals at all, but nine years' experience both in Bengal and North India has convinced me that the more obscure *purdah nashin* ladies and the respectable women of the upper and lower middle classes have not the slighest objection to finding themselves when ill under the same roof together or even sharing the same wards, always provided that no men are ever admitted either as visitors or officials, and that reasonable tact is exercised in all the internal arrangements.

The proportion of *purdah nashin* ladies admitted to mission hospitals is very large, yet sick women of all castes, including Christians, are admitted to them. If any objection is ever made it usually proceeds from the men, but even that is very rare.

Putting aside such considerations as the need for gaining wide experience and of spreading the fame of a hospital through those who are free from *purdah*, few English medical women with a high ideal of their calling would care to acquiesce in such a rule which inflicts a wrong on a large class of women in order to benefit a small and select one. Nor would such an one appreciate being only nominally head of her own hospital, which is virtually in charge of the civil surgeon of the district (possibly a native or Eurasian), who may claim to perform any operation that he likes and also attend the midwifery cases there.

Another change which would be a distinct step in advance might be made by appointing a fully qualified medical woman, with some Indian experience, to inspect all hospitals and branch dispensaries. This would give the public some guarantee that inefficiency would be detected and reported, and reliable records and statistics published. (See pages 301, 527 of the report.)

It is time that some steps were taken in these directions, as an impression seems to be gaining ground that a large amount of the work done is in the hands of men or inefficient half-trained women calling themselves "lady doctors," and that in consequence the subscribers' money is not being used to the best advantage.—I remain, etc.,

Delhi, North India, Aug. 7th. M. E. STALEY, M.B. London.

HOLIDAYS FOR ENGLISH AND SCOTCH POOR-LAW MEDICAL OFFICERS.

SIR,—During the last year there has been much agitation amongst the Irish Poor-law officers as to their holidays. I understand that by a new Order in Council they have gained their point, but I am not aware what fees they have generally agreed upon for the *locum tenens*.

The question I wish to raise is as to the advisability or otherwise of using this as a precedent for asking English and Scotch Boards to grant holidays to their officers. Do the Irish doctors get theirs only by virtue of the recent Irish Local Government Act? or is it quite competent for English and Scotch Boards to grant their officers holidays and pay the *locum tenens*, and if so, what would be a reasonable proportion of the fee to expect?

I know that with *locums* charging £5 5s. and upwards per week, it is becoming practically impossible for doctors about here to get holidays at all.—I am, etc.,

Sept. 4th. METROPOLITAN DISTRICT MEDICAL OFFICER.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

MEDICAL ARRANGEMENTS OF THE CHINA FIELD FORCE.

ONE division, consisting of two brigades of four regiments each with some divisional troops were first sent to China, while a third and fourth brigade are now being despatched. As they are all native troops, with the exception of the artillery, the medical officers are being supplied by the Indian Medical Service nearly entirely, the strength being as follows:

For each brigade 4 regimental officers, 2½ native field hospitals manned by 10 medical officers (4 for each field hospital of 100 beds), and one native general hospital of 500 beds with 10 medical officers. In addition each unit of the divisional troops, such as a cavalry regiment, has its own medical officer, while there is one divisional principal medical officer, making a total of 49 medical officers (excluding those of the divisional troops, which are not the same in each brigade) for a division of some 10,000 troops. The third and fourth brigades are being supplied on the same scale, but no principal medical officer has yet been appointed.

In addition to the above two hospital ships are being sent out from India with 5 medical officers each, including the ship given by the Maharaja of Gwalior. Further, a third general hospital for native troops is being equipped ready to be sent at once if required, while a fourth is being prepared to recieve any native troops which may be invalided home.

It must also be borne in mind that each regiment has two or three hospital assistants who have had three years' training in a medical school, while each field hospital has 8 of these men, 2 for each section, and the general hospitals are proportionately supplied with them. Enteric fever rarely attacks natives.

In order to supply the above medical officers some 50 Indian Medical Service men in civil employment have been recalled to military duty, all leave has been stopped, and it is probable that those at home will be recalled to duty, while in the meanwhile the civil branch of the service is seriously handicapped in its work, although some relief will be shortly afforded by the arrival of a batch from Netley.

IT is stated that the medical officers warned by the War Office to prepare for service in China at forty-eight hours' notice have been informed that for the present at least their services would not be required.

THE PROFESSORSHIP OF MILITARY HYGIENE AT NETLEY.—We learn that Major R. Hamill Firth, F.R.C.S., R.A.M.C., has been appointed to the Professorship of Military Hygiene in the Army Medical School, Netley, in the room of Colonel J. Lane Notter, who has resigned the appointment in consequence of having to proceed to South Africa as a member of the Commission of Inquiry as to dysentery and enteric fever.

CHINA EXPEDITIONARY FORCE.

IT may be useful to friends of officers serving with the China Expeditionary Force to know that the postal instructions for the addressing of letters, etc., are that only the corps, regiment or battery, is to be stated with the addition of the words "China Expeditionary Force, Hong Kong." The post, we understand, is to be bi-weekly.

ROYAL NAVY MEDICAL SERVICE.

STAFF-SURGEON GEORGE H. FOOTT, M.D., has been appointed to the *War-spite* from the *Phaeton*, and Surgeon BEAUCHAMP F. PARISH to the *Pelorus*, both dated September 1st.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN H. W. VAUGHAN-WILLIAMS, M.B., is placed on temporary half pay on account of ill-health, August 3rd. He was appointed Surgeon-Lieutenant, July 28th, 1894, and after a short term of service in Ireland was attached to the 3rd Battalion Grenadier Guards in August, 1896.

Colonel W. F. STEVENSON, M.B., is granted the temporary rank of Surgeon-General whilst Principal Medical Officer at Army Headquarters, South Africa, May 4th.

Among the invalids returning from South Africa are the following: Lieutenant-Colonel R. D. HODSON, R.A.M.C., Civil Surgeons BENNETT and J. G. WILLIS, Major FITZGERALD, Captain CRAWFORD, Lieutenant CROLY, and Quartermaster SPACKMAN, R.A.M.C.

Civil Surgeon W. H. STEELE is returning on duty during the voyage home.

The following officers have been discharged from hospital to duty: Messrs. LAWLESS, R.A.M.C., and Civil Surgeons KNAPP, STEELE, and Harper.

Civil Surgeon J. PRESTWICK died in the General Hospital at Howick, South Africa, on August 28th, from pneumonia.

INDIAN MEDICAL SERVICE.

COLONEL G. W. R. HAY, M.D., Bombay Establishment, is promoted to be Surgeon-General from May 26th. He entered the service as Assistant-Surgeon, April 1st, 1868, and became Surgeon-Colonel, August 16th, 1897, but has no war record in the Army Lists.

Colonel J. H. NEWMAN, M.D., Bengal Establishment, has retired from the service, July 14th. He joined the Department as Assistant-Surgeon September 30th, 1867, and was made Surgeon-Colonel, March 29th, 1895. He was in the Abyssinian war in 1868 (medal), and in the Afghan war in 1878-9, and took part in the two expeditions into the Bazar Valley (medal).

Surgeon-General CHARLES SIBTHORPE, C.B., Madras Establishment, has also retired from the service, from August 12th. He was appointed Assistant-Surgeon, April 1st, 1870, and Surgeon-Major-General, May 18th, 1894. He served in the Afghan war in 1879-80 with the Peshawur Valley Field Force, receiving a medal, and with the Burmese expedition in 1885-6 in medical charge of the Headquarters Staff, for which he was mentioned in despatches, promoted to be Brigade-Surgeon, and received the Frontier medal with clasp. He was nominated a Companion of the Order of the Bath in 1897.

The retirement from the service is also announced of Lieutenant-Colonel J. W. EVANS, of the Madras Establishment, from May 9th. His first commission dated from March 31st, 1880; that of Lieutenant-Colonel twenty years therefrom. He was in the Burmese campaign in 1885-6, and has the Frontier medal with clasp.

Lieutenant-Colonel J. YOUNG, M.B., Bengal Establishment, has been granted the temporary rank of Colonel from July 14th, while officiating as Principal Medical Officer Presidency District, *vice* Colonel J. T. Bookey, appointed Principal Medical Officer China Expeditionary Force.

The undermentioned Lieutenants, having completed three years' full-pay service, are promoted to be Captains, from July 28th: J. G. P. MURRAY, M.B., S. ANDERSON, M.B., F. H. G. HUTCHINSON, M.B., J. L. MARJORIBANKS, M.B., A. FENTON, M.B., J. A. DREDGE, R. W. KNOX, M.B.

Assistant Surgeon J. T. O'NEILL, Bombay Establishment, died on August 27th, at Geluk, South Africa, from wounds received in action.

Orders have been issued stopping all leave other than sick leave to Indian Medical Service officers in military as well as civil employ; but this is not to preclude the granting of privilege leave in India to such officers as can be spared.

ARMY MEDICAL RESERVE.

SURGEON-LIEUTENANT A. Y. PRINGLE, 1st Suffolk and Harwich Volunteer Artillery, to be Surgeon-Lieutenant, September 5th.

THE MILITIA.

SURGEON-LIEUTENANT-COLONEL F. FAWSSETT, jun., M.D., 4th Battalion the Suffolk Regiment, retires from the service, retaining his rank and uniform, September 1st.

MILITIA MEDICAL STAFF CORPS.

MR. GEORGE J. D. DAVIES is appointed Surgeon-Lieutenant, August 14th.

Surgeon-Major W. WARING is promoted to be Surgeon-Lieutenant-Colonel, and to command, August 20th.

Surgeon-Captain W. M. O'CONNOR, M.B., is promoted to be Surgeon-Major, August 20th.

Lieutenant A. H. BENSON is returning from South Africa invalided.

IMPERIAL YEOMANRY.

SERGEANT R. G. MURRAY, M.R.C.S., is appointed Medical Officer to the 14th Battalion, with the temporary rank of Captain, June 11th.

THE VOLUNTEERS.

THE undermentioned Surgeon-Lieutenants have been promoted to be Surgeon-Captains in their respective corps: C. FORSYTH, M.B., 1st Essex Artillery (Eastern Division Royal Garrison Artillery), August 22nd; J. W. NICHOLSON, 1st Volunteer Battalion the Lincolnshire Regiment, July 28th; T. W. BANKS, M.B., 9th Lanarkshire Rifles, August 22nd; O. C. MAURICE, Royal Wiltshire Yeomanry (Prince of Wales's Own Royal Regiment), August 29th; C. E. HUMPHREYS, 5th Volunteer Battalion the South Wales Borderers, August 29th.

Surgeon-Captain W. R. SEWELL, M.D., 1st Renfrew and Dumbarton Artillery, is promoted to be Surgeon-Major, August 22nd.

Surgeon-Captain W. P. MORGAN, M.B., 1st Sussex Engineers, has resigned his commission, August 22nd.

The Volunteer Officers' Decoration has been conferred upon the undermentioned officers: Surgeon-Lieutenant-Colonel E. J. LAWLESS, 4th Volunteer Battalion the East Surrey Regiment; Surgeon-Major R. T. A. O'CALLAGHAN, 1st Flintshire (Buckley) Royal Engineers (Volunteers); Surgeon-Major C. H. GWYNN, M.D., 2nd Volunteer Battalion the King's (Shropshire Light Infantry); Surgeon-Major H. J. FAUSSET, M.D., 2nd Volunteer Battalion the Prince of Wales's (North Staffordshire Regiment); Surgeon-Lieutenant-Colonel W. MASON, 1st Cornwall (Duke of Cornwall's) Volunteer Artillery (Western Division Royal Garrison Artillery).

Mr. KENNETH MACK DOUGLAS, M.D., is appointed Surgeon-Lieutenant in the Queen's Rifle Volunteer Brigade (Highland Battalion) the Royal Scots (Lothian Regiment), August 14th.

Surgeon-Lieutenant A. W. MESSER, M.B., 2nd Volunteer Battalion the Northumberland Fusiliers, resigns his commission, August 29th.

Surgeon-Major G. F. ENGLAND, 2nd Volunteer Battalion the Lincolnshire Regiment, is promoted to be Surgeon-Lieutenant-Colonel, August 29th.

Surgeon-Lieutenant GEORGE HIGGINSON, 1st Shropshire and Staffordshire Artillery, resigns his commission and is appointed Second Lieutenant, September 5th.

A DUAL POSITION.

Army Medical Reserve propounds some curious questions to which it might puzzle even the ingenuity of the War Office to give a clear answer. His position is this: He is the senior although only a surgeon-captain in his volunteer battalion, and is regimentally addressed by that rank; but he is also a Surgeon-Major in the Army Medical Reserve. Query, what are his proper army rank and title? His battalion goes into camp for fourteen days' training; he receives the pay and allowances of a captain—not of a major, which includes forage. Query, should he not be treated in these respects as of field rank and a mounted officer?

The case well illustrates what we have often pointed out—the contradictory and absurd position of a volunteer medical officer who holds two commissions, one regimental and the other reserve. When pay and allowances are concerned, and he is called out with his corps, he is treated as of the inferior rank, which is no doubt strictly in accordance with the pay regulations. But while the higher rank in the reserve costs the state nothing, he is given it freely as the inducement to enter that body. Truly the dual position is anomalous and absurd to a degree, and shows the purely factitious nature of the reserve!

INDIAN MEDICAL SERVICE.

Dr. John Hope Potter (Porlock) writes: I am glad to see that owing to Mr. Victor Horsley's sense of fair play a Committee will be appointed to investigate the conferring of hospital appointments in India. It has long been a crying injustice that those appointments should be confined to members of the I.M.S. I wonder if Colonel Macleod, who professes to have the interest of the Indian graduates at heart, approves of Scotch graduates being debarred from holding hospital appointments in England. Yet he would keep Indian appointments as a monopoly for the I.M.S.

Colonel Macleod asserts "no reflection can be cast on the officers who hold the chairs." The reflection is not on the men, but on the system that appoints them. No one doubts the Indian medical officer is up to the standard (if not above it) of the ordinary newly-qualified man, but surely this does not suffice to qualify him for professorships in different faculties. As a matter of fact, I have known the Chair of Midwifery to be held by an excellent officer and practitioner who told me he knew nothing of midwifery, not having seen any since his student days. Yet he of necessity got all the consulting midwifery of a large Presidency city. I knew also the Chair in Medicine to be held by a Licentiate in Surgery who, as was stated in the public papers and not denied, could not have held a Poor-law appointment at home, as he held no medical qualification. This man, owing to his appointment, got all the consulting medical work. If Colonel Macleod doubts or denies these statements I shall be glad to furnish him with names and particulars. If the best men are appointed, why fear competition? There are plenty of good men who spend years at unremunerative special work in London hospitals who would be suitable for such appointments if thrown open.

It is well known, and has been admitted in conversation to me by highly-placed medical officials, that there is a strong feeling against appointing junior men, however suitable, over the heads of senior men. This is natural. These appointments, if not influenced by wire-pulling, are given as a reward for services, which services are generally quite distinct in character from the subject of the Chair. Thus square men get put into the round holes.

THE ARMY HOSPITAL CONTROVERSY.

Surgeon-General Retired, in forwarding newspaper cuttings, makes some suggestive remarks on the controversy. He thinks that in the onslaught on the Army Medical Service, from first to last, there are coincidences and sequences so remarkable as to suggest that the attack had been deliberately engineered by persons who have grudges against the R.A.M.C.

FULL ARMY STATUS.

Lieutenant-Colonel A.M.S. writes: In the article in the British Medical Journal on the Future of the Army Medical Service, you mention the granting to medical officers "full army status in a Royal corps." If that be so, can you explain the fact that an officer of the R.A.M.C. is still a non-combatant, and in being such the last joined subaltern, if senior combatant officer, takes precedence of him, no matter what his rank? Also, even the last joined paymaster does so, as he now serves as a combatant officer, on his combatant commission, and not an honorary rank.

*** We do not think the question of precedence is altogether as our correspondent puts it; there are other elements to be considered. As we understand the matter, substantive army commissions confer on their holders magisterial powers identical in kind and scope to all, whatever be the gradation of rank, from subaltern to colonel. But the exercise of these powers, in the function of command, is usually expressly defined and limited in various directions by Royal warrants and the Queen's regulations. Thus the command by medical officers is limited to that of their own corps, or of such others as may be serving or sick in hospitals over which they exercise discipline; the commanding officer under given circumstances is thus named. Such limitation or definition cannot alter the status conferred by a commission of a substantive kind. We admit the question propounded is not without curious and possible complications, such as appeared in the famous, or rather infamous, Fowler case; where a medical officer was made to suffer for not exercising disciplinary authority over combatant officers in virtue of powers declared to be inherent in his commission. As to paymasters we are not aware that they serve under combatant commissions, or as departmental officers can take precedence of those of a Royal corps.

VOLUNTEER MEDICAL SERVICES IN THE ARMY AND NAVY.

Canada asks: What chance would there be for a fully-qualified Colonial physician or surgeon in the volunteer department of either the British army or navy?

*** 1. There is no volunteer department of the Royal Naval Medical Service. There is a scheme for employment of reserve doctors in the Royal Navy in time of war pressure. Information on this matter could be obtained from the Medical Director-General of the Royal Navy, Admiralty, London.

2. The medical service of the volunteers is only indirectly under the War Office so far as appointments are concerned. The regimental medical officers are appointed by the regimental commanding officers, and the same condition exists in the Volunteer Medical Staff Corps. In neither case does the Director-General of the Army Medical Service appoint, and there is no body of volunteer surgeons serving directly under the Director-General Army Medical Staff, or receiving their appointments directly from him. Such a branch of the Volunteer Medical Service is greatly needed, and to it a great part of the civil surgeons now serving in South Africa could have been appointed.

FEMALE NURSES IN THE UNITED STATES ARMY.

The female nurses of the United States army now number 145, practically all of whom are either in the Philippines, stationed at the hospitals of the various garrisons throughout the Archipelago, or on their way there.

MEDICO-LEGAL AND MEDICO-ETHICAL.

PURCHASE OF SHARE OF PRACTICE.

Member asks for information on the following points re the purchase of a share of a medical practice: (1) Is the share to be calculated on the amount earned or the amount received during the year? (2) If the purchase-money is paid on January 1st, 1901, does the new partner immediately receive his share of all moneys paid, including debts of one, two, or more years' standing, or does he only receive his share of income earned and received from date of partnership? (3) Is he responsible for his share of all working expenses?

*** (1) A share is always reckoned on the gross professional receipts for the year. (2) A partner is entitled from the date of partnership to his share of all profit receipts for work done since the commencement of the said partnership; but he has no claim to any receipts for work done before the date of his joining the firm, unless otherwise agreed in the partnership agreement. (3) A partner is responsible for his share of the working expenses from the date of his partnership.

THE L.S.A. AND THE TITLE OF "DR."

Enquirer asks: Is a medical practitioner holding the L.S.A. solely entitled to style himself "Dr.," and is there any regulation bearing on the matter?

*** The following extract from an article published in the British Medical Journal of December 14th, 1895, p. 1508, may serve as a reply to our correspondent's question: "The result of the Acts of 1858 and 1886, and what has occurred in connection with them, has tended to confuse or break down altogether distinctions which existed formerly. Reasons may exist more in one case than another in favour of the moral right to use the title of 'Dr.,' but we can only deal with the question as a whole, and on broad and general lines. So dealing with it, we think that we may safely affirm that no legal proceedings will lie against a qualified medical practitioner who chooses to call himself 'Dr.,' or even to put that title on his doorplate. On the other hand, it is clear that if he describes himself as a Doctor of Medicine or writes the letters 'M.D.' after his name, or directly expresses or implies that he holds a university degree, he can be prosecuted under the 40th section of the Medical Act of 1858. It goes without saying that he can equally be prosecuted if he describes himself or appends to his name any higher title than the one which he actually possesses."

ASSISTANTS AND FEES FOR MEDICAL EVIDENCE.

A Correspondent asks whether it is customary for an assistant to take the whole fee for attendance at assizes and at inquests?

*** In the absence of an agreement to the contrary, an assistant is entitled to none of the fees received for giving evidence either at inquests or in courts of law, where the matter on which he gives evidence has arisen in the course of his principal's practice.

PROFESSIONAL SECRECY.

F. G. H.—Our correspondent should speak to his patient about the difficulty and consult as to what should be done. He is not ethically justified in telling his patient's secrets to anybody, but the patient must take the consequences of the doctor's refusal to speak. It would probably be best to advise the patient to be prepared to tell the truth or to allow it to be told for him.

WORKMEN'S COMPENSATION ACT.

SUBSCRIBER.—The contracts made by medical men with large employers of labour probably vary a great deal. There are many books on the Workmen's Compensation Act. Probably those by Mr. Ruegg and Mr. Minton Senhouse are the most reliable, from the legal side. The working of the Act is not yet thoroughly ascertained. But many doubtful points have been decided by the Court of Appeal. No doubt an amending Act will soon be passed by Parliament to clear up difficulties which have been discovered.

THE ETHICS OF CONTRACT PRACTICE.

CONTRACT PRACTICE.—We cannot help feeling sorry that our correspondent parted with his money so readily, as he was not in any way called upon to pay the bill. When next morning he visited the patient, as he promised to do and as we assume he did, he offered his services, and if they were declined there could be no further equitable claim against him.

PROFESSIONAL ATTENDANCE UPON THE FAMILIES OF MEDICAL MEN.

We have repeatedly pointed out that no medical practitioner is obliged to attend a colleague or the members of a colleague's family without payment. (See JOURNAL, March 24th and April 28th, 1900.) A correspondent writes to us that he is medical officer to a school where many of the boys are the sons of medical men, one of whom has complained of having to pay for medical attendance. It is clear that such a claim cannot be allowed, as in the case of a school where all the boys were doctors' sons it would be impossible to find a medical officer willing to give his services for nothing.

APPOINTMENTS UNDER AMALGAMATED FRIENDLY SOCIETIES.

DUBITANS.—There is not anything strictly unprofessional in accepting an appointment as medical officer to amalgamated friendly societies at a fixed salary, but the mode in which these friendly societies have so generally conducted their business has brought them under the ban of professional opinion, and we should advise our correspondent to make careful inquiries before accepting such an appointment. We assume that he is aware that the General Medical Council has issued a warning to all medical practitioners holding office under such societies as seek to gain practice by the unprofessional methods of advertising and canvassing.

CHANGE-OF-ADDRESS CARDS.

A MEMBER.—The card sent to us is a flagrant instance of the way in which these cards are abused if, as our correspondent says, it was sent to persons other than the *bonâ fide* patients of the practitioner in question.

THE RELATIONS OF PRACTITIONERS.

IN the case referred to us concerning A., B., and C., upon the facts as stated, we do not think the intervention of the *locum tenens* B. and his dismissal deprive A. of his status as the practitioner originally in charge of the case, and we think C. ought to have communicated with A. upon his return.

NEWSPAPERS' PUFFS.

LA FLEUR.—It is not for us to offer a gloss upon a resolution of the Council, but there must be exceptions to all rules, and our correspondent will probably admit that where medical men occupy positions of exceptional eminence, or are called to take part in events of great public interest, it is unavoidable that non-medical newspapers should take notice of them, and it is quite certain that their photographs can be easily purchased by any editor.

A SOUTH AFRICAN CORRESPONDENT sends us a cutting from the *Cape Times*, headed "Great Operation Marvellous Surgery at Deelfontein," with half a column of description of the case of an officer who was wounded in the spine by a Mauser bullet, localisation of the projectile by the x rays, and its subsequent successful removal. He rightly considers that such descriptions are suitable only for professional newspapers; but he admits that the operator and his assistants whose names are given may have had nothing whatever to do with this publication, and we can only express our hope that he is correct in this supposition. It is particularly undesirable that more or less eminent members of the medical profession who are now in South Africa owing to the war should set a bad example to colonial practitioners, and we would urge them to do their best to prevent the appearance of such highly-coloured and sensational narratives in the colonial newspapers.

UNIVERSITIES AND COLLEGES.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, August, 1900.—The following candidates passed in:

Surgery.—A. St. J. Bateman (Section II), King's College Hospital; H. N. Horton (Section II), Middlesex Hospital; E. R. Risien (Section I), St. Bartholomew's Hospital; E. F. Rose (Section II), St. Bartholomew's Hospital; W. C. Spooner (Sections I and II), Edinburgh.

Medicine.—W. A. C. Cox (Sections I and II), St Mary's Hospital; F. R. Featherstone (Section II), Guy's Hospital; J. C. Furness, Charing Cross Hospital; J. I. Halstead (Section I), Manchester; A. H. L. Newstead (Cambridge and St. Mary's Hospital); E. F. Rose (Sections I and II), St. Bartholomew's Hospital; A. Y. St. Leger (Sections I and II), Cambridge and St. Mary's Hospital.

Forensic Medicine.—W. A. C. Cox, St. Mary's Hospital; J. C. Furness, Charing Cross Hospital; J. I. Halstead, Manchester; A. H. L. Newstead, Cambridge and St. Mary's Hospital; E. F. Rose, St. Bartholomew's Hospital; M. J. Ryan, St. Bartholomew's Hospital; A. T. Spanton, Cambridge and St. George's Hospital; A. Y. St. Leger, Cambridge and St. Mary's Hospital.

Midwifery.—R. R. P. S. Bowker, Middlesex Hospital; E. Osborne, Birmingham; E. F. Rose, St. Bartholomew's Hospital; W. C. Spooner, Edinburgh.

The diploma of the Society was granted to A. St. J. Bateman, R. R. P. S. Bowker, W. A. C. Cox, F. R. Featherstone, H. N. Horton, A. Y. St. Leger, A. H. L. Newstead, and E. F. Rose.

OBITUARY.

LIEUTENANT-COLONEL C. J. H. WARDEN, M.D., I.M.S.

LIEUTENANT-COLONEL CHARLES JAMES HISLOP WARDEN, I.M.S., who, as announced in the BRITISH MEDICAL JOURNAL of July 28th, died recently in London, was born in 1851. He was the only son of Captain Charles William Warden, of St. Heliers, Jersey. He studied medicine at St. George's Hospital, and became a member of the Royal College of Surgeons of England in 1872 and a Licentiate of the Royal College of Physicians of London in the following year. From a comparatively early age he had taken great interest in chemistry, and while a student gained in open competition a silver medal for pharmaceutical chemistry and materia medica given annually by the Society of Apothecaries. In 1873 he obtained certificates of proficiency in chemistry from the Royal College of Chemistry and the Royal School of Mines. In 1874 he entered the Indian Medical Service and was appointed to Bengal. In 1876 he was deputed by the Board of Revenue on special duty to inquire into the cause of the repeated failure of the system of taxing materials used in the distillation of spirits. In 1878 he acted for six months as principal assistant to the opium agent at Behar. In 1879 he was appointed Professor of Chemistry in the Calcutta Medical College and Chemical and Opium Examiner to the Government of Bengal. These appointments he continued to hold until 1892. During the thirteen years that he held the Professorship of Chemistry, he was repeatedly thanked by the Government for the excellent work performed by him as Chemical Examiner. During that time also he examined and pharmacologically tested most of the indigenous drugs, and in conjunction with Brigade-Surgeon W. Dymock, of the Bombay service, and Mr. David Hooper, Quinologist to the Madras Government, he produced the *Pharmacographia Indica*, a work which is accepted as a standard authority. His services were frequently requisitioned during these years by the Government for scientific investigation. In 1881 he was twice appointed to make experiments on the packing of opium. In 1883 he conducted many experiments in connection with the testing of petroleum, for which he received the thanks of the Governor-General in Council. In 1883 also he was engaged in experiments with reference to the manufacture of country spirits. In 1886 he inquired into the presence of fusel oil in country spirits. In 1890 he performed a large amount of work on the verification of petroleum testing apparatus, and in 1891 he drew up a scheme for the determination of the real alcoholic strength of imported spirits, and devised special forms of apparatus for carrying out the necessary operations. These were subsequently adopted by the Government of Bengal. For these services he received the thanks of the Government. Whilst absent on furlough in 1884 he spent some months at the Imperial Board of Health Laboratories in Berlin, making a special study of bacteriology and chemistry. In 1886 he was associated with Sir Frederick Abel and Mr. Redmond in drawing up the "rules for testing petroleum," which were afterwards incorporated in the "Petroleum Act of 1886." In that year he also took the degree of M.D. Brussels. In 1892 he was appointed officiating medical storekeeper, Bengal, and effected many alterations in the laboratory, especially in the manufacture and preparation of drugs. In December, 1897, Dr. Warden was deported by the Government of India to special service in Bombay in connection with the plague, and rendered assistance of the first importance there until he was allowed to proceed on furlough in May, 1898. In 1895 he was sent to visit and report on the medical store depots at Madras, Bombay, and Meean Meer, and towards the end of that year was appointed a member of the Indigenous Drugs Committee. In 1893 the Pharmaceutical Society of Great Britain elected him a corresponding member in appreciation of the great value of the work done by him in the branches of knowledge embraced in the educational objects of the Society. In 1884 he was elected a Fellow

of the Royal Chemical Society of Edinburgh, and in 1886 a Fellow of the Calcutta University. Dr. Warden came to England on furlough in June, 1898, and shortly after officiated for Dr. Macnamara, the Examiner of Medical Stores at the India Office, succeeding to the permanent appointment on the latter officer's death in 1899. He retired from active service on the expiration of his furlough in June 1900.

Of a somewhat retiring disposition, and not caring for the ordinary pleasures of society, his chief delights lay in the laboratory and in his garden which as a scientific botanist he loved so well. To those who had the privilege of his friendship he always extended a warm welcome, and there are many who mourn the early loss of a true and warmhearted friend and brother officer. In his public capacity he was held in the very highest repute by the head of the Indian Medical Service as a well-educated and broadly scientific officer; his services were in almost constant demand, and he never failed to come up to the expectations formed of him. The value of his work was well recognised, and his assistance highly appreciated in those more abstruse questions of a scientific character only remotely connected with the ordinary duties of Indian medical administration. Amongst Dr. Warden's many contributions to various scientific journals the following may be mentioned as representing the variety of the work which occupied his attention: (1) Analysis of Soil from the Gold Coast; (2) The Active Principles of Indian Hemp (jointly with Surgeon Madden); (3) Analysis of Mud from the Mei Range; (4) Indigenous Drugs of India; (5) Memorandum on Fusel Oil; (6) Memorandum on Certain Experiments connected with the Manufacture of Country Liquor.

WILLIAM MARSHALL, M.D., L.F.P.S.Glas.,

Consulting Surgeon, Dumfries and Galloway Royal Infirmary.

We regret to record the death of Dr. William Marshall, of Dumfries, which took place on August 30th, at the age of nearly 80 years. He was born in Caledon, county Tyrone, where his father, Mr. Huggins Marshall, was then resident, and received his medical education in Glasgow. He took the L.F.P.S. in 1845, and the M.D. at St. Andrews University in the same year. Afterwards he proceeded to the Southern States of America. Returning to this country in 1848, he was sent with eleven others to Dumfries to assist during the cholera epidemic of that year. On the cessation of the outbreak Dr. Marshall remained in Dumfries as assistant to the late Dr. McCulloch, and after a few years started practice on his own account. He was recognised as a skilful practitioner, and his kind and genial manner secured for him a host of friends and an extensive connection. Dr. Marshall took a keen interest in the affairs of his adopted home, served on its Town Council and zealously supported schemes for improving the sanitary condition of the town, especially in regard to its water supply. He was specially concerned in the welfare of the Dumfries and Galloway Royal Infirmary, on the medical staff of which he actively served up to about four years ago, when he retired and was appointed consulting physician. He was also Medical Officer to the Dumfries Parochial Board for over forty years, being eventually assisted by his elder son, who predeceased him. Dr. Marshall was one of the first in the district to be connected with the volunteer movement, and served as surgeon for some eight years, taking part in the review by the Queen at Edinburgh in 1860. Dr. Marshall possessed all the wit and charm of manner which distinguish the natives of the Emerald Isle. He was a capital *raconteur*, and not even severe suffering would prevent his making witty remarks or telling a good story. He took a keen interest in all outdoor sports, especially coursing, bowling, and curling. He was fond of music, and until a contraction of his little finger became pronounced, not a mean performer on the violin. He was an enthusiastic Freemason, and recently was an office-bearer in the Provincial Lodge. Dr. Marshall was twice married, and has one surviving son now in New Zealand.

JOHN ANDERSON, M.D., LL.D.

Dr. John Anderson, who recently died at Buxton at the age of 66, was the son of the late Mr. Thomas Anderson, Secretary to the National Bank of Scotland, Edinburgh. He was born in that city in 1833, and educated at the George Square Academy and the Hill Street Institution, and finally at the Edinburgh University. In 1861 he took the degree of M.D., being awarde a gold medal for a thesis entitled Observations in Zoology. After graduation he was appointed Professor of Natural Science in the Free Church College, Edinburgh, but he resigned the office in 1864, and was appointed Superintendent to the Indian Museum, Calcutta, in 1865. Two or three years afterwards he was also given the chair of comparative anatomy in the Medical College, Calcutta. In 1868 he accompanied an expedition to Western China through British and Independent Burma as scientific officer; and in 1874 he went again to Western China in the same capacity. In 1881 he was sent by the trustees of the Indian Museum to investigate the marine zoology of the Mergui Archipelago, off the coast of Tenasserim. In 1887 he retired from the service of the Government of India. Dr. Anderson was the author of numerous papers on zoology, and of a Report on the Expedition to Western China *viâ* Bhamo, published by the Government of India in 1871; *Mandalay to Momien*, an account of the two expeditions to Western China under Colonel Sir Edward Sladen and Colonel Horace Browne; and *Anatomical and Zoological Researches* including an account of the zoological results of the two expeditions to Western China in 1868-9 and 1875. The scientific results of his researches in the Mergui Archipelago were published by the Linnean Society of London, and he also published in 1890 an account of *English Intercourse with Siam in the Seventeenth Century*, in Trübner's Oriental Series. In 1896 Dr. Anderson published a small volume on *The Herpetology of Arabia*, and he was lately engaged on a work dealing with The Fauna of Egypt. In addition to being a Fellow of many learned societies, he was also a Fellow of the Calcutta University and a Corresponding Fellow of the Ethnological Society of Italy. In 1885 the University of Edinburgh conferred on him the honorary degree of LL.D.

We regret to announce the death of Dr. Thomas Martyn Sibbald, R.N., who died at Taku, China, recently, after having been for nearly a quarter of a century in the service of his country. He studied medicine at King's College, and obtained the diploma of M.R.C.S. Eng. in 1875 and that of L.R.C.P.Ed. in 1876. The deceased officer, who was in the prime of life, was on the staff of Admiral Seymour on board the flagship *Centurion*, and had attained the rank of Fleet Surgeon. Had he survived the present outbreak in China he would have in due course been made Deputy-Inspector of Hospitals and a C.B. Dr. Sibbald was no doubt, says the *Daily Mail and Empire* of Toronto, unduly taxed by his work among the large number of wounded, and when seized with quinsy was unable to bear up. A relative in Canada received from him a letter dated Tien-Tsin, June 28th, in which among other things he said:

> We have just returned from an expedition which tried to reach Pekin to rescue the various ministers. We failed, as the Chinese tore up the railway, and our force was too small to go on, being practically surrounded by the Chinese army. We have lost very heavily. Our captain is dangerously wounded, but I have hopes he will recover. Five other of our officers are wounded and our captain of marine artillery killed, all by shell and bullets. Many of the men were killed and a large proportion wounded. I got off with a small hole in my trousers and a slight graze above the knee, which stung a bit at the time but otherwise caused no inconvenience. At one time we thought it was all up with us; but we stormed and captured a fort, where we entrenched ourselves, and, though several times attacked, managed to keep the enemy off. None of us had been through so many days of incessant fighting. We suffered rather from want of food, but not much. We fortunately found large stores of rice in a building close to our enclosure. A relief column, composed chiefly of Russians, fought their way up to us three days ago and got us out of as uncomfortable a position as you can imagine, and we came down here, where we remain for the present. I live with the admiral and staff in a very good house here, and have an enormous amount of work. The town hall, club, and other buildings have been converted into hospitals.

Dr. T. M. Sibbald was the younger of two sons of the late Captain Thomas Sibbald, R.N., of Eildon Hall, Lake Simcoe, Ontario, and grandson of the late Colonel Sibbald, of Pinnacle, Roxburghshire. He was a nephew of Mr. Hugh Sibbald, a large property owner in Ontario, and a relative of Sir John Sibbald, M.D., late Commissioner in Lunacy for Scotland.

Captain John Stuart Stevenson, I.M.S. (Bengal), whose death was announced in a recent issue of the British Medical Journal, died at Lucknow on July 20th, in his 26th year, of heat apoplexy. He was the only son of Surgeon-General W. F. Stevenson, R.A.M.C., lately Professor of Surgery at Netley, now P.M.O. with Lord Roberts. Captain Stevenson entered

the service in 1896, and proceeded to India in the same year. He was employed on plague duty at Hardwar during the outbreak at that great pilgrim centre. Afterwards he was on field service during the war on the North-West Frontier in 1897-98. In 1899 he was deputed to Mauritius as Special Plague Officer, and was thanked by the Governor of that colony for his services. Returning to India, he was in April, 1900, appointed to officiate as Deputy Sanitary Commissioner, North-West Provinces. Captain Stevenson was a very promising officer and much beloved by all who knew him. The whole profession will sympathise with Colonel Stevenson in the irreparable bereavement which he has suffered.

We regret to announce the death of Dr. WILLIAM HENRY LOWE, F.R.S.Edin., formerly President of the Royal College of Physicians of Edinburgh, which occurred on August 26th at his residence, Woodcote, Wimbledon Park, in his 86th year. He received his medical education at the University of Edinburgh, where he graduated M.D. in 1840. In the same year he was admitted as a member of the Royal College of Physicians of Edinburgh. He had previously taken the Membership of the Royal College of Surgeons of England in 1839. He was elected a Fellow of the Royal College of Physicians of Edinburgh in 1846, and President of that College in 1873. Dr. Lowe held several important positions in Edinburgh, among others those of President of the Royal Medical Society and Vice President, subsequently President, of the Royal Botanic Society. At the meeting of the British Medical Association in Edinburgh in 1875 he was President of the Section of Psychology, and delivered the address before that Section. Dr. Lowe was for some years resident physician to the Saughton Hall Institute for the Insane, and was subsequently in practice at Balgreen, Murrayfield, Edinburgh. In 1875 he settled at Wimbledon Park. He was the author of a work entitled *Jaundice from Non-Elimination, together with Remarks on the Pathological Condition and Chemical Nature of the Bile.*

WE regret to learn of the death of Surgeon-Major JOHN TRESSILIAN TOLL, M.R.C.S.E., L.R.C.P.E., on the voyage from the Cape to Melbourne on board the ss. *Australasian.* Surgeon-Major Toll, who was about 48 years of age, was born in London, and was taken by his parents to South Australia when a child. He was educated at the Adelaide Grammar School, but came to England in 1871 and entered Queen's College, Birmingham. All his fellow-students will hear of his untimely death with the deepest sorrow, for "Jack" Toll was universally popular. He held two resident appointments at the General Hospital, and he also studied in Edinburgh, at University College Hospital, and in Paris. Soon after obtaining his diploma in 1877 he returned to Australia as Surgeon in charge of the emigrant ship *Airlie.* Shortly after his arrival he entered into partnership with his brother-in-law, Dr. Gething, and on the death of that gentleman in 1883 he became Government Health Officer. He also held the post of Medical Officer to the Port Adelaide Corporation for fifteen years. He had the medical charge of the Largs Bay and Glanville Forts, and also of the colonial warship *Protector.* When arrangements were being made for the despatch of the first South Australian contingent to the front, he offered to accompany the force as a volunteer medical officer without pay. He went with the troops up country to Bloemfontein, where he was attached to one of the hospitals; here he was stricken down with enteric fever, became convalescent, however, and invalidid home. The *Adelaide Advertiser* of June 25th, commenting on the voyage, says:

> The voyage was closed by one sad incident of especial interest to South Australia. Surgeon-Major Toll, of Adelaide, who had fallen a victim to enteric fever, was returning home. He quickly became a great favourite on board. He was of that temperament which makes men popular. On June 20th the gallant surgeon major expired. He was seized with an epileptic fit and sank soon afterwards. He was buried at sea with full military honours, but his death clouded the end of the voyage.

Surgeon-Major Toll married a daughter of the late Mr. W. R. Mortlock, a niece of the Hon. A. Tennant, and leaves an only son.

THE value of the estate of the late Dr. Charles Brodie Sewell, of Tintoch House, Canterbury, and formerly of Cavendish Square, W., who died on January 28th, has been proved at £45,727.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

BELFAST BOARD OF GUARDIANS.

AT the meeting of the Board held on Tuesday, August 21st, Dr. James Lynass, one of the medical officers of the infirmary, submitted a very interesting report, showing that 368 cases of surgical injuries and 62 of surgical diseases had been treated in his department during the last six months; the number of operations under chloroform—51—is also very encouraging considering the freshness of the move; and Dr. Lynass and the other medical officers are to be congratulated on this energetic effort towards specialisation. It is a distinct advance on the old heterogeneous system, which still manifests itself, however, greatly to the inconvenience of the surgeon, and the detriment of the patients in having to admit alcoholic cases to the general wards. Dr. Lynass also pays a well-deserved compliment to his house-surgeons and to the nursing staff. The work of reformation in the infirmary and workhouse generally began many years ago when Miss Pirrie, daughter of one of the old leading practitioners of Belfast, was lady superintendent of nurses, and she reorganised the nursing and instituted many improvements. From that time on, every now and then some step in advance has been taken; the medical officers, both visiting and resident, have been increased, a nurses' home has been built, and bit by bit trained nurses have supplanted pauper help. This last move is but a further stage in the evolution.

There are still, however, many evils to be dealt with. The infirmary committee in an investigation discovered that at supper not a single child was getting more than two-thirds of the quantity of milk ordered by the Board, and that in the case of bread the deficiency was even more glaring. An inquest was also held on August 24th on a patient who died from injuries received in falling out of a window. Complaints have also been made as to the housing and treatment of the aged infirm poor.

LISBURN DISTRICT COUNCIL.

AT a special meeting of the North of Ireland Urban District Council, held on August 22nd, the propriety of adopting the Infectious Diseases (Notification) Act, 1889, and the Infectious Disease (Prevention) Act, 1890, was discussed. The medical officer of health (Dr. Jefferson) reported the prevalence of typhoid fever. The chairman (Dr. St. George), and Dr. Mackenzie, medical officer to the workhouse hospital, also spoke as to the large number of cases, and all three medical men believed that quite a number could be traced to infected milk from one or two dairies in the town and country. The motion that the Acts be adopted and put in force in Lisburn was carried by a majority of 7 to 3.

RETURN OF CONTRIBUTIONS PAID UNDER SUPERANNUATION ACT, 1896.

G. C. H. writes to ask on what grounds it has been stated in the BRITISH MEDICAL JOURNAL, in answer to correspondents, that a district medical officer can, on leaving his union, demand a refund of his contributions towards superannuation allowance.

*** Under ordinary circumstances a medical officer cannot demand a return of his contributions towards superannuation on leaving his union; and we are not aware that we have ever expressed the opinion that he could do this; but by Clause 8 of the Act of 1896 any officer who has not become entitled to superannuation allowance, and who loses his office in consequence of a reduction of staff, or alteration of areas or from other causes beyond his own control, is entitled to receive out of the common funds of the union a sum equal to the amount he has contributed towards superannuation. Even this he will have to pay over the guardians of any union in which he may obtain a subsequent pointment.

DIPHTHERIA AND SCARLATINA.

M.O.H. received a notification of five cases of scarlet fever. A fortnight later the same practitioner reported other four in the same village. All the cases were mild but one, that of the child first attacked, who, as the rash was fading and the skin beginning to peel, developed certain throat symptoms and a glandular abscess. A few days later another practitioner called in—not in consultation—saw this patient and notified the case as one of diphtheria. "M.O.H." asks if he is justified in accepting the second practitioner's notification, adding that if so the same child, during one and the same illness, becomes registered under two different complaints.

*** If the same child had two different complaints due to two separate infections, there seems to be no reason why "M.O.H." should not register both of them. Diphtheria as a complication of scarlet fever is only too common. The scarlatinal convalescent seems specially liable to the attack of the Klebs-Loeffler bacillus. Probably in most cases diphtheria is an accident of another ailment, that is, the diphtheria bacillus finds its most convenient nidus in an already affected throat, but such a case, if fatal, would be registered under diphtheria, not under pharyngeal catarrh. We assume, of course, that there is no doubt of the *bona fides* of the second practitioner, while we regret he did not insist upon a consultation with the medical man already in attendance.

A MINISTER OF PUBLIC HEALTH AND OTHER MATTERS.

S. R. asks: (1) If, having different Local Government Boards, we can be said to possess a State department of public health similar, for instance, to the War Office?

2. What officer nearest approaches a minister of public health?

3. If there are any reliable figures regarding the mortality due to the abuse of alcohol?

4. What is the mortality due to tubercu'osis?

*** 1. The function of the several central Boards dealing with public health is principally one of co-ordination, and this largely in relation to expenditure. The theory of the English public health system is one of local self-government. It has this advantage over a bureaucratic one, that changes of procedure are not generally adopted till local public opinion is ripe for them.

2. The President of the Local Government Board is the officer most nearly approximating a minister of public health. The Parliamentary Secretary to this Board in the last Government was a medical man (Sir Walter Foster), and the Board possesses a complete medical staff.

3. The most useful figures as to alcohol are obtained from a study of the diseases of certain trades contained in the decennial reports of the Registrar-General.

4. Tuberculosis accounts for about 10 per cent. of the mortality. A useful paper, with figures, was drawn up recently by a Committee of the Association, and can be had in quantities from the Secretary at a nominal charge.

APPOINTMENT OF A LADY *LOCUM TENENS* FOR A DISPENSARY DOCTOR.

The Poor-law Guardians at Crookstown have appointed Miss Annie H. Crawford, M.B., *locum tenens* for Dr. Bell, Pomeroy, at the rate of three guineas per week. Both the guardians and Dr. Crawford are to be congratulated on this progressive step.

DUTIES OF A WORKHOUSE MEDICAL OFFICER.

C. D., a workhouse medical officer, writes to ask whether it is necessary for him to make the entries in the medical relief book in his own handwriting (which he says his Board of Guardians request him to do), or whether it is sufficient if he arranges this to be done by someone else and subsequently puts his initials to every case in the column of the book set out for this purpose.

*** We should regard it as unreasonable for the guardians or even the Poor law Board to insist on all the entries in question being in the handwriting of the medical officer himself; but if he engages anyone to make these entries for him, we consider it should be someone acting as an assistant to him, and not anyone on the staff of the workhouse, except, of course, a duly appointed assistant medical officer, if there should be one.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 7,042 births and 4,824 deaths were registered during the week ending Saturday last, September 1st. The annual rate of mortality in these towns, which had been 20.3, 19.5, and 19.8 per 1,000 in the three preceding weeks, further rose to 21.7 per 1,000 last week. The rates ranged from 11.9 in Halifax, 12.3 in Croydon, 14.1 in Bradford, and 14.2 in Cardiff, to 27.9 in Birmingham, 30.6 in Hull, 33.3 in Preston and 33.6 in Sheffield. In the thirty-two provincial towns the mean death-rate was 22.6 per 1,000, or 2.4 more than the rate recorded in London, which was 20.2 per 1,000. The zymotic death-rate in the thirty-three towns averaged 4.8 per 1,000; in London this death-rate was equal to 5.3 per 1,000, while it averaged 7.1 in the thirty two provincial towns, among which the highest zymotic death-rates were 11.7 in Bolton, 12.1 in Sheffield, 13.2 in Preston, and 14.4 in Hull. Measles caused a death-rate of 1.0 in West Ham, and 2.0 in Swansea; scarlet fever of 1.3 in Burnley; whooping-cough of 1.3 in Cardiff, 1.7 in Brighton and 1.9 in Gateshead; "fever" of 1.9 in Portsmouth; and diarrhœa of 9.2 in Birmingham, 10.5 in Bolton, 12.3 in Preston and 13.8 in Hull. The 49 deaths from diphtheria in the thirty-three towns included 10 in London, 10 in Sheffield, 6 in Leicester, and 3 in Leeds. Three cases of small-pox were registered in Liverpool, but not one in London or in any other of the thirty-two towns; and only two cases of small-pox were under treatment in the Metropolitan Asylum Hospitals on Saturday last, September 1st. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,838, 1,793, and 1,726 in the three preceding weeks, fell again to 1,702 on Saturday last; 176 new cases were admitted during the week, against 155, 157, and 140 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, September 1st, 936 births and 542 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had declined from 19.0 to 16.9 per 1,000 in the five preceding weeks, rose again to 17.6 last week, and was 4.1 per 1000 below the mean-rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 13.2 in Leith and 13.7 in Dundee, to 22.6 in Paisley and 23.1 in Aberdeen. The zymotic death-rate in [illegible] highest rates being recorded in [illegible] registered in Glasgow included 2 from measles, 2 from scarlet fever, 2 from diphtheria, 16 from whooping cough, 2 from "fever," and 27 from diarrhœa. Five fatal cases of measles and 4 of diarrhœa were recorded in Edinburgh; 6 deaths from diarrhœa and 13 from whooping cough occurred in Greenock, and 6 from diarrhœa in Dundee.

MEDICAL NEWS.

Bare Feet as Plague Carriers.—By a recent decree of the Sanitary Council of Constantinople, all persons are strictly enjoined to wear shoes or other covering for their feet. The reason assigned for this ordinance is that if persons who go barefoot happen to have scratches or excoriations on these extremities, they may thereby become infected with plague and so transmit the disease. It takes a good deal to awaken the sanitary conscience of the Sublime Porte, but when it is aroused its activity would appear to be remarkable.

The Health Congress.—At a recent meeting of the Town Council of Eastbourne the Mayor (Alderman H. W. Keay) moved, "That a hearty invitation be given by the members of this Council to the members of the Royal Institute of Public Health to hold their next Congress at Eastbourne, and that we pledge ourselves as a Council to do our best to receive and entertain them." He stated that he had received a promise from the Duke of Devonshire that he would accept the office of President of the Congress if held at Eastbourne. The motion was passed unanimously.

A Lady Poorhouse Medical Officer.—At a meeting of the Dundee Parish Council on August 13th, applications for the post of resident medical officer at Dundee East Poorhouse were submitted. Both came from lady graduates of Edinburgh. After some discussion whether any appointment should be made, Dr. Laura Stewart Sandeman, M.B., Ch.B., Stanley, was appointed at a salary of £100 a year. Dr. Laura Sandeman is a daughter of the late Colonel Sandeman. She studied at University College and the Royal Infirmary, Dundee, and on several occasions she acted in the infirmary as one of the assistant house-physicians. Miss Sandeman afterwards studied in the Extramural School of Medicine, Edinburgh, in the Royal Infirmary, Edinburgh, and the Rotunda Hospital, Dublin.

Lunatics in the City.—In a recent issue of the *City Press*, reference was made to the fact that the number of residents of the City confined in lunatic asylums is far in excess per 1,000 inhabitants of the number similarly afflicted in London at large. A report presented to the City guardians, and summarised in the same paper, shows first the number of persons found wandering by the police in the city and subsequently sent to Stone; and secondly, the number of persons resident in the city who were similarly certified as being insane. In the three years which ended June last, 245 persons thus found wandering were sent to Stone, the medical superintendent's fees amounting to £264 12s., and the relieving officer's expenses, court fees, etc., to £82 15s. 5d. In this way the total expenditure incurred by the guardians was £1,075 2s. 5d. The number of persons resident in the city who were brought before the magistrates and certified to be insane was 63. The medical officer's fees amounted to £66 3s., and the relieving officers' expenses and court fees to £135 4s. 1d. In addition, 9 persons were discharged as not being insane, the medical officer's fees being £10 10s., and other expenses £2. The city residents thus brought before the magistrates in three years consequently involved a total expenditure of £213 17s. 1d.

MEDICAL VACANCIES.

The following vacancies are announced:

BELGRAVE HOSPITAL FOR CHILDREN, Gloucester Street, S.W.—House-Surgeon. Appointment for [illegible] Board and residence, and £5 allowance. Applications to the Honorary Secretary [illegible]

BERKSHIRE ASYLUM, [illegible].—Second Assistant Medical Officer, unmarried, [illegible] years of age. Salary, £150 per annum, rising [illegible] apartments, attendance, and allowance. Application [illegible]

BIRMINGHAM GENERAL DISPENSARY [illegible]

BRADFORD [illegible] with board, residence, and washing. [illegible] 15th.

BRADFORD ROYAL INFIRMARY.—[illegible] annum, with [illegible]

BRISTOL ROYAL [illegible] Honorary Secretary [illegible] tions to the Secretary [illegible]

BUXTON: DEVONSHIRE HOSPITAL.—Assistant [illegible] £50 per annum, with furnished apartments, board, and [illegible] "Assistant House-Surgeon," to the Secretary.

CARLISLE: CUMBERLAND INFIRMARY.—Assistant House-Surgeon for seven months. Salary at the rate of £40 per annum, with board, lodging, and washing. Applications to the Secretary by September 11th.

CARLISLE DISPENSARY.—House-Surgeon. Salary, £150 per annum, with apartments. Applications to the Honorary Secretary, Mr. G. A. Lightfoot, 23, Lowther Street, Carlisle.

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—District Surgeons. Applications to the Secretary by September 18th.

DEVONPORT ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon for six months. Salary at the rate of £40 per annum. Applications to the Chairman of Medical Committee by September 27th.

DUNDEE ROYAL INFIRMARY.—Resident Medical Assistant. Appointment for six months. Salary at the rate of £40 per annum, with board and washing. Applications to the Secretary, Mr. D. Gordon Stewart, Solicitor, 10, Meadowside, Dundee, by September 12th.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—(1) House-Surgeon. Honorarium of £25 at end of six months, with board, residence, etc. (2) Resident Medical Officer. Salary, £80 per annum, with board, residence and washing. (3) Medical Officer for casualty department. Appointment for six months. Salary, £100 per annum, with luncheon. Applications in each case to the Secretary by September 15th.

EAST SUSSEX COUNTY ASYLUM, Hayward's Heath.—Second Assistant Medical Officer and Pathologist, unmarried. Salary, £175 per annum, with board, lodging, and washing. Applications to the Medical Superintendent by September 25th.

GLASGOW UNIVERSITY.—Professor of Clinical Medicine. Salary about £112 and share in fees. Applications to the Secretary of the Glasgow University Court, 91, West Regent Street, Glasgow by September 12th.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—(1) Anæsthetist. Honorarium, 10 guineas per annum. (2) Junior House-Surgeon. Appointment for six months. Salary at the rate of £30 per annum, with board, lodging, and washing. Applications to the Secretary by September 10th and 17th respectively.

HAMPSTEAD HOSPITAL, N.W.—Resident Medical Officer. Salary at the rate of £120 per annum, with rooms, coals, and gas. Applications to the Honorary Secretary by September 10th.

HULME DISPENSARY, Bale Street, Manchester.—House Surgeon. Salary, £150 per annum, with apartments, etc. Applications to the Honorary Secretary, Medical Committee, by September 19th

LANCASTER COUNTY ASYLUM.—Assistant Medical Officer. Salary commencing at £125 per annum, with usual allowances. Applications to the Medical Superintendent.

LEITH HOSPITAL.—(1) House-Physician; (2) Assistant House-Physician; (3) Assistant House-Surgeon; (4) Surgeon in Outdoor Department. Applications to Mr. G. V. Mann, Secretary, 33, Bernard Street, Leith, by September 15th.

LEYTON, WALTHAMSTOW, AND WANSTEAD CHILDREN'S AND GENERAL HOSPITAL.—House-Surgeon. Salary, £80 per annum with board, residence, and washing. Applications to the Honorary Secretary by September 15th.

LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer, unmarried, and not exceeding 26 years of age. Applications, endorsed "Assistant Resident Medical Officer," to be addressed to the Chairman of the Port Sanitary and Hospital committee under cover to the Town Clerk, Municipal Offices, Liverpool, by September 20th.

LONDON THROAT HOSPITAL, 204, Great Portland Street, W.—Non-resident House-Surgeon. Appointment for six months. Honorarium at the rate of £25 per annum. Applications to the Secretary of the Medical Committee by September 21st.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer; unmarried. Appointment for six months, but eligible for re-election as Senior. Salary at the rate of £80 per annum as Junior and £100 as Senior, with board and lodging. Applications to the Secretary, Dispensary, Gartside Street, Manchester, by September 13th.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £80 per annum, with apartments and board. Applications to Mr. H. Teague, Secretary, 33, Barton Arcade, Manchester, by September 23th.

MANCHESTER ROYAL INFIRMARY AND DISPENSARY.—Honorary Assistant Surgeon; must be F.R.C.S.Eng. Applications to the Secretary by September 22nd.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) House-Physician. Salary, £40 per annum. (2) House-Surgeon. Salary, £40 per annum. (3) Assistant House-Physician. Salary, £25 per annum. (4) Assistant House-Surgeon. Salary, £25 per annum. Appointment for six months. Applications to the Secretary by September 15th.

NEWCASTLE-UPON-TYNE CITY LUNATIC ASYLUM.—Second Assistant Medical Officer, unmarried, and under 30 years of age. Salary, £140 per annum, rising to £160. Applications to the Medical Superintendent.

NORTH SHIELDS AND TYNEMOUTH DISPENSARY.—House-Surgeon and Dispenser. Salary, £150 per annum, with an allowance of £20 towards house, etc. Applications to the Honorary Secretary, 99, Howard Street, North Shields, by September 24th.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £200 per annum. All found except board. Applications to the Secretary.

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Resident Physician. Salary, £120 per annum, with board, washing and attendance. Applications to the Clerk to the Local Authority, Municipal Buildings, Paisley, by September 24th.

PLYMOUTH BOROUGH ASYLUM, Blachadon.—Assistant Medical Officer, unmarried. Salary, £150 per annum, increasing to £200, with furnished apartments, board, and washing. Applications, endorsed "Assistant Medical Officer," to Dr. W. H. Bowes, Superintendent, by October 1st.

PRESTON ROYAL INFIRMARY.—Assistant House-Surgeon. Salary, £60 per annum, with board, lodging, washing, etc. Applications to the Secretary by September 13th.

RAINHILL: COUNTY ASYAUM.—Assistant Medical Officer, unmarried, and not more than 30 years of age. Salary, £125 per annum, increasing to £250, with furnished apartments, board, attendance, and washing. Applications to the Medical Superintendent by September 25th.

ROCHDALE INFIRMARY.—Resident Medical Officer; unmarried. Salary, £100 per annum with board, residence, and washing. Applications to the Honorary Secretary by September 18th.

RYDE: ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £50, and fee of £10 10s. for lectures to nurses. Applications to the Secretary.

T. GEORGE THE-MARTYR, Southwark.—Lady Sanitary Officer and Health Inspector, not less than 25 years of age. Salary to commence at £110 per annum, rising to £150. Applications (on forms provided), endorsed "Lady Sanitary Officer and Health Inspector," to the Vestry Clerk, 81, Borough Road, S.E., by September 10th.

ST. PETER'S HOSPITAL FOR STONE, Etc.—Henrietta Street, W.C.—House-Surgeon. Appointment for six months, but eligible for re-election. Salary at the rate of £100 per annum, with board, lodging, and washing. Applications to the Secretary by September 12th.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer. Salary, £ 5 per annum with furnished apartments, board, and washing. Applications to the Clerk to the Guardians, Union Offices, Westbar, Sheffield, by September 19th.

STOKE-UPON-TRENT UNION.—Resident Medical Officer of the Workhouse. Salary, £130 per annum, rising to £175, with board, washing, and furnished apartments. Applications to the Clerk of the Guardians, Union Offices, Stoke-upon-Trent, by September 10th.

TOTTENHAM HOSPITAL.—House-Surgeon. Salary, £50 per annum, with board, residence, and laundry. Applications to the Chairman of the Joint Committee, The Green, Tottenham, by September 10th.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum, with board, lodging, washing, and attendance. Applications to the Secretary.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician. (2) House-Surgeon. Appointment for six months. Board and lodging provided. Applications to the Secretary Superintendent by September 26th.

WESTMINSTER GENERAL DISPENSARY, 9, Gerrard Street, Soho.—Dispenser. Salary, £60 per annum. Applications to the Secretary by September 24th.

WEST RIDING ASYLUM, Wadsley, near Sheffield.—Temporary Fifth Assistant Medical Officer for six months. Salary at the rate of £130 per annum, with apartments, board, and attendance. Applications to the Medical Superintendent by September 13th.

WISBECH: NORTH CAMBS. HOSPITAL.—House-Surgeon. Salary, £140 per annum, with furnished house. Applications to the Honorary Secretary by September 13th.

WOOLWICH UNION.—Resident Assistant Medical Officer at the Infirmary Plumstead, unmarried, and not more than 30 years of age. Salary, £120 per annum increasing to £150, with apartments, rations, and washing. Applications to the Clerk to the Board, Union Offices, Woolwich, by September 27th.

MEDICAL APPOINTMENTS.

BENNETT, J. H., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Fourth District of the Maidstone Union, *vice* A. Wood, M.R.C.S.

BRAUND, J. M., M.R.C.S.Eng., reappointed Medical Officer of Health for the Stratton Rural District.

DAVISON, H. E., M.B., B.S., B.Hy.Durh., M.R.C.S., L.R.C.P.Lond., appointed Resident Medical Officer to the Newcastle-on-Tyne Dispensary, *vice* W. Hardcastle, M.B.Lond., B.Hy.Durh., M.R.C.S., L.R.C.P.Lond., resigned.

ENSOR, C. A., M.R.C.S., L.R.C.P., appointed Medical Officer of Health for the Tisbury Rural District, *vice* J. A. Ensor, M.R.C.S.Eng., resigned.

HARRIS, H. G., M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond., appointed House-Surgeon to the Paddington Green Children's Hospital.

HEWETSON, Alfred, M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant House-Surgeon to the Huddersfield Infirmary.

KIRBY, Saml. J. J., M.D.Brux., L.R.C.P.Edin., M.R.C.S.Eng., reappointed Medical Officer of Health to the Hoxne Rural District Council.

RIVERS, W. C., L.R.C.P., Lond., M.R.C.S.Eng., appointed House-Surgeon to the Stamford, Rutland, and General Dispensary, *vice* T. W. Nunn, M.R.C.S., L.R.C.P., resigned.

SLOSS, Wm., M.B., Ch.B.Edin., appointed Junior House-Surgeon to the Bootle Borough Hospital, Liverpool.

STEVENSON, Archibald, M.B.Glasg., appointed Junior Assistant Medical Officer to Hawkhead Asylum, Crookston.

ST. THOMAS'S HOSPITAL.—The following gentlemen have been selected as House Officers from Tuesday, September 4th, 1900:

House Physicians—H. M. Harwood, M.A., M.B., B.C.Cantab.; R. B. Kinloch, L.R.C.P., M.R.C.S.

Assistant House-Physicians—C. F. Selous, L.R.C.P., M.R.C.S.; H. H. E. Clarke, L.R.C.P., M.R.C.S.

House-Surgeons—A. E. Martin, M.A., M.B., B.C.Cantab., L.R.C.P., M.R.C.S.; C. L. Hawkins, M.A., M.B., B.C.Cantab., L.R.C.P., M.R.C.S.; J. F. Cunningham, L.R.C.P., M.R.C.S.; Y. Takaki, L.R.C.P., M.R.C.S.

Assistant House-Surgeons—T. H. Edwards, L.R.C.P., M.R.C.S.; B. S. Wills, L.R.C.P., M.R.C.S.; T. S. Taylor, M.A., M.B., B.C.Cantab.; T. Burfield, M.A., M.B., B.C.Cantab., L.R.C.P., M.R.C.S.

Obstetric House-Physicians—(Senior) B. F. Howlett, L.R.C.P., M.R.C.S. (Junior) H. R. Beale, L.R.C.P., M.R.C.S.

Clinical Assistants in the Special Department for Diseases of the Ear—Z. Mennell, L.R.C.P., M.R.C.S.

Clinical Assistants in the Electrical Department—L. S. Dudgeon, L.R.C.P., M.R.C.S.

Several other gentlemen have received an extension of their appointments.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Hutchinson Consultation. (Skin.)

TUESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Seymour Taylor: Consultation. (Medical.)

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 5 P.M.—Dr. Byrom Bramwell. Clinical Lecture.

THURSDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Hutchinson: Consultation (Surgical)

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Dundas Grant: Consultation. (Throat)

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BIDWELL.—On September 5th, at 59, Wimpole Street, Cavendish Square, W., the wife of Leonard A. Bidwell, F.R.C.S., of a daughter.

CROLL.—On September 2nd, at Marvfield, Holyhead Road, Handsworth, the wife of Andrew Croll, M.D., of a son (prematurely).

JENNINGS.—On August 30th, at The Laurels, Congresbury, Somerset, the wife of Richard E. W. Jennings, M.R.C.S., L.R.C.P., of a son.

SIMPSON.—September 1st, at Kynance, Farnborough, Hants, the wife of Captain J. Tracy Simpson, M.D., R.A.M.C. Mil., of a daughter.

MARRIAGE.

DAVIES—WOODFIELD.—On August 29th, at St. Stephen's Church, Redditch, by the Rev. S. Davis, M.A., assisted by the Rev. A. E. Prue, M.A., Hugh Davies, F.R.C.S.Eng., M.B., B.S.Lond., Vale House, Greenwich, eldest son of Mr. Davies, Lledfron, Llanfyllin, North Wales, to Elizabeth Victoria (Lily), fifth daughter of William Woodfield, Elmsdale, Redditch.

DEATHS.

AYMER.—At Bervie, on August 26th, James Aymer, M.B., C.M., aged 43 years.

ENSOR.—On September 4th, at Tisbury, Wilts, John Arthur Ensor, M.R.C.S., L.S.A., aged 58 years.

Queries, answers, and communications relating to subjects to which special departments of the BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

SEACOMBE asks if any reader can suggest any improvement on the routine methods of treatment for an obstinate case of threadworms.

DIDYMUS asks: What is the best and cheapest antiseptic for a public vaccinator to use in vaccinating? also, the best and cheapest dressing to apply?

INQUIRER would be glad to know of a hospital in or near London where an elderly man could be sent for a course of massage free of expense. It a very deserving case, and one likely to benefit considerably.

VITREOUS asks if any reader will tell him the best treatment for specks in the vitreous which are visible to the patient, and cause him some slight defect in his vision.

P. M. C. asks: What is the proper colour for the walls and windows of an ophthalmic ward, and on what principle is the selection made? Is it desirable to exclude either the chemical or caloric rays of light.

IVY asks if any reader can inform him about an anæsthetic used on the Continent called "bromedit," as regards safety in administration, its action on the heart, time the patient can be kept under its influence, and where procurable.

DR. JAMES T. BAYS, M.D., M.O.H. (Grahamstown, South Africa) asks for a rough idea of the cost of construction in England of a small sand and gravel filter bed capable of filtering 100,000 gallons or more per diem. Material and labour to be considered, but not value of land.

SOMERSET would be much obliged if any member could advise a home suitable for a cook, aged 40, able to do a little but practically crippled by rheumatoid arthritis. She has no resources but some small amount might be paid by subscription.

WRANGLE would be glad if any member could inform him of a home for a dumb boy, aged 8, where he could be taught a trade (preferably in the Eastern Counties). Dumbness due to infantile convulsions. Boy is not an idiot. Parents could pay only a small sum weekly.

SOMERSET will be obliged for suggestions for treatment in the following case: A man has craving for drink about every three or four weeks, then there is excess. The smell of a publichouse or something that jars on the temper brings on the craving. He is very desirous of giving up drink, and tries hard to do so, but the terrible craving is too much for him. Is there anything of real use to allay this when it comes on?

IOLO asks: (1) The best means of preventing blackening of the skin after prolonged external use of resorcin. (2) What to do in a case of eczema of the lips that has resisted all the usual methods of treatment. It commenced three years ago; the subject is a young lady of 21 years, of dark complexion. A peculiar feature of the case is the pigmentation of the exfoliating epidermis. She had rheumatic fever in childhood, which left slight endocarditis. At Christmas the patient had pneumonia complicated with abscess of lung; the illness lasted five months. She has made a good recovery. The pigmentation is independent of all drugs or chemicals applied to the lips.

J. L. asks for suggestions as to the treatment of a case of neurasthenia The patient is a married man who has had repeated attacks of influenza and who has also probably indulged his sexual appetite too freely, as he is the subject of some chronic prostatitis, with seminal emissions about once a week. He also complains of a good deal of pains in his head and neck. For treatment he is using cold baths regularly, and is taking a mixture containing quinine and nux vomica. He is also taking acid. arsenios. gr. $\frac{1}{60}$ in pill twice a day. At present there does not appear to be much improvement. If it is likely to do good, how long should the treatment be continued? Would the faradic battery be useful? If it would, how had it better be applied?

"THE CORNUTOS OF SEVENTY-FIVE."

DR. GEORGE PEACHEY (Wantage) writes: If any reader happens to possess a copy of a small 8vo pamphlet bearing the above title and would be kind enough to lend me the same for a short while, I should be very much obliged. There were two editions, each of which was published in 1748. Either of them would answer my purpose, but I should prefer the second.

APPORTIONING OF PARTNERSHIP RECEIPTS.

BETA writes: I have bought, with two years' introduction, a practice in a large Yorkshire town where the major amount of the receipts is paid to weekly collectors (the local custom). So far these belong chiefly to the vendor, A., but gradually will become A. and B.'s, then mostly B.'s, and, finally, B.'s only. I will thank any fellow member who can inform me of a simple and rapid mode of dividing the weekly collections without the waste of time and labour incurred in entering each small payment in ledger; or can tell me if, and where, any books suitably ruled for such purpose can be obtained?

MEDICAL ADVICE BY TELEPHONE.

M.D. writes that he has lately been put on the telephone, and thus brought into direct communication with some of his more wealthy patients. Some of these now ring him up, and ask professional questions through the telephone instead of coming to see him and paying his usual fees. He wishes to know whether medical practitioners ought not to charge fees for advice given under such circumstances.

*** Reasonable fees ought to be charged in all cases, but the amount must be left to the discretion of the individual practitioner.

ANSWERS.

FORREST will find Sir Andrew Clark's original paper in the *Lancet* of October 26th, 1889, p. 840.

D.P.H.—Microscopic slides of the specimens of parasites, etc., which are usually shown in the examinations for the D.P.H. may be obtained of Mr. E. Wheeler, 48, Tollington Road, Holloway, London, N., and of Messrs. W. Watson and Son, 313, High Holborn, London, W.C. The textbooks most commonly read for a D.P.H. are mentioned in the Students' Number of the BRITISH MEDICAL JOURNAL (August 25th, p. 511).

MRS. AMY ROBINSON.—(1) It is wiser to take a course of midwifery training in England. (2) For fuller information our correspondent might apply to the Midwives' Institute, 12, Buckingham Street, Strand, W.C. (3) There is no Indian Army Nursing Society; the Indian Army Nursing Service is organised under the Army Medical Department. Lady Roberts started a Nursing Service for the officers and their families in India; headquarters, Murree, India. Particulars can be obtained at the India Office, S.W.

LEVITE.—(1) The first use of the word "lock" in connection with a hospital is said to be in the will of Ralph Holland, a merchant tailor, who in 1452 bequeathed twenty shillings to the *Lock* lazar house outside St. George's Gate: "*Item, lego leprosis de Lokis extra barram Sti. Georgii, 20s.*" This afterwards became a hospital for venereal diseases, and hence it and kindred institutions came to be called lock hospitals. The word 'lock" has by some been derived from the French *loque*, a rag, because rags were used for dressings. But as the use of rags for this purpose was not confined to venereal hospitals, we venture to suggest that it would be more reasonable to take the word as applying to the shreds and tatters of humanity who were sheltered in these institutions. Mayne suggests the Saxon *loc*, or the French *loquet*, in reference to the fastening of St. George's Gate, outside which stood the lazar house. (2) There is no reason that we know of why the word "Samaritan" should be regarded as a monopoly of special hospitals for women. In connection with several general hospitals there are Samaritan funds which are not specially intended for the relief of women.

CYMRO.—(1) The following books may be recommended for the First F.R.C.S.Eng. examination: *Quain's Anatomy*, tenth edition (London: Longmans, Green and Co.); Cunningham's or Ellis's *Manual of Dissection* (London: Smith, Elder and Co.); Stewart's *Textbook of Physiology* (London: Baillière, Tindal and Cox, 1895, 15s.); Foster's *Textbook of Physiology* (London: Macmillan and Co., 1898); Stirling's *Manual of Physiology* (London: C. Griffin and Co., 1835, 9s.); Wiederheim's *Structure of Man* (London: Macmillan and Co., 1895, 8s.); and Flower's *Osteology of the Mammalia* (the chapters referring to man). (2) To become a barrister it is necessary to enter one of the Inns of Court. Before doing so a candidate must pass a literary examination, but medical practitioners, having passed the preliminary examination in Arts recognised by the General Medical Council, will be exempted from that test. The Inns of Court are Lincoln's Inn, the Middle and Inner Temple, and Gray's Inn, and the fees payable are slightly less at Gray's Inn than at the others. On application for admission the candidate must present a recommendation signed by two barristers of the Inn he proposes to join, and must sign a declaration that he has no connection with certain trades and professions. He is then admitted a member of the Inn on the payment of fees, which amount to about £40. Before being called to the Bar it is necessary for the candidate to dine in Hall for twelve terms, of which there are four annually. To keep a term the candidate must dine in Hall, if a graduate or undergraduate of an English University, at least three times. If not connected with a University, he must dine at least six times to complete the term. While keeping his terms the candidate is required to pass two professional examinations, one in Roman law and the other in the various sections of English law as laid down by the Council of Legal Education. On passing both these examinations and completing his terms the candidate is eligible for his call. To obtain it he must be proposed by a Bencher of his Inn, when on paying fees amounting to about £100 he may become duly enrolled on the Bar of his Inn. On becoming a member of his Inn a sum of £100 must be deposited as a security for fees, which will be returned on call, unless the member be a University man, when a bond for the same amount from two substantial householders will suffice.

SURGICAL STERILISERS.

F.R.C.S.—The name of the firm which makes electric heaters is "The General Electric Company, Limited." The addresses of the firm are:—London offices, 69, Queen Victoria Street, E.C.; works, 45A, Chapel Street, Manchester.

NORDRACH.

THE best books are (1) *Sanatoria for Consumption*, by Dr. F. R. Walters. London (Sonnenschein and Co.), 1899, and (2) the *Discussion on the Open-air Treatment of Tuberculosis*, at the Royal Medical and Chirurgical Society, 1899; separately published by Longmans, Green and Co., London, 1900. Price 2s. 6d.

LIGHT TREATMENT OF LUPUS.

DR. J. NIGHTINGALE.—The light treatment of lupus is carried out in London at the London Hospital and (under the direction of Mr Malcolm Morris) at The Studio, 1A, Berkeley Gardens, Church Street, Campden Hill, Kensington, W. A description of the Light Department of the London Hospital appeared in the BRITISH MEDICAL JOURNAL of June 30th, 1900 (p. 1595), and of the other institution mentioned above in our issue of July 7th, 1900 (p. 33). Poor patients are treated at both places without charge, but patients moderately well-to-do are expected to pay a sum sufficient to cover working expenses.

THE PREVENTION OF RUPTURE OF THE PERINEUM.

DR. J. WALTERS (Reigate) writes: Dr. A. Duke [illegible] entirely misunderstood my note published in the BRITISH MEDICAL JOURNAL of July 14th. I never suggested that prevention [illegible] of the head was a certain plan for preventing [illegible] only that the more modern practice "diminishes the [illegible] pressure." I do not claim this as my plan; it has been [illegible] by many distinguished obstetricians. My attention was first directed to it by the late Matthews Duncan. I am well aware that rupture is often caused by the shoulders, but I did not intend to call attention to all the causes. I believe in these cases the tear is generally commenced by the passage

of the head and finished by the shoulders. I suppose nearly every old woman who calls herself a midwife practises what Dr. Duke calls intermittent dilatation when the occasion arises.

THE PREVENTION OF FLOODING.

FOURTH STAGE writes: The only method of preventing flooding is to ensure that the uterus is contracted and retracted. In order to do this it must be throughly empty of placenta, membrane, and clots. Proper management of the third stage will ensure these conditions; certainly no amount of opium or ergot will, whether it be administered "just before or after the birth of the child." Such teaching is dangerous, and although "P. M." "has never known any harm result," yet if "Zephyr" has any regard for his peace of mind and patients' safety, I would urge him to exercise very great "hesitation in adopting this practice," and advise him instead to make himself thoroughly acquainted with the natural history and management of the third stage of labour as taught in modern textbooks.

TREATMENT OF TAPEWORM.

DR. HERBERT C. MAJOR (Bingley, Yorks.) writes: In reply to the request of "Verax," made in the BRITISH MEDICAL JOURNAL of August 18th, 1900, for suggestions for the treatment of obstinate cases of tapeworm, I would recommend a trial of pelletierine (an alkaloid obtained from the bark of the pomegranate root) if it has not already been resorted to in the case. Tannate of pelletierine may be given in doses of 3 to 8 grains, the sulphate in doses of 3 to 8 minims (Hale White). The dose of pelletierine itself is given as 2 grains, taken fasting, 10 grains of tannin being given immediately before it (Whitla). I have myself used the drug (tannate) successfully. An interesting note on the treatment of tapeworm by the "pelletierine of Tanret," as carried out by the late Dr. Dujardin-Beaumetz, who considered it the best of all tænicides, with a reference also to the pumpkin-seed treatment of the same affection, will be found in the JOURNAL of February 16th, 1895. The dose, however, of the sulphate of pelletierine there referred to—9½ grams—would seem to be erroneously stated, unless the preparation employed was a feeble one.

T. C. writes: I had a case like that mentioned by "Verax," and dealt with it successfully by the following method: The patient was purged and put on a very light diet for two days, so as to give the worm full exposure to the liquid extract of male fern which was given early on the morning of the third day, and the worm came away entire shortly after.

CERTIFYING SURGEONS UNDER THE FACTORY ACTS.

MEXICO.—Certifying surgeons under the Factory Acts are not paid by salary but by fees, some particulars of which will be found in Churchill's *Medical Directory*. The duties are: (1) Examining and certifying children and young persons under 16 for fitness for employment in factories; (2) reporting upon certain accidents and cases of industrial poisoning arising in factories and workshops; and (3) periodical examination of persons employed in certain dangerous processes. The remuneration depends upon the amount of work to be done, and this varies greatly in the 2,000 districts into which the United Kingdom is divided for the purpose. Applications should be by letter addressed to the Chief Inspector of Factories, Home Office, London, and should state age, qualification, local appointments held, and previous experience. As in all other public appointments, credentials from one or two persons of known position (local or otherwise) would be useful, if based upon personal knowledge. The D.P.H. would no doubt be considered a desirable addition to other qualifications. The duties are very rarely such as to require whole-time service, and the appointments are usually held by local practitioners.

SEA VOYAGES.

DR. FREDERIC C. WOOD (Derby) writes: In reply to "Married's" query in the BRITISH MEDICAL JOURNAL of September 1st, I should advise him to apply to Messrs. Devitt and Moore, 5, Fenchurch Avenue, E.C., who are, I believe, the owners of the finest sailing ships to the Antipodes; in return for services as surgeon he would be given a first-class return saloon passage, but would probably have to pay for his wife.

DR. D. LLOYD SMITH (Ipswich) writes: In reply to "Married" I wish to say that I was offered such a post (medical officer) to a large sailing vessel proceeding to Melbourne about September 30th. If "Married" will communicate with Messrs. Fred. Green and Co., 13, Fenchurch Avenue, London, E.C., perhaps the appointment has not been filled up yet. From that firm he will be able to get further particulars.

MR. D'ARCY SUGDEN (Winchfield) writes: Allow me to suggest to "Married" that he do not take his wife a long sea voyage in a sailing ship, especially to Australia. It is a most deadly dull method. A much better way is to steam to Australia *viâ* the Cape (there are several lines). In this way the heat of the Red Sea, etc., is avoided and the intense cold sometimes experienced in a sailing ship from going far south for the purpose of getting the wind to make the "Easting." I would then suggest his trying to obtain a hospital appointment on the "Downs"; there are frequently advertisements, especially in the Queensland papers, and the pay will be sufficient, with private practice, for him to live on. On no account let him keep on the coast with his wife; the dampness is, I think, injurious and the sanitation generally abominable. In the interior the towns are usually so small and the air so dry that except in case of an invasion, sanitation need not be bothered about. The diet on a sailing ship is very monotonous.

NOTES, LETTERS, ETC.

DRINKING URINE.

DR. G. A. LEON (Sidmouth) writes: One reads occasionally in books of travel of individuals drinking their own urine as a remedy for various diseases, but until the other day I did not know that such a custom is still advocated in parts of England. A patient of mine last week told me that in his youth he suffered very badly from crops of boils on various parts of his body. He tried many remedies without success. He was then recommended to drink a teacupful of his own urine every morning for three days, then cease for a like time, then resume the drinking for three days and so on until cured. He followed the advice and by the ninth day all the boils had almost disappeared never to return. Such a treatment seems so strange to me that I have thought it worth recording in the BRITISH MEDICAL JOURNAL with a view to hear if other practitioners have come across similar instances.

ACADEMIC COSTUME.

ANTIHUMBUG writes: Will you kindly allow me through the medium of your columns to thank Dr. Jos. Wm. Gill (Liskeard) and "Jackdaw" for their letters *re* academic costume, which were called forth by a letter of mine in your issue of July 21st. I have not the time to reply categorically to their numerous queries, comments, and "confident assertions," and if I had, should not feel justified in trespassing so far upon your valuable space; but they have said sufficient to convince me that there is a considerable section of the medical profession who regard what they wear as a matter of the gravest importance. I should, however, be very sorry if the general public regarded this as the ambition of the profession at large, hence my protest. As these gentlemen remark, "it is a free country," and therefore in non-essentials each man is at liberty to follow his own inclination, and if it give them any pleasure to dress themselves in silks and satins, bedecked with gauds and gewgaws, by all means let them do it. It is an innocent form of amusement both for themselves and the public—especially the latter. Personally, I think we are far more likely to gain the respect and affection of our patients by doing our utmost to restore them and their loved ones to health, and to relieve them when in pain and suffering, than by dressing ourselves in gaudy costumes, and wrangling, like the members of another profession, over the "breadth of our phylacteries."

COCKADES.

VERITAS writes: Your correspondent "Plain Hat" in the BRITISH MEDICAL JOURNAL of July 28th on cockades is not quite correct. Cockades should only be worn by servants of officers of the army and navy and those holding commissioned offices under the Sovereign. There are two kinds of cockades—the "fan-shaped" and the "circular," the former for servants of officers in the army, and the latter for the servants of officers in the navy, deputy-lieutenants, and justices of the peace. The title of Esquire is also frequently misapplied; the only men entitled to rank as Esquires are esquires of the Sovereign's bodyguard, the eldest sons of knights and their elder sons, the elder sons of younger sons of peers, sheriffs for life, coroners, justices of the peace, gentlemen of the Royal Household, barristers, doctors of law, divinity, and medicine.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Dr. Louisa B. Aldrich-Blake, London; Aorta; Dr. F. J. Allan, London; Dr. J. R. Armstrong, Treorky. **B** Dr. E. G. Barnes, Eye; Mr. W. H. Bennett, London; Dr. J. T. Bays, Grahamstown; Beta; Mr. C. J. Black, Belfast; Mr. G. H. Broadbent, Manchester. **C** Mr. F. W. Collingwood, London; T. Colvin, M.B., Glasgow; Mr. G. L. Cheatle, London; Dr. W. Collier, Oxford. **D** Mr F. Deane, Barbadoes; Mr. W. T. Davies, Penybont; Dr. H. M. Eustace, Drumcondra. **E** Dr. F. W. Edridge-Green, Hendon; Enquirer; Mr. W. T. Edgar, Stafford. **F** W. W. Fyfe, M.B., Johnstone; Mr. G. B. Foye, Wanstead; F.R.C.S. **G** E. W. H. Groves, M.B., Bristol; Mr. P. B. Giles, Bletchley. **H** Dr. Louis Henry, Melbourne; Hobhole. **I** Ivy; Iolo. **J** H. B. Jones, M.B., Glasgow. **K** Mr. J. B. Kenny, Killeshandra. **L** Dr. G. A. Leon, Sidmouth; Lord Lister, London; L.S.A.Lond. **M** Dr D. Montbrun, Port of Spain; More Work for Nothing; Dr. C. K. Millard, Burton-on-Trent; Dr A. S. Myrtle, Harrogate; Dr. W. H. Maidlow, Ilminster; M.B., M.A.; Metropolitan District Medical Officer; Mr. A. J. Martineau, Hove. **N** J. Nightingale, M.B., Horsforth. **P** Dr. C. B. Plowright, King's Lynn; Dr. R. Prichard, Cardiff; Dr. G. C. Purvis, Grahamstown; Mr. G. C. Peachey, Wantage; Mr. L. H. Pegler, Lyme Regis; J. H. Parsons, M.B., London. **R** Dr. W. R. Rice, Coventry; H. J. Ritchie, M.B., Belfast. **S** Ward Smith, M.B., Leek; Secretary of State for the Colonies, London; Sir J. Sibbald, Edinburgh; Dr. W. G. Scott, Onehunga, N.Z.; Mr. W. B. Stevenson, London; Seacombe; Mr. J. G. Scott, Funchal; Mr. W. L. Symes, London; Sir J. Sawyer, Birmingham; H. B. Smith, M.B., Shrewsbury; S. G. L. **T** Dr. H. H. Tooth, London; Mr. A. T. Todd-White, London; Mr. W. T. Thomas, Liverpool. **V** Vitreous. **X** Xerxes. **Y** Young etc.

BOOKS, ETC., RECEIVED.

The Physiological Feeding of Infants. By E. Fritchard, M.A., M.D. London: The Scientific Press. 1900. 1s.

Original Contributions Concerning the Glandular Structures appertaining to the Human Eye and its Appendages. By A. Alt, M.D. St. Louis, Mo.: Office of the American "Journal of Ophthalmology." 1900. 1.50 dol.

Die Proteine. Von Dr. W. G. Ruppel. Marburg: N. G. Elwert. 1900. M. 7.

A Manual of Clinical Diagnosis. By C. E. Simon, M.D. Third Edition. London: Henry Kimpton. 1900.

Traité Pratique des Déviations de la Colonne Vertébrale. Par P. Redard. Paris: Masson et Cie. 1900. Fr. 12.

Southall's Organic Materia Medica. Sixth Edition by J. Barclay, B.Sc., F.C.S. London: J. and A. Churchill. 1900. 7s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

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SIXTY-EIGHTH ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION.

Held at IPSWICH, July 31st, August 1st, 2nd, and 3rd, 1900.

PROCEEDINGS OF SECTIONS.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

W. S. A. GRIFFITH, M.D., President.

A DISCUSSION ON PUERPERAL FEVER IN RELATION TO NOTIFICATION.

I.—D. BERRY HART, M.D.,
President of the Obstetrical Society of Edinburgh; Physician, Royal Maternity Hospital, Edinburgh; Honorary Fellow, American Gynecological Society.

THE notification of typhoid, scarlet fever, etc., is practically accepted by the profession as absolutely necessary and immensely helpful in preventing the spread of these diseases. There are, however, undoubtedly difficulties connected with the notification of puerperal fever, and the Association has judged quite rightly that a discussion of these would be helpful to the profession in general.

Another reason is, probably, that despite all our progress in antisepsis and the proper management of labour, the mortality from puerperal fever has not fallen as one would have expected. There are evidently other factors at work in keeping up the mortality, and these should be searched out and counteracted if possible. How far a complete system of notification and what it may lead to in the way of accurate investigation may help in this matter remains to be seen.

Probably the simplest way to introduce this subject will be to state the evident objections to the notification of puerperal fever, to discuss them, and then to consider the advantages. These objections may be stated as follows:

1. The difficulty of defining what one means by puerperal fever.
2. The risk of the statistics being misleading from errors, unavoidable or otherwise, in diagnosis.
3. The supposed unwillingness of practitioners to notify unless in cases likely to end fatally.

I.—THE DIFFICULTY OF DEFINING WHAT ONE MEANS BY PUERPERAL FEVER.

We may in the first place remark that the official use of the term "puerperal fever" is probably advantageous, although now the term is abandoned by the profession. The term "puerperal septicæmia" involves a theory, probably right, but yet one that may be superseded, and it is thus better to speak of puerperal fever, and to define it according to our knowledge at the time. Our present definition of puerperal fever is that it is some form of puerperal septicæmia.

We are met next with the query, What do you mean by puerperal septicæmia? By puerperal septicæmia we understand an acute disease due to the entrance into the system from without and through lesions of the genital tract of a micro-organism, usually a pyogenic one, that is, a streptococcus or staphylococcus. Other organisms may be found as a cause, namely, the bacillus coli communis, the pneumococcus; or it may be that in cases where there has been great bruising of the parts or retention of portions of the placenta and membranes we may have simply putrefactive organisms. It is at any rate usually a pathogenic organism, and by its spread into the living tissues and by the production of its peculiar toxin it poisons and may kill the patient affected. The great risk of the pyogenic organisms is their passage along the lymphatic or blood routes of the body, and it is the occurrence of this spread that practically makes a case notifiable.

It is impossible, however, at present for the majority of practitioners to ascertain the presence of such organisms in the uterine cavity in a suspected case. This would require special manipulation, facilities for cultivating organisms, and an amount of examination the private patient would resent.[1] We must therefore, outside special hospitals, rely for our diagnosis, as a rule, on the clinical conditions, and we can classify the notifiable cases under three varieties:

1. The acute rapid form due to a large amount of poison and usually associated either with severe laceration or ruptures of the genital tract, or with the retention of much placental *débris* as in greatly adherent placenta or membranes.
2. The ordinary lymphatic form.
3. The rarer venous form.

In the first variety the severity of the labour will have put the attendant on his guard, and the rapid pulse, relatively low temperature, the early tympanites and irregular rashes, with the intoxicated or poisoned look of the patient, will make it evident that notification must be speedy to antedate the death certificate. Cases of this variety are comparatively rare, but I have seen practitioners not greatly alarmed as the temperature was not much up and they underrated the importance of the rapid pulse.

The second form is the ordinary one. The occurrence of elevation of pulse and temperature within the first five days, the persistence of this rise, the occurrence of rigors, the onset of peritonitic, pericardial, or endocardial symptoms render the diagnosis easy. The case at first may seem, or actually be, one of Duncan's sapræmia or wound intoxication of German observers. This will usually yield to local antiseptic remedies and the patient's condition will improve under treatment; but if the sapræmia be intense it may kill. Then, again, the mischief may become localised and end as a cellulitis, for instance, with or without suppuration. The lateral fixation of the uterus and the after-exudation will make the case clear as a non-notifiable one.

The third variety—the venous form—is the one that taxes the practitioner's skill in diagnosis most. We have a sudden rigor and a high temperature, a pulse not so high relatively, and an absence at first of local lesions. There is here an infection of some clot in the uterine wall with streptococci, and this causes the rigors and raises the temperature and pulse, without at first giving much, if any, local indication. There is not the frank invasion of the patient's system along the lymphatic route, with its evident local peritonitic disturbance, but a passage of the mischief insidiously through a blood channel. Soon, however, the special pyæmic affections of joints, lung, or brain come on, and render the nature of the case clear. Such cases are more tedious and more trying, and lead the practitioner further astray in his diagnosis than the lymphatic form. Typhoid fever, drain poison, tuberculosis, or scarlet fever may occur to him as causes of the condition, and the attendant is often, quite rightly, hard to satisfy as to the non-existence of these.

The serum reaction has rendered the diagnosis of enteric fever much easier now. I have had one case of typhoid in the puerperium in a private patient, but the diagnosis was easy, as the attack occurred late in the puerperal recovery, had very evident symptoms, and a very evident cause in the barrel of Dublin oysters which a thoughtful mother-in-law sent over to qualify the rather monotonous dietary.

As to drain poison, so ably advocated by Dr. Playfair as a cause of puerperal pyrexia in certain cases, I have so far only reached the Scotch verdict of "Not proven." I have seen several cases where it seemed a very reasonable explanation, but I could not quite exclude the possibility of sapræmia. In one special case where fœtid air seemed the cause of the patient's condition, a *post-mortem* examination showed venous pyæmia. When I saw the patient a month after labour the uterus was not specially enlarged; there was no discharge; the air of the house was malodorous owing, as it turned out, to the presence of a dead animal below the flooring. Clinically the case seemed undoubtedly poisoning from impure air, and yet the examination after death negatived this completely.

The rashes associated with septicæmia have undoubtedly shaken somewhat the position of those who believe in puerperal scarlatina, but by no means exclude the possibility of

[1] If a serum treatment is tried the streptococcus must be found in the uterine cavity, as Marmorek's serum is antistreptococcic.

this condition. The source of scarlet fever infection should be very evident, however, before one commits oneself to its diagnosis. Cases, therefore, should be notified as puerperal fever where one has the clinical features of a general or threatened general septicæmia. Sapræmic conditions, localised septic pelvic conditions, need not be notified, and all care must be taken not to lay the blame on typhoid or scarlatina when sepsis is the real cause.

Two conditions caused by special organisms require a passing word, as they are, strictly speaking, not notifiable, although one often is so reported. These are gonorrhœal cases due to the gonococcus and puerperal tetanus due to the tetanus bacillus.

Gonorrhœal puerperal infection is by no means rare. It may come on later in the puerperium, but I have seen three cases where the gonorrhœa had caused Bartholinian abscess late in pregnancy, with the result of speedy general peritonitis in the puerperium. The history of these cases and the presence of the gonococci in the uterine discharge make such cases clear. Tetanus is very rare, but the cases at Prague recorded by v. Rosthorn and others are of great interest.

I have not hitherto held it right to expect bacteriological diagnosis in private practice, although I have no doubt it will come. Whitridge Williams gives a clinical sign, if rough and ready, of some use. If on digital examination of the uterine walls "they were found markedly roughened, a probable diagnosis was made of infection with putrefactive organisms, either alone or in combination; while if its walls were smooth to the examining finger, the existence of a streptococcus infection was rendered quite probable." Bumm has also drawn attention to the fact that on specular examination, if the lips of the cervix be drawn apart, one can see the greyish pellicle in infective cases.

II.—The Risk of the Statistics being Misleading from Errors, Unavoidable or Otherwise, in Diagnosis.

There is little to be said on this head. I think the practitioner will certainly not rashly diagnose puerperal fever, and the death certificate will give an additional check.

A much more serious objection is that of the

III.—Supposed Unwillingness of Practitioners to Notify unless in Cases likely to End Fatally.

No medical man in charge of obstetric cases but will find it disagreeable to notify puerperal septicæmia. That these cases are notified conscientiously I have no doubt, as in looking over the statistics of large towns like Sheffield, London, and Leeds, one is struck with the fact that the notified cases exceed the actual deaths by a considerable number. Thus, in Sheffield from 1890 to 1898, 379 cases were notified, with 207 deaths. In Leeds, whose statistics I saw through the kindness of Dr. Spottiswoode Cameron, the same holds good. There seems to me no evidence of unwillingness to notify, and little, if any, omission to do so when necessary.

As compared with zymotic cases, those of puerperal septicæmia place on the practitioner's shoulders the onus in certain instances of actually causing the condition. Our improved knowledge of antisepsis, however, and the greater care exercised in the management of labour, should eliminate this. Teachers of obstetrics should enforce on the student the great importance of accurate knowledge of the management of normal cases, and especially of the third stage of labour. The distressing case in practice is that of septicæmia after a normal labour.

Notification should, in my opinion, be a privileged communication. There is no need for the medical officer of health to visit the house where it has occurred unless the case be a midwife's one. If the medical officer think further information necessary he will, of course, obtain it from the medical attendant, and it may be his duty to advise the practioner who has repeated septicæmia cases to cease midwifery practice for a little, and to make sure he is not, by some error in practice, actually causing it. I have no doubt in such cases the practitioner will find the health officer a loyal friend.

The Advantages of Notification seem to me very Obvious.

In the first place we get statistical information as to the frequency of this condition, and as to whether it is diminishing or increasing. Unfortunately, it does not seem to be diminishing as it should, as Boxall and Cullingworth's work has shown. Some factors causing this condition may be discovered as the result of statistical research. It must not be forgotten that Semmelweis's great discovery was made not by direct investigation of the disease but by noting what appears to be a side issue, namely, that the puerperal infection was much more common in cases at Vienna attended by students than in those under midwives' care, owing to the fact that the students came straight from the necropsy to the lying-in ward.

Notification of cases will certainly help in prevention by putting the medical officer on the track of careless midwives and nurses and in this way do marked service. Dr. Whitridge Williams's paper gives several good examples of this. I am doubtful if we can expect much more from it. The municipality, however, which enforces notification of puerperal septicæmia must provide hospital accommodation for the reception of suitable cases.

This seems to me a matter of first importance and one that we should strongly advocate. Such cases require special local treatment, careful nursing, and this in many instances cannot be obtained. The medical man may not be able in all cases to devote himself to their care with due regard to his other patients; the midwife is not competent to treat such a condition as puerperal fever, and unless we have special hospitals or wards in municipal hospitals the unfortunate patient must suffer, and we all know what a mother's death means to a household. In a special hospital skilled medical and surgical treatment would be available, there would be thorough nursing, and the chances of the patient's recovery would be increased. I am not optimistic in regard to treatment in bad cases: many of these are very hopeless; but I am certain that investigation of such could be carried out satisfactorily only in a hospital equipped with a laboratory and all necessary apparatus for investigating the causes of this terrible disease.

I am strongly in favour, therefore, of notification provided that it does not begin and end in mere registration. If the municipalities are wise they will see that the medical man gets aid in such cases—skilled nursing where necessary, removal to a properly-equipped hospital when desired, supervision of nurses and midwives when solely associated with the management of the case, and supervision of their proper disinfection before they take up fresh work. I am certain that this would prove a step in the right direction and enable us to see more clearly into all the factors, and they are many, which cause this dreaded disease. Semmelweis, Pasteur, and Lister have solved part of the problem, but there remains still much to be explored before the obstetrician can attend the lying-in woman with an easy mind or the specialist treat puerperal septicæmia from a severely historical standpoint.

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II.—W. J. Smyly, M.D., etc.,

Late Master of the Rotunda Hospital; Gynæcologist to the Adelaide Hospital, Dublin.

Dr. Smyly said that it would be very important to know the extent of the mortality from puerperal fever in private practice; but this was a matter of great difficulty. As a matter of fact the total returns of mortality in childbirth were of more scientific importance than the cases notified as "puerperal fever," because the latter returns were apt to be vitiated by variations in definition. In the Registrar-General's returns there were three classes of deaths reported: (1) Deaths from metria, (2) deaths from accidents of childbirth,

(3) deaths due to causes not directly connected with childbirth. The greatest difference of opinion would be found in relation to the third group, because deaths after parturition reported as due to rheumatic fever, typhoid, scarlet fever, etc., might well be considered as being really in many instances due to septic infection. The perpetuation of the term "puerperal fever" was to be deplored as an anachronism. Since fever after childbirth was merely a form of sepsis, the great difficulty was to know which cases should be notified. Dr. Berry Hart said that cases of general infection should be notified, but it was not necessary in the case of local infection. But why not? Was not a local infection also dangerous as a source of infection? And, then, why stop at puerperal infection? Why not all cases of septic infection; for example, after surgical operations? The popular view of puerperal fever was very different from the scientific, and the notification of puerperal fever might cause great injury to the attendant.

III.—John Campbell, M.A., M.D., F.R.C.S.,

Senior Physician to the Samaritan Hospital for Women, Belfast; Assistant Physician, Belfast Maternity Hospital.

Dr. Campbell said: The chief difficulty which we have to face in considering the question of notification is the influence which it would have on the position of the medical attendant. The scientific and the public views of puerperal fever are quite distinct. The public almost always attribute the disease to the doctor or the nurse, and, if the doctor notifies the disease, he will be sure, in many cases, to get into serious trouble with the patient's relatives and friends. We must remember this in advocating notification. While I mention this objection I quite recognise the importance of notification from a scientific point of view. To my mind the great advantage will be the increased interest which it will arouse among the public on the question of midwifery nursing. At present the average middle-class lady prefers to have a "homely woman" whom she likes rather than a thoroughly competent and well-trained nurse. As far as my experience goes there are now practically only two channels through which infection is carried to the patient, namely, the nurse and the patient herself. The nurse is probably responsible for a large proportion of the cases occurring among the poor. Such cases as the following are not uncommon.

A woman was attended by a friend of mine with the most rigid precautions and nevertheless had a severe attack of puerperal fever. Three months afterwards my friend saw the midwife's daughter suffering from a gonorrhœal ophthalmia, and learned that at the time his patient was being confined the daughter had been syringed regularly by her mother, who had several times examined the lying-in woman and thus given rise to the disease.

Among the poor a large number of cases arise in this way, either through the midwife conveying sepsis from some other puerperal or other septic case, or from some disease of an inflammatory character in her own body. Among the well-to do the second cause (auto-infection) is more frequent. Such patients, though attended by nurses who are well aware of the necessity of cleanliness and by doctors whose care is beyond question, nevertheless suffer from severe puerperal inflammations. I have been able to follow out the previous medical history of many of these cases, and in some of them the medical history of the husbands also, and I have been able to prove that the sepsis was due to pre-existing infection from gonorrhœal or other venereal sources. While the profession must be on their guard as to the attitude of the public towards the doctor in cases of puerperal fever, they have in reality nothing to fear from notification, because at the present time the amount of the disease communicated by the profession is infinitesimal. What we want is the improved education of nurses and improved social status of nurses. We want to raise the midwifery nurse to the same level as her surgical sister. By so doing we shall minimise the amount of puerperal fever to the greatest extent, but we shall not abolish it entirely. The doctor is now beyond suspicion. The nurse can be improved so as to be safe, but, in spite of this, the residuum will remain of those cases in which the disease has arisen from some pre-existing infection. A system of notification, wisely carried out, is a thing to be desired, and cannot ultimately fail to prove of great advantage to the public and to the profession.

IV.—Robert Boxall, M.D., M.R.C.P.,

Assistant Obstetric Physician and Lecturer on Practical Midwifery, Middlesex Hospital; Visiting Physician to the General Lying-in Hospital, London.

Dr. Boxall said that since he had drawn attention to the prevalent mortality of childbirth at the time when the subject was under discussion in the Obstetric Section at the Newcastle meeting, seven years had elapsed. At that time he had just published statistics from the Registrar-General's return extending over a considerable number of years, which showed that throughout England and Wales the death-rate from childbirth had not been appreciably diminished, and that, as regards puerperal fever, an actual increase had taken place in the provinces. Continuing these statistics, he now found that during the last seven years, for which the returns were available (1892-98), and comparing this period with the preceding ten years (1881-91) but little improvement was manifest either in London or in the provinces. The deaths from puerperal fever in London had dropped from 21.5 to 19.2 per 10 000 confinements, and in the provinces from 25 6 to 24 1. The Infectious Diseases (Notification) Act was passed in 1889, so that if any considerable benefit were to be derived from its working, it should be apparent in the statistics of the latter period. Inasmuch as septicæmia had been practically abolished from lying-in hospitals (which formerly were hotbeds of infection) by the adoption of antiseptic and aseptic methods, it seemed that we must still look to such means to eradicate the disease. Notification was but a means to reach that end. During the last twelve years no case of sepsis had arisen in the General Lying-in Hospital, with which he was personally connected, but during the same period several cases, in which attempts at delivery had been made elsewhere, had been admitted and had developed serious septic complications, and three of these cases died. Yet the disease was prevented from spreading to other patients, showing, if further evidence were wanting, that the measures adopted were sufficient to protect other patients from infection, even when septicæmia had been introduced in the hospital wards. Now, during this period nearly 6,000 patients had been delivered in the hospital without sepsis following, and yet they were drawn from a population surrounded by squalor and insanitary conditions, not a few, indeed, being known to be infected with gonorrhœa. For this reason he felt bound to join issue with Dr. Campbell in regarding the disease as at all likely to arise from disease pre-existing in the patient herself. Owing to the difficulty in deciding as to what should and what should not be included in the term "puerperal fever," he was inclined to agree with Dr. Smyly that at any rate all cases of septicæmia, whether mainly local or general, should be notified, for what was comparatively speaking a mild and local disease in one patient was quite capable of setting up a violent form of inflammation in another. If only that meeting could clearly define what puerperal cases should be notified, he thought the matter would thereby be considerably advanced.

V.—A. V. Macan, B.A., M.B., F.R.C.P.I., etc.,

King's Professor of Midwifery, Trinity College; and ex Master of the Rotunda Hospital, Dublin.

Dr. Macan said: Public notification seems to me quite impossible until it has become the rule of the profession to tell the truth as to what is the matter with the patient to the patient's husband and relatives. That, as a rule, this is not done at present is well known both to general practitioners and consultants. The use of notification is either for the good of the patient herself, or to prevent the spread of the disease to others. How can notification do the patient herself any good? Unless you take the case from the doctor who is attending it you can make no change in the treatment or surroundings. On the other hand, how will notification stop the spread of the disease to others? If the doctor is acquainted with modern antiseptics he will not require notification to prevent the spread of the disease; and unless you have compulsory powers over midwives you cannot compel them to cease practice. The chief point is that the midwife should be already instructed in antiseptics. Now I am informed that it is the rarest thing to find a trained midwife in any of the country workhouses or country districts throughout England. In my opinion the first step to lessen the amount

of puerperal fever is by the improvement of the education of the doctor and midwife, and not compulsory notification. While quite believing in the occurrence of auto-infection, nevertheless I think it is so extremely rare as to have no practical influence on the percentage of puerperal mortality, and therefore I cannot accept it as the solution of the ordinary case of fever after labour.

I.—JOHN WILLIAM BYERS, M.A., M.D., M.A.O. (*Hon. Causâ.*).
Professor of Midwifery and Diseases of Women and Children, Queen's College, Belfast.

PROFESSOR BYERS said that while there might be a difficulty in saying for notification purposes what puerperal fever was, he thought Dr. Berry Hart's definition a very fair one. In doubtful cases the value of the examination bacteriologically of the uterine secretions was of the utmost importance. He could not agree with the statement that there was a large class in which patients, owing to pre-existing disease, infected themselves. Such cases were extremely rare, as the statistics of maternities showed, and especially from the fact that the large proportion of cases of puerperal fever occurred in primiparæ, where there was less chance of pre-existing pelvic mischief than in women who had previously been confined. He thought the great importance of notification was that it would lead to the stamping out of the disease by indirectly showing the value of antiseptic precautions. He believed that the prevention of the disease would be best secured (1) by teaching the value of abdominal palpation, and (2) by the avoidance of unnecessary vaginal examination combined with rigid antisepsis. By these measures, and indirectly by notification of the disease, he was hopeful that the mortality from this disease would diminish.

VII.—JAMES GREEN, M.R.C.S., L.R.C.P.,
Portsmouth.

MR. GREEN asked what degree of pyrexia should lead to certification, and within what period following delivery. Temperature under 100° even early should not need certifying, nor should a rise of temperature coming on a week or more after delivery. In reply to Dr. Byers as to septicæmia not happening in cases unexamined *per vaginum*, Mr. Green had met with most terrible septicæmia in cases of lacerated perineum which had been undiscovered owing to non-examination. And as to the matter of personal asepsis on the part of the attendant, Mr. Green found absolute certainty difficult to secure, and his rule in case of the misfortune of septicæmia was to ask himself where he had failed in his precautions.

VIII.—R. BRUMMITT, M.R.C.S., etc.,
Kooringa, South Australia.

MR. BRUMMITT spoke of the conditions of notification in South Australia where the responsibility rested with the medical attendant. Difficulty in deciding as to the necessity of notifying puerperal fever arose from the rather frequent occurrence of transient pyrexia, but there were other sources of error and in consequence any statistics lost some of their value. Notification should be useful, but there was risk of injury to patient as well as attendant if undue publicity were given to the name of "puerperal fever."

IX.—J. H. TARGETT, M.S., F.R.C.S.,
Assistant Obstetric Surgeon, Guy's Hospital.

MR. TARGETT thought that one object of notification should be the provision of proper nursing and treatment of the affected case, and when the patient was poor, if necessary, her removal to an infirmary. He referred to the difficulties of diagnosis in the early stages of a fever in the puerperium, and he insisted on the importance of recognising that the attendants at a labour were almost invariably the source of the sepsis.

X.—MICHAEL BEVERLEY, M.D., M.R.C.S.,
Consulting Surgeon, Norfolk and Norwich Hospital.

DR. BEVERLEY agreed with Dr. Hart that the disease should be notified, because, as a rule, it was preventable, and that therefore notification would be one great means of stamping it out.

XI.—THOMAS ARTHUR HELME, M.D., M.R.C.P., F.R.S.E.,
Assistant Surgeon, Clinical Hospital for Women and Children, Manchester.

DR. HELME said that a remark made by Mr. Targett seemed to him to demand notice, namely, that he instructed the students of Guy's Hospital that, whenever a patient developed puerperal fever two persons were responsible, namely the student and the nurse. This remark touched at once a very serious difficulty in the notification of puerperal fever, for it had been so persistently explained to the public that in the matter of puerperal fever the practitioner was the sole and blameworthy cause that at the present moment in many districts to tell the friends that the patient had puerperal fever would permanently injure the practitioner. While it was doubtless true that in, perhaps, the majority of instances puerperal fever was due to infection by outside agencies, it was equally true that in a not small number of instances the source of infection was within the patient herself, vaginal or other. Therefore if we wished it to go forth from this meeting that notification of puerperal fever was advisable, it was equally important that the erroneous opinion of the public, largely due to statements by teachers of obstetrics, that in every case of puerperal fever the practitioner in attendance was practically a criminal, should be combated.

XII.—HENRY BRIGGS, M.B., F.R.C.S.,
Professor of Midwifery and Gynæcology, University College, Liverpool; Surgeon to the Liverpool Hospital for Women.

PROFESSOR BRIGGS alluded to the advantages of regarding puerperal fever as surgical fever. The modes of prevention of the one and the other were identical. The earlier the diagnosis was made in either the better. In many of the cases the morbid conditions were local and only required early diagnosis and prompt local treatment. Notification of these cases was unnecessary. For cases of general infection he would like to see the provision of isolation wards as a supplement to notification.

XIII.—WALTER SPENCER ANDERSON GRIFFITH, M.D.,
Assistant Physician-Accoucheur to St. Bartholomew's Hospital; Physician to Queen Charlotte's Lying-in Hospital; President of the Section.

DR. GRIFFITH said: The opinions of those present are evidently divided on a matter which appears to me to be fundamental to the subject. It has been asked by a distinguished obstetrician, How is notification possible when it is so highly undesirable to inform the friends of the true nature of the disease? This question obviously involves others of the most serious kind, for suspicions in these cases are easily and quickly aroused, and plain questions are asked as to the nature of the case. Now I would ask, What is the alternative to a properly-guarded but direct reply? Evasion will probably lead to the suspicion that the doctor is either unable or unwilling to state the true nature of the case, and thus diminish, the confidence in him without which medical practice in serious cases is intolerable. In my opinion it would be very difficult to justify such a course, and on the other hand, every advantage lies with a straightforward explanation of the case. Is it true that a doctor's reputation and livelihood are wrecked by one such calamity? Has he, except perhaps in the case of a young man early in practice, no friends among his patients who will stand by him in his trouble and recognise that he is doing all he can to improve his methods and protect his patients? It is quite clear that some courage is needed to diagnose and to act on this diagnosis of puerperal fever as distinct from all other notifiable fevers, in which the doctor is free from any suspicion that he may have been the means of communicating infection to the patients; and it is the duty of every practitioner who is called in to assist in such cases to give the attending doctor not only all the help he possibly can, but also his real sympathy, and, as Dr. Berry Hart has said, help to protect him from arbitrary treatment. But there occur cases due to gross ignorance or utter disregard of the simple and fundamental safeguards for the protection of our patients. One speaker actually objected to teachers of obstetrics clearly informing students and nurses of their personal responsibility in the prevention of puerperal fever, on the ground that the

public would ultimately learn the lesson. Now I would ask, On what other basis can the teaching of aseptic and antiseptic surgery and midwifery rest? Is there not overwhelming evidence that if the patient is protected from infection from without, all other risk of septicæmia is almost infinitesimal? The difficulties of diagnosis form a very important practical question, much too large for discussion here; there are two points I would like to lay stress on; one, the necessity for the routine taking of temperature, whenever it is possible to do so, night and morning and after midday, in every case, for I am sure that the commonly-held opinion that septic fever usually arises on the third day is wrong, and that it usually begins within twenty-four hours of delivery, and by the third day the symptoms are so marked that they can no longer be overlooked; and it is in the first two or three days that almost our only chance of saving our patient occurs, after this it is often too late. The second point is that, granting the difficulty of diagnosis, our patient's safety is best secured by our reversing the common practice of refusing to recognise a case as septic until we are compelled to do so, but rather to assume it is, and act on this assumption in every case of puerperal pyrexia, unless we can clearly satisfy ourselves that it is not. [Dr. Griffith read extracts of letters he had received from Mr. W. H. Power, Principal Medical Officer to the Local Government Board, and some medical officers of health. Among them was one to the following effect from Mr. Power:

The object to be attained, in so far as preventive medicine is concerned, is to bring to the knowledge of the sanitary authority all those conditions which, supervening upon parturition, are communicable from one parturient woman to another, while at the same time discouraging useless and evasive notification.]

REPLY.

Dr. BERRY HART having shortly replied, the following resolution was proposed by Dr. BOXALL, and, after a few remarks from Mr. WATT SMITH (London), who pointed out that to make notification a privileged communication would prevent the medical officer of health taking any steps in the case, was carried *nem. con.*:

That it be a recommendation to the Council that, in [the] opinion of the meeting, it is desirable that notification of puerperal fever (septicæmia should be adopted generally.

CEPHALOTRIPSY FOR THE AFTER-COMING HEAD.

By J. H. TARGETT, M.S., F.R.C.S.,
Assistant Obstetric Surgeon to Guy's Hospital.

I HAVE ventured to bring this case before your notice because the operation of cephalotripsy, as performed upon the after-coming head, is hardly mentioned in any of the ordinary textbooks on midwifery, and therefore no details of the procedure are available. It will be readily allowed that the occasions on which such an operation might be required are very rarely met with, and in the case which forms the subject of these remarks there can be no doubt that Cæsarean section, or some allied operation, would have been the better mode of treatment.

The patient, aged 29 years, unmarried, was a rickety dwarf barely 4½ feet high. She came under observation towards the end of the ninth month of her first pregnancy, and was found to have marked pelvic contraction. As the woman declined to have Cæsarean section performed at term it was decided to induce labour at once.

The interspinous and intercristal diameters measured 9 and 10 inches respectively, the diagonal conjugate was 3½ inches, and the true conjugate was estimated not to exceed 2½ inches. On abdominal examination the fœtus was found lying in the first vertex position, and the head was freely movable above the brim. To induce labour the cervix was gradually dilated by hydrostatic bags, but they entirely failed to excite proper uterine contractions. At the end of 48 hours, though there were no pains, the cervix had dilated sufficiently to admit the hand, and as the vertex had been considerably displaced to the left by the hydrostatic bag, it was resolved to bring down a leg in the hope of exciting labour pains and facilitating delivery. The left leg was easily reached and drawn down into the cervix, and from time to time gentle traction was applied to it.

Twelve hours later there were still no labour pains, the patient had slept well, and taken plenty of nourishment. Pulse 88; temperature normal. As there was no advance and the cervix had moulded round the top of the left thigh, an anæsthetic was administered and the cervix was again dilated with the fingers until the half breech could be drawn down with its bi-iliac diameter across the pelvis and the sacrum directed to the front. This procedure, however, did not stimulate uterine action, so after a further delay of several hours I decided to complete the delivery.

The left arm had become extended by the side of the head, but it was brought down by hooking the left forefinger over the top of the left shoulder and then rotating the trunk to the right with the opposite hand. As the head was still above the contracted brim of the pelvis, it was so rotated that the occiput pointed to the right and the face to the left end of the transverse diameter of the pelvis. In this position it was kept well flexed by jaw traction; yet, in spite of strong pulling and pressure from above, no advance was made. At the time when the trunk was delivered the pulsations in the umbilical cord were very feeble, and, as they had now ceased, it seemed better to perform craniotomy at once than risk the failure of forceps on the after-coming head.

The suboccipital region was chosen for perforation because it was most easily reached, and was also uppermost in the left lateral position of the patient. The lower blade of the cephalotribe came into apposition with the face of the child, the body being drawn well forwards. On attempting to insert the upper blade, it was found that, owing to the contraction of the pelvis from side to side as well as the incomplete dilatation of the lower segment of the uterus, the upper blade could not be passed over the convexity of the occiput. Its end repeatedly caught in the edge of the suboccipital perforation, and this occurrence induced me to pass the blade into the skull through this aperture, and thus crush the base of the skull in its antero-posterior diameter. This plan answered admirably, and a good central grip of the head was at once obtained. After crushing, the cephalotribe was rotated through a quarter of a circle, bringing the occiput to the front once more, and the extraction of the head was then effected without further difficulty.

The uterus contracted down very feebly as its cavity was emptied, yet there was very little hæmorrhage after the placenta had been expressed, and the patient made a good recovery. The fœtus was above the average size, and dissection showed that the ossification of the bones of the skull was considerably more advanced than normal, the anterior fontanelle being remarkably small.

There are several interesting features in this case, notably the complete absence of labour pains in the ordinary sense of the term. The uterus was in a state of primary inertia from first to last, and it may be truly stated that the woman did not have a proper expulsive pain throughout the labour. The points, however, to which I desire to call attention refer solely to the treatment of the after-coming head. (1) What is the best site for perforation of the after-coming head? (2) When crushing is necessary, how should the cephalotribe be applied? I should also like to raise the question of the supposed advantages of version before craniotomy, inasmuch as this procedure may necessitate the performance of cephalotripsy on the after-coming head.

The sites usually recommended for perforation of the after-coming head are the roof of the mouth, the region behind the ear, and the suboccipital space. This operation is not infrequently attended with much difficulty, especially if the head is retained above the brim of a contracted pelvis and the lower segment of the uterus is imperfectly dilated. Perforation through the mouth becomes then almost impossible, and even the suboccipital space may be hard to reach. If the latter route is chosen the aperture is liable to be directed too much towards the foramen magnum, so that the exit of brain matter is greatly impeded. Moreover the cerebellar fossa is alone opened, the larger part of the cranial cavity being practically shut off by the tentorium. Perforation behind the ear meets this objection, but it is important to work well above the root of the mastoid process, and this site is higher and more difficult to reach than the suboccipital region, at least in the cases of marked pelvic contraction which are now under consideration.

When once it has been decided to perforate, it will be generally conceded that no risk of laceration of the cervix or lower segment of the uterus should be incurred in the extraction of the after-coming head. For this purpose I would venture to recommend the method of applying the cephalotribe which was adopted in this case and was so eminently successful. It consists in passing one blade of the cephalotribe into the aperture made by the perforator while the other blade is adapted to the exterior of the head in the usual manner. Experiments have shown me that the best grip is obtained by inserting one blade into a suboccipital perforation, while the opposite blade is applied over the face. Assuming that the woman is in the lateral obstetric position and that the pelvis is flattened, it will be most advantageous to have the long axis of the head engaging the transverse diameter of the brim with the occiput uppermost, and if the occiput happens to be forwards the head should be gently rotated in the required direction. The trunk must then be drawn forwards as far as possible to give room for the application of the cephalotribe posteriorly.

The advantages of this method are that the head is seized by its base in the chief antero-posterior diameter, that the most rigid part of the skull is thus effectually crushed or strongly flexed on the spine, that a very firm grip is obtained with no

chance of slipping when the blades are screwed up, and, lastly, that it is easier so to apply the cephalotribe when the space is seriously diminished at the sides of the pelvis by general contraction with flattened brim. Some ten or twelve years ago Dr. Donald, of Manchester, published an able paper on the methods of craniotomy for cases of severe pelvic contraction. He recommended a preliminary podalic version and extraction of the body, then perforation through the roof of the mouth, and finally crushing and extraction of the after-coming head with the cephalotribe. The advantages he claimed for this method were that the base of the skull was thoroughly broken up by the perforation through the roof of the mouth, and that the head could be easily rotated into the best diameter and well fixed by traction on the trunk during perforation and crushing. This advice is quoted by most writers on obstetrics, but I cannot find that the practice is carried out in any of the large London maternities. My own experience would lead me to believe that if the trunk can be extracted and the completely extended arms brought down without much difficulty or risk to the maternal passages, then the delivery of the after-coming head by forceps or cephalotripsy in the manner above described need cause no anxiety.

The converse line of practice, namely, version after cephalotripsy, is, I imagine, very rarely adopted. Some few weeks ago I was called to a case of very severe pelvic contraction in a dwarf. Perforation and cephalotripsy had already been performed, but the head was high up in the pelvic cavity, and the trunk would not enter the brim. I found that internal version was not specially difficult, but when the leg had been brought down the breech became impacted in the brim and was most difficult to extract. The rest of the trunk gave much trouble, but the final stages of the delivery became surprisingly easy because the arms were completely extended by the side of the crushed head, and the mass so formed was less in bulk than the breech or thorax; hence the fœtus was drawn down with the arms in that extended position. In spite of the prolonged manipulation the case did well.

Dr. GRIFFITH said that Mr. Targett's paper was of much practical interest, and he explained that for many years he had practised and taught the great advantage of delivering by version after craniotomy when practicable. When the fœtus was dead forceps should not be used if there was any considerable difficulty in extraction, but craniotomy should be performed.

Dr. PURSLOW (Birmingham) had in one case delivered by version after perforation when attempts to extract the head by cephalotribe and crotchet had failed, and agreed with the President that in some cases this method of delivery had advantages; he preferred perforation through the mouth to that behind the ear in cases of after-coming head.

OBSERVATIONS ON HUMAN PLACENTATION IN ITS SECOND STAGE.

By CATHARINE VAN TUSSENBROEK, M.D.,
Amsterdam.

THE human placenta is one of Nature's most difficult problems. The clue lies in its evolution. It was Hubrecht, the Dutch zoologist, who found the clue. His remarkable publication on the placentation of the hedgehog threw quite a new light both on the development and the phylogeny of the human placenta. Few words will suffice to recall to your minds Hubrecht's important paper, which has been published in English,[1] and found full recognition in England.

Hubrecht found an unexpected and striking conformity between the placenta of one of the *Insectivora*, *Erinaceus Europæus*, and that of man. In *Erinaceus*, as in man, there exists a decidua reflexa, by which the blastocyst is totally enclosed. In *Erinaceus*, as in man, the blastocyst is, on all sides, beset with villi, which, in an early stage of pregnancy, are surrounded by maternal blood in wide lacunæ. In *Erinaceus*, as in man, the villi disappear afterwards in the part of the blastocyst turned to the reflexa, and develop to a discoid placenta in the pole which is fixed to the uterine wall.

The first implantation of the blastocyst takes place in the following way: As soon as the impregnated ovum comes into contact with the mucous membrane of the uterus, at the place of contact the uterine epithelium disappears, and the ovum engraves itself into the proliferating subepithelial connective tissue, in which it becomes totally enclosed. The outer cell layer of the blastocyst has meanwhile given rise to a mighty proliferation of cells, in which, by reabsorption of tissue, lacunæ appear. Those lacunæ, which have no proper walls, are filled with blood by the maternal capillaries, which freely open into them after their lumen has enormously dilated, under proliferation and absorption of their endothelium.

So the first connection between mother and fœtus is, in *Erinaceus*, formed neither by the yolk sac nor by the allantois, but by an ectoblastic proliferation of the blastocyst, which, even in a very early stage, carries in its lacunæ maternal blood. In a stage a little further advanced the yolk sac distends and brings the *area vasculosa* in contact with the lacunæ of the blastocyst, the yolk sac occupying the part of the blastocyst which is turned towards the reflexa. A little further still appears at the opposite side the allantois, extending with its mighty vessels towards the basal pole of the blastocyst. The yolk sac circulation diminishes in the same degree as the allantoidean circulation advances, until at the side of the reflexa the blastocyst loses its villi, and at the opposite basal pole the placenta has fully developed. Struck by the conformity of this final stage and the ripe placenta of man, Hubrecht advanced the hypothesis that the first stages, too, would prove in both genera to be the same.

The confirmation of this hypothesis was brought almost ten years afterwards from two young human ova, examined in their natural attachment with the uterus. The first ovum, advanced to the second week of pregnancy, was investigated by Siegenbeek van Henheloin, and described in the *Archiv für Anatomie und Physiologie*, 1898; the second ovum, about four days old, has been studied by Hubert Peters, and is published in an important monograph. Both publications together have enlarged our knowledge of human placentation with the following facts:

First. At the place of implantation of the human ovum the mucous membrane of the uterus is bereft of epithelium, the ovum either destroying the epithelium at the place of contact, or—as has been long maintained by Lawson Tait and his school—choosing for its implantation a spot which lacked its epithelium beforehand.

Secondly. The ovum is totally enclosed within the subepithelial connective tissue.

Thirdly. In a very young stage of pregnancy (three or four days' ovum of Peters) the human ovum within the mucosa is surrounded by a lacunary tissue (Hubrecht's trophoblast) in the cavity of which maternal blood circulates. This blood is supplied by distended maternal capillaries, which open freely into the lacunæ after their endothelium has degenerated and disappeared.

So human placentation has proved to be almost a perfect copy of the process which Hubrecht studied in *Erinaceus*. The primitive blood lacunæ give origin to the intervillous spaces; out of the trophoblastic septa between the lacunæ the the first villi develop, sprouts of mesoblastic tissue penetrating within them. After the intervillous spaces have become wider and the villi longer, the connection with the maternal tissue is loosened and absorbed, and the tips of the villi are free.

We are arrived now at the stage of placentation, which already bears histologically a great resemblance to the ripe placenta, except for the villi not having plump and irregular forms, and lacking the fine ramifications which are characteristic for the end of pregnancy. But macroscopically we are still at a great distance from the ripe placenta. For in this stage there is no question yet of a discoid form, the primitive placenta surrounding the total periphery of the blastocyst. Great changes must take place before the typical macroscopical form is brought about. At the basal pole of the blastocyst—the decidua serotina—the growth of the placenta must vigorously advance. At the opposite pole—the domain

of the reflexa—the villi must be reduced, the intervillous spaces must obliterate, the reflexa itself must disappear, until at length the chorion leve conglutinates with the vera.

I have thought it worth while to ascertain the way and time at which those changes are effected.

After I had prepared and studied the microscopical sections of twelve human ova in successive stages of development, I found out that I was not the first to treat this subject. Sedgwick Minot in his beautiful work on human embryology gives a thorough description of the reduction of the decidua reflexa, which, in the main points, is in accordance with the results of my work.

If, notwithstanding the fact of my subject not being a new one, I venture to request your attention for a short exhibition of my results, it is because I think the worth of a scientific statement is increased when it is made by two persons working independently one from the other. And, in the second place, because my plates may perhaps serve to complete the work of Sedgwick Minot which, beautiful as it is, has but few illustrations.

Plates 1, 2, and 3, representing different parts of a human pregnancy. At the end of the third month,[2] in opening the uterine cavity, the decidua vera and reflexa proved to be totally free from each other.

Fig. 1 represents a microscopical section, taken from the border of the placenta. To the right is the decidua serotina, to the left the decidua vera, both resting on the muscular wall of the uterus. The limit of serotina and vera is marked by the spot where the reflexa begins. Between chorion and serotina on the right side, chorion and reflexa on the left side, is the intervillous space with the fœtal villi. There is a marked difference between the villi at the side of the serotina and those at the side of the reflexa. The latter bear no vessels; their epithelium is less well preserved, and they have a shrivelled and atrophic aspect. The decidua reflexa is very narrow, but in a good state, showing no signs of degeneration.



Fig. 1.—Human pregnancy, third month. Border of the placenta. *ch* = chorion; *pl* = placenta; *ser* = decidua serotina; *r* = decidua reflexa; *v* = decidua vera; *sp* = muscular wall.

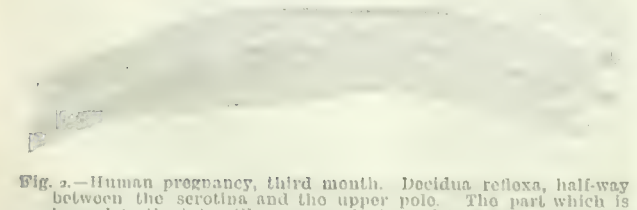


Fig. 2.—Human pregnancy, third month. Decidua reflexa, half-way between the serotina and the upper pole. The part which is turned to the intervillous space is formed by a layer of fibrin. The villi are atrophic.

Fig. 3 is taken from the upper pole of the ovum, opposite to the serotina. The figure consists of chorion and reflexa. The intervillous space between them is very narrow; chorion and reflexa begin to agglutinate at several points. The reflexa is entirely necrotic. The villi are small, atrophic, and badly stained.



Fig. 3.—Human pregnancy, third month. Upper pole, opposite to the serotina. Necrosis of decidua reflexa and of villi. Chorion and reflexa begin to agglutinate.

Fig. 2 is taken from a part of the gestation sac lying half way between the placenta and the upper pole. There the tissues are in an intermediate state of degeneration. The intervillous space is a little wider than in Fig. 3; chorion and reflexa are nowhere agglutinated. The villi, though atrophic and small, are in a better state than in Fig. 3. The epithelium is better preserved; the nuclei of the connective tissue are more or less distinctly stained. Most of the villi are without vessels; a few show single capillaries. In the reflexa two layers are to be distinguished; the upper layer, turned to the intervillous space, is formed by the so-called "kanalisirte fibrine;" the under layer consists of decidual tissue, which, though partly necrotic, is partly in a good state.



Fig. 4.—Human pregnancy, sixth month. Agglutination of chorion and decidua vera to the left. To the right remnants of necrotic decidua reflexa and atrophic villi in the cleft between chorion and vera.

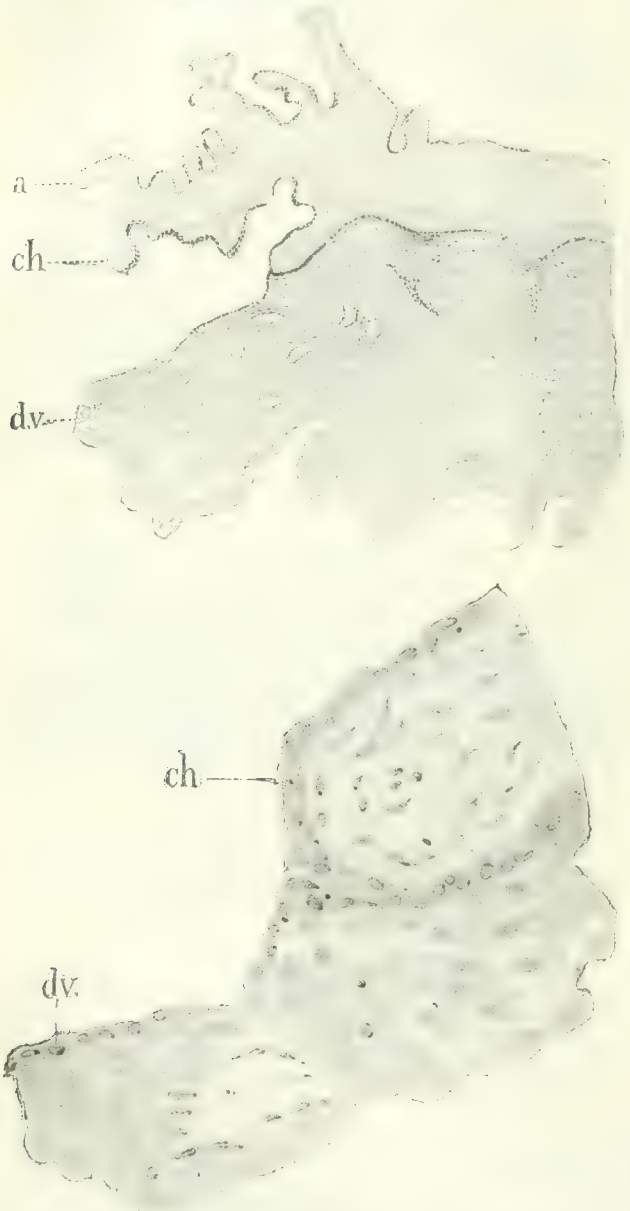
Fig. 4 is taken from a pregnancy of the sixth month. The ovum was *in toto* expelled, with the vera, by a patient suffering from influenza. The chorion is agglutinated with the vera over almost the whole periphery of the gestation sac; only a small part of the pole, opposite to the serotina, is formed by the fœtal membranes alone.

In most of the microscopical sections, decidua reflexa, villi, and intervillous space have totally disappeared; but not everywhere.

In Fig. 4 you see, to the left, the chorion resting immediately upon the decidua vera, with nothing between. Following the line of agglutination to the right, between chorion and vera appears a narrow cleft. In that cleft you find, clinging to the chorion, a narrow, tattered, necrotic band of tissue, enclosing remnants of atrophic villi. At other places there is no cleft, but between chorion and decidua vera is a small layer of fibrin. Those are the last traces of the decidua reflexa. On the greater part of the gestation sac it has totally disappeared. Places, where nothing of the reflexa is left, may even be found in an earlier stage of pregnancy. One of these spots, belonging to a pregnancy of five months, is represented in Fig. 5 and, under a high magnifying power, in Fig 6. Fig. 5 shows the amnion, chorion, and decidua vera. In Fig. 6 the amnion is omitted, and only the spot reproduced where chorion and decidua vera meet. Both are covered with

their own epithelium; at the place of contact the two epithelial layers are united.

From the preceding facts we may conclude that the form of the ripe placenta is attained in the sixth month of pregnancy; the chorion leve clinging to the vera, decidua reflexa and villi being reduced to a few necrotic remnants, enclosed between chorion and vera.



Figs. 5 and 6.—Human pregnancy, fifth month. Total disappearance of decidua reflexa. Chorion and decidua vera touching each other, with nothing between.

As to the cause of this reduction, as far as the reflexa is concerned, I hold it to be the simple effect of pressure, and I see no reason to call into action the nutritive nerves, as Sedgwick Minot does. The reflexa perishes by simple necrosis, which can be perfectly accounted for by the extension of the growing ovum, causing the vessels of the reflexa to be distended, distorted and closed. It is certain that the necrosis begins at the pole opposite to the serotina, where the extension reaches its maximum, and diminishes gradually as the edge of the placenta is approached. At the upper pole I found the reflexa in an advanced state of necrosis even in the fifth week.

Concerning the reduction of the chorion læve another question must be taken into consideration. Hubrecht found, in *Erinaceus* that the reduction of the chorion leve depends upon the reduction of the yolk sac, the villi of that part of the chorion receiving their vessels from the area vasculosa. The question, if the same is the case in man, may be answered in the negative, and we can affirm that in no stage of human pregnancy does the yolk sac come into contact with the chorion.

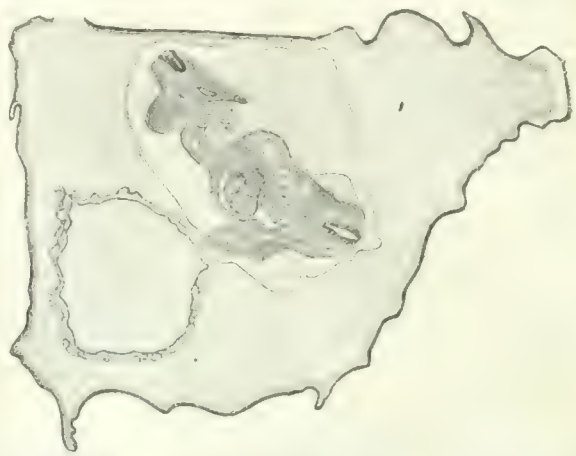


Fig. 7.—Tubal gestation, fourth week.—Tubal wall and placenta not reproduced. The outer line is the chorion, enclosing the exocœlom. Within the exocœlom to the right the amnion with the embryo; to the left the yolk sac.

In one of my youngest ova—which I hold to be about 32 days—I found the yolk sac, large as a pea, attached to the ventral part of the embryo, but utterly free from the chorion. In all early human ova which have been described you can find the same. The objection that the greater part of these ova are not irreproachable, because they are obtained either by abortion or after death, and that an attachment of the yolk sac to the chorion might *in vivo* have existed, can be refuted by the young, perfectly-preserved tubal gestation which is represented in Fig. 7. The pregnancy is advanced to the middle of the fourth week; the specimen is hardened and worked out, not by me but by M. A. Couvelaire, of Paris, who kindly presented me with one of his beautiful sections, and gave me the free disposal of it.

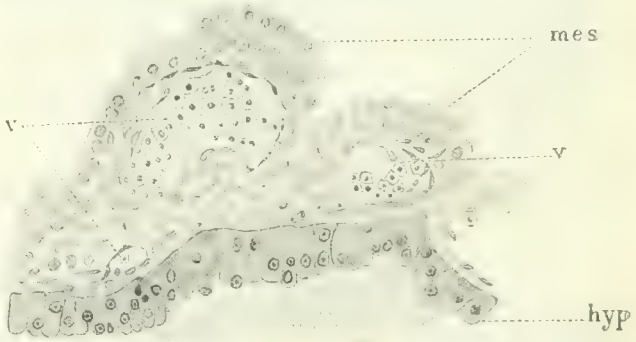


Fig. 8.—Wall of the yolk sac, under a high magnifying power, consisting of hypoblast and mesoblast. In the mesoblast fœtal vessels (area vasculosa) filled with blood.

Fig. 7 is an almost median section through the ovum. The outer line is the chorion, enclosing the exocœlom, which is partly filled by the amnion with its contents and by the yolk sac. On the yolk sac you find the area vasculosa in full vigour, as may be seen in Fig. 8, showing a part of the wall under a great magnifying power. The vessels extend over the whole

periphery of the yolk sac, which is absolutely free from the chorion.

So the vascularisation of the chorion leve in man has nothing to do with the area vasculosa, the human chorion being provided in a very young stage of pregnancy with vessels from the allantois. The reduction of the villi at the side of the reflexa in the second stage of pregnancy is easy to explain; the obliteration of the intervillous spaces caused by the pressure of the growing ovum depriving them of their supply of food. It is obvious that the fœtal villi are fed, not by their own circulation but by the mother's blood in which they are suspended.

Summarising my results, I offer you the following conclusions:

1. The macroscopical form of the human placenta is accomplished about the sixth month of pregnancy.
2. At that period the decidua reflexa has almost totally disappeared.
3. The reduction of the decidua reflexa is the effect of mechanical pressure.
4. The reduction of the villi of the chorion leve is chiefly effected by the obliteration of the intervillous spaces between chorion and reflexa.

REFERENCE AND NOTE.

[1] *Quarterly Journal of Microscopical Science*, vol. xxx, Part III, December, 1889. [2] The specimen was obtained by an amputatio supravaginalis, performed by Dr. Mendes de Leon for myomata surrounding the cavum uteri and increasing in size during pregnancy.

A DISCUSSION ON THE NATURAL HISTORY OF FIBROIDS AND RECENT IMPROVEMENTS IN THEIR TREATMENT.

I.—ALBAN DORAN, F.R.C.S.,

President of the Obstetrical Society of London; Surgeon to the Samaritan Free Hospital.

I MUST tender my sincere thanks to the President, Vice-Presidents, and Honorary Secretaries of this Section for the honour which they have done me in inviting me to open the present discussion.

I trust that some really important clinical evidence will be brought forward to-day—evidence which will be of definite value to us in the treatment of fibroids. In scientific research we must seek the unknown through the known, first making sure of what we know. Our knowledge, unfortunately, is obscure as to several esssential matters relating to the natural history of fibroids.

First, we know something about their pathology, as tumours, but we are not yet agreed about their physiological and pathological relation to the ovaries.

Secondly, we know that they are sometimes associated with menorrhagia or metrorrhagia and are sometimes associated with normal menstruation. But we are not always certain as to the precise significance of menorrhagia in individual cases.

Thirdly, we know that they may grow very slowly or very rapidly; that a slow-growing fibroid may take on sudden growth, and that a rapidly-growing fibroid may as suddenly cease to grow altogether. But prognosis as to growth in any given case is very uncertain. We urgently seek for more knowledge, for treatment depends on this question of future growth or quiescence of the tumour.

Fourthly, we know that fibroids tend to get smaller about the menopause, but this rule must be accepted with certain qualifications, and has many exceptions.

When we have considered these questions, we may turn to our second subject—recent improvements in treatment. Setting to work as in the former case, let us see how our knowledge stands at present.

First, we know that most fibroids require no operative treatment whatever. About therapeutics there is much variety of opinion.

Secondly, we know that some require removal by a surgical operation, whilst those that do not require removal may be extirpated with relative impunity by an operation, which in such a case is not surgery.

Lastly, we know of several operations, but we are not certain as to which method is the best. That which was vaunted in this very Section not many years ago is now rejected, and that which is commended here to-day will in all probability be condemned at a future meeting.

Before considering these questions at greater length, I must observe that we must put aside the retroperitoneal fibroid, commonly termed fibroid of the broad ligament. We know something of its natural history. It always tends to grow large, and is apt to press on important organs.

It should always be removed. The difficulties and dangers met with in an operation for its extirpation are in many respects quite different from those which are encountered during hystercotomy for the removal of a uterine fibroid which burrows into the broad ligament. It is associated with a uterus seldom enlarged, and usually thin and flattened over the surface of the growth. Whether the operator removes the uterus as well, or leaves it, the removal of a broad-ligament fibroid is, strictly speaking, a different operation from hysterectomy of any type. Two years ago I removed successfully a tumour of this kind weighing 44½ lbs., but I have not classed it nor included several similar cases among my hysterectomies. I consider that statistics of hysterectomy which include tumours of this class are thereby rendered faulty. I have published my own views on operation for removal of fibroid of the broad ligament, in the forty-first volume of the *Transactions of the Obstetrical Society*.[1] As compared with hysterectomy for uterine fibroid burrowing into the broad ligament, the risk of hæmorrhage is greater, but as there is usually no thick cervix to deal with, the risk of septicæmia is less. Let us return to our subject, for fibroid of the broad ligament is, I maintain, not our subject.

1. Our first question in relation to the natural history of uterine fibroid is the practical aspect of its pathology. It is not a fibroma, but is always more or less of a myoma. Nobody thinks of curing a fibroma of the periosteum or any other part by drugs. But a myoma consists of plain muscle fibre, and so does the uterus. Ergot acts on the uterine muscular tissue, and so it does, to a more limited extent, on a uterine myoma. Most probably, however, when ergot acts on a uterine myoma, the action depends rather on the fact that the tumour is uterine than on the fact that it is a myoma. Ergot may prove very beneficial in the treatment of uterine fibroid. But fibroid is not rarely associated with cardiac disease which, as Dr. Thomas Wilson, of Birmingham, has shown us, is a contraindication to the use of ergot.

Of more practical importance is the relation of the ovaries to fibroid disease. In the first place we cannot assume that we know all about normal menstruation. Then, in spite of the most painstaking researches, especially in Germany, no definite change has ever been detected in ovaries connected with fibroids, which can be held as in any way causing the tumour or promoting its development. But the results of an operation once popular amongst us show that removal of the ovaries in certain, or rather in uncertain cases, reduces the fibroid or checks the bleeding, when there is bleeding. Failure has proved nothing more than that removal of the ovaries for the cure of fibroids is not followed by uniform and satisfactory results. It has not thrown much light on the physiological relationship of the ovaries to the tumour. In cases of failure we can never feel sure that all the ovarian tissue has been removed. The ovarian ligament may bear ovarian tissue close up to its uterine attachment. I have had successful results when, to my knowledge, some ovarian tissue was unavoidably left on the pedicle. In some cases I found that the tumour diminished, yet the show continued, in one the show ceased, yet the tumour increased in size. Oöphorectomy for fibroid is practically discarded, though under certain circumstances it is still practised. Its results, however, remain of some interest to us as bearing on a much newer question, the results of leaving or removing the ovaries in hysterectomy for fibroid, a question which we must presently consider.

2. We are not quite clear as to the nature of the hæmorrhages observed in fibroid disease. We know something about the bleeding almost constant in the polypoid and submucous forms, and we know that in the subserous type, and even in

[1] Fibroid of the Broad Ligament weighing 44½ lbs (20 kilogrammes) Removed by Enucleation: Recovery: with Table and Analyses of 39 Cases. *Trans. Obstet. Soc.*, vol. xli, 1899, p. 173.

gigantic cystic fibroids there may be no hæmorrhage, not even in the form of the most regular menorrhagia. We must make ourselves a little more sure about the precise significance of menorrhagia in an unhealthy or plethoric middle-aged patient. Lastly, the distinction between menorrhagia and metrorrhagia is not always easily determined.

3. One of the most puzzling questions in relation to fibroids is their growth. Prognosis on this point is exceedingly difficult. On calcification, mucoid changes, sloughing and suppuration and the very rare malignant degeneration, I need not dwell. For my own part, I know of no rule for prognosis. I have now a large number of patients with fibroid who have been under observation for years. The irregular rate of growth in these cases has surprised me. In the case of three sisters, the tumour capriciously took a sudden growth in two, and I successfully removed the uterus in both cases; in the third, where the tumour was the largest at first, it has remained quite stationary for over four years. All three sisters were between 30 and 40 years of age, and in all the fibroid was interstitial or partly subserous. Slow spontaneous disappearance of a fibroid may certainly occur; I trust that we give this class of tumour a fair chance of displaying this phenomenon in these days. Rapid disappearance is doubtful, and usually means error of diagnosis or simple destruction of the growth by some familiar inflammatory change. I have dwelt on this subject elsewhere at length.[2] The advocates of electricity will explain to us if their method induces molecular disintegration, and if so, how the molecules are carried away. One recognised truth lies behind histories of spontaneous disappearance and of diminution of fibroids after treatment by electricity or ergot. This truth is that uterine fibroids may at least remain stationary, whilst all other pelvic and abdominal tumours are clinically, if not also pathologically, malignant.

We must not be led astray by measurements of the abdomen and uterine cavity. Abdominal measurements are useless till the tumour has grown large enough to stretch the parietes in the hypogastrium at least. The sound may involve fallacies. Let us not, then, put too much trust in tapes and sounds. If they show an inch or more of diminution within a certain time, we are not justified in reporting the case as a cure by ergot or by doing nothing. If they show an inch or two of increase, let us not, on that score alone, urge the patient to undergo hysterectomy.

There remains one more important question concerning the natural history of uterine fibroids—the influence of the menopause. It is still generally believed that a fibroid ceases to grow after the change of life. Kleinwächter, however, made out, on extensive clinical evidence, that, as a rule, fibroids do not cease to grow at the menopause. It seems, at least, clear that the menopause is deferred, often till over the fiftieth year, in subjects with fibroid. There is, we must also remember, a source of confusion in clinical reports. Depending so much on the patient's evidence, we can seldom distinguish between true but late and irregular catamenial hæmorrhage and bleeding from the uterine mucous membrane long after all the catamenial phenomena have ceased.

Two other facts we know. The majority of fibroids give no trouble after the menopause. We lose sight of the patients, and sometimes they come back to us on account of some other complaint. But a minority justify as the exception that which Kleinwächter would make us believe to be the rule, and require hysterectomy after the menopause.

Our second subject is Recent Improvements in Treatment.

Living authorities as gynæcologists and operators condemn the indiscriminate removal of even large or pelvic fibroids. Dr. Champneys's statistics, issued last January,[3] confirm the general impression of the profession on the rarity of directly fatal results from fibroid. Wallace, who died but recently, declined during the last few years of his life to perform hysterectomy, save in cases where life was absolutely threatened.

On the other hand, we are mostly consulted by those cases where the fibroid is causing serious symptoms. Bleeding alarms more than pain or dysuria. I have had under observation for two years a patient who bled largely, but declined operation, fatal syncope occurred just when it was not expected. Again, Spannochi, Thomas Wilson,[4] and Chavannaz,[5] have shown a close relation between uterine fibroid and heart disease.

These questions are, however, beyond the limits of the present discussion. Returning to the subject, we should consider if there be any recent improvements in expectant treatment. As to electricity, we have Mr. Skene Keith still speaking in its favour. Wallace advocated deobstruents of calcium chloride, potassium or sodium bromide with syrup of the iodide of iron, and declared that they have "again and again reduced the size of large tumours." I should like to hear your opinion on this observation. I have generally found that when a fibroid is quiescent and the patient in good health, bromides spoil the health and do not have any effect on the tumour.

Such are the chief subjects of importance relating to the natural history of fibroids. Until they are more clearly understood we shall not be competent to judge fairly the value of our own and of our neighbours' experience and practice. For that reason, Mr. President, let us trust that these subjects will be duly considered in the coming discussion.

Recent improvements in the operative treatment of fibroids are undoubtedly more fascinating. At the outset of this, the second subject for discussion to-day, I must observe that it includes medication and electricity, to which I have already referred. We should like to hear if any member present can bring forward new experience to guide us in what may be called an intelligent use of ergot and intelligent non-operative treatment, especially as regards diet.

I have referred to the general principles which should guide us in respect to operating. We all know that a majority of fibroids require no operative treatment, and we know that small "symptomless" fibroids may be extirpated with relative impunity. Such practice is, however, operating, and often very clever operating, but not surgery. Dr. Herman, in his well-known textbook, has ably explained the duty of the surgeon in considering a doubtful case of fibroid.

Assuming that a case demands operation, let us dwell on the latest and most improved methods. The *serrenœud* or elastic ligature is still advocated by some obstetrical authorities in hysterectomy for fibroid obstructing labour, where rapidity is of the first importance. Lepage quite recently amputated the uterus and applied the elastic ligature, saving mother and child. But Amand Routh, yet more recently, performed with equal success the retroperitoneal operation in a similar case. No doubt, however, a good practical obstetrician, inexperienced in abdominal surgery would, if called to an urgent case of fibroid obstructing labour, find hysterectomy with the *serrenœud* and pins easier, speedier, and safer than either the Sänger-Cæsarean operation or retroperitoneal hysterectomy.

We have usually, however, to deal with cases of fibroid not immediately associated with pregnancy or labour. What is to be discussed is the most recent and favoured method. The American school of gynæcologists speak well of myomectomy, and claim good results in enucleation of fibroids through a wound made in the peritoneal and muscular coat of the uterus. Braithwaite and others have had satisfactory results in this country.[6] The French school greatly favour panhysterectomy, of which we shall no doubt hear much to-day, and great advances have been made in Europe in removal of the fibroid uterus through the vagina. But retroperitoneal hysterectomy is the most popular method in the United Kingdom at present. I shall therefore conclude with some personal opinions as to its merits and as to improvements in matters of detail.

I need not go through the details of the operation, they are well known to you. I shall simply indicate what experience has shown us is best. It is the management of the stump

[2] "On the Absorption of Fibroid Tumours of the Uterus, with a report of a Suspected Case." *Trans. Obstet. Soc.*, vol. xxxv, p. 250.

[3] An Address on Some Points in the Natural History of Uterine Fibroids. *Lancet*, Jan. 20th, 1900, p. 147.

[4] The Relations of Organic Affections of the Heart to Fibromyoma of the Uterus. Obstet. Soc., Lond. See BRITISH MEDICAL JOURNAL, May 19th, 1900, p. 1224.

[5] Fibrome utérin douloureux. Arythmie cardiaque. Hystérectomie abdominale. Guérison avec disparition de l'arythmie. *Revue Mens. de Gynec. Obstet et Pædiat. de Bordeaux*, vol. ii., March 1900, p. 186.

[6] James Braithwaite, Removal of a Submucous Fibroid by Section of the Uterus (Myomectomy), BRITISH MEDICAL JOURNAL, February 3rd, 1900, p. 251. Dr. Braithwaite informs me that he has since performed a similar conservative operation where the fibroid caused obstruction.

and the treatment of the appendages that deserves most consideration.

Experience has shown that it matters little whether the operator begins by tying the ovarian vessels and dividing the broad ligament on both sides, or proceeds straight across, beginning with the ovarian and uterine vessels on one side, then amputating the uterus, and, lastly, securing the remaining uterine and ovarian artery. I find that each method has its advantages according to the nature of the fibroid in individual cases. I need not pause to consider flushing of the peritoneum, the use of the drainage tube, and aseptic or antiseptic precautions. They have their value, but it has been exaggerated by writers whose success has been really due to their own skill and experience. Those, however, who support retroperitoneal hysterectomy ought to deliberate about the closure of the stump. The great disadvantage of this method is the necessity for a considerable number of ligatures. Ligatures transfixing the flaps, and tied firmly on the stump may cause sepsis or sloughing within a few days. Indeed such ligatures, half in the peritoneum and half in the tissues of the stump, expose the patient to the dangerous complications so common when the old intraperitoneal operation was performed. The stump of the uterus was treated by ligature like an ovarian pedicle. Klotz, as Dr. Herbert Spencer reminded us in a discussion on the subject seven years ago,[1] watched three of these intraperitoneal hysterectomies which "recovered," yet all died within three years of septic peritonitis. Let us therefore leave no intraperitoneal ligatures or sutures that communicate with the stump. The suture uniting the peritoneal layer of the flaps does not come under this category. Yet when the ligatures on the arteries are tucked under the sutured peritoneal flap, they may set up parametritis within a few weeks; this, however, is a lesser evil than septic peritonitis. I find that it is best to unite the cut edges of the peritoneal flaps with a true, continuous Lembert suture of fine silk. A little oozing into the peritoneum may and does occur, but the flap is usually sealed up before the oozing becomes dangerous, and the stump is thus cut off from the peritoneum.

The question of the treatment of the ovaries in this operation is important. We know from experience that too much importance was attached twenty years ago to removal of the ovaries; so possibly we shall be showing a few years hence that we are now, in 1900, laying too great stress on the advantages of leaving them. At the Portsmouth meeting of this Association, Dr. Reed of Cincinnati and other men of experience were in favour of retention of the appendages, but the evidence of this concord of opinion was not conclusive. Abel has shown on clinical evidence that the removal of the entire body of the uterus in hysterectomy entails atrophy of the ovaries left behind, hence Zweifel, it appears, always includes uterine tissue in the flaps. He does not dread big, fleshy flaps as some of us do in this country, we who like to remove not only the uterus, but also as much of its cervix as possible. In twenty cases on which I performed hysterectomy between March, 1897, and January, 1900, and have since been able to procure trustworthy histories, I removed both ovaries in 13, and of the 13 the ovaries were healthy in 7, but in 4 of the 7 I deemed their removal advisable for surgical reasons. In 6 the ovaries were diseased, or pyosalpinx was present. Now, I find, rejecting one case where the after-history is unreliable, that in 6 cases the patients remain in good health though they have noted occasional flushings, in 5 (all over 18 months since operation), the patients are not only in good health, but have never experienced flushing, whilst only 1 patient complained of distressing flushings; these ceased at the end of a year, and she is now in perfect health. The operation was performed in April, 1897, the fibroid was sloughy, and the appendages infected. Thus, in my experience of hysterectomy, removal of both ovaries does not entail very formidable results. I cannot say that I am surprised, since in over 100 double ovariotomies and removals of diseased appendages in my own practice, I have only traced two cases of severe neurosis, and in one of the two the patient was neurotic before operation, whilst severe flushings were rare, and, as in the hysterectomies, not incompatible with excellent general health. But it seems to me that this dread of removing the ovaries is rather a fashion; yet, on surgical grounds, I save them when possible and safe, not through fear of the exaggerated horrors of an artificial menopause, but on the ground that a surgeon should only remove what absolutely demands removal.

In the 7 of the 20 cases above referred to, where I left an ovary, only one complains of flushings. This case underwent operation last December, I was obliged to amputate part of the cervix, which Abel would consider almost equivalent to removal of the ovaries. In a second case, where the patient, a single woman, aged 38, was very neurotic, I left the right ovary. The operation was done on June 22nd, 1899. On July 10th, this year, the patient informed me that she was in good health, but that she felt queer at the period, and noted a very slight show of blood. The remaining cases are free from any inconvenience.

In conclusion, it would seem that retroperitoneal hysterectomy is the best of recent improvements in the radical treatment of uterine fibroids. On its disadvantages I have already dwelt. Panhysterectomy, claimed by some as a yet greater improvement, entails more dangers at the time of operation, besides as in the more conservative procedure ligatures cannot be dispensed with. What we want is long after-histories of patients submitted to the retroperitoneal operation. The ligatures in the stump sometimes set up trouble, and certainly intestinal obstruction is not unknown, though that accident may follow ovariotomy. In this country the results of retroperitoneal hysterectomy are otherwise than gloomy. Nevertheless, we want, I repeat, more after-histories and fewer triumphant tables of mere recovery from operation.

We know that any smart operator—I will not say surgeon—can remove small and medium-sized fibroid uteri with the most gratifying results as far as low mortality is concerned. But are the patients any the better for the operation in the long run, or does it not entail ultimate discomfort? In ovariotomy good operating and good surgery are identical; the tumour must come out, and the more skilful the operator the better the technical details and nursing, and the better it will be for the patient at once and in the future. In hysterectomy for fibroid it is quite otherwise. The operation may in any one case have been needless notwithstanding perfect manipulation, irreproachable asepsis, admirable after-treatment, and speedy recovery.

Let us hear to-day what is the safest way, and in the long run the best way, to remove the fibroid uterus when, as is sometimes the case, it really requires removal, but let us beware of being reckoned as hysterectomy-mongers. I trust that British surgeons really desire a solution of this question in the interests of the patient. "Let the galled jade wince," as Hamlet said, for we trust that "our withers are unwrung."

[1] *Trans. Obstet. Soc.*, vol. xxxv, p. 189.

II.—David Berry Hart, M.D., F.R.C.P.Edin.,

President of the Obstetrical Society of Edinburgh; Physician to the Royal Maternity Hospital; Assistant Gynæcological Physician to the Royal Infirmary, Edinburgh.

Dr. Berry Hart expressed the pleasure with which he had listened to Mr. Doran's able paper. It was pervaded with a very healthy scepticism, and the account of the natural history of fibroids, so far as it was known, was very good. He himself thought that the standpoint in this country was too conservative. This was probably due to the unfavourable results of the extraperitoneal treatment of the stump, and to an exaggerated optimism as to the beneficial changes occurring at the menopause. He had seen several disastrous cases where operation was not undertaken—death from hæmorrhage, driving down of a large irremovable mass, bowel obstruction, malignant degeneration. There were two great recent improvements in operating—namely, the more complete control of hæmorrhage according to Stimson's method, and the employment of the Trendelenburg position. The advantages of asepsis stood, of course, in the first place. As regarded the control of hæmorrhage, no fact had struck him more than the security against bleeding given by the simple ligature of the ovarian, round ligament and uterine arteries. He thought the two best methods were the supravaginal amputations as described by Kelly and panhysterectomy according to Doyen.

III.—W. J. SMYLY, M.D., F.R.C.P.I.,

Late Master of the Rotunda Hospital; Gynæcologist to the Adelaide Hospital, Dublin.

DR. SMYLY considered prognosis a matter of the greatest difficulty since the actual mortality from fibroids was unknown; but in the past the errors had mostly been on the side of conservatism. As to the methods, he preferred those introduced by Doyen, both the abdominal and vaginal.

IV.—HARRISON CRIPPS, F.R.C.S.,

Surgeon to the Women's Ward, St. Bartholomew's Hospital.

MR. HARRISON CRIPPS said: I do not propose to discuss this subject from a pathological point of view, for this has already been put so ably before the Association by Mr. Doran that I am content to accept his views of the matter. There are two points which I think at the present stage are well worthy of consideration. The first is, Under what circumstances should the growths be removed? and the second, What is the best method of performing the operation?

Question of Removal.—Presumably, if a woman knew that a fibroid tumour, apart from mere discomfort, was of a nature that would seriously threaten life, she would undoubtedly assent to its removal, provided the risk from the operation was no greater than that of leaving it alone; and, further, no woman would care to carry about a tumour which, apart from any question of life, was causing her annoyance and discomfort, provided it could be shown that the risk to life involved in the operation was but slight.

Take, for instance, a fatty or fibrous tumour under the skin of the back. A surgeon, though knowing that such a tumour did not interfere with life, would not hesitate to remove it, on account of any discomfort it might be producing, for he would do so knowing that the risk of the operation was extremely small. It seems therefore important to consider what would happen to a fibroid if left alone, and, further, the risk to life involved in its removal.

It is extremely difficult to get sufficient trustworthy information as to what becomes of a fibroid if left to take its course. If one could only see, for instance, 100 cases of myoma of the uterus in one year, and if none of these were treated by operation, and then if in ten years' time we could again see our patients, we should be in a position to say what progress the tumours had made, what discomfort they had caused, and what percentage had threatened or destroyed life, but such an experience is not forthcoming. In a general way it is known that many of these tumours grow very slowly after being first noticed, producing no practical inconvenience. In other instances they have actually destroyed life either directly or by complications. Opinions therefore differ widely as to the prognosis of these growths.

The surgeon who operates has a tendency to take a graver view of fibroids than the physician who treats the disease on the expectant plan. This in some measure arises from the different class of case seen by the two sides of the profession. A patient in whom the tumour is growing, or in whom inflammation or cystic degeneration has produced dangerous symptoms, seeks in her trouble a surgical opinion, while she who notices no increase and little discomfort is satisfied with occasional visits to her physician. It thus happens that the experience of a surgeon is chiefly with the worst cases, whilst the physician sees more of the simpler and uncomplicated ones. Perhaps the most recent writer on the subject of the danger of fibroids is Dr. Champneys, and the eminence of this author and his impartiality entitle his statistics to the most careful consideration.

This author states[1] that over a series of about thirty years 1,860 necropsies were made on women over 30 years of age at St. Bartholomew's Hospital, and in 141 instances, or about 8 per cent., quite apart from the cause of death, fibroids of greater or smaller size were found. Out of these 141 cases, 3 deaths were attributable to the fibroid apart from operation, or a death-rate of a little more than 2 per cent. If Dr. Champneys's statistics had remained on this simple basis they would have afforded some clue as to the danger of fibroids; but, unfortunately, in the summary in his paper he upsets this simple calculation by the following paragraph:

[1] *Lancet*, January 20th, 1900.

The mortality from operation is 17 per cent. The mortality, apart from operation, is 3 in 2,160,112, or 0.000 138 per cent. It seems undeniable that deaths from fibroids apart from operation are excessively rare.

An error must have crept in somewhere in these statistics; and, as they are likely to be quoted hereafter, I think the discrepancy requires explanation. All of us who have seen anything of fibroid disease of course know that the fatality from fibroids is vastly greater than the 3 in over 2,000,000 mentioned.

My own experience of fibroids tells me that their fatality is infinitely greater, and even the 2 per cent. mortality disclosed in the *post-mortem* room in St. Bartholomew's is considerably below the mark. The following are the causes that I have met with in my own experience which render a fibroid a dangerous disease:

1. Cystic degeneration.
2. Sloughing.
3. Pregnancy.
4. Obstruction.

1. *Cystic Degeneration.*—Out of 80 cases of fibroids, in 6 the tumours had become cystic and were breaking down.

2. *Sloughing.*—In 1 case a large tumour had rotated on its pedicle and was sloughing.

3. *Pregnancy.*—In 1 case an abortion was followed by partial sloughing. In a second case a tumour growing from the cervix so completely blocked the pelvic outlet in a pregnant woman that the uterus and child had to be removed as the only means of saving life.

4. *Obstruction.*—Lastly, a few years since I was called on to do colotomy in a case of complete obstruction produced by a fibroid. It was too late, however, for, on opening the abdomen, it was found that the intestine had given way, and the abdominal cavity was full of gas and putrid fluid. It will be thus seen that, in a comparatively small experience, I have seen a considerable percentage of cases in which fibroids had threatened or destroyed life.

In giving an opinion as to the advisability of an operation it is possible to formulate certain general principles. For instance cases, which from their size prevent a woman from getting about in comfort, or, if in the lower classes, prevent her earning her living, tumours which are undermining the health with frequent bleedings, tumours which interfere with the rectum or bladder, and, above all, tumours having any suspicion of being cystic are cases which, to my mind, should be operated upon. On the other hand, where the fibroid is small, where it is not producing any symptoms or showing any special tendency to increase, it should be left alone.

Between these two sets of cases is a third in which the inconvenience is but slight, where complications are not serious, nor is the increase of the growth very marked. In these the advisability of an operation must, to a great extent, depend on the risk to life involved. If this is slight, perhaps no greater than the removal of a fibrous tumour from the surface of the body, undoubtedly it would be the wish of the patient, and rightly so, that it should be removed. On the other hand, were the risk as high as it was ten years ago in the days when antiseptics were little understood and the pedicle brought outside the abdomen, it would be better for a woman to suffer the tumour to remain than have it removed by operation. As the dangers from the operation decrease so much more widely will the legitimate range of operation extend, it therefore becomes a matter of importance to show to what extent recent improvements have diminished the mortality. I have recently seen papers by Drs. Gow and Dr. Duncan recording the results of their hospital cases, and I was much struck with the brilliant results obtained. It is scarcely a fair test to take the whole series of cases of any surgeon who has been operating for a long series of years, for progress has been so rapid that it is quite fair to do as Duncan has done and use only the more recent results as a basis of the present mortality.

Since I have been connected with the Women's Ward at St. Bartholomew's Hospital during the last fifteen years, I consider that the three most important improvements in methods are as follows: (1) Better knowledge of antiseptics; (2) the intra-peritoneal treatment of the stump; (3) the Trendelenburg position.

First amongst these may be placed the great improvement

in antiseptic surgery, and when I see the extreme care and caution now exercised by all concerned in the operations, I am inclined to smile at the feeble, imperfect attempts at asepsis of only a few years since. Of course, the ultimate proof of improvement in this respect must be calculated by the diminished mortality, but apart from this it may be interesting to note the improvement disclosed by cultivation experiments. It has been the custom in our operating theatre attached to the Martha Ward to take portions of the skin from the fingers of the surgeon, assistants, and nurses, and subject these to a cultivation test. A few years ago growth in the culture was quite common, but now is exceedingly rare. The antiseptic in use in Martha Ward is biniodide of mercury. After five minutes' use of the nailbrush and soap and water the hands are soaked for a similar time in 1 in 500 of spirit solution of biniodide. Pads and all instruments are invariably boiled and taken direct from a steriliser as required.

Intraperitoneal Treatment of the Stump, first made practicable by Baer in America, did not find immediate favour in this country. As soon, however, as I knew of his work, I introduced the plan at St. Bartholomew's. After only a small experience its value seemed so evident that I brought the matter before the Obstetrical Society in 1896. A discussion followed, but I may say, with due deference to Mr. Doran, that the Samaritan surgeons were the most strenuous opponents to the new plan. At the present time, however, there must be few surgeons unconvinced of its superiority to the old method of strangulating the pedicle outside.

The Trendelenburg Position for operating is of the greatest advantage in hysterectomy; indeed, some operations deep in the pelvis would be almost impossible without its aid. At first I only employed it sparingly for difficult cases; experience, however, has made me confident that even in prolonged operations the position is harmless, and now I employ it practically in every case. Not only does it afford an excellent view, but it saves nearly all handling and pressing of the intestines.

In proportion to the number of cases of fibroids presenting themselves at St. Bartholomew's the number submitted to operation is small. This arises from the principle adopted in Martha of not operating upon fibroids for mere inconvenience, but only in cases where they prevent the woman earning her living or when complications arise from inflammation, pressure effects, or hæmorrhage. Still, I consider as the mortality from the operation is reduced the range within which it may be fairly undertaken admits of considerable extension. It is now about three years since I adopted the systematic use of the Trendelenburg position and of the biniodide of mercury as an antiseptic, and I think it must be more than a mere coincidence that during this period the mortality from operation has considerably decreased; indeed, in the last 27 cases of operations for fibroid I have had but a single death, and this case could not be reckoned as a pure hysterectomy. The case was one of fetid pyosalpynx with a suppurating ovary on the opposite side. There was a small fibroid of the uterus, and owing to the adhesion of the ovary it was considered safer to remove the uterus rather than to dissect the ovary off.

After opening the abdominal cavity and ascertaining the nature of the tumour and the character of any adhesions present, it is important early to ascertain the position of the bladder. Its being located gives the operator confidence and he is enabled to proceed more rapidly and boldly. In many cases the limits of the bladder can be seen, if not an assistant passes a sound *per urethram* into the bladder, the end of which can easily be felt by the operator's fingers. Any adhesions of the omentum or the intestines to the tumour are separated. Such adhesions are by no means uncommon in old standing cases, being the result of inflammatory attacks; indeed, around cystic fibroids adhesions are nearly always present.

I have given up the procedure originally recommended by Baer of transfixing and tying the broad ligaments in bulk. There is no objection to this if the tumour and uterus are small and the ligaments flaccid, but I seldom operate on such cases. In the majority of instances the ligaments are stretched, and owing to a partial rotation of the tumour, lie like broad straps on its surface. If an attempt be made to transfix, and tie these in their tightened state, it will almost invariably be found by the time the rest of the operation is complete that they have loosened and slipped, so that the time occupied in their primary ligature has not only been wasted, but troublesome hæmorrhage may arise during the subsequent steps of the operation.

I now treat the broad ligament by clamping it with two or three pairs of moderate-sized forceps successively. These are placed both on the proximal and distal side of the ligament, which is divided between them. In this way the ligament on either side can be divided fairly low down, and this allows the uterus to be further drawn up. The anterior transverse incision through the peritoneum I like to make at least an inch and a-half above the reflection from the bladder. The peritoneum strips off the bladder with ease, the handle of the knife being used, but posteriorly it cannot be stripped back in this way, a thin flap having to be cut, consisting not only of the peritoneum, but part of the capsule as well. The assistant now passes his hand to the bottom of Douglas's pouch, so as to grasp the pedicle when divided, while with the other hand he draws the tumour up. The remaining deeper portions of the broad ligament, containing the uterine vessels, have now to be divided. I prefer to do this without previously either clamping or ligaturing the portion. By operating thus the uterine artery spurts on division, and it can be easily picked up separately with forceps. It can be then tied with a fine ligature without including a lot of unnecessary structures. The cervix of the uterus is now cut across transversely, leaving a small button in its lower part as a roof to the vagina. Two or three oozing points can be seen on the stump. These, if slight, can be treated with the cautery, or, if considerable, the bleeding area is transfixed by a fine curved needle and tied with a fine ligature. The cervical canal seen in section in place of the stump is touched over with the cautery. The stump is now dropped back, and the anterior and posterior flaps are accurately united across the surface with interrupted fine ligatures. These ligatures are all passed before being tied. This allows of the surface of the stump being finally washed over with mercury lotion, for I consider it a matter of importance that there should be no blood clot allowed to accumulate between the surface of the stump and the peritoneal covering. Any blood clot or fluid is removed from Douglas's pouch by a sponge, and also from the bladder *cul-de-sac*. I have given up flushing and drainage, save in the rare cases, where, in cystic fibroids, any purulent fluid had been extravasated. In my earlier cases ventral herniæ were not uncommon. This was partly due to the frequent use of large glass drainage tubes, and partly to the want of appreciation of the proper method of uniting the incision. As fas as is possible, I consider it better to make the incision a little to one side or the other of the middle line. The dense thin fascia in the middle line does not present so broad and good a surface for union as does the muscular tissue at the side. Great care should be taken not to draw the peritoneum up into the incision, for if that be done it interposes itself between the other layers, preventing them uniting, and thus the scar is formed by skin and peritoneum only. To prevent this, the needle should be passed not more than eighth of an inch from the edge of the peritoneum, plenty of muscular tissue being included. I consider it a mistake to remove the stitches too early. It is quite soon enough if the alternate stitches are removed on the eighth day, and the remainder four or five days later. The longer a patient can keep quiet the better. I like them to be in bed at least a month, and to strain or lift no weights for three months after the time of operating.

In conclusion, I would wish to express my thanks to my colleague Dr. Champneys, Mr. Bruce Clarke, and to you, Mr. President, for your courtesy and assistance in my work in Martha Ward, St. Bartholomew's, for the last ten years.

V.—A. V. Macan, B.A., M.B., F.R.C.P.I.,

King's Professor of Midwifery, Trinity College, Dublin; ex-Master of the Rotunda Hospital.

Dr. Macan said: As to the natural history of fibroids I would wish to draw attention to the fact that these tumours are much more common in negro women than in those of the white races. The statistics take no account of the thousands of women who have one or more fibroids the existence of which is not discovered or betrayed by any symptom during life. The chief question seems to me to be to decide in what cases, even where the tumour is not giving any trouble, we should advise operation in order to avoid further danger from degeneration of the tumour or otherwise. The method of operation, whether Schroeder's, Martin's, Doyen's, or the American method, seems to me of less importance than perfect asepsis and the use of Trendelenburg's position. The method I prefer myself is supravaginal amputation.

VI.—Irving H. Cameron, M.B., etc.,

Professor of Surgery and Clinical Surgery, University of Toronto.

Professor Cameron said: I quite agree with Dr. Macan that statistics upon the frequency of uterine myomata are unreliable, owing to the disparity of the incidence in the different races, it being probable that nearly 50 per cent. of negro women at the menopause will afford evidence of uterine fibromyomata. However frequent uterine myomata may be, and however few the women who will die of them, regarded in the aggregate, the important point for the clinician is what is going to happen in the individual patient who is consulting him. And here I quite agree with Dr. Smyly that, however accurate the physician may be in forecasting the future of his patient, the gynæcologist must feel very uncertain in his diagnosis of uterine fibroids. Let me cite a case. Eight years ago, a lady with a fibroid the size of one's fist, and entirely free from any complications or symptoms due to it, consulted me. I advised abstention from interference until symptoms arose, and for eight years I congratulated myself and the patient upon the advice. Last spring, however, I was called to see this patient in consultation, she having been well

and comfortable in the meantime, and found that suddenly some change in the tumour (sloughing or twisted pedicle) had occurred, the patient was *in extremis*, there was no room for operation, and next day she died. With regard to the operation, I cannot agree with Dr. Macan that the choice of operation is a matter of indifference. Doubtless each surgeon will be partial to and will best perform the operation with which he is most familiar; but as Mathias Mayor long ago well said, "*simplex sigillum veri*," and I hold on general principles that the simplest is the best. Kelly, of Baltimore, to whom Dr. Berry Hart has referred, while himself the champion of myomectomy, has elaborated the method which seems most simple and satisfactory. I venture to differ from Dr. Smyly in his preference for so-called "panhysterectomy," and agree with Dr. Macan in thinking there is less hæmorrhage (from vaginal arteries) in leaving a portion of the cervix, and that the vaginal vault is better preserved. If it be thought that danger may arise from the presence of ligatures, I would like to point out that some surgeons on our side of the water dispense with them altogether by the adoption of temporary clamping of the pedicle by an instrument specially devised and tested up to 2,000 lbs. of pressure. This leaves a horny, transparent, bloodless, aseptic pedicle, and no foreign body.

VII.—William Roger Williams, F.R.C.S.,
Clifton.

Mr. Williams said: An enormous amount of literature has lately appeared on the subject of the surgical treatment of myomatous tumours, but it appears to me that hardly any of those who have written on this subject have grasped the fundamental factors essential for arriving at a proper conclusion. Hence large numbers of women have been mutilated to no purpose, and many valuable lives have been unnecessarily sacrificed. These remarks especially apply to those who have advocated and practised extirpation of the uterus for small myomata, whenever they could be recognised, as a "conservative" operation, for the prevention of possible ills that might ensue from the subsequent increase of such tumours. An acquaintance with the natural history of myomata suffices to show that such a remedy is far worse than the disease. We must not forget the old surgical maxim "*Non nocere*." Surgeons have been led into a false position in this matter by comparing myomatous with ovarian tumours. Between the two there is no real analogy, but rather complete antithesis.

With ovarian cystomata the tendency is for the majority of unoperated cases to end fatally, the average duration of life having been estimated at only three years, while the morbidity is considerable.

With myomata, as I propose to show, not more than 1 in 2,000 unoperated cases ever ends fatally, hence the average duration of life is hardly appreciably affected by the disease, and the number of those who suffer serious indisposition on this account is wonderfully small—probably not exceeding 1 in 500 cases. For the elucidation of this subject, it is a matter of the first importance to gauge the frequency of myomatous disease in the general population, and the mortality resulting from it.

Unfortunately no statistics are available dealing directly with this matter, and the Registrar-General's classification is so faulty that myomata are not even discriminated from other uterine diseases. In spite of these difficulties it is, I believe, possible by indirect means to arrive at tolerably correct conclusions. It may be safely asserted that uterine myomata are exceedingly common.

According to Bayle, 20 per cent. of all women over 35 are subject to these tumours, and with this estimate Rokitansky, Lee, and others agree. So far as I can judge it is fairly accurate, for of 159 necropsies on women—who had died of cancer of various organs—I found uterine myomata in 20, or in 12.6 per cent. Of 440 necropsies on women 35 years old and upwards who had died of various diseases, Winckel reports that myomata were noticed in 66 cases, or in 15 per cent. Of 462 surgical *post-mortem* examinations at St. Bartholomew's Hospital on women over 30 years old, myomata were found—according to Champneys—in 67, or in 14.4 per cent. In making *post mortem* examinations small myomata are often overlooked, so that the disease is no doubt commoner than these *post-mortem* records indicate. Thus Bayle's estimate is probably correct.

On this basis I calculate that there would be about one million myomatous women in our present population.

According to the returns of the Registrar-General, about 700 women die annually of "diseases of the uterus and vagina"—under which heading myomata are included—probably furnishing most of the cases over 35 years of age, for puerperal and malignant diseases are excluded. Thus the report for 1897 shows 745 deaths under this heading; but of these, 229—being under 35 years of age—may be disregarded for our purpose, very few deaths being due to myomata until later in life; the 1898 report shows 682 deaths under the same heading, 196 deaths being under 35 years of age.

Reckoning the deaths from myomata at 500 per annum, the mortality from this cause for the whole community would be 1 in 2,000, which, in the absence of more exact information, I accept as an approximately correct estimate; at any rate, the mortality is certainly not higher than this, although it may be somewhat lower.

It follows from the foregoing that if the practice of some surgeons (in removing myomata whenever recognisable) were generally followed, nearly a million extirpations would be done in a single year. As the average mortality of such operations may be estimated at about 10 per cent., this means that about 100,000 lives would be sacrificed in a single year; whereas, if the disease were left to its natural course, not more than 500 lives would be lost. It will thus be seen that those who advocate and practise these so-called "conservative" operations, incur a grave responsibility.

Not only are uterine myomata infinitely less dangerous to life than ovarian cystomata, but their removal is more hazardous, hence radical treatment is only exceptionally required. In most cases myomata cause no dangerous symptoms, and in many other cases such symptoms as do arise can be relieved by palliative treatment. To justify the removal of these tumours there must, therefore, be some urgent indication.

VIII.—Edward Stanmore Bishop, F.R.C.S.,
Honorary Surgeon to the Ancoats Hospital, Manchester.

Mr. Bishop said it was one of the most effective charges by antivivisectors against physiologists that they repeated experiment already sufficiently tested. Surely they were open to the same charge if they repeated to their patients' detriment treatment already far more than amply tried. It was far wiser to accept the fact, and put medical treatment entirely on one side as a curative measure. Turning to the question of operative treatment and the question as to when it should be undertaken, he wished to lay stress upon the fact that fatality was by no means the only factor which had to be considered. Comparatively few cases directly produced death. Far more reduced the patient to a vegetative existence, in which she passed the best part of her life at the lowest possible line, without reasonable comfort or happiness; that, during this period of hopeless waiting for a persistently deferred menopause, the conditions rendering possible effective operation, and an only real cure steadily changed for the worse, so that at last when in despair she claimed relief, complications due to the lapse of time, and to that alone, rendered her chances of recovery almost *nil*. He avoided statistics as often misleading, yet a drop in mortality from 50 to 80 to one of from 2 to 8 per cent. could not be explained only by the inclusion of unnecessary cases. He believed that those who inveighed against indiscriminate operating on all and every fibroid discovered were beating the air, since he had never met anyone who seriously advocated such a proceeding. He quoted a case to show the evil of prolonged delay, and suggested that a good deal had been said as to the responsibility incurred by those who advised operation, but nothing of the far greater responsibility of those who exposed women to such dangers by advising senseless and useless delay. He thought that the Section was to be congratulated upon the fact that it was no longer considered criminal to discuss surgical measures in fibromyoma, even before the patient had been subjected to prolonged treatment by medicine, baths, etc.

So far as the use of medicine was concerned, the discussion had ignored it. Had it been otherwise, he had collected a large number of written opinions in the literature of this subject. He wished to point out that medicine had been tried for centuries, and rightly so, when the mortality of operative work had been so high; that it had been tried in every way by men who were as astute as ourselves, and who were possessed of much the same drugs; and that their verdict might be summed up in the words of the late Dr. Alfred Meadows:

"There is, in truth, no folly greater than to attempt the impossible, and no worse treatment of conscience and character than the habitual prac-

tice of unreality.....I am firmly convinced that to persuade women for months and years to swallow gallons of medicine, mostly of a depressing and debilitating kind, in the vain hope that we can thereby bring about the absorption and removal of a hard fibroid tumour.....is not only unscientific, but unreal and dishonest.....Of late years, our knowledge of the action of many drugs has greatly increased, and the clearer our insight becomes, the more completely does it dispose of the false reputation which has been dishonestly acquired by the remedies usually given in these cases." Then he asks how can potassium bromide, known for its action on the nervous system, have the smallest influence in promoting the disintegration or absorption of a solid tumour? ".....Mercury is believed by some—I confess I am not of the number—to have the power of promoting the absorption of inflammatory products, what relation is there between this reputed property and the alleged power of absorbing the organised constituents of a solid fibroid tumour? I have used perseveringly the chlorides, iodides, and bromides of mercury, even to the maintenance of slight salivation kept up for some time, but I must frankly own that beyond the mischief to the patient's constitutional powers, which they are well capable of inflicting, I have not observed any result, and most certainly I have never seen the very smallest diminution in the size of the growth. In iodide of potassium and iodide of iron I have just as little belief for the purpose in question." Then he discusses the claims of chloride of calcium—which has, he says, a most undeserved reputation, and points out that the natural process of calcification which it is desired to emulate is a consequence and not a cause of a previous starvation of the tumour by diminution or loss of its blood supply; and that, moreover, mere addition of lime to the patient's fluid by no means insures its deposition at any point at which we may desire it. "I believe," he says, "that drugs are utterly inert in promoting the removal of uterine fibroids."

IX.—JOHN CAMPBELL, M.A., M.D., F.R.C.S.,

Senior Physician to the Samaritan Hospital for Women, Belfast, etc.

DR. CAMPBELL said: While we are bound to recognise that a large number of women go through life with fibroids which do them no harm, we must not forget that a surgeon who is in the habit of removing abdominal tumours is consulted by women suffering from fibroids which are causing them danger or discomfort, and, in many cases, require operation. What proportion of women have harmless fibroids is of no interest to me. I have to deal with patients who consult me as to what is best to be done with tumours which are causing them trouble, and, in a great number of cases, necessitate operation. Another point which I should like to emphasise is that no tumour should be allowed to remain until dangerous changes have taken place in it, or until the woman's state of health is such as to make the operation a matter of life and death. It is surely good surgery to remove tumours at a favourable time when the operation can be undertaken with a good chance of success. As the methods of performing these operations improve and the dangers become less the removal of fibroids will be more and more frequently practised. However frequently we may operate, we must meet with many cases in which medical treatment is essential for some reason, especially for hæmorrhage, and I would say a word in favour of calcium chloride. A combination of calcium chloride and hydrastis canadensis appears to me to give good results, at least as good results as any other line of treatment. The calcium chloride acts not by depositing calcium salts in the tumour or elsewhere, but by its power of favouring coagulation of the blood and preventing hæmorrhage. In the consideration of surgical treatment nothing has been said about the vaginal method, and yet from the point of view of both patient and surgeon this is the ideal plan of removing fibroids. It is, moreover, applicable to a great number of cases and to many of those very cases which most often require operation, namely, cases of severe and persistent hæmorrhage. The most troublesome and dangerous hæmorrhage is very frequently due to small multiple fibromata such as may be very easily and safely removed by vaginal hysterectomy. The question whether retroperitoneal operation or panhysterectomy is the best method, does not appear to me to be, in the present state of our knowledge, of great importance. I am, however, inclined to agree with Dr. Smyly in his approval of panhysterectomy In the retroperitoneal method we do a thing which in general surgery we endeavour to avoid, namely, cutting off most of the blood supply from the mass of tissue which we leave behind, and in which we may have had to leave many ligatures or sutures. As a matter of fact a certain proportion of these cases show an after-history of a mild septic condition, and a small proportion of them even suffer from some sloughing of the cervical stump with ultimate recovery. At present success in one or other of these operations will largely depend on the experience of the operator in the method selected. Whatever method is adopted the less cervix we leave the better.

X.—H. MACNAUGHTON-JONES, M.A., M.Ch., F.R.C.S.I., M.D.,

Ex-Professor of Obstetrics and Gynæcology, Queen's College, Cork.

DR. MACNAUGHTON-JONES altogether demurred, in regard to women who came complaining of symptoms from myomata, from Mr. Alban Doran's statement that "the majority of fibromata required no operative treatment whatever," and denied that they were, as suggested by Mr. Rogers Williams, seeking about for such tumours "wherever recognisable," and proceeding to operate upon them just because there was a myoma present. He had seen patients dying from the consequences of pressure, necrosis, sloughing, uræmia, renal disease independent of pressure, malignant disease, and dementia, as well as general conditions due to hæmorrhage. These were but a number of the causes which led up to a fatal result. He was one of those who had to consider, in the case of a woman coming for relief of symptoms, what alternative to operation he had to offer her. Most of the alternatives—such as ligature of the uterine arteries, oöphorectomy, and others—were failures. In operations on the pelvic organs he saw no reason to depart from the first principles of surgery followed in other parts of the body save the increased risk of interference with those organs. The risk had been so reduced that he thought, given a case in which they had to deal with a myoma accompanied by symptoms rendering the woman's life unhappy or useless, or one in which any graver consequences were threatening, the course was to operate. The size, the position, the nature of the tumour would decide the point in many cases. As to technique, the methods referred to had been again and again discussed, and it seemed to be "flogging a dead horse" to take up time by doing so again. For instance, with regard to the uterine arteries and their hæmostasis referred to by Mr. Harrison Cripps, it was over three years since Doyen published his cases of "hysterectomy without preventive hæmostasis," and his method of drawing out the uterine arteries and securing them with his forceps and their ligature.

XI.—Mrs. STANLEY BOYD, M.D.,

Surgeon to the New Hospital for Women, London.

MRS. STANLEY BOYD said: Surgeons have held the field today rather than pathologists. With regard to the question of hæmorrhage Mr. Doran did not refer to the presence of concomitant salpingitis as a cause. I should like to know his opinion on that point. I would suggest that valuable evidence as to the significance of hæmorrhage might be collected from surgeons, if statistical evidence were collected of cases operated on, showing the symptoms, and especially hæmorrhage, for which the operation was undertaken, and the exact pathological conditions found at operation, exact position of tumour with regard to uterine cavity, state of the mucous membrane, condition of the tubes and ovaries, etc. This valuable information might be gained and further guidance obtained as to the exact cause of symptoms, and therefore as to whether they necessitated operation or not. Operation is too often exploratory; it is most important to make an accurate diagnosis beforehand, and to ascertain not only that there is a fibroid, but its exact relations, the state of the mucous membrane and of the appendages. Mr. Doran warned us not to depend upon the length of the uterine cavity in estimating the amount of growth of a fibroid. The only true way to estimate the growth of any pelvic tumour is a careful bimanual examination made both by vagina and rectum in combination with the abdomen. One point in the question of operative treatment has had less attention in the discussion than it deserves—the question of the removal of one or both appendages. Mr. Doran spoke on the authority of Abel of atrophy of the ovaries as following removal of the uterus. If this is so, is atrophy of the ovaries the same thing as complete removal? In the light of the recent work that has been done on the function of the ovaries in the general work of the organism, can we regard a woman with atrophied ovaries as in the same position as one whose ovaries have been entirely removed? My practice, so far, has been to leave one ovary if possible; and no doubt, as this method is now much practised, we shall be able to see whether the remaining ovary does atrophy or not. I have one case operated on a year ago where the patient has had two hæmorrhages within a year, and the ovary, far from atrophying, has

enlarged since operation. Perhaps too much of the cervix encroaching on the uterine tissue was left. With regard to antisepsis, an important point is careful preliminary disinfection of the vagina. If this were carried out, perhaps less objection would have been brought forward to the presence of sutures in the stump.

XII.—Mrs. M. A. D. SCHARLIEB, M.D., M.S.,

Senior Surgeon to the New Hospital for Women, London; Lecturer on Midwifery and Diseases of Women and Children, London School of Medicine for Women.

MRS. SCHARLIEB said: As indications for operating, we may accept such present conditions as hæmorrhage, pain, pressure on bladder, ureters, and rectum, invalidism, and the possibility of future degeneration, especially malignant and gangrenous. As the method of operating, I prefer abdominal hysterectomy in the Trendelenburg position, with accurate asepsis and antisepsis, the latter for our hands and the patient's skin, asepsis for the peritoneum. I leave the ovaries if healthy, mark out the flaps, secure the uterine arteries and amputate, reduce the stump if necessary; do not transfix and ligature but disinfect and sew the attenuated stump, then cover with the flaps of peritoneum and close with Lembert sutures. Panhysterectomy should be performed if fibroids infest the whole uterus, even the cervix; myomectomy in suitable cases where symptoms are marked, and the tumour or few tumours interstitial or subperitoneal, and removable without undue mutilation of the uterus. Vaginal hysterectomy is suitable for myomatous uteri not larger than a four months' pregnancy.

XIII.—Arthur Edward Giles, B.Sc., M.D., M.R.C.P.,

Surgeon to Chelsea Hospital for Women and Gynæcologist to the Tottenham Hospital.

DR. ARTHUR GILES, in speaking of the natural history of fibroids, referred to the extraordinary fallacies that were met with when the fatality of unoperated cases of fibroids was considered. Mr. Harrison Cripps had shown how such a careful observer as Dr. Champneys might be led wide of the mark, and Dr. Giles pointed out a fallacy in Dr. Champneys's paper to which Mr. Cripps had not referred. The mortality of fibroids left to themselves was reckoned from the number of deaths from untreated fibroids. It was usually quite overlooked that nearly all the gravest cases where death was threatened came under the surgeon's care, and that consequently a large number of what would otherwise have been fatal cases were removed from that category. Mr. Roger Williams had fallen into the same error, and had indeed gone much further; for while he stated that the natural mortality of fibroid was 1 in 2,000 (a statement which Dr. Giles contended was entirely theoretical), he went on to say that if all cases of fibroid were operated upon the mortality reckoned at 10 per cent. would amount to 100,000 per annum. This was absurd, because as all authorities agreed the mortality of operations undertaken for small fibroids was practically *nil*. Nothing was further from his mind than to advocate such general operating; but he wished to protest against such misleading juggling with figures as appeared in Mr. Roger Williams's remarks. As to the indications for operation, the difficulty always arose in dealing with the individual case. When the matter was considered generally, the question was relatively simple, namely, when a fibroid gave no symptoms no treatment was necessary; if it gave symptoms these must be treated. If the symptoms were not severe enough to endanger life they might try drugs or electricity if they thought any good were to come of them. Personally, he had very little faith in either. That being so, the question of operation ought to be fairly placed before the patient, as Mrs. Scharlieb had so well contended, and the choice left with her. In cases where life was threatened all agreed that operation was necessary. He agreed with Dr. Smyly as to the advisability of removing as much of the cervix as possible, though he did not think it necessary to follow Dr. Smyly so far as to advocate removal of the whole cervix. But there was no doubt that if the uterine arteries were tied low down and much cervix was left there was a great danger of necrosis of the stump. A little necrosis occurred in nearly every case, as evidenced by the slight rise of temperature so frequently seen a few days after hysterectomy. He entirely concurred in Mrs. Stanley Boyd's remarks as to the advisability of leaving one or both ovaries. He was sure from cases he had seen that this course secured a smoother convalescence and a better state of health afterwards.

XIV.—Henry Briggs, M.B., F.R.C.S.,

Professor of Midwifery and Gynæcology, University College, Liverpool; Surgeon to the Liverpool Hospital for Women.

PROFESSOR BRIGGS cited the case of a nurse whose fibroid was ruptured by a fall from a high trap, causing internal hæmorrhage. Abdominal hysterectomy was performed during the collapse, and the patient recovered. Difficulties in diagnosis contaminated the clinical statistics of fibroids. On the treatment of the cervical stump in Baer's operation he desired to allude to a small point. As sutures of the cervical tissues were to be avoided, a simple plan was to pass two sutures of fine silk or catgut vertically on each side of the cervix; these sutures, when tied, brought together the serous covering of the cervical stump, and checked the small residual bleeding which often continued from the close of the operation.

XV.—Skene Keith, M.B., F.R.C.S.,

Surgeon to Out-patient Samaritan Free Hospital for Women.

MR. KEITH said: If it were possible to agree on the question of what part a fibroid tumour plays in the life of a woman there would be less difficulty in settling what is the proper treatment. Excluding fibrocysts and tumours where there is much watery discharge, as these require hysterectomy, a fibroid may be defined as a tumour which grows during menstral life. There are no tables showing the age at which menstruation stops in healthy women at the present time, but in bleeding fibroid it seems to cease between 52 and 54, and if this is correct treatment will depend on the age. What might be justifiable at 40 would not be justifiable at 50. At present long lists of hysterectomies are appearing but unfortunately little information is given about the cases, and what is given is too indefinite to be of any use. I have collected 20 cases of bleeding fibroids treated by myself by Apostoli's method ten or more years ago. In 3 menstruation continues, in the remaining 17 in all but 2 menstruation ceased at 50 or under; 18 are completely cured, one is much better, and in one the tumour is somewhat larger than it was eleven years ago. After thirteen years' experience of Apostoli's treatment I have no hesitation in saying that it is a good treatment, though I do not limit myself in any way, and perform hysterectomy occasionally.

XVI.—Walter Spencer Anderson Griffith, M.D., F.R.C.P., F.R.C.S.,

Physician to Queen Charlotte's Hospital, Assistant Physician-Accoucheur to St. Bartholomew's Hospital; President of the Section.

DR. GRIFFITH said: There is very little difference of opinion amongst the members of this Section on the great points in connection with fibroids. On the methods of operating, for instance, there is little diversity. We are all agreed that in cases where certain well-defined symptoms arise that operation must be performed if the patient's life is to be saved. We are all agreed that there is a certain small mortality directly due to fibroids. We are all agreed that there is a very large amount of serious ill-health, not necessarily involving danger to life, as the result of these tumours. There is also a large class of cases which are on the border-line of severity, in which there must be differences of opinion as to treatment. The decision in these cases, it seems to me, must be left, as in almost all difficult circumstances, to the judgment of the individual doctor responsible for the case. Where one man is more conservative another man is more inclined to operate, and so it will always be. I do think that the general tendency as exhibited in the discussion of to-day has been a wise one, and I do not think that anyone will find fault with the general opinions which have been expressed. With regard to the natural history of fibroids, the points which have been raised have not received quite the consideration they deserve, though they are of very great importance. One great point is, what changes follow the climacteric? I am convinced that the rule in the very great majority of cases is for the fibroids not only to cease to increase, but to steadily diminish in size in a marked degree. Within twelve months the tumour is very definitely smaller, and the ordinary

troubles due to fibroids have ceased. There are well-known exceptions, but our judgment must be based on the rule, while we bear in mind the exceptions. There is only one other point upon which I wish to make any remark, and that is on the question of palliative treatment, which certainly has not been sufficiently considered to-day. There are a large number of women who with proper rest and care at the times of menstruation, with the aid of drugs, manage to get on at other times without serious inconvenience. Since Professor Wright's paper on the action of calcium chloride I have used it in some cases of great anæmia due to uterine hæmorrhage (where the cause could not be easily removed), while feeding the patient on iron, with highly satisfactory results. There are some surgeons who appear to have no faith whatever in drugs for the relief of menorrhagia due to fibroids. I wonder if they carry out these principles in the case of their own relatives who may be suffering in this way. May I in conclusion express our appreciation of the part taken in this discussion by the ladies of this Section, who have shown themselves able to make by no means the least valuable contributions to it?

REPLY.

Mr. ALBAN DORAN said that purely statistical evidence, like that of Champneys, must be judged with caution. Tables of hysterectomy for fibroid were very unsatisfactory; they could not judge the authority, principles, and prejudices of individual operators. "Size of tumour" and "reason for operation" in such tables were headings more likely to mislead than to guide. Mr. Stanmore Bishop opposed all expectant treatment. Mr. Doran did not believe much in drugs, but he found by experience that therapeutics and hygiene kept scores of fibroids quiescent. Yet Professor John Campbell and the President advocated calcium chloride. The chance of malignant degeneration should never be prominently placed before a patient with fibroid as an argument for operation, and the surgeon should never alarm the patient by predicting grave results within a few years as certain if hysterectomy were not performed. Mrs. Stanley Boyd was right in dwelling on salpingitis in fibroid cases. Mr. Doran suspected that many of the published "cures" of fibroid by removal of the appendages were cures of the discomfort from which the patients suffered, not from the fibroids but from disease of the appendages which so often complicated such cases. As for the opinions on operation delivered by the speakers that morning, they must be duly considered when the discussion appeared in print. The results of hysterectomy for fibroid depended much on innumerable matters of detail, judgment, and personal character. Thus the Trendelenburg position was excellent; Mr. Doran always adopted it; but some operators disliked it, and found that they manipulated better when the patient was placed in the horizontal position. In two cases where he operated the patient had dangerous symptoms until the pelvis was lowered.

VAGINAL HYSTERECTOMY FOR CANCER: ITS LIMITATIONS AND RESULTS.

By Mrs. MARY ANN DACOMB SCHARLIEB, M.D., M.S.,
Senior Surgeon to the New Hospital for Women, London.

IT might be thought that the time had gone by in which it was necessary or desirable to report cases of vaginal hysterectomy, to mention the limitations of the operation, to describe methods and to register results both immediate and remote. It might be supposed that such efforts were simple anachronisms, were it not for the startling pronouncement of a distinguished surgeon that he is of opinion that vaginal hysterectomy for malignant disease is a most unsatisfactory operation, carrying a heavy percentage of deaths as its immediate result, and as its remote result recurrence usually within three months. If surgeons of position and experience write and teach thus, it is the duty of every surgeon to put on record the exact results of the operation in his or her hands.

The following analysis is based on 46 consecutive cases of vaginal hysterectomy, of which 35 were for malignant disease, 8 for fibroids, 2 for procidentia, and 1 for suppuration involving the uterus and left broad ligament in a woman in whom both sets of appendages had been removed a year before for gonorrhœal pyosalpinx. The 11 non-malignant cases recovered and are in satisfactory health at the present time.

The diagnosis of malignancy in the present set of 35 cases was based on the clinical history, signs, and symptoms verified by a microscopic examination conducted by a competent pathologist. In 9 of the malignant cases the cervix appeared to be healthy, the disease affecting the body only of the uterus. This proportion, rather more than 25 per cent., is in excess of the usually-accepted ratio, but no doubt as the importance of dilatation and curettage in cases of menorrhagia and metrorrhagia is increasingly realised the teaching on this subject will be modified. Two of the 9 cases of malignant disease of the body were cases of sarcoma; in none of the 35 was sarcoma noted affecting the cervix only.

The Limitations of the Operation.

Probably the one fact that does most to discredit vaginal hysterectomy for cancer is that an attempt is often made to operate on cases in which (1) the disease has spread beyond the uterus locally; or (2) the disease has already infected the lumbar, iliac, and other glands; (3) or distant organs, such as the lungs or the liver, are also the seats of malignant disease; (4) or lastly some other grave constitutional state exists, such as diabetes or Bright's disease.

If the operator does not carefully avoid such cases the immediate death-rate will rise, and the ultimate results will be equally unsatisfactory. It is absolutely necessary for us to remember that our duty to our patients, to ourselves, and to the operation demands attention to these and to other such limitations, and that brilliant operating is not identical with good surgery.

In the present series of 35 cases 4 proved fatal within a month of the operation, 1 died of kidney disease, 1 of shock after a long and difficult operation, 2 of sepsis. It is easy to be wise after the event, but probably the one who had chronic interstitial nephritis should not have been submitted to operation, and in one of the other cases circumstances existed which rendered the operation unusually difficult.

Methods of Operating.

An earnest attempt has always been made to render the vulva and vagina surgically clean, the uterus has been well exposed with lateral retractors and drawn down by volsella, the mucous membrane circumcised at the vaginal junction and the bladder stripped up from the cervix until the peritoneal reflexion was recognised. From this point the operations varied; sometimes it was easier and better to open the pouch of Douglas next, sometimes the anterior fold. Having freed the uterus from all but its lateral connections, and having packed Douglas's pouch with iodoform gauze to act as a temporary protection to the intestines it is necessary to ligature or to clamp the broad ligaments.

Of the first 6 cases now presented 4 were clamped, and of those 4, 2 were fatal, and the other 2 fatal cases were also clamped; in one of them (No. 30 on the list) the fatal result appeared to be due to necrosis spreading from the clamped tissues which caused sepsis and secondary hæmorrhage on the sixteenth day. This is probably not a mere coincidence, but may be due in part to the unusual difficulty of the operation which made the use of clamps seem necessary and in part to want of skill as clamps have been used once only in Cases 12 to 46. In the great majority of the cases operated on for malignant disease the ovaries and tubes were also removed, but in only 2 cases was there any evident involvement.

Immediate Results of the Operation.

Of the whole 46 cases 4 proved fatal within a month; they were all cases of carcinoma.

CASE II.—Mrs. D, aged 40, carcino[illegible] cervicis uteri, operation difficult; time, two hours; broad ligaments cl[illegible]

CASE III.—Mrs. W., aged 46, carcinoma cervicis uteri, operation easy; time, 40 minutes; broad ligaments clamped. Died of kidney disease

CASE XIII.—Mrs. B., aged 64, sent from country with diagnosis of probably early carcinoma. External surface of cervix healthy; advanced carcinoma of body of uterus. Pouch of Douglas obliterated by strong fibrous adhesions which involved the whole posterior surface of the uterus. The operation was extremely difficult, lasting 2½ hours. The broad ligaments were clamped. Patient died of sepsis on the third day.

CASE XXX.—Mrs. R., aged 42, carcinoma of cervicis uteri advanced, but

uterus movable. Operation 1 hour and 20 minutes; clamps used. Patient died at the end of a week. In this case necrosis appeared to spread into the tissues beyond the grasp of the clamps. Secondary hæmorrhage occurred, and the patient died of sepsis at the end of a week.

I have ventured to narrate these four cases as illustrating the limitations to which the rightful performance of the operation is subject. Granting that two of them were suitable for operation, the other two were not (the kidney case and the adherent case), and immediately the mortality is altered from 8 per cent. to 4 per cent.

The ultimate result in these cases of malignant disease is equally important, and bears a favourable comparison with other operations for malignant disease, and with the course of the illness if left unchecked.

All the patients have been written to, or seen, with the following results: One patient was well seven years after; 1 patient was well six years after; 3 patients were well five years after; 4 patients were well four years after; 5 patients were well three years after. Out of the 35 patients 17 are now alive, and without recurrence. The most recent of these was operated on a year ago, and the earliest of them in 1893. The percentage of known recurrences within three years after operation is 7.1 per cent.

The lessons to be learnt from this and from any similar record are obvious. Among the chief are:

1. It is very well worth while to operate on cases of malignant disease of the uterus if the case comes to hand while the uterus is still freely movable, and there is no obvious extension of the disease beyond this organ.

The disease is commonest about 45 to 50, the average age of the patients now under report being 47—a time when the woman ought to be most valuable to the community.

2. That it is not worth while to operate unless the whole disease can be removed, and the patient has no other mortal disease.

The immediate percentage of death in properly-selected cases should not much exceed 5, and it may reasonably be hoped that it may be still further reduced; but the immediate percentage in unsuitable cases will always remain high—(*a*) from unduly prolonged operation causing shock; (*b*) from undue bruising and injuries to tissues predisposing to sepis, and sometimes to secondary hæmorrhage; (*c*) also from the necessity of using clamps where ligatures cannot be applied.

3. That the responsibility in this matter lies between the general practitioner and the specialist. The family doctor to whom the patient usually first complains should not be contented with ordering ergot, rest, and change of air, but should insist on examining every patient who has profuse or irregular uterine hæmorrhage. Anyone who has a large practice among women, and still more the overworked out-patient official, knows the temptation to listen to a patient's objections and to postpone examination, but as a matter of conscience the examination must be made, and if sufficient information cannot be thus obtained, the further aid of the dilator, the curette, and the microscope must be invoked.

Until the idea of "change of life" is eradicated many valuable lives will be sacrificed. The teachers of gynæcology must not be weary in teaching students, nurses, and patients that all hæmorrhage irregular in time or in quantity, is abnormal and needs treatment, not always operative. Thus gradually there will be an education of public opinion both lay and professional, and we shall no longer find that the majority of cases of uterine cancer are sent for operation long after all hope is passed, when interference only hastens the inevitable end.

A DISCUSSION ON THE PREVENTION AND TREATMENT OF POST-PARTUM HÆMORRHAGE.

I.—JOHN W. BYERS, M.A., M.D., M.A.O. (*Hon. Causâ.*).
Professor of Midwifery and Diseases of Women and Children, Queen's College, Belfast; Physician for Diseases of Women, Royal Hospital, Victoria, Belfast.

POST-PARTUM hæmorrhage may be defined as hæmorrhage occurring after the birth of the child, and either before, but usually after, the delivery of the placenta. If it occurs within a period of twenty-four hours it is said to be primary, but, for purposes of discussion, we may say clinically that *post-partum* hæmorrhage occurs soon after delivery, or, if later, before the usual period that the medical attendant leaves his patient, believing her to be safe.

Amount of Blood Lost.—It has been stated that, as a result of careful estimates made in lying-in hospitals, the average amount of blood lost in childbirth is about 1 lb. But while this may be accurate scientifically, yet for practical purposes it would convey little information to tell a doctor engaged in private practice that when the blood lost at her confinement by one of his patients exceeded 16 ozs., he was to regard it as a case of *post-partum* hæmorrhage. In practice we soon come to know that every patient is a rule to herself as to the amount of blood she loses during the birth of her child. Some lose more, others less, and it is probable that, as Dr. Giles has pointed out, there is a "physical temperament" characterised by copious pigmentation and the brunette complexion, in which the tendency to hæmorrhage is greater, and among such the normal amount of loss at the time of labour would be above the average. A woman may be said to suffer from *post-partum* hæmorrhage when she has a sudden excessive loss of blood after childbirth, or when a slighter amount continues to flow, and when at the same time there is either uterine inertia or traumatic lacerations of the parturient canal, the effect of the hæmorrhage being shown by her constitutional condition as evidenced by her appearance (variations in pallor) and by her pulse (rapid, low tension, and the intervals between the beats not well marked).

PATHOLOGY.

In order that we may treat *post-partum* hæmorrhage, it is necessary to know what are the usual pathological conditions present in cases of bleeding setting in immediately after delivery, and the causes may be grouped under two heads:

A. Hæmorrhage due to uterine atony, the bleeding in these cases arising from the uncompressed vessels in the placental area.

B. Wounds of any part of the parturient canal, without any necessary uterine inertia.

By far the most numerous cases fall into group "A," indeed some would restrict the term *post-partum* hæmorrhage to cases of atony of the uterus, but for purposes of diagnosis and treatment I shall also have to speak of cases arising from traumatic lacerations. However, I ask your attention mainly to the first division:

A. POST-PARTUM HÆMORRHAGE AFTER DELIVERY WITH A RELAXED UNCONTRACTED UTERUS.

In the majority of labours *post-partum* hæmorrhage sets in without our having had any warning to put us on our guard against its occurrence, but in some cases our suspicions as to the possibility of our having to deal with such a serious complication may have been aroused beforehand.

The following are the conditions which may lead the accoucheur to suspect the onset of *post-partum* hæmorrhage:

I. History.—(1) Hæmorrhage at a previous confinement; (2) rapidly-succeeding pregnancies, especially met with amongst the poor, time not being given for the uterine muscle to assume its normal condition; (3) a combination of want of exercise, and the taking of too much food and stimulants, as seen among the better classes; (4) elderly primiparæ; (5) patients with pre-existing metritis.

II. During Pregnancy.—(1) Over-distension of the uterus (twins, hydramnios, etc.); (2) presence of a tumour in the uterus (myoma) preventing uterine contraction; (3) albuminuria; (4) extreme mental depression, seen often in cases following the death of the husband; (5) excited vascular system, especially towards the end of pregnancy.

III. During Delivery.—(1) The character of the pains in the second stage of labour. "The pains are of this kind—they are strong and quick; they do not gradually culminate into a strong pain, and subside again, but they are sharp, quick, and cease almost suddenly, and the intervals between the pains are long in proportion to the length of the pains."[1] (2) A pulse keeping rapid towards the end of delivery, with low tension and of a jerking nature. This state of the pulse is quite different from that met with in nervous women at confinement, or in those who have taken chloroform; in both of these conditions the pulse may also be quick, but there is a distinct interval between the beats, and there is evident vascular tension.

By some it is thought the administration of chloroform during a confinement predisposes to the occurrence of *post-partum* hæmorrhage. At the Nottingham meeting of the British Medical Association, July, 1892, I read a paper, "Does chloroform promote *post-partum* hæmorrhage?" in which I endeavoured to show that this anæsthetic has no effect in causing *post-partum* hæmorrhage, provided that in all cases

[1] Whittle BRITISH MEDICAL JOURNAL, September 27th, 1873.

care is taken not to effect delivery too rapidly, and also to manage the third stage of labour according to modern teaching. Subsequent experience has confirmed me in the view I have stated, but I need hardly say in all cases in which in obstetric practice chloroform is given to the surgical degree, a competent person should be asked to administer the anæsthetic.

Prophylaxis.

There is no complication met with in obstetric practice of which it can be more truly said that its treatment is its prevention, and the best proof of this aphorism can be found in the circumstance that while students and medical men in the early years of practice dread the condition, as they get more experience they become less fearful of it and really meet it less frequently. I propose to speak first of the prophylactic measures to be used to prevent its occurrence in every case, and subsequently to say something as to the measures to be adopted under those special conditions which I have mentioned as leading us to suspect its onset.

Prophylaxis to be Adopted in all Cases.—The two measures which should be adopted in every case to prevent *post-partum* hæmorrhage are (1) the proper management of the third stage of labour and (2) the important principle never to deliver in the absence of pains.

1. The management of the third stage of labour. Of no condition in obstetric practice may it be said with greater truthfulness that "meddlesome midwifery is bad" than of the management of the third stage of labour. This is due partly to the teaching of Credé, but still more to inaccurate knowledge as to what occurs in the uterus after the birth of the child. There are two factors in the third stage of labour (*a*) the separation and (*b*) the expulsion of the placenta with the membranes. Nature should be allowed to separate the placenta, and then if she is not equal to the second task the accoucheur can assist in helping her to expel the already separated placenta. The great mistake is in an attempt made at once by the obstetrician to express the placenta from the upper or contractile part of the uterus (a line of practice liable to be followed by retention of membranes, *post-partum* hæmorrhage, and even septic poisoning) instead of waiting until certain signs indicate that Nature has herself done this. For the sake of clearness and because of its enormous importance as a preventive of hæmorrhage after delivery, let me point out the best method of managing the third stage of labour.

Management of the Third Stage of Labour.—As soon as the head of the child is born the left hand of the accoucheur is placed on the women's abdomen over the fundus of the uterus, the ulnar edge of the hand looking towards the vertebral column. The child's eyes are wiped, and a finger ascertains if the cord is round its neck. During the subsequent birth of the child the left hand of the accoucheur follows down the fundus. Immediately after the child is born the woman is turned on her back, the advantage of this most important step being twofold, as it enables the uterus to be easier and better controlled by the accoucheur's hand, while it prevents (especially in multiparæ) the entrance of germ-laden air through the relaxed vulva. As soon as pulsation has ceased the nurse ties the cord, one ligature being placed in the usual way near to the child's abdomen, the other close to the vulva of the mother (care being taken to gently draw down the cord so as to leave no loop in her vagina). The hand of the accoucheur never leaves the fundus (except in the case of a child born in white asphyxia, when the doctor must look after it, and the nurse takes his place in controlling the fundus). No attempt should be made to massage or stimulate the uterus; all that is required is simply to control the uterus with the hand and to ascertain when the placenta has separated. This can easily be diagnosed by the following signs:

1. A sudden rising up of the uterus which may have previously been largely in the pelvis.

2. A swelling detected above the pubes due to a bulging forward of the lower uterine segment. It is very much in the position of a distended bladder, and is sometimes mistaken for it.

3. Greater mobility of the uterus.

4. Expulsion of a few more inches of the cord, as shown by the fact that the ligature placed at first close to the patient's vulva has now advanced from that position a few inches.

The separation of the placenta, as indicated by these signs, takes place in about twenty to thirty minutes. When once the placenta has separated and has left the upper active and contractile portion of the uterus, then firm pressure is made by the hand of the accoucheur over the fundus during the height of a pain, and the placenta is expelled out of the lower uterine segment and vagina, the nurse then takes charge of the after-birth, gradually turning it round and round to get the membranes thoroughly away. The hand of the accoucheur still controls the uterus, and while he is doing this the nurse floats the placenta and membranes in a basin of water so that he can see if there is any lobule of placenta left behind, or if there is a piece of chorion wanting, indicating the presence of a placenta succenturiata. Supposing the examination of the placenta and membranes shows there is nothing left behind, the nurse bathes the patient's vulva with a mercurial lotion (all blood, etc., being removed), applies a pad wrung out of corrosive and the binder is put on, but the accoucheur never lets go control of the uterus until this is completed. In this way the uterus is left in a state of permanent retraction.

2. The other important measure as a prevention of *post-partum* hæmorrhage is not to deliver in the absence of pains. As examples of the abuse of this principle, I may cite such a condition as "secondary uterine inertia," where a labour comes to a standstill. The pains cease, the woman and her friends (Smellie's "gossips") urge the doctor to deliver her. It may be she is well on in the second stage, but her pulse is quiet and her uterus on abdominal examination is relaxed, and there is no rise of temperature. The doctor yields; tired it may be after sitting up all night, and anxious to visit other patients, he easily slips on the forceps and delivers, but later on severe hæmorrhage sets in, the uterus not having contracted, and the woman is in imminent peril. Here the proper line of action should be to give a dose of opium; the woman will then fall asleep, and after a time pains will come on again, and she will probably be delivered without any instrumental assistance.

Another example of the terrible mistake of delivering in the absence of pains is afforded by the way cases of placenta prævia are sometimes managed. It is well known that one of the best methods of treating placenta prævia is by bimanual version, a foot being brought down so as to dilate and plug the lower part of the uterus with the child's leg and thigh. Too often it is forgotten that time must be allowed for uterine pains to come on, and deliver the child after it has been turned; the delivery is hurried after the child has been turned, and as a result hæmorrhage occurs from an atonic uterus, while the forced delivery, by tearing the tissues of the lower part of the uterus (which, owing to the implantation of the vascular placenta, are as soft as blotting paper), causes also a bleeding due to traumatic laceration of the parts.

Prophylaxis to be Adopted in Suspected Cases of Post-Partum Hæmorrhage.—When from the symptoms I have mentioned we suspect the occurrence of hæmorrhage after delivery the following precautionary measures should be adopted (1) during pregnancy the patient should be advised to take exercise and to keep her skin and bowels acting. She should avoid all stimulants, and if there is albuminuria a milk diet should be enforced; (2) during confinement the fœtus should be delivered slowly, its birth being followed down by the hand on the fundus, and it is good practice (provided the head or breech presents) to puncture the membranes when the os is nearly fully dilated. By this measure the pains are increased in energy, and it also favours tonic contraction of the uterus after expulsion of its contents. Further, from the very onset of labour the patient should be kept lying, and as soon as the os is fully dilated I have found the practice recommended by the late Dr. McClintock of giving two teaspoonfuls of liquid extract of ergot most useful.

In cases where I suspected the occurrence of *post-partum* hæmorrhage I have prescribed for a couple of weeks before delivery 10 grs. of calcium chloride thrice daily. This practice gave good results, but whether the medicine or the careful management of the third stage of labour deserves the credit it is, of course, difficult to say. Dr. Atthill, of Dublin, in cases where from the experience of previous labours he anticipated *post-partum* hæmorrhage, or where, in the progress

of tedious labours, the uterus became exhausted so that he suspected hæmorrhage after delivery, gave in the former case for three weeks before the expected labour a mixture of liquor strychninæ with infusion of ergot, adding iron if the patient was anæmic, hydrochloric acid if she was plethoric. He gave this mixture for seven to ten days, then, after ceasing its administration for 48 hours, he let the patient continue it.

The mixtures are as follows: Ext. ergot. liquid. ℥ij; liq. strychninæ ℥j; acid. hydrochloric. dil ℥ij; inf. ergot. ad ℥vj. M. A measured tablespoonful thrice daily. In anæmic women the hydrochloric acid was replaced by ℥j of ferri et ammon. cit. In the latter case (exhausted uterus in a tedious labour) he recommends a dose of ergot with ten drops of liquor strychninæ in the first dose, and five drops in the next, if necessary.

Endometritis in a married woman at the child-bearing age should be carefully treated.

TREATMENT.

As there is hardly any complication met with in midwifery needing greater pluck and more resourceful and prompt action on the part of the attendant, it is good practice in all confinement cases to see as the second stage of labour is advancing, that everything is conveniently ready, such as hot water, the douche, with double-current intrauterine tube (Bozeman's or Budin's), etc. The accoucheur, fortified in this way, acts with much greater self-reliance should hæmorrhage suddenly set in. Supposing the placenta has all come away, and that then suddenly bleeding sets in with a relaxed inert uterus, what should be our line of practice?

1. I think the first measure to be adopted is external *uterine massage*. By this means the uterus is stimulated to contraction, clots are expelled, and often this method is sufficient of itself to arrest the hæmorrhage.

2. Should this plan fail then I recommend the use of *hot water*. A double-current instrument (Budin or Bozeman's) should be employed, and it is a great advantage at the same time to draw down the uterus by catching the anterior lip of the cervix with a vulsellum forceps. Certain precautions in the use of hot water are necessary: (1) *Temperature.*—In maternities a bath thermometer is of use as indicating the proper temperature (118° F.) to be used; but in private practice the best rule is to use the water at that temperature which the hand immersed in it will bear. (2) *Amount.*—The hot water should be used in large quantities. (3) The intrauterine tube should be passed up to the fundus, so that the whole inner surface of the cavity is bathed. (4) *Antiseptic.*—Some use a little creolin in the hot water. I prefer salt, a teaspoonful to the pint. Never use any corrosive sublimate in the hot water, the objection to it being that, owing to the open state of the uterine vessels, absorption takes place rapidly, with the risk (I have seen its occurrence) of mercurialism. Cold water should not be employed. It is not sterile, and its low temperature has a prejudicial effect, while the hot water is distinctly stimulating.

3. *The Introduction of the Hand into the Uterus.*—As there is no operation, I believe, so dangerous to a parturient woman as the introduction of the hand of her attendant (owing to the admitted difficulty of rendering it aseptic) into the uterus, this practice should only be done when the indications are clear. If hæmorrhage sets in before the placenta comes away, and if, owing to adhesions, external abdominal massage fails to expel it, then the hand must be introduced to separate and withdraw the placenta. Again, if a lobule of placenta or a piece of outlying after-birth is retained (I have mentioned the signs indicating both of these conditions), the hand should be introduced to remove the retained parts which prevent by their presence the uterus contracting on its open vessels. After the hand has been withdrawn the uterus should be carefully douched with a hot creolin lotion. In the absence of the clear indications I have mentioned, the use of the hand inside the uterus is, I believe, bad practice. No doubt it stimulates the uterus to contract, but hot water will do this equally well, and there is not the same risk of septic poisoning as when the hand is introduced.

4. Should the preceding measures have failed, then we may try *bimanual compression*, but my own experience of it is that it is very fatiguing to the accoucheur and trying to the patient, and I prefer

5. *Gauze Plugging of the Uterus.*—A word about its technique. You may, as the textbooks teach, need three lengths of 4 or 5 yards, each 3 to 4 inches broad, but I have been struck with the fact that when the uterus is drawn down with the vulsellum, in many cases very much less of the gauze is needed. The plan I can recommend from personal experience is to carry in your obstetric bag one of Dührssen's sealed tins of sterilised iodoform gauze. This tin takes up little room, it can be opened quickly, and it contains sufficient gauze to plug the uterine cavity. Great care should be taken to plug the uterus tightly up to the fundus. The hold given by the vulsellum forceps allows sufficient counter-pressure when packing the cavity of the uterus. The gauze acts by stimulating the uterine muscle to contract, but also by insinuating itself into the mouths of the bleeding vessels, and so directly compressing them.

6. *Drawing Downwards the Uterus.*—Should we meet a case where, notwithstanding the gauze packing, hæmorrhage continues, I think we should first (on the assumption that our previous technique has been at fault) remove the gauze, wash out the uterine cavity with a creolin douche, and reapply —packing very firmly—the gauze. If, notwithstanding, the hæmorrhage again returns, I would strongly recommend the firm drawing down, as far as possible, of the uterus with tenaculum forceps passed through the lips of the cervix. This method acts, I think, by kinking and compressing the uterine arteries, as is seen often in the operation of vaginal hysterectomy. In such circumstances Professor Schauta of Vienna thinks atheromatous vessels are present in the placental area. He advises laparotomy in hospital practice, or in private practice eversion of the uterus into the vagina by pressure on the fundus, so that the bleeding vessels may be caught, or an india-rubber ring (as recommended by Kocks), or a gauze bandage may be fastened round the everted uterus so as to cut off the circulation. The compression should not be maintained for more than six hours to avoid gangrene, and Professor Schauta prefers that the vessels should be caught directly rather than that pressure should be applied to the whole uterus. When the bleeding is stopped the uterus is to be reinverted. I have no personal experience of this method; I simple mention it on the authority of the distinguished Viennese obstetrician.

7. *Injection of Iron.*—I have not used the injection of perchloride of iron solution for the past five years. It is a remedy not without danger; it causes a certain amount of superficial injury of the uterine wall which forms a suitable nidus for the growth of germs, and if it fails plugging cannot be done owing to the effect the iron has on the tissues. I have been told that gauze plugging has replaced the use of iron in bad cases of *post-partum* hæmorrhage in the Rotunda Maternity Hospital.

The treatment I have mentioned applies to cases of uterine inertia giving rise to hæmorrhage after the delivery of the placenta. Should bleeding set in before the after-birth is delivered, pressure should be at once used to bring it away, and if this fails the hand should be introduced to separate and withdraw the placenta. Should a portion of the placenta remain or a piece of membrane, or should there be the suspicion of a uterine tumour, the hand must also be introduced both for diagnosis and treatment. In all such cases the uterus should afterwards be most carefully douched out with a hot creolin lotion.

B. POST-PARTUM HÆMORRHAGE FROM WOUNDS OF ANY PART OF THE PARTURIENT CANAL.

This division includes the class of cases described by the older obstetricians as *post-partum* hæmorrhage with a contracted uterus. The wounds or lacerations may occur in the perineum, the crura of the clitoris, or the vessels of the bulb, the vagina (of greatest importance when the wounds are at the upper and posterior part often involving the large vessels of the cervix), the cervix, or the uterus itself.

A word or two about the diagnosis of the source of the bleeding in these cases.

1. *The History.*—It is after forceps or unaided labours that vulvar or vaginal wounds are most apt to occur; while lacerations of the cervix are more usually met with in breech and turning cases.

2.—*Examination.*—The best time to distinguish between atony of the uterus and a wound of the parturient canal as a source of bleeding is when by massage you have made the uterus to contract. If the hæmorrhage is from uterine inertia the blood is suddenly driven out of the uterus, but in lacerations there is a continuous oozing, the uterus remaining contracted. If the uterus is washed out by means of a double-channelled tube the return fluid is clear if there is no uterine inertia, while if there are lacerations, blood is still seen to flow at the sides of the tube from vagina or vulva. If blood comes from a wound of the vulva ocular inspection will demonstrate its source and its florid colour; if with a contracted uterus there is no wound of the external parts, then a careful examination of vagina and cervix will show where the wound is in cases of hæmorrhage.

Treatment of Lacerations.—The perineum if torn should be stitched up. Hæmorrhage from a wound of the vascular anterior part of the vulva (often produced by one of the blades of the forceps) may be stopped by a gauze pad and pressure, or a suture may be passed by a curved needle. Wounds of the vagina must be stitched, and if the cervix is lacerated it can be drawn down and sutured, or a gauze plug may be applied.

A very rare cause of *post-partum* hæmorrhage is a wound of the uterus, or it may be due to a previously existing intra-uterine tumour which has been injured and torn during labour. Here diagnosis and treatment follow upon a careful digital exploration of the uterus. If possible the tumour should be removed and a gauze plug applied. In the rare cases of hæmorrhage due to a tear of the uterus gauze plugging should be used.

The After-Treatment of Post-Partum Hæmorrhage.

When the hæmorrhage has ceased the subsequent anæmia demands most careful treatment. The patient should be kept quiet, her head low, the lower part of the bed being raised to facilitate the weak circulation. Subcutaneous injections of ether and strychnine are most useful, but our sheet anchor is saline transfusion, experiments having shown that animals bled almost to death will recover if a normal saline solution is introduced into the circulation. If the heart gets something to act on it can be kept going until the natural vascular fluids have time to form again. The saline solution (one teaspoonful of salt in a pint of warm sterilised water) may be introduced direct into the veins; this is the best method, but it takes time, and often cannot be done without skilled assistance. On the other hand, the solution may be given by enema, or what is, I think, better, into the tissues by means of a large hollow needle and funnel, which are connected by tubing. Half a pint may be injected into the tissue under each breast. The amount of saline fluid to be used or re-used depends on the patient's condition—2, 4, or 6 pints. It should be injected slowly at a temperature of 98°, and we should continue it until the pulse gets slower and increases in volume. In addition to these measures in the treatment of the anæmia, the patient should be encouraged to take nourishment (such as concentrated meat juices, milk, etc.), which is quickly absorbed.

Literature.

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II.—Robert Boxall, M.D., M.R.C.P.,

Assistant Obstetric Physician and Lecturer on Practical Midwifery, Middlesex Hospital; Visiting Physician to the General Lying-in Hospital, London.

Dr. Boxall desired to convey Dr. Dakin's regret at his inability to be present, and, in the first place, to offer on his behalf a few observations which it had been his intention to make. Professor Byers had in his very forcible exposition alluded to the difficulty in simply taking the amount of blood lost as a criterion of the hæmorrhage, and he (Dr. Boxall) thought that it might more satisfactorily be expressed in relation to the body weight if that could be obtained. But even then the effect of the loss would vary much in individual cases. Taking 10 ounces as the normal average for purposes of the observations which he was now about to offer on Dr. Dakin's behalf, double that amount and over had been selected as the standard of excessive hæmorrhage.

Now during the years 1866-67 among 1,058 women delivered in the General Lying-in Hospital, 94 had a loss of 20 ounces or more. A few only among this number had any severe hæmorrhage or urgent symptoms. In 20 cases the hæmorrhage was associated with retained placenta or membranes, in 8 cases with *ante-partum* clot retained till after delivery; and consequently 28 cases in all might be said to be due to retention, leaving 66 to be otherwise accounted for. Of these 66, 4 were twin and 2 were precipitate labours. In 60 cases—that is, in 6 per cent. of the deliveries—no definite cause could be assigned. But during the first half of the present year Dr. Dakin made a series of special observations on 260 cases delivered in the hospital, which appeared to throw some light on the subject, and to definitely connect the liability of hæmorrhage as well as undue adhesion of the placenta and retention of the membranes, with the "collerette" placenta described by Auvard.

The practical point of this observation was that in all cases where a collerette placenta was found difficulty in the third stage of labour occurred, and hæmorrhage might be anticipated.

Turning now to Professor Byers's remarks, Dr. Boxall had little to add except by way of emphasis and nothing to criticise. Alcohol appeared to increase the liability to hæmorrhage, for he had observed that practically in all cases when the patient just before delivery had been in an intoxicated or semi-intoxicated condition hæmorrhage was liable to be excessive. Chloroform given judiciously often shortened the labour and diminished the liability to subsequent loss, but when the patient was kept deeply under its influence for some time he felt sure that in itself it increased the liability to hæmorrhage. Again, delivery by means of the forceps, if judiciously carried out, often succeeded in overcoming difficulties, saved the uterine forces from being unduly expended, and thereby diminished the liability to subsequent hæmorrhage. But to effect delivery in the absence of pains was to court *post-partum* hæmorrhage. And again, the artificial rupture of the membranes fairly early in the first stage, carried out with due regard to the necessities of the individual case, often prevented undue expenditure of uterine energy, shortened the labour, and diminished the liability to hæmorrhage. The point chosen for the second ligature of the cord, recommended by Dr. Byers, though a detail, was by no means an unimportant one. Successful practice was made up of a series of details like this. In cases of anticipated hæmorrhage quinine and nux vomica given before delivery both appeared to be useful, and calcium chloride had been strongly recommended, but of this he had no practical experience in midwifery cases. And anomalously it so often happened that, even in cases with strong hæmophilic history, no hæmorrhage occurred, that the utility of drugs could scarcely be tested. Finally, he wished to say a word with regard to the use of ergot given as an adjuvant to other measures for dealing with *post-partum* hæmorrhage, that it was desirable to have a preparation which could be thoroughly relied upon, and if possible one that could be used hypodermically as well as given by mouth. He had found that ergole satisfactorily fulfilled these con-

ditions. This again was a detail, but not unimportant when serious hæmorrhage had to be combated.

III.—JOHN HADDON, M.D.,
Hawick.

DR. HADDON said while listening to the opening speech he was carried in imagination to his early professional days in attending midwifery cases, when every midwifery case was approached with terror, and he was inclined to think it must have been such teaching as that of Professor Byers that had so frightened him, and the *post-partum* hæmorrhage must have been the cause of terror. Birth was as natural as death, and quite as simple under natural conditions. The lower animals managed the process themselves each for itself. Some of the peasantry working in the fields could go into a plantation (as the females in some tribes retired to the bush), be delivered, and return to their work, no one knowing that they had given birth to a child. Such had no hæmorrhage, and what they should aim at was prevention, by insisting on women being trained as athletes. As to the cause it was either local or general. Many reasons pointed to its not being local. Thus (1) they were taught to separate the placenta in placenta prævia to stop the hæmorrhage; (2) they might have *post-partum* hæmorrhage with a contracted uterus; (3) they might have an uncontracted uterus and no hæmorrhage. That it was general might be inferred from the facts (1) that during pregnancy there was a pulse of very high tension, and as soon as delivery took place the tension fell; (2) symptoms of *post-partum* hæmorrhage might be seen in the patient, fast pulse, pallor, noise in ears, etc., without bleeding. If it were general more attention must be given to the health of the patient before, and during pregnancy, and it would not be met with.

IV.—EDWARD STANMORE BISHOP, F.R.C.S.,
Surgeon to Ancoats Hospital, Manchester.

MR. BISHOP said: Though an academic discussion can be carried on with amusement and calmness, it is a very different matter when a general practitioner finds himself confronted with a case of *post-partum* hæmorrhage. There is no time when coolness or concentration of thought is more required. The introducer of a discussion must necessarily refer to all points; but this is not necessary to subsequent speakers. My object is to make the subject as simple as possible. Causes are manifold, but they may all be classified under three heads. The first are rare; so rare as to be best forgotten; the second are avoidable; the third, the larger class, are all easily included under the head of "tired muscle." The uterus differs in different people as all muscles do, and not only so but in the same people at different times. Most of the causes—previous alcoholism, depression, fibroid in the uterine wall, residence in hot climates, etc., all act in increasing the probability of early occurrence of this physiological state of fatigue. If the point of fatigue is once reached the one thing required is rest, and rest would appear to be the one thing which is impossible, but this is not so. The woman is not dying because her uterus is uncontracted, but because she is bleeding. If this can be controlled, the uterus will recover. All these causes produce temporary exhaustion of muscular fibre, they do not destroy it. All bleeding is either venous or arterial. Venous bleeding can be controlled by position. If the patient is placed with the feet raised so that the uterus is above the heart, all venous bleeding will cease. The arterial blood comes from two sets of arteries, the uterine and ovarian. The uterine arteries are easily controlled by compression of the aorta, the ovarian arteries are not, and it is a very good thing that they are not. Muscular tissue from which all blood is shut off does not recover its tone. By the ovarian arteries just sufficient blood is allowed to pass to restore the uterine strength, whilst not enough can escape to put the patient in any danger. The arterial supply of the uterus may, indeed, have been designed for this very emergency. As to the length of time compression must be kept up, that will depend in each case upon the amount of exhaustion present, but it must be continued until the natural ligatures of the vessels involved have by their renewed contraction closed their open mouths.

V.—MRS. SCHARLIEB, M.D., M.S.,
Senior Sugeon to the New Hospital for Women.

MRS. SCHARLIEB inquired whether Dr. Byers drew down the uterus digitally or with forceps, and mentioned that in India and other hot climates *post-partum* hæmorrhage was common, especially in English women exhausted by the climate—and that quinine given during labour strengthened the contractions of the uterus, accelerated the labour, and was also a prophylactic against hæmorrhage.

VI.—JOHN CAMPBELL, M.D., F.R.C.S.,
Senior Physician to the Samaritan Hospital for Women, Belfast, etc.

DR. CAMPBELL said: In the treatment of the more severe cases of hæmorrhage already going on, we must not waste time in speculating as to whether the bleeding is arterial or venous, nor need we attempt to compress the abdominal aorta, for I imagine very few of us could do it satisfactorily with a big flabby uterus lying in front of it. What we have to do is to act as the surgeon does in ordinary wounds, and get as near the source of hæmorrhage as possible. To do this we seize the anterior lip of the cervix and draw it well down into the vulva with a strong vulsellum. This will at once stop, or at least materially diminish the hæmorrhage, and give us time to arrange for our next procedures. We then inspect the vulva, vagina, and cervix, and if bleeding lacerations are found they can be at once repaired, and if they are the only source the bleeding is controlled. If the hæmorrhage has been from the uterine cavity the organ should be washed out with hot sterilised saline solution and a flushing curette. I say a flushing curette, because it is no more dangerous to use than one of the ordinary intrauterine catheters, and it removes thoroughly all clots and placental *débris* which may have remained behind. After this the gauze packing may be applied, though I am afraid it is not very reliable, as when the uterus is allowed to recede into the pelvis again, blood may accumulate behind the gauze or soak through it. Finally, if the patient is much exhausted, a hot saline rectal injection should be given. I agree with Dr. Byers that the subcutaneous injection of fluid is the better plan, but I think that the average man over the country can more easily manage the rectal than the subcutaneous method. During the whole of these manœuvres the uterus is being held well down by the vulsellum. At the end of fifteen minutes the uterus may be allowed to recede and watched for some time, with the vulsellum in place, to see whether the bleeding has really ceased. If it has not the uterus must be again drawn down, and held for some time longer.

VII.—C. E. PURSLOW, M.D., M.R.C.P.,
Honorary Obstetric Officer, Queen's Hospital; and Assistant Professor of Midwifery and Gynæcology, University of Birmingham.

DR. PURSLOW thought that, in the order in which Dr. Byers laid down the principles which should guide them in the treatment of actual *post-partum* hæmorrhage, he differed in one important respect from that usually taught and adopted in this country, in that he placed plugging of the uterine cavity before introduction of the hand and bimanual compression of the uterus.

VIII.—W. J. SMYLY, M.D., etc.,
Late Master of the Rotunda Hospital; Gynæcologist to the Adelaide Hospital, Dublin.

DR. SMYLY said that prophylaxis and diagnosis were the important points; the former involved the entire management of labour, and, as some of the causes of *post-partum* hæmorrhage were due to metritis and endometritis, asepsis in one delivery might be regarded as preventing hæmorrhage in subsequent labours. He entirely agreed with Professor Byers in his treatment of this important subject. When hæmorrhage had occurred, diagnosis was of the first importance, as the treatment suitable in one case would be worse than useless in another.

IX.—FARDRACE SIDNEY GRAMSHAW, M.D.,
Easingwold, Yorks.

DR. GRAMSHAW said: After an experience of thirty years in midwifery practice, the lesson taught me by observation is that the most frequent cause of *post-partum* hæmorrhage is an inertia of the uterus from too prolonged labour; and I take it

the obvious duty of the obstetrician, all things being in due order, is to empty the uterus as soon as possible, and particularly in cases where the patient has had bleeding in previous confinements. I consider another reason for bleeding is a retention of the placenta, and it is therefore advisable to shorten the third stage. For the treatment of the actual bleeding nothing succeeds better than flushing with hot water, and for the subsequent exhaustion the exhibition of subcutaneous saline injection.

X.—HENRY BRIGGS, M.B., F.R.C.S.,

Professor of Midwifery and Gynæcology, University College, Liverpool; Surgeon to the Liverpool Hospital for Women.

PROFESSOR BRIGGS said: After the usual obstetric manipulations have been completed, and bleeding is still proceeding, the question arises as to what are the means to be adopted. As most hæmorrhages will cease or be controlled by the usual simpler methods, it is rarely necessary to plug the uterus. Dr. Davies, of Liverpool, many years ago, successfully used an extemporised plug saturated with glycerine. Plugging with iodoform gauze (about 12 yards were used), as a means of arresting *post-partum* hæmorrhage in one case afterwards engaged the attention of the Obstetrical Society in London, but years before Dührssen's book was published. In 1891 I reported before the North of England Obstetrical and Gynæcological Society the great advantage of drawing down the uterus with one or two lightly-constructed vulsella. Hæmorrhage is thereby controlled or arrested, and if it should be necessary to plug a smaller quantity of gauze will be required.

XI.—WALTER SPENCER ANDERSON GRIFFITH, M.D.,

Physician to Queen Charlotte's Hospital; Assistant-Physician Accoucheur St. Bartholomew's Hospital, etc.; President of the Section.

DR. GRIFFITH said: It seemed to us when choosing the principal subject for discussion, we could hardly do wrong in allying it with the great, and if possible, more important subject of puerperal fever, and I think that the discussion which has taken place to day, and that which took place on Wednesday fully justify the choice of these subjects. If I remember rightly, it was Mr. Stanmore Bishop who wrote a letter to the *Lancet* some few years ago, rather complaining of the great variety of methods of treatment of *post-partum* hæmorrhage. There were too many ways of dealing with it described in the textbooks, and I certainly agree with him now when he says that the whole matter requires simplification. I cannot help thinking that now we have heard the various opinions the whole matter is materially simplified by the use of hot water when ordinary means fail. The principle which we have to aim at in every case is to get the uterus perfectly empty and its cavity closed. We want simple methods which all of us can use in any case, and we have them and they are almost always efficient.

There are a few points upon which I should like to say something. The first is the great advantage of managing the third stage of labour with the patient lying on her back, and to make the examination for laceration and insert the sutures in this position. There is one point which Dr. Byers has not said very much about, and that is the hæmorrhage due to laceration. I would not refer to it again except to state that I have seen one fatal case. I saw it not many hours after the doctor who had been attending the case had left. The laceration was due to forceps and was about three quarters of an inch long. She died within 24 hours, and she was absolutely bloodless when I saw her.

With regard to anæsthetics. The use of anæsthetics in labour is a matter in which I have always taken great interest. I am satisfied from my own observation that chloroform, when it is given at all deeply, interferes with the power, the duration, and the frequency of contraction of the uterus, just having the very reverse effects of ergot. Ergot increases the power, duration, and frequency of uterine contraction, and for some little time I have been in the habit of administering ergot when the uterus is inert before putting any patient deeply under chloroform for the purpose of delivery. The administration of ergot before delivery is contrary to the textbook rules, which are too absolute in this matter. If you have made up your mind what difficulty you have got to meet, and how to meet it, the use of ergot to stimulate the uterus enables you to deliver an exhausted uterus with greater safety. It is of the highest value in the case of a woman who has been left until she is absolutely tired out with suffering and with the effects of labour. If we in that case were to give her opium, and let her have a few hours' sleep, it would prolong delivery and add to the risk. In cases of prolonged inertia in the second stage I also give ergot. I give half a fluid drachm, and repeat this in half an hour if necessary, and as soon as pains of a satisfactory character arise the anæsthetic is given, and the effect of it is, I am certain, satisfactory. If a man were to give ergot without knowing exactly what he was going to do, or the difficulty he had to meet, he is more likely to add to the danger and the difficulty of delivery.

We then come to the question of hot water. On that point I differ from Dr. Byers in one point. He says, "Don't trust your nurse as regards the temperature of the water, and do not use a thermometer." Well, at Queen Charlotte's, we insist on the hot douche being brought with the bath thermometer in it; or we should find, as we do in private practice, the water to be tepid and useless, or too hot and hurt our patient; 117° to 120° F. in the douche can is a standard temperature, which is probably the best for the purpose.

Now with regard to plugging the uterus, that is a subject in which I have in former years had some practical experience. I have only had to use it in one case since I understood the use of the hot water injection. Now what is the simplest way of doing it in an emergency, when away from all luxuries of treatment? A few feet of clean linen, 3 or 4 inches wide, soaked in a quite weak solution of perchloride of iron, or in brandy or whisky, can be passed up to the fundus without any instrument, with no great difficulty, and may be safely left for twelve to twenty-four hours; there will be no more hæmorrhage, the uterus contracting promptly and firmly upon the plug. It is important to leave an end of each strip introduced into the uterus in the vagina for easy removal. I have done this myself on three occasions, but not in recent years.

REPLY.

Professor BYERS said the main object of his remarks in opening the discussion was to emphasise the fact that, in the great majority of cases, hæmorrhage after delivery was preventable, this being accomplished by a proper management of the patient before and during delivery. He fully agreed with those speakers who said the correct treatment of *post-partum* hæmorrhage must depend on the accurate diagnosis of the underlying causes, but he had drawn attention to this in the second half of his paper. With reference to the introduction of the hand, he had mentioned the indications for this line of treatment; but he objected to this practice merely as a routine measure unless the indications were clear for its use. The method of flushing out the uterus with hot water had three special advantages: (1) It caused uterine contraction, (2) it washed away clots, etc., and so (3) it limited the number of cases in which the introduction of the hand was necessary. One could be sure the double-current intrauterine tube and the hot saline fluid were aseptic, but there was often a doubt about the asepticity of the hand. There still, however, would remain some severe cases in which the hot water failed, and it was for such he recommended the other methods of treatment. He thanked the speakers for their very appreciative remarks.

CONSERVATIVE SURGERY OF THE TUBES AND OVARIES.

By Mrs. STANLEY BOYD, M.D.,

Surgeon to the New Hospital for Women, London.

THIS paper purposes to be an analysis of the cases under my care which have been submitted to conservative operations at the New Hospital for Women from 1894 up to the present time—in all 30 cases. I have not included 4 cases of extrauterine gestation and 2 of hæmatosalpinx, 4 of which were treated conservatively, as these cases involve quite different conditions with special risks of their own. These 30 cases may be divided into two groups.

GROUP I.

(a) *Cases of Pyosalpinx or Hydrosalpinx.*

	Age.	Married or Single.	No. of Children.	Symptoms.	Disease.	Physical Conditions.	Date of Operation.	Nature of Operation.	Drainage.	Course and Complications.	Result.
No. 1	37	M. 10 yrs.	4	Womb prolapsed; pain in left groin; white discharge from vagina and anus, after wearing a ring. No gonorrhœal history	Retroflexion fixed; cyst of left ovary. Matting of right appendages.	Uterus retroverted and retroflexed. Unilocular cyst of left ovary. Relations not stated	August, 1894	Left appendages removed. Ventrifixation of uterus. Right appendages freed and left	No	Wound healed well, much pain after operation; ceased before patient was discharged	Has reported that no benefit had resulted, and second operation performed at Soho 18 months previously, when right ovary removed; since then much better.
No. 2	35	M., 9 yrs.	0	Pain in lower part of abdomen 5 to 6 weeks; profuse yellow vaginal discharge for 2 to 3 weeks. Pain prevented work. Amenorrhœa 7 weeks. Temperature 99°	Gonorrhœa, left pyosalpinx. Right appendages matted; acute peritonitis	Uterus to front and right; left pyosalpinx filled left fornix of pelvis, and adherent to back of uterus; right tube and ovary adherent in pelvis	October, 1895	Exploratory lateral incision first. Removal of left appendages; right freed and left. Infusion	Yes	Peritonitis at time of operation; secondary syphilis. Bronchitis after operation; bad adhesions. In hospital about 8 weeks	Drainage track suppurated; healed in 3 months. Fresh perisalpingitis on right side since discharge. Second operation May, 1896. Removal of right tube and ovary; good recovery and excellent result.
No. 3	24	M. 2 mos.	0	"Bearing down" for 5 years since a fall; periods profuse and prolonged since marriage; pain in left side and then in abdomen; ceased after vomiting; pink vaginal discharge 1 week; no gonorrhœal history; temperature 99.4°	Right hydrosalpinx; left appendages matted	Uterus somewhat to left; right hydrosalpinx adherent above, free below, as it lay in and filled Douglas's pouch; right ovary movable between separated layers of broad ligament; left tube and ovary adherent to back of uterus and bowel	Nov., 1895	Right appendages removed; left appendages freed and left	No	None	Excellent for a time; left ovary became movable; no longer tender; in normal position; remained well till December, 1899, then admitted to hospital with severe attack of salpingo-oöphoritis and inflammation of surrounding peritoneum, forming a definite tumour; treatment by rest, etc.; then—July, 1900, free from pain till last week when slight attack; uterus in good position; appendages on left high, not tender; no special enlargement.
No. 4	25	M. 5 years	1 child before marriage, none since	Severe pain in right side and difficulty in breathing 3 weeks ago; abdominal pain after; patient losing for three weeks; temperature 101.2°	Left pyosalpinx; right tube slightly dilated and adherent to ovary; recent gonorrhœa	Uterus twisted, with left horn uppermost; right horn anchored by adhesions of tube alongside of uterus and in Douglas's pouch; left tube distending back of broad ligament adherent to back of uterus and in Douglas's pouch	Feb. 11, 1899	Left appendages removed by enucleation; right freed; tube disinfected with 1 in 1,000 and iodoform paste; adhesions to ovary freed and left	Yes	Much pain for first 24 hours; ? tubal colic, with vomiting until tube removed; slight fever	Excellent recovery; 1903, menorrhagia. February, 1899, pain lately in right groin; matted appendages behind and to right of uterus, size of tangerine stained flesh; no further pregnancy
No. 5	36	M.	1 still-born at 6 mos.	Pain in abdomen since miscarriage at 22; vomiting later; yellow vaginal discharge and discharge from anus; temperature 98.6° (history of syphilis)	Right pyosalpinx; left appendages matted	Uterus pushed to left by fluctuating tumour size of large apple, in right broad ligament, densely adherent to floor of pelvis (? site of former opening into vagina). Left tube and ovary adherent in Douglas's pouch & to rectum; omentum adherent in pelvis at sides and to back of uterus; right ovary not detected	March 18, 1896	Removal of right pyosalpinx by enucleation and left ovary with 2 inches of left tube; piece of left tube left adherent to rectum	Yes; glass tube 36 hours	Good recovery but small area of suppuration in abdominal wound necessitated opening up; slow healing; went out with small sinus	June, 1898, reported good health till last 2 months; then menorrhagia and pain in scar for which attended as out-patient.
No. 6	25	M. 2 yrs.	1 miscarriage	Miscarriage 18 months ago; pain in right side of abdomen and right leg since; menperiods regular; leucorrhœa; no gonorrhœal or specific history	Right hydrosalpinx; left salpingitis	Omentum adherent; right tube enlarged to size of orange and densely adherent to side of uterus; sigmoid (?) coil of small bowel and bladder; vesico-uterine pouch obliterated; left tube also very adherent; left ovary fairly free	July 9, 1898	Operation very difficult; lasted over two hours; right appendages removed; peritoneal coat of small bowel wounded and required suture; first part of rectum completely lacerated also sutured; piece of tube left on bladder in separating adhesions; tube ruptured in removal	Yes; Keith's tube for 36 hours then rubber for 12 hours	Bronchitis after operation; faecal discharge on 5th day; superficial part of abdominal wound had to be opened up and some of muscular (?) stitches removed; blood and pus appeared in urine; slight fever (99.6°, once 103°); in hospital 4½ weeks	In November, 1898, long abdominal sinus through which flatus came; healed in first half of 1899 thickening about left appendages.

No. 7	29	M. 18 mos.	Pain in left iliac region since marriage; dyspareunia; yellow discharge and bearing down before marriage	Right hydrosalpinx	Uterus retroverted to left; small extremely mobile, lax cystic tumour in pelvis; right hydrosalpinx. Both ovaries very small	Feb. 26, 1900	Removal of right hydrosalpinx; right ovary not removed; left appendages healthy and left *in situ*	No	Healed by first intention	Uterus movable, but remains retroverted; free from pain.

(b) Cases of Fixed Retroversions and Retroflexions.

No. [illegible]	[illegible]	W.	1 child, 1 miscarriage.	[illegible]	Encysted hematocele in Douglas's pouch, matted appendages	Uterus large and prominent, thickened and adherent right broad ligament; Douglas's pouch distended by bloody fluid and walled in by small intestine; left ovary and tube matted and adherent posteriorly	May, 1894.	Drainage of pouch and removal of right appendages; left appendages partially freed; infusion.	Yes	Operation shortened owing to patient's condition; temperature of 104° on 3 occasions during convalescence; history of drink	Further history unknown.
No. [illegible]	[illegible]	S.	[illegible]	Since a strain 3 years before dysmenorrhœa and menorrhagia, and menstrual periods irregular (every 2 or 3 weeks); clots passed, pain prevents work; leucorrhœa.	Uterus fixed in retroflexion double oöphoro-salpingitis.	Uterus fixed in retroflexion by broad adhesions in Douglas's pouch; left appendages matted to size of hen's egg at back of uterus; right tube adherent to posterior pelvic wall, and right ovary to pelvic brim: omentum adherent to left ovary deep in pelvis	Nov. 27, Dec. 4, 1896.	Preliminary curetting, abdominal section; left appendages freed with difficulty and pedicle tied off in many pieces; doubtful whether whole tube removed; uterine adhesions divided and right ovary and tube freed; tube convoluted, probe passed along outer ½ in. only; uterus so brought up into good position; no stitch; left appendages only removed.	No	Healed by first intention.	Uterus again retroflexed before leaving hospital; fundus contracted, fresh adhesions, and also right tube and ovary. Second operation, June 1st, 1897. Right appendages removed, after dilatation and curetting; hysteropexy by 2 catgut sutures; immediate result good, then irregular metrorrhagia and hydrorrhœa, which finally necessitated hysterectomy.
No. [illegible]	[illegible]	M.	2 children, 1 miscarriage, Feb., 1896.	Since last confinement, 3½ years ago, aching pain in abdomen; brown vaginal discharge since flooding in February, 1896; menstrual period every 2 or 3 weeks; temperature 99° on admission.	Retroversion slight in left direction; prolonged treatment by plugs and pessaries and rest.	Uterus retroverted; slight adhesions about right appendages	Feb. 26, 1897.	Hysteropexy, 2 catgut stitches; right appendages freed; uterus curetted.	No	Healed by first intention.	Uterus in good position; confined of full-term child in summer, 1898; labour normal.
No. [illegible]	[illegible]	M.	1 child, 3 miscarriages.	Pain at bottom of back 3 years, preventing work last 3 months. Vaginal discharge white or yellow, 3 years, profuse. Menstrual period irregular 10 months. Temperature normal on admission.	Uterus retroflexed; ovaries prolapsed	Uterus adherent to pelvic wall by tough old adhesions; right ovary densely adherent to side of uterus; right tube occluded; left ovary adherent to left tube and side of uterus	May [illegible], 1898.	Right ovary and tube removed; left ovary and tube freed sufficiently to bring uterus up. Hysteropexy, 1 stitch.	No	Blood collected in wound; clot removed and wound sewn up again; healed well.	Uterus in good position; periods irregular; in September had a fit followed by hemiplegia; much improvement as to pelvic pain.
No. [illegible]	[illegible]	M.	2 children, 2 stillborn.	Pain in womb 6 months, ring tried, but caused pain. For 12 years pain after micturition just before or after menstrual period.	Uterus retroverted and retroflexed; ovaries prolapsed and adherent; laceration of cervix; ruptured perineum.	Uterus adherent posteriorly and to omentum; right tube adherent to right ovary behind and internal to it and posterior uterine wall; adhesions old and tough; tube dilated at outer end; left ovary adherent in pocket at back of left broad ligament and posterior surface of uterus; left tube behind and internal to ovary	June 2, 1898.	Right appendages removed; distal two thirds of left tube removed; left ovary remains *in situ* Hysteropexy, 2 stitches, very free oozing; peritoneum over right uterine horn sewn up.	Yes, 12 hours	Healed by first intention.	During last 2 years has had attacks of pain; periods regular but slight; no further pregnancy; symptoms of stone in right kidney; uterus in good position; left ovary low, adherent, tender, to left of Douglas's pouch.
No. [illegible]	[illegible]	M.	12 years	Pain in back and dysmenorrhœa and sterility, for which curetted in July, 1898. Under anæsthetic adhesions detected about right tube and ovary. Symptoms persisted after curetting.	Adherent retroversion of uterus	Uterus adherent posteriorly by thin bands; right ovary adherent by thin cords, easily freed; left ovary densely adherent to back of left broad ligament, and even after freeing there was still some tension on left broad ligament.	Jan. 5, 1899.	Hysteropexy by two silkworm-gut sutures. Appendages left *in situ*	No	Healed by first intention, but slight metrorrhagia for whole three weeks in hospital. Comfortable and free from pain.	October, 1899, health excellent. January, 1900, tenderness and swelling about left ovary, which subsided under treatment; evidently a slight attack of perioöphoritis. No pregnancy.

GROUP I—*continued.*

(b) Cases of Fixed Retroversions and Retroflexions (continued).

	Age.	Married or Single.	No. of Children.	Symptoms.	Disease.	Physical Conditions.	Date of Operation.	Nature of Operation.	Drainage.	Course and Complications.	Result.
No. 14	26	M. 8 mos.	0	4 to 5 years pain in side and dysmenorrhœa: 3 months after marriage severe attack of pelvic peritonitis resulting in fixation of uterus in retroversion, with recurrent pain on any exertion. (?) tuberculous in origin: gonorrhœa out of court	Adherent retroversion of uterus, with matting and adhesion of right appendages	Uterus held retroverted to right by adhesions of right appendages; uterus adherent also to posterior pelvic wall; right ovary cystic and densely adherent to back of broad ligament; fimbria of right tube adherent to ovary: tube patent; left ovary and tube, fine adhesions to pelvic wall; left ovary, cyst size of cherry; left tube occluded at fimbriated end; adhesions to small bowel	Feb. 23, 1899	Resection of right ovary, catgut sutures; right tube freed from ovary and fimbriæ stitched by fine catgut sutures to peritoneum. Resection of left ovary. Occluded end of tube incised, and inturned fimbriæ set free. Tube contained yellow fatty mass, size of lentil; fimbriæ sewn to peritoneum and incision along tube made, and mucous membrane of cut sewn to peritoneum in order to enlarge opening into tube: outer end of tube disinfected with 1 in 1,000. Hysteropexy; silkworm gut sutures	No	Healed by first intention; excellent recovery. Patient had 4 attacks of peritonitis at intervals during year following operation; each attack less severe than the last. Right appendages were the chief seat of inflammation until October, 1899, when left side was attacked	July, 1900, movable uterus in good position; nothing felt of right tube and ovary; left ovary felt low by side of uterus, size of normal ovary, evidently contains small cyst; no tenderness; no cohabitation up till now, when resumed in hope of family. Feels much better for operation, and is glad she had it done.
No. 15	23	M.	0	Three years pain in left iliac fossa; 1 year previously sharp attack of pelvic inflammation following introduction of pessary at another hospital	Adherent retroversion	Uterus retroverted and omentum and small intestine adherent to it. In Douglas's pouch left ovary and tube, right tube, 2 coils of small bowel, sigmoid and anterior surface of rectum matted together and adherent to uterus at level of internal os posteriorly. Rectum lacerated in separation and required suture, which was deep and very difficult	Nov. 9, 1899	Freeing of adhesions. Operation proved so difficult that hysteropexy was abandoned. Left tube and ovary freed fairly easily. Right tube removed. Rectal wound required suture, and also peritoneal coat of surrounding bowel. Free hæmorrhage from back of uterus checked by plug of iodoform gauze	Yes, by gauze and india rubber tube	Sickness troublesome. Fæces came through drainage wound on fourth day. Irrigation more or less continuous, with boracic lotion. Death on fifth day from sepsis	Death from sepsis.

(c) Cases of Tuberculous Disease.

No. 16	27	S.	0	Constant pelvic pain. Menstrual periods always painful and irregular until last 7 months; very scanty. History of acute inflammatory attack 4 years previously.	Tuberculous disease of right tube. Scattered tuberculous nodules over intestines, and parietal peritoneum. Larger nodules in Douglas's pouch. No ascites	Right tube and ovary matted to size of tangerine. Tube thickened with caseous contents. Uterus held to right by adhesions to thickened tube. Lay obliquely with cervix pointing to left. Utero-vesical pouch obliterated. Appendages densely adherent in base of broad ligament and ampulla to side of uterus. 3 coils of intestine adherent to uterine end of right tube	May 27, 1896	Removal of right appendages necessitated splitting of broad ligament and enucleation towards uterus. Uterine artery seen and tied. Extensive adhesions of bowel separated. Lateral wall of uterus sutured and covered in with peritoneum. End of Fallopian tube touched with pure carbolic. Left ovary and tube remain. Operation lasted 2 hours. Caseous contents of tube oozed during separation	Glass tube 36 hours	Did well, but serous collection in abdominal wound necessitated opening up superficially and plugging. Healed on July 8th	Excellent. Uterus became quite movable, as also left ovary, and abdomen soft. Operated on later for inguinal hernia.
No. 17	24	M.	0	For 8 weeks pain in abdomen, chiefly on right side; abdominal swelling for about 1 month; pain sometimes associated with vomiting; menstrual periods regular; no pain now; wasting for about 1 year; temperature 100° on admission	Tuberculous disease of tubes and peritonitis	Prominence of lower abdomen with fluctuation; uterus much anteverted and anteflexed; peritoneum much thickened; much fluid on opening cavity bounded by anterior abdominal wall in front and matted intestine above; matting of both tubes and ovaries	March 31, 1898	Right appendages removed, left tube also; left ovary left *in situ*; iodoform paste left in cavity	No.	Healed by first intention; reopened at end of month and discharged much bloodstained fluid, which constantly reaccumulated	Discharged with wound almost healed; returned later; abdominal fistula, discharging pus; cavity in peritoneum had contracted.

(d) *Cases of Ovariotomy.*

No.										
No.	[illegible]	[illegible]	[illegible]	Gradual enlargement of abdomen for some months; wasting for 6 months; menstrual periods regular; one period 3 months ago, continued slightly for 3 weeks. Temperature, 98.2°	Left multilocular ovarian cyst, with a good deal of solid matter	Reached to diaphragm; contents of cysts various; partial rotation of cyst; uterus pushed over to left by tumour, and right horn uppermost; right ovarian adherent to back of uterus, also tube; tube patent	March 5, 1896	Removal of cyst with tube; right tube and ovary freed from adhesions and left	No	Excellent health	Excellent health.
No.	[illegible]	M	1 aged 2	Since confinement, constant pain in back; dyspareunia; Menstrual periods profuse; clots passed, but not lately; menstrual periods every 3 to 4 weeks; vaginal discharge, yellow or white; temperature [illegible] on admission	Dermoid of right ovary	Uterus anteflexed; tumour size of extra orange in right fornix, adherent to pelvic wall and in Douglas's pouch; left tube and ovary adherent to each other	April 13, 1899	Right ovariotomy, with tube; left tube and ovary freed from adhesions and probe passed along tube	No	Suppuration of wound extending down to pedicle necessitating a month after operation scraping of sinuses and removal of all buried silkworm-gut sutures. (One of a group of suppurations.)	Separation of recti in wound. Uterus freely movable; some matting of left tube and ovary; dysmenorrhœa; slight cervical catarrh.
No.	[illegible]	S	0	For 2 years backache and bearing-down pain; for 3 months vaginal discharge, thick and green at first, then watery; also frequency of micturition, for 3 weeks irritation from discharge; more menstrual clots passed lately than formerly	Left unilocular ovarian (small cystic outgrowths in wall); sessile fibroid polypus on anterior wall of cervix	Uterus retroverted to right behind cyst, which was adherent to left half of uterus and rectum; right ovary adherent here also; cyst contained chocolate-coloured fluid.	November 4, 1899	Preliminary curetting; left ovariotomy after freeing right ovary and tapping cyst; cyst torn into in separating adhesions to rectum; oozing from back of uterus controlled by two sutures; left tube removed with cyst	No	Healed by first intention; uneventful convalescence	Uterus much retroverted, polypus in cervix more pedunculated. Periods every 3 weeks (4 days) not so profuse, but more pain; tube adherent to right cornu; ? dilated

(e) *Cases of Myomectomy.*

No.	[illegible]	M.	[illegible]	Dysmenorrhœa with micturition and dyspareunia	Pedunculated fibroid springing from right lateral wall of uterus by finger thick pedicle, and occupying right broad ligament	Tumour filled right and posterior aspects of pelvis, and reached to within three fingers' breadths of umbilicus. Uterus pushed to left and to front, and cervix flattened behind pubes. Cavity 5½ inches; small fibroid size of walnut on anterior wall. Right tube and ovary healthy. Left tube and ovary slightly adherent	January 31, 1896.	Myomectomy; enucleation of myoma from right broad ligament; incision in broad ligament closed by catgut sutures; small fibroid enucleated by elliptical incision; three stitches; adhesions between left tube and ovary separated	No.	Healed by first intention; hæmatoma found in bed of tumour, shrank to small hard mass in right broad ligament	Quite well for a time. In summer of 1897 got gonorrhœa; and by August, 1898, double pyosalpinx. Operated on at Charing Cross, as New Hospital was closed.
No.	[illegible]	34 M	1	Pain on defæcation and dyspareunia	Pedunculated fibroid occupying right broad ligament, possible right kidney	Uterus pushed over somewhat to left by tumour springing from side of uterus, about level of internal os, size of an apple; left ovary and tube thick adhesions posteriorly; right ovary and tube free and healthy	May [illegible], 1896	Myomectomy; bleeding troublesome after enucleation of fibroid from right broad ligament, necessitating suture through broad ligament and removal of right tube and ovary; even then free oozing from back of cervix where peritoneum was torn; adhesions of left tube and ovary separated	Yes; of pouch in broad ligament by iodoform gauze 24 hours	Healed by first intention, except drainage area, which granulated. Hæmatocele formed in right broad ligament and invaded Douglas's pouch through torn broad ligament; tedious convalescence; in hospital 3 months; left hospital with remains of hæmatocele, in which left tube and ovary were involved	July, 1897, adhesions about left tube and ovary holding cervix back. July, 1898, patient said she was no better for operation. Still had pain in back.

GROUP II.

(a) *Cases of Ovariotomy.* (b) *Replaceable Retroversions.* (c) *Prolapsed Ovaries.*

No.	[illegible]	S	[illegible]	Dysmenorrhœa since [illegible], menstrual period more profuse for 2 years; slight objection to micturition 1 month ago; pain 1 month before menstruation; [illegible] to 7 weeks increase of abdomen, passing worms and [illegible]	Retroflexion; prolapsed cystic ovary (previous right oophorectomy)	Prolapsed and tender ovary left. Low down on left side, much smaller than 12 months before; surface irregular, projection at one pol	Dec., 1897	Cysts excised and ovary sewn up to uterine horn; ventrifixation	No	No complications	Temporary improvement; then continued to suffer a good deal, and was bent on further operation. Lawson Tait operated some time in 1897, and she died 2 to 3 days after; nature of operation unknown.

GROUP II—*continued.* (*a*) *Cases of Ovariotomy.* (*b*) *Replaceable Retroversions.* (*c*) *Prolapsed Ovaries (continued).*

	Age.	Mar- or Single.	No. of Children.	Symptoms.	Disease.	Physical Conditions.	Date of Operation.	Nature of Operation.	Drainage.	Course and Complications.	Result.
No. 2	29	S.	0	Dysmenorrhœa and incapacity for 2 years	Retroversion; left ovary prolapsed with small cyst (treatment by pessaries tried and failed)	Uterus so retroverted as to lie horizontally	March 19, 1897	Hysteropexy; silkworm stitches; left ovary resected; 3 catgut sutures	No	Healed by first intention; patient markedly hysterical	At first much relief, but very invalidish; then better, with work; after influenza relapsed entirely as to pain, although uterus remained in excellent position; hysterical spine. Operated on later by Dr. Herman, who resected both ovaries, and found slight adhesions about left ovary; result so far good.
No. 3	28	S.	0	Persistent pain in sacral region, unrelieved by prolonged rest, blistering, etc.. Examination under anæsthetic showed retroversion	Retroversion of uterus; right ovary cystic. ? Tubercle of right Fallopian tube	No adhesion; fine nodules on right Fallopian tube; right ovary cystic; left ovary showed a few very small cysts	April 2, 1900	Three-quarters of right ovary resected; tube not removed; interrupted catgut sutures; left ovary not dealt with. Hysteropexy; 2 silkworm sutures	No	Healed by first intention; a good deal of pain for first 24 hours; needed morphine	Relief of pain in back.
No. 4	32	S.	0	? strain 10 years ago; 18 months backache, pain in abdomen, and misery; good for nothing at or after periods. Under treatment all this time; pessary, ichthyol plugs, etc. Highly nervous	Retroflexion of uterus. Cystic disease of both ovaries	No adhesions; extreme retroflexion. Left ovary contained ruptured cyst	April 2, 1900	Both ovaries resected freely; catgut sutures. Hysteropexy; catgut sutures	No.	Healed by first intention; not much pain; no morphine necessary	Tedious convalescence. July, 1900, "old daily ache gone, and walking easier. Not much better at periods. The operation has benefited more generally than at the periods, and has been decidedly beneficial."
No. 5	26	S.	0	Pain in back and menorrhagia since a fall in August, 1899	Both ovaries enlarged	Uterus anteflexed. Both ovaries large, white, and cystic	July 16, 1900	Both ovaries partially resected; catgut sutures. Wound in left ovary touched with pure carbolic.	No.	Healed by first intention; a good deal of pain day after operation; needed morphine	Quite free from pain so far (July 30).
No. 6	30	M.	—	—	Right broad ligament cyst	—	January, 1895	Removal of cyst with right tube and ovary. Resection of left ovary	No	Cyst, post-peritoneal. Bronchitis after operation	Satisfactory; pregnancy since. Miss Walker attended confinement; labour normal.
No. 7	24	M.	2	Attack of pain, faintness, and vomiting 3 months previous; then "lump" felt in right iliac fossa. Patient was laid up for 3 weeks. Menstrual period, due when pain came on, lasted longer than usual (6 days). Temperature 99 4°	Left ovarian cyst, unilocular. Right ovary cystic; right tube congested	Tumour reached umbilicus. Uterus pressed to front beneath abdominal wall and to right. Tumour adherent to posterior abdominal wall at pelvic brim and back of uterus	March 31, 1898	Cyst removed; broad pedicle; also left tube. Right ovary (two-thirds) resected	No	Healed by first intention. Recovery quite uneventful. No special pain	Further history unobtainable.
No. 8	20	M.	3, youngest 3 months	Swelling of abdomen and occasional pain since getting up from confinement in January, 1899	Right multilocular ovarian tumour Cystic left ovary	Uterus retroverted and pressed down by large lax cyst, reaching to ½-inch above umbilicus, and springing from right broad ligament. Cyst partially rotated. Left ovary free, but contained cyst the size of pigeon's egg	March 30, 1899	Right ovariotomy after puncture of first cyst, which contained dark fluid, and a second containing gelatinous, and a third containing clear, straw-coloured fluid, in all 4½ pints. Resection of left ovary	No	Did well for four days, then the temperature rose, with abdominal pain, and continued to range from 100° to 102°. Mass appeared behind uterus and in right side of pelvis to right of abdominal wound. Much worse on April 10th. Suppuration in pelvis suspected; abdominal wound opened up, and incision of right broad ligament above Poupart. Suppurating hæmatocele evacuated and drained. Patient died same day. (First of a group of suppurations.)	Death on eleventh day. *Post mortem*, no general but severe pelvic peritonitis with general adhesions; foul collection of blood in right broad ligament; no hæmatocele in Douglas's pouch. Uterine cavity contained pus and muscle softened; left ovary and tube matted and adherent to sigmoid; no sign of hæmorrhage from it.

Group I includes all cases of freeing, either bilaterally or unilaterally, of more or less adherent and matted appendages, coupled in certain cases with the opening up or disinfection of occluded tubes—22 cases.

Group II comprises resection, on one or both sides, of non-adherent diseased ovaries—8 cases.

In all these 30 patients operation was undertaken for pain of an incapacitating nature, and in some cases fever, hæmorrhages, or sterility. In all there were more or less severe symptoms or a definite pelvic tumour (as apart from mere matting). In most, other methods of treatment had been tried without success.

In considering the results of these operations, I wish to draw attention to the following points:

1. Recurrence of symptoms.
2. Necessity for further operation.
3. Restoration of function as shown by the occurrence of pregnancy.

Taking the cases of Group I, they fall into the following divisions:

(*a*) Six cases of unilateral pyosalpinx or hydrosalpinx with matting of the appendages on the opposite side. With these I place a single case of unilateral cyst of the ovary, probably the result of inflammatory conditions, where also there were matted adherent appendages on the other side. In 3 of these there was a definite history of recent gonorrhœa, while one of the 3 developed also secondary syphilis after the operation. In another there was a history pointing to gonorrhœa, and in 2 more to recent syphilis. Of these 7 cases, 4 had recurrent attacks of perisalpingitis at a longer or shorter interval, 2 requiring further operation and removal of the second set of appendages. One of them (No. 2), a syphilitic case, I operated on myself within a year, and her condition afterwards was thoroughly satisfactory, the other (No. 1) I watched for two years, and declined to operate upon further, whereupon she drifted away from me and had the second appendages removed by Dr. Smith at Soho three years after her first operation, with very great benefit to her health according to her own report. Indeed, she was as severe upon me for not having removed both sides as some patients have shown themselves in other cases where complete removal has been practised.

One case, a patient of 24, operated on in November, 1895 (No. 3) remained well for four years, and then was in hospital again for five weeks with a severe attack of salpingo-oöphoritis and pelvic peritonitis. Quite a large tumour developed, and had I not been very anxious to preserve the remaining appendages I should have thought it wiser to operate. However, she has completely recovered, the mass now, at the end of six months, has quite disappeared, leaving only some adhesions between tube and ovary and the patient feels perfectly well. I am not even now clear whether the pelvic mass was a hæmorrhage connected with a tubal abortion or whether it was an exudation round about an inflamed tube and ovary. Her case, however, stands in favour of non-operative measures.

Another case, a young woman aged 25 (No. 4), where, after a removal of a pyosalpinx, I freed the other appendages, disinfected the tube with 1 in 1,000 perchloride solution, and introduced some iodoform paste, made an excellent recovery, and remained well for three years, when she got a fresh attack of perisalpingitis, and I found the appendages again matted and adherent. The symptoms subsided with treatment.

In a fifth case (No. 5) both tubes were removed, but the ovary was left on the side from which the pyosalpinx was removed. She had good health for two years, then menorrhagia, of which she did not make much, considering herself decidedly better for the operations.

In the sixth case (No. 6) much thickening remains round the appendages left, but this may have been due to a long persistent fæcal fistula that followed the operation, the bowel having been wounded in separating dense adhesions to the hydrosalpinx, and suture proving unsuccessful. She seems satisfied, but she was very uncomplaining before operation, with a large tumour and persistent fever.

In the last case (No. 7), operated on this year, both ovaries were left, and she has done excellently up to the present.

To sum up: 2 out of the 6 required further operation; in 3 the appendages left are again adherent: in no case has pregnancy occurred.

(*b*) Eight cases of fixed retroversions or retroflexions. Here the uterus was freed, and in most cases sutured to the abdominal wall, and one or both appendages after freeing left; in some cases an occluded tube was opened up, and where necessary the mucous membrane was stitched to the peritoneum to insure patency. In several preliminary curetting was done. Many of these operations were very difficult, owing to the density of the adhesions to bowel and omentum and pelvic organs.

Most of the patients had been under observation and treatment for some time. The symptoms were mostly incapacitating pain and dysmenorrhœa, hæmorrhage, and in some cases sterility.

Of these, 1 case died (No. 15). The adhesions were specially dense, and in separating them the rectum was lacerated deep in the pelvis, where suture was very difficult and unsatisfactory. Fæces came through the drainage track on the fourth day, and death occurred on the fifth day.

Five had subsequent attacks of perisalpingitis; of these, 1, a single woman (No. 9), required further operation within a year. I had not sutured the uterus to the abdominal wall after removing the appendages of one side and freeing or opening up the tube, and it became again adherent in retroversion. At the second operation the other appendages were removed, and a hysteropexy was done. The immediate result was good, then irregular metrorrhagia and hydrorrhœa, finally necessitating hysterectomy. Her health is now good.

In 2 (Nos. 12 and 13) the subsequent attacks were slight, but have left the ovary again adherent.

In another (No. 14), a young woman of 26, there was severe pelvic peritonitis before operation, and she was operated on within eight months of marriage. The ovaries were freed and resected, the occluded tubes opened up and the mucous membrane sewn to the peritoneum, the tubes disinfected, and the uterus sutured to the abdominal wall. Since operation, eighteen months ago, she has had 4 similar attacks of pelvic peritonitis of diminishing severity. The uterus and right ovary remain free, the left ovary is prolapsed and probably adherent to the side of the uterus, but the patient expresses herself as much better for the operation and lives in hope of family. All these 3 latter patients have benefited greatly by operation.

In 2 others (Nos. 10 and 11) the result has been good; 1 (No. 10), where the adhesions were slight, became pregnant and had a normal labour sixteen months after operation. Of 1 the further history is unknown (No. 8).

Summary: 1 death; there were in 5 subsequent attacks of pelvic inflammation; 1 required further operation; in 1 the result has been quite satisfactory; in 1 pregnancy occurred.

(*c*) Two cases of tuberculous disease. One made an excellent recovery, the uterus and remaining ovary becoming quite movable (No. 16). In the second case (No. 17) the abdominal scar gave way at the end of a month from tension of reaccumulated fluid, and later suppurated. She had a fistula for months, and has slipped away from my observation.

(*d*) Three cases of ovariotomy, with adhesions about the opposite tube and ovary, which were separated. One gave an excellent result (No. 18). In the second suppuration occurred, and the ovary and tube are again matted and adherent, and there is dysmenorrhœa (No. 19). In the third the health is fair, but the ovary is again large and adherent. The periods are not so profuse as before operation but there is more pain (No. 20).

(*e*) Two cases of myomectomy from one broad ligament, with removal of the appendages on that side and on the other freeing of adherent appendages. One has no benefit from the operation, which was followed by a hæmatocele, and the tube and ovary are again matted (No. 22). In the other the result was excellent until the patient became most unfortunately infected with gonorrhœa and developed pyosalpinx, necessitating further operation (No. 21).

To sum up these results in the 22 cases: 1 death; 3 no improvement, owing to outward conditions connected with the operation; 10 recurrent pelvic inflammation, which in 3 necessitated further operation, while 5 show distinct and 2 very little benefit; 6 good result, of these 1 became pregnant; 2 condition unknown.

Group II, 8 cases of resection of non-adherent ovaries, either

sclerotic or showing signs of chronic inflammation or cystic degeneration:

(*a*) Of these, in 3 an ovarian tumour was removed on the other side. One case died (No. 8), but the death was in no way due to the resection. A large partially-rotated multilocular cyst was removed on the right side, and the left ovary resected for a cyst the size of a pigeon's egg. The patient died on the eleventh day from peritonitis following hæmorrhage into the right broad ligament and Douglas's pouch. The resected ovary was adherent to the structures around, and was involved in the general pelvic inflammation, but it was not the source of the hæmorrhage.

In one (No. 6) pregnancy and delivery at term occurred. One (No. 7) made an uneventful recovery.

(*b*) Three were cases of replaceable retroversions quite incapacitated by their sufferings, which other treatment, general and local, had failed to cure.

In all the uterus was suspended, and one or both ovaries resected. One (No. 2), a unilateral resection, improved for a time and worked well, but relapsed after influenza. The ovarian pain returned although the uterus remained in good position, and she developed also hysterical spine. I refused further operation, but Dr. Herman, after watching her for some weeks, did a double resection of the ovaries with marked benefit.

Two more (Nos. 3 and 4) have been distinctly relieved. Their cases are recent, and I have every hope that the improvement will become more pronounced as they recover from the state of invalidism they were in before the operation.

(*c*) Two were cases of prolapsed ovaries without displacement of the uterus. One of these (No. 1) had already had one ovary removed when she came under my care. She was a highly-nervous, ill-disciplined woman, suffering from severe dysmenorrhœa, and clamorous for the removal of the ovary. This I declined to do, and resected and suspended a large inflamed but non-adherent ovary.

The improvement was very short-lived, and finally I heard that she was operated on by Lawson Tait, and died four days after the operation. I tried to get details of the condition found, but she seemed to have entered the hospital under an assumed name, and could not be traced.

The last (No. 8) has been operated on too recently for any satisfactory judgment, but so far she is free from pain. To sum up: 1 death; 2 unrelieved; 4 a good result, one becoming pregnant; 1 hopeful. In ovarian disease, more than in any other form of pelvic disease, it seems difficult to dissociate the mental and physical conditions, and it is therefore most necessary to keep the patient in view for some time after operation, and to treat the chronic mental invalidism in which so many of these patients are plunged. If the operation alone is trusted to effect a cure disappointment will often occur. This of course used to be noted in the days of oöphorectomy for these conditions, and was one of the chief arguments against the main operation.

As experience grows no doubt conservatism will be more practised, but there are some cases in which it needs a certain amount of courage to leave within the abdomen diseased structures which may prove by no means harmless. In very difficult cases with complications likely to lead to sepsis, it may be wiser to remove rather than to disinfect. And in cases of clear gonorrhœal infection with fever, where there is suppuration of one tube and occlusion of the other, the question will arise whether the probability of saving the other tube is sufficient to warrant the by no means insignificant risk of leaving it behind. Patients, too, are apt to show themselves restive and disappointed if a second abdominal section becomes necessary within a year. But if the patients are young and are willing for the hope of family—a somewhat forlorn hope as far as my cases go to prove—to run the risk of a possible second operation, I should feel encouraged by my own results and the greater successes of others to persevere along these lines. Two pregnancies out of 30 cases, and those the simplest, do not seem to be a large proportion, but of these 30 patients 9 have so far remained single, and of the rest some are not beyond hope of improvement with respect to preguancy. Pozzi and Schauta have both expressed themselves as definitely against conservative operations in gonorrhœal cases, while the American surgeons, Kelly, Polk, and Dudley, favour them. In comparing my results with the recent statistics published by others, I am struck by the large number of recurrent attacks of inflammation that my tube cases show. Dr. Dudley, reporting 68 conservative operations on the tubes and ovaries, sums them up as all well, no relapses, and 8 pregnant—a result so brilliant as to make one envious if not sceptical. Out of 80 cases treated conservatively by Dr. Polk, there were only 7 failures, and 4 pregnancies occurred. Dr. Martin, out of 45 conservative operations on the tubes and ovaries, had 2 deaths and 6 pregnancies. Professor Pozzi, out of 62 cases of resection of the ovary published in 1897, saw 33 quite cured or much relieved, 12 pregnant, and 7 *in statu quo*, 8 required further operation, 1 being pregnant, and another having just aborted. Ries of Chicago, in reporting 20 cases of resection and freeing for benignant growths of the ovary, extrauterine pregnancy (which I have specially excluded) and salpingitis without pus, saw no result as to pregnancies.

Many single cases with excellent results have been recorded; I may give as an example the illustrative cases mentioned by Mr. Martin when he brought the subject of conservatism to the notice of members at the '98 meeting. From all published statistics we see clearly that better results are obtained from conservative operations on the ovary than from those on the tube, and it would tend to render our knowledge more exact if the two sets of cases were differentiated in estimating the results.

In the tables (pp. 728 to 732) such a division has been made.

MRS. SCHARLIEB feared that where active gonorrhœal mischief was present in both tubes at the time of operation, the patient is likely to return needing a second abdominal section, the second operation being more difficult and dangerous than the first. Hence the necessity for very careful selection of cases for the conservation of the ovaries and tubes.

The PRESIDENT (Dr. W. S. A. GRIFFITH) said that "the thanks of the Section were due to Mrs. Stanley Boyd for her able and clear explanation of cases which have been operated on in the Hospital for Women. There is only one point which I am going to make any remark upon in connection with this paper and that is the want of knowledge amongst the public of the danger of gonorrhœa to a woman. In the other sexual disease the public, as a rule, know something of its danger, and, if marriage is contemplated, a great deal of care is used by the better educated classes to prevent any harm following, but with gonorrhœa a marriage takes place blindly, and it is not exaggeration to say we meet every week with cases of young women who, within a few months of marriage, are injured, rendered sterile, and often invalided for life. It is sometimes exceedingly difficult to know whether a case is gonorrhœal or not. I think that, as a rule, we may take it that if we find a case of a woman suffering from inflammation of the appendages who has neither been pregnant nor subjected to gynæcological examination or treatment we may assume generally that this is usually gonorrhœal in origin. It is always very difficult to bring such a subject to the knowledge of the public, but it is the duty of every doctor who has a male patient affected by gonorrhœa to explain to him the dangers of marrying, and the injury that is likely to be done to his wife, even when the disease is chronic and almost cured. My own experience of conservative surgery in these inflammations has been limited. I am convinced that to endeavour to save part of an ovary when acutely or recently inflamed is to court failure; the case must be very chronic and then the pus in the ovarian or tubal sac is almost sterile and a part apparently healthy may be saved.

AN ACCOUNT OF A CASE OF COMPLETE INVERSION OF THE UTERUS OF THREE YEARS' DURATION.

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CASES of chronic inversion of the uterus appear to be considered sufficiently rare as to justify their publication when they do occur, and the one I am about to relate appears to me to have one or two points of special interest.

The patient, a married woman, aged 26, was admitted to the Queen's Hospital on November 30th, 1899. She was the mother of three children, the last confinement having taken place three years previously. On that occasion she was attended by a midwife, and lost a great deal at the confinement. She was rendered very pale, but there were no symptoms of collapse or fainting. The labour was good, lasting about eight hours. The child was born head first, and as far as she knows the midwife did not pull on the cord. For twelve months after the child was born there was almost continuous loss, and for the succeeding two years the periods recurred every two or three weeks, and persisted for a week each time, the loss being excessive. Any unusual exertion or excitement would bring on hæmorrhage. There had been pain in the right iliac region since the confinement, worse on exertion, and relieved by lying down, also some bearing-down pain. Patient had felt with her finger that there was something in the vagina, and there had been slight leucorrhœal discharge. The patient had been under treatment by a medical man for anæmia, but had not been examined *per vaginam*.

Physical Signs.—On examination *per vaginam* a rounded smooth tumour was found to occupy the whole vagina coming down close to the outlet. This tumour was narrowed above, and its neck was surrounded by a ring or collar formed by the external os uteri; this ring when examined by the uterine sound was found to be about one-third of an inch in depth all round, it being impossible to introduce the sound more than that distance at any point. The surface of the tumour when exposed by the Sims speculum was seen to be deeply vascular, and it bled freely at the least touch. Bimanual examination showed that the fundus uteri was absent from its normal position, and the cup shaped depression at the top of the vaginal tumour could be readily felt. *Per rectum* it was found to be impossible to reach with the finger to the top of the vaginal tumour.

On December 2nd the patient was placed under anæsthesia, and a prolonged effort was made both by myself and by Mr. Frank Rowland (obstetric house-surgeon) to effect manual reduction, but with no result whatever. The vagina was afterwards firmly plugged with gauze and an abdominal binder applied; this was removed on December 4th, and a note was then made that the uterus was still in the same position, but was softer and could be readily indented by the finger; an attempt was made without anæsthesia to replace the uterus by pushing up the central portion in the form of a cone so as to dilate the tight constricting ring, but as there appeared to be some risk of perforating the uterus owing to its softness, this was abandoned.

On December 7th Galabin's modification of Aveling's repositor, which had been procured in the meantime, was applied and pressure was kept up with this, taking it out and cleansing the vagina and reintroducing it at intervals, until December 12th.

As great pain was now complained of and the pulse and temperature were rising, the further use of the repositor was discontinued; and on December 16th, after the usual preparation of the patient, amputation of the inverted uterus was performed, and it is to the way in which this was done, which I believe to be to some extent original, that I particularly wish to draw attention.

The patient was anæsthetised and placed in the lithotomy position; the funous was seen to be ulcerated from the pressure of the repositor. After a thorough cleansing of the vagina a rubber tube was tied tightly round the neck of the tumour to act as a tourniquet. The inverted fundus was then split from front to back in its whole length with scissors, so as to lay open the peritoneal cavity.

The broad ligament of each side, as high up as could be reached, was now transfixed with a pedicle needle and tied with silk, the ligatures on each side being left long.

Each half of the uterus was now divided with scissors at its neck and removed. An additional ligature was placed on each uterine artery, the cut end of which could be plainly seen on the divided surface of the broad ligament; this ligature was cut off short.

The rubber tourniquet was removed, and as there was some hæmorrhage from the cut surface of the uterine wall this was transfixed in several places by interrupted silk sutures, which were tied so as to bring peritoneal and mucous edges together, partly covering in raw edge. These sutures, which were cut short, arrested the bleeding. A strong silk ligature was passed through the whole thickness of the cervix on each side and tied, thus narrowing the opening which led into the peritoneal cavity. The ends of these ligatures were left long and brought down into the vagina, with the idea that they might be useful to prevent reinversion of the stump of the cervix in case that showed a tendency to occur. A piece of iodoform gauze was passed up a little way into the peritoneal cavity through the small opening now remaining in the vaginal roof, and the vagina was also lightly packed with gauze. As there was some rise in in the temperature the gauze was removed on the next day. On the eighth day all the ligatures came away spontaneously. Subsequent progress was uneventful, and the patient left the hospital on January 19th. She has attended occasionally since as an out-patient, and was last seen a few weeks ago. She is now in completely good health, and able to perform all the work of her house as well as ever she was. On examining with the speculum it is impossible to see that anything has been done, as the external os presents an absolutely normal appearance. It is clear that reinversion of the short stump of the cervix must have taken place, probably gradually, at some time after she left the hospital.

It is worthy of note that nothing was seen of the ovaries during the operation; they were not drawn down into the cup-shaped depression, although the inversion was complete; it has been noted in other cases that even in complete inversion the ovaries do not descend into the peritoneal cup.

I have ventured to bring this case forward in the hope that the method I have described may be found useful, its chief advantages appearing to me to be that it diminishes the risk of hæmorrhage from the divided uterine vessels and from the cut uterine wall, also that it lessens the risk of reinversion of the stump immediately the inverted mass is cut away, the latter being a danger to which the books especially direct attention.

It is always dangerous to claim novelty for any surgical (or still more so for any gynæcological) proceeding, but I have looked up this matter, and can nowhere find described the method of splitting the inverted fundus and tying the broad ligaments from the inside, which I adopted in this case, and which has, I venture to think, certain advantages over many of the methods previously described.

SECTION OF PHYSIOLOGY.

W. D. Halliburton, M.D., F.R.S., President.

A DISCUSSION ON THE FORMATION OF URIC ACID.

I.—W. D. Halliburton, M.D., F.R.S.,

Professor of Pysiology, King's College, London; President of the Section.

When I accepted the presidential chair of this Section my gratification for the honour thus thrust upon me was considerably damped by the thought that it would be necessary to prepare a presidential address. For months I was perplexed with the question, What shall I talk about? My cogitations led to no definite result, until one morning all my difficulties were solved by the arrival of a circular letter stating that Presidents of Sections were not expected to deliver introductory addresses. I feel that the ruling powers of the Association are right in this decision. It is a wise course, when one considers how much a Section has to accomplish, that we should enter at once upon our business, and not curtail the already too short time we have to devote to the consideration of original communications.

Let me then thank those who will contribute to the success of our meeting by the reading of such papers, and welcome here all who propose to assist either by taking part in our discussions, or by listening to what others have to say.

The modern tendency of physiological teaching is to become more and more practical; this tendency is reflected in the mode in which examinations are now conducted, but it is especially seen in meetings such as those of the Physiological Society, where physiologists gather together to compare notes and interchange ideas. A demonstration rather than a communication is nowadays always preferred. I much regret that the absence of a physiological laboratory in Ipswich will limit, if not entirely prevent, any experimental demonstration of the facts of which we shall hear.

It is largely for this reason that the officers of the Section have resolved to adhere to the old custom of setting down for discussion certain questions of general interest; and I trust, in selecting uric acid and muscular tonus for these general discussions, that we have succeeded in choosing subjects which will interest not only the professional physiologist but also the practical physician.

The decree has gone forth that the task of opening the first of these two discussions shall rest with myself. At first I felt inclined to rebel, as the subject is one at which I have never done any original work, but, on second thoughts, this appeared to be in one sense an advantage. I shall not be unduly biassed in favour of any one exclusive view, but I shall, I hope, be able to present the subject from the general standpoint, and leave it to the specialists who follow me to discuss the details.

Without further introductory or preliminary remarks, let us now apply ourselves to business, and proceed to consider the question of the origin of uric acid. The important pathological bearing of the uric acid question gives special interest to the theories which explain—or attempt to explain—the way in which it originates under normal circumstances. Previous to about ten years ago, I think I may safely say that all current theories left us entirely in the dark. The idea that deficient oxidation due to over-eating and sedentary habits would explain an abnormal increase in uric acid fitted in with experiments that showed that injection of urates into the blood stream was followed by a corresponding increase of urea in the urine if oxidation was active: the relatively large quantity of uric acid in fœtal urine was also compatible with this theory. But a fatal objection to the theory was at once seen when a wider survey of the animal kingdom was taken, and in particular the birds form

an instance of animals in which the processes of oxidation are specially active, but in which also uric acid is the chief end product of nitrogenous metabolism. The oxidation theory, moreover, leaves us completely uninformed of the way in which the small amount of uric acid in normal urine is formed.

To say that the question of what is the most suitable vehicle for getting rid of waste nitrogen in the different classes of the animal world is a question of natural selection is no doubt true, but such a general statement is more of the nature of a platitude than an explanation. Again, in considering the question of the heredity of gout and allied disorders a hereditary predisposition to disordered nitrogenous metabolism is a high-sounding phrase which may comfort some minds, but is hardly calculated to satisfy the inquirer.

Physiologists and pathologists alike therefore welcomed with enthusiasm the theory that originated with Mares and Horbaczewski, for here at least there was a doctrine which rested on reasoning from experimental data. Mares showed that the greatest increase in uric acid excretion occurs a few hours after a meal, whereas general nitrogenous katabolism as indicated by the amount of urea excreted increases more slowly and does not reach a maximum until some hours later. Horbaczewski formulated his now familiar theory that this was due to a digestive leucocytosis and the consequent increased liberation of nuclein within the organism. He supported this view by pointing out the close chemical relationship between uric acid and the so-called alloxuric bases (adenine, xanthine, hypoxanthine, etc.) which are obtained by the decomposition of the nuclear material. He showed that the spleen pulp in a still living condition is able to oxidise these bases and so form uric acid, and he recorded numerous observations to demonstrate the connection between the number of leucocytes and the rise in the amount of uric acid excreted. This theory was widely accepted, and it certainly fitted in with such well-known pathological phenomena as the increase of uric acid in leucocythæmia.

I think we may fairly regard this work of Horbaczewski's as epoch making. The details of the theory have perhaps not stood the test of ten years experimental criticism, but it has formed the basis of all subsequent work on the subject, and if it does not express the whole truth, it contains the essential germ of truth which I fancy nobody will question, namely, that we are to seek the origin of uric acid, in mammals at any rate, in the destructive changes that occur in nuclein. There may be other sources of uric acid which are still undetected, but the only one of which we have any certain knowledge is the one just alluded to.

I think that this important practical outcome of physiological investigation is a lesson to us that there is no such thing as useless research. The accusation is often levelled at physiologists that they work too much in the clouds, and devote too little attention to subjects of practical interest. Truth, however, when found is always useful, whether it is discovered in the clouds, or on the dry land. Its application may not be always immediately forthcoming, and I fancy that when physiologists began to investigate such an out-of-the-way subject as the chemistry of cell nuclei, neither they nor their practical brethren imagined it would help towards the elucidation of the uric-acid problem. In working out the matter the labours of the pure chemists must not be neglected either. Fischer in particular who has, thoroughly worked out the question of uric-acid constitution, has shown that it and the alloxuric bases are all members of one family linked together by containing a common radicle which he has dubbed "purine." Physiologists and pathologists have too long devoted their attention to the most prominent member of the purine group, namely, uric acid, but in any general examination of the subject investigation would be incomplete if we did not also take into account the other members of the group.

The further researches started by Horbaczewski's work have been very numerous, and I do not propose to go fully into all of these. I may, however, select a few as typical examples of the rest.

It has been shown that a well-marked digestive leucocytosis may occur after a diet of egg-white or even after a non-nitrogenous meal, and yet there is no rise in the amount of uric acid excreted. The theory has therefore been modified by supposing that the acid arises from the breakdown of the nuclein of the food, independently of any intermediate leucocytosis; the striking increase of uric acid after a meal of sweetbread lends considerable support to this view. It was also shown that the amount of disintegration of the leucocytes might be measured by the output of phosphoric acid, for this substance is also a product of the disintegration of nuclein. The amounts of uric acid and phosphoric acid do not always run parallel, and in a case of leucocythæmia recorded by Milroy and Malcolm there was even a diminution of phosphates in the urine. One case, however, does not prove or disprove a rule, and the balance of present-day opinion is distinctly in favour of the view that nuclein is at any rate one of the sources of uric acid.

Other workers in the field have been Hopkins and Hope at Cambridge, and Smith Jerome at Oxford, and our two ancient universities are not at one on the question. Smith Jerome has shown by a new series of observations that feeding on nuclein and foods which contain nuclein distinctly raises the uric-acid output. His most important point, however, is an answer to the most serious objection to the nuclein theory that Hopkins and Hope adduced. Hopkins and Hope pointed out that as nuclein resists digestion with gastric juice, it cannot be expected to supply the uric acid which is excreted a few hours after a meal, and the disproportion between the relatively small amount of nucleo-proteid in muscle and the large increase in uric acid after a meal of flesh cannot be explained by the nuclein theory of its origin. Smith Jerome's answer to this is that any disproportion between the excretion of uric acid after flesh diet and the amount of nuclein in muscle is probably to be explained by the presence in such diet of purine bases, especially of hypoxanthine, in sufficient quantity to account for the rise produced; the presence of such bases in flesh diet would account also for the early rise in uric acid after a meal, and would further explain the increase found when pepsin-hydrochloric acid (that is, nuclein-free) extracts of thymus gland are taken. Smith Jerome is therefore strongly of opinion that uric acid may be formed from nucleo-proteid, nuclein, and one variety at least of purine base, and that there is at present no proof that it can arise in man independently of a substance containing a purine group.

Just as the onlooker in a game of chess often sees moves that are invisible to the actual players, so in experimental researches, the one who stands by may often detect fallacies or draw conclusions better than those actually engaged in the work. Though I do not pretend that what I have now to say really probes the matter to the bottom, I think that any suggestion from an impartial observer may be helpful in a complicated question of this kind.

In the first place my temperament is such as to lead me to fight shy of extremist views. The origin of uric acid from the nuclein of the food may be one factor; at the same time the origin of uric acid from the nuclein of the leucocytes is another; the two probably act together, and in one case the one, in another case the other, factor may be more predominant. I would further point out that there is a third factor, which never yet seems to have received any attention; this is that the katabolism of the nuclei of other animal cells, such as those of secreting glands, may contribute to the formation of the acid. Investigators hitherto seem to have got into the way of supposing that the leucocytes are the only cells whose nuclei need be troubled about. They are the cells which lend themselves best to investigation, but, after all, they constitute a mere fraction of the total cells of the body.

Another fallacy which appears to underlie a good deal of the work on the uric acid question is the habit of regarding the amount of uric acid in the urine as synonymous with the amount produced in the body. Recent experimental work points the other way. The uric acid produced in metabolism doubtless in great measure leaves the body by the urine, but all of it certainly does not; some may be retained within the body for a time; an exaggeration of this is seen in gouty concretions; some may be further oxidised and converted into urea and simpler products; some may enter into combination with other organic substances, lose its identity, and the nitrogen ultimately leave the organism not only as uric acid but in other forms also. This possibility receives emphasis when one considers the work which was published this year

by Kossel and Goto.[1] They showed that uric acid, like other purine substances, will form *in vitro* loose combinations with nucleic acid, and in this way uric acid may be held in solution. It is thus possible that the action of nucleic acid and its compounds in the body may be a factor in determining the solubility of uric acid there.

The work of Hugo Wiener[2] is also important from this point of view. He shows that the "surviving" liver of the ox, and extracts of the liver, kidney, and even of the muscles of some animals, have the power of destroying uric acid. The liver is able, therefore, not only to form uric acid from xanthine derivatives, but also to destroy it. As long as the relative intensities of the two processes are undetermined, the amount of uric acid in the urine is no measure of the amount actually produced in the body. These experiments have suggested to me a possible fallacy in connection with phosphoric acid. I have already mentioned the observation of Milroy and Malcolm that the phosphoric acid and uric acid are not present in parallel amounts, as they would be if both ultimately came from the same material, for what is true for uric acid may also be true for phosphoric acid; neither acid necessarily leaves the body at once, but may be further utilised in the organism before it is finally disposed of.

Another factor which is often neglected is the amount of purine substances that leaves the body in the fæces. This has been shown by Parker[3] to be by no means a negligeable quantity.

The last fault I feel inclined to find with many observations on uric acid formation is the narrow standpoint from which it is regarded; this I have already alluded to. Uric acid does not stand alone; it is a member of the great purine family, and in quantitative work all the members of the group must be considered.

One sees in the history of any physiological subject that when a great central idea is once started and research is directed towards working it out, how every worker profits by the errors of his predecessors. Mistakes in methods are remedied, fallacies in argument corrected, new ideas come into being. Each research improves on the one before, and gradually and slowly the links in the chain of truth are forged. The ink was hardly dry on the lines I had written when a paper was brought under my notice in which a well-conceived attempt to clear up the matter is made, and in which many of my criticisms are met. The paper is by Burian and Schur.[4] Though it is lengthy it will amply repay careful study, and I cannot do better than conclude my remarks by giving in outline the main ideas and results of the investigation. Every healthy adult excretes a certain characteristic amount of purine substances which is independent of his diet; this is the result of tissue metabolism and may be termed "endogenous urinary purine." Its amount may be directly estimated by examining the urine after a diet of substances which are practically free from purine compounds; such articles of diet are milk, white bread, potatoes, rice, green vegetables, etc. This method of examination is much better than that of analysing the urine during hunger. In inanition the upset produced in metabolism generally is sure to give untrustworthy results.

Diet.	Total Percentage of Purine Substances in Diet.	Percentage of Exogenous Urinary Purine.
Beef	0.06	0.030
Coffee	0.20	0.075
Calf's liver ...	0.12	0.060
Calf's spleen ...	0.16	0.080
Calf's thymus ...	0.40	0.100

But when a man takes his ordinary diet, which contains articles containing nuclein, or purine compounds, the amount of urinary purine is increased by a part of the purine derived from his diet, and this increase may be termed "exogenous urinary purine." The "nutrition putrine" does not pass wholly into the urine; a certain fraction remains in the organism, the purine double ring being broken down. The amount of the remainder (exogenous urinary purine) differs for different forms of food, and is but little affected by the individuality of the subject of the experiment. The table in the previous column gives some of the figures quoted.

By subtracting the exogenous from the total urinary purine, the endogenous urinary purine is obtained, and the numbers come out closely with the results obtained by direct estimation; it varies in the majority of people from 0.1 to 0.2 gram daily, but values both higher and lower than these were obtained.

Working on such lines as these it seems possible that in the future the whole metabolic history of the purine compounds will be unravelled, and then it will be the time to return to the one member of the group—namely, uric acid—to which the attention of so many up to now has been almost exclusively directed. Finally, when the normal life-history of uric acid is known its abnormal behaviour in diseased conditions will be a comparatively simple problem.

From what I have said, it will be seen that I have directed your attention principally to one side of the subject, the side with which I should be expected to be most familiar. I have not attempted to trespass on the domain of the pathologist nor of the therapeutist; the influence of age, of disease, of diet, of mineral waters, of drugs, and other remedial agents I have left all but untouched; still I hope that those who follow me in the discussion will not exhibit similar reticence. The debate will lose much of its value if we do not attempt to approach the subject from as many points of view as possible.

[1] *Sitzungst. Gesellsch. gesammt. Naturwissensch.*, Marburg, 1902, April 6th.
[2] *Arch. exp. Path. Pharm.*, 1899, xlii, 374-398.
[3] *American Journal of Physiology*, 1900, vol. iv, p. 83.
[4] *Pflüger's Archiv*, 1900, vol. lxxx, pp. 241-343.

II.—Thomas Hugh Milroy, M.D., B.Sc., F.R.S.E.,
Lecturer on Physiological Chemistry in the University of Edinburgh.

Dr. Milroy referred to the importance of the metabolism of nucleins as a factor in the formation of uric acid, mentioning in this connection the work of Dr. F. G. Hopkins. The leucocytosis that followed absorption of the products of digestion of nucleins was at first lymphocytosis, the increase in granular leucocytes not appearing until later; it was therefore necessary to observe the nature of the leucocytes found, for example, in blood and marrow, as well as their number. It was beyond doubt that absorbed nucleins could directly form uric acid, and was equally clear that uric acid had a metabolic origin in the living cells of the organism. Our knowledge as to the *rôle* of the liver in the synthesis of uric acid was chiefly based on the work of Minkowski and v. Mach, who removed that organ in geese. It should be remembered that the birds survived the operation for only a very short time, and as might be expected, passed a urine poor in solids, rich in ammonia, and containing some sarcolactic acid. Dr. Milroy believed that in turkeys and geese nuclein-metabolism was strictly comparable to that in mammals. His own work in this direction formed the subject of a paper to be read at a later meeting of the Section. Dr. Milroy also pointed out that nucleins were not absolutely insoluble in gastric juice, but that they underwent gradual solution.

III. Frederick Gowland Hopkins, M.B., B.Sc.,
Lecturer on Chemical Physiology in the University of Cambridge.

Dr. Hopkins quoted, as evidence that uric acid arose from channels other than nuclear breakdown, some additional experiments with meat extracts. He had prepared extracts which had produced more uric acid than could be accounted for by the alloxuric bodies present in them. The observation of Wöhler that administration of fruits might greatly reduce uric acid excretion had been confirmed and amplified by Weiss, who attributed the effect to quinic acid. Dr. Hopkins could confirm Wöhler's statement, and considered that the diminution in question was due to interruption of some synthetic process rather than to a mere effect on excretion.

IV.—William J. Smith Jerome, M.B., M.R.C.S.,
Lecturer in Medical Pharmacology and Materia Medica in the University of Oxford.

Dr. Smith Jerome regarded the statements made with respect

to uric acid as readily classifiable under the headings "proven" and "not proven." He regarded the following propositions as proven: 1. That the quantity of uric acid excreted can by starvation be reduced to a fairly constant minimum; and hence that a part of the daily output is independent of food taken. 2. That the quantity of uric acid excreted can be increased by the use of certain foods, and so that a portion of the normal output is under control and directly dependent on the quantity and quality of ingested food. 3. That food which increases the output of uric acid contains alloxuric nitrogen. As "not proven" he characterised the subjoined: 1. That we know the source of the uric acid produced in inanition. 2. That we can explain the want of fixed proportion between ingested alloxuric material and excreted nitrogen. 3. That daily output represents production only, or the balance between production and destruction. 4. That uric acid is retained in the system. 5. That uric acid formation necessarily depends on leucocytosis. 6. That we understand the precipitation of uric acid from urine of which neither the acidity nor the percentage of uric acid is above the normal. 7. That the cause of deposition of sodium biurate in the tissues under pathological conditions is at present known. 8. That in pathological states in which there are inflammatory conditions of certain tissues, together with deposition of uric acid in urine, and of sodium biurate in tissues, there is a causal relationship between the phenomena in question. Dr. Smith Jerome remarked that in his own case these symptoms had been separated from one another by an interval of several months.

V.—JOHN HADDON, M.D.

DR. HADDON stated that he was interested in the question personally, and that he had found a strict vegetarian diet most beneficial.

VI.—HARRY CAMPBELL, M.D., F.R.C.P.,

Physician to the North-West London Hospital, and to the West-End Hospital for Nervous Disease.

DR. HARRY CAMPBELL observed that attacks of gout and gravel were rarely synchronous. This was pointed out by the late Sir William Roberts, and was Dr. Campbell's own experience. He agreed with Dr. Smith Jerome that the solubility of uric acid in the urine was not merely dependent upon the acidity of the urine and the percentage of uric acid in it. One other factor might be the presence of pigment. He insisted upon the influence of quantity as distinguished from quality of food. Those with the uric acid tendency should take a minimum quantity of food.

VII.—RICHARD JOHN ANDERSON, M.A., M.D.,

Professor of Natural History, Queen's College, Galway.

DR. RICHARD JOHN ANDERSON said that one factor in the production of uric acid which must not be neglected was the influence of the central nervous system on metabolism.

VIII.—ALEXANDER HAIG, M.A., M.D., F.R.C.P.,

Physician to the Metropolitan Hospital and to the Royal Hospital for Children and Women, Waterloo Road.

DR. HAIG said: In health I have examined my own urine on 2,990 days (or more than eight years) getting an excretion of 36,087 grs. of uric acid, and 1,044,760 grs. of urea, with a relation of uric acid to urea 1 to 29. Dividing these totals by the number of days we get 349 grs. of urea and 12 grs. of uric acid per day. But this excretion of 12 grs. a day is made up of formation, *plus* introduction in food, *plus* excretion of uric acid already in the body.

With regard to introduction I published my first experiments showing that uric acid and other similar substances appeared in the urine as uric acid when taken by the mouth, in the *Journal of Physiology*, vol. xv, and this observation has now been confirmed by very numerous observers, among whom I may mention Dr. Smith Jerome in the same journal, vol. xxii.

For reasons given in full in my work on *Uric Acid*, Ed. 5, I calculated that in the above eight years I had introduced some 200 grs. of uric acid into my body in experimental work, and that I had perhaps 300 grs. in my body at the beginning of the period, most of which has now been dissolved out and excreted; and the 500 grains thus made up amounts to about 0.1 gr. per day over the eight years.

In a similar way, I concluded that I had introduced each day in my food about 1.9 gr. of uric acid, more in the early part of the period and less later on, as I gradually found out and eliminated more and more of the substances (eggs, tea, coffee, pulses, etc.) that contained it (prev. ref. Fig. 73). And if we take these quantities 1.9 plus 0.1 from the 12 grs. of excreted uric acid, we get left 10 grs. per day as the probable formation of this substance.

Now this 10 grs. of uric acid was formed along with 349 grs. of urea, or almost in the relation of 1 to 35, and if we take a case in which urea is at the physiological level of $3\frac{1}{2}$ grs. of urea for each pound of body weight, we should get 35 grs. of urea and 1 gr. of uric acid produced by 10 lbs. of body weight each day.

To watch uric acid excretion over long periods of time in which fluctuations in excretion tend to balance each other, and in which introduction can be calculated and allowed for, is, I believe, the only way to arrive at trustworthy information as to the actual formation of uric acid in the body.

Excretion in health can be made just anything we like by controlling solubility on the one hand, and introduction on the other; and I can make my own excretion alter from 12 up to 30 grains in a day; but so great a change is dangerous to life, and I now content myself with smaller ones, many of which will be found in my book.

In Disease.—I have been watching the urines of others for some fifteen or sixteen years in periods varying from days up to weeks or months; but in no single patient nor in any form of disease, have I seen any evidence that uric acid is formed in excess of the relation to urea of 1 to 35. Of course, when people take an excess of albumens they will form both excess of urea and of uric acid, but always I believe in about this relation to each other.

But here, also, as in physiology, by influencing solubility on the one hand and introduction on the other, almost any relation of uric acid to urea in excretion may be met with, or produced; but this is no proof that formation is altered, and, taken over a long period, I think it would be found quite unaltered.

In splenic leucocythæmia, for instance (about which so much has been said as a case of excessive formation), a course of salicylates will, as I have pointed out, produce a constantly falling excretion of uric acid, bearing an ever smaller and smaller relation to urea as the store from which it comes is diminished; showing, I think, that the large excretion of splenic leucocythæmia is excretion merely, and is due to previous retention such as takes place in the early stages of malarial and other fevers. While if it was really due to formation, the large excretion should continue at the same level of relation to urea, in spite of salicylates and their solvent effects.

In this country all diseases produced by uric acid are chiefly due to introduction, and may be said in a word to be poisoning by flesh and tea, a poisoning which has been increasing for years and is now producing most serious results. A demonstration of this fact is easily obtained by the good effects which follow giving up the poisons; while, on the other hand, if these diseases were due to excessive formation, this would go on upon any and every diet, it would be impossible to cure these diseases, and I myself should not now be alive.

The PRESIDENT briefly replied.

ON DILATATION OF THE PUPIL FROM STIMULATION OF THE CORTEX CEREBRI.

By JOHN HERBERT PARSONS, M.B., B.Sc.,
Research Scholar of the British Medical Association.

BOCHEFONTAINE[1] (1875), in describing various phenomena accompanying electrical stimulation of the brain of dogs, mentions dilatation of the pupil. Both dilatation and constriction were observed by Luciani and Tamburini[2] in their experiments. Ferrier[3] confirmed these results more in detail; thus, in monkeys: "(12) Including the posterior half

or two-thirds of the superior and middle frontal convolutions, the eyes widely open, the pupils dilate, and head and eyes turn to the opposite side." "(13) and (13[1]) On the anterior and posterior limb of the angular gyrus respectively the eyes move to the opposite side.....usually also the pupils become contracted." "(14) On the superior temporo-sphenoidal convolution pricking of the opposite ear, head and eyes turn to the opposite side, pupils dilate widely." In dogs: "(7) On the frontal division of the second external convolution (coronal convolution).....the movements of the eyeballs I have found to be divergent, associated with contraction of the pupils." [I have not as yet been able to confirm this result.—J. H. P.] "(12) On the precrucial division of the sigmoid gyrus the eyes widely opened with dilatation of the pupils.....In one or two instances I have seen the eyeballs converge, but in all cases the pupils were dilated." [I have never yet obtained convergence accompanied with dilatation of the pupils.—J. H. P.] "(13) On the parietal and posterior division of the second external convolution movement of the eyeballs to the opposite side.....the pupils occasionally contract."

Similar results were obtained by Ferrier upon jackals, equivocal results on rabbits. In cats he only occasionally obtained constriction, but does not state that he ever obtained dilatation. In pigeons the most constant effect of any was an intense constriction of the opposite pupil on stimulating the middle of the convexity of the hemisphere.

Horsley and Schäfer[5] obtained hemiplegia, accompanied by great dilatation of the right pupil and constriction of the left, in a monkey in which the anterior part of the right marginal convolution and almost the whole of the motor area had been removed.

Schäfer,[6] in exciting the visual centre in monkeys, besides ocular movements, obtained movements of the eyelids, etc., which, he states, "have not been constant in my experiments, nor have the changes in the pupils which are sometimes observed accompanying the movements of the eyes. I have occasionally obtained from stimulation on or near the quadrate lobule marked contraction of the pupils.....More usually, however, the movements whatever the part stimulated, are accompanied by dilatation of the pupil."

Beevor and Horsley[6] state: "In the vast majority of instances there was no movement of the pupils; when it occurred dilatation was always noted. This dilatation of the pupils exists simply in association with turning of the head and eyes to the opposite side. It appeared to be represented most round the horizontal limb of the precentral sulcus, but we did not observe it many times."

Beevor and Horsley,[7] as also Franck and Pitres,[8] obtained dilatation of the pupils on stimulation of the forepart of the internal capsule.

Beevor and Horsley[7] in the orang-outang expressly state that there was no dilatation of the pupils from stimulating the brain anterior to the precentral sulcus.

Bechterew and Mislawski,[10] in investigating the centres for the secretion of tears, obtained also the usual effects of stimulation of the cervical sympathetic (dilatation of the pupil, action of the nictitating membrane, etc.) from excitation of the "inner parts of the anterior and posterior divisions of the sigmoid gyrus" in the dog. Whilst confirming these results I may incidentally remark that I have quite failed to obtain any conclusive effects upon the lachrymal gland.

My experiments have hitherto been confined to dogs and cats, especially the latter, in which the movements of the iris are so readily demonstrated.

The animals were anæsthetised with A.C.E. mixture. A Du Bois Reymond inductorium was used, with a single Daniel cell.

The following is a summary of the principal results obtained:

(1) Dilatation of the pupil, like other effects of cortical excitation, is best obtained with slight anæsthesia. It often occurs without any movement either of the eyes or body, but most when the animal is struggling; it is never seen with deep anæsthesia.

2. It is only obtained from those parts of the brain which are concerned in eye movements that is, from the anterior part corresponding to the frontal motor area for the eye muscles, and from the posterior part corresponding to the occipital "visual centre." The frontal area in the dog and cat is in the neighbourhood of the crucial sulcus, and the pupil effect is usually best obtained from the mesial surface of the hemisphere at this point. The occipital area is the posterior part of the second external convolution (Ferrier's).[13]

3. When well marked the dilatation of the pupil is accompanied by all the usual effects of stimulating the cervical sympathetic.

4. The effect is usually more marked upon the opposite eye.

5. The effect is diminished, but by no means abolished, by section of both sympathetic nerves in the neck. The other sympathetic effects are abolished.

6. The effect is abolished by section of the oculomotor nerves intracranially, subsequent to section of the cervical sympathetics. Under these conditions the pupils assume the position of *post-mortem* equilibrium and are immobile. Hence, I conclude that in the absence of the sympathetic channels the diminished effect is due to inhibition of the tonic action of the third nerves.

7. The effect is not abolished on either side by the section of the corpus callosum. Stimulation of the cut surface of the corpus callosum results in the usual bilateral pupillary reaction.

8. Stimulation of the central end of a cut afferent or mixed nerve—for example, sciatic—still causes dilatation of both pupils after section of both cervical sympathetics—that is, a reflex inhibition of the third nerves.

9. I have not as yet obtained unequivocal constriction of the pupils from stimulation of the cortex, but not much attention has hitherto been paid to this point.

The following is the protocol of a typical experiment:—

Experiment xiv.—July 14th, 1900.—Large Cat.—A.C.E.

Sympathetics dissected out to superior cervical ganglia. Left hemisphere exposed.

11 A.M.—Stimulate left sigmoid gyrus; eyes straight, both pupils dilate.
11.2 A.M.—Stimulate left second external gyrus; eyes to R., both pupils dilate. (The second external often gives a better result than the frontal, but did not in this case.)
11.5 A.M.—Left vagus and sympathetic torn out as high up as possible.
11.10 A.M.—Pupils contracted and equal.
11.11 A.M.—Stimulate L. sigmoid; eyes straight; pupils equal and moderately dilated.
11.13 A.M.—Pupils as at 11.10; stimulate L. second external; pupils as at 11.11.
11.15 A.M.—R. vagus and sympathetic stimulated together; R. pupil dilates fully. R. vagus and sympathetic pulled out as high up as possible.
11.17 A.M.—Pupils equal and moderately constricted.
11.18 A.M.—Cat stopped breathing. Pupils equal and moderately dilated. Artificial respiration. Recovery.
11.23 A.M.—Pupils very constricted. L very slightly > R.
11.25 A.M.—Stimulate L. sigmoid. Pupils slightly but very sluggishly; equal; no eye movements.
11.30 A.M.—Pupils react very feebly to light. 11.25 effect repeated twice.
11.40 A.M.—Corpus callosum divided. Stimulate L. sigmoid; very slight effect both. Stimulate L. second external; very slight effect both.
11.45 A.M.—L. sciatic exposed and divided. Central end stimulated. Both pupils dilate well.
11.50 A.M.—Stimulate L. sigmoid; no effect.
11.55 A.M.—Stimulate L. sigmoid; well-marked dilatation of both pupils, no eye movements; no struggles.
12.0 NOON.—Deeper median section to ensure division of corpus callosum in its whole extent. Pupils moderately dilated.
12.5 P.M.—Stimulate L. sigmoid; no effect. The sigmoid gyrus has been considerably injured by the previous manipulations. Stimulate outer part of L. sigmoid=marked dilatation of both pupils; struggles. Anæsthetic increased.
12.10 P.M.—Repeat. L. eye down; no movement of R. eye; dilatation of both, more marked on L. side.
12.12 P.M.—Stimulate L. second external; same as 12.10 effect.
12.15 P.M.—L. hemisphere removed.
12.20 P.M.—R. Pupil widely dilated; L. pupil tightly constricted.
12.22 P.M.—L. third divided intracranially. Both pupils moderately dilated and equal.

In the explanation of the results my remarks must be regarded as tentative. I believe that the pupillary reaction is entirely a reflex one, but is especially interesting as further demonstrating the possibility of a reflex inhibition. I can only in a very modified sense agree with Bechterew and Mislawski[10] that in the inner part of the sigmoid gyrus we have the central prolongations (*Verlängerungen, Fortsetzungen*) of the cervical sympathetic. It would be a misuse of the term to regard these results as pointing to the existence of cortical pupillary "centres."

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CHANGES IN THE CELL OF THE NEWT'S STOMACH DURING AND AFTER SECRETION.

By E. WACE CARLIER, M.D., B.Sc., F.R.S.E.,
Professor of Physiology in the University of Birmingham.

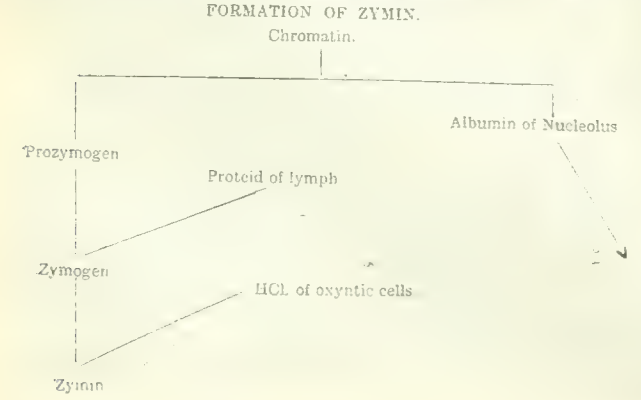
[After briefly referring to a communication made to the British Medical Association at Edinburgh, Professor Carlier expressed his views on the formation of zymogen as follows:]

As soon as the cell begins to part with its stored-up zymogen, the nucleus commences to produce at the expense of its chromatin a new antecedent substance—namely, prozymogen. The production of this substance is facilitated by the movement towards and the spreading out of the chromatin immediately beneath the nuclear envelope. This prozymogen must pass into the cytoplasm in a liquid form, as there is no evidence of it within the nucleus, and when poured out into the protoplasm it remains in the neighbourhood of the nucleus without being at once converted into zymogen, but remains as a compound of considerable stability, increasing in amount until the full complement has been produced. This stage is marked by the change in the reaction of the remaining chromatin, and no more prozymogen can be manufactured until a new supply of chromatin has been reproduced in the nucleus from some constituent of the cytoplasm.

As soon as the zymogen granules have become exhausted, the cytoplasm begins to take up material from the lymph, probably of an albuminous nature, as its appearance in the cell is marked by a change of reaction. This ingestion from the lymph of proteid material permits the rapid conversion of the prozymogen into zymogen, which is retained in the cell and not at once discharged, but retained until such a time as the nuclear chromatin shall have been completely restored.

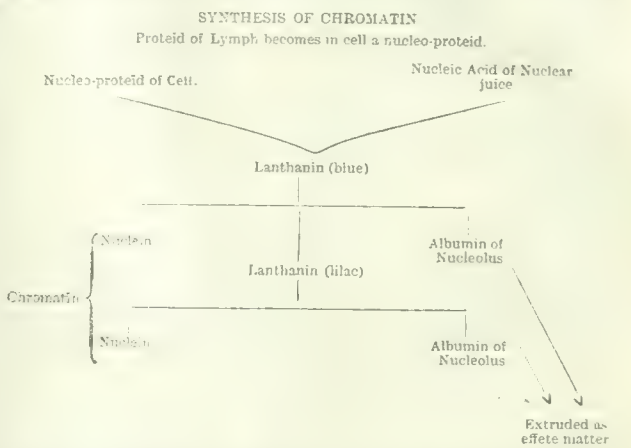
The renewal of chromatin is brought about by the entrance into the nuclear juice of an easily coagulable substance (probably a proteid material among other things) which is the meaning of the great increase in the number of the lanthanin granules at this time.

Chemically, chromatin contains nucleic acid and an albuminous substance. It is very stable, and acts as an acid to bodies less acid than itself, therefore it stains with methyl blue. In order that this stable body may pass into the cytoplasm, it is necessary that it should be rendered soluble, in this process some of the albumin is removed, and goes to form the nucleolus. This albumin acts as a base in presence of bodies more acid than itself, and therefore exhibits marked affinity for eosine. Being now useless in the nucleus it is extruded into the protoplasm, there to be disposed of. The more acid part of the chromatin passes into the cytoplasm, where it remains in an invisible state unless the phosphorus and iron it contains are unmasked and revealed by dyes.



When the cell begins to take up material from the lymph, the prozymogen quickly links on some albumin to become zymogen in the form of granules, nucleo-albuminous in nature, which is probably a still less stable compound than the prozymogen; it now reacts as a feeble base to eosine, and hence is stained red with that dye. It is also readily soluble when brought into contact with weak acids, either in the cytoplasm or elsewhere. In other words, both chromatin and zymogen have the same nuclein radicle, their difference in staining property and solubility depending on the amount of albumin linked on to it.

The repair of the nucleus can only be brought about by the passage into it of substances from the cytoplasm, which probably unite with nucleic acid in the nuclear juice to form a material analogous to chromatin, that is, the blue staining lanthanin. This material seems gradually to give up its nucleic acid to increase the chromatin, leaving the less acid material in the juice, which stains lilac. Finally also, this material seems to be removed, possibly passing to increase the size of the nucleolus, and may or may not be in sufficient quantity to induce some nucleolar expulsion during repair.



I think, therefore, that one must look to the nuclear juice to find the earliest indication of the synthesis by which chromatin is built up from simpler compounds. This is a beautiful example of nucleo-cytoplastic interchange, and a further proof of the nuclear origin of cell ferments. I believe that this necessity for repair of the chromatin sufficiently accounts for the phenomenon of the double secretory wave, the cell, though full of zymogen granules, not being in a fit state to secrete again until the nucleus has been completely restored, but when once this point is reached, there being no longer any further need of rest, the cell again starts secreting zymin and the nucleus prozymogen should any call be made upon its energies. We must therefore believe that to the usual functions ascribed to the chromatin of the nucleus yet another important one must be added in the case of specialised cells at least, namely, that of producing at its own expense materials for the well-being of the body as a whole.

The behaviour of the nucleoli during secretion is also worthy of note: during the early stages they increase in size, often attain considerable dimensions only to be cast out of the nucleus and melt away in the protoplasm, new ones being quickly re-formed to take the place of those extruded, and these again may increase in size during the period of repair and suffer a like fate.

From my own observation in the stomach and mammalian ovaries during activity, I have been forced to adopt the view of Pizon that the nucleolus is in part, if not entirely, composed of effete material which is tolerated in the nucleus for a time, but expelled either entire or after fragmentation as soon as its bulk renders it detrimental to the well-being of that body.

Professor R. J. ANDERSON asked whether Dr. Carlier's observations corresponded to the present ideas with reference to the function of nuclei—whether the substances taken

from the protoplasm were taken by way of food, and whether the substances yielded up by the nucleus were really excretions.

Dr. T. H. MILROY referred to the importance of the reaction of the granules in cells as a possible means of obtaining information as to nature of intracellular changes. The possibility of these granules being nucleo-proteid in nature had been referred to by Professor Carlier. There were many other things that made the speaker suspect that these were nucleo-proteid in nature. In the granules of leucocytes one could show, after the action of nucleic acid, a change not only in the reaction but also in the number and form of the granules. The speaker also referred to the possible *rôle* of granules as carriers of nutritive material from muscle to ovary or testis in the salmon (Miescher), and also to the eosinophile cells around mammary gland acini in subinvolution of that gland.

CILIATED CELLS IN THE CONVOLUTED TUBULES OF THE KIDNEY.

PROFESSOR CARLIER then described and demonstrated "ciliated" cells in the convoluted tubules of human and other mammalian kidneys.

True motile ciliated cells had long since been recognised in the kidneys of amphibia. Klein and others had described "ciliated" cells in the kidney of mammals, and Professor Carlier had been able to confirm Klein's statements, and in addition to find similar and hitherto unnoticed cells in the human kidney. Professor Carlier had made attempts in the lower mammals to detect motion in the "cilia" in question, but as yet without success. Until their mobility was definitely established, he himself preferred to style the cells "brush" cells, in accordance with German nomenclature, rather than ciliated cells, as they were generally termed in this country.

FATIGUE OF THE CEREBRAL MOTOR CORTEX.

[ABSTRACT.]

By A. G. LEVY, M.D.,
London.

IN this paper were described some of the more striking evidences of fatigue of the cerebral motor cortex which may be elicited by application of a faradic current of medium strength to a cortical motor centre, the contractions of the correlated muscle being recorded on a moving surface. It was established by control experiments that muscular fatigue might be excluded as a factor likely to complicate the results. The experiments were performed upon cats. If one stimulates the cortex uninterruptedly with a faradic current, the animal being under the influence of morphine, a curve is described which may be designated the cortex curve. There is an initial tonic contraction gradually attaining its maximum by summation of stimuli followed by a descent of the curve which is characterised by a clonic tendency. The actual progress of fatigue, as evidenced by the relaxation of the muscular, is comparatively rapid. The total duration of a curve rarely exceeds thirty seconds, generally it does not last so long. After induction of such a curve, the cortex is quite unexcitable to further stimulation, but recovers after an interval of repose.

In order to further test the fatigue of the cortex, a method of applying mild faradic stimulations of short duration at definite intervals was adopted. The short stimulations tend to minimise any risk of evoking reactions from other nervous mechanisms than the specified group of motor cells, and the intervals of repose serve to obviate any very profound disturbance of the cortical circulation. Commonly the duration of the stimulations was one or two seconds, and the intervals lasted as a rule two seconds.

By this method I have generally readily obtained evidence of cortical fatigue, but it is very much more gradual in its progress than in the curves produced by continued stimulation, as perhaps might be expected by reason of the intermitted periods of repose allowing some degree of recovery to take place, and probably for the same reason the total expenditure of energy is generally far greater.

Some of these tracings show a remarkably gradual and regularly diminishing cortex reaction, but in others the cortex fails by responding only intermittently and irregularly before it becomes actually played out. Not uncommonly, after the fatigue process has progressed to a certain degree, there is found a secondary rise of excitability which, in its turn, may fade more or less rapidly.

ON THE USEFULNESS OF THE TERM "FUNCTIONAL INERTIA OF PROTOPLASM."

By DAVID FRASER HARRIS, M.D., B.Sc.(Lond.),
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I VENTURE to call functional inertia that property of protoplasm whereby it contrives to remain in a functional *status quo ante*, notwithstanding that it has received a stimulus, or, having responded to the stimulus, it continues to exhibit its functional activity for a certain time after the stimulus—as a form of energy—has ceased to exist. I believe it will be useful and convenient as a term. In physical terminology there are two kinds of inertia—itself a "property" of matter: the inertia of matter at rest, or inertia of mass, and the inertia of matter in motion, or *par excellence* momentum.

Thus by reason of its inertia (of rest), we find it difficult to move a massive gate swing even on hinges of relatively small friction; there is not, in other words, an instantaneous response in the way of the gate moving when we give it a push. On the other hand, once the great door has been set swinging, it will move through a considerable angle after we have ceased to push it. This is due to its momentum or inertia of movement.

Living protoplasm furnishes us with examples of an inertia which might be called that of function: first, the functional inertia of resting protoplasm. This is the property of protoplasm which, being at rest—in the anabolic phase of metabolism—cannot be instantaneously caused to "change that state," that is, respond to a stimulus; the property, in fact, that underlies the familiar "period of latency," the time that must elapse between the moment of the application of the stimulus and the sensible demonstration by the protoplasm of its affectability. Thus all cases of latency of function come under this heading: The true latent period of muscular response, the latent period of vagus inhibition of the heart, the latent period of secretion of gastric glands, and of the pancreas after stimulation of their secreto-motor vagal fibres. Of course, the time occupied by the travelling of an impulse (due to stimulus) is not a case of functional inertia; thus reflex time, reaction-time, time of spinal or of cerebral delay, are not, as such in their totality, cases of functional inertia, though functional inertia may be a factor entering into their components; but it is functional inertia that causes the delay, after the stimulus has travelled to the given tissue, before the tissue begins to act in its own specific manner. Take as typical of the functional inertia of rest of protoplasm the relatively long time elapsing between stimulation of the vagus and a flow of pancreatic juice. As a term it seems convenient for expressing the undoubted non-instantaneousness of metabolic response to a stimulus capable of eliciting functional activity in protoplasm; and it differs in degree in different tissues; or in other words, the functional inertia of pancreatic protoplasm at rest is very much greater than that of muscular. The functional inertia of rest of non-striated muscle is somewhat greater than that of heart-muscle, and very much greater than that of skeletal muscle. The very variety of muscle which takes the longest time to have its activity brought out (longest latent period) is the one that "acts" for longest after the stimulus is withdrawn, is alive longest after blood-supply has ceased; great inertia of rest involves great inertia of movement, to which we may now turn.

Examples of that functional inertia which corresponds to the inertia of movement (momentum), the inertia that makes the wheel rotate long after you have ceased to spin it, are numerous.

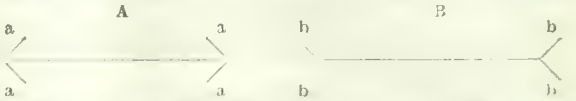
First, there is the familiar nerve-muscle preparation, which "acts" after being separated from its nutrient blood and lymph, the isolated (excised) bloodless heart of frog beating on a glass plate, the isolated nerve, as in the experiments of Waller and in those of Gotch, the growth of hairs after death of body; *post-mortem* peristaltic movements are all cases of

functional inertia—of katabolic momentum—activity after primary source of energy is withdrawn. [The cases of organs with defibrinated blood perfused through them, still performing their functions, are of course not cases of this, because here their metabolism is being constantly supported by nourishment applied under altered (artificial) conditions.]

All those cases, however, so insisted on by Heidenhain of organs and tissues continuing to perform functions after blood supply has been cut off, are cases of functional (katabolic) inertia, for example, glands secreting either in complete absence of blood or with extreme vaso-constriction—they continue to secrete in virtue of the molecular mobility impressed upon them potentially by previous anabolism, they continue to exhibit the potentiality for molecular vibration (function) after the source of that potentiality is withdrawn—this is functional inertia. Thus pure secreto-motor effects, that is, apart from the usual concomitant vasomotor effects, can only be called forth because protoplasm possesses functional momentum; when that momentum is spent, no more such results can be elicited.

Other cases of functional activity in avascular or post-vascular conditions will occur to one: for example, the power which protoplasm, deprived of blood, possesses of reducing (deoxidising) pigments—for example, methylene blue, ferric ferrocyanide—brought within its sphere of influence, is a case of katabolic inertia; the "animal" is "dead," but some of its protoplasm exhibits functional momentum. All examples of "*post-mortem*" manufacturing of enzymes, of animal heat, etc., would come under the same category. Functional inertia expresses itself in a slightly different manner in those cases in which an apparently single stimulus gives rise, not to one result but to a series of effects—just as, when by a single tap we set a jelly vibrating, it will continue by its momentum to oscillate for some time afterwards. For instance, Ritter's tetanus—due to the sudden return to normal from a hyponormal state of excitability in a nerve—is a case of apparently single stimulus causing an incomplete tetanus, a series of effects maintained by the functional inertia of katabolism. Again, the (Wundt's) tetanus that may arise from the sudden increase of a constant current is a case of the same phenomenon, a single stimulus outlived by a relatively long-maintained series of effects. Closely allied to these are the cases of tetanus following chemical and thermal stimuli, a single application resulting in a series of phenomena; it is a post-stimulant activity, this is functional momentum. Functional inertia may express itself in the maintenance of a certain rhythm of discharge of impulses, as Horsley and Schäfer brought out in their experiments upon the normal rate of discharge of cells of anterior cornu of the spinal cord. They showed that whatever was the rhythm of stimulation (provided it was 10 per second or more) artificially imposed upon the nerve tracts proximal to the cells, the rhythm of discharge was always 10 per second, not more. Here we have functional inertia expressing itself in the maintenance of a certain inherent rhythm of discharge of impulses;[1] no artificial rate of stimulation will accelerate the rhythm of discharge (provided the stimulation be below a certain intensity); the protoplasm of these cells has its refractory period or interval of "physiological insusceptibility." Its molecular swing is its own; you cannot accelerate it, this is functional inertia, the rhythmical expression of it. Cases of physiological insusceptibility are clearly examples of the functional inertia of activity, as for instance in the so-called "refractory period" in the cardiac cycle. During systole no one stimulus, however great, has any effect, and hence no series of such stimuli affect the heart in systole, that is, cannot tetanise the heart. In other words, during activity (systole) the katabolic momentum of the cardiac myoplasm is physiologically infinite as regards stimuli tending to produce further action, just as the forward push you might give to a railway train passing you would have practically no effect on it.

Turning now to examples in which the functional inertia involves consciousness as a factor, we have a good example of metabolic momentum in the positive after-image; the retino-cerebral (and conscious) effect outliving the time of application of the stimulus—post-stimulant retinal functional activity, in short. This is the forward oscillating of the jelly after you have ceased to tap it; but there is the backward swing too; there is the phase of the reconstitution of th affectable material whose psychic counterpart is the negative after-image: this is anabolic functional inertia. It is to this very property of functional inertia in retino-cerebral protoplasm that the beautiful modern illusions of movement are due in the devices known as kinematograph (biograph, mutoscope, etc.); the stimuli—namely, illuminated instantaneous photographs—are presented in a series, each presentation being separated by an interval of time, but the perception to which they give rise is not a series of jerks, but one of continuous and more or less smooth movement. In the psychic sphere the examples of functional inertia of movement are, I think, very numerous. A person appears taller than he otherwise does if his dress shows longitudinal striping. Our minds have the idea of extension up and down, and being, as it were, fully occupied with it, we carry it on unconsciously into our estimate of the person's height. Again, in the familiar illusion in connection with the diagrams A and B—



we judge line A shorter than B (when they are actually equal), because the short lines (a, a) give the notion of "backward," "returning on itself," the "end reached," and so on; and there having been set agoing, as it were, in the mind this notion of limitation, we carry it over into our judgment as to the length of the line A, which appears shorter than B, into the judgment of whose length the notion of "extension," "onward," etc., has been imported by functional mental inertia due to the short lines (b, b) suggesting the notions "onwards" and "outwards" from the ends of the line B.

But this well marked mental tendency to do what has been done before, to continue doing what you have just done, to yield to habit, to the familiar, etc., is nothing else than the expression of the functional momentum of psychic activity. Every day we have examples of it: some one is reading out of the newspaper to us; the expression "thirty or fewer" is used, nine out of ten persons will read "thirty or forty" before they notice their mistake. Oliver Wendell Holmes alleges that not one in ten people can read Judges xv. 16 correctly; the verse is, "And Samson said 'with the jaw-bone of an ass heaps upon heaps, with the jaw of an ass have I slain a thousand men.'" Nearly everone reads "jaw-bone" for "jaw" in the second clause. But examples could be indefinitely multiplied. Do not bigotry and fanaticism come under the categories of mental functional inertia of rest and functional momentum respectively? Are not superstition and an unenlightened dislike to change examples of inertia of psychic rest? It is owing, on the other hand, to the absence in the child-mind of both the inertia of rest and the inertia of movement, that its extreme suggestiblility is due. The child-mind maintains, for so short a time and in so slight a fashion, any one course of action or set purpose, that almost any fresh idea ("suggestion") from parent or playmate can turn it aside into a fresh channel, and that again can be easily supplanted by some other newer still.

There is so little mental inertia of rest belonging to the idea in possession of the mind that it can be easily supplanted, and the new idea has so little momentum that it can be easily turned out of its course for some other newer still.

Thus "a volatile nature" is one with little mental functional momentum; a "dogged temperament" is one with much. The great obstinacy of the uncultured, and the "fixed delusion" of the lunatic, are cases of pathologically developed psychic inertia of rest.

(*To be continued.*)

[1] Strychnine tetanus elicited by a single stimulus is another example.

LEPROSY IN THE PHILIPPINE ISLANDS.—It is stated that there are 30,000 lepers in the Philippines. It is believed that the disease was introduced in 1633 by a vessel from Japan, which brought 150 lepers to be placed under the care of the Catholic priests.

A CHAIR of Hygiene and Bacteriology has been established in the University of Athens. Dr. Savas, formerly Staff-Surgeon of the Greek Army, has been appointed Professor and Director of the Hygienic Institute.

AN ADDRESS
ON
TUBERCULOUS LESIONS FROM A CLINICAL POINT OF VIEW.

Being the Address in Surgery delivered before the Canadian Medical Association at Ottawa, September 13th, 1900,

By EDMUND OWEN, M.B., F.R.C.S.,

Surgeon to St. Mary's Hospital, and Consulting Surgeon to the Hospital for Sick Children, Great Ormond Street, London.

Mr. President and Gentlemen—Though the substance of the Address which I have the high honour of presenting to you may entirely fail to arouse in you any measure of satisfaction, yet I think I may, at any rate, claim your kind appreciation for its title. For it gives you the assurance that I am not going to ask you, even in your imagination, to pass any of this September day in that gloomy room in which Death is made to deliver up his grosser secrets; nor in that other place where, in an atmosphere of methylated spirit and oil of cloves, you are accustomed patiently to unravel the tangled threads of morbid tissues. My remarks will deal with tuberculous lesions as the Surgeon meets them day by day in hospital-ward and operating-theatre, and in private practice. And if I shall find occasion to ask you to go beyond these spheres, it will be to take you to some of those beautifully placed convalescent institutions in which, when full of gratitude for having triumphed over the distress of chronic disease, or the risks which are inseparable from its operative treatment, the tuberculous patient spends possibly the very happiest weeks of his life.

It is, I make bold to say, a good and wholesome thing for a surgeon now and then to get away from pathologists and morbid histologists—to play truant, as it were, from his unbending schoolmasters. In recent years there has been a little too much inclination to apotheosise the morbid anatomist. His brow has been decked even with roses, and now, standing high in his suit of sable, he looks upon the clinical surgeon as if his chief duty were to supply him with material.

In the title of my Address are the words "from a clinical point of view," and desiring to emphasise the fact that the word *clinical* related solely to remarks made and work done in the sick-room and in the theatre, I thought it well to call attention to its exact meaning. But on looking it out in "Liddell and Scott," I found to my dismay that κλινη was not only *that on which one lies, a couch or bed*, but, secondarily, a *bier*. The discovery somewhat disconcerted me. If a *bier*, why not a *mortuary-table?* At any rate the word *Clinical* is of wider signification than I supposed; so that the pathologist might have right on his side when he claimed that clinical instruction, begun at the bed-side, and carried, perhaps, into the operating-theatre, is not complete until he has written the epitaph.

Even on this side of the middle of the dying century, institutions were in existence in which much pathological work was actually done within the walls of the hospital itself. This, of course, we know to have been wrong. But surely we have now gone to the other extreme; the pathological laboratory is constantly getting further and further away from its source of supply. The pathologist is no longer a practitioner of medicine, his interest is not in the *case* but in the *subject*. Like the carpenter, he does not interest himself in *living* material; his thought is only for dead tissue. The surgeon sees the human tree during its life (and perhaps helps to fell it), but he now, unfortunately, rarely follows it off his estate. So with the student; he does his clinical surgical work at one time and in one place, and his pathological work at another, and he is unable, I regret to say, to follow any individual case, or any part of it, straight from the ward to the laboratory.

The present arrangement is, of course, incapable of alteration, but it is an unfortunate one for the student; and on his account it behoves the surgeon to do all that he can towards welding the pathological details of his cases with the clinical features, so as to represent to his class that the two aspects are inseparable, and must always be considered together. If, for instance, he is demonstrating a tuberculous knee-joint, he should, whilst discussing the clinical features of the case, explain precisely the histological changes that are taking place; and supposing that a resection or amputation is eventually resorted to, he should show on the fresh specimen in what respects the morbid conditions harmonise with or differ from the account which he had described. He should, as far as possible, make his teaching independent of his colleague in the laboratory, for the specimen which the latter takes out of a jar of formalin or alcohol is no more like the condition as it exists in the wards than canned salmon is like a fresh-run fish.

The clinical surgeon has sometimes been a little too much under the influence of the experimental pathologist and bacteriologist. When an important surgical problem awaits a solution which cannot be effected in the ward or on the operating table, the clinical surgeon turns to his enthusiastic and obliging friends in the laboratories who, in order to help him, straightway proceed with careful thought and gentle hands to sacrifice upon the altar of Hygeia some mongrel curs or a few of those tail-less rodents which, so far as I can see, have been provided solely for the use of the experimentalist; then, because such and such a thing happens in such and such circumstances in the laboratory to the dog or the guinea-pig, the pathologist is apt to assume that in different circumstances it must happen also in man himself!

When in due course the pathological and bacteriological Athanasius formulates his Creed, I am afraid that I shall be burned at the stake. But in saying this I trust that no one will jump to the conclusion that I would hinder experimental research. Indeed, I think it absolutely necessary, and I am strongly of opinion that the life of a man is of more value than that of many sparrows (or guinea-pigs), and that the clinical surgeon is deeply indebted to the experimentalist for much valuable collaboration. But if there is one matter more than another in which the work of the experimentalist has led to faulty generalisation from a clinical point of view, it is with regard to the course of certain tuberculous lesions. Nor will anyone think, I trust, that I would underrate the value of the work of the experimental pathologist; it certainly is not so, for it is to these workers that we owe our knowledge of the precise cause of diphtheria as well as of tuberculosis—of tetanus and erysipelas, and of many other serious diseases. And knowing the cause we have been enabled in many cases greatly to influence the course of the disease by treatment. Indeed, it would be almost impossible to over-estimate the practical value of experimental laboratory work both to the profession and to the public. Nevertheless, there are some of the public who, in their ignorant well-meaning, would once and for all stop such beneficent research. But stranger still, there are some members of our own profession in England who also try to get in the way of scientific progress. Fortunately, however, they have not the power of doing much harm!

Not long ago we used the words "strumous" or "scrofulous" when we were in a surgical corner; but to-day these indefinite terms are deleted from our nosology; indeed, they are devoid of scientific meaning, and we now call *tubercle* by its proper name, our patients reaping the benefit of our greater precision.

From the medical point of view an unusual amount of attention has lately been drawn to the subject of tuberculosis by means of excellent societies which have recently been organised to carry on a never-to-be-ended warfare against the disease. Taking its birth upon the Continent, the scheme has received a considerable amount of support in Canada, in the United States, in England and elsewhere, and its effect cannot be but for good.

Three Important Facts.

There are three great facts in connection with tuberculosis of which the public must be made fully conscious:

The first is that the disease is *communicable*. The truth of this fact we have ourselves only of late entirely realised. The public, therefore, must be allowed a little time before they generally accept it. But accepted it must be, and it behoves each one of us to do all that he can towards promoting its acceptance.

The second is that the disease is *preventable*. This follows almost as a corollary to the previous statement, and when the truth of it becomes fully understood how great will be the responsibility of those who wilfully disregard it.

The third fact is that the disease is *curable*. And as we are to-day considering certain surgical lesions of tuberculosis from a clinical point of view, I shall seize this opportunity of entering somewhat fully upon the question of curability.

THE CURABILITY OF TUBERCULOUS LESIONS.

A few years ago tuberculosis was regarded as a well-nigh incurable affection, for the word had been chiefly reserved for hopeless cases of pulmonary consumption, and of meningitis complicating certain chronic diseases. To call a surgical lesion, therefore, *tuberculous* was tantamount to signing the patient's death-warrant. It was in the public estimation a term of dreadful omen. But among the many uncertainties of our professional environment, one thing has of late become quite certain, namely, that tuberculosis is not necessarily of the intractable nature that it was formerly considered to be. So far as my practical acquaintance with the disease is concerned - and I have worked at a large general hospital, and at the largest children's hospital in London for a quarter of a century—tuberculous lesions are exactly what they used to be. But we know much more about them, and careful clinical study and microscopical and experimental work have enabled us to treat them more successfully, and, therefore, to warrant us in taking a much more hopeful view of them. But I would like to know if the surgical lesions of tuberculosis which are met with in your dry, bracing climate are just as we have them in Western Europe. Many of you have studied tuberculous lesions under your own bright skies and also in the mother country, whose borders are washed by the seas, and whose life is so greatly influenced by the Gulf-stream. From your cradle you have been taught that the sun never sets on the Empire of our dear Sovereign Lady, but I am afraid that when some of you have come over to us in a bad season you have wondered if there are not parts on which it never rises. Well, do you find that tuberculous lesions are exactly the same clinically in the two hemispheres? Every country has a climate, just as it is said to have a form of government, which is equal to its deserts: ours is a damp climate which exactly suits the soil and the race; but it is a bad one for the unhappy individual in whose blood the bacilli of tuberculosis are lurking, as well as for those who by heredity or surroundings have acquired that condition of tissue which renders it vulnerable by the mean bacilli of tuberculosis, and adapts it for their cultivation.

Sometimes when I have been going round my wards I have asked a visitor to note how large a proportion of the cases are tuberculous. Is it thus also in *your* surgical work? Do chronic tuberculous affections of the hip-joint, knee, spine, lymphatic glands shoulder, elbow, foot, and hand represent a very large proportion of the lesions which come under treatment by the general surgeon? Have you, in proportion, just about as much tuberculous disease in Canada as we have at home; and does it take the same course?

Much of my clinical work has lain amongst senior students: I come in contact with them just as they have left the laboratories and are proceeding to put what they imagine to be the "finishing touches" upon their professional education. They have spent many delightful hours in a pathological laboratory and in a white cotton smock; they have cultivated and even tamed bacilli; they have seen how potent they may be for evil, and they are firmly of opinion that if once such germs gain access to a suitable spot in a suitable individual, nothing short of the most vigorous surgical measures can suffice for the eradication of the disease and for the emancipation of the host. This is the students' bacteriological faith and except they act up to it their patients cannot be saved. Many young practitioners also hold that faith. Where do they learn it? Not in clinical surgery. The public also have begun to believe it: but the public will believe anything that they are told if only they are told it often enough. And if the statement is couched in semi-scientific or mysterious phraseology they seize upon it with all the greater avidity. Otherwise, how would bonesetters, vendors of patent medicines, and other quacks, qualified and unqualified, flourish like a green bay tree in a sunny corner of an arboretum?

But is the outlook in advanced tuberculous disease necessarily so hopeless in the absence of active surgical treatment? To answer this important question I will instance an imaginary case of a young man who, a year or so previously, hurt his back in a fall at a gymnasium. He has now pectoral neuralgias, and dull pains between his shoulder-blades and in his back, which have probably been ascribed to "rheumatism." Eventually the discovery is made that the third and fourth dorsal spinous processes are unduly prominent, and it is evident that the bodies of those vertebræ have undergone tuberculous disintegration. The disease is close behind the arch of the aorta, and the surgeon is unable to get at it. He cannot scrape it, and he cannot even irrigate it with germicidal lotions. I believe that there are some surgeons who would attack it if they could: *rien n'est sacré pour un sapeur;* but fortunately one cannot possibly get at it. What, then, is to be the future of this patient? Is he going to die the death, as the guinea-pig would in the laboratory? Most certainly not. Everyone here has acquaintance with such an individual, or if he does not know him personally he has seen him in the street. He is rather a short man with peculiarly high, square shoulders, and with a boss between them. And not only has he long since outgrown his tuberculous disease without any operative assistance whatever, but could we see him in his own home we might not improbably find him—and I say it with some regret—surrounded by a number of apparently healthy sons and daughters.

Such a case is one of great clinical importance: it shows that a man with an undoubted tuberculous lesion of the first magnitude can completely recover without having undergone any operative procedure. At the end of the 19th century it is somewhat unusual for any patient with any surgical affection to be allowed the opportunity of showing what he can do without submitting himself to operation, so that such an account as that which I have just instanced is not only important but actually interesting. One rarely hears speak now of the *vis medicatrix Naturæ;* surgical zeal has apparently rendered it not only obsolete but superfluous.

Another instance of the favourable course which severe tuberculous disease may run in the absence of active surgica interference, is seen in the case of old-standing hip-join disease, the boy actually "growing out of his trouble." The disease, let us suppose, began at that period of life when it is customary to send a boy to school, and his school-life was frequently interrupted and was continuously clouded by the affection. But he is now a young man at College, and though he walks lame and is precluded from taking an active part in athletics, still he is vigorous, and he has evidently and completely triumphed over his disease. I am not sure that have in clinical work ever before used the specious expression, "growing out of a disease;" and possibly I might not do so now if I thought that there were any students or unqualified persons present, for its adoption might prove unfortunate o even dangerous. It is a rather favourite expression, however amongst parents and other ill-informed persons when confronted with a child with a tuberculous lesion. Would they expect a garden to grow out of its weeds or a field out of its thistles? No; it is a popular superstition, but like most erroneous beliefs, it is founded on a substratum of truth. For, as a matter of fact, many patients do "grow out of" tuberculous disease, and, strange to say, sometimes most markedly so after a surgeon has made the clear pronouncement that without operation recovery is quite impossible. A boy for instance, has chronic tuberculous and suppurative disease of his tarsus; he is albuminuric and very ill. His able young surgeon says that unless the foot is removed the boy will die. This is an unwise thing for any surgeon to say, for he cannot possibly know for certain what is going to happen. But what *may* happen is this: The operation is declined, the child is put under the care of another practitioner who, though not so clever a surgeon, is, perhaps, older and a better man of the world. By good luck rather than by good management the disease clears up, and in a couple of years' time the boy is walking about with scarcely a limp. "See that boy?", says the proud father, "well, Dr. Omniscient wanted to cut off his foot, but his mother and I would not let him!" According to the rules of the game the foot, of course, ought to have been amputated; but Nature does not always play according to the rules, as the young practitioner sometimes finds out to his cost. *Knowledge* is the prerogative of youth, but *wisdom* should come with years.

I recollect that I have wandered from that case of chronic hip-joint disease; I was instancing it merely to say that

though the head of the thigh bone and the socket in which it worked have been quietly destroyed by a growth of tuberculous granulation tissue, so that the limb is greatly shortened, still, it is now, years afterwards, solidly fixed and fairly serviceable. The skin has remained unbroken and the man has completely trumphed over his disease.

In connection with this little batch of reports I would like to make a few disconnected statements, chiefly from a clinical point of view:

1. Chronic inflammation of a joint in a child or young person is always tuberculous—except in those very rare cases in which it is due to hereditary syphilis or osteo-arthritis.

2. Tuberculous inflammation may completely destroy a joint, and then leave it solidly and soundly synostosed, without the surrounding tissues or the skin having been implicated.

3. If tuberculous granulation-tissue breaks down into a fluid, that fluid is not *pus*, and the collection is not, properly speaking, an *abscess*—unless, by bad fortune, or by worse surgery, it has become infected by septic micro-organisms.

4. The fluid collection is not to be treated as an abscess—by incision and drainage, that is—but is to be opened and emptied, and scraped and cleansed of its unhealthy lining of granulation-tissue. Then the wound in the skin is to be completely closed by sutures; firm pressure is to be evenly applied, and the part is to be kept absolutely at rest. It is no news to most of you to be told that the success attending this line of treatment leaves, as a rule, little to be desired, or that for this important advance in practical surgery we are chiefly indebted to the patient researches of our friends with the smock-frocks and the guinea-pigs.

5. I have failed to discover that iodoform is of any peculiar value in the treatment of tuberculous lesions. At any rate I have long since discarded it, and I have not noticed any falling off in the results of my practice in consequence. Iodoform is an irritant and a poison; it is apt to be septic, as germs can grow upon it, but I have no knowledge of the truth of the statement that mushrooms have actually been cultivated on it.

Sometime since a lady was sent to me for my opinion about a tuberculous ulcer of the anus which a practitioner had long been treating with iodoform. She earnestly begged me to consider if I could not recommend some other local application, as she said that the smell of the yellow powder rendered her "socially objectionable." This was for her a very serious matter, as she kept a fashionable boarding-house, and whilst many members of her household seemed to notice the peculiar odour, some few of her young men "paying guests" actually appeared to recognise the drug itself.

I confess that I have a sort of feeling of sorrow for a surgeon who thinks that he cannot successfully carry on his practice without iodoform, just as I have for the lady who deems patchouli to be indispensable for her toilet.

The Forcible Straightening of Carious Spines.

The direct treatment of the angular deformity resulting from tuberculous disease of the spine, is a subject that a few years ago was thrust somewhat vigorously upon us, not only by articles in the medical papers, but by the reproduction of photographic representations of ghastly clinical procedures in the pictured journals of the lay press. This is scarcely the way in which one would expect solid surgical work to be advanced. One remembers that there was a somewhat similar outburst in the lay press, a few years ago, when the Koch treatment of tuberculosis was being boomed in Berlin. For this, however, the illustrious Koch must not be held responsible; he was hurried into bringing forward his work ere he had assured himself that the results of his injections justified their being regarded as *curative*. Immediately there was a rush to the German capital, and medical men lent themselves and their names to lay journalism and their portraits to the illustrated papers, passing glad to obtain notoriety in such a beneficent, or at any rate in such a popular, movement.

I do not know how it may be with you, but in Western Europe every new method or invention is at once greedily accepted and not improbably made the means of unmistakable advertisement. It does not much matter whether it is to turn out a real success or not, the point seems to be to have one's name associated with it whilst it is on the crest of the wave.

I say that I do not know how it may be with you, but I hope and I think that in your peaceful Arcadia you can practise your profession undisturbed by many of the anxieties, struggles, and temptations by which your less fortunate *confrères* are sometimes well-nigh overwhelmed in an older country. And long may it so continue with you, not only for the good of your honourable profession, but also for your own self-respect and happiness!

To affirm that the forcible straightening of carious spines must needs be unsurgical simply because it is a reversion to the ways of the bonesetter would be unfair, for the blundering bonesetter sometimes did good by chance. But at any rate he experienced none of that sense of responsibility which a surgeon must feel when he is proposing to straighten a tuberculous spine. It is obvious that in straightening the angle the tuberculous ulcer of the vertebræ must be widely opened out, and that if the neural arches have been already cemented together, this rigid support must be broken across. And, supposing that this is done, and that the patient survives the risks which are inseparable from the procedure, will the widened osteal ulcer duly heal and the neural arches again become solid? Possibly so. But—and this is the point—will there be no further recurrence of the hump?

Though I should be grieved to stand in the way of surgical advancement, I do not mind getting in the road and temporarily impeding traffic whilst we are taking time to consider the route, and are assuring ourselves that the stream of surgical practice is going in the right direction. My opinion is that the deformity of Pott's disease does not lend itself to operative treatment; that forcibly to interfere with it is to thwart Nature in her good attempts at effecting a curative consolidation in her own way—and Nature's ways, as a rule, are not unworthy of our respectful recognition. I think, further, that in a short time we shall hear very little about the method. This is what I *think*, but I am absolutely *sure* of this, that if a child of my own had an angular deformity of its spine, no person on earth should be allowed roughly to meddle with it. This is the only trustworthy way of testing one's opinion concerning the therapeutic value of speculative methods of treatment, and when a surgeon is planning some new scheme of procedure, it is a good thing for him to measure it out first with the golden rule—would he accept such and such a line of treatment for himself, or for those nearest and dearest to him? But surely, after all, each one of us actually does this, though some apparently have greater belief in heroic measures than others. At any rate, let us not be precipitate or over-enthusiastic with respect to each untried method as it is introduced; *festina lente*.

There is a small class of cases for which forcible rectification of the angular deformity may, perhaps, eventually be found suitable, namely, in a certain few of those in which pressure by bone, or by organising inflammatory deposits, has taken place upon the anterior surface of the cord, so that the patient has lost the power of voluntary movements in the lower extremities. In a few such cases I might perhaps be eventually inclined to resort to forcible straightening rather than to a laminectomy, an operation of which, by the by, I have but a poor opinion.

The humped back of spinal disease is of course an opprobrium, and it is small wonder that the surgeon is anxious to efface it. But if he had given proofs of such laudable anxiety at the beginning of his treatment of the case, he would probably have had no hump to deal with. I have no hesitation in saying that, even at the present time, the treatment of spinal disease in its early stages is too often half-hearted and sometimes actually blameworthy. It may be urged by way of excuse that at the very beginning of spinal disease the symptoms are so equivocal that the practitioner hesitates even to whisper his opinion, lest the disappearance of the symptoms should suggest that after all he is an alarmist. He knew that the girl had symmetrical pains in her chest, belly, and legs; he knew that she got easily tired at play, or that she was inclined to loll and lie about when others were full of activity, and that, regardless of nursery manners, she persistently sat at meals with her elbows on the table. He suspected spinal disease; he even told the parents that the girl should be kept quiet. He may actually have gone so far as to sketch out a plan of treatment which was designed to secure a certain amount of rest, but he was slack in seeing

that even this small measure was carried out. In short, he had not the courage of his opinions, and the case was allowed to drift.

Oh, for the spirit of Lady Macbeth, who called out to her weak-kneed spouse and fellow-practitioner,

Infirm of purpose! Give me the daggers!

I am a great admirer of Lady Macbeth, though I am fully aware that her character is not faultless. She was not the sort of person, perhaps, to be trusted with the dissection of tuberculous glands from the neck, or of operating on a case of torticollis, but how splendid she would have been in the treatment of early spinal disease! There would have been no half-measures with her!

The Treatment of Vertebral Caries.

If a practical surgeon were asked what is the proper treatment of early spinal disease he would unhesitatingly say *Rest!* Yes, absolute and uninterrupted rest. But there is only one way of ensuring such rest for a child, and that is by making him lie flat in bed. As I shall set forth directly, he is not to be kept actually *in bed* all the time; but in every case the treatment is at any rate to be commenced by imprisoning him in a pillowless bed. This, I feel sure, is the only way of successfully inaugurating the treatment of *rest*. But it is of little use if, when in bed, the patient is allowed to roll about, to sit up for his meals, or to hang over the side of the bed in order to pick up a dropped toy. The details of the treatment must be seriously considered, and the medical man must make it his business to see that they are loyally and thoroughly carried out. He must not content himself merely with giving his instructions; the parents will very likely want careful looking after, as well as the boy, or else as soon as the doctor has left the house, or at any rate after a short period of rest, the boy will probably be allowed to do pretty well what he likes, and so the case will quietly drift. What the circumstances demand is the presence of a sort of clinical policeman in the house, in the shape of a hospital nurse.

I know that there are all sorts of schemes, corsets, apparatus and braces (as my American friends call them) for treating spinal caries without keeping the patient flat. But they are all wrong; wrong in theory and wrong in practice; and if they could be cast into the bottomless pit, and every case of spinal disease could from the beginning be treated by continuous rest in the horizontal position, there should be no more of those unsightly humps to invite speculative interference. Of course, I do not include in my anathema Phelps's box-splint, the double Thomas's splint with head piece, or any form of cuirass which takes the child in bodily and keeps him flat. Indeed, the design of each one of them is well-nigh perfect; but what I want utterly and severely to condemn is the modern, ambulatory treatment of spinal caries. I think it probable that after all the stir about the new treatment of hump-backs by forcible straightening has subsided, the chief beneficial outcome will be that every surgeon feels himself compelled to be far more careful in the adoption of patient and efficient prophylactic measures in the early days of the disease.

As I look back through many years of active hospital practice, I cannot divest myself of the thought that the plaster-of-paris jacket treatment (of which, I confess, I have been a warm advocate) must be held responsible for much of the existing deformity of Pott's disease. Many a time have I seen the angular projection coming on and increasing when the child has been getting about in a plaster jacket or some other form of support.

Though the child is to be lying flat for six, twelve, eighteen or more months he is not to be shut up in a close bedroom; the windows are to be kept open and he is to be carried out every day into God's blessed sunshine—which is as necessary for warm-blooded animals as for plants; his muscles are to be maintained in good trim by massage, but he is to be kept all the time in the horizontal position. I know that in these days of activity and progress such unromantic treatment demands great confidence on the part of the parents in the judgment of the practitioner who insists upon it, but no little experience enables me with the utmost confidence to recommend it. Certainly it is not a new method. Hear what Sir Benjamin Brodie says upon the subject—this is the sentence at the very beginning of his valuable chapter on the *Treatment of Caries of the Spine*. "From the first moment, therefore, in which the nature of the case is clearly indicated, the patient should abandon his usual habits, and be confined altogether on his bed or couch."[1]

Naturally one turns also to see what Percivall Pott has to say upon the question of the treatment of the disease which bears his honoured name. And it is somewhat of a disappointment to find him so taken up with the subject of the *Palsy of the Lower Limbs* which follows destruction of the bodies of the vertebræ, that apparently he has not the inclination to discuss general measures. But it is all delightful reading; and even to-day it is brimful of clinical instruction What a relief it is to read a chapter or two of Pott, or Brodie, or Chassaignac after one has been poring over the pages of some modern text-book in order, as the saying is, to "keep abreast with the times!" Pott seems to put his red velvet sleeve around one's shoulders and to draw one aside from the bustling crowd of the "busy practitioners" (in whose peculiar interest modern text-books are quaintly said to be written), and to talk to one in the delightful manner of those whose literary style has not been spoilt by the habit of counting words on telegraph forms, or by compiling "copy" of precise length, and in a limited time, for medical publishers!

However, Pott has a few pregnant remarks to make about the treatment of the later stages of spinal disease, but I am afraid that they will not prove quite acceptable to most modern surgeons any more than my own poor words on that subject may do. Still, it is a great pleasure to know that one is in good company the while! Pott is talking about the treatment by "spinal-supports" and "steel boddices," and as I am telling you what he says I feel his velvet sleeve leaving my shoulders and actually passing around my neck. He says that though the use of these "pieces of machinery" is so general, and the vulgar prejudice in their favour is so great, he has long been convinced of their perfect inutility; and, moreover, that he is satisfied their effects are mischievous.

Speaking generally, the acceptance of a simple unromantic clinical method makes a far more serious demand upon the parent's or the patient's confidence than does the bidding of him to do some greater thing. This is understood and acted upon by the quack who, merely to create an impression, inserts in a lengthy prescription some rare and perhaps rubbishing ingredient which he thinks the apothecary will be unlikely to have in stock; who writes out a fussy dietary with unworthy attention to detail, and who, having failed to effect the promised cure, endeavours to preserve an unenvied reputation by sending his confiding patient to some far-distant watering place. In spite of education people love quackery now just as much as they did in the time of Elisha; and, strange to say, the higher they are in the social scale the more they seem to hanker after it. The brief clinical record which we have of the tuberculous lesion of the Syrian Lord Roberts admirably illustrates these points, for

Naaman was wroth, and went away, and said, "Behold, I thought, He will surely come out to me, and stand, and call on the name of the Lord his God, and strike his hand over the place."

No: if he was to undergo the water-cure it certainly should not be in a muddy Israelitish stream: he knew of a couple of of spas in Damascus which were really high class! "So he turned and went away in a rage." But being "a great man" he was not obstinate; so he changed his mind, followed out the instruction to the letter; and, to his intense delight, attained the reward which sometimes falls to those who do exactly what their doctors tell them.

Here, so far as this Address is concerned, the clinical aspect of the case of Naaman ends; but it still contains an important lesson from a public point of view. For when the gallant officer found that his cure was complete he went straight to his good doctor—whilst the tear of gratitude was still in his eye—and begged his acceptance of a substantial and appropriate reward for the great service which he had rendered.

If during the unromantic treatment of spinal caries the weather is very bad and the patient has to be kept in his bedroom, the window should be open, and if necessary and practicable a fire should be burning—not a poisonous, parching gas-fire, however, as one finds in so many bedrooms. The condition of the bedroom of town-dwellers in England is a subject which greatly needs reform. The bedrooms in many

London houses have recently become the recipients of a kind of back-wash of that unwholesome tide of æstheticism which was so much in evidence about twenty years ago. The walls are heavily papered and covered with fans, silly brackets and ornaments, dirty-looking hangings and rubbishing photographs. The table or chest of drawers is spread with an uncleaned cloth on which are arranged more photographs and dozens of nick-nacks—every one of which is a dust and germ collector. The furniture and window-hangings are heavy and the room is stuffy, dusty, and teeming with germs of all sorts, I should think, and not improbably with those of tuberculosis.

Such rooms should be stripped bare, fumigated and washed; the walls should be distempered, and the floors should be treated to a weekly scrubbing. A small iron bed, a washstand and a couple of rush-bottomed chairs would be about all the furniture allowed. This does not sound artistic, I admit, but it is healthy; and it is better to be healthy than "artistic"; but art which is not subservient to intellectual and physical health is false and unwholesome.

When much of my work lay with out-patients, I used to have the children with spinal caries placed in the empty boxes in which oranges are imported. Such a box could be bought for a few pence; and an old blanket folded on the bottom of it served as a mattress. In the process of evolution the orange-box became for certain children a Phelps's box-splint. By some such means a child with caries can be carried from one room to another or taken into the open air without risk, and by slightly tilting up the box or tray the child can see what is going on around him, and thus he feels that he is not entirely excluded from the bustling world—the bright and sunny world in which his happy friends are permitted the enjoyment of work and relaxation.

Some years ago a man of about thirty was brought to me with the stiff, straight back, and all the other signs of lumbar caries. He lived close to a cricket-field and it was early summer; so, having had him fitted with a rigid jacket, I told him to spend the whole day lying on his face and watching the games. Thus he was able to enjoy to the full those three essentials for the successful treatment of the disease, rest, fresh air, and sunshine, and he made a complete recovery.

But supposing that the child with dorsal caries has been kept lying flat from the very first, the surgeon cannot even then promise that no deformity shall ensue; because the vertebral ulceration heals by granulation-tissue, which is ultimately converted into fibrous and osseous scar tissue. This, in consolidating, of necessity undergoes a considerable amount of contraction, which may suffice to draw the front of the vertebræ together. The more extensive the ulceration the greater is the amount of cicatricial contraction, and the more pronounced the deformity.

Here, in Eastern Canada, it would especially ill-become me to speak lightly of the value of cod-liver oil in the treatment of the disease under consideration, but perhaps I may humbly suggest that there are other remedies which may be looked to in the circumstances. As a matter of fact, I am a great believer in the value of the oil, but I would not, against his will, insist on a child taking a dessert-spoonful or even a tea-spoonful of it three times a day, as the manner of some is. So forced down, it is apt to upset the stomach as well as to cause diarrhœa, and it may then be found floating upon the surface of the dejections.

We are all apt to get too much in the habit of prescribing medical and dietetic treatment by routine, ignoring the fact that constitutions are not equally made to pattern. You have heard of that submissive patient for whom Sir Andrew Clark had laid down a very particular and strict regimen which ended up as follows: "And after dinner one cigar; not a strong one; a single Manilla cheroot." In answer to the illustrious physician's inquiry, a week later, as to how the dietary had answered, the unhappy patient, whilst reporting that he was certainly better, pleaded to be let off the cheroot, which had invariably had the result of dispossessing him of his dinner. Possibly, however, after all, it was that cheroot which had played the most important part in effecting the gentleman's improvement!

Cream, butter, bacon, and other fatty foods are all good for tuberculous patients, but I think that there is nothing quite so valuable as cod-liver oil. And if a patient assures me that he *cannot* take it, I often manage successfully to administer it after breaking up a conspiracy amongst his olfactory, optic, and pneumogastric nerves. He probably confesses that he likes sardines; so, without his becoming aware of the trick, I have the preservative cotton-seed oil emptied away, and keep the sardine box filled with fresh cod-liver oil, of which every day he unconsciously takes a substantial amount.

For a tuberculous infant I order systematic inunction of the limbs and body with cod-liver oil every evening after the warm bath. I fully understand that this is apt to make the child "socially objectionable," but this is overlooked when the mother finds that he is improving, and steadily increasing in weight.

Prophylaxis.

The extermination-treatment of tuberculosis is a subject in which every member of the community should be encouraged to take a personal and intelligent interest. It is a great mistake to allow it to be regarded as merely "a doctor's question." And to wage a successful war of extermination the attack should be begun right early. It is a question which is of vital importance for the nursery, the school-room, the dwelling-house, the store, the office, the barrack—in fact it concerns every department and every period of life. The disease is everywhere, and its eradication is, therefore, a matter of concern to everyone.

It has not yet been shown that the offspring of tuberculous parents are born actually tuberculous, but it is beyond question that they are very prone to inherit a peculiar physical condition which renders their tissues an easy prey to the germs of the disease. The family history of many patients who at the threshold of life become the subjects of enlarged glands, or of chronic affections of the bones or joints, gives incontrovertible evidence of there being a marked hereditary disposition in the matter of tuberculosis.

So comes the question, ought there to be a law preventing those who are undoubtedly tuberculous taking upon themselves the responsibility of parentage? There are some who would answer this affirmatively and without hesitation. But what would the Church in general say to it, and what would the tuberculous curate in particular say to it? He would tell us that he reads in the very beginning of his Book that he is to "Be fruitful and multiply"; and, to do him justice, it must be admitted that in England, at any rate, he does his best to carry out this instruction to the very letter. But let him finish the injunction—Man was to be fruitful that he might *replenish* the earth. Now, though I do not claim to be in possession of peculiar knowledge on this point, I cannot think that The Great Architect of the Universe who "saw everything that he had made and, behold, it was very good," could have desired that this beautiful world was eventually to be stocked with so large a proportion of tuberculous rubbish.

I am fully conscious of the fact that in suggesting the desirability of preventing the marriage of tuberculous persons I am advancing a somewhat extreme measure; but surely the subject enters very largely into the question of prophylaxis. It is one, moreover, that will have to be deliberately approached and dealt with some day, and that, perhaps, soon. I do not think that our Houses of Parliament as at present constituted will be anxious to occupy themselves with an attempt to solve this question, vast as its imperial importance is, but I think that the County Councils which we have lately established through England might find the task not uncongenial. The question is fully as important as that of water supply, or of protection from fire, or of the isolation of infectious disease, each of which is already in their grasp. Indeed, I think that it falls in under the last heading. And what scope it would afford for discussion!

You will remember that when Horatio and Marcellus joined Hamlet on the platform after the appearance of the ghost, and showed great anxiety to know what had been the subject of his remarks, Hamlet tried to put them off by telling them that his communication had been something of a quite commonplace nature, on which Horatio ejaculated:

> There needs no ghost, my lord, come from the grave,
> To tell us this.

I do not know what space the "perturbed spirit" had traversed in order to deliver his Address to the unhappy Prince, but I have travelled about four thousand miles to deliver mine. And if you feel inclined to suggest that there was no

need for one to come so far to tell you that which I have just unfolded—that it is commonplace, and by no means worth my long journey or your short one—I shall conclude with Hamlet's retort:

> Why, right; you are i' the right;
> And so, without more circumstance at all,
> I hold it fit that we shake hands and part.

As a matter of fact, I have not, like the ghost, temporarily escaped for the purpose of this communication from a place where sulphur, burned in the open, is the ordinary domestic fuel, but I am here in response to a kind and highly flattering invitation from yourselves. I had, indeed, made arrangements for spending my autumn holiday, which certainly did not include two weeks of sea-sickness; but when I received your President's command (for so I regarded your invitation) I at once scattered my personal plans and considerations to the winds and decided to accept it. And let me tell you that coming to Ottawa is not to me like going amongst strangers, though it is my first visit here; it arouses in me a feeling somewhat like that experienced by a man who is taking a homeward journey, for my father was a Canadian. From my infancy I have had pictured to me, and have been encouraged to interest myself in, your forests and rivers, your orchards and wide fields of waving corn, your green pastures and still waters, and your lingering snows (kindly notice that I have put the snows *last*). I have also constantly heard from my childhood of the intense loyalty of the peoples of this great and fertile country, and of the loving devotion of its sons and daughters to that dear Lady who is, indeed, a mother to us all.

Lastly, let me tell you that your complimentary invitation came to me just after those dark days of trial in which an ambitious, a cunning, and an unscrupulous race had been endeavouring for ever to overwhelm us. Dark, indeed, were those days; but darker still would they have been had we not known that your strong-limbed and keen-eyed sons were standing by us in our time of need! It is certainly not for a humble individual like me to presume, or to attempt, to say what the feeling of undemonstrative England may be towards Canada—I allude to this and to other circumstances only that you may in some measure see with what pride I accepted your invitation, and in order that you may more fully appreciate the sincerity of the thanks which I herewith tender you for thus directing my course to Ottawa, with an inclination eastwards to Nova Scotia—and to Halifax—where, in 1812, my good father was born.

REFERENCE.

[1] *Observations on the Diseases of the Joints*, 1850, p. 342.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

CASE OF PUERPERAL ECLAMPSIA TREATED BY PILOCARPIN.

ON January 20th, about 1 P.M., I was called in consultation to a case of eclampsia persisting *post partum*. The patient, a primipara, aged 23, of slight build, dark complexion, and somewhat anæmic, had previously enjoyed good health, and convulsions had set in, without premonitory symptoms, with the commencement of labour about 6.30 P.M. on January 19th.

Labour was completed by rapid dilatation of the os, and a healthy male child delivered by forceps. The bowels were freely opened by croton oil ♏ij placed on the tongue, the patient being unconscious. Chloroform was given during the seizures, which some time after delivery commenced to increase in frequency.

When seen by me clonic convulsions were recurring about every five minutes. The temperature was 100°, the pulse 140, the extremities cold, the pupils dilated and equal, and there was strabismus.

Uræmic origin being suspected, pilocarpin $\frac{1}{10}$ gr. was injected pretty deeply into the arm, and a "poor man's bath" improvised by means of several hot-water bottles wrapped in pieces of blanket and placed under the bedclothes. Within ten minutes there was profuse diaphoresis, and warmth returned to the extremities. When this condition was thoroughly established the convulsions ceased, and did not return during the two hours I remained with the patient with the exception of one slight seizure near the end of that time which lasted but a second or two. It was intended to repeat the dose of pilocarpin if required, but the prompt response of the system to the very moderate dose already given made this appear unnecessary; so that treatment was continued by the hot moist pack and poultices to the loins. With the exception of a fair amount of salivation, no untoward effects followed upon the administration of the drug.

The patient made a good recovery; had no more convulsions; but did not recover consciousness until early on the morning of January 21st.

I think the details of this case may be worthy of mention, as I have seen but little mention by obstetric authors in favour of the use of pilocarpin for the treatment of such cases. It is possible that this drug may be of some diagnostic as well as therapeutic value in cases where uræmic or other toxic conditions are present.

A. INGLIS, M.D.,
Medical Officer of Health, Maybole, Ayrshire.

ANTISTREPTOCOCCUS SERUM IN ERYSIPELAS.

DR. HARRISON'S account of the successful treatment of erysipelas by antistreptococcus serum induces me to mention a case which occurred in my own work, and which, in the discussion on another subject (the treatment of pneumonia) I incidentally referred to at a meeting of the Clinical Society of Manchester, early in 1898.

Mrs. S., aged 63 years, when first seen on December 28th, 1897, presented an erysipelatous patch on the forehead extending down the nose. After a brisk saline aperient, she was ordered tinct. ferri perchlor. 30 minims every three hours, and the forehead was dusted with flour. On December 29th the erysipelas was extending up the scalp and across the forehead, and the temperature was 101°. Drachm doses of perchloride were given, and the forehead was painted with friar's balsam. On December 30th the erysipelas was spreading; the temperature was 103°. On this day I had to leave home, and handed the case over to my partner, Dr. MacMillan. The condition of the patient went from bad to worse. On January 3rd, 1898, the patient was delirious, and the temperature 104°. Dr. MacMillan called in Dr. Graham Steell, who, while approving of the treatment, feared the most grave issue. On the following afternoon, January 4th, I returned home, and found the patient quite unconscious; the temperature 105°; and pulse indefinable. The appearance of the head and face reminded one forcibly of what one used to see long ago in cases of bad confluent small-pox, the features, eyes, nose, mouth, and ears being quite indistinguishable. At 8 P.M. I injected 20 c.cm. of antistreptococcus serum (Burroughs and Wellcome), 10 c.cm. beneath either scapula. The patient was fed by the rectum. At 6 A.M. on the following morning, January 6th, I found consciousness returning. The temperature had fallen to 102°; 10 c.cm. of serum were injected. At 10 A.M. the patient recognised my voice; the temperature was 102°; 10 c.cm. serum injected. At 6 P.M. the patient was quite conscious, and endeavoured to articulate. She had taken some nourishment by the mouth. The temperature was 100°. On January 7th, at 8 A.M. the temperature was 99°, and there was a striking improvement in the head and face. From this time recovery was rapid and uninterrupted.

I greatly regret I cannot recollect and acknowledge the source from which I derived the suggestion to use the serum.

Manchester. H. LESLIE JONES, M.D., M.Ch., F.R.C.S.I.

AMERICAN THERAPEUTIC SOCIETY.—The American Therapeutic Society was organised May 1st, 1900, in Washington during the session of the Congress of American Physicians and Surgeons. According to the statutes of the new society, "reputable physicians who are engaged in the regular active practice of medicine, and who are interested in the study of materia medica and therapeutics in any or all their branches, and such reputable physicians not engaged in active practice but who are engaged in legitimate experimental therapeutic research, shall be eligible for active membership." The president is Dr. Horatio C. Wood, of Philadelphia; the vice-presidents, Dr. Howard H. Barker, of Washington; Dr. Reynold W. Wilcox, of New York: and Dr. Eli H. Long, of Buffalo.

REVIEWS.

SOME RECENT WORKS ON GYNÆCOLOGY.

The *Monats. für Geburtshilfe und Gynaekologie* has issued a special number,[1] compiled entirely by Professor Schauta's pupils in celebration of the twenty fifth year of his doctorate. The first paper is an important contribution comprising a critical review of 394 operations performed by Professor Schauta during the last twelve years, and will be found of great interest to abdominal surgeons. The total mortality from all causes works out at only 9 55 per cent. A paper upon the anatomical signs of defloration by Professor Haberda, the medical jurist of Vienna, is of great interest from many points of view; he quite establishes his contention that complete coitus may have occurred repeatedly, and still an intact hymen may be present; the width of the introitus vaginæ, and the dilatability of the hymen are more important points than the presence of laceration. Most of the papers deal with pathological subjects. Decidual polypus of the uterus is discussed by Dr. Hitschmann, carcinoma psammosum of the uterus by Dr. Schmit, tuberculosis of the female genital organs by Dr. Stolper, melanosarcoma of the labia by Dr. Torggler. Altogether this *Festschrift* must be said to be well worthy both of the distinguished Viennese gynæcologist and of the commanding position which the *Monatsschrift*, a comparatively young periodical, has obtained among gynæcologists of every tongue.

The new edition of Professor Dührssen's useful *Manual*[2] has been considerably strengthened by the addition of a short anatomical section, which will form a serviceable epitome for the practitioner whose anatomy has become rusty from disuse. Being unillustrated, it will however probably be skipped, for anatomy without diagrams forms the very dry bones of medical reading. Other alterations deserving notice are the description of the methods of intrauterine steam medication in endometritis, and the alterations devised by the author in the technique of vaginal fixation, designed, according to the translators' preface, "to prevent those dangers and obstructions which were very occasionally observed as a sequel of the older method." Altogether this edition is certain to maintain the position which Dr. Dührssen's *Manual* has attained in this country as an epitome of German gynæcological teaching.

The conclusions which Dr. Prosper Mossé[3] reaches in his work on the present state of knowledge with regard to the administration of ovarian juice are as follows: The ovaries produce, probably by the corpora lutea, a secretion having an important influence on the female organism during growth and the prime of life. Grafting ovarian tissue on to subjects who have been deprived of the ovaries has proved successful, but the practical difficulties in the way of carrying out this treatment prevent its systematic use. Contrary to Curatulo, who found oöphorectomy followed by a diminution in the excretion of phosphates (and traced a relation between this effect and the cure of osteomalacia), Dr. Mossé finds oöphorectomy followed by an increase in the elimination of phosphates. This increase is reduced to normal by the administration of ovarian tissue. Clinically, Mossé thinks the administration of the fresh gland is better than any kind of dried extract. Ovarian tissue produces the best results in the troubles attending the menopause, whether physiological or post-operative. Good results have also been obtained from ovarian medication in exophthalmic goitre. Mossé thinks it may be useful in some cases of amenorrhœa and dysmenorrhœa; in chlorosis it is far inferior to iron. The work is a clear and orderly summary of what has been observed.

Dr. William Pryor, of New York, in his essay on the *Treatment of Pelvic Inflammations through the Vagina*,[4] pleads ably for the advantages of this over the abdominal route for certain diseases of the genital tract. In the preface he states that "the spirit predominant throughout this book is that of an aggressive interference." There is a great deal too much aggressive interference, in the sense of extirpation of the uterus and other radical measures at the present time, and because an operation is safer when performed through the vagina, that does not prove that it is also justifiable. Dr. Pryor certainly goes too far when he says that "no man nowadays dare assume responsibility for the results following the morphine-poultice-douche treatment of pelvic inflammation. As surely is he responsible for the hysterectomy which will some day be the result of his timidity, as he will be for a death from the neglected disease." This is a deplorable sentence, for obvious reasons, and all the more so that he at once admits there are several conditions in which he invariably applies conservative treatment, one of these conditions being hydrosalpinx, double or single. The use of the curette, uterine drainage, and allied conservative practices, should always be studied, and Dr. Pryor teaches their use. But, granting that he lays fair stress on procedures which do not involve mutilation, we fear that too great prominence is given to "vaginal ablation" of the uterus. To take away the womb for inflammatory complications is at the best a very grave act, and it is questionable how far it should be taught in a textbook. In scientific teaching Dr. Pryor is no doubt accurate. Many will agree with him in the opinion that broad ligament "cellulitis" should be called broad ligament lymphangitis. He recognises the condition, but keeps it too much in the background. An expert can distinguish it at once from other forms of pelvic inflammation, but an observer unaccustomed to examine the female pelvic organs may easily fall into error. With his advocacy of an intelligent use of the curette and his distrust of opiates all will agree. The book concludes with a few useful formulæ and with short directions for sterilisation before operation, much more suited to the learner than are the intricate rules and regulations to be found in more ambitious textbooks.

Dr. Oscar Schaeffer's *Atlas*[5] maintains its reputation as one of the best manuals of gynæcology, where the reader is instructed by pictorial art rather than by the text. The coloured drawings are remarkably good, the microscopic woodcuts fair, the diagrams (mostly coloured diagrammatically, genital tract red, and intestines blue), perhaps less satisfactory, owing to their small proportions; still the bright red of the uterus in the sketches demonstrating displacements certainly catches the reader's eye, and so far teaches as clearly as would a much bigger uncoloured sketch. The chromolithographs from original water colours by the artist, Schmitson, are of very high merit. Thus Fig. 53, representing varicose veins and phleboliths in the broad ligament, is a triumph of faithful colouring, whilst Fig. 65, a uterus with myoma of the cervix, the whole modified in colour through anæmia, is perhaps a greater feat, since in Fig. 53 much depends on draughtmanship, whilst in Fig. 65 more depends on coloration, in this case peculiarly difficult. The letterpress, though holding a secondary place to the pictures, will give the student a very fair general idea of the elements of gynæcology.

Dr. Macnaughton-Jones has issued a new edition, the eighth, of his *Manual of Diseases of Women*.[6] He has recently attended the hospital practice of several distinguished foreign operators, so that much of the work of Doyen, Terrier, and others is to be found explained in clear English

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[1] *Monatsschrift für Geburtshilfe und Gynaekologie. Festschrift Herrn Professor Dr. Friedrich Schauta.* Berlin: S. Karger; and London: Williams and Norgate. 1900. (Roy. 8vo, pp. 492. M.12.)

[2] *A Manual of Gynæcological Practice for Students and Practitioners.* By Dr. A. Dührssen. Translated by John W. Taylor, F.R.C.S., and Fredk. Edge, M.D., F.R.C.S. 2nd English Edition, translated and edited from the sixth German Edition. London: H. K. Lewis. 1900

[3] *Etat Actuel de l'Opothérapie Ovarienne*, Etude Expérimentale et Clinique, par le Dr. Prosper Mossé, Ancien Interne des Hôpitaux de Toulouse. Paris: J. B. Baillière et Fils. 1899. (Roy 8vo, pp. 115, Fr. 3.50.)

[4] *The Treatment of Pelvic Inflammations through the Vagina.* By William R. Pryor, M.D., Professor of Gynæcology, New York Polyclinic. London: Rebman, Limited. 1899. (Demy 8vo, pp. 248. 110 illustrations. 8s. 6d.)

[5] *Atlas und Grundriss der Gynäcologie* [Atlas and Essentials of Gynæcology]. Von Dr. Oscar Schaeffer, Privat-Docent in Obstetrics and Gynæcology at the University of Heidelberg. Second Edition. Munich: J. F. Lehmann. 1899. (Crown 8vo, pp. 262, 207 plates (90 coloured), 62 illustrations. M. 14.)

[6] *Practical Manual of Diseases of Women and Uterine Therapeutics for Students and Practitioners.* By H. Macnaughton-Jones, M.D., M.Ch. Eighth Edition, Revised and Enlarged. London: Baillière, Tindall, and Cox. 1900. (Demy 8vo, pp. 947; 28 plates; 640 illustrations. 18s.)

in these pages. Indeed, for a handy collection of gynæcological novelties, whether in the form of operations or instruments, this work is unrivalled. Some of the beautiful plates from Howard Kelly's standard work have been introduced; let us hope that they will encourage British authors to cultivate this branch of high art. The author himself has done so, as several of the new plates testify. Thus Plate XXV really gives an idea of the appearance of a carcinoma of the ovary. No doubt when well drawn and well cut there is nothing like a woodcut for illustrating a scientific work, but woodcuts are often badly finished in this country; Dr. Macnaughton-Jones supplies us with a large series collected from standard works, and most instructive in showing how good and how poor different woodcuts may be. His own work is throughout good, especially when it is purely original, as in the clinical reports.

CORRESPONDENCE.

THE ADDRESS IN SURGERY.

SIR,—I have only most recently been able to read Mr. Frederick Treves's address on surgery delivered at the annual meeting of the British Medical Association held at Ipswich. The title appears to me to be a happy one, and the address, which deals with the past, the present, and the future of the surgeon, is of an erudite character and very pleasant reading.

My object in asking for a short space in the JOURNAL is to draw attention to what Mr. Treves says as regards the employment of anæsthetics, and especially to emphasise, as one of the important gains of the 19th century, the employment of local anæsthesia which Mr. Treves, no doubt for excellent reasons, did not think it necessary to specifically refer to. The wonderful assistance and freedom from mental anxiety which the hypodermic employment of solutions of cocaine or eucaine give to the operating surgeon in the performance of many minor and a selected number of major operations is one of the boons for which those who pioneered this method of enabling operations of a local character to be painlessly performed have to be gratefully thanked.

Without going into particulars I may state that within the last three weeks I have performed oöphorectomy successfully in a stout female, local anæsthesia only being resorted to.—I am, etc.,

Wolverhampton, Aug. 18th. T. VINCENT JACKSON.

THE COVENTRY PROVIDENT DISPENSARY.

SIR,—We enclose a copy of a letter we are sending to-day to Dr. Saundby on the subject of the Coventry Provident Dispensary. We should be much obliged if you would insert it in the BRITISH MEDICAL JOURNAL in order that your readers may hear our side of the question.—I am, etc.,

WILLIAM FLETCHER,
pro The Staff of the Coventry Provident Dispensary.

Coventry Provident Dispensary.

Dear Dr. Saundby,—As you have again been led into an expression of opinion on the Coventry Dispensary, we think it desirable that you should be in possession of a few facts about the institution, of which we can produce abundance of proof when required, so that you may not be misled by the untrue statements of Dr. Phillips and his friends.

If the actions, speeches, and letters of anyone who is opposed to the institution (to quote the words of your letter in the BRITISH MEDICAL JOURNAL of September 1st) were characterised by truthfulness and an earnest desire to assist the staff to bring the institution into a line approved of by the profession generally, much more would have been effected in the way of reform; but when the avowed object, as expressed by Dr. Phillips, is to "bring the staff on their knees and to smash the institution," it is not to be wondered at that there is an absence of that cordial co-operation throughout the whole profession in Coventry towards a common end, which is desirable.

FACTS ABOUT THE INSTITUTION.	STATEMENTS BY THOSE OPPOSED TO THE INSTITUTION.
The number of members at present is between 18,000 and 19,000, and has no time exceeded this. The population of Coventry about two years ago was 63,000. By the annexation of an adjoining district last year it is now 73,000.	"The Coventry Provident Dispensary contains 25,000 members out of a population of 50,000"—Mr. G. Jackson, reported BRITISH MEDICAL JOURNAL, May 12th 1900. "It had then (1892) half the population of Coventry on its books: something like 25,000."—Dr. Phillips, Association meeting, reported in BRITISH MEDICAL JOURNAL, August 4th, 1900. Is it reasonable to suppose that 25,000 people out of a population of 52,000 would have belonged to this dispensary if active canvassing had not been carried on.—Dr. Phillips, September 1st, 1900.
No canvassing has ever been allowed by the institution. This is vouched for by the oldest member of the staff.	Canvassing is actively carried on.—Mr. G. Jackson, in BRITISH MEDICAL JOURNAL, May 12th, 1900.
There is no wage limit, though we still hope to get one. But every month the admission book is placed before the staff at their monthly meeting, and if exception is taken to any applicant, the Committee appoint two of their number to inquire into the circumstance, and if undesirable they are refused admission. The rules of the institution definitely state that the institute is for working men, their wives and families, and such others as cannot pay ordinary fees.	There is no wage limit, and members are admitted without regard to their earnings or social position.—Mr. G. Jackson. The benefits of the Coventry Dispensary are not confined to working men, as in the case of friendly societies, but are extended to any one who cares to join.—Mr. F. White, BRITISH MEDICAL JOURNAL, September 1st, 1900.
The only rule in this institution referring to consultations is as follows: "Rule 16.—The medical officers in cases of danger or difficulty shall if they think it necessary, or if the patient so desires, call in for consultation any or all of the medical staff or any specialist, the specialist's fee only to be paid by the member."	I should like to point out the rule in the Coventry Dispensary as to consultations. If a patient requires a consultation he is told that there are six doctors on the staff; he can have any of these without remuneration, but no other doctor in the town, even upon payment, though a doctor from a neighbouring town can be called in.—Dr. Phillips, September 1st, 1900. The members of the profession in Coventry belong, with one or two exceptions, to two camps, the adherents of each never meeting in consultation or otherwise to discuss matters in a friendly way.—Dr. Moore's address as President of the Birmingham and Midland Counties Branch of the Association, BRITISH MEDICAL JOURNAL, July 21st, 1900.
The whole of the money received from members' payments is divided amongst the medical officers after the annual expenses have been paid. The only money which has ever been used for investments or for the purchase of property is that which is derived from legacies and interest on legacies.	We object strongly to a condition of things whereby the medical profession is exploited for pecuniary gain. This is proved from the fact that surplus funds are not all divided up amongst the profession, but money has been invested in mortgages and property in addition purchased.—Dr. Rice in BRITISH MEDICAL JOURNAL, September 8th, 1900.

Is it not very contemptible of Mr. F. White to keep referring as he does in his letter in the JOURNAL of September 1st to faults in the institution, such as "publicly extolling their medical staff and the drugs they supply, and publishing the number of bottles of medicine made up week by week in the local papers," when he well knows that for many years nothing of the kind has been done? Is it any good trying to get reforms if the faults of years ago are constantly being unearthed and published in letters in such a way as to convey the impression that they still exist?

Dr. Phillips, in his letter of September 1st, says the rule of the Coventry Dispensary as to consultations is that a patient is told there are six doctors on the staff he can have, but no other doctor in the town, even upon payment. Can any sane person interpret the rule (16) quoted above to have that meaning? It simply makes no reference to the other doctors in the town, and as a matter of practice the members of the staff are quite willing to meet, and do meet, those other medical men of the town over dispensary patients whom they would meet in their private practices. Dr. Milner Moore knows well that

this is the case in spite of his statement as President of the Birmingham and Midland Counties Branch, quoted above. And he frequently meets us in consultation.

Dr. Phillips, in the *Lancet*, August 25th, 1900, says: "The reports of their (*Lancet's*) special commissioner, Mr. Adolphe Smith, were culled from the local press and the practitioners of Coventry, those on the dispensary staff included, and that they were masterly *resumés* of the whole situation." We say most emphatically that they were nothing of the kind. They were one-sided statements in which everything in favour of this institution was omitted, whilst statements which were contradicted by us, and were easily capable of being proved untrue, were accepted and published in his report.

Dr. Rice's "demands" contained in his letter of September 8th are not likely to have much weight with us as his "ways" do not commend themselves to us; years ago he commenced to attack the institution by means of letters in the local press. Later, when a vacancy occurred on the staff he applied for the appointment but was not successful, after which he resumed his attacks.

No doubt the ultimatum which he proposes to present to the consultants of Birmingham "whether in the future they are prepared to uphold the honour of the profession or the interests of their pockets" will receive the attention which it deserves, but to quote the words of your letter of September 8th, "We cannot see that it advances any cause to make charges that are so easily proved to be false and that cause not unnatural irritation in the persons who are the objects of them." This is exactly what we complain of, and we are getting heartily sick of contradicting untruths, though we still continue our endeavour to get more reforms.

Would it not be better and fairer if the Council of the British Medical Association would draw up some rules to be complied with by those who wish to hold public appointments and at the same time retain their membership, instead of singling out one body of men like us to be pilloried for defects which exist in so many old institutions like ours, merely to satisfy the personal animus and jealousies of a few men who have no desire to see the institution reformed? We are sending a copy of this letter to the British Medical Journal for publication. Apologising for its length,—We are, etc.,

D. McVeagh,
Charles Davidson, M.D., C.M.,
W. J. Pickup, M.D.Lond.,
T. A. Hird, M.D.,
John A. Loudon, M.B., C.M.Edin.,
William Fletcher, M.B., B.C.Cantab,
} The Staff of the Coventry Provident Dispensary.

September 10th.

Sir,—I hope the profession in Coventry does not endorse the language of Dr. Richardson Rice, when he says that he will give "the consultants of Birmingham an opportunity of deciding whether, in the future, they are prepared to uphold the honour of the profession or the interests of their pockets." May we put aside for the moment the honour of the profession, which does not appear to be in question, and remember that this is a matter of pounds, shillings and pence, in which a section of the medical profession in Birmingham is to be asked to make a definite pecuniary sacrifice in order to help the profession in Coventry to raise their fees? I have already stated that I have every belief in the willingness of the medical profession in Birmingham to give the most careful consideration to any application coming to us from the profession in Coventry, but language of this sort does not help matters. It makes one wonder whether the failure hitherto experienced by the profession in Coventry to obtain the desired changes in the organisation of the dispensary may not have been due to the unconciliatory—indeed I might say the discourteous and quarrelsome—temper displayed by those who unfortunately are put forward as their spokesmen. There are many men in the profession who urge with incontrovertible truth that no boycotting resolution would justify a refusal to render assistance in an urgent case, and therefore there is always a loophole by which those who do not wish to be bound by it may escape. If the scheme is to succeed there must be a strong unanimous feeling that the reforms asked for are wise, moderate, and just, and that those who ask for them are animated by a genuine desire for reform, and not by animus against an institution or the persons connected with it.—I am, etc.,

Birmingham, Sept. 11th. Robert Saundby.

Sir,—Absence from town has prevented me from replying to Dr. Saundby's remarks on my speech at Ipswich *re* the Coventry Provident Dispensary, which appeared in your issue of August 18th. I trust, however, you will permit me to protest against my speech being characterised as unfair. Having regard to the fact that the action of the medical staff of the Coventry Provident Dispensary had been the subject of adverse criticism at previous general meetings of the Association, and that the subject was referred to by the Council in their report which was then under discussion, I beg to submit that my remarks were amply justified. Even if the great friendly societies have no wage limit their case is not, as Dr. Saundby suggests, on all-fours with that of the Coventry Provident Dispensary.—I am, etc.,

Gibson Square, N., Sept. 12th. George Brown.

Sir,—Dr. Edward Phillips's letter reveals a very anomalous condition of affairs at Coventry. We are told that out of a population of 52,000 no fewer than 25,000 are members of the Provident Dispensary, and that this institution is a charitable one, and yet some of these members are so well-to do they have each actually paid as much as 10, 15, and 25 guineas for the services of consultants.

Dr. Saundby, in his reply to this letter, does not say whether he does or does not approve of Birmingham consultants meeting the medical officers of this institution, but contends for the General Medical Council taking action rather than the Council of the British Medical Association, which has acted so feebly in the matter during the last eight years.

Dr. Saundby takes shelter under the excuse that there is no wage limit amongst clubs. This, I take it, is special pleading and shirking the question, and I insist that there is nothing like the abuse in clubs as to improper persons as in dispensaries, and there is this other consideration that the latter clear away the whole of the families, whereas in clubs the doctor has the benefit of the families as private patients. It is not so much the existence of an actual wage limit as whether there is flagrant abuse of the institution.

Again, in clubs the candidates are healthy men when they join and are only admitted at the option of the doctor after his examination, whereas the families in dispensaries all join; strong and weakly of all ages are admitted without examination.

If such institutions as these were restricted to the really poor they would be beneficial to the profession in ridding it of bad payers, but the fact is the thrifty who are well able to pay ordinary fees, who are always on the look-out for what is cheap, avail themselves unblushingly of this method of saving doctors' bills, and being always regular in the payment of the nominal, trifling contributions they are allowed to remain and are catered for, and in many cases canvassed for. The poor, on the other hand, are not canvassed for and remain outside, and in such a place as Coventry must fall to the lot of those doctors outside the dispensary, constituting a source of worry and loss.

As Dr. Phillips tells us that there are 6 medical officers for 25,000 patients, it would be interesting to know if they are allowed to engage in private practice in addition to attending an average of about 4,200 each. He also might tell us of the different classes of people who are members, such as property owners, publicans, shopkeepers, etc.

After hearing Dr. Saundby's dealing with the question at Ipswich and reading his letter last week, I cannot see that Dr. Phillips can depend much upon his help if, as the former suggests, the matter is brought before the Birmingham Branch of the British Medical Association.

I do not agree with Dr. Saundby that if the Coventry medical officers were threatened with expulsion from the Association they would therefore resign their membership. If they did they would show at once they had no case. No member of the Association would vote for their expulsion until they had had the opportunity of defending themselves and fairly stating their case and position.—I am, etc.,

Manchester, Sept. 4th. G. H. Broadbent.

THE INDICATIONS FOR INTRANASAL TREATMENT IN EAR DISEASE.

SIR,—I regret that owing to my forcedly hurried departure from England, and prolonged absence from London, I have hitherto omitted to supply you with an account of the substance of my observations at the termination of the discussion, in the Section of Laryngology and Otology at Ipswich, on the above subject. In view of the great practical importance of the subject, I trust that I may be allowed to atone for my omission in this letter, and to supplement the remarks attributed to me in the BRITISH MEDICAL JOURNAL of September 8th.

I concur with Dr. McBride's division of cases of progressive deafness in adults into two typical classes: (1) Those due to stapedial ankylosis, on the one hand; and (2) those due chronic middle-ear catarrh (that is, hyperplastic catarrh of the intra-aural mucous membrane), on the other. I believe this is essentially correct, and that the objective appearances of these types are those which Dr. McBride described. There will not be probably a great difference of opinion as to the non-effect of intranasal procedures in pure cases of the first type. But the vast majority of cases met with in practice are of the hyperplastic type, or sooner or later of the mixed variety, in which there are both hyperplastic and ankylotic changes, and it is as to the hyperplastic and mixed cases that the combat rages as to the value or otherwise of intranasal procedures. *Imprimis* it is not only a question of curing deafness, but of staying the progress of a hyperplastic aural catarrh, and so of delaying or arresting the advance of an already initiated deafness.

Most of the cases of adult deafness seen by the specialist, in my experience, are unfortunately of such long standing that structural changes of a hyperplastic character have supervened in the middle ear, which changes are practically inaccessible and therefore not susceptible of removal. In such long-standing cases it is seldom possible to promise the patient that any improvement in hearing would follow any treatment, provided, of course, that cerumen could be excluded. But in all such cases (in which any hearing is left), if the hearing power is variable and fluctuating, if it gets worse with a head cold, if head colds are frequent, if the membrana tympani is indrawn, injected, or woolly and thickened, and if, in association with nasal stenosis, there are other evidences that the stenosis is acting injuriously on the patient, I have formed the conclusion that in such cases the patient ought to have the benefit of the chances afforded by clearing up the nasal stenosis—one of the most important factors in the recurrence and persistence of the so-called head colds.

It should invariably be made clear to the patient that no improvement in hearing could be guaranteed as the result of nasal operation, though not infrequently improvement follows. This caution is always most essential, for patients frequently expect so much more from an operation than in the nature of events is possible.

My experience has perfectly convinced me that the clearing up of nasal stenosis is the direct cause of such a diminution in head colds that the hyperplastic catarrh in the nose and ear is thenceforward less frequently aggravated by them, and that the deafness either remains stationary or its former rate of increase is delayed, other things being equal. In other words, the progress of the chronic hyperplastic aural catarrh and deafness is arrested or retarded after, and as a result of, clearing up the nasal stenosis. Added to this, in many instances I have observed such an absolute diminution of the signs of middle-ear catarrh and improvement in hearing; and in a small percentage of cases an extraordinary recovery of hearing power and of translucency of ear drums. Perhaps Mr. Cresswell Baber's recommendation as to the inflation test may assist us in the future to determine beforehand which cases are more likely to improve in hearing from intranasal operation; but as previously stated, it is my opinion that the probability of improvement in hearing should not at present be held out to the patient as an inducement to submit to operation, for in that respect the failures would exceed the successes. But at the same time I strongly maintain the probability of arresting and delaying the progress of an already existing and progressive hyperplastic catarrh, and so saving what hearing remains, and that in a degree shared by no other means of treatment. The great object of our discussions is the elucidation of truth so that we may know what to promise our patients as probable, what as possible, and what as impossible as the result of treatment. By so maintaining the most rigid exactitude in prognosis we cannot be blamed either for raising false hopes or for discouraging them from undergoing what is calculated to benefit them. This causative relation of nasal stenosis to hyperplastic catarrh and deafness would appear to be a good working hypothesis, for it is one with which all the leading facts are in complete agreement, while the exceptions are only apparent and capable of explanation. Dr. McBride, Dr. Tilley, and Dr. Jobson Horne have called attention to some of these latter, which were anticipated and an explanation tendered in the introductory address to the Section.

That curing nasal stenosis does not cure the structural changes of advanced hyperplastic catarrh of the middle-ear is in no way opposed to the hypothesis that nasal stenosis is one of the leading factors in initiating, keeping-up, and increasing hyperplastic catarrh in the nose, Eustachian tube, and middle ear; nor does the fact that advanced hyperplastic catarrh is not capable of removal imply that it is not capable of further aggravation and intensification on continued action of the exciting cause. It is by no means assumed that stenosis is the sole cause of hyperplastic catarrh, or that it must necessarily produce deafness at once. Experience shows that the deafness may only come on later in life, for example, when gouty inflammatory tendencies are superadded to a stenosis which in youth did not suffice to break down the vasomotor control of the nasal, Eustachian or aural mucous membranes, and so initiate congestive, exudative, and hyperplastic changes. Or influenza, or weak health may form the last straw, and precipitate a catarrhal inflammation in a region prepared by the adverse influences of stenosis.

It is true that the connection is not capable of mathematical or experimental demonstration, and that the evidence on which it is based is inductive from a large number of clinical observations in which respect it does not differ from the majority of clinical inferences. With reference to Mr. Baber's inflation test as an indication for operation for curing deafness I would submit that while a negative result might negative operation for improving hearing, it would not negative operation with a view to arresting a progressive hyperplastic catarrh. Mr. Baber raised the question of the criteria of nasal stenosis and the measurement of diminished air tension. For my own part I do not think that at present this can be expressed in physical measurements. What determines whether there is stenosis or not is whether in any given individual the nasal air passages can admit sufficient oxygen for the needs of all the vital processes without creating a departure from the normal variations of air tension in the nasal chambers. This amount of oxygen will vary with the weight of each individual, with his state of rest or activity, with his position (erect or recumbent), with the energy of his vital processes and other circumstances such as temperature of air, nature of food, etc. If the ingress for oxygen is insufficient, either mouth breathing takes place, or objective signs are observed, among which are undue collapse of alæ nasi on inspiration; stuffiness of nose—perhaps only at night or on exposure to slight changes of temperature—and many others. These must at present be regarded as the criteria of stenosis. I do not agree with Mr. Baber in thinking that diminished air tension during inspiration is compensated for by increased air tension during expiration. For among the first effects of nasal stenosis is increased vigour of respiratory movements, hence diminished intranasal air tension; hence collapse of alæ, which further aggravates stenosis; whereas in expiration there are no soft collapsible valves to act like the alæ nasi do in inspiration, and intensify the stenosis, and so augment the air tension. Abnormal expiratory increase of air tension only takes place occasionally when sudden and violent expiratory blasts are made, as in blowing the nose, and these Mr. Richard Lake apparently regards as the chief cause of mischief in stenosis. Dr. Dundas Grant uses the term "negative pressure" to describe the diminished air tension of stenosis, and Dr. Holbrook Curtis objects thereto, suggesting instead the term "rarefaction." Though the terms positive and negative, applied to air or anything else,

are well understood by logicians and mathematicians, it is perhaps hardly the best term in this connection, especially since "diminished air tension" and "rarefaction" are available, terms derived from the nomenclature of pneumatics, of which this is one of the phenomena, although occurring under biological conditions. Summing up the views of the different speakers, while Dr. McBride appears sceptical as to the influence of nasal stenosis *per se* in ear disease in adults, Dr. Watson Williams boldly affirms the direct negative. All the others in varying degrees recognise that nasal stenosis is a factor to be considered (however it may act), and that it is necessary to deal with it in the treatment of certain forms of ear disease. In conclusion, may I again point out the grave inexpediency of applying the ambiguous term "experimental" to any rational attempt at relief of disease as calculated to do infinite harm to the advance of scientific medicine and surgery as well as to the profession? In this country the prejudices of the uninformed are easily excited. They read into the term "experiment" what is not intended by those who injudiciously employ it in this connection.—I am etc.,

Welbeck Street, W., Sept. 9th. SCANES SPICER.

THE SURGICAL TREATMENT OF NASAL INSUFFICIENCY.

SIR,—Please be good enough to notify a serious error which has crept in amongst the illustrations of my paper on the Surgical Treatment of Nasal Insufficiency in the BRITISH MEDICAL JOURNAL of September 8th, pages 654-5. The description under Fig. 10 refers to Fig. 12, and *vice versâ*: but the shears represented in Fig. 12 are curved on the flat. Those, however, which were intended for illustration, and are described in the text, are perfectly flat and straight. As for Fig. 13 the special angular punch forceps, of which I furnished an illustration, are not bent obliquely at the beak, but turned up at a right angle.—I am, etc.,

Welbeck Street, W., Sept. 9th. L. HEMINGTON PEGLER.

BLACKWATER FEVER AND MALARIA.

SIR,—As I was unfortunately not able to be present at the meeting of the Association at Ipswich, I shall be much obliged if you will allow me to make a few remarks in reference to the discussion which followed the reading of my paper on Blackwater Fever. It is evident from what Dr. Manson and Mr. Rees are reported to have said that there are certain points in connection with the relation of pigment to malaria which deserve to be cleared up and which are capable of solution. If the bearing of these points had been kept in view, the remarks of these gentlemen would probably have taken a different direction.

A careful study of the exhaustive writings of Bignami and of the tissues in five cases of fatal pernicious malaria has led me to believe that while the mere presence of pigment in the spleen and liver only determines that malarial fever had been present some time before death, the presence of pigment, distributed as it is seen in the drawings which you so liberally printed *in extenso*, shows that malarial fever existed very shortly before the death of the patient. Mr. Henderson's careful drawings will enable those observers who have examined microscopically the tissues of patients who have died from malarial fever, and of patients who have died from some other cause after having recovered from malarial fever, to judge whether my opinion is borne out by the facts. The BRITISH MEDICAL JOURNAL will carry these drawings into the pathological schools of Southern Europe, and it would be interesting to know whether the pathologists there who have had this experience regard them as showing that the patient in this case was the subject of acute malaria when he died.

Whether pigment is present in the spleen and liver of persons who die in malarial countries from accident, "cut throat," or diseases other than malarial, and if present, how it is distributed, are questions capable of solution, and the schools of tropical medicine in this country would undoubtedly effect a good purpose if they would utilise the opportunities which they have for answering them.

I regret that my own experience on this point is very limited. A careful and minute examination of the viscera of man who died of pericarditis at Sierra Leone after two years' residence showed that in his case there was not a trace of pigment. In tissues sent me from Bombay of a man who died there about two months after an attack of malarial fever (I say "about," because I am writing away from home and unable to refer to any notes), the pigment was found accumulated in blocks in the perilobular spaces of the liver in a manner similar to that which has been described as being found in the the tissues of patients who died of intercurrent disease after recovery from malaria, and the distribution was in that respect entirely different from that shown in Mr. Henderson's drawings.

Whilst I am glad that Dr. Manson's remarks have given me the opportunity of explaining more fully what was not sufficiently dwelt on in the paper, I think I ought in the interest of future conferences—and I hope this is not the last at which blackwater fever will be discussed—to express my surprise that it has been thought necessary to characterise my "reasonable hypothesis" as an example of "rashness." Those who are familiar with the literature of malarial fever know that the belief that blackwater fever is a severe form of malarial fever is widely held by experienced observers in countries in which blackwater fever occurs, and that capillary vessels in the brain packed with the parasites of malaria, with a disposition of pigment which shows that when death occurred it was being carried by white corpuscles to the spleen, and thence to the liver by the portal system, are by competent men considered evidences of death from acute malarial disease. If these appearances do not prove a man to have died of malarial fever, we may ask what evidence does prove it?

Those who are not familiar with the subject will agree with me, and I am sure with the physicians and pathologists who are specially interested in these matters, in believing that what is really to be deprecated is not an expression of opinion that does not necessarily carry universal consent, but criticism expressed in a manner calculated to produce disagreeable impression.—I am, etc.,

September 3rd. G. THIN.

TREATMENT OF MALARIA.

SIR,—In the discussion reported in the JOURNAL of September 1st, and in the books to which I have referred there is no mention of perchloride of iron in the treatment of malaria. I was induced to prescribe it twelve years ago in a case of apparently hopeless quotidian ague with great anæmia. The effect was marvellous. I ordered the tincture in doses of ℥xv to ℥xx gr. with ½ or 1gr. of quinine sweetened with syrup every hour during waking hours. In six very bad cases of quotidian, and in several milder attacks in which this mixture has been administered, there has not been a single subsequent rigor, recovery has been rapid and the liver and splenic enlargements have been reduced by inches within a fortnight. There has been no digestive disturbance, headache, or cinchonism. Quinine even in large doses does not produce this result.

As the number of cases I see is very small I would beg Dr. Duncan and others, who have a larger field, to give this method a trial, and I am convinced the result will gratify them.—I am, etc.,

Cardiff, Sept. 3rd. R. PRICHARD, M.D.

"SUMMER DIARRHŒA."

SIR,—In his letter on "Summer Diarrhœa," page 457 of the BRITISH MEDICAL JOURNAL, Dr. Alexander McCook Weir writes: "The summer diarrhœa of infants in England is the cholera infantum of the United States, but it matters little whether it is called by these names, or by epidemic enteritis, or zymotic enteritis as suggested by the College of Physicians."

Now, the Diarrhœa Nomenclature Committee of that College stated in their report that they regarded it as essential that the idea of specificity should be retained. Hence they recommended the College to authorise the use of the term "epidemic enteritis" (or, if preferred by the practitioner, "zymotic enteritis") as a synonym for epidemic diarrhœa (*Nomenclature of Diseases*, p. 9, ed. 1896); and they further recommended that the College should urge the entire disuse of other synonyms of the disease in medical certificates of

death. Their report was unanimously adopted by the College.

The point to bear in mind is that this malady is a specific disease, and that, consequently, it should be always known by a well-defined name. What confusion would there not be if all other specific diseases had the multitudinous synonyms which are given to this one?

It is with a view to putting an end to the confusion in certification and classification of "diarrhœa" deaths hitherto prevailing, which have been caused by want of uniformity in nomenclature, that the Home Counties Branch of the Incorporated Society of Medical Officers of Health are endeavouring to promote the universal adoption of these recommendations of the Royal College of Physicians in medical certificates of death.—I am, etc.,

Reading. ALFRED ASHEY.

SIR,—In the BRITISH MEDICAL JOURNAL of August 11th you did me the honour of publishing a letter from me on the above subject, in which I advanced the theory that "summer diarrhœa" is not due to heat but to chill following the heat.

In the JOURNAL of September 1st I find a most interesting paper by Major Buchanan, I.M.S., on "Hot Weather Diarrhœa in India." He gives us many causes for this diarrhœa, but does not suggest "chill." Now, Sir, I am of opinion that this "hot weather diarrhœa" of India is due to "chill," and in support of my theory I will quote the following from Major Buchanan's paper:

1. Attack commences "at night or in the early hours of the morning," namely, when the temperature is lowest.

2. "Albuminuria is often found in these cases." Why? Simply because, as I stated in my letter of August 11th, the kidneys as well as the bowels are called upon to do unusual amount of work.

3. He states, "125 cases occurred after a cyclone in Midnapur Central Gaol." The cook did not cook supper properly. Sad, very! But does not the temperature fall rather suddenly after a cyclone? and was that the only time the prisoners had an uncooked supper?

4. Major Buchanan says this "hot-weather diarrhœa is partly due to putrefaction," but admits that he has seen cases of it in cold weather. Colonel Kenneth Macleod says, "We are ignorant of the precise causation." Perhaps my suggestion that "fall of temperature" is the predisposing cause may help him. It is probably also the predisposing cause of cholera, lowering the vitality of the bowels so that the cholera bacillus can obtain a foothold. This probably explains the use of the cholera belt. Why will the members of our profession go out of their way to find fearful and wonderful causes (for example, bacilli) for everything when the explanation of them is so simple and as plain as a pikestaff?—I am, etc.,

Leytonstone, Sept. 4th. ARTHUR TODD-WHITE.

FILARIA AND MOSQUITOS.

SIR,—The recent theory of Dr. Low that the probable mode of infection of filaria is through mosquitos has, I think, some objection. I notice in his description, in the BRITISH MEDICAL JOURNAL of June 16th, that the filaria was found between the labium and hypopharynx; now the labium is not inserted when the mosquito is sucking; it is applied against the skin encircling the other organs—the hypopharynx, mandibles, and maxillar arc. This is easily seen on watching a culex suck, when the proboscis is seen to become bent, forming a marked angle near the head.

On two occasions, whilst watching a culex suck my hand, I killed them with a sharp stroke of the finger without crushing the head. Under the microscope I saw the labium distinct from the hypopharynx, mandibles, and maxillæ, which formed a tube filled with blood. I was able to cut off the proboscis and leave this tube clear by cutting at the angle. In trying to mount the preparation the pressure of the cover glass opened up the tube.

I have seen a drawing in which the maxillæ are represented as sharp-pointed organs with a row of five or six teeth at their ends; but this appearance is due to higher refraction, and probably thicker condition of their ends as a thin transversely striated structure is seen to extend down to the base, and when the two maxillæ are joined to each other they form a tube.

I think therefore the filaria does not enter the body through the proboscis between the labium and hypopharynx. The duct of the hypopharynx is very small—I cannot distinctly make it out myself—and would not be large enough for the filaria.

Can the filaria enter through the maxilla tube? The action of the labium must be that of a sucking pump forcing the blood from the lower part of the tube into the mouth; the filaria would have to go against the stream. The fact that the mosquito sucks up the embryo filaria, considering its size, is wonderful, but that it could infect a larger animal is much more so.

The face and hands are probably more bitten than the legs. Elephantiasis and lymph varix is rare in the upper part of the body. We should expect it to be more affected if from mosquito bites.

It is possible that the filariæ migrate to the head because it is a better resting place, muscles not pressing so much; the mosquito not dying, they try and get out to keep on their existence; they get into the proboscis and may escape from there into water when the mosquito is not sucking; when the mosquito sucks they may also get away or may have to remain in the proboscis for the time. That they get into the proboscis appears evident, but that they are infected does not necessarily follow.—I am, etc.,

British Guiana. C. S. KENNARD, M.D., M.R.C.S.Eng.

MIDLAND MEDICAL UNION.

SIR,—I should be glad if you can find room to insert in the BRITISH MEDICAL JOURNAL that the Midland Medical Union has not collapsed, but organisation is in abeyance during the holiday season. It is hoped to resume operations early in October. I have had many inquiries as to the fate of the Union, which originated in the correspondence in the JOURNAL *re* Colliery Surgeons in the Midlands. I was elected Hon. Sec. *pro tem.*—I am, etc.,

Mansfield. ERNEST H. HOUFTON.

PREVALENCE OF MISCHIEVOUS CUSTOMS.

SIR,—Having recently measured many scores of young women, I find that they mostly measure about two inches less outside the corsets than around the corresponding part of the nude waist. The great majority seem quite unaware of the fact, and immediately discontinue the practice when it is pointed out. As this fashion doubtless prevails all over the country, and as the great majority of its victims seem quite ignorant of the harm they are doing themselves, and quite ready to mend their ways, we seem to me extremely remiss as a profession for exerting so little influence towards the abolition of so pernicious a habit. Much the same may be said of other foolish customs, such as the use of tight garters, tight pointed boots, and tight kid gloves; the absence of efficient ventilation in nearly all dwellings, especially when the air is poisoned by the use of paraffin and other stoves, lamps, and gas; and the substitution of expensive and comparatively useless extracts for simple, cheaper, more nutritious, and more wholesome foods.—I am, etc.,

Kendal, Sept. 10th. W. RUSHTON PARKER, M.D.

THE REGISTRAR GENERAL'S STATISTICS AND "CHEAP" INSURANCE COMPANIES.

SIR,—It rarely falls to my lot to have anything to do with death certificates. It happens, however, that during the past few weeks three cases have come under my notice which show how "valuable" the statistics of the Registrar-General must be, and how eminently "satisfactory" should be the results of the "cheap" insurance companies business.

The following cases will illustrate what I have said. For many years I have had under my notice a boy with "pseudo-hypertrophic paralysis." He died a few days ago, and his certificate was as follows: "Bronchitis, pneumonia, syncope." During the past twelve months I have also been in touch with a case of undoubted carcinoma of the liver. A few days ago this patient died somewhat suddenly, and her death certifi-

cate, "cirrhosis of liver, ascites," was submitted to me because the company refused to pay the insurance money, £7 10s. I trust, however, that the certificate I was able to give has removed their objection to "parting." The third case is one of considerable interest in this particular. A small boy died from tuberculous meningitis, aged 6 years and 4 months. Since 1 year old he had had a small discharging sinus connected with some dead bone, probably in the coccyx; this was entirely unimportant in appearance even at the time of his death, and probably very much less so at the time of his insurance, 5 years previously. The certificate given was "Tuberculous disease of coccyx, 5 years 4 months; tuberculous meningitis, 11 days." Upon this the company refused to pay, and having the opportunity to mention this case to a gentleman in general practice, he said "They never pay on tuberculous cases; I learnt a lesson about that very early in my career, and I never mention tuberculous disease in any certificate where I have the slightest reason to suppose there is an insurance, and of course I never state how long any condition has been present."

The above remarks will, I think, serve to show how extremely "valuable" the statistics of disease must be, and how extremely unsafe it must be for any person to risk even the sum of 2d. per week on the off chance of receiving a death certificate in accordance with the requirements of the insurance companies.—I am, etc.,

A FELLOW.

LEMONS FOR THE SOUTH AFRICAN HOSPITALS.

SIR,—In the early months of the year 70 000 lemons, specially selected and packed, were sent from Mentone to Capetown to be freely delivered there for the hospitals in South Africa, and more were offered if required.

These were a gift of local produce from many of the English visitors, with the liberal assistance of one of the English hotel proprietors.

Nothing has, I believe, ever been heard of them since. It would be of interest to know if they have been of any use, or whether they are still at Capetown, where, I fear, they will not profit by indefinitely prolonged storage.—I am, etc.,

London, W. D. W. SAMWAYS.

THE ROYAL NAVAL MEDICAL SERVICE.

SIR,—As year by year passes, one sees in the Educational Number of the BRITISH MEDICAL JOURNAL a statement made to the effect that naval medical officers are satisfied with the conditions under which they serve. I can assure you, Sir, that this statement is not correct. There is very great dissatisfaction with our present position. I will try to show how this happens, and suggest a remedy.

The average age at which a surgeon joins the navy is about 25. The rank of surgeon corresponds to lieutenant, and for twenty years he continues to rank with a lieutenant. At present lieutenants are promoted to that rank at an average age of 22 years; after eight years they are given a step, although still called lieutenants. Medical officers, however, wait twelve years for a corresponding step, when they are promoted to staff surgeons. Thus a surgeon of 35 would find himself in the same relative rank as a lieutenant of 22, unless he had joined under the average age.

In the last batch of promotions to commander the seniority of the various lieutenants ranged from under eleven years to nearly fifteen. This promotion corresponds to that of fleet-surgeon, for which, however, a medical officer has to attain twenty years' seniority. Not only this, but at present paymasters are obtaining their promotion (which correspond to staff-surgeon) at 31 years of age.

Thus a surgeon may, and often does, find himself in a ship where paymaster, lieutenant or naval instructor, who were formerly junior to him, are all in a higher rank now though years younger. This is in the ordinary flow of promotion, and not taking into account special advancement for war service. Allow me on behalf of my brother officers and myself to suggest a remedy:—Abolish the rank of staff surgeon, and allow surgeons to rank after eight years with lieutenants and naval instructors of eight years' standing. After fifteen years' seniority let promotion be made to fleet-surgeon. We shall then be on a par with naval instructors who attain a similar relative rank after a like number of years.

Now is the time for something to be done, as the Admiralty are considering the improvement of ranks in the steam and accountant departments. I feel sure, Sir, you will agree that the position of the naval medical officer does not at present add to the dignity of the honourable profession he represents in the senior service.—I am, etc.,

M.O., R.N.

MR. BURDETT-COUTTS AND THE MEDICAL PROFESSION.

SIR,—I think it high time that members of the medical profession ceased to make use of such unparliamentary and offensive language towards Mr. Burdett-Coutts (the husband of a lady who has spent her life in alleviating, with the aid of surgeons, suffering and distress at home and abroad) simply because he believes he is performing a solemn public duty. Over and over again he has given praise to individual surgeons and to the army surgeons as a body, and he only attacks the system, certainly much improved of late, which so handicaps the small and devoted band of officers and men, that they are unable to do all they could wish to relieve pain and misery while restoring to health their patients.—I am, etc.,

SURGEON MAJOR A.M.R., Retired.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

SIR,—It is high time medical men took action as regards the payment made by the majorities of these companies to medical men for the examination and report of applicants for life insurance. I hold that the smallest fee should be half a guinea. The thorough examination of a case involving analysis of urine cannot be done under 15 to 30 minutes—an ordinary chemist charges 10s. 6d. to £1 1s. for examination of urine alone, and why should we be expected not only to do that but make a careful investiation of every organ in the body, and go into the family history for the same amount? I maintain that our payment should to a certain extent accord with the amount of insurance.

Years ago an office paid me 10s 6d. in a case where the annual premium came to between £40 and £50. I demanded a guinea; this was refused. The next case from the same office was a patient of my own. He had been persuaded by the agent of the office—a personal friend to insure, and actually paid him the first premium in advance. The office sent me usual form of queries. I wrote and demanded £2 2s. in advance; the secretary wrote saying usual fee was 10s. 6d., but his directors had instructed him to pay me £1 1s. I returned that, stating that £2 2s. or no report; directors agreed. I then wrote across the form, "This life is not insurable." In six months the man died; he was a martyr to gout, had heart disease and epilepsy. The amount he wished to insure for was £3,000. Lately I filled in report for an office and sent in note for £2 2s. The secretary sent me £1 1s.; this I declined, and in a day or two I received the other £1 1s. These facts prove that medical men have only to be firm and refuse to accept what any insurance company may imagine a sufficient remuneration for information of the very greatest value and importance to itself. The enormous amount of money accumulated in a few years by all well-managed insurance offices shows that they can well afford to be just, if not generous, to the men who act as the safeguards of their business.—I am, etc.,

Harrogate, Sept. 1st. A. S. MYRTLE, M.D.

SIR,—A circular from an insurance company has just been issued to its medical examiners requesting them to subscribe to an agreement to a reduced scale of fees for examinations. Before this document be signed would it not be well for the examiners to confer on the matter?—I am, etc.,

September 10th. ECLECTIC.

SIR,—I have received the enclosed from the New York Life Insurance Company. I hope all examiners for this or any similar office will refuse to accept a half fee for doing the amount of work for which the usual fee is £1 1s. Although I

am insured in this office I have no wish to increase my bonuses by sweating the medical profession.—I am, etc.,

Alresford, Hants, Sept. 11th. F. W. JOLLYE.

NEW YORK LIFE INSURANCE COMPANY.
John A. McCall, President.

Chief Office for Great Britain and Ireland, Trafalgar Square, London, W.C.

London.

Dear Sir,—The Board of Management of this Company have decided that from (on and after) the 1st November prox., the fees payable to their Medical Examiners shall be 10s. 6d. where the amount insured is £250 or less, and £1 1s. for sums in excess of £250.

It is expected of Examiners, as hitherto, that they will aid the business of the Company by visiting applicants at their own houses where it is not practicable to bring them to the Examiner's office, but in cases where the Examiner has to examine the applicant at a distance of two miles or more from his residence the fee will be £1 1s. in all cases.

We shall be glad of an early reply from you agreeing to this revised scale of remuneration.

Yours truly,

C. SETON LINDSAY,
General Manager.

"DRESSERS" FOR THE WEST COAST EXPEDITION.

SIR,—I had occasion some little time ago to call attention to the parsimony of the Colonial Office in its attempt to obtain medical officers for an expedition to Coomassie. Whether it failed to obtain an adequate supply of qualified men for the totally inadequate remuneration offered I am not aware, but lately in your columns and in the columns of your contemporary there appeared an advertisement asking for "dressers." These "dressers" are offered pay at the rate of £20 a month *plus* an allowance of 5s. per diem, with privileges as regards passage, rations, and gratuity similar to those of the previously advertised-for medical officer. This offer to the unqualified "dresser" appears to be as liberal as the offer to the qualified man was illiberal, the difference in the value of the services of the qualified and registered (£30 a month and no allowance) and the unqualified and unregistered (£20 a month *plus* 5s. a day allowance) candidate being—if the estimate of the Colonial Office be accepted—only some £2 10s. or £2 15s. per mensem.

It was rumoured that some senior students and dressers who volunteered for service in South Africa were told off to scrub floors and clean "quarters." I do not think that these "dressers" need have any fear that their services will be so little appreciated; they will probably find themselves in positions of considerable responsibility. The circumstances of the case rather seem to favour the suspicion that—the previous request for medical officers at the small salary offered having elicited no very fervid response—the authorities contemplate employing unqualified men under the guise of "dressers." The remuneration offered to these "dresser" candidates is ample, though not extravagant; and, while some "chronics" may be tempted to respond, I doubt if any genuine "dresser" or "clerk" with any prospects will care to delay his curriculum and cast his chances into such a fatal lottery as a West Coast expedition.—I am, etc.,

CANTAB.

HOUSING OF THE WORKING CLASSES.

SIR,—In your account of the discussion on this subject in the State Medicine Section at Ipswich, in to-day's BRITISH MEDICAL JOURNAL, I am stated to have said that the dwellings erected by the Corporation of Liverpool had not been successful financially.

What I really said was that it had not been found quite possible to carry out the original idea of letting tenements at the rate of 1s. per room; 2s. 6d. and in a few cases 2s. 3d. for two room tenements, being the lowest rents which allowed any return on expenditure.—I am, etc.,

Victoria Street, S.W. E. PETRONELL MANBY.

TUBERCULOSIS IN HAWAII.—According to official reports there has recently been a marked increase in the number of deaths from tuberculosis in Hawaii, especially among the natives and the Japanese. The cause is said to be the influx of sufferers from tuberculosis who go to the islands in search of health.

TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

FINAL GENERAL MEETING.

THE closing general meeting of the Congress was held on Friday, August 17th, at 5 P.M., in the large amphitheatre of the Faculty of Medicine. The hour originally fixed was 3 P.M., but the Sections had all been in heated discussion till after midday, and at 2 P.M. the International Committee met. They had a great deal of business to get through, as it was necessary to consider the resolutions adopted in the various Sections during the previous week and to decide which of these should be laid before the general meeting.

RESOLUTIONS.

The amphitheatre was crowded when the President, Professor BROUARDEL, took the chair. After declaring the meeting open, the Professor explained that as the numerous resolutions had been fully discussed in the Sections no general discussion would be allowed but the assembly as a whole must vote "Yea" or "Nay." He then called on Dr. A. J. MARTIN, the General Secretary, who read out the following long list of resolutions one by one. These were all unanimously adopted:

RESOLUTIONS ADOPTED BY THE FIRST SECTION.

1. That it is indispensable that Governments and municipalities should establish laboratories in sufficient numbers for the gratuitous examination of diphtherial products taken both during the disease and during convalescence.

2. That it is desirable that children who have had diphtheria should not be readmitted into schools till they are provided with a certificate showing that the bacteriological examination has not revealed the presence of any virulent bacilli in the throat.

3. That the preventable use of injections of antidiphtherial serum having often given satisfactory results, it is indispensable to collect documentary evidence on this question in every country. A Commission composed of Drs. Ehrlich, Loeffler, Behring, Roux, Paltauf, Pertik, Rauchfuss, Van Ermenghem, Wladimiroff, Spronk, Salomonsen, Simonetta, MacFadyen, Parkes, and Williams Martin is instructed to collect such documentary evidence and to present a report on the question at the next Congress.

4. That the question of the uniformity of the measure of the activity of the serums shall remain on the order of the day for the next Congress. The following additional members are included in the permanent Commission on this subject: Drs. Ehrlich, Nocard, Calmette, and Martin.

5. That the progress realised in the preparation and preservation of animal vaccine has done away with all complications in vaccination; that therefore vaccination and revaccination against small-pox should be obligatory in every country.

6. That the watering of market gardens with human excreta, as is too often the practice in the South of France, should be absolutely forbidden.

RESOLUTIONS ADOPTED BY THE FIRST AND SECOND SECTIONS COMBINED.

1. That each box of preserve (meat, fish, etc.) should bear distinctly marked upon it the date of manufacture (day, month, and year).

2. That detailed instructions as to the right methods of preparing such preserves should be drawn up and placed at the disposal of all manufacturers.

3. That the use of any antiseptic should be forbidden in the preservation of food and drinks.

RESOLUTIONS ADOPTED BY THE FIRST AND THIRD SECTIONS COMBINED.

1. That the supply to all communities of pure water, exposing them to no danger of infection, is one of the measures essential to the prophylaxis of a great number of diseases; that it is therefore indispensable that in every country laws should be promulgated containing efficient clauses for the protection of the water courses against all sources of pollution, especially those due to communities and industries.

2. That, to ensure the purity of the water used in the alimentation of towns, it is desirable that the methods of the bacteriological examination of water should be assimilated. This question shall be studied by a permanent international Commission composed of Drs. Loeffler, Fraenkel, Fódor, Gaertner, Max Gruber, Sormain, Mendoza, Miquel, Ponchet, Vaillard, Chantemesse, Calmette, A. Lévy, Rappin, Bordas, Bonjean.

3. That the Congress calls the attention of Governments to the necessity of rendering by law the inspection of meat general, obligatory and uniform in each State, in order to include in this inspection every locality, all animals intended for food, all meat without distinction of origin or

destination as well as all establishments which prepare meat or put it on sale.

4. That, in the interests of science, of sanitary inspection and of general economy, it would be desirable for an international conference to draw up the basis of uniform official statistics in order to collect the facts and the results of such inspection.

5. That it is indispensable that the restrictions decided on respecting the inspection of meat should be formed on scientific data whose value should have been proved by experience.

6. That these data should be taught theoretically and practically in the veterinary schools which have not yet included them in their courses, and should be included among the subjects necessary to a diploma.

7. That to make meat inspection really efficient it is advisable to oblige every district of a certain importance to have a public abattoir built and suitably arranged; all slaughtering to be compulsory in such abattoir.

8. That the small communities not too remote from larger centres should be compelled to unite and build a common abattoir; if, on the other hand, the distance from their larger centre is considerable, that these communities might be authorised to keep provisionally private slaughterhouses, but in limited numbers, with the restriction of only slaughtering in them at certain hours which shall be fixed by the respective mayors, and under their supervision.

9. That the inspection of meat cannot offer the desired guarantee of efficiency unless conducted exclusively by veterinaries, who alone are qualified, moreover, to interfere in disputes regarding seizures, to inspect the markets and cattle, to direct abattoirs, and to exercise the control which is indispensable to the service of inspection in the communities. (communes).

10 That in any case in such localities where at present it is impossible to organise inspection by veterinary authorities, it will be possible to provisionally employ sanitary inspectors, appointed by the local authority, holding restricted powers, taught by veterinary authorities in large abattoirs, and who before being appointed shall have passed a special examination. These inspectors will only be able to act under the control of the nearest veterinary inspector, to whose decision they should immediately refer in every case in which the meat submitted to them appears to be unsound.

11. That it is necessary that all meat for consumption be stamped or marked in a distinct manner by the authorised inspectors.

12. That meat in market places (*viandes foraines*) and imported meat should be submitted to a fresh inspection on arrival.

13. That meat of inferior quality, but recognised as harmless, should either at once, or after a special preparation done as much as possible in the slaughterhouse itself, be sold at a reduced price in buildings allotted for the purpose, being declared as such and under the supervision of the authority.

14. That in order to avoid slaughtering in secret, to combat epizootic disease more effectually, as well as to render meat and sanitary inspection less of an imposition to the interested parties, there is an urgent need for the introduction of general and compulsory insurance of all cattle intended for consumption.

15. That it is important that the opening and conducting of establishments which prepare or sell meat intended for food should be under the legal authority.

16. That the inspecting staff should have power to enter (day and night) these establishments to assure themselves that the administrative regulations are properly carried out with respect to the construction, arrangement, and healthiness of the buildings, the methods of preparation or manufacture, the condition and nature of the utensils, etc.

RESOLUTIONS ADOPTED BY THE SECOND SECTION.

1. That the uses of fine tin ought to be compulsory in the soldering of boxes of preserve in every case where the method of closing employed permits the possibility of any of the solder getting inside the box.

2. That the Congress invites the public authorities to compel manufacturers of preserves to inscribe clearly on the boxes or bottles the date of their manufacture.

3. That, as the mixing of water from different sources is a possible source of contamination of the mixture, it is desirable to leave them distinct as far as is practically possible.

RESOLUTIONS ADOPTED BY THE THIRD SECTION.

1. That domestic hygiene demands the immediate removal and without stagnation of slop and soil water to the public collecting sewer. It is indispensable that a permanent water trap (seption) should be provided to all discharge pipes of dirty water of whatever source before their junction to the descending pipe or on the drain.

2. That domestic hygiene demands equally the permanent ventilation of all the drains systems, and the impossibility for the gases to enter the rooms from this canalisation system.

3. That all plumbers' work, as much in the supply of drinking water as in the removal of soil or slop water, should be object of particular attention. The pipes for the distribution of water, as well as the hydraulic apparatus (reservoirs, siphons, etc.), the down pipes for slop water, should be completely protected from frost.

4. That the Congress is resolved that overcrowding is illegal and should be within the restriction of the public authorities as being a grave cause of unhealthiness, beyond what may be due to faulty arrangement of the dwelling itself; that municipalities and the State should encourage, more especially by exemption from taxation, all proprietors who construct healthy workmen's dwellings.

5. That the Congress calls the attention of municipal authorities and of the public to the unhealthiness of hotel rooms, and encourage private initiative.

6. That in towns a general regulation should compel the installation of a tap of drinking water in every dwelling, or at least on each landing, as one of the conditions essential to the health of those dwellings.

7. That municipalities should establish douches and baths either gratuitously or at very cheap rates, as well as wash-houses provided with disinfecting apparatus

8. That in very crowded centres of population, all regulations should tend to increase the width of streets and the size of courts, and to diminish the height of the houses.

9. That a professional education with a test examination before obtaining a diploma should be demanded of "sanitary plumbers" with a view to spreading among plumbers a knowledge of hygiene and of rational and economic construction in their work.

10. That smoke being unwholesome, especially black, thick, or continued smoke, strict regulations compelling smoke-consuming apparatus are imperatively called for in the higher interests of the public health. Administrative control is particularly necessary in quarters where industrial smoke is produced.

RESOLUTIONS ADOPTED BY THE FOURTH SECTION.

1. That ideas of hygiene, sanitation, and health, as well as their advantage from every point of view, should be spread and popularised in the country by means of instruction in these subjects in the primary and secondary schools.

2. That the study of the hygiene of the family and of the child form a part of all instruction given to girls.

3. That candidates for all examinations be regularly questioned on hygiene according to a special syllabus adopted for each of these examinations.

4. That in the adult courses for girls special importance should be given to the domestic hygiene of the family and of the infant.

5. That lectures on practical hygiene for women over 18 years of age be organised in all towns and country districts by societies and teaching leagues already in existence, and by new societies which can be formed for the purpose.

6. That crèche schools be formed to provide with teachers who shall instruct young girls on the essential elementary principles of the hygiene of the infant.

7. That municipalities should prevent that under the name of milk there should be delivered fluids of bad quality, which contain too little nourishment and are often dangerous; the use of infant bottles with a long tube should be absolutely forbidden.

8. That, while we continue the practice of isolation of all patients suffering from a contagious disease, it is necessary by every possible means to spread the knowledge of the fact that medical antisepsis well carried out is the best means of preventing contagion.

9. That legislation should modify the regulations which still prevent the common use of cremation.

RESOLUTIONS ADOPTED BY THE FIFTH SECTION.

1. That in all countries statistical and medical monographs should be compiled on the different unhealthy occupations, with the help of factory inspectors and surgeons.

2. That an international agreement be concluded with regard to the prophylactic measures to be adopted in industries employing toxic compounds.

3. That the law of 1893 be rigorously applied, especially as regards industrial dusts of every nature, even when non toxic, the latter playing an important *rôle* in the etiology of tuberculosis.

4. That, in cases where the ventilation, either general or local, is absolutely inapplicable or clearly insufficient to protect the workman against dust, the Congress recommends the use of personal means of protection, such as respirators, spectacles, etc.

5. That by all possible means, printed notices or otherwise, the State and the employers should bring to the workman's knowledge the extent of the danger against which the protective measures imposed on them in the interest of their health are a remedy. That especially in all workshops where toxic substances are employed, a clear printed notice should point out the nature of the poisons, the dangers, and the chief precautions to be taken.

6. That workmen who make accumulators be forbidden with the naked hand to manipulate toxic (lead, mercurial, etc.) pastes, and that in different countries measures should be taken to limit the dangers resulting from similar manipulations in other industries.

7. That the law voted in a French Chamber authorising female shop assistants to sit down be definitely adopted, and that analogous measures be adopted in such countries where they do not already exist.

RESOLUTIONS ADOPTED BY THE SIXTH SECTION.

1. That colonial hygiene be more widely taught, and that medical experts of recognised authority should be called by right to sit in councils and in the general staff of the army occupied in the preparation or direction of colonial expeditions. That in France, seeing the importance of her colonies, schools for the teaching of tropical diseases, of exotic pathology, and of colonial hygiene be formed, on the same lines as those already existing in London and in Liverpool, or which are in process of formation in the other European countries with colonial possessions.

2. That the Governments of colonising nations proceed in every colony to the establishment of sanatoria situated and built according to the laws of hygiene, and that European garrisons be maintained permanently in camps.

RESOLUTIONS ADOPTED BY THE SEVENTH SECTION.

Prophylaxis against Plague.—(1) The plague being at the present moment a permanent menace to all the ports of Europe and America, it is advisable that the navigating companies, *les armateurs*, and the navies of the State should take necessary steps that all vessels shall have on board at their sailing from the home port a sufficient provision of antiplague serum. (2) That the French Government shall take the iniative in calling a fresh International Conference on prophylactic measures against the plague. (3) That, in order the better to declare pestilential diseases occurring during the voyage, it is desirable that the ship's doctor should be independent of the companies which employ them and of the captain of the vessels.

Declaration of Transmissible Diseases.—(1) That the notification of transmissible diseases should be compulsory in all countries. This is as essential for cases of disease as for deaths. The list of notifiable diseases should be drawn up by the learned bodies and the sanitary authorities. This declaration should be made by the head of the family and the medical man. (2) That open tuberculosis (*tuberculose ouverte*) should appear on the list of diseases which are compulsorily notifiable.

RESOLUTIONS ADOPTED BY THE EIGHTH SECTION.

1. That persons suffering from a contagious disease be not allowed to travel in the ordinary railway carriages; that such persons be obliged to declare the nature of their disease to the stationmaster at the station of departure; but this compulsory notification which is the basis of prophylaxis is a very difficult question.

2. That a special transport service be organised for travellers with contagious disease.

3. That new railway carriages be so fitted that they may be more easily cleaned and disinfected.

4. That a service of disinfection be formed in each region.

5. That wiping with a damp cloth be substituted for dry sweeping.

6. That spitting be forbidden on the floor of railway carriages, waiting-rooms, etc. (the question of spittoons is adjourned).

7. That drinking water be placed at the disposal of travellers and company's servants in all railway stations.

8. That employees (agents) suffering from contagious disease be isolated, and that at the close of the disease the dwellings and clothing from them be disinfected.

9. That an employee, who when suffering from pulmonary tubercle works in an office with other employees, be absolutely forbidden to spit on the ground; that the floor be cleaned with a damp cloth, and that the walls be washed instead of dusted (no dry sweeping or dusting allowed).

10. That alcoholism, which is the chief predisposing cause of tuberculosis, be struggled against by means of printed notices, lectures and pamphlets, by forbidding also the company's servants, by notices posted in the railway stations, to frequent bars during their hours of duty; that remuneration and promotion should only be granted to sober employees, and that severe disciplinary measures be put in force against employees convicted of drunkenness.

11. It is desirable that advantage be taken of the transformation of the means of traction to increase the lighting in railway carriages.

12. That in carriages drawn by animals, where lighting by electricity or acetylene are practically almost impossible to realise, the drivers should receive strict injunctions to attend constantly to the good working of the lamps.

13. That the best means of heating consists in driving hot water or steam vapour from the engine. In carriages drawn by horses or driven by electricity heating by briquettes is the only means, which, while being sufficient from a hygienic point of view, at the same time gives out a sufficient and regular amount of heat.

14. That the regulation of the prefect of police which demands that drivers of carriages arrived at the terminus shall lower the windows at the end of the carriage to ventilate the interior be strictly carried out. It is desirable that a notice advise the public of this regulation to avoid protests.

15. That the public be reminded of the regulation of June, 1898, forbidding spitting on the floor of vehicles, a regulation which under present circumstances the conductors of carriages are powerless to enforce.

16. That the Congress recommends the meeting of a international conference to draw up a uniform series of regulations regarding the transport of pilgrims and emigrants from the point of view to the speed of the vessels, the air space for each person, proper ventilation between decks, the distribution of the passengers on board, the cleansing of the vessel, the amount of responsibility to be given to the port authorities as to the provision of water, the fitting up of special isolation rooms, the number of doctors on board and their being independent of the company, the visits on setting sail at ordinary times, and the measures to be taken in the ports of sailing in times of epidemic.

17. That visual acuity should be normal in both eyes in railway servants.

18. That the use of spectacles be forbidden to servants having the care of the line or of the trains.

19. That in future congresses the minimum of chromatopsy allowed be further studied, fixed scientific data being wanting at present on this question.

20. That an international commission shall decide on a uniform method in the disinfection of cattle trucks for international use.

21. That in passenger boats it should be possible to completely disinfect every portion; the arrangement of all the generally frequented parts, corridors, dining saloons, drawing rooms, should be better carried out for this purpose.

22. That very efficient and active ventilation should be in perfect working on shipboard.

DEMOGRAPHY.

It is desirable that in every country at the census period statistics should be taken of dwellings considered in relation to the number of the rooms occupied.

To draw up these statistics, the following definitions are recommended: Definition of the word "room": Every compartment of a house destined for being inhabited separated from the other compartments by partitions reaching to the ceiling and capable of containing a bed for an adult. Definition of the word "dwelling": The collection of rooms in house intended for the dwelling place of persons living under one and the same head. The rooms, however, of the same house intended for the servants of those persons form part of the dwelling.

The closets are not included in the number of rooms in the dwelling. Stables, coachhouses, shops, workrooms are not included, unless they at the same time are used as dwelling rooms.

Statistics of dwellings considered in relation to the number of their occupants should have the following table as their basis:

Number of tenements inhabited by	Number of tenements consisting of					
	1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	5 Rooms.	6 Rooms
1 person ...						
2 persons ...						
3 persons ...						
4 persons ...						
5 persons ...						
6 persons ...						
7 persons ...						
8 persons ...						
Etc.						
Totals ...						

Establishments given over to public instruction, barracks, hospitals, penitentiaries, convents, and other analogous dwellings must not be included in the general table of dwellings, but be drawn up in a separate table.

For the general statistics of dwellings, statistics which can only be summary, it is sufficient to give the number of rooms in a dwelling, with some remarks as to their size and usage, with the number of occupants in each dwelling.

For the detailed statistics (generally partial inquiries) it is absolutely necessary at the time of taking the census of dwellings, to state the size and use of the rooms (cubic space, ventilation, etc.). Details in such cases are preferable to definitions of words "room" and "dwelling."

The Congress is of opinion that administrative authorities in large towns should introduce into their sanitary department a register of dwellings, the basis of which register being individual pigeonholes or drawers for each dwelling.

Labour Legislation.

At the conclusion of the voting of this lengthy series of resolutions, M. Vaillant rose and asked why certain resolutions adopted by the Fifth Section of Industrial Hygiene had not been laid before the general meeting. The resolutions had been unanimously adopted by the Section, and although they had an economic as well as a hygienic bearing, still they had only been discussed from the latter point of view. The resolutions adopted, which indicated the hygienic reasons for demanding further labour legislation, will have the value of resolutions of the Section, but the speaker regretted that the present Congress had not the courage to vote on the subject in the general meeting, and hoped that future congresses would continue the important work. These words were greeted with great applause.

The President rose and explained that the International Committee fully appreciated the work of the Fifth Section, but the resolutions touched too much on the legislative constitution of foreign nations. They would, however, all be published and laid before the next Congress.

Close of the Congress.

Professor Brouardel then delivered a short closing speech, remarking on the large amount of hard work which had been done in the Sections, and of the precise terms of the resolutions which had been unanimously adopted after thorough discussions. French hygienists were glad to have these resolutions to point to, and to be able to lay before their Government the unanimous opinion of foreigners on the various questions. He hoped that these resolutions would also be of similar help to reformers in foreign countries.

M. Conrad, the Government delegate from Holland, returned thanks on the part of all the Government delegates and members of the Congress for the hearty welcome they had received in France and in Paris. All were delighted with the friendly reception they had received, and would long remember with pleasure the days passed at the Congress in the brilliant capital of France, illuminated by the genius of the civilised world.

The President then declared the Congress closed, and the amphitheatre and quadrangle of the Medical School emptied but slowly, while the parting guests with regret bade each others farewell.

Excursion to Municipal Sewage Farm at Achères.

On Sunday, August 12th, at 2 P.M., as the guests of the Municipality, about 250 or 300 members of the Congress started in a special train for the Municipal Sewage Farm at Achères. The visitors were met on their arrival by MM. Bechmann and Launay, the municipal engineers, who gave an interesting description of the utilisation of the crude Paris sewage in the fields, and of the resulting purification of the water of the river Seine, which formerly served as the outlet for the sewage of Paris. In three small trains the members visited various points of interest on the estate. After having drunk of the purified water refreshments and champagne were served, while roses grown in the gardens were presented to the ladies. The members returned to Paris by special train, arriving at 6 P.M.

The farm, which lies on the bank of the river Seine, near the Forest of St. Germain, is in the form of a long strip of ground, 10 kilometres in length and 1 kilometre in width. The work was terminated in 1895 at a total cost of 15,000 000 francs (£600 000). The drains are distributed over this long piece of land like the bones in the skeleton of a fish. The principal drains run down the middle of the estate and feed transverse channels, which, starting perpendicularly at intervals of about 400 metres, carry the sewage to the limits of the ground. The total area is divided into four distinct zones, which can be shut off by means of water-gates. The secondary pipes (12 inches by 15¾ inches) are provided at intervals of 75 to 100 metres with a branch and a smaller sluice-distributor to feed a smaller area. These sluice-distributors are 292 in number, 21 acting automatically, and each feeds an area of about 3.40 hectares.

The larger drains of purified water are arranged as ornamental waters with lakes, artificial islands, cascades, and rustic bridges, while the grassy banks are planted with poplars. Thus the waste land has been beautified, and the streams discharge into the Seine. The estate is separated from the river by an impermeable band of alluvium, so, in order to prevent an undue rise of the ground-water, covered pipe drains have been laid at a depth of 2 metres. These run round the limits of the estate, and by means of transverse branches passing through the impermeable ground discharge also into the river.

The total system represents a length of 20 kilometres of drains, 6 3 kilometres being open and 13 7 kilometres in pipes.

The irrigation is intermittent, never more than a fourth part of the estate receiving sewage on any given day, and then this portion is left free for three or four days according to the nature of the crop in cultivation. The land is mostly let out to cultivators, and the farm being some distance from Paris, instead of market produce the principal crops are beetroot and potatoes. The Municipality has reserved a portion of the estate, which is laid out as a park with ornamental flower beds, and some ground for experimental purposes when apples, peaches, etc., are growing. A distillery on the estate utilises the beetroot grown for making alcohol.

As to the results obtained in the purification of sewage at Achères, the following figures speak for themselves:

	Organic Matter.	Dry Residue at 180° C.	Nitrogen. Nitric Acid.	Nitrogen. Ammonia.	Bacteria per c.cm.
Sewage water	34.9	630	2.2	16.7	11,750,000
Purified water at Achères: drain des Noyers	0.9	663	15.3	None	188
Purified water at Achères: drain de Garenne	1.3	741	15.0	,,	2,350

The quantity of sewage turned on to the fields must not by law exceed 40,000 cubic metres per hectare per annum. The City of Paris now possesses four of these sewage farms—at Gennevilliers 900 hectares, at Achères 1,000 hectares, at Méry-Pierrelaye 2,150 hectares, at Carrières-Triel 950 hectares, a total of 5,000 hectares, capable of dealing with 200 000,000 cubic metres of sewage. The amount of sewage annually treated is at present 180,000,000 cubic metres, and the Seine is no longer contaminated by Paris.

The Banquet.

On Tuesday evening, August 14th, a subscription banquet was held in the Auberge des Nations, situated in the sixteenth-century quarter of the reconstruction of Old Paris in the Exhibition. Professor Brouardel, the President of the Congress, was in the chair. At dessert, as the first toast, he proposed "The Health of the President of the French Republic," coupling with it the Sovereigns and Presidents of foreign States represented at the Congress. Among the other speakers were Professor Gabriel, M. Dupuy of the Central Society of French Architects, Dr. Andreas Mayer, and Dr. Gregorowitch. Dr. Laurent read some original verses in praise of sanitary reform and reformers. The dinner was finished early, and as the ticket included free admittance to the Théâtre du Palais, close at hand, the diners adjourned there and much enjoyed the performance, which included a satirical review of the events, political and otherwise, of 1900.

Excursion to Chocolate Factory and Model Village.

On Thursday afternoon, August 16th, at 1 P.M., a party of more than 300, including many ladies, started in a special train from the Gare de l'Est for Noisiel, Seine et Marne, to visit the chocolate factory of M. Menier. The proprietor, who is deputy for the district, received his guests, who in groups of fifty, under the guidance of the members of the firm and of the engineers, proceeded, first, to visit the immense factory: 1 950 hands are employed, 1,200 men, and 750 women, and the daily output of chocolate is 55,000 kilogrammes.

After seeing the various processes in the manufacture, the members of the party, tasting the finished product the while, now visited the model village, which is certainly a most interesting and successful enterprise from both the hygienic and social points of view. The entire population of the locality is employed in the factory. The village consists of

12 isolated and independent semi-detached cottages, each tenant having his own garden of 300 square metres. The streets, 10 metres wide, are planted with lime trees, and at equal distances of 45 metres is placed a gas lamp, with a water tap at its base. These semi-detached buildings each cover an area of 64 square metres, the cost of construction being £166. Each tenant pays an annual rental of £6, taxes and repairs being paid by the proprietors. Co-operative stores provide food, clothing, boots, fuel, etc., at wholesale prices. Bread, wine, coal, etc., are delivered at the villagers' doors, the daily sale being 1 200 kilos of bread, 250 kilos of meat, and 400 litres of wine. Three large refectories, one for men, one for women, and one for married couples, are reserved for employees from the neighbouring villages; those who bring their meals with them can have them heated, or they may at cost price buy their food already cooked, the *menu* being varied daily according to the season. Primary education is given gratuitously in the village schools, which are attended by 325 children. On finishing their primary education the children can enter the factory as apprentices, and receive rising salaries. There is also a free library, and even lectures are given to the adult population. An adjoining building contains a hall for lectures and entertainments; a band and choral society of more than one hundred performers has been organised and frequently give concerts. The firm pays a doctor and a midwife to attend gratuitously on the employees. During illness the men receive 2 francs and the women 1 franc per day. A savings bank pays 6 per cent. on savings deposited. In addition the workpeople receive annual gratuities, over and above their wages, in proportion to their term of service, the men receiving after 6 years of service 60 francs per annum, after 10 years of service 100 francs per annum, after 15 years of service 150 francs per annum, and after 20 years of service 200 francs per annum, the women receiving half of the above sums.

Almshouses with an infirmary have just been built at the upper end of the village for the aged men and women. The firm has also completely fitted up a fire brigade of forty-five employees, which, with steam and hand-pumps, is at the service of the district.

As to drainage, the cottages and schools are provided with waterclosets, the latter being flushed automatically. The sewage is first received into a vast cistern of iron and cement, hermetically closed, from which it is pumped and carried in pipes to a distance of 1½ mile from the nearest house, and is here utilised for irrigation purposes on a small sewage farm.

After having visited the factory and all the interesting institutions in the village, the members of the Congress were received most cordially by M. Menier in his beautiful *château* overlooking the river Marne. Here at 5 P.M. the visitors sat down to an excellent luncheon, during which the band of the village executed several selections, concluding with the "Marseillaise." A special train brought the visitors back to Paris, greatly pleased with this visit, which had been excellently planned and carried out.

INTERNATIONAL CONGRESS OF MEDICAL DEONTOLOGY.

[BY OUR SPECIAL COMMISSIONER.]

(*Continued from page 451.*)

THE RELATIONS OF POLICE SURGEONS IN ENGLAND TO THE STATE AND TO MUNICIPALITIES.

MR. NELSON HARDY, Treasurer United Kingdom Police Surgeons' Association, read a paper in which he discussed the conditions under which the work of police surgeons is carried on in London and sixty other English towns, as to which information had been obtained giving the population, area, ratable value, strength of police force, number of police surgeons, salary paid to each, whether the surgeon supplies medicine to the police, whether he devotes his whole time to the duties of his office, whether he is paid for attendance as a witness in police cases at police courts, inquests, or assizes, whether he gives ambulance lectures to the police, and if so whether he is paid for doing so, and other information on minor points. It was first of all explained that the police surgeon has a twofold relation to the force. He is their medical attendant in all cases of sickness or injury, either among themselves or the prisoners in their custody, and he is, besides, their medical adviser in all medico-legal cases, being sent for in all cases of suspected murder or manslaughter, of suicide, rape, criminal assaults, and to examine the bodies of newly-born children found by the police, this second portion of his duties naturally leading to his frequent appearance in the witness-box at police courts and assizes. Taking first the London police force, it was shown that the district in which this force acts extends over a radius of fifteen miles from Charing Cross, and includes a population of over 5,500,000, in which some 14,000 police are employed, and that about 150 police surgeons are attached to various police stations, with a chief surgeon at Scotland Yard as their head. Both the chief and the divisional surgeons are appointed directly by the Home Secretary, and their duties and rate of remuneration are regulated by the same authority. All police incapacitated for their duties, either by illness or injury, are placed under the care of the divisional surgeon attached to their station, and must be seen by him and certified as being so incapacitated within twelve hours of declaring themselves sick. If able to leave their houses to see the surgeon they are brought to him by a police-sergeant at a certain fixed hour in the morning or evening, and if unable to leave home they are visited by the surgeon, by whom all necessary medicines are supplied at his own expense. If hospital treatment should become necessary, cases can always be sent either as in-patients or out-patients, but if the latter, the case must still be seen by the divisional surgeon once a week. A sick-book has to be kept by the divisional surgeon in which are entered particulars of each case of illness or accident treated by him, the dates and hours of his visits, and the line of treatment adopted, for the information of the chief surgeon and every half-year he has to copy out, on a form provided for the purpose, particulars of all cases which have occurred during the previous six months. Forms have also to be filled up whenever any sick police are recommended for leave of absence, whenever they have to go before the chief surgeon for examination by him, and whenever any of them is reported unfit for further service, and certificates have to be given by the surgeon to those who belong to clubs or sick benefit societies.

For these various duties the remuneration of the metropolitan police surgeons, paid half yearly, is at the rate of 10s. per annum for each superintendent or inspector, and 8s. per annum for each sergeant or constable, or say £40 a year, for every hundred men.

For the other portion of his duties the police surgeon is paid in a different manner. When any casualty occurring in the street, such as an accident or sudden illness, is brought to the knowledge of the police, the divisional surgeon is sent for if possible, and a certificate is given him for his attendance, which is paid for at the rate of 3s. 6d. in the daytime and 7s. 6d. at night. Similarly, in all cases of supposed homicide, and in cases where those in custody are suffering from illness or accident, the surgeon receives a certificate at similar rates, from 8 A.M. to 10 P.M. being reckoned daytime, and 10 P.M. to 8 A.M. night. In all cases of medico-legal examinations for rape or criminal assaults the same rate of payment is maintained, except in cases where there is occasion to examine more than one person, in which case two or more certificates may be given.

On his appointment each divisional surgeon is now furnished with a copy of the police orders affecting his duties and position in regard to the force, a very important advantage, which was only obtained in recent years through the exertions of the Metropolitan Police Surgeons' Association, a society formed about a dozen years ago. A few years later police surgeons outside the metropolitan district, including some in Scotland and Ireland, formed a similar society called the United Kingdom Police Surgeons' Association.

In the principal provincial towns police surgeons are sometimes paid, as in London, on the club system, at rates varying from 3s. per officer per annum to 6s., 7s., 9s., 10s., and in one town 10s. 6d. a head. No one who considers how liable the police are in the course of their duties to receive injuries requiring medical treatment, and to suffer from diseases due to exposure to all weathers, such as rheumatism, will think that 10s. a head is too much for their surgeon to receive, while a payment of 3s. a year will strike him as ridiculously inadequate. In the other towns where a fixed salary is paid

the police surgeons, this varies in amount from £10 or £12, to £20, £30, £40, £50, up to £100. Salaries of £100 and upwards are paid in nine towns, Birmingham and Manchester each paying £125, Kingston-upon-Hull £135, Bristol and Leeds each £150. The author was unable to discover any fixed ratio between the amount of duties and the salary paid, but thought £50 little enough in most cases for the duties to be performed. Referring to the police surgeon's frequent appearance in the witness-box, it was pointed out that in the provinces this often involves great loss of time and considerable out-of-pocket expenses, the surgeon in order to give evidence at assizes having to leave his own home and his practice sometimes for a whole week, travel by rail to the assize town, stay there at a hotel, and incur expense by the employment of a *locum tenens*, and at the end of the trial receiving only the quite inadequate remuneration of a guinea a day. Five years ago representations were made to the Home Office by the United Kingdom Police Surgeons' Association, when the then Home Secretary admitted that a substantial grievance had been shown to exist, but said that he and other holders of his office had been afraid to burn their fingers by attempting to remedy it—a plea which, if held sufficient, might prevent the remedying of almost any injustice that had existed for half a century. Consequently not only has nothing been done, but the present Home Secretary has even refused to receive a deputation on the subject either from the Police Surgeons' Association or from the British Medical Association.

Reference was also made to the mode of procedure when the police surgeon is called in to give an opinion on the body of a newborn child found by the police. The English system of death certification and registration being very imperfect, and there being no system in London corresponding to that of the *médecins-vérificateurs* of Paris, these cases have all to be reported to the coroner, who thereupon summons a jury of twelve or fifteen men, mostly belonging to the artisan class, who have first to view the body, then listen to the police surgeon's or any other evidence that may be laid before them, and in the end are told by the coroner: "Well, gentlemen, you have heard what the doctor says was the cause of death; do you find your verdict in accordance with his opinion?" which in ninety nine cases out of a hundred they do.

The author suggested that if the police surgeon were authorised, as in Edinburgh, to make a necropsy where necessary, and his report were then accepted in lieu of a death certificate, it would be both better and cheaper in the long run.

The author's conclusions were:

1. Police surgeons should be paid at the rate of at least 10s. per officer per annum, or preferably by fixed salary of at least £50 a year when the men under their care number 100 or less, with a proportionate increase for numbers over 100.

2. The injustice of compelling police surgeons to give evidence on behalf of the Crown at assizes, and paying a sum which actually leaves them out of pocket as a result, should be remedied without delay.

3. The modification of the system of *médecins-vérificateurs* at present carried out in Edinburgh, should be at once introduced in London and all large English towns.

SOUTH AFRICAN HOSPITALS COMMISSION.

Overworked Orderlies.

Among the witnesses whose evidence was taken by the Commissioners on September 5th was the Rev. Mr. Franklin, a local pastor, who complained that in the early days the staffs were inadequate. There were too few orderlies, and the men were overworked.

Dr. James, Surgeon of No. 9 Hospital, said men arriving in convoys were put in bell tents, and retained their unwashed clothes, which were not changed sometimes for a week. He was sorry for the men, but did not apply for changes of clothing because he knew it would be useless.

Major Wright, R.A.M.C., in charge of St. Michael's Home Hospital, said wounded and enteric patients were kept apart. He denied Mr. Burdett-Coutts's allegation that they were lying side by side.

Colonel Benson, Chief Staff Officer at Bloemfontein, said, as regards orderlies, there had been several cases of men having drink but few cases of intoxication while on duty. There were very few complaints in regard to their conduct otherwise.

Surgeon-General Wilson's Evidence.

On September 6th Surgeon-General Wilson, Principal Medical Officer in South Africa, detailed the arrangements made for the care of the sick and wounded. When the Army was increased beyond two Army Corps the Medical Department was undermanned. He had inspected the base hospital in Capetown and considered that there was no serious cause of complaint. Lord Methuen's force had a full equipment for three field hospitals and bearer companies, with accommodation for 600 patients at Orange River. In Lord Roberts's advance from Modder River the hospital *matériel* was considerably curtailed owing to military exigencies. Hospital trains ran to Modder River with stores, medicines, and appliances, and the sick and wounded were well looked after notwithstanding the rapidity of the advance. Generally, the medical equipment was sent up as expeditiously as possible. He contradicted the figures given by Mr. Burdett-Coutts and Mr. Murray Guthrie to show that the death-rate in private hospitals was less than in military ones. Exactly the reverse was the case. He also denied having made any statement as to the unsatisfactory condition of the Bloemfontein Hospital.

General Kelly-Kenny's Evidence.

General Kelly-Kenny explained that on the advance to Bloemfontein the ambulances were cut down considerably owing to military exigencies. There were only two ambulances per brigade instead of ten, and the suffering endured was owing to the necessities of the march. He paid a tribute to the conduct of the orderlies, who behaved splendidly, and on occasion did a great deal of work in addition to their own. They even carried a number of Boer wounded across a river up to their armpits in water. Such service, the General stated, was purely voluntary.

Statements of Civil Surgeons.

Sergeant-Major Roberts and Corporal Beach indignantly denied the truth of the civil surgeons' statements with regard to No. 8 Hospital; but an orderly from that hospital partly confirmed them.

Overcrowding at Kroonstadt.

At Kroonstadt, on the same day, witnesses admitted the suffering of patients, and that there had been overcrowding under field hospital management, but they could not see how it could have been altered. They agreed that the state of things improved when the General Hospital and the Scottish Hospital arrived.

The Canadian Red Cross Commissioner and Mr. Burdett-Coutts.

A telegram in the *Times*, dated Toronto, September 5th, quotes Dr. Ryerson, lately Canadian Red Cross Commissioner in South Africa, in a letter in that night's *Telegram* regarding the alleged hospital mismanagement in South Africa as saying:

> Mr. Burdett-Coutts has not added much strength to his case by the statement that he cabled his complaint from Capetown to Lord Wolseley. Why did he run away from Bloemfontein and Lord Roberts? Why did he not make his complaint where it would have met with instant investigation? Does it not look as though he feared the results of an immediate investigation?

Dr. Ryerson further asks how Mr. Burdett-Coutts reconciles his facts with the mortality statistics as given by Mr. Wyndham, and quotes figures showing that the death-rate from enteric fever at Bloemfontein was only 21 per cent., against a much higher mortality in the Chitral and more recent campaigns. He asks how it is possible that such good results could be obtained had matters been so bad as they were represented to be by Mr. Burdett-Coutts. The Canadian Commissioner also supports his arguments by pointing to the small disproportion between deaths from disease and those from wounds, as compared with the figures in former wars, and concludes by saying, "Surely there must be something wrong with Mr. Burdett-Coutts's facts."

The Commissioners at Pretoria.

The Hospitals Commission reached Pretoria on September 8th, and at once got to work. Surgeon-Major Kilkelly, Grenadier Guards, stated that no complaint had been made of the Imperial Yeomanry and Portland Hospitals, although there was considerable pressure during the epidemic. He

denied that patients unfit to be moved had been taken to the Portland Hospital. The latter arrived in Bloemfontein in a storm, but tents were not pitched and no patients were received.

Evidence of Sir William Thomson.

Sir William Thomson, who has been in civil charge of the Irish Hospital since its commencement, complained that the authorities of the hospital were unaware of sick being detained at the railway station on May 23rd, as mentioned by Mr. Burdett-Coutts. He had then left Bloemfontein. He remembered similar incidents in April, in which notification had been given of the arrival of a train, but the train was several hours late owing to a breakdown, and the men were left without food. The arrangements for feeding patients at railway stations were not efficient until latterly. When Lord Roberts advanced the sick had, unfortunately, to be taken on with the army from Roodeval, as it was considered unsafe to send them back. He confirmed Mr. Murray Guthrie's statement that he had said that the men could not be properly treated in bell tents, and that there were insufficient stores in Pretoria. He formed a Committee in Pretoria which supplied all the hospitals with necessaries purchased in Pretoria and Johannesburg. He recommended the reorganisation of the medical department with a view to greater relief being given to the sick and wounded in war time, establishing the definite principle of a civil nursing system. This civil nursing system should be a distinct department, associated with the army under special officers. Consulting physicians were more necessary than surgeons in a campaign, where only one-sixteenth of the men in hospital were wounded and the remainder were sick.

Evidence of Chaplains and Others.

The Rev. Maurice Jones, garrison chaplain, spoke highly of the hospital arrangements, with the exception of the 12th Brigade Field Hospital, where the medical officer in charge of 290 patients was left practically without a staff for twelve days.

Captain Mould denied that men for the Irish Hospital remained unattended at Bloemfontein Station for a long time.

The Rev. W. Le Grave, Roman Catholic Chaplain to the Forces, considered that the Woodstock Hospital was badly situated and difficult to keep clean, but the patients had every attention. Everything was perfect in Pretoria.

Evidence of Mr. Kendal Franks.

Mr. Kendal Franks, consulting surgeon, described the condition of the field hospital after Paardeberg as most distressing, but said it was unavoidable owing to the accommodation being cut down to meet the necessities of the campaign. He denied that 2,000 sick arrived in Bloemfontein after the action at Paardeberg. The total number of patients in Bloemfontein on March 16th was 302. Accommodation was always found for the sick and wounded, but there was a great deal of overcrowding. The dead were always buried in separate graves.

Major Faunce denied Mr. Murray Guthrie's allegation that the hospitals in Pretoria were short of everything.

Illness of the Chairman.

According to a Reuter telegram, dated September 9th, Lord Justice Romer was unwell on that day, and it was considered possible that the resumption of the proceedings will be postponed.

Splendid Work by Doctors, Nurses, and Orderlies.

Up to the present the complaints, says Reuter, made are chiefly in regard to matters of detail, but nearly the whole of the evidence bears testimony to the splendid work of the doctors, nurses, and orderlies.

CONTRACT MEDICAL PRACTICE.

THE GROWTH OF CONTRACT PRACTICE.

Commercial Travellers' Association.

At a time when the medical profession is struggling to emancipate itself from the bondage to which it has been reduced by powerful working-class medical associations we feel it our duty to draw attention to the movement which is being very quietly carried on to enrol commercial travellers, clerks, and their families in a widespread medical benefit society. We have received a copy of the following circular, but at present we think it desirable to suppress names and addresses:

——— and ——— Commercial Traveller's Association: ——— Division.

President: ——— Esq., J.P.,

February ——, 1900.

C. T. A. Medical Branch.

Dear Sir,—In order to meet the wishes of members who desire to co-operate for the provision of first-class medical attendance for themselves and families on the lines of the medical schemes adopted by ——— and other C. T. A.'s, it is proposed to organise a similar scheme in connection with the ——— Division, and arrangements have been provisionally concluded with an eminent local physician, holding high London University qualifications, on the following terms:

10s. 6d. per annum for consultations, to a member or any of his family, at the doctor's house.

For visits at member's residence a reduced fee of 2s. per visit.

Medicines will be supplied, if desired, by the physician at a reduced charge.

This exceptionally favourable arrangement is necessarily subject to a minimum membership and it is hoped that those desirous of joining our Medical Branch will kindly fill up and return the enclosed form to the undersigned at the earliest possible date.

Yours faithfully,

———

Honorary Secretary.

To this is appended a form of application and an undertaking to pay the annual subscription in advance. We have reason to know that this scheme will be brought before the medical profession in the localities where it is being worked. The circular does not say how much the eminent physician receives per annum of the half-guinea subscribed. The adequacy of the rate of payment must no doubt depend upon the class of persons who take advantage of the scheme, the general rate of payment in the district, and the status of the practitioner employed, but it certainly appears to us to be very moderate. As, while there are many commercial travellers and clerks who are poor there are also very many who are quite well-to-do, there is the gravest risk that the scheme will be abused and that by accepting such work the profession will be forging another link in the chain which threatens to reduce the great mass of practitioners to a state of ill-paid servitude.

Medical Clubs in Lancaster.

The medical men in Lancaster are at present engaged in an interesting little contest with the members of various workmen's clubs. In round numbers these have a membership of some 4,000. At present the men pay 3s. 6d. a head per annum for medical attendance. The work is divided amongst twelve practitioners. In June the latter, through the Lancaster Medical Book Club, a very old society, which has latterly been enlarged so as to include all members of the profession practising in the town, gave notice that after the end of the present year nothing less than 5s. a head per annum would be accepted for attendance on club patients. After some negotiations the clubs have offered 4s. "as a final settlement of the question so far as the present staffs are concerned." This offer was refused at a meeting of the Book Club held on September 8th, and it will be recognised that the rate proposed by the medical men in Lancaster is certainly not unreasonable, having regard to the nature of the skilled services which they would undertake to render for it. The former rate of 3s. 6d. is absurdly low, and the increase to 4s. is inadequate.

The Backworth Collieries and their Doctors.

The *Newcastle Daily Journal* recently reported a meeting called by an association styling itself "The Backworth and District Medical Co-operative Association." The object of the meeting appeared to be to form a medical club for Backworth and district to provide cheap medical attendance for its members without regard to their social position. It was stated that already 550 persons had agreed to become members, and it was decided to advertise for a doctor at once.

This movement appears to have arisen in consequence of the Backworth colliery doctors demanding a more equitable scale of remuneration for their services. As the colliery doctors are united, it has been found necessary to call in outsiders to crush their union, and for that purpose the above Association has been called into existence.

The modest demand of the doctors is that 9d. per miner and family shall be paid each fortnight instead of 6d. as heretofore. It is to be regretted that any of our profession should find it necessary to accept such contracts, even at the enhanced rate, and we earnestly hope that no practitioner will be found to assist the Backworth and District Co-operative Medical Association against his brethren and the interest his profession.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, SEPTEMBER 15TH, 1900.

PRECAUTIONS AGAINST PLAGUE.

From every seaport in the kingdom comes news that special steps are being taken to prevent the introduction of plague and to provide for its treatment should it appear. This is as it should be, and we know that the Government and the municipal authorities of the chief ports are sparing neither money nor pains to take precautions against the threatened approach of plague.

There are, of course, several points that require careful thought. One all-important question is: Where are the sick, the suspects, and the "contacts" to be housed? Are the fever hospitals to be utilised for the treatment of plague patients? In other words, is it right to place persons suffering from plague in a permanent building? In the opinion of most of those who have had practical experience of plague, a plague hospital should be a temporary building, and any building in which plague patients have been treated should be burned when it is of no further use for the specific purpose for which it was erected. Some authorities even go further than this, and maintain that it is wise to be still more careful. They maintain that a plague hospital should not be used for more than a few months, since the premises become so saturated with the infection that not only is the disease possibly rendered more virulent in the case of the infected, but doctors, nurses, and attendants are rendered more liable to infection. It may be argued that modern hospitals for infectious diseases are so constructed that they can be thoroughly disinfected; that other diseases, even more highly infectious than plague, are treated there without the necessity of any such extreme measures; and that temporary buildings cannot be warmed, drained, or supplied with water so liberally as permanent hospitals specially designed. While the force of such arguments may be acknowledged, it must be remembered that plague is a disease of a special nature: that its methods of spread are not fully known: and that the very fact of the hospital being connected with the public drains is in itself a danger, as the spread of the disease by rats is a fact generally accepted.

While present knowledge would not justify the assertion that the admission of patients suffering from plague into the ordinary fever hospitals would be a public danger, yet it would equally fail to justify the converse assertion, and before admitting plague cases to such buildings the sanitary authorities ought to consider the expediency of such a step, giving the arguments we have advanced full consideration. For our part we should prefer to see plague patients housed in a separate hospital, and one of a temporary character which could be destroyed by fire when the outbreak is over.

The housing of "suspects" is also an anxious question. They ought not to be brought to the plague hospital itself until they are proved to have the disease. Usually this is a point easily determined; but when a case is believed to be plague, what is to be done with it before the sanitary authorities take the case in hand? Theoretically it ought to be isolated in a building devoted to the reception of such cases. But when the medical practitioner is in doubt he does not feel justified in sending a patient away from a comfortable home, it may be on mere suspicion; and the patient and his friends, should the case not prove to be plague, would have something to say to the medical man who made such a mistake. Fortunately plague, except in cases of the pneumonic type, is not highly infectious in the early stages; and if thorough disinfection of the apartment, clothing, utensils, and excretions is carried out after removal of the patient, there is but little danger to the rest of the household.

The housing of "contacts"—that is, of persons who have been exposed to infection—is a much larger question. To remove all the persons from a house let out in tenements because a case of plague has occurred in the building, necessitates the provision of another dwelling to put them in. In this country it is well nigh impossible to put the "contacts" under canvas even in summer. A house must be provided, but there would frequently be found a difficulty in finding empty houses suitable for the purpose. In London and in most large cities artisans' dwellings on the point of completion are frequently available, at any rate for the poorer classes. In these the "contacts" might be located and a daily inspection would be sufficient to guard against any case of illness being overlooked. In the houses of the better classes it would in all probability be sufficient to cut the healthy inmates off from the floor where the disease had occurred, and to maintain a daily inspection of their condition for some two weeks after the patient had been removed.

All these circumstances imply the removal of the patient to a hospital. In large houses, occupied by one family, removal may not be necessary, but the movements of the "contacts" must be carefully watched, and no one allowed to go away unless his destination is known, so that the medical officer of health in the district to which he removes may be definitely informed of the fact.

The warning received from the outbreak of plague at Glasgow has given us time to consider what steps should be taken to ward off, or deal with, the disease, and, seeing that every part of the country is on the alert, we have little fear that any of the sanitary or municipal authorities will be caught napping.

THE TREATMENT OF LUNATICS.

We publish elsewhere a report of a prosecution under the Lunacy Acts which raises questions of importance. In the first place it has in effect been decided by a magistrate that under some circumstances the striking of a lunatic is not *primâ facie* illegal, the intention with which the act is committed being a material factor in

constituting a breach of the law. Startling as such a decision may be, there is ground for believing that doubt as to the exact scope of the term "ill-treatment" has arisen elsewhere, for in the Lunacy Bill which has been before Parliament for some years there is a clause specifically extending it to the act of striking.

The charge of neglect having been rejected by the magistrate, the issue was narrowed down to the point of whether the use of a cane under the circumstances of the case was ill-treatment, and we are glad to be able to further narrow it, in view of his closing words exonerating Dr. Hutton from intentional cruelty, and to examine the question as if it were one of treatment.

It is generally accepted that corporal punishment, or even the threat of it, has been proved to be a mistake in the care of the insane. It was banished from all institutions years ago, even from those receiving idiot children. The reason for this is not far to seek—other and better methods have been found. The effect of such punishment on the individual can only be the production of a sense of personal subjection of a deteriorating nature. This is probably universally accepted in regard to an ordinary insane patient, but whether so accepted or not in relation to an idiot or imbecile it is none the less true. We must not be led away by the argument that the latter, though adults in age, are in reality children mentally, needing the ordinary correction applied to erring children. There is no sound comparison between the two classes. The reasoning powers, observation, habits of thought, capacity for mental extension, prospects for the future are on entirely different planes in the normal child and in one who is a child simply from lack of wits; and therefore the ultimate effects of punishment must vary, though in regard to the cessation of a particular act or practice temporary success may suggest similarity.

Further, it has been the aim of all concerned in the treatment of the insane to establish the fact that anyone whose mental powers are affected or impaired is a patient in the strict sense of the word, however much his acts may suggest responsible frowardness, malice, or crime. The object, and indeed the result, is to replace the gaoler by the doctor and nurse, and thereby do away with much of the horror and repugnance with which confinement for mental defect is regarded. Once admit that corporal punishment (though it be called treatment) may be inflicted even to obtain a desirable result in a particular case, and all the old mistrust and misrule will return. The relations of doctor and patient will be altered, the nurse will be regarded as a possible tyrant not only by the patient in question, but by all others, patients or not, and the whole system will relapse.

Other consequences of an inconvenient nature will logically follow any such falling away. Where can a line be drawn between legality and illegality? Who has wit enough to draw limiting provisions which will not invite constant litigation and scandal? Again, the only justification of a blow can be that it is administered for the purpose of producing good. Then, if a blow can produce a good effect on one patient, why should other sufferers be denied the advantage of similar treatment? It would be quite easy on going round an asylum to pick out people who by reason of mischievous waywardness are but children for the time being, and who would probably be kept quiet for the time by a slap or two. Why should they not be slapped? Yet once more, if one person can confer a benefit by a blow, why should not another administer it with the same intention? These speculations receive some justification from the conviction of the coachman for adopting a punitive line of treatment. No difference in the eye of the law arises between him and his master on the ground that the latter was brother and the other servant. Probably his reasoning was that it was his right, if not duty, to do good to the patient on lines similar to those adopted by his master. And this element of example is one of the strongest reasons for total abolition of personal correction of the insane.

We hold, therefore, without any misgiving, that the real interests of the insane demand a rigid exclusion of anything in the nature of a blow, and we shall be glad when definite legislative support is given to what we believe to be the intentions of the present law, as interpreted by those who have most experience and responsibility in the care of insane persons.

SUNSTROKE AND HEAT WAVES.

Even at the present day a person who has been suddenly paralysed is said to have had a "stroke," a phrase that is probably a relic of those remote times when a vindictive influence of sun, moon, and stars was believed to be active in producing disease. The term "sunstroke," moreover, like the French *coup de soleil* and the German *Sonnenstich*, is a somewhat unfortunate one for ordinary use at the present day, inasmuch as the condition it is meant to signify may occur independently of the sun.

Many people during seasons of hot weather, and particularly during the insurgence of heat waves, manifest an irritability of temper with a degree of motor restlessness which are annoying to their friends, and a loss of appetite, insomnia, and disinclination for exertion of any kind which are distressing to themselves. More alarming, however, is the sudden faintness or giddiness followed by a dazed feeling which sometimes occurs during actual exposure to the sun—a condition which, if it be not usually dignified with the name, is probably a minor degree of sunstroke.

There may be said to be two main clinical types of sunstroke, the cardiac or syncopal and the hyperpyrexic or comatose. The former is characterised by all the symptoms of heart failure without pyrexia. In these cases recovery is the rule. This condition may occur after exposure to a high temperature, not solar in origin, and is, therefore, often known as heat prostration. In the second group of cases in conjunction with hyperpyrexia, there is cyanosis, stertorous breathing, profound coma, and evidence of intense pulmonary congestion. About 50 per cent. of these cases, it is said, prove fatal. Doubtless, however, there are many cases to which intermediate positions must be assigned.

That the personal equation is important is evident from the fact that, as a rule, only a very small proportion of those exposed to the same conditions of heat or sunshine suffer in the way that has been described; for example, only 300 out of 18,000 troops were so affected in the Aldershot manœuvres last June. This personal proclivity is

doubtless often dependent on some undiscovered organic disease, but probably more often on a lowering of the vital resistance of its subjects, the result of breathing vitiated air, of exhaustion, of inanition, or most frequently of alcoholic intemperance.

The morbid anatomy of sunstroke cannot be said to have thrown much light on its causation, although Van Gieson found chromolytic changes in the nerve cells precisely similar to those produced by bacterial toxins. There are at the present time four different theories in regard to its pathology. These may be termed the caloric, the chemical, the autotoxic, and the microbic.

The caloric theory, according to which all the forms of the disease—if specific disease it be—are due to the action of intense heat, directly and alone, is certainly the oldest hypothesis. The excessive heat is supposed to put out of gear the vasomotor and heat-regulating centres of the body. Recent experiments, particularly those of Goldscheider and Flatau, who observed symptoms something like those of sunstroke with characteristic changes in the nerve cells in animals who had been subjected to a high external temperature, appear to lend some support to the theory, but they can hardly be considered conclusive.

The chemical theory is especially attractive at the present time. As is well known, the ultra-violet and violet rays can not only produce a superficial dermatitis with pigmentation of the skin, but they can also effect chemical changes under the skin, while the Roentgen rays, which have a similar superficial action, can penetrate deeply into the tissues of the body. A fact advanced in support of the theory that the chemical rays may produce sunstroke by acting directly on the central nervous system is that a tolerance of excessive sunshine may be established in Europeans similar to that which appears to belong naturally to the native races of the tropics. This tolerance, which however it must be said is also claimed as evidence by the supporters of the microbic theory, may be assumed to depend, in part at least, on the deposition of pigment in the skin, for this by itself can intercept many of the chemical rays.

The holders of the third or autotoxic theory assume that a high external temperature produces changes in the blood—possibly by causing the addition to it of certain products of imperfect tissue metabolism—which make it poisonous for nerve cells, and particularly for those of the vasomotor centres and cardiac ganglia. The blood serum obtained from cases of sunstroke has been actually found by Levene to rapidly produce fatal toxic symptoms in rabbits.

According to the fourth or microbic theory, hyperpyrexic sunstroke is a specific fever like yellow fever, being endemic in certain low-lying seacoast districts and river valleys, and tending under favouring conditions to become epidemic. In this theory it is implied that all other forms of so-called sunstroke are merely cases of ordinary syncope determined by heat. It is pointed out that while this disease is endemic in some very hot districts it is unknown in others equally hot; that both the anatomical observations of Van Gieson and the experiments of Levene lend as great support to it as to the autotoxic theory, and that multiple neuritis is a not infrequent sequel.

Whether one or other of these theories will eventually be accepted, or whether in fact two or more different pathological states are not being classed as one are questions that cannot yet be answered. But whatever the *causa vera* of sunstroke may be, its occasion is obvious and should be met. Its prevention depends, on the one hand, on keeping the bodily resistance at a high level, and on the other in avoiding or antagonising the influence of intense sunshine or of excessive heat when from any cause the general health is lowered.

In regard to the first object it should be constantly kept in mind that excesses of all kinds, but especially in alcohol, are never so injurious as in hot weather; that harmful excess may pertain equally to physical exertion, particularly if in a highly humid atmosphere; and that an unreasonable curtailment of the hours of sleep is a potent means of lowering the resisting energy of the body.

As regards our army some at least of these measures are not very practicable, neither are some of those belonging to the second group, such as the employment of cold baths, the use of iced drinks, and of punkas and other breeze-producing mechanisms. But the question of head covering is of special significance at the present time. It is of interest to remember that the ancient Greeks wore brazen helmets in action, and it is conceivable that the metallic substance acted as a barrier to certain of the sun's rays as metals do to the passage of the Roentgen rays. The suggestion has at all events been made that a light metallic sheet, say of aluminium or tin foil, might be a useful addition to the soldier's head gear during hot bright weather. A red lining for head coverings has also been advocated as a means of absorbing the violet actinic rays. The muslin fall over the nape of the neck worn by Indian troops and the khaki neck-covering recently adopted by the City police had their prototype in the plate of brass prolonged over the back of the neck from the crown of the Grecian helmet. The desirability of airy camps and adequate commissariat is self-evident: as also is the advisability of reducing the number of mere drills to a minimum during hot weather, and holding even these in the cooler morning and evening hours, and that before early morning drill rations with tea or coffee should be served. When possible marches should, it is clear, be interrupted with frequent intervals of rest, preferably in the shade, while no unnecessary weight should be carried or constricting bands worn, and a plentiful supply of cool drinking water should be provided.

In the active treatment of heat prostration or of syncope induced by heat the obvious indications are for recumbency, coolness, and the exhibition of stimulants. Cold water affusion in moderation is probably useful, but any excess would still further depress the patient's vitality.

For the fully developed hyperpyrexial cases, ice packs, iced-water douches, and other ordinary means of combating hyperpyrexia should be energetically employed, but the coal-tar antipyretics are to be avoided, as they have proved harmful. Tincture of digitalis by hypodermic injection has been found useful, probably both from its cardiac effect and also from the direct influence it apparently has on nerve cells. Seeing that the fatal termination in these cases is usually due to respiratory failure, it would have been anticipated that strychnine would have been helpful, but its administration has seemed

to do more harm than good, and, waiving the question of the possibility of artificially neutralising any toxic substance that may be present in the blood, the mainstay of the last position of defence is the vigorous prosecution of artificial respiration. If, however, there be an organismal cause of sunstroke—and a bacillus has already been described—something more than merely symptomatic treatment may become possible in the future.

MEDICAL OFFICERS OF THE HIGHLANDS AND ISLANDS.

THE reply of the Local Government Board of Scotland to the memorial presented to that Board by the medical officers of remote parishes in the Highlands and Islands of Scotland[1] must be disappointing to the memorialists, in that although it expresses sympathy with the desired reforms, it confesses the inability of the Board to remedy the grievances complained of. The difficulties under which medical men in these remote parishes carry on their work are very great; their districts often are of large extent, necessitating journeys of from ten to thirty miles over rough roads perhaps to see a solitary patient, and possibly not only to receive no remuneration, but be compelled to remain overnight in one of those very dwellings described and condemned by the county medical officers of health.

The poverty of the districts makes it difficult for parish doctors to increase their emoluments to any great extent by private practice, so that the salary paid by the parish council is the principal source of income, and in this respect they differ from their more fortunate brethren in more favoured districts. The request made to the Local Government Board to be provided with a substitute to enable the parish doctor to take a short annual holiday was a very reasonable one. No obliging colleague can be got close to his door; if he wants to get a holiday he has to obtain a *locum tenens* from Edinburgh or Glasgow, at a cost, owing to his remoteness from railways, out of all proportion to his receipts, and although his holiday may be to visit some hospitals and keep himself up to date in his work, his proposed trip has to be abandoned.

Since parish councils have come into existence a new terror has been added, as exemplified by the well-known case of Dr. Lamont of South Uist, and by the treatment meted out to Dr. Robertson by the parish council of Harris, as described by him in the BRITISH MEDICAL JOURNAL. It is not to be wondered at that it is difficult to obtain well-educated professional men who will submit to the chance of being removed from office without any explanation being given of the cause of removal.

The memorialists stated that the Local Government Board of Ireland requires that a Board of Guardians shall give its medical officer an annual holiday and pay a reasonable fee to a qualified substitute, and that most of these Boards have cheerfully acquiesced in this requirement. The Local Government Board for Scotland confess their inability to comply with this request, but are willing to do the best in their power—that is, they will offer no objection to the cost of substitute medical officers being ranked against the medical relief grant in the more remote parishes of the highlands and islands of Scotland, provided that the local circumstances are such as are described in the memorial, and provided care be taken that the parish council shall pay only for the services rendered by these substitutes to the paupers, and not for services to the medical officer's private patients.

While this is so far satisfactory, it is not enough, and legislation is necessary to remedy the grievances of the parish medical officers and give them security of tenure. But in view of what the Local Government Board express themselves willing to do, it is desirable that no medical man should accept an appointment in these districts unless the parish councils agree to comply with the suggestion of the Local Government Board. Present holders of office might approach their respective Boards, and find if they are willing to grant them a like privilege.

In view of the approaching general election, every member of the British Medical Association can do something to assist his brethren in the Highlands and Islands by bringing the matter before prospective candidates for Parliament, and obtaining an assurance that they will view with favour the measure that will be introduced to remove the grievances of parish medical officers, and obtain for them security of tenure.

[1] See BRITISH MEDICAL JOURNAL, August 18th, 1900, p. 457.

THE PLAGUE IN GLASGOW.

THERE are 16 cases of plague under treatment in Glasgow, an increase of 3 during the week. Four cases are under observation as "suspects," and 113 "contacts" are located in the reception houses. All of them have been definitely related to the infected area on the south side of the city except one which comes from Govan. This last case was of the pneumonic type, and was admitted to the Western Infirmary supposed to be suffering from simple pneumonia. Certain features of the case, however, at once aroused suspicion, and the patient was transferred to the Belvidere Fever Hospital, where the diagnosis of plague was afterwards confirmed. This case from Govan has no known connection with the main focus of infection in the Thistle Street neighbourhood, and the same may be said of the earlier fatal case that occurred in Govan a week ago. Moreover these two Govan cases are not known to have had any connection with one another. When it is remembered, however, that the disease was present in the heart of the city for at least three weeks before there was any suspicion of its presence, it will not be surprising if for a short time apparently isolated cases should crop up in different parts of the city. On the whole the disease in Glasgow has been of a rather mild type, and, so far, only one death has taken place in the fever hospital. The bulletin issued on Tuesday, September 11th, gives 16 cases of plague still in hospital, and 2 cases of suspected plague. One or two doubtful cases have been declared free, and now a good many of the "contacts" under observation in the reception houses have been dismissed, the extreme limit of time for incubation of the disease having passed. The report is satisfactory, and all the more so when it is known that the fresh cases have occurred either amongst those who were under observation, or who had in some way been associated with the original source of infection in Rose Street. The disease seems limited in a marked manner, and there appears to be every prospect of its being completely and speedily eradicated. It may confidently be said that everything possible is being done to attain that end. If energy, care, and money can avail in stamping out disease never have they had a fairer trial than in Glasgow. The illnesses on board ships are being attended to with anxious surveillance, and especially is sickness amongst lascars being noted. It is fortunate that malarial fever is

nowadays so easy of recognition. Several of the lascar crews have developed malaria to a considerable extent, and there is no doubt but that for the exact means of diagnosis at our disposal their presence would have added to the public alarm. We notice that the term "reception house" is bestowed upon houses devoted to the reception of "contacts." We would commend this term to other municipalities in preference to "detention house," "segregation camp," etc. The reception house is in no sense a detention house; although "contacts" are received they are not detained there, and the use of the term "reception" will tend to lessen the natural objection people have to leave their homes if they think they are to be regarded as prisoners.

PRECAUTIONS AGAINST PLAGUE IN DUBLIN.

AT the request of Sir Charles Cameron, C.B., the Medical Superintendent Officer of Health for the City of Dublin, the President and Fellows of the Royal College of Physicians of Ireland have drawn up a memorandum on the symptoms and treatment of bubonic plague. This pamphlet will be circulated among the members of the medical profession in Dublin; and although the chances of the disease reaching that city are considered to be extremely small on account of the precautions that are being taken in the matter of inspecting vessels trading with Glasgow, it is a wise proceeding to be fully prepared to cope with the malady if unfortunately it should appear. Sir Charles Cameron is endeavouring not only to prevent its presence in Dublin, but has already secured an isolation hospital where the disease could be treated if any cases should reach the city.

RATS AND THE PLAGUE.

IN a letter published in the *Daily Mail*, Dr. W. Munro states that "it is not the rats themselves, but the vermin which infest them" by which plague is conveyed to man. Dr. Munro states that as the vermin are gorged with plague bacilli, therefore it is the vermin that are infectious and not the rats themselves. He points out, arguing from this basis, the danger of spreading plague by handling rats that have died of plague, and he considers that offering money to kill rats, which are subsequently handled whilst still warm and before the vermin have left them, is a certain method of spreading infection when plague is rife in the vicinity. According to Dr. Munro, the advantage of killing the rat is the destruction of the vermin infesting the animal, and he advises that the work should be undertaken only by officials properly protected by waterproof clothing against the attacks of the rat vermin. The dead rats should be at once covered with paraffin, picked up with shovel or tongs, and carried to a place where they can be burned. A ship should not be fumigated when in dock, as the rats simply swarm ashore, carrying infection with them. The ship should be fumigated whilst it is some distance from the shore. Dr. Munro's remarks are practical, and probably correct.

UNIVERSITY OF LONDON.

IN addition to the candidates already mentioned in these columns as aspirants to the sixteen seats to be filled by Convocation other names are now being canvassed. Thus while in the Faculty of Science Sir Philip Magnus, Dr. Kimmins, and Mrs. Bryant appear to enjoy the confidence alike of the Association and the Union of Graduates, the names of Professors Silvanus Thompson, Carey Foster, and Vines are supported by the latter body for the other three seats against Drs. Clowes, Russell Wells, and Macaulay. In the Arts Faculty the new names put forward are those of Sir Joshua Fitch, Dr. Routh, Mr. Osler, and Mr. Wood. Dr. R. D. Roberts has, we understand, been independently nominated in the Science Faculty. September 17th is the last date for sending in nominations to the Clerk of Convocation. Each nomination paper must be signed by ten registered graduates. The Senate will probably meet on October 8th to wind up the business of the University in its old form, and Convocation will meet on the following day to elect the new Senators from that body. We understand that the Imperial Institute is not prepared without a struggle to allow the road in which it is situated to be rechristened University Avenue, as it still regards itself as the predominant partner in the South Kensington buildings.

CARBOLIC ACID A SCHEDULED POISON.

IT is now some ten or twelve years since the frequent occurrence of cases of poisoning, accidental or suicidal, by carbolic acid led the Parliamentary Bills Committee of the British Medical Association to make representations in support of applications made by the Pharmaceutical Society that carbolic acid should be declared to be a poison within the meaning of the Pharmacy Act of 1868. Nearly five years ago a strong memorandum was addressed to the Privy Council, on behalf of the Association, but it is only a few weeks since the Order in Council was issued approving the regulation declaring that liquid preparations of carbolic acid and its homologues containing more than 3 per cent. of those substances are to be deemed poisons. Exception is made in the case of preparations for use as sheep-washes or for any other purpose in connection with agriculture or horticulture, and contained in a closed vessel distinctly labelled with the word "Poisonous," the name and address of the seller, and a notice of the agricultural or horticultural purpose for which the preparation has been prepared. In future, solutions of carbolic acid above the strength indicated can be sold, except for the purposes specified in the last sentence, only by chemists, and the vessel must be labelled with the name of the article, the word "Poison," and the name and address of the seller; liniments, embrocations, and lotions containing it must be sent out in poison bottles. The issue of the order has led to protests on behalf of grocers, oil and colourmen, and other persons who have been in the habit of selling preparations of carbolic acid without taking any sort of pains to see that the purchaser was properly warned of the poisonous nature of the stuff sold. Cases have occurred in which crude carbolic acid has been supplied in cups, ginger-beer bottles, and so on, without a label of any kind, and many accidents have happened in consequence, and it is to be hoped that having at length taken this very necessary step in the public interest, the Government may not be induced to weaken its effect by any clamour which will be raised by interested traders.

TEMPORARY *V.* PERMANENT HOSPITALS FOR SMALL-POX

THE thriving seaport of Barry is much exercised in mind on the question of providing itself with a proper hospital for the treatment of cases of small-pox. We are informed that the population of this busy town is now estimated at 30,000 and that it does a large trade with Continental ports. Under these circumstances the Medical Officer of Health has advised that a permanent hospital be erected for the reception of any cases of this disease that may occur. In this he has the support of the Chairman of the Health Committee, himself a medical man, as well as that of another medical member of the District Council. On the other hand, the opposition claim the support of three other members of the same profession, not, we believe, at present members of the Council. One of these gentlemen in a letter to the *Barry Herald* declares that "Experience teaches us that, in the unhappy event of a severe epidemic of any infectious disease occurring, sufficient and

efficient accommodation could be provided in the space of twenty-four hours for any number of cases." This statement is, to say the least of it, startling. We have known some hospitals of wood and some of iron erected with considerable rapidity in times of stress, but the time from the passing of the resolution to the time of getting patients into them has always very much exceeded this sanguine estimate. We are inclined to agree with him that it is not absolutely necessary to have all the beds erected in time of peace that may be possibly required in time of war, but it seems highly desirable, and not least so in a seaport town, to have the nucleus of a small-pox hospital ready for an emergency. Such a hospital should contain a somewhat complete administration. It should have provision not only for persons of both sexes actually suffering from the disease, but it should provide for the isolation of those doubtful cases which are the plague of the conscientious health officer. To leave these cases at home is often to facilitate the spread of the disease. To place them in an infected ward may settle the diagnosis unfavourably to the patient. This provision made, a portion of the ground should be levelled on which other pavilions, whether temporary or permanent, could be quickly erected. In certain seasons of the year these might be merely canvas tents, though even these, if provided, as is desirable, with wooden floors, take longer to prepare than most people suppose. The administration and the minimum of accommodation we have suggested should, in our opinion, be built of permanent material. The former should, of course, be large enough for administering to the extended hospital, which might grow up like Aladdin's palace in a night. In an imperfectly-protected community the isolation of the first half-dozen cases of small-pox may often prevent an epidemic. The accommodation for them should be always ready. Many towns now protect themselves by providing also accommodation for "contacts." These may in many cases, however, be dealt with by quarantining them at the house where the first case occurred. Money spent in preventing an outbreak of small-pox is not generally money wasted.

FOOD PRESERVATIVES COMMITTEE.

DR. TIMBRELL BULSTRODE, one of the members of, and Mr. Charles J. Huddart, Secretary to, the Food Preservatives Committee, have during the past month visited Amsterdam, Hamburg, and various places in Denmark for the purpose of studying the dairy industry and the methods of transport of dairy produce, with special reference to the milk and butter supplies in Holland, Germany, and Denmark, and the butter export trade, in relation to the use or non-use of chemical preservatives. The Committee and their Secretary are, we understand, proceeding to Ireland in the course of the present week with a like purpose. They propose to give special attention to the South and West of Ireland, although visits will also be paid to the province of Ulster with the same object. The Committee will probably spend the rest of the month in their study of the above matters in Ireland prior to reporting.

FOOD PRESERVATIVES.

AT the Ipswich meeting, as our readers will remember, the State Medicine Section passed a resolution to the effect that in their opinion the addition of preservatives to milk, butter, and similar products, as well as to beer and wine, should be prohibited, and that the addition of such substances to other foods should be regulated by statute. The whole subject of the addition of chemicals and dyes to the food supply is engaging the attention of a Departmental Committee of the Local Government Board. Amongst other bodies the Council of our own Association were asked to tender two witnesses. The evidence of both these gentlemen was to the effect that the addition of preservatives to milk products was wholly undesirable, and that any additions to other articles of food should be illegal unless declared. Since this evidence was tendered Professor Halliburton, himself also a witness before the Commission, has published in our columns on July 7th the results of further experiments on the effect of boric compounds in milk upon the digestion of that fluid by rennet. As was pointed out by Dr. Grünbaum in introducing a discussion on the subject of preservatives at Ipswich while, as Professor Halliburton has shown, the addition to milk of even so small a quantity as 0·05 per cent. of borax inhibits considerably the action of the natural digestive ferment, it has practically no antiseptic action. What we require, as Dr. Grünbaum was careful to indicate, is aseptic, not antiseptic, food. Whether the antiseptic be boric acid or formalin, its addition interferes with the digestion of the food and in large amounts it may injure the digestive tract. The end desired can be attained by means free from objection. If the milk when it leaves the cow were at once chilled and kept at a low temperature till it reached the consumer, chemical preservatives would be unnecessary. It is chiefly where milk has to travel far that the temptation to tamper with it in this way exists. If mutton can be brought in chilled chambers from Australia in perfect condition surely milk can be carried a few miles by train. What is wanted is a specially fitted waggon on the rail for the purpose and an ample supply of ice. Ice can now be obtained in most large towns at fairly reasonable prices, and this is one of the cases where the demand is sure to create the supply. It can be made in any required quantity at a moderate outlay. Instead of this there is danger at present that in hot weather the farmer may add the prescribed quantity of the convenient powder purchased so readily from the druggist; that the dairyman on receiving it at the station, knowing nothing of the farmer's action, may add another dose as he distributes it; while the careful housewife, on receipt of what she has a right to suppose the pure product of the cow, may add a third amount of the very same drug to the necessary food of the innocent baby, and then wonder that the puny infant suffers from catarrhal diarrhœa. If it were made penal to add anything to the milk without declaring that it had been done and stating the amount of the addition, some benefit might ensue, but it would be better to reform the practice altogether, and prohibit the addition of any foreign body to so essential an article of our children's food.

SANITARY CONGRESS AT STIRLING.

THE twenty-sixth annual congress of the Sanitary Association of Scotland was held last week at Stirling under the presidency of Dr. A. Campbell Munro, County Medical Officer of Health for Renfrewshire. Dr. Munro, in his presidential address, discussed the question of the influence that the advance in sanitation during the last fifty years had had on the health of the community as gauged by vital statistics. He showed that the death-rate from small-pox had fallen from 576 to 15 per million; relapsing fever had become extinct; typhus fever had all but vanished; the decrease in the prevalence of typhoid fever was hardly less gratifying, and the death-rate from scarlet fever had fallen from 971 per million in 1861-70 to 162 per million in 1891-99. Dr. A. R. Wilson, Medical Officer of Health for Stirling, read a paper, in which he advocated the appointment of a Crown Minister to control matters relating to the administration of public health, and in particular a special State Department for Scotland. Dr. George A. D. Mackay, of Edinburgh, read a paper containing a plea for tact in the conduct of sanitary work. A discussion on the housing of the working classes was introduced by Dr. Patrick Murison, Medical Officer of Health for Sutherlandshire, in which it was suggested that periodic inspection of all tenement

buildings should be made every five years by proper officials, who should report to the local authorities. Professor Glaister, of the University of Glasgow, on the second day of the Congress gave an address on the supervisory control of water supplies, which included the systematic inspection of the sources of supply, and a regular chemical and bacteriological examination of the water at short intervals. A resolution was unanimously adopted calling for legislation dealing with the conservation of the sources of water supplies, and with the conditions attached to the acquisition of the water. Mr. William Thomson, Sanitary Inspector of Stirling, described the difficulties which presented themselves in the endeavour to improve the sanitary condition of the older portions of ancient towns. The proceedings of the Congress were brought to a conclusion with papers on the prevention of tuberculosis in dairy stock, and the sanitary supervision of public conveyances.

SIR GEORGE HARE PHILIPSON.

It has been decided to invite Sir George Hare Philipson to a complimentary dinner in celebration of his having received the honour of knighthood and in recognition of his services to the medical profession. The following Committee has been formed to carry out the arrangements: Dr. G. H. Hume, F.R.C.S.E. (Chairman), Dr. D. Drummond, Mr. F. Page, F.R.C.S., Dr. R. S. Peart, Dr. W. C. Beatley, Dr. T. Beattie, Dr. J. Munro, Dr. J. Hedley, Dr. W. Robinson, Dr. J. Murphy, Dr. J. P. Elliot, L.R.C.P. and S., and Professor T. Annandale, F.R.C.S. Honorary Secretaries: Dr. W. Crump Beatley, 4, St. Mary's Terrace; and Dr. T. Beattie, 3, Ellison Place, Newcastle-upon-Tyne. The dinner will take place on Tuesday, October 2nd, 1900, at 7 P.M.; tickets £1 1s. each, including wine. Those desirous of being present are requested to apply to either of the Secretaries before September 22nd. The Freemasons intend to extend similar hospitality to the University of Durham Professor of Medicine.

MISERABLE COMFORTERS.

It has been said that the acme of human happiness is reached when a young mother has her thriving infant toddling after her. The joys of maternity are manifestly very great, but they are not so great as they might be if mothers, particularly those of the uneducated classes, were instructed in elementary hygiene. Perhaps the most wearing part of a mother's life during the first months of her child's existence is the disturbance of sleep, night after night, caused by the needs of her offspring. What wonder is it then that jaded mothers use artificial means of securing some rest for themselves? But these artificial means are not always wise, and sometimes are positively dangerous to infants. A few years later, when the growing child is cross it is charitably supposed, in many cases, to be suffering from gastro-intestinal disorder, and is forthwith given a dose of compound rhubarb powder, which acts both as a rectifier of morbid conditions and as a moral deterrent. But in the early days of a child's life apparently no such wholesome doctrine is recognised. One expedient frequently adopted is for the nurse to walk up and down with the infant in her arms, patting its back the while in strokes which, having regard to the frailness of its anatomy, must often shake it considerably, whereupon the child settles down into a dazed quietude which has been compared to the somnolence induced in some people by a jarring railway journey. Other mothers, usually belonging to a lower social stratum, administer a dose of some widely advertised "soothing syrup," or, if on a still lower scale, a drain of their favourite spirituous drink. Hardly less reprehensible, however, is the practice of giving the fretful infant what are euphemistically called "comforters" to suck. On a moderate estimate about 70 per cent. of the out-patients of a hospital for sick children are brought actually *in flagrante delicto*. It may be, and probably is, that to the infants themselves the "comfort" is sweet to the taste but, without doubt, it is often very bitter in the belly. For the ordinary routine is that the blind indiarubber teat falls on the floor from whence it is directly lifted and placed straightway between the infant's lips, and this, not once or twice in the day but repeatedly. Or, if the child is a little older, it throws the teat in play on the floor and crawls or walks after it, replacing it in its ordinary position when reached. It is unnecessary to point out the possible connection of such a procedure with the gastro-intestinal disorders of infancy. But the irony of the disinfected hands of the milkman, the cleansed teat of the cow, the sterilisation of the cow's milk, the discarding of long india-rubber tubes to feeding bottles, and the administration of intestinal antiseptics to infants is sufficiently striking.

A SO-CALLED "INTERVIEW."

Mr. Frederick Treves writes to us from Luchon as follows: "Sir,—I find that in a certain magazine an article has appeared which purports to be an account of an interview with me. Will you kindly give me the opportunity of saying that I have had no 'interview' with any representative of that or any other magazine, and that the account has been published not only without my consent but, indeed, without my knowledge. The author of the article in question has written—in answer to a letter from my solicitor—to express his regret for the production of this so-called 'interview,' and to state that it is taken from certain reported remarks and published letters of mine. (The only letters of mine which have been printed appeared in the pages of the British Medical Journal.) The photographs which accompany this so-called 'interview' were not obtained from me, and are also published without my knowledge or consent.—Yours faithfully, Frederick Treves."

A SANATORIUM FOR CONSUMPTIVES AT DUNDEE.

About a year ago it was decided by the leading citizens of Dundee that a sanatorium should be erected for the treatment of phthisis among their poorer townsfolk. It was recognised from the outset that its establishment and maintenance would involve a heavy financial outlay. But the gift of £10,000 by Ex-Provost Moncur shortly after the scheme was initiated largely met the financial responsibility in regard to the building, and an anonymous donation of £500 for five years was made for its maintenance. Difficulties in respect of a suitable site arose both from the special requirements of the sanatorium and from the disinclination of landed proprietors to part with ground for the purpose. Both difficulties were, however, met by the gift of the late Earl of Airlie, who was at the time serving with the British army in South Africa. The site is 800 feet above sea level, comprises 21 acres of ground, and is well sheltered from north and east winds. At the beginning it was thought that £10,000 would provide for the accommodation of thirty patients, but, when plans and estimates were submitted to the Executive Committee, it was found that about £13,000 would be required. Accordingly, with great generosity, Ex-Provost Moncur added £5,000 to his original gift. Both the building and the manner in which it has been financed will do lasting credit to Dundee.

MEDICAL MEN IN PUBLIC LIFE.

In proposing a vote of thanks to Sir George Robertson for his striking address on Political Geography and the British Empire, at the meeting of the British Association, Sir William Turner made appropriate reference to the prominent part which Sir George had taken in the expansion of the empire, and cited him as "an instance

of what was not uncommon in the profession—namely, of men after having joined it, being found to be better fitted for greater duties than mere doctoring." The idea might have been more gracefully expressed, for after all, in the whole range of human activity there is no greater duty than "mere doctoring," and the suggestion that men take to public life because they are "better fitted" for that than for the exercise of their own profession appears to be a somewhat doubtful compliment. But the fact to which Sir William Turner alluded is one of the most remarkable circumstances in the story of the growth of Greater Britain. When the full history of our colonising enterprise is written, it will be found that the doctor has played a great part in the expansion of the Empire. Much of this pioneer and civilising work has doubtless been done by the "mere doctoring" which the President of the General Medical Council appears to rate so cheaply. But a not inconsiderable part has been achieved by men who having been bred to medicine as a calling have carried into the sphere of public life the power of seeing things as they are, the scientific accuracy of observation and the large human sympathies which are among the fruits of a medical training. As examples of living members of our profession who are or have been engaged in governing colonies or administering departments of State may be mentioned, in addition to Sir George Robertson, Sir William McGregor, the Governor of Lagos in West Africa; M. de Lanessan, the French Minister of Marine; Dr. José Paes de Carvalho, Governor of the State of Para in the Brazilian Republic; Professor Guido Baccelli, Italian Minister of Public Instruction; General Wood, Governor of Santiago; Sir John Kirk, formerly British Consul-General at Zanzibar; Sir Halliday Macartney, Councillor of the Chinese Legation in London; Mr. R. E. Bredon, Deputy Inspector-General of the Chinese Customs; and Dr. L. S. Jameson, Ex-Administrator of Mashonaland. Mr. Rutherfoord Harris, who has played a considerable part in South African politics, is also by "first intention" a doctor; so is M. Clémenceau, who is still a political force in France. Professor Virchow was till lately the leader of the Liberal party in Germany. Sir Rutherford Alcock, who was for a long time our plenipotentiary in China, was originally a doctor; so was Emin Pasha. Among medical politicians in the past we may mention Joseph Hume, the economic reformer; Sir James Mackintosh; Thomas Wakley, the "Member for Medicine;" Baron Stockmar, the confidential adviser of Prince Albert; Struensee, who for a time held the reigns of government in Denmark; Sir John Schultz, Lieutenant-Governor of Manitoba; and Marat, the Revolutionist—who was, we regret to say, not a "horse doctor," as he is called by Carlyle, but a fully qualified medical man. In the last Government Sir Walter Foster was Parliamentary Secretary to the Local Government Board, an office which is the nearest approach to a Ministry of Public Health that has yet been reached in this country. This list, which is far from exhaustive, will serve to give an idea of the extent to which the medical profession supplies men fitted to take a leading part in public life.

AN OUTBREAK OF EPIDEMIC CEREBRO-SPINAL MENINGITIS ON BOARD SHIP.

WE have received from the Colonial Office an extract from a report by the Immigration Agent-General for British Guiana to the Governor of that Colony in regard to an outbreak of cerebro-spinal fever on the ship *Clyde* while conveying immigrants from Calcutta to Georgetown. The first case occurred on the morning of January 27th last, three days after embarkation. The patient, a young woman, suddenly became ill, rapidly became unconscious, and on regaining consciousness complained of severe headache; she had fever, vomiting, delirium, and head retraction. She died after fifty days' illness from exhaustion. On February 1st, five days after the first case, a male coolie developed the disease and died six hours after its onset without regaining consciousness. On February 6th, a third case showed itself. The man died at the end of four days. On March 19th, forty-one days after the last case, another appeared; this man died in a few hours. It is pointed out as remarkable that although there was no possibility of case-to-case infection, and although rigorous disinfectant measures were employed, the last case should have occurred forty-one days after the previous one had died. The fourth and first cases came to the depot in the same batch of coolies. It is suggested from these facts that the incubation period is longer than is generally supposed. All the patients were young, healthy, and strong persons. The average pyrexia was about 101°; it sometimes was as high as 103°. There were no premonitory symptoms. A *post-mortem* examination revealed acute inflammation of the membranes of the brain and cord with hæmorrhagic patches; blood was also found effused at the base of the brain. There was nothing in the climatic conditions during the voyage to predispose to such an outbreak; there was no communication between the persons affected; the sanitary state of the ship was excellent. Cold lotions to the head gave the most relief, and the lack of ice was greatly deplored.

IT is understood that the date for the election of a surgeon to the Meath Hospital, Dublin, in the room of the late Sir William Stokes, has been fixed for Thursday, September 27th.

THE prize of 4,000 marks voted by the Berlin Congress of Tuberculosis for the best popular work on tuberculosis as a social scourge, and the means of preventing its ravages, has been awarded to Dr. S. A. Knopf of New York. The work will be published by the German Central Committee.

A *conversazione* to inaugurate the opening of the first session of the Medical Faculty of the University of Birmingham will be given on October 1st. Professor B. C. A. Windle, Dean of the Medical Faculty and Professor of Anatomy in the University, will deliver an address.

IT is announced that Dr. George Turner, medical officer of health for Cape Colony, formerly Lecturer on Hygiene at Guy's Hospital, has been summoned by Lord Roberts to Pretoria, and has been appointed medical officer of health for the Transvaal.

THE fund to perpetuate the memory of Lieutenant Tait, of the Black Watch, a former golf champion, who was killed in one of the early actions in the South African campaign, amounts to £1,600. Of this sum, £120 has been devoted to furnishing a bed in the Scottish South African Hospital. The committee now propose to allot £1,000 for the equipment of a bed in the Edinburgh Royal Infirmary and £400 for a bed in the St. Andrews Cottage Hospital.

THE telegraphic reports of the disaster which has befallen Galveston, Texas, state that many medical men made heroic efforts to give help to the injured. Dr. West lost his life in such an attempt, and Dr. Young, who had trusted himself to a plank in his effort to reach one of the temporary hospitals, was washed out towards the bay, and seriously injured by a floating log.

WE are asked to state that the special general meeting of the Odontological Society of Great Britain, summoned for September 17th, has been postponed owning to unexpected delays in the preparation of the plans for the proposed new rooms at 20, Hanover Square.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE meeting of the British Association for the Advancement of Science at Bradford, the opening of which was referred to in the BRITISH MEDICAL JOURNAL of September 8th was brought to a close on September 12th. We give brief summaries of such parts of the work of the various Sections as seem likely to be of interest to medical readers.

Malaria and Mosquitos.

In the Section of Zoology Major RONALD ROSS lectured on Malaria and Mosquitos from a Zoological Point of View. A striking evidence of the interest taken in this subject at the present time was afforded by the very large audience which assembled to hear this lecture. The room was crowded and many could not obtain admittance. In giving the life-history and cytology of the parasites in the vertebrate and invertebrate hosts, the lecturer stated that this history presented three points of great novelty and interest to zoologists; first that these organisms, although simple unicellular organisms, possess, besides the usual neutral proliferation—a most typical sexual proliferation—not a mere approach to it such as we are familiar with in the ordinary conjugation, but a mature ovum and sperm apparatus, exactly like what is found in the higher animals. Secondly, that first among the Protozoa, the parasites of malaria have been found to exhibit the property of *metoxeny*—that is, they require two hosts for their complete development, and exhibit *alternation of generations*. Thirdly, as Professor Ray Lankester has just pointed out, the development of the *blasts* (*sporozoites*) is closely similar to spermatogenesis, and is probably the first recorded instance of *androcratic parthenogenesis*, that is of propagation without zygosis from andromorphic and not from gynæcomorphic cells—such as we are accustomed to in cases of parthenogenesis hitherto known to us. The lecturer concluded by giving some leading facts regarding the bionomics of gnats, especially *Anopheles*. In answer to Professor Poulton, he said that though gnats certainly feed on fruits and leaves, he had never known them to lay eggs without a meal of blood.

The Respiration of Anopheles.

In the Section of Zoology Professor L. C. MIALL delivered an illustrated lecture on the Respiration of Aquatic Insects. He called attention to the important part played by the hairs of skin in directing currents of air to the spiracles beneath the surface of the water. In the case of the larvæ and pupæ of insects the modifications were much more profound. The larvæ of the gnat and its adaptions were described, and in this, as in many other insects, the only spiracles which remained open were those on the hinder end of the body. The manner in which the larvæ of *Anopheles*—the malaria-bearing mosquito—maintained free communication with the air while the whole of the body was completely under water was especially interesting. A fringe of hairs at the tail-end formed a sort of cup, which enabled the tail-end to float, and so admit an abundant supply of air through the open spiracles, while the larvæ were feeding on the bacteria on the surface of the water. This cup, formed of a fringe of hairs, was found in a good many insects. Then there was the telescopic tail, which enabled the larvæ of some insects to bring the terminal spiracle to the surface from a comparatively considerable depth; and again, there was the retractile tail with spiracles at the very tip. The larvæ of gnats showed an interesting transition. Generally the tracheal tubes passed through the body and opened at the tail; but in some cases the tubes were much narrower, and at two places swelled into vesicles. This modification reached its extreme in the larvæ of the phantom gnat. In this, only two pairs of vesicles, one at each end, were visible, and the tracheal tubes were invisible. On these vesicles granules of a deep violet substance were apparent—a peculiar substance frequently observed in the respiratory tract of insects. It seemed to possess some considerable physiological importance, but its nature had not yet been determined. The tracheal system was at first filled with water, and only in the course of a few days did air take the place of the water. The operation of replacing the water by air in a completely closed system, which nowhere touched the surface, without any rise of temperature or diminution of pressure, was a puzzle not yet explained. This wonderful process was constantly observed in aquatic insects.

Effects of Local Injury in Nerve.

In the Section of Zoology Professor F. GOTCH made a communication on the subject of the Physiological Effect of Local Injury in Nerve." He contended that, whatever our idea of nervous impulse may be, the electric change which is supposed to be its inseparable concomitant may possibly either take place without it, or be absent under conditions when the nervous impulse is undoubtedly present. He described a particular instance in which the nerve was so modified that no electric change could be detected at a part where the nervous impulse was undoubtedly present.

Incidence of Disease in Bradford.

In the Section of Economic Science and Statistics Dr. A. RABAGLIATI presented a communication on the Local Incidence of Disease in Bradford: a comparison between the rates of mortality from various diseases as published by the Registrar-General for England and Wales and those published by the Health Department of the City of Bradford. Bradford, he observed, was a bleak, raw, cold place, with a somewhat smoky atmosphere and a frequent but not heavy rainfall. Apart from climate, the work of a place was an important element in respect of health, and the staple trade of Bradford—partly in consequence of the love of open air which characterised the people, and partly of Parliamentary regulations—could not on the whole be considered unhealthy. The process of "gassing," however, which involved the use of a great number of gas jets, was injurious. The remedy was to be sought in larger cubic space and free ventilation. The returns of the Registrar-General furnished some strange results as regarded the city. The birth-rate, which thirty years ago was upwards of 38 per 1,000—about 3 in excess of England and Wales—had fallen between 1891-95 to 27.20, or 3 below that standard. A greater disparity existed in the marriage-rate, which in 1891-95 in the whole country was 15.16 in the 1,000, whereas in Bradford it was only 9.23. It was lower even than that of Ireland, which was far and away the lowest of all European countries. It was a grave matter, however, that with a lower birth-rate there was a considerably higher infant mortality than in the country at large. In 1891-95 it was 176 per 1,000, as compared with 151 for the rest of the country. It should, however, be added that it continually diminished. One reason assigned for this state of things was the number of Bradford mothers at work in the mills instead of at home with the children. As in the rest of the country, the illegitimate birth-rate was falling, but in 1891-95 in this city it was 5.76, as against 4.2 for the country at large. Bradford showed a low zymotic death-rate, which was doubtless attributable to the liberal policy of its Council in opening new parks, clearing insanitary areas, and improved sanitation generally. But it was an alarming fact that there had been no improvement in the mortality from zymotic diseases during the last ten years. One of the chief reasons was that in 1891-95 influenza had devastated the people. Its victims in England in 1876 were 203; in 1890, 4 523; in 1891, 16.686; and 12,800 in 1895. The explanation might perhaps be that we had been taking a too narrow view of the causation of fevers, and that there were other as yet unascertained causes than bad air and overcrowding. Unfortunately, again, cancer was a growing disease both in England and in Bradford—in the former in the course of 15 years the increase had been 42 per cent., in Bradford 45 per cent. The increase in the city was in part probably due to the founding of the Cancer Hospital, which attracted persons from the outside. He would suggest that a crusade should be started against diseases such as cancer and influenza, which had come to stay, rather than against consumption, which was satisfactorily diminishing. Treatment might be carried on with considerable success without clear ideas of causation, though prevention was impossible without knowledge of causes. It would seem that we had exhausted the benefits to be derived from improved sanitation, and it was impossible to avoid a strong misgiving that some important element of causation had still to be discovered as regarded fevers. In respect of cancer our mental attitude had to be one of silence, if not of despair.

Population and Birth-Rate.

In the Section of Economic Science and Statistics, Mr. MARCUS RUBIN, Director of the Royal Danish Bureau of Statistics, read a paper on Population and Birth-Rate viewed from the Historico-Statistical Standpoint. He said that one of the earliest of his investigations, published in 1882, was concerned with the question of the number of the inhabitants of Copenhagen in the seventeenth century, an inquiry based on the records of baptisms in the church registers for that century. The chief question to be answered was: Assuming that the number of baptisms at some period in the past can be ascertained for a town or a country, how can its population be deduced from that number? As a rule the registers give information only of baptisms, not of stillbirths. In general, at any rate in Denmark, children were baptised as soon as possible after birth, so that the numbers not baptised may rather be compared with the stillborn of later times. Given the number of baptisms at some period in the past, this number must be subjected to an addition before it can be compared with the record of births of recent times (living births and stillbirths). At the beginning of the present century the stillbirths were some 8 per cent. of those born alive. Thus, to find the number of births of the earlier times at least 8 per cent. must be added to the number of baptisms. Having obtained this datum what multiplier will yield the total of the population? This is dependent upon whether people in former times married earlier than now; further, on whether marriages were more fruitful; and, finally, on whether the number of illegitimate births was greater. It is clear that if, in comparison with the population, more children were born in preceding centuries than nowadays, the multiplier must be made less than would serve now to deduce population from births and *vice versâ*. Unfortunately the old Danish church registers contain no record of the ages at marriage, but one may assume that people married earlier than at present because such a course was in agreement with the needs and wishes of the time, whether considered from the point of view of State, of Church, or of public opinion. Mr. Rubin has obtained information on this point from unpublished records of a census of Denmark in the year 1787, which exist in the Danish Statistical Bureau. The census proves that on the average the age of marriage was higher than in our time, because the masses were compelled to postpone marriage, but in spite of this the number of marriages was greater, partly because the well-to-do married earlier than now, partly because the masses married, almost without exception, as soon as they could, and, further, partly because the widowed remarried in far greater proportion than now. Now the well-to-do married late, the masses early. Although, on the average, marriages were later than now, yet the number of children to a marriage was at least as great as in our time. In our time the fertility of marriage is determined partly by physical, partly by social causes. Formerly the fertility of marriage was as great as nature permitted, just as marriage was undertaken as freely as the law and the economic development of the community permitted, not as nowadays, when people remain unmarried though not restrained by the fact of being unable to afford it. In spite of the marriages taking place later on the average, the fertility of marriage was not less than now. A result of the masses being compelled to defer wedlock to a later age than now was that the number of illegitimate births was greater than in our time. This cannot be proved directly, but the author showed, by the use of modern statistics, how the number of illegitimate children increases as the age of marriage among the masses increases. Mr. Rubin was confident that the rule can be laid down for Denmark that in former times, both within and without the bonds of wedlock, more children were born relatively to the population than in our own time. The tendency towards a diminished birth-rate which can be shown for our time did not exist of old. That the population did not increase was due, not to a small natality, but to a large mortality. When the number of the baptised in former centuries is determined, a smaller factor must be used with which to multiply it in order to deduce the population than would be appropriate for our time. If the number of baptisms in former times be multiplied by thirty, the numbers of the population will probably be determined to within 10 per cent. of excess or defect.

West Yorkshire Folk.

In the Section of Anthropology Mr. J. BEDDOE, F.R.S., read a paper on the Population of West Yorkshire, in which he discussed the question whether any considerable British or pre-Anglian element remained in the country around Bradford. Without coming to any positive conclusion, he was disposed to consider the inhabitants of those parts as mainly Anglian in type. More British blood remained further north in Craven. A prevalent type about Leeds seemed to him to resemble the Burgundian Belair type of Hies and Rutimeyer. He had found heads in Yorkshire broader and larger than in other parts of the country. Leeds men he found had vertical foreheads and smooth prominent brows.

The Kephalic Index.

Dr. BEDDOE also communicated Some Observations on the Vagaries of the Kephalic Index, based on an examination and description of two heads, both dolichoid in pattern, but of which the one that was most distinctly so gave a latitudial index (living) of 82.3, owing to retarded ossification of the posterior part of the temporo-parietal suture. But for this he thought that the index would not have exceeded 77.

Grooves on the Human Skull.

Professor A. F. DIXON, M.D., read a paper, with lantern illustrations, on Certain Markings on the Frontal Part of the Human Cranium and their Significance, in which he observed that an examination of the frontal region of the cranium showed that, in many cases, grooves or channels were present on the bone corresponding to the branches of the supraorbital nerves. These grooves varied very much in appearance, as they might be simple or branched, shallow or deeply cut. They were not infrequently converted in parts of their course into little tunnels. In some cases they were found on one side of the cranium only, in others they occurred on both sides; their distribution was rarely quite symmetrical. Most frequently the grooves occurred beneath the outer branches of the supraorbital nerve, but in many cases they were found beneath the inner branches. The grooves never passed from the frontal on to the parietal bone, across the coronal suture. They often extended upwards from the supraorbital notch, or foramen, as far as the coronal suture; in other cases they began inferiorly at a little foramen where some branch of the nerve entered the bone. The openings of these little foramina were directed upwards towards the coronal suture, just as the openings of the nutrient foramina in the long bones were directed towards the end of the bone where growth was most active and went on longest. The presence of these grooves indicated a want in proportion between the growth in length of the nerves and the amount of expansion of the underlying part of the cranium. The nerves might be looked upon as constricting cords, which became depressed in the developing bone as the cranium expands. The constricting portions of the nerves were often limited inferiorly at a point where some little branch entered the bone, and superiorly at the coronal suture, where the deep layers of scalp were firmly bound down to the cranium. Hence the grooves for the nerves did not cross the coronal suture, and often began inferiorly at little foramina whose openings were directed upwards. The grooves appeared to indicate in the skulls in which they occurred an excessive development of the frontal part of the cranial wall. In races in whom the grooves were common and strongly marked, one would expect the presence of a tendency towards increased development and capacity of the frontal part of the cranium; while, on the other hand, in races in whom the grooves did not occur or were rare and but feebly marked, they would expect to find much uniformity in the shape and size of the cranium, indicating that none of its various parts were tending towards an increased development. In the purer races of mankind, with marked uniformity in the size and shape of their crania, one would look for the greatest harmony between the growth in length of the overlying structures and the amount of expansion of the various parts of the cranial wall; on the other hand, in mixed races they would be more likely to find individuals exhibiting a want of such correspondence in the amount of growth of the superficial and deeper structures. In this connection it was interesting to note that the frontal grooves were hardly ever

found in Australian and Tasmanian skulls, that they were rare among Melanesians, slightly more common among Polynesians, while among bushmen and negroes, especially in Zulus and Kaffirs, they were very common, and often extraordinarily well marked. Among negroes they were present in over 50 per cent. of the skulls examined. In the skulls obtained in the dissecting room they were present in about 41 per cent. of all cases.

The Microcephalic Brain.

Professor D. J. Cunningham, F.R.S., read a paper, illustrated by specimens and lantern slides, on the Microcephalic Brain. The brain of the microcephalic idiot, he explained, might exhibit features not merely representing a fixed embryonic condition. In one specimen the arrangement of the fissures and furrows was found to approach more closely to the ape than to the human type, and in almost every furrow some simian character could be detected. These simian characters should not be considered mere fœtal conditions rendered permanent. The apelike condition existing in the brain exhibited did not as a whole correspond to that of any one ape or group of apes, but there was a complicated mixture of features, some of which were characteristic of high apes, while others found a parallel in the brain of low apes. The microcephalic brain might be regarded as a partial atavism. So far as its surface markings were concerned, the specimen noted had reverted wholly or in part to an arrangement which in all probability existed in some early stem-form of man.

The Sacral Index.

Professor Cunningham also read a paper on the Sacral Index. Inasmuch as the true length of the sacral portion of the vertebral column was not indicated by the shortest distance between the apex and base of the sacrum, but rather by the length of the curve formed by the sacral vertebræ, he proposed that in making measurements for the determination of a sacral index length should be measured by using a tape along the concavity of the sacral curve, and not by callipers, one limb of which was placed upon the base and the other on the apex of the sacrum. Breadth, measured by callipers in the ordinary manner, multiplied by 100 and divided by length (measured in the manner indicated) gave the true sacral index. The curvature of the sacrum might be conveniently plotted by taking a tracing from a strip of soft metal that had been previously adapted by pressure to the front of the sacrum along its middle line. The index of curvature might be expressed by the number derived by multiplying the height of this plotted cure by 100 and dividing by the number corresponding to the true length of the sacrum.

Development Changes in the Human Skeleton.

Dr. D. Waterston read a paper with lantern illustrations, on Development Changes in the Human Skeleton from the Point of View of Anthropology, and exhibited a series of specimens of the long bones of the extremities at different ages of embryonic and infantile life examined by the methods of anthropometry—namely, osteometry and osteoscopy. By the former the relative lengths of the bones of the limbs at different ages had been ascertained, and by the latter it had been found that these bones presented some definite and interesting characters. It had been already shown that the curvature of the spine in the lumbar region was a post-natal development and one adapted to the assumption of the erect attitude by the infant, and he now showed that in a similar way the configuration of the bones of the lower extremity altered after birth before the infant could stand erect.

The Effects of Copper on the Human Body.

Dr. Hime, in a paper on this subject read in the Section of Chemistry, said: The recrudescence of an agitation by some public analysts as to alleged danger to health produced by copper has rendered it desirable to make an investigation into the subject, although it was long since satisfactorily disposed of from a point of view hitherto scarcely utilised as it deserves, and at the same time to review the general results attained. The examination of the two principal excretions, solid and liquid, by which copper is eliminated from the body, offered a promising means of judging of the effects of the agent, whether merely swallowed or also absorbed. These excretions have therefore been examined during a period of several months from a number of healthy persons engaged, some for many years, in dealing with copper, either in smelting works or as workers in its alloys, brass, etc., or from healthy persons unconnected with any kind of copper work, who had intentionally swallowed some compound of copper in improperly so-called "greened" vegetables (they are not rendered "green" by treatment with copper) or otherwise. Copper was found in relative abundance in the excretions of all these persons, yet they had enjoyed perfect health, and were unconscious of anything abnormal existing in their excretions. It is excreted slowly, and some weeks may elapse before the whole of the copper compound ingested is got rid of. That fact, that copper may, after being swallowed, be absorbed into the blood and exist there for months, and no doubt during at least twenty years, without indicating its presence by the slightest inference with health, or, indeed, in any way whatever, has thus been established beyond question. In one case, a brass-finisher, aged 38, who had been 30 years engaged in brass work, copper was found on various occasions when sought, during several months. For the last fourteen years this man had never drawn any money from his sick club, and he has had perfect health. The copper exists in the excretions, as it does in coppered vegetables, not as copper, but as an insoluble compound which, when tested directly for copper, gives no indication of copper being present in any form. As a fact no copper is present. It is entirely unjustifiable to speak of copper being a poison because when combined with some other elements poisonous effects may be produced by the compound. Because copper and arsenic combined, forming copper arsenite, which is not copper, is poisonous, a death due to copper arsenite is reported and quoted for sixty years in all the text-books as due to "poisoning by copper." As well call iron a poison because it, too, when combined to form a new compound, arseniate of iron, may prove poisonous. Copper exists in a great number of plants, including cereals, mineral waters, wines, shellfish, fruits, and various kinds of animal flesh. It has been calculated that a man eating good bread, "coppered" only by nature, would consume in this way alone some 93 grains of copper corresponding to 366 grains of the sulphate. Thousands of wealthy and educated persons who flock yearly to the health-restoring springs of Wiesbaden, Teplitz, Pyrmont, etc., consume copper in every glass of water they drink; yet their health improves, they return yearly to derive fresh benefit, and are unaware that they are being "poisoned." Many trustworthy observers have found copper as a normal constituent in the human body. That the consumption of vegetables which have been treated with copper to preserve their natural green is perfectly harmless has been proved beyond all doubt, not only by such experiments as that of Galippe, who for fourteen months took copper with his food daily without any ill effect, and the classic experiments of Lehmann and his pupils on themselves for many months: but by the infinitely larger experiments made yearly by thousands of the public, who consume copper in some form or other in artificially coppered vegetables, and in their flour, fruit, various kinds of flesh, oysters, crabs, wines, mineral waters, etc., "coppered" by Nature. Not one case of injury to health under such circumstances has ever been brought forward, even in prosecutions for selling "coppered" peas as being "injurious to health." The charge is supported by the allegation "copper is a poison." But people who eat "coppered" vegetables do not consume "copper." The chemical compound of copper they swallow is not copper at all, and they are not injured. Even verdigris, so much feared, is not all the dangerous substance alleged. Copper utensils are quite harmless with ordinary cleanliness. The alleged "poisonings" by food cooked in copper vessels have undoubtedly been mostly, if not all, due to ptomaine poisoning. Copper has been known and used longer than any other metal, and it its alloys is the most generally used of all metallic substances. It has been in use from prehistoric times, and its dangers, if they existed, must have been known to the ancient and modern world. Yet the ancients are absolutely silent on the subject, and among moderns

only a few, almost entirely analysts, declaim to an incredulous public as to dangers which have not been realised. The alleged fraud in so-called "greening" of vegetables is purely imaginary. The copper does not "green" old peas or make them look young. Old yellow peas when "coppered" still look old and yellow. The quantity of the copper compound present in the amount of artificially-treated vegetables which is occasionally eaten at a meal is only a fraction of the corresponding amount of copper sulphate which physicians prescribe to be taken three times a day for weeks and months continuously. Therefore there is no sufficient ground for the prohibition of the sale of "coppered" vegetables, any more than of the innumerable kinds of fruits, vegetables, shellfish, cereals, mineral waters, wines, and animal flesh which naturally contain the metal in some form. If the latter drastic arrangement were attempted, absolute and general starvation would be the inevitable result, so widely is the natural presence of copper in articles of food extended.

Political Geography.

Sir GEORGE SCOTT ROBERTSON, K.C.S.I., Lieutenant-Colonel I.M.S., President of the Geographical Section, delivered an address on Political Geography and the British Empire. He said that at the present time great social and political changes were occurring throughout the world. These changes were dependent upon the physical peculiarities of the different lands acting upon generations of men during a prolonged period of time. As a consequence of certain soils, geographical characteristics and climates, harsh surroundings had disciplined some races to hardiness and strenuous industry, accompanied by commercial activity, which was of itself both a result of increasing population and the cause of still greater overcrowding. With other people at first sight more happily circumstanced the struggle to live was less ferocious; their food was found with little toil. But the outcome of generations of nature's favouritism had been to leave them less forceful and less ingenious in the never-ending warfare of existence. By comparison they grew feeble of defence against the hungrier nations, ravenous for provender. Man for ever preyed upon his own kind, and an easy life in bland surroundings induced a flabbiness which was powerless against the iron training of harsh latitudes, or against the fierce energy and the virile strength produced by hereditary wrestling with unkindly ground. The colonisation of territories in the temperate zone by European Governments, separated by vast ocean spaces from their offshoots, had given origin to new and distinct nations different from the parent stock in modes of thought and in ways of life, a result due mainly, no doubt, to local physical conditions; but in fact, also, if only in part, to detachment, to complete an actual severance from the mother country. Concerning the British Empire, and comparing it with other empires, ancient, recent, and now existing, its two remarkable features were its prodigious and long-continued growth and the persistency of its power. The world, as a whole, had strangely contracted owing to increase in lines of communication, to more detailed geographical knowledge, to the formation of new harbours, the extension of railways, the increased speed and the increased number of steamships, and the greatly augmented carrying power of great sailing vessels built of steel. Hardly second in importance to these influences were the great land lines and the sea cables, the postal improvements, the telephones, and—perhaps it might soon be added—the proved commercial utility of wireless telegraphy. This universal time diminution in verbal and personal contact had brought the colonies, our dependencies, and our protectorates, closer to each other, and all of them nearer still to us. Measured by time distance the world had wonderfully contracted, and with this lessening the dominions of the Queen had been rapidly consolidating. In the near future one might anticipate equally remarkable improvements of a like kind, especially in railways, telegraph lines, and deep-sea cables, and in other scientific discoveries for transmitting man's messages through water, in the air, or, perhaps, by the vibrations of the earth. For us particularly, railway schemes of expansion must be mainly relied upon to open up and to connect distant parts of the Empire. But our true and only trustworthy road of intercommunication between the heart of the Empire and its limits must always be the sea. If we ever forget that, there may be a calamitous awakening.

Sir WILLIAM TURNER moved a cordial vote of thanks to Sir George Robertson. He said that the subject of the address was most appropriate at this time, for at no period in the history of the British Empire had the idea of what was meant by that expansion gone more deeply into the heart of the nation than during the last few months. Sir George Robertson himself had contributed to the extension and the defence of the British Empire, and his name would for ever be associated in history with the name of Chitral. Sir George Robertson and himself belonged to the same profession, but Sir George was an instance of what was not uncommon in the profession—namely, of men, after having joined it, being found to be better fitted for greater duties than mere doctoring.

The motion, having been seconded by Dr. SCOTT KELTIE, was carried unanimously.

The Black Races of the Transvaal and Orange River Colony.

In the Section of Geography Mr. E. SIDNEY HARTLAND read a paper on the Imperfection of our Knowledge of the Black Races of the Transvaal and Orange River Colony. The black peoples of South Africa were Bantus and Bushmen Hottentots. After giving an account of the punishment of theft, Mr. Hartland discussed the marriage customs. The prohibited degrees of kindred appeared to be much wider than with us, though most of the tribes were polygamist. One of the modes of oppression of blacks in the Transvaal had been the refusal to recognise those marriages. That policy we should be compelled to reverse; and we must start by informing ourselves what marriages were regarded by the natives of each tribe as legal. An accurate study of the native customs, institutions, and beliefs was an urgent necessity both for missionaries and for purposes of government. In view of these difficulties the Committee of the Section of Anthropology had decided to propose to the General Council of the British Association that the Council should suggest to Her Majesty's Government that as soon as the condition of the Transvaal and the Orange River Colony should permit, and prior to any legislation affecting the natives, a Commission should be appointed to inquire (*a*) into the customs and institutions of the natives of those States; and (*b*) into the relations between the natives and the European settlers, with power to make recommendations for the purposes above referred to; such Commission to consist, so far as possible, of persons familiar with native life in South Africa, and, in addition, of at least one person, unconnected with South Africa, of recognised eminence in the study of savage customs and superstitions in general.

Mr. CROOKE, in warmly supporting the proposal for ethnographical survey of these races, ventured to caution its advocates against depending too much on official action. Except in some isolated cases the attitude of our colonial and Indian Governments towards anthropological inquiries had been characterised by apathy and indifference.

The Father of Modern Electricity.

In the Section of Mathematical and Physical Science, Dr. JOSEPH LARMOR, F.R.S., in his presidential address referred to the work of Gilbert, the physician who is acknowledged to have been the scientific pioneer in the new world of magnetism and electricity. He said the famous treatise which opened the modern era by treating magnetism and electricity on a scientific basis appeared just 300 years ago. The author, William Gilbert, M.D., of Colchester, passed from the grammar school of his native town to St. John's College, Cambridge; soon after taking his first degree, in 1560, he became a Fellow of the college, and seems to have remained in residence and taken part in its affairs for about ten years. All through his subsequent career, both at Colchester and afterwards at London, where he attained the highest position in his profession, he was an exact and diligent explorer, first of chemical and then of magnetic and electric phenomena. In the words of the historian Hallam, writing in 1839, "In his Latin treatise on the magnet he not only collected all the knowledge which others had possessed, but he became at once the father of experimental philosophy in this island;" and no demur would be raised if

Hallam's restriction to this country were removed. His book passed through many editions on the Continent within forty years; it won the high praise of Galileo. Gilbert has been called "the father of modern electricity" by Priestley, and "the Galileo of magnetism" by Poggendorff. When the British Association last met at Bradford in 1873 the modern theory which largely reverts to Gilbert's way of formulation, and refers electric and magnetic phenomena to the activity of the ether instead of attractions at a distance, was of recent growth; it had received its classical exposition only two years before by the publication of Clerk Maxwell's treatise. The new doctrine was already widely received in England on its own independent merits. On the Continent it was engaging the strenuous attention of Helmholtz, whose series of memoirs, deeply probing the new ideas in their relation to the prevalent and fairly successful theories of direct action across space, had begun to appear in 1870. During many years the search for crucial experiments that would go beyond the results equally explained by both views met with small success; it was not until 1887 that Hertz, by the discovery of the ethereal radiation of long wave-length emitted from electric oscillators, verified the hypothesis of Faraday and Maxwell, and initiated a new era in the practical development of physical science.

Animal Electricity.

Professor F. Gotch delivered an evening address on Animal Electricity. He said that animal electricity, if strictly interpreted, had a most extensive scope, commensurate indeed with all forms of animal life. The study had, however, a special significance in connection with one class of living structures—namely, those which constituted the nervous system. There was absolutely no doubt that organs of an essentially nervous type existed the prime object of whose activity was the production of electrical disturbances. Such were the electrical organs found in a few groups of widely different fishes. Every electrical organ was built up of columns containing a vast number of special structures arranged in series, and to make these essential features clear, and at the same time to bring forward all known instances of electrical fish, a series of slides were shown. As to the characters of the organ shock, Professor Gotch exhibited a living specimen of Malapterurus, which had been lent for the purpose by the Liverpool Corporation Museum through the kindness of the director, Dr. Forbes. Experiments were made to show that the shock of the fish could effect the mercurial column of a capillary electrometer, and that in this way photographic records of the shock could be obtained. Such photographic records showed that each shock was multiple, that is to say, the electrical organ, once it had been made to produce its shock, would go on doing so automatically. The power of each blow—in other words, its electromotive force—was astounding in a fish about 8 inches long. Professor Gotch had determined that under favourable conditions the first electrical disturbance could reach a maximum of 200 volts, and that this could develop in two-thousandths of a second. This astounding voltage would be produced when the electrical effect in each single disc reached only four hundredths of a volt. Illustrations were then given of the mode of following the electrical disturbance occurring in a nerve during the passage of a single nervous impulse from a very large number of experiments made in conjunction with Mr. G. J. Burch, F.R.S. Professor Gotch said that it appeared that the nerve electrical effect was very similar to that present in each disc of the electrical organ. Finally, he brought forward evidence to show that there must be an electrical disturbance in the nerve-endings of the organ whenever a nervous impulse might be produced outside the nerves. The astounding effects produced by the electrical organs of fishes thus had their physiological counterpart in nerves; and in this, as in other departments of natural science, Nature showed no gulf.

Next Meeting.

The meeting of the British Association in 1901 will be held in Glasgow under the presidency of Professor A. W. Rucker, F.R.S.

Retirement of a General Secretary.

It was announced that Professor E. A. Schäfer was retiring from his position as one of the General Secretaries.

THE WAR IN SOUTH AFRICA.

BRITISH PRISONERS AT PRETORIA.

The report of the Court of Inquiry held at Pretoria last June to inquire into the treatment of British prisoners, but more especially of sick prisoners in the hands of the Boers in and near Pretoria, which was issued by the War Office on September 12th, together with Lord Roberts's observations thereon, makes very disagreeable reading. Lord Roberts's comment with reference to the treatment of sick prisoners is as follows:

(*a*) The inhuman treatment of the sick prisoners throws the greatest discredit on the authorities at Pretoria, who must have been aware that proper hospital accommodation and equipment had not been provided, that suitable food and medical comforts were not forthcoming, and that the supply of medicines and medical appliances was wholly insufficient. That the deficiencies referred to in the correspondence were to some extent made good by the exertions and liberality of private individuals does not exonerate the Government of the South African Republic from its responsibility in this matter, and the indifference which was shown to the sufferings of the sick among the British prisoners is the more inexcusable when it is remembered that the sick among the Boer prisoners have invariably received the same care and attention as our own sick soldiers.

Lord Roberts adds that the efforts of Drs. P. H. Haylett and R. von Gernet to ameliorate the condition of their patients, and the assistance rendered by burghers and British civilians, by whom a fund to supply the deficiencies was raised, are the only gratifying features in the correspondence. He adds, on the other hand, "that it would be difficult to condemn too strongly the conduct of Dr. H. P. Veale, M.B.(Cambridge), whose heartlessness in ignoring the disgraceful treatment of the sick prisoners, and the remonstrances addressed to him by the medical officers in immediate charge of them, calls for the severest reprobation."

Dr. Veale in his evidence stated that he along with Drs. Knobell and Lingbeek were the three medical members of the Transvaal Branch of the Geneva Red Cross Society. Dr. Veale was responsible for the care and medical attendance of the prisoners of war at the racecourse but denied that he had anything to do with the sanitary arrangements, although he admitted that it would be his duty as medical officer attending the sick to notice and try to remedy anything in the arrangements of the hospital or its precincts prejudicial to health. He stated that he did bring several points to notice, and considered that everything in the racecourse hospital was reasonably satisfactory when he left at the beginning of December.

Dr. P. H. Haylett, who was appointed to take charge of the hospital at the racecourse in December, stated that there was no adequate provision of medicines, considerable difficulty in obtaining stimulants, and no means of keeping the hospital buildings clean. The refuse of the hospital was left close to the buildings, there were no sheets, and but a few pillows. In January he went out to Waterval as medical officer for the prisoners there, and at once reported in writing to Dr. Veale, condemning the sanitary arrangements, the water supply, and the hospital building and its equipment. Eventually, protests having been unavailing, Dr. Haylett resigned, and in February Dr. Rudolph von Gernet was appointed in his place. Dr. Gernet stated that he found the prisoners housed in sheds built of corrugated iron open towards the front and with leaking roofs. The central road was higher than the floor of the sheds, so that the rain water drained into them and the men were lying in water on the bare ground. The surroundings were in an indescribably filthy condition. The latrines were within 50 yards of the night camp in which the men slept. These latrines, which consisted of trenches, were filled by the heavy rain and the contents were floated all over the place. The supply of drinking water was insufficient, the prisoners were clothed in rags, and though the building used as a hospital was satisfactory, the furniture was absolutely unsatisfactory. For 60 in-patients and 20 orderlies there were only 21 bedsteads, 11 mattresses and 49 blankets. Nearly all the sick were lying on the floor without bedding or pillows, and there were 41 typhoid cases for whom there were no suitable medicines. The food supply of the hospital was insufficient.

Dr. von Gernet took vigorous action and brought the deficiencies before the notice of the Committee charged with the care of the prisoners. This Committee acted promptly.

and President Kruger took an interest in the question, so that eventually the defects noted were remedied. It therefore appears clear that had Dr. Veale shown at an earlier date more vigour and independence, and better appreciation of the responsibilities he had accepted, these defects would have been earlier remedied.

THE MOOI RIVER HOSPITAL, NATAL.

WE are indebted to Mr. Charles S. S. Johnston, architect, of Edinburgh, for the following extracts from a communication which he has received from Major Henry H. Johnston, R.A.M.C., giving some particulars as to the results of the treatment of enteric fever at that hospital. It will be remembered that an interesting account of this hospital, from the pen of the late Sir William Stokes, was published in the BRITISH MEDICAL JOURNAL of April 28th. In that paper is embodied a note by Major H. H. Johnston describing the precautions taken to prevent the spread of enteric fever. Major Johnston writes as follows:

Since No. 4 General Hospital was opened on January 6th, 1900, there have been up to the present date, August 10th, a total of 6,581 patients treated in it and 207 deaths. For wounds received in action there have been 1,707 admissions and 46 deaths; operations, 222. For enteric fever, 1,150 admissions and 114 deaths. The mortality from enteric fever has been 10 per cent., which is very low, and as there are only 2 patients dangerously ill out of the 51 enteric fever patients remaining in hospital, the percentage mortality from that disease will not be perceptibly increased.

In addition to the admissions for enteric fever there have been a large number for so-called simple continued fever, many cases of which were probably mild cases of enteric fever but from which there have been no deaths. If these doubtful cases were added to the admissions for enteric fever, the percentage mortality for the latter disease would be still lower than what I have mentioned.

The enteric fever patients have been well looked after in this hospital. They are treated in double-roofed and walled marquees, with wooden floors, and there are six beds in each marquee. There is one nursing sister for every six marquees (36 patients), and in each marquee there are two ward orderlies from 6 A.M. to 8 P.M., and one orderly from 8 P.M. to 6 A.M. The night orderly is on duty for a week at a time; he has hot chocolate and biscuits at 2 A.M., and he has no day duty to perform during his week's turn of night duty. This system is infinitely better than that of making the orderlies throughout the whole hospital take their turns of night duty in addition to their daily work, because, under the latter system, which prevails throughout the army, the orderlies are fatigued and sleepy at night after their day's work, and there is also the risk of orderlies from the surgical wards having their hands contaminated with enteric excreta and infecting patients' wounds.

The favourable results obtained in this hospital are due to the good hygienic conditions under which the patients have been treated in a healthy bracing climate, 4,550 feet above sea level, under the skilful treatment of the civil surgeons, the care and devotion of the nursing sisters and orderlies, with the abundant supply of milk and other articles of food of good quality suitable for enteric fever patients.

The drinking water for the whole hospital is obtained from the Mooi river, and it is passed through a large automatic Pasteur-Chamberland filter containing about 350 filtering tubes.

The soldiers, especially those of the regular army, have been very good patients, cheerful, and always ready to submit to any operation that was recommended by the medical officers. They have received liberal diet and extras, and many presents of tobacco, notepaper, fruit, fish, biscuits, etc., from public aid institutions and private individuals.

From June 1st to July 31st the maximum temperature in the shade, in a Stevenson's screen 4 feet above the ground, has ranged between 50° F. and 74° F. by day, and the minimum in the same situation between 15° F. and 53° F. by night. The greatest daily range was 50° F. on July 7th, when the minimum was 15° F. and the maximum 65° F. The lowest range was 8° F. on July 31st, when the minimum was 53° F. and the maximum 61° F. on a cloudy day. There was frost on 20 nights in June and on 18 nights in July. Rain fell on 3 days in June and 5 days in July, but, with the exception of a heavy shower on the night of July 24-25th, only a few drops fell on each occasion. In all the occupied hospital marquees there are single and duplex "Diamond" oil stoves burning all night for warming purposes.

Major Johnston appends copies of the orders for the overseer of Indians, orders for wardmasters and orderlies dealing with enteric cases, a form for orderly medical officer's report, and orders for the non-commissioned officer in charge of disinfection.

CASUALTIES.

AMONG the casualties reported by Lord Roberts from Belfast, Transvaal, under date of September 9th, we regret to notice the name of Major G. Hilliard, R.A.M.C., C.M.G., who was severely wounded near Doornkop on September 6th. Major Hilliard succumbed to his wounds in the General Hospital, Newcastle, on September 7th. Major Hilliard was appointed Surgeon-Captain February 5th, 1887, and Major twelve years thereafter. He served in Ashanti under Sir Francis Scott in 1895-6, and received the star granted for that expedition. He went to the Gold Coast in 1895, and proceeded thence to the Cape of Good Hope in the following year, remaining in South Africa until his decease. He had nearly completed his 39th year.

We also regret to observe that among those reported missing on September 5th after the action near Warm Baths, is Mr. A. Cradock Fry, L.R.C.P., M.R.C.S., M.A., M.B., B.C.Cantab, of the 9th Battalion, Imperial Yeomanry.

RED CROSS SOCIETY.

At a monthly meeting of the Cape of Good Hope Society on September 3rd Sir John Furley, Chief Commissioner of the Red Cross Society, said that he had recently visited the hospitals in Pretoria, Johannesburg, and other centres, and that he found the arrangements for caring for the sick and wounded most excellent. All had abundant supplies. He spoke in glowing terms of the grand work accomplished by the London Central Committee, and hoped that it would become a permanent organisation. The result of the co-operation of the civil, military, and hospital organisations had been very gratifying. Sir John Furley added that the strain was now practically over, and he considered that there was no further need of appealing to the public for subscriptions, but he admitted that private assistance was necessary and would be welcome.

THE PLAGUE.

GLASGOW.

THERE are 16 cases of plague under treatment in Glasgow, an increase of 3 during the past week. No deaths have occurred from the disease during the week. Four cases are under observation as suspects, and 113 persons are detained as "contacts."

The source of the epidemic has not yet been discovered, though there is a general feeling in favour of some connection between it and shipping. Nothing so far has been discovered to indicate that the rats have had anything to do with the infection. Careful investigations are being made on this point, and the rats, which are being killed in large numbers in the infected area, are subjected to pathological and bacteriological examination by Dr. R. M. Buchanan, the city bacteriologist, but up to the present with negative results.

PREVALENCE OF THE DISEASE.

INDIA.

THERE were 449 deaths from plague during the week ending August 20th for all India, against 285 in the previous week. In Bombay City 51 deaths from plague occurred during the week ending August 19th; the death-rate in the city, however, has increased from 1,522 to 1,979. Cholera is responsible for much of the increased mortality, but unless an analysis of the ailments is before us, it is impossible to say whether pneumonia, fevers, etc., which play so important a part in plague epidemics, are used as terms to conceal the presence of plague or not. In the Presidency of Bombay, 64 deaths occurred, as against 45 during the previous week. For the week ending August 20th, 64 deaths occurred in Calcutta from plague; 103 in the Madras Presidency, and 210 in Mysore. The increase in this

week's returns is mainly due to the recrudescence of plague in Southern India. The disease has never been so virulent in Southern as in Northern India, but the present outbreak threatens to be severe. A telegram dated September 12th from Simla states that plague is increasing in India; over 1,000 persons died of the disease in India during last week.

AUSTRALIA.

Sydney.—A telegram dated September 9th states that "the town is now altogether free from plague." The municipality of Sydney has to be congratulated upon the energy displayed in stamping out the disease. On September 6th the Colonial Office received the following announcement from the Governor of New South Wales: "I have to transmit subjoined bulletin of the incidence of the bubonic plague at Sydney up to September 1st, 1900, namely: Remaining for treatment August 25th, 3; admitted during the week, none; discharged recovered during the week, none; died during the week, none; remaining for treatment September 1st, 3; total cases, 303; total deaths, 103; total discharged recovered, 197; total contacts isolated, 1,707; total contacts remaining, none; total cases among contacts, 7; total Chinese attacked, 10; total deaths among Chinese patients, 8."

MAURITIUS.

During the week ending September 6th, 8 fresh cases of plague occurred in Mauritius and 6 deaths from the disease.

EGYPT.

A Reuter's telegram announces that the total number of cases of plague in Egypt since the first appearance of the disease in April 27th last is 119, of which 54 proved fatal. The plague has now entirely disappeared. This information is mysterious, as we had no knowledge that plague existed in Egypt during the past summer. We understood that plague had disappeared from Egypt long ago.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association at 429, Strand (corner of Agar Street), London, on Wednesday, the 10th day of October next, at 2 o'clock in the afternoon.

FRANCIS FOWKE, *General Secretary.*

September, 1900.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH.—The next meeting of this Branch will be held in the Infirmary, Workington, on Friday, September 21st, at 3.15 P.M. Business: Minutes of last meeting. Election of new member. Dr. J. W. Crerar, Maryport, will read a paper on The Treatment of Carbuncles. Dr. Norman Walker, Edinburgh, will read a paper on The Treatment of Lupus in General Practice. Members will be shown through the wards of the infirmary. After the meeting, dinner will be served at the Green Dragon Hotel.—W. F. FARQUHARSON, M.D., Honorary Secretary, Garlands, Carlisle.

NORTH WALES BRANCH.—The autumn intermediate meeting of this Branch will be held at Glynweddw Hall, Llan Bedrog, Pwllheli, the last week of September, Mr. Solomon Andrews having kindly offered hospitality on the occasion. Members having papers to read, cases to communicate or specimens to show, are requested to advise either of us on or before September 15th, at which date also all signed applications for membership of the Association should be received.—W. JONES-MORRIS (Portmadoc), H. JONES ROBERTS (Pen-y-groes), Honorary Secretaries.

SOUTH MIDLAND BRANCH.—The autumnal meeting of this Branch will be held at Stamford on Thursday, September 20th. Gentlemen desirous of joining the Association or Branch, and members wishing to read papers or contribute cases to the meeting, are requested to communicate at once with the undersigned. The following papers have been promised:—Mr. Hailey: The Provision of Isolation Hospitals for Rural Districts. Dr. Jones: Chorea, especially in its Complicated Forms. Mr. Kinsey will give a brief summary of the work at the Ipswich meeting. Luncheon will be provided at 2s. 6d. per head.—C. J. EVANS, Northampton, Honorary Secretary.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.—The next meeting of this District will be held at the Grand Hotel, Eastbourne, on October 10th. Mr. C. O'Brien Harding will preside. All notices of resolutions, communications, etc., should be sent to the Honorary District Secretary, J. W. BATTERHAM, M.B., Bank House, Grand Parade, St. Leonards.

BRITISH GUIANA BRANCH.

THE third quarterly meeting of this Branch was held at the Public Hospital, Georgetown, on July 26th, Dr. W. S. BARNES, Senior Vice-President, in the chair.

Confirmation of Minutes.—The minutes of last quarterly meeting were read and confirmed.

New Member.—Mr. J. B. De Freitas, M.R.C.S.Eng., L.R.C.P. Lond., was elected a member of the Branch.

Liver Abscess.—Dr. J. H. CONYERS read a most interesting paper on liver abscess, especially on some of the difficulties in the diagnosis, chiefly in connection with a case he treated in February, 1897.

In that case there was pointing in the epigastric region. After making the usual incision and the escape of a large quantity of pus, the walls of the abscess cavity collapsed and a drainage tube could not be introduced. In order not to disturb any adhesions there might be, an antiseptic dressing was applied to await the almost certain reaccumulation of pus before further operative procedure. The surprising result, however, was that there was no reaccumulation, and the patient left hospital two weeks later, without the most rigid physical examination being able to detect anything abnormal in the hepatic region, and he remained quite well for three years, when he again returned to hospital with another hepatic abscess, and unfortunately died from an acute attack of dysentery. A *post-mortem* examination failed to show any scar in the liver which might represent the first abscess.

Dr. Conyers drew attention to the frequent recrudescence of liver abscesses after apparent cure, to the insidious onset of the disease, to the site of pain being far removed from the actual abscess, to the frequency of absence of bulging, and to the advisability of the free use of the aspirating needle in diagnosis. He also pointed out the frequency of tropical abscess of the liver being double, and even treble, and the difficulties of diagnosis in those cases, most of them revealed *post mortem*. He also made remarks as to treatment.—The discussion which followed was taken part in by most of the members present, and a cordial vote of thanks was passed to Dr. Conyers for his most instructive paper.

Specimens.—Dr. W. S. BARNES exhibited the bones of a fœtus of an extrauterine pregnancy, which had gone on to suppuration, and passed *per rectum*, patient making an excellent recovery. —Dr. F. H. EDMONDS exhibited the kidneys of a pig containing the *Sclerostoma pinguinola*.—Dr. VON WINCKLER showed the thumb of an East Indian, which had been pulled off by a cord around the thumb, with all the tendons from their origin up the forearm.

SPECIAL CORRESPONDENCE.

BELFAST.

Health of Belfast: Annual Report of the Superintendent Medical Officer of Health.—Endemic Typhoid Fever.—Tuberculosis.

THE Superintendent Medical Officer of Health has lately issued his annual report on the health of Belfast. For some years past the subject has excited no little amount of interest. In 1896 a Special Committee was appointed by the City Council to investigate and report on the high death-rate; this Committee brought to light a very serious state of affairs, and practically censured the Improvement and the Public Health Committees. In the succeeding years many important measures were taken to improve the condition of affairs, and the serious typhoid epidemic of 1898 excited a strong public feeling. It is important, consequently, to examine closely each annual report, to ascertain what efforts have been made and what success has attended them.

The report fills 26 double octavo pages, and contains three charts and twelve short tables of statistics in the text, and some still smaller tables unnumbered. There is no index. Compared with the health reports of Liverpool, Birmingham, Manchester, or Glasgow the pamphlet looks meagre. The report for the city of Liverpool is a royal octavo volume, well and carefully printed on good paper, with 232 pages, several photographs, and an appendix of maps and statistical charts thicker in bulk than the whole Belfast report. There is an accurate index of 6 pages containing 206 items. On perusing the Belfast report, the disappointment caused by its external appearance is intensified. There is little attempt at classification or at what may be termed graphic printing, and, if the report were of any length, the result of reading it would be one

bewildering confusion; we miss the large distinct main divisions of the Liverpool report—"Census," "Statistics," "Sanitary Administration," "Insanitary Property," etc. The means adopted by the authorities, then, of making public the work of the Health Committee would seem to be inadequate.

The report, however, contains interesting information. The death-rate from all causes is stated to be 22.7; this figure, however, is based on estimates which the census next year will put on a surer basis. Some of the statistics do not inspire faith in these estimates. In Table No. 1, 769 cases of measles are noted as occurring in 1896, 3 in 1898, and none in 1899; it is explained immediately below that measles is not notified; the figures, however, appear in the first statistical table, yet 146 deaths from measles occurred in 1899. Again, at the bottom of page 6, the average death-rate for the eight years ending 1898 is given as 23.8; calculation from the figures given brings it out as 24.1. In Table No. 8, the annual death-rate in Liverpool is put as 26.4 from all causes, and 3.7 from zymotic diseases. Dr. Hope, however, puts it in his annual report for 1899 as 24.3 from all causes, and 4.1 from zymotic diseases. In Table No. 11 the infant mortality in Birmingham is given as 191; Dr. Hill gives it as 193. The estimation of the population of a large manufacturing town at the end of the decennial period is hopelessly unreliable; at the close of the last period, Newcastle was 11.7 below the estimate, and Salford 25.5 above it, so that comparisons would be misleading to the extent of 37.0 per cent.; the error in the estimate of the population of Liverpool reached 100,000. It would not be surprising if the error in the estimate of the population of Belfast reached 50,000. No mention is made of the unprecedented number of vacant houses at present to be observed in Belfast; it should be remembered that a large and healthy suburban area has lately been added to what may be termed old Belfast, the statistics of the whole are lumped together. The report gives no material wherewith to form an independent opinion as to the matter really at issue, namely, the health of the Belfast as it existed before the suburban areas were added. The two diseases attracting most public attention in Belfast are typhoid fever and tuberculosis; the terms "chest affections" and "diseases of the respiratory organs" are used rather loosely, and it is impossible to form any idea of how far heart disease enters into the calculations; the medical officer of health has no information as to the cause of death of 4,003 people who died during the year; as is natural he deplores his inability, which arises from the Chinese muddle which the authorities allow to continue year after year. Taking the question of typhoid fever Belfast had, in rough proportion to the population, four times as many deaths in 1897, seven times in 1898, and three times in 1899 as Liverpool had from this disease. The attack rate per 1,000 living in Manchester in 1898 was 1.19, in Belfast for the same year it was 14.6. In the face of this endemic condition it may well be asked what has been done? One page is devoted to typhoid fever, and one-third of this is taken up by a table showing the monthly returns; 1,370 houses were examined as regards their sanitary arrangements; not one word is said as to the nature of the examination, as to the results, as to the localities, or as to what was done; it is stated that every precaution was taken to prevent the spread of the disease, but only two are mentioned; of the 1,598 cases, 814 were removed to hospital—a very commendable measure; but will the friends of the 273 who died from this disease in 1899 be content to know that the only other measure reported is that "pails with disinfectants were provided in all cases which occurred in houses with privy accommodation"? Three lines, which tell little or nothing, are devoted to the water supply; no mention is made of the milk trade, of houses being shut up, of courts or alleys closed, of the insanitary conditions of houses being remedied; even the offending cockle and mussel escape scot free. No mention is made of the new drainage of the city, already condemned, nor of the experimental bacteria beds lately instituted. Compare this with nine pages in the Birmingham report, or the twenty-nine pages in the Manchester report (1898), both towns with a considerably smaller number of actual cases, and proportionately to the population a very much smaller incidence of the disease.

Turning to the question of tubercle, we find the number of deaths registered from phthisis to be 1,112, the highest ever recorded though the increase is not great—68 above 1898. The mortality has varied very little during the decennium in actual numbers, and so, when the large increase of population is taken into account, this year contrasts favourably with the early Nineties. Still, it is a terrible mortality. When we compare this number with 1,404 in Glasgow (1898), 1,313 in Liverpool, 1,139 in Manchester (1898), and 841 in Birmingham, we see that Belfast's supremacy in typhoid is seconded by a corresponding, although a not so marked, supremacy in phthisis. To deal with this scourge, that brings about 1 death in every 7 in Belfast, we should expect some record of energetic measures. In the Manchester report (1898) we have 42 pages devoted to tuberculosis, in the Belfast two-thirds of a page. No distribution of pamphlets is mentioned, no requests for voluntary notification, no disinfection of houses, no inspection of dairies or byres, no examination of milk, no mention of seizure of tuberculous animals in the public abattoirs. There is not a single record or recommendation of any practical preventive measure, neither is there any mention of other forms of tuberculous disease in man or animal, nor of the views of Continental or English authorities on the subject. From newspaper reports it can be gathered that several useful measures have been debated in the Health Committee and in the Corporation, but no far-reaching scheme dealing with the insanitary arrangements of the city has ever been publicly put forward, with the avowed intention that by such a measure the Public Health Committee would stand or fall. Again the annual report must be looked upon as an official statement of the work of this Committee, or perhaps as a stocktaking of the work done under the authority of this Committee; the deficiencies in it are reprehensible. In addition to those already mentioned, there is no mention of prosecutions under the Health Act, no hospital reports, no list of officers in the department, no women inspectors, no returns of vaccination, no reports on the housing of the poor, no returns as to the density of the population, or the population of the various districts; no mention of bacteriological examination of diphtherial throats, or of the use of Widal's reaction in cases of suspected typyoid, both of which are carried out by Professor Lorrain Smith in the College Pathological Laboratory; there are no maps, no mention of the foreshore nuisances, of the smoke nuisance, of influenza and its effect on the general mortality, no mention of the increase or decrease of alcoholism, of the use of preservatives in food, of the excellent ambulance system; and no mention of the sanitary destructors that are being erected.

For many of these deficiencies the superintending medical officer of health can in no way be held responsible; he has pointed out the deficiencies times out of number in his statements and reports. His position is an anomaly that might be a survival from an earlier century; he has little or no real power, and his best efforts are paralysed by the unavoidably apologetic tone in which he is forced to clothe his suggestions for reform in a city that prides itself on its progressive civilisation and its reforming spirit. The Health Committee and the Council generally deserve censure. When contrasted with the commendable activity and large sums of money spent in other objects, this slackness in sanitary matters is inexplicable. The medical profession has long demanded, and the public are beginning to demand, that the post of medical officer of health should be placed on the same footing as those of the best regulated English towns. The recent report of the engineer to the Water Commissioners, and the continued prevalence of typhoid fever have once more aroused keen interest and somewhat angry discussion. If the Water Commissioners on the one hand, and the City Council on the others, would set about putting their respective house in order, instead of finding fault with each other, the public would be better served.

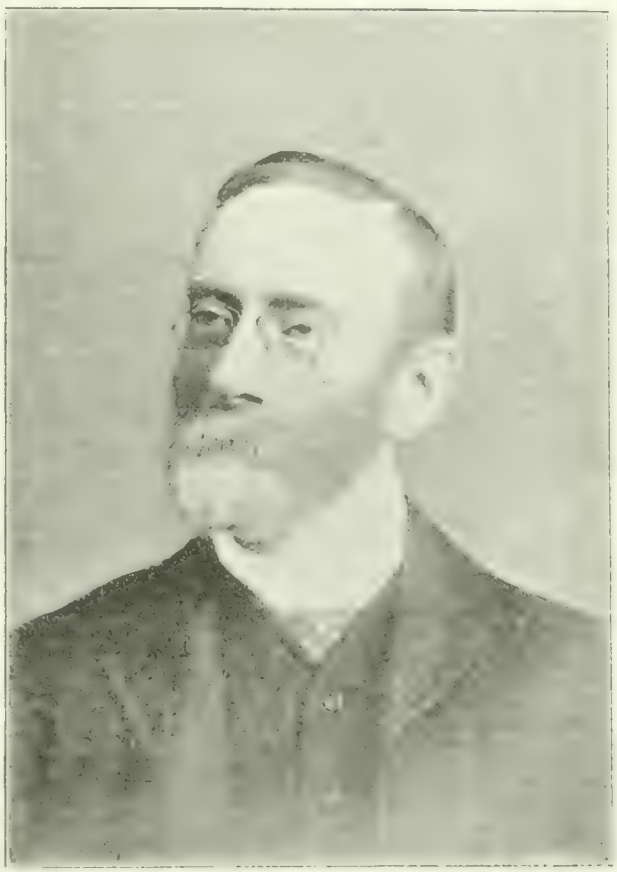
HARTLEPOOLS HOSPITAL.—At a meeting of the governors of the Hartlepools Hospital, on September 4th, it was decided to place in the surgical ward a bronze medallion portrait of the late Dr. S. Gourley, J.P., of West Hartlepool, who was for over thirty years a member of the honorary medical staff of the institution.

OBITUARY.

ARTHUR WYNNE FOOT, M.D.Univ.Dubl., F.R.C.P.I.,

Ex-Professor of Practice of Medicine, R.C.S.I.; Ex-Senior Physician, Meath Hospital, Dublin, etc.

On September 1st there passed away a great Dublin physician. To die in harness, as is the wish of so many enthusiastic workers, was not the lot of Arthur Wynne Foot. Eight years ago, at a time when his opinion as a consultant was receiving the recognition it so fully deserved, and when his services were in requisition by his brethren throughout the greater part of Ireland, the delicate and overworked nervous system gave way, and his retirement from practice and teaching was regarded by his friends as little short of a calamity to the profession of medicine. It is true that Foot never enjoyed a large private practice such as his endowments and his position in the profession entitled him to, but the causes for this will appear later on.



He was born in Dublin on January 22nd, 1838. His father, who was a barrister, was descended from the Foots of Cornwall, some of whom had accompanied William III, when he went over to Ireland. Young Foot was educated at the Portarlington School, and afterwards in Trinity College, Dublin, and in the Meath Hospital, where he was apprenticed to Maurice Henry Colles. He graduated in Arts and Medicine in the University of Dublin in 1862, and while preparing for the Final Examination in Medicine he had as his co-worker the late Rev. Dr. Haughton, who was at that time a Fellow of Trinity College. In the same year Foot became a Licentiate of the Royal College of Physicians and of the Royal College of Surgeons of Ireland, in both of which institutions he was afterwards destined to occupy important positions. In the following year he was appointed Demonstrator of Anatomy in the Medical School of Trinity College, a post which he held until 1871, when he succeeded Dr. Alfred Hudson as Physician to the Meath Hospital. While a student in that institution he had won golden opinions from all his teachers, and was regarded by his class fellows with an admiration which was little removed from awe. A short time after he had received his qualifications he was appointed Curator of the Pathological Museum in the Hospital, where his extraordinary energies had ample scope for development. When in course of time he became Visiting Physician and a colleague of his illustrious master Stokes, his position was one in which a man of less powerful intellect would have been overshadowed. But the lesser light shone with a brilliancy which the greater only tended to strengthen, and in a few years Foot emerged from the friendly intellectual conflict a clinical teacher and a diagnostician with a local reputation as great as even Stokes had acquired.

In 1873 he was appointed Lecturer on Medicine in the old Ledwich School, where he laboured for ten years until his translation to the Chair of Medicine in the Royal College of Surgeons; and for a further period of ten years—until his resignation in 1893—he delivered his delightful lectures to appreciative classes in the College school.

In 1865 he obtained the M.D., and in 1871 the diploma in State Medicine of the University of Dublin. The examination for the latter was the first of its kind held in Dublin; its introduction was due to the representations of William Stokes, at that time Regius Professor of Physic, and the candidates then successful in addition to Foot were John William Moore, John Todhunter, and Gerald Francis Yeo. While yet a student Foot received in 1861 a silver medal from the Pathological Society for an essay on diseases of the testis, and, after being a constant contributor to this Society in the intervening years, he became its President in 1880.

In the Royal College of Physicians he was an examiner in Arts for one year, an additional examiner in Medicine for four, a Censor for ten, and its Vice-President for four years, but for the position of President, which was quite within his reach, he never showed the slightest ambition.

His contributions to medical literature were numerous and valuable, and, although his systematic lectures on Medicine are unlikely ever to receive the publicity they deserve, it is to be hoped that his occasional papers, so ably and beautifully written, may yet find their way from the hands of the publisher to those who would read them with profit and pleasure. The more important of them may be here mentioned: On Chromidrosis (*Dublin Quarterly Journal*, 1866-69); on Bromidrosis (*Ibid.*, 1866); on Xanthelasma (*Ibid.*, 1876); on Aneurysm of the Abdominal Aorta in a Female (*Ibid.*, 1870); Hydrophobia; Tuberculosis; Scleroderma; Epilepsy; Narcolepsy; Morphinism; Life Assurance; Commentaries on Diseases of the Kidneys; Graves's Disease, and finally Reminiscences of the Dublin Biological Club (*Dublin Journal of Medical Science*, 1892). Even at the time of his death he was contemplating a paper on the medical humours displayed by newspaper cuttings.

Foot's writings speak for themselves, but his powers as a teacher are known only to the hundreds of practitioners scattered far and wide who were fortunate enough to have come within the circle of his magnetic influence. His systematic lectures were the result of elaborate preparation, and were delivered in a fashion never to be forgotten; but his clinical teaching was an intellectual treat which educated students alone were capable of appreciating.

With uninteresting cases he had little patience, but once face to face with serious maladies, the masterly and cultured mind became a wealth of knowledge and a source of delight to his hearers. There was never any attempt at sledge-hammer repetition, but slowly on from point to point every symptom was brought under notice, and that too with such a marvellous skill that the observer was never conscious of exerting his observation nor at all certain of the fulness of the information he had received until his textbook subsequently revealed to him how much more he had been taught than was contained in its pages. The classical allusion, the happy wit,

the fund of satire, and the ready metaphor were so temptingly interwoven with the methods of examination and the information imparted, that the capable students forsook the wards not wearied but refreshed by the manner in which the treasures of knowledge and experience at the teacher's command had been fixed in their minds.

Foot's chiefest delight was in his hospital work, where he had not to cater for fancied ills or study the fads of his patients. He despised the arts of practising medicine where the bare facts could not be dealt with. Many a patient he lost through his outspoken honesty, and this did not always stand in his favour either with the practitioners who employed him as a consultant or with the general public, to whom the truth was often hurtful and apparently unnecessary. His mind was so averse from humbug, mediocrity, and idleness, that he was often unjust to those whose qualities were otherwise excellent.

There never lived a preacher who followed more faithfully his own teaching as to the value of earnestness, industry, and perseverance than did Arthur Wynne Foot. Work was to him the pleasure which recreation is to so many of his fellows. And what he was unable to accomplish during the day, for years he encroached on the watches of the night to perform, and my "Lady Nicotine" bore him constant company, so that Nature at length proclaimed her revenge. The unsteady gait became obvious to onlookers, but never a hint came from the sufferer that he was conscious—as well he was—of the terrible fact that locomotor ataxia had claimed him for a victim. Antipyrin, self-administered, relieved the lightning pains, and the gastric crises were spoken of as bilious attacks; but a cerebral hæmorrhage in the autumn of 1892 came not alone to break down the reserve with which he had surrounded his sufferings, but to make it clear that his working days were nearly at an end. He then relinquished all his appointments, except the Chair of Medicine in the College of Surgeons School, where for another session he clung to his beloved duties; but although helped to and from the lecture room by the strong arms of loving pupils, this, too, he was compelled to resign. A second hæmorrhage—this time into the upper part of the spinal cord—nearly carried him away in the following winter; but again he recovered, and retained his full mental vigour until the morning of September 1st, when the third copious hæmorrhage into the brain, from which he never regained consciousness, proved fatal in a few hours.

Foot was a man of great culture and literary tastes, and was both an enthusiast and a scientist. He had the essential groundwork of medical knowledge on which to erect a finished superstructure; and the possession of this accurate knowledge, combined with a powerful imagination, were largely responsible for his eminence in matters of diagnosis. In the medical societies his opinions were treated with the highest respect, and when he interposed in a debate his uprising was a signal for the disappearance of lethargy among the audience. Weak theories then received short shrift, while careless observation and reasoning met with the fate they deserved. His satire was keen—too keen at times—his diction was elegant and never verbose; but above all he was lucid, interesting, and original in whatever he had to say.

His inaugural addresses—seven in number—delivered at different times in the Meath Hospital, are masterpieces in their own particular line. On his retirement from the hospital his pupils past and present readily contributed to a testimonial, the greater part of which was spent in the purchase of useful but costly gifts for his personal use while the remainder was applied to the painting of a portrait which adorns the walls of the board room in the institution where he had worked and taught for over 30 years.

In 1865 he married the eldest daughter of the late Mr. Edward Hunt, of county Kilkenny, who survives him, and to her unceasing care and devotion may be justly attributed the prolongation of his existence in a condition where only incessant watchfulness kept the frail bark afloat. To have been the nurse, companion, and loving helpmate of a man like Arthur Wynne Foot carried with it its own reward. He is gone, but

To live in hearts we leave behind
is not to die.

MR. A. J. MARTINEAU, F.R.C.S.Ed. (Hove) writes: It is with profound regret that I have heard of the loss the profession has sustained by the death of JOHN PRESTWICH, M.B., civil surgeon, which occurred from pneumonia, in South Africa, on August 28th. He held the posts of Assistant House Physician and Assistant House Surgeon at the General Hospital, Nottingham, and was Resident with me practically for two years, so that I knew him intimately. His work was of a high order and his energy tireless. His invariable cheerfulness and kindly manner endeared him to all. He was most conscientious in all the monotonous details of his hospital work—work for which there is little credit to be gained perhaps, but which, when thoroughly carried out, tends so much to the smooth and efficient working of a large hospital. His loss must be felt in South Africa, as he was so eminently suited for the work he went out to do.

WE regret to record the death of Deputy-Inspector-General JOHN BURTON ST. CROIX CROSSE at the advanced age of 85. He received his medical training at the Royal College of Surgeons, Ireland, Guy's, and the London Hospital. Afterwards he studied for some time in Paris. He became a member of the Royal College of Surgeons in England in 1837, and a Fellow in 1863. He entered the army in 1840, and served first with the Connaught Rangers, and passed through an epidemic of yellow fever with them in the West Indies, himself suffering from a severe attack. He then became Surgeon of the 11th Hussars, with whom he served in the Crimea, including the affair of Bulganac, battles of Alma, Balaclava, Inkerman, Tchernaya, and siege and fall of Sebastopol. For his services in the Crimea he received the medal with four clasps, the Turkish medal, and the order of Knight of the Legion of Honour. He retired on half-pay in 1886. He was an ideal regimental surgeon, well educated, enthusiastic in his profes-

sion, beloved and trusted by officers and men, ever watchful and painstaking in all that concerned the health and well-being of his regiment, a military surgeon every inch of him, a high-toned honourable man, a kind and steadfast friend. For many years he was Surgeon to the Duke of York's Royal Military School, and was looked upon by the orphan boys there as their father, so kind, careful, and considerate was he of them. His services never received the acknowledgment they merited at the hands of the authorities. Many years ago a hint of a coming honour was made to him, but it never came, and he was of too retiring a character to advance his claims. He was nearly related to Sir Richard Burton, the famous traveller.

We regret to learn that the only son of Dr. George Stevens, of Norton, near Bury St. Edmunds, who was a member of the Rhodesian Field Force, died at Marandellas Camp, Rhodesia, on July 28th. Mr. Stevens, who was only 19 years of age, was educated at Epsom College, and had recently become an apprentice of the Society of Apothecaries and a student of Charing Cross Hospital. He went out as a hospital assistant, and had latterly acted as dispenser. Letters which have been received by the family from Captain G. H. Arnold, R.A.M.C., and from two of his comrades, show that he had endeared himself to all with whom he came in contact, both by the charm of his character and by the faithful and conscientious discharge of the duties entrusted to him. He was buried with military honours, and his comrades intend to erect a cross with a suitable inscription over his grave. The deepest sympathy will be felt with his father and sister in their loss.

Dr. José Gerson da Cunha, of Bombay, who recently died at the age of 56, was born in the village of Arpora in Portuguese India. He began his preliminary studies in the capital of Goa, and finished them at the University of Bombay. He obtained the diplomas of L.R.C.P.Lond. and M.R.C.S.Eng. in 1867. He settled in Bombay, where he soon acquired a large practice. He read several papers which attracted much attention at the Medico-Physical Society, and an article on the Use of Chloral in Obstetrics, published in an English medical journal, is quoted by Professor Schroeder in his standard work on the subject. An essay on Dengue: its History, Symptoms, and Treatment was written after an epidemic of dengue in Bombay. Dr. da Cunha also devoted himself to the study of history, anthropology, and numismatics, gaining a considerable reputation in all these departments of knowledge. His collection of coins, catalogued by him with great precision and method, is said to be one of the best in the British Empire. He was the author of some twenty works on history and Indian philosophy, besides papers, etc., read at the Royal Asiatic Society of which he was a Vice-President, and at the Anthropological Society, of which he was a President. His best known books are the *History of Chaul and Bassein* and the *Life of Gantama Buddha*, which was translated into French. He has left in a complete state a voluminous *History of Bombay*, and to the mental strain caused by his labours in the preparation of this work is, to a large measure, due his premature death. Dr. da Cunha was awarded a prize at the Congress of Orientalists in Florence in 1877, and was one of the most interesting figures at the Twelfth Congress held in Rome in 1899. He was a Knight of the Crown of Italy, of St. Gregory the Great, and of the Literary and Scientific Order of St. James of Portugal, etc. One of his daughters is a graduate of medicine of the University of Bombay, and lately obtained a diploma of *perfezionamento* in bacteriology in Florence. The second is a B.A. of Bombay. A son is a student of medicine at Owens College. The loss of Dr. da Cunha is deeply felt in Bombay both in medical and in literary circles, where his knowledge of five European and six Oriental languages, besides Latin and Sanskrit, added to his charm of manner, made him a conspicuous and interesting figure.

We regret to announce that Dr. Max Schäfer, of Bremen, a distinguished specialist in diseases of the throat and nose, recently lost his life while mountaineering in the Alps. Both he and his guide fell into a crevasse. From notes made by Dr. Schäfer in his diary, which was found with the bodies, it appears that the guide was seriously injured by the fall, and that Dr. Schäfer made a strenuous effort to escape by cutting steps up the ice wall, but fell and broke his foot. After this accident he appears to have calmly awaited death, which was no doubt due to cold.

We regret to announce the death of Professor Johann Kjeldahl, Director of the Chemical and Physiological Laboratory at Alt-Karlsberg, near Copenhagen, who was seized with cramp while trying to save the life of a drowning child, and fell a victim to his courageous philanthropy. Professor Kjeldahl's name is well known to scientific men from the method for the detection of nitrogen which goes by his name.

Deaths in the Profession Abroad.—Among members of the medical profession in foreign countries who have recently died are: Dr. Pierre Lebrun, head of the Ophthalmic Institute of Brabant, where he succeeded Warlomont; Dr. Porson, a leading practitioner of Nantes, one of the founders and a past President of the Union of Medical Syndicates of France, aged 53; Dr. Franz Michl, Professor of Surgery in the University of Prague, aged 50; Professor Wagner, of Königshütte, Upper Silesia, Secretary of the German Surgical Society; Dr. Jankulow, of Philippel, some time President of the Bulgarian Sobranje; and Dr. Manuel Isidro Osio, a leading ophthalmologist of Madrid.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE UNDERMANNING OF THE ARMY MEDICAL SERVICE.

The following is the distribution of the active list of the Army Medical Service and Royal Army Medical Corps for September, 1900, according to the monthly Army List:

Distribution in the September Army List, 1900.

Ranks.	Home.	South Africa.	Other Foreign Stations.	Not Posted.	Total.	Remarks: Seconded.
Surgeon-Generals ..	5	1	4	—	10	—
Colonels	7	9	11	—	27	3
Lieutenant-Colonels...	22	41	63	1	127	4
Majors	23	185	160	—	368	3
Captains	15	74	104	—	193	6
Lieutenants	44	116	24	2	186	3
Total...	116	426	366	3	911	19

The total strength is the same as for August, but the distribution has slightly varied; there are (including the Guards) 12 more medical officers at home, 5 fewer in South Africa and 5 fewer at other foreign stations, while the non-posted are 3 against 5. There are also 4 retired pay and 6 Militia Medical Staff Corps officers in South Africa. About 117 retired pay medical officers and 16 retired quartermasters are employed. There is no return of the number of Volunteer medical officers and civil surgeons serving in South Africa.

THE OUTBREAK IN CHINA.

Despatches from Admiral Seymour, dated June 27th, have been published detailing the operations of the force under his command which attempted the relief of the Legations at Peking. Admiral Seymour gives full particulars of the operations undertaken and of the composition of the force, which consisted of several nationalities. He speaks with unstinted praise of the conduct of all, both officers and men, British and foreign, who participated. From his report we learn that the medical officers R.N. were Fleet-Surgeon Thomas M. Sibbald, whose death we had to record last week; Surgeon Edward B. Pickthorn, of H.M.S. *Centurion*, and Surgeon Eric D. Macnamara, B.A., of H.M.S. *Endymion*.

Captain McCalla, who commanded the officers and men of the United States ship *Newark*, who took part in the march under Admiral Seymour, reports to his Government the

serious nature of the difficulties met with and the admirable conduct of Admiral Seymour and the other British and foreign officers. He recommended his Government to make some recognition of these services: among others: "To Fleet-Surgeon Thomas M Sibbald, R.N., and Surgeons Edward B. Pickthorn and Eric D. Macnamara, R.N., for skilful treatment of 25 wounded Americans, notwithstanding they had the care of a great number of their own wounded."

CHANGES OF STATION.

The following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From	To
Lieutenant-Colonel J. Martin	Aldershot ...	Londonderry.
,, J. L. Peyton, M.B. ...	Cork	Salisbury Pl'n.
,, G. A. Hughes, D.S.O.	Salisbury Plain	Hong Kong.
,, J. L. Hall	South Africa ...	Dover.
Major C. J. Holmes, M.D.	Limerick ...	South Africa.
,, W. Turner	Devonport ...	,,
Captain A. E. Milner	South Africa ...	Dover.
,, S. H. Fairrie, M.B.	Punjab	Madras.
,, H. W. Grattan	Madras ...	Punjab.
,, J. H. Campbell	South Africa ...	Madras.
Lieutenant W. W. Scarlett	,, ...	Chester.
,, F. H. Hardy	Salisbury Plain	Aldershot.
,, A. D. Jameson	Woolwich ...	South Africa.
,, B. B. Burke	Salisbury Plain	Aldershot.
,, W. B. Fry	,, ...	,,
,, C. R. L. Romayne, M.B. ...	,, ...	,,
,, G. Baillie, M.B.	,, ...	,,
Quartermaster E. Lines	— ...	Portsmouth.
,, W. M. Clarke	South Africa ...	St. Helena.
,, R. Scott	,, ...	Aldershot.

Lieutenant-Colonel H. C. Kirkpatrick, M.D., has been granted the higher rate of pay under Article 362 of the Royal Warrant.

Major A. H. Morgan, D.S.O., retired pay, has relinquished his appointment in South Africa.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty:—John H. Thomas, Staff Surgeon, to the *Devastation*, September 26th; John Acheson, Staff Surgeon, to the *Gladiator*, October 2nd; H. E. C. Fox, Surgeon, to the *Gladiator*, September 2nd.

ROYAL ARMY MEDICAL CORPS.

Among the released prisoners who have arrived at Lorenzo Marques from Nooitgedacht are Major Moberly and Captain Beach, R.A.M.C., and Civil Surgeon Aymard. They will be sent on to Durban at the first opportunity.

Civil Surgeon Strafford is returning from South Africa in the steamship *Persia*, for duty on the voyage.

Civil Surgeon Charteris has been discharged from hospital to duty.

Mr. John George Blantyre Gowlland, L.R.C.P.E., L.R.C.S.E., L.F.P.&S.G., has been appointed Captain in the Queensland Defence Force (Land) Army Medical Corps, and has applied for service in China.

Lieutenant-Colonel Michael Richard Ryan, M.D., died at Hong Kong on August 23rd, aged 48. He was appointed Surgeon, February 4th, 1877; Surgeon-Major, February 4th, 1889; was granted the rank of Lieutenant-Colonel, February 4th, 1897; and made Brigade Surgeon-Lieutenant-Colonel, October 17th, 1898. He was in the Afghan war in 1878-79, and was at the capture of Ali Musjid (medal with clasp); and in the Egyptian war of 1882, including the battle of Tel-el-Kebir (medal with clasp, and Egyptian bronze star).

INDIAN MEDICAL SERVICE.

Officers of the Indian Medical Service now on leave home are to be recalled to duty owing to the great demands made for the China expedition. Further, retired Indian Medical Staff officers are to be invited to come out again for re-employment temporarily. The services of 25 Indian Medical Service officers are being replaced at the disposal of the Commander-in-Chief from civil employ, and arrangements made for 18 newly commissioned officers of the same service, who just left Netley, to come out at once to supplement the military branch of the Medical Department.

THE VOLUNTEERS.

Surgeon-Major G. R. T. Phillips, Pembroke Yeomanry, is promoted to be Surgeon-Lieutenant-Colonel, September 12th.

Surgeon-Lieutenants S. R. Dyer, M.D., 1st London Engineers, and J. W. Edwards, M.B., Tees Division Submarine Miners, are promoted to be Surgeon Captains, September 12th.

Messrs. James Mowatt, M.B., and John Cumming are appointed Surgeon-Lieutenants in the Queen's Rifle Volunteer Brigade (Highland Battalion) the Royal Scottish (Lothian Regiment), August 31st.

VOLUNTEER MEDICAL STAFF CORPS.

Quartermaster C. H. Lawton, the Manchester Companies, resigns his commission, September 12th.

The professional schools and colleges of the United States last year graduated 16,448 students, of whom 5,597 were doctors of medicine, 3,065 lawyers, and 1,673 clergymen.

MEDICO-LEGAL AND MEDICO-ETHICAL.

PROSECUTION UNDER THE LUNACY ACT.

On August 16th Dr Hutton, of Harringay Gardens, Tottenham, appeared before Sir F. Lushington to answer five summonses charging him with keeping a lunatic in an unlicensed house for payment, and with neglecting and ill-treating him. The latter charge was taken first.

The section of the Act under which it was brought is:

322.—If any manager, officer, nurse, attendant, servant, or other person employed in an institution for lunatics, or any person having charge of a lunatic, whether by reason of any contract, or of any tie of relationship, or marriage or otherwise, ill-treats or wilfully neglects a patient, he shall be guilty of a misdemeanour, and, on conviction or indictment, shall be liable to fine or imprisonment, or to both fine and imprisonment at the discretion of the court, or be liable on summary conviction for every offence to a penalty not exceeding twenty pounds nor less than two pounds.

In view of distinctions which are frequently drawn for other purposes between a "lunatic" and an "idiot," it may be well to point out that the interpretation clause (341) of the Lunacy Act defines a lunatic as meaning an idiot or person of unsound mind.

As reported in the *Times*, the prosecution was conducted by Mr. Bodkin on behalf of the Director of Public Prosecutions. The facts of the case as laid before the magistrate by Mr. Bodkin were shortly as follows: The lunatic was the defendant's own brother, and 36 years of age. He was a congenital idiot incapable of speech. In 1892, by order of a Master in Lunacy, his property was invested and the income of between £80 and £90 was paid to the patient's mother for his benefit. She, being unwilling that her son should go to an institution, handed him and his income over to her other son, the defendant. Until six months ago the patient lived in the house with his brother, but then, on account of his habits, the following change took place. The defendant's coachman was sent to lodgings and a bedroom for the patient was made out of the harness-room. Between the latter and the party fence of the garden a space 6 feet by 4 feet was partitioned off and in this space the patient was confined from morning till evening. The door was fastened on the outside, and there was a seat at one end partially covered from the rain. There was no other protection from the heat or rain. The police having heard of this state of affairs made inquiries, just at the time that an anonymous letter reached the Commissioners in Lunacy. Immediate action was taken, and on August 9th the patient was removed to Earlswood, where four days later he died.

The following evidence was given in support of counsel's statement:

Inspector Peckover stated that he called on the defendant on July 9th, and told him that he had been informed that Dr. Hutton kept a lunatic in a cage, whom he had struck in the face, and with a whip. The defendant admitted that he kept a lunatic, but that it was done quite openly. As to the cage, he was shown by the defendant the place where the patient was kept, and he bore out the counsel's description of it. The defendant also admitted the fact of caning the patient—for instance, when he ate ravenously, lest he should choke himself. The witness, in cross-examination, said that the patient seemed to be happy and comfortable when he saw him.

Dr. Maudsley stated that he saw the patient on July 14th, in pursuance of an order from the Lord Chancellor. In the absence of the defendant, his wife showed him the place where the patient was confined. The harness room contained a bed with blankets and rug but no sheets, and a pillow without a pillow-case. Harness was hanging on the opposite wall. The patient was properly and neatly dressed. Dr. Maudsley considered that the circumstances in which the patient lived were altogether deteriorating, besides causing physical suffering. The use of a cane was unheard-of nowadays, and even the production of it for overawing a patient most improper. Proper treatment might have caused an improvement.

Arthur Wainwright, an artisan, who was working next door in July, stated that he often saw the patient in the enclosure. One afternoon, after a heavy thunderstorm, he looked over the partition and saw the patient sitting there looking at the sky and apparently very much upset.

A letter from the defendant to Dr. Maudsley was put in, and the court adjourned.

On August 24th the case was further heard.

Dr. Nicolson, late Medical Superintendent of Broadmoor Asylum, at present a Lord Chancellor's Visitor of Lunatics, stated that he went to see the patient on July 9th. The defendant and his wife were both out, but the coachman showed him the patient and his surroundings. He generally confirmed the former evidence, and spoke most strongly against the impropriety and the bad effects of corporal punishment on such a case. He stated that the provisions made for the patient's comfort and requirements were inadequate and unjustifiable.

Mrs. Thompson, a near neighbour, said that during the cold and wet weather she saw the patient confined in the enclosure. On one occasion he knocked at the partition, and after this had been going on for a quarter of an hour Dr. Hutton came out and threatened to use a stick to the patient. On another day the patient kept on crying out for his tea. The defendant came out and told him to sit down and wait, but as the patient continued to cry out he went into the house and fetched a stick. He told the patient to put his hand out, which he did through a hole. Two blows were then administered which caused the patient to cry out. Afterwards as the patient still cried out for his tea, the defendant returned and struck the partition with the stick very hard just where the other's face would be

The last witness's daughter gave similar evidence.

Another witness who was working next door said that he had seen the defendant hit the patient on the hand for whistling and knocking at the door. The patient then sat down, but on the defendant's carriage driving off a few minutes after, the patient recommenced the knocking. On the next day there was a thunderstorm, during which the patient was left in he enclosure without anyone coming out to him.

Another witness deposed to the patient being left in the enclosure while snow was on the ground.

This closed the case for the prosecution, and the case was then adjourned.

On August 3rd Mr. Muir, for the defence, submitted that the word "ill-treatment" in the Act must mean actual cruelty or wanton neglect, and that therefore the evidence adduced by the experts that Dr. Hutton's treatment was not the best would have no effect if he were honestly in the belief that it was for the good of the patient. Counsel contended that he could prove the great affection and kindness shown by the defendant to his brother. He admitted that Dr. Hutton did occasionally use the cane, which he produced. He pointed out that from the fact of its being split it would naturally make a loud noise.

The defendant was called. He stated that since they were children there had always been much affection between his brother and himself; that he had always done his best to treat him in the kindest way in seeing that he was properly dressed and as comfortable as his habits and mental condition permitted. The patient had the same food as he and his wife had, and that generally he had his meals with them or just after them in the dining-room. He was considerably out of pocket by keeping his brother. So far from his brother being confined in the outside enclosure, he believed that he shut himself in there, as he disliked the presence of strangers. When he had been troublesome the patient would go into a corner saying, "Naughty boy," and then come forward saying, "Wicked," and hold his hand out to be tapped, when he would go away pacified. He would tap him with anything—the handle of a tablespoon, for instance. In using the cane he thought he had never caused physical pain.

In cross-examination he stated that when he and his wife were away the patient would be looked after by one or two charwomen and a page boy. He had not had an experienced attendant as it would have been inconvenient.

Mr. C. Horner, M.R.C.S., L.R.C.P., who by the order of the Master paid half yearly visits, stated that he found that the lunatic did not vary, but was in good health and appeared to be well treated.

Dr. Caldecott, Medical Superintendent of Earlswood Asylum, gave evidence as to the reception and death of the patient at that institution. He did not think that the defendant's conduct, regarded as that of a responsible relative, was reprehensible, but he admitted that striking a patient would not be allowed anywhere in his asylum.

The defendant's wife, sister, several old servants, neighbours, etc., were called to give testimony as to the constant care and kindness shown by Dr. Hutton to the patient.

The magistrate then gave his decision. From his own personal inspection of the bedroom he did not think that it could be fairly described as a harness-room. Most of those in court had slept in a room no better without a sense of hardship. With regard to the enclosure, after all the evidence given there that day it was impossible to doubt that the patient was not confined there against his will, but was free to do very much as he liked. In respect to the charge of active cruelty, if it were true, as stated by witness after witness, that the split cane produced was the only one ever used, the patient might well have been struck so as to cause a noise without the least pain being inflicted. It was certainly desirable that no cane or stick should be permitted to be used in an asylum; indeed such a provision would be necessary to guard the patients against cruelty from irresponsible warders. He had no doubt that Dr. Hutton had acted throughout in the best interests of his brother. The whole of his conduct to the unfortunate man was characterised throughout by extreme kindness. This charge would therefore be dismissed.

The other charges as to the illegal reception, etc., of the patient were next gone into, and after close argument the defendant was fined in a nominal penalty of 5s., the magistrate remarking that he thought it to be a pity that the matter, as far as Dr. Hutton was concerned, was not dropped after the expression of his views on the former summons.

After Dr. Hutton's case was disposed of, his coachman, H. G. Blake, was charged with ill-treating the lunatic.

Mrs. and Miss Thompson, the witnesses in the former case, gave evidence, the former stating that she had seen the defendant, when "grooming" the patient, strike him on the face with his flat hand.

Counsel for the defendant having raised unsuccessfully the question whether the defendant was technically in charge of the patient, the magistrate said it was perfectly clear that whatever might have been the reason, the defendant had been guilty of an act of cruelty, and he fined him £5 and £5 5s. costs.

CORONERS AND MEDICAL WITNESSES.

A CORRESPONDENT writes to draw attention to a report of an inquest recently held at Shrewsbury in which the coroner comments upon the fact that the medical man who administered the chloroform from the effects of which a lad died when about to be operated upon for enlargement of the tonsils did not report to him the fact of the death, but gave a certificate stating the cause of death, which was taken to the registrar. Our correspondent observes that the remarks of the coroner and a juror seem to be uncalled-for, and reflect upon the character of the medical man, who appears to have acted according to the letter of the law, though not according to a custom prevailing amongst medical men of reporting the matter directly to the coroner.

"*" We would refer our correspondent to our comments on such cases which appeared in the BRITISH MEDICAL JOURNAL of December 23rd, 1899; also to a letter from the Secretary of the Coroners' Society in the JOURNAL of March 17th, 1900; and, further, to our comment thereon which appeared in the JOURNAL of March 24th, 1900. There is no statute law compelling a medical practitioner to give notice to the coroner of any death which may come to his knowledge in which he thinks further inquiry may be necessary, and the coroner is not justified in making uncomplimentary observations on any medical man who declines or fails to do so. Nevertheless, it is a custom amongst medical men to notify to the coroner or his officer any case in which it is probable an inquest may be held. If this is done, the certificate should be withheld, and delay will be avoided in the holding of the inquest.

A QUESTION OF FEES.

H. J. R.—We are not in a position to form an opinion as to what would be a reasonable amount to charge in the case referred to us, as we do not know even the number of visits paid, and there is an irreconcilable discrepancy as to the facts in the statements laid before us. We think Dr. R. is entitled to charge for services rendered, and we strongly support the proposal made by the solicitors to the deceased that the matter should be left to either of the eminent gentlemen named by them to decide what amount should be paid.

SECRET COMMISSIONS.

A SURGICAL CORRESPONDENT sends us a circular received when in Paris at the International Medical Congress from a Parisian maker of orthopædic instruments, offering him 30 per cent. upon the price of the instruments ordered through him, the commission to be taken out in instruments or "par tout autre moyen à votre convenance." We have been well aware of similar offers to the medical profession on the Continent, but in our remarks upon secret commissions we have not intended or desired to discuss the question except as it concerns practitioners in this country.

A HORSE BARGAIN.

HOBBOLE.—Our correspondent says he has lately heard of a case of a doctor who bought a horse from a farmer and offered in part payment to cure the farmer of a chronic disease. The offer was accepted, and the patient is now taking out the part payment for the price of his horse. As the farmer was our correspondent's patient he does not like his being taken away from him in this manner, and he asks our opinion of the transaction. There can be no doubt that it is contrary to the generally recognised rules of professional conduct to offer to treat a patient under the care of another medical practitioner.

MEDICAL BIOGRAPHIES IN LAY NEWSPAPERS.

S.E.L.—We have repeatedly commented adversely upon the practice of permitting biographical notices with portraits of members of the medical profession to appear in lay newspapers; but there is nothing to show that the gentleman whose athletic feats are held up to admiration in the paragraph in question had any share in its production.

APPOINTMENTS IN THE SALE OF A PRACTICE.

YOUNG.—On the face of it, it would seem most unjust for A. to apply for the post, but we should have thought that the contract of sale would provide for this. If it does not, we still think A. would give B. good cause for complaint that he had not been treated fairly.

PRINCIPAL AND ASSISTANT.

G. L.—The agreement in the form suggested would probably be sufficient; but it would be better to state the consideration.

INDIA AND THE COLONIES.

ASCENSION.

Beri-Beri.—Surgeon Philip N. Randall, R.N., in the BRITISH MEDICAL JOURNAL of June 16th, questions the suggestion that the Kroomen's quarters on Ascension Island may have become infected with the beri-beri germ—a view in connection with the spread of this disease for some years held in China—on the ground that "dampness, high temperature, and possibly contamination of the soil by animal matters," are the conditions necessary for the development of the beri beri germ. It may be observed that Manson's later views, as published in his work on *Tropical Diseases*, 1899, strongly favour the opinion that beri-beri is a place disease, and probably not communicable from man to man. The Kroomen's quarters on the Island of Ascension, in the Health of the Navy Report, 1898, are thus described by Surgeon Randall: "In spite of roomy and well-ventilated quarters, it is the custom of these people to crowd close together at night for warmth (with which view they will block up all sources of ventilation), and also from darkness, of which they stand much in dread." And again in his letter now referred to: "There has never been any question of overcrowding except in the way of herding closely together—two, three, or even four, in an ordinary service hammock." This appears to indicate most favourable conditions for the possible generation of the beri-beri germ in these men's surroundings, as advanced by Manson in his recent publication—a view supported by the well-known beneficial effects of change of locality for such patients to superior hygienic environment, and the fact of the virtual abolition of beri-beri in the Japanese Navy by improved hygienic conditions. Overcrowding appears to favour the spread of beri-beri, according to Manson's observations, especially in regard to the sedi-boys in steamers' forecastles in the Albert Docks. It will be interesting to note if the new huts provided at Ascension at the end of 1898, "with provision for ample ventilation which cannot be obstructed," will abolish the disease there. Observation, should the disease continue, as to the number of cases arising among newly-imported Kroomen, and also among those some time resident on the island would be valuable.

NEW SOUTH WALES.

Insanity.—Dr. Eric Sinclair, the Inspector-General of the Insane, has just issued his annual report for the year 1899. From this we learn that up to the end of that year 4,217 insane persons were under official cognisance, an increase of 144 on the [illegible] in the previous year. This shows an advance on the annual average increase for the last ten years, which has been 116. The proportion of insane to the general population is 1 to 321. The number of admissions for the year was 700, 702 being first admissions and 91 readmissions, a larger number than in any previous year. The recovery rate was 42.90 per cent., which, though 1.14 per cent. below last year's rate, is just [illegible] the average for the last ten years.

The death rate was 6.20 per cent., 48 deaths were due to general paralysis; pulmonary diseases caused 58 deaths, and one-half of these were due to pulmonary phthisis. There are at present in the colony 6 hospitals for the insane, 3 licensed houses, a hospital for the criminal insane, and a reception house; the total accommodation thus provided being for 3,911 patients, but these various institutions have been overcrowded to the extent of 87 patients. The necessity for a new hospital at Orange has again been strongly urged to provide the accommodation for the yearly increase in the number of patients. It is proposed to take advantage of this new hospital, which will be situated in an admirable climate for phthisical patients, to provide special wards for male and female cases of tuberculosis. The average weekly cost per patient was 11s. 1d.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

EXAMINATION IN SANITARY SCIENCE.—Part I of the Examination in Sanitary Science will commence on Tuesday, October 2nd, and will be continued on the two following days. Part II will commence on Tuesday, October 9th, and will be continued on October 10th and 11th.

UNIVERSITY OF DURHAM.

FIRST EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.—The following candidates have satisfied the examiners:

Chemistry with Chemical Physics (Old Regulations).—E. A. Clayton, L.R.C.P. & S., Edinburgh School of Medicine; J. S. Hall, M.R.C.S., L.R.C.P., St. Thomas's Hospital; J. Sandison, M.R.C.S., L.R.C.P., London Hospital.

Elementary Anatomy and Biology, Chemistry, and Physics.—Honours—First-class: T. W. Maddison, College of Medicine, Newcastle-upon-Tyne. Honours—Second-class: S. Robson, College of Medicine, Newcastle-upon-Tyne; A. L. Sheppard, College of Medicine, Newcastle-upon-Tyne. Pass List: G. N. Biggs, St. Thomas's Hospital; H. M. Braithwaite, College of Medicine, Newcastle-upon-Tyne; W. E. Falconar, College of Medicine, Newcastle upon-Tyne, J. Galloway, College of Medicine, Newcastle-upon-Tyne; N. H. Hume, College of Medicine, Newcastle-upon-Tyne; J. H. Lewars, College of Medicine, Newcastle-upon-Tyne; A. V. Maybury, Guy's Hospital; E. Martin, College of Medicine, Newcastle-upon-Tyne; D. M. Ross, University of New Zealand; W. E. Stevenson, College of Medicine, Newcastle-upon-Tyne; S. G. Webb, College of Medicine, Newcastle-upon-Tyne; J. L. Wilson, M.A., College of Medicine, Newcastle-upon-Tyne.

Chemistry and Physics.—F. D. Atkins, St. Thomas's Hospital; L. A. H. Bulkeley, College of Medicine, Newcastle-upon-Tyne; A. Budd, College of Medicine, Newcastle-upon-Tyne; E. H. Barrett, M.R.C.S., L.R.C.P., St. Mary's Hospital; H. Christal, College of Medicine, Newcastle-upon-Tyne; H. B. Cunningham, College of Medicine, Newcastle-upon-Tyne; F. T. H. Davies, Mason College, Birmingham; H. E. Featherstone, College of Medicine, Newcastle-upon-Tyne; A. J. Gilbertson, College of Medicine, Newcastle-upon-Tyne; A. H. Hogg, College of Medicine, Newcastle-upon-Tyne; G. E. Lloyd, College of Medicine, Newcastle-upon-Tyne; C. F. F. McDowall, College of Medicine, Newcastle-upon-Tyne; Mary Raw, College of Medicine, Newcastle-upon-Tyne; L. M. Rosten, St. Bartholomew's Hospital; Olga Schiele, London School of Medicine for Women; F. J. Strachan, College of Medicine, Newcastle-upon-Tyne; W. T. Sewell, College of Medicine, Newcastle-upon-Tyne; W. L. Tindle, College of Medicine, Newcastle-upon-Tyne; R. Le G. Worsley, M.R.C.S., L.R.C.P., L.S.A., St. George's Hospital.

Elementary Anatomy and Biology.—C. C. Lavington, College of Medicine, Newcastle-upon-Tyne; W. Seymour, College of Medicine, Newcastle-upon-Tyne; W. F. Wilson, College of Medicine, Newcastle-upon-Tyne; E. Young, St Mary's Hospital.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,888 births and 4,375 deaths were registered during the week ending Saturday last, September 8th. The annual rate of mortality in these towns, which had been 19.5, 19.8, and 21.7 per 1,000 in the three preceding weeks, declined again to 19.6 last week. The rates in the several towns ranged from 10.1 in Derby, 12.4 in Halifax, 12.7 in Bradford, and 13.3 in Blackburn, to 25.9 in Sheffield, 26.4 in Leicester, 26.8 in Preston, and 35.6 in Hull. In the thirty-two provincial towns the mean death-rate was 20.7 per 1,000, and exceeded by 2.7 the rate recorded in London, which was 18.0 per 1,000. The zymotic death-rate in the thirty-three towns averaged 5.1 per 1,000; in London this death-rate was equal to 4.0 per 1,000, while it averaged 5.9 in the thirty-two provincial towns, among which the highest zymotic death-rates were 9.3 in Wolverhampton, 9.4 in Burnley, 13.1 in Leicester, and 17.5 in Hull. Measles caused a death-rate of 1.0 in Oldham; scarlet fever of 1.4 in Oldham; whooping-cough of 1.3 in Preston, 1.4 in Derby and in Gateshead, and 1.8 in West Ham; "fever" of 1.9 in Portsmouth; and diarrhœa of 6.7 in Brighton, in Bolton, and in Manchester, 8.0 in Burnley, 8.1 in Wolverhampton, 9.0 in Leicester, and 15.5 in Hull. The 63 deaths from diphtheria in the thirty-three towns included 19 in London, 13 in Leicester, 8 in Sheffield, 4 in Bristol, and 4 in Manchester. No fatal case of small-pox was registered last week either in London or in any of the thirty-two large provincial towns; and only 3 small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last, September 8th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had declined from 1,838 to 1,702 at the end of the four preceding weeks, had risen again to to 1,736 on Saturday last; 213 new cases were admitted during the week, against 157, 140, and 176 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, September 8th, 909 births and 540 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.9 and 17.6 per 1,000 in the two preceding weeks, further declined to 17.5 last week, and was 2.1 per 1,000 below the mean-rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 14.6 in Paisley and 15.1 in Edinburgh, to 21.9 in Aberdeen and 23.2 in Greenock. The zymotic death-rate in these towns averaged 2.7 per 1,000, the highest rates being recorded in Aberdeen and Greenock. The 256 deaths registered in Glasgow included 3 from measles, 3 from scarlet fever, 2 from diphtheria, 11 from whooping cough, 2 from "fever" (including 1 from bubonic plague), and 17 from diarrhœa. Two deaths from measles and 9 from diarrhœa were recorded in Edinburgh. Six deaths from diarrhœa occurred in Dundee; 3 from whooping cough and 6 from diarrhœa in Aberdeen; and 5 from whooping-cough in Greenock.

APPOINTMENT OF A LADY *LOCUM TENENS* FOR A DISPENSARY DOCTOR.

DR. ARTHUR WIGLESWORTH (Liverpool) writes: I should be very sorry to think that the congratulations that you have offered in the BRITISH MEDICAL JOURNAL of September 8th to the Poor-law Guardians of Cookstown and to Dr. Bell on the appointment of Miss Crawford as his *locum tenens* were endorsed by the profession at large. Apart altogether from the very open question whether the introduction of the feminine element into the ranks of the profession is necessary, wise, or politic, I believe that hitherto all public appointments that have been conferred on female practitioners have been of such a nature that allowed the recipients of the various charities the option of choosing between male and female practitioners for the purpose of being treated (except, of course, hospitals for women); but in this case I apprehend there is no choice whatever given to the poor of that district, but they will either have to consult Miss Crawford or suffer their complaints in silence until the return of Dr. Bell. So long as the option of choice remained to these poor people I apprehend there would not be much cause for complaint, but to force the poor to bring their complaints before a female practitioner is a moral wrong of no mean order. I have found amongst the poor as great a delicacy of feeling as amongst the higher grades of society, and an equal aversion to discuss certain complaints, even in the presence of a nurse; and to compel such to consult a female practitioner concerning, for instance, renal or rectal affections, to undergo an inspection for bubo or hæmorrhoids, or to have to submit to the passing of a catheter, or the hundred and one similar things that fall to the lot of a dispensary surgeon, is an outrage on the first principles of morality. So long as a female practitioner confines herself to the treatment of her own sex many persons would not object, and if one of the opposite sex should seek her advice she could consult her own feelings whether she would acquiesce in giving it; but to force this attendance upon those who, from innate feelings of true modesty, object thereto, is a retrograde and not a "progressive step," and the *ipse dixit* of the JOURNAL on this point will not, I venture to say, be endorsed by the major portion of the subscribers thereto.

EXAMINATION OF LUNATICS UNDER THE SCOTTISH POOR LAW.

DEMENTIA writes: Parish A. has two parish medical officers. If the certification of a lunatic is required, be he pauper or otherwise, is there any legal right by which these two parish medical officers should be called in to certify the lunacy to the exclusion of another member of the profession who may be in attendance on the case? In the event of there being no legal right what would you advise us to do? We have applied to the inspector of poor here, but all that we can get out of him is that it is customary

*** As the inspector of poor is charged with the duty of intervening in cases of insanity under the Lunacy Acts, it is customary for him to refer the medical questions arising to the medical officers appointed by the local authority. Certainly there is no power to compel him to consult other medical practitioners.

SUCCESSFUL VACCINATION.

COUNTRY PRACTITIONER.—A case can be certified as successfully vaccinated if one good mark results from four punctures. It is quite true that a revaccination on the eighth day in cases vaccinated with glycerinated calf lymph where only one vesicle has resulted will generally be entirely without result.

LEPROSY IN LITHUANIA.—The Lithuanian Society for the repression of leprosy, as the report for 1899 shows, received during that year 24,928 and expended 49 787 roubles. The excess of expenditure over income is due chiefly to the erection and equipment of a new leper house with 120 beds, which was opened at Tarwast in October, 1899. In the four leper houses at Muhli, Nennal, Wenden, and Tarwast, there were at the beginning of the year 137 patients, as against 143 in the previous year. During the year 24 died, 20 discharged themselves, and 72 new cases were admitted. At the close of the year the total number of patients was 165. The four leper houses together provide accommodation for 280 cases.

MEDICAL NEWS.

Professor Carl Gegenbauer, the distinguished Professor of Anatomy in the University of Heidelberg, has resigned his chair on the ground of his advanced age.

The Middlesex Hospital has received a donation of one thousand guineas from Miss Wicksteed to endow a bed in perpetuity in the cancer ward for female patients.

New German Pharmacopœia.—The fourth revised edition of the German Pharmacopœia has just been published. It contains 628 articles, of which 26 are new, while 10 articles official in the third edition have been dropped in the fourth.

At the Paris Exhibition two Grands Prix have been awarded to the Pasteur filter, one to M. Chamberland in the class of General Hygiene, and one to the manufacturers in the class of Military Hygiene.

Goat's Serum in Leprosy.—It is stated that experiments are being made with goat's serum in the treatmen of leprosy, at the Pasteur Institute at Hanoi, the capital of Tonkin. Two patients in whom this method of treatment has been employed are said to have benefited considerably.

A False Alarm of Plague in Berlin.—Some alarm was lately caused by a report that a case of plague had occurred in Berlin. The patient was a servant in the Institute for Infectious Diseases, who on August 13th was found to be suffering from furuncular inflammation of the nose, which was at first suspected to be due to plague infection. The strictest precautions were at once taken to prevent any spread of the disease. The suspicion was afterwards clearly shown to be groundless, as the man had not been exposed to infection. All the "contacts" who had been kept under observation were therefore set at liberty.

The League of Mercy.—Their Royal Highnesses the Prince and Princess of Wales, as Grand President and Lady Grand President of the League of Mercy, recently entertained the Presidents and Vice-Presidents (ladies and gentlemen) of the League at Marlborough House. The guests assembled in the garden and on the arrival of the Prince and Princess were presented to their Royal Highnesses. During the afternoon the Prince and Princess of Wales, in accordance with the statutes of the League, presented the Order of Mercy for services to the League, and also for services in connection with the London hospitals to the following: Sir Whittaker and Lady Ellis, Mr. E. A. Hambro, and Mrs. Herbert Allingham. Two more orders have been awarded, but the presentation of them was deferred owing to the unavoidable absence of the lady presidents (the Duchess of Westminster and Isabella Lady Lennard) to whom they were to have been given.

The United States Army Medical Arrangements for China.—The American *Army and Navy Journal* for August 11th says that the Surgeon General of the United States Army has ordered thirty-five hospital corps men from Fort Columbus and forty-one from Washington Barracks to San Francisco for service in China. It was intended that the transport *Warren*, which sailed on August 16th, should carry at least one hundred members of the hospital corps and several surgeons and assistant surgeons to join the army in China. At the present time there are two hundred hospital corps men in China, but it is deemed necessary, with the reinforcements being sent to General Chaffee, to also send an additional number of medical corps men and officers. The serious aspect recently assumed by the situation in China made it necessary greatly to increase the hospital corps of the army. At the present time this corps consists of 4,117 men, of whom over 2,000 are in the Philippines. Many additional contract surgeons have been employed for Chinese service, and large quantities of medicines have already been shipped to China. The medical corps is doing excellent work, says our contemporary, and will be well able to adequately handle the medical situation.

The Imperial School of Medicine at Constantinople.—Drs. Haireddine Pacha and Fuad Sureya Bey were some time ago asked by the Turkish Government to draw up a detailed report indicating the reforms which should be introduced into the imperial faculty of civil medicine. By an imperial *Iradé* issued in accordance with a decision of the Council of State, ten doctors of the Constantinople Faculty of Medicine have been appointed to serve for a year as assistants in the clinics and in the chemical laboratories. Two are to study specially medical pathology, two ophthalmology, two venereal diseases, one diseases of the ear, one surgical pathology, one obstetrics, and two chemistry. By the terms of an ordinance of the Sultan, a surgeon is to be engaged in Germany as Professor of Anatomy, and is to perform the operations in the clinic of the Imperial Faculty of Medicine.

Medical Society of Japan.—Eleven years ago, Dr. Senya Saito founded a medical society at Kyao, an ancient imperial residence of Japan, with 34,000 inhabitants. That society, of which he is President, now numbers 291 members. Its objects are to further the progress of humanity, and to improve the condition of the medical profession. The members give disinterested help to the Government and the authorities of the town on medical and hygienic questions. Thus last winter, thanks to their active intervention, they saved the town from the plague, and ten years ago they were instrumental in saving innumerable victims after the great earthquake. They meet every month for the discussion of professional questions, and they have a journal which is published monthly. There are in Japan two universities and five medical schools. There is in addition a kind of practical medical school under the auspices of the Government.

Bequests.—The late Dr Pierce Adolphus Simpson, Emeritus Professor of Forensic Medicine in the University of Glasgow, has directed his trustees to pay the following among other legacies for charitable purposes on the death of his wife: The Western Infirmary, £1,000; the Royal Infirmary of Glasgow, £1,000; the Victoria Hospital, Glasgow, £500; Sick Children's Hospital of Glasgow, £1,000; Higginbotham Home for Nurses in Glasgow, £1,000; Glasgow Eye Infirmary, £1,000; Glasgow Maternity Hospital, £500; Broomhill Home for Incurables, £500; Glasgow and West of Scotland Society for the Prevention of Cruelty to Animals, £500; Glasgow Charity Organisation Society, £500; Mission to the Outdoor Blind for Glasgow and the West of Scotland, £500; Scottish Branch of the National Society for the Prevention of Cruelty to Children, £500; Quarriers' Consumptive Home, £500; Quarriers' Homes for Children, £500; Royal Asylum for the Blind, £500; West of Scotland Convalescent Seaside Homes, Dunoon, £500; and Glasgow Convalescent Home, Lenzie, £500.

Small-pox in the United States.—According to the *Medical News* the spread of small-pox continues throughout most of the States. Up to the present time there have been reported 3,346 cases of this disease, as compared with 805 cases reported during the same period of time in 1899. The increase is particularly notable in Alaska, Colorado, Indiana, Louisiana, Minnesota, Texas, North Carolina, and Ohio. These last two States show a marked increase. In North Carolina, from May 1st to June 30th, 440 cases were reported, as contrasted with 68 during the same period of 1899, while during the first six months of 1900 Ohio has reported 1,353 cases, contrasted with a total of 20 cases for 1899 during the corresponding months.

MEDICAL VACANCIES.

The following vacancies are announced:

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—Resident Surgeon; unmarried. Salary, £80 for the first year, increasing to £100, with board and furnished apartments. Applications to the Secretary by October 22nd.

BELGRAVE HOSPITAL FOR CHILDREN, Gloucester Street, S.W.—House-Surgeon. Appointment for six months. Board, residence, and £5 allowance. Applications to the Honorary Secretary by September 22nd.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary, £150 per annum, with £30 allowance for cab hire and furnished rooms, etc. Applications to the Secretary by September 24th.

BIRMINGHAM GENERAL HOSPITAL.—House-Surgeon. Appointment for six months. No salary, but residence, board, and washing provided. Applications to the House Governor by September 22nd.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary, £100 per annum with board and residence. Applications endorsed "Dispensary Surgeon" to the Secretary by September 18th.

BRIGHTON ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House-Surgeon for twelve months. Salary £80, with board, lodging, and washing. No stimulants. Applications to the Chairman of the Medical Committee, by September 28th.

BRISTOL GENERAL HOSPITAL.—House-Surgeon. Salary, £120 per annum, with board, residence, etc. Applications to the Secretary by September 30th.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £80 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant House-Surgeon," to the Secretary.

CARLISLE: CUMBERLAND INFIRMARY.—Assistant House-Surgeon for seven months. Salary at the rate of £40 per annum, with board, lodging, and washing. Applications to the Secretary.

CARLISLE: CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer; unmarried. Salary £130 per annum, rising to £150, with board, residence, etc. Applications to the Medical Superintendent.

CARLISLE DISPENSARY [illegible] per annum, with apartments. Applications to the Honorary Secretary, Mr. G. A. Lightfoot, 23, Lowther Street, Carlisle.

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—District Surgeons. Applications to the Secretary by September 18th.

DEVONPORT ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon for six months. Salary at the rate of £40 per annum. Applications to the Chairman of Medical Committee by September 27th.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £40 per annum, with residence, board, and washing. Applications to the Secretary by October 4th.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary, £140 rising to £160 per annum, with board, laundry, and attendance. Applications to the Medical Superintendent.

EAST SUSSEX COUNTY ASYLUM, Hayward's Heath.—Second Assistant Medical Officer and Pathologist, unmarried. Salary, £175 per annum, with board, lodging, and washing. Applications to the Medical Superintendent by September 25th.

GLASGOW EYE INFIRMARY.—Resident Assistant House-Surgeon. Salary £50, with apartments and board. Applications to the Secretary, 88, West Regent Street, Glasgow by September 28th.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Junior House-Surgeon. Appointment for six months. Salary at the rate of £30 per annum, with board, lodging, and washing. Applications to the Secretary by September 17th.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Appointments for six months. Honorarium £25. Applications to the Secretary by September 27th.

HOSPITAL FOR WOMEN, Soho Square, W.—House-Physician. Appointment for six months. Salary, £30. Applications to the Secretary by September 21st.

HULME DISPENSARY, Bale Street, Manchester.—House Surgeon. Salary, £150 per annum, with apartments, etc. Applications to the Honorary Secretary, Medical Committee, by September 19th.

KENT COUNTY ASYLUM, Chartham, near Canterbury.—Junior Assistant Medical Officer; unmarried. Salary commencing at £120 per annum, with board, lodging, and washing. Applications to the Medical Superintendent.

KING'S LYNN: WEST NORFOLK AND LYNN HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board, residence, and washing. Application to the Chairman of the Week y Board by September 21st

LANCASTER COUNTY ASYLUM.—Assistant Medical Officer. Salary commencing at £125 per annum, with usual allowances. Applications to the Medical Superintendent.

LEITH HOSPITAL.—(1) House-Physician; (2) Assistant House-Physician; (3) Assistant House-Surgeon; (4) Surgeon in Outdoor Department. Applications to Mr. G. V. Mann, Secretary, 33, Bernard street, Leith, by September 15th.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum, with board, residence, and maintenance. Applications to the Chairman by September 26th.

LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer, unmarried, and not exceeding 26 years of age. Applications, endorsed "Assistant Resident Medical Officer," to be addressed to the Chairman of the Port Sanitary and Hospital committee under cover to the Town Clerk, Municipal Offices, Liverpool, by September 20th.

LONDON THROAT HOSPITAL, 204, Great Portland Street, W.—Non-resident House-Surgeon. Appointment for six months. Honorarium at the rate of £25 per annum. Applications to the Secretary of the Medical Committee by September 21st.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £80 per annum, with apartments and board. Applications to Mr. H. Teague, Secretary, 38, Barton Arcade, Manchester, by September 28th.

MANCHESTER ROYAL INFIRMARY AND DISPENSARY.—Honorary Assistant Surgeon; must be F.R.C.S.Eng. Applications to the Secretary by September 22nd.

NEW HOSPITAL FOR WOMEN, Euston Road, N.W.—Three Qualified Women as Assistants to Out-patient Department. Applications to the Secretary by September 26th.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board and residence (no stimulants). Applications to the Secretary by September 24th.

NEWCASTLE-UPON-TYNE CITY LUNATIC ASYLUM.—Second Assistant Medical Officer, unmarried, and under 30 years of age. Salary, £140 per annum, rising to £160. Applications to the Medical Superintendent.

NORTH SHIELDS AND TYNEMOUTH DISPENSARY.—House-Surgeon and Dispenser. Salary, £150 per annum, with an allowance of £20 towards house, etc. Applications to the Honorary Secretary, 99, Howard Street, North Shields, by September 24th.

NORTH STAFFORDSHIRE INFIRMARY, Hartshill, Stoke-upon-Trent.—House-Physician. Salary £100 per annum, increasing £10 per annum at the discretion of the Committee, with furnished apartments, board, and washing. Applications to the Secretary by October 1st.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £200 per annum. All found except board. Applications to the Secretary.

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Resident Physician. Salary, £12 per annum, with board, washing and attendance. Applications to the Clerk to the Local Authority, Municipal Buildings, Paisley, by September 24th.

PLYMOUTH BOROUGH ASYLUM, Blachadon.—Assistant Medical Officer, unmarried. Salary, £150 per annum, increasing to £200, with furnished apartments, board, and washing. Applications, endorsed "Assistant Medical Officer," to Dr. W. H. Bowes, Superintendent, by October 1st.

RAINHILL: COUNTY ASYAUM.—Assistant Medical Officer, unmarried, and not more than 30 years of age. Salary, £125 per annum, increasing to £250, with furnished apartments, board, attendance, and washing. Applications to the Medical Superintendent by September 25th.

ROCHDALE INFIRMARY.—Resident Medical Officer; unmarried. Salary, £100 per annum, with board, residence, and washing. Applications to the Honorary Secretary by September 18th.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—(1) House-Physician; (2) Resident Medical Officer. Appointments for six months, but renewable. Salaries at the rate of £40 and £100 per annum respectively, with furnished apartments, board, and washing. Applications to the Secretary by September 25th.

ROTHERHAM HOSPITAL.—Assistant House-Surgeon. Salary, £60, with board, lodging, and washing. Applications to Mr. J. S. Martin, at the Hospital, by September 19th.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT) Greenwich.—House-Surgeon. Salary, £50 per annum, with board, residence, and washing. Applications to the Secretary by October 1st.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer. Salary, £75 per annum with furnished apartments, board, and washing. Applications to the Clerk to the Guardians, Union Offices, Westbar, Sheffield, by September 19th.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Appointment for six months, but renewable. Residence, board, and washing provided. Honorarium at the rate of £50 per annum. Applications to Mr. Joseph Worrall, Infirmary Office, 24, King's Street, Southport, by September 29th.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon. Appointment for six months. Salary at the rate of £24 per annum, with board, washing, and residence. Applications to the Secretary before September 18th.

WEST DERBY UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £100 per annum, with first-class rations, apartments, etc. Applications to the Union Clerk, Brougham Terrace, West Derby Road, Liverpool, by September 23rd.

WEST HAM HOSPITAL, Stratford, E.—Junior House-Surgeon. Salary, £75 per annum, with board, residence, etc. Appointment for one year, but eligible for election as Senior, salary £100. Applications, marked "Junior House-Surgeon," to the Secretary by September 18th.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician. (2) House-Surgeon. Appointment for six months. Board and lodging provided. Applications to the Secretary Superintendent by September 26th.

WESTMINSTER GENERAL DISPENSARY, 9, Gerrard Street, Soho.—Dispenser. Salary, £60 per annum. Applications to the Secretary by September 24th.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon; unmarried. Salary, £100 per annum, with board and residence. Applications to the Honorary Secretary by September 29th.

WOOLWICH UNION.—Resident Assistant Medical Officer at the Infirmary, Plumstead, unmarried, and not more than 30 years of age. Salary, £120 per annum, increasing to £150, with apartments, rations, and washing. Applications to the Clerk to the Board, Union Offices, Woolwich, by September 27th.

MEDICAL APPOINTMENTS.

BEALES, T. W. L., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer for the West Ham District of the East and West Ham Incorporation, *vice* A. Crisp, M.R.C.S.Eng.

BLACKER, A. Barry, M.D.Durh., B.S., appointed Superintendent of the new X-Ray Department at the Hospital for Consumption, Brompton.

EVANS, D. R. Powell, L.R.C.P.Lond., M.R.C.S.Eng., L.S.A.Lond., appointed Medical Officer for the North Wimbledon District of the Kingston Union, *vice* O. W. Berry, M.R.C.S., L.S.A., resigned.

FOWLER, George, L.R.C.P., L.R.C.S.Edin., D.P.H.Eng., appointed Resident Assistant Medical Officer to the Sheffield City Hospitals.

HAWLEY, S. H., M.B.Durh., appointed Medical Officer for the First District of the Walsall Union.

HIRST, Walter C., M.B., appointed Resident Assistant Medical Officer to the Leeds City Hospitals.

JACKSON, H. W., M.B.Lond., D.P.H., appointed Medical Officer for the Central District of the Middlesbrough Union, *vice* A. Webster, M.R.C.S., L.R.C.P.Lond.

KIRK, T. D., M.D., M.Ch.R.U.I., appointed Medical Officer for the Forden District of the Forden Union, *vice* T. Morgan, L.R.C.P., L.R.C.S.Irel., resigned.

KNOX, E. G., M.R.C.S.Eng., L.R.C.P.Lond., appointed Certifying Factory Surgeon for the Fresh ford District of Somerset.

M'DONALD, Edward, M.B., B.Ch., appointed Medical Officer for the Nos. 1 and 3 Dispensary District of the Carlow Union, *vice* Dr. O'Meara.

MARSH, J., M.B., C.M.Edin., appointed Medical Officer of Health for the Atherton Urban District, *vice* J. T. Neech, L.R.C.P.Edin., D.P.H.Vict., resigned.

MORGAN, Rosslewin, M.D.R.U.I., appointed Certifying Factory Surgeon for the Ballyfeard District of the Kinsale Union, co. Cork.

PRYTHERCH, John R., M.B., Ch.B.Edin., M.R.C.S.Eng., L.R.C.P.Lond., appointed Second Resident Medical Officer at Chester General Infirmary.

SYDENHAM, F. W., M.D.Edin., D.P.H.Vict., appointed Medical Officer for the Second District of the Walsall Union.

WADDY, F. H., M.D.Glasg., appointed Medical Officer for the South District of the Sheffield Union, *vice* W. J. T. Baker, L.R.C.P., L.R.C.S.Edin., resigned.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. A. Whitfield: Consultation. (Skin.)

TUESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. James Taylor: Consultation. (Medical.)

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. G. F. Still: Consultation, (Pediatrics.)

THURSDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., (Eve.) 2 to 3.30 P.M.—Dr. Harry Campbell: Clinical Examination of the Nervous System. (Demonstration I.) 4 P.M.—Mr. N. Maclehose: Consultation.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BOWER.—On September 7th, at Elton House, Gloucester, the wife of E. Dykes Bower, F.R.C.S.Edin., of a son.

BROOKE.—On September 8th, at Cockburn Harbour, Turks and Caicos Islands, the wife of Dr. G. E. Brooke, G.M.O., and Deputy Commissioner, of a son.

MARRIAGES.

BARRINGTON—LOCKE.—On September 11th, at Hampton, Staff-Surgeon J. Leslie Barrington, R.N., H.M.S. "Medea," to Edith Marie, daughter of the late John Locke, Esq., Barrow, and granddaughter of Mrs. Watts, Chesterfield, Hampton, Middlesex.

BIRD—BARRINGTON.—On September 11th, at Wembledon, Bridgwater, by the Rev. G. Trevor, Vicar of Holy Trinity, Bridgwater, assisted by the Rev. J. M. Evans, Vicar of the Parish, George William Harvey Bird, M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P., second son of the late George Adam Bird, of Glenthorn, Worcester, to Nellie, elder daughter of G. G. Barrington, of Westfield House, Bridgwater.

JONES—ARCHER.—On August 23th, at the Church of St. Peter and St. Edward, Westminster, by the Rev. Father Butler, Henry John Rutherford Jones, M.R.C.S.Eng., L.R.C.P.Lond., son of the late Robert Slade Jones, to Lilian Kate Archer, widow of Jacque Jerome Archer, Esq., of New York, and eldest daughter of James Thynne, Esq., C.S., of Sydney, New South Wales.

WALKER—SHAW.—On September 4th, at Jesmond Parish Church, Newcastle-on-Tyne, Frederick Septimus Walker, M.D., B.S., youngest son of the late Thomas Walker, J.P., of Staincliffe, Seaton Carew, to Florence Edith, youngest daughter of Benjamin Shaw, Singleton House, Newcastle-on-Tyne.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

B. G. would be grateful for information with regard to Aix-les-Bains on the following points:—(1) Is the treatment carried out there in October and November? (2) The name of a good hotel to stay at.

L. M. H. asks where a boy aged 13, who is suffering from phthisis, early stage, could be sent to school and have the outdoor treatment continued?

Liverpool asks for advice on the non-operative treatment of a hallux valgus. Is there not a boot with a peg in the sole to keep the toe in its place? Is it of any use? Are springs attached to a special sole satisfactory?

C. O. asks for advice in treatment of "heat spots" in a boy 16 months old. Magnesia and alkalies in general have been tried in vain. What diet and climate would be best? The boy does not like milk foods, but takes eggs, meat extracts, etc., and is otherwise healthy.

Cartha asks for advice in the treatment of the following case: A domestic servant has suffered for over a year from dizziness, faintness, and headache immediately following the ingestion of food. Dieting, lactopeptine, pepsine, nux vomica, mineral acids, etc., and counter-irritation have all been tried, but with no avail. The bowels are habitually constipated.

F.W.S. writes: A bachelor, aged 55, who up till 1898 spent most of the year fishing and shooting, but is now unable to do so owing to illness, is anxious to find some place in England to spend the winter. It must be sheltered from north-east wind; gravel soil, and dry; a comfortable hotel and club not far from each other required.

Bacteriologist would be obliged for information as to English literature bearing upon the following points:—(1) The transmittance of germs by means of spermatozoon or ovum; (2) the passage of germs from the maternal to the fœtal circulation; (3) the part played by germs in the destruction of the body after death.

Epidermis writes that he has great difficulty in keeping his hands clean in appearance, especially along the outer margin of his index finger and the back of the phalanges. His hands are frequently washed in hot water, but the skin is naturally dry and looks dirty in cracks. Strongly alkaline soaps, rubber brush, etc., have been tried. He asks for suggestions as to suitable measures.

Member has been asked by a patient who is suffering from a chronic phthisis with a flabby heart and albuminuria, and faulty liver action, the most suitable place for passing the worst of the winter months. He is 61 years of age, and has great dyspnœa on the least exertion. He has suggested the following places: Eastbourne, Newquay, Marazion (Cornwall), Bude, Minehead, Barmouth, and Aberdovey.

Puzzled asks for help in the diagnosis of the following case: A man over 60 who has not had syphilis nor ordinary catarrh, but lost the sense of smell after influenza, complains much of the loathsome smell and of the bad taste his food has. Nothing but slight redness of the mucous membrane of the left nostril can be found; those coming near the patient do not perceive any ill smell from him; he has no polypus and no discharge, but is of a highly sensitive nervous nature. Is it ozæna or some affection of the nerves, and what is the best treatment?

Works on Plague.

Dr. J. Reynolds (Brixton Hill, S.W.) would be glad to know where he can obtain a work or monograph giving particulars—for example, history, symptoms, and treatment—of the bubonic plague.

*** We may refer our correspondent to a paper on the Symptomatology, Pathology, Treatment, and Prophylaxis of Plague, by Professor W. J. Simpson, which appeared in the British Medical Journal of September 16th, 1899, p. 697. A good practical paper on the same subject by Mr. James Cantlie, was published in the *Practitioner* of November, 1899. We understand that a monograph on plague, by Mr. Cantlie, will shortly be issued by Messrs. Cassell and Co.

Physical Examination of Candidates for Naval Cadetships.

F.R.C.S. writes: A boy, aged 16, wishes to go into the navy as a midshipman. The second and third toes of both feet were bound together throughout their extent by a web the whole thickness of the toes. I operated on them by Didot's operation three months ago, and they are very much improved. They are free for two-thirds of their extent, but there is, in consequence of the flaps not quite joining at the apex of the cleft, some slight webbing present. He can move both toes freely, and can climb a rope, etc. Would this slight webbing prevent his passing for the navy, as, if so, his whole course of study would have to be altered?

*** We have referred this question to a retired naval medical officer of high rank, who writes: From a lengthened experience of the physical examination of candidates for naval cadetships, I do not consider that the slight webbing of toes indicated by your correspondent would in any way affect the boy passing the medical examination if he was otherwise physically fit. If "F.R.C.S." does not possess the "Physical Standard" required by candidates he should apply to the Secretary of the Admiralty for it.

Church Lads' Brigade.

More Work for Nothing writes: Can any member inform me of the nature of the instruction that is usually given to "Church Lads' Brigades"? Is the medical instructor expected usually to instruct them in infantry drill, etc.? Does any central body issue information in the form of a syllabus of lectures to be delivered to such classes, and, in the absence of such a syllabus, would the junior St. John Ambulance course be suitable for such a brigade?

*** The Church Lads' Brigade was instituted about ten years ago, we believe, with a view to promote the welfare of young fellows under 20, and its headquarters is Church House, Westminster, and our correspondent can obtain all information by applying to the secretary there. It instructs in military drill, ambulance work, and various other matters educational. There are branches in many parts of England, and instructors are sometimes plentiful. Sometimes one has to teach several subjects. Probably a medical instructor would not find anyone else to teach ambulance drill. The junior St. John Ambulance course would be about suitable for the brigade.

ANSWERS.

H.—*Medical Partnerships, Transfers, and Assistantships*, by G. B. Stocker and W. Barnard (London: Stevens and Sons. 8s. 6d.) will probably meet our correspondent's requirements.

G. B. F.—The M.D. of Dublin University is obtainable only by those who have graduated in Arts, and the M.D. of the Royal University of Ireland is granted only to those who have passed two examinations in Arts.

M.R.C.S. & L.D.S.Eng.—Loss or decay of more than ten teeth is held to disqualify for the Royal navy, but the condition of the remainder and the cause of loss—whether by accident or disease—are taken into consideration in conjunction with the candidate's physique and constitution.

Drink Craving.

Dr. J. S. Pearse (Plymouth) writes: In reply to "Somerset's" query as to the best means to adopt in the case of severe drink craving, may I suggest his prescribing tinct. cinchonæ co? Allow the patient to take 10 to 20 drops in a little chloroform water whenever he feels the craving coming on; this acts satisfactorily in some cases.

Treatment of Inebriates.

J. R. A.—The best chances of success would probably be afforded by "colony" treatment, and such is available at the Cottage Homes for Working Women, Duxhurst, near Reigate. Application should be made to the Sister-Superintendent. For particulars in regard to a home, application might be made to the Matron, The Grove, Fallowfield, near Manchester.

Treatment of Neurasthenia.

Mr. C. C. Weeks (Lewisham Park, S.E.) writes in reply to "J. L." (British Medical Journal, September 8th) to suggest that all causes of reflex trouble, such as varicocele and naso-pharyngeal troubles, should be carefully examined for, and, if found, suitably treated. Medicine.—The hydrobromate of quinine with hydrobromic acid, and no nux vomica. Electricity.—The constant current; a large cathode to be placed on the abdomen, and a small anode on the vertex, occiput, and other parts of head. Current strength at first 1 milliampère, which may be kept up in gradually-increasing lengths of time—maximum, quarter of an hour.

Duties of Medical Officer of an Isolation Hospital.

Diphtheria.—*The Prevention of Epidemics and the Construction and Management of Isolation Hospitals*, by R. McNeill, M.D. (Churchill, 1894), gives (chapter viii) fairly full particulars as to the medical officer's duties. Further information could be obtained by applying for the printed rules of the Metropolitan Asylums Board (Norfolk House, Strand, W.C.) or the rules in force in any of our great towns, which the Medical Officer of Health would doubtless be pleased to supply.

NOTES, LETTERS, Etc.

Section of Laryngology and Otology.

We are requested to state that one of the references to literature appended to Dr. Watson Williams's paper on Toxic Paralysis of the Larynx was omitted from his MS. by the typewriter, namely, Heymann, P., Beitrag zur Lehre v. d. toxischen Lähmungen d. Kehlkopfmuskulatur. *Archiv f. Lar. u. Rhin.*, Berlin, 1896, v, 256. As he was much indebted to Heymann's paper, Dr. Williams is anxious the reference should not be omitted.

Flies and Typhoid Infection.

Dr. Arnold H. Watkins (Kimberley, S. Africa) writes: May I be allowed to suggest that in considering the epidemic of typhoid among our troops during this campaign the fly as a factor in its spread has not, perhaps, received the attention it deserves? It is decidedly rife in this country typhoid is generally a water-[illegible] of course, this may occur sometimes, we have [illegible] state it. In the common (alas! only too common) [illegible] carrier of contagion, and one, I think [illegible] first of the cases in our military camps. Flies [illegible] exposed to the air, and they also swarm in all milk [illegible] left for a minute uncovered. It is a very simple process for the fly passing from the typhoid stool to the milk, the jam, the butter, or the other articles of food, to carry on his legs enough fecal matter to infect the consumer of the food, even if the typhoid bacillus cannot be transmitted through the fly's intestinal canal. With the advent of cold weather the flies completely disappear, so does almost entirely the typhoid [illegible] although, of course, both events may be due to a common cause and not otherwise related, I think it will probably be found that there is a very distinct relation of cause and effect between the fly and the typhoid.

ERRATUM.—In Dr. J. Edgar's article on a vaginal speculum with detachable weight and blades, published in the BRITISH MEDICAL JOURNAL of September 8th, the word "couch" in the sentence "if a couch be used to support the patient's legs" should have been "crutch."

PRIVATE MILITARY HOSPITAL AT SURBITON.

IN a paragraph which appeared in the BRITISH MEDICAL JOURNAL of September 1st it was stated that a visit had been paid by the Princess of Wales to The Gables private military hospital at Surbiton, which, it was added, is maintained by Mr. Alfred Cooper, F.R.C.S. With reference to this paragraph we have received a communication from Mr. Alfred Cooper, of The Gables, Surbiton, who writes: "The letters F.R.C.S. after my name are incorrect, as I am not the eminent surgeon who also bears the same name."

TREATMENT OF CORNS.

LIEUTENANT-COLONEL (RET.) R. TEMPLE WRIGHT (Parliament Street, S.W.) writes: Besides the remedies described by other contributors, may I mention that corns can be cured by the leaves of *Echeveria glauca*, the rosette-like plant which is used as an edging in gardens at home and in India? Pluck a leaf, remove its outer skin, and apply the raw leaf to the corn at bedtime, binding it on the foot with a piece of old handkerchief to prevent it from falling off. Continue this every night for a week, when the corn can usually be removed easily without pain. It is especially useful for soft corns between the toes, which are difficult of access by instruments, as under this treatment they gradually disperse without any bleeding or discharge.

DRINKING URINE.

DR. JAS. W. GILL (Liskeard, Cornwall) writes: I can add to Dr. Leon's note about urine drinking that my own coachman was telling me only a few days previously, and has since confirmed it, how he drank for three successive mornings a teacupful of his own urine for "blackheads," and he is quite confident that it cured him, as in a few days, I think he states about eight or nine after the commencement of treatment, the boils disappeared. He drank it warm, directly after passing, and had a handful of sugar ready to follow the disgusting draught. I have come across several cases like this.

DR. J. REES GABE (Mecklenburgh Square, W.C.) writes: Dr. Leon's letter brings to my mind a case of a patient of mine some years ago who was very deaf. I requested him on his next visit to "bring some of his water." On his next appearance, in about a week's time, he expressed himself as very much better, and that nothing had done him so much good before. On asking for the specimen of urine, he replied that he had drank it every day and felt a great deal better each time. Owing to his deafness he had misunderstood the word "bring" for "drink." He was suffering from chronic bronchitis.

DR. S. GRESSWELL (32, Lawford Road, N.W.) writes: Drinking one's own urine is very prevalent in the fens of Lincolnshire as a remedy for ague. The writer has come across several instances.

DR. H. E. BELCHER (Nottingham) writes: I have once or twice heard poor patients say they drank their own "netting" as a cure for urticaria. The word "netting" is, I think, local for urine, and its use in this manner would be a fair example of primitive (or advanced?) homœopathy; "netting" and "nettle" being derived from A.S. *netels*=a nettle.

ACADEMIC COSTUME.

M.D. writes: I have read with interest the various criticisms, adverse and otherwise, which have appeared from time to time in the BRITISH MEDICAL JOURNAL, with regard to academic costume, and some weeks ago I noticed an article emanating from the pen of a visitor at the centenary meeting, in which he suggests that a hood should be added to complete the costume of the Members and Fellows of the College of Surgeons. Now I should like to remind the writer that neither the Royal College of Surgeons nor any other licensing body has any right to institute the wearing of a hood; this right lies solely with those who have obtained a degree from a *bonâ-fide* university in the faculties of Arts, Science, Law, Divinity, Medicine, or Music, and any deviation from this rule would, in my opinion, be a gross violation of the laws of good taste. An ordinary solicitor is expected to appear in court in a stuff gown, being a solicitor of the Supreme Court, which is his technical description, but he cannot wear a hood unless he has a degree. Likewise a Fellow or Member of the College of Surgeons appears in a stuff gown; so does the verger in a cathedral; but this attire does not convey any distinctive interpretation. There seems to me to be a certain amount of jealousy existing amongst many members of the medical profession who from various reasons have not been able to obtain a degree. I think that we, as a body, ought, in justice to ourselves and in respect to the university of which we are graduates, to maintain our status by wearing academic costume on every fitting occasion.

DR. JAS. WM. GILL (Liskeard) writes; Perhaps it is as well that "Anti-humbug" has not attempted to reply to the various queries, etc., of "Jackdaw." Just a little reflection will prove to "Anti-humbug" that academic costume can have nothing to do with the manner in which we behave towards or treat our patients, for it is on the rarest occasions only that it behoves us to wear it. It must be plain to "Anti-humbug" that our professional behaviour and mien would be sadly cloaked if we appeared in the sick room either in nightgown or hood and gown, and therefore what we hear should certainly be considered as of some slight importance; but I protest against his statement that a large section consider their costume before their art. His farrago about "gauds" and "gewgaws" and "silks and satins" can only be regarded as extravagant nonsense,

A SWALLOWED PIN.

DR. RICHARD HENRY DENNISTOUN POPE (Belfast) writes: About three weeks ago Mrs. T. came to me with the history of having swallowed accidentally an ordinary pin, about $1\frac{1}{2}$ inch in length. I examined her mouth and throat carefully, could find no trace of lodgment in any part, and as she was experiencing hardly any discomfort, I concluded the pin must have reached her stomach. I decided upon giving Nature a chance, and put her on oatmeal porridge, with which hairs were mixed (not a very palatable diet). I saw her shortly again. No pin was seen in evacuations. Same diet continued and castor oil given, which had the effect of safely dislodging the pin, embedded in a fæcal mass, on the third day after its having been swallowed.

THE L.S.A. DIPLOMA.

A CORRESPONDENT signing himself "'L.S.A.(Lond.),' 'Dr.,' 'Physician and Surgeon,'" writes to protest against what he calls a "covert sneer" against the L.S.A. diploma in the Educational Number of the BRITISH MEDICAL JOURNAL. We certainly had no intention of speaking disrespectfully of the L.S.A. diploma, and cannot admit that we have done so. We stated as a fact that "few students are content after a course of study as prolonged, and with the exception of the cost of the diploma, as expensive as that of the Conjoint Board, to be able to write after their names L.S.A. or L.A.H. We do not question our correspondent's right to be satisfied with the letters which he appends to his name, but we fail to see why this should prevent us from recognising the fact (which can readily be tested by reference to the *Medical Register*) that most members of the profession are not content with the diploma in question. We would again, as on many previous occasions, strongly advise every intending student so to arrange his course of study that at its termination he may be in a position to take a university degree.

LIGHT TREATMENT OF LUPUS.

DR. A. BARRY BLACKER, M.D., B.S., etc. (Superintendent *X*-Ray Department, St. Thomas's Hospital, and the Hospital for Consumption, Brompton), writes: May I be permitted to point out that in your answer to a correspondent under the heading "Light Treatment" of lupus, you omitted to mention the fact that I am treating cases by Finsen's method. You also have mentioned the fact in a former issue of the BRITISH MEDICAL JOURNAL. I believe that I was the first to introduce the treatment into London, and to exhibit cases which had derived great benefit and had been entirely treated by me in London.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Alpha; And.; Dr. C. Aitken, Penarth. **B** A. H. Benson, M.B., Dublin; Bacteriologist; B. G.; Dr. J. W. Byers, Belfast; Dr. A. B. Blacker, London; Mr. H. E. Belcher, Nottingham; Dr. F. G. Bushnell, Plymouth; Mr. G. H. Broadbent, Manchester; Mr. E. Bailey-Denton, London; Birmingham University, Secretary of, Birmingham; Messrs. Burroughs, Wellcome and Co., London; Mr. A. S. Barling, Lancaster; Mr. G. Brown, London. **C** Country Practitioner; Dr. W. Campbell, Bradford; M. Carthew, M.B., Throckley; Mr. A. Cooper, Surbiton; Mr. W. R. E. Coles, London; Cartha; C. O. **D** J. F. Davidson, M.B., Tomintoul; Diphtheria; Dr. A. Duke, Cheltenham; Mr. M. M. Daly, Cadoxton; D'Arcy; Dr. N. Davis, Buntingford. **E** Epidermis; Dr. J. Edmunds, London; J. Edgar, M.B., Glasgow; Mr. M. Eustace, Clifton; Eclectic; Euan. **F** Mr. T. Frampton, London; F. W. S.; Mr. A. Forrester, Selukwe, S.A.; Dr. C. W. Fassett, St. Joseph, Mo.; Mr. J. B. Fry, Esher; W. Fletcher, M.B., Coventry; Dr. W. F. Farquharson, Carlisle; Dr. G. FitzGerald, Queenstown; Fiat Justitia. **G** Mr. J. W. Gill, Liskeard; Dr. J. R. Gabe, London; Mr. S. Gresswell, London; Mr. J. G. B. Gowlland, Townsville. **H** Mr. G. A. Hutton, West Ayton; Mr. F. A. Humphry, Crowborough; Dr. D. B. Hart, Edinburgh; Dr. T. W. Hime, Bradford; Dr. J. Highet, Workington; H. **I** Irish Dispensary Doctor. **J** J. W. H.; Dr. B. Jones, Leigh; Mr. C. S. S. Johnston, Edinburgh; Mr. F. W. Jollye, Alresford; Mr. W. Jones-Morris, Portmadoc. **K** Mr. R. Kurka, Frankfort-on-Maine. **L** Dr. J. Lewtas, London; Liverpool; Livarno; Mr. G. Lys, Wareham. **M** M. C.; Miss A. C. Madden, London; M.B.Edin.; Member; J. McGlashan, M.B., Bedworth; M.R.C.S. and L.D.S. **N** Mr. A. S. Norman, Havant; Dr. J. C. Nichol, Manchester. **O** Mr. F. Osborne, Dover; Mr. G. W. Ord, Richmond, Surrey. **P** Mr. R. D. Pedley, London; Dr. L. H. Pegler, London; Mr. J. S. Pearse, Plymouth; Dr. W. R. Parker, Kendal; Phthisis; Puzzled; Perplexed. **Q** Quibble. **R** Dr. J. Reynolds, London; Dr. G. Reid, Stafford; Dr. E. Rice, Abingdon; Dr. H. Renney, Sunderland; Dr. W. Renner, Freetown; R. M. H.; Mr. R. W. Roberts, Port Talbot. **S** Dr. S. Spicer, London; Soldier; Mr. H. C. Smith, Belfast; Messrs. Southall, Bros., and Barclay, Birmingham; Mr. G. Stevens, Bury St. Edmunds. **T** Dr. Catherine van Tussenbroek, Amsterdam; Mr. H. Taylor, Wroxham. **W** Dr. R. T. Wright, London; Mr. T. Webster, Bristol; Dr. A. H. Watkins, Kimberley; Dr. B. C. Windle, Birmingham; Mr. H. Waite, Leeds; Mr. A. Wiglesworth, Liverpool; Mr. C. C. Weeks, London; Dr. W. Williams, Festiniog.

BOOKS, ETC., RECEIVED.

The Art of Dispensing. Sixth Edition. By P. MacEwan, F.C.S. London: Office of "Chemist and Druggist." 1900. 5s. 6d.

Veterinary Counter Practice. Third Edition. London: Office of "Chemist and Druggist." 1900. 3s. 6d.

The Locust Plague and its Suppression. By Æneas Munro, M.D. London: John Murray. 1900. 21s.

Where Should Londoners Live? Croydon: J. W. Ward. 1900. 6d.

Writ in Barracks. By E. Wallace. London: Methuen and Co. 1900. 3s. 6d.

Essentials of Diagnosis. By S. Solis-Cohen, M.D., and A. A. Eshner, M.D. Second edition. London: Henry Kimpton. 1900.

A Short Practice of Gynæcology. By H. Jellett, B.A., M.D., etc. London: J. and A. Churchill. 1900. 7s. 6d.

A Manual of Midwifery. By A. L. Galabin, M.A., M.D., F.R.C.P. Fifth Edition. London: J. and A. Churchill. 1900. 15s.

Christian Science. By W. A. Purrington. New York: E. B. Treat and Co. 1900.

The Life of Sir Astley Cooper. By W. H. Horrocks. London: Leadenhall Press. 1900.

Studies in Fossil Botany. By D. H. Scott, M.A., Ph.D., F.R.S., F.L.S., F.G.S. London: A. and C. Black. 1900. 7s. 6d.

Ulceration of the Bladder. By E. H. Fenwick, F.R.C.S. London: J. and A. Churchill. 1900. 5s.

The Autobiography of a Quack and the Case of George Dedlow. By S. Weir Mitchell, M.D. London: T. Fisher Unwin. 3s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

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SIXTY-EIGHTH ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION.

Held at IPSWICH, July 31st, August 1st, 2nd, and 3rd, 1900.

PROCEEDINGS OF SECTIONS.

SECTION OF PSYCHOLOGY.

R. PERCY SMITH, M.D., President.

THE PRESIDENT delivered an introductory address on The Prevention of Insanity, which was published in the BRITISH MEDICAL JOURNAL of August 11th, p. 340.

A DISCUSSION ON THE CORRELATION BETWEEN SEXUAL FUNCTION, INSANITY, AND CRIME.

I.—H. MACNAUGHTON-JONES, M.A.O., M.D., M.Ch., F.R.C.S.I., London.

AFTER a few preliminary observations on the relationship between insanity and gynæcology, Dr. Macnaughton-Jones proceeded as follows:

That the psychologist recognises to the fullest extent the correlations between the sexual functions, activities, and diseases, and the mental disorders that are found in association with them, is clear from the terminological groupings of certain forms of insanity, as, for example, masturbational, ovarian, climacteric, and that of "old maids."

The gynæcologist on the threshold of his study has to consider a physiological process, or series of processes, in the evolution of which important physical changes occur in the organs that have intimate relations with, and dependence upon, the brain and spinal cord. During this evolutionary process there are occurring side by side two distinct physiological phenomena, generally but not necessarily correlated, often independent the one of the other, but together producing what Strassman[1] well calls "a rhythmic life expression." And in this expression there is a manifestation of nutrition, terminating at the completion of ovulation in the discharge of the ovum. The physical changes connected with the anabolic and katabolic sides of these phenomena include considerable alterations in the ovarian, uterine, and broad ligament vascular supplies, their venous outlets, and the ramifications of lymphatic tributaries to the pelvic, lumbar, and inguinal glands, and in the sympathetic plexuses. Also, clinical facts furnish us with ample evidence that during the rhythmic functional activity of these ganglion cells and plexuses there are aroused excitations and impulses in the spinal cord—the precursors of a condition of exaltation, in which reflex action is readily excited and morbid reflexes generated, attended possibly by their corresponding psychic states.

There are two periods of life during which this rhythmic cycle of activities affect the brain and nervous system, often disturbing the normal condition of equilibrium. At puberty, and during adolescence, any deviation from the normal balance of healthy nutrition in the tissues of the body is attended by loss of inhibitory will power and nerve control, greater susceptibility to exaggerated reflexes, morbid subjective sensations and perverted emotions, and the disturbance of all the reproductive and developmental attributes which are then beginning to influence and shape the relations which the growing woman will present socially, intellectually, and morally to her environment. The occurrence of epilepsies, choreas, suicidal leanings, delusional insanity, and distorted or exaggerated sexual impulses, is evidence of such loss of inhibition.

Again, when the sexual life of the woman is approaching its close, and at a period when changes—some natural, others pathological—are occurring in her sexual organs, and have their accompanying psychical expressions—witness the blushings, the altered temper, the moroseness, the lethargy, the caprices of the menopause; we have like mental defects, corresponding losses of inhibitory will-power and nerve control. As a consequence we find the various forms of climacteric insanity, with frequent suicidal impulses, and delusional states commonly mixed up with perverted sexual ideas of self, as well as others relating to the married state.

At both these periods of her life the woman is apt to exhibit those temperamental traits which have been passed on to her as a victim, possibly appertaining to third and fourth generations. They are weaker links in the chain of the woman's life, through which its strength is tested and some flaw discovered, either through the influence of her social environment, her calling, or accidental occurrences. The mental factors which can already in early childhood be recognised as likely to dominate the character of the future adult are more fully evolved and finally developed during the years of adolescence, and while they may in the intervening years of adult life and of the struggle for existence be partially held in abeyance, they are apt to again manifest themselves during the years when there is cessation of physiological activity in the reproductive organs, one of the early signs of general decadence in the female organism.

During the intervening time of active ovulation the influences which were developed during early adolescence may remain latent or be altogether subdued amidst the many forces which operate in maintaining before the world the mental balance, or this latter may be so finely adjusted as to be liable to varying degrees of disturbance from any slight interference. The gynæcologist, alive to these psycho-physiological bearings of ovulation on the health of the woman, has to consider the pathological conditions of her generative organs and the further effects of such abnormal deviations on her physical and mental state. He no longer regards such deviations from the point of view of their symptomatology, but rather their pathology. Amenorrhœa, dysmenorrhœa, menorrhagia, and metrorrhagia are but signs with attendant symptoms, having abnormal physical configurations, or definable pathological changes, many of them disintegrating, deteriorative, or degenerative, to explain them. We are not to treat the amenorrhœa, the dysmenorrhœa, or the menorrhagia without searching for the cause of the absence of the pain attendant upon or the excessive quantity of the menstrual discharge.

If there is one point clearer than another in the writings of psychologists on the etiology of insanity it is this, that the various types of manifestation of disordered mentalisation are in a large proportion of cases transitional—neurasthenia, hypochondriasis, melancholia, mania, and dementia may overlap each other, or pass the one into the other, according to the temperament, hereditary impressions, or the environment of the sufferer. Further, it seems to be generally agreed that perversion of function, whether it have a pathological basis or not in various organs—digestive, respiratory, circulatory, and nervous, may act as one of the initial causes of, and aggravate, the insane condition. And in considering the question of the sexual factor we have to remember that precisely similar relations are met with in disorders of the organs of sense, as, for example, in the nose, ear, and throat, in intestinal disturbances, in cardiac disease, in phthisis, and in epilepsy. Such diseases as myxœdema, exophthalmic goitre, syphilitic degeneration are forerunners of insanity. Perhaps the example uppermost in our minds is that of the heart. It is a matter of common experience that as compared with other affections, those of the heart occupy a most prominent place in regard to insanity, and the comparative frequency with which the aortic and mitral valves are affected has been pointed out.[2] Not only this, but various phases of mental disorder which are correlated to the different forms of valvular heart disease, whether regurgitant or stenosis, as also to atheromatous changes in the aorta, or dilatation with hypertrophy, have been differentiated. How far such cardiac conditions, through disturbance of the cerebral circulation, operate as exciting causes of insanity, or are part of the general degenerative changes that lead up to it, or are secondary to the nervous condition attendant upon it, it is for alienists to determine. And the same difficulty meets us

[1] *Archiv f. Gynäk.* bd. iii, cnap. i, 1806. *Brit. Gyn. Jour.*, p. 11, vol. xii.

[2] Cardiac [illegible] Hack Tuke's

in the instance of the sexual organs, only in a less direct fashion, when we endeavour to fix the relation of some disease of the genitalia with the associated mental disease.

We may take it that the clinical evidence is overwhelming, that the simple physiological discharge of the function of ovulation, even where there are no symptoms of disturbance or any pointing to abnormal conditions, has in some women a distinct psychical effect, amounting in a few to obvious mental excitability or depression, slight changes in temper, irritability, or moroseness, or hysterical symptoms. It is, however, when we come to consider the consequences of the various forms of erratic menstruation that we find different degrees of mental disturbance in their more aggravated forms occurring.

Here, again, the psychical effect may be due in many instances to vasomotor paresis or excitation, or, as in the case of uterine tumours, to a direct effect on the entire circulation through the quantity of blood which is present in such growths and the periodical loss of blood by hæmorrhage.

Let us clear the ground by dividing into two principal groups the affections of the genitalia with which we have to deal.

Group I includes: First, all those congenital abnormalities in any part of the external or internal genitalia that cause disturbances, suppression, or absence of ovulation and menstruation. And in this class we must also include malformations which interfere with conception and cause sterility. Secondly, it embraces all malpositions of the uterus, whether associated with displacement of the ovaries or not.

Group II we may also subdivide under two heads. The first embraces the various pathological changes occurring in the stroma of the ovary, which are the consequences of ovulation, and often causing severe dysmenorrhœa. Such interstitial changes are frequently attended by varying degrees of ovaritis, and are initial stages in cystic degeneration and lead up to those forms of chronic ovaritis known as cirrhosis, colloid degeneration, encysted abscesses, and various sclerotic conditions of the ovary. In this division we may also include some of the milder forms of salpingitis, twists of the Fallopian tubes, or stenosis from various causes, and we may add such minor affections as erosions of the cervix, cervical and intrauterine polypi, and lacerations.

Under the second head we may place all the grosser changes which are found in the adnexa, inflammatory and degenerative, which form an adnexal tumour of any kind, whether in ovary or tube, and in which frequently the other pelvic viscera are involved by adhesions or displaced by the growth. The grosser changes in the uterus will include the severer forms of endometritis and the many types of tumour included under the term "fibromyomata," as well as all malignant and tubercular growths. It is important here to note what has of recent years been demonstrated that various *primary* malignant and tuberculous growths occur in the ovaries, tubes, and fundus of the uterus, but are not possible to recognise at these early periods save by operation.

At the menopause the grosser ovarian degenerations met with are generally either consequences of pre-existing morbid processes which have occurred in the adnexa or consist of neoplasms of the ovaries incidental to this period of life, and in the uterus we find secondary degenerative changes due to previous hyperplasias and insterstitial myomatous formations. Here also we have to consider the complication of any displacement of the uterus and vagina which may be attendant upon such degenerations or growths. It is quite unnecessary to enumerate the various reflex neuroses that have been noted by both alienists and gynæcologists as attendant upon uterine and adnexal affections. Gynæcological literature is full of records of various hystero-psychoses and neuroses due to some abnormal condition of the sexual organs of women. This has been established independently of such sources of error as might arise from the presence of those nervous, vascular, or digestive conditions as might explain their presence or weaken the proof that the association was attributable to the sexual disease. Long since, Fordyce Barker,[3] Hodge, Goodell, and Engelmann, with others in America, Tilt[4] in England, Mayer, Hégar, and Shroeter[5] in Germany, wrote on such neuroses, and recorded numbers of cases exemplifying their dependence on uterine or ovarian disease. Some years past, out of 500 cases taken consecutively, occurring in my private practice, I tabulated 270 cases with such reflexes present, as well as the different associated affections of the sexual organs. It is noteworthy that out of the 270, 53 suffered from various head symptoms, such as aggravated headache, sensation of fulness with loss of memory; 45 from neurasthenia; 15 from insomnia; 13 from hysteria, 15 from facial neuralgia, 3 from epilepsy, 2 from catalepsy, 1 from agoraphobia, and 13 from more serious mental symptoms, such as melancholia and dementia. Mark that all the above neuroses occurred in women in whom there were no special functional or organic troubles in any other organ, and an analysis of the cases showed that they were nearly all sufferers from the commonly occurring affections of the adnexa and uterus, a fairly large proportion being displacements. Mendes de Leon, following on the same lines, read a paper before the British Gynæcological Society establishing the same relation between functional nervous disorders and diseases of the genitalia; and McGillicuddy, of New York, has written an interesting monograph on "Functional Nervous Disorders in Women," in which occur several examples of the relation between such functional neuroses and disorders of the genitalia.

So far back as 1887 George Engelmann (Boston), in his paper on Hystero-neuroses,[6] recorded the particulars of 59 cases of different forms of hystero-neuroses attacking various organs, the majority depending upon uterine, and not ovarian, conditions. He insisted on the necessity for the differentiation of cases of a physiological from those of a pathological nature, at the same time recognising the difficulty arising from the frequency with which a dual cause operates.

We may then conclude that disorders and diseases of the genitalia are frequent causes of disordered innervation and mentalisation, when appearing in women who have or have not a psychopathic predisposition, being necessarily more active and dangerous in the former. The question remains, Does this disturbance of nerve function, or some lesser degree of interference with mental action, lead up to the more serious forms of insanity? Arising out of this issue, three questions have to be decided: (1) Has the sexual disease or disorder as a cause of insanity in woman to be clinically determined as a first step in prognosis and treatment? (2) how far are gynæcological examination and treatment, therapeutic or operative, indicated should such sexual disease or disorder be found to be present? and (3) arising out of this last inquiry, should such therapeutic or operative interference fail to benefit, is it, on the other hand, likely to impede or prevent the recovery of the patient?

As influencing any decision on these points, the expression of which your experience is more particularly desired, it must be remembered that a most important consideration is that of social position. It must be a truism to say that the class of patient on whom the observations are made, whether in the lower grades of society, or if taken from the more refined and luxurious, must influence the predisposing causes of insanity. This is true as to their modification, intensification, or subjugation by the various forces incidental to the rearing, training, education, occupation, and general environment, not to speak of the hereditary tendencies incorporated with these. Thus would come to be given their due importance, as turning adversely the scale according to the plasticity of the organism or otherwise, the impressions as affected by alcoholism, sexual excesses, the subtle influences on the mind that such causes as worry, anxiety, domestic trouble, fright and nervous shock, love affairs, overpressure and overwork, religious excitement, and remorse, and everything that leads to physical stress or strain. There is no common ground for scientific data between the cultured, refined, and petted child of society, so far as her nervous organisation is concerned, and the agricultural labourer's wife, the city sempstress, the factory hand, and the unfortunate of the streets. It is the sensitiveness of a delicately-constructed electrometer as compared with the magnetic impressions of a roughly-magnetised bar of iron.

Another most important consideration is that of masturbation

[3] Uterine Disease as an Exciting Cause of Insanity, *Journal of the Gynecological Society of Boston*, May, 1872, p. 347.

[4] Diseases of the Change of Life.

[5] Das Verhaten der Menstruation bei Psychosen, *Beiträge zur Geburtshüfe und Gynäkologie*, iii, 3, p. 293, Berlin, 1875.

[6] The Hystero-neuroses, vol. xii, *Gynæcological Transactions of America*, 1887.

or nymphomania. On reflection I feel that it is better for purposes of our discussion to exclude the bearing of such a habit or condition. If for no other reason than that of time we could not enter into an analysis of the arguments which are advanced for and against masturbation and eroticism, in the male as well as female, being the cause or the effect of the insane ideas that are commonly met with in connection with such practices and their physicial results. I know of no subject of greater importance in the etiology of insanity than that of the presence, often hereditary, of inordinate or perverted sexual impulses in their connection, either as predisposing factors in the insanity of adolescence or secondary to morbid ideas of which they are the consequences, or, again, as exaggerated by the mental conditions which they complicate and frequently intensify. In the male it opens the question of circumcision, in the female of clitorodectomy (both as a prophylactic measure and as a curative step) in masturbational insanity and nymphomania. You are all familiar with the able writings of Clouston, and while there is little to be added to these one cannot help feeling that there remains much that requires the light of special experience, both as regards the management of those addicted to self-abuse and the indications and contra-indications for operation.

There are two other questions that I would have wished to have touched upon in this discussion, and on which specialised views framed from close observation would be most valuable. The first is the influence of sex developments during adolescence in causing in the male, apart from masturbation, disturbance of mentalisation, and the evidences in the male of the approaching and existing climacteric, as well as the initial symptoms which point to mental disturbance at this period of life. The second is an expression of opinion as to the full responsibility for her acts of the woman who suffers from sexual disturbances, especially during adolescence and at the climacteric. For myself, I am confident that such a connection is not sufficiently considered, and that with our present knowledge of the various phases of morbid mental impulses associated with the expression of sexual function in women, whether attended by evidences of physiological disorder or not, acts bringing the perpetrator within the operation of the law, which are committed at or about the time of such expression, demand investigation both in the interests of mercy and justice.

Clouston, in his *Developmental Aspects of Criminal Anthropology*, states that the period of adolescence is that of the maximum of criminality, and maintains the connection of the sexual nisus with the want of moral inhibitory control and stability, whether in the man or woman. Much more so is such perversion of the moral and mental attributes to be found in the weaker or more emotional sex when we have present anomalies in development and structural and pathological strayings from the normal type. Krafft-Ebing, who has fully investigated the medico-legal relations of disordered menstruation, insists on the necessity of inquiry into the effects of menstrual function on the ideation of a woman suspected of certain crimes, and that the establishment of habits of caprice, erraticisms of temper, and otherwise inexplicable mental attitudes, ought to be weighed as offering extenuating, if not exculpatory, circumstances. I am not, of course, here referring to puerperal delusional acts, nor those insane impulses which arise as the consequence of melancholia occurring during pregnancy. This, however, has to be remembered, that there are often associated with such criminal tendencies the degenerations due to inherited or chronic alcoholism, and the predisposing influences to crime existing in the dipsomaniac.

In arriving at the conclusions I shall place before you, so far as insanity is concerned, the writings and experiences of British alienists. Among them are such well-known authorities as yourself Sir, Drs. Urquhart, Clouston, Yellowlees, Rooke Ley, Barraclough, Ambler, Sutherland, Brayn, Blandford, Saunders, Woods, Claye Shaw, and Turner.

Conclusions.

1. Functional disorders of ovulation are frequently attended by mental aberration, and in a proportion of cases originate the mental disturbance. The same remark applies to disorders of ovulation which have a pathological cause.

2. In the great majority of such cases, the nervous disturbance is of the neurasthenic character, and is associated with various visceral or other neuroses. In only a small proportion does the alienation assume so grave a type as melancholia, mania, or dementia.

3. Where in an insane person, ovulation and its external manifestation, the menstrual discharge, are erratic or absent, the erraticism or absence may be a consequence of the general and insane condition, and not a causal factor in its production; but under any circumstances such abnormal menstruation appears to have an aggravating effect on the insanity, and there is sufficient evidence to support the view that when such irregularity—especially if it be due to a pathological cause—exists, it should be treated therapeutically or by operative measures.

4. The question of a gynæcological examination of an insane woman must be a matter for the discretion of the psychologist, influenced by the gynæcological view as to its expediency from the signs and symptoms present in the sexual organs. For many reasons, as a *universal* practice, with our present knowledge it is not advisable.

5. Sufficient evidence is now advanced to justify the removal of the adnexa or uterus in insane women, when there are gross lesions of the former or tumours of the latter. Here, again, such operation must be advised according to the psychological condition of the patient and the type of her insanity.

6. From a mass of evidence, including some of the largest experiences in Europe, Canada, and America, it does not appear that there is in healthfully-minded women, who suffer from diseases of the genitalia, any special risk of post-operative insanity. On the other hand, if there be a psychopathic predisposition, which had existed prior to and independently of the sexual disease, there is in such cases a larger percentage of post-operative mental disturbance than follows other operations. In such women the prudence of a radical operation may have to be carefully discussed. The post-operative mental effect does not appear generally to be of a serious or permanent nature.

7. It may be generally affirmed that when mental disease of a graver type follows upon sexual disorder there has been in the woman affected an underlying and often unrecognised psychopathic predisposition: the disorder of the menstruation or the disease in the genitalia completing the chain of the vicious circle needful for the final manifestation of the mental condition.

8. The relation of aberrant sexual function or a disorder of menstruation to any criminal act ought to be taken into consideration in determining the responsibility of the woman.[7]

In gynæcology, apart from the evidence of several of my British colleagues, I have thought it well to invite the opinions of some of the best known of foreign operators, including Schauta of Vienna, Martin of Berlin, Koeberle of Strassburg, Hegar of Freiburg; amongst American and Canadian gynæcologists, also Drs. Howard Kelly, Engelmann (the President of the American Gynecological Society), Mary Dixon Jones, and Professor Lapthorne Smith.

Here, again, is a mass of evidence which time prevents me from reading. I should, however, like to read an extract from Professor Hegar's letter: "Our data as to the correlation between the brain and the sexual organ apparatus, and also between other organs and the genitalia, under normal physiological conditions, are very scanty and incomplete for the purpose of a statistical estimate of the pathological states. Neither are the observations on these latter, which are available, either numerous or accurate enough to allow of reliable deductions." We should examine and study the large supply of material to be found in the lunatic asylums, in order that valuable results may be confidently arrived at.

The views of American and Canadian alienists—notably A. T. Hobbs of Ontario, Holmes of Chatham, Burgess of Montreal, Rohé of Sykesville, and Hurd of Baltimore, are well known, and particularly interesting are their statistical results bearing on the question of operative interference in cases of insanity, as well as the occurrence of mental aberration and insane states after operations on the female sexual

[7] In the forthcoming (October) number of the *Edinburgh Medical Journal* the author discusses these conclusions more fully, and amplifies the evidences on which they are based.

organs. Ernest Hall,[8] Piqué (before the Surgical Society of Paris, March 29th, 1899), Claye Shaw, in his paper on Insanity with Sexual Complications, Dr. Mary Dixon Jones[9] in several monographs on the subject, Dr. Christian Simpson in his paper on Post-operative Insanity, have also made most valuable communications on this latter point.

II.—JAMES GREIG SOUTAR, M.B.,
Gloucester.

DR. SOUTAR recognised the influence of sexual function in modifying insanity or even in producing it, whether Dr. Macnaughton-Jones's conclusions were fully accepted or not. Unnecessary interference with the sexual organs of female lunatics, for example, routine or frequent gynæcological examination, was to be deprecated and should be avoided, as it was prone to suggest delusions to the patient which often became fixed and intractable.

III.—BERNARD O'CONNOR, B.A., M.D., M.R.C.P., D.P.H.,
Physician to the North London Hospital for Consumption.

DR. O'CONNOR asked for observations respecting cases of delusions and melancholia in which no disorder of the sexual organs had existed, and questioned whether the idea of irresponsibility in criminal cases could be applied justly to the case of a woman whose only approach to any disorder of menstruation or of the pelvic organs was the fact that her age was about 43.

IV.—WILLIAM WYNN WESTCOTT, M.B., M.R.C.S., D.P.H.,
Coroner for North-East London.

DR. WYNN WESTCOTT stated that in illustration of the relation of insanity to the menstrual life of woman, whether healthy or diseased, he had no experience of the treatment of insane women, and only common knowledge of the mental peculiarities of women's life changes. Yet he would add what might be of interest—that having held inquests on 700 suicides, and more than 200 of those being women, he found that the majority of these women had killed themselves about the change of life, and of the younger women the majority appeared to have been menstruating at the time of suicide.

V.—ROBERT PERCY SMITH, M.D., F.R.C.P.,
Lecturer on Psychological Medicine to Charing Cross Hospital; President of the Section.

DR. PERCY SMITH stated that in asylums in only a small proportion of cases in females was the mental disorder due to disease of the sexual organs. Amenorrhœa was very common in acute mental disorders, but did not imply pelvic disorders. Where pelvic disease such as "fibroids" existed in a patient in the asylum surgical operation should be performed. He agreed with Dr. Soutar that in some cases admitted to asylums the symptoms of mental disorder had been exaggerated by previous gynæcological examination and treatment, and gave a very marked instance of this in his experience. He could not accept the views—held by some American gynæcologists—that the uterine appendages should be removed in insanity.

VI.—GEORGE ARTHUR CARDEW, M.R.C.S.,
Cheltenham.

MR. CARDEW said that as medical officer of large schools for girls his experience was that amenorrhœa was very common amongst the senior classes. As a rule these girls were in general good health, free from anæmia and hysteria, and the amenorrhœa disappeared during the holidays. Vaginal examinations were never required for this condition, and there was no tendency for the amenorrhœa to produce any mental disturbance. He had only seen one or two cases which had a tendency to mental disturbances. The removal of such from a public school should be immediately ordered.

EPILEPTIC INSANITY.

By E. S. PASMORE, M.D.Lond., M.R.C.P.Lond.,
Assistant Medical Officer, Banstead Asylum.

IN a paper read in April, 1898, before the Medico-Psychological Association, I suggested a classification of insanity based upon clinical, etiological, and pathological grounds; in it I pointed out that accompanying certain physical states of the body were certain trains of mental symptoms; that bodily disease and insanity seemed to go hand in hand; and that from this correlation of mental and physical states it was possible to build up a useful classification of insanity.

It is to that class of cases termed "epileptoid insanity" that I intend to refer to-day, of which the following is usually the clinical history in its early stages in the adult. There is a history of fits for some years, probably from childhood, before any mental disturbance occurs; then some day without warning, after a fit or a first succession of fits, mental symptoms show themselves, namely, slight confusion of ideas or temporary loss of memory, or the performance unconsciously of some purposive act. This marks the initial stage of the disease. After a time these slight mental disturbances might precede the fit or alternate periodically with it. Later they may develop into maniacal paroxysms of an impulsive, homicidal, or generally dangerous character. In some cases hallucinations of hearing supervene upon the post-epileptic phenomena and give rise to temporary delusions. For a considerable period in the course of the disease the mental faculties remain quite clear between the attacks, but gradually dementia sets in, preceded in its early stages by irritability of temper, confusion of ideas, restlessness, and querulousness. In other cases again before the onset of dementia the paroxysms of convulsions disappear, to be replaced by periodic maniacal outbursts only. It is to this last class of cases that I shall especially direct your attention to-day, namely, those cases in which the periodic paroxysms of convulsions alternate or are replaced by periodic maniacal symptoms.

The symptoms associated with chronic epileptic insanity, such as tendency towards religiousness, collecting rubbish, speech, physiognomy, etc., are too well known to you for me to spend any time in their delineation. The following are illustrative cases:

B. T., female, single, aged 32, admitted into Banstead Asylum in January, 1886. There was a previous history of insanity. Patient had been at Colney Hatch for two years—1880-82. She was discharged and remained out four years. She then came to Banstead, where she remained one year and a-half and was discharged recovered, but readmitted in January, 1886. After admission patient was noticed to have fits once a year followed by ten days of acute maniacal excitement. Then (1889-91) patient remained free from fits, but had acute maniacal attacks every six months. During 1891-96 patient was again free from fits, but had acute periodic maniacal attacks. Since 1896 patient has been free from fits, but she gets periodic maniacal attacks about every six months. The attacks last longer now.

H. J., admitted into Banstead Asylum, female, aged 42, married, in September, 1897. Not first attack. Mental state on admission showed a history of epilepsy of three years' standing. Patient however was said to be recovering from an acute maniacal attack. She appeared quiet, answered questions coherently, and, in fact, appeared quite rational. She remained in this quiet state for three weeks after admission then had some fits at night and next day became acutely maniacal. She became talkative, excited, aggressive, violent, and dangerous, also incoherent. She remained in this state for two days and then got quite well. Since admission patient has also had attacks of *petit mal* followed by acute mania. She has also had maniacal attacks without fits and of the same character as those that follow the fits. At times the maniacal attacks and the fits alternate periodically, at other times they come on periodically of themselves. After the attacks patient has no recollection of what has happened. She appears quite rational between the attacks. When the maniacal attacks come on by themselves they are generally preceded by depression, then patient gets talkative, excited, violent, abusive, and dangerous, and also destructive.

L. P., admitted into Banstead Asylum, September, 1897, female, single, aged 32. Patient had a history of having had epileptic fits since she was twelve months old. They increased in severity and frequency till she was 21, then they abated under treatment. A little time before being admitted, however, patient became strange after her fits and had to be sent to an asylum. She became excited after the fits and did a lot of things of which she was quite unconscious after. Her sister saw her arrange and rearrange a chest of drawers after a fit and patient had no idea she had done so. She has been an inmate three years and suffers periodically from epilepsy. She is suicidal and maniacal after fits as a rule except she has a succession when she becomes demented after. Patient is quite rational between epileptic attacks. No family history obtainable.

L. W., admitted September, 1897, shows hallucinations after fits, aged 26, single, has a history of epilepsy since eight months old. Since admission patient has been found to get maniacal after her fits at times, at other times she develops hallucinations of hearing and delusions of persecution, the hallucinations and delusions are quite absent between attacks and patient appears quite rational.

J. W., admitted August, 1898, female, single, aged 46. Mental history on admission showed a history of epilepsy 15 years ago. Patient after admission had maniacal attacks periodically for 2 years. The attacks generally came on with a depressing headache then patient became excited, noisy, and dangerous. She also developed hallucinations of hearing.

[8] Gynecological Treatment of the Insane in Private Practice, *Pacific Medical Journal*, 1890.

[9] Oöphorectomy in Diseases of the Nervous System, etc.

Patient appears quite rational between attacks. Two years after admission patient was noticed to get attacks of *petit mal*.

E. C., female, married, aged 46, admitted August 2nd, 1895, said to be first attack. Mental history on admission, however, showed a history of *petit mal* attacks during two years, then patient developed hallucinations of hearing after the attacks and becoming very dangerous, had to be sent to an asylum. Since her residence of five years in Banstead patient has not been noticed to get any *petit mal* attacks, but she gets periodic maniacal attacks with incoherency, excitement, violence and destructiveness, and also develops suicidal tendencies then. Between attacks patient appears quite rational.

These cases corroborate what I have stated, namely, that the periodic paroxysms of convulsions might be replaced by periodic maniacal attacks. Now the following class of cases have hitherto been considered a distinct form of insanity, namely, recurrent mania. The following cases are appended as illustrative of this condition. For reasons, however, which I shall afterwards state, they appear to me to be really cases of an epileptic character in which the convulsions are absent. They appear similar to those maniacal states associated with the epileptic state.

E. G., female, single, aged 31, admitted into Banstead Asylum in June, 1884, suffering from acute mania. She had previously been an inmate at Devon Asylum in 1881. Patient remained at Banstead until July 1st, 1887, when she was discharged. She remained out, however, only eight days, and was readmitted on July 9th with acute maniacal symptoms. Patient remained in four years, and, her attacks getting less frequent, she was sent out on trial in 1891, but was out only five days when she had to be sent back; since then patient has been a constant inmate. Her attacks of maniacal excitement come on now at shorter intervals than formerly. Between the attacks patient is perfectly rational. The attacks come on quite suddenly. A twitching of the muscles of the face is observed to precede the attack, then patient gets depressed for a few hours with confusion of ideas, and afterwards dangerous and maniacal. She is impulsive, irritable, throws things about, and is, in fact, homicidal; after this she quiets down but remains incoherent, excitable, talkative, dirty in habits, destructive, and collects rubbish. The duration of the attacks vary from a week to fourteen days and more, the symptoms gradually subside, and patient gets quite well: then, after a varying interval, the same cycle of events is repeated. The family history shows that patient's brother and sister are insane. Other data unobtainable.

H. M., admitted March, 1895, female, single, aged 56; not first attack. Patient had been in several other asylums and discharged recovered. Mental state on admission: She was restless, talkative, and incoherent, and appeared to have delusions of persecution. Patient remained in this state for nearly four months, and then got well. Patient during her residence in the asylum has gone as long as two years without an attack. The attacks generally came on by patient first getting flushed, irritable, querulous, and bringing false charges against the attendants. She then develops violent and dangerous symptoms, and shows the same characteristics as the mental state she manifested on admission.

C. H., admitted September, 1897, female, married, aged 36. Mental state on admission: Patient appeared convalescing. She talked coherently, and gave a good account of herself. She remained quiet and continued to improve, and at the end of two months was discharged. She did not, however, remain well long, as she was admitted three weeks later in an acutely maniacal state. She was restless, violent, incoherent, destructive. She remained in this state for three months, and then got well. Since then patient has regularly periodic attacks, varying in time and frequency. She is perfectly rational between her attacks. When patient was first admitted, in 1897, the certificate stated that she had previously been in two other asylums and had suffered from acute mania. Family history: Father died from drink and fits and mother died insane.

W. M. B., admitted September, 1884, male, single, aged 25. Had previously been in Bethnal House in August, 1883, and Bethlem in 1884. Mental state on admission: Incoherent, talkative, restless, gesticulating. History of case from mother: From childhood was of a nervous disposition. Very religious. Was temperate and steady, but addicted to masturbation. Three or four years before admission patient had a faint and lost himself for a little time, could not recollect afterwards what occurred. He recovered, but sometime after he had a similar attack, and then mental disturbance manifesting itself patient was sent to Bethlem, where he remained a year before coming to Banstead. Hereditary predisposition on both sides. Father's: Uncle hanged and cousin poisoned himself. Mother's: One of her uncles had a fit and became insane. Another was a great drunkard and poisoned himself. Patient's insanity is characterised by periodic attacks of maniacal excitement; these attacks come on very suddenly. Patient might be speaking quite coherently and sensibly when he appears to get pale and goes suddenly off. Begins to mutter to himself incoherently, loses himself, then gets maniacal and destructive and becomes quite temporarily demented. After periods varying from one to three weeks recovers. Interval of attacks vary. Patient is quite rational between attacks.

E. A., admitted into Banstead Asylum July, 188-, with symptoms of acute mania. Had previously been an inmate at Banstead and also at Bethnal House, and had been discharged recovered. Mental state on admission: Patient was excited, talkative, incoherent, and restless. She remained in this state a fortnight and then got quite well. Since then she gets periodic attacks of the same character. Just before the attack is coming on patient is noticed to flush, then she gets talkative, restless, excited, incoherent, dangerous, and destructive. The length of her attacks vary from a week to a month. She remains quite well sometimes for four or five months. Family history: Father died from bronchitis. Mother alive, but mother's mother died from fits. Mother's uncle died insane.

The features which are characteristic of epilepsy and epileptic insanity are:

1. That the disease is markedly hereditary.
2. That it is periodic in character.
3. That between the attacks the patient is quite *compos mentis*, and that it is only after varying periods that dementia supervenes.
4. That maniacal attacks precede and succeed the epileptic convulsions.
5. That these attacks alternate at times with the convulsive seizures.
6. That they might replace them.
7. That the maniacal attacks have certain definite clinical features.

In studying this condition of recurrent mania we see in the second series of cases which I have related, and in which a full family history was obtainable, that there is a history of insanity and epilepsy. We also see that in three cases the attack is ushered in by symptoms which are allied to the epileptic state. In one case the patient flushes, in another there is sudden pallor, in another twitchings of the facial muscles are noticed. Again we see that the condition is markedly periodic, and that between the attacks these people are quite rational and free from any hallucinations or delusions. Further, it is noticeable that the maniacal attacks are of a sudden impulsive and dangerous character; that they have many of the clinical features which are noticeable in epileptic mania, viz., impulsiveness, violence, suicidal and homicidal tendencies, destructiveness, and that they also collect rubbish during the period of the attack, and many even have a tendency to hoard a lot of useless stuff which is so often seen with the epileptic.

The features which are characteristic of epilepsy and insanity as we know it, and those which are characteristic of recurrent mania, appear to have many points in common.

1. Heredity seems to play a prominent part in both and a history of epilepsy appears common to both.
2. They are both periodic in character.
3. Between the attacks the patients show the same proclivities to well-being.
4. Epilepsy might alternate with maniacal symptoms, and mania may precede or follow epilepsy.
5. Maniacal attacks might entirely replace the epileptic state, especially when that is of the *petit mal* type.
6. The mania associated with ordinary epileptic insanity, and that known as recurrent mania, show marked similarity in their clinical symptoms.

For the above reasons, therefore, this maniacal condition, which is termed "recurrent mania," I should suggest is an epilepsy of a psychic type. I therefore propose to term it psychic epilepsy or epileptoid mania. This condition of psychic epilepsy or epileptoid mania must not be confused with those exacerbations of mental excitement which are seen in the chronic delusional insane. In this latter class the patients are never really sane. In the former class the condition of sanity which is present between the attacks is of varying length, and often, in the earlier stages of the complaint, deceive. You will have noticed that in nearly all the cases I have quoted the patients were discharged cured from different asylums, with the result only to be readmitted at a later date. This epileptoid mania would appear to be present, especially in those who show a dual family history of epilepsy and insanity. Dementia seems a very late feature, in fact I have not noticed it in any of the cases, and in one of my cases the patient is over 70 years old. The prognosis is very bad. The condition seems rare also.

For clinical purposes, therefore, we may classify the insanities associated with epilepsy into:

1. Congenital, including (*a*) idiocy (epileptic), (*b*) imbecility (epileptic).

(2) Idiopathic epileptic insanity, the ordinary insanity of epilepsy as met with in the adult.

3 Hystero-epileptic insanity, found chiefly in young girls about the age of puberty.

4. Psycho-epileptic insanity (1) recurrent or epileptic mania (2) *Amnesia transitoria* and *epilepsie larvée*.

Dr. OLDFIELD said that epilepsy might manifest itself by mental symptoms only, and not necessarily by physical convulsions. This being so, we must apply our knowledge of this disease to the treatment of criminals as maintained by Lombroso. Anarchists, regicides, and murderers must not at once

be classed as purely criminal, to be dealt with by legal penalties, but the question of epilepsy must always be taken into account as well as the possibility of the criminal belonging rather to the psychological physician than to the gaoler and the executioner.

Dr. LLOYD ANDRIEZEN referred to the importance of classification and the plans adopted. Epilepsy was a complication of many forms of brain disease; for example, idiocy, imbecility, paraphrenia, and various phrenopathies. It might also lead to "doubling of personality," "automatism," etc. It was thus of great medico-legal importance. He could not accept the identity of recurrent mania with epileptic insanity, either on clinical or pathological grounds, the symptoms both during life and *post mortem* being different.

Dr PERCY SMITH said he did not consider that recurrent mania was to be considered as a rule as epileptic; it usually began more gradually, and there was less confusion of mind and loss of memory for the occurrence of the attack. He referred to a case of recurrent mania, in which one of the maniacal attacks ended suddenly, after a series of convulsive seizures, and which seemed therefore to show some relationship to epilepsy.

Dr. SOUTAR understood that the object of Dr. Pasmore's paper was to change the old name of "recurrent insanity" to that of "epileptoid mania." A general similarity existed in some cases, but in many essential particulars there was a marked difference. In reference to Dr. Oldfield's remarks, they must be careful in regard to questions of criminality not to let the promulgation of theory which they could not support by fact put them in a false position.

INSANITY IN LEAD WORKERS.

By ROBERT JONES, M.D.Lond., B.S., F.R.C.S.Eng.,
Resident Physician and Superintendent, London County Asylum, Claybury, Essex.

I HAD considerable difficulty in selecting the title of this paper. At first I felt some uncertainty as to the exact causal relationship of lead poisoning and insanity, although in a few isolated instances I had no hesitation in associating certain mental conditions having also prominent paralytic symptoms with well-marked signs of plumbism. These cases from the first apparently hopeless, and to all appearances likely to become progressively worse, made unexpected recoveries, and I felt justified in classifying them under the first selected title of my paper, "Saturnine Encephalitis," but further inquiry led me to associate other cases less typical from the mental and nervous aspect, but presenting well-marked symptoms of lead impregnation, and a repeated history of attacks of lead poisoning. I therefore altered my title to the more general and comprehensive one of "Insanity in Lead Workers."

The population of England and Wales at the last census (April, 1891) was 29,002,525 in the proportion of 14,052,901 males and 14,949,024 females. Of the males 7,515,934 were over 20 years of age.

In the same census there was returned a total of 132,010 lead workers, distributed as follows: 123,829 painters, 2,431 workers in leaden goods, and 5,750 lead miners, giving a proportion of 1 lead worker to every 58 of the population,

Taking the proportion of lead workers to the population to be unchanged, there should be 18 of this class in Claybury. There are, however, among the 1,050 males no fewer than 35, which suggests *primâ facie* that the occupation of this class may be a contributory factor in the causation of insanity. Again, taking the Report of the Lunacy Commissioners for 1899 the average yearly admissions into asylums (1893-7) per 10,000 of the estimated population is 6.3 males, or 11.2 of those over 20 years of age, whereas the average of admissions among lead workers, taking only paperhangers, plumbers, painters, and glaziers, and excluding the pottery workers, miners, etc., amounts to 13.93 per 10,000 of the same population.

I have personally examined the histories of 3,500 male patients admitted into Claybury. Of these 133 were artisans, who in their work might have been lead impregnated. Their occupations were grainers, house decorators, painters, glaziers, plumbers, and workers in lead factories. The proportion of these to the other male patients in the asylum is 1 to 26. Dr. Rayner[1] considered that in the county of Middlesex the proportion of painters to the adult male population was 1 to 34.6. The county of Middlesex has since become the county of London, and I have no reason to think that the proportion has changed. There seems therefore some suspicion that the occupation of these persons may have something to do with their disease. As to their intemperance, Dr. Rayner remarked that their compulsorily careful habits of life to avoid lead poisoning by the nature of their employment ought to protect them against vicious habits and should protect them against a too free indulgence in the use of alcohol. Whether this be so or not is uncertain. The frequency with which gout occurs in some of those who are intemperate, as also in many lead workers, will be referred to subsequently.

Since the important contribution of Tanquerel, who in 1836 first described saturnine encephalopathy, the subject of mental disorders accompanying or caused by lead poisoning has received but scant notice until Drs. Rayner, Savage, Alex. Robertson, and Ringrose Atkins read a joint paper in 1880 before the Medico-Psychological Association.[2] The only previous record in the *Journal* of the Association is by one Dr. MacCabe.[3] Subsequent references by Dr. W. W. Ireland in the Psychological Retrospect,[4] have been made to papers by Drs. Bartens,[5] Monakow,[6] and Popow.[7] Cases by Drs. Campbell Clark,[8] Hale White, Alex. Robertson and W. L. Ruxton,[9] and chemical analysis of the brain and other organs by Mr. Winter Blyth,[10] together with a slight note by Dr. E. S. Reynolds,[11] complete the references to insanity and lead poisoning for nearly sixty years, from the proceedings of the Association whose members are responsible for the care of the insane in this country, and which appears to justify the criticism of Dr. Savage that this subject (so far as English writers are concerned) has either been unrecognised or unrecorded. A recent interesting paper, however, appears by Dr. Ransom on Lead Encephalopathy.[12]

That lead has a far-reaching and subtle deleterious influence upon the nervous system is undoubted. It enters largely into an extensive range of occupations, and its industrial use by lead smelters, manufacturers of spelter, shot, sheet-lead, leaden pipes, lead foil for various purposes, enamellers of iron plates and letters; those engaged in tinning and enamelling hollow metal utensils, electroplaters, gold and silver refiners, brass-founders, type-founders, printers, iron and steel workers, makers of files and cutters who work on a cushion of lead, tool factors, and those engaged in electric accumulator works, may cause symptoms of poisoning. Besides these, there are those engaged in white and orange lead works (whose employers are now bound to have periodical inspection of their premises and staff by medical men); those engaged in the manufacture of earthenware and china wares, who are by law inspected once a month by a duly appointed factory surgeon. Over and above the industrial evil effects of lead there may be an accidental contamination of drinking water as reported by Dr. Kaye,[13] more especially that from peaty soil, which is said to favour one or more varieties of bacteria capable of producing an acid which causes the water to act readily upon leaden pipes. The use of pewter, lead vessels, or valves, beer, especially that drawn the first thing in the morning through leaden pipes. I have collected all the cases of barmen, barmaids, potmen, etc.—38 males and 20 females being all the admissions of this class into Claybury—and have failed to notice among them one case of detected lead impregnation. Cider, soda siphons (Dr. Owen Rees's own case),[14] hair dyes, cosmetics, and coloured sweets,[15] are all liable to cause lead poisoning.

The use of virgin lead is not so common a cause of lead poisoning, and miners rarely suffer from the ordinary symptoms of lead absorption. It is stated that there is hardly any risk from the raw British ore, but not so with the foreign ore rich in carbonate. The danger with lead begins with the smelting, the fumes given off by the molten metal being poisonous, and measures have been taken against inhaling the fumes by "hooding" the furnaces, or having high chimneys to remove the fumes. The greatest danger with lead is when the metal is converted into its various compounds—for example, the carbonate—the fine dust when inhaled causing poisoning. The regulations established for protecting the health of lead workers are mostly based upon personal cleanliness, supplemented by periodic medical inspection.

The history of this protection and State regulated inspection

is an interesting one. As early as the spring of 1893 a Departmental Committee was appointed by the Home Office. It issued a report in the following December (Eyre and Spottiswoode). As a result of this the Factory and Workshops Act 1895 was passed, and on January 1st, 1896, it came into force. Clause 29 made it compulsory to notify all deaths from lead, phosphorus, arsenic, and anthrax to the Home Secretary, and in 1899 power was granted to the Home Secretary to place diseases traceable to mercurial poisoning in a factory or workshop among these. In 1896 in consequence 1,050 cases were reported during this first year, the Superintending Inspector of Factories for the Birmingham District reported in the Midlands 631 cases of lead poisoning from earthenware and factories alone. Of the 1,050 cases quoted 1,030 were due china to lead alone, and of these 42 per cent. were from china and earthenware factories, 23 per cent. from white lead factories and the remainder 35 per cent. from workers in glass, smelters of metal, tin workers, enamellers, file cutters, workers in paints and colours, coach makers, and other operatives. In 1896 the White Lead Committee recommended that no girl under 20 should be employed in white lead works. During 1897 the Dangerous Trades Committee of the Home Office commenced its inquiries, and on February 17th, 1898, in the House of Commons the Home Secretary stated there were 37 cases of lead poisoning in factories and lead works among boys under 18 years of age which had proved fatal. Subsequently it was arranged that no children should work in factories and no women should be engaged to do the more dangerous work in the manufacture of white lead, and the minimum age for lead workers was to be 14 years from August, 1898, and 15 years from August, 1899. It was also specified that women and young persons should be inspected monthly, that overalls and head coverings should be used for these persons, and that garments should be washed weekly, that there should be soap and towels and one basin of water provided for every five persons, that the meal accommodation should not be in dangerous rooms, that good ventilation should be ensured, exhaust fans be used, and when necessary respirators worn. It was further recommended that susceptible women and girls should not be employed on account of the deleterious influence upon their health and progeny (of 123 pregnancies, 73 children were born dead) and that no person with albuminuria should be engaged at all. The Factory and Workshops Act, 1865, under penalty of a fine of 40s. compels every medical practitioner attending or called in to visit a patient whom he believes to be suffering from lead, phosphorus, or arsenical poisoning or anthrax "contracted in any factory or workshop" to send to the Chief Inspector of Factories at the Home Office a notice stating the name and full postal address of the patient, together with the disease from which in the opinion of the medical practitioner the patient is suffering. For this he is entitled to a fee of 2s. 6d. House painters and plumbers do not come under this Act, unless they may have contracted lead poisoning while performing such processes as grinding lead pigment in factories or workshops, and the wide extent of lead poisoning among this class can be well anticipated by the fact that 100 cases have been certified with 18 deaths under this condition of limited notification.[16] On March 28th, 1899, a special committee of two experts, Drs. Oliver and Thorpe, reported upon the employment of compounds of lead in the manufacture of pottery, their influence on the health of the workpeople, with suggestions as to the means which might be adopted to counteract their evil effect. As a result a glaze without lead was recommended, a "fritted double silicate" was to be used for enamelling, women were not to be employed in the dipping house, or as ware cleaners after dippers in lead glaze, and it was again pointed out that the age of greatest susceptibility was that between 17 and 30 years. The fact that the Duke and Duchess of York[17] were shown the results of the new leadless glaze at the Stoke Potteries in Staffordshire proves its success in some departments of the industry, although proprietors state it to be inapplicable to earthenware goods. They also state it to be 20 per cent. cheaper than lead glaze, but is uncertain, inefficient, and cannot be relied upon on any large scale. It would have been hoped that these protective regulations would have very considerably diminished the deleterious effect of lead upon the operatives, but the hope is too sanguine; and it is recorded in the Report of Factories and Workshops, 1899, that although cases of plumbism were on the whole fewer—the decrease being mainly in the Potteries—there was an increase in some industries, especially in the manufacture of whitelead, paints, and colours, and minor lead industries. Mr. John Burns[18] quoted from a report by Dr. Prendergast, of Staffordshire, that in two years 285 cases of lead poisoning had occurred; 162 were women, and of these women 12 were totally blind, 46 were partially blind, and 7 were insane. Of the 123 men, 4 were totally blind, 26 partially and 75 completely paralysed. No precautions can combat ignorance, carelessness, and neglect on the part of the employed, and that much of the blame must be attached to the workers themselves is evident from the reports made frequently during the inspectors' visits, who state that the mess rooms provided were not used, and that overalls and head coverings were discarded as not becoming, respirators were worn round the neck, and basins for washing were discarded.

Absorption.—Lead is absorbed by the mucous membrane, and mainly through the mouth and nostrils. A case[19] of lead poisoning with typical Aran-Duchenne paralysis is reported from washing the nose with a solution of acetate of lead for syphilitic erosion, and in a case reported by Dr. Savage at Guy's Hospital through the use of a vaginal douche.[20] By the respiratory mucous membrane, as in the dipping houses or among painters who burn the lead paint from wood, and volatilise the metal, or who work in the dust of lead compounds. By the mucous membrane of the alimentary canal from unwashed hands, with food (the hydrochloric acid of gastric juice converts the lead into a soluble chloride when the poison is taken up by the alimentary canal); probably this is the most common form among certain operatives, although Dixon Mann states that when lead is administered medicinally one-half to two-thirds passes through the intestine unabsorbed. The skin when intact is stated to be a doubtful source of poisoning, although chronic lead poisoning has followed the use of cosmetics and hair dyes. When absorbed lead is stated to be stored mainly in the liver, kidneys, and brain. Wynter Blyth extracted 117.1 milligrammes of lead sulphate—less than 1 gr. of lead—from the brain of an operative who had died of lead poisoning.[21]

Elimination.—Lead is eliminated, according to Dixon Mann, mostly by the bowels, and to a much lesser extent through the kidneys. It has been stated by some observers that lead is eliminated by the skin; others deny this, as the copious diaphoresis produced by pilocarpin does not apparently eliminate the metal. Lewis Jones has obtained it upon copper electrodes from baths used by those affected. The skin is also said to be blackened by the presence of potassium sulphide, but there may be a suspicion that this is due to lead which has accumulated in the pores of the skin from external sources. It is also stated by Dixon Mann that a certain proportion of lead forms a definite combination with organic matter, and may remain in the system for an indefinite time, but a small proportion undergoes progressive elimination independently of any treatment.

Idiosyncrasy and Predisposition.—One attack of lead colic predisposes, also the presence of gout. Duckworth[22] reports 136 cases of unequivocal gout in both sexes, of whom 18 per cent. presented signs of lead impregnation. In at least one-half of the total number there was a history of intemperance. His paper remains one of the most valuable upon the relationship of plumbism with gout. Garrod[23] stated that at least 1 in 4 (33 per cent.) of the gouty patients who had come under his care in hospital had at some period of their lives been affected with lead, and for the most part followed the occupation of plumbers or painters. Dr. Pye-Smith[24] denies this association. Grainger Stewart, Gairdner, and others in the North have rarely seen gout and lead symptoms in association, and it is stated that the association is scarcely noticeable except in a population among whom gout from other causes is prevalent. In my patients admitted with a possibility of lead impregnation, 1, who previously had a history of lead poisoning, developed a typical attack of gout in the great toe soon after admission; 14 others (over 10 per cent.) gave rheumatism as the predisposing cause of their mental condition, whilst nearly 7 per cent. stated that gout was a predisposing cause, and several were the subjects of rheumatic arthritis. Arterial degeneration, renal disease, anæmia, privation, and drink predispose to lead poisoning and insanity. The

young are more predisposed, especially women. Of 135 cases at Newcastle Infirmary, 91 were women and 44 men. The women's ages were 18 to 23, men 41 to 48. A hereditary neurotic history predisposes to encephalopathy, as would any accident or injury. In 20 per cent. of my cases with typical signs of lead poisoning an injury such as a fall or kick was given as a predisposing cause.

Pathology.—It has been stated that lead does not act upon animals in the same way that it does upon man, and that the poisonous effects of lead are not direct, but due to altered nutrition. Experiments upon animals fed with lead caused death after the loss of one-third the weight, and the symptoms produced were loss of appetite, a peculiar nervousness, constipation, and diarrhœa with dark stools, albuminuria, rapid emaciation, and death with very rapid *post-mortem* changes. Paralysis in the hind limbs has been described in animals which get well in two to three weeks after the poison is withdrawn. Abortion and loss of sexual power have been noticeable features. Vulpian has also described a myelitis after the experimental use of lead.

Lugaro[25] describes and figures a diffuse proportional chromatolysis in the posterior ganglion cells after an injection into dogs of a 5 per cent. solution of acetate of lead. In the anterior horns were both normal and pathological cells, the Nissl granules in the latter being disintegrated. Lugaro concluded that the formed chromatic substance was affected, and that the observed results were different from those of arsenic, also that different metals with which he had experimented affected parts of the nervous system in a different manner. Lead, like alcohol, tobacco, and the syphilitic poison, has a selective affinity for special parts of the nervous system which it affects either primarily as a poison, or the changes described in the neuron may be secondary, and due to an altered nutrition—an auto-intoxication caused by the retention of animal poisons due to inadequate hepatic and renal elimination. Roberts stated that both lead and gout have a tendency to alter metabolism by crystallising urates in the fluids and tissues of the body, and it has been pointed out by Garrod, Ralfe, and Haig, that lead hinders normal excretion by diminishing the alkalinity of the blood and lessening the solubility of uric acid. The fact that fatal lead encephalopathy has been described by Oliver without the slightest trace of lead in the brain strengthens this view of altered elimination by the liver and kidneys.

Monakow found changes in the ganglion cells of the anterior horns after lead poisoning, and Oeller described minute hæmorrhages into the anterior horn involving the anterior horn cells.

Laslett and Warrington[26] reported the condition of the spinal cord, nerves, muscles, and muscle spindles. There was wrist drop on both sides, some leg and general wasting, the extensors giving no reaction to either electric current, there was slight impairment of sensation and the knee-jerk was diminished. Microscopic examination of the nerves showed a break-up of the myelin, and transverse sections showed that half the fibres had disappeared. The posterior spinal roots appeared normal, but the anterior showed atrophy. The muscles showed 90 per cent. wasting of the fibres (no fatty change, but increased connective tissue). The muscle spindles were unaltered, and the nerve in the spindles was normal. In the sixth and seventh segment of the cord some cells had an eccentrically placed nucleus, the Nissl bodies were dispersed in a powdery form, and centrally there was no stain (chromatolysis). The proportion of altered to normal cells was about 1 to 4. They were equal on the two sides, and there was no special distribution among cell groups. These observers concluded that lead affects both the central nervous system and the peripheral, giving rise to a neuritis, and evidence points to the peripheral portion of the efferent system as being mainly affected. Changes in the cells by administration of lead have been studied by Nissl,[27] who found that loss of continuity of the axon is early followed by degenerative changes in the corresponding cell. He considered that changes in the spinal cord were not due to the direct action of lead, but occurred in consequence of atrophy of the axons. Schaffer[28] described disintegration of the chromatic substance and shrinking of the nucleus.

Déjerine described changes in the anterior roots corresponding to the altered peripheral nerves—a combined lesion. Gombault regards the lesion as a special peripheral neuritis. He states that the axis cylinder is spared, and that a periaxial degeneration sets in, involving Ranvier's segments only, the nerve fibre above and below being normal—unlike the Wallerian degeneration, which affects the whole course of the nerve to its furthest part.

If this hypothesis be true, it affords a ready explanation of the remedial character of lead palsy. Pitres, however, does not agree with Gombault, and he does not believe the axis cylinder is saved. Brissaud states that he has met with this "fragmentary neuritis" in infective and toxic diseases, also in tuberculous and cancerous cases as well as in old people. There is, therefore, some doubt as to this interpretation in lead poisoning, but that "periaxial" neuritis does occur may be taken as proved.

Whether the lesion be primarily central or primarily peripheral neurologists do not seem agreed upon. Mott's researches upon the neuron prove that nutritional changes affecting the ganglion cells in the brain or cord affect also as an immediate consequence the most peripheral and distant portion of the axis cylinder, which, like the leaves of a tree, die back to the root. It is also proved that peripheral section of the axis cylinder is attended with chromatolytic changes in the Nissl bodies of the central neuron. As to the relation of the neurons affected, it is known that the different neurons of a group in functional combination occupy different segments of the cord level, and the cells in the anterior horns of the cord represent muscles that are functionally associated rather than any combination or contiguity of peripheral nerves. Thus it is that supination is higher in the cervical cord than extension of the wrist.

Supination involves the combined action of the supinator longus, biceps, and brachialus anticus, and is not represented by any one particular nerve. The action of lead upon the nervous system, although involving profound trophic changes—the affected muscles undergoing extreme atrophy and yielding all the characteristic reactions of degeneration—is mainly limited to the efferent rather than the afferent system of neurons. Sensory symptoms however, although not very striking, have been noticed in patches of anæsthesia and analgesia by Vulpian and Raymond, giving rise to that class of cases described as "toxic hysteria." Wynter Blyth states that lead dissolved in the blood probably overcomes the vital resistance of the bioplasm by decomposing it and forming a definite substitution compound, and that in consequence the lead-saturated cell is no longer capable of originating, inhibiting, or conducting—thus directly interfering with its functions. As to the inequality of the pupils described in some affections of lead, Oliver has suggested a primary action upon the great sympathetic ganglia, but this needs further investigation before acceptance. The myopathic theory of lead poisoning has no modern supporter, and Sir William Gowers denies strongly the direct action of lead on muscle.

Symptoms.—The symptoms of lead poisoning in the early stages are indigestion, offensive breath, the skin is anæmic or icteric, there is in women amenorrhœa, or it is stated more often menorrhagia, nutrition is considerably interfered with, leading in chronic cases to well-marked saturnine cachexia. There may be coloured patches on the mucous membrane inside the cheek and roof of the mouth. The teeth are often loosened and tend to rapid decay. There is a blue line along the free margin of the gum where there are teeth and a deposit of tartar, and this may be more marked along the margin of the upper jaw. Sometimes a double line appears, one of which caused by tartar can be brushed off, the other being more permanent, and lasting often a considerable interval even when under treatment. The pulse is usually slow with a high tension, and in relation to this Tanquerel in 1840[29] described 102 cases of lead encephalopathy with 14 cases of hemiplegia. Da Costa has also reported a case of hemiplegia due to lead poisoning.[30]

Other well-marked signs are colic with constipation, arthralgias, palsy, and encephalopathy, the latter of which mainly concerns the subject of this paper. This term includes ocular affections, amaurosis, visual illusions, aural hallucinations, fits, loss of memory, drowsiness, sleeplessness, dizziness, or excitability, delirium, and other psychical disturbances. Of 1,390 cases[31] colic occurred in 88 per cent., paralysis in 7 per cent., and encephalopathy in 5 per cent. Dr. Prendergast writes me (July, 1900) that "lead encephalopathy tends to

disorganise the brain cortex, and epileptiform convulsions are very frequent. Loss of speech and blindness often follow and acute mania sometimes results." The paralysis is usually of the forearm variety with the double wrist drop, although the peroneal type in the legs occurs in 13 per cent. of those affected with palsy. In an analysis[32] of 163 cases, by Frerichs of Berlin, 14 men and 1 woman had lead palsy; it was bilateral in 12 cases, unilateral and on the right side in 3 cases. No affection of the nerve centres is recorded, although the different possible forms due to lead are enumerated. In arthralgia the pain probably originates in the sensory nerves of muscles in the neighbourhood of joints—most often the flexors. The pain is shooting or flying, and may come on without warning; contraction or twitching of these muscles has been observed extending to the trunk muscles. The knees are most frequently affected, then the elbows and shoulders, not the small joints as a rule, and the sensation is described as affecting the bone itself, and being of a boring, tearing pain. Drummond[33] states that his experience at Newcastle caused him to believe that the arthralgia of lead impregnation was more of a myalgia than a joint affection proper. The arthritis of lead is probably not gouty. Gout is very rare in Dublin, yet Wynne Foot, who was Senior Physician to the Meath Hospital, stated that plumbic arthritis was quite common in his experience, and he regarded it as a spinal arthropathy. One of my cases developed an inflammation of the elbow, which became pustular, and afterwards a similar affection of the knee, there being no other cause apparent.

Out of the 133 cases who from the nature of their work were liable to lead impregnation, their occupation was as follows:

Painters	75
Decorators	13
Plumbers	18
Gasfitters	13
Labourers, lead works	6
Grainers	3
Gas meter makers	2
Colour grinder	1
File cutter	1
Tea lead roller	1
	133

Of these 19 had signs of lead poisoning upon admission, such as local palsies, wrist weakness, tremors, anæsthesia, optic discharges, colic, or constipation, and a blue line on the gums, and it is to these that I desire to call special attention. Twenty-two others had a distinct history of lead poisoning at some time or another, such as giddiness, headache, eclampsia, wrist-drop and colic, but this number does not represent a correct and actual percentage, as it only includes the histories of a few from whom I have been able to obtain an answer to inquiries since their discharge, and those who were still in residence, and either themselves or their friends were able to give their history. Neither does it include those who have died, nor most of those who were discharged.

The following is an analysis of the mental condition of the 133 cases referred to:

Mania	37
Melancholia	33
Dementia	19
Dementia with epilepsy	10
Dementia with general paralysis	24
? General paralysis	7
Alcoholic mania	3
	133

It is thus seen that 24 were general paralytics, and of these 5 are living and 19 have died. Seven were classified as cases of doubtful general paralysis; of these, 4 recovered, 1 was discharged relieved, but is still living and in another asylum, and 1 has died. He had loss of memory, giddiness, paralytic speech, exaggerated knee-jerks, and had had a fit affecting the right side. Death was from chronic brain disease and pneumonia.

The proportion of general paralytics among these possible lead cases is 18 per cent., the average yearly percentage of general paralytics to the total average number of male patients admitted into asylums for the five years 1893-97" was 13.1, and it appears to me there is a strong presumptive evidence that lead may be a factor in the cause of general paralysis of the insane.

As there was no positive proof of lead impregnation upon admission in these cases, and as probably alcohol also entered into the causation of their insanity, I have excluded them from the scope of my paper, but I present the cases of 19 males in whom I and my colleagues have observed definite signs of lead poisoning. These I have tabulated for the purpose of easier comparison and study.

As to the mental condition in these 19 cases, 6 suffered from mania, 6 from melancholia, 4 from dementia (one of whom had sensory anæsthesia and analgesia in legs, and absence of knee-jerk, which under the influence of massage have cleared up although he is mentally unimproved), 2 were cases of general paralysis (a proportion of only 10.6 per cent.), and 1 a toxæmic condition similar to that described by Tanquerel. He was noted upon admission as hystero-epilepsy with functional aphasia: he had right-sided hemianæsthesia, and was temporarily deaf and dumb, but he could write his ideas on paper. He had a fit three weeks before admission. He stated that for three years he had suffered on and off from lead poisoning, and had frequently over-indulged in alcohol; he had visual hallucinations, imagining that he saw people about to stab him. He recovered somewhat suddenly, and was discharged in two months. Of those quoted 3 if not 4 had symptoms of a general paralytic nature, 2 having in all probability (that is, pupils were described as inactive to light) the Argyll-Robertson phenomenon and unequal pupils.

It is interesting to compare the percentage of general paralytics (18 per cent. in the possible lead cases) with that of 10.6 per cent. in the actual lead cases, the difference probably being due to the fact that the latter are too few in number from which to draw any definite and reliable statistics. Dr. Savage[35] states his opinion that lead will produce any of the symptoms of general paralysis of the insane, and may even be a contributory cause of the disease: and Dr. Goodall[34] refers to the experience that nerve poisons, such as syphilis, alcohol, those caused by fevers, injury, or sunstroke, and which are intermediate in fixity between alcohol and lead, seem to have an intermediate influence in the production of general paralysis. Oliver has described what he calls an unusual form of lead affection,[37] namely, a generalised paralysis (something like acute ascending paralysis, or that following influenza, diphtheria, or other toxins), the tendency of which was to get better, although death may take place readily from asphyxia.

In No. 1 of my cases, which had marked cachexia, there was drawling and blurring of speech, co-ordination was deficient, and there was muscular tremor. The knee-jerks were brisk, the delusions grandiose, with marked *bien-être*, and there was considerable dementia, with a very slow reaction to questions. The pupils were unequal, but reacted. The case appeared to be one likely to deteriorate rapidly, but he quickly mended, and was discharged recovered after about two months.

Mott[38] described a case of syphilitic encephaltitis and atrophy simulating general paralysis in a worker in lead. His speech is described as impaired, from a hesitancy and slowness; tremor in upper lip. Unilateral right-sided convulsions. Pupils equal, react to light and accommodation. Gait spastic; knee-jerks exaggerated; ankle clonus. *Post-mortem* examination revealed thickening of the pia arachnoid over area of distribution of veins into longitudinal sinus; ventricles granular. Microscopical examination showed the degeneration, with secondary atrophic sclerosis, in the crossed pyramidal tract, direct pyramidal descending, and some ascending tracts. The appearances of the cells were not like those of an ordinary general paralytic; they were arranged in definite layers, and their processes could be followed to the second and third branches. Nissl granules normal; the tangential fibres were nowhere absent. Dr. Mott remarks that the patient's repeated statement during life that "the colours had got into him" was probably not devoid of foundation.

In the 19 cases reported 9 have recovered, a proportion of 47.3 per cent., and the average duration of residence in these was from three to four months. The average recovery rate for England and Wales was 38.[39] Three have died, 2 being due to general paralysis and 1 to phthisis; 4 have been over five years and 2 over two years under treatment, and they have become chronic. Two others remain and are improving, but the dementia upon admission was profound, and a complete recovery is improbable, one of them having well-marked signs of glosso-labio-laryngeal paralysis and epileptiform seizures.

Summary of Cases to August 1st, 1900.

No.	Occupation.	Age	General Appearance and Temperament.	Hereditary History.	History of Lead.	Alcohol.	Fall or Injury.	Muscular Power and Co-ordination.	Grasp.	Gait.	Speech.
1	Plumber	41	Cachetic; has a bland, affable smile.	Father 86, mother 60, 2 years mentallyaffected, sister fits	Attributes breakdown in part to big plumbing job	Lately abstainer, formerly unsteady	Yes, on head; not laid up after	Muscular fair; co-ordinate deficient; tremor of muscles	Fair	Gait	Drawling and blurred
2	Painter (glass)	38	Fairly good health and condition	Paternal side phthisis and alcohol and C_2H_6O	Lead colic for 10 years	Yes, at intervals	Yes	Fair muscular development: tremors of hands and feet	Good	Good	Unable to speak, can only write
3	Painter	52	Dull, wasted, and weak-looking	—	Blue line, wrist drop on admission	Yes	Fall 6 months before admission	Wrist drop, incoordination; facial, tremulous tongue	Weak	Ataxic	Blurred and thick
4	Plumber	36	Dull, depressed, stupid, and weak-minded-looking	—	Lead line on gums on admission; lead colic	—	—	Fair	—	Unaffected	Fair
—	Re-admitted	—	—	—	—	—	—	—	—	—	—
5	Worker in white lead	43	Pale, thin, and anxious, depressed-looking but without creases.	Father committed suicide	Lead line on gums; history of wrist-drop	Yes	Discharged from situation	Incoordination of facial and neck muscles, tremulous tongue, wrist-drop 12 months before admission	Unaffected on admission	Jerky in manner	Tremulous and slurred
6	Labourer in lead works	39	Pale and ill nourished	Mother and grandfather insane; epilepsy in family	Lead poisoning: worse 6 months before admission	Yes	Kick on head from horse 8 years ago	Muscular power feeble, tremulous tongue	Feeble	Feeble	Tremulous
7	Decorator	45	Poorly nourished; cheerful	Brother insane	Blue lead line on admission	Yes	—	Trembling; tremulous tongue	Trembling	—	Tremulous
8	Plumber	40	Pale and aggressive; irritable	—	Plumbism	—	—	Exhibits some tremor	—	—	Some tremor
9	Labourer in lead	40	Ill and consumptive; reserved	—	Lead poisoning on admission. Blue line, 20 years in lead	Yes	—	Feeble muscular power; marked tremors	—	Feeble	Tremulous
10	Plumber	40	Fairly nourished, reserved, and irritable	—	—	No	—	Tremulous	Fair	Shaky	Blurred
11	Plumber	50	Ill nourished and in poor health	Brother committed suicide	Blue line on gums	—	—	Fair	—	Fair	Speech monosyllabic
12	Worker in lead mills	43	Impaired health; pale, but fair nutrition	—	Blue line on gums; weakness in left wrist	Steady	—	—	—	Good	—
13	Painter	48	Pale and cachectic; anxious, furtive look	—	Blue line; lead palsy in right hand and forearm; lead colic 4 times	—	—	Impaired; marked incoordination	Impaired in the right hand; dynamometer test, right hand 75, left hand 80	Fair	Fair, not blurred
14	Painter	49	Pale, and poorly nourished	—	Blue line on gums	No	—	Poor muscular power, with incoordination	Poor	Ataxic	Shaky, and trembling

Summary of Cases to August 1st, 1900.

Reflexes.								Result.		
Knees.	Pupils.			Delusions, etc.	Fits.	Mental Diagnosis.	Special Bodily Affections.			
	Equal.	Regular.	Light and Accommod.					Recovered.	Not Recovered.	Died.
Brisk, excessive on left side.	Unequal	—	React	Grandiose *bien-être*. Defective memory; imagined he was to be operated on. Slow reaction to questions	—	Dementia. ? General Paralysis	Seemed to be rapidly going to the bad	2 months	—	
Exaggerated	Equal	—	React	He is depressed. Visual hallucinations; sees people who wish to stab him	Yes, three weeks ago	Functional aphasia: hystero-epilepsy	Deaf and dumb. Right hemi-anæsthesia after a fit three weeks before admission	2 months	—	—
?	Equal	—	React	Some exaltation, also cries and has persecutory delusions, very depressed, neighbours annoy him; cerebral process slow	Yes, two years ago	Dementia with General Paralysis	Increased arterial tension, slurred speech, tremulous tongue, symtoms typical of general paralysis	—		Died 4 years
Exaggerated	Equal, eyes blue, at one time blind in right eye, now only little weaker than left	—	React	Persecution, refuses to go to bed or undress; Memory defective; terrors	—	Mania	—	Over 3 months	—	
Absent	—	—	—	People follow him; slow, dull, and aural hallucinations	? Epilepsy	Recurrent mania	—	Over 1½ years	—	
+ left side, not present right side	Equal	—	React	Memory feeble, depression, at times threatening; very irritable, headache	—	Dementia with ? General Paralysis	Suffers much from headache: tremulous tongue	Over 3 months	—	
—	Equal	—	React	Delusions of being drugged and poisoned; violent and excited, impulsive and irritable; thought he was to be buried; exalted	Fits, whilst in infirmary	Mania	Tremulous tongue; no headache stated	Under 3 months		
—	—	—	Reaction slow	Auditory hallucinations; voices jeering at him, persecution, attention divided and uncertain	—	Melancholia	Arterial tension increased, pulse 90, senses dull; no headache recorded	Over 3 months	—	—
Some exaggeration	? Equal	—	React	Incoherent and erratic, exalted, sensory disturbances, impulsive and aggressive: broke windows	—	Mania	Regular pulse = 80	Alive July, 1900; transferred to another asylum.		—
Absent	—	Regular	React	Restless and noisy, annoyances and voices, going imaginary journeys	—	Mania	Gout, ten years. phthisis both apices; synovitis right knee		—	Died 8 m'ths
Diminished	Unequal	—	React slowly, but normally	Defective memory, excitable, lost, noisy, and restless; habits dirty, grandiose delusions		General Paralysis	Paralysis said to have commenced in legs	—	—	Died.
	Equal	—	Normal reaction	Loss of memory, depression, restless and suspicious, attention not sustained	—	Melancholia	Headache; double arcus senilis	Over 7 months		
Normal	Equal	Regular	React	Persecution, auditory hallucinations, voices and telephones; people jeer about his work; poison; aggressive		Melancholia	—	Under treatment 4 years; became chronic paranoiac	—	
Exaggerated patella, and ankle clonus	Equal 2½ mm.	Regular	React to light, but not accommodation. Small patch pigment temple side right disc; discs very pink, no stained hemorrhages	Delusions of persecution, auditory hallucinations, emotional and tearful, suspicions of people killing and kicking him; telephones	Yes, one severe fit through lead	Melancholia	Osteo-arthritis right shoulder; atheromatous arteries; pulse irregular; urine, no albumen, 1020	Over 2½ yrs. under treatment chronic.		
Absent	Dilated, react to accommodation, and slowly to light			Lost, confused, and rambling; imaginary walks	—	Dementia	Aortic disease, anæsthesia analgesia; no girdle pains, no crises or true lightning pains; rheumatism 14 years ago		Nearly 2 years under treatment	—

Summary of Cases to August 1st, 1900—continued.

No.	Occupation.	Age	General Appearance and Temperament.	Hereditary History.	History of Lead.	Alcohol.	Fall or Injury.	Muscular Power and Co-ordination	Grasp.	Gait.	Speech.
25	Labourer in lead works	38	Pale and ill-looking	—	Lead poisoning and colic several times	Yes	—	Fair muscular development	—	Shaky	Tremulous and slurred
26	Painter	40	Weak and dull; paralysed-looking	—	Blue line on gums, and been under treatment about 2 years	No; always temperate	No	Weak, more in right side; poor co ordination	Weaker right hand	—	Drawling and drivelly
—	Painter	40	Dull and blank-looking; appears ill	Mother had paralysis	Blue line; lead colic; right wrist-drop	Some excess	No	Feeble; tremor of tongue; marked shakiness	Poor	Unsteady; cannot stand blindfolded, nor turn steadily	Indistinct and slurred when effort used
28	Painter	65	Anxious, and very suspicious; frightened look	—	Lead line on gums on admission	—	—	—	Good	—	—
29	Painter	61	Poor condition, marked senile changes, confused look	—	Lead line on gums on admission	—	No	—	Good	Normal	—

The gait is described as "ataxic" in 2 of my cases, shaky or jerky in 3, feeble in 2, fair in 3, good in 2, unsteady in 1, normal in 2, and not stated in 4. The ataxia described in these



Fig. 1.—Case I (Table).

lead cases is probably not a true ataxia, although it may present a superficial resemblance to it, owing to partial anæsthesia of the soles of the feet. It is an inco-ordination due more to muscular weakness than to loss of knowledge of muscular position and errors in the balance or contractions of muscles by which any particular movement is performed. The apparent jerkiness or jactitation in the gait may be due to a weakness of the flexors and an undue action of the extensors. In my two cases of "ataxic gait," one had a fit, and there was probably some descending degeneration; the other had anæsthesia and analgesia, in addition to muscular weakness.



Fig. 2.—Case II (Table).

Summary of Cases to August 1st, 1900—continued.

	Reflexes.							Results.		
	Pupils.									
Knees.	Equal.	Regular.	Light and Accommodatn.	Delusions, etc.	Fits.	Mental Diagnosis	Special Bodily Affections.	Recovered.	Not Recovered.	Died.
Increased	Unequal; left > right	--	Inactive to light	Visual hallucinations, delusions of persecution, people follow with harmful intent	—	Mania, (?) general paralysis	—	Over 3 months	—	—
Increased right side, not well-marked on left	Unequal; left > right	Dilated	Inactive to light	Incoherent and demented, inclined to restless excitement, lost and depressed, memory impaired; wet, persecution	Two, first 2 years ago, weak right side since	Dementia, (?) general paralysis	Saliva drivels in conversation, slight bronchitis, urine 1032, no sugar, acid, habits defective, 'symptoms like glossolabio laryngeal	—	Not recovered, but improved 8 months	—
Brisk, and increased; no ankle clonus	2½ mm.	—	Sluggish to light, especially left; react to accommodion	Vacant and listless, slightly exalted ideas, with *bien être*, memory and intellect impaired, apathetic	Several, last 7 years	Mania	Rheumatism and gout. Muscular power poor.	—	Not recovered; under treatment 2 months	—
Diminished	Equal	Pin point	No reaction	People after him through the wall, fellow-workmen going to put him through the furnace and burn him	—	Melancholia	Bowels irregular	3 months	—	—
Lively	Equal	—	Normal reaction	Delusions of people watching him through ceiling, sees them, hears voices making false accusations, confused and depressed, impulsive, self-accusing	—	Melancholia	Bowels confined; physically degenerate	—	Under treatment at Hanwell, July, 1900	—

Ataxia with multiple neuritis possibly points to a disease of the sensory muscle nerves, and their end-organs—the muscle spindles; but, on the other hand, a disease or degeneration of the terminal nerve fibres to both skin and muscle has been found where during life there has been no inco-ordination. Genuine inco-ordination does, however, very rarely occur in cases where the lesion is limited to the peripheral nerves, the posterior roots and root zones being free from disease, as in neurotabes peripherica (Judson S. Bury).

It is improbable that many of the cases of lead encephalopathy seen in hospitals find their way into asylums, the mental symptoms being much less marked than the physical. Dr. J. F. Payne writes to me (July, 1900) that he has recently had a "case of dementia with some paralytic symptoms, but not



Fig. 3.—Case V (Table).



Fig. 4.—Case XIII (Table).

regular general paralysis in a compositor." An interesting paper by Dr. Ransom[10] quotes two such cases.

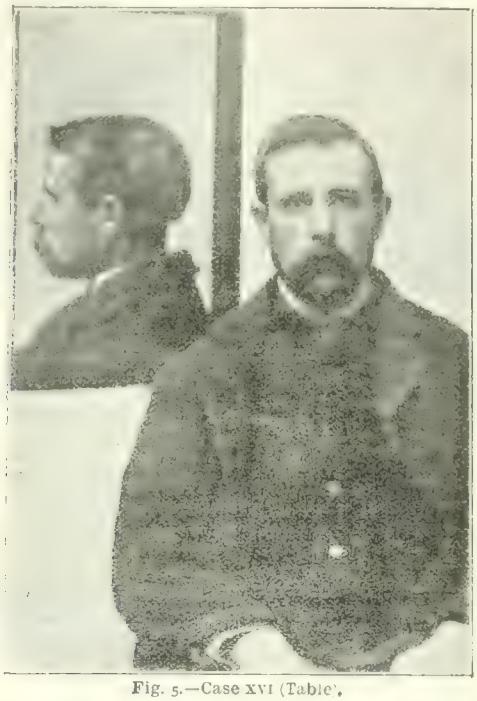


Fig. 5.—Case XVI (Table).

Alcohol is often associated with lead in the production of nervous symptoms, so that it becomes difficult to state what is actually due to the one and what to the other. Out of 40 deaths that occurred in the 133 possible lead cases, inter-



Fig. 6.—Case XVII (Table).

stitial nephritis was described upon *post-mortem* examination in 22, that is, 55 per cent. Probably both lead and alcohol act as a renal irritant, and cause granular kidney. Out of the 19 cases of actual lead impregnation, 9 or 10 had a history of alcoholic excess—fully 50 per cent.; and it has been suggested that the only correct method of studying this question is to watch the effect of a great epidemic of water lead poisoning. Fortunately, however, opportunities such as these are rare, and we are compelled to draw our deductions from less correct experimental methods. Again, the question of heredity in these cases requires to be considered, and I do not find this predisposition to mental disturbance (28 per cent.) to be quite as high as in the average of other admissions, although heredity may be a contributory factor. In my report of Claybury Asylum for 1899 I reported an average of 43 per cent. with a predisposition through previous attacks and heredity.

Summary.

To sum up my conclusions I find:—

1. That lead poisoning is a contributory factor in the causation of insanity, and that in lead workers there is a higher average number of general paralytics than in others of the population.

2. That there is a tendency in these cases to cardiac, renal, and arterial degeneration with complications due to syncopal or epileptiform fits.



Fig. 7.—Case XVIII (Table).

3. That most cases present marked signs of anæmia and ill health with unsteadiness of gait and general impairment of muscular strength and very frequently a history of temporary failing vision.

4. That the mental symptoms may be grouped among one or other of the following varieties:

(*a*) Those in the nature of toxæmia with sensory disturbances and which tend rapidly to get well. (*b*) Those with hallucinations of sight and hearing more chronic in their nature and which may be irrecoverable. The delusions in this class are almost invariably those of being poisoned or followed about and are in the main persecutory. (*c*) Those resembling general paralysis with tremors, increased knee jerks, inco-ordination, and accompanied with listlessness amounting to profound dementia but which tend to get well.

5. And that in most lead cases presenting mental symptoms the tendency is to recovery unless the patient dies early.

Mental Symptoms.

As to the most characteristic mental symptoms of lead impregnation, I would cite affections of memory, confusion, incoherence, headache, want of power to fix and sustain the attention. Depression, irritability, and suspicion were in my cases more frequent

than active restless excitement and noisy rambling delirium. Visual and auditory illusions with terrors are frequent, but there is no reaction and resentment as Dr. Rayner pointed out to be the case frequently from alcohol, also delusions of persons following, injuring, or killing them—based upon wrong perception of sensory impressions. Delusions of poisoning are frequent, less so are delusions of grandeur, exaltation, and *bien-être*. If these occur there is often a listlessness, and the person is of slow mental reaction, lost, and demented, It is these cases, with impaired muscular power, ataxia, feeble grasp, and increased reflexes, that look so much like general paralysis of the insane, and which tend to get well, that cause trouble and error in diagnosis, and Dr. Savage states that signs of plumbism should always be looked for in general paralysis. As to physical signs, a pallid look with debility amounting either to grave anæmia or extreme cachexia is noted. My cases were described as ill, dull, pale, thin, cachectic, feeble, anxious, depressed, etc. There may probably be cardiac hypertrophy with high arterial tension and albuminuria. Speech is affected, there is tremor of the muscles, especially face, tongue, and hands, restlessness, a feeble grasp, a weak or ataxic gait, unequal, irregular, and inactive pupils; headache, vomiting, and optic neuritis; and Dr. Bramwell[41] states that symptoms of lead are not unlike those of intracranial tumour. Atkin's case[42] was worn, haggard, and aged-looking, the memory was failing, there was gloom and depression, and the pupils were normal.

One of Hale White's cases[13] had unconsciousness following saturnine eclampsia, the pupils being unequal; the other had speech affection like that of general paralysis, the appetite was poor, tongue furred, and there was albuminuria, but the case recovered quickly.

Ruxton's case[44] presented cutaneous anæsthesia, fine tremor of tongue, wrist-drop, increased knee-jerks with ankle clonus, and restlessness. Mentally the case was one of post-epileptic stupor without hallucinations.

One of Dr. Savage's cases[45] had hallucinations of sight and hearing, another had delirium resembling delirium tremens, but the patient was a sober man. Dr. Rayner[46] adopts Tanquerel's classification and describes his cases under three heads; but, so far as I can see, his cases of coarse lead poisoning with acute mania and those like general paralysis would probably come under those of toxæmia, developing in a manner, as he himself states, resembling general paralysis. Dr. Reynolds[47] described acute symptoms, partial dementia, depression, and pallor.

Dr. Goodhart[48] also described 4 cases, and Dr. Campbell Clark[49] quoted a case of alcohol and lead poisoning with tremor, delirium, delusions of identity (alcoholic), unsteady gait, and sallowness. Dr. Alex. Robertson[50] referred to non-febrile delirium, convulsions, headache, and an affection of sight and hearing. The retina was examined in one of his case, and a band of thin choroid was described along the vessels on the left. The fundus was mottled, there being white spots especially towards the periphery, and the disc was pale.

My cases were without special eye symptoms. One case, of whose retina I have no ophthalmoscopic record, complained that he was once almost blind in the right eye, but the sight was afterwards only a little weaker than the left; another whose pupils reacted to light and accommodation had very pink discs, vessels normal size, and no stained hæmorrhages; a small patch of pigment was noticed to the temple side of the right disc. In one case of a lead worker—not one of my 19 cases—the pupils were regular and equal, reacted both to light and accommodation. Vessels of the left eye normal, no hæmorrhages, patches of dead-white choroidal atrophy with some pigmentation at the edges; retinal vessels seen passing over these patches. The largest patch seen in lower temporal part of fundus; another, smaller and not so white, seen in upper central part; and a third large patch with pigmentation at its lower edge below the first patch mentioned. Right disc normal, vessels normal, no hæmorrhages, no patches of choroidal atrophy observed, but patches of pigmentation above and to the nasal side of the fundus. One had a patch of pigmentation on the outer periphery of the right disc. Another, the edge of the disc not well defined, vessels healthy. Another had small floating, light yellow, glistening particles in the left vitreous, none discovered in the right.

There are said to be no characteristic eye symptoms in acute cases of lead poisoning, whereas chronic lead poisoning shows in many cases central and peripheral affections. The ophthalmoscope reveals sclerosis and periarteritis in the vessels—a white sheath around the arteries being often visible—a neuritis on one or both sides with disturbance of sight, or a diffusely reddened and cloudy papilla with swelling or hæmorrhages, the latter accompanied with permanent disturbance of vision. The central disorders include visual hallucinations, hemianopsia, with or without reaction of the pupils to light. Colour disorders and concentric narrowing have been described by Knies.[71] Galezowski[72] described paralysis of accommodation. Landesberg[73] referred to motor disturbances. The fact that lead poisoning is often associated with renal trouble may cause the retinal changes accompanying it, but albuminuric neuro-retinitis may occur without albumen in the urine. Temporary lead amblyopia is stated to be nearly always uræmic. The prognosis in eye cases is usually unfavourable, owing probably to the poisoning being advanced and involving subsequent atrophy of the optic nerve, and probably also owing to the complication of renal disease.

When complete amaurosis takes place in ordinary lead poisoning blindness occurs through double optic neuritis, or neuro-retinitis, but there may be amblyopia without fundus changes. Vision may be recovered from after partial blindness, which may be primary and due to chronic atrophy of the optic nerve, or secondary to papillitis.

In some of the fulminating cases of lead encephalopathy, blindness, delirium, convulsions, or coma and death may take place in a few hours. Folker[51] describes 5 cases of lead amblyopia in workers from the pottery district a peculiar symptom (already referred to), in each of these cases being flashes of colour with failing sight. The discs were described as white, and the vessels small. Axial neuritis is not, as stated, characteristic of lead alone, other poisons, such as alcohol, tobacco, quinine, bisulphide of carbon, santonin, salicylic acid, giving rise to amblyopia also. Dr. Bell Taylor[75] records a case where the symptoms came on after taking diachylon pills for four weeks to procure abortion. Dr. Ransome also records similar cases.[50]

Eclampsia.—Fits occurred in 7 of my 19 cases, a proportion of over 36 per cent. In the yearly average number of patients admitted into asylums the percentage of epileptics is only 9 in male patients.[57] The fits are probably toxæmic and similar to alcoholic or uræmic convulsions, and they may be the first symptom. Dr. R. M. Simon[58] reported 2 cases, one in whom fits occurred and who recovered; the other, with peripheral neuritis and general paralysis, who died. Dr. Alexander Davidson[59] reports a case with epilepsy, delirium, and death. G. Goidin[60] described cases of lead encephalopathy either as (*a*) delirious, (*b*) convulsive—which drunkenness, exposure to cold, and privation may determine, or (*c*) the comatose, a classification adopted by Tanquerel, and referred to by Dr. Denison Stuart.[61] Dr. George Ogilvie writes (July, 1900) that he had a case recently of lead poisoning in whom the symptoms were marked. The patient had a convulsive seizure, but had since recovered. In women, fits are stated to involve an unfavourable prognosis, and to be especially associated with abortion.

Treatment.—The treatment in my cases has been mainly expectant. Milk with beef-tea and eggs were prescribed as additional proteids to a fairly representative diet, such as is usually fixed to scale in public asylums. Proteids in solution are said to retard the soluble effects of the hydrochloric acid of gastric juice upon lead compounds. Sulphate of magnesia in the form of hst. sennæ co. was given to relieve constipation. A regular and not exhausting exercise in the open air was customary. In some cases massage was employed, also the hot and the electric bath, the latter by passing the constant current through water at a temperature of 100° in an ordinary earthenware large bath. The two terminals in the bath were broad copper plates, one at the head and the other at the foot of the bath, with a smooth piece of wood between them and the patient's body. M. Delearde reported[62] the cases of nine patients treated at Lille by the injection of large doses (about 500 c.cm.) of artificial serum (Hayem's formula—namely, sulphate of soda 5 grams, common salt 1 gram, corrosive sublimate

0.05 gram, and distilled water 200 c.cm. under the skin of the abdomen). The muscular pain, headache, and vomiting were relieved, but no action upon the paralysis was noted. G. Goidin[63] recommends normal saline solution sterilised and warmed to the temperature of the body, and in doses of 600 to 800 c.cm. subcutaneously. He also urges bleeding in association with this to one-half the size of the injection, and reports such treatment to be favourable in cases of convulsions, and that under this treatment the albuminuria disappears. Dixon Mann[64] reports some interesting experiments carried out upon the excretion of lead from the system, and he found that the administration of potassium iodide did not influence the rate of elimination, but that warm baths and general massage increased it. Dr. McDowall[65] stated that in Newcastle, where many cases of lead poisoning occurred, experience had taught if the treatment recommended in textbooks were adopted the patient would be poisoned outright. If potassium iodide were given in very severe cases, the patient would pass into a state of coma, and die quickly. Lewis Jones recommends electric baths, and states he has found unmistakable traces of lead deposited upon the copper electrodes, but (as stated) it is considered uncertain whether this lead is from the tissues or from contamination of the skin with lead compounds. Gowers speaks highly of the voltaic current to keep up the irritability and nutrition of the muscles while the nerves are recovering after peripheral neuritis. Hence it is clear, he states, that nerve fibres profoundly degenerated may be entirely reformed; new axis cylinders may develop and become covered with myelin and a new set of fibres will convey healthy impulses to healthy muscles. Nitrite of amyl is recommended for cerebral symptoms due to increased arterial tension, also alcoholic solution of nitro-glycerine with an acidulated saline aperient. Subcutaneous injection of atropine or of morphine has effectively relaxed the spasm of colic, after which aperients may be administered.

The effects of lead present so wide a range of serious symptoms and its deleterious influences are so subtle, persistent, cumulative, and protean in character, that I have entered somewhat fully into its consequences. My fears are that I have trespassed unduly upon your forbearance, and in conclusion I have only to offer you, as an apology for the undue length of my paper, the very great importance of this question and the desire to add—however inadequately—to what is already known upon the subject.

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Dr. LLOYD ANDRIEZEN said that lead encephalopathy might in some cases be primary, that is, dependent on the action of lead salts on the nerve elements, rather than secondary to uric acidæmia. The best proof of this was the fact that symptoms of encephalopathy such as mental confusion, delirium, and incoherence followed within a few hours of poisoning by lead. He related an instance of a family, members of which had eaten sweets containing lead chromate, with the result that several of them suffered from acute symptoms of cerebral toxæmia of the kind above mentioned, the symptoms appearing within 24 hours in some. In animals such as rabbits, the spinal cord showed a marked selective affinity for the lead, and paraplegia was an early symptom. The insanity resulting from lead encephalopathy was one that could be prevented—just as lead colic and peripheral neuritis were preventable—by hygienic precautions against the inhaling or swallowing of lead dust or fumes, or substances (such as glazes, paints, and pigments) containing lead, and this was an argument in support of the principle of prevention of other insanities of toxic origin. The simulation of symptoms of melancholia, hysteria, mania, acute mental confusion, and even of subacute alcoholism and paralytic dementia by lead encephalopathy, varied according to neuropathic predisposition, and showed that it was necessary to be guarded in diagnosis and prognosis if the presence of lead was suspected owing to the patient's occupation. Acute symptoms generally subsided rapidly under treatment, and a definite prognosis was possible after four or five days. Such acute mental symptoms did not require asylum treatment.

Dr. E. S. PASMORE said two points had struck him on which he should like to ask Dr. Jones's opinion. Dr. Jones thought that lead was a factor in the causation of general paralysis. Had he in those cases eliminated a history of syphilis? As regarded the next point, that mania, melancholia, etc., were met with in lead poisoning, his opinion was that these were merely phases in the clinical history of the mental condition. The cases that he had studied showed the same mental phenomenon as Dr. Jones described, namely, mania, hallucinations of sight, etc.

Dr. H. CORNER was of opinion that lead poisoning might produce practically any mental symptoms, as mania, melancholia, delusional insanity, dementia, and others going on to general paralysis. It was important to recognise that many cases were only of temporary nature, and that with treatment for a week or ten days in a hospital they might get well and not have to be sent to an asylum. Such cases frequently simulated acute alcoholism and occurred more frequently in young males; some of them having practically all the symptoms of delirium tremens, and others that of mania transitoria. Another class occurred amongst young girls and frequently simulated ordinary hysteria, the result being that they were often diagnosed as such and treated with the battery, etc., at general hospitals. Many of these cases had a few epileptiform fits and they frequently ended fatally. Most of the temporary cases occurred in young people of marked neurotic inheritance, and the symptoms appeared after they had been working only a few days in lead works.

Dr. PERCY SMITH referred to the fact that alcholol, syphilis, and lead might all poison the higher nervous system and produce various forms of mental disorder. Whether they did this directly or through the intervention of other toxins remained yet to be certainly proved. He thought it very important in attributing general paralysis to lead to be quite sure that such other causes as alcohol and syphilis were not present.

ACUTE DELIRIOUS MANIA.

By JOHN TURNER, M.B.,

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By acute delirious mania I mean a condition of delirium associated with a group of bodily symptoms of a typhoid type. There is extreme restlessness and weakness, feeble circulation, a dry brown tongue, sordes of lips and teeth, and generally, but not always, a slight (2° or 3°) increase of temperature, though occasionally it is throughout the disease below normal.

Sometimes the above group of mental and bodily symptoms appear in a previously healthy subject; at other times, and probably more frequently, they are superimposed as it were on an existing condition of insanity, and Bevan Lewis describes a case supervening on general paralysis.

Although not generally described under the same category, there seems to be, at least from the clinical point of view, no reason for considering delirium tremens, the delirium associated with septicæmia of puerperal origin, and the usually described acute delirious mania of textbooks, as separate forms of disease. They all present precisely similar mental and physical symptoms, and the great distinction between

them is that whereas the first is rarely fatal, the other two are generally fatal.

The reason, however, for this does not seem far to seek; in delirium tremens as soon as the symptoms of poisoning become manifest, the supply of poison is cut off and the subject recovers, whereas as in the others we are not in a position to be able to do this, they ultimately succumb.

From the point of view which I have taken there are three divisions into which cases of acute delirious mania fall:

1. Those of alcoholic origin.
2. Those of septic origin.
3. Those in which we are not able at present to identify any particular poison as the cause.

The first two divisions are obviously due to a poison originating outside the organism. The latter, I believe, is due to a poison generated within the organism—it is auto-toxic. It is with this latter division that what I have to say in the following pages mainly applies.

In Dr. Macpherson's work on *Mental Affections*, the cases I am now dealing with are grouped under the heading of Confusional Insanity, along with General Paralysis, etc., and he takes a similar view as to their toxic origin.

The main point which I want to draw attention to is that most of these cases present a definite alteration in certain of their nerve cells (chiefly the giant cells of Betz), so much so that in cases of acute delirious mania of my third division you can almost rely on finding a certain type of alteration in the giant cells of the ascending convolutions of the brain. I say almost because in at least one case I was not able to find this change, but here the cells of the cortex and of the anterior horn of both cervical and lumbar cord showed very pronounced changes, probably of a degenerative character, whilst many of them stained very intensely.

As, however, sometimes the cells on one side of the brafn are much more deeply affected than on the other,[1] and as they never all on one side are equally deeply affected, we must regard the cause of the change as prone to affect certain areas in the brain, and thus a failure to find them in a case in the one particular place examined would not necessarily invalidate the connection it is supposed that they bear to delirious states.

It is owing to the researches of Nissl that we are enabled to display the characteristic changes of the nerve cells about to be described. Nissl gives seven forms of alteration of human nerve cells, of which one is acute cell disease (acute veränderung). According to him[2] "it runs the same course in every instance having always the same termination, and when it has once appeared it involves all the cells of the cortex without exception. The changes are so characteristic that after having once seen them one can make a positive diagnosis without difficulty. ..... In this form of neuron change the unstainable substances are so altered that they become stainable." He finds this change, "not only in acute paralysis, but in a great variety of psychoses, and also in patients who have not been the subjects of mental disease in the ordinary sense, but who, succumbing to various disorders, have before death been partly delirious, partly somnolent."

August Hock, of the McLean Hospital, Waverley, Mass.[3] gives a full account of this change, with illustrations. From his description it seems to me that Nissl's acute cell disease is similar, if not identical, with the changes found in the anterior cornual cells of animals after artificial pyrexia.

But whether the acute cell change is identical with the so-called pyrexial cell or not it is evident that the condition I am going to describe as associated with acute delirious mania is quite distinct from the former.

At the outset we are met by the fact that in my cases the changes are localised, as before noted, whilst Nissl lays great stress on the universality with which all the cells are implicated in his acute cell change.

The change in the appearance of nerve cells I am dealing with is not peculiar to acute maniacal cases, as I have myself met with it in a man, aged 54, who died in a general hospital, of carcinoma of duodenum, but whether this man was delirious before death I do not know. I have also found it associated with 4 cases of typhoid fever in insane patients.

Before proceeding to a description of the pathological features of these cases, I wish to say a few words on the character of the mental and bodily symptoms more in detail.

The mental state is described as one of delirium, and by this is meant a state of utter confusion of mind. The incoherence is more complete than in any other variety of insanity, the disjointed flow of ideas more rapid. But in my cases I have never, I think, observed the utter oblivion to the surroundings mentioned by Bevan Lewis. One of the features I have been much impressed with in the most incoherent subjects and those who paid absolutely no heed to questions, was the facility with which they have seized upon words used by those in their hearing, or upon sounds in the wards, or upon objects presented to their gaze, and have weaved these words or the names of the objects or sounds into their incoherent babblings. In most of the cases the periods of delirium are broken up by longer or shorter intervals when the mind is fairly clear, and they will converse and answer questions rationally. Another feature very commonly met with is extreme apprehension: the patient resists blindly and stubbornly against anything one may desire to make him do. Thus, on attempting to give him food, he struggles violently, and his face expresses extreme terror.

Frequently along with their delirious mutterings they gesticulate, clap their hands, and are extremely restless. In other cases a low muttering delirium is seen with very little movement on the part of the patient. On the physical side there is a dry, brown tongue with sordes of the lips and teeth, and ashy pallor of face.

The pulse is often rapid and weak, but the arterial pressure though generally low is sometimes of normal height (= 130 mm. of Hg), or may be distinctly raised (170 mm.). Parotitis is common, and although this may sometimes be caused by the handling necessary in those cases which require artificial feeding as suggested by Dr. Hill,[4] yet even where this may be taken as the exciting cause of the gland swelling it has a certain pathological significance showing that comparatively slight injury serves to set up a disturbance which in other cases where forcible feeding is necessary is never hardly seen. It is therefore an indication of some existing alteration in the gland structure or metabolism ready with slight injury to start an inflammatory process resulting in suppuration. Although this parotitis is sometimes followed by the recovery of the patient,[5] as a rule it is a very unfavourable symptom. Blebs or bullæ not infrequently form on the heels or other parts of the legs and arms in the later stages of the disease. The temperature is very often raised two or three degrees throughout the course of the disease, but in some it is subnormal throughout. The character of the physical symptom as a rule is of a typhoid type.

The following cases may be taken as fairly characteristic of the disease:

E. J. J., female, aged 43, has had seven children and one miscarriage: last child born eleven years ago; a hard-working, cheerful, sober woman. This is her first attack of mental disease, and began six weeks ago with similar symptoms to those noted on admission. No history of previous depression. Her mother was strange in her mind, a brother was a drunkard and committed suicide.

Admitted November 6th, 1899. Axillary temperature below 98° in axilla; pupils contracted, right slightly the larger; they react to light (direct and consensual); pulse 80 in bed; arterial pressure 90 mm. Hg.; tongue red and sticky at the sides, dirty brown with yellow fur down centre; lips, teeth, and palate covered with dirty slime; bladder distended; general condition very feeble. Lies and chatters to herself; smiles and calls out; pays no heed whatever to questions; mouths and waves her arms about; is at times noisy; passed a large quantity of urine in the night and did not sleep; was noisy. She fell asleep midday the day following and slept till 4.30 P.M., when a change was noted in her; she was breathing noisily and apparently unconscious; the next day was quite lively, and, when questioned as to her health, replied, "Quite well, thank you." Tongue now dry and brown, and protruded to the left; bowels [illegible] continued to vary between the above-mentioned states [illegible] when she had to be fed but did not retain any [illegible] nutrient enemata. She now never spoke, but lay [illegible] about. Died at 11.20 A.M., November 24th, 1899. Her temperature in the rectum on the evening of the 7th was 97° F., [illegible] the 8th only 95.6°; it kept below normal [illegible] of the 21st, when it was 99.2°, at which level it [illegible] ing of the 22rd, when it was 101°, and it was [illegible]

Necropsy 22½ hours later. Body fairly nourished; no sores; slight rigor mortis. The brain and its coverings appeared [illegible] healthy, the meninges thin and stript well [illegible] other signs of atrophy. There were old adhesions in the left pleura. Both lungs deeply congested. Heart natural; aorta healthy. The liver was rather mottled, nothing markedly abnormal in its naked-eye appearance, but microscopically there was found to be well marked fatty degeneration of the liver cells around the margins of the lobules in [illegible] the portal veins. The spleen was firm. The kidneys appeared [illegible] Brain 1,270 grams, heart 250, liver 1,160, right kidney 105, left kidney 97, spleen 73.

E. C., female, aged 44. First attack of mental disease supposed to be of

recent origin. No history obtained. The facts indicating insanity on the certificate of admission were: delusions about being shot, and other dreadful things; refusal of food.

She was admitted on May 11th, 1899. A delicate-looking woman, with thick complexion, skin greasy, knee-jerks exaggerated, pupils equal and react fairly to light and distance; small pulse (sitting) 122, arterial pressure 130 mm. Hg. Tongue brown and dry down centre. Has a lugubrious aspect, and will not speak; is very resistive and restless; makes no noise; does not sleep; developed double parotitis, although she took milk without being forcibly fed. Remained in the same restless, resistive and silent state till May 22nd, when at 4 A.M. she died. Her temperature rose from 99.6° on the evening of the 18th to 103° on the evening of the 20th, and then fell to 97.8° on the evening of the 21st.

Necropsy 5 hours later. Body well nourished; rigor mortis present. The meninges were injected, thick and opaque in patches over the frontals and ascending frontals, they stripped readily. Shrinking of convolutions at vertex and at the frontal end. Basal vessels healthy. No dilatation of lateral ventricles. Cortex dark, natural consistency. No granulations; cerebellum soft and congested. Lungs slightly congested at bases, contained muco-pus in the tubes. Heart large and soft; mitral stenosis; old vegetations on both cusps; some atheroma of aorta. Liver large, firm, and pale (it was not examined microscopically). Kidneys tough, capsule slightly adherent in places; cortex deep. Brain equal 1,368 grams, heart 334, liver 1,444, right kidney 134, left kidney 179, spleen 132.

A. B., female, aged 24. The present attack of mental depression is of quite recent origin. It began with a transient condition of depression about three weeks ago, followed by suddenly developed acute maniacal symptoms. Her mental condition was one of noisy delirium, constantly chattering, flinging her arms about, and very restless; shakes her head from side to side; grimaces; exposes herself indecently; pays no heed to questions. "You're Mr. Moore, I know; you're lovely; you're a gentleman; pure girls, lovely girls; you look at mother; now, my darling, you know who you have to look at for food. Hot lily, you burn if I shall not" (repeats this last over and over rapidly). She continued excited with short intervals of calmness, when she recognised her friends and spoke to them coherently. Tongue dry and brown; blebs formed on heels; her extremities became cold and livid, and she died eight days after admission. Her temperature was never raised above normal, except on the evenings of August 2nd (101.4°), 5th (99.8°), and 6th (99.2°).

Necropsy 4½ hours after death. Body well nourished. On the external surface of the dura was a soft, dark coloured clot, 30 by 40 mm.; it lay over the middle portion of second frontal convolution on the right side. The vessels of the arachnoid were enormously engorged. There was some apparent shrinking of the convolutions at the vertex (more especially in the motor area). Grey matter dark coloured and congested looking. Lateral ventricles dilated, and filled with blood-stained serum. Nothing abnormal was noted in the chest except that the aorta had atheromatous patches just above its valves, and the lungs were very congested at their bases. The liver was pale, and on microscopical examination showed a general fine fatty degeneration of the cells throughout the lobules; kidneys fairly healthy.[6]

Now all three of these cases presented the alteration of the giant nerve cells of the cortex about to be described, but in the last case the alteration was most marked and most unusual, there being in this case no healthy cells seen.

PATHOLOGICAL ANATOMY.

Concerning the changes found in the nerve cells in delirium tremens and in the delirium of septicæmia of puerperal origin I have but little to say. Regarding the former personally I have had no opportunity of studying them, but others have done so with not altogether harmonious results. Dana, in acute alcoholism,[7] finds intense pigmentation of the large pyramidal and giant cells, with shrinking of their cytoplasm and nucleus. He also finds proliferation of pericellular nuclei. These results, so far as they go, seem to be in harmony with those to be described here. Ewing,[8] in two cases of delirium tremens with high temperature, found the cortical pyramidal cells markedly bleached; sometimes coarsely granular and indistinct. K. Bonhoffer[9] studied two cases of alcoholic delirium, and found the great pyramidal cells of the central convolutions of indistinct contour, and with displaced nuclei. The small nerve-cell bodies also showed marked indistinctness and disintegration, with feebly-stained nuclei.

Experiments with acute and chronic alcohol poisoning on animals—chiefly dogs—have been carried out by Dehio,[10] Nissl,[11] Vass and Marinesco,[12] and others; and although one or two observers—notably Dehio in the Purkinje cells and Vass in the anterior cornual cells of the cord—have obtained a darker staining of the cell than usual in acute alcohol poisoning, yet these results do not seem to be at all constant.

In cases of delirium of septic origin, I have had the opportunity of examining the brains, etc., in a few instances; and although I have not met with the deeply-stained giant cell bout to be described to any marked extent, yet I have founds in the frontal lobe areas where the pyramidal cells appear shrunken, darkly stained, and deeply pigmented. The frequent references already made to the very partial distribution of the morbid change, even in those cases where it falls upon the central convolutions, renders at least feasible the supposition that a similar morbid change may affect certain areas in all the cases of acute delirious mania, whether of alcoholic, septic, or other origin. Be this, however, as it may, what we are chiefly concerned with here is the undoubted fact that in certain cases of acute delirious mania, a fairly constant change is met with in certain areas of the brain, and the character of these changes will now be described.

With the naked-eye appearances of the brain I shall have nothing further to remark than that occasionally we meet with intensely congested areas in the meninges, and in two cases I found thrombosis of the veins and sinuses, and in one of these this condition had led to a hæmorrhage in the right temporo sphenoidal lobe (cortex). What I have to say is chiefly in reference to the condition of the giant cells (Betz) of the ascending frontal convolution, because it is in these elements that I have met with the most marked alterations.

Every one of the cases (11) collected has shown in greater or less degree the change to be described. In some practically every giant cell is affected; in others, whilst some are undoubtedly affected, others show a condition which is very probably an earlier stage of the alteration.

I shall first of all deal with the cells as seen entire, that is, simply stained in toluidin blue, and pressed out in Farrant solution or glycerine. A feature which strikes one in many of the cells is the enormous accumulation of pigment (yellow), when we consider that we are dealing with cells from people in the prime of life. It occurs in large masses at the base, or all down the side, or at the apex, or sometimes there are two separate collections. Except in extreme cases not all the cells will be affected, but those which are stain very densely, and although, except in cells much altered, the chromophilic material can still be discerned, yet the between-substance colours much more deeply than usual. It is only in very advanced stages of the disease that the cell appears at all shrunken. It is generally plump and big and with numerous dendrites of the usual bulk and configuration. Sometimes there is a manifest crumbling of the Nissl bodies, both in the cell bodies and in the dendrites. The cells and their processes are not fragile, and probably not altered in shape. The axis cylinder stains very slightly deeper than usual. As a rule the colour in the cell is so deep that the nucleus and even the nucleolus is obscured. When visible it is generally central.

Fig. 2 shows a cell in an apparently early stage of the

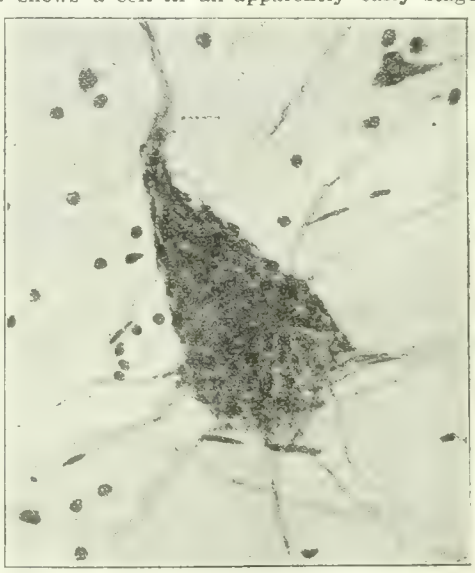


Fig. 1.—Normal stichochrome, entire cell. × 400.

change, and with an enormous collection of yellow pigment at its lower end. Throughout this mass of pigment were grains of purple stained material, probably the remains of Nissl bodies. The dendrites it will be noticed are numerous, and contain probably the usual number of chromophilic

threads. This cell is from a woman aged 43. Many other of her cells were much more densely and diffusely stained.

Fig. 3 shows a very densely stained cell with crumbling of



Fig. 2.—Early change; densely stained, entire cell heavily pigmented. × 400.

the Nissl bodies, best seen in the dendrites. The cell is also very heavily pigmented. It was from a man aged 44.

EXAMINATION OF SECTIONS FROM BRAINS FIXED IN SUBLIMATE AND STAINED IN TOLUIDIN BLUE.

A common feature in all the sections of the cases was a large number of free nuclei within the pericellular and perivascular spaces seen in all layers of the cortex. These bodies are round or oval, with a definite lining membrane and granular contents; they are only moderately darkly stained, and measure 5μ to 6μ. They often surround the nerve cells; as many as nine or ten sometimes can be counted in a pericellular space, and are commonly seen partly imbedded within the cell body, and even fairly healthy-looking cells are thus encroached upon. There are several views as to the nature of these bodies, some describing them as mononuclear leucocytes, others as glia nuclei, and others as proliferated adventitial nuclei.

Turning now to the giant cells, we notice that in sections they appear very much more altered than when studied in films. They are shrunken and distorted; often only an irregular, deeply-stained, pigmented mass is seen lying within a large pericellular space, and with only one or two, perhaps fractured, processes coming off from it. The cell stains so densely that nearly all interior detail is obscured, and the nucleus, which in sections from natural cells appears as an oval space with a few granules, may now stain nearly or quite as deeply as the cell body. It is generally central, but occasionally occupies a position at the periphery, and is often shrunken. The fracturing of the dendrites is obviously an artificial process, but it has a pathological significance.

We saw in films that the cell retains its usual size and shape, but when it is subjected to dehydrating agents it appears as a shrunken, deformed mass. This seems to indicate that in this disorder the substance of the cell body and its processes is of a more fluid character than usual: hence the greater shrinking that it undergoes when treated with alcohol. Of course this shrinking pulls the cell body away from its dendrites, which are held by the matrix of the cortex, and thus causes them to fracture. In the same way the apex is not infrequently fractured. Although we see only very few dendrites in these cells, yet generally those met with contain chromophilic threads. The large masses of yellow pigment are often bordered all round by a thin rim of cell cytoplasm (see Fig. 4). As a rule, the more profoundly the cell is altered the larger is the deposit of pigment.

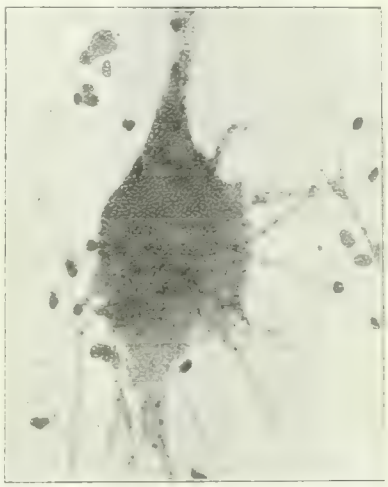


Fig. 3.—Dense cell with granular degeneration of Nissl bodies. × 400.

In what is apparently an earlier stage of the change the cell does not stain so very deeply, but the whole ground substance colours, and the Nissl bodies often show signs of crumbling in the centre of the cell. The increase in density and darker staining of the nucleus, with ultimate shrinking already referred to, seems also to represent early stages in the cell change.

Figures 4 and 6 show photomicrographs of typically affected nerve cells. The two basal processes in Fig. 4 show dendrites

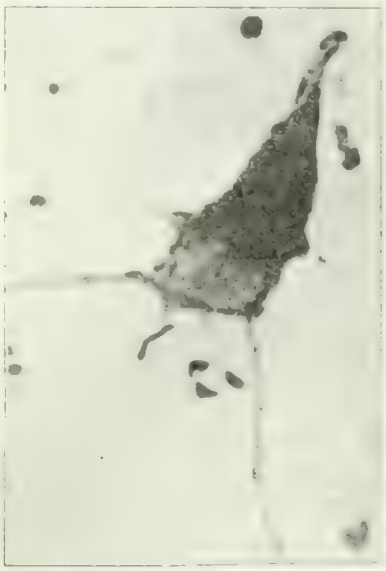


Fig. 4.—Section densely stained; pigment-shaped cell with fractured

retaining still their chromatic elements. Higher up is seen a fractured process. Although the section is through the centre of the cell, yet no appearance of any nucleus is visible, it being of the same density and stained as deeply as the cytoplasm. The nucleolus can be dimly discerned.

In Fig. 6 the darkly-stained ill-formed cell shows a double but still much denser nucleus than usual pushed to one side.

A large collection of pigment is indicated at the lower extremity of the cell. A fractured process is seen. This cell



Fig. 5.—Section of cell with dense nucleus; showing very little change in body; from one side of acute general paralysis. × 580.

was from a case (see footnote) of acute general paralysis, and was representative of most of the giant cells on one side of the brain. The next figure (Fig. 5) is representative of



Fig. 6.—Densely stained deformed cell; typical of cells on other side of same case. × 580.

those on the other side. You will notice that there is central breaking down of the chromatic elements, whilst the nucleus appears as a somewhat dense, sharply-demarcated body lying loose in the cytoplasm.

In sections stained with osmic acid I have generally found numerous tangential fibres in the ascending frontal region; in one case they were absent on one side only. In the frontal and occipital region they were frequently absent or very few; this, however, is I believe only what is found in all human brains. By osmic acid, also, one can in some cases demonstrate a fatty degeneration of the nerve cells of the second and outer part of the third layer; but this seems by no means a constant occurrence, at least not in the parts which I have examined (frontal, ascending frontal and occipital).

A very common occurrence in these cases is a condition of fatty degeneration of the liver cells. The fat is deposited in small droplets at the edges of the liver cells and generally mostly at the margins of the individual lobules in the portal vein region, but sometimes it occurs in fine drops pretty equally distributed throughout the whole lobule. I have quite recently examined the spinal cord in one case and failed to find any evidence of degeneration of nerve fibres in the white matter.

Conclusions.

I believe that all forms of acute delirious mania are of toxic origin, but whilst some are obviously caused by the introduction of a poison from without, namely alcohol, others are caused by the absorption of septic material, whilst a third class are due to auto-intoxication, probably as the result of perverted metabolism, which the disordered nervous system is very likely the cause of. The fact that in these acute cases, occurring as they do in the prime of life, we almost invariably meet with fatty degeneration of the liver, an organ, one of whose functions is most probably to prevent the introduction into the system of poisonous intestinal products, is in corroboration of this idea. It may be asked if acute delirious mania is of toxic origin why is it that some nerve cells suffer whilst others perhaps in their near neighbourhood escape, though all must be subjected to the same poisonous influence. Possibly it may be that those particular cells which are chiefly concerned in the delirious condition, those at any rate which happen to be in a state of great activity, are those which will feel the chief effect of the poison. If, as some hold, an accumulation of pigment in the nerve cell is an expression of past (and probably recent) activity, then the fact that those cells which are most pigmented are usually those most affected will to a certain extent bear out this contention. But as regards the action of a possible poison on the nerve cell and its functions the subject is too speculative for any advantage to be derived in discussing it. The cells just described are found here and there in many other forms of insanity which did not during life betray any symptoms of delirium, and even in some undoubted cases of acute delirious mania only a minor proportion of the giant cells are markedly affected; but in those cases with high delirium and a rapidly fatal termination we generally meet with a condition in which all the giant cells are profoundly altered, and I believe that from an inspection of such a section a tolerably accurate diagnosis could be formed of the mental condition preceding death.

Notes and References.

[1] Recently in a case of general paralysis, in a male aged 46, running a somewhat acute course, I have met with a very marked instance of this partiality of the disorder for certain cells. For whilst practically all the giant cells of the ascending frontal (leg) area of one side were profoundly affected, scarcely one of those of the other were in a like condition, although these latter did not present a normal appearance, for there was a very advanced condition of central chromatolysis, whilst the nucleus appeared as a nearly solid body, bounded by a sharp line and lying loosely within the cytoplasm of the cell (see Figs. 5 and 6). [2] Quoted from Barker, *The Nervous System*, p. 291. [3] *Amer. Jour. of Insanity*, April, 1898. [4] *Jour. of Mental Disease*, vol. xxxvii, p. 673. [5] See paper by Hyslop, *Jour. of Mental Science*, vol. xxxvi. [6] A fuller account of this case will be found in *Brain*, Spring Number, 1899. [7] *Quart. Jour. of Inebriety*, January, 1899. [8] *Arch. of Neurol. and Psychol.*, No. 398. [9] *Monatschrift für Psychiatrie und Neurologie*, April, 1899. [10] *Centralbl. f. Nervenheilk.*, 1895, No. 3. [11] Quoted by Goldscheider and Flatau, *Anat. d. Nervenzellen*, pp. 55-6. [12] Quoted by Robertson, Critical Digest, Normal and Pathological Anatomy of Nerve Cell, *Brain*, Summer Number, 1899.

Dr. C. C. Easterbrook considered that the most interesting point in Dr. Turner's paper was his observation of the great increase in pigment in the giant nerve cells in acute delirious mania. Though pigmentary degeneration had been previously observed in acute insanity, it was generally regarded as a common condition in advancing age in health, and in insanity it was usually characteristic of subacute and chronic conditions. The source of the so-called pigment was also a vexed question, but Dr. Turner's demonstration distinctly indicated that the morbid pigment was directly derived from the chromophilic elements of the cell protoplasm, there being a concomitant marked chromatolysis.

Dr. Lloyd Andriezen had examined the brains microscopically with Nissl's method in two cases of acute delirium and found excessive reddish-brown pigmentary degeneration in nearly all the cortical pyramidal cells. The changes were observed most in the largest pyramidal cells. He also noted some degree of pericellular hyperplasia, and in many capillaries the

occurrence of thrombosis. The pericellular hyperplasia was less marked than in general paralysis, and he concluded also that the protoplasmic glia cells (plasma cells of the grey matter) described by him several years ago (BRITISH MEDICAL JOURNAL, 1893) were hypertrophied, probably owing to irritation by the toxin of acute delirium. Where toxæmia was tending to end fatally, therefore, venesection and saline injection were indicated, as this would also tend to prevent capillary thrombosis in the brain.

Dr. PERCY SMITH said he had taken great interest in these cases of acute delirious mania, and was interested to find that Dr. Turner did not find it possible to distinguish cases clinically from whatever cause they arose. With regard to Dr. Turner's suggestion that the appearance suggested increase of fluid in the cells, he mentioned a case in which *post mortem* there was marked dryness of the whole of the organs of the body, and a very small quantity of blood in the vessels.

A DISCUSSION ON
THE TREATMENT OF EPILEPTICS IN COLONIES.

I.—WILLIAM ALDREN TURNER, M.D., F.R.C.P.,
Assistant Physician to King's College Hospital and to the National Hospital for the Paralysed and Epileptic.

To many it has seemed that by the charitable and philanthropic agencies of the latter half of the present century the claims of the epileptic have been curiously overlooked or neglected. Many varieties of individuals who are unable to maintain themselves have earned the care and attention either of the State or of charity. The insane, the blind, deaf-mutes, feeble-minded and defective children, and paupers receive legitimate assistance from one or the other source. The epileptic, however, is in the position that unless he becomes insane, or is at the outset feeble-minded or defective or becomes a pauper, neither philanthropy nor the State takes note of his condition. Should he fall ill his presence as a patient in a general hospital is regarded with alarm, while during convalescence he is debarred from admission to the numerous convalescent homes on account of fits. As a boy at school he is regarded as a suitable object for the humorous sallies of his school-fellows, while the pedagogue looks upon him as a source of trouble and annoyance. Should he be of the artisan class or of that large section of the community which supplies the domestic servant, the shop assistant, and like forms of labour, the fact that he is an epileptic, if known, precludes him from obtaining the means of existence. As time goes on it becomes impossible to care for these individuals in their own homes. In many cases bad hygienic surroundings, unsuitable and irregular food, intermittent medicinal treatment, or in many instances no treatment at all, lead invariably, in association with the epileptic seizures, to physical as well as mental deterioration. In this way many epileptic persons eventually are received into the workhouse, the infirmary, or the asylum.

During the past decade, however, much and increasing interest has been awakened over the unfortunate condition of the epileptic. In Germany it has been recognised since 1867 (in which year the celebrated epileptic colony at Bielefeld was established) that epileptic persons might be usefully and industrially employed with benefit to their health and with satisfactory financial results. In the United States, since 1890, when the Ohio Hospital for Epileptics was founded, numerous colonies have sprung up, including the now well-known and progressive Craig Colony at Sonyea, New York State. In our own country, the foundation of Maghull, near Liverpool, in 1888, was a preliminary step in the same direction. In 1894, the National Society for the Employment of Epileptics opened their farm colony at Chalfont St. Peter, Bucks.

That the matter is arousing considerable general interest may be gauged from the recent publication of the large work of Letchworth upon the *Care and Treatment of Epileptics*, New York, 1900, the whole of which is given over to a detailed account of the epileptic institutions of the United States, and of some others in this country and abroad and the principles underlying their foundation.

In this country, in addition to those already mentioned, a large colony is being instituted at Chelford, in Cheshire, and the London County Council is arranging to draft the insane epileptics from some of their asylums to a farm colony which is being prepared at Hoxton, in Surrey.

My personal experience of the treatment of epileptics in colonies is entirely limited to the working of this system as seen at the farm colony at Chalfont St. Peter, which has been in existence for six years and is yearly increasing in size, as may be seen from the following figures. On December 31st, 1894, five months after opening, the epileptic population was 14 with a staff of 5 persons. On June 30th, 1900, the epileptic population was 110 with a staff of 14 persons. During the six years there have passed through our hands 168 epileptics, male and female. These numbers may appear small when compared with the total number of epileptics seen during the course of the year in the out-patient department of the National Hospital for the Paralysed and Epileptic; but though small in number they are most valuable for the study of the influence of environment, discipline, outdoor and indoor work and diet upon the number of seizures and upon the general health and mental condition of the epileptic. There is a register of all fits, of the work allotted to the colonist, and of the influence which one or other form of employment has upon them. In out-patient hospital work it is scarcely possible to do more than note the effect of medicinal treatment upon the number and character of the seizures.

The points to which I specially wish to draw attention with a view to discussion or to elicit information are:

1. The education of epileptic children.
2. The influence of the colony system upon the sane adult epileptic.
3. The colony system as a means of treating young adult epileptics at the commencement of their disease.
4. The cure of epilepsy.

1.—THE EDUCATION OF EPILEPTIC CHILDREN.

Provision should be made in all colonies for the education of epileptic children. Experience has shown that in order to give the epileptic the fullest benefit from this or any other system of treatment, he should be educated apart from the healthy and the imbecile. Arrangements have been made at the Chalfont colony for this purpose by the construction of two houses each to contain 24 children, males and females; but owing to the unfortunate inclusion of a section in the Elementary Education (Defective and Epileptic Children) Act (1899) certain restrictions were legalised which prohibited the Committee from making that use of the houses for which they were originally devised. It is hoped, however, that some amendment of the Act may be passed which will permit the National Society to undertake the education of epileptic children, as well as to provide for the employment of sane adult epileptics. Owing to these circumstances it is impossible to communicate from personal observation the best methods to be adopted for the education of epileptics, or the results which may be expected to ensue regarding the amelioration of their disease. But the results of this system as practised in the United States may be briefly mentioned.

In the Ohio colony for epileptics "the children are taught according so their capacity for the reception of knowledge, either by means of Kindergarten methods, embracing the ordinary object-lesson system of teaching, or by the common school methods of instruction in reading, writing, etc. It is asserted that there is a constant improvement in the mental, moral, and physical condition of the children."[1]

Dr. Spratling, the superintendent of the Craig Colony for epileptics, New York State, has stated that the future of the colony system lies with the young epileptic. At this colony the system of education consists chiefly in teaching the several forms of labour—carpentry, cabinet work, repairing, and so on, while the girls are given suitable instruction in manual work.

2.—THE INFLUENCE OF THE COLONY SYSTEM UPON THE SANE ADULT EPILEPTIC.

The chief point to be borne in mind in all matters appertaining to the care and management of the epileptic is that medicinal treatment forms only a small part of the requirements of each case. Increased experience favours the view that the early treatment of epilepsy ought to be institutional in its methods. It will be presently shown how valuable

[1] Letchworth, *op. cit.*, p. 82.

this system may be in the case of young adults received into a colony within a short period of the onset of the seizures.

The principles which have guided us in the management of epileptics in the colony are: (*a*) The removal of the epileptic from town or city environment, including their removal from the sometimes unsatisfactory influence of the domestic circle; (*b*) regular and congenial employment in garden, fields, orchards, or workshops, under the supervision of capable persons; (*c*) a well-ordered and regular mode of life, with avoidance of excitement and abstinence from alcoholic liquors; (*d*) abundance of nourishment of a simple character; (*e*) the reduction of medicinal remedies to a minimal amount, namely, one-half drachm of bromide of potassium at bedtime.

The effect of the practical application of these principles upon the number and severity of the seizures, and upon general and mental conditions, may be briefly summarised: (*a*) The frequency of the fits is usually considerably diminished for a period after admission, a change which may be ascribed to the effects of improved hygienic surroundings. In a minority there is a temporary increase in frequency, probably due to a diminution of the potassium bromide, with which many are saturated on arrival. In most, the average frequency of the seizures is soon obtained. Of those who have been with us for the six years of the colony's existence, it may be said that they maintain a surprisingly constant average, both in the frequency and the severity of their seizures. (*b*) In the majority of cases an amelioration in the severity of the attacks has been seen; in a minority no material alteration is observed, while in a few there has been a distinct increase in severity. (*c*) In a very small minority there has been a steady downward tendency towards dementia, apparently the natural course of the disease in these cases, as it was associated with increased severity and frequency of the fits. In the great majority of cases no such mental deterioration has been observed. The average mental state is very constant. Many of the colonists are capable of work requiring individual alertness and tact, while most are able to do good work under supervision. (*d*) It is scarcely necessary to do more than mention that under the influence of good food, regular meals, and improved hygienic circumstances, the general physical state undergoes material improvement.

But apart from the influence which the colony system has as a remedial agent upon the duration or course of epilepsy, it has also to be regarded as of immense utilitarian value. It affords the means of giving employment to a class of the community who have great difficulty in finding work on account of their peculiar malady; it provides that kind of work which is most suitable for the slow, torpid nervous system associated with this disease; as the work usually performed is scheduled and under direct supervision, the non-imaginative and debilitated have as good a chance of success as the alert and imaginative, and that which is perhaps of most value lies in the general moral effect which the system exerts upon the individual colonists. If interest is taken in his work, in his mode of life, and in his amusement, the confirmed epileptic is capable of becoming quite a useful citizen.

It is scarcely necessary to enter into the question whether associating epileptics together in houses has any influence, malign or otherwise, upon the disease. It is generally found that epileptics are essentially charitable towards their fellow patients during the seizures, while a healthy rivalry both in work and in games cannot possibly be detrimental to anyone.

3.—The Colony System as a Means of Treating Young Adult Epileptics at the Commencement of their Disease.

It is well known, and the method is in constant use in private practice, that at the commencement of epilepsy, usually during puberty or in early adolescent life, the brain should receive that all-round rest which can only be obtained by withdrawing the patient from school or college, by lessening to the utmost the more severe forms of exercise so agreeable to the young, and preferably also by removing him temporarily from social intercourse with those of his own age. This is commonly effected by placing the young epileptic upon a farm, or by giving him employment in a market garden, where, however, he is not under that organised supervision which is so important a feature of a colony.

It may be fairly claimed for the colony system that it provides the most satisfactory means of dealing with epileptics in the humbler walks of life upon the lines already laid down; and our experience at the Chalfont Colony has entirely justified this conclusion.

But it is desirable to point out in this place that there does not appear any reason against admitting to colonies for epileptics those who themselves or whose parents or guardians are able to afford higher rates of payment. The same line of treatment is applicable to both classes, and it is only right that those who are able to afford it should have the same opportunities as those who are more or less dependent on charity.

So far as I am aware, there is not in this country a farm colony where highly paying epileptics can be received. I would therefore suggest that at all epileptic colonies there should be one or more villa residences where young epileptics may be received as private patients.

4.—The Cure of Epilepsy.

Finally, brief reference may be made to the question, Is there a cure of epilepsy? There is no doubt that some epileptics are cured of their fits, and in other cases the tendency to seizures endures for a period and then disappears, whether the person has been treated therapeutically or not. The full consideration of this important matter rests naturally upon what is the causal factor in individual cases; but without entering into speculative considerations, one is inclined to state that in the majority of cases which improve or get better the cure (if such it may be called) should only be spoken of in relative terms, for it has to be borne in mind that long intervals amounting to several years may elapse between seizures, and also that a dose of bromide at bedtime may keep down the explosive tendency for many years. This latter event may be regarded as a cure of epilepsy speaking relatively, for it is common knowledge that in epilepsy commencing in infancy and early childhood the fits may cease for a number of years, to reappear about puberty, and it is also a matter of observation that fits may be spontaneously arrested during adult life.

In conclusion, it is necessary to point out that care is taken in the selection of cases for admission to the colony. It has been found advisable to refuse all those with obvious evidence of organic cerebral disease; those in whom epilepsy developed late in life; those who have been for prolonged periods in the workhouse infirmary; and those who are manifestly insane. Those who by preference are chosen are young adults in whom the disease is of comparatively recent onset.

Without entering into details, I have attempted to show the immense value of the colony system in the treatment of epilepsy, and have no hesitation in confirming the opinion of Dr. Spratling, of the Craig Colony, that the future of this system lies chiefly in the treatment of the young adult epileptic.

II.—Robert Jones, M.D., B.S., F.R.C.S.,

Superintendent of the London County Asylum, Claybury.

DR. ROBERT JONES referred to the mental difference between the epileptic and the other inmates of an ordinary asylum. He considered that 33 per cent. of the epileptics in asylums would benefit from treatment in a colony, and he went on to describe the scheme for these which was at present before the London County Council. He referred to the advantages to be gained by the civic care of the sane epileptic, and that the homeliness of institutions, whether civic or voluntary, was dependent upon the disposition and administration of the home by the principal officers. He stated it to be his opinion that potassium bromide was only suitable and advisable in selected cases owing to the danger induced through the onset of the status epilepticus which he himself had noticed after an interval of freedom due to the bromide.

III.—Harry Corner, M.D.,

Late Medical Superintendent of the Earlswood Idiot Asylum.

DR. CORNER said that when at Earlswood he was much struck with the great waste of money and labour entailed by sending epileptics and trained high-grade imbeciles home after the period of their training the value of their work when at

home being very little. This led him to investigate the relative value of their work while under supervision and without any assistance when at home. They had at Earlswood many cases whose work was valued at from 7s. 6d. to 15s., and even 21s. a week in the shops or on the farm. He consulted the heads of the trade departments as to the value of the work of these cases when at home, that was, without the assistance of a trained instructor, who was able to think for those under his care and thereby make up for their defects. All practically agreed that the value of the work of such cases when not under supervision would be about 10 per cent. of that done under supervision. This led him to think it possible to start an industrial colony where the educated high-grade imbecile, the feeble-minded, the epileptic, or otherwise slightly defective might receive suitable occupation and become practically self-supporting. This opinion was strengthened by the number of slightly weak-minded and epileptic persons that he found in workhouses and shelters in the East End of London, such cases being untrained, and therefore a burden to their parents and the State, although they would have been some of the most favourable cases for special instruction. He then visited schools for the blind and deaf and dumb, where he found that children could be educated to do work equal to £1 a week, but when at home their work was only worth 2s. 6d. to 3s. per week. This, he thought, showed that these cases could be made self-supporting when in suitable surroundings; and he believed an industrial colony would remedy the evil, besides preventing such cases drifting and becoming insane or criminal. This referred to State-aided cases, but his present experience amongst private patients strengthened his view of the matter. Such cases he would divide into three classes—first, those who when trained required supervision in a home; secondly, those who might be made well enough to earn a livelihood in the outside world; and, thirdly, an intermediate class who could be made practically self-supporting in suitable surroundings. For the last class he usually recommended the taking up of such things as poultry farming, dairy work, horticulture, etc.; that they should, when trained, have a plot of land where they could do useful and remunerative work under the supervision of a reliable bailiff, thereby preventing further deterioration, and improving the general health. As to medical treatment, he would reduce bromide to a minimum, but would look upon the avoidance of all forms of peripheral irritation as the most important, while general mental and physical hygiene should be studied. He would also urge that epileptic cases should be studied as early as possible with the view to surgical treatment. A large percentage of the cases in Earlswood showed signs of local paralysis, and had epileptiform seizures, the history usually being one of prolonged labour or instrumental delivery. Such cases could be benefited if operated on early in life; but the result was not usually favourable if operated on later, when the disease had become organised.

IV.—EDWIN STEPHEN PASMORE, M.D., M.R.C.P.,
Assistant Medical Officer, London County Asylum, Banstead.

DR. PASMORE said that on two points which struck him in Dr. Turner's paper he should like to speak, namely: (1) The causal factor of epilepsy; (2) Was there a cure for epilepsy? With reference to the first, Dr. Leonard Hill (whose permission he had for quoting his work) in some recent work of his had shown that there was a possibility that epilepsy was produced by a toxin. With reference to the second point, the epileptic often came under notice at a late period, but in many cases a factor might be found. A case came under his notice where the epileptic state was caused by traumatism and in which the condition disappeared after operation. The modern craze of bricks and mortar must soon end, as all our land available for asylum accommodation would be taken up. It was only a matter of arithmetic. He should therefore suggest that to all these institutions a fully equipped laboratory should be attached, so that the range of the disease might be scientifically investigated.

V. WILLIAM LLOYD ANDRIEZEN, M.D.,
Late Deputy Medical Superintendent, Darenth Asylum.

DR. LLOYD ANDRIEZEN urged the importance of classification in obtaining practical results. There were sane epileptics, epileptic idiots and imbeciles of low, medium, and high grades; there were epileptics with grave mental perversion and criminal instincts (epileptic paraphrenia), and finally there were epileptic phrenopaths in whom the epilepsy was a late symptom in life, and might often be an acquired disease. The low-grade epileptic idiots and imbeciles required the provision of custodial institutions, cheap, and managed on a large scale. They were uneducable and unproductive patients. The epileptic imbecile of higher grade and the feeble-minded epileptic required farming and industrial institutions. They were educable and trainable, and could with proper supervision be made to a great extent self-supporting, though if allowed to be in the world at large they could not earn enough to live, as their labour had too little market value. They also would tend to deteriorate and to perpetuate vice and crime, and to breed a bad progeny if living at large, and this should be preventable. Sane epileptics could be treated at home or in hospital as out-patients, according to their means. Epileptics with tendencies to violence, brutal impulsiveness, murder, and post-epileptic automatism of a dangerous kind required sequestration and careful watching. Cases of psychical epilepsy proper might be associated with scholarly ability and even artistic talent. He referred to the case of a Cambridge undergraduate recently mentioned in the daily papers, who in a state of post-epileptic automatism was wandering at large and eventually lodged in an inn, but who when his memory returned was able to go back and resume his studies. Epilepsy was very seldom curable, the ratio of cases, according to Dr. Spratling, being less than 5 per cent. Dr. Andriezen discussed the pathological changes underlying epilepsy, and concluded from his results (published in the BRITISH MEDICAL JOURNAL in 1897, On the Pathogenesis of Epileptic Idiocy and Imbecility) that cure was impossible because the lesions often began in intrauterine life. He referred to Wood's treatment with antipyrin and ammonium bromide as giving excellent results in epileptics of higher mental grade, and urged the great importance of dietetic regulation (diminution of nitrogenous extractives in the food).

THE RELATION OF THE LUNACY LAWS TO NEURO-PSYCHOLOGICAL DISEASES.

By JOHN M. MACCORMAC, M.D.Durh., L.R.C.P. & S.Edin.,
Honorary Physician to the Hospital for Diseases of the Nervous System, Belfast.

THAT some change is desirable in the laws relating to lunacy bearing upon the practice of the profession in reference to neuro-psychological disease is manifest from the hesitation experienced by most members of the profession in signing certificates on which a patient may be deprived, even temporarily, of his freedom. Indeed, unless he is singularly rash and self-forgetful, no practitioner would incur the responsibility unless he is safeguarded by some guarantee on the part of the patient's relatives or friends.

In order to be able to fully appreciate the difficulty, let me ask your attention to the following extracts from Dr. Hack Tuke's *Dictionary of Psychological Medicine*. Under the head of Medical Certificates of Insanity (Lunacy Act, 1890, Schedule 1, Form 8, *q.v.*) he says: "A medical man when asked to give a medical certificate should approach the duty with a sense of deep responsibility and with great caution, for even a most pronounced case may give trouble on recovery. The Act above quoted has made some changes in procedure and in the liability of a certifier to action. It has increased the responsibility and consequent punishment for '*mala fides*' on the part of the certifier. On the other hand the Act declares (Section XXX):

"1. A person who, before the passing of this Act has signed or carried out or done any act with a view to sign or carry out an order, purporting to be a reception order or a medical certificate, that a person is of unsound mind, and a person, who, after the passing of this Act, presents a petition for any such order, or signs or carries out, or does any act with a view to sign or carry out an order purporting to be a reception order, or any report or certificate purporting to be a report or certificate under this Act, or does anything in pursuance of this Act, shall not be liable to any civil or criminal proceedings, whether on the ground of want of jurisdiction, or any other

ground, if such person has acted in good faith and with reasonable care.

"2. If any proceedings are taken against any person for signing or carrying out, or doing any act, with a view to sign or carry out any such order, report or certificate, or presenting any such petition as in the last preceding subsection mentioned, or doing anything in pursuance of this Act, such proceedings may, upon summary application to the High Court of Justice or judge thereof, be stayed upon such terms as to costs and otherwise, as the court or judge may think fit, if the court or judge is satisfied that there is no reasonable ground for alleging want of good faith or reasonable care.

"It will be noted 'that if there be no reasonable ground for alleging want of good faith or reasonable care' the action is stayed. This provision was put into force within a few months of the passing of the Act, in the case Toogood *v.* Wilkes, when Mr. Justice Field held that there was no such reasonable ground, and stayed the action, but he also held that the onus of proving the absence of bad faith, etc., lies on the defending medical man."

The advice, given in the extract I have quoted, to approach the duty of giving a certificate with the sense of deep responsibility and with great caution, because a most pronounced case may give trouble on recovery, is worthy of the utmost attention. That a deep sense of responsbility is felt and great caution always exercised goes without saying; but when it is remembered that it is possible for a person who has been retained and treated by medical psychological experts, during a more or less protracted period in an asylum when discharged to enter an action against his medical adviser for wrongful committal, that those who are to pronounce upon the case are for the most part men whose mental training and intellectual ability do not always qualify them to form a correct judgment: further, that the onus of proof of the absence of *mala fides* is thrown upon the practitioner instead of the proof of the existence of it being demanded from the plaintiff, the indisposition to sign a certificate must, in any case, become exceedingly strong.

Then, too, the disinclination on the part of the friends or relatives of a patient to be a party to his incarceration in an asylum because of the supposed disgrace attaching to the patient or relatives, in consequence of such incarceration, is very great.

The practical effect of this is to deter both doctor and friends from taking decisive and possibly remedial action, in the early stages of mental disease, and the tendency of the law in its present state is consequently to develop such diseases, so that curative treatment may become utterly valueless.

The feeling of disgrace at the necessity for restraint or mild control, on the part of patient and friends would be vastly diminished, and soon eradicated were it always understood that the imposition of it in the early stages of disease, which act or react upon the brain, would in nine cases out of ten, be instrumental in restoring mental vigour and self-control.

When the action of various organs of the body is interfered with by gluttony or debauch, and implicit obedience to the injunctions of the family doctor, in order to restore their normal condition, becomes imperative, no disgrace is felt to be attaching to the sufferer or his friends. It would therefore seem altogether singular that molecular disturbance in the brain, with temporary mental perversions, caused possibly by an over-anxiety to meet the pressing demands of daily life, or by the courageous and perhaps hopeless effort to sustain the strain made upon the physical capacity of the individual, should be regarded as a social stigma.

Most practitioners of experience in cases of neuro-psychological disease could cite many instances, as I can, where patients have been allowed to drift from bad to worse during three, six, and even twenty-four months, without being placed under such supervision and treatment as would have been calculated to restore their physical and mental health. As Dr. Hyslop remarks: "Since no one individual reacts to circumstances in precisely the same way as any other individual, it is impossible, without full consideration of the life-history, habits, and mental characteristics, to do more than conjecture as to the nature of the mental reaction which may occur in association with any bodily disease." In this we entirely concur, and would insist that, while there is much to be said in favour of the common-place remedies of "change of air" and "change of scene," they are by no means infallible remedies or cures for the hysterical, the hypochondriacal, the melancholic, the irritable neurasthenic, or for the proliferation of morbid meningeal elements, the dilatations and thickening of cerebral arteries, and the many other causes of morbid functional and organic changes of the nervous system.

If the immense importance of the character and functions of the nervous system were more adequately conceived, the paramount necessity for preserving and maintaining its normal and healthy action would be more fully recognised, and the methods by which this is secured must be left in the hands of the ever vigilant practitioner.

From a scientific standpoint we are not justified in regarding the operations of the mind as absolute, but as relative. The body reacts upon the mind, and the mind upon the body. Hence we can comprehend how the interchange of movement or the exertion of force, the transformation, storing, and dispensing of force are under the jurisdiction of a system—the nervous system—and that force is, by the ramifications of that system, transmitted wherever and whenever necessary. Any disorganisation of the nervous system, however trifling, must, therefore, seriously affect the well-being of the individual. Recognising, then, the beneficial effects of prophylactic and early curative treatment we ought to devise means whereby we can secure legal power for the application of such remedial measures as may be necessary for the restoration of such normal powers as would secure healthy action and reaction of body and mind. The laws should be altered in such a way as would enable and empower the members of our profession to fulfil those duties which, if conscientiously performed, would materially benefit not only the patients themselves, but also society at large.

We cannot insist upon this point too earnestly. The benevolent public is ever ready to afford help for the needy, and to provide remedies for the sick and suffering; but it does not always realise the full meaning of the trite expression, "Prevention is better than cure." In cases like those to which I have referred, and which are deserving of the utmost consideration, the practical sympathy of the benevolent and parental care of the State or local authorities are urgently needed. For to anticipate and prevent calamity or suffering is a virtue of a far higher order than that which, in view of the distress caused thereby, seeks to alleviate it. As a sensible mother would seek to save her child from the agony consequent upon an incautious meddling with the fire, rather than endeavour to deaden the pain of the burn, so should intelligent society try to prevent the dire consequences of mental disease rather than connive at measures which aim at palliative instead of preventive treatment.

In a general way, then, and also in the hope that the suggestion may lead to the formation and adoption of some satisfactory and workable plan, I would recommend that at least in all our great cities supported in part by the rates there should be established hospitals in which special attention should be paid to the treatment of diseases of the nervous system, and that in each of those institutions there should be a department for the proper supervision and treatment of patients suffering from brain disturbances associated with mental disorder in its early stage. Further, that it should be competent for a medical practitioner, co-operating with the relatives or friends of a patient, to consign the sufferer for a limited period to the care of one of these institutions. In such institutions it should be the duty of the medical officer, without limiting the general liberty of the patient, to impose such conditions and restrictions on the habits, diet, and environments as may be deemed necessary in dealing with the peculiar requirements of the case. If possible, the written consent of the patient should be obtained, but when once admitted to treatment he should be submittted to a mild but firm *régime*, without the possibility of any subsequent appeal against such detention to a court of law.

As a rule relatives would not object to patients being treated for nervous diseases in such institutions as I suggest, because the stigma of having been in an asylum would not attach to them, while such prophylactic or curative treatment would probably save them from life-long incarceration.

The few cases of failure—for there would no doubt be a small

percentage of such—could be dealt with subsequently as the law permits and directs.

Difficulties, of course, lie in the way of carrying into operation a scheme of this nature; but if the principle underlying it be once conceded and approved, the development of it ought to be assured, and with its development the permanent recovery of a large proportion of such sufferers as those to whom I have referred undoubtedly secured.

Dr. SEYMOUR TUKE confessed that he was always grieved to hear the repetition of the statement that there was so great risk in medical men's signing certificates, but was glad of an opportunity to be able to state in public that there was not so great a danger as Dr. MacCormac's paper would seem to show. Speaking as John Conolly's grandson, Dr. Tuke could not help saying that he had had some experience in the matter of signing certificates, and the bringing of actions, etc., in the matter. In many years he had had experience of two actions—one in which his father was concerned—which, though amply won, yet, from the expense of its proper defence, caused some pecuniary loss; and the other (since the passing of the present Act), which was in due course stayed by the Judge in the High Court. This last caused also some pecuniary loss, though costs were given against the patient in both cases. It seemed to Dr. Tuke that some mischief was being done by this reluctance to do their manifest duty on the part of medical men, and it did seem that unless medical men who were sure of their opinion were ready to act without fear or favour, the condition of affairs, now distinctly bad, would tend to get worse. At any rate, some provision should be made in any Act whereby the patient should deposit a sufficient sum to cover the action.

Dr. LLOYD ANDRIEZEN pointed out that the existing provisions of lunacy law gave insufficient protection to medical men signing certificates, one result being a premium on the uncertified and unrestrained lunatic at large in society.

Dr. DOUGLAS remarked that the Lunacy Bill which had been twice before Parliament contained an important provision for the early treatment of incipient or doubtful cases of insanity, whereby the English law would be, if the Bill became law, similar to the Scottish in allowing patients to be placed under proper care for six months without being considered in the eyes of the law lunatics.

ORGANO-THERAPEUTICS IN MENTAL DISEASES.

By C. C. EASTERBROOK, M.A., M.D., M.R.C.P.E.,
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ORGANO-THERAPEUTICS, or the administration in disease of the tissues or extracts of healthy animal organs, dates from Brown-Séquard's classical experiments[1] upon himself with "orchitic fluid" in 1889. On these and subsequent experiments he based the physiological doctrine of "internal secretion" formulated in his own words thus:[2] "All glands and all tissues have an internal secretion; all injected subcutaneously have a tonic effect." The discovery of the thyroid treatment of myxœdema in 1891 by Victor Horsley, G. R. Murray, and others gave a great impetus to the use of animal extracts in disease. During the past ten years organo-therapy has been practised by the profession with extraordinary enthusiasm. There is now scarcely a tissue of the body, but has been administered in drug form, and the literature of the subject is enormous. This wholesale administration of animal drugs has, however, been largely empirical and unscientific; the great anxiety has been to obtain "results"; too little attention has been paid to the study of their actions in health and in disease. The result is that our knowledge of these substances has not increased *pari passu* with their use, and that those who have been disappointed with their results have become sceptical, whereas the more sanguine have found panaceas for almost all the ills that flesh is heir to. At the annual meeting of the British Medical Association in 1896 the Treatment of Mental and Nervous Diseases by Animal Extracts was discussed in the Section of Psychology. Dr. A. Robertson, in introducing the subject, referred to his own experience in these diseases, with brain extract more particularly, but also with thyroid and orchitic extracts, and the subsequent discussion centred almost wholly around the use of thyroid in insanity.

Organo-therapeutics assumes, according to Brown-Séquard's formula, that any organ may supply to the lymph and blood one or more substances or active principles which are useful or indispensable to the nutrition of the tissues, organs, or body generally. Organo-therapeutics in the insane is based on the assumption that the various organs of the body supply to the blood metabolic products which influence the nutrition of those portions of the brain which subserve mental activity. This influence of the organs upon the nutrition of the brain from the blood side is entirely to be distinguished from their influence upon its nutrition from the nervous side, that is, along the lines of the afferent system of nerve fibres, which, acting both from the body within and from the environment without, practically constitutes the mechanism for the potent "trophic" nervous supply of the cerebral centres—the mechanism which we largely take advantage of in our time-honoured methods of asylum treatment by rest and exercise, occupation and amusements, congenial surroundings, and even, perhaps, personal influence and suggestion. It is often extremely difficult to determine how much of the influence of a peripheral organ upon the working and nutrition of the brain takes place along nervous lines, and how much by way of the blood. This is a problem which the study of organo-therapeutics in the insane may help to solve. To determine the *rôle* of an organ in the bodily and mental economy, the most exact method would be to remove the organ where this was safe or possible, to note the recent and remote effects of the removal; and, finally, to see how far these effects could be relieved by administering extracts of the organ removed. While vivisection is impossible in the human subject, we constantly meet with insane patients in whom some organ has become more or less functionless from chronic disease, or has been removed for some reason or another, or has never been properly developed. In all such cases, the administration of the extract of the organ which is deficient is most likely to indicate the metabolic *rôle* of the organ in the body from the blood side, and to help in differentiating between its blood and its nervous influence upon brain nutrition.

During the past five or six years I have administered to patients suffering from the various forms of insanity, extracts of the following animal organs—the thyroid gland, the parathyroid bodies, the thymus, the pituitary body, the brain, the choroid plexuses of the brain, the spleen, the suprarenal bodies, the testes, the ovaries, the uterus, and the mammæ. With the exception of the thyroid none of these substances have been employed by alienists generally; some of them have been tried more or less extensively in insanity by a few individual physicians. Some of them do not appear from the literature to have been employed in mental diseases before; and parathyroid extract has not previously been exhibited at all in the human subject.

In the administration of these animal substances I have kept in view all along two distinct objects: First, to determine their therapeutic value: secondly, to ascertain their pharmacological actions.

I.—To Determine the Therapeutic Value of Animal Extracts in Mental Disease.

In regard to this point, a reading of the literature of organo-therapy in the insane suggests the necessity of emphasising the following cautions:

(1) The fallacy of calling a "recovery" what may be only a temporary remission of symptoms. The final verdict as to the effect produced by any extract in any given mental case, can be pronounced only after a reasonable interval has elapsed since the period of treatment, and when one is in a position to take, as it were, a bird's-eye view of the whole course of the disease, before, during, and after the special treatment. The great majority of my patients were treated in the years 1895, 1896, 1897, and 1898, and I am acquainted with their mental histories since.

(2) The fallacy of attributing to an extract mental recovery, improvement, or retrogression when these effects are in reality due to the natural course of the disease. To claim a "recovery" from the use of an extract which was administered either when the patient was actually improving at the time of administration, or before the patient had been given a fair chance to recover under ordinary methods of treatment, is obviously unscientific, proves nothing, and makes no real pro-

gress in organo-therapeutics. This flaring fallacy is only to be avoided by thoroughly applying the ordinary methods of treatment for a reasonable time before treatment by a special extract is adopted, and in the case of asylum patients a reasonable period should always be allowed to elapse from the time of admission, so as to eliminate the ameliorative and curative influences of the change of environment characteristic of our beautiful modern hospitals for the insane. In the records of recoveries of patients after the use of animal extracts, the duration of the mental illness and of its asylum treatment previous to the administration of the extract used, should always be clearly stated.

In my cases I made it an essential point to administer animal extracts only to patients whose insanity was definitely making no progress towards recovery under the approved methods of asylum treatment, or whose insanity was not merely becoming stationary, but was apparently becoming chronic, or whose insanity was definitely chronic, or whose insanity, so far as we know, was incurable.

3. The fallacy of ascribing to an extract benefit which is really attributable to psycho-therapeutics in some form or another. This comprises (*a*) the beneficial effect of the extra attention and nursing on the part of physician and nurse entailed by the treatment, an influence which is common to all forms of human therapeutics, owing to the operation of the universal law of the action of mind upon mind. It also includes (*b*) the beneficial effects of undue personal influence of physician upon patient, and of a special suggestion by the physician of the curative efficacy of the particular drug used; both of these factors are avoidable; and, further, they are obviously illegitimate, in mental more than in any other diseases, where one's object is to determine the essential therapeutic value of any particular drug used. In all my cases I administered the animal extracts without any special suggestion of their curative value, and the only persuasion ever employed was merely in order to induce the patients to take the medicines when they were unwilling to do so, as occasionally happened.

II. TO ASCERTAIN THE PHARMACOLOGICAL ACTIONS OF ANIMAL EXTRACTS IN THE INSANE.

It may be argued that one is not justified in coming to final conclusions as to the activities of animal drug substances unless they have been obtained from various animals, made up in different pharmaceutical forms, and administered by the stomach or subcutaneously or otherwise. It is obvious that such an enquiry in the case of a series of animal drugs readily surpasses the limit of individual effort. This paper, therefore, is to be regarded mainly in the light of an introduction to the study of organo therapeutics in the insane, and with the idea of forming a basis or starting-point for future observations. I have, as far as possible, maintained uniformity as regards the source of each animal extract used, the form of its preparation, and the site of its administration. The source of the drug was the sheep in all cases, except the parathyroids, which were more conveniently obtained from the ox. The form of preparation employed was the "tabloid" in all cases, except the parathyroids, which were dissected and prepared by myself. In the case of thyroid extract other preparations were used in addition to the tabloid. In the case of the testes and ovaries I had previously administered the raw glands to a few ordinary hospital patients, but found that they were more apt to produce nausea and gastric disturbance than the dried extracts of these organs. In all cases fresh tabloids were obtained directly from Messrs. Burroughs, Wellcome, and Company, who inform me that they "are made of the whole substance of the glands or other bodies, dried at a uniform temperature of 100° F., and with the addition of a percentage of sodium chloride, lightly compressed." The site of administration in all cases was the stomach, but parathyroid extracts were also injected subcutaneously. It is obvious that the method of stomach administration was by far the most convenient, and it was the mode adopted in all cases, mainly in order to secure as uniform conditions as possible for comparing the actions of the various extracts used. It is open to the objection that the activity of extracts of animal organs may be destroyed by gastro-intestinal digestion, an objection which certainly does not hold good in some cases, and which also in most cases would seem to be overcome by giving relatively large doses. The obvious discomfort and inconvenience to the patient, especially an insane patient, of the hypodermic method repeated twice or thrice daily, sometimes for weeks, and the undoubted difficulty of carrying out this method with all its details of preparation and administration for prolonged periods with perfect asepsis, were potent objections to its employment, especially where one was desirous of investigating a comprehensive series of the animal extracts, and of avoiding as far as possible any experimental error.

THE METHOD OF PROCEDURE ADOPTED IN THE ADMINISTRATION OF THE ANIMAL EXTRACTS, WITH SPECIAL REFERENCE TO THE CLINICAL INVESTIGATION OF METABOLISM.

Each patient was weighed, put to bed, and given a fixed mixed diet sufficient to maintain the body temperature and body weight at their usual levels. In the course of the first few days, during which the patient's condition was becoming stable under the circumstances of rest and diet, a careful note was made of the state of the bodily and mental functions, including investigations of the pulse, blood, and urine and other excreta. The extract was generally commenced on the fifth day in bed, and during its administration daily observations were made as before. In due course the extract was stopped, observations were continued for a few days afterwards, and finally the patient was weighed and allowed to be up and about and to return to ordinary diet and mode of living. In most cases the patient was weighed weekly during treatment and for a month after its cessation. The observations before, during, and after each administration embraced in every case as far as possible all the systems of the body, and the effects of the extracts upon the metabolism, blood, and pulse were specially investigated. Wherever a quantitative element was present in the observations—as in the daily records of the temperature, the frequency of the pulse, respiration, and motions, the daily estimations of the urine, and the counting of the blood corpuscles—an average was taken of the readings before, during, and after each drug administration respectively, the average readings being more likely to represent the facts than the reading on any particular day or days.

I. *The Clinical Investigation of Metabolism.*—Food and work being the chief disturbing factors of metabolism, the conditions of a fixed mixed diet and rest in bed were indispensable. Under these conditions the disturbing factors are made constant, metabolism "strikes a balance" with definite readings for the elimination of water, carbonic acid, urea, and other metabolic products, and by the introduction of drugs into the system it is possible to alter these readings and so to upset or influence in some way the metabolic equilibrium.

At the commencement of treatment the constituents of the dietary[3] were chosen, usually in conjunction with the patient, and the quantities of the constituents selected were fixed for each meal and were rigidly adhered to during the whole period in which the metabolism was under observation. Solid constituents were weighed by scale, and semi-solids and liquids were measured in specially-marked vessels. The diet contained in suitable quantities the necessary alimentary principles:—

(*a*) *Proteids:* These alone go to form the living tissue or bioplasm of the body, and are also a source of the bodily energy. The body proteids, organised (that is, bioplasm) and unorganised, in the course of their metabolism are split up into a nitrogenous part (one-third) which is not oxidised and escapes as urea, and a non-nitrogenous part (two-thirds) which may become fat or carbohydrate, but is eventually oxidised and escapes as carbonic acid, water, phosphate and sulphate.

(*b*) *Fats and Carbohydrates.*—These are the main source of the bodily energy. They are completely oxidised, and escape as carbonic acid and water.

(*c*) *Salts and Water.*—These are largely inert—seem to play the *rôle* mainly of providing a suitable vehicle for the other constituents of the food and a suitable medium for the changes which take place in them in the tissues, and they escape in the urine unchanged. According to the modern views of metabolism,[4] the protoplasm of the cells of the body consists on the one hand of bioplasm ("organised proteid"), which is the only living constituent of the cell, and, on the other hand, of several non-living constituents lying in contact with the

bioplasm, namely, the "unorganised proteid," which is the immediate source of nourishment of the bioplasm, the fat and carbohydrate which are the immediate source of the energy of the cell, and the salts and water which mainly provide a suitable medium for the other constituents. The bioplasm, acting probably much in the same way as an organised ferment, by "contact action" regulates all the physico-chemical changes of metabolism in the other constituents and *pari passu* is itself metabolised. Clinical evidence of the state of the metabolism was obtained directly from the condition of the excreta and the organs of elimination.

(1) *The Urine.*—The twenty-four hours' discharge was collected daily, carefully mixed and measured, and examined fresh the next morning. The physical characters were noted in the usual way. The presence in apparent excess of urates as indicated by the clearing up on boiling, and the presence of the chromogens of indigo-red and urorosein, as indicated by the red coloration on the addition of strong nitric acid, were also noted, but the further investigation of these substances was not attempted. Quantitative estimations of the uric acid and of the alloxuric bodies were not made, the main reason, apart from that of unduly burdening the investigations, being that most of the extracts employed are rich in the precursors (nucleins) of these substances. The presence of albumin, blood, sugar, bile, and pus was tested for in every instance. In my experience in cases of insanity tending to become stationary or chronic, or to go downhill, glycosuria is rare, but slight degrees of albuminuria are common and more so than in recent insanity. The tests employed were for albumen, boiling with the addition of strong nitric acid, and in doubtful cases the picric acid test; and for sugar, Trommer's test; and in doubtful cases the phenyl-hydrazin test. The daily estimations of the urine included:

(*a*) The total daily quantity, measured in ounces.

(*b*) The total dissolved solids estimated in the rough by multiplying the daily number of ounces of urine by the last two figures of the specific gravity, this giving a rough comparative estimate of the number of grains of total solids excreted in the 24 hours.

(*c*) *The urea*, estimated by the hypobromite method with Gerard's ureameter. Urea is the chief organic solid of the urine, varies in amount directly as the total nitrogen excreted from the body, and so is a reliable index of total proteid metabolism. The hypobromite method liberates 94 per cent. of the nitrogen in the urine (more if sugar be present), and so is sufficiently accurate clinically for comparative observations in any individual case.

(*d*) *The phosphates*, estimated by the uranium method with potassium ferrocyanide as indicator. The phosphates have a special relationship to central nervous metabolism, and in my experience phosphaturia is the most common morbid condition of the urine in recent insanity, and probably indicates an undue metabolism of the "phosphorised constituents" or so-called "azotised fats" (for example, protagon and lecithin) which are especially abundant in the grey matter, and possibly by "contact action" of the living proteid of the nerve centres are the main source of nervous energy. In several cases of acute mania I have observed a marked increase of the phosphoric acid in the urine.

(2) *The respirations* of the patient under the conditions of rest and diet, and with lungs previously ascertained to be healthy, afforded the only clinical evidence available (without the actual use of a respiration chamber) of the rate of the ingestion of oxygen and of the excretion of carbonic acid. Under the conditions, the "outer respiration" may probably be taken as a fairly reliable index of the "inner respiration" or tissue oxidation, a clinical point which I think is not sufficiently realised. It is essential that the respirations be very carefully counted.

3. *The Sweat and Action of the Skin.*—The sweat is usually said to consist of water with 1 to 2 per cent. of solids, of which the organic are twice or thrice as abundant as the inorganic. There is no doubt, however, that as soon as the skin breaks into perspiration its excretion of carbonic acid at once rises, as Schierbeck has shown, and so also does its elimination of urea, a considerable quantity of which may be lost in this way. The latter is a matter which I have specially investigated in relation to metabolic problems and described elsewhere.[5] Hence, when free perspiration is produced by exercise or by drugs, the extra sweat lost means an increased elimination by the skin of water, carbonic acid, and urea.

4. *The Fæces and Action of the Bowels.*—The quantity of carbonic acid present in intestinal gas is too trivial for consideration in metabolic problems. Similarly urea is ordinarily absent or negligible in the fæces, the nitrogen in the latter being derived mainly from undigested food stuffs. The water in the fæces on a mixed diet usually amounts to 2 or 3 ounces per stool, the quantity depending entirely upon the length of time the fæces remain in the bowel subject to the process of absorption, and never seriously affecting the output of water from the body without at the same time altering the naked eye character of the stool, which therefore was alone kept under observation. Other substances in the fæces were not examined.

In addition to the condition of the excreta and organs of elimination, which give the most direct clinical evidence as to the state of the metabolism, the body temperature, body weight, appetite, primary digestion, and sleep, are all points which have special bearings on the metabolism, and which consequently were kept under special observation during the administration of the various extracts. Dyspepsia and insomnia had always been corrected as far as possible before treatment by animal extracts was adopted.

II. *The Investigation of the Blood and Pulse* included estimations of the hæmoglobin with a Gowers's hæmoglobinometer, and of the corpuscles with a Thoma-Zeiss hæmacytometer, and in some cases film preparations of the blood were made according to Gulland's method,[6] in which the films are first fixed and stained in a mixture of absolute alcohol, ether, corrosive sublimate, and eosin (which stains the hæmocytes), and then after washing are counterstained in methylene blue (which stains the leucocytes and blood plates). Tracings of the radial pulse with a Dudgeon sphygmograph were taken in many cases, and observations of the brachial blood pressure with a Hill and Barnard's sphygmometer were made in a few cases.

Thyroid Extract (130 Cases).

The thyroid gland arises in the embryo much in the same way as a simple gland, and is developed from the pharyngeal hypoblast (the alveolar epithelium) and mesoblast (the stroma).

The solids of the thyroid—or, in other words, dried thyroid extracts—consist, with the exception of small quantities of inorganic salts, extractives (organic acids and nuclein bases), and albumen, mainly of nucleo-proteids, and so are rich in nitrogen and phosphorus. Several active principles have been described, and it is possible that more than one exists, but there is little doubt now that the main active principle of the thyroid is iodothyrin (Roos and Baumann), a non-proteid body containing iodine, occurring, as Hutchison has show, in the colloid matter, and in the natural state combined more or less with proteid, which is not essential to its action.

In mental diseases thyroid extract was first administered in two cases of myxœdematous insanity by J. Macpherson[7] and by Melville Dunlop,[8] who each obtained a cure both of the myxœdema and the insanity. In 1894 M'Claughray[9] exhibited thyroid in two cases of insanity with goitre, and obtained amelioration of the mental condition; and in 1895 Reinhold[10] in 12 cases of insanity with goitre obtained improvement as regards the goitre only.

In 1893, however, L. C. Bruce and S. R. Macphail[11] found that they could produce a feverish condition in their insane patients by giving thyroid extract in full physiological doses, and hoping to simulate Nature's occasional method of cure of insanity by an attack of fever, they applied this method of treatment to the insanities generally. Their efforts met with such success as to attract the notice of alienists generally. Bruce[12] in his subsequent papers was inclined to attribute the beneficial effects of thyroid in insanity not only to its general stimulation of nutrition as after fever, but also to a specific excitant action on the brain cortex. Since the original papers of Bruce and MacPhail many physicians have published their results of thyroid treatment in insanity. The recoveries vary from 0 to 50 per cent. in the different records, and recently two American physicians, Mabon and Babcock,[13] have given a summary of over a thousand cases collected from the literature and elsewhere, and yielding the following results:

	Recovered.	Improved.	Unimproved.
1. Published cases (from the literature)	Per Cent. 23.9	Per Cent. 29.4	Per Cent. 46.1
2. Unpublished cases (in American Asylums)	9.8	18.5	71.6
3. Authors' own cases	19.8	26.2	54.0

Collectively the 1,032 cases yield 16.8 per cent. recovered, 24.0 per cent. improved, and 59.2 per cent. unimproved.

Notwithstanding these very fair results, alienists on the whole are at present somewhat disappointed with their experience of thyroid treatment in insanity, and recently J. Shaw [14] has expressed this feeling in somewhat pessimistic terms by saying that "thyroid can hardly, after some years' trial, be said to be reliable (in insanity) except in myxœdematous and cretinoid cases, but it appears to act well in melancholia and stupor."

In reading over the published cases which, we may take it, are more often the good than the poor results, I feel convinced that many of the recoveries reported were not true tests in the sense that thyroid was employed when there was still a good chance of recovery by the ordinary methods of treatment. To administer thyroid in a hopeful and curable case of insanity of only two or three months' total duration, or when it has been hardly a month under asylum treatment, yields an unduly high percentage of recoveries, gives no indication of the real therapeutic value of thyroid in insanity, will lead to disappointment in intractable cases, and possibly to disparagement of a useful drug.

I have administered thyroid extract in 130 cases of insanity, a larger series than has hitherto been published by one individual. All the patients (85 females and 45 males) were suffering from insanity which at the time was stationary or chronic or incurable. The following are my results, necessarily stated, from the limits of this paper, in the briefest manner.

PHARMACOLOGY.

Of the 130 different patients treated 22 were given thyroid on more than one occasion—namely, 17 patients twice, 3 patients thrice, 1 patient four times, and 1 patient five times. There were thus in all 160 separate administrations of the drug. Of these 120 were with large doses, 10 with moderate doses, 20 with small doses, and 10 with commencing small doses, gradually increased to moderate or large.

The forms of thyroid extract used were the official preparations "liquor thyroidei" and "thyroideum siccum," Hutchison's colloid powder ("thyrocol"), and in the majority of cases the "thyroid tabloid." These are all obtained from the sheep, and in my experience all are capable of producing undesirable effects upon heart, stomach, and nervous system—effects which are therefore probably due not to useless products, but to the iodothyrin which they contain. As regards their relative activity in the insane, I find that a sheep's gland (which weighs on an average 60 grs.) = 100 minims liq. thyroid = 50 grs. thyroid sicc. = 60 grs. thyroid tabloid = 20 to 15 grs. thyrocol.

I.—LARGE DOSES (120 CASES).

In the case of large doses the equivalent of a sheep's gland was given daily for a week—for example, four tabloids (=20 grs.) thrice daily. Sometimes two-thirds of a gland were given daily to begin with; sometimes the daily dose was increased to a gland and a-half. The characteristic effects of these large doses of thyroid in my cases were as follows:

1. *Pyrexia.*—Absent in 15 per cent., present in 85 per cent., being "subfebrile"—that is, a rise of 1° to 2° F. above the previous average temperature—in 70 per cent.; "slightly febrile"—a rise of 2° to 3° F.—in 12 per cent.; and "moderately febrile"—a rise of 3° to 4° F.—in 3 per cent. Of the "subfebrile" cases, 50 per cent. were good reactions—that is, a more or less continuous pyrexia of between 1° and 2° F.

2. *Loss in Weight.*—Constant in all cases weighed within four days of the cessation of the drug, and amounting on an average to 6 lbs., or nearly at the rate of 1 lb. a day during the week of the drug. The loss was usually followed by a gain in weight, which did not set in till after the cessation of the drug. The gain was not so rapid as the previous loss, but usually exceeded it in amount, and was often remarkable. One patient who lost 6 lbs. during the week of treatment made the extraordinary gain of 46 lbs. in the following nine weeks.

3. *Integumentary System.*—Increased perspiration and hyperæmia, followed by desquamation and a healthier appearance of the skin were common. Previous skin eruptions—as acne—were not benefited. In one case urticaria appeared after the taking of the drug. The subcutaneous fat was obviously diminished.

4. *Locomotory System.*—The bones, joints, and muscles showed no clinical changes apart from nervous symptoms.

5. *Hæmopoietic System.*—Pallor was common, but the changes in the blood were not constant. Diminution of the hæmoglobin was the most frequent change, decrease of the red corpuscles came next in frequency, and a slight degree of leucocytosis was often present. The thyroid gland and spleen were not apparently affected in size.

6. *Nervous System.*—Sensory symptoms, in the form of pains and tinglings in various parts, were common. Motor tremors and ultimately weakness were also common. The superficial and deep reflexes in a few cases were increased. Trophic power was temporarily reduced in a few cases, as evidenced by a tendency to the formation of boils. Mental excitement during the drug was common, varying from quiet talkativeness and restlessness to noisy scolding and impulsive acts and even violent behaviour. Several melancholic and stuporose patients became temporarily maniacal. Sleep was not specially affected.

7. *Circulatory System.*—Palpitation and fainting occurred in a few cases. The pulse was invariably increased in rate, usually by 30 or 40 beats, and became softer, and finally it became weak and irregular, and gave the signal to stop the drug in the majority of cases. The increase in pulse-rate was nearly always the earliest symptom of reaction to the drug, and it was usually distinctly recognisable on the second day. Thyroid was well borne by patients with valvular disease of the heart, but very badly by those with fatty heart disease. In all those cases, however, in which large doses of thyroid were given to the subjects of cardiac disease, the patient in addition to being treated at rest in bed was given alcohol and cardiac tonics as a precautionary measure. Pulse tracings showed distinct evidence of diminished tension (namely, a sharper crest, diminished predicrotic wave, and increased dicrotic wave), and that the lowering of blood pressure was, in part at least, due to an increased laxity or dilatability of the arterial wall, as Oliver has maintained,[15] was indicated by the fact that, notwithstanding the undoubted weakening of the heart's action by thyroid, the height of the ascent of the curve remained as long as before or was increased. Sphygmometric readings indicated a diminution in blood pressure, amounting in various cases to from 40 to 80 mm. Hg.

8. *Respiratory System.*—The respirations were increased constantly, usually by 6 per minute. This means a marked increase of tissue respiration in the twenty-four hours, possibly almost to the extent of a fourth of its previous level. I found thyroid borne well by patients who were tuberculous in constitution, as evidenced by gland cicatrices and other signs of the diathesis. In no patient with actual phthisis, either in a quiescent or in an active form was the drug given. In such cases, as in all wasting diseases, the exhibition of thyroid in large doses is undoubtedly contraindicated.

9. *Alimentary System.*—The appetite was usually diminished during the drug, but considerably increased afterwards. Thirst was commonly increased towards the end of treatment. The action of the bowels in my cases was not notably affected. In 25 per cent. of cases thyroid dyspepsia occurred, necessitating the stoppage of the drug in 10 per cent. I think there is little doubt that the dyspepsia is of the nature of a catarrhal irritation produced by iodothyrin, and possibly by its iodine.

10. *Urino-generative System.*—Menstruation was frequently more profuse than usual during treatment; in three patients it appeared irregularly, and in one amenorrhœic adolescent it reappeared. In several patients with uterine fibroids or cystic ovaries thyroid in large doses produced no apparent

benefit of the disease. The urine: The daily amount was usually increased, the increase varying to some extent inversely with the perspiration, but amounting to about a fifth of the previous average daily quantity, for example, from 40 to 48 ozs. Colour and turbidity were usually increased, but the deposit of mucus and the odour were not noticeably altered. The reaction was invariably acid. The chromogens of indigo-red and urorosein were usually more distinct. Uraturia was common both before and during treatment, and indicated a previous sluggishness in the metabolism of the patients, and also an increased elimination of the nitrogenous transition products by thyroid in large doses, such as occurs during fever or exercise. The increased uraturia during thyroid treatment by dry extracts is also probably in part due to the formation of uric acid from the nucleo-proteid in the extract. Slight transitory albuminuria was produced in 10 per cent. of the cases. Choluria occurred in a few of the cases with marked thyroid dyspepsia. Glycosuria was not produced in a single case. Hæmaturia (except that of menstrual origin) and pyuria did not occur. The total dissolved solids were markedly increased, the increase amounting generally to a fourth of the previous average daily quantity, for example, from 1,000 grs. to 1,250 grs., but varying in different cases from an eighth to a third. The urea similarly was much increased, usually by a fourth of its previous quantity, for example, from 400 to 500 grs. daily, but varying from a sixth to a third in different cases. The phosphoric acid was also markedly increased, especially during the earlier period of treatment, the increase amounting usually to a third of its former average level, as from 39 to 52 grs. daily, but varying in different cases from a fourth to a half. The increased phosphoric acid is probably in part derived from the metabolism of the nucleo-proteid of the dry extract.

Moderate and Small Doses (40 Cases).

Moderate doses, equivalent to one-half of a sheep's gland, continued daily for two weeks as a rule, but sometimes for a week or a month, were given in 10 cases; and in 20 cases small doses were given, equivalent to from one-quarter to one-sixth to one-twelfth of a gland daily, continued for from one to three months. In these cases the physiological effects produced were essentially similar in kind to those produced by large doses, differing usually only in degree. Thus pyrexia was absent in about one-third of the cases with moderate doses, and in about one-half of the cases with small doses, and when present it was subfebrile and a poorer and more irregular reaction than the typically good subfebrile pyrexia with large doses. Loss in weight was not constant; when present it was more gradual, steadily progressive, and sometimes considerable. Similar but less marked changes occurred in the skin. The blood usually exhibited no changes. Mental excitement in mild degree was not uncommon. The pulse was nearly always increased by about 10 to 20 beats, with small and moderate doses respectively, and although it became softer it was not specially weakened. The respirations were usually slightly increased. Dyspeptic symptoms were rare; 4 of the patients had carcinoma of the lower lip, œsophagus, pylorus, and pancreas respectively, and small doses produced no amelioration except curiously in the pyloric case, in which there occurred a disappearance of the gastric symptoms, an increase in weight, and a continuance of good health for two years, when fatal hæmorrhage supervened. The nature of the case was confirmed *post mortem*. In a cretinoid idiot of 21, who was receiving one tabloid daily, menstruation occurred for the first and only time on the twenty-sixth day of treatment. The total solids, urates, urea, and phosphates of the urine were increased, but not so markedly as in the case of large doses.

Conclusions.—The preceding phenomena in my cases indicate that thyroid extract in the insane acts as a powerful metabolic stimulant, that is as a katabolic stimulant, for in man, as in all animals, metabolism is characterised by its katabolic phase, or the splitting up and oxidation of the complex tissue substances. The increase in the excreta under the conditions of rest and diet is so great as to suggest that iodothyrin is a specific stimulant of general cell metabolism. If one might form a rough idea of what happens when one sheep's gland is administered daily for a week to an insane patient, I would say that the daily loss in weight of nearly a pound was made up of about half an ounce of organic and inorganic solids (by the kidneys mainly), two ounces of carbonic acid gas (by the lungs mainly), and the rest in the form of water by the kidneys, skin, and lungs. The incidence of this loss falls mainly upon the fats of the tissues, probably because the fats (and amongst these are probably to be included the so-called azotised fats or phosphorised constituents of the nerve centres) are the most fluctuating and unstable of the body-stuffs. The proteids are probably the most stable of the tissue substances, for, according to Voit, they are metabolised daily to the extent of only about 1 per cent. of their substance. The tissue proteids, however, do not escape during thyroidism, for the nitrogenous waste in the urine is much increased, and is much more than can be accounted for by the proteid present in the extracts employed. While thyroid extract powerfully stimulates the general cell metabolism, it is probable that the early quickening of the pulse in practically all cases (which in the want of a better explanation is probably due to a stimulation of the acceleratory sympathetic centre in the medulla), the early occurrence of sensory, motor, and mental excitations, followed sometimes by symptoms of temporary nervous exhaustion where the drug has been pushed too far, and possibly the early increase of phosphorus in the urine, all point to a special affinity of the drug for the nerve centres. I may mention that I fed two rats on porridge and water, poisoned one with thyroid extract, which was mixed with the daily meal, and killed the other instantaneously on the day on which the poisoned rat died; and that while the brain cells of the healthy rat were normal in appearance, those of the thyroidised rat showed distinct and marked chromatolysis. Berkeley of Baltimore[16] found no such changes in mice and guinea-pigs poisoned with thyroid.

Toleration of Thyroid Extract.—Small and moderate doses were tolerated well by all. In the case of large doses the drug was borne badly by those under 20 years, and much more so by those over 60, the former showing a special tendency to lose much weight, the latter to exhibit failure of the pulse. Possibly the explanation of this is that in the old the thyroid gland is feebly functional and the system therefore is not accustomed to much thyroid secretion, whereas in the young, apart from a greater instability of metabolism, the gland is freely active, and the body, therefore, probably already has a good supply of iodothyrin. It is often said that young people are thin because they are growing rapidly. Hertoghe, of Antwerp,[17] has suggested that both the thinness and the rapid growth are due to an unduly active thyroid gland. The drug in large doses was also badly borne by patients who were emaciated or tending to lose weight, and even more so by obese patients, especially those in whom there was reason to suspect fatty degeneration of the heart. In all these cases, therefore, the drug when indicated therapeutically in the insane, should be given at first in small or moderate doses.

Therapeutics.

The 130 patients treated suffered from the following varieties of insanity: Congenital (1 cretinoid idiot, 1 epileptic imbecile, and 3 congenital imbeciles); pubescent (2 maniacs); adolescents (5 maniacs and 3 stuporose melancholiacs); chronic insanity originally "adolescent" in onset (9 dements, 1 monomaniac, 1 chronic maniac, and 1 *folie circulaire*); masturbational (4 melancholiacs); hysterical (2 melancholiacs); gestational (1 melancholiac); puerperal (5 stuporose maniacs and 3 melancholiacs); lactational (3 melancholiacs); chronic insanity originally "child-bearing" in onset (1 chronic melancholiac, 2 chronic maniacs, and 2 dements); myxœdematous (2 melancholiacs); post-influenzal (3 melancholiacs); "phthisical" or tuberculous (1 melancholiac and 1 maniac); syphilitic (1 melancholiac); alcoholic (8 melancholiacs); chronic insanity, originally "alcoholic" in onset (1 dipsomaniac and 1 monomaniac); general paralytic (7 patients); traumatic (1 melancholiac); idiopathic insanity, that is insanity apparently due to bodily wear and tear and mental worry or shock, and similar obscure causes (15 melancholiacs and 7 maniacs); chronic insanity originally "idiopathic" in onset (3 monomaniacs, 1 chronic maniac, 1 *folie circulaire*, and 1 dement); climacteric (18 melancholiacs and 4 maniacs); and senile insanity (4 melancholiacs).

The table (p. 818) shows the results at a glance.

Variety of Insanity.	Males.	Females.	Recovered.	Improved.	Unimproved.
1. Congenital (5)	2	3	0	0	5
2. Pubescent (2)	1	1	0	0	2
3. Adolescent (8)	2	6	1 M.	3 F.	4
With chronic cases (12) ...	4	8	0	2 F.	10
4. Masturbational (4)	4	0	1 M.	1 M.	2
5. Hysterical (2)	1	1	0	0	2
6. Insanity of childbearing (12)	0	12	4 F.	5 F.	3
With chronic cases (5) ...	0	5	0	1 F.	4
7. Myxœdematous (2)	0	2	1 F.	0	1
8. Post influenzic (3)	1	2	0	0	3
9. "Phthisical" (2)	1	1	0	0	2
10. Syphilitic (1)	1	0	0	0	1
11. Alcoholic (8)	6	2	0	5 (4 M. 1 F.)	3
With chronic cases (2) ...	1	1	0	0	2
12. General paralysis (7) ...	5	2	0	0	7
13. Traumatic (1)	1	0	0	1	0
14. Idiopathic (22)	11	11	3 (1 M. 2 F.)	4 (3 M. 1 F.)	15
With chronic cases (6) ...	3	3	0	0	6
15. Climacteric (22)	1	21	2 F.	6 F.	14
16. Senile (4)	0	4	0	1 F.	3
Totals	45	85	12 (3 M. 9 F.)	29 (9 M. 20 F.)	89

Hence out of 130 patients treated, 12 recovered, 29 were improved, and 89 were unimproved. Twelve recoveries out of 130 cases is just over 9 per cent. If, however, the obviously incurable cases be eliminated, namely, the 30 "congenital" and "chronic" cases in the above list, there remain 100 cases with 12 recoveries, or 12 per cent. of recoveries for all cases of insanity which were not hopeless but were found to be intractable by ordinary methods. In the case of the 45 males, if we eliminate the 10 incurable cases, there remain 35 cases with 3 recoveries, or only 8.5 per cent. In the case of the 85 females, if we eliminate the 20 incurable cases and the myxœdematous case that recovered, there remain 64 cases with 8 recoveries, or 12.5 per cent. of recoveries of ordinary intractable insanity. My experience, therefore, indicates that the thyroid treatment of insanity is more efficacious in women than in men, and from the above table it will be seen that the best all-round results were obtained in the insanities connected with childbearing. My results may thus, perhaps, indicate that the thyroid gland is functionally more active in woman than in man. Anatomists and physiologists inform us that the gland is somewhat larger in women than in men, and that it often enlarges during menstruation and pregnancy. I have come across no rational explanation of this physiological enlargement of the thyroid during menstruation and pregnancy, but would suggest that it is either a provision of Nature to supply more thyroid secretion for the development of the embryonic tissues in their earliest stages, or more probably that it is an expression of the response of the thyroid to the demand of an increased maternal metabolism, affecting more particularly the uterus and also, in cases of pregnancy, the mammæ.

All my recoveries were test cases in the sense that previous treatment had been well tried, but had failed. None of them relapsed. The duration of asylum treatment before thyroid administration averaged eight months for the cases that recovered. The patients' ages varied from 20 to 46, but were mostly between 20 and 30. The recoveries included 1 adolescent stuporose maniac (male), 1 masturbational stuporose melancholiac (male), 3 puerperal stuporose maniacs, 1 lactational simple melancholiac, 1 myxœdematous stuporose melancholiac, 1 idiopathic stuporose maniac, 1 idiopathic stuporose melancholiac (male), and 1 idiopathic simple melancholiac, and, finally, 2 climacteric simple melancholiacs. Hence, as regards the mental states at the time of treatment, of the 12 patients who recovered 8 were stuporose (5 being of the secondary or maniacal type, and 3 of the melancholic type), and 4 were in a state of simple melancholia. Large doses of thyroid were used in every case of recovery. I have had no case of recovery (except the myxœdematous patient) with small or moderate doses. This seems to indicate that it is the briskness and intensity of the metabolic reaction produced which is the valuable effect of thyroid in large doses in insanity, and I am inclined to think, from the clinical type of case which is most commonly benefited by thyroid, as well as from the condition of the urine during thyroidism, that the drug owes much of its value to its power of clearing out of the system various transition and probably toxic products of metabolism. All the patients who recovered reacted well to the drug, the test of the reaction being the loss in weight rather than the pyrexia, and more particularly the subsequent gain in weight. The average loss in weight was 7 lbs. and the average gain in weight afterwards was 14 lbs. in the patients who recovered, and usually the physical improvement preceded the mental, though sometimes these occurred *pari passu*. Physical improvement was present in all the patients who recovered or improved mentally, and also in nine of those who were unimproved. It was evidenced in all cases by the subsequent gain in weight over that prior to treatment, and also in many cases by a healthier appearance of the skin. Five of the 130 patients treated who were either improved or unimproved by thyroid at the time, but who did not recover by its use, finally made good recoveries. They suffered respectively from adolescent, puerperal, alcoholic, idiopathic, and climacteric insanity. This indicates that a patient who is not cured by thyroid may still recover by other means. At the same time, in my experience, if a patient is going to recover by thyroid treatment at all, recovery will occur at the first administration of the drug in large doses. In 22 patients to whom the drug was given on more than one occasion, not a single recovery was secured. Thyroid extract at the same time has its uses in chronic insanity. Thus many patients who are becoming demented are temporarily improved in expression, talk, and habits. In *folie circulaire* I can corroborate the experience of Bruce,[18] who has found the drug useful in aborting the maniacal attacks. No ameliorative or rousing effect occurred in one case in which I gave the drug during the melancholic phase. Similarly in chronic mania of distinctly recurrent type I have found the attacks aborted by large doses of thyroid. The essential point is to give the drug early, before the attack becomes established, otherwise it is more likely to aggravate the storm than to calm it. In these cases, also, I think that thyroid probably acts by freely stimulating the metabolism, and ridding the economy of transitional and toxic products.

PARATHYROID EXTRACT (3 CASES).

The parathyroid bodies, four in number, one pair (inner and outer) being in relation to each lateral lobe of the thyroid gland, arise in development with the thyroid, but become differentiated from it later. For a long time after their discovery by Sandström in 1880 they were regarded as embryonic thyroid residues which could take the place of the thyroid in the economy either by vicarious action or by actual development into thyroid tissue. During the past four years, however, the experimental work, more particularly of Vassale[19] and Generali in Italy, of Gley in France, of Blumreich and Jacoby in Germany, and of Welsh[20] in this country, has drawn considerable attention to them, the Italian and French observers asserting that removal of the parathyroids alone gives rise to a group of symptoms (tetania) which are said to be the same as or similar to the acute neurotic effects of thyroidectomy in animals, whereas the German observers state that one and all of the parathyroids may be removed without ill effects. The experimental evidence is at present, therefore, very conflicting; but it raised the question that the activities of thyroid preparations might be due to an admixture of parathyroid, and so it occurred to me that light might be thrown upon the matter from the pharmacological aspect by the administration of parathyroid extract which had not previously been exhibited in the human subject.[21] The chemistry of the parathyroids is unknown. The ox being the most convenient animal from which to obtain a sufficient supply of these small bodies, I had the freshly-killed tissues (thyroid, windpipe, and gullet) sent to me daily from the slaughterhouse, and I dissected out the "external parathyroids" only, these being anatomically separate from the thyroid, and not, like the "internal bodies," incorporated with the larger gland. In the fresh state the external parathyroids of the ox weigh from half to one grain each.

Parathyroid extract was administered to three female patients—a case of phthisical insanity of the delusional mania type, a case of general paralysis, and a case of climacteric

melancholia. In the first case the extract was given in the fresh and in the dried state by the stomach and in glycerine extract form hypodermically, in daily doses of from one to three glands in the case of each of the three preparations, the treatment being maintained for three weeks. In the second case extracts in glycerine, in sulphuric ether, and in 10 per cent. sodium chloride were injected hypodermically, the daily doses in the case of each extract being equivalent to from one to four glands, and the treatment being continued for seven weeks. In the third case glycerine extracts were given hypodermically for a week, containing in each daily dose from one to nine fresh glands, or more parathyroid than would be found associated with two thyroid glands in the whole animal.

The pharmacological effects were practically negative, with the exception of a slight increase in pulse tension. There was no pyrexia, no loss in weight, no increase in the rate of the pulse or breathing, no increase in the urinary water, nitrogen, or phosphoric acid, no mental change, in short, none of the symptoms of thyroid feeding. In the third case the patient was given thyroid extract a few days later and reacted markedly to the drug, thus proving conclusively that thyroid extract does not owe its activity to parathyroid.

The therapeutic results of parathyroid in the three cases were negative, but the slight increase in the pulse tension suggests that it may act like the pituitary or the suprarenals in the economy.

Thymus Extract (2 Cases.)

The thymus arises from hypoblast and mesoblast, but as development proceeds the hypoblastic elements ("concentric corpuscles") seem to be entirely overshadowed by the mesoblastic ("thymus cells"), and the mature gland practically consists of lymphoid tissue. The solids of the thymus (as in dry extracts) consist largely of proteids and proteid-like bodies. The proteids are mainly nucleo-proteids and so are rich in phosphorus, but cell-globulins and cell-albumin also occur. Nuclein or alloxuric bases, namely, xanthin and adenine, are relatively more abundant than in other glandular organs. Iodine also is present.

I have administered thymus extract in tabloid form by the stomach in two cases of insanity, both males, one a case of idiopathic melancholia of resistive type and the other a case of general paralysis. The doses given in both cases varied from 60 grs. (=12 tabloids) on the first day to 90 grains on the second day, to 120 grs. on the third day continued for a fortnight, each patient receiving in all during this period 1,590 grains of the dry extract.

Pharmacologically.—The temperature rose $\frac{1}{2}$°F. above its previous level in both cases. There was a loss in weight of 6 lbs. in the general paralytic and of 5 lbs. in the melancholiac during the first week of the drug; but during the second week both patients regained what they had lost and the melancholiac gained an additional 5 lbs. after the cessation of the treatment. The skin became less healthy in appearance during the initial loss in weight, but after this it became clearer and better nourished-looking than before. The pulse became somewhat softer but was unaffected in rate. The respirations were increased very slightly, the bowels were unaffected in the general paralytic, but in the melancholiac they became regular in action during the second week of treatment. The average daily amount of the urine was distinctly increased in the general paralytic and slightly diminished in the melancholiac. The total daily solids were slightly increased in the general paralytic and slightly diminished in the melancholiac. The daily urea was increased from 30 to 40 grs. in both cases and the daily phosphoric acid diminished by 5 grs. in both cases. In the melancholiac the urine became highly uratic in appearance, exhibiting marked turbidity, a yellowish-pink colour, and a thick deposit of urates. Umber and Weintraud[22] have shown that the ingestion of thymus largely increases the excretion of uric acid, and there is little doubt that the marked uraturia in the above case was largely due to the metabolism of the nucleo-proteid contained in the dry extract. The general paralytic became somewhat confused, excited, and restless during treatment. In both patients there was thus evidence of an initial stimulation of katabolism followed by an anabolic reaction which set in before the drug was stopped.

Therapeutically thymus extract produced no mental improvement in either case, but in both cases there was distinct physical improvement.

Pituitary Extract (4 Cases).

The pituitary body is developed from the epiblast, the anterior lobe, which has a somewhat glandular structure, arising from the buccal epiblast and the posterior lobe, which is nervous in structure, arising from the neural epiblast. The evidence as to the *rôle* of the pituitary in the economy from the experimental, pathological, and therapeutic aspects is still conflicting and uncertain. Thus according to different authorities it is said to resemble the suprarenals in its physiological actions, to act like thyroid as regards its therapeutic effects in myxœdema and cretinism, and to play a distinct *rôle* in the pathogenesis of acromegaly. Its chemistry is imperfectly known. In mental diseases pituitary extract has has been employed by Blair,[23] who gave it in "several cases of insanity, but as a rule with negative results"; also in two cases of myxœdema (one being improved and the other unimproved); and finally in a case of acromegaly with "persecutory mania," this patient receiving small daily doses for two months and becoming improved.

I have administered pituitary extract in tabloid form (each tabloid = 2 grains) in four cases of insanity, 3 males and 1 female, namely in 1 case of adolescent melancholia, 1 case of monomania of suspicion and persecution (originally commencing as an adolescent case), and 2 general paralytics (one of them the female case).

The daily doses employed varied from 24 grains to 72 grains, and were continued for from one to two weeks.

Pharmacologically.

1. *Temperature* rose 1° F.—poor subfebrile pyrexia—in 2 cases, and was unaffected in the other 2—general paralytics.
2. *Weight.*—Three of the patients lost from 1 to 2 lbs. each during the first week of treatment, but all 4 ultimately gained in weight, the 2 general paralytics commencing to gain during the second week of the drug, and continuing to do so afterwards.
3. *Pulse* in the 2 general paralytics became distinctly stronger towards the end of treatment.
4. *Respiration* was not noticeably affected.
5. *Bowels* became more regular in action during the second week in the male paralytic.
6. *Urine.*—The water was increased slightly, but the daily total solids, urea, and phosphoric acid remained practically stationary.

On the whole the tendency to pyrexia and loss in weight with slight increase of water in the urine possibly indicated a slight stimulation of non-nitrogenous katabolism, and the gain in weight afterwards pointed to an anabolic reaction. The strengthening of the pulse and bowel action were possibly specific effects of the extract upon muscle, similar to the increased contraction of heart and arteries described by Oliver and Schäfer[24] as following intravenous injections of pituitary decoctions.

Therapeutically.

All patients were unimproved mentally, but the 2 general paralytics were improved physically.

Cerebral or Brain Extract (19 Cases).

The brain arises from the neural epiblast and the mesoblast, the essential nerve elements developing from the epiblast, the neuroglia probably from both epiblast and mesoblast, and the vessels and membranes from mesoblast. Dried brain extract consists mainly of proteids (especially nucleo-proteids), phosphorised constituents (for example, protagon and lecithin), and cholesterin, the two former being most abundant in the grey matter, and the cholesterin in the white matter. Neurokeratin (especially in the neuroglia), nuclein, cerebrosides, and other obscure nitrogenous bodies, and small quantities of extractives and inorganic salts are also present.

In mental diseases brain extracts have been administered, but with indefinite results, by A. Robertson,[25] who employed glycerine extracts and tabloids of sheep's brain given by the stomach; by Ryan,[26] who used hypodermic glycerine extracts; and by Wilcox,[27] who gave tabloids to four female epileptics, all of whom were unimproved, two of them becoming temporarily maniacal. Robertson is inclined to think

that brain extract may act as a tonic in mild and early cases of neurasthenia and insanity.

I have administered cerebral extract in "tabloid" form by the stomach in 19 cases of insanity, 16 women and 3 men.

The daily doses varied from 15 to 90 grs. (that is, from 3 to 18 "cerebrinine" tabloids). Most patients received 60 grs. a day for 3 weeks. The smallest quantity given was 360 grs. in 6 days, the largest amount was 2,700 grs. in 60 days.

Pharmacologically.

1. *Temperature* in half the cases was subfebrile; in the others it was unaffected.

2. *Weight* was unaffected in all except 4 cases, in which there was a loss of 2, 3, 4, and 5 lbs. respectively, followed by a gain which set in either during the later course of the drug or afterwards.

3. *Blood.*—The hæmoglobin and corpuscles were unaffected.

4. *Nervous System.*—Four patients became more excitable, talkative, and impulsive.

5. *Pulse* was unaffected, but in tracings the ascent and dicrotic wave were sometimes increased.

6. *Respirations* were unaffected, except in 1 case (increased).

7. *Alimentary System.*—Nausea and vomiting in 2 cases, diarrhœa in 1.

8. *Urino-generative System.*—Menstruation appeared "irregularly" during treatment in one case, and in another case, a puerperal patient who had been amenorrhœic ever since her confinement nine months before, it appeared on the seventh day after the cessation of treatment. In the urine there was a slight increase in the total solids (averaging 60 grs. more daily) and in the urea (averaging 30 grs. more per diem). Hence, dry brain extract tends to produce more particularly pyrexia and increase in urinary solids, indicating a slight increase in proteid metabolism, which is possibly due to the richness of nucleo-proteid and nitrogenous matter in the extract.

Therapeutically.

The forms of insanity treated were as follows:—4 adolescent cases (a melancholiac, 1 maniac and 2 dements); 1 puerperal stuporose maniac; 1 lactational melancholiac; 1 post-influenzal melancholiac; 1 post-typhoid stuporose maniac; 1 "phthisical" delusional melancholiac (a male); 2 syphilitic cases (1 male melancholiac and 1 female maniac); 1 alcoholic maniac; 1 general paralytic; 3 idiopathic cases (2 female maniacs, and 1 male melancholiac); 2 climacteric maniacs, and 1 senile maniac.

Of these 19 cases, 14 were unimproved (including the 3 males), 3 were improved (all females, with mania, adolescent, climacteric and senile respectively), and 2 recovered (females). Those who recovered or improved mentally were also benefited physically, this being evidenced mainly by a gain in weight. Four of the patients who were unimproved mentally gained slightly in weight after treatment. Of the two recoveries, one was an adolescent of 20, who at 19 became melancholic and stuporose, was unimproved by thyroid at the fourth month of her illness, became worse after influenza at the seventh month, menstruated and became maniacal after ovarian extract at the tenth month, remained in a state of simple mania till the eighteenth month, when she was given 900 grs of brain extract in fifteen days, during which there was a good subfebrile pyrexia; during the following two weeks the mania subsided and the patient improved physically, recovered mentally, and remained well.

The other patient, aged 31, suffered from puerperal mania with stuporose and delusional features; was temporarily improved by thyroid at the fourth month; was given brain extract (945 grs. in fourteen days) at the eighth month, exhibited distinct azoturia during treatment, improved physically, and on the seventh day after the cessation of the drug menstruated for the first time since her confinement, and recovery set in at once.

Choroid Plexus Extract (2 Cases).

The choroid plexuses of the lateral ventricles of the brain arise from the mesoblast (their main substance) and from the neural epiblast (their epithelial covering). According to Findlay,[29] who adopts the rational views of Ford Robertson, and Middlemass[30] as to the structure of the pia arachnoid, they are local developments of this membrane, and therefore essentially reticular connective tissue or "spongy lymph sacs" richly permeated with blood vessels, but he states that they are covered as a rule with stratified rather than with merely a simple layer of epithelium. It is probable, therefore, that chemically they will yield mainly the albuminoids, gelatine and reticulin. Findlay, however, considers that the choroid plexuses are actively secreting structures, their secretion being formed by actual transformation and disintegration of the epithelial cells, and being discharged into the ventricular cavities.

I have administered the choroid plexus extract in "tabloid" form (each tabloid = 1 gr.) in 2 male general paralytics. The daily doses varied from 10 to 50 grs., 1 patient receiving 100 grs. in a week, and the other 300 grs. in the same period. There were no pharmacological effects except a temporary slight loss in weight in one patient, and therapeutically the results were negative, both patients being unimproved.

Suprarenal Extract (4 Cases).

The suprarenal bodies are said to arise from the mesoblast (the cortex) and from the neural epiblast (the medulla). Dried suprarenal extract consists mainly of proteids (especially nucleo-proteid and cell globulin), various extractive bases acids and salts, and an active principle, for which the name sphygmogenin has been suggested. It is obtained only from the medulla of the organ, is a powerful reducing substance, and probably is essential to muscle metabolism, increasing the muscular contraction and tone of the heart and arteries more particularly, but also of the skeletal muscles. According to Swale Vincent[31] the active principle of the suprarenal acts peripherally upon the arteries, raising the blood pressure, and centrally upon the motor centres of the brain (perhaps, however, through the cerebral arterioles) producing occasionally a preliminary motor and muscular excitation, but usually direct paresis and paralysis. He states that the active principle is very unstable, is rapidly altered and excreted, and so may be taken in large doses.

I have administered suprarenal extract in tabloid form by the stomach in 4 cases of insanity, 3 males and 1 female; the daily doses varied from 15 grs. (that is, 3 tabloids) to 120 grs; the smallest quantity given was 400 grs. in a week, the largest quantity was 4,000 grs. in 6 weeks.

Pharmacologically.

1. *Temperature.*—Unaffected in 3 cases, was lowered 1°F. in the fourth.

2. *Weight.*—Increased in two cases, unaffected in one, decreased slightly in one, but regained on cessation of the drug.

3. *Blood.*—Unaffected in one case, but in two cases the hæmoglobin was slightly increased (5 per cent.), the red corpuscles being slightly increased in the one and slightly diminished in the other.

4. *Pulse.*—Diminished in frequency in three cases by ten beats on the average. Tracings show a distinct diminution in the ascent of the curve, indicating in the absence of a weakening of the pulse, an increased contraction of the arterial wall and probably increased blood pressure.

5. *Respirations.*—Slightly diminished in one case.

6. *Action of the Bowels.*—Unaffected.

7. *Urine.*—The total solids, urea and phosphoric acid were slightly diminished.

8. *Mental State.*—In three of the cases (melancholiacs) there was no change. In one case (of acute mania) there was a distinct cessation of excitement during treatment, due I think partially to an apparent diminution of the metabolism by the drug and also to an increase in blood pressure, for Maurice Craig[32] has shown that there is a tendency among the insane to a low blood pressure in patients with mental excitement, and to a high blood pressure in patients with depression.

Therapeutically.

The patients comprised one adolescent acute maniac who was distinctly improved and three melancholiacs (one adolescent, one idiopathic, and one climacteric) who were unimproved.

I think that suprarenal extract is worth a systematic trial in cases of acute maniacal excitement. The activity of its sphygmogenin seems to overshadow any actions of the proteid constituents of the dry extract when given in large doses, and

my cases seem to indicate that suprarenal extract produces a specific diminution of tissue oxidation in addition to its tonic contraction of the muscular walls of the arteries.

Splenic Extract (2 Cases).

The spleen arises entirely from mesoblast, being developed within the embryonic mesentery of the stomach. Dried spleen consists mainly of proteids (nucleo-proteids and cell-globulin), hæmoglobin, and numerous extractives, bases, acids, and salts.

In mental diseases splenic extract has been administered by Campbell Clark,[32] and by Bois and Kerr,[33] who employed liquid extracts given by the stomach, and obtained 8 recoveries (4 stupor, 3 melancholia, and 1 mania) in a series of 22 cases (12 male and 10 female), and physical improvement in 17 cases. I have administered dry splenic extract in tabloid form by the stomach in 2 female cases. The daily doses varied from 15 to 90 grs. (that is, 3 to 18 tabloids) continued for a fortnight, but amounted to 45 grs. during the main period of the treatment in both cases.

Pharmacologically.

1. *Temperature* practically unaffected, but in one case on increasing the daily dose from 45 to 90 grs. the temperature rose temporarily 1° F.

2. *Weight.*—Temporary loss of 2 lbs. in the one, who was weighed immediately after treatment; gain of 2 lbs. in the other, who was not weighed till the fourth day after treatment.

3. *Skin* was flushed and increased in action in one case.

4. *Blood.*—Hæmoglobin in both cases was slightly increased (5 per cent.); the red corpuscles in one case was slightly increased, in the other slightly decreased. The blood plates as seen in film preparations were distinctly increased in one case.

5. *The Spleen* was not noticeably altered in size in either case.

6. *Pulse* was unaffected, and tracings showed no characteristic change.

7. *Respirations.*—Unaffected.

8. *Action of the Bowels.*—Unaffected.

9. *Urine.*—The water, total solids, and urea were all slightly increased.

On the whole, therefore, there was evidence of a slight stimulation of proteid katabolism, followed by an anabolic reaction, effects in no way specific, but in my opinion accountable for by the nucleo-proteid in the dry extract.

Therapeutically.

Both patients, adolescent and climacteric melancholiacs, showed a slight temporary improvement, physically and mentally, but soon afterwards continued much the same as before treatment.

Orchitic Extract (8 Cases).

The testis arises from the mesoblast, its epithelium being derived from the specially modified or "germinal" portion of the lining of the embryonic body-cavity. Dried testis consists mainly of proteids (especially nuclein and neucloproteid), also of phosphorised constituents (for example, protagon and lecithin), fat and cholesterin, and extractives and salts. According to Poehl of St. Petersburg the testis is also said to contain an active principle called spermine, an animal alkaloid or base of a leucomaine nature, which is stated to be a powerful oxidising agent and to be present in the semen, in the blood, and in other organs (for example, thyroid and pancreas).

Brown-Séquard's classical experiments with orchitic fluid in 1889 laid the basis of the doctrine of internal secretion and of the practice of organo-therapeutics, and according to him and to many of his followers the testis contains an internal secretion (said to be spermine), which produces important tonic and invigorating effects upon the physical, nervous, and mental energies, that is, more precisely, upon the nervous and muscular systems.

Orchitic extract has been administered in mental diseases, especially in cases of melancholic stupor, but with indefinite effects. Bogroff of Odessa[34] gave hypodermic injections of rabbit's testicular extract in 16 cases of insanity, of whom 2 recovered (a stuporose melancholiac and a delusional maniac), and 14 were unimproved, although several of the latter were benefited physically. A. Robertson,[35] however, found no effects, physical or bodily, produced by hypodermic injections of the Brown-Séquard fluid in two cases. Wilcox[36] gave tabloids to ten male epileptics, all of whom were unimproved, most being temporarily excited and showing only a slight physical reaction.

I have administered dry orchitic extract in tabloid form by the stomach in 8 cases of insanity, 4 males and 4 females. The daily doses varied from 15 grs. (= 3 "didymin" tabloids) to 120 grs., continued in 6 cases for a fortnight, during which the patients received from 600 grs. to 1,560 grs. in individual cases; and for a month in the remaining 2 cases, 1 senile patient receiving 2,660 grs. during this period, and the other (a castrated male) 3,240 grs.

Pharmacologically.

1. *Temperature* in 5 cases was continuously raised ½° to 1° F.

2. *Weight* in 4 cases was diminished, this being most marked (= 7 lbs.) in 2 male cases, one of whom had been castrated and the other of whom had an undescended left testis and a rudimentary right testis the size of a pea. The loss in weight was followed by a gain, which usually set in before the drug was stopped.

3. *Pulse and Respiration* were apparently unaffected, but in one case during the fourth week the pulse became stronger and the peripheral circulation generally was improved.

4. *Action of the Bowels* was unaffected except in one case where during the third and fourth weeks it became more regular. Slight temporary nausea occurred in 3 cases.

5. *Urine.*—In the 2 male cases above mentioned there was a distinct increase in the water, total solids, urea, and especially in the phosphoric acid of the urine; and in the other cases the increase in phosphates was usually present though less marked.

6. *Menstruation* was unusually and severely profuse in 1 female adolescent, though occurring at the usual period.

7. *Mental Excitement* occurred in 2 general paralytics, a male and a female, amounting in the latter to temporary acute mania. This is interesting in connection with the statement by Venturi[37] that in general paralytics the testes and ovaries are commonly atrophic, the degree of atrophy varying directly with that of the brain.

Therapeutically.

The patients treated were: 1 post-influenzal and adolescent stuporose melancholiac (female), 2 general paralytics (1 female, 1 male), 2 climacteric maniacs (females), 1 senile and alcoholic melancholiac (male) becoming debilitated and demented; and 2 chronic cases (males), one of whom, aged 45, who had an undescended left and a rudimentary right testis, had been ill for fourteen years with monomania of suspicion and unseen agency; while the other, aged 41, had been ill for twenty-four years, he having suffered from masturbational insanity (chronic melancholia) since his youth, and having been castrated without benefit at the age of 24. These two patients were slightly improved mentally, so was the stuporose case. The other patients were unimproved mentally, but two of them, as well as the three previous cases, were improved physically, this being indicated mainly by a gain in weight as compared with that before treatment.

Ovarian Extract (36 Cases).

The ovary arises from the mesoblast, its essential epithelial elements, the ovisacs and ova, being derived from the specially modified or "germinal" portion of the lining of the embryonic body cavity. Dried ovary consists almost wholly of proteid and allied bodies, the ova and ovisacs being composed mainly of nuclein and nucleo-proteid, but also of cell globulin and cell albumen, and the stroma yielding the albuminoids mucin and gelatine. According to Poehl the ovary also, like the testis, contains spermine. Brown-Séquard and his followers state that "ovarian fluid" is a tonic to the nervous and muscular systems, acting similarly to orchitic fluid but not so powerfully.

Ovarian extract does not appear to have been much employed in mental diseases. Buschan, in his recent work on

organotherapy, only refers to 7 cases, of whom 3 were cured. Wilcox[38] gave tabloids to 5 female patients who were amenorrhœic as well as insane. Menstruation was re-established in 4 of the patients of whom 1 recovered (an acute maniac of 18) and 3 were improved (a maniac of 19 and 2 melancholiacs of 20 and 33 respectively). The fifth case, a melancholiac of 43, was unimproved.

I have administered dry ovarian extract in tabloid form by the stomach in 36 female cases, the daily doses varying from 15 grs. (= 3 tabloids) to 120 grs., continued usually for from two or three weeks, but from one week to ten weeks in the various cases. Most patients had 600 to 1,200 grs. in the two or three weeks. The largest doses were given to a castrated female who was treated on two distinct occasions, she receiving 2,200 grs. in ten weeks the first time, and 3,470 grs. in a month on the second occasion three and a half years later.

Pharmacologically.

1. *Temperature*, in most cases unaffected, was raised 1° F. continuously in a third of the patients.

2. *Weight* mostly unaffected, sometimes increased by 2 to 3 lbs., but often temporarily decreased by 4 to 5 lbs., the loss in these cases being usually followed by a gain which set in either during the course of the drug or shortly after it.

3. *Blood* mostly unaffected. The hæmoglobin and red corpuscles were slightly increased or slightly decreased in a few cases.

4. *Pulse* and *respirations* usually unaffected in frequency. Pulse tracings showed the tension to be slightly increased as a rule.

5. *Action of the bowels* usually unaffected, but in a few cases become more regular.

6. *Menstruation* was occasionally more profuse than usual at the regular periods, and in 5 cases it occurred irregularly during treatment, and in one case it reappeared fourteen days after the cessation of treatment, having been in abeyance for eight months.

7. *Urine* showed a slight increase in total solids, affecting the phosphates more than the urea. This was especially seen in a patient who had previously had her ovaries removed, indicating a considerable increase in the oxidation of phosphoric acid. Curatulo and Tarulli, of Rome,[39] have also noticed the increase of phosphoric acid by exhibition of ovarian extract in castrated females, and they give it as the explanation of the beneficial effects of oöphorectomy in cases of osteomalacia, the removal of the ovaries admitting of a greater deposit of phosphates in the bones.

8. *Mental excitement* occurred in a third of the cases, and an increase of vigour occurred distinctly in two prematurely senile cases.

Therapeutic Effects.

The 36 female cases included 1 congenital imbecile, 2 pubescents (one an epileptic), 5 adolescents, 1 post-connubial stuporose melancholiac, 1 lactational maniac, 2 post-febrile cases, 2 alcoholics, 2 general paralytics, 4 idiopathic cases, 11 climacterics, 3 senile melancholiacs; and, finally, 2 chronic cases—a melancholiac who had cystic disease of both ovaries, and a maniac who had been previously castrated. Two of these patients made a recovery long after treatment, and probably independently of it. Four cases, mainly stuporose, were temporarily improved, the others were unimproved. Twelve of the patients, including the four who were improved mentally, gained in weight after treatment, and so were benefited physically. The patient whose ovaries had been removed, and the patient whose ovaries were absolutely destroyed by cystic disease (as was confirmed by *post-mortem* examination eventually), both had ovarian extract in enormous doses, but showed no mental change and were unimproved. Three patients, however, did react dynamically. One, an epileptic of 14, who was given 765 grs. in 14 days, took 4 epileptic fits on the last four days, and then passed into a state of severe epileptic mania with rigidity of the limbs, loud screaming, and much mental confusion. This lasted 3 days, and then she became her usual self again. Another—a climacteric excited melancholiac of 46, of prematurely senile appearance—became distinctly more vigorous physically and more excited mentally. The third, a prematurely senile woman of 55, melancholic and extremely debilitated, received 1,350 grs. in 40 days, became physically so strong that she raised up on its end the bed which she had hitherto been unable to leave, and mentally she became acutely maniacal, and has remained a chronic maniac for four years.

UTERINE EXTRACT (1 CASE).

The uterus arises from mesoblast, being derived from a thickening and invagination of the epithelial lining of the embryonic body cavity. Dried uterus consists mainly of proteids (especially globulins and albumins) and of gelatine, fat, extractives, and salts. I administered uterine extract in tabloid form in a case of puerperal mania which had subsided in severity, but was becoming stationary and relapsing in tendency. Doses of 45 grs. continued daily for a fortnight, were accompanied by a rise in temperature of nearly 1° F. and a loss in weight of 2 lbs., both of which effects were undoubtedly attributable to a bout of mental excitement which set in during treatment, and was due apparently to the natural course of the disease and not to the drug which seemed to be inert. The therapeutic effects of uterine extract were negative, but the patient made a good recovery two months later when menstruation became re-established.

MAMMARY EXTRACT (2 CASES).

The mamma arises from the cutaneous epiblast. Its solids consist mainly of proteids (especially nucleo-proteid) of the precursors of the casein and lactose of milk, and of extractives and salts. I administered mammary extract in tabloid form to two patients, one a puerperal maniac, who had become stuporose and stationary, and the other a lactational, still in the acute stage. Daily doses of 15 to 120 grs. continued for ten days were accompanied by a rise in temperature of nearly 1° F., by slight loss of weight in both cases, and by a slight increase in the urinary urea in the puerperal case, but by no changes in the blood, pulse, respirations, or in the mental condition in either case. Both patients, however, eventually recovered, the puerperal case three months later after a course of thyroid treatment, and the lactational case six months later.

GENERAL CONCLUSIONS.

Brown-Séquard's generalisation, that "all glands and all tissues have an internal secretion; all injected subcutaneously have a tonic effect," undoubtedly requires modification. My investigations in the insane lead me to conclude that those animal extracts which consist mainly of simple proteids (albumins and globulins) and albuminoids, merely have a dietetic value; but that those animal extracts which are rich in nucleins and nucleo-proteids produce, when given by the stomach in sufficiently large doses (as 60 grs. per diem of the dried extract and upwards), a temporary stimulation of cell katabolism with a subsequent anabolic reaction, this being evidenced by the common increase of the water, total solids, urea, and phosphoric (and uric?) acid of the urine; by the general tendency to a subfebrile pyrexia; and perhaps most importantly of all by the initial loss in weight, followed by a gain.

This initial katabolic stimulation with its resultant anabolic reaction is, in my opinion, the explanation of the physical improvement or "tonic effect" which occurs in a fair proportion of cases (usually under 50 per cent.), and which, if pronounced, may be accompanied by mental improvement, and even by mental recovery. In this sense, therefore, these substances may be termed metabolic tonics, and it is probable that in the living body those organs (cellular) which are naturally rich in nucleins and nucleo-proteids, produce, in virtue of the metabolism of these substances, similar distant "tonic" effects upon the general cell-metabolism.

In the administration of animal extracts in diseases generally, I think it of the utmost importance to recognise the fact that many of them (apparently those rich in nucleins and nucleo-proteids) may produce this tonic effect. It explains many of the discrepancies in the results obtained by various workers in the various fields of disease, and it should save me from the fallacy of attributing to various extracts specific effects in diseases in which, *a priori*, on the "internal secretion" hypothesis, their use seems to be specially indicated, these effects being in reality the general tonic effect of a certain group of animal extracts.

Apart from the general tonic effect upon cell metabolism, it

is extremely doubtful whether each organ possesses a specific internal secretion in the sense intended by Brown-Séquard. Some organs probably have such an "internal secretion," for example, the active principle (sphygmogenin) of the suprarenals which powerfully increases muscular contraction and apparently diminishes tissue oxidation. So also the thyroid has an active principle (iodothyrin), whose specific effect is to stimulate cell katabolism or tissue oxidation, for in this respect thyroid extract stands far above all others, and when it is administered in large doses the anabolic reaction never sets in until after the cessation of the drug, whereas in the case of all the other "metabolic" extracts which have been used by me, an anabolic rebound generally sets in during the continuance of the drug.

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Dr. SOUTAR thanked Dr. Easterbrook for his valuable paper, which they hoped to have the pleasure of reading *in extenso*. It was a highly important contribution to the moderate statement of the results—carefully-scrutinised results—obtained by the use of these substances. It brought them to the point which those who were not over-sanguine had desired to reach, namely, that these organic substances were aids in the treatment of a limited number of cases. The first case which was treated at Barnwood House was one of what seemed to be confirmed dementia of long standing, secondary to puerperal mania. The rapid improvement which took place in this case was surprising, and might easily have inspired false hopes as to the value of thyroid. Since that time he had used the drug in many cases of many types, but although a degree of improvement was obtained in some cases, no other recovery had resulted.

Dr. PERCY SMITH agreed with Dr. Soutar's remarks that at first he had expected a great deal from treatment of mental patients with thyroid extract, but had been on the whole disappointed. He had seen marked improvement up to a point result in some chronic cases, but without absolute recovery. He considered they were greatly indebted to Dr. Easterbrook for the very exhaustive and scientific communication he had made.

SOME CARDIO-PSYCHICAL ASSOCIATIONS.

By JAMES R. WHITWELL, M.B.,
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IN considering the relationship that may exist between any given bodily condition and any associated mental symptom, one is at the outset met with the great difficulty of having to decide between mere concomitance, even regular sequence or uniform antecedence, and a causative pre-relationship, and in the instance of bodily disorders and psychical associations this difficulty is the greater inasmuch as the mental mode-picture presented is capable of but comparatively few major variations and the mental symptoms or groupings can never be definitely and specifically associated with a given bodily condition and none other. There is, however, a certain consensus of opinion that some intimacy of association and relationship, causative or otherwise, does exist between certain variations in bodily conditions and variations in the constitution of the *ego*, the psychical variant coinciding with a mere transient mood or a violent deliriomania.

To consider the possible or probable relationship of abnormal cardiac conditions to psychical variations in all its details would occupy too much time, I will therefore exclude from consideration all acute cardiac conditions and cardiac conditions which are only part of a symptom complex. The first class of case to which I would refer then consists of a certain comparatively rare condition of imbecility apparently related to (probably in a causative sense) actual cardiac hypoplasia. Without entering into wearying details of symptoms, etc., I would instance from notes the case of

A. J. T., a boy aged 17, of moderate physique and stunted growth, but without any marked deformity. Cranial measurements not abnormal, and proportional. Family history negative; no signs of syphilis. Speaking generally, his mental condition was one of mischievous, resistive stupidity; did not attempt to articulate, but hears well apparently, and notices quickly. Special sense organs apparently normal, possibly anosmia may be present, but it is difficult to ascertain definitely. General sensibility rather less acute than normal. Salivates abnormally; extremities cold and bluish. General appearance not unintelligent, but he appears entirely incapable of attention and education. Later he became demented, as dementia occurs in imbeciles, and finally died of phthisis. At the *post-mortem* examination the heart was noticeably small, weighing only 160 grams, with a brain weight of 1,200 grams. The aortic orifice was particularly small, 14 mm. diameter. The thymus gland was large and persistent. The brain was examined by the freezing method. The nerve cells appeared to be fewer and more scattered than normal, but no malformation or degeneration was noted. This case occurred prior to the introduction of recent cytological methods.

This case appears to me to be worthy of some consideration as possibly representing a disproportionate evolution between the cardio-vascular and nervous systems; and in the case of the latter, though sufficient blood supply was apparently present to carry on the vital organic change of mere growth, the progressive cytoplasmic changes and complex internuncial communications representing the educative intellectual life of the individual failed to be evolved. Two cases of a similar type have been recorded by Dr. Hagen,[1] in which there was reason to believe that the developmental disproportion between cardio-vascular and nervous systems led to imperfection in the performance of psychic functions amounting to imbecility.

Wulff,[2] in a more elaborate research, has still further examined this subject, and appears to show evidence that there are certain cases of imbecility which are secondary to cardio-vascular hypoplasia, entirely independent of those other cases in which the nervous system, being stunted in growth and function, interferes with the full development of the body and its organs.

We may then, perhaps, with some reserve for further observations, in the meantime accept a certain series of cases of imbecility due to disproportion between the development of brain and cardio-vascular system; and it will be noted that here the mental symptoms, as a result of this imperfect evolution, are entirely on the lower plane of psychical reactions—that is, the perpetuated infant, with the uncontrolled animal instinct, based on the more elementary requirements and corresponding adaptive impulses superadded.

The second class of case to which I would refer is one in which congenital or early infantile heart disease of serious type is present, the proportionate cardiac development being normal, and compensation being more or less properly carried out. This I might illustrate from the following cases:

CASE I.—W. H., aged 22, a boy about the average height, poor physique, pale, with a greyish tint in his face; mentally and bodily he is not in any way advanced beyond puberty; his views on all subjects are quite childish, and his education, though fairly good, remains as a series of isolated points of memory, which have made few new attachments or generalisations. Mental effort or concentrated attention is a thing impossible to him, as also is physical effort, which p[illegible]. Examination reveals a well-marked, thrill, and pres[illegible] maximum intensity at the inner end of the fourth [illegible] accentuated second sound. History of some indefinite febrile diseases at about six years of age. No family history of mental disease ascertained, nor personal mental defect till eight or nine, when his backwardness was noticed.

CASE II.—J. C., aged [illegible], a boy, who is reported by his mother to have had "a bad heart all his life" appears to have been more or less cyanosed for many years, and had no other than ordinary children's diseases; he was however late in all educative processes, for example, walking, etc. His

memory was bad as a child, and he appears now to be intelligent and quick at picking up small details of knowledge for the moment, but any studious effort is practically impossible. He remained, therefore, intellectually and emotionally, as well as in general physical build, a child. A diagnosis of the cardiac condition was never arrived at, to auscultation there was a loud blowing systolic murmur heard over the whole precordium, conducted almost equally in all directions, and the second sound was much accentuated; percussion showed an enlarged heart, especially the right side.

Cases similar to these are fairly numerous (I have notes of 4), and they are occasionally, as in certain senile cardiac conditions, associated with epileptiform seizures. If we consider them as a group and eliminate from each the superadded features and local—that is, individual—colouring, there may be found a common symptom basis in the one point that the condition of puberty or early adolescence remains as almost a fixed one, and to this basis in each case is added its special individual symptom-colouring varying with education, heredity, and environment—that is to say, the tendency to stupidity, impulsiveness, sexuality, hyper-mannishness—is potentially existent in varying degree and differing value in each individual case. These, then, it appears are practically cases of pubertal or early adolescent insanity, existing at a period other than, and later than usual, as a result of serious congenital or early-acquired valvular disease of the heart, the permanent condition being one of physical and psychical immaturity.

A still more common set of psychical symptoms to be found in connection with abnormal cardiac conditions is met with in some cases of mitral disease, especially stenosis, more frequently (in my own experience) and more typically occurring in females; for example:

E. H., a female, aged 40, about the average height, but small in physique and musculature, somewhat anæmic, and having a marked presystolic thrill and murmur, is reported to have had acute rheumatism with cardiac complications at about the age of 20, was apparently well mentally for a year after this, then became gradually more and more retiring, distrustful of self, moody, irritable, and impulsive. Mentally, she is quiet and somewhat depressed at her best, and at all times is hypersensitive and morbidly suspicious, sometimes apparently with definite hallucinations; and in addition, has occasional outbursts of apparently uncontrollable temper, great motor excitement and violence, and a special tendency to smash crockery and furniture, etc These outbursts usually had some trivial cause, but were out of all proportion to the circumstance from which they originated. As regards insane heredity, none was ascertained definitely, though her mother appears to be a small, quick-moving, excitable, and neurotic woman.

This is one of a series of cases, commonly known, I believe, in asylums, and may be called indifferently either mania or melancholia, both being merely the symptom reflex of a condition of irritable weakness. I would, however, draw attention to the tendency to violent destructiveness so pronounced in many of these cases, because on further analysis the genesis of this motor symptom is apparently to be traced in the earlier stages of certain of these cases, to a mere condition of restlessness and desire for movement; in still other cases the symptom becomes further evolved into an actual feeling referred to the muscles of the limbs which they themselves describe as sometimes a "feeling of strength," and sometimes a feeling of "must do something" requiring violent muscular action. The next stage in evolution is the violent motor outburst previously referred to.

The leading symptoms and characteristics of this class of case then consist in a degree of gloom and depression more or less permanently present, begetting a certain selfishness, self-absorption, and disregard of family and other ties, and general suspicion, and accompanying this a considerable degree of irritability and impulsiveness associated with a form of motor instability; and there are cases which tend to induce the belief that the accentuation of mental symptoms is to be traced to and connected with concomitant changes in the cardiac condition. This detailed association is, however, extremely difficult to determine.

In connection with disease of the aortic valve, I have no cases which show any evidence of intimacy of association, leading to the production of mental symptoms, and I therefore would with diffidence, having in view the observations of Dr. Mickle, express any definite opinion, though inclined to the belief that any mental phenomena, secondary in point of time, to this lesion, if related to it, only become so through sequential mitral incompetence. Other than this, the power of this lesion appears to lie chiefly in the direction of tinting a delusion, or adding colour to a paræsthetic hallucination or illusion. These cases are, moreover, in general, hopelessly mixed up with general paralysis and syphilitic disease, themselves such potent bases of mental symptoms.

Passing over the condition referred to as delirium of heart cases so ably described by Moxon and others, and the mental association of such conditions as acute cardiac asthenia described by Da Costa, I would ask attention to the cardiac condition associated with certain cases of senility.

A. P., aged 68, a man of good physique, musculature, and nutrition, without known family history of mental disease, was admitted suffering from a form of mild senile depression with somewhat defective memory; no gross physical disease detected, no albumen in urine, etc. The heart was enlarged to percussion, evidently hypertrophied, the pulse of good tension, rather higher than normal, as shown by the sphygmograph, but regular in rhythm and force, the vessel was somewhat thickened. To auscultation the first cardiac sound was somewhat muffled, but no distinct murmur was present. This patient remained without any further symptoms for nearly two months, and even had sufficient mental improvement to suggest possible recovery; then one day he became rather restless, wandering aimlessly about, and gradually became hazy as to his surroundings, spent restless erratic nights, pulling the bedclothes about his room, tearing the mattress, etc. The patient's condition was one of restless, confused, never-ceasing anxiety, without any idea of any reason for it, accompanied by great motor agitation and a certain breathlessness; his pulse was rapid and irregular in rhythm and force, wanting in tone, and of low tension. The precordial area showed an extended impulse area, and to auscultation there was a faint systolic murmur, all suggestive of muscular incompetence. Under cardiac treatment this condition passed away, only to return again at a later date, and this varying mental condition was maintained until he died from exhaustion after one of his periods of excitement. At the *post-mortem* examination no valvular lesion was found, but the heart was hypertrophied and dilated, and showed marked fibroid degeneration, probably secondary to renal changes.

In this case each variation of the mental condition was inevitably associated in some way with its concomitant cardiac condition. Cases similar to this are, I believe, not very uncommon in asylums, and several I have been able to follow with a certain amount of detail. The cardiac condition appears to be one of asthenia, with its associated erethism, and the balance of evidence would appear to suggest the view that the cardiac was the primary condition, the mental symptoms being but an exaggeration of the mental condition typically present in acute cardiac asthenia.

Omitting several other interesting cardio-psychical associations I would, in conclusion, refer to what may be termed the remarkable condition of pathological eupathy not infrequently present in the later stages of heart disease, the condition in which the heart, at last refusing to respond to ordinary cardiac stimulants, gradually fails beyond hope of recovery, and yet the patient, in a buoyant condition mentally, is convinced that he is better and stronger daily, and asks to be allowed to get up and go for a walk, or do some physical work equally impossible and absurd. The desire for, and feeling of ability to do, active muscular work is again the leading feeling in the patient's mind, and in this mental state (as it were an illusion of the muscular sense) efforts are apt to be made which not infrequently result in sudden death.

In drawing attention to the foregoing cases I am only too conscious of the difficulty of ascertaining and establishing the nature and degree of the association of bodily variations and mental concomitants, and especially of estimating their value in relation to the neurotic basis factor. The earlier stages in such mental changes appear to be so subtle and delicate that they are most apt to be overlooked; and, on the other hand, mental symptoms have for fundamental character so few variations that it is the more difficult to make sure of the connection.

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ON BLOOD PRESSURE IN THE INSANE.

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WE may now, I think, take it as accepted that in states of acute mania the blood pressure is low, whereas in the majority of cases of melancholia the blood pressure is raised; in other words, that with the affective disorders of the mind there is an alteration in the tonicity of the vasomotor system. In general paralysis in the earlier stages the blood pressure seems to vary to a certain extent in cases that are restless and excited in contradistinction to those who are depressed, but when the physical signs of general paralysis are well marked the blood pressure is always low.

Apart from it being an interesting fact that the blood pressure is so altered in various forms of mental disorder, I

had hoped that in some way the above data might assist us by indicating the line of treatment likely to be suitable in the different types of disorder. In some small extent this is the case, but I regret to say that up to the present the weight of evidence goes to show that altered blood pressure is more a symptom in, than a cause of, mental disorder. This view is, to a certain degree, borne out by those cases of alternating insanity where the initial stage is one of depression and the second stage one of intense excitement, during the whole period of depression the blood pressure is high, and if taken regularly it will be found after a time to fall to, say, 125 mm. of Hg., and with this fall the patient's mental state is found to be apparently almost normal, but excitement slowly supervenes, and with the mania the blood pressure is found to be lowered. Is it that a reaction has set in after the vasomotor centre has passed through a long period of irritation? If this were the case altered blood pressure might be legitimately looked upon as a cause of altered mental states. No, the explanation is probably not so simple, for if it were a mere reaction we ought to get alternating insanities much more frequently than we really do.

Is the altered blood pressure then merely a concomitant with altered emotional states? This again seems scarcely the whole explanation, for when we look at the agitated melancholiac, surely he of all persons ought to have a high blood pressure; but no, his blood pressure is low, whereas his equally depressed but calm brother has a very high blood pressure. There seems to be something more than the mental state which determines the actual tension of the vasomotor system.

In sleep we are told by observers that the blood presure is very low, and this at first is difficult to reconcile with the low blood pressure of acute mania. But, after all, is there not a great deal in common between the mental states in dreamland to that of mania? In the first place, in each the attention is at its minimum, and this accounts for the rapidity with which thoughts, varied though they may be, pass through our mind. During dreams every thought has an equal chance; we attend to nothing; we attend from nothing. And this accounts for the fantastic arrangement of ideas during sleep. This fantastic arrangement is present also in acute mania. The maniac attends to nothing and every sensation has an equal chance, and hence the incoherence of the patient.

Again, with the lowered blood pressure we have loss of power of comparison. Once more let us appeal to dreams. We always believe a dream to be true while it lasts, no matter how absurd or fantastic in arrangement, for we have nothing to compare it with at the time. Dreams appear to be true, for they seem to occur not in the future or past but at the present time. Loss of power of comparison is a symptom frequently present in mania, and perhaps most common of all in the general paralytic, whose blood pressure, you will remember, is very low.

I am not aware whether the blood pressure of a somnambulist has been taken, but I strongly suspect that if it were it would be even lower than the quiet sleeper.

With lessened blood pressure the highest centres are cut off or their inhibitory power is reduced and spontaneous and uncontrolled movement may result. The microkinesis of the child or the constant movements of some idiots show this, as also in senile dissolution restlessness is one of the early symptoms, and with this restlessness there is always lowered blood pressure.

During states of extreme joy and excitement we are probably in a lower state of evolution than during our calm moments. How, then, can we explain the altered blood pressure in mental disorders? We have long known that mania and states of excitement are symptoms of a disorder that is much more damaging to the nervous system than states of depression.

May it not be that with mania there is more chromatolysis and even achromatolysis taking place in the nerve cell, and that assuming destruction of the myelin sheaths of the nerve fibres in mania that choline is formed, and finds its way into the blood, and is the cause of the lowered blood pressure? Dementia more rapidly supervenes upon mania than upon melancholia. In dementia we find grave changes in the neuron, and in some cases total disappearance of cells. This is also the case in agitated melancholia, and accounts for the reason that such a large percentage of these patients do not recover.

The emotional state, as evidenced by cheerfulness or unhappiness, seems to be almost an accident, and is often a misleading symptom to the casual observer. Every physician experienced in mental diseases has encountered the difficulty of deciding whether certain given cases ought to be classified under the head of mania or melancholia, and I have even known it happen that two physicians equally well informed have given the most opposite diagnosis. To my mind the difficulty can and ought to be decided by the nature of the pulse and blood pressure. It is true that these are only symptoms, but so are the states of excitement and depression, and the latter are not so easily measured, neither are they so comprehensive as the changes in the circulation.

I do not for one moment wish to suggest a new classification based upon blood pressure, but whilst we are still groping for light, and we are awaiting the dawn of a new pathology of insanity, I feel assured that some light and assistance can be derived from observing blood pressure.

All the evidence at the present time points to this, that low blood pressure connotes restlessness. Restlessness is a constant symptom in mania, but there are also other forms of mental disorder where restlessness is a concomitant symptom. I refer especially to the cases of so-called agitated melancholia and at the risk of repetition what I wish to insist upon is this, that in mania and in agitated melancholia there is in addition to the common physical sign of lowered blood pressure, the common mental symptom—motor restlessness. This view that mania and so-called agitated melancholia are probably different aspects of one and the same disorder is corroborated by the researches of Dr. Stoddart on the pilocarpin reaction in the insane.

Dr. Stoddart found that both the maniac and the so-called agitated melancholiac reacted rapidly to the drug, whereas the true melancholiac either did not react at all or the reaction was much delayed. The symptom of restlessness ought to be, and I quite believe is, the key to the line of treatment that should be adopted. Dr. Percy Smith has often expressed his opinion that infusion of saline solution is clearly indicated in certain cases of extreme excitement and restlessness, as in acute delirious mania. I am sure that he is correct, for the amount of fluid in the circulation is greatly diminished in these cases. This is shown clinically by the smallness of the pulse, and *post mortem* by the dryness of the tissues.

On several occasions when I have noticed a patient very restless, and have found the pulse small and thin, I have ordered every morning or evening an injection of about 8 or 10 ounces of water to be passed into the rectum. If the water is retained, and it usually is, I have often noticed a very marked and steady improvement in the patient's condition, and several patients have told me afterwards what relief they have derived from this treatment.

These, gentlemen, are a few further observations upon the blood pressure in the insane, I had hoped to bring some more facts before your notice, but I find that my observations are not complete enough for me to make any reliable and definite statements. I have come here hoping to learn a good deal from others who have been working at this subject.

Dr. Pasmore inquired whether the high and low blood pressures in melancholia and mania respectively might not be associated in the one case with muscular rigidity and in the other with muscular relaxation, the muscular rigidity causing increase of peripheral resistance to the circulation.

Dr. Corner thought that congenital heart disease was rather a physical stigma than the cause of congenital imbecility, though the defective circulation would naturally tend to retard mental development. In cases of imbecility associated with heart disease caused by endocarditis the imbecility was frequently caused by the occurrence of rheumatic fever early in life, just in the same way as other fevers would cause mental defect. In heart disease associated with insanity the mental symptoms were usually those of melancholia, unless the disease was atheromatous, when it usually occurred in people of the sanguine temperament who were predisposed to mania

with expansive delusions rather than to melancholia. In aortic disease the melancholia was usually of the active and restless kind, while in mitral disease the patients were more quiet and silent. It was interesting to note that the facial expression of patients in ordinary hospitals differed in the same way, the aortic patient being pale, extremely restless, and with an expression of fear; whereas the mitral cases usually remained quiet, looked down, and had the typical melancholic expression, with overaction of the corrugator supercilii muscles and depression of the angles of the mouth. With regard to the extreme restlessness mentioned by Dr. Whitwell, it was interesting to notice the mental aspect of cardiac cases during dreams. When studying dreams in relation to disease of organs at the London Hospital, he found that many cases of heart disease had "a feeling of hurry." When dreaming they usually dreamt they were at home hurrying about and working very hard. He believed this was explained by excessive action of the heart, being the normal cardiac expression of mental and bodily activity; consequently in dreams an overacting heart suggested "activity" to the mind.

Dr. Robert Jones referred to the association of congenital cardiac lesions with dull, listless, and torpid mental conditions, and the opposite condition—that of excitable, irritable, and suspicious emotional states associated with aortic disease; the irritability of the cortex after ligation of the cerebral arteries corresponding to this as a physiological result. He also referred to the raised general blood-pressure in some cases of mania and those of early general paralysis.

Dr. Lloyd Andriezen pointed out the difficulty of correlating cardiac and cerebral conditions. The importance of studying hospital patients with cardiac disease, for example, aortic disease and fear, etc., lay in the fact that parallel conditions occurred in the insane. Idiots and imbeciles had more or less cardiac aplasia, with feeble circulation. The cases of congenital syphilis were different, for there the cardiac condition might be secondary to arterial disease. Myxœdema should be specially studied for blood-pressure in view of the definite cause present, namely, deficiency of thyroid secretion, which produces the mental symptoms as well as the circulatory symptoms characteristic of this disease. In the earliest stages of general paralysis the high blood-pressure was correlated with cerebral erethism and the excitation of vasomotor cortical centres, the presence of such vasomotor centres in the brain being established by the observations of Rose Bradford and others on dogs. He believed that it would be advisable, in estimating the value of blood-pressure as a clinical symptom in various mental diseases, to make simultaneous observations on the uric acid ratio of the blood, because that was—as shown by Dr. Haig—a potent cause of alterations of blood pressure.

Dr. Seymour Tuke mentioned a case in which previous to admission the patient had been treated for mitral valve disease, active exercise, etc., being stopped. He was admitted for melancholia, with suicidal tendency and delusions of persecution. During the two years the attack lasted the heart symptoms largely or almost entirely disappeared, and patient could take a large amount of exercise and no murmur, though often sought for, was discovered. The delusions wore away, and patient left and kept fairly well, mentally and physically, for three years; since that severe mitral and aortic stenosis have twice brought patient's life into serious danger, and through both attacks of physical cardiac trouble there has been mental improvement, and at no time was patient more sensible than in the most severe of the cardiac troubles. It was exceedingly difficult to tell what connection there was between cardiac and cerebral phenomena, and in this case it almost appeared to be actually an inverse one so far as mental conditions and cardiac conditions were concerned.

Dr. Percy Smith referred to the fact that melancholia was not the only form of mental disorder met with in mitral disorder. He hoped that Dr. Craig would not cease working at blood pressure in insanity, not only in functional cases, but where there was cardiac or vascular disease. He corroborated in the main Dr. Craig's observation. He narrated a case which had been under his care in Bethlehem Hospital in which acute mania had developed rapidly after ligature of both common carotids.

PERIPHERAL NEURITIS AND INSANITY.

By R. Percy Smith, M.D.Lond., F.R.C.P.,
Lecturer on Mental Diseases at Charing Cross Hospital.

During the last ten years attempts have been made by various observers to associate a special form of psychosis with multiple neuritis and to describe what our German colleagues call a special "symptom-complex" which has been variously called psychosis polyneuritica, polyneuritic psychosis, *névrites périphériques des aliénés, psychoses névritiques*, infectiöse neuritis multiplex, cerebropathia psychica toxæmica.

Korsakoff, of Moscow,[1] first drew attention to the fact that a special form of mental disorder which had previously been described as being typical in alcoholic cases, and was commonly associated with multiple neuritis might also occur in cases where there was no history of alcoholism, but where there was multiple neuritis from other causes. He described 14 cases where there was no alcoholic history obtained, and which appeared to be due to such causes as a decomposing ovum, puerperal septicæmia, fæcal accumulation, typhoid fever, tuberculosis, diabetes, jaundice, lymphadenoma, and degenerating tumours, and also referred to the fact that similar disorder of mind associated with multiple neuritis might be caused by alcohol, arsenic, lead, ergot, bisulphide of carbon and carbonic oxide. In all these cases the common factor was altered composition of the blood and the accumulation of poisons acting on the nervous system, peripheral or central. For such conditions he suggested the term cerebropathia psychica toxæmica.

Tiling of Rothenburg Asylum, Riga, in the same volume of the *Allg. Zeitschr. für Psych.*, wrote on the mental disturbances in alcoholic multiple neuritis, and referred to one of his cases where there was no history of alcoholism as a cause, and where the loss of memory was less profound than that met with characteristically in alcoholic cases. He concluded that of all the neuritides alcoholic neuritis made a special group to be looked upon as an affection of the peripheral nerves and the central nervous system concurrently. He considered, however, that other cases resembling alcoholic neuritis might occur from loss of blood, puerperal causes, etc. In a subsequent paper (translated by Dr. McCorn in the *American Journal of Insanity*, October, 1898) Tiling describes "infectious" multiple neuritis as corresponding almost exactly with the alcoholic paralysis of former writers. He refers to Korsakoff's view that the symptoms in alcoholic peripheral neuritis with mental disorder are due to some toxic agent in addition to alcohol, and that the symptoms may arise from auto-intoxication or from metallic intoxication. He quotes cases described by many authors as occurring after diarrhœa, typhoid fever, tubercle, liver trouble, and himself gives two cases—one after gangrene of the foot and one after "post typhoid perityphlitis." He considers that the question as to whether metallic poisons can produce the same "symptom-complex" is still unsettled, and says that cases with transient mental disorder with polyneuritis from lead poisoning do not correspond with the type described. He also says "further observation will show whether neuritis with amnesic mental disorder produced by puerperal fever, typhoid fever, gangrene, etc., corresponds with the chronic and generally incurable alcoholic neuritis."

Korsakoff and Serbski[2] further refer to polyneuritis occurring after typhoid fever and puerperal infection, and press their point as against Tiling to the effect that many cases show no history of alcoholism. They give at length a case in which suppuration due to extrauterine pregnancy was followed by multiple neuritis, delirium, and general loss of power and of memory.

Dr. Anglade of the Toulouse Asylum in a paper[3] in the *Annales Médico-Psychologiques* for 1899 describes 3 cases of melancholia which were not alcoholic, saturnine, tuberculous, or febrile in origin, but in which there were peripheral neuritis and changes in the cells of the anterior horns of the cord. In these cases the mental disorder was not accompanied by the loss of memory described by others as characteristic of the psychosis of peripheral neuritis.

Ballet of Paris includes under the term "polyneuritic psychosis" mental disorders having various clinical forms the symptoms of which are generally associated with polyneuritis

having origin in a toxic or infective agent which may influence the nervous system as a whole or in any part.[4]

Professor Kraepelin, in the last edition of his *Psychiatrie* (vol. i, p. 28) refers to the special form of insanity described by Korsakoff, Tiling, and others, with multiple neuritis, and says: "Evidently the mental disturbance was not the result of the neuritis, but only the effect on the brain of the same agent which had affected the peripheral nerves." He says: "Unfortunately I have hitherto had no opportunity to observe closely such cases" (that is, those of non-alcoholic origin).

In vol. ii he includes the cases thus described by Korsakoff under the heading of Infectiose Schwächezustände, and considers that although alcohol is especially a cause of peripheral neuritis with a characteristic psychosis, that it will not do to look upon it merely as an alcoholic mental disturbance, and thinks that alcohol only makes a favourable groundwork for the production of this form of insanity, which may occur without alcohol. His conclusion is that "the mental disturbance described here is in all probability caused by poisons, which generally, but not always, give rise also to peripheral neuritis, the appearance of which is specially favoured by chronic alcoholism."

He sums up the mental disorder in these cases as disturbance of attention, of thought, and of memory, loss of orientation, confusion, restless agitation, especially at night, and often hallucinations, especially of sight. It develops quickly, sometimes with delirious excitement, and the most prominent symptom is inability to retain extremely recent impressions. Although perception is not greatly disturbed, experiences are forgotton in a few minutes, time sense is especially damaged, and the patient describes long-ago events as recent occurrences, the gaps being filled up by fabulous statements as to recent experiences. Although there is recovery in some cases, more often, especially in alcoholic cases, there is permanent incurable weakmindedness.

In this country, although long ago Wilks described the characteristic loss of memory for recent events in association with alcoholic paralysis, the occurrence of similar mental disorder, with peripheral neuritis from other causes, appears to be very little recognised, and even the frequent association of peripheral neuritis, with a characteristic "symptom-complex" in alcoholic cases, is hardly referred to in the textbooks of mental disease. The late Dr. Ross, in a paper read before the Medico-Psychological Association[5] on The Psychical Disorders of Peripheral Neuritis, referred mainly to alcoholic cases, but said, "I have seen a more or less similar condition in chronic poisoning by lead, and it is possible that it might result from many of the other poisons mentioned."

Judson Bury, in the article on Multiple Symmetrical Peripheral Neuritis in *Allbutt's System of Medicine*, enumerates the causes of peripheral neuritis, and lays stress on the frequency of psychical disorder in alcoholic cases, but does not describe similar disorder in cases due to specific fevers, septicæmia, or metallic poisons. Osler, in describing acute febrile polyneuritis after exposure to cold or over-exertion and multiple neuritis in infectious diseases, makes no reference to mental disorders, though in describing alcoholic neuritis he makes full reference to it.

Hamilton Wright and Orange, in Mott's *Archives of Neurology*, describe fully the pathological appearances in a case of alcoholic dementia with peripheral neuritis, but their paper dors not deal with the clinical aspect of polyneuritic psychosis.

Manson, in the article on Beri-beri in Allbutt's *System of Medicine*, refers to the absence of symptoms of mental disorder in that disease.

I have thought it well to bring before this Section of the Association a summary of the cases of insanity associated with peripheral neuritis which I have met with at Bethlem Hospital in the years 1885 to 1898 inclusive, and also in the last eighteen months in practice, and to see whether there were cases in which the characteristic dementia described with cases of alcoholic peripheral neuritis was present without alcohol being the cause. In all I have met thus with 20 cases in which there were symptoms of peripheral neuritis, 4 being males and 16 females. All the male patients and 12 of the females were in Bethlem Hospital, and the remaining 4 female patients were met with in private practice.

Of the male patients, 3 were undoubtedly alcoholic, and the remaining 1 was said to have become paralysed after a severe attack of typhoid fever with relapses, in which he was ill for five months, and which had been preceded by much exposure and privation in the campaign against the Matabele. In his case, although there was not a very positive history of alcoholism, it was said that alcoholic excess could not be excluded from being a possible contributory cause.

Of the female patients, 11 were certainly alcoholic; in 1 the husband "had no knowledge that his wife was drinking," but there was no other apparent cause, and the symptoms seemed to leave no doubt of the fact; in 1 the patient's husband denied alcoholism, but her doctor had suspected it, and there was a history of "morning sickness;" in 1 the husband, a brewer, denied alcoholism in his wife, but the history showed at any rate that she had been in the habit of taking beer instead of tea in the afternoon, possibly to encourage her husband's business; and in one the husband, himself markedly alcoholic, said that his wife could not stand alcohol without being upset, and her doctor was inclined to think that she was not alcoholic. Careful inquiry into the history, however, elicited the fact that she had on several occasions taken excess of alcohol, as it were, in self-defence, because, she said, she was so miserable at her husband's drinking habits and his ill-treatment of her that she thought she would drown her misery. It may be safely said that alcohol could not be excluded; but in addition there was the fact that one night she had run out of the house and been exposed to the cold and rain in her nightdress for some time from fear of her husband.

The remaining case was one of diabetes, in which there was wasting of the anterior tibial muscles of the right leg, with dropped foot and absent knee-jerks, the neuritis being local only, and there was no history of alcoholism whatever. In 2 of the 4 men there was a family history of both alcohol and insanity; and in 6 of the women, or 37.5 per cent., there was a family history of alcohol (direct inheritance in 4 cases), and a family history of insanity in 4 cases, or 25 per cent.

It is impossible to go in detail into the distribution or amount of paralysis or of anæsthesia or analgesia in the various cases. These may be summed up by saying that the paralysis varied in different cases from weakness and clumsiness in movements of the hands and arms and in standing or walking, with tenderness of muscles and absent knee-jerks, to profound generalised loss of power in all the limbs, with subsequent "dropped foot," or contractions and permanent wasting to a greater or less degree. Some of the cases which for a time, however, appeared to be most unfavourable in this respect recovered under prolonged treatment. One patient died of paralysis of the diaphragm, and difficulty or thickness of speech was a temporary symptom in some. In all cases the pupils reacted normally. The disturbances of sensation again varied in different cases from numbness of hands or feet and legs to marked anæsthesia and analgesia. Delayed sensation and difficulty in localising was very common. In other cases hyperæsthesia was a prominent symptom commonly associated with tenderness of muscles and nerve trunks. In some of the cases tingling or sensation of pins and needles was present. Control over bladder and rectum was retained, except where there was delirium or profound dementia.

The disorder of motion and sensation in some cases came on very quickly, and developed concurrently with delirium, while in others it had been a matter of gradual onset, sometimes associated concurrently with progressive loss of mental power, and sometimes anticipating by a considerable period the development of more acute mental disorder.

The form of mental disorder observed in the alcoholic cases agreed in the main with the groupings described by Korsakoff, and might be grouped as (1) irritability, restlessness, suspicion and hostility sometimes amounting to homicidal desire with hallucinations and passing into weakmindedness; (2) cases marked at the onset by excitement, exaltation, and violence, and rapidly passing into confusion with delirious excitement and profound affection of consciousness; and (3) cases marked mainly by profound loss of memory for recent events, but without very marked excitement or disorder of conduct except that arising from the loss of memory. Cases belonging to the second group predominated in number, but

it does not appear to be possible always to place a case in one definite group; profound loss of recent memory either temporary or permanent, was a very common occurrence in most of them whether beginning with delirium or not. Tiling remarks on the infrequency of hallucinations, but my experience does not correspond with this and in most of my cases they were very marked and often affected various senses. Hallucinations of sight were common, patients complaining of seeing angels, snakes, reptiles, coffins, people who were dead, white mice, faces, babies, beetles, devils, and so on. Hallucinations of hearing ("voices" or explosive noises like shots) were frequent but less so than those of sight. Some patients complained of taste of poison, and others of the smell of gases or burning charcoal. Of special interest were the hallucinations or illusions of common sensation. In some cases no doubt these disturbances were entirely of the nature of illusions, and associated with anæsthesia, hyperæsthesia, or analgesia, the patient misinterpreting his sensations. For instance, patients complained of their legs being bitten by mad fish, of wires in their fingers, of animals biting their arms, of being covered with leeches or eels, of tight bands round the limbs, of strings round the the fingers, of a rabbit or snake in the bed. Several women felt that they had just been delivered of a child or of twins. In many such cases, however, disordered sensations of this kind were associated with hallucinations of other senses, and were no doubt to some extent of the nature of hallucinations. For instance, one woman felt snakes and reptiles in the bed and strings tied round the fingers, saw snakes, heard voices, tasted poison, and smelt gases, and in other cases subjective sensations referred to the limbs were independent of marked disturbance of common sensation. It was curious that the "electrical shocks" so often met with in cases of chronic alcoholic delusional insanity were not complained of by any of these patients suffering from peripheral neuritis. The characteristic disorder of memory was very marked in most cases. In some memory as to place and time was completely at fault. The patient could not remember where he had been a few minutes before or where he had come from. A woman could not remember the age of her youngest child, date of coming into the hospital, the situation of her bedroom, the names of nurses or doctors or of herself, the day of the week or month, the times of meals, or the fact of a recent meal having been consumed. All recent impressions escaped from the memory within a few minutes. Memory for remote events, however, was commonly retained, and such events were often described as having taken place recently, so that former walks, visits, and so forth, were considered as recent events and described as such, or gaps in time were filled up by "romancing." Loss of memory of this nature may be recovered from in the course of a few months with abstinence from alcohol and improvement in the general nutrition, but in other cases more or less permanent weakmindedness remains, and it is important to remember that similar loss of memory may occur without neuritis. Seven patients of the above 20 recovered both mentally and physically, two died, one of paralysis of the diaphragm and 1 of bronchitis and the remaining 11 were permanently damaged in mind at least, and some of then remained more or less paralysed.

It is well to examine a little more closely the cases in which typhoid fever and diabetes appeared respectively to cause the disease. With regard to the first I have already said that alcohol could not be excluded as a possible cause, but no doubt the neuritis appeared during the fever. The mental disorder was at first marked by excitement and exaltation, the patient thought he was to be king of the blacks, that he was wealthy, and he was threatening, noisy, using bad language and dirty in habits. His appetite was voracious and his demands for tobacco and food incessant. His memory for recent events was very defective, he took no notice of his mother on arrival from abroad as if he had not been away, and he did not seem to remember his meals, but there was never the narration of long past events as having recently occurred, nor the description of purely imaginary recent occurrences which is so common in alcoholic cases. His mental condition resembled more the dementia which might follow a severe attack of insanity after typhoid fever than a typical alcoholic case. Both legs were much wasted and the feet dropped, there was hyperæsthesia but not anæsthesia, and the knee-jerks had begun to return on admission to Bethlem Hospital. He recovered power sufficiently to walk without assistance, but there remained some wasting of legs and dropping of the feet, and he was permanently demented.

In the diabetic case the patient, a widow, aged 44, whose father had died of "softening of the brain," and whose mother had been alcoholic, had suffered from diabetes for some time. She was not alcoholic herself, and her mental disorder had commenced two months before admission, and was no doubt due to the general malnutrition. She became slightly excited, thought that she was "Mrs. Metcalf," which was not her name, thought she was very wealthy and could travel without a ticket, and expected to marry again. There were no hallucinations; she was not violent or delirious, and was easily managed. Both knee-jerks were absent, but loss of power and wasting affected only the anterior tibial muscles of the right leg. Under treatment, the diabetic symptoms improved very markedly, and so did the paralysis of the right leg; and concurrently with this the mental condition also improved, so that eventually she was discharged recovered. She remained well in mind, but died subsequently of diabetic coma. In her case the characteristic loss of memory for recent events was absent, but of course it could not be said that she had multiple neuritis, only the muscles of the front of the right leg being affected.

So far I have not met with any case in which it could be said that there was a characteristic polyneuritic psychosis apart from alcoholism, and I shall be interested to hear the experience of others working in psychiatry upon this point. It is impossible to ignore the statements of the observers I have quoted, but if cases similar to the alcoholic ones are at all frequently met with, it is surprising that some such cases should not have come under notice in a hospital admitting in the course of fourteen years over 3,600 patients, most of them suffering from acute forms of mental disorder. I have seen no case of polyneuritic psychosis due to septic or metallic poisoning. Time does not permit me to enter upon the pathology of these cases, and the question as to whether some other toxin than alcohol should be considered as the immediate cause of the neuritis and of the psychosis, and all I have been able to do is to refer to the views of some Continental observers on the subject.

REFERENCES.

[1] *Allg. Zeits. für Psych.*, xlvi, p. 475. [2] Ein Fall von polyneuritischer Psychose mit Autopsie, *Arch. für Psych.*, vol. xxiii, p. 112. [3] Sur les Névrites Périphériques des Aliénés. [4] French Retrospect, *Jour. of Mental Science*, Jan. 1900. [5] *Jour. of Mental Science*, April, 1890.

Dr. JAMES STEWART said that in no case that had come under his observation at Dunmurry during the last twenty years was the symptom of loss of memory for recent events absent. Two cases were worth recording. One was that of a clergyman of considerable intellectual ability, who after being free for seven years from alcohol, and whose general physical health had been quite restored, yet after reading the morning paper would ask what year it was; and if he had been out for a walk he would ask when he could get out. The other was that of a married lady who (similarly to the wife referred to by the reader of the paper) gave self-defence as her reason for taking alcohol. She would go upstairs after breakfast to her room, and if she met a member of the family after an hour or so would ask when breakfast would be ready. He had been called in once in consultation about a case in which there was a decided polyneuritic psychosis associated with lead poisoning, but no alcoholic excess had been traced at all.

Dr. PASMORE had seen two cases of peripheral neuritis during the last two years, namely, one of alcoholic and the other of diabetic origin, both showing the marked amnesic condition that followed on physical recovery.

Dr. SOUTAR did not seek to establish any theory by mentioning two cases in which peripheral neuritis occurred in patients suffering from mental disorder identical with that found in those alcoholic cases which had been discussed. He had seen two cases in which the taking of sulphonal in large quantities had been followed by loss of memory, mental confusion, and delusions as to personal identity, and at the same time by marked peripheral neuritis. The evidence was too slender for drawing conclusions, but he mentioned them with the object of obtaining from others further information.

THE TITLE OF THE SECTION.

Before the close of the meeting it was resolved:

That this Section of the annual meeting held at Ipswich 1900 begs to draw the attention of the Council to the fact that the present title of the Section is a misnomer, and recommends that in future the Section should be called "Section of Psychiatry."

SECTION OF PHYSIOLOGY.

W. D. HALLIBURTON, M.D., F.R.S., President.

(Continued from page 742.)

A DISCUSSION ON MUSCULAR TONUS IN RELATION TO DISEASES OF THE NERVOUS SYSTEM.

I.—F. W. MOTT, M.D., F.R.C.P., F.R.S.,

Pathologist to the London County Asylums; Assistant Physician to Charing Cross Hospital.

DR. MOTT regretted that the task of opening this debate had not fallen on Professor C. S. Sherrington, to whose work he referred in eulogistic terms. He spoke of muscle as being in part "autotonic," and in part dependent for its tonus on the nervous system. Muscle tone was dependent on every portion of the reflex arc, and loss of either centripetal or centrifugal nerve impulses profoundly modified it. Dr. Mott also referred to the effects of "shock" on muscle tone, and commented on the seeming discordance between physiologists and clinicians as to the effect of transverse spinal lesions, the former stating that transection (after disappearance of shock) leaves the reflexes increased, whilst the latter find that complete transverse crush of the cord produces the opposite effect. He drew attention to many clinical conditions in which tonus was noticeably modified, particularly in the muscles of the limbs and the face. These conditions were illustrated by photographs, and in many instances the degree of tonus was pointed out. The influence of emotional states on tone were indicated and fully discussed, as also the condition known as decerebrate rigidity. Dr. Mott was especially gratified at the presence of Dr. L. J. J. Muskens, and hoped to hear the views of that gentleman and of the physiologists present.

II.—W. D. HALLIBURTON, M.D., F.R.S.,

Professor of Physiology in King's College, London; President of the Section.

PROFESSOR HALLIBURTON alluded to the difference of results described by Dr. Mott as obtained by physiological experiments on animals and clinical observations on man with regard to the effect of total transverse lesion of the cord on reflex action, and suggested that the difference might be partly explained by the fact that a crushing lesion was a different thing from a clean cut with a knife, for no doubt a considerable area of grey matter was injured also. It might also be that the grey matter in man was particularly susceptible to shock.

III.—L. J. J. MUSKENS, M.D.,

London.

DR. MUSKENS said that the relation which undeniably existed between muscular tonus and the tendon phenomena was not a direct one. Although as a rule the sharpness of the tendon reaction increased with increase in tone of the muscles concerned, yet in many instances exaggeration of tendon phenomena accompanied markedly subnormal muscular tonus. Dr. Muskens described and showed a tonometer which he had found of value in estimating the degree of tonus (figure). The model shown was designed for the tendo Achillis. The tonometer consisted essentially of a combination of a spring and a dial, enabling the observer to apply any desired pressure and read the corresponding muscular elongation. Dr. Muskens himself was accustomed to test each tendon with a series of pressures, and to compare the readings yielded by a given patient from day to day and under variable conditions. He further believed that accumulation of such data would enable them to profitably compare the tonometer readings in many different cases of nerve disease. He had examined some 500 cases with the instrument, and he regarded tendon phenomena as being dependent on the nutrition and



irritability of the muscle fibres, the passive tension of the muscle, and the muscular tonus. Apart from the muscle itself, other factors concerned were nerve impulses from cerebrum, cerebellum, and spinal cord. He did not regard tendon phenomena as reflex but rather (with Westphal, Gowers, and Waller) as directly excited by mechanical stimulation, and quoted in support of this view an analysis of some 200 cases of gross lesions of the cerebro-spinal axis. In 33·7 per cent. of these neither tendon (Achillis) phenomena, nor true reflexes (plantar) were noticeably affected. In the balance (66.3 per cent.) only 13.6 per cent. showed variation of the true reflexes and tendon phenomena in the same direction. In 26 per cent. the tendon phenomenon was markedly exaggerated, whilst the plantar reflex was normal, diminished, or absent; and in the latter contained most of Dr. Muskens's cases of locomotor ataxy. In relation to this analysis he alluded to Professor Horsley's observation that in narcosis by nitrous oxide the plantar reflexes were abolished, whilst the knee-jerks remained unchanged. With respect to muscular tonus, Dr. Muskens regarded it as an essentially reflex phenomenon.

IV.—WILLIAM BARNETT WARRINGTON, M.D., M.R.C.P.,

Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Liverpool; Pathologist to the Stanley Hospital.

DR. WARRINGTON alluded to Bell's experiment on the section of the sensory division of the fifth cranial nerve, and the resulting atonic condition of the masticatory muscles. He also suggested that ocular paralyses in tabes might be due primarily to a sensory disturbance.

V.—WILFRED JOHN HARRIS, B.A., M.D., M.R.C.P.,

Assistant Physician to the City of London Hospital for Diseases of the Chest.

DR. HARRIS said that the condition of the tendon reflexes in hysterical hemiplegia and paraplegia was interesting in connection with the relation of muscle tonus and tendon phenomena. In true hysterical paralysis, though spasm was also present, the tendon reflexes were not increased, but might even sometimes be diminished, in marked contrast to conditions of neurasthenia in which the reflexes might be markedly increased. The latter condition was apparently associated with excessive irritability and greater waste of the higher centres, whereas in true hysterical paralysis there appeared to be an auto-inhibition of the higher centres which was, perhaps, partly comparable to the condition produced by total transverse lesion of the cord.

REPLY.

Dr. MOTT, in reply, alluded to the obviously great value of Dr. Muskens's tonometer. He said that he regarded the anterior root cell as contributing something to muscle tonus

on its own account under the influence, on the one hand, of impulses from the posterior root fibres, or on the other hand, from cerebral and cerebellar sources.

THE CONDITION OF THE CELLS IN THE SPINAL CORD AFTER VARIOUS NERVOUS LESIONS.

(MICROSCOPICAL DEMONSTRATION.)

By W. B. WARRINGTON, M.D., M.R.C.P.,
Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Liverpool.

IN the cat and monkey I have previously shown that the abolition of the afferent impulses which normally impinge upon the anterior cornual cells through the posterior roots, is accompanied by the change known as chromatolysis. This fact, in conjunction with the law established by Nissl, indicates that the normal life of the cell depends not only on the integrity of the parts of its own neuron, but on those which are immediately related to it. The section I now show is taken from the cord of a puppy, in which the roots can be divided without opening the dura mater, and hence any other possible causal factors are eliminated. Several cells in the postero-lateral group of the lower lumbar region show the characteristic alteration. After the same interference, changes occur in the cells of Clarke's vesicular column. Complete section of the spinal cord is accompanied by, first, chromatolysis, and later, atrophy of the cells of Clarke's column, while the cell of the anterior horn remain intact even after a period of one hundred and fifty days. Division of an anterior root is followed by chromatolysis in most of the cells at the outer part of the cord, whilst those situated most internally remain normal. This observation supports the contention of von Lenhossek that they are not root cells, but commissural in nature. Speaking generally of the value of the Nissl method, I have never found the condition of chromatolysis except in morbid conditions, and hence am convinced of the significance of its presence in cells. At the same time the reaction appears to be subject to certain limitations; it varies with the species of animal, with its age, and with the nature of the interference produced. I do not, think it can be regarded as absolutely trustworthy in attempts therefore, to deliminate nuclei, and as a matter of fact those who have used the method for this purpose have not obtained quite similar results.

Dr. L. J. J. MUSKENS asked whether regeneration of fibres had been observed in Dr. Warrington's cases after section of the posterior root between the ganglion and the cord. In the cats in which he himself had cut the lumbar roots intradurally it had never been possible to detect any regeneration at all, although in one case the animal lived five months.

Professor CARLIER asked as to Nissl's granules, whether they were nuclear in origin, and, if nuclear, what prompted the nucleus to produce them. He further inquired whether section of neurons coming to an anterior horn cell would cause similar chromatolysis to that produced by section of the efferent fibre from the cell in question.

Dr. WARRINGTON, in reply, said he had not worked at the nature of Nissl's granules, but regarded them as "equivalent pictures." He confirmed Dr. Mott's experience that the posterior ganglion cells did not show chromatolysis after division of the root. He regarded the reflex arc as a vibrating arc, and believed that interference with it in any part of its course would give rise to biochemical changes which might in some cases be shown histologically.

THE METABOLISM OF THE NUCLEINS IN BIRDS.

By T. H. MILROY, M.D., B.Sc., F.R.S.E.,
Lecturer on Physiological Chemistry in the University of Edinburgh.

THE experiments which I have been conducting for some time past on the *rôle* of the liver in nuclein metabolism have been done entirely on birds, but the results obtained are not yet sufficiently definite to warrant me in discussing the subject at present. I should like however to refer shortly to the metabolism of nucleins in birds without special consideration of the part which the liver may play. The most important end-products of nuclein disintegration in mammals are the alloxur bodies, including under this term both the bases and uric acid, phosphoric acid, and urea. In mammals it is well known that both the alloxuric bodies and phosphoric acid are increased after assimilation of nucleins, and in well recognised conditions, experimental or pathological, where the nuclear metabolism in the tissues is affected, one has also an alteration in the amounts of the end-products excreted in the urine. For these reasons disintegration of the nucleins present in the food or derived from the tissues has been usually referred to as at least the main source of uric acid in mammals. In birds, on the other hand, when uric acid is the most important end-product of nitrogenous disintegration, the source just referred to has been given a secondary place, mainly as a result of Minkowski's experiments on the effects of removal of the liver from geese when the excretion of uric acid rapidly falls until only a very small quantity remains in the urine, while in its place there is an increased excretion of ammonium salts and fairly large quantities of sarcolactic acid. Now, although this is the case, it is difficult to draw conclusions from these experiments as to the *rôle* of the liver in birds under normal conditions, for the geese only lived for a very short period after the very severe operation, and then passed a very watery urine. The operation was so severe that there must naturally have been a great disturbance of both the proteid and carbohydrate metabolism, even apart altogether from the effect of removal of an organ which plays so important a *rôle* in the carbohydrate metabolism. It was by no means extraordinary that there should have been a marked excretion of such a body as sarcolactic acid and of ammonium salts formed by ammonia derived from increased proteid disintegration neutralised by the former substance. Of course, it is by no means improbable that such a feasible synthesis as Minkowski suggests may take place in the liver under ordinary conditions, but the proof is by no means a complete one. It was important to find out how the nucleins behaved in the organism of birds, and so I fed and injected subcutaneously nucleins, nucleic acid, and alloxur bases to geese, turkeys, ducks, and hens, and have found that on giving the two first-mentioned substances, there is a more distinct increase of uric acid than in mammals, and quite as distinct an increase in phosphoric acid. The rise in the excretion of P_2O_5 is greater than could be accounted for from the organically formed phosphorus absorbed, and one gets a leucocytosis more or less of the same type as in mammals. The blood of a hen under the influence of nucleic acid shows a much higher percentage of P_2O_5 than that of a normal one. I cannot speak at present of intracellular changes in the case of birds after nucleic acid, nor of the effects of the alloxur bases, but there seems to be little doubt that the formation of uric acid from nuclear disintegration may be an important one in birds as well as in mammals. It is interesting in this respect to recall the fact that v. Mach found that removal of the liver by Minkowski's method did not affect the tranformation of hypoxanthin into uric acid.

The PRESIDENT suggested that Dr. Milroy's results opened the important question whether physiologists were right or wrong in attributing to the liver an exclusive or predominant *rôle* in the final stages of nitrogenous metabolism. The results of Eck's fistula in mammals certainly did not show the great diminution of urea which was expected. He also asked how Dr. Milroy explained the diminution in phosphates excreted in some cases of leucocythæmia.

Dr. D. F. HARRIS asked Dr. Milroy whether his researches had indicated that they had moved away from the position determined by the experiments of Schroeder as to the specific synthetic power of the liver in urea and uric acid formation.

Professor W. H. THOMPSON asked Dr. Milroy if he had paid attention to the output of phosphorus by the fæces as well as by the urine, seeing that it is well known that the nature of the diet—chiefly as regarded its content of calcium—affected the excretion of phosphorus, less going out by the kidney and more by the rectum.

Dr. W. E. DIXON drew attention to the presence of Charcot-Leyden crystals reported to be present in leucocythæmics, asthmatics, and others, and suggested the possibility of these crystals being a means of getting rid of some of the P_2O_5.

Dr. MILROY replied in the first place to Professor Halliburton's remarks on the diminished phosphoric acid excretion in leucocythæmia as seemingly militating against his view of the relationship between increase in number of leucocytes (as in experimental leucocytosis) and increased excretion of phosphorus. He explained the seeming discrepancy by saying that probably there was, so to speak, a slower metabolism in the myelocytes than in the ordinary polymorphonuclear granular leucocyte, and as the former were the characteristic cells of medullary leucocythæmia, this might explain the diminished excretion. He agreed with Dr. D. F. Harris in concurring with Schroeder's view in the formation of urea from ammonium lactate in the liver, but said that this of course did not help in the determination of the *rôle* of the liver in birds. In reply to Professor Thompson's question he said that the excretion of P_2O_5 by bowel was determined in all cases. In reply to Dr. Dixon, he said that he had only rarely met with Charcot-Leyden crystals in leucocythæmia, and could not form any definite opinion as to their mode of formation.

A NOTE ON RESPIRATION.

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ABSTRACT.

PROFESSOR ANDERSON discussed the mode of entrance of atmospheric air into the pulmonary lobules and infundibula; commenting on the relative shares of aspiration and diffusion concerned in the process. He regarded the tidal air as penetrating far into the lobes; whence, by mixed aspiration and diffusion, it entered the lobules. The infundibular opening being less than $\frac{1}{250}$ of an inch (0.1 mm.) in diameter, gas passed through it slowly, and the contents of the alveoli were subjected to alternate rarefaction and compression. Some notion as to the degree of this might be gained by observing the rate at which air passed at known pressures through apertures of known size. Experiments made with a hole of 1 mm. diameter in cardboard showed that, for example, at 18 mm. pressure 435 c.cm. of air passed in 130 seconds; and others made with a slightly smaller hole in bladder showed that the rate of passage was somewhat greater. Thus, the rate of passage under such circumstances varied not only with pressure and size of the aperture, but also with the nature of the wall of the aperture. It was not possible to reproduce exactly the physical conditions that obtain at the infundibular inlet; but the low results observed in such experiments with comparatively high pressures suggested that the rate of entrance of air into the alveoli was exceedingly slow, and hence, that the alternate rarefaction and compression of the alveolar air was by no means inconsiderable.

OBSERVATIONS ON THE TEMPERATURE OF MAN AFTER SO-CALLED "HEAT-STROKE."

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W. H. PASSMORE, and E. T. CLAYTON, M.R.C.S., L.R.C.P.

NUMEROUS observations have been made upon the temperature of men suffering from so-called "heat-stroke," but apparently all the determinations have been limited to the heat of internal parts, such as the mouth, rectum, and closed axilla. The temperature of the skin would without doubt throw light upon these somewhat obscure cases, and in order to call attention to this point we record the few observations which we have been able to make during the extreme heat of the latter weeks of July. The neglect of observations upon the temperature of the skin is due to the complicated apparatus necessary for thermo-electric determinations. Recently, however, it has been shown by Waller,[1] Hale White,[2] Nicol and Pembrey,[3] that comparable results of value can be obtained by the use of a simple mercurial thermometer provided with a flat bulb. A consideration of the temperature of the skin of healthy individuals exposed to the heat under conditions of rest and muscular work must precede and serve as a standard whereby to judge the results obtained in the cases of so-called "heat-stroke." Of the following tables the first (p. 832) gives certain meteorological observations kindly supplied by Mr. W. L. Shaw, of the Meteorological Office; the second gives the data obtained by one (M. S. P.) of us upon himself during the hot weather.

The figures in the second table (p. 832) show that, notwithstanding the rise in the internal temperature, which is normal in healthy men doing muscular work, there is no corresponding rise in the temperature of the skin. This is due to the cooling effect of the evaporation of the abundant sweat.

We may now consider the cases of so-called "heat stroke" admitted to Charing Cross Hospital under the care of Dr. Green and Dr. Mitchell Bruce.

CASE I.—The patient was a well-built man, aged 48. During the last eleven years he has worked as a porter, previously he had served fourteen years in the navy. The only history of previous illness was one of a slight attack of ague when he was a sailor, and an attack of subacute rheumatism about three years ago. On July 16th he was walking round for orders, and was perspiring freely; at 11 A.M. he had a lunch consisting of cold meat, bread and cheese, but nothing to drink. About midday, with little or no warning, he became unconscious and fell down. He was brought to the hospital by the police. He understood nothing that was said to him, and frequently struggled in a most violent and convulsive manner. There were no signs of alcoholic drinking. The skin was extremely dry and hot, and, except for the flushed face, was pale. The pupils were dilated. Every attempt to take his rectal temperature was met by violent struggling, but observations upon the temperature of the skin were easily made.

Time.	Rectum.	Axilla.	Abdomen.	Thigh.	Remarks.
	Deg.	Deg.	Deg.	Deg.	
1.30 P.M.	Above F. [illegible]	[illegible]	[illegible]	100.4	The abdomen had been exposed for a short time before the temperature was taken.
	C. 35.8	38.4	37.9	38.0	

An icebag was applied to the back of the head, $\frac{1}{4}$ gr. of morphine was given hypodermically and tepid water sponged over the body. The evaporation of the water cooled the skin extremely quickly, and the surface temperature of the thigh fell to 92.3° (33.5°) in about ten minutes. The patient was left exposed to the air for about an hour, his temperature (axilla) fell to 99° (37.2°), he became much quieter and was put to bed. Examination showed no signs of disease, the lungs were emphysematous, the number of respirations 20, and the pulse slow, regular, and weak, with a frequency of 44 per minute.

The tepid sponging was continued for the next two or three days, for the patient did not sweat. The bowels were obstinately constipated. The urine showed no abnormality. The pulse remained slow, with a frequency of 48 on July 20th. The patient was discharged on July 24th. The following are further observations made upon the temperature of the patient:

Date.	Time.	Rectum.	Axilla.	Mouth.	Abdomen.	Thigh.	Forearm.	Remarks.
		Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	
July 17	Noon.	F.	100.4		98.6	97.9	98.0	No sweating. Skin dry.
		C.	38.0		37.0	36.6	36.7	
..	11.25 A.M.	F. 99.6	98.2	98.6	97.7	96.4	96.4	Temperature of ward [illegible]
		C. 37.2	36.8	37.0	36.5	35.8	35.8	

CASE II. The patient was a van-boy, 13 years of age. No history could be obtained of any previous illness, except of fainting once at school and once after bathing for a quarter of an hour. On July 18th the boy began

Time.	Rectum.	Axilla.	Mouth.	Abdomen.	Thigh.	Remarks.
	Deg.	Deg.	Deg.	Deg.	Deg.	
12.15 P.M.	F. 99.8	99.5	99.2	[illegible]	[illegible]	Temperature of the air of room, window and door open =86.0° F., 30.5° C. Rectal determination taken after others and removal of clothes.
	C. 37.7	37.5	37.3	38.0	37.5	

TABLE I.

Date 1900.	Temperature. In shade. Maximum at Brixton.	Maximum at Westminster.	Minimum at Brixton.	Maximum at Greenwich	Sunshine, W'minster. Hours.	Cloud, Brixton or Westminster.			Relative humidity Brixton or Westminster.			Wind. Brixton or Westminster.
	Deg.	Deg.	Deg.	Deg.					Per cent.	Per cent.	Per cent.	
July 15	80		53	150		Clouds	Clouds Blue sky Clouds	Blue sky Clouds	67	56	56	South-west light.
,, 16	92	91	60			Clouds	Blue sky Clouds	Clouds	74			West light to S.W. light.
,,	83	82	60	132		Blue sky	Blue sky Clouds	Blue sky	73			North-west light.
,,		84	58		12.9	Blue sky	Blue sky	Blue sky	69	42	50	South-west light.
					11.0	Blue sky	Blue sky Clouds	Blue sky			49	S.W. light to S. and E. light
,,						Blue sky Clouds	Clouds	Blue sky Clouds		4		E. light to S. and S.W. light.
						Overcast	Blue sky Clouds	Clouds		59		West-south-west light.

TABLE II.

Date and Time.	Temperature of Air. In Sun.	In Shade.	Wind, Clouds.	Deep Temperature of Body. Rectum.	Urine.	Mouth.	Surface Temperature of Body. Abdomen.	Thigh.	Forearm.	Remarks.
	Deg.	Deg.		Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	
July 20, 7.45 P.M. F.	—	81.95	—	—	100.4	100.4	95.0	95.50	95.00	Sweating slightly after a slow bicycle ride of two miles.
C.	—	27.75		—	38.0	38.0	35.0	35.25	35.00	
F.		75.00	Good breeze	100.5	99.6*	99.1	92.3	93.20	95.50	After digging in garden. No coat, waistcoat open, no hat even in sun. sweating.
C.	—	24.00		38.0	37.7	37.3	33.5	34.00		
		84.20	No wind	99.6	99.0*	99.6	97.3	95.90		Writing. No coat. Sweating slightly.
C.	38.5	29.00		37.0	37.2	37.6	30.3	35.50	35.70	
F.	95.0	92.50	Good breeze, clouds	100.7	100.5*	99.2	94.6	96.40	96.10	After a bicycle ride of three and a-half miles. Sweating profusely.
C.	35.0	33.60		38.1	38.0	37.3	34.8	35.80	35.60	

NOTE.—The clothes worn were flannel.
* The quantity of urine was too small for a correct determination of temperature.

work at 7.30 A.M. Two hours later he made a poor breakfast of tea, bread and butter; and then worked in the shade cleaning harness until soon after 10 o'clock, when he became faint, and was found by his friends in an unconscious condition. He was brought to the hospital at 11 A.M. The patient was now conscious, but dull and suffering from severe headache. The skin was hot and dry, and, with the exception of the somewhat flushed face, was pale. There was no sweating on any part of the body. The rate of respirations was 20, of the pulse 88. The table on p. 831 shows determinations of his deep and surface temperature.

An icebag was applied to the head, and the body was sponged with tepid water. The evaporation of the water in about five minutes reduced the temperature of the skin to 89.6° F., 32° C. Under a continuation of this treatment the boy recovered rapidly, and left the hospital the next day.

CASE III.—The patient was a Covent Garden porter; during the last twelve months he has been a teetotaler; previous to this he drank heavily. A history was obtained of six "fits" fourteen years ago, after a fall, and of an attack of influenza ten years age, otherwise he has been well. On July 12th, after working in the heat in Covent Garden Market, he was wheeling a coster's barrow along Regent Street when he suddenly fell down in an unconscious condition, and was brought to the hospital. He was in a state of collapse; the surface of the body was cold, and covered with perspiration. The pulse was rapid and weak, the rate of respiration 20. The patient was restless but not violent. The temperature of the axilla was 95° F. (35° C.), but unfortunately the patient was not seen in time for observations to be made upon the surface temperature. The patient was put to bed with hot-water bottles, and given stimulants. He was soon seized with severe shivering, and the temperature in the axilla rose to 99.4° F. (37.4° C.) at 6 P.M., but soon fell again. When he regained consciousness he complained of very severe headache in the occipital region. Examination of the patient showed the heart to be slightly enlarged, a systolic murmur heard at the apex and conducted into the axilla. Apart from the cardiac condition no disease was found. At this date (July 31st) the patient is still in the hospital suffering from mitral incompetence.

CASE IV.—An old man was overcome by the heat, fell down and was brought in dead by the police. The surface temperance of the abdomen and thigh was 96.8° (36°), and there were no signs of sweat when the body was seen about half an hour after death (July 18th, noon). The man had been under treatment elsewhere for heart disease. No *post-mortem* was made, no inquest was held, and therefore, in the absence of further knowledge, no stress can be laid upon this case.

Summary.—The observations in Cases I. and II. show that that after the "heat-stroke" the skin was dry and hot, and there were no signs of sweat. The surface temperature was three and a half to five and a half degrees (2° to 3° C.) above the normal temperature of the skin. The deep temperatures were 103° (39.4°) and 99.8° (37.7°). Case III. is one of so-called "heat exhaustion" with profuse sweating, collapse, and subnormal temperature 95° (35°). Mitral incompetence is present, and possibly dates from the "heat-stroke."

Conclusions.—The observations are too few and incomplete to justify conclusions or theories, but they show that the cases of so-called "heat-stroke" are complex and obscure. With a high internal temperature and no sweating the temperature of the skin becomes abnormally high, and the body is warmed throughout. The heart appears to be affected, or it may be that men with weak hearts are more readily affected by the heat. There may be profuse sweating, with collapse and subnormal temperature.

We wish to express our thanks to Dr. Green and Dr. Mitchell Bruce for the opportunity of examining the cases in their wards, and to Mr. A. E. F. Hubbard, the clinical clerk. The special thermometers for surface temperature were provided out of a grant from the Scientific Grants Committee of the British Medical Association.

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1 Proc. Physiol. Soc., *Journ. Phys.*, 1894, vol. xv. 2 Croonian Lectures *Lancet*, 1897. 3 *Journ., Physiol.*, 1898, vol. xxiii.

ANÆSTHETICS AND URINARY SECRETION.

By W. H. Thompson, M.D., F.R.C.S.,
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Experiments were performed on dogs. In most cases urine was received from the ureters by means of cannulæ inserted sometimes from the front, sometimes from behind. Blood pressure was recorded in these cases. In another class of experiment no operative procedures were carried out. Urine was simply drawn from the bladder at stated periods before and after the administration of the anæsthetic. In the earlier experiments (undertaken as control experiments in connection with another research) morphine was previously given hypodermically. An abstract of these appeared in the British Medical Journal of April, 1899, p. 793. In the latter experiments morphine was omitted. The effects of (1) ether, (2) chloroform, (3) A.C.E., and (4) a mixture of two parts ether with one part chloroform were studied. The anæsthetics were administered through a tracheal cannula in the first series of experiments, and by simple inhalation in the later series.

1. *Ether* caused an increased diuresis in the great majority of the experiments, which continued after the anæsthetic was removed. The percentage output of nitrogen suffered a diminution corresponding to the increase of urine. The total excretion per hour of nitrogenous substances was however increased. In one experiment (second series) the amount of urine was diminished; the diminution, however, was followed by an after-increase.

2. *Chloroform* in the greater number of cases caused a diminution in the secretion of urine with, for the most part, an after-increase. The output of nitrogen per cent. suffered a diminution except where decrease in the quantity of urine was very marked. In all cases the total excretion of nitrogen per hour was greatly reduced, followed by an after-increase. One experiment (first series) showed a considerable increase in the quantity of urine secreted.

3. *A.C.E.*—The immediate effects of this compound were variable, but all of the experiments showed a very pronounced after-diuresis. In experiment total suppression lasting two hours and a-half was produced, followed after removal of the anæsthetic by a somewhat augmented secretion. This dog proved to have had albuminuria previous to the experiment. The total output of nitrogen was, as a rule, increased, but not invariably; the percentage output corresponded inversely to the outflow of urine. The variability in the results was probably due to the predominating effect of one or other constituent of the anæsthetic.

4. Ether-chloroform mixture as used, produced a very slight diminution in the outflow of urine, the average of seven experiments being 10.75 c.cm. for the normal hour, 8.85 c.cm. for the anæsthetic hour, and 9.4 c cm. and 10.3 c.cm. respectively for the two subsequent hours. The output of nitrogen per cent. was correspondingly affected, per hour very slightly increased. For kidney experiments this is, therefore, *par excellence*, the anæsthetic to be selected.

After all of the foregoing anæsthetics the chlorides suffered a marked diminution.

Abnormal constituents also occurred in the above urines. (*a*) In some cases albumen was observed; but in all of these cases, with one exception, the urine was slightly tinged with blood. It was concluded, therefore, that this furnished the albumen, and had probably arisen from a slight lesion of the ureter mucous membrane by the end of the cannula. Such a lesion was discovered in every case in which it was sought for. The exceptional case was that in which the dog had suffered from albuminuria prior to the experiment. This was shown by the presence of albumen in the urine obtained from the bladder. The author has therefore little doubt that some fallacy has crept into the experiments of Kemp,[1] where he found the presence of albumen in the urine to be very frequent after the administration of ether.

Reducing substances were found in the majority of the urines, even these of the second series where morphine was not administered and to which the following remarks only now refer. That in the urine after chloroform gave crystals resembling those of glucosazone, the urine also fermented, though not always very typically. There can be little doubt, therefore, that grape sugar was present. Osazone-like crystals were also obtained after the administration of ether. The urine required at least an hour's boiling and the crystals separated out only after standing overnight. This urine did not always ferment.

The urines were also tested for glycuronic acid compounds both before and after boiling with a mineral acid. All of the recognised reagents gave, however, only negative results. Reactions for pentose likewise failed.

The volume of the kidney was studied by means of Roy's oncometer under the influence of chloroform and ether chloroform mixture. Both these anæsthetics gave a fall in volume, more marked in the case of chloroform. The number of experiments was not, however, sufficiently large to speak conclusively.

[1] *New York Medical Journal*, 1899.

THE EFFECTS OF INHALATION OF CERTAIN ANÆSTHETICS ON THE KIDNEYS.

By
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Introduction and History.

The following paper forms part of a series dealing with the effects of anæsthetics on the organs and tissues of the body. The subject of the present communication is the effects produced upon the kidney by the inhalation of certain anæsthetics. Ether was made the principal study both because of the fact that it is usually regarded as possessing properties highly deleterious to the peculiar action of the kidneys, and because the research was a part of a larger one dealing more particularly with ether. Experiments were, however, also undertaken with chloroform, and these serve as a contrast and explain some of the effects produced in the case of ether.

Although a considerable number of papers have appeared dealing with the subject in hand, no attempt is made here to offer a bibliography of the matter, but it is proposed rather to describe the experiments undertaken, and present such conclusions as they and the clinical records now submitted appear to warrant. In the case of a research undertaken by Drs. Thomson and Kemp[1] more than passing notice is given, as the results of these gentlemen appear to us to be capable o explanations which bring them into line with the present conclusions arrived at by ourselves.

It is obvious that no research upon the subject under discussion can be complete without appeal being made at once to direct experiment, and to clinical investigation. The conditions under which physiological experiment is made must present certain diversities from the surroundings of patients undergoing surgical operations. They are capable of more exact control in many ways, and permit of an analysis of results, and so form the preliminary basis for clinical research. On the other hand, for practical conclusions, the appeal to clinical evidence must be had recourse to, since many factors in the problems are involved in the behaviour of patients subjected to anæsthetics for more or less prolonged periods, during which operations of trifling or great magnitude are performed. The experiments of Drs. [illegible] W. H. Thomson, convinced them that "sulphuri[illegible] anæsthetic produced a specific effect of its own upo[illegible] circulation." An effect which they believe is indi[illegible] any "corresponding disturbance of the gen[illegible]s indicated by the blood pressure in the [illegible]n of complete suppression of the urine freq[illegible]urring." The results of these observers were so se[illegible] to demand the most careful scrutiny, and the present research was initiated by one of us from that standpoint. If such conclus[illegible] to be accepted it was felt that a very stringent delini[illegible] the use of ether would become necessary. The conclusions of these workers are as follows, and were arrived at by extremely careful and well-though[illegible] experiments:

Under ether: Carotid tracings (1) rise of blood pressure from commencement; (2) further slight rise on pushing the ether; (3) moderate fall on withdrawal of ether.

Kidney tracings (1) under moderate anæsthesia slight rise of oncometric



Fig. 1.—Blood pressure effect under ether. Animal aspirating air through ether contained in a vessel surrounded by hot water. At 3 perfusion of air through this ether was commenced. At 4, ether taken off. The arrow shows the direction of the movement of the oncometer lever which indicates contraction of the kidney. The effect on the kidney volume is quite transient, recovery taking place as the blood pressure rises.

curve (expansion of kidney) corresponding to rise of blood pressure; (2) on pushing ether a great fall of oncometric curve (shrinkage of kidney) to or below the recording limit of the tambour. If ether is suspended the kidney recovers in from 30 seconds to 2 minutes.

This effect is according to these observers "specific."

They further affirm that this "specific" effect is revealed when mixtures containing ether are employed, and this fact they believe precludes the possibility of the effect being only the result of the increased central arterial tension brought about by ether.

On kidney secretion they find ether produces the following results: The drops flowing from a cannula in the ureter are diminished in frequency and this diminution is progressive and ends in suppression as the ether is pushed. "Albumen appeared early even under moderate anæsthesia. This increased under deep narcosis, until just before the suppression it amounted to 60 per cent. in volume." These experiments were performed on ten dogs.

With regard to chloroform an evanescent rise of blood pressure was followed by a fall. The oncometric curve followed the blood-pressure curve, and although revealing a fall this was never excessive. The secretion of urine they found to remain copious until the blood pressure fell very low, and it flowed almost to the time of death. Albumen, usually absent, appeared in small quantity however after prolonged narcosis when the blood pressure had become dangerously depressed.

With regard to the A.C.E. (Harley) mixture the methods employed appear to indicate that the results arrived at in the one case corresponded to those regarded by Drs. Kemp and Thomson as an "ether effect," and in another as those incident to the employment of chloroform.

Method of Experiments.

To return to our own work the following was the method employed:

Dogs were employed in all instances. The variations of volume of the kidney were measured by an oncometer which was an adaptation of Schäfer's plethysmograph. This was attached to a Marey's recording tambour marking upon smoked paper revolving on a Hürtle kymographion. The blood pressure was registered through the medium of a cannula inserted into the femoral artery. The flow of urine was recorded by inserting a cannula in the ureter of the unenclosed kidney, and signalling each excretory effort. The ureter was exposed and cannularised retroperitoneally in the iliac region.

Method of Administering the Anæsthetic.—To allow of regular anæsthetisation the animal was in every case tracheotomised. The anæsthetic was given by one of two methods.: (1) by aspiration of air through the anæsthetic by means of a modification of the ordinary "wash bottle" attached to the tracheotomy tube. This bottle was in some instances surrounded by hot water to produce more rapid vapourisation. In every case care was taken to allow free expiration by the use of a double tube which could be closed if required during inspiration. (2) By aspiration through a tube connected with a funnel held over cotton wool more or less soaked in the anæsthetic according as a deep or light narcosis was required. Care was taken to maintain a light anæsthesia during the preparation of the animal, so as to avoid vitiation of the subsequent experiments by an accumulation of a large amount of the anæsthetic in the blood.

Results of Experiments.

As the result of our series of twelve experiments we failed to substantiate the occurrence of the "specific ether effect" with the same constancy which is attributed to it by Kemp and Thomson. In five of our animals it was obtained, but in six we entirely failed to evoke it, although the ether was gradually pushed until its toxic effects on blood pressure and subsequently respiration were evident. On each animal several trials were made, but with this result only. In one further experiment a doubtful, probably mixed, result was obtained.

A fall of blood pressure resulting from an excessive dose of ether is, of course, accompanied by a contraction of the kidney from lessened blood supply, accompanied naturally by a diminished flow of urine, which becomes restored to the normal *pari passu* with the expansion of the kidney as the blood pressure rises on ceasing the administration of the anæsthetic. This simple blood pressure effect (see Fig. 1) is obviously quite distinct from the true ether effect, and is quite comparable to the blood pressure effect observed under chloroform administration (see Fig. 2).

The specific ether effect we only obtained after prolonged administration or repeated large doses of the ether, a point which we consider to be of extreme importance. The specific effect when obtained, and as illustrated by the accompanying tracing, may, as Kemp and Thomson maintained, be entirely

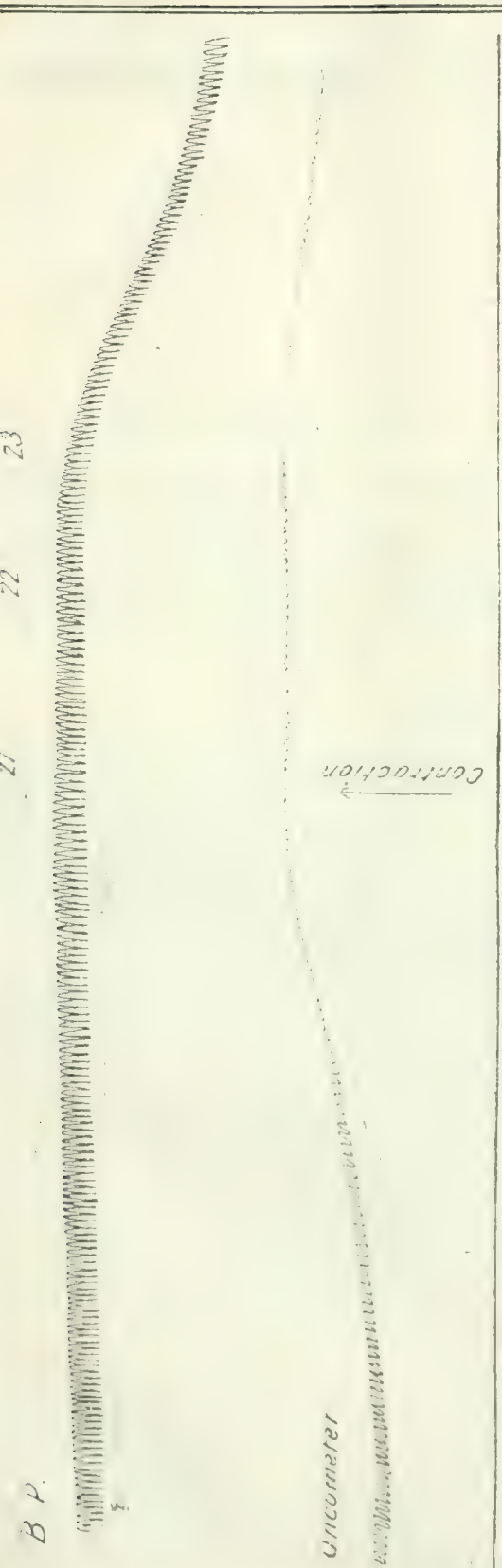


Fig. 4.—Specific ether effect followed by toxic effect on medullary vital centres. Animal respiring ether vapour through a funnel. 21. Breathing slowly. 22. Breathing slowly, ether taken off. 23. Breathing ceases and blood pressure falls.

independent of any decrease of blood pressure, but we certainly, in the majority of instances, noted some degree of fall, not sufficient perhaps to be regarded as a factor in the production of the ether effect, but important as denoting the degree to which etherisation had been pushed, the commencement in fact of the toxic stage of anæsthesia (Tracing, Fig. 3). Another observation which we frequently made was that after producing a specific kidney effect we could not prolong the ether inhalation without soon causing either a failure of respiration or a pronounced fall of blood pressure (Tracing, Fig. 4), this instancing how the anæsthetisation had been carried to a dangerous degree. The kidney volume resumes its normal after specific contraction gradually and much more slowly than in the case of a simple blood pressure effect.

Our observation upon the flow of urine during the progress of a specific kidney effect in the main agree with those of Kemp and Thomson. We have found on the occasion of an ether effect the interval between successive drops of urine to reach as much as 2 minutes, when the normal interval was 12 seconds. We consider, however, that the plan of signalling actual drops of urine is not a sufficiently accurate one and it cannot be implied that no excretion takes place during the above intervals, for each actual drop is the total of a number of small excretory efforts. The normal rate of secretion is resumed very gradually as the circulatory disturbance disappears, but we have to take exception to the expression "complete suppression," for this we never witnessed, the secretion though slowed never entirely stopped (Fig. 3), and was always found to be fairly active after an appropriate interval, during which the anæsthetic was withdrawn. The employment of this term we think to be misleading in that it implies a complete suppression lasting for a long period, a condition which we cannot think Drs. Kemp and Thomson intended to imply. We may say we never found a condition of anuria approaching in persistency that which may be readily produced by accidental traction on the ureter when inserting the cannula, and which, though generally very temporary in duration, may in pronounced cases last for an hour or more.

We have not so far far had an opportunity of investigating very thoroughly the urine excreted in the course of the experiments, but the following table shows the results of 5 experiments—in 4 of which a variable quantity of albumen was present in the whole collections of urine excreted during the experiment, being entirely absent in one:

No. of Experiment.	Albumen.	Remarks.
1A	No albumen	No ether effect. Several toxic doses of ether given. (Urine secreted immediately on cannularising ureter. Under anæsthetic over an hour.)
5	Trace	No ether effect. (Temporary initial suppression from manipulation of ureter.)
6	Considerable trace	No ether effect. (Temporary suppression from manipulation of ureter.)
7	Considerable trace	No ether effect. (Temporary suppression from manipulation of ureter.)
8	Fair trace; following ether effects, none previous to this.	Ether effect obtained. (Urine excreted freely from commencement.)

In the above cases, when no ether effect was obtainable, the anæsthetic was pushed more than once until a pronounced fall of blood pressure was obtained. It seems evident from them that albumen may appear in considerable traces following the administration of a considerable quantity of ether vapour. The influence of a temporary suppression of urine caused reflexly by manipulation of the ureter in inserting the cannula has possibly to be considered in connection with the amount of albumen found. This reflex suppression is frequently difficult to avoid.

CONCLUSIONS.

The study of our tracings and a consideration of the details of our experiments leads us to regard the specific ether effect not as a *necessary* and *initial* result of ether narcosis, such as Drs. Kemp and Thomson appear to regard it, but as the occasional result of the prolonged action of ether when circulating in the blood in such excessive quantity as is nearly toxic to the vital centres of the medulla. Such a dose may, we consider, in some cases be actually toxic to the

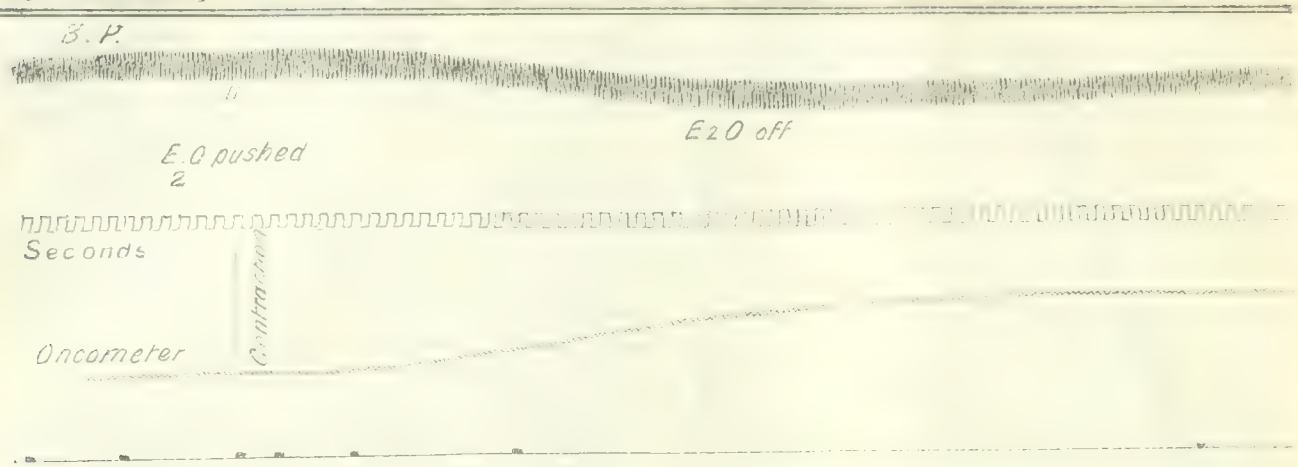


Fig. 3.—Specific ether effect. Ether administered through a funnel. Urine flow registered as before. The flow of urine is much of the recording drum was interrupted

kidney in that it acts directly on the kidney arterioles exciting their contraction, thus producing the "specific effect."

After cessation of administration of the anæsthetic the urine secretion is gradually resumed. We are unwilling, to ascribe directly to the ether such a suppression of urine as occasionally follows an operation under this anæsthetic.

Chloroform Experiments.—Our results in respect of the administration of chloroform need not be enlarged upon here, as they agree in the main with those described by Drs. Kemp and Thomson, and already mentioned.

CLINICAL EVIDENCE.

Turning to the clinical side of the present paper, we may give the following account of the plan adopted. The anæsthetic was given by one of us (D.W.B.) or by a student under personal supervision. The cases were taken in rotation without any attempt being made at selection. The operations were in some cases slight, in others very severe.

In the cases in which ether was given, care was taken, as is is the custom in our methods, to obtain anæsthesia rapidly by the employment of a regulating inhaler, and, while maintaining complete narcosis, restricting the amount of ether given. The quantities employed are seen in the table of results.

The duration of the anæsthetic varied from a few minutes to over an hour, and occasionally there was severe hæmorrhage. The operations were performed by surgical colleagues, to whose courtesy we are indebted for the opportunity of studying the cases.

When possible the urine was collected for twenty-four hours before the administration of the anæsthetic. The first urine passed after the completion of the operation was collected and examined separately from the remaining urine passed in the twenty-four hours ensuing on operation. In a few instances it was possible to obtain only specimens, and in such cases of course no comparison as to quantity could be instituted. We regret in the present series of cases catheter specimens were not obtainable. The patients were, however, required to urinate before entering the anæsthetising room, and the first specimens passed, after conclusion of operation, were usually small in amount.

I.—*Methods of Examination.*

The specific gravity of the three sets of specimens having been taken, the quantities were measured, reactions noted, and deposits examined microscopically. Albumen was tested for in each case by (1) the boiling test and (2) the nitric acid ring test, and, when confirmatory evidence was required, by (3) trichloracetic acid, and (4) picric acid tests.

When albumen was present in sufficient amount, quantitative estimations were made by Esbach's method. When only traces of albumen existed pus cells were always looked for microscopically.

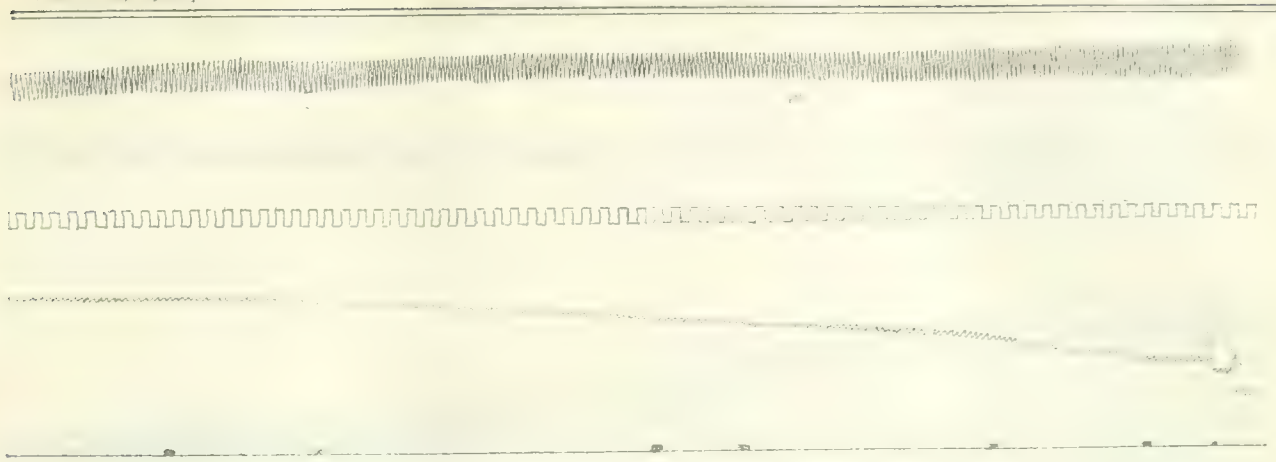
II.—*Results.*

The following table shows the details of 37 cases of etherisation:

TABLE I.

Sex.	Age.	Of patients. Quantity of Anæsthetics.	Duration of Operation.	Specific gravity. 4 Hours before.	Specific gravity. 24 Hours after. First specimen.	Specific gravity. 24 Hours after. Remainder.	Quantity of Urine. 24 Hours before.	Quantity of Urine. 24 Hours after.	Albumen. 24 Hours before.	Albumen. 24 Hours after. First specimen.	Albumen. 24 Hours after. Remainder.
M.	50	℥ii	20′	—	—	—	—	—	*Nil*	*Nil*	*Nil*
M.	32	℥iii	25	—	—	—	—	—	,,	,,	,,
*M.	52	℥ii	25′	1015	1021	1023	1,750	460	,,	,,	,,
M.	21	℥ii ℥ij	25′	1027	1030	1022	—	—	,,	,,	,,
M.	18	℥iiiss	—	1023	1033	1029	—	—	,,	,,	,,
M.	26	℥iiss	40′	1014	1019	1025	1,720	940	,,	,,	,,
†M.	20	—	70′	1019	1039	1031	950	490	,,	,,	,,
M.	7	℥ij	25′	1028	1028	1026	615	374	,,	,,	,,
F.	37	℥vj	120′	1020	1015	1020	—	—	,,	,,	,,
F.	51	℥ijss	—	1013	1020	1023	900	670	,,	,,	,,
M.	34	℥ivss	60′	1022	1030	1011	1,100	1,530	,,	,,	,,
M.	40	℥vss	60′	1027	1028	1026	—	—	,,	,,	,,
M.	15	℥j ℥vj	20′	1018	1030	1030	1,200	350	,,	,,	,,
M.	61	℥iijss	45′	1022	1028	1024	800	950	,,	,,	,,
M.	17	℥ij	10′	1012	1030	1027	1,200	720	,,	,,	,,
M.	16	℥ijss	45′	1010	1034	—	1,100§	420‖	,,	,,	,,
M.	23	℥iv	45′	1022	1030	1030	850	500	,,	,,	,,
M.	50	℥jss	30′	1021	1022	1023	—	—	,,	,,	,,
M.	30	℥iij	30′	1026	1026	1031	1,300	1,360	,,	,,	,,
M.	—	℥ij	45′	1011	1037	1016	1,800	670	,,	,,	,,
M.	22	℥v	40′	—	—	—	—	—	,,	,,	,,
M.	32	℥iv	30′	1015	1022	1016	1,100	1,010	,,	,,	,,
M.	36	℥iv	60′	1020	1030	1026	1,050	780	,,	,,	,,
M.	29	℥ijss	30′	1020	1012	1025	1,330	1,220	,,	,,	,,
M.	25	℥v ℥v	35′	1016	1020	1020	2,100	1,380	,,	,,	,,
*M.	8	℥ij	25′	1021	1031	1015	650	960	,,	,,	,,
M.	14	℥iij	40′	1011	1022	1025	1,600	1,130	,,	,,	,,
M.	25	—	15′	1028	1030	1026	—	—	,,	,,	,,
M.	45	℥iij ℥v	40′	1022	1031	1030	—	—	,,	,,	,,
M.	22	℥iv	40′	1020	1040	1034	1,200	1,050	,,	,,	,,
M.	29	℥iij ℥v	40′	—	—	—	—	—	,,	,,	,,
M.	17	℥jss	15′	—	—	—	—	—	,,	,,	,,
Albumen Cases.											
M.	15	℥iii	20′	1014	1033	1030	—	—	*Nil.*	Trace	*Nil.*
M.	47	℥ij	50′	1030	1225	1026	800	1,[illegible]2	Faint trace	Considerable trace	Considerable trace.
M.	30	℥iv	40	1022	1020	1021	—	—	Trace	Faint trace	*Nil.*
M.	—	-	—	1012	1032	1022	1,280	650	Faint trace	*Nil.*	*Nil.*
F.	—	—	60′	1006	—	1018	1,250	—	Trace	—	*Nil.*

* Hæmorrhoids. † A.C.E. mixture administration. ‡ Urine passed with with fæces, specimen only obtained. ‖ Drawn off by catheter. § Six hours' collection only.



retarded during the ether effect. The kidney eventually recovers, but the process of recovery is prolonged. The movement at the points × × to show this.

Analysis of the foregoing Table.

Taking into consideration, in the first place, the total quantities of urine passed in the twenty-four hours antecedent to and after the operation respectively, we find that there is in the majority of instances a considerable diminution in amount in the latter case.

TABLE II.

	Kemp and Thomson.	Buxton and Levy.
	Per Cent.	Per Cent.
No albumen in urine before etherisation, trace or more after	59.8	2.7
No albumen in urine before ether or after	18.5	86.5
Some albumen before etherisation and no change after	11.4	—
Some albumen before etherisation and increase after	6.1	2.7
Some albumen before etherisation and decrease after	2.1	2.7
Some albumen before etherisation and none after ...	2.1	5.4

This result in a more summarised form would appear thus:

	Per Cent.	Per Cent.
No deleterious effect of etherisation in respect of albumen	34.7	94.6
Deleterious effect apparent	65.3	5.4

TABLE III.

Sex.	Age.	Of Patients. Quantity of Anæsthetic.	Duration of Operation.	Specific Gravity. 24 Hours before.	Specific Gravity. 24 Hours after. First Specimen.	Specific Gravity. 24 Hours after. Remainder.	Quantity of Urine. 24 Hours before.	Quantity of Urine. 24 Hours after.	Albumen. 24 Hours before.	Albumen. 24 Hours after. First Specimen.	Albumen. 24 Hours after. Remainder.
M.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Faint trace	[illegible] per cent.	Well-mrkd. trace
M.	[illegible]	[illegible]	40 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.05 per cent	[illegible] per cent.	0.075 per cent.
M.	44	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	..	..	..
M.	11	dy	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	..	..	..
M.	28	Will	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	..	..	..
M.	68	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	..	..	..
M.	17	[illegible]	40 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	..	..	..

Table III shows the result of the observations of seven cases in which chloroform was administered.

The record of specific gravities brings into prominence the occurrence of an almost constantly increased density of the urine passed after the anæsthetisation. The details concerning the reactions and the deposits not being germane to our present subject will not be here further discussed.

TABLE IV.—*Cases of Operation upon the Kidney.*

Sex.	Age.	Of Patients. Anæsthetic employed and Quantity of Anæsthetic.	Duration of Operation.	Specific Gravity. 24 Hours before.	Specific Gravity. 24 Hours after. First Specimen.	Specific Gravity. 24 Hours after. Remainder.	Quantity of Urine. 24 Hours before.	Quantity of Urine. 24 Hours after.	Albumen. 24 Hours before.	Albumen. 24 Hours after. First Specimen.	Albumen. 24 Hours after. Remainder.
F.	40	Ether 2 ozs.	6 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 [illegible]	48 h [illegible]	Trace	0.15 per cent.†	Faint Trace
*F.	[illegible]	Ether [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Trace	Trace	
**F.	48	Chloroform.	60'	1026	[illegible]	—			0.1 per cent.††		

* Operation for hydronephrosis. Nephrotomy and nephrorrhaphy. † Pus cells present. ‡ Abundant *débris* and blood corpuscles and pus cells. Some pus cells. ¶ Nephrotomy. No pus cells found in the urine. ** Operation for hydronephrosis: nephrorrhaphy; a little ether also given. The first specimen after operation was not collected. †† Very few pus cells present.

With regard to the influence exercised by ether upon the appearance of albumen in the urine, it will be seen that in 32 cases there was no albumen before the administration of ether, and that none was found subsequent to the anæsthetisation; in 1 case only there was an absence of albumen before and a trace found afterwards; in 1 other case a trace was present before, which decreased subsequently; while in 2 cases there was a trace before which disappeared entirely after; in 1 case a trace of albumen was found before etherisation, and a slight increase occurred afterwards.

We append a table (II) comprehending the above results, and for purposes of comparison we have placed in parallel columns the figures showing the results of clinical

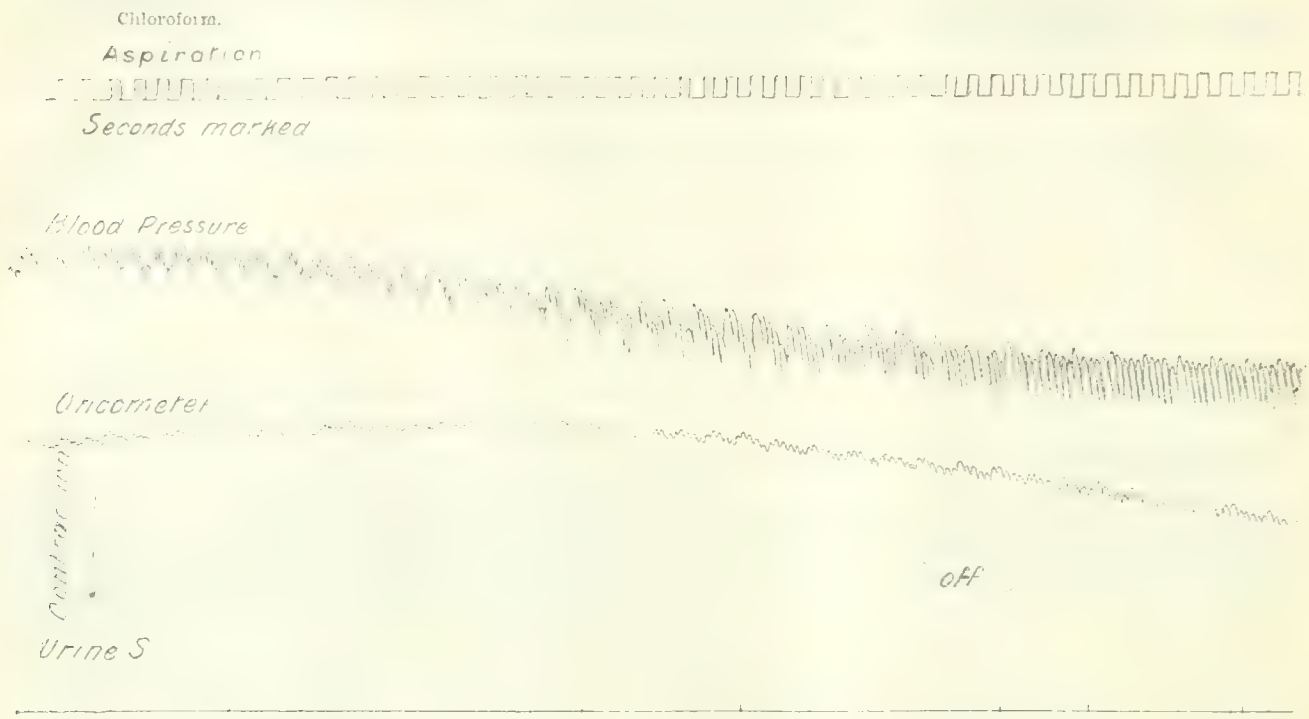


Fig. 2.—Blood pressure effect under chloroform. Each signalling of the urine flow represents a single small excretory effort, not an actual drop of The influence of the fall of blood pressure due to chloroform inhalation

observations given by Drs. Kemp and Thomson on p. 809 of their paper.

In 5 cases no albumen was found in the urine before chloroform was given, and none appeared afterwards. In 2 cases some albumen was present before the operation was undertaken, and the amount was increased subsequently; these two cases are suggestive in view of the infrequency with which we found albumen to become increased after etherisation.

It further appeared to us to be valuable to note separately the results of examination of the urine of patients whose kidneys were known to be diseased, and upon whom surgical operations had been undertaken for the relief of the renal disability. If in any cases the use of ether should cause interference with function, it would surely be most evident in those cases in which one or both kidneys were working at a disadvantage.[2]

Table IV (p. 837) gives the details of two operations on the kidneys in which ether was given and one in which chloroform was employed, although a little ether was inhaled in this case by this patient during the induction of anæsthesia. Considering, first, the ether cases, we find that in No. 1 the urine contained pus before operation more abundant immediately after, whilst the last specimen shows only a faint trace of albumen, possibly accounted for by the presence of a few pus cells. In No. 2 a severe operation on the kidney results in the appearance of a trace of albumen. In the third, the chloroform case, a considerable quantity of albumen appears before the operation, but this subsequently disappears. In these few cases, then, there is no evidence of mischief which can be attributed directly to the anæsthetic employed.

CONCLUSIONS.

Taking the above clinical observations into account we think the following points deserve attention:—

Referring to Table I, the ether cases, it will be seen that the quantity of urine passed after the operation was, in the majority of cases, reduced in amount. Probably the abstinence from liquid both immediately before and after the operation, as well as the vomiting which in some cases occurred, and the purging incident to the routine preparation of the patient before operation, may have had considerable influence in bringing about this reduction. Other but less usual causes acting in the same direction are the diminished blood pressure due to surgical shock, especially in the case of abdominal operations, and also the reflex inhibitory action on the kidneys in certain operations such as those for the relief of hæmorrhoids. We think that in certain cases direct manipulation of kidney and ureter has to be considered in this connection.

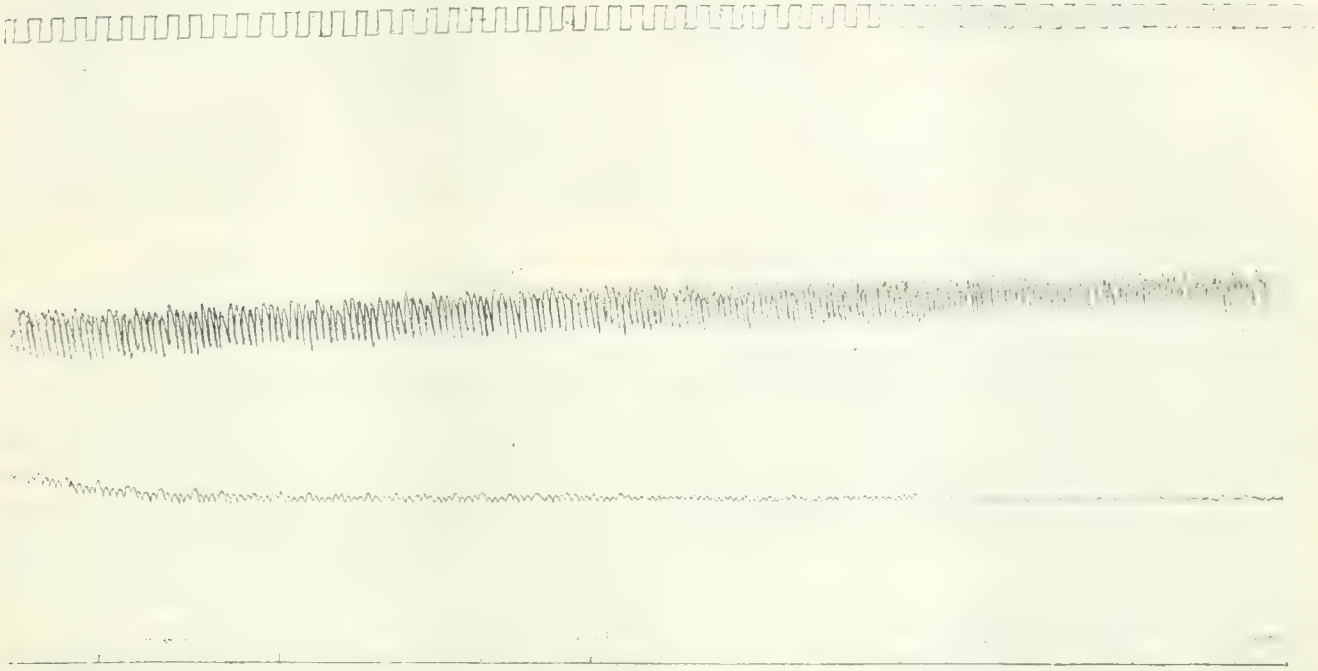
It cannot be too strongly insisted upon that this reduction is in the urinary water only. The increase in the specific gravity of the urine after operation, which has been already pointed out as occurring constantly, sufficiently demonstrates that the functional activity of the kidneys concerned with the excretion of the solid constituents of the urine is not generally seriously affected by the ether.

If as we may be led to believe from the experiments of Drs. Kemp and Thomson the kidneys are materially affected by ether even in light narcosis, and that albuminuria early gives evidence of this renal derangement, it is most surprising that most, if not all, patients who inhale ether should not show the results of the ether effect on their kidneys, and our clinical tables palpably fail to indicate that such is the case.

The fact is, there is little evidence tending to show that ether exerts directly any deleterious influence on the kidney parenchyma. The albumen found in the urine of the dogs which had undergone experiments we believe is not to be explained in this way, but by the indirect action of the anæsthetic, in that it produces, when pushed to an excessive dose, an ischæmia of the kidney, that is, the specific ether effect.

Nussbaum's experiment of temporary ligature of the renal artery of the frog has demonstrated how deprivation of arterial blood damages the renal epithelium, and causes the appearance of albumen in the urine. A similar deprivation of arterial blood by reason of intense and prolonged contraction of the renal arterioles, such as we find occurring in the specific renal effect of ether, would naturally lead, we should expect, to the appearance of albumen in the excreted urine.

A less intense and less prolonged deficiency of blood supply



urine. Movement of lever *downwards* in this case represents kidney contractions. Animal aspiring air through chloroform surrounded by hot water upon the kidney volume is shown, causing some retardation of urine flow.

produced by a temporary fall of blood pressure, such as follows the administration of chloroform or of a toxic dose of ether, should naturally be followed by the occurrence of albumen in smaller quantities.

We do not consider that any specific ether effect and consequent kidney ischæmia and albuminuria should ever occur in the course of ether anæsthesia for operative purposes, provided the administration be performed with reasonable care. We think, however, that in the case of ether, owing to its comparative safety as far as the vital centres are concerned, there is a danger lest, owing to a false sense of security, excessive quantities are administered. Where quantities of ether are given—where the patient is "soaked" with ether—we meet with "ether effects" on the kidneys. Such effects are probably transient in most cases, and produce no acute or lasting mischief; but even these are not, we submit, necessary, and are, in fact, the result of the abuse rather than the use of ether.

NOTE AND REFERENCE.

[1] Further Experimental Researches on the Effects of different Anæsthetics on the Kidneys, *New York Medical Journal*, November 18th, 25th, and December 2nd, 1899, pp. 732, 765, and 804. [2] The safety of giving ether to such patients had been established by our practice for many years past, so that no unusual or, to our mind, unsafe course was adopted in employing ether for such patients.

Dr. WALLER had made many experiments as to the relative anæsthetic powers of ether and chloroform, and his experience had been to the effect that chloroform was eight times as powerful as ether. He was glad to hear from Dr. Buxton that the evils attendant on the use of ether were exaggerated. Owing to the greater safety of ether its employment by inexperienced persons was desirable, but had he to undergo prolonged anæsthetisation at the hands of an expert he would ask for chloroform rather than ether.

Mr. BENJAMIN MOORE (London) asked Professor Thompson whether he had pushed ether to the extent of obtaining a fall in blood pressure and observed the rate of flow of urine under this condition. He further inquired with reference to the appearance of albumen and sugar in the urine after administration of anæsthetics, at what period these substances appeared, and in what percentage they were present, as in experiments of his own in which chloroform and ether were used as anæsthetics no albumen or sugar were found in the urine excreted immediately after the operations.

Dr. R. J. ANDERSON remarked that it had been shown that the contact of chloroform with mucous membranes was attended with considerable reflex disturbance, and that it was known that fatal effects might follow the administration of chloroform before the drug had time to get into the blood. Different mucous membranes had different susceptibilities in this respect, the nasal differing very much from that of the throat. The same mucous membrane might differ in different persons. It was therefore important to study the onset of the earlier effects with the view of determining how much of the urine effect is due to direct and how much to indirect action.

Professor CUSHNY inquired whether Professor Thompson had used morphine in the cases in which glycosuria occurred.

Dr. MARSHALL pointed out the possibility of vesical injury producing albuminuria in some of Professor Thompson's cases.

Professor THOMPSON, in reply to Dr. Benjamin Moore, stated that ether was never pushed to the extent of markedly lowering blood pressure, and chloroform only to that of the slight fall which occurs soon after its administration. Sugar was present in chloroform urine in measurable quantities, but he had not estimated its amount. In reply to Professor Cushny, he stated that the reducing substances described were present in the experiments where no morphine was administered. And in reply to Dr. Marshall agreed that the mucous membrane of the bladder was even more likely to cause some bleeding than that of the ureter, as a result of slight injury by the end of the cannula.

Dr. DUDLEY BUXTON, in reply, said he desired to express the great pleasure he had received from hearing Professor Thompson's most able and lucid paper. It confirmed his opinion of the great value of a research which Professor Thompson and he, working from a similar but distinct points of view, had undertaken, and encouraged him to pursue the same line of experiments along fresh avenues of thought opened up by the discussion. He concurred with Professor Thompson in believing methods pursued by Drs. Kemp and Thomson were open to adverse criticism, and vitiated in no

small degrees the results at which they had arrived. Professor Anderson's questions with regard to reflex effects produced by stimulation of the mucous membrane of the naso-pharyngeal tract could not be answered by the present set of experiments as all his (Dr. Dudley Buxton's) dogs were anæsthetised through tracheotomy tubes. The initial rise of blood pressure noticed by many observers as taking place when chloroform was inhaled was, he believed, due not to stimulation by chloroform but to the muscular movements incident to first stages of chloroformisation. He knew that observations had been made upon the histological changes in the renal mucous membrane after anæsthetisation, but he believed they were not done under conditions which made them conclusive. He thought the extremely transitory nature of the effect produced by ether and chloroform on the kidney tissues as were shown by his observations could hardly reveal themselves in structural changes. He hoped, however, to investigate this point for himself in future experiments. Professor Waller had pointed out that excessive dosage with ether might produce serious harm, and Dr. Dudley Buxton agreed, and had referred to this point in the conclusion of his paper. The tendency was to regard ether as being safe under any conditions, but at no time should the fact be lost sight of that all anæsthetics were powerful drugs, and should be given with as much regard to their appropriate dosage as was accorded when strychnine, atropine, or other powerful drugs were employed. The dangers of anæsthesia were usually due to careless pushing of the anæsthetic when anæsthesia was produced, and a neglect of the fact that the physiological dose of ether, chloroform, etc., should be diminished step by step as the blood approached that point of saturation requisite for surgical anæsthesia.

THE RETINAL RESPONSE TO LIGHT.

By AUGUSTUS D. WALLER, M.D., F.R.S.,
Lecturer on Physiology, St. Mary's Hospital Medical School, London.

[ABSTRACT.]

THE eyeball of a frog, removed with the least possible injury, was connected to a galvanometer by unpolarisable electrodes applied respectively to fundus and cornea. On illumination of the eyeball the galvanometer indicated production of a current in the same direction as the current of injury. This "positive variation" was the normal response of an uninjured eye, not merely when excited by illumination, but also when stimulated by an induction shock. At the close of a period of illumination of the eyeball, another positive variation was observable. If the eyeball were subjected to gentle massage—for example, by rolling it between the thumb and finger its response to excitation was reversed, and the stimulating it either by illumination or electricity was to produce a uniformly negative variation of its original current of injury. At the conclusion of his paper, Dr. Waller described briefly a distinction between living and non-living matter to which his attention had recently been drawn. An induction shock sent into dead matter elicited a polarisation current in the opposite direction to the shock itself. In living matter, on the other hand, the electrical response to such a shock was not reversed by reversing the direction of the cause. It was a "post-anodic blaze."

THE STRUCTURE OF THE MUCOUS MEMBRANE OF THE ŒSOPHAGUS.

By DENIS J. COFFEY, M.D.,
Kingstown.

[ABSTRACT.]

IN an interesting series of communications published in 1897, Schäffer, of Vienna, described in detail certain glands noticed by Rüdinger in 1879 as occurring in the mucous membrane of the human œsophagus at its upper extremity. In the earlier account they were said to be found in the lateral bays of the mucous membrane, quite close to the pharynx. They were easily distinguished from the ordinary mucous glands by their strict limitation to the mucous membrane, while the mucous glands had their acini all beneath the muscularis mucosæ. The glands in question, too, were tubular. Schäffer identified them with "cardiac" glands, since *inter alia* they sometimes contained "oxyhutic cells." He quoted their distribution as variable, their presence on the other hand was constant. They have been found as low as the fifth tracheal ring. Professor Coffey's own investigations confirmed their presence near the pharynx. Their distribution was by no means symmetrical, and many differences in structure and detail presented themselves. The muscularis mucosæ could be identified at the junction of the pharynx and œsophagus, and passing downwards quickly formed a complete layer of somewhat closely-set bundles. The ordinary mucous glands were most numerous at the lower extremity of the upper third of the œsophagus.

A DIGITAL SPHYGMOGRAPH.

By AUGUSTUS D. WALLER, M.D., F.R.S.,
Lecturer on Physiology, St. Mary's Hospital Medical School, London.

I DERIVED the first idea of the sphygmograph now described from M. Laulanié, of Toulouse.[1] His instrument consists of a weighted lever resting upon the finger-nail so as to be set in movement by the pulsating vessels of the nailbed, and to actuate a light indicating lever through the medium of a thread and pulley. The novelty of this instrument consists in the utilisation of the finger-nail, a point that has also been acted on previously by Max Herz,[2] of Vienna.

My instrument consists of a rather stiff fixed spring (A), and a movable support (B), between which the tip of a finger is inserted; the movements imparted to the spring by the pulsatile elevations of the finger nail are magnified about 50 times by the lever L, and if desired recorded on a smoked cylinder or glass plate.

The application of the instrument is extremely simple. A finger is slipped into position between the spring and screw, and by a turn of the latter the pressure on the finger nail adjusted to give best movement of the recording lever. The lever can be easily adjusted in the field of a demonstrating lantern to trace its movements upon a travelling smoked plate, and in this way the general plan of a sphygmograph and a variety of pulse experiments exhibited to a class. It was, indeed, for this purpose that the instrument was originally devised.

The well-known method of measuring an intravascular pressure by finding that extravascular counter-pressure at which the pulsatile expansion is greatest is very easily applied and demonstrated by means of this instrument—the "onychograph" or thumb-screw sphygmograph, or finger sphygmograph, as it may be designated. For this purpose a few of its pulsatile movements are recorded at various pressures brought to bear upon the finger by means of the screw. An optimum pressure below and above which the pulsatile excursions are not at their greatest is found, and the value of that optimum pressure is approximately expressed in terms of mercury by a previous or subsequent graduation of the spring. Such graduation is most easily performed by means of an elastic finger stall in air-tight connection with a mercury manometer on which heights of mercury are read corresponding with deflections of a spring effected by screwing up the finger stall against the spring. Measured in this way I find in my own case that the pressure in the vessels of my finger tips is approximately equal to that of 2 cm. of mercury.

This number arouses reflection and leads to further analysis, the outcome of which is to convince us that the instrument is something more than a merely convenient sphygmograph, and that it is indeed an instrument *sui generis*, affording direct information concerning the state of one of the principal factors of arterial pressure and blood flow, namely, of the state of the precapillary arterioles.

The steps to this conclusion are briefly as follows:

The pressure of 2 centimetres of mercury is the textbook pressure of the "capillary" vessels, ascertained by observing that counter-pressure by which a flushed portion of skin is rendered pale. This at first suggests that the finger sphygmograph is in principle a volume-recorder as well as pressure-recorder of the great capillary lake rather than of the arterial rivers and rivulets that flow into it. But as I have shown in

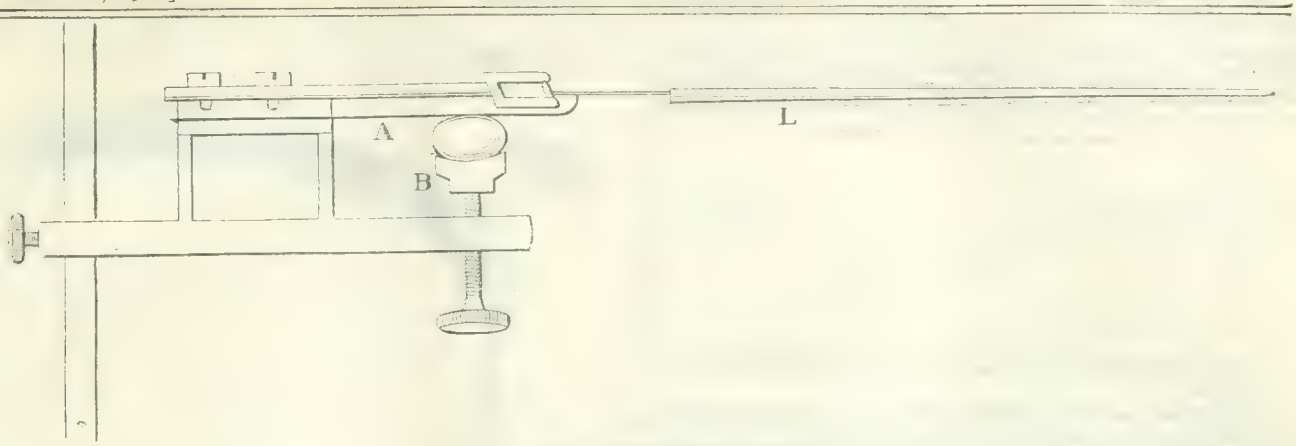


Fig. 1.—Digital sphygmograph

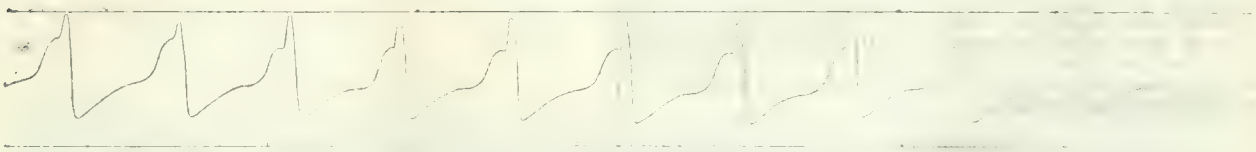


Fig. 2.—Normal pulse of finger-nail

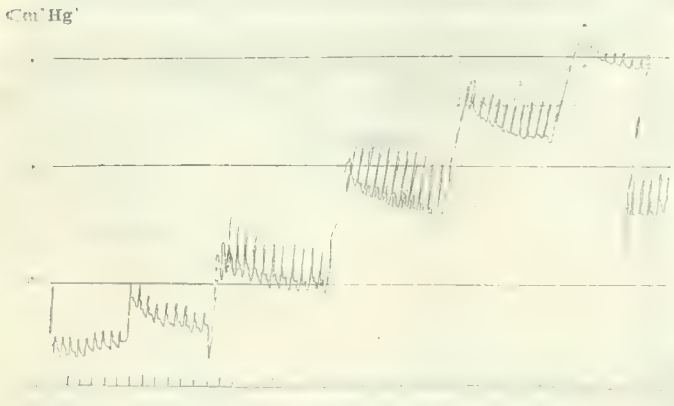


Fig. 3. Different excursions of lever at different pressures of spring Maximum excursion at pressure = 2 cm. Hg.

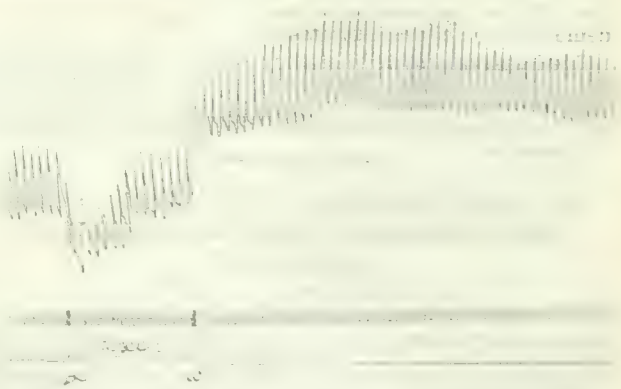


Fig. 5.—Influence of tetanisation of the median upon the pulse of the middle finger-nail. Constriction giving place to dilatation of the arterioles of the nailbed.

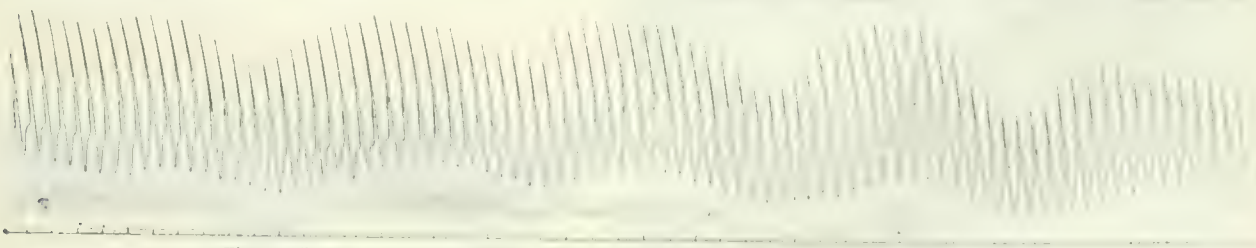


Fig 6.—Finger pulse showing Traube-Hering undulations at a frequency of 5 to 6 per minute.

an earlier paper,[3] there is a quite appreciable time-interval between the pulse in an artery like the radial or the anterior tibial and the plethysmographic expansion of the hand or foot, of about 0.04 second. Now two levers resting upon the finger-nail and upon the radial artery exhibit no appreciable time-interval between the two pulsations: from which I conclude that the pulse of the finger-nail is not a volume-pulse of capillaries but a pressure-pulse of arterioles. [This point, be it remarked in passing, seems to imply that the measurement of capillary pressure by abolition of skin redness is properly speaking a measurement of pressure in peripheral arterioles.]

Having once recognised that the finger-sphygmograph gives direct information as to the state of the peripheral arterioles we readily understand what at first experience of the instrument is something of a disappointment. Its indications are of very variable magnitude, in different individuals and in the same individual at different times. A person with cold hands has little or no finger pulse. In the morning the finger-pulse is much less striking than in the evening or just after a meal. And there is here no question of difference in mode of application, for although in this way differences may be simulated, it is not difficult, as with the radial sphygmograph, to test the finger-pulse under uniform conditions.

It is for this reason possible that the indications of this

particular instrument may prove of clinical use. I must confess, however, that I am not very sanguine as regards the clinical utility of any form of sphygmograph. It is rather as a laboratory instrument of demonstration, conducing to a more

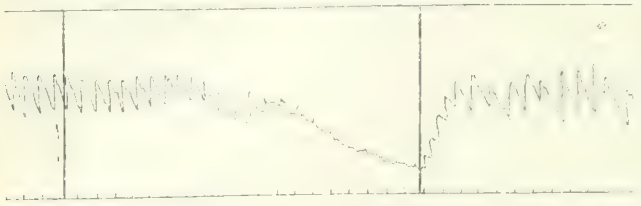


Fig. 4.—Valsalva's experiment. Fall of blood pressure and arrest of heart's beat during forcible expiration with closed mouth and nostrils.

intelligent manner of feeling the pulse, that a sphygmograph is of value to the student of medicine. In this respect the instrument just described is of distinct service. By its means the student can easily repeat for himself, and if need be demonstrate to others such simple fundamental experiments as those of Müller and of Valsalva, the action of amyl nitrite, and even vasomotor effects of nerve stimulation. In certain cases it may bring out very distinctly the well-known Traube-Hering undulations.

REFERENCES.

[1] Sur un Sphygmographe donnant le Pouls Digital et le Pouls Radial, *Journal of Physiology*, vol. xxiii, suppl., 1899. [2] Der Puls der kleinsten Gefässe, *Wiener Klinik.*, p. 165, 1896. [3] Rate of Propagation of Arterial Pulse wave, *Journal of Physiology*, vol. iii, p. 37, 1880.

[Dr. Waller's paper was illustrated by lantern slides and a demonstration of the instrument.]

The PRESIDENT stated he was already familiar with Dr. Waller's sphygmograph. In expressing his appreciation of its value as an indicator of variations in the vascular system, he remarked that the facilities which it offered for demonstration were unique.

ON SOME CHANGES IN VOLUME OF THE SUBMAXILLARY GLAND ACCOMPANYING SECRETION.

BY J. L. BUNCH, D.Sc., M.D.,

Research Scholar of the British Medical Association

CHANGES in volume of the submaxillary gland may be brought about by variations in the flow of blood to the gland, and of the secretion from the gland. Not so long ago it was believed that a distinct causal relationship existed between vascular supply and secretion, that fluid was secreted from the gland as a result of increased intracapillary pressure, and the discovery by Claude Bernard of the vaso-dilator action of the chorda tympani—the chief secretory nerve then known—lent additional weight to this theory. But the theory was disproved by Ludwig, who showed that the dog's submaxillary gland could be made to secrete by stimulation of the peripheral end of the cervical sympathetic nerve, though this excitation caused vaso-constriction instead of dilatation, and that the pressure of secretion in the gland duct could exceed the pressure even in the carotid artery. Other facts were discovered which pointed in the same direction, such as the paralysis of the secretory fibres of the chorda by atropine, while the vasodilator fibres were unaffected, and the secretion which can be obtained as a result of chorda stimulation unaccompanied by vasomotor changes after degeneration of the nerve for two or three days.

It cannot, however, be said that the problem of secretion has lost its complexity even now, for we know that secretion may be accompanied by vaso-constriction or by vaso-dilatation, that it may in some cases be paralysed by quinine or atropine, in others not, and that in the same gland stimulation of one nerve may give rise to a secretion having quite different characteristics from that brought about by excitation of another nerve.

In the present paper, however, I am concerned only with the changes in volume of the submaxillary gland, and not with the associated electrical and other changes which accompany

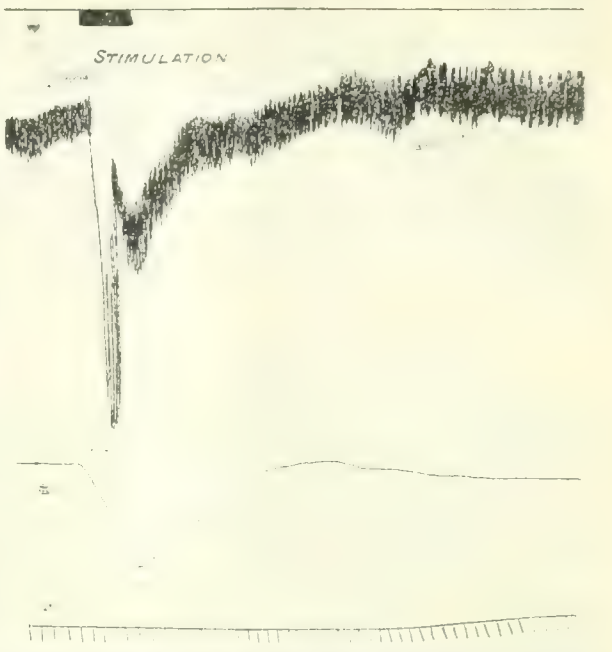


Fig. 1.—Dog. Stimulation of the peripheral end of the cut vagus. The upper tracing is that of the carotid blood pressure, the middle tracing that of the plethysmographic lever recording the volume of the submaxillary gland, the lowest tracing that of the time-marker recording intervals of two seconds.

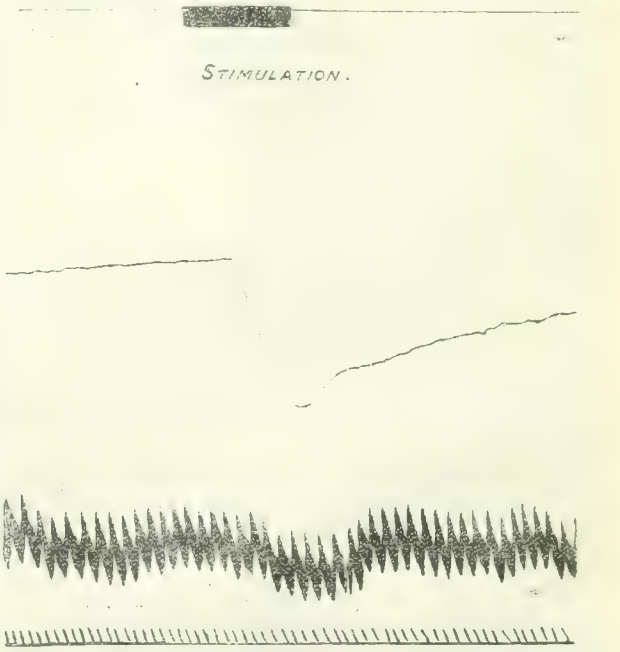


Fig. 2.—Dog. Diminution in volume of the submaxillary gland brought about by stimulation of the divided sympathetic in the neck. The lowest tracing is that of the time-marker; the one above this that of the carotid blood pressure. Volume of gland = 6.8 c.cm. Amount of secretion induced by sympathetic stimulation = 0.1 c.cm.

activity. The method which I have employed to record these changes has been a plethysmograph of very simple construction, consisting of a gutta-percha box with one side of glass, which enables the gland to be kept directly under observation and any flushing or pallor of the superficial vessels to be accurately noted. The box is connected with a tambour or piston-

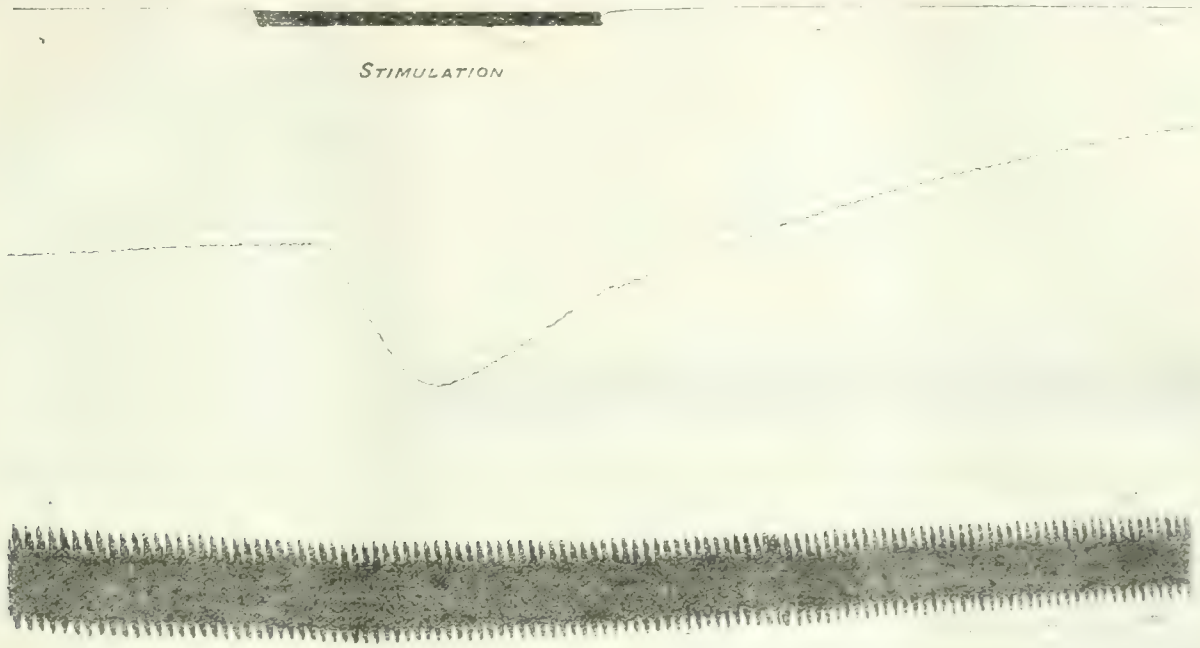


Fig. 3.—Dog. Effect on gland volume of stimulation of the divided chorda tympani. Coil at 12 cm. The lowest tracing is that of carotid blood pressure. Volume of gland = 7.2 c.cm. Amount of secretion poured out as a result of chorda stimulation = 0.6 c.cm.

recorder, which writes on a smoked paper, by an india-rubber tube attached to a glass tube which passes through one side of the box, the whole apparatus being filled with air. A lateral tube leads from this connecting tube, and is closed with a spring clip, so that the pressure within this air-tight system can be raised or lowered at any moment. The tracings ob-

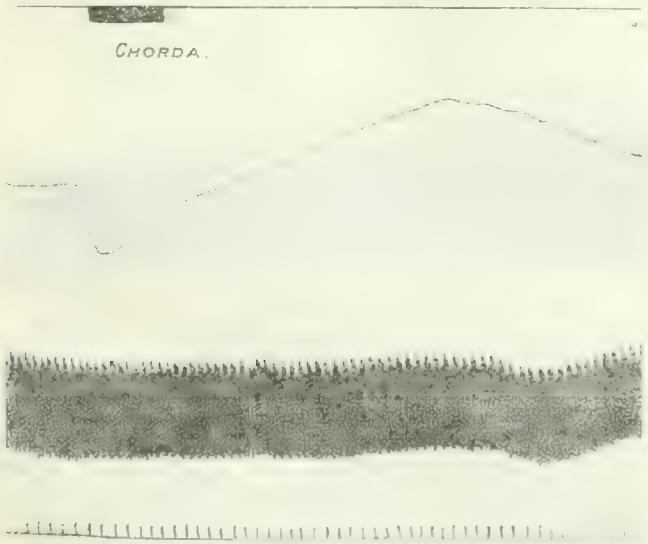


Fig. 4.—Dog. Coil at 10 cm. The submaxillary gland was secreting badly, and as a result of chorda stimulation only 0.15 c.cm. of secretion was obtained. The preliminary constriction of the gland is succeeded by a well-marked dilatation.

tained in many cases show most distinctly both heart beats and respiratory curves. When the peripheral cut end of the vagus is stimulated, an almost immediate diminution in volume of the gland is produced (Fig. 1), the gland immediately returning to its former bulk as soon as the current is shut off, and if the stimulus has been of moderate strength the plethysmographic lever rises to a level still higher than that at which it stood before the excitation.

The constriction of the vessels of the gland caused by sympathetic stimulation, although the stimulus be weak and applied only for a short time, is sufficient to cause considerable diminution in volume of the gland even apart from the effect which is brought about by the secretory fibres when the nerve is stimulated (Fig. 2). The surface of the gland can be seen to become pale, and, if the nerve stimulation be prolonged, some time elapses before the gland recovers completely. The maximum amount of diminution of gland volume is obtained by stimulating the sympathetic strongly after repeated chorda excitations; but if the sympathetic be first stimulated and then immediately afterwards the chorda, the fall of the plethysmographic lever is usually replaced by a rise, sometimes of considerable extent if the sympathetic secretion is very viscid.

Stimulation of the chorda tympani, with a stimulus so weak that it is barely perceptible to the tongue, causes considerable diminution in volume of the gland, and, as the strength of current is increased, this diminution becomes greater. After the current is shut off the gland slowly recovers in volume, and this recovery is succeeded by dilatation of the gland, which is greater the more extensive was the previous shrinking (Fig. 3).

This diminution in gland volume is accompanied by a free flow of saliva from the duct, the amount of which is measured, and by marked dilatation of the vessels of gland. When the stimulus is stronger the latent period is shorter, the flow of saliva greater, and the diminution in volume of the gland more abrupt and of greater range. The recovery of volume is also slower, and the after-dilatation more marked. When the secretion produced by chorda stimulation is scanty and viscid in spite of the accompanying active vaso-dilatation, stimulation of the nerve causes either a very small fall of the lever, or a preliminary fall succeeded by a rise (Fig. 4). In some cases, more especially when there is some obstruction to the free escape of blood through the veins and also scanty secretion, chorda excitation gives rise to increase in volume of the gland, owing to the increased flow of blood to the gland more than compensating for the small amount of secretion leaving it (Fig. 5).

After the administration of small doses of atropine intravenously, sufficient in amount to paralyse the secretory fibres of the chorda (8 to 12 mg. for a dog of 7 kilos.), stimulation of the peripheral cut end of the chorda causes no flow of

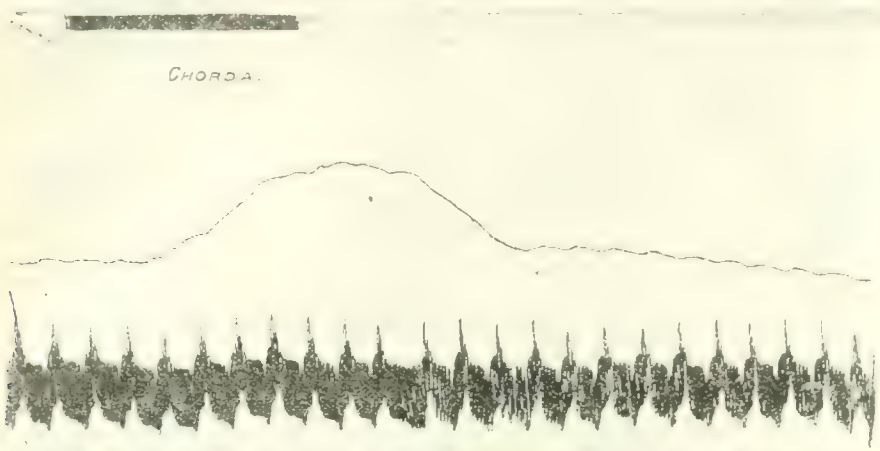


Fig. 5.—Dog. The lowest tracing is that of carotid blood pressure. The secretion of the gland induced by chorda stimulation was very viscid and scanty.

secretion from the duct, but an active dilatation of the gland (Fig. 6) and a rise of the piston-recorder lever to an extent about equal to its previous fall brought about by a stimulus of the same strength and duration before any atropine has been administered. Now, knowing the effect on the volume of the gland both of the secretory and vasomotor fibres of the chorda, we can determine the actual diminution in volume of the extra-vascular elements of the gland as a result of chorda stimulation. On comparing this with the amount of secretion poured out in the same time, we find that at least nine-tenths of the secretion is derived from the extra-vascular portions. Since there is no diminution in the lymph flow from the gland, but rather a slight increase during the period of stimulation, we must conclude that the effect of the secretory nerves is simply and solely upon the secretory cells, the increased exudation from the blood vessels which must in the last instance supply the fluid for the secretion being a secondary phenomenon determined entirely by the metabolic changes of the cells and lagging behind these to a very considerable extent.

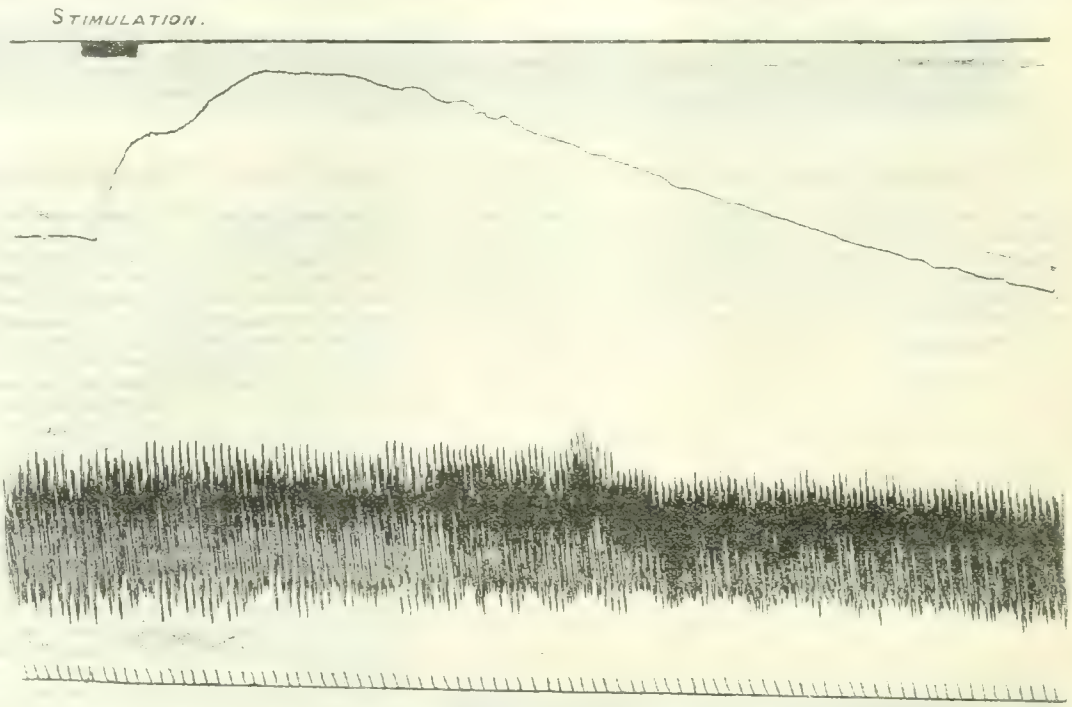


Fig. 6.—Dog. 7.4 kilos. Dilatation of the submaxillary gland brought about by excitation of the chorda tympani after the administration of 10 mg. of atropine. No secretion.

CONCLUSIONS.

1. Changes in volume of the submaxillary gland may be brought about both by variations in the flow of blood to the gland and of secretion from the gland. 2. Cardiac inhibition, whether brought about by vagus stimulation or by drugs, is followed by shrinkage of the gland. When this shrinkage is brought about by vagus stimulation, it is followed after the stimulus has been removed by an after-dilatation of the gland. 3. Stimulation of the chorda tympani causes diminution in the volume of the submaxillary gland, followed by an after dilatation. 4. After the administration of a dose of atropine sufficient to paralyse the secretory fibres of the chorda, excitation of the chorda causes dilatation of the submaxillary gland. 5. Sympathetic stimulation causes shrinkage of the gland, and a maximum effect is obtained when the chorda has previously been subjected to repeated excitation. 6. Continuous stimulation of the chorda after blockage of the gland duct causes a maximum dilatation of the gland. 7. The amount of secretion poured out as a result of chorda stimulation is chiefly if not altogether derived from the fluid in the gland cells, or, at least, from the extravascular portions of the gland.

AN INTERMITTENT PULSE.

PROFESSOR CUSHNY gave a demonstration on this subject. The demonstration was an appendix to a paper read in the Section of Medicine. Professor Cushny demonstrated a pulse tracing showing occasional omission of a pulse wave. When omission occurred, the interval between the waves preceding and following the one admitted was sometimes double the normal interval, sometimes not quite so great. In some instances omission was partial rather than complete. Professor Cushny had experimented on dogs, and by exciting the heart with induction shocks, had produced intermission comparable to that shown in his sphygmographic tracings.

[A paper on The Influence of Sodium Salicytate was read by Dr. F. W. Goodbody. It is published in the current number of the *Journal of Physiology*.]

THE draft of a comprehensive new law on public health has been before the Second Chamber of the States-General of Holland for some time.

REVIEWS.

RECENT WORKS ON PHYSIOLOGY.

THIS revised edition of Part IV of Sir MICHAEL FOSTER'S well-known *Textbook*[1] is noticeable because of the appearance of Dr. Rivers's name with Sir Michael Foster's on the title-page. The subjects of which the volume treats, the senses, have been the special subject of study and research by Dr. Rivers, and as usual Sir Michael Foster has been fortunate enough to select the proper person to assist him in the revision. The changes, however, are not very extensive, and the style and personality of the principal author are visible throughout. There is the same flowing language as of old, the same avoidance of positive opinions, the same reluctance to refer to the names of investigators. The lengthy discussions of rival theories interspersed throughout the book will appeal to minds of a judicial and philosophic cast. We doubt if they will be appreciated by the bulk of students who dearly love to have something certain to stand upon. This class of readers will find but little to satisfy them. For instance, after a long inquiry into the validity of the two principal theories of colour vision, we read that no crucial test between them has as yet been brought forward; and after discussion of the rival theories of the way in which the basilar membrane of the organ of Corti acts, we find the statement that in the present state of our knowledge the whole matter must be left as uncertain. Sir Michael Foster has never been in feverish haste to include in his textbook the latest acquisitions to knowledge. No doubt he considers that the great test of the validity of a new fact or a new hypothesis is the test of time. To go back to the instance we have already cited—that of colour vision—there is no allusion to any other theories than those which may be termed classical; the important work of Mr. Burch on the subject is not even mentioned. Still, the shortcomings of the *Textbook* are as well known as its excellencies, and we congratulate the authors on the continued popularity of their work, as evidenced by the frequent new editions and revisions that appear.

Professor HUXLEY'S *Elementary Physiology* appeared at an opportune moment. It was, moreover, written by the hand of a master, and it so amply fulfilled its purpose that it stood for many years without a rival. The master is no more, and the work of revision has fallen into other hands. Sir Michael Foster and Dr. Sheridan Lea, who are responsible for the new edition,[2] state that they have found their task difficult. A pious feeling has led them, wherever possible, to preserve the original author's own form of exposition, but the progress which has taken place in science has rendered necessary considerable changes and additions, both in the text and in the illustrations. They state they have done their best to secure both of these ends. The general get-up of the book is much the same as before; the cover has the same colour; the pages, though more numerous, are of the same size, but the work of revision has been carried out so thoroughly that it becomes difficult in most instances to recognise the book when one examines the material of which it is now composed. This is, of course, inevitable. The changes brought about will restore the usefulness of the book, and that we take it is the main object of writing books at all; and we feel sure that no one would have welcomed the transformation more than the late Professor Huxley himself. Without intending any disparagement of the work, or of its present editors, we must add that it now stands on a different plane from that which it occupied formerly. Then it was a new departure to place the main facts of physiology in an elementary and in the best sense of the term a popular way; and it stood foremost, if not alone. Now it is one of a crowd. Younger rivals, many of them modelled on its own plan, have sprung up, and are bidding for popularity and for buyers. We shall watch with interest to see if it is still able to hold its own.

When one considers the large number of excellent textbooks of physiology which are ready to the hand of the student to-day, it is difficult to see the need for yet one more. Professor HALL'S *Textbook of Physiology*[3] cannot therefore be said to supply a want, though on account of its many excellences it will no doubt prove a formidable competitor in the field. The idea that seems to underlie its construction is to present to the student a book which in a moderate compass will include not only an account of human physiology, but also the principal facts of comparative physiology, general physiology in Verworn's sense of the term, and the history of the subject. The aim of the book is therefore ambitious, but as the volume is not larger than the majority of other textbooks, the matter is necessarily much compressed, and in many cases so sketchy that we fear it will be of little use to the student, though it may stimulate his interest to seek further. The historical sketches are well conceived, well executed, and form a new feature in works of this kind. They will prove most useful. The book is well got up; the illustrations are numerous and well selected; very few are original, but most are borrowed from well-known sources. We have noticed a considerable number of clerical errors, but most of these are so obviously misprints that they will hardly form a stumbling block to the reader. It is, however, the critic's duty to point out what he considers to be the defects of a book, and there appear to be the following. In the first place, there is an unevenness of treatment. Important subjects are often placed on the same level as, and occasionally dismissed in fewer words than, subjects of quite subsidiary interest, and there is no indication to the reader which are the big and important questions, and which those of minor interest. Secondly, there is a tendency to assume that the student knows all he ought to know of the sciences on which physiology is built. The ideal student of physiology is one who knows his chemistry and physics so well that he can pass without difficulty to the application of the laws of these sciences, to the problems of vital phenomena. But the ideal student is a rare bird: most students want a good deal more than a mere reminder of the chemistry and physics they learnt a year or two previously. For this reason we fear that much of the excellent chemistry here given will be thrown away, simply because the meaning of the terms used and formulæ employed is not clearly explained. If we take an instance from the physical side, the summary given of the laws of osmosis will scarcely be intelligible except to those who have made themselves specialists in this very complex mechanical problem. The author shows far too great a tendency to tabulate his matter, and this is what we regard as the main fault of the book. Tables with explanatory text are often most useful, as also are tables which summarise the material already fully discussed, but Professor Hall in many cases seems to think that a mere table is all-sufficient; the student will often give up the task of mastering a table, or in other cases if he learns it by heart it will be mere parrot knowledge unless he is provided with the reasons, the evidence, the *pros* and *cons*, and the logical sequence of the facts and arguments. The book, as we have said, is both ambitious and interesting, but it would have fulfilled its objects much better if greater pains had been taken to present the subject in a more readable form; it is too split up into small paragraphs, and cross-headings are so numerous that continuous interest in the reading of any subject becomes most difficult.

We noticed the first part of Dr. CREIGHTON'S *Microscopical Researches on Glycogen*[4] about three years ago (BRITISH MEDICAL JOURNAL, 1897, vol. i, p. 594), and from its manifest [illegible] ness both as to the mode of research adopted and the conclusions drawn were compelled to express the opinion that the book has little or no value. We have read the second part with attention and find the same faults as before. In the first part of his work Dr. Creighton attributes to glycogen a much more important part than it is usually credited with. He has

[1] *A Textbook of Physiology.* By Sir Michael Foster, K.C.B., M.D., F.R.S., assisted by W. H. R. Rivers, M.A., M.D. Sixth Edition, revised. Part IV, The Senses. London: Macmillan and Co.; and New York: The Macmillan Company. 1900. (Demy 8vo, pp. 1253-1575, Figs. 143-190. 10s. 6d.)

[2] *Lessons in Elementary Physiology.* By Thomas H. Huxley, LL.D., F.R.S. Enlarged and revised edition. London: Macmillan and Co.; and New York: The Macmillan Co. 1900. Crown 8vo, pp. [illegible]. Figs 187. 4s. 6d.

[3] *A Textbook of Physiology.* By Winfield S. Hall, Ph.D., M.D., Professor of Physiology North-Western University Medical School, Chicago. London: Robman, Limited. 1900. (Demy 8vo, pp. 672, 6 coloured plates, 343 figures. 20s.)

[4] *Microscopic Researches on Glycogen.* [illegible] on of Snails and Slugs in Morphological and Physiological Correspondence with the Lymph System of Vertebrates. By Charles Creighton, M.D. London: Adam and Charles Black. 1899. (Royal 8vo pp. 127; 6 coloured plates. 7s. 6d.

devoted so many years to the study of a single substance, that in his eyes it is all-important; thus he speaks of its "formative" properties, and even assigns to it in early life the functions subsequently played by hæmoglobin. Dr. Creighton is not the only pathologist who is dominated by one idea; the mental attitude of those who ascribe multifarious and universal duties to one particular substance they have worked at, be it glycogen or any other, is much on a par with those who regard one particular pathological substance, such as uric acid, as the cause of nearly every human ailment, or one particular pill as a cure for the same. The present volume is by no means devoid of interest; it is a record of painstaking microscopical observations; it contains much that is historically interesting; it is illustrated by several beautiful drawings, and it contains the germs of many suggestive thoughts; but through it all there runs the dominant note of the one idea. Not only is there one idea, but the author has apparently limited himself to one method of research. We pointed out before that the yellow or brown tint which iodine strikes with glycogen is by no means diagnostic of that substance; and though Dr. Creighton admits in his review of the work of others that microscopic and macroscopic methods do not always give concordant results, he is still content to limit his observations to the former method. The examination of numerous specimens from all parts of the invertebrate kingdom is recorded, and if we regard Dr. Creighton's microscopic test as trustworthy, one cannot help being struck by the enormously wide distribution of glycogen. In the plant world animal starch is represented by vegetable starch, and here again the formative and even the respiratory functions of this carbohydrate are insisted upon. Dr. Creighton does not seem to have grasped the idea that protoplasm is the physical basis of all living things, and that proteid, not carbohydrate, is the chemical basis of protoplasm. Carbohydrate may be present or it may be absent; proteid is never absent, and it is nitrogenous not carbonaceous metabolism that is the main character of the living as compared to the non-living thing. The chief objects of study have, however, been snails and slugs; here glycogen is very abundant, and its principal residence is in those cells of the connective tissues that have been called by various names, but to which the author recommends that the name "plasma cells" should be assigned. These are placed along the sides of the blood vessels, often forming an outer investment to them, and the appearance a crowd of them frequently presents by mutual pressure is very like that of a somewhat thickened endothelium. The theory advanced is that these cells represent a primitive lymphatic system. This may be the case; the morphologists will doubtless in time decide whether such a view will hold good. But, if we accept it for the moment, we entirely dissent from the next conclusion, which is that the contents of these cells must therefore represent lymph, and therefore that glycogen and lymph are functionally the same thing. We might equally well conclude that the nuclei of these cells represent lymph. Lymph is a highly complex fluid derived from the blood and tissues; it flows in channels bounded by endothelium; it is not the substance contained within the endothelium cells themselves. Though glycogen is most abundant in these so-called plasma cells in snails and slugs, it is present in other places in other molluscs, or may be absent, and this diversity of distribution becomes more apparent when other invertebrates are studied. It is found in some in connection with respiratory passages, in others in the generative organs, and so forth; but one does not conclude from its presence in such places that the groups of cells which contain it represent various tubular structures of the vertebrate lung or testis. Dr. Creighton evidently does not believe that Claude Bernard reached bed rock when he promulgated his glycogenic theory, for he speaks of the work of the liver in connection with carbohydrate metabolism as the "so-called" glycogenic function. He will permit of no secondary place being assigned to his favourite; it is no mere storage product of carbohydrate for future use in the combustion processes of the body, but it is formative, it is intimately associated with life, it is respiratory, and will take the place of blood pigment, and to add to its other responsibilities it is now burdened with those of lymph. His allusion to the work of Blundstone published in the *Proceedings* of the Royal Society (vol. xxxviii, p. 442) is characteristic. Blundstone described the distribution of glycogen in the connective tissue cells of molluscs in a preliminary notice; Dr. Creighton mentions this as the work of an English student, and then complains that a fuller account never appeared. In our opinion Blundstone's paper, though short, is of more value than all Dr. Creighton's speculations put together. He points out that the invertebrate liver is not a true liver either in regard to its external or internal secretion; the invertebrate liver is in its external secretion more like a pancreas. Blundstone also suggested that the glycogenic function of the vertebrate liver is performed in molluscs by their connective tissue corpuscles; and probably this simple statement contains the whole gist of the matter. We must not be too severe on Dr. Creighton or on his views on descent, for he admits that his dip into zoology is an excursus beyond his proper sphere. We may therefore leave his views on the snail as the ancestor of the vertebrate's lymph system to the tender mercies of the morphologists. Part III, which is promised, is to treat of the part played by glycogen in pathological processes. We hope that Dr. Creighton will be more successful there in presenting views which have some chance of meeting with acceptance.

THE HYGIENE OF THE MOUTH. By R. DENISON PEDLEY, F.R.C.S.Ed., L.D.S. London: J. P. Segg and Co. 1899. (Demy 8vo, pp. 100, 31 illustrations. 2s. 6d.)

Two objects appear to be aimed at in this book—the one to show that the greater the attention paid to cleanliness and the nearer approach that is attained to cleanliness in the surgical sense, the less the suffering from dental caries which will take place; and the other, that general infections and other disturbances of the system are more frequently due to the condition of the mouth than is generally supposed.

The first of these propositions needs no proof, being well recognised by those who have given attention to the subject; but this book may serve to disseminate more widely the information which it is desirable that everyone, and more especially medical men, should possess.

In support of the second proposition, a good many suggestive cases are cited. To take the author's own words, "There is no distinct proof of a connection between dental and other diseases as cause and effect; but there is a strong reason to suspect, and even to believe, that many of the diseases of the nervous system, diseases of the respiratory system, diseases of the alimentary canal, may be due, in some cases directly, in others indirectly, to the fact that the masticatory organs have been neglected." From this general statement we presume that the author would except cases of septicæmia, sometimes fatal, which do unquestionably occasionally arise. Everyone will agree with him that more care should be directed to the state of the mouth in acute illness, a matter which nurses, unless kept up to the mark by the medical attendant, are prone to neglect.

The woodcuts cannot be praised; and some of them, as indeed also some of the matter which they illustrate, are quite out of place in a work of this kind.

NOTES ON BOOKS.

THE annual *Charities Register and Digest*, published by Messrs. Longmans for the Charity Organisation Society (4s.), is a valuable compilation which is too well known to require any praise at our hands. The issue for 1900 was published some months ago, and has been revised by the Editor, Mr. C. S. Loch.

We have before us the seventeenth annual issue of the *Year Book of the Scientific and Learned Societies of Great Britain and Ireland* (London: Griffin and Co. 1900). We have on many previous occasions indicated the scope of this useful volume, which is not only a directory to the societies indicated, but a kind of index to the work done by them.

YELLOW FEVER.—Reports continue to arrive at Paris indicating the gravity of yellow fever in Senegambia. The troops returning to France tell pitiful stories of their experience. There is cause to fear that the disease may be brought to some of the French ports, but the authorities are taking every precaution.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

SUBSCRIPTIONS to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, SEPTEMBER 22ND, 1900.

THE MALARIA EXPERIMENTS.

IN the BRITISH MEDICAL JOURNAL of May 12th, 1900, page 1187, it was announced that an experiment was to be made under the auspices of the Colonial Office to test the truth of the mosquito theory of malaria by a practical application of it under conditions such as dwellers in malarious regions have actually to face. Dr. Luigi Sambon and Dr. G. C. Low, both connected with the London School of Tropical Medicine, volunteered to live from June till October, that is to say, through what may be called the height of the malaria season, in a part of the Campagna near Ostia which is so infested by the disease that no one who spends a night there under ordinary conditions escapes the effect of the poison. Dr. Sambon, Dr. Low, Signor Terzi, and their servants, have now exposed themselves to the pestilential influence of this valley of the shadow of death for over two months. They live in a mosquito-proof hut, which was described and figured in the JOURNAL of May 12th. They take no quinine or other drug which might be regarded as prophylactic. Not one of the experimenting party has shown the least sign of infection. We are able to make this statement on the best authority, and we consider it right to give it the fullest publicity, as we understand that a rumour is being industriously circulated in Italy that the experiment has proved a failure. So positive indeed have been the rumours to this effect that we thought it our duty to make inquiries on the subject at the London School of Tropical Medicine. In reply, the original of the telegram, of which the following is a copy, was shown to us:

Roma 13 Sept. at 6.25 A.M., received 7.51.

To { Manson Finically } London.

Assembled in British mosquito proof hut having versified [verified] perfect health experimenters amongst malarial stricken inhabitants, I salute Manson who first formulated mosquito malarial theory.

Grassi.

The testimony of Professor Grassi disposes in the most satisfactory manner of the sinister rumour to which allusion has been made.

The wisdom of our forefathers has warned us not to halloo before we are out of the wood, and the same maxim of proverbial philosophy may be taken as applying with special force to a malarious swamp. The experiment has still some six weeks to run before the object lesson which it is meant to enforce can be regarded as fully completed. The omens, however, seem to be propitious, and we may now, with as much confidence as the uncertainty of human things warrants, look forward to a successful completion of this important experiment. Satisfactory as such a consummation will be from a scientific point of view, it will also be matter for gratification that the men who have in the cause of humanity deliberately exposed themselves to a most serious risk have not had to suffer for the scientific faith that is in them.

What for practical purposes may be regarded as an experiment of the same kind is being conducted in West Africa. Dr. Elliott, a member of the Liverpool expedition sent to Nigeria some time ago to investigate the subject of malarial fever, has recently returned to this country. He reports that the members of the expedition have been perfectly well, although they have spent four months in some of the most malarious spots. They lived practically amongst marshes and other places hitherto supposed to be the most deadly. They have not kept the fever off by the use of quinine, and they attribute their immunity to the careful use of mosquito nets at night.

It may be remembered that as a complement to the preventive experiments in the Campagna, it was arranged that attempts should be made to produce malaria in healthy persons in this country by causing them to be bitten by mosquitos carrying the germ of the disease. We are informed that this experiment has also been successful. A consignment of mosquitos which had been fed on the blood of a sufferer from malaria in Rome, under the direction of Professor Bastianelli, was received in London early in July. A son of Dr. Manson, who offered himself as a subject for experiment, allowed himself to be bitten by these insects soon after their arrival in this country and again at the end of August. On the first of these occasions the bites apparently proved harmless, and a third experiment was made last week, but the positive result which has now been reached is probably due to the mosquitos which bit in August.

Dr. Manson's son, who has never been in a malarious country since he was a child, is now suffering from well-marked malarial infection of double tertian type, and microscopical examination shows the presence of numerous parasites in his blood. The genuineness of the experiment and the accuracy of the observations can be vouched for by several competent and independent witnesses. The mosquitos, as already said, were fed under the personal superintendence of Dr. Bastianelli, and were sent by Dr. Samton to the London School of Tropical Medicine, where they were placed in a warm chamber with all the precautions necessary to keep them in a state of vigorous vitality. They throve well, fed greedily, and deposited their ova. Full details of the experiments will, we understand, be published in due course.

A similar experiment is said to be in progress in New York. Mosquitos fed on a patient suffering from malaria, now in the Bellevue Hospital, were allowed to bite a healthy young man, who of his own free will submitted himself to the experiment. Six days later the young man began to show signs of malarial infection.

The malaria problem is not yet entirely solved, but these experiments certainly afford very strong confirmation of the theory that makes mosquitos chiefly responsible for the conveyance of the poison to man. It is clear that if the formula, "No mosquito, no malaria," does not con-

tain the whole truth of the matter, it may for practical purposes be taken as a guiding principle by colonists and pioneers in tropical climes. This country, with its vast and ever-growing imperial interests, has the best reason to be grateful to Dr. Manson, Major Ronald Ross, and the other scientific workers who have spent themselves in the endeavour to track to its lair the insignificant-looking enemy which, more formidable far than legendary dragons, guards the golden apples of our colonial Hesperides, dealing death to those who seek to gather them. The thanks of the nation are also due to Mr. Chamberlain who, with an intelligent appreciation of the results of scientific research, too rare in Ministers of the British Crown, has given the work every encouragement in his power.

THE SECTION OF PSYCHOLOGY.

The wide scope and the practical aims of this Section are well shown in the presidential address which has already been published, and in the proceedings which are published in full in this week's issue of the British Medical Journal. The keynote is struck in the presidential address, which deals with the important question of the prevention of insanity at its sources. Dr. Percy Smith points out clearly and categorically the factors in the problem in so far as they are capable of being practically influenced. They are as follows: First, the hereditary transmission and propagation of insanity; secondly, the influence of alcoholic intemperance in producing insanity and various forms of cerebral degeneration; and thirdly, the influence of syphilis as a potent cause of general paralysis of the insane, the most fatal of the insanities. If to these we add the prevention of tuberculosis—itself a contributory cause of idiocy, imbecility, and epilepsy in the offspring of tuberculous parents—four great groups of causes are placed before us, all of which are more or less capable of prevention. The encephalopathy resulting from lead, subject which was dealt with by Dr. Robert Jones, also furnishes an instance where prevention can do much. Alcoholism is responsible as an etiological factor for 25 per cent. of all male cases of insanity admitted to our asylums, in addition to its being a powerful agent in the production of vice and crime. The ravages of alcoholism can be limited by the education of public opinion, the spread of scientific knowledge, and the enactment of legislation for the repression of inebriety.

The incidence of syphilis both on the military and the civil populations might similarly be lessened by the compulsory sequestration of prostitutes—at least in the infectious stages of the disease—and by the inculcation of the virtues of chastity and temperance. The campaign against tuberculosis, already in active operation, must be fraught with advantage to the race in the next generation, for were all tuberculous fathers and mothers eliminated, the offspring would tend to be free of scrofula, and idiocy, imbecility, and other forms of bodily and cerebral malnutrition would be diminished. The marriage of chronic epileptics or of persons who have suffered from one or more attacks of insanity, the intermarriage of deaf-mutes, and the marriage of persons afflicted with profound hysteria and suicidal tendencies, should be discouraged as far as possible. The importance of this cannot be too strongly insisted on as a matter of public health.

According to the annual report of the Commissioners in Lunacy for 1898, the total number of lunatics in England and Wales on January 1st, 1899, was 105,086, "being an increase on the corresponding number on January 1st, 1898, of 3,114, the largest annual increase we have yet to record." The Scottish and Irish statistics appear to show that similar increases are taking place in the sister kingdoms. In England and Wales this increase concerns both classes of patients—paupers and private—alike. During the last few years considerable alarm has been felt at the steady increase in the numbers of the insane, and Dr. Percy Smith says that "when all is said and done there remains the undoubted fact that the numbers of the insane increase by leaps and bounds, and that the county and borough authorities are constantly being confronted by the demands for more accommodation in county and borough asylums; that new asylums spring up as the result, and that the taxpayer has constantly to put his hand in his pocket to defray expenses." This is a statement of facts which must immediately appeal to practical and public men.

Classification of the insane and the epileptic on broad medico-economic lines is the second most important subject discussed in the proceedings of the Section. The paper by Dr. W. Aldren Turner on the Colony Treatment of Epileptics, and the discussion which followed it, show clearly the importance of classification. There are already in existence in the United Kingdom "custodial" institutions for helpless idiots and uneducable imbeciles; we have farming and industrial colonies for epileptics who are practically sane or slightly weakminded; "hospitals" for acute and curable forms of insanity are already being built in some counties, while there is a growing body of opinion that the chronic and incurable insane should be housed in the large blocks for chronic cases which form the main part of most public asylums. A correct classification underlies all this division of labour and differentiation of institutions.

The term "Section of Psychology" had long been felt to be inadequate as a title for this Section, which concerns itself with insanity and mental diseases in their various aspects, and hence it was judged advisable that the title should be changed. After a brief discussion, initiated by the President, it was agreed that the term "Section of Psychiatry" would be the correct designation, and a resolution to that effect was passed drawing the attention of the Council of the Association to the matter, and recommending "that in future the Section should be called 'Section of Psychiatry.'"

These remarks will serve to show the wide scope of the Section, and the great public and medical importance of the subjects of insanity, mental diseases, and criminology with which it concerns itself.

THE ARMY HOSPITAL CONTROVERSY.

The telegraphic reports of the evidence taken by the Hospitals Commission which have been summarised in our columns from week to week show that the picture drawn by Mr. Burdett-Coutts was at least overcharged. Until he made his charges the Army Medical Service was credited, on the most competent authority, with doing remarkably good work in South

Africa, although it was seriously handicapped by undermanned establishments; in fact, it was represented as the one bright spot in an otherwise rather dark background. What Mr. Burdett-Coutts directly aimed at, whether it was failure in the medical or transport branch, was not at first apparent. The charges, however, were speedily fastened almost entirely on the medical service, and an attack made on it all along the line by persons now suspected by some shrewd observers as only waiting for a signal to begin. Whether or not there was any such preconcerted action, the sudden and general outcry against the military hospitals, so different from the previous laudatory reports, was to say the least remarkable.

It is not only the officers but the hard-working orderlies of the Medical Corps who are abused. They have been described as negligent, ignorant, and untrained, and even thievish. Probably some of their detractors sin in ignorance by confounding the genuine orderly, who is a highly instructed man, with the untrained substitutes and assistants drawn from regiments and civil sources to supplement grievously undermanned hospital staffs.

The depreciation of the male orderly is usually associated with the exaltation of the female nurse. We think it most desirable that the latter should be largely employed in military hospitals whenever practicable; but that she can or should wholly supersede the trained hospital orderly, as some have advocated, is impossible. Military hospitals differ from civil institutions just as a soldier differs from a civilian in being under different laws and conditions. Officers, non-commissioned officers, and men must control soldiers when in hospital just as in other phases of military life. There are also wards and classes of diseases in which the employment of female nurses would be undesirable. Can women take the place of men in the fighting line, or field hospitals, or bearer companies? If not, how are men to be trained in these duties unless organised in a medical corps? How are wardmasters, stewards, and other non-commissioned officers whose presence is essential for the discipline and daily administration of military hospitals to be found unless bred up from orderlies in a medical corps? To talk of superseding and thus destroying the Medical Corps is, therefore, pure folly.

There are other critics at work, not hostile, but benevolent, towards the medical service, who, under a complete misapprehension of the situation, advocate the re-establishment of dual control in military hospitals with the object of relieving the officers from supposed hard and uncongenial administrative duties, so as to leave them free for strictly professional work. This is an old argument which dire experience in dual control refuted long ago; the terrible inefficiency in the Crimea and elsewhere was directly traced to the friction and confusion begotten of such control, which so fettered the medical officers in their strictly executive professional duties as to make their position at once impossible and intolerable.

Medical officers therefore, as military officers having a full share in the difficulties and dangers of military life, claim and require the complete disciplinary control and administration of their hospitals as essential to success in their professional duties. Without such autonomy they could not, and indeed would not, in these days consent to serve at all. Root and branch reformers, therefore, who so easily formulate new conditions for the medical service of the army, should pause to consider whether actual or potential medical officers and men would consent to serve under conditions forced on them. It is difficult enough to get men to serve now, under autonomous conditions far in advance of any that have hitherto existed, without gratuitously creating fresh complications.

If the medical service of the army is undermanned and not properly equipped whose fault is it? The War Office has for years past been warned as to what would occur whenever any exceptional strain occurred, and appeal has been made to the public to insist that a matter of such vital concern to the efficiency of the army, and through that to the welfare and credit of the nation, should be dealt with in a large-minded and statesman-like way. But the public has paid no heed and has suffered the interests of the sick and wounded soldier to be sacrificed to bureaucratic pedantry and military caste prejudice.

THE DEMANDS ON THE INDIAN MEDICAL SERVICE.

The force sent to China from India, or under orders to go, comprises four brigades of infantry and cavalry, with the usual complement of divisional troops, sappers, pioneers, field, park, and horse artillery, the whole roughly amounting to about 21,000 troops with some 11,000 followers, including 4 coolie corps of 1,070 men each, for transport purposes, while some 3,000 horses and ponies, 3,500 transport mules, and about 1,200 draught bullocks accompany the force. The hospital provision is very extensive—16½ field hospitals of 100 beds, each with 4 medical officers and 8 medical subordinates, 2 field medical store depôts, 3 general hospitals of 500 beds, and 1 European general hospital of 110 beds have gone or are going. A fourth general hospital of 500 beds is held ready for despatch if wanted, and a fifth will be established in Calcutta for the reception of sick and wounded from China. Each of these hospitals has 10 medical officers and 20 hospital assistants. Three hospital ships with a combined capacity of 600 beds are being provided, exclusive of the one to be supplied by H.H. the Maharajah of Gwalior. Each regiment has its own attached medical officer and hospital assistant, with complete field equipment, panniers, medical companions, and haversacks. Including hospital ships and the base hospital at Calcutta there is a total of 3,250 beds, a provision for over 10 per cent. of troops and followers. As the regulation mobilisation scheme contemplated provision for only 4 per cent. of troops and 1 per cent. of followers, the resources of the Indian Medical Service have thus been strained to meet the demand; 87 medical officers in civil employ have already been given up by local governments, and it is possible that it may turn out to be necessary to detach 30 more, a total of 117. As the regular mobilisation scheme only provides 132 medical officers for four divisions, the present allotment of at least 87 for two divisions shows that medical provision is being made on a scale more liberal than had hitherto been contemplated by the Indian Government. A couple of months ago we published details

of the medical establishment of the German East Asiatic Expeditionary Corps for service in China, and it may be remembered that for this force, which consisted of two infantry brigades, a cavalry regiment, artillery, train, etc., four field hospitals, one general hospital, and a hospital ship, 91 medical officers were considered necessary. The medical staff of the Indian and German expeditionary forces are, however, not directly comparable, because the officers of the Indian Medical Service are ably reinforced by members of the Subordinate Medical Service; but even so, it cannot be said that the number of medical officers detailed is in excess of requirements in an unhealthy country such as the littoral of China.

From other points of view this fresh call upon the already sorely-taxed Indian Medical Service is a very serious matter. With plague increasing once more, with famine still bad, and cholera worse than it has been for years, the resources of the Service are strained to the uttermost. Leave has been stopped, retirements suspended, and all officers on furlough have been recalled to duty.

This is the third time within five years that all leave has been stopped; and having regard to the frequent recurrence of such emergencies, and to the trying climatic conditions of service in India, the question whether the establishment of the Indian Medical Service ought not to be permanently augmented necessarily arises. It has frequently been discussed, and we have reason to believe that representations have been made to the Indian Government not only unofficially but officially. The financial authorities are of course opposed to any augmentation, and are disposed to contend that the admitted pressure on the Service is of a temporary character and ought to be met by temporary expedients. But when pressure can be considered to cease to be temporary we do not know, for it has continued almost without intermission for five years. It has already contributed to diminish the popularity of the Service, and threatens ultimately to extinguish it altogether.

Apart from financial considerations, there are other questions of considerable delicacy which must be taken into account in connection with any proposition to permanently increase the establishment of the Indian Medical Service. The sudden calls made in recent years upon the governments of the several provinces to give up medical officers in civil employ in order to meet emergencies created by military operations or by plague or famine, have dislocated arrangements and interrupted continuity in civil administration; causing such great inconvenience as to open the question of the advisability of organising a special sanitary service in India, apart from the military. This proposition has not been favourably received by some of those very competent to judge; but, on the other hand, impartial observers contend that the Government of India would at least be well advised to make an early and careful inquiry into the present condition of the entire medical service in India, as well as of requirements of the civil and military medical establishments. Lord Roberts, in his evidence before the Hospitals Commission in Pretoria, stated that it would be advisable, when the war was over, that a departmental inquiry should be made into the various questions connected with the Royal Army Medical Corps which had arisen during the war. In any such inquiry, the medical arrangements for the British army in India could not fail to be discussed. It is hardly possible, therefore, that the Home and Indian medical establishments can be considered entirely independent of each other; they are in many ways mutually dependent—a fact forcibly brought home by the China expedition. Such interdependence must necessitate the consideration of questions affecting both services if there is to be the reorganisation of our medical establishments as a whole, which appears to be foreshadowed by Lord Roberts.

THE PANDEMIC OF PLAGUE.

DURING the past week 5 fresh cases of plague have occurred in Glasgow. Alarming though this statement appears, a close investigation of the extension robs it of much of its significance. One patient is a woman engaged in cleaning the Plague Hospital premises, and who consequently was directly exposed to the contagion. Fortunately, it is quite exceptional for medical men, nurses, or attendants in plague hospitals to contract the disease; but cases of the kind do occur with annoying irregularity. Nor is the sanitary staff especially liable to plague. Men employed in cleansing the infected dwellings, or as carriers of dead bodies to the mortuaries or cemeteries, have seldom been known to be attacked. In fact, contact with plague patients or with bodies dead of plague, does not expose healthy persons to any special danger, so far as can be gathered from experience gained in India or China. The other persons attacked during the week all belonged to one family, and it is believed that they were infected through direct intercourse with one of the families already attacked. The announcement that the number of plague cases steadily increases is not welcome news. The death-rate so far is not high, for, including the 22 cases in hospital and the 3 "suspected" plague deaths outside—25 in all—5 only have died, giving a death-rate of 20 per cent. One of the lowest plague death-rates previously recorded was that from Sydney, where of 303 persons attacked, 103 only died; yet this is far higher than the Glasgow returns, although much lower than the statistical returns from India, where the death-rate seldom falls below 40 per cent. The sanitary authorities in Glasgow are acting with vigour. Overcrowding is being inquired into, and no fewer than 40 householders were summoned at the Glasgow Southern Police Court on September 14th, for offences in this direction. The majority of cases of overcrowding occur in the plague-defined area in the south side of the Clyde. The French seaports are being closely watched, and ships arriving from Glasgow are detained until they are disinfected, the crew medically examined, and their clothing fumigated. It is satisfactory to learn that there is a sufficiency of antiplague serum in France to supply not only all local needs, but it is said all Europe if need be. The possibility of the spread of plague in Great Britain and on the Continent is a very present danger. That the mortality from the disease will be high or that any one locality will suffer severely is unlikely; but that cases of plague will occur in European cities, more especially in seaports, for the next few years, must be regarded as probable. It was Oporto last year, it is Glasgow this year; next year it may be some other centre. At no period since the Crusades have soldiers of so many nations flocked eastwards; never before have so many ships sailed for Asiatic ports, nor has communication between Europe and Asia been so intimate. As this has occurred at a time when plague is pandemic, the danger of Western Europe becoming infected is immediate. It is therefore, neces-

sary to take a broad view of the situation. The public mind is directed upon the actual presence of the disease in some single centre—now here, now there—for the moment; the announcement of a few cases more or less in some city is looked upon with alarm or satisfaction, as the case may be; the form of the disease is frequently stated to be "mild" or the area affected to be distinctly limited. These and such occurrences as these are apt to withdraw attention from the pandemic character which plague has at present assumed. Only by vigilance, constant and prolonged, can this, the most stealthy of infections, be fought, a vigilance which must extend not merely for weeks or months, but for several years to come. The danger of plague infection will not cease when the limited outbreak which has occurred in Glasgow is at an end; it will continue while plague exists in Asia, or whilst it is prevalent in any centre in direct communication with the rest of the world by land or sea.

THE GERMAN SCIENTIFIC AND MEDICAL CONGRESS.

OUR special correspondent writes: The seventy-second Versammlung Deutsche Naturförscher und Aerzte which began its meeting on September 17th at Aix-la-Chapelle, contains 38 Sections; 17 are devoted to more or less non-medical subjects, such as Natural History, Geology, Geography, Education, etc., the remaining 21 dealing with all the special subjects of medicine, including Balneology, Accidents, History of Medicine and Medical Geography, and finally veterinary matters. Several large buildings are devoted to the business of the Sections, and there is a strong muster of about 2,000 German-speaking scientists, including many whose names are well known outside their respective countries. As compared with the recent International Congress and our English meetings of various associations, little or nothing is offered in a social sense, the Daily Journal merely naming the various restaurants, etc., where those interested in particular Sections may, during the evenings, meet others whose tastes and professions lie in similar directions. A number of excursions have, however, been arranged. At the opening meeting the usual speeches of welcome were delivered by the Mayor and others, and the introductory addresses this year were by arrangement devoted not only to giving a retrospect of the subject, but a sketch of its development during the nineteenth century. Dr. J. H. van t'Hoff (Berlin) spoke on the Development of the Exact Natural Sciences (natural history, chemistry, and allied subjects). Dr. G. Hertwig (Berlin) delivered an address on the Evolution of Biology, in which, after relating anatomical discoveries, he came to the large question of the natural origin of the organism world. He considered that Darwin's theories as to inheritance and natural selection still rested on the uncertain basis of hypothesis. He pointed out, however, that the difficulty arose from the absence of sufficient prehistoric records, and expressed his agreement with the opinion of Huxley that Darwin's teaching as to evolution will survive, apart from his principles of selection. Professor Naunyn (Strassburg) gave an address on the Evolution of Medicine, connecting the progress of the science with the names of the German Schwann, the Frenchman Pasteur, and the Englishman Lister. The fourth and last address was given by Professor Chiari (Prague), whose subject was the Evolution of Pathological Anatomy. As the founders of this science he mentioned Morgagni, Baillie, and the latter's pupils. The Sections began their work on September 18th. An exhibition of scientific apparatus, drugs, foods, etc., is held in connection with the Congress. Some 300 to 400 papers are announced to be read, the congress occupying five days in all.

THE GENERAL ELECTION.

THE fortunes of the small band of medical candidates for Parliamentary honours will be watched with keen interest during the general election by all members of the profession. A complete list is not yet available, but we may note in the first place that most of the old members are standing again. Dr. Farquharson, who has represented West Aberdeenshire for over twenty years, is again a candidate, but will have to stand a contest, as he is again opposed by Sir Arthur Grant, whom he defeated at the last election. Dr. Farquharson has done much valuable service for the medical profession, and as the member in charge of Private Bill business in the House of Commons occupies a semi-official position, so that we may venture to express the hope that his return is not doubtful. Sir Walter Foster, who entered Parliament in 1885, has again to stand a contest in the Ilkeston division of Derbyshire, which he has represented since 1887. He was, it will be remembered, Parliamentary Secretary to the Local Government Board in 1892-1895, and his work during that period when the country was threatened by cholera, and the wide knowledge which he brings to the discussion of public health questions, would make his loss to the House of Commons a very serious one. Sir George Pilkington, who, it will not be forgotten, took a leading part in the opposition to the Midwives Bill, was elected the representative of Southport as recently as May, 1899; may again be a candidate, but in this constituency also there will be a contest. Sir Michael Foster, K.C.B., who was elected member for the University of London in February last, and Sir John Batty Tuke, who was elected representative of the Universities of Edinburgh and St. Andrews in May, are both again candidates, and, so far, nothing has been heard of any opposition. We regret to observe that Sir Charles Cameron, Bart., who has been one of the representatives of Glasgow since 1884, has not offered himself for re-election. The loss of his medical knowledge and independent judgment will be seriously felt in the House of Commons. Mr. Robert J. Price, M.R.C.S., is standing again for Norfolk East, and Dr. Clark for Caithness, where his chances for re-election appear somewhat doubtful. With regard to the Irish constituencies information is not yet available. Among the names of new candidates we notice that of Dr. Alfred Hillier, who is standing at Stockport as a supporter of the present Government. Before settling in London he was for many years a medical practitioner in Johannesburg, and took an active part in political affairs there. While in favour of departmental reform he holds that the South African policy of the Government is honourable and wise. In the Osgoldcross Division of the West Riding of Yorkshire Dr. Vickerman Rutherford, of Newcastle upon-Tyne, is the nominee of the Liberal Association, in opposition to Sir John Austin, who stands again as a Liberal Imperialist or Unionist candidate. The names of a few other medical candidates are mentioned, but not apparently with authority.

THE R.A.M.C. IN SOUTH AFRICA.

THE first number of Mr. Murray's new venture, the *Monthly Review*, which appeared on September 19th, contained an article by Mr. Bowlby, of St. Bartholomew's Hospital, who was Chief Surgeon of the Portland Hospital, which was at work at Rondebosch from January until April, and then moved to Bloemfontein. The hospital was thus at Bloemfontein during the worst of the epidemic, and Mr. Bowlby states that during May there were 4,500 occupants of hospitals in and around the town, while more than 10,000 men passed through the hospitals during that month. With regard to the cause of the epidemic, Mr. Bowlby agrees with other observers in believing that many of the men who sickened with enteric fever at Bloemfontein had contracted the disease before the march from the Modder River began or at Paardeberg, but he

adds that after the cutting of the supply from the waterworks most of the water which could be obtained at Bloemfontein was doubtful or bad, and that the dam water at Thaba-N'chu was probably responsible for many cases. He thinks that flies also may have been carriers of infection, "for they were always thick on the lips and faces of the worst cases of typhoid, and, of course, were attracted by food of all kinds." As to the admitted deficiency in hospital accommodation and supplies at Bloemfontein, he observes that "before blame can be attached to those in charge of the medical arrangements, it must be shown that they were not ready or able to deal with these difficulties, and that the failure to supply hospitals and their equipment was not due to military exigencies, but to neglect of the necessary and obvious preparations. Only a full knowledge of the facts can enable unbiassed observers to form a just judgment." Of the Royal Army Medical Corps he says that "an immense amount of most valuable work has been performed, and that, as far as I can learn, no army has ever been so well supplied with medical comforts and surgical treatment." He then points out that the establishment of the Corps is too small, and that it is seriously below even that minimum, and asks that the question of the inability to obtain the necessary officers should be very seriously considered. Mr. Bowlby's observations on this head are so important that we venture to quote his own words: "Speaking from my own knowledge, as a surgeon attached to the largest medical school in London, I can assert without fear of contradiction that the service in the army is so unpopular with recently-qualified medical men, that hardly anyone thinks it worth his while to join it; and, as a matter of fact, competition for vacancies has long since ceased, and it is quite impossible to attract a sufficient number of men of any kind, let alone attracting the best. The reasons for this are not far to seek, and active service with an army for six or seven months has made them more clear to me than they formerly were. The pay is insufficient. The position of the army surgeon is not on a par with the position of an officer in any other department of the army. It is true that it has been recently improved by the formation of a Royal Corps, and that before that was done the position was much worse than it is now. There are still, however, plenty of grievances to rectify before justice will have been done; and as it is evident that the army must be supplied with surgeons, the sooner the matter is dealt with in a most liberal spirit the better. At the present time, when we are increasing our army, the matter is surely one of urgent necessity, for not only is it impossible to get men to join the Royal Army Medical Corps, but, in addition, men already in the corps are constantly resigning their commissions as soon as ever the chance of a pension enables them to do so. For years past the chief rulers of our army have refused to treat the army surgeons in such a way as to enable the army to obtain a sufficient number of competent men. Surely it is plain that when a corps of 800 is short of its proper numbers by no fewer than 200, it is time to look matters plainly in the face, to realise the difficulties, and to see that they are overcome. With sufficient liberality and reasonable concessions the Royal Army Medical Corps would command the services of men who would make it the rival of any other corps, and I trust that the day is not far distant when this ideal may be realised. The corps has already numerous able and valuable officers, and the services of many of them in this war have been of the utmost value to the troops. Let those in power see that the numerous vacancies now existing are filled by men as good as the best of those now serving in our armies.'

ENTERIC FEVER AMONG TROOPS IN SOUTH AFRICA.

The following official statistics relative to enteric fever among our troops in South Africa have not yet, as far as we are aware, been made public. The total number of cases from October 13th, 1899, to June 29th, 1900, was 13,057. Of these, 3,174 died, giving a mortality of 24.3 per cent. Taking Bloemfontein alone, the total number of cases up to July 6th was 4,487, with 878 deaths, a mortality of 19.5 per cent. It is noteworthy that the death-rate at Bloemfontein, in spite of the alleged breakdown of the hospital arrangements, was lower than the general typhoid mortality of the forces in South Africa. It may be inferred that there was an exceptionally high death-rate in other places. We hope that when Parliament meets, full information on this subject will be forthcoming.

UNIVERSITY OF LONDON.

We understand that in addition to the names already announced in the British Medical Journal as members of the new Senate of the University of London, the following representatives have been elected by the Royal College of Surgeons, Mr. Howse and Mr. Pearce Gould; by the City Corporation, Dr. T. B. Crosby; by the City and Guilds Institute, Sir Frederick Abel. The legal bodies are also sending representatives; thus Gray's Inn has appointed Mr. C. A. Russell, Q.C.; the Inner Temple, Sir Alfred Martin; the Middle Temple, Mr. C. M. Warmington, Q.C.; while the Incorporated Law Society sends Mr. Pennington and Mr. Godden. The Faculties are summoned to meet on October 12th to elect their sixteen representatives.

THE DEFECTS OF THE DUFFERIN ASSOCIATION.

In the British Medical Journal of July 7th some suggestions, based on the Annual Report for 1899, were made for improving the work of this Association for providing female medical aid for the women of India. In the Journal of September 8th was printed a letter from a medical woman in India, whose work at the Dufferin Hospital in Calcutta, and subsequently at St. Stephen's Hospital, Delhi, entitles her opinion to consideration. A more detailed investigation of the last two annual reports suggested by her criticism of the Dufferin methods shows that, while the hospitals managed by English qualified women seem to do excellent work, remarks are made by the civil surgeons on the inefficiency of the lady "doctor" (frequently a native hospital assistant) provided. Further, we find some civil surgeons reporting that the Dufferin Association is at work where the women are quite ready to see male doctors, or where, as at Patna, there is a flourishing mission hospital to which *purdah* women consent to go. Allusions are made to the difficulty of obtaining women of any medical training at all, and yet opportunities of giving valuable experience to those who have just left the medical schools are wasted. At Gaya, for example, the civil surgeon is stated by the inspector-general to be a "skilled gynæcologist;" yet he has only a third grade lady "doctor"—we protest against such misuse of the term—to help in his female wards, while at the same time he accuses the lady doctor of the Dufferin Hospital at Gaya (first grade, but of Indian birth and education) of tapping ovarian cysts which she ought either to have removed or sent to his hospital. Though in some cases, as at Delhi, Hooghly, and Amrasti, the civil surgeons and the Dufferin doctors seem to speak highly and kindly of each other, at others, such as Gaya, there seems to be a state of war. The other point of dispute between the medical staff and the various Dufferin officials is whether their hospitals should admit *purdah* women only. We hear that the *purdah* restriction has so emptied the new Calcutta Hospital, that the English medical woman and the English nurse in charge have resigned. No doubt it is fair to try a *purdah* experiment, but in view of the inefficiency and the insufficient experience of which the country-born assistant surgeon or hospital assistant is so

often accused in this very report (see pp. 301, 527, 17, 19, 23, 299), it seems deplorable that the Bengal Branch has not been able to supply a lady holding a university degree with enough work to satisfy her. Considering that the demand for female medical aid in the East exceeds the supply, it would be more politic if the Dufferin Association could render its staff more contented. Their grievances seem to be: (1) In the case of Englishwomen of experience insufficient pay and unsatisfactory relation to the civil surgeon; (2) insufficient holiday, since a month cannot be considered enough, at least for an Englishwoman in the tropics, owing to the increased frequency of the catamenia; (3) in the case of ladies born in India, insufficient experience between the date of qualification and that of being given complete responsibility for a hospital. We should suggest as remedies (1) that the minor hospitals and dispensaries which can only afford medical women of the second or third grades should be grouped round a central hospital officered by (*a*) an English medical woman and a first-grade Indian medical woman, who might in turns take charge of the hospital and visit the outlying district hospitals; (*b*) a house-surgeon of the second grade fresh from college, who might serve as a supernumerary to relieve district medical women when absent on leave while a senior hospital assistant took her place; (*c*) a certain number of hospital assistants and nurses, who should be trained at the central hospital and sent out to the district hospitals and dispensaries; (2) that expenditure on large buildings or in small districts, especially where there are Government hospitals with female wards or good mission hospitals, should be curtailed; (3) that newly-licensed second grade medical women should be put in charge of the female wards of general hospitals under the superintendence of the civil surgeons; (4) that the English medical women in towns where there are medical schools should be put into relation with the female students so as to impart to them something of the spirit that animates the profession at home. The Government, in answer to the representations of Surgeon-General Harvey that medical women had greatly aided in the task of combating plague, has transferred a special clerk to do duty with the Central Dufferin Committee. It is somewhat amusing to read that he formerly belonged to the Revenue and Agricultural Department. The committee was obliged to veto, on the ground of expense, the far more necessary appointment of a medical woman of experience and tact as inspectress of all Dufferin hospitals, but Government might well be asked to pay the salary of such an officer. The appointment of such a lady, and of more Englishwomen to central hospitals, as we have suggested above, would no doubt be expensive: for as the prospects of medical women at home are brightening, they can no longer be expected to accept posts in tropical climates which offer neither the pay, promotion, position or pension which the Indian Medical Service affords to men. Unless, however, steps are taken to improve the state of matters in the Dufferin hospitals, we much doubt if there will not be a still more serious falling off in the voluntary contributions which support them.

CONSULTATION FEES UNDER THE IRISH POOR LAW.

A letter signed by Dr. Kidd, of Enniskillen, on the subject of consultation fees in the Poor-law service, has appeared in various Irish daily papers, and appears deserving of further consideration. Under the Local Government Act of 1898 and the Orders in Council following thereon, medical officers of dispensary districts in Ireland are required to call in consultants in difficult cases upon their own responsibility, but the onus of proof that the case was one requiring a consultation is laid upon the dispensary doctor who, if the necessity is disallowed by the guardians and the Local Government Board, must himself pay the consultant's fee. We are aware that a good many dispensary doctors have hesitated to incur the responsibility, and are unaware that they have any other alternative. Dr. Kidd, however, points out that under Section VII of the Act of 1847, still unrepealed, "Every relieving officer . . . . . shall have power to afford . . . . . such poor person immediate temporary relief in food, lodging, medicine, or medical attendance." So that the dispensary doctor still has the option of giving the relieving officer a requisition for a consultant, and we agree with Dr. Kidd that he should adopt that course whenever the condition of the patient admits of it. We regard the new regulation as a gratuitous indignity to a most honourable body of public servants, whose honesty must be relied upon without any check in far more important matters than the calling in of a consultant. With regard to the scale of fees for consultation in poor law cases there is no legal compulsion. No Poor-law doctor can be compelled to enter into any agreement with the guardians as to the amount of remuneration he is to receive for extra services. The judges of the land are fortunately the ultimate authorities as to what is a reasonable fee. Dr. Kidd complains very justly that the Local Government Board have never defined who is and who is not "a poor person," entitled to gratuitous medical relief, though they do so most strictly as regards all other forms of relief. Practically, as the Irish Poor Law is administered, it is a huge medical aid society, embracing every man, woman, and child in the country, and the doctor who objects to attend members, even those who are able to pay him, soon finds his position intolerable. His remuneration for medical attendance, exclusive of medicines, which are paid for by the guardians, but inclusive of surgery and midwifery, works out at something under 6d. a head of the peasant population, any of whom can get a ticket for the asking. What are we to think of sweating like that? Should the fair-wages clause only apply to artisans? We hope the Irish Poor-law Officers' Association, recently formed, will not cease to agitate until some measure of justice is obtained for all classes of Poor-law officers, who are about the hardest worked and worst paid public servants in the kingdom.

LEGISLATION OF THE PAST SESSION.

A glance at the Statute Book for 1900 would be sufficient to show that something outside the ordinary routine of political life was uppermost in the minds of our legislators during the past session. Increased taxation, Parliamentary power to issue new Consols, enactments relating to the employment of volunteers on active service, the pay of reservists in the army, the stoppage by proclamation of the exit of war material from this country in time of danger, all serve to show that much Parliamentary time has been devoted to foreign rather than to domestic affairs. The session cannot, however, be said to have been entirely useless from the point of view of the domestic politician. Many useful statutes have been passed. The Workmen's Compensation Act, 1900, which extends the provisions of the statute of 1897 to the employment of workmen in agriculture by any employer who habitually employs one or more workmen in such employment. Where any workman is employed by the same employer mainly in agricultural, but partly or occasionally in other work, the Act is to apply to the employment of the workman in such other work. The expression "agriculture" includes horticulture, forestry, and the use of land for any purpose of husbandry, inclusive of the keeping or breeding of live stock, poultry, or bees, and the growth of fruit and vegetables. The foregoing wide definition of the term "agriculture" would seem to bring the domestic gardener within the benefits conferred by the new Act. Must the owner of a country house pay compensation to his gardener when stung by a bee, or when disabled by the kick of an unruly cow? This is a question which must soon arise,

and which we anticipate will be answered in the negative, for it has been decided that a gardener is a menial servant, and this although he is a head gardener receiving a salary of £100 a year, with the right to take apprentices. The Act, however, does not come into force until July 1st, 1901. By the Mines (Prohibition of Child Labour Underground) Act, 1900, a boy under the age of 13 years shall not be employed in or allowed to be for the purpose of employment in any mine below ground. Sections IV and V of the Coal Mines Regulation Act, 1887, and Section IV of the Metalliferous Mines Regulation Act, 1872, are modified so as to be applicable to boys under 13. Section V of the Act of 1887 provides *inter alia* that boys at or above the age of 12 years shall not be employed in or allowed to be for the purpose of employment in a mine below ground for more than 54 hours in any one week, nor more than 10 hours in any one day, nor otherwise than in accordance with the regulations thereinafter contained with respect to the employment of boys in a mine below ground. The new Act will not, therefore, affect boys above the age of 13. The Volunteer Act, which enables the Government to call out the volunteers in cases "of imminent national danger or of great emergency," materially alters the status of the citizen soldier. Hitherto he has felt that until the enemy's ships are in sight of land he cannot be called out. Now he can be summoned to take up arms whenever the Government has need of him. Since the striking out of the clause relating to companies practising or carrying on the business of doctors, the Companies Act, 1900, has lost its special interest for the medical profession. In providing for the further safety and security of investors, however, it is well calculated to protect the interests of the investing public.

IRISH DISPENSARY DOCTORS' HOLIDAYS.

No Order in Council has been issued respecting the length of holidays to be given to dispensary medical officers in Ireland since the recent decision of the Court of Queen's Bench. We understand, however, that many Boards of Guardians are granting the full four weeks without demur. A paragraph appeared in the *Irish County Council Gazette* of September 8th stating that the Treasury had agreed to pay half the salaries of *locum tenens* for dispensary medical officers provided the guardians granted the full four weeks' holiday. If this be true there will probably be no need for any Order in Council.

FEMALE STUDENTS IN AUSTRIAN UNIVERSITIES.

THE question of the admission of women to the medical and pharmaceutical faculties of the Austrian universities, which has long been warmly debated, appears at last to have reached a final solution. The matter was discussed by the Superior Sanitary Council on July 21st, when the Council declared itself in favour of the principle, provided that the women were not granted any exemption from the courses of instruction and examination imposed upon male students. This resolution was transmitted to the Minister of Education, who replied that a decree permitting women to enter and obtain degrees in the faculties referred to would be promulgated this month. It was issued on September 15th. With the commencement of the coming academic year 1900-1901, therefore, women will be able to take their places among the students in the lecture rooms of the famous medical school of Vienna and the other universities of Austria.

PURE MILK FOR HOSPITALS.

THE Paisley Corporation, under the guidance of their energetic medical officer of health, Dr. Robertson, have just started an interesting experiment in connection with the supply of milk for their infectious diseases hospital. A model byre has been erected, and was formally opened last week. It is constructed on the most modern principles as to lighting and ventilation and is designed to accommodate fourteen cows. A number of cattle have been purchased, but only those that pass the tuberculin test are retained, the others being destroyed. In this way only healthy animals will be housed from the outset. Special precautions are also to be taken with the sterilisation of the cans and with the filtering of the milk, and immediately after being taken from the cows, it is to be put into cans which have been fitted with lock and key so that they cannot be tampered with in transit between byre and hospital. These precautions, it is held, should give the fever patients a milk supply entirely free from tuberculous taint, and this experiment on the part of the Paisley authorities will be watched with interest by other corporations and hospital boards.

THE DUTY OF LICENSED VICTUALLERS TO PROVIDE LIGHT REFRESHMENTS.

AT the recent licensing meeting for the Ormskirk Division of Lancashire, the Superintendent of Police reported complaints from travellers, principally cyclists, that licensed persons in the district had refused to supply such reasonable refreshments as tea, bread and butter, etc. According to a note which appeared in the *Times* for September 8th, the inspector then declared his intention to object to the renewal of licences where holders have thus "failed in their duty to the public." The Chairman (Mr. J. C. Wood) said that tea must be provided if asked for; that this was the law, and that the Bench would uphold it in every case brought before them. The superintendent then promised to send a copy of the section of the Act to every licence holder in the division. The attitude assumed by the justices in the above case is deserving of every sympathy, as there can be no doubt that the existence of mere drinking houses where nothing but alcoholic beverages are supplied is an incentive to intemperance, but we should be glad to know the exact legal grounds which the magistrates have relied upon for the course which they propose to adopt, in so far as relates to licensed victuallers as distinguished from innkeepers. Even assuming that power to compel a publican to supply all comers with light refreshment is conferred upon justices by the Licensing Acts taken as a whole, no such power appears to be contained in any one section. It may be that in thus endeavouring to perform a public service the justices have not given much attention to the legal interpretation of the terms "licensed victualler" and "innkeeper." A licensed victualler is the creature of statute upon whom power to sell intoxicating liquor at stated times is conferred by the licensing justices. Nothing is said in the Acts as to the duty of a licensed victualler to supply refreshment, and apparently he need not serve anyone unless he likes either with intoxicating liquor or other refreshment. An innkeeper, on the other hand, is under a common law liability to supply reasonable refreshment for man and beast, and his refusal could be made the subject of indictment or action at common law. The relation of innkeeper and guest may exist where only occasional refreshment is supplied. It is not necessary that the guest should intend to stay a night; the innkeeper is liable to receive and to find food and lodging at reasonable prices for all travellers, if he have room. The intending guest must, of course, tender payment, and need not be received if he conducts himself in a manner likely to be offensive to other guests. The same principles naturally apply to a licensed victualler who is also an innkeeper, and, inasmush as an innkeeper who fails to supply his guests with refreshment is liable to indictment, the justices would clearly be justified in refusing to renew his licence. But, according to the report of the proceedings at Ormskirk, the justices intend to treat all licensed victuallers alike. Seeing that there is no express right to do so in any of the Licensing Acts, we are forced to inquire whether by any roundabout method they can attain their object.

The root of the justices' authority to grant licences is based upon the Alehouse Act, 1828, where it is provided that justices shall annually hold a special session for the purpose of granting licenses to persons keeping or being about to keep inns, alehouses, and victually houses to sell liquors by retail. The section goes on to provide that it shall be lawful for the justices . . . to grant licences to such persons as they shall in the exercise of the powers contained in the Act, and in the exercise of their discretion, deem fit and proper. The Act defines the word "inn" to include "any inn, alehouse, or victualling house," while the words "inn, alehouse, or victualling house" includes all houses in which shall be sold by retail any excisable liquor to be drunk or consumed on the premises. Justices might argue thus: Any person who does not consent to serve customers with tea, etc., is not a fit and proper person to hold a licence; we therefore refuse to renew it. Can this argument be sustained in law? It is true that in some districts licensing justices have acquired and habitually exercise powers for which there is no statutary justification.

ALCOHOL AND INFECTION.

Whether alcohol increases our susceptibility to infection or not is a question of great importance, but one on which comparatively little work has been done. So far as experiments which have been made on animals go, it would seem that alcohol, like certain other substances such as chloral, carbonic acid, etc., does render the consumer more liable to fall a victim to the germs of infectious diseases, and this view is supported by clinical experience in the tropics and elsewhere. Seeing that brandy and other alcoholic stimulants are frequently given to patients suffering from infectious diseases the question presents itself whether we are helping the disease or the patient most by their exhibition. Dr. Laitinen[1] has recently experimented on no fewer than 342 animals—dogs, rabbits, guinea-pigs, fowls, and pigeons—with a view to settling the question. As infecting agents cultivations of the anthrax, tubercle, and diphtheria bacilli were employed. These were chosen as types of acute infection, chronic infection, and a pure intoxication. The alcohol employed was, as a rule, a 25 per cent. solution of ethylic alcohol in water. In greater strength the alimentary mucous membrane of the birds became inflamed. Some of the dogs had 50 per cent. solutions. It was given either by œsophageal catheter or by dropping it into the mouth from a pipette. The dose varied with the animal and its weight from 1½ c.cm. in the case of the pigeon to 60 c.cm. in that of some of the dogs. It was administered in several ways and for varying times; sometimes in single large doses, at others in gradually-increasing doses for months at a time in order to produce here an acute and there a chronic poisoning. A full account of these experiments is given in an elaborate series of tables to which we must refer the reader for details. Briefly, Dr. Laitinen found that in all these cases without exception the effect of the administration of alcohol, in any form whatever, was to render the animal distinctly, sometimes markedly, more susceptible to infection than were the controls.

THE CLINICAL SOCIETY OF LONDON.

The first meeting for the session 1900-1901 of the Clinical Society of London will be held on Friday, October 12th. The first clinical evening will be held on Friday, October 26th, and in connection with these evenings some new regulations are issued. The cases will be in attendance from 8 to 9 P.M., and will then be dismissed. In lieu of the oral demonstrations in the meeting room, members will be provided with a brief printed summary of each case, calling attention to the various points illustrated, and to the questions raised by them. The President will take the chair at 9 P.M., and will immediately invite discussion of the cases, following the order on the list. This order will be determined by the Secretaries, who will, as far as possible, group the cases. This will, it is believed, add to the interest of the evenings, but will render it impossible to give notice of the cases to be shown in the diary of the medical journals. The clinical evenings of this Society have been so successful that these new regulations, the result of a good deal of experience, may possibly be of use to the committees of other societies.

[1] *Zeitsch. f. Hyg. und Infect.*, July 19th, 1900.

HERTFORD BRITISH HOSPITAL IN PARIS.

This hospital, on the death of the late Lady Wallace, was transferred to Her Majesty's Government, who have appointed a Committee to manage the hospital, consisting of the Honourable Michael Herbert, C.B., Mr. Austin Lee, C.B., Mr. A. Percy Inglis, Her Majesty's Consul-General, Mr. John Pilter, and Mr. Alfred Coleman. Her Majesty's Office of Works recently instructed Professor Corfield, Inspector of Buildings to the Department, to investigate the sanitary arrangements of the hospital, and he has reported that in his opinion the hospital, which had been closed for temporary repairs, cleaning, etc., should not be reopened until extensive alterations have been made in the present sanitary arrangements. Meanwhile, in order to obviate any inconvenience which may result from the non-admission of urgent cases among the British poor resident in Paris, instructions have been given to the resident medical officer to take immediate steps to obtain admission to a suitable French hospital for any such applicants.

CHAIR OF CLINICAL MEDICINE, GLASGOW UNIVERSITY.

This chair has been rendered vacant by the promotion of Professor McCall Anderson to the Chair of Practice of Medicine, and applications have now been received from the following candidates: James Finlayson, M.D., LL.D., Glasgow; Samson Gemmell, M.D., Glasgow; George S. Middleton, M.D., Glasgow; Alexander Morison, M.D., London; John Lindsay Steven, M.D., Glasgow. The appointment is in the hands of the University Court, which meets on October 4th.

The Prince and Princess of Wales have consented to visit Belfast in the early part of next year to lay the foundation stone which is to be built to commemorate the Queen's Jubilee.

We are requested to state that although, as already announced in the Journal, the London School of Tropical Medicine will open on October 1st, the introductory address by Sir William MacGregor, K.C.M.G., C.B., M.D., will be delivered on Wednesday, October 3rd, at 9 P.M.

We understand that the plague vaccine used in Glasgow since the beginning of the outbreak has been supplied by the Liverpool Pathological Laboratory. A stock of Haffkine's vaccine is always kept there in stock for possible emergencies, and it can at any time be procured by application to Dr. Balfour Stewart at the laboratory.

Professor Rudolf Virchow celebrated his golden wedding on August 24th. The family festival was kept in the house of his youngest son, who is director of the gardens of the Castle of Wilhelmshöhe. Professor Virchow's wife is a daughter of Karl Mayer, the celebrated gynæcologist, who died in 1868. It may be mentioned that it was on Professor Mayer that the title of Sanitary Councillor, founded by Friedrich Wilhelm IV. was conferred for the first time in 1840.

THE WAR IN SOUTH AFRICA.

THE HOSPITALS COMMISSION.

[FROM OUR CAPETOWN CORRESPONDENT.]

Capetown, August 28th.

THE Hospitals Commission has now been sitting continuously since the 21st, and has heard a considerable amount of evidence. So far, it is permissible to state that practically all the more serious charges against the hospitals at the base have broken down; indeed, it is remarkable that the local gentlemen who led the original chorus of complaint have persistently kept in the background. This bears out the impression I have previously put on record, that the charges made in the Capetown papers and at the Cape of Good Hope Society were lamentably deficient in exactness. Indeed, in the one specific instance brought forward in connection with Rosebank, the prosecution caved in at once. It is a little disappointing to find that people who rushed into print with the gravest accusations against the department, collectively and individually, appear to have done so without being in possession of actual facts which they could have laid in evidence before a tribunal. It is, of course, premature to say what may be brought out against the hospitals upcountry, but thus far, the evidence has been almost entirely in defence of the administration. This fact is a distinct gain, for it must be remembered that, although the lash was mostly applied to the backs of these hospitals, some very grave allegations were made against even the base hospitals, allegations which, were they proved to be justifiable, would carry, in a sense, more weight than those against the field institutions, inasmuch as military exigencies cannot be so strongly pleaded in defence of the former as of the latter. I am forwarding you a fairly detailed report of the actual evidence, so that all I need do here is to give you such a commentary upon certain items thereof as are suggested by my constant observation of the working during the whole of the war, and by my knowledge of the opinions of the local profession and of the medical officers, R.A.M.C., and civil surgeons.

THE PERSONNEL OF THE COMMISSION.

In the first place, I feel bound to record the almost universal feeling of susprise in local circles that the Commission did not include one combatant or Army Service Corps officer. It is felt, and by none more strongly than the profession, that so many of the alleged deficiencies in the medical administration are closely interwoven with ordinary military exigencies that the Commission should have had one member who could have put questions from the point of view of a practical soldier. In the absence of such a member, the important point of the way in which the R.A.M.C. is hampered by its being held in leading strings by lay officials is apt to be lost sight of. I can well understand that an army medical officer would feel considerable reluctance to argue out this aspect of the question unless actually questioned upon it, whilst even if faced by a more or less hostile examiner, he would probably bring forward plenty of facts to establish his position. Now, an officer of high rank with staff experience, preferably a general officer, would be exactly the man to elicit evidence as to the extent to which the army administration generally is involved in any proved defect, and even if he started his examination from a somewhat *ex parte* standpoint, the end of ventilating the subject would be gained all the same. Another point wherein the *personnel* of the Commission creates some surprise is that it does not include one experienced lay hospital administrator. Such men are to be found by the score in the United Kingdom, shrewd business men who have made hospital work a hobby, and by long service as chairmen or members of hospital Boards, have added to their business "common sense" an exact knowledge of hospital requirements and the difficulty of always supplying them, whilst to the idealism of this civil administrator the experience of the soldier who knows what war is would have been an admirable corrective.

CIVIL SURGEONS AND THE HOSPITALS.

Another point which I think is unfortunate is that, so far as I can gather, evidence has been entirely voluntary, by which I mean that no one unless it be officers of high rank have been actually invited to give evidence. Consequently there appears to be some opening for the inevitable remark of the scoffer that the evidence has been picked, and that the voice of the highly placed R.A.M.C. officer has been too much in evidence. Now, in making this criticism I wish to be distinctly understood not to insinuate that any intentional partiality to the department has been shown. On the contrary, I feel certain that, had a certain number of subordinate officers or even non-commissioned officers and men been summoned, the justification of the administration would have been more complete than it is even now. Take, for instance, the large body of civil surgeons now employed. These gentlemen occupy an absolutely unique position of advantage as possible witnesses. They have been for months interwoven with the actual every-day working of the hospitals just as closely as their brethren of the R.A.M.C., and they are in a position to give facts where others can only furnish impressions. They have by this time learnt what military exigencies are, and they know how great have been the difficulties confronting the administration. No one can accuse them of being biassed by any undue military *esprit de corps*, and any testimony they might give exonerating the department would carry tenfold more weight than the same evidence from the R.A.M.C. man, because unconsciously they take the ordinary big civil hospital as their standard of comparison. If one of them says that the arrangements at a certain base hospital were as good as, or superior to, those of an ordinary civil hospital under similar circumstances, such an assertion would carry enormous weight, more especially as some of them have had large civil experience in the colony itself, and I feel certain that had some of the civil surgeons been examined their testimony would have gone almost unanimously in the direction of proving that Tommy Atkins has been getting better attendance in a military hospital than his fellows in civil life get at their own homes or in civil hospitals. And yet Professor Dunlop is practically the only purely civil surgeon who has given evidence. Dr. Scholtz hardly counts, for his experience was not that of an officer day by day face to face with hospital difficulties. But it is evident that no civil surgeon with a proper idea of discipline could volunteer to give evidence. He would be set down as a busybody, if nothing else. If two or three of the senior civil surgeons had been invited to come forward, I feel certain that much valuable and impartial testimony in favour of the administration would have been elicited. It is absurd to say that they would have been terrorised from speaking their minds. They are only temporarily connected with the Service, and probably not one in a hundred of them has the remotest intention of accepting a commission if offered to him, so that no official frown would frighten them. It is, I repeat, regrettable that they have had no opportunity of speaking, more especially in the case of the Woodstock staff, for, as it happens, the only men at present at the hospital who were there during its most severe stage of stress (and criticism) are civilians. In support of the fact that I am not speaking without book, I only yesterday had a conversation with a gentleman who has been very active on Mrs. Chamberlain's side, and who, when I asked him whether he did not admit that his charges had broken down, at once rejoined, "Oh, yes, but why did the Commission carefully avoid calling anyone who was acquainted with the hospitals in December and January?" I, in reply, told him that in that case I should be surprised if the bottom would not have been further knocked out of his case, but he was not convinced, and probably will vigorously take up the same line of argument when it is too late to prove him wrong.

VOLUNTARY V. MILITARY HOSPITALS.

Passing on to some of the evidence, that of Major MacMahon has some valuable points. For instance, every one who knows this country will regard the fact of the supply people being able to furnish one hospital with 200 gallons of fresh milk daily as a triumph of administrative ability in a place like Bloemfontein during war time, and not a favourable period of the year. People in England regard milk as something always obtainable. Your South African knows what it is to go for months, even in an agricultural district, without a drop of that necessary fluid otherwise than made from the condensed article. Then, again, his contention that the volun-

tary hospitals are not so mobile as the regular military institutions will be amply confirmed by all who have had anything to do with them. They are admirable establishments, and the *élite* of the cases get better attendance in them than elsewhere, but they do not fulfil the paramount military consideration of dealing with the maximum of patients in the shortest possible time. In military medical work it is better to give 150 men comfort than to give 100 luxury and leave the other 50 alone. The voluntary hospitals lose in breadth as they gain in depth; moreover, their expenses are enormous. The British taxpayer would strike hopelessly if he was asked to run the permanent service on the lines of the voluntary institutions called forth by the enthusiasm born of a great national emergency. His remarks about the necessity of the R.A.M.C. having its own transport arrangements bear the stamp of common sense. The dual control of transport is responsible for much red-tapeism and more delay and friction.

Volunteer Orderlies.

Upon Major MacMahon's dictum that the R.A.M.C. orderlies are superior to the St. John men and volunteers there is some difference of opinion, but most of the medical officers with whom I have discussed the question agree with the witness that the volunteer, willing and intelligent as he usually is, lacks grievously the *savoir faire* which comes only by practical training. He is all very well if he has a sister constantly at his elbow, but left alone, for ever so short a time, he either does not act at all or shows the meddlesomeness begotten of inexperience. To illustrate what I mean, I heard of one case in which a typhoid patient was found to have got up to defæcate. The sister was out of the ward for a time, and when she returned found this out. The volunteer orderly's reply was characteristic, "He had had no orders to keep that particular man in bed." Now, the R.A.M.C. man in a similar position would have taken the simple fact of the patient being marked enteric as quite sufficient warrant for sturdily refusing him permission to stir from between the sheets. As I have said before, a week or two's drill will make your average citizen a very good bearer and first-aid man; nothing but actual experience will make him a passable orderly.

The Alleged Paucity of Nurses.

With the witness's opinion as to there being too few nurses at the general hospitals at the base I can hardly agree, unless he refers to the condition of things obtaining in the early days when nurses were very scarce. In my humble opinion the number of sisters now stationed at the base is more than sufficient. With properly trained orderlies the nurse has only to supervise; in other words, not to perform the duties of a nurse in a civil hospital, but rather those of a ward sister. And it is well that it should be so. If you attempt to run all the nursing by nurses, how are you going to give your orderlies that practical training which they will sorely need during operations where nurses are not obtainable? Moreover, in any base hospital there must be a far larger proportion of convalescent or slightly ill patients than in a civil hospital, and this class certainly does not need the highest type of nursing.

The Burden of Administrative Work.

Major MacMahon alluded to the burden of administrative and clerical work as materially hampering the principal medical officer's staff, and this was repeated by several of the witnesses. No one can doubt that this is the case. Any system which practically withdraws from professional work the officers above the rank of major, and which puts even the major into the position of fifth wheel to a coach, as is the case in the general hospitals, is regrettable. The remedy, however, is not so obvious. It is certain that no critic, whether civilian or medical officer, is in a position to point out the *modus operandi* of improvement, unless he has himself been through the office mill. A departmental commission should go into this matter at an early date. The outside critic must not dogmatise about red tape and the like. No big organisation can go on without system, and system involves forms, correspondence, and supervision of officials of one grade by those of another. The critics would be the first to complain if relatives in England could not get prompt particulars about sick soldiers. The remedy is certainly not to be found in a return to the old bad system of putting the sick and the hospital alike under non-professional authority, and relegating the R.A.M.C. officers to the position of professional camp followers. This system has been tried and found wanting, and if once reintroduced will render the service far more unpopular than it is now. But it is surely possible to steer a middle course, and, whilst keeping the whole of the disciplinary control intact under the principal medical officer, to somewhat simplify returns and correspondence, to put more of the clerical work in the hands of clerks, and, to adopt a suggestion made by Colonel Ivor Herbert, to delegate much of the supervision of ward and "domestic" routine to an official of the same stamp as the steward or lay superintendent of some civil hospitals. But, with reference to this last item, it is essential that the official in question should have commissioned rank, and that the said commissioned rank should be junior to that of the professional officers. In my humble opinion, the quartermaster in a station hospital or an additional quartermaster in a general hospital would be what it wanted.

With a principal medical officer relieved of much of his clerical work, and with the duty of seeing that wards are clean, diets properly served, and orderlies at their posts, performed by a quartermaster, the head of a general hospital would have time to personally give the subordinate medical officers all the professional supervision needed, and, part of the divisional officers' work being taken over by the principal medical officer, and part by the quartermaster, these "fifth wheels" might well be dispensed with as such; and a major could take wards the same as a captain or lieutenant, with perhaps the difference that he could be allowed to take over the pick of the cases, the wards of the majors being a sort of "clinical wards." That the divisional officers might be improved off the face of the earth is shown by the fact that, even with a staff almost or entirely civil, the registrars have, in several hospitals, taken over divisional duties in addition to their own without anybody suffering thereby; and if this can be done with a staff of civil surgeons, the plan could be extended with the normal R.A.M.C. staff, who naturally require less supervision. Colonel O'Connor, whose office experience is considerable, freely admitted the burden of clerical work, and, I have no doubt, would, if questioned on the subject, be able to indicate directions in which it might be reduced.

The Undermanning of the R.A.M.C.

Professor Dunlop's evidence derives special value from his being the only civil surgeon witness with a practical knowledge of general hospitals, and it is with such hospitals that the Commission is at present mainly concerned. He emphasises the exact situation by saying that the patients at No. 1 were as well treated as they would have been at Glasgow, and his testimony, backed up by that of Professor Chiene, emphatically acquitted the medical staff of any neglect. He dwelt, very properly, upon the grievous professional detriment to the R.A.M.C. officers through want of study leave, but we must never forget that this hinges upon a whole train of circumstances. Officers cannot get study leave as long as there are so few of them. You can hardly increase the establishment until you can fill the present effective list, and you cannot do this until the service competes in popularity with civil careers. The whole thing works round in a vicious circle, and the man who cuts that circle will be the man who can suggest a remedy for the unpopularity of the Service as compared with, say, the I.M.S. That point will be more fittingly dealt with under Mr. Bowlby's evidence. Professor Chiene's testimony was what one would have expected from "honest John," as his old students lovingly called him. He plainly pointed out where some faults appeared, but certainly disposed of all the grosser allegations of general neglect and incompetency. Upon one point I think he made himself liable to be misunderstood, that of the tube for ordering which he was censured. The error on his part, I take it, was not that he did not consult headquarters about the tube, but that he did not order it through the principal medical officer of the hospital. I have before placed it on record that Colonel Supple never insists on requisitions for emergency instruments passing through his office, but he rightly expects that they should go through some authority. If this were not done any junior civil surgeon might be ordering things on his own account, and the result would be chaos.

THE PATIENCE OF TOMMY ATKINS.

Nurse Richardson showed a little professional bias against the orderlies, and I must certainly differ from her as regards the patience of Tommy. Everybody I have met with who knows him assures me that he is remarkably prompt in insisting on his rights and in full measure.

WOODSTOCK AND GREENPOINT HOSPITAL.

The Woodstock and Greenpoint inspections brought forth no facts needing comment, but they conclusively proved that no complaints of any importance needed ventilation. The few elicited were of the most flimsy character. Father O'Reilly's testimony was especially valuable. He is a most devoted priest, heart and soul with his people, and a man who never minces matters either favourably or otherwise. Those who know him are confident that, had he heard any complaints to speak of he would have "hit out hard." Dr. Scholtz, a local practitioner who has been up at the front with the Langman Hospital and otherwise, unintentionally promulgated a delusion with reference to the nomenclature. Army ideas in the way of diagnosis are not quite up to the standard of a London hospital registrar, but Dr. Scholtz was unfortunate in alleging that a medical officer is tied down to the return form in diagnosis. By regulation he may return anything in the Royal College of Physicians' *Nomenclature*. The ordinary weekly return has, for convenience sake, an excerpt from that *Nomenclature*, and it is obviously desired, by the clerks especially, that this return should be adhered to as far as possible, but anything else in the *Nomenclature* can, by regulation, be inserted in manuscript under the proper class of disease. It may be that Dr. Scholtz had to do with a registrar who wanted to save himself or his clerks trouble, but he was in a sufficiently independent position to have insisted on the regulation liberty. Why he gave pneumonia as an instance in point I cannot understand, as that disease is constantly returned and has a printed line on the very form he condemns.

MR. BURDETT-COUTTS AND THE TRAFFIC MANAGER.

Mr. Price's evidence showed Mr. Burdett-Coutts in a somewhat ungenerous light. The Chief Traffic Manager is one of the most courteous of men, sometimes to his own detriment, and it is a little hard that his rather injudicious politeness to Mr. Burdett-Coutts should have been made the handle for an attack.

CIVIL SURGEON AND MEDICAL OFFICER.

Colonel Supple's evidence was clear and to the point, and every one who has watched developments knows that he has worked night and day to make things run along as smoothly as possible. He remarked that civilian medical officers were less able to maintain discipline than the R.A.M.C. men. This is quite probable, but does it not teach the lesson that, in the first place they should always be granted temporary commissions, and in the second, that divisional officers should be scrupulously careful not to belittle them in the presence of the orderlies? The necessity for the employment of civilians at all is deplorable, but no system could obviate it in times of stress, and consequently it should be remembered that every care should be taken to give them, in Tommy's presence at least, all possible status. I am afraid that, too often, a dangerous impression is given that the civil surgeon has nothing whatever to do with discipline, and consequently the said civil surgeon gives up any attempt to enforce it. In some hospitals the civil surgeon keeps things in order very well, although probably not up to the lines of the R.A.M.C. man, in others he is a hopeless failure. And the same difference may be noticed even between two divisions in one hospital. The deduction is obvious. I can, speaking as an ordinary civilian practitioner, quite endorse Colonel Supple's opinion that special sanitarians are not needed. Whatever may be the other professional shortcomings of the R.A.M.C. man, I am readily prepared to admit that one thing he invariably knows well, and that is sanitation.

Colonel MacNamara's remark that many civil surgeons do not readily accustom themselves to discipline is, unfortunately, too true in many cases, and the younger the man the worse sinner he is in this respect. They should be compelled to get a copy of the regulations before assuming duty, and told to read, mark, and inwardly digest them, and any offender should be made an example of. And above all things the major should not say one thing and the colonel another. If the rule were strictly adhered to of never communicating with any body, officer, non-commissioned officer, or man, except through his immediate superior, most of the difficulties of maintaining discipline would disappear.

Reverting to Colonel Herbert's evidence, one is sorry to see him somewhat inclined to give further currency to the outrageous allegations made by a volunteer in the *Cape Times*. I have dealt with them on a former occasion, and endeavoured to point out that they stood self-condemned. Although the identity of the writer has been admitted, I still adhere to my opinion that they were too absurd to receive any credence whatever. It is remarkable that, although a good number of soldiers have been examined, not one of them has accused orderlies of the gross crimes which Mr. Saunders thought fit to lay to their charge. Whilst endorsing Colonel Herbert's suggestion for a sort of lay administrator, I cannot go with him in recommending that the whole management of the hospitals should be in the hands of such a layman. It is one thing to delegate certain duties to a layman, quite another to give over the entire control to him. The analogy with civil life may be strained too far. Tommy is educated in the idea of reverencing the Queen's commission, and you will never get him to pay much respect to the orders of anyone who does not bear it.

Colonel O'Connor's evidence was common sense throughout, but I imagine he must have been misreported when he said the fact of the Department being understaffed did not affect the patients. If men are overworked patients must suffer more or less.

PAUCITY OF CANDIDATES FOR THE R.A.M.C.

Finally, one might say a word or two about Mr. Bowlby's explanation of the cause of the paucity of candidates for the service. Of the causes he enumerated, my own opinion is that the pecuniary one is the least operative. The pay is not much, but when taken into consideration with the pension, I feel certain that taking average men, who start in life without means to buy a practice, the R.A.M.C. Lieutenant-Colonel after twenty years' service is in a better position than his fellow who has struggled through a similar period in civil life. The real fault lies in the anomalous position of the junior ranks. Qualified men have the heart taken out of them by the lack of appreciation given to good professional work, and by the fact that whilst nominally responsible for their cases, they are subject to the professional control of superiors. The position of a house surgeon they understand, that of a man in responsible charge they equally understand; but that of a man who is responsible and yet fettered they kick at, and they diffuse their discontent far and wide through schools and universities. Of course, all these drawbacks are not universal. Numbers of the senior officers possess sufficient tact to make the wheels run smoothly, but to do so requires a combination of qualities which it is unreasonable to expect to find widely distributed. But the question of the depletion of the department must be fairly faced. What I should like to impress upon all concerned is that something more than mere increase of pay is needed.

The service must be made one in which professional interest can be cultivated, and in which self-respect will not be lost. In this connection it must not be forgotten that, human nature being what it is, one senior officer who domineers or ostentatiously sits on scientific work makes a more lasting impression upon the mind of the neophyte than half a dozen who act as gentlemen and members of a progressive profession. The former is brooded over, the latter are taken as a mere matter of course. The delinquencies of the former are dwelt upon to fellow-students, the good points of the latter are said nothing about, and so the service gets a bad name. At least, such is my impression from a perusal of evidence, got at first hand. But the Commission has so far failed to elicit any facts going to substantiate the allegations of carelessness and incompetency which have been so lightly, recklessly, and cruelly made. As with every other phase of human strife, *cherchez la femme* if you want to find out how it originated. I cannot conclude this letter better than by laying down the proposition that, in criticising a base hospital, one ought to ask oneself whether it is or is not as well conducted as the civil hos-

pitals in the same place at the same time. Now, after carefully following the evidence, I am convinced that were the Commission to investigate the working of the New Somerset Hospital on the same lines as they have done that of the base hospitals—and the New Somerset is a presumably well-managed institution, for no one has denounced its management—it would be found that the military hospitals would in every single item, except the actual buildings, come out best in the comparison.

THE IMPERIAL YEOMANRY HOSPITALS.

The Imperial Yeomanry Committee now has under its control in South Africa four hospitals and one bearer company. In addition to the base hospital at Deelfontein there is a camp hospital at Mackenzie's Farm, Capetown; a branch hospital in Pretoria under Major Kilkelly, who was Principal Medical Officer of the Portland Hospital, which has returned to England, and a field hospital under Major Stonham.

We are indebted to Mr. L. V. Cargill, F.R.C.S., Ophthalmic Surgeon to the Imperial Yeomanry Base Hospital at Deelfontein for the following notes, dated August 27th:

Changes in the Staff.—Messrs. Fripp and Raymond Johnson and Dr. Saunders have left for England. Mr. Turner and Dr. Handson, with Mr. Thornton as dresser, have gone to the Mackenzie Farm Branch at Capetown, where Mr. Turner is acting as Principal Medical Officer. The medical side consists of Dr. Washbourn, Senior Physician, and Drs. Elliot, Richmond, Breeks, and Black. Mr. Hamilton A. Ballance has become the Senior Surgeon, the other surgeons being Messrs. Christopherson, Ashdowne, Parker, and Bruce. Mr. Cargill still remains in charge of the ophthalmic department, and Mr. Hall-Edwards in charge of the *x*-ray department. The dressers are Messrs. Atkins, Blathwayt, Pearson, Ransford, Richards, Hawkins, and Sells. Dr. Elliot and Mr. Parker, who have been away on sick leave, have returned to duty. Mr. Greenfield, one of the dressers, who has had enteric, has been away on sick leave to Lady Gifford's Convalescent Home at Norval's Pont, and is returning to England. Of the nursing staff, Sisters Brereton and Leggatt have gone to the Pretoria Branch; and Sisters Stephenson, Cable, and Cooper to the Mackenzie's Farm Branch, Capetown.

Structural Improvements.—Under the supervision of Mr. Hall-Edwards electric light has now been installed in the cruciform building containing the operating theatre and surgical store, *x* ray and photographic rooms, and surgery. It is proving a great boon. The dynamo is worked by a 4-horse power oil engine. The Russian bath which has been opened in the laundry building is a great success, and is largely patronised. It is managed by Mr. Hale-Smith, the chief masseur.

Surgical Cases.—There are 770 patients in hospital, 38 of whom are officers; nearly one half of the total number belong to the Imperial Yeomanry. Patients are being received and discharged daily, and a week ago No. 4 Ambulance Train brought 17 officers and 95 men from Wynberg, most of whom came from General Clements's force. They were nearly all surgical cases. In addition to the operations performed on wounded men, there has been a fair amount of ordinary civil surgery lately. During the last week Mr. Ballance has operated on two cases of mastoid disease following recent otitis media. In one case the patient was suffering from enteric, and in the other from scurvy. There are in hospital a considerable number of cases of compound fracture of the lower limb, with extensive and troublesome necrosis, needing repeated operations.

Rheumatism and Malaria.—Judging from the few cases we now have of enteric and dysentery, the epidemic has completely subsided. The majority of the medical cases now admitted consist of various forms of rheumatism. As a rule the rheumatism takes a subacute form which is not readily amenable to treatment. Presumably its prevalence is due to the weather which, contrary to the general rule, has been not only cold, but exceptionally damp, in spite of this being the dry season for up-country. In addition to rheumatism, a not inconsiderable number of cases of malaria have been admitted, the patients either being old sufferers from malaria, or having contracted the disease north of Bloemfontein and Kimberley.

Enteric Fever.—Among the enteric cases there have been several cases of typhlitis, usually recrudescences of a former attack. A case recently operated on by Mr. Ballance is now doing well. Dr. Washbourn reports that musk has been of great value in the treatment of certain cases of enteric. In a case in which the patient was comatose and almost pulseless, rapid improvement ensued upon the administration of musk in 5-gr. doses every four hours. The improvement was maintained, and the patient is now convalescent. In another case of enteric with persistent pyrexia continuing after the other symptoms had subsided, the administration of salol caused the temperature to return to normal in a couple of days. It would appear that the pyrexia was due to putrefactive changes occurring in the intestinal canal which were prevented by the salol.

Major Kilkelly reports, under date September 14th, that they had successfully treated 295 cases amongst the sick and wounded, and that there then remained in the hospital 303 patients, of whom 89 belonged to the Imperial Yeomanry, 4 being officers and 85 non-commissioned officers and men of this branch of Her Majesty's forces.

The *Times* published the following extract from a letter received by Mrs. Alfred Lucas from Colonel A. G. Lucas, D.A.G., Imperial Yeomanry, who is now in South Africa.

We arrived at Deelfontein about 10 A.M. yesterday, and I went all over the hospital. It certainly is beautifully laid out, and all the arrangements as near perfection as is possible in such an isolated spot, and reflect the greatest credit on all concerned. It is ideal except for the want of trees, which are few and far between on the veld. Everyone, both officers and men, to whom I spoke, expressed the greatest gratitude for the kind attention and treatment. Everything is beautifully clean, and the laundry, dairy, and all the stores are perfect—in fact, it would be very hard to find a fault. Lady Georgiana Curzon and all who have worked with her have set a good example in showing what can be done by proper organisation and common sense in establishing a properly-equipped hospital at the seat of war, which will be a lasting benefit to the country and the greatest possible blessing to our troops in future wars.

Red Cross Society.

Sir John Furley, Chief Commissioner of the Red Cross Society, in a farewell letter, after thanking the Local Cape of Good Hope Society and the Durban Patriotic League for their assistance, says: "Experience proves two things. In no army can the medical department be made equal to the exigencies of a great war without supplementary aid from volunteer societies, and no such societies can properly fulfil that duty without preparation and organisation in time of peace."

THE DETENTION OF LUNATICS.

We referred last week to some points of interest raised by a recent prosecution under the Lunacy Acts, but other questions which arose on this case touching the detention of a person of unsound mind demand consideration. In order that these should be understood we quote the section of the Lunacy Act:

Section CCCXV.—(1) Every person who, except under the provisions of this Act, receives or detains a lunatic, or alleged lunatic, in an institution for lunatics, or for payment takes charge of, receives to board or lodge, or detains a lunatic or alleged lunatic in an unlicensed home, shall be guilty of a misdemeanour, etc. (2) Except under the provisions of this Act it shall not be lawful for any person to receive or detain two or more lunatics in any house unless the house be an institution for lunatics or a workhouse. (3) Any person who receives or detains two or more lunatics in any house, except as aforesaid, shall be guilty of a misdemeanour.

A preliminary point may be cleared up. The charge in the case substantially had nothing to do with the lunatic being kept in an "unlicensed house." It was necessary to quote these words in the summonses, and no doubt their use would give the impression that no patient may be kept except in an authorised or licensed place. But this is not so; the words "anywhere else" might have been used in the Act in place of them to draw the distinction intended to be made for other reasons. The use of an unlicensed house is prohibited only for the reception of more than one patient, and as a matter of fact a lady has been fined £20 within the last few days at the Wandsworth Police Court for detaining three lunatics in her own unlicensed house. The magistrate, while admitting that the patients were well cared for, said that the Act was most important and must be rigidly enforced. In the charge against Dr. Hutton the important words were "except under the provisions of this Act" in subsection (1). The Act provides that orders for detention of one sort or another, founded on medical certificates, are essential if any payment is made. In the case in question there was no such order, the only thing at all like it being an order of the Court of Chancery which applied solely to the estate and not to the person of the patient. The patient's brother, therefore, was prosecuted for doing certain things without legal authorisation. These were for payment taking charge of—receiving to board and lodge—detaining the patient; and three separate summonses dealt with these separate points. As stated in the report of last week, the defendant was fined a nominal sum of 5s., the first two charges being dismissed on technical grounds, while he was convicted for detention. The magistrate inclined to the opinion that reception and taking charge of a patient are not continuing offences. The language used in the Act supports such a view, though it is not quite the construction which would suggest itself to the ordinary mind.

The main question to be considered is, Who may be kept as a patient in any other place but an asylum without a judicial order and medical certificates or similar authority? The answer furnished by these proceedings is that no one may be so kept unless no payment whatever is made for him. It is not a question of profit being made; if, as in this case, a patient's own income is applied to his maintenance, a breach of the law results, even though the receiver spends more on the patient than he gets. Hitherto it has been popularly supposed that in lunacy, as in other matters, certain powers of care and control rest with relatives, and, doubtless, had it not been for collateral allegations, such a belief would not have been now disturbed by the prosecution of a patient's

brother. But the present case disposes of any idea that the rights of relationship, however close, can oust the operation of lunacy law, unless the controlling relative bears all charges himself. This latter proviso would clear most parents and husbands from the necessity of placing their children or wives under certificates in their own homes; but how can a husband or a wife, who does not own the purse, dispense with the necessary formalities in the case of the other? And since it is now held that the words "for payment—receives to board and lodge," have a limited meaning, quite apart from any idea of detention, it would seem to be almost impossible to send patients of unsound mind for a change to lodgings or hotels, without exposing the proprietors to the risk of being accused of breaking the law. Further, the disabilities apply not only to lunatics but to alleged lunatics, so that all these troubles may arise on or be complicated by a question of the sanity or insanity of a suspected person.

The position is an intolerable one. It will not ease mind or conscience to reflect that as long as things go well no trouble will arise. Few people care to continue under a knowledge that they are breaking the law, even if they feel that they are acting under the most natural and righteous circumstances. Though the plain word of the law is, without doubt, as it has been held to be, we cannot believe that the intention of the Legislature was to go thus far in its endeavours to subject to legal provisions all those who need protection on account of their not being able to protect themslves.

THE GERMAN ASSOCIATION OF PUBLIC HEALTH.

The twenty-fifth annual meeting of the Deutscher Verein für oeffentlichen Gesundheitspflege (German Association for Public Health) took place in the ancient city of Treves on September 12th to 15th. The hospitality of the town provided the accustomed convivial meetings and *fête*, but the business portion was also distinguished by the thorough treatment of important subjects.

The Prevention of Plague.

Professor Gaffky, who was a member of the German Plague Commission to Bombay, read a paper on Precautions against Plague. He thought the due observance of the Convention of Venice would provide sufficient safeguard, especially in conjunction with the new Infectious Diseases Act. The inspection of ships should be done thoroughly by competent persons, and not be a mere formality. The disinfection of the excreta and sputum should be carefully performed, and those exposed to infection should be inoculated. The discussion degenerated into a criticism of the Infectious Diseases Act, which the speakers thought infringed the liberty of the subject, although it is not so stringent as in England, and into a question of the competency and good faith of the English doctors.

Catchment Reservoirs.

Professor C. Fraenkel and Professor Intze read papers on Water Supply for Towns by Damming Valleys. The former was inclined to think ground water preferable from a hygienic and a dietetic point of view, and since the water in the other case was really a surface water with all its impurities, it would always be necessary to filter it. He deprecated the method of making the artificial lake a pleasure resort, by which the chance of pollution was enormously increased.

Professor Intze, from the engineer's standpoint, drew attention to the greater regularity and permanency of such a supply over the ground water; Mr. J. Andreas Meyer to the excellent results obtained in Great Britain and particularly in Liverpool.

Infantile Diarrhœa.

Professor Prausnitz read a paper on Infant Mortality from Diarrhœa and its Prevention. He showed statistically how the mortality fell chiefly on the poor and destitute. He attributed it chiefly to insanitary dwellings and deficient air, and did not think artificial food had much to do with it, nor did he expect much improvement from sterilising the milk. Professor Fraenkel thought that the municipal authorities should undertake sterilisation, but observed that the proper thing was for mothers to suckle their children themselves. With Professor Fraenkel's views subsequent speakers in the main agreed, but thought there would be much difficulty with modern social tendencies in inducing mothers to do so. Although the etiology of the disease was referred to, nobody seemed aware of Ballard's observations on the ground temperature, nor the fact that municipal sterilisation of milk has been successfully tried in both France and England.

Housing of the Working Classes.

On the third day there was a discussion on the housing of the working classes. The good work already done in Great Britain was frequently referred to. There was general agreement that where a municipality destroyed dwellings it should provide fresh ones; but speakers were much divided on the question as to how far the city should otherwise provide dwellings, and apparently the majority were of the opinion that no part of the cost should fall on the rates, nor should the city in any way damp competition. Although small dwellings as a whole were advantageous, yet having regard to the preference of the workman to be near his work, even in a less comfortable house, the erection of large buildings was inevitable.

SOUTH AFRICAN HOSPITALS COMMISSION.

Evidence of Lord Roberts.

On September 11th the Commission sat at Pretoria, and Field-Marshal Lord Roberts gave evidence. He said (according to the *Times* report) that in entering an unknown, sparsely populated, and hostile country, it was absolutely necessary to take large food supplies, and the number of mules and horses, and the amount of forage for these were limited. Rapid movement was possible only by cutting down the equipment of the field hospital and other details, as every day's delay put more heart into the enemy. The whole question was one of the limitation of transport, and the first consideration was the supply of food and ammunition. Every care was taken of the sick and wounded, and there were no complaints from the men, who said they were more comfortable in waggons than in ambulances. During the first part of the advance the wounded were sent back to Modder River or to Kimberley in waggons which returned with supplies.

Failure of Supplies at Bloemfontein.

In Bloemfontein everything that was possible was done for the care of the sick, and an unlimited order was given to commandeer everything obtainable. To show the enormous difficulties which had to be overcome, Lord Roberts mentioned that from March 13th, when Bloemfontein was reached, to March 28th, not a single truck was able to cross the Orange River, and no food was obtained from the base except a little which was commandeered at Norval's Pont and was brought up by road. The first truck arrived in Bloemfontein from Cape Colony on March 29th. For sixteen days, therefore, there were no supplies and but few medical comforts obtainable, although the requirements of food for the troops were 40 trucks per day, or 400 tons, for both men and animals. From March 29th until April 7th, the trucks sent to Bloemfontein were 105 fewer than the number required for the daily supply. From April 7th to 17th, 503 trucks arrived, making a total of 789 trucks, or 11 trucks short of the number required to supply the food actually necessary. From March 29th to April 17th, the troops were only just fed, and not one day's reserve was accumulated. Sixty-two trucks with hospital stores came in during that period. The doctors brought on a load of equipments and nurses in wagons from Norval's Pont, and these reached Bloemfontein on March 22nd, seven days before the railway was opened. Every day's delay in Bloemfontein made matters worse, and food for a further advance had to be accumulated. From April 18th to May 3rd, a reserve of food for forty-five days was accumulated, and this justified the advance on Pretoria from Bloemfontein. The field hospitals had ten ambulances.

Kroonstadt and Johannesburg.

At Kroonstadt everything obtainable was commandeered, and ladies came crying that mattresses and beds were taken from under them. At Johannesburg requirements were obtainable much more easily.

Home Authorities not to Blame.

Lord Roberts thought that no blame attached to the home authorities in reference to the supply of military stores and equipment. He had considered it inadvisable to have special sanitary officers in the camps, and had only appointed one in Bloemfontein and in Pretoria. To add to the present allowance of bearer companies and field hospitals would be to create difficulties in regard to transport. It would be advisable that when the war was over there should be a departmental inquiry into the questions which had been raised in connection with the Royal Army Medical Corps in time of war.

The Plague of Women.

With regard to Mrs. Richard Chamberlain he had given orders forbidding her to enter the Wynberg hospital as she had not obeyed the regulations.

Tribute to the R.A.M.C.

At the conclusion of his evidence Lord Roberts stated that the campaign had been an extraordinarily difficult one from the hospital point of view, and gave it as his opinion that the Royal Army Medical Corps, assisted by the civilian surgeons, had met the difficulties magnificently.

The Press and the Hospitals.

Lord Stanley, Private Secretary to Lord Roberts, who had acted as the principal censor, denied that criticisms on the hospitals were stifled. The correspondents had liberty to make any statement with regard to the hospitals in their letters, and every telegram on this subject would have been passed. Mr. Burdett-Coutts acted as the *Times* correspondent in regard to hospital matters, and was given every facility. When Lord Roberts thought that Mr. Burdett-Coutts had had time enough to acquaint himself with the facts and suggested that he should return to Capetown, Mr. Burdett-Coutts expressed a wish to see the field hospital, and permission was given but was not immediately utilised. The presence of Mr. Burdett-Coutts gave rise to applications from other people to come up, and, an order being given to Mr. Burdett-Coutts to go back, he said that if he could not spend further time in Bloemfontein he would have to make a bad report of the hospitals.

Denial of Mr. Burdett-Coutts's Allegations.

Several civil and army medical officers gave evidence to the effect that the suffering of the sick and wounded was minimised as far as possible. There were, they admitted, short periods of overstrain upon the resources of the staff, but these were unavoidable having regard to the rapid movement of the army. The condition of affairs never, in their view, justified Mr. Burdett-Coutts's allegations, which were gross exaggerations.

No Men Allowed to Die on the Veld.

Brigadier-General Wavell admitted that it was sometimes impossible to pick up men who were falling out of the ranks on the march. He knew, however, of no case of a man being left to die on the veld. The allegations that had been published were greatly exaggerated. When witness's brigade advanced from Bloemfontein for the north one bearer company did all the work for the field hospital, and for some time the field hospital patients were not removed to the base hospital with sufficient promptitude. Witness considered that the field and general hospitals should be entirely under military officers, the civilian doctors being reserved for the stationary hospitals.

The Commission at Johannesburg.

On September 12th the Commission took evidence at Johannesburg. Dr. Somerville, the principal medical officer in Johannesburg, and formerly in charge of the military hospital at Naauwpoort, testified that there was no overcrowding there. The hospital was pitched in an insanitary spot. All the patients were accommodated in marquees, there being no bell tents. There was a sufficiency of doctors, orderlies, nurses, and supplies. The doctors were mostly civilians, whose work, however, was perfectly satisfactory. Some of the St. John Ambulance men and civilian nurses did not know the work at the outset, but they soon learned to discharge their duties efficiently. The percentage of deaths was 11.75. Every arrangement of the hospital was satisfactory. The cases of enteric fever were separated from the wounded. Referring to the hospital conditions at Johannesburg, Dr. Somerville said they were perfect. There was no overcrowding, and supplies were plentiful.

Hospital Trains.

Colonel Girouard and another railway officer gave evidence to the effect that hospital trains and supplies were always forwarded with all possible promptitude whenever the conditions allowed. The latter remembered some instances at Bloemfontein where hospital trains were not promptly attended to, so that the wounded were exposed for several hours in open trucks, as the authorities did not know that the trains had arrived. This was on account of the arrival of the trains not having been previously advised by telegraph, this again being due to severed telegraphic communication.

The Rev. Mr. Morgan said that in all his experience in the hospitals he had never heard any complaint. He had always been very much struck by the extraordinary devotion of the doctors, nurses, and bearers.

Evidence of Lord Kitchener.

On September 14th Lord Kitchener appeared before the Hospitals Commission. He declared that the cutting down of the hospital transport under the order of January 29th was absolutely necessary in order to act quickly for the relief of Kimberley. Everything was cut down. The problem resolved itself into what could be carried with the number of mules available. The divisional transport, of which the figures were 1,666 mules and 416 oxen, was cut down to 964 mules. The idea was that up to Kimberley the field hospital and the ambulances could do the work, as, being near by, the sick and wounded might be sent to the base. General Cronje's escape to Paardeberg altered the whole matter. The *personnel* of the field hospital was not cut down, and it worked well. He heard no complaints at Bloemfontein. The Commander-in-Chief gave orders for everything that was necessary to be obtained.

Difficulties of Transport.

Lord Kitchener deprecated placing the transport altogether under the charge of field hospitals, and confirmed Lord Roberts's evidence with regard to the supplies brought into Bloemfontein while the force was there. One thousand six hundred and eighty tons of medical stores were brought up—all that was possible under the conditions then existing. The activity of the enemy necessitated the troops being sent out, and the field hospitals had to be emptied to accompany them, causing overcrowding. On the advance from Bloemfontein the field hospitals and ambulances were brought up to their full strength. He had never heard of men having fallen out on the road with no one left to attend to them. Only two complaints were made in Bloemfontein, and both of these were about men being brought in at night and not accommodated in hospitals till the morning.

Good Work of the Medical Service.

Lord Kitchener frequently saw Mr. Burdett-Coutts. They rode together to Kroonstadt, but Mr. Burdett-Coutts never once made a complaint of any sort, or called his attention to any of the matters mentioned in his letters. Had Mr. Burdett-Coutts done so he would have investigated the case immediately. It was now too late to know exactly what really was the case. The medical staff worked tremendously hard, and the civilian doctors in the field did excellent service. Their work was exceptionally hard and difficult, by reason of the rapidity of the advance. Witness never heard of men falling out of the march and being left to die. The advance from Bloemfontein was adjacent to the line of railway.

Evidence of Surgeon-General Stevenson.

Surgeon-General Stevenson explained that the men had to lie in the field hospitals in their khaki uniforms as no provision was made for supplying the field hospitals with clothes. It was contemplated that the sick and wounded would be sent back to the base. In Bloemfontein every building was taken which was capable of being worked by the *personnel*. He admitted that there was a shortness of utensils, milk, bedding, etc., and overcrowding in the general hospitals. There was also a lack of drugs and utensils in Kroonstadt and Pretoria for a short time. He had permission from Lord Roberts to purchase everything obtainable, and he spent thousands of pounds. He denied that he had refused to take the Palace of Justice in Pretoria. He advocated an increase of the medical corps in regard to doctors, nurses, etc., and the establishment of small stationary hospitals rather than large general hospitals.

Hospitals in Johannesburg.

Two civil surgeons spoke well of the hospitals in Johannesburg, but a dark picture was drawn by Miss Boyle of the state of things in the Jewish School Hospital there for the first three weeks.

General Drift of Evidence.

On September 15th the Hospitals Commission concluded its sittings at Johannesburg. The evidence taken (according to Reuter's correspondent) in general testified that everything

was done for the comfort of the patients, and to the good equipment of the hospital, although at times there was an insufficiency of supplies owing to the difficulties of transport.

EMBARKATION OF TYPHOID PATIENTS.

At East London 1,681 patients were treated, of which number only 28 died, but grave inconvenience was caused by patients having to be taken to the transports lying in the roadstead and hauled aboard in baskets, owing to the ships being unable to cross the bar.

FIELD HOSPITALS IN THE MARCH FROM BLOEMFONTEIN.

In the advance from Bloemfontein the field hospitals were not complete and had to be left behind. Their duties, therefore, devolved upon the bearer companies and were very well done indeed. Complaints had been made by men about the hospital arrangements on long marches. On hard marches men fell out in such large numbers that the ambulances were unable to deal with them. The men usually caught up the brigade at the next camp, or remained for some time in neighbouring farmhouses. The suggestion was made that the administration work should be done by the Army Service Corps. A Surgeon in charge at the Vet River gave evidence that he was unable to obtain necessaries from Bloemfontein and no notice was taken of his complaints.

THE COMMISSION AT NEWCASTLE.

The Commission reached Newcastle on September 15th and left for Pietermaritzburg on the 16th, continuing its inquiries on the way. It was to begin its investigations at Pietermaritzburg on September 19th.

THE PLAGUE.

PLAGUE IN GLASGOW.

[FROM OUR OWN CORRESPONDENT.]

SINCE our report last week, there has been an increase in the number of cases of plague in Glasgow, 6 new cases having been admitted to Belvidere Fever Hospital; but this increase must not be considered as of any serious importance. One of the new patients is a female cleaner in the plague wards at Belvidere, who must have contracted the disease at her work, and this notwithstanding the great precautions that have been taken to minimise the danger of infection of the staff. An interesting point in her case is that she was inoculated with antiplague serum like the other officials, and that although she had not been rendered completely immune to the disease, her symptoms are of the mildest possible character. Another of the patients is the wife of one of the men employed in removing patients to the Fever Hospital, who may be considered to have carried the infection to his wife. The other 4 new patients belong to one family—a grandmother, her daughter, and the latter's two young children—and they reside in the locality in the infected area of the city from which most of the previous cases have been taken. The members of this family have been ailing for the last three weeks, and are now found to have been in indirect association with persons already in hospital. Fortunately, as will be gathered from the above facts, these new cases do not indicate any fresh focus of infection. The disease also continues to run on the whole a mild course, although one of the most recent admissions has ended fatally. This is only the third death since the disease was discovered in the city almost four weeks ago.

The position of matters at this date is that there are 21 cases of plague in hospital; there are 3 suspected cases, while 105 persons are still under observation as "contacts," 5 having been discharged on September 19th. Many of those who have been under observation have now been sent back to their own homes, but the number of "contacts" is kept up by the isolation of persons who have been in contact with some of the more recent cases. The attitude of the health authorities, while they continue to take every means in their power to eradicate the disease, is one of confidence that the malady is now well under control, and not a cause of any undue alarm. At this week's meeting of the City Corporation the convener of the Health Committee gave full details of the precautionary measures that were being taken, and was also able to announce that satisfactory arrangements had been made with the various shipping companies to prevent any further invasions from the outside.

BACTERIOLOGICAL REPORTS.

The following reports are summaries of Professor Muir and Dr. R. M. Buchanan as they appeared in the *Glasgow Herald* of September 17th:

The documents regarding the plague to be submitted at to-day's meeting of the Glasgow Corporation include the following report by Dr. Muir, Professor of Pathology at the University:

In accordance with the request of the Public Health Committee, conveyed to me by Dr. Chalmers on Monday, August 27th, I have investigated the bacteriology and pathology of the cases of suspected plague in Belvidere Hospital, and beg to report as follows: (A preliminary report was communicated to Dr. Chalmers on Thursday, August 30th):—In making these investigations my endeavours were directed, in the first place, to the separation and cultivation of the special bacillus from the cases, and, in the second place, to the determination, by scientific methods, of its identity with the bacillus of bubonic plague. In addition, I performed the *post-mortem* examination in the case of Patrick Molloy on Tuesday, August 28th, and have to state in brief the results of that examination. In summarising the results it will be convenient to place them under the following three heads:

(I) The characters of the bacillus isolated in pure cultures—Is it the bacillus of bubonic plague?

(II) The presence or absence of that bacillus in the various cases examined.

(III) The pathological changes in the body of Patrick Molloy.

I. The bacillus, cultivated, in the first instance, from Patrick Molloy, during life, was examined as regards the following characters:

(*a*) *Structural Characters and Staining Reactions.*

Under this heading may be mentioned size and shape, grouping in various cultures and in the tissues of the body, absence of motility, presence of polar staining, decolorisation by Gram's method, production of involution forms under various conditions, absence of spores, etc.

(*b*) *Cultural Characters.*

These were studied in various media, including agar, Hankin's salt agar, blood serum, peptone gelatine, and bouillon.

(*c*) *Pathogenic Effects in Various Lower Animals.*

As regards the various points enumerated under the above headings, the organism was found to correspond in every particular with the bacillus of bubonic plague, and I may especially state that the pathogenic results of the plague bacillus were reproduced in animals by inoculation with the pure cultures obtained from the human subject. The result of these investigations is to demonstrate that the organism in question is without doubt the bacillus of bubonic plague.

II. I have examined 9 cases bacteriologically. For this purpose I have punctured the affected glands, and have examined the fluid obtained both microscopically and by means of cultures. The following are the results:

In the cases of Patrick Molloy, Patrick Ford, Thomas Horne, and James Bogan the bacillus of plague was found on microscopic examination, and also cultivated in a pure condition. In the case of Mrs. Molloy a few degenerated plague bacilli were found on microscopic examination, but I did not obtain cultures. Two days previous to my examination, however, however, Dr. M'Clure obtained pure cultures of the plague bacillus, and the negative results obtained by me were in all probability due to the fact that the disease was in process of cure and that the bacilli were dying out. The five patients mentioned have thus been demonstrated to have suffered from bubonic plague, and it is of interest to note that in none of them was any other organism than the plague bacillus obtained from the glands.

The following were examined with negative results, namely, Dennis Tierney, Mrs. Tierney, Archibald Drummond, and John Cunningham. (This does not prove, however, that these patients had not plague; in fact, the three last-mentioned were recovering at the time of examination, if they had plague, the bacilli would be few, if not entirely gone).

III. On Tuesday, August 28th, I made a *post-mortem* examination of the body of Patrick Molloy. I found an almost general bubonic affection of the lymphatic glands, those especially involved being in the right armpit and in the neck. The glands were greatly swollen and inflamed, partly hæmorrhagic and partly softened, while the surrounding tissues were the seat of inflammatory œdema and hæmorrhages. On microscopic examination, these glands were found to contain enormous numbers of plague bacilli. The spleen was swollen to twice its normal size. (It is unnecessary to give greater details; a full report has been entered in the pathological records in Belvidere Hospital.) The sum total of the changes found are met with in no other disease than bubonic plague.

As a summary of the facts above stated, I have to report that up to the present date 5 patients have been proved by bacteriological methods to have suffered from bubonic plague, and that one of those (Patrick Molloy) died from that disease.

In conclusion, I have much pleasure in acknowledging the valuable collaboration of Dr. M'Clure in the bacteriological work, and the kind assistance which I have had from Dr. Brownlee and other members of the staff of Belvidere Hospital.

RATS AND THE PLAGUE.

Another report by Dr. R. M. Buchanan, bacteriologist to the Corporation, contains the following passage relative to rats and the plague:

In order to keep the department informed of any indication of plague appearing amongst the rats in the defined area, all the animals caught or found dead are carefully examined for any evidence of the disease. So far no indication of plague has been found in the rats submitted.

PREVALENCE OF THE DISEASE.

INDIA.

As announced last week plague is increasing in some parts of India. For all India 629 deaths from plague are reported for the week ending August 28th, as against 449 for the previous week. In Bombay City the death rate from plague rose from 51 to 75 and in the Bombay Presidency from 84 to 160. In Calcutta the plague deaths during the same period numbered 103 as against 84 for the week previous. In the Central Provinces the number of plague deaths rose from 210 to 281 during the same week. The recrudescence of plague in Mysore City is causing considerable

anxiety; on one day, August 26th, 43 fresh cases were recorded and 23 deaths from plague. Plague has reappeared at Belgaum.

The account given above is gathered from information brought to this country by mail, and therefore does not represent the extent of the increase up to date, as we learned by telegram that during the second week of September over 1,000 deaths had occurred in India from plague.

AUSTRALIA.

Brisbane.—A telegram from Brisbane, dated September 14th, states that 13 fresh cases of plague had recently occurred there, bringing the total up to 123 since the commencement of the outbreak. In all 53 deaths have occurred in Brisbane from the disease. The case mortality in Brisbane is considerably higher than that recorded in Sydney, where of 303 cases only 103 persons died. Plague seems to have completely disappeared from Sydney.

MAURITIUS.

A telegram to the Colonial Office from the Government of Mauritius gives the number of fresh plague cases occurring there for the week ending September 13th as 12. During the week 9 persons died from the disease.

HONG KONG.

The Governor of Hong Kong telegraphs to the Colonial Office that for the week ending September 15th 5 fresh cases of plague occurred, and 5 deaths from the disease.

EGYPT.

The Spanish Consul at Alexandria telegraphed to his Government that the British steamer *Ocean Prince*, bound from that port to Valencia, should be placed in quarantine and disinfected on arrival at Valencia, as plague existed in Alexandria. There is no official communication that plague exists in Alexandria, nor has the press reported its occurrence there recently. It is to be hoped that the information of the Spanish Consul is incorrect.

MEMORANDUM BY THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE following is the text of the memorandum to which reference was made last week on the symptoms and treatment of bubonic plague, drawn up by the Royal College of Physicians of Ireland, at the request of Sir Charles Cameron, C.B., the Medical Superintendent Officer of Health for the City of Dublin:

I.—DESCRIPTION OF THE DISEASE.

Bubonic plague is a feverish disease common to man and several of the lower animals, such as rats, mice, rabbits, and guinea pigs. It is communicable from man to animals, and from animals to man, especially by inoculation. Any break in the skin or mucous membranes, however trifling, may serve for the introduction of the poison of the disease into the system. Thus a scratch or pin-prick may be infected by a common house fly; or a flea, or other parasite, may infect through the puncture it makes in a previously sound skin.

The poison of plague is due to a bacterium and the toxins—or poisonous principles—it produces. This poison becomes virulent to an extreme degree in the presence of dirt, overcrowding, want of ventilation, and destitution. It also becomes virulent when introduced into the body of a badly nourished, unhealthy, or intemperate individual. Hence the urgent necessity for attention to personal and home cleanliness, for good food fresh air, free ventilation, and strict temperance. At this time, especially, the clergy of all denominations might, with advantage, urge upon the people the importance of cleanliness in the fullest sense of the word.

Symptoms of plague show themselves after a latent or incubation period of from two to eight days from the time the poison is received into the system. The victims feel weak in mind as well as in body. They are depressed. Appetite is lost. The limbs ache. There are feelings of chilliness, giddiness, and palpitations. Dull pains are felt in the groins. Then fever sets in with headache, giddiness, drowsiness or wakefulness, or troubled dreams in sleep. Nausea and vomiting and diarrhœa may occur. The face becomes drawn and haggard, the eyes are bloodshot. The patient walks dreamily or staggers like a drunken man.

Soon the fever increases, the face looks bloated, the eyes are fixed and sunken, the mouth is dry, and thirst is intense. Then raving comes on and the sufferer passes into a state of partial or complete unconsciousness, or fits may occur.

The name "bubonic plague" is derived from the remarkable swellings of the lymphatic glands which take place, especially in the groins, but also in the armpits, and sometimes (particularly in children) at the angle of the lower jaw. There is great pain in these swellings, which often turn black, soften and burst, or slough. Bleedings may also occur from the nose, mouth, lungs, stomach, bowels, or kidneys; and the skin may become covered with purpuric spots from bleedings into its substance.

Death may take place at any time, usually between the third and fifth days of the attack; on the other hand, when patients recover, they do so slowly, tediously, and painfully.

Sometimes plague shows itself as an inflammation of the lungs (pneumonia). This is a very infectious and dangerous form, requiring great care in the management of the expectoration—the stuff which is coughed up should be at once disinfected and destroyed.

II.—MANAGEMENT.

Those sick of plague should be at once removed to an isolated hospital, their rooms being thoroughly cleansed and disinfected by the sanitary authority. The bodies of the dead should be cremated, or burned with quick lime in deep graves. Those who have been in close proximity to the sick ("contacts"), and those who have been in other ways exposed to infection ("suspects"), should be segregated in "refuges" provided by the sanitary authority, and closely watched until the usual period of incubation of plague has run out.

It is reassuring to know that plague, although a "catching" disease, is not nearly so taking or infectious as typhus, small-pox, scarlatina, or measles. Attendants on the sick in clean, roomy, airy hospital wards run little risk provided they have an intact skin, and do not hang over the patients, or remain too long beside them.

A wholesale crusade should be made upon rats and mice in an infected or suspected district, and, above all, in vessels coming from a port where plague exists.

As the poison may possibly be swallowed in water or food contaminated with sewage or fæcal matter, no food should be eaten in the raw state, while water should be used for drinking purposes only after being boiled. In consequence of the possibility of milk being diluted with infective water, it likewise should be boiled before use.

The discharges from the bowels should be disinfected, and disposed of as quickly as possible. A wineglassful of the following disinfectant mixture should be poured into the vessels used by the patient, namely:

Common sulphate of iron (green copperas), 1 ounce; carbolic acid, ½ ounce; water, 20 fluid ounces, or 1 imperial pint.

Strict personal cleanliness should be practised, especially in connection with the feet, by which the poison is apt to be introduced into the system; and the clothing should be adapted to the season and weather.

Infected bedding and all articles of clothing worn by the sick should be destroyed by fire.

All debilitating causes should be carefully avoided—such as excessive and long-continued fatigue and fasting; overcrowding; exposure to moist, stagnant air, or to air loaded with organic effluvia.

In order that the sanitary authority may obtain the earliest information as to the outbreak of plague, the disease should at once be scheduled as notifiable under the provisions of the Notification of Infectious Disease (Ireland) Act, 1889; and the Act should be adopted without further delay in all sanitary districts adjacent to Dublin.

As regards curative treatment, a physician should be consulted at the earliest possible moment, in order that the rapid onset and advance of the disease may be arrested, if possible, by serumtherapy or other means, and that other necessary measures may be taken to preserve strength, combat symptoms, and avert death.

Signed, by order of the College,
JOHN WILLIAM MOORE, M.D.Univ. Dub., President.
JAMES CRAIG, M.D.Univ. Dub., Fellow and Registrar.

September 10th, 1900.

LITERARY NOTES.

MR. JOHN MURRAY'S new magazine, the *Monthly Review*, will commend itself to the lovers of large print, and they include probably most of those who have passed their eighth lustrum, by reason of the largeness and clearness of its print, the blackness of its ink, and the whiteness and dulness of its paper. The ease of reading depends largely upon contrast between type and ground, as can, we think, be proved by examining those evening newspapers which are printed on green paper. We refer elsewhere to Mr. Bowlby's article entitled, Surgical Experiences in South Africa, but there is at least one other article which will interest medical readers. The Details in my Daily Life, dictated by the Ameer of Afghanistan, contain some curious details as to the habits of that energetic and successful ruler. He is, we believe, 55 years old and a martyr to gout, but he seems to violate nearly every one of the old rules for attaining health, wealth, and wisdom. He turns night into day, going to bed at 5 or 6 A.M. and rising about 2 P.M. He does not eat meals at regular hours, but whenever he feels hungry, sometimes he tells us, forgetting whether he has had dinner or not. He suffers much anxiety, and works very hard dictating, giving orders and judgments, and hearing petitions, but apparently lies on his couch all day, and he smokes cigarettes. When he is awake he always has people about him talking and playing games and making music, and does not even sleep in a quiet room, but has a storyteller droning by his bedside, a custom which he says has this advantage, "that one gets accustomed to noise, and I can sleep soundly on the battlefield and under similar circumstances." On the other hand he is a great lover of beautiful scenery, flowers, green grass, music, pictures, and every kind of natural beauties. His palaces "are built on sites that command a beautiful view and in a bright, breezy place," and for weeks in summer, spring, and autumn he lives in tents.

SANATORIA IN ITALY.—On August 28th the Administrative Committee of Charities of the Milan Savings Bank decided that a subvention of 30,000 lire annually should be granted to the sanatorium for the tuberculous poor of the city and province of Milan. The sanatorium, which is to be erected by private subscriptions is to be called after King Umberto I. The municipality of Leghorn has decided to found a sanatorium of the same kind with the same name. The Communal Council of Pisa has decided to allocate 30,000 lire for the foundation of a sanatorium which is also to bear the name of the late king. Thanks to the initiative of Drs. Pisani and Romeo a sanatorium for tuberculous patients has recently been opened in the neighbourhood of Catanzaro.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association at 429, Strand (corner of Agar Street), London, on Wednesday, the 10th day of October next, at 2 o'clock in the afternoon.

FRANCIS FOWKE, *General Secretary.*

September, 1900.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

SOUTH EASTERN BRANCH: EAST KENT DISTRICT.—The next meeting will be held at the Grand Hotel, Broadstairs, on September 27th, at 3 P.M., the Honorary Secretary in the chair. Agenda:—Dr. P. Lewis: Enuresis in Childhood; its Pathology and Cure. Mr. W. K. Treves: Malingerers. Mr. Raven: Hypnotics. For the convenience of those who travel by the South Eastern Railway, a brake will meet the train at Ramsgate, due at 12.41. All members of the South-Eastern Branch are entitled to attend these meetings and to introduce professional friends.—THOMAS F. RAVEN, Honorary District Secretary, Barfield House, Broadstairs.

SOUTH EASTERN BRANCH: NORTH KENT DISTRICT.—The next meeting of this District will be held in the Bell Hotel, Bromley, Kent, on Thursday, October 4th, at 3.45 P.M. The following papers have been promised: 1. Mr. J. Cantlie, F.R.C.S., Plague; 2. Mr. W. J. Walsham, F.R.C.S., Resection of the Cæcum for Cancer. The annual dinner will be held at the Bell Hotel at 6.30 P.M. Tickets 7s., exclusive of wines. All members of the Branch are entitled to attend and to introduce a professional friend. Members who intend dining are requested to notify not later than Tuesday, October 2nd, to the Honorary Secretary, A. TENNYSON SMITH, M.D., The Birches, Orpington, Kent.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.—The next meeting of this District will be held at the Grand Hotel, Eastbourne, on October 10th. Mr. C. O'Brien Harding will preside. All notices of resolutions, communications, etc., should be sent to the Honorary District Secretary, J. W. BATTERHAM, M.B., Bank House, Grand Parade, St. Leonards.

NORTH WALES BRANCH.—The autumn intermediate meeting of this Branch will be held at Glynweddw Hall, Llan Bedrog, Pwllheli, in the last week of September, Mr. Solomon Andrews having kindly offered hospitality on the occasion.—W. JONES-MORRIS (Portmadoc), H. JONES ROBERTS (Pen-y-groes), Honorary Secretaries.

SYDNEY AND NEW SOUTH WALES BRANCH.

THE regular monthly meeting of this Branch was held at the Royal Society's Room, Sydney, on June 29th, Dr. W. H. COUTIE, President, in the chair. There were 45 members and 2 visitors present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Communications.—Drs. F. H. QUAIFE and RENNIE read a paper on a case of aneurysm of the arch of the aorta in a woman, and exhibited the specimen. Dr. SYDNEY JONES made remarks on the case, and Dr. QUAIFE replied. Dr. WORRALL read notes on (1) a huge fibro-cyst of the uterus; (2) intramural fibriod, enucleated from the puerperal nterus, and exhibited the specimens. Drs. RENNIE and CRAGO read a paper on a case of hydatid of the brain; operation; recovery. The patient was exhibited. A discussion ensued, in which Drs. COUTIE, SYDNEY JONES, and HINDER took part. Drs. RENNIE and CRAGO replied. Dr. WEST exhibited (for Dr. BOWKER): (1) Cases of interscapulo-thoracic amputation; (2) cases of forward dislocation of tibia and fibula.

SPECIAL CORRESPONDENCE.

BELFAST.

"Fishy" Water.—Seaweed and the Pollution of Sea Water.—Dr. O'Neill's Report on Meat Inspection.

DR. AGNEW, M.O H., made an interesting report at the meeting of the Lurgan Urban District Council on September 10th. On the morning of September 7th complaints reached the sanitary authorities that the water supplied to the town had a peculiar fishy odour. The water is a lake water pumped up from Lough Neagh, and is well stored and filtered. An inspection of the various works traced the smell to one of the filters. The necessary steps of draining, washing, and recharging were promptly taken with complete success. The scum gathered from the filter had the same fishy odour. Dr. Agnew is of opinion that the filters have been rather overworked, and that too frequent renewal of the water in the settling pond was required to allow efficient sedimentation. At certain periods of warm weather, chiefly from July to September, a slimy layer called "waterbloom," consisting of microscopic algæ, may appear on the surface of the filter from lake waters, and gives the water a bad taste—"fishy," "marshy," "mouldy," or, as was said in this case, like an old sardine box. Dr. Rideal describes the condition at Zurich Waterworks, and says that it has been observed in the United States. The algæ are related to the desmids, the scenedesmid, alosterium, and others, and they give a greenish appearance to the water. They have no pathogenic influence, and Lurgan is remarkably healthy at present.

For many years a nuisance has arisen from the sloblands of the upper reaches of Belfast Lough during the summer months; a similar nuisance arises from the sloblands in the northern portion of Dublin Bay. It is caused by deposits of the green seaweed, ulva latissima, or sea-lettuce; and with certain winds this deposit is enormous, forming banks some feet in thickness. The seaweed ferments in the shallow pools and a very unpleasant stench arises. At the meeting of the British Association Professor Letts described his experiments in the chemical laboratories, Queen's College, Belfast, which show that hydrogen and carbonic anhydride are evolved, with fatty acids, chiefly proprionic, but also butyric acid. Later on sulphides appear, and the seaweed blackens from formation of ferrous sulphide, which disengages sulphuretted hydrogen. Two forms of micro-organisms appear to be associated with the process. Dr. Letts is of opinion that the occurrence of the seaweed in quantity in any locality is associated with sewage pollution. The evidence is threefold; the seaweed contains more nitrogen than any other seaweed—over 6 per cent., and so in nitrogen content resembles an animal product; secondly, its power of absorbing nitrogen is remarkably high. A frond was put in various mixtures and pollutions of seawater in succession, and the power of assimilating nitrogen was estimated by examination of the mixtures before and after the seaweed had been in contact. Lastly, it is abundant in Dublin Bay and Belfast Lough, but almost entirely absent in Strangford Lough, which is in many respects similar to Belfast Lough. It is not found in the southern parts of Dublin Bay except near Kingstown, where a large sewage tank discharges on the ebb-tide. While, however, acting as a scavenger in absorbing nitrogen compounds from polluted seawater, it may itself give rise to a very extensive nuisance.

Councillor Henry O'Neill, M.D., was appointed a delegate by the Council of the County Borough of Belfast to the International Congress of Hygiene and Demography in Paris. He has visited also Berlin, London, Manchester, and has now drawn up three reports: 1. The housing of the working clases; 2. the inspection of the meat supply; 3. the inspection of the milk supply of towns, and the question of municipalising the milk supply. Report No. 2 was presented to the Market Committee on September 15th. It contains resolutions passed at the International Congress, an excellent account of the abattoir of La Villette in Paris, which Dr. O'Neill personally visited, and the regulations in force in Paris, Berlin, London, and Manchester; it also contains extracts from the report of Mr. Shirley Murphy to the London County Council. Some photographs and a plan of a model

German abattoir complete what to Dr. O'Neill is but the pourergon of a summer holiday, but which to many would be a fortnight's hard work. In reading the report one can see at a glance the main principles involved, and in a varying degree already adopted by leading sanitarians, namely, the abolition of private abattoirs, the erection of large, roomy, public abattoirs, built on scientific lines with scientific conveniences and aids, so that the work may be expedited and carried out in an economical manner, not hampered or the trade restricted, and lastly full and competent inspection by well qualified men without undue delay or interference. Councillor O'Neill deserves the best thanks, not only of the Council, but also of his fellow citizens, for thus advancing the sanitary work of the city. He recommends the adoption of the methods in use in Berlin and Paris, and he and the other members of the profession in the Council may be trusted to see that the proposals take a practical shape, and are not allowed to be pigeonholed and forgotten.

CORRESPONDENCE.

FEES TO MEDICAL WITNESSES.

SIR,—If you think the publication of the letter written by me to the Solicitors acting for the Treasury in a recent case of alleged murder, sent herewith, likely to lead to any practical result, such as a combined action by the Council of the Association with the Secretaries of every Branch of the Association, intended to lead to the better payment of medical witnesses, please publish it.

The solicitors replied, "We have communicated with the Treasury with regard to your letter, but they inform us that they have no control over the taxing officer, who appears to have allowed the full amount authorised by the scale."

It is, however, clear that either the scale has been altered adversely to the profession, or the practice of the present taxing master differs from that of former masters.—I am, etc.,

Willenhall, August 25th. JOHN T. HARTILL.

[Copy.]

After the case Regina *versus* —— was concluded, the sum of £2 19s. 6d. was offered to me, and also to my assistant, Mr. Baker, for our professional services and expenses at Stafford and before the magistrates at Willenhall.

The £2 19s. 6d. were made up of 7s. travelling expenses (second class), 10s. 6d for attendance before the magistrates from midday to nearly 8 P.M., with short interval for luncheon, and £2 2s. for attendance at Stafford on July 21st from 10 A.M. to 6 P.M., and to-day from 8.45 A.M. to 6 P.M.—that is to say, from the time of leaving home until getting home again.

This fee I declined to receive either for myself or assistant, on the grounds, first, that it was totally inadequate; and, secondly, not in accordance with the scale of payment granted to me on previous occasions.

Thirty years ago, when I had three cases at the assizes, I was paid one guinea a day for each case—Sunday included—from the day the assizes commenced until the respective days on which the hearing of each case was concluded, an arrangement which ought to hold good in every case with as much certainty as counsel would get a fee in every case in which their services were requisitioned.

At a later date, when I had three cases, I was paid a daily fee of one guinea for one case only, an arrangement which I submit was unjust; but whether I had one case or more than one case, and whether the date for hearing of the case or cases was fixed by the judge or not, I was always paid one guinea a day—including Sunday—from the commencement of the assizes until the day on which the hearing of the case or cases was concluded.

To-day I am told by the taxing master that as the judge fixed the date for the trial he has no power to pay me for the intermediate days between that on which a true bill was returned and the date of trial before the ordinary jury.

Against this I wish to enter a vigorous protest, and whatever may be the issue in my particular case, on public grounds I propose to send a copy of this letter to the BRITISH MEDICAL JOURNAL, because I know that the majority of medical gentlemen who attend assizes are not only seriously inconvenienced, but actually do not receive enough for their compulsory public services to cover necessary expenses which must go on at home in respect of their practices when they are away from them. It is therefore not surprising that medical gentlemen have long been dissatisfied with the present scale of payment.

First, with regard to inconvenience. In order to be at Stafford on July 21st Mr. Baker and I both put in a very long day's work on July 20th, and spent nearly all day on Sunday, the 22nd, at work; whilst the same held good on the 24th in order to be present on the 25th. Further than this, Mr. Baker was to have left my service on July 10th, and for the convenience of the Court consented to remain with me at my expense until the assizes were over.

Secondly, I engaged, and paid for, professional assistance for part of the 21st and 25th, so that the more serious cases and recent urgent messages might not be neglected whilst we were away.

Now, if one in ten medical gentlemen is casually the witness of some crime once in a lifetime in the interest of good government he would rarely or never complain if he were put on the same footing as other witnesses; but when professional services in the public interest are sought over and over again from the same man I contend he is on a different footing to the casual general witness, whether medical or non-medical, and that his scale of payment should be adequate to the position which members of a learned profession should occupy, and the scale should be fixed with due regard to necessary expenses which must go on in his practice whilst he is compulsorily away from it.

I wish further to add that I left home at 10.45 and returned at 2, with Mr. Baker and my own horse and coachman to make the *post-mortem* examination of the body on June 12th, and that the notes sent to the coroner would subsequently occupy about one hour in writing. For this I was paid one guinea, out of which damages to instruments, sponges, etc. would reach an average sum—about 4s. borne by me. On the following day I I again attended from about 10.45 to 2 at the inquest, and received 21s., providing my own horse and coachman. Mr. Baker was not paid for assisting at the *post-mortem* examination and was not called before the coroner.

I therefore respectfully submit that representations should be made to the Home Office or to whomsoever is the proper authority, that the present scale of payment to medical witnesses at assizes, quarter sessions, petty sessions, and before coroners, is totally inadequate for services compulsorily rendered, and that the time has come for the scale of payment to be revised.

In my opinion there are few men of any position in the medical profession who would give up the entire day to a private patient for a less remuneration than £3 3s., whilst the bulk of them would not do so for less than £5 5s. I therefore submit the public ought not to expect medical gentlemen to compulsorily undertake a duty which most of them dislike, if not hate, for a less sum than they could command for similar services from private sources, always bearing in mind dead expenses going on for horse, carriage, groom, dispenser, surgery cleaner, *locum tenens*, etc.

*** Dr. Hartill's letter draws attention to a persistent and very real grievance under which the medical profession in England continues to labour. It is to be observed from his letter to the Solicitors acting for the Treasury that Dr. Hartill, after giving up three working days to attend before the magistrates and at the assizes, involving him in considerable additional work and inconvenience, received a most inadequate remuneration of £2 19s. 6d. Under the existing statutory orders there can, we regret to say, be no doubt that this is the full amount authorised, and we do not quite understand our correspondent's allusion to an experience of his thirty years ago when he had 3 cases at the assizes and was paid 1 guinea a day for each case, as the scale, which was then as now in force, only provides that medical witnesses may be allowed a sum not exceeding £1 1s. for each day they necessarily attend the court to give evidence. Probably, however, in that case the taxing officer put a generous construction upon the Order. However this may be, there can be no question that the remuneration to medical witnesses in this country, who, as our correspondent points out, are in a very different position (at any rate in cases where they are called upon to give professional evidence) from other witnesses, is most inadequate, and there appears unfortunately to be but little hope of immediate remedy. In 1895 Mr. Asquith, the then Home Secretary, in reply to a deputation from the United Kingdom Police Surgeons' Association upon the subject, while admitting the inadequacy of the remuneration, declined in effect to make any alteration. In 1898 the Council of the British Medical Association, which has not been backward in attempting to remedy the state of things, prepared a memorial on the subject for presentation to the present Home Secretary, and asked that a deputation should be received, but this request was refused, as a similar request from the Police Surgeons' Association was refused in 1896. It is evident, therefore, that unless some great effort is made, and the grievance persistently urged, future Home Secretaries will assume the same *non possumus* attitude as their predecessors, an attitude which appears utterly inexplicable, as an increased rate of allowance to medical witnesses could be but a very slight additional burden upon the public purse, and medical witnesses standing as we have said in a peculiar and wholly different position from other witnesses, an increase of their allowances could hardly be construed as a precedent for increasing the rates of allowances to other classes of witnesses. The injustice to the profession in England is rendered more conspicuous by the fact that a considerably higher allowance is made to medical witnesses in Scotland and Ireland. Our correspondent may, however, rest assured that the matter is not being allowed to sleep, for in the course of last year a joint Committee of the British Medical Association and the Police Surgeons' Association was formed to press the matter on, and we have every confidence that this Committee will leave nothing undone to

endeavour to remedy a very great and admitted hardship, and one felt very generally by the medical men of this country, though naturally, owing to the entire engrossment of the public attention by the war, it has not been found possible by the Committee to take any active step during the past year beyond the publication in the public press of an admirable letter upon the nature of the grievance. We venture to think that the question might be considerably advanced by medical members of Parliament pressing the Home Secretary with questions upon the subject in the House of Commons, and generally we think medical men would do well to impress the importance of the matter upon parliamentary candidates at the present time.

THE ROYAL NAVY MEDICAL SERVICE.

SIR,—I wish to express my concurrence with the opinions of "M.O., R.N.," as stated in his letter published in the BRITISH MEDICAL JOURNAL of September 15th, with regard to the relative ages and rank of officers of the Royal Navy.

I believe that many naval medical officers are of the opinion that, if they are to wear uniform and hold rank at all, a more perfect assimilation of ages and rank, though apparently a small matter, is due to the profession, that it would cause additional respect for the profession in others, and would assist themselves in maintaining their professional pride. Practically increased rank would add to their content by giving them a choice of cabins, though only by putting them on the same footing as men of the same age.

The question of cabins is one that gives rise to much, and I think legitimate, discontent; and, by the scheme at present in existence, the medical officer does not even obtain what the "Queen's Regulations" allow him. The "Regulations" say that cabins are to be apportioned to officers according to seniority, but in the dockyards certain cabins are labelled, and the medical officer is obliged to occupy the one selected for him by a dockyard official, though there may be several cabins preferable to it; these are at the disposal of his juniors, perhaps ten years his junior in age. It seems a pity that such small reforms, that would not cost the country anything, should not be granted.—I am, etc.,

September 15th. N. O.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

SIR,—It is all very well for Dr. Myrtle to say it is high time the medical men took action in respect of medical fees for insurance cases, but what action can any medical man take individually (as we have no means of acting collectively) in respect of the notice recently issued by the New York Life Assurance Company? He may, of course, as I am doing, refuse to subscribe to the same, and be removed from the list of referees in consequence; but what good will that do? None. Our places will be easily filled. No, Sir. It is high time that the acquisition of a medical diploma also meant the compulsory admission of each diplomate into some society or association which will control our own actions and protect us against infringement of our rights not only by the insurance societies but by every other body. No insurance office would have dared to issue such a notice to their referees as the "New York" has done, and which was published in the BRITISH MEDICAL JOURNAL of September 14th, if such societies had not been fully aware of our utter helplessness from want of cohesion. A form (about fifty-five questions) taking an hour to fill up, and entailing a possible journey of 3½ miles, is now claimed for 10s. 6d. in place of 1 guinea as heretofore, and I venture to add that if next year they further reduced the fee to 5s. they would still find referees among the impoverished members of our profession at that figure. Why? Because the profession is overstocked, and it has no means of stopping the suicidal process of accepting unprofessional fees, and until such a society as the above referred to is formed, in our present overcrowded condition we must simply submit to any injustice or indignity an ungrateful and united public cares to inflict on us, and we deserve it until we can learn to respect and protect ourselves. The only remedy is the formation of such a society, which every medical man must be compelled to join on receiving his degree or diploma, and it appears to me that the most powerful body to assist us in a matter of this sort is the British Medical Association.—I am, etc., DUBITANS.

SIR,—In my letter on insurance companies and the payment of medical referees in the BRITISH MEDICAL JOURNAL of September 15th, I find I said: "I hold that the smallest fee should be half a guinea." The context shows my error, for I hold that the smallest fee should be one guinea.—I am, etc.,

Harrogate, Sept. 15th. A. S. MYRTLE, M.D.

SIR,—As attention has recently been called in your columns to the subject of life insurance from one medical point of view I should like to ask your notice of another and important aspect of the question of which I have some knowledge and experience.

It is the relation of the insurance agent to the medical man. A medical man may be appointed a local examiner by the head office, and yet unless he happens to stand well with the local agent or manager cases may not be sent to him. I have known instances where the agent hinted at some sort of advantage for himself for sending cases, and when this was refused few or no more examinees did the medical man get. The agent, again, naturally sends his cases to the man he thinks to be the easiest examiner. I have more than once known him suggest that a small quantity of albumen in the urine should not disqualify a candidate, and urge that a man with a very large degree of glycosuria was insurable.

The object is too often not the good of the office but to get the greatest number of cases passed. This fault is due to the commission system. An examiner, quite independent of local agents and managers, appointed solely by the head office, to whom all local cases must be sent by them, will in the long run best serve the interests of the insurance company. At present in very many instances the agent sends the candidate to whomsoever he will.

It is a common practice for many agents, in order to get the medical man to insure his life, to promise to send him enough cases to pay his premiums, a promise as far as my knowledge goes rarely performed or even intended to be kept. It is the junior who is caught by this assurance, and it is desirable that the fact should be widely known among the juniors in the profession.

If the insurance companies realised these things it would be, I think, to their advantage. My experience in insurance work has been altogether unfavourable, but such as it is I hope that it may serve as a caution to medical men who may be approached by insurance agents.—I am, etc.,

September 18th. EXPERIENCE.

REGISTRAR-GENERAL'S STATISTICS AND "CHEAP" INSURANCE COMPANIES.

SIR,—I quite agree with "Fellow" in the BRITISH MEDICAL JOURNAL of September 15th as to the "value" in many cases of death certificates. He could, however, scarcely expect a different one in his first case for the boy presumably did not die of pseudo-hypertrophic paralysis, and the cause of death is what one certifies.

As regards insurance companies, is not the refusal to pay merely "bluff?" I have understood that it has been decided by one of Her Majesty's judges—I cannot give time or place, but a lawyer could no doubt supply the data—that an insurance company having entered into the contract and having received the premiums are bound to pay in spite of the conditions they lay down. I have never known the refusal maintained, even when I have dated the commencement of a disease before the date of the policy. In one case of phthisis, a man died two or three months after insurance, though some time before that he was considerably emaciated. The agent, I should fancy, was not afterwards on the best of terms with his company, but the money was forthcoming. Again, a woman was admitted into an infirmary suffering from morbus cordis and must have known it, though I was not quite certain whether I had told her or not. She came out and took out a policy, though she was not much better and was able to do very little work. She died not long after, within three months I think, and again I had a visit from the agent. The company, however, paid the amount of the policy to the best of my knowledge. They told me they paid as it would be a good advertisement, but I believe my statement to be true and that they could have been compelled to "part."—I am, etc., M.B.CANTAB.

THE COVENTRY PROVIDENT DISPENSARY.

Sir,—Relative to the letter in the British Medical Journal of September 15th, signed by the Coventry Dispensary Staff, I must ask you to give me space to reply, otherwise some of your readers might be led to think that the agitation against this institution is being carried on in an unfair spirit, and that I have made statements which cannot be substantiated.

It is an old grievance, and all the arguments brought forward have been heard before. The only new feature appears to be that the dispensary medical staff profess to be able to produce "abundance of proof when required" in defence of their position. Such proof has been required since 1892, and has not been forthcoming.

As to the statement that the number of patients is now 19,000 or 18,000, it would be well to point out that at the annual meeting of the Dispensary in 1892, the chairman made the following statement (*Coventry Standard*, April 30th, 1892): "It was difficult to give the exact membership, but approximately it was about 25,000 or 26,000." (Population of Coventry, 52,000). No returns have been published since, but each year the chairman has congratulated the members upon the continued success of the institution. Are we to understand from this that the numbers are some 6,000 less than then? or that the chairman each year has been furnished with false reports?

As regards the consultations, Rule 16 bears out exactly what has been stated, that a consultation can be held with any other member of the staff or a specialist. There being no specialists in Coventry, the import of this rule is too obvious. Moreover, the senior medical officer of this institution, at a meeting of the profession in Coventry, stated that this rule was suggested to the Dispensary Committee by its medical staff.

It should be mentioned that these medical officers made an appeal to their Committee (a copy of which is enclosed), in which the abuses complained of are admitted and reforms asked for. What was the reply of the Committee to this document?

The general feeling of the Committee on the whole question is that if the medical staff are not satisfied with their position, the Dispensary would be quite prepared to get a medical staff exclusively for the institution, as is being done in other towns, notably at Yarmouth.—*Coventry Herald*, September 3rd, 1897.

Could anything be more degrading to us as a profession than this?

There is no half-way house for these dispensary doctors: they must either insist upon the reforms asked for from their Committee in their own memorial, or resign their appointments. We all admit that a dispensary when properly conducted as a provident institution for sick poor is a most important organisation, and I entirely repudiate having made use of such expressions as "smash the institution" or "bring the staff on their knees," but since such phrases have been put into my mouth I would like it to be understood that as long as the profession in Coventry is on my side, backed up, as it is, by the majority of the members of the British Medical Association and the profession generally, together with the medical press, I shall still continue to wage war upon men holding appointments in a condemned institution until they have brought about the reforms asked for.—I am, etc.,

Coventry, Sept. 18th. Edward Phillips.

Sir,—In my recent letter to the British Medical Journal *re* the Coventry Dispensary, I confined myself to the point of comparison raised by Dr. Saundby between the friendly societies and the above institution, and I was justified in referring to what has taken place. It was important to show how a dispensary has built up a monopoly by means which the societies do not make use of. My letter would convey no false impression to any sensible man. As the dispensary doctors cannot deny that they and their drugs have been publicly extolled, they denounce me as "contemptible" for alluding to "faults" that I know well are past and done with. I wish I could think so. Annual meetings will continue to be held, and I shall be surprised if injudicious friends of the institution do not repeat the indiscretions of the past. I know, of course, that the medical men are not directly responsible. It is the system they unfortunately support.

As for my statement that anyone can join the dispensary, I believe that is practically the case, in spite of this new rule submitting the admission book once a month to the inspection of two of the staff. What can they know of the majority of names entered, and what likelihood is there of an objection being supported by a lay committee which has shown itself very jealous of any restriction on admissions? The adoption of a wage limit would seem a more simple and efficient remedy.—I am, etc.,

Coventry, Sept. 18th. F. Faulder White.

Sir,—A personal explanation seems necessary from me as one of those partially responsible for the attack on this institution. I am accused by the medical staff of having "commenced to attack the institution by means of letters in the local Press," and later of having "applied for the appointment." The first charge is untrue and I have written to the staff demanding an apology. It is true, however, that I applied for the appointment about ten years ago, when I first came to Coventry. I have ever regretted it, but at the time I was by no means fully aware of the methods and working of the dispensary, there being at that time no organised agitation against it, nor was there any professional opinion formulated on the question. It is equally true that vacancies have occurred since then on three occasions, and that neither I nor any other member of the Public Medical Service have applied for or ever intend to apply for the post.—I am, etc.,

Coventry, Sept. 17th. W. Richardson Rice, M.D.

Sir,—As the members of the staff of the Coventry Provident Dispensary refer to my statements with regard to it in their letter, published in the British Medical Journal of September 15th, I think it is only right that I should give chapter and verse for my facts.

They object to my statement that the population was 50,000 and that half of it belong to the dispensary. That statement appeared in the *Coventry Herald* of December 19th, 1894, and is referred to in the report of the Ethical Committee of the Birmingham and Midland Branch of the British Medical Association.

With regard to the statement attributed to me, namely, "That canvassing is actively carried on," that is not what I said. The quotation is taken from a paper I read at the Medical Conference at Manchester on Provident Dispensaries, when I said that active canvassing used to exist, but this is not so necessary now that half the population have joined, but there is still the rule that any one can join when ill, if he or she can procure two healthy persons above the age of twelve years to enter at the same time and pay one year's subscription in advance. I imagine this condition will entail a certain amount of canvassing.

My statement as to there being no wage limit is not disputed. It is, however, difficult to see how exception can be taken to anyone on pecuniary grounds, in the face of the resolution passed at the annual meeting held in 1893, namely: "That the pecuniary circumstances of an applicant should be no bar to membership." Of course if that resolution is rescinded we shall all be very glad to hear it; if not it is somewhat of a farce to submit the admission book to the staff.

If the General Medical Council would only grasp the nettle, and definitely inform every registered practitioner that it would regard the acting for such societies as infamous in a professional sense, the committees of such associations would have to cave in, as they would be unable to get members of the profession to join the staff under such conditions.

There is one thing I don't understand, that is the position of Dr. Saundby in the matter: he appears to labour under the delusion that two blacks make one white. He thinks that because there are other institutions conducted under equally bad conditions it is unjustifiable to attack one only. On that principle one ought not to try and expose one delinquent unless you could all at the same time.

I much regret that I was unable to attend the meeting at Ipswich when I intended to bring this matter forward. I should have wished as a corollary to the proceedings with regard to this matter which had taken place at Edinburgh and Portsmouth to have moved the expulsion of the members of the staff from the British Medical Association. It appears, how-

ever, that a member can only be expelled from the Association by a resolution of the Council if carried by three-fourths of the members present, subject to confirmation by the next annual meeting.

If this rule is to be maintained and the Council are all of the same mind as Dr. Saundby this means of expressing the disapproval of the conduct of the staff of the Coventry Dispensary cannot be carried out.—I am, etc.,

Plymouth, Sept. 17th. G. JACKSON.

SIR,—There appears to me a certain want of candour in the manifesto of the staff of the above institution which, if one of their usual characteristics, may account for the unenviable position in which they find themselves. What is the sense of their saying that it would be fairer if the Council of the Association would draw up some rules "to be complied with," when as they admit there is no wage limit? and yet this is the one definite thing which that very Council has instructed them to procure. There was no wage limit in 1892, nor is there in 1900. Why do they not state what steps they have taken to obtain this, so that the profession may judge of their *bona fides?* Even with a wage limit everyone knows that abuses will creep in, but without one they are certain to be rife. That this is the case at Coventry is to be fairly deduced from the figures supplied by the staff itself. The rules state that the institution is intended for working men and their families and such others as cannot pay ordinary fees. According to the figures given more than one-fourth of the total population of Coventry are not able to pay the ordinary medical fees which are being constantly paid by the same classes of people all over the country. If all those who are under the care of the Poor-law medical officers are deducted from the population, it would appear that one out of every three of the remainder must be in a poor financial condition. That this is not at all likely to be correct is shown by the figures published by the Council of the Manchester and Salford Provident Dispenaries. According to the report for the year 1896 (which is the latest I possess) the proportion in this district of provident dispensary members was 1 in 25 of the total population. At Coventry it is 1 in 4. *Verb. sap.*

Salford, Sept. 15th. R. HANSON WOLSTENHOLME.

YAWS.

SIR,—I would like to make the following remarks *re* yaws. I am of the same opinion as Mr. Jonathan Hutchinson since visiting the South Sea Islands, Fiji, Ellis, and Rotumah, that there is no essential difference between syphilis and yaws. In the later stages the two diseases seem to exhibit similar manifestations—such as iritis, keratitis, nodular formations affecting the periosteum of the bones of the leg, arm, and skull, spreading ulcerations affecting the skin and mucous membranes, and lastly, diseases of the septum of the nose—and, what is more, these manifestations are markedly improved by mercurial and iodide treatment.

It is in the early stage that the two diseases differ as to time of onset and point of inoculation. The secondary rash of syphilis has its counterpart in the vesicular and pustular symmetrical rash which occurs in infantile life, lasting several weeks or months.

Healthy children are huddled together on the same mats with diseased ones, and in my opinion the purulent discharge from this pustular rash finds a suitable point of inoculation through the hot, naked, perspiring, and frequently abraded skin of an adjoining infant. It is said that there is no distinct primary sore in yaws. Probably there is not a typical Hunterian chancre in yaws; but the more one sees of syphilis the less one expects to find so-called typical chancres. The nature of the primary sore in yaws is no doubt as a rule overlooked, as it frequently is in England, unless it occurs on the genitals.

This must of necessity be the case, as the dusky parent would give little heed to so unimportant a thing as a sore, and the most enthusiastic inquirer after knowledge is not, as a rule, in a position to inspect native children until the parent brings the child covered with secondary rash which is often ulcerated from the want of care and cleanliness; so that it is difficult to distinguish a primary sore and a sore the result of ulceration of a secondary pustule, and thorough examination from head to foot is often difficult owing to the objections of the native mother. The fact that at the time of puberty a man or woman has already had the disease as far as the secondary stage, accounts for the fact that the disease is non-venereal with the native, which is, in my opinion, the only characteristic which differentiates it from syphilis.—I am, etc.,

FREDERICK W. COLLINGWOOD.

Grosvenor Club, W., August 31st.

PILOCARPIN IN PUERPERAL ECLAMPSIA.

SIR,—In the BRITISH MEDICAL JOURNAL of September 15th, page 748, Dr. Inglis calls attention to the value of pilocarpin in the treatment of puerperal eclampsia; he seems to have entirely overlooked the danger incurred in the use of this drug when the patient is in an unconscious condition. Pilocarpin not only causes profuse perspiration and salivation, but also an enormous increase in the mucus in the bronchial tubes, and the unconscious patient runs a very good chance of being suffocated by his own secretions. Some years ago I remember giving an injection of pilocarpin in a case very similar to the one recorded by Dr. Inglis, and afterwards only saving the patient from suffocation by long-continued artificial respiration. Since that time I have known personally of at least two other patients whose lives were seriously jeopardised by the use of this drug while they were in an unconscious condition.—I am, etc.,

Oxford, Sept. 18th. WILLIAM COLLIER, M.D.

SIR,—I can cordially agree with Dr. Inglis in the high opinion he has formed of the value of this drug in puerperal eclampsia. In the last two cases I have had, an injection of pilocarpin (gr. $\frac{1}{3}$) was given at the outset of treatment, and had not to be repeated. In both it produced almost instantaneous diaphoresis and a great change for the better in the condition of the patients. In one the fits commenced several hours after the childbirth (which was quite normal), in the second they occurred at the commencement of a premature confinement. Of course other methods of treatment, such as administration of chloroform, dry cupping over the kidney region, chloral hydrate, etc., but the pilocarpin gave the requisite start.—I am, etc.,

E. MANSEL SYMPSON, M.D.,

September 19th. Surgeon to Lincoln County Hospital.

PUBLIC VACCINATORS' FEES.

SIR,—In the BRITISH MEDICAL JOURNAL of August 25th under the article, "Medicine as a Career," p. 471, you write to the effect that the public vaccinators are better paid than they used to be; this is an erroneous statement, and considering that frequently there are announcements in the press that certain Boards of Guardians are about to petition the Local Government Board to reduce the amounts paid, I think it should be corrected.

The work under the New Vaccination Act in point of the time taken up alone is more than doubled even supposing the child to be vaccinated is healthy and everything works smoothly, the pay on the other hand and at the minimum rate it only just twice as much as formerly.

Considering, though, the work with all its extra bother and the numerous calls the public vaccinator has to make in individual cases, the appointment now is very poorly paid.—I am, etc.,

Margate, Aug. 28th. J. J. HEMMING.

"PREVALENCE OF MISCHIEVOUS CUSTOMS."

SIR,—Dr. Rushton Parker's letter in your issue of to-day induced me to examine notes of measurements of waist and of the corset in 50 women taken during the past two years and a half.

The average size of the waist is 23.8 in., that of the corset 21.7 in. These figures coincide with the results obtained by Dr. Parker.

The greatest difference noted between size of waist and that of corset was 5 inches.—I am, etc.,

T. F. HUGH SMITH, F.R.C.S., L.S.A.

Farningham, Sept. 15th.

THE DISCUSSION ON "FIBROIDS"—A PROTEST.

Sir,—I was not present when Dr. Giles made his abusive remarks anent my communication to the discussion on "Uterine Fibroids," or I should certainly have protested against them, as I now take the opportunity of doing.

It surely is a gross breach of good manners when, at a scientific meeting of this kind, one member accuses another of "misleading juggling with figures," without advancing one tittle of evidence in support of his offensive remarks; and I suppose it was by inadvertence that the President of the Section failed to call him to order.

We see a great deal too much of this sort of bad mannerism—which is but a sorry substitute for solid scientific work—at our medical meetings.

I am not so vain as to imagine myself infallible in attempting the solution of a difficult problem like that raised in the discussion on "fibroids." I have simply set forth the conclusions at which I have arrived after careful study of the matter. I shall be pleased if Dr. Giles, or any one else, will point out any error in my work, so that I may correct it. Indeed, I challenge him to do so, or to withdraw his offensive remarks; otherwise I shall treat his abuse with the contempt that such impudence deserves.—I am, etc.,

Clifton, Sept. 15th. W. Rogers Williams.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

LUNG DISEASE IN THE ROYAL NAVY.

The correspondence which has been raised in the *Times* as to the apparent considerable increase of tuberculous disease of the lungs among men and boys of the Royal Navy has led Dr. Mitchell Bruce to call public attention to some interesting statistics which he contributed to the annual meeting of the British Medical Association last year.[1] Dr. Bruce showed that the invaliding and deaths from phthisis per 1,000 were (in 1897) for all ships on the home station 5 0, and for ships of the training service home station 8.0. These figures he compared with the mortality from phthisis in the general population (aged 15 to 45 years), which was given by Sir Hugh Beevor as 2.53. Although the comparison was between invaliding *plus* mortality on the one hand, and mortality on the other, yet he thought that it was fair to conclude that the loss of life from tuberculosis was probably three times as great in the training ships for boys as in the general population, and this notwithstanding the fact that the boys had only been admitted to the navy a year or two before after a strict medical examination. Suspicion naturally fell upon the quarters in which the boys live, and a comparison between the health of the boys in a wooden ship and on an iron ship gave support to the supposition that the real cause was to be found in their quarters. In an iron ship the percentage of invaliding and deaths from all diseases was only 2 812, whereas in a wooden ship the percentage was 4.660. Further, he had learnt from officers of the service that the most common cause of invaliding and death on the training ships for boys was diseases of the lungs and pleura; and, further, that the old wooden ships were overcrowded, low decked, wretchedly ventilated, and full of decay, their timbers soaked with the damp of ages, and the cracks and crannies the most favourable places possible for harbouring and developing the tubercle bacillus.

From all quarters, medical and lay, evidence is accumulating as to the necessity of inquiry into the present system of training ships or hulks for boys, who, though carefully selected by medical examination, are yet apparently more subject to tuberculous disease of the lungs than the general population.

In this connection we have received a letter from an inspector-general, R N. (retired), who considers that attention ought to be drawn to the coincidence between the increase of lung disease in the navy and the date of the abrogation of the Contagious Diseases Acts in this country. He suggests that there may be some relation between the present prevalence of venereal disease—close on 12,000 cases according to the last statistical report—and lung disease: first, by the general deterioration of health, temporary or permanent, produced by venereal disease, rendering men more liable than they would otherwise be to phthisis; secondly, by the occurrence of syphilitic phthisis, which he believes to be more common in the navy than is usually suspected; and, thirdly, by the association of patients suffering from tuberculosis and syphilitic affections in confined spaces between decks, or in naval hospitals now crowded with venereal patients.

That constitutional syphilis has steadily increased in the navy is apparent from a study of the statistical reports of the health of the navy, both in reference to the home station and the total force.

Dealing with constitutional syphilis in the navy on the home station, we find from the Health of the Navy Reports that in 1872, after the Contagious Diseases Acts had been enforced for a few years at Portsmouth, Plymouth, Southampton, Dartmouth, and Queenstown, "the continued beneficial influence of the operation of these Acts on the force is now so fully recognised by medical officers that they have almost ceased to make any direct allusion to it. Whenever it is referred to it is in the highest possible terms, and the only regret expressed in connection with it is that the Acts are not more extended in their action."

One stationary ship in this year at an unprotected port, with a complement of 410, reported 54 cases of constitutional syphilis, a ratio of 131.70 per 1,000 of mean force, while that for the home station was 18.3 per 1,000 of mean force; in 1878 the ratio had fallen to 10.73; in 1882, the last year of protective legislation, 19.88, but the ratio for protected was 10 52, for unprotected ports 35 05. The ratios on the home station after the abolition of protective legislation were in 1888. 23 35; in 1898, 26.22. These ratios per 1,000 of the mean total force of the Royal Navy were somewhat similar, namely: 1872, 18.3; 1878, 13.27; 1882, 17.82; 1888, 22 51; 1898, 27.69.

That deteriorated health from venereal diseases may render the subjects more liable to lung diseases and tubercle is a view with which most medical men would concur.

The crowded state of our naval hospitals in recent times, we are informed, has attracted the attention of the Admiralty, and measures have been and are being taken to remedy it.

[1] British Medical Journal, 1899, vol. ii, p. 1157

WATER SUPPLY OF ARMIES IN THE FIELD.

One of the many questions which must be reconsidered after the war is undoubtedly that of the purification of the water for troops in the field. The conditions in South Africa were on many occasions peculiar, since, as Mr. Treves and Mr. Watson Cheyne have pointed out, the filters in use worked very slowly and were quickly choked. This was due to the very large quantity of mud suspended in many of the rivers, for example, the Modder.

Dr. Leigh Canney has written a letter to the *Standard* urging that of the two alternatives, filtering or boiling of water for armies in the field, the latter is preferable, mainly on the ground that it is simpler, and that the necessary apparatus would weigh less. His calculation for an army of 50,000 is as follows:—"(*a*) Filtration: 500 filters (and each filter would require a fresh candle daily). Total weight, 50 lbs. × 500 = about 11 tons. Total cubic space, 1,000 feet. (*b*) Boiling: 500 combined heaters and stoves in separate wooden cases. Total weight, 100 lbs. × 500 = about 22 tons. Total cubic space, 3,000 feet. This army would require as fuel about 150 gallons of petroleum and 20 gallons of methylated spirit daily. The boiling system would abolish the need for some 4,000 kettles, probably supplied at present to this army, and weighing probably about 20 tons. The boiling system would therefore only add 2 tons + the weight of 150 gallons of petroleum and 20 gallons of spirit to the 500 tons of stores daily necessary for such an army. The boiling system or the filtration system would render the transport of vast typhoid and dysentery hospitals unnecessary As in war, as practised at present without prevention, there are five times as many cases of disease (mostly preventable) as there are wounds, the hospital equipment to be transported under preventive measures could be reduced, if not by four-fifths, at least very largely."

This conclusion is one which we should be very sorry [illegible] out further information and actual experience. During the [illegible] campaign the want of fuel has been a great difficulty; but w[illegible] to think that if soldiers were trained to look upon tea or coffee as their ordinary beverage during a campaign a considerable improvement in the sickness returns would be effected.

ROYAL NAVY MEDICAL SERVICE.

Deputy-Inspector-General H. C. Woods, M.D., M.V.O., has been promoted to be Inspector-General, August 1st. He was appointed Surgeon December 8th, 1862; Staff-Surgeon May 15th, 1876; Fleet-Surgeon May 22nd, 1884; and Deputy-Inspector-General May 24th, 1895. He was promoted to be Staff-Surgeon on the occasion of the Prince of Wales's visit to India, and appointed a Member of the Royal Victorian Order in 1897.

The following appointments have been made at the Admiralty:—P. W. Mackean, M.B., Surgeon, to the *Vivid*, September 12th; Walter H. S. Sequeira, M.B., Surgeon to the *Pembroke*, September 2nd; Horace B. Marriott, Surgeon, to the *Scout*, September 13th; Edward C. Cridland, M.B., Surgeon, September 13th; Edward H. McSherry, Surgeon, to the *Phœbe*, October 4th

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT COLONEL F. R. BARKER, M.B., retires on retired pay September 15th. He entered the service as Surgeon March 6th, 1886, became Surgeon-Major March 6th, 1892, and Lieutenant-Colonel March 6th, 1900. He is not credited with any war service in the army lists.

Lieutenant NICKERSON, who was among the prisoners captured at Ventersburg on the 19th ultimo, has been released, with others, all of whom are described as being well.

Civil Surgeons G. SIMON, R. W. JAMESON, and E. P. WALLACE are on the voyage home from South Africa.

INDIAN MEDICAL SERVICE.

LIEUTENANT COLONEL T. S. WEIR, Bombay Establishment, is promoted to be Colonel, April 1st. He was appointed Assistant Surgeon, April 1st, 1870, and became Brigade Surgeon-Lieutenant-Colonel, March 31st, 1897.

A Simla telegram of August 29th says: "In view of the pressure on the medical services, Government have sanctioned the re engagement of superannuated military assistant surgeons for so long as their services may be required. They will receive the pay and allowances drawn before retirement, their pensions meanwhile remaining in abeyance. Major J. T. Leslie, Major Mayn rd, and Captain G. C. Smith, who are engaged on scientific work at home, have been specially exempted from the operations of the orders recently issued, recalling all Indian Medical Service officers from leave on private affairs. Inquiries are now being made by Government as to what retired Indian Medical Service officers would be willing to volunteer for further service in India."

MILITIA MEDICAL STAFF CORPS.

MAJOR W. WARING is reported as seriously ill at Pinetownbridge, South Africa.

THE VOLUNTEERS.

SURGEON-LIEUTENANTS W. MCCLELLAND, M.B., 4th Lancashire Artillery, and W. LAWTON, M.B., 1st Cheshire Engineers, are promoted to be Surgeon-Captains, September 19th.

Surgeon-Major R. T. A. O'CALLAGHAN, 1st Flintshire (Buckley) Engineers, is promoted to be Surgeon-Lieutenant-Colonel, and to remain supernumerary, September 19th.

Surgeon Captain A. THOM, M.D., 4th (Perthshire) Volunteer Battalion the Black Watch (Royal Highlanders), resigns his commission, September 19th.

Surgeon-Lieutenant-Colonel E. M. WRENCH, 2nd Volunteer Battalion the Sherwood Foresters (Derbyshire Regiment), retires, with permission to retain his rank and uniform, September 19th.

OBITUARY.

THOMAS MOORE, F.R.C.S.,

Surgeon to the Miller Hospital, Greenwich.

WE regret to record the death of Mr. Thomas Moore, F.R.C.S., which took place on September 6th after a few hours' illness. Mr. Moore, who had nearly completed his 62nd year, was a brilliant student of St. Bartholomew's. For many years he practised at Petersfield, where he founded the cottage hospital which was one of the earliest to be established in this country. For the last twenty years he had practised at Blackheath, and at the time of his death held the posts of Senior Surgeon to the Miller Hospital, Greenwich, Medical Officer of Health for Eltham, Consulting Surgeon to the Brighton Children's Hospital and to the Petersfield Cottage Hospital, and Treasurer of the Roentgen Ray Society.

Mr. Moore was an indefatigable worker and an enthusiast in everything he took up, but he was, before all, a surgeon, and was never so happy as when he was operating. Bacteriology and Roentgen rays claimed a great deal of his time of late years, and he worked at these at an age when most men think of retiring. A few years ago he started at the Miller Hospital a Roentgen ray department which he equipped himself.

He was beloved by his patients, rich and poor, his services were ungrudgingly given to them day or night, and his death has made a gap which many will feel it most difficult, if not impossible, to fill.

In his earlier years he was an enthusiastic volunteer and a good shot, being twice in the Queen's "Sixty" at Wimbledon.

Mr. Moore was an ex-President of the West Kent Medico-Chirurgical Society, of which he had been an active member for many years, and a constant contributor to its *Transactions*.

It is of such men the medical profession may well feel proud.

SIR LOUIS DE VERTEUIL, M.D., K.C.M.G.

SIR LOUIS A. A. DE VERTEUIL, M.D., K.C.M.G., died at his residence, Port of Spain, Trinidad, on August 11th, at the ripe age of 93. He was the son of the Chevalier de Verteuil, a member of an old Breton family, who distinguished himself on the losing side in the Vendean War. After the failure of the hopes of the Royalists the Chevalier de Verteuil settled in Trinidad, where he married, and where the subject of this notice was born. Louis de Verteuil was sent to France for his education, and eventually took the degree of M.D. Paris, after which he returned to Trinidad in 1837, and soon took a leading place in his profession. He became President of the Medical Board, and Consulting Physician to the Colonial Hospital, and was the first President of the Trinidad and Tobago Branch of the British Medical Association. He also took a prominent part in local politics, and in 1864 was appointed an unofficial member of the Legislative Council, a post which he retained up till 1895, in which year he received the honour of K.C.M.G. He published in 1858, under the title of *Trinidad: Its Geography, National Resources, Administration, etc.*, a standard and valuable work of comprehensive character. A colleague well acquainted with his character and work writes: "As a medical man he has been a distinguished figure in the history of the island, he was a beloved and highly valued *confrère*, always ready to place his unrivalled experience at the disposal of his fellow practitioners. Besides his worth as a medical man he devoted a good deal of his life to the political welfare of the colony. He dies honoured and loved by everyone of this mixed community."

THE death is announced of Dr. ROBERT S. COCHRANE, F.R.C.S.I., of Longford, from pneumonia. Dr. Cochrane settled in Longford a good many years ago, where he acquired an extensive practice, and was much respected by all classes of the community. In the year 1892 he was appointed Medical Officer of the Longford Union, and immediately commenced, with characteristic energy, the reform of the Union hospitals. When a couple of years later the agitation for workhouse reform began, he was one of the leading spirits, and became known throughout Ireland for his uncompromising opposition to that section of the guardians who were trying to stop the much-needed improvements in the treatment of the sick poor. Matters went so far that the guardians suspended him, a suspension which was immediately removed by the Local Government Board. Under the close supervision of Dr. Cochrane the Longford Union hospitals soon became models of what such institutions should be; and his loss will be deeply felt by the poor and helpless members of the community in whose service he wore himself out.

WE regret to announce the death of Dr. KORSAKOFF, Professor of Clinical Psychiatry in the University of Moscow, which has just occurred at the early age of 46. Professor Korsakoff was an ardent advocate of the no-restraint system, and was the author of many contributions to the literature of his special province of medicine. At the International Congress of Medicine held in Paris in August, he presented a communication on the Pathological Anatomy of Idiocy, an abstract of which appears in this week's EPITOME.

WE regret to have to announce the death of Dr. JOHN A. LOTHIAN of Glasgow, after a long illness. He was born in Edinburgh in 1828, and studied in Edinburgh University, graduating in 1849. He afterwards, in 1858, received the degree of M.D. from Aberdeen University. He was one of the oldest of the Fellows of the Faculty of Physicians and Surgeons in Glasgow, and though he has been laid aside for some time he had been in practice in the city for nearly thirty-seven years. He was, moreover, one of the Surgeons of the Glasgow Royal Infirmary for twenty-two years.

INDIA AND THE COLONIES.

BARBADOS.

The General Hospital.—A Barbados newspaper recently stated that there was evidently something radically wrong at the General Hospital, Barbados, as the head nurses found it impossible to remain many months. The fact, we are informed, is that the head nurse appointed in May, 1899, resigned after a few months, and that her successor, appointed in November, resigned recently. We are asked to state that the second resignation is not due to any difficulty created by the committee of management of the hospital, but is due to the fact that the lady found the sole charge of the hospital nursing staff too much for her strength and the strain of constant supervision to tell severely upon her health, and partly to private reasons.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF DURHAM.

SECOND EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.—The following candidates have satisfied the examiners:

Anatomy, Physiology and Materia Medica.—Honours—First-class: W. H. Peacock, College of Medicine, Newcastle-upon-Tyne. Honours—Second-class: A. L. Wilkinson, College of Medicine, Newcastle-upon-Tyne; A. G. Dunn, College of Medicine, Newcastle-upon-Tyne; D. R. Guns, College of Medicine, Newcastle-upon-Tyne; Margaret D. French, London School of Medicine for Women. Pass List: E. G. Annis, M.R.C.S., L.R.C.P., D.P.H., Guy's Hospital; E. H. Barrett, M.R.C.S., L.R.C.P., St. Mary's Hospital; A. H. Bateman, St. Bartholomew's Hospital; W. D. Carruthers, Birmingham University; J. W. Caton, College of Medicine, Newcastle-upon-Tyne; G. R. East, College of Medicine, Newcastle-upon-Tyne; A. H. Fullerton, College of Medicine, Newcastle-upon-Tyne; P. G. Garrett, M.R.C.S., L.R.C.P., D.P.H., Middlesex Hospital; F. J. Gowans, College of Medicine, Newcastle-upon-Tyne; M. Haver, College of Medicine, Newcastle-upon-Tyne; W. G. T. Hepplewhite, College of Medicine, Newcastle-upon-Tyne; W. Hughes, Edinburgh School of Medicine, W. H. Lamplough, Birmingham University; C. R. Lease, College of Medicine, Newcastle-upon-Tyne; E. J. Miller, Cooke's School of Anatomy and University College, London; G. E. V. Morris, Birmingham University; C. Muthûswamy-Anthony, Guy's Hospital; Thomasina Georgina Prosser, College of Medicine, Newcastle-upon-Tyne; F. W. Ritson, College of Medicine, Newcastle-upon-Tyne; J. C. Stewart, College of Medicine, Newcastle-upon-Tyne; A. M. Watts, M.R.C.S., L.R.C.P., University College, London; J. R. Wylie, College of Medicine, Newcastle-upon-Tyne.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE EMPLOYMENT OF UNQUALIFIED ASSISTANTS.

R. W. R.—Assuming the facts to be as stated by our correspondent, we consider the employment of an unqualified assistant to perform such professional duties to be a violation of the recent order of the General Medical Council.

DENTISTS' ASSISTANTS.

ALPHA.—A principal can employ an assistant under his own supervision, and charge for services rendered by him. But he cannot properly hand over patients to an unregistered assistant, for example, by leaving him in sole charge of a branch practice. The question has not, so far as we are aware, been raised with reference to a dentist; but the case of Davis *v.* Makuna decided with reference to unqualified medical assistants, would no doubt be followed. In the case of a dentist heard before the General Medical Council, the issue appeared to turn upon the nature of the services which the unqualified assistant rendered to patients and the extent to which these were *bonâ fide* under the supervision of his principal.

CONTRACTS NOT TO PRACTISE.

M. C. asks whether, having signed a bond not to practise in or within five miles of a certain town for a period of five years, he, having settled in a town ten miles away, would be breaking his bond by visiting in consultation with another practitioner in the town in question.

In reply, we may say that the answer will, of course, depend upon the strict interpretation given to the terms of the agreement, which is not before us. Unless the bond our correspondent has signed excepts consulting practice from its terms, it would be breaking the bond to meet another practitioner in consultation within the proscribed area.

NAMESAKES.

T. F. G.—Our correspondent, who has been in practice in a large health resort for some seventeen years, states that another practitioner of the same name settled there a few years ago, and that considerable confusion necessarily ensues. He asks if we can suggest any means by which this can be prevented. The only practicable means would be for one or the other (and we suppose the one to do it would be he who feels most injured by the present state of things) to change his name, or adopt a *prénom* of the Montmorency Smith or Fitz-Howard Jones style, and he would be perfectly justified in making public this change of name in the ordinary way, and by sending a circular to his personal friends and patients.

MEDICAL ADVERTISING.

PERPLEXED. The General Medical Council has never laid down any distinct rule upon the subject of advertising. More local knowledge than we possess is required to estimate properly the facts related to us, as it is certainly not uncommon for medical men who have scattered practices to hire a room for the purpose of seeing patients in certain distant villages and to put up a notice in the window of the cottage giving their hours of attendance, etc. Where there is no opposition nobody complains of this practice, which has its obvious convenience, but we can quite understand that if there is a resident medical practitioner he would object. We would suggest that the matter should be referred to the local Branch Council.

IRESPONSIBILITY OF EMPLOYERS OF INJURED WORKMAN.

S. B. states that last year a workman came to him suffering from a deep wound the result of the falling of an axe upon his arm. At the time of the accident he was working on a new building, and the axe had been carelessly left by another workman on the joist above the spot where the man was when the mishap occurred. The patient was in the employ of a subcontractor. He was accompanied to the surgery by the foreman of the contractor, and, in reply to our correspondent's inquiry as to who would pay his fee, the foreman said, "We will see you paid." The account was accordingly sent in to the firm, but no notice was taken of it; and, in reply to a letter from our correspondent, the firm replied as follows: "Yours to hand with account. Seeing our foreman used our name, we will see that you are paid; but we are trying to get something from the man's master, as we gave him £20 on the understanding that he paid you and everything else in connection with the accident." Our correspondent has heard nothing further since then, and asks whether he would have a good chance of recovering his fee against the firm in the county court.

*** As the firm of contractors expressly ratified the promise of their foreman, and stated that they would see our correspondent paid, we do not see what answer they would have if proceedings were instituted for recovery of the money. Our correspondent had better get his solicitor to make formal application for payment, which we do not think would then be delayed. Under the circumstances, "S. B." is not concerned with any arrangements made between the contractor and subcontractor.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

COCKLES AND TYPHOID FEVER.

A STATEMENT having recently appeared in the press that an outbreak of typhoid fever had occurred in Exeter which was said to be traceable to the consumption of cockles from Exmouth, we have made inquiries, and find that there is some truth in the statement, although the number of cases has been greatly exaggerated. The cases appear to have arisen through an Exmouth man having taken some cockles to Sidbury, near Sidmouth, as a present to some friends, these cockles being eaten by himself and four others, resulting in the man and two of his friends being attacked by typhoid. It may be mentioned that a great many of the poor people in this district eat cockles uncooked, using the shell as a spoon, and putting the whole into their mouths. There were nine cases in Exeter during July and August which were attributed to this cause; but after inquiry, and excluding those cases in which it was found that there was no evidence as to the date of consumption, etc., there remain four in which the evidence is strong. Some of the cockles are gathered from a shoal in the estuary of the Exe, near the outfall of a sewer which takes the storm water and some sewage from the lower parts of the town. This, we understand, will soon be remedied by a high level sewage system now in course of construction.

It should be remembered that Exeter itself, as well as many small towns and villages above and below turn their sewage into the river. Exeter will, we are informed, in a short time dispose of the whole of its sewage by the septic tank process. But at present, in addition to Exmouth, there is a population of some 40,000 or 60,000 turning its sewage into the river.

There would seem to be a disposition among some people in Exeter—if there is the slightest evidence that cockles have been partaken of raw or cooked—to attribute every case which occurs in the town to this cause, with a total disregard to the dates when the fish was eaten, and to the neglect of all other sources of infection, of which there is no scarcity in their district. The gathering and sale of cockles is not, as might be gathered from the statements made in certain papers, an important local industry at Exmouth. The trade is confined to a few boys—twelve or fifteen in number—each of whom under the most favourable circumstances of low spring tide, fine weather, and good luck, may gather a quarter of a bushel a day, making about four bushels for the whole gang. Of this quantity, nearly the whole is consumed in Exmouth, only a very small quantity going to Exeter.

It is somewhat remarkable in the face of this evidence that, with the exception of the case mentioned earlier, in spite of the most searching inquiry there has never been a case in Exmouth which could be even remotely associated with the consumption of cockles. It might have been expected that—as in other food epidemics—the greatest incidence of disease would be in the area where the largest quantity of the contaminated food was consumed. A far larger quantity of cockles is gathered and sent away from Shareross on the opposite side of the estuary and from Lympstone higher up than from Exmouth. It is scarcely fair, therefore, that Exmouth alone should be held up to public reprobation. The sanitary authority has co-operated with Exeter and has assisted by every means in its power to bring into force the provisions of the Rivers Pollution Prevention Act, and in deference to representations has taken and is still taking every possible means to prevent the sale of cockles. There is a difficulty in the adoption of legal means, as Sections cxvi and cxvii of the Public Health Act, 1876, scarcely provide for the situation, as under those sections it would be necessary to prove that each basket of cockles sold was unfit for human food, which would be difficult, if not impossible.

Exmouth has been greatly and undeservedly damaged as a health resort by the exaggerated reports disseminated by the public press and we are assured that the sanitary authority would only be too pleased to remedy the evil, which it is admitted exists but not to anything like the extent which is represented.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 9,500 births and 4,046 deaths were registered during the week ending Saturday last, September 15th. The annual rate of mortality in these towns, which had been 21.7 and 19.6 per 1,000 in the two preceding weeks further de-

clined last week to 18.2. The rates in the several towns ranged from 9.1 in Norwich, 10.7 in Cardiff, 11.1 in Bradford, and 11.4 in Halifax, to 23.2 in Liverpool, 23.7 in Swansea, 25.4 in Manchester and in Preston, and 26 8 in Sheffield. In the thirty-two provincial towns the mean death-rate was 19.1 per 1,000, and exceeded by 2.4 the rate recorded in London, which was 16.7 per 1,000. The zymotic death-rate in the thirty-three towns averaged 3.9 per 1,000; in London this death-rate was equal to 3.2 per 1,000, while it averaged 4.4 in the thirty-two provincial towns, among which the highest zymotic death-rates were 6.6 in Hull, 7.1 in Manchester, 8.3 in Leicester, and 9.6 in Preston. Scarlet fever caused a death-rate of 1.1 in Sunderland; whooping-cough of 1.2 in Croydon, 1.4 in Derby, and 2.4 in Gateshead; "fever" of 1.3 in Portsmouth and 2.5 in Sunderland; and diarrhœa of 4.0 in Swansea and in Burnley, 5.9 in Leicester, 6.0 in Manchester, 6.1 in Hull, and 8.3 in Preston. The mortality from measles showed no marked excess in any of the large towns. The 57 deaths from diphtheria in the thirty-three towns included 17 in London, 9 in Leicester, 6 in Bristol, and 5 in Salford. One fatal case of small-pox was registered last week in Liverpool, but not one in any other of the thirty-three towns; and only 3 small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last, September 15th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,702 and 1,736 at the end of the two preceding weeks, had further risen to 1,753 on Saturday last; 243 new cases were admitted during the week, against 140, 176, and 213 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, September 15th, 943 births and 584 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.9, 17.6, and 17.5 per 1,000 in the three preceding weeks, rose again last week to 18.9, and exceeded by 0.7 per 1.000 the mean-rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 15.2 in Leith and 15.8 in Dundee, to 22.3 in Greenock and 32.0 in Perth. The zymotic death-rate in these towns averaged 3.2 per 1,000, the highest rates being recorded in Paisley and Greenock. The 274 deaths registered in Glasgow included 1 from small-pox, 6 from scarlet fever, 16 from whooping cough, 1 from bubonic plague, and 21 from diarrhœa. Two fatal cases of diphtheria and 11 of diarrhœa were recorded in Edinburgh. Seven deaths from diarrhœa occurred in Dundee; 2 from diphtheria and 4 from diarrhœa in Aberdeen; 5 from diarrhœa in Leith; 2 from "fever" in Paisley; and 2 from whooping-cough, 2 from "fever," and 4 from diarrhœa in Greenock.

PUERPERAL FEVER.

A GENERAL PRACTITIONER writes: I quite agree with Dr. Berry Hart that "there is no need for the medical officer of health to visit the house when it has occurred unless the case be a midwife's one." There would not be so great an objection if all medical officers of health were prevented from taking part in private practice, as in large towns. Where I practise the medical officer of health is one of the general practitioners. A medical officer of health holding such a position is very likely to be biassed on being called to see a case of puerperal fever occurring in the practice of a fellow practitioner, and, although not intentionally, may let drop some remark which would damage the medical man attending the case. I think the nurse is responsible for most of the cases of puerperal fever which now occur. The other day I was called to a poor case; having made lotion, I asked for soap, and they had to send out and get some. The woman, who called herself a nurse, informed me she had examined two or three times and thought everything was all right; her hands were black; she had not even washed them, and she had used some filthy goosegrease as a lubricant. I gave the patient an intrauterine douche and nothing happened; if the case had gone wrong I should have got the blame. I do not think this is a rare occurrence, and the wonder is that we get so few cases of puerperal fever. When all these women are registered what will happen?

APPOINTMENT OF A LADY *LOCUM TENENS* FOR A DISPENSARY DOCTOR.

MRS. ISABEL THORNE (Nottingham Place, W.) writes: As one of the pioneers of the medical education of women I was much interested in Dr. Wiglesworth's remarks respecting the appointment of a lady *locum tenens* for the Cookstown Dispensary. I know nothing about the appointment beyond what has appeared in the BRITISH MEDICAL JOURNAL, but if it obliged men to consult a woman for medical aid I should strongly protest against it. Thirty years ago, when I first became connected with the movement, women were compelled to consult medical men whatever their ailments might be, and it was to remove this compulsion that the long struggle for the medical education of women was begun. I am, therefore, not surprised at the attitude taken up by Dr. Wiglesworth. The records of the New Hospital for Women in the Euston Road show how readily women avail themselves of treatment by fully-qualified medical women, especially in diseases peculiar to their sex, now that they can obtain it.

SEGREGATION OF LEPERS IN THE PHILIPPINES.—General MacArthur has convened a Board of Officers, of which Major L. M. Mans, surgeon, United States Army, is President, to select an island in the Philippine archipelago for the segregation of lepers, to prepare plans and estimates for suitable buildings thereon, and estimates of salaries for the necessary officials and employees. The Board is also charged with fixing the ration and other allowances for the support of this leper colony. This action was taken in view of the large number of lepers in the Philippines now under no restraint and a constant menace to the public health.

MEDICAL NEWS.

BLANE Gold Medals for medical officers of the Royal Navy have just been awarded to the undermentioned officers, namely, Staff-Surgeon James M. Rogers, F.R.C.S., H.M.S. *Terror*, and Surgeon Oswald Rees, R.M.L.I., Walmer.

DR. E. SYMES THOMPSON, the Gresham Professor of Medicine, will deliver a course of lectures on Diseases of Armies in the Field, at Gresham College, Basinghall Street, E.C., on October 2nd, 3rd, 4th, and 5th, at 6 P.M.

THE COLONY TREATMENT OF INEBRIATES IN FINLAND.—A colony for the treatment of male inebriates has been founded by Dr. Olderoge on the Island of Kuusari, in the Gulf of Finland, 6 kilometres from Kotka. The establishment provides accommodation for 25 patients.

UNIVERSITY OF BERLIN.—According to the official prospectus of the coming winter semester, the teaching staff of the Faculty of Medicine of the University of Berlin consists of 15 ordinary, 9 honorary, and 31 extraordinary professors, with 86 *Privat-docenten*.

CREMATION IN SPAIN.—A cremation society has recently been established in Spain. This method of disposing of the bodies of the dead is, it appears, still illegal in that country, though provision is made for it in the new sanitary law which has already received the approval of the Senate and has almost passed the Congress.

THE END OF THE POZZI-DEVILLERS DUEL.—The thrilling story of the recent duel between Dr. Pozzi, the eminent gynæcologist of Paris, and Dr. Devillers, was told at the time in the BRITISH MEDICAL JOURNAL. The incident has had a somewhat unheroic ending. Dr. Devillers was prosecuted for insulting Dr. Pozzi, who is a member of the French Senate, and has just been condemned to pay a fine of 3,000 francs.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—The autumn meeting of the Northern and Midland Division of the Medico-Psychological Association will take place at the Newcastle City Asylum, Gosforth, on Wednesday, October 3rd. Plans of the annexe to the Parkside Asylum, Macclesfield, will be shown and described by Dr. T. S. Sheldon. Dr. Callcott will show members round the asylum, and will afterwards entertain them at dinner.

BRITISH MEDICAL BENEVOLENT FUND.—At the September meeting of the Committee of Management seventeen urgent applications for help were considered, but the balance available for grants was only £88 2s. 7d. Dr. Swallow, of Clapham, was elected an honorary local secretary, and the Committee will greatly appreciate offers of help from members of the profession willing to accept this office. Four annuitants were elected to fill vacancies caused by deaths since the last meeting. It is hoped that friends of the Fund who have not yet done so will send in their subscriptions for the current year, and also endeavour to interest others in the work of the charity.

SIR GEORGE PHILIPSON was entertained at a dinner at Newcastle on September 14th by the Freemasons of Northumberland and Durham. The chair was occupied by the Right Hon. Sir Matthew White-Ridley, Provincial Grand Master, who, in giving the toast of the evening, said that no man was more worthy of honour at the hands of Freemasons or the medical profession than Sir George Philipson. All knew how much the Newcastle Royal Infirmary owed to him. In every walk of life he had endeared himself to all sections of the community. Sir George Philipson, who was enthusiastically cheered on rising to respond, said he was deeply sensible of the great kindness shown him, and expressed his thanks for the compliment, which he said would be a remembrance never to be effaced from his mind.

LANE MEDICAL LECTURES.—The fifth course of the Lane Medical Lectures, inaugurated in Cooper Medical College in 1896, has been given this year by Sir Michael Foster, K.C.B. The following were the subjects of the lectures: Vesalius, his Forerunners and Followers; the Beginning of Modern Physiology; Harvey and the Circulation of the Blood, the Lacteals and Lymphatics; Malpighi and the Physiology of Glands and

Tissues; Van Helmont and the Rise of Chemical Physiology; the Physiology of Sylvius and His Pupils; Digestion in the Seventeenth Century; the English School; The Physiology of Respiration in the Seventeenth Century; Priestley and Lavoisier; the Modern Doctrines of Respiration; Réaumur and Spallanzani; the Physiology of Digestion in the Eighteenth Century; Haller and the Physiology of the Nervous System.

EXHIBITION HONOURS.—In the list of those on whom honours have been conferred for services in connection with the Paris Exhibition there are several members of the medical profession. Professor Gariel is promoted to the grade of Commander, and Professor Berger, Professor Chamberland, of the Pasteur Institute, Dr. Regnard, of the Académie de Medécine, Dr. Doubre, of the Medical Service of the Exhibition, and Dr. A. J. Martin, member of the Consultative Committee of Hygiene, to that of Officer of the Legion of Honour. The following have been created Knights of the same Order: Professor Bergonié, of Bordeaux; M. Beurnier, Surgeon to the Paris Hospitals; Dr. R. Blondel, General Secretary of the Congress of the Medical Press; Dr. Chauffard, *Professeur Agrégé* of the Paris Faculty of Medicine; Dr. Daudieu; Dr. Frébault; Dr. R. Jamin, President of the Medical Syndicate of the Seine; Dr. Legrain, President of the French Anti-alcohol Union; Dr. Millon, Physician to the Dispensaries; Dr. Thibierge, Physician to the Paris Hospitals, and Dr. Weiss.

THE INTERNATIONAL CONGRESS OF PHARMACY.—The ninth International Congress of Pharmacy which was recently held in Paris passed a number of resolutions, some of which will doubtless be of interest to our readers. One was to the effect that a table should be drawn up displaying prominently the differences in composition of the principal active medicaments inscribed under the same name in the various Pharmacopœias, and that this table should be sent to the official commissions of different countries, with a circular inviting them in the drawing up of new Pharmacopœias to bear in mind as far as possible the resolution passed in favour of the unification of the formulæ of active galenical medicaments. Another was that pharmacists of different countries should at once take active steps to induce their respective Governments to accept the principle of unification of international medicaments. The question of the establishment of an international Pharmacopœia was discussed, and it was resolved that the Belgian Government, which was taking up the scheme, should call a conference at which the States more particularly interested, namely, Germany, Great Britain, Austria, Belgium, France, the United States, Italy, Russia, and Switzerland, should be represented by at least two delegates having an official mandate from their Governments. On the proposal of M. Jacob, the Congress passed a resolution that in all countries a knowledge of Latin should be required of all pharmaceutical candidates. It was also resolved that hygiene, deontology, and pharmaceutical law ought to form part of the instruction of pharmacists, and that their studies should be pursued in autonomous faculties, and be completed with the title of doctor.

MEDICAL VACANCIES.

The following vacancies are announced:

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—Resident Surgeon; unmarried. Salary, £80 for the first year, increasing to £110, with board and furnished apartments. Applications to the Secretary by October 22nd.

BANBURY: HORTON INFIRMARY.—House-Surgeon and Dispenser. Salary, £80 per annum, with board and lodging. Applications to the Honorary Secretary, 21, Marlborough Road, Banbury.

BIRKENHEAD BOROUGH HOSPITAL.—Honorary Surgeon. Applications, endorsed "Election of Honorary Medical Officer," to be sent to the Secretary by October 4th.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary, £150 per annum, with £30 allowance for cab hire and furnished rooms, etc. Applications to the Secretary by September 24th.

BIRMINGHAM GENERAL HOSPITAL.—House-Surgeon. Appointment for six months. No salary, but residence, board, and washing provided. Applications to the House Governor by September 29th.

BOURNEMOUTH: ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board. Applications to the Chairman of Committee by October 1st.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary, £180 per annum with board and residence. Applications endorsed "Dispensary Surgeon" to the Secretary by September 25th.

BRIGHTON: ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House-Surgeon for twelve months. Salary £80, with board, lodging, and washing. No stimulants. Applications to the Chairman of the Medical Committee, by September 29th.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £80 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant House-Surgeon," to the Secretary.

CHESTER: COUNTY ASYLUM.—Junior Assistant Medical Officer; unmarried and not more than 30 years of age. Salary £130 per annum, increasing to £160, with board, lodging, and washing. Applications to Dr. Lawrence at the Asylum by October 11th.

DEVONPORT ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon for six months. Salary at the rate of £40 per annum. Applications to the Chairman of the Medical Committee by September 27th.

DOUGLAS: NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon; unmarried. Salary, £72 per annum, with board and washing. (Is usually appointed Medical Attendant of the House of Industry at a salary of £10 per year.) Applications to the Honorary Secretary, 25, Athol Street, Douglas, by October 9th.

DOWNPATRICK: DOWN COUNTY ASYLUM.—Assistant Medical Officer; unmarried and not exceeding 32 years of age. Salary, £100 per annum, with furnished apartments, board, washing, and attendance. Applications to the Resident Medical Officer by October 6th.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £40 per annum, with residence, board, and washing. Applications to the Secretary by October 4th.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary, £140 rising to £160 per annum, with board, laundry, and attendance. Applications to the Medical Superintendent.

EAST SUSSEX COUNTY ASYLUM, Hayward's Heath.—Second Assistant Medical Officer and Pathologist, unmarried. Salary, £175 per annum, with board, lodging, and washing. Applications to the Medical Superintendent by September 25th.

FRENCH HOSPITAL AND DISPENSARY, London.—Resident Medical Officer; unmarried. Salary, £80 per annum, with full board. Applications to the Secretary, 172, Shaftesbury Avenue, W.C.

GLASGOW EYE INFIRMARY.—Resident Assistant House-Surgeon. Salary £50, with apartments and board. Applications to the Secretary, 88, West Regent Street, Glasgow, by September 28th.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Appointments for six months. Honorarium £25. Applications to the Secretary by September 27th.

HOSPITAL FOR WOMEN, Soho Square, W.—House-Physician. Appointment for six months. Salary, £30. Applications to the Secretary by September 29th.

HULL: VICTORIA CHILDREN'S HOSPITAL, Park Street.—Lady House-Surgeon. Salary, £50 per annum, with board and laundry. Applications to the Honorary Secretaries by October 3rd.

KENT AND CANTERBURY HOSPITAL.—House-Surgeon: unmarried. Salary, £100 a year, with board and lodging. Applications to the Secretary by October 15th.

LANCASTER COUNTY ASYLUM.—Assistant Medical Officer. Salary commencing at £125 per annum, with usual allowances. Applications to the Medical Superintendent.

LEEDS UNION.—Assistant Medical Officer for the Workhouse, Schools, and Infirmary; unmarried and not above 35 years of age. Salary, £130 per annum, rising to £150, with board, washing, apartments, and attendance. Applications, endorsed "Assistant Medical Officer," to be sent to the Secretary, Poor Law Offices, East Parade, Leeds, by September 25th.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum, with board, residence, and maintenance. Applications to the Chairman by September 26th.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle Street.—(1) House-Surgeon. Salary, £85 per annum. (2) Assistant House-Surgeon. Appointment for six months. Salary, £25. Board and lodging provided in each case. Applications to the Honorary Secretary by September 26th.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £80 per annum, with apartments and board. Applications to Mr. H. Teague, Secretary, 38, Barton Arcade, Manchester, by September 28th.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for the In-Patient Department, Bowdon. Salary, £60 per annum, with board, apartments, and washing. Applications to the Secretary before October 8th.

MIDDLESBROUGH: NORTH ORMESBY COTTAGE HOSPITAL.—House-Surgeon: unmarried; non-resident. Salary £200 per annum. Applications to the Secretary, Mr. R. T. Milner, Royal Exchange, Middlesbrough, by October 3rd.

NEW HOSPITAL FOR WOMEN, Euston Road, N.W.—Three Qualified Women as Assistants to Out-patient Department. Applications to the Secretary by September 26th.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board and residence (no stimulants). Applications to the Secretary by September 24th.

NORTH SHIELDS AND TYNEMOUTH DISPENSARY.—House-Surgeon and Dispenser. Salary, £150 per annum, with an allowance of £20 towards house, etc. Applications to the Honorary Secretary, 99, Howard Street, North Shields, by September 24th.

NORTH STAFFORDSHIRE INFIRMARY, Hartshill, Stoke-upon-Trent.—House Physician. Salary £100 per annum, increasing £10 per annum at the discretion of the Committee, with furnished apartments, board, and washing. Applications to the Secretary by October 1st.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £200 per annum. All found except board. Applications to the Secretary.

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Resident Physician. Salary, £12 per annum, with board, washing, and attendance. Applications to the Clerk to the Local Authority, Municipal Buildings, Paisley, by September 24th.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Gynæcologist. Applications to the Secretary.

PLYMOUTH BOROUGH ASYLUM, Blackadon.—Assistant Medical Officer, unmarried. Salary, £150 per annum, increasing to £200, with furnished apartments, board, and washing. Applications, endorsed "Assistant Medical Officer," to Dr. W. H. Bowes Superintendent, by October 1st.

RAINHILL: COUNTY ASYLUM.—Assistant Medical Officer, unmarried, and [illegible] than 30 years of age. Salary, £125 per annum, increasing to £250, with [illegible] apartments, board, attendance, and washing. Applications to the Medical Superintendent by September 25th.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—(1) House-Physician; (2) Resident Medical Officer. Appointments for six months, but renewable. Salaries at the rate of £40 and £60 per annum [illegible] board apartments [illegible] Applications to the Secretary by September 24th.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone Road, N.W.—Physician to the Out-Patients' Department. Applications to the Secretary by October 13th.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT) Greenwich.—House-Surgeon. Salary, £50 per annum, with board, residence, and washing. Applications to the Secretary by October 1st.

SHOREDITCH: PARISH OF ST. LEONARD.—Second Assistant Medical Officer at the Infirmary, Hoxton Street, N. Appointment in first instance for six months. Salary £80 per annum, with rations, washing, and [illegible] forms provided, to be sent to the Clerk to the Guardians, [illegible] by October 1st.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Appointment for [illegible] Honorary [illegible] Infirmary Office, 24, King Street, Southport, by [illegible]

STOURBRIDGE DISPENSARY.—House-Surgeon and Secretary. Salary, £120 [illegible]

WEST [illegible] House-Physician [illegible] ing provided. Apply [illegible]

WEST[illegible] and Street, Soho.—Dispenser. [illegible] Secretary by September 24th.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon; unmarried. Salary, £100 per annum, with board and residence. Applications to the Honorary Secretary by September 29th.

WOOLWICH UNION.—Resident Assistant Medical Officer at the Infirmary, Plumstead, unmarried, and not more than 30 years of age. Salary, £120 per annum, increasing to £150, with apartments, rations, and washing. Applications to the Clerk to the Board, Union Offices, Woolwich, by September 27th.

MEDICAL APPOINTMENTS.

BELLI, R., M.D., Ch.D., appointed Government Medical Officer and Vaccinator at Walgett, New South Wales.

BLAKE, S. R., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the No. 4 District of the West Ham Union.

BURKITT, G. O. E., L.R.C.P., L.R.C.S.Irl., appointed Honorary Surgeon to the Ear and Throat Department of the Perth Public Hospital, Australia.

CLARKE, W. J., M.R.C.S.Eng., appointed Medical Officer for the Second District of the Newbury Union, *vice* M. H. O. Palmer, M.R.C.S., L.R.C.P.Lond., resigned.

CRAKE, H. M., M.B., Ch.B Vict., reappointed Special Assistant Health Officer, Calcutta, on plague duty, for a further term of one year.

DAVIES, Frederick W. S., M.R.C.S.Eng., L.R.C.P.Lond., appointed Honorary Anæsthetist to the Cardiff Infirmary.

DODD, Noel, L.R.C.P. & S.Edin., appointed Junior Assistant House-Surgeon to the Stockport Infirmary.

FINEMORE, Jas. Harman, L.R.C.P.Edin., L.S.A., appointed Medical Officer at Boonah, Queensland.

HOGGAN, Bertram B., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., appointed Health Officer for the Shire of Meredith, Victoria.

HOUSE, Frederick M., M.R.C.S.Eng., L.R.C.P.Lond., appointed Health Officer to the Beverley Local Board of Health, West Australia.

HOWELLS, John, M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the St. Osyth District of the Tendring Union, *vice* W. C. Steele, M.B., C.M.Glas., resigned.

MACDONALD, George B. D., M.B., Ch.M.Aberd., appointed Health Officer for the Shire of Waranga, Eastern Riding, Victoria.

PEARCE, D. A. Channing, M.D.Lond., B.S., M.R.C.S., appointed Medical Officer and Public Vaccinator for the Chartham District of the Bridge Union.

PEARCE, Geo Harper, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glas., reappointed Medical Officer of Health by the Dartford Urban District Council.

PRATT, Eldon, M.D.Lond., appointed Honorary Anæsthetist to the Cardiff Infirmary.

RENDLE, Richard, F.R.C.S., appointed Health Officer at Normanton, Queensland.

ROBSON, T. S., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the St. Osyth District of the Tendring Union, *vice* W. C. Steele, M.B., C.M.Glas., resigned.

SOUTHAM, F. A., M.S., F.R.C.S., appointed Honorary Surgeon to the Manchester Cancer Pavilion and Home.

THORMAN, W. H., B.A.Cantab., M.R.C.S., L.R.C.P., appointed Medical Officer and Public Vaccinator for the Kirkburton District of the Huddersfield Union, *vice* W. P. T. Daniel, M.R.C.S., L.R.C.P.Lond., resigned.

TURNER, G. G., M.B., B.S., M.R.C.S., L.R.C.P., appointed Surgical Registrar to the Royal Infirmary, Newcastle-on-Tyne, *vice* J. D. Wardale, M.B., B.S.Durh., resigned.

WILLIAMS, Mrs. Mary Hamilton, M.B., B.S.Lond., D.P.H.Cantab., appointed Special Service Medical Officer to the Gambia, 1900, under Colonial Office Special Service Medical Officer on the Staff of the Ashanti Expeditionary Force.

WILLIS, C. S., M.B., appointed Government Medical Officer at Wyalong, New South Wales.

WOOD, C. G. Russ, M.R.C.S.Eng., L.R.C.P.Lond., appointed Surgeon to the Eye, Ear, and Throat Hospital for Shropshire and Wales, Shrewsbury, *vice* W. Charnley, M.D., deceased.

WRIGHT, G. A., M.B., F.R.C.S., appointed Honorary Surgeon to the Manchester Cancer Pavilion and Home.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. W. Anderson: Consultation. (Skin.)

TUESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. C. T. Williams: Consultation. (Medical.)

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 5 P.M.—Dr. A. E. Sansom: Clinical Lecture.

THURSDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., tion. (Surgical.) 3 P.M.—Dr. Harrison Low: Class. Practical Application of Roentgen Rays. (Demonstration I.) 4 P.M.—Mr. J. Hutchinson: Consulta-

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. St. Clair Thomson. Consultation. (Nose and Throat.)

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

CHURCHOUSE.—On September 12th, at Long Buckby, Rugby, the wife of W. J. Franklin Churchman, L.R.C.P.Edin., etc., of a son.

MARRIAGES.

GODSON—MAYALL.—On September 13th, at St. Thomas's Church, Werneth, Oldham, by the Rev. John Godson, M.A., Vicar of Ashby Folville and Rural Dean, uncle of the bridegroom, and the Rev. Canon Bowntree, M.A., Vicar, Alfred Henry Godson, B.A., M.B., B.C.Cantab, F.R.C.S.Eng., eldest son of Alfred Godson, M.A., M.B., and M.C.Cantab., J.P. of Cheadle House, Cheadle, Cheshire, to Mary Elizabeth, youngest daughter of the late Samuel Mayall, J.P., of Springside, Lees, and of Mrs. Mayall, 61, Werneth Hall Road. At home, 63, Union Street West, October 16th, 17th, and 18th.

HINTON—LINGEN BURTON.—On Tuesday, September 11th, at St. Eata's, Atcham, Shropshire, by Rev. A. G. Burton, Vicar of the Parish, Hammond Tooke Hinton, M.B., C.M., youngest son of Joseph Hinton, M.R.C.S., L.S.A., of Heytesbury, Wilts, to Constance, third daughter of the late Robert E. Lingen-Burton, of Shrawardine Castle, Shropshire, and Mrs. E. E. L. Burton, of Selwyn House, Shrewsbury.

DEATH.

JARDINE.—At Lilybank, Bantyre Ferme, Uddingston, on the 8th inst., James Jardine, M.B., M.D.P.H., late of Heywood, Lancashire, in his 49th year.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Roentgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, i.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, i.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, i.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, i.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Tu. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, i.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, i.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, i.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2, Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 3; Th., 2.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 9; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, W. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; i.-p., Tu. Th., 2.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9; Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; i.p., 1; o.p., 12; Obstetric, i.p., Tu. F. 1.45; o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu., F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—I.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

WE would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided.

T. asks to be recommended a good gas stove for the waiting-room. He has no fireplace, and his desire is to get a stove that is odourless.

INQUIRER asks for experiences of the motor driven by gas (coal) made by Dunkleys, Birmingham.

FAR AWAY asks for experience regarding the use of luminous paint for a "night bell," where it can be obtained, cost, and if easily renewed.

POCKET SPITTOONS.

DR. RICHARD PURDON (Belfast) asks information as to the best form of pocket spittoon. For some time, he adds, I have been using Detweiler's flask and a modification of the same, but I find the screw on the bottom is very hard to keep water-tight, and allows fluid to escape into the pocket. Some sorts without the bottom screw seem to me hard to clean in a thorough aseptic manner.

*** The pocket spittoon sold by Mr. Martindale (10, New Cavendish Street, W.) would seem to meet the requirements. It was illustrated in the BRITISH MEDICAL JOURNAL of August 4th, p. 332.

TREATMENT OF RINGWORM.

TINEA asks whether any reader can suggest a remedy with any hope of certainty for ringworm of the scalp in young children. I have (he writes) tried the following, amongst other things, with no result to speak of: Ung. hydrarg. ammon., hydrarg. perchlor., varying strengths; hydrarg. perchlor. in acid. acet. 1 in 100; carbolic acid, varying strengths; formalin ditto; salicylic acid, sulphur. præcip.; chrysarobin (Unna's method) persevered in for four months; lin. iodi and tinct. iodi. ichthyol., boric acid, etc. These have been tried in a most painstaking and careful manner, but in spite of it all the old patches remain as far from cure as ever, and fresh ones keep cropping up. The fungus is the small-spored one. Epilation, scrubbing with ethereal and other solutions of antiseptics have also been tried, and the disease has now been running on for about thirteen months.

ANSWERS.

MRS. C. T.—(1) The Editor cannot give medical advice. (2) A sanitary expert should be consulted.

EUAN.—*Public Health Laboratory Work*, by Dr. H. R. Kenwood, 2nd edition (London: H. K. Lewis, 1890, 10s. 6d.) will be found a suitable book. It contains particulars of the chemical work required from those presenting themselves for examination for a D.P.H.

DR. MEREDITH YOUNG, M.O.H. (Public Health Department, Stockport), writes: "Bacteriologist" will find some interesting matter relating to the part played by germs in the destruction of the body after death in last report of the Principal Medical Officer to the Local Government Board, published by Messrs. Eyre and Spottiswoode. The article in question is by Dr. Klein.

BICUSPID.—(1) The names of dentists qualified to practise can be ascertained by reference to the *Dentists Register*. (2) We would refer our correspondent to the answer to a similar query, which appeared in the BRITISH MEDICAL JOURNAL of September 8th, 1900, page 704, headed "Certifying Surgeons under the Factory Acts."

LIGHT.—Our correspondent will probably find the information which he requires in the report of a committee of the Society of Arts on the Exhibition of Acetylene Generators at the Imperial Institute a couple of years ago, which was published last year, and can, we believe, be obtained from Mr. William Trounce, 10, Gough Square, London, E.C., price one shilling.

A CASE FOR DIAGNOSIS.

DR. H. OPPENHEIMER (South Hampstead) writes: "Puzzled's" case, published in the BRITISH MEDICAL JOURNAL, Sept. 15th, p. 787, appears to me suspicious of empyema of the antrum or other accessory nasal cavity.

WORKS ON PLAGUE.

M.B. writes: Dr. J. Reynolds, Brixton Hill, S.W., will find an excellent account of the bubonic plague, as it occurred at Hong Kong in 1893 in epidemic form, in the Army Medical Department Report for the year 1893, page 330.

HEAT SPOTS.

M. D. suggests to C. O. the use of ung. acid. carbol. weakened with adeps, and the internal administration of pot. brom. and sodii bicarb. in mixture. Benger's food is worth a trial, with peptonised milk as an alternative.

HOW TO KEEP THE HANDS CLEAN.

DR. H. OPPENHEIMER (South Hampstead) writes: "Epidermis" might find the addition of a good proportion of glycerine to the water advantageous. I should also recommend him to rub the following ointment well into the skin at bedtime: R Acid. salicylici, vilj gr.; sulphur præcipitat., xxv gr.; lanolin, glycerin, ā℥ss.

UNCTOR writes: The condition described is probably a mild eczema. It requires a soothing treatment; anything irritating makes it worse. Soap should be used as little as possible. Soft water is preferable to hard, but the hands should not be washed often. Olive oil applied at bedtime with gloves worn at night, will soon improve matters. Glycerine diluted with an equal bulk of water may be applied through the day: a few drops at a time, not enough to moisten the skin.

B.S. LOND.

EXAMINER.—We do not think our correspondent could improve on the works he mentions. Tilmann's *System of Surgery* (Kimpton 63s.) might be used as a book of reference, and monographs such as Jacobson's *Operations of Surgery* (Churchill, 34s.), Treves on *Intestinal Obstruction*, and H. Morris on the *Surgery of the Kidney* should also be read. Our correspondent might perhaps get assistance of the kind he requires at Cooke's Medical School, London.

SALARY OF MEDICAL OFFICERS OF FEVER HOSPITALS.

N.—The payment of medical officers to infectious hospitals varies very much, and we are not aware of any practice sufficiently general to be called "usual." The officer is very commonly the medical officer of health, and often the duties are included in his salary, without defining what proportion of such salary is allowed on account of the fever hospital work. Where a separate amount is paid in respect of the work the amount given is of course dependent on the size of the hospital. With a small hospital, of 20 beds or under, £50 per annum is a sum often allowed, but £250, or even more, is paid for medical attendance on the large hospitals of 100 beds or over.

AIX LES BAINS.

B. L. M. writes: In reply to "B. G.": (1) Treatment is carried on throughout the year, but the season (places of amusement and visitors) cease by the end of October. Baths are free to medical men, and half price to their families with them. Casino and *cercle* (not theatre) free to medical men and families. The English doctor leaves about October 15th. Bathers who have to be carried home pay from 1.50 to 2f. according to distance. They should buy their "peignoirs" themselves before starting their baths, otherwise the hotel servants will provide second-hand ones at over first-hand prices. (2) The Hôtel Britannique is close to the baths and has at present the most English visitors.

ANTISEPTIC VACCINATION.

DR. HENRY LISTON (Medical Officer and Public Vaccinator, No. 4 District, Sunderland) writes: In reply to "Didymus" in the BRITISH MEDICAL JOURNAL for September 8th, my routine proceeding is as follows: On visiting a case to be vaccinated I first wash the arm with a piece of absorbent eucalyptus wool moistened with a saturated solution of acid boric. I then dry the arm with another piece of eucalyptus wool. Then I apply the lymph and make small scratches with a modified "Cooper Rose" needle point. Instead of the sliding arrangement, whereby the needles are exposed or covered. I use needles in a fixed case. These cases I can screw into a common handle, so that I can use a separate set of needles for each arm. The needles are easily sterilised, either in flame from a spirit lamp at the time or when at home by boiling in a test tube. After vaccinating I apply a piece of "provac," and direct it to be kept on as long as possible. That day week on visiting the case, if the pocks have taken, I put on a dressing of carbolated vaseline (from a collapsible tube) on a piece of lint, and direct the mother to put on a similar dressing of vaseline or cold cream night and morning.

WINTER RESORT FOR CHRONIC PHTHISIS.

B. writes: In answer to "Member" regarding a winter resort for chronic phthisis with flabby heart and albuminuria, etc., I see Aberdovey has been suggested, and beg to enclose meteorological report for winter months, 1899; time, 8 A.M.:

Date.	Air Temperature. Maximum.	Minimum	Mean.	Rain.	Bright Sunshine.
1899.	Deg.	Deg.	Deg.	Inches.	Hours.
January ...	48	44	46.0	4.39	55.8
February ..	49	41	46.5	1.63	118.2
March ...	45	41	43.0	1.75	191.9
October	54	50	52.0	3.45	153.9
November ..	53	49	51.0	1.92	49.6
December ..	43	39	41.0	2.66	69.2

I have seen phthisical patients such as described benefit a good deal by a few months' residence in Aberdovey. The place faces S.W., looking on Cardigan Bay and is on the estuary of the River Dovey. It is splendidly sheltered from the north, and to a very great extent from the east. Living during the winter months would not be very expensive. The ground dries up very quickly after rain. What may be a drawback to some ought to be mentioned, and that is that there is practically no social life in the place. It is a very quiet little town, and the main interest, apart from the grand scenery, is the daily life of the working people, shipping, etc. The open-air method of treatment can be well enough carried out here in some of the houses.

DR. D. LIVINGSTONE DAVIES (Criccieth, North Wales) writes: I would beg to suggest that "Member's" patient should give the rising health resort of Criccieth a trial. As Barmouth is one of the places suggested, I may point out that Criccieth is only 24 miles distant on the coast line of Cardigan Bay. An official guide, price 2d., to Criccieth can be obtained from Messrs. Gibson, Terrace Road, Aberystwith.

NOTES, LETTERS, ETC.

ERRATUM.—In the query from "Zephyr" published on August 18th, 1900, p. 467, the word "toxicity" in the twenty-first line should read "tonicity."

FATAL RESULTS FROM STINGS BY INSECTS.

QUIBBLE suggests that the writer of the note, p. 679, on "Stings by Insects" should allow a wasp to sting him; he will observe that there is no need to "at once remove the stieg."

OBJECTIONABLE CIRCULARS.

A CORRESPONDENT writes to protest against the circulation by the post of such pamphlets as that on Vaginitis, Yarrow's Pinus, Suppositories and Aletris Cordial, all of which emanate from the same address. He asks whether nothing can be done to stop this, and whether it would not be possible at least to restrain those registered medical practitioners whose testimonials are printed thereon? We have received many protests of the same kind and have repeatedly drawn attention to the matter. What further steps we can take to stop the nuisance is a matter for consideration, and we shall be glad to receive additional copies of these pamphlets from those of our readers who possess them.

ALVARENGA PRIZES.

THE President of the Hufeland Society has, on the recommendation of the German Balneological Society, proposed the following as the subjects of essays for two Alvarenga prizes, each of the value of 800 marks (£40): (1) The influence of the saline contents of drinking wells on the constitution of the blood; (2) the influence on the vascular tonus, and the rapidity of the blood stream of thermic and mechanical stimuli. Essays, which may be written in German, English, or French, are to be sent by March 1st, 1901 to the President, Professor Oscar Liebreich, Neustadtische Kirchstrasse, 9, Berlin, N.W. Each essay must be authenticated with a motto, the name of the author being sent in a sealed envelope. The decision of the judges will be announced on July 14th, 1901.

DIPLOMAS AND APPOINTMENTS.

M.D., F.R.C.S.ED. writes: I note your advice to students to take a university degree. I myself went to that labour and expense, and also took the Fellowship in Surgery of the Edinburgh College, and yet after many years' experience as a hospital surgeon I am told that I am not eligible for a post at a small provincial town hospital because I am not also M.R.C.S. What, therefore, is the good of taking the highest diplomas? In fact with these degrees and twelve years' hospital appointments in the speciality advertised, I am ineligible because I am not a "M.R.C.S."

*** The fault appears to lie in the rules of the hospital.

VOICE TERMINOLOGY.

MR. LENNOX BROWNE (Mansfield Street, W.) writes: I observe that one of the speakers in the discussion on Dr. Aikin's paper at Ipswich, entitled the Vocal Resonator (BRITISH MEDICAL JOURNAL, p 648) questioned the precision of the terms "falsetto," "head," and "chest" register. Allow me to remark that in my demonstration at the meeting of the British Medical Association at Liverpool in 1883, I described the registers in the terms adopted by Curwen of "thick," "thin," and "small," and I stated that the scientific accuracy of these terms could—in the first two instances—be demonstrated by means of transmitted light, and the third by the laryngoscope. The nature of "falsetto" was also considered. Those interested in the subject may be referred to the original paper (BRITISH MEDICAL JOURNAL, 1883, ii, p. 811).

SUMMER DIARRHŒA.

DR. THEODORE FISHER (Clifton, Bristol) writes: The remarks of Dr. Todd-White upon the association of outbreaks of diarrhœa in children with a rapid fall of temperature will probably be acknowledged to be true by most observers. Dr. Eustace Smith says "The rapid alternations of temperature which are so often met with during an English summer are almost always followed by an outbreak of diarrhœa amongst the children" (*System of Medicine*, Clifford Allbutt, vol. iii, p. 747). While, however, recognised medical authorities and all practitioners of experience may agree that a fall of temperature frequently plays an important part in the etiology of infantile diarrhœa, few probably will go so far as Dr. Todd-White, and look upon micro-organisms as "fearful and wonderful causes," the fearful character of which exists only in the minds of misguided "members of the profession." It must frequently be obvious to careful clinical observers that this disease of children is a septicæmia, of which the diarrhœa is only a symptom. For example, in some cases in which the diarrhœa has been slight and of short duration, the child fails to improve after the cessation of the diarrhœa, and finally succumbs. After death such definite proof of septicæmia may sometimes be found as the existence of extensive thrombosis in which micro-organisms, chiefly streptococci, may be present. I have met with thrombosis of the renal vein, in the right auricle and right ventricle, and of the choroid plexuses. From two of these cultures streptococci were obtained.

CAPTAIN W. D. SUTHERLAND, M.B., I.M.S., writes: It was with the feeling of pleasure which one experiences when meeting an old friend that I read Mr. Todd-White's letters in the BRITISH MEDICAL JOURNAL of August 11th and September 8th. He holds that "chill" is the *causa causans* of diarrhœa, and considers that this explanation is "as plain as a pikestaff." It is certainly simple, and for that reason has been for very many years the explanation given by the older writers on tropical diseases. To their works I would refer Mr. Todd-White, for he will find their definitions of "chill" to be surprisingly like his own. To them, as to him apparently, the word "chill" was even as that blessed word Mesopotamia. Certainly Mr. Todd White has had the advantage of being able to extract from Major Buchanan's paper, which appeared in the JOURNAL of September 1st, facts to fit his explanations, but I regret to say that some other facts occur to me which seem to negative the correctness of the "chill" theory.

In the tropics—in India at least—there is a daily fall of temperature as soon as the sun goes down, and this—after the tropical heat which has prevailed from 9 A.M. to 4 P.M.—would appear to be that fall which, according to Mr. Todd White and the others, does the mischief. If this theory were the right one, "India's teeming millions" would be in a parlous state. But I conceive that it might be objected that, since this fall of temperature is a daily event, there becomes established a balance of the organism which tends to protect the alimentary canal from the pernicious effects of chill. This objection sounds well, I confess, but does not seem to meet the facts: (1) That newcomers do not of necessity suffer during their first week in India; and (2) that the diarrhœa which Major Buchanan describes occurs in the hot weather, when there is also a daily fall of temperature which would tend to establish a balance, etc.

Should the objection be raised that it is the great heat of the hot weather which weakens the organism so that it is more prone to be affected by the daily fall of temperature or by a sudden fall—such as occurs when a cyclone blows—this can be met by the statement that diarrhœa has not yet been noted to be a concomitant phenomenon of the onset of the monsoon. In the plains of India one is by no means at one's fittest at the end of the hot weather—after 100° to 112° F. in the shade and anything above that in the sun—at midday. One's daily allowance of fluid may be 9 to 12 fourteen-ounce bottles of soda water, and this is suddenly curtailed, for "the rains break," and in half an hour the whole conditions of life are changed. Surely this is enough to cause "chill" and all its dire effects, as described by Mr. Todd-White. As to his explanation of the discharge from the bowels being the result of a superabundance of water there, it is at least as conceivable that it is the result of the endeavour to wash away the bacteria; and the explanation of albuminuria does not seem to apply to the albuminuria which one finds when the kidneys are obviously doing very little work, as in cholera nostras.

The question as the possibility of an uncooked supper being a by no means uncommon thing in an Indian gaol would not have been asked, I believe, had Mr. Todd-White had an elementary knowledge of the Indian gaols and their management. It does not, therefore, appear to require an answer.

DRINKING URINE.

DR. WM. CRAIG (Bingley, Yorkshire) writes: The correspondence on "drinking urine" reminds me of a common practice in this neighbourbourhood. It is that of wiping a baby's tongue and lips with its wet napkin in order to "kill the thrush."

LETTERS, COMMUNICATIONS, ETC., have been received from

A A. R. E.; Mr. A. H. Allen, Sheffield. **B** Mr. L. Browne, London; Mr. O. Bowen, Liverpool; Dr. E. B. Bowen, Barry Dock; Bicuspid; B.; Barbatus; B.B.B.; Brisbane; B.S.M.; Mr. T. J. Bokenham, London; Mr. C. Brown, Plymouth. **C** Dr. B. Clarke, London; Dr. J. Calvert, London; Dr. H. Corner, Southgate; Miss J. Cock, M.D., London; Mr. L. V. Cargill, Deelfontein; Dr. H. E. L. Canney, London; Dr. C. Clapham, Rotherham; Dr. W. Collier Oxford; Dr. J. W. Craig, Binley. **D** Messrs. Doulton and Co., London; Mr. D. L. Davies, Criccieth; Dr. L. G. Davies, Pelsall. **E** Mr. J. Ellerton Leamington; Mr. O. Eaton, Exmouth; Mr. G. S. Elliston, Ipswich; Mr. J. F. Elliott, Tongaat, Natal; Experience. **F** Far Away; G. W. Farmer, M.B., Oxford; F.R.C.S.; Dr. T. Fisher, Clifton. **G** Mr. T. F. Gardner, Bournemouth; Mr. T. L. Gaskin, Barbadoes; Dr. A. S. Grunbaum, Cologne; General Practitioner; Dr. J. Galloway, London. **H** Hands; Hygiene; Dr. W. E. Hadden, Portadown; Mr. R. M. Hugo, Purley. **I** Inquirer; Dr. FitzGerald Isdell, London. **J** Mr. G. Jackson, Plymouth. **K** Mr. J. B. Kenny, Killeshandra. **L** Light; Dr. P. G. Lewis, Folkestone; Mr. H. A. Lee, London; Mr. H. Liston, Sunderland. **M** Sir W. MacCormac, Bart., London; Mr. J. H. Mummery, London; G. V. Miller, M.B., Stockton-on-Tees; Mr. H. W. Mott, Chester; M.D.; Dr. C. J. Moore, Walthamstow; A. Murchison, M.B., Uig; M.D., F.R.C.S.E.; Dr. A. S. Myrtle, Harrogate; Militia; M.B.; M.B.Cantab. **N** N.O.; Mr. A. D. Nicholson, London. **P** Mr. W. G. Proudfoot, London; Pontoon; Mr. R. S. Pengelly, London; Mr. F. E. Pirkis, Nutfield; Dr. R. Purdon, Belfast; Dr. E. Phillips, Coventry. **R** Dr. E. Rice, Abingdon; Dr. C. M. Rogerson, Huddersfield; Mr. T. F. Raven, Broadstairs; R.A.M.C.; Mr. G. Russell, London; W. R. Rice, M.B., Coventry; Retired. **S** Mr. T. F. H. Smith, Farningham; Mr. M. Style, Moreton-in-Marsh; S.B.; Messrs. Southall Bros and Barclay, Birmingham; S. E. T.; Sticker for Medical Rights; Mr. N. E. Sargant, London. **T** Mr. H. E. Taylor, Bradford; Mrs. Tennant, Cambridge. **U** Unctor. **W** Dr. F. J. Waldo, London; Dr. B. C. A. Windle, Birmingham; Mr. W. R. Williams, Clifton; Dr. A. McC. Weir, East Sheen; W. M.; Wivenhoe; Mr. R. H. Wolstenholme, Salford; Mr. F. F. White, Coventry. **X** X.Y.Z. **Y** Dr. M. Young, Stockport. **Z** Zephyr.

BOOKS, ETC., RECEIVED.

Die Krankheiten der warmen Länder. Von Dr B Scheube. Zweite Auflage. Jena: Gustav Fischer. 1900. M 17.

The Theory and Practice of Hygiene (Notter and Firth). By J. Lane Notter, M.A., M.D., and W. H. Horrocks, M.B., B.Sc. Second Edition. London: J. and A. Churchill. 1900. 25s.

Uric Acid as a Factor in the Causation of Disease. By A. Haig, M.A., M.D., F.R.C.P. Fifth Edition. London: J. and A. Churchill. 1900. 14s.

Surgical Pathology and Morbid Anatomy. By A. A. Bowlby, F.R.C.S. London: J. and A. Churchill. 1900. 10s. 6d.

Manual of the Diseases of the Eye. By C. H. May, M.D. London: Baillière, Tindall and Cox. 1900. 8s. 6d.

Food and Drugs. By C. J. Higginson, LL.B. London: Effingham Wilson. 1900. 2s. 6d.

Orthopædic Surgery. By C. B. Keetley, F.R.C.S. London: Smith, Elder and Co. 1900. 16s.

*** In forwarding books the publishers are requested to state the selling price.

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SIXTY-EIGHTH ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION.

Held at IPSWICH, July 31st, August 1st, 2nd, and 3rd, 1900.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICINE.

THOMAS BUZZARD, M.D., President.

A DISCUSSION ON INFLUENZA AS IT AFFECTS THE NERVOUS SYSTEM.

I.—JUDSON S. BURY, M.D.Lond., F.R.C.P.,
Physician to the Manchester Royal Infirmary.

INFLUENZA presents a greater variety in its symptoms than perhaps any other disease. The symptoms vary greatly not only in different epidemics but in different persons during the same epidemic. So great is the variation in different cases both as regards the grouping of symptoms and as regards their individual intensity that it is difficult to form an accurate conception as to what should be regarded as an ordinary or type case. In one set of cases the respiratory mucous membrane is mainly attacked, and nasal, laryngeal, and bronchial catarrh are the chief manifestations of the disease. In other cases the catarrh affects the gastro-intestinal tract, and a thickly-coated tongue, anorexia, vomiting, and diarrhœa are the main symptoms. Sometimes the heart appears to be predominantly affected, while in other cases nervous symptoms are conspicuous, and may be exclusively present.

A clearer idea of the disease is obtained by arranging and studying these various groups of symptoms than by attempting to frame an artificial type case. At the same time it is to be noted that in nearly every well-marked case of illness produced by the influenza bacilli there is abundant evidence that the nervous system is profoundly affected. Thus during the febrile stage the patient usually suffers from severe pains in the head, back, and limbs; he aches all over, his muscles are tender, often even to gentle pressure, and the skin, too, may be hyperæsthetic. Very often the patient is restless and unable to sleep, and there may be delirium. The subjective feelings of intense misery and depression are also in all probability the result of influenza toxins acting on nerve tissue. Moreover, in the types of influenza where nervous symptoms appear to be in abeyance there are often indications in the modification or the aggravation of symptoms associated with diseases of the viscera that certain parts of the nervous system are also affected by the influenza poison. For example, in some cases of pneumonia, paroxysmal attacks of dyspnœa and excessive delirium, sometimes maniacal in character, may be observed. Then when the main symptoms appear to be cardiac in origin attacks of tachycardia, of bradycardia and of various irregularities in pulse rhythm suggest that the nervous mechanism of the heart is profoundly affected. The cardiac symptoms which may occur in an influenza attack are indeed identical with those observed in diphtheria. Again, the gastro-enteric variety is frequently characterised by the severity of neuralgic pains and of tenderness in various parts of the abdomen; in some cases it is difficult to say whether the mucous membrane is primarily affected or whether the nerves supplying the alimentary canal are at fault. During the period of convalescence too nervous manifestations are very frequent, and, indeed, if we accept the evidence of reported cases, there is scarcely any variety of nervous disorder that may not occur during this period.

Having briefly alluded to the almost constant presence of nervous symptoms in influenza, let us direct our attention to cases in which the nervous system seems to be specially selected for attack by the bacilli and their poisonous products. Such cases may be broadly separated into two groups. In the first group we place nervous diseases which develop during or shortly after the febrile stage, and are sometimes the sole representatives of the effects of the influenza poison; meningitis and hæmorrhagic encephalitis are the best examples of this group. We assume, and indeed have proof, that in these diseases brain tissue is directly attacked by the bacilli. In the second group we place nervous diseases which usually occur after the attack has subsided; neurasthenia and multiple neuritis may be mentioned as good examples. Here we assume that the toxins produced by the bacilli are more dilute, less virulent than in the first group. Sometimes they are sufficiently powerful to initiate degenerative changes in nerve tissue, whereas in other cases they appear to be incapable of setting up definite histological changes, their power being limited to a disturbance of the functions of certain parts of the nervous system.

This division is not strictly accurate, because some of the effects of the diluted poison may be observed during the febrile stage, while inflammatory changes may be set up at a later period; still, from a clinical standpoint, the division is a convenient one.

Group I.—Of nervous symptoms belonging to the first group the most important are those which indicate a morbid condition of the brain. I shall venture to distinguish two types of cases—namely, the comatose type and the delirious type; not that they can always be sharply separated, but because the distinction is useful from a practical point of view.

The Comatose Type.—In a well-marked example a patient, with or without the usual symptoms marking the onset of influenza—namely, prostration, pyrexia, headache, and nasal catarrh—gradually becomes drowsy and apathetic; he answers questions with difficulty, and in a few days becomes comatose. Recovery may occur, but a fatal termination is more common. An examination of the brain in such cases may reveal nothing abnormal, or there may be congestion of its surface, or a purulent meningitis with or without an encephalitis, which is usually hæmorrhagic in character. In cases that recover and in those where no morbid changes are found *post mortem*, we must assume that during life there was a toxæmic condition of the brain, or the presence of definite lesions which were slight and temporary.

Of severer cases, where a meningo-encephalitis is usually found, the following is a good example; the patient was seen by my colleague Dr. Dreschfeld, to whose kindness I am indebted for permission to bring it before your notice.

The patient, a clerk, aged 31, was apparently quite well on Sunday. On Monday morning he went to business as usual but complained of headache, looked ill, and was unable to attend to his duties properly. His master was so struck with his looking ill that he told him to go home, and advised him to take a holiday. He went home, had some tea, and then sat near the fireplace. His landlady noticed that although there was no fire he held his hands out as if trying to warm them. The next day, Tuesday, he stopped in bed, and was unable to eat any breakfast or dinner. On Wednesday he was noticed to be very drowsy. Dr. Mackenzie saw him in the afternoon; his temperature was 102° and his pulse 110. He was drowsy, answered questions very slowly, put out his tongue when asked to do so; did not complain of anything. During the evening he passed his urine and fæces into the bed. On Thursday he was worse. Dr. Dreschfeld saw him in the evening. His temperature then was 105°, his pulse 120; he was unconscious, and unable to swallow any food. His limbs were quite rigid, the right limbs being stiffer than the left ones. Occasional twitchings of the arms and legs were noticed. The skin was dry; the pupils reacted to light. The knee-jerks were present, but the wrist-jerks and elbow-jerks and the superficial reflexes could not be obtained. On Friday afternoon he seemed to rally a little, and opened his eyes when spoken to. His temperature had fallen to 102° and his pulse to 110. On Saturday night Dr. Dreschfeld saw him again. His temperature then was 101°; he could swallow a little; the rigidity was less marked; he could put out his tongue; he tried to speak but could not get out any words. On Sunday morning he was worse, became comatose during the day, and died during the night.

A necropsy was made by Dr. Moore, Pathologist [illegible] Infirmary, about eight hours after death. The follo[illegible] his report: On removing the calvarium the dura [illegible] the superior longitudinal sinus contained fluid [illegible] were engorged. The other sinuses were also eng[illegible] Separation of the dura from the pia arachnoid was easy except on either side of the median fissure about midway between the anterior and posterior ends; here the two membranes were firmly united by inflammatory exudations. The whole brain was of a bright red colour, with here and there scattered patches of a yellowish white, these appearances being especially prominent over the anterior half of the right hemisphere. All the vessels of the pia arachnoid were greatly engorged; there were also œdema and irregular-scattered patches of yellowish white fibrino-purulent exudation. The patches of inflammatory exudation were practically confined to the anterior aspects of the right hemisphere. On section of the brain (See Fig. 1) the grey matter had a pinkish appearance, the redness being most marked in the intermediate layers; the nutrient vessels were intensely hyperæmic. The white matter

presented scattered bleeding points and several small irregular patches of hæmorrhage in the anterior half of the right hemisphere. The other parts of the brain had a healthy appearance. There was no excess of fluid in the lateral ventricles. Microscopical appearances (See Fig. 2): The pia arachnoid was increased in thickness owing to con-

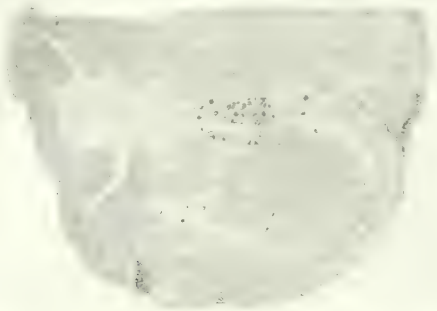


Fig. 1.—Section of cortex (anterior portion of right hemisphere).—Drawn by Dr W. E. Fothergill.

gestion of the vessels and distension of its lymphatic spaces, with inflammatory exudation. The lymphatic and especially the perivascular spaces were distended and occupied by well-marked networks of fibrin, in the meshes of which were leucocytes and many large endothelial cells derived from those covering the walls, which were proliferating rapidly and in places had accumulated in layers of some thickness. The inflammatory exudation was sharply limited to the pia and its cerebral offsets, the brain tissue proper being free. The vessels in the pia were engorged; some showed well-marked proliferative endarteritis which appeared to be of recent origin; some vessels contained thrombi. The same changes were seen in the nutrient vessels of the brain. In many instances hæmor-



Fig. 2.—Microscopic appearances of pia arachnoid and subjacent tissues. P.A., pia arachnoid; T.P.A., thickened pia arachnoid; E., endarteritis; L., leucocytes and fibrin; C., engorged vessel; H., hæmorrhage.

rhages had occurred into the perivascular sheaths, and in some places had penetrated beyond the sheaths into the adjacent nerve substance. The nerve tissue showed much distension of the pericellular spaces, the nerve cells lying to one side of what appeared to be an empty space. As regards micro-organisms, in sections stained by dilute carbol-fuchsin, a few small bacilli-like bodies were seen in the midst of the exudation in the pia; they were very small; some appeared to be bipolar, and to resemble the influenza bacillus. In sections stained by Loeffler's and Gram's methods a few cocci-like bodies were also noted, and one typical diplococcus was present.

In this case we have a week's illness characterised by headache, pyrexia, and a rapidly-developing coma, symptoms associated with, and apparently dependent on, a meningo-encephalitis hæmorrhagica. The presence of Pfeiffer's bacilli in the diseased tissue was doubtful, but there are reasons for believing that the condition was a variety of influenza. In the first place the patient had been in contact with persons suffering from influenza; in the second place we have an acute illness in a comparatively young man, due to hæmorrhagic meningo-encephalitis and unassociated with any other lesion in any organ in the body. Many similar cases have been recorded, in some of which the influenza bacillus has been found in the meningeal exudation and in the inflammatory brain foci. In this direction the work of Fraenkel, of Nauwerck, and of Pfuhl is especially to be mentioned. Now, without pretending that acute hæmorrhagic encephalitis is pathognomonic of cerebral influenza, I would submit that its presence, in the absence of disease elsewhere, should be regarded as strong presumptive evidence that the fatal illness was due to influenza. Hæmorrhagic encephalitis is admittedly a rare condition; it is stated to occur in the course of some of the specific fevers, especially epidemic cerebro-spinal meningitis and in cases of ulcerative endocarditis. At my request Dr. Kelynack has very kindly made a careful search through the *post-mortem* records of the Manchester Royal Infirmary for the last ten years, but has been unable to find a single reference to any brain change resembling hæmorrhagic encephalitis. In Dr. Dreschfeld's case, apart from muscular rigidity, there were no motor symptoms. The absence of paralysis is explained by the localisation of the lesion to the frontal region of the brain, and perhaps there is a tendency in cerebral influenza for the anterior portion of the cortex to be attacked. It will, however, be readily understood that the symptoms will vary according to the situation of the inflammatory foci, to their number and size, and to the intensity of the process. Thus there may be a hemiplegia or a monoplegia, or a paralysis of one side of the face, or aphasia. I can recall one case of aphasia which came on during an attack of influenza, and was probably due to a patch of meningo-encephalitis in the neighbourhood of Broca's convolution.

The patient, a man, aged 35, was confined to bed with influenza and slight pneumonia; he began to exhibit a curious exaltation of ideas combined with exuberant spirits and self-assertiveness. Then he became aphasic, and had slight paralysis of the right side of the face. After recovering from the attack of influenza it was noticed that in addition to aphasia, the man's mental condition was decidedly altered; there was no gross impairment of the mind, but a subtle change as regards his mental attitude towards things in general. The aphasia as regards inability to give correct names to persons who were well known to him persisted for nearly two years.

Meningitis, as in Dr. Dreschfeld's case, is a frequent accompaniment of encephalitis, but it may exist alone. It is difficult in many cases to say how far some of the symptoms present are due to one or the other condition. The meningitis affects the vertex more frequently than the base, and is usually of the suppurative variety. Many of the reported cases have been in young children who have not presented the usual symptoms of influenza. Thus Fraenkel records three cases:

One, an infant, 10 weeks old, suffered from bronchitis, diarrhœa, and pyrexia, and died of exhaustion at the end of a fortnight. The *post-mortem* examination revealed a suppurative meningitis with much exudation in the subarachnoid space; typical influenza bacilli were cultivated from the pus. The second case was that of an infant, 9 months old, who after suffering for two weeks from bronchitis and digestive disturbances, developed symptoms of meningitis, and died three days later. A thick layer of pus was found between the soft membranes on the vertex and at the base of the brain in the region of the pons and medulla, and also on the posterior aspect of the cord. Here again influenza bacilli were cultivated from the purulent exudation. In the third case, a young child with pneumonia and empyema, suppurative meningitis and foci of hæmorrhagic encephalitis, were found *post mortem*. Typical bacilli were found in the pus and in the diseased portion of brain.

The meningitis may be secondary to a purulent otitis set up by influenza, or to a suppurative condition of the nasal cavities, the specific bacilli being conveyed to the brain either by the blood or by the lymph channels to the subarachnoid space. No doubt in many cases of meningitis there is a mixed infection, staphylococci and streptococci being found as well as influenza bacilli; we may assume that the influenza bacillus first attacks the brain, and paves the way for the entry of virulent streptococci. Our knowledge of the bacteriology of infective meningitis is still very limited, and the practical outcome of cases reported by Fraenkel, Pfuhl, and others is to direct our attention to the possibility of influenza infection as the cause of many apparently obscure cases of suppurative meningitis. A continued study of the results of lumbar puncture will doubtless in the future enable us to make a more accurate diagnosis than is at present possible. Before leaving the subject of meningitis I may mention that Krannhals has shown that a focal hæmorrhagic lepto-meningitis may occur in influenza without any serous or purulent exudation—a condition analogous to hæmorrhagic encephalitis. Kuskow also describes, under the title "hæmorrhagic influenza," cases of simple hæmorrhage into the membranes of the brain—an infiltration of blood into the pia mater without a trace of any inflammatory process. Besides meningitis and encephalitis,

other brain lesions may develop during an attack of influenza —namely, embolism, thrombosis, abscess of the brain, and hæmorrhage independent of encephalitis.

Cerebral abscess usually follows a purulent otitis which is not uncommon in influenza; in a case under my colleague, Dr. Steell, it was secondary to a collection of pus in the ethmoidal sinuses.

The patient, a young man aged 19, had an attack of influenza during and after which he suffered from severe pain in the frontal and occipital regions. His mental condition became very dull, and when admitted into the Manchester Infirmary about a month after the attack of influenza he was in a state of stupor; there was optic neuritis in the right eye but no neuritis in the left eye; the knee jerks were absent; the temperature ranged between normal and 102°; during the last four days of his life it gradually rose to 106°; he became unconscious and died about six weeks from the commencement of the attack. At the necropsy a large abscess was found in the right frontal lobe and a small collection of pus in the upper ethmoidal sinuses on the right side.

Cases have been reported by Bristowe and by Leichtenstern in which no primary focus of infection could be discovered.

The Delirious Type.—In contrast to the drowsiness, somnolence and unconsciousness which characterise what I have called the comatose type, we may meet with cases in which restlessness, irritability, delirium, and even mania are the essential features.

Dr. Dreschfeld has recorded the case of a boy, aged 15 years, who during an attack of influenza suddenly became restless and then maniacal, the temperature rising to 103°. He tossed himself violently about, and could only be restrained with difficulty. Chloral, bromide, morphine, and hyoscyamus had no effect whatever, and the boy died in 24 hours after the onset of the maniacal delirium.

In an unpublished paper read before the Manchester Society Dr. Dreschfeld related some cases that he had seen which seemed to suggest the occurrence of another variety of cerebral influenza. The symptoms were severe pains in the head, mental excitement, and various perversions of consciousness.

In one case, that of a lady who lived in a house where four people were laid up with influenza and one of whom she was nursing, violent headache and lassitude were quickly followed by strangeness in her manner; she was morose and very stupid. She lay curled up in bed with her knees drawn up and her chin on her chest. Then she had an attack of acute delirium and howled with pain and wanted to get out of the window. The next day she was drowsy and not easily roused, and passed urine into the bed. On the following night she had an attack of acute maniacal excitement. In some respects the symptoms resembled those of hysterical mania. After a few days of alternating moroseness and raving delirium she began to recover and quickly regained her usual good health.

In this case there was no elevation of temperature, and the absence of pyrexia was observed by Dr. Dreschfeld in other cases of this type. He believes that the prognosis is good, and certainly better than in the comatose type.

In infants an attack of influenza may be represented solely by pyrexia and convulsions. Very rarely a change in the mental condition precedes the outbreak of influenza. There may be depression and drowsiness or an exaltation and confusion of ideas passing into active delirium. These symptoms, which probably represent a toxæmic condition of brain, sometimes disappear when the actual feverish attack begins.

The Spinal Cord and its Membranes.—I have already mentioned a case recorded by Fraenkel, in which spinal meningitis accompanied the cerebral meningitis. As a rule affections of the cord appear to develop at a varying time after the attack of influenza, but in rare cases spinal symptoms show themselves during the attack and may constitute, as we have seen is the case in cerebral types, its salient features.

Some years ago I saw, in consultation with Dr. Duncan, of Tyldesley, a remarkable case, in which the symptoms suggested an inflammatory condition of the spinal membranes.

The patient, a man aged 34, during an epidemic of influenza was suddenly seized with headache and pains all over the body. When I saw him on the fifth day of his illness he complained of severe pain at the back of the head and along the spine, and of shooting pains along the limbs and round the body. The pain was much increased by movement and by pressure, indeed there seemed to be general hyperæsthesia of both skin and muscles. He was unable to turn his head from side to side, and the back also was rigid, with a slight tendency to opisthotonos. These symptoms were accompanied by pyrexia, the temperature ranging daily from 99 to 102°. After a fortnight's illness he gradually made a good recovery.

Group II. Nervous Sequelæ.—A greater variety of disorders of the nervous system may come after influenza than after any other disease. A study of the literature suggests that a complete list of the nervous sequelæ is most easily made out by enumerating every possible variety of functional, inflammatory, and degenerative diseases that may affect the nervous system. Thus, as regards the brain, we meet with neurasthenia, hysteria, epilepsy, outbursts of delirium, and every variety of psychosis; with meningitis, encephalitis, cerebral hæmorrhage, embolism, and thrombosis of arteries, veins, or sinuses. As regards the cord, almost every variety of myelitis or of degeneration of its various tracts may occur. Foa has recorded a case of disseminated hæmorrhagic myelitis, a condition analogous to that of multiple hæmorrhagic encephalitis. Finally, as regards the nerves, we may have neuralgia or neuritis in the territory of nearly every cerebral or spinal nerve, as well as the different forms of multiple neuritis. Here the occurrence of retrobulbar neuritis should be specially mentioned.

The paralyses which are related to disorders of the bulbar nuclei or of their nerves are of great interest, because they illustrate one of the striking peculiarities of influenza toxins—namely, the erratic way in which they seem to be distributed. Thus, while as in diphtheria there may be paralysis of accommodation associated with paralysis of the palate, there is a greater variety in influenza than in diphtheria as regards the grouping of muscles affected with paralysis. Thus we meet with isolated paralysis of the superior rectus or of the internal or external recti, with transitory dilatation of one pupil, with intermittent paralysis of accommodation, with paralysis of both thirds, or of both fourths, or of both sixths, or of both sevenths, or with paralysis of one side of the tongue. In these cases recovery is, I believe, invariable, hence the symptoms, whether of neuritic or of bulbar origin, must be assigned either to functional disturbances by the influenza toxins or to very slight changes in nerve tissue, inflammatory or degenerative in character.

The subject of post-influenzal nervous disorders is a very large one, and to-day it would be impossible for me to enter it further. Before concluding, however, I should like to briefly mention 5 cases that have come under my own observation, 2 relate to the brain, 2 to the peripheral nerves, and 1 case to the spinal cord.

Of the brain cases, one was that of a young man, aged 21, whom I saw in consultation with Dr. Nolan last June. He had an attack of influenza in February, from which he seemed to recover. Shortly after Easter he had a second attack, and suffered from headache and backache for a fortnight. Then he went to Llandudno, but returned home at the end of a week because he felt so poorly. When he reached home his temperature was 104°. In a day or two he improved, and was able to go out for a walk. On June 7th he became worse, and took to his bed; on June 9th he vomited several times. When I saw him on June 18th he was lying on his back, with his eyes half closed, and in a semi-conscious state. With difficulty he could be roused to answer questions. The optic discs were normal. The knee-jerks were present, though probably of less than normal activity. Beyond the stupor there were no other signs of disease. He rapidly became comatose, and died on the following day.

A necropsy could not be obtained, but I think there can be little doubt that the lesion was a meningitis or a meningo-encephalitis, which in all probability was set up by influenza. The interest of the case is that brain symptoms were not prominent till several weeks after the second attack of influenza.

The other case was one of, or what appeared to be, primary cerebral hæmorrhage following influenza in a lady aged 30, whom I saw several times with Dr. Brown, of Preston, in the year 1891.

The history of the case is briefly as follows: During the last week in May she had an attack presenting the features of influenza. Early in June she was able to go out-of-doors, but felt seedy, was subject to headache, to faints and to cramps, and aching pains in the limbs, and occasionally she had aching pains in the abdomen and slight diarrhœa. On June 12th she was seized with cramp in the right calf. This was followed by swelling of the leg. The condition, which persisted for some time, was thought to be due to venous thrombosis. On June 16th Dr. Brown allowed her to get up, but the leg was very painful. In the [illegible] she was suddenly seized with [illegible] pouring out tea when she was suddenly seized with [illegible] power of swallowing, and great emotional distu[illegible] put out her tongue; there was no loss of consciousness. She was very emotional during the rest of the day, but partially recovered her speech. I saw her on the 17th, and observed a little weakness of the right side of the face and of the right limbs. The tongue was protruded [illegible] difficulty and deviated very slightly to the right side. She spoke very slowly and with great effort, and laughed and said, "How ridiculous." The knee-jerk was present on the left side, but could not be [illegible] on the right side. During the next two days she complained of numbness in the left arm and in the right thumb and right index finger, also of a tingling sensation round the mouth, which made her feel very uncomfortable after drinking. She was not able to use the right hand quite as well as the left. The pupils and optic discs were normal. There was no vomiting. On June 20th she complained of numbness in the left [illegible] and forefinger, but no anæsthesia could be detected in any part of the limbs. She complained also of severe frontal headache, and it was noticed that the right pupil was larger than the left. On June 21st she was better, and the pupils were equal in size: in the afternoon she suffered from severe neuralgic

pain in the left side of the frontal region, and in the right arm. On June 25th she had an attack of hiccough and vomited; in the evening she felt giddy and had a frightened look, and was inclined to cry. On June 26th she suffered from nausea and had a sudden attack of pain in the left side of the neck and across the sternum to both clavicles. During the next ten days she suffered much from both frontal and occipital headache, and vomited nearly every day. On two occasions the right pupil became suddenly dilated for a time. There were times, however, when she felt fairly well. On July 10th she was seized with a sharp pain in the left popliteal space, and during the next few days the leg was much swollen. On July 11th she had a sudden pain on the right side of the chest; the next day the temperature was 99° to 100°, and a faint friction sound was heard at the right base. Two days later the chest symptoms were better, and there were no physical signs of pleurisy.

On July 16th she became semi-conscious; the pupils were widely dilated, the right being larger than the left. She was unable to speak or swallow. During the evening the left arm and leg became paralysed. The next day there was complete left hemiplegia; she became comatose and died a few days later.

At the necropsy a large cavity about the size of a walnut, filled with coagulated blood, was found in the white matter of the right hemisphere at the junction of the parietal and occipital lobes. The clot was recent; the walls of the cavity presented numerous hæmorrhagic points, but they were not softened to any extent, although the whole hemisphere was a little softer than the left hemisphere. The hæmorrhage had broken through the grey matter, and a little blood was effused along the superficial vessels in the pia mater. The cavity communicated with the right lateral ventricle which contained, however, only a small quantity of bloodstained fluid in the posterior cornu; there was scarcely any fluid in the left ventricle. A patch of pinkish white softening about the size of a shilling was found in the white matter external to the corpus striatum; all other parts of the brain were healthy. The venous sinuses were free from clot. On a branch of the posterior cerebral artery which ran up in the direction of the cavity there were three small aneurysmal dilatations; the vessel from which the hæmorrhage actually occurred was not discovered.

Time will not permit me to discuss the many interesting phenomena met with in this case, but I would especially draw your attention to the transient dilatation of the right pupil which was observed on three occasions; to the two attacks of venous thrombosis in the leg and to the frequency of emotional disturbance, the features of which made us often think that possibly the case was one of hysteria and nothing more.

The following is a case in which there was fair evidence that the lumbar portion of the spinal cord was involved:

A man aged 39 years, who was under my care at the Manchester Royal Infirmary four years ago, had an attack of influenza which was immediately followed by severe shooting pains down the legs. Then he noticed that his urine began to dribble from him, at first only during sleep, but subsequently during the day time also. There was also slight incontinence of fæces. The legs were weaker than natural, flexion of knees and ankles being weaker than other movements. There was no rigidity and no wasting of muscles; the knee jerks were absent. He had a sensation of numbness down the left leg; there was no distinct anæsthesia, although occasionally in various places he could not always distinguish between the head and the point of a pin. Three months later his knee jerks were still absent; he could hold his water for two or three hours. Soon after this his right knee jerk returned and then his left, and in about five months from the commencement of his illness he was quite well.

In the fourth case the nature of the complaint was not clear, but I was inclined to regard it as a variety of the irritative form of peripheral neuritis.

The patient, a governess, aged 21 years, who was much run down by overwork, had a severe attack of influenza and a few weeks later became subject, especially after exertion, to violent neuralgic pains in the body and limbs and to muscular cramps, which began in the legs and feet and then attacked the thighs and hands. Subsequently she suffered from numbness and tingling in the fingers, which were extremely sensitive to touch. During a severe attack of cramp the hands and feet assumed the attitude seen in tetany. Treatment by rest and massage, followed by a long holiday, resulted ultimately in complete recovery.

The last case that I would mention is one of almost complete paralysis of all four limbs in a girl aged 15 years, who was under my care about two years ago:

The muscles of both arms and legs were moderately wasted; some of the more atrophied ones gave the partial reaction of degeneration to electricity. The knee-jerks were absent; there was no sensory disturbance. After a few weeks' treatment with massage and electricity muscular power slowly returned. When examined one year from the onset of paralysis she appeared to be quite well, and no weakness could be detected in any of the movements of the arms or legs. The knee-jerks were still absent.

The paralysis was immediately preceded by aching pains in the back and limbs. One month after the onset of paralysis she noticed that her sight was affected; she had a difficulty in reading small print. This paresis of accommodation suggested diphtheria as a possible cause of the paralysis, but the most careful inquiries from her friends failed to obtain any evidence of her having suffered from this disease. The evidence as to influenza, it must be admitted, was very slight, consisting merely in the aching pains which ushered in the attack. Our President, Dr. Buzzard, showed a somewhat similar case at a meeting of the Neurological Society some years ago, in which the paralysis followed an illness having the characters of influenza. I have seen several cases of these widespread atrophic paralyses, in which sensory symptoms were insignificant or completely absent, and in which complete recovery suggested that they depended on a multiple neuritis. In one of my cases, complete paralysis of arms and legs was associated with symmetrical gangrene of the feet; the patient died and a microscopical examination proved the existence of a peripheral neuritis and the absence of any change whatever in the spinal cord. In two cases of this type I was unable to get the slightest clue with regard to their etiology. It may be that these and many other forms of paralysis are brought about by the action of organisms at present unknown to us. Hence we must not too readily assume during epidemics of influenza or of other specific diseases that an attack of paralysis unattended by the special features of the existing disease is more likely to be caused by it than by an agent, the usual effects of which are well known to us or by an agent of which at present we are completely ignorant.

II.—Sir W. H. BROADBENT, Bart., LL.D., M.D., F.R.C.P., F.R.S.

Physician Extraordinary to H.M. the Queen: Physician in Ordinary to H.R.H. the Prince of Wales: Consulting Physician to St. Mary's Hospital.

SIR WILLIAM BROADBENT said: I should not have thought of taking part in this discussion had not the President laid his command upon me. The opportunities I have had of seeing influenza have not been such as to permit of continuous observation or of following up the clinical symptoms to *post-mortem* examination, and I have not had time to keep up with the investigations of others. I can only relate some clinical experiences and refer to the speculations which have arisen in my own mind with regard to the way in which the nervous system is affected. It has seemed to me that some of these effects are due to the action of the toxin as, for example, neuritis and neuralgia, or neurasthenia which are common sequels of influenza, just as diphtheritic paralysis has been shown to be the result of the special toxin of this disease. Others appear to be directly due to the microbes, just as in the malignant form of malarial poisoning in which the meningeal capillaries are choked by the malarial parasites. There are, however, cases in which the results seems to be attributable rather to antecedent instability of the nervous system than to anything specific in the action of the influenza poison. I am disposed to explain in this way the cases of insanity which are not uncommon after influenza. Insanity occurs also after typhoid fever and other acute diseases. Such cases have not been frequent in my personal experience, but I have seen one example of acute dementia which followed influenza symptoms and proved fatal.

The comatose form of attack seems to me to be due to the direct action of the microbes. I have seen one case in which the onset of the coma was even more acute than in that related by Dr. Judson Bury. There was an outbreak of influenza on board a training ship near Portsmouth. The accommodation for the sick was limited, and I think was on the lower deck. Two or three hundred boys were attacked in rapid succession, and there was naturally overcrowding. Very shortly several boys—five in all, I think—after exhibiting the usual symptoms of influenza, in the course of a few hours became suddenly comatose, and two were already dead within twenty-four hours of the supervention of coma, and *post-mortem* examination had been made. The cerebral meninges were found to be intensely congested, as were the spleen and kidneys. I was called to Southsea to see the chaplain of the ship. He had been round the vessel in the course of his duty on a given day; he ate his dinner as usual, passed the evening with his family, and went to bed apparently well. At 6 A.M. he woke his wife, saying he was very ill. She went in search of something for him, and on her return found him quite unconscious; and in this condition he remained until I saw him early in the afternoon. The bowels had acted involuntarily, the bladder was full, and required the catheter. There was irregular rigidity of the limbs; the temperature was between 103° and 104° F.

It was thought that the best chance would be afforded to the

patient by subcutaneous injection of quinine, and he had two 10 grain doses of hydrobromate of quinine at an interval of three hours. There was apparent improvement within a few hours, and in the course of a few days consciousness was regained and hopes were entertained that he would recover. The case, however, proved fatal after about a week. In another very recent case syphilis and contracted granular disease of the kidney were present as complications. The patient had been out hunting on the Wednesday, had had a walk on Thursday, and in the evening was seized with symptoms of influenza. On Friday afternoon comatose symptoms set in attended with extreme restlessness. At the same time the urine became loaded with albumen and very shortly paresis of the left facial nerve supervened. I saw the patient in the night between Saturday and Sunday; he was unconscious, moaning loudly, the limbs rigid but in constant movement, the left facial paresis was peripheral and not central. Death occurred on the Sunday afternoon. A remarkable feature was that although there was no paralysis of the lower limbs, patches of herpes and of necrosis of the skin were present round the hips and buttocks, resembing those present in acute paraplegia, from which it was inferred that the lower end of the cord was implicated as well as the brain. In another case there was one-sided convulsion, which was not followed by paralysis, and the patient recovered after a period of sleeplessness and prostration. A very remarkable case of hemiplegia occurred in the first or second year of influenza, in which it seemed to me that thrombosis had taken place in the veins of the right hemispherical cortex while the patient was under treatment for influenza. Paralysis of the right limbs gradually came on in the course of about twenty-four years with stupor and confusion. An interesting point in this case is that although the attack occurred about 10 years ago, improvement is still taking place in the paralysed limbs year by year. There is rigidity, but it is not the rigidity of late hemiplegia, but an active spasm of the muscles that relaxes in some degree during sleep. Dr. Judson Bury asked if the respiratory muscles have been attacked in the multiple neuritis of influenza. I have seen one case in which in the course of a very general sensory neuritis, attended with severe pain and tenderness, death occurred from paralysis of the respiratory muscles.

III.—Sir Peter Eade, M.D., F.R.C.P.,

Consulting Physician to the Norfolk and Norwich Hospital.

Sir Peter Eade said: I would first note that influenza is still being discussed by this Association ten years after its latest invasion. This is largely due to its prolonged continuance and to the special study of its nervous phenomena lately given to it. Let us not forget that influenza is primarily a local parasitic disease of the mouth, throat, bronchial tubes, etc., the special nervous symptoms being due to absorption of the toxin secreted by its special germ, Pfeiffer's bacillus. This toxin exerts a selective affinity for different parts of the nervous centres, with a strong tendency to largely affect the medulla oblongata, as specially noted by the late Dr. Althaus and others. In the spinal cord the sensory appear to be more affected than the motor portions, shown by the numerous special painful affections seen in cases of the disease. It is to be remembered that the so-called incubation period of hours or two or three days, is that in which the first portion of this toxin is formed, and that this often takes place before any sensation of illness is felt. The effect upon the nervous tissue unquestionably varies from mere poisonous irritation to actual inflammation, and the seriousness of the effects will vary with this. One of the best proofs of the special involvement of the bulb and the eighth nerve is the marked influence exerted upon the heart, as shown by the marked and often fatal asthenia observed in acute cases; also by the tachycardia and bradycardia seen in connection with the influenzal disease. I would venture here to remark that the noma or sleeping sickness occasionally met with is due to the slow or bradycardiac condition, which adds defective brain circulation to the already impaired nutrition of the nerve matter. A great multitude of varied secondary or tertiary symptoms have, of course, been observed by all in course of practice. There is no time to dwell upon special cases. But we must remember that they are all varying effects of the lesions of the different parts of the nerve centres or nerves—the organs most affected or specially attacked being, as Sir W. Broadbent has just said, those which have some inherent weakness or defect. The treatment of the nervous sequelæ must always be largely guided by our appreciation of general principles and of all-round knowledge of the disease.

IV.—Thomas Clifford Allbutt, M.A., LL.D., M.D., F.R.C.P., F.R.S.

Regius Professor of Physic in the University of Cambridge.

Professor Clifford Allbutt said: The diagnosis of influenza can rarely be precise, and is often very indefinite indeed, so that any guidance to be had in cases of doubt becomes very important. One clinical feature, which may perhaps be called decisive, is the great suddenness, it may even be said the singular suddenness, of onset. Prodromal symptoms are often absent, the attack falling upon the patient all at once. The patient is riding at ease upon the high road, he is travelling between two stations by rail, he is walking briskly across a field, and in a moment is plunged into a state of illness so severe that he may be unable, or able with great difficulty, to move from the spot. As to the aid of bacteriology, it seems to be admitted that the influenza bacillus is very difficult to cultivate, if not indeed to find. I would urge that lumbar puncture should be practised in all cases of cerebro-spinal meningitis, possibly influenzal, and this at an early stage before the organism gets imprisoned, or, what is more likely, is overwhelmed by organisms, pyogenic or other, of mixed infections which are very apt to supervene. From site again, sites of election, some means of diagnosis may be obtained. Dr. Judson Bury is disposed to look upon the frontal cerebral lobes as preferentially attacked. My own experience leads in the same direction, and it is important that the precise lie of the mischief in influenza should be noted in all its nervous manifestations. Sir W. Broadbent's experience seems to have led him to think, on the other hand, that the disease is prone to fall upon parts weakened by some previous and independent causes. In regard to prognosis, I am was unable to give strong assurances of recovery in cases of severe influenza of the nervous system. However tediously, no doubt the large majority of cases end in recovery, but there is unfortunately a substantial remnant in which even recovery of the general health does not bring with it a restoration of the nervous parts permanently damaged by the attack, although some considerable degree of amendment is the rule.

V.—George Newton Pitt, M.A., M.D., F.R.C.P.,

Physician to Guy's Hospital, Lecturer on Pathology in Guy's Hospital Medical School.

Dr. Newton Pitt said: During the earlier years of the epidemic of influenza I saw seven cases of meningitis, which at the time were in each case thought to be part of an attack of influenza. In two there was found to be infection and distension of the frontal sinuses, from which apparently the meninges had been infected. These two may fairly be considered as the result of influenza. With regard to the others, the question is, Were they the result of influenza, or were they due to pneumococcal infection, or were they sporadic cases of cerebro-spinal meningitis? In one case the organism appeared to be pneumococcus, but we were not then cognisant of the diplococcus intracellularis of Weichselbaum. All the cases were fatal, but in several it was not possible to obtain a necropsy. I am not aware whether the organism of influenza has been found in any of the cases of meningitis with influenza. I should think it will most likely be found that in some of those cases in which the nasal sinuses have been inflamed, they have become secondarily infected with streptococci. Many of the cases of meningitis which have been attributed to influenza are not directly due to it; but after an attack of influenza patients are much more liable to take certain diseases against which previously they were immune; such as enterica, and probably in this way they more readily fall victims to the diplococci of Weichselbaum and of Fraenkel, for I believe that either may be the efficient cause of the meningitis.

The intensity of peripheral neuritis arising from influenza varies greatly. The most severe case which I have met with occurred in a powerful man, who was a professional long-distance runner. Some three weeks after the onset of a typical

influenza attack, he found he was becoming progressively weaker, so that he could no longer get about quickly. The weakness continued to increase, and he had marked wasting, with so much weakness of both extremities, that he was only able to shuffle across a room with assistance, while there was foot-drop, the grasp of the hand and the movements of the fingers were extremely feeble. There was great loss of expression in the face, but no facial or ocular paralysis. He complained of defective and abnormal sensation, but there was no complete anæsthesia. The muscles of the extremities showed partial reaction of degeneration. With rest in bed, galvanism applied locally, and strychnine given hypodermically, he gradually made a good recovery, and was able to walk well, but his career as a professor runner was over. In many of the cases of prolonged weakness with wasting which are occasionally met with after influenza, there is sometimes evidence of slight neuritis. There is another group of cases of neuritis in which the toxin has especially affected the facial and the ocular muscles, this has been associated with some peripheral paralysis, which, however, has not been general in the cases I have met with. The paralysis has not presented any characteristic features which would enable the cause to be diagnosed with certainty without a history of influenza. The great cardiac irregularity and failure not infrequently met with after an attack of influenza may be due to affection of the cardiac ganglia and nerves quite as much as to a lesion of the muscle; in a few cases, œdema and water-logging develop, with extreme disturbance of the heart's action. Not infrequently the cardiac disturbance and the profound depression which are met with are due to a marked dilatation of the stomach with decomposition of its contents; and not directly to any nerve lesion; these are most efficiently relieved by treatment directed to the dilated condition of the stomach.

VI.—JOHN M. MACCORMAC, M.D.Durh., L.R.C.P. & S.Ed.,
Physician to the Hospital for Diseases of the Nervous System, Belfast.

DR. MACCORMAC said: It is now ten years ago since my Observations Based on the Clinical Phenomena of Influenza were published in the *Medical Press and Circular*. Influenza at that time was regarded as a lung disease of microbial origin, and this view is still held by many in spite of the fact that we now recognise clinically throat, lung, stomach, intestinal, and it may be liver influenza. I ventured then to state that the morbid conditions were induced by atmospheric conditions rather than by microbial infection, and that the nervous system suffered specially and primarily. My subsequent experience of the disease has convinced me more firmly than ever of the validity of the conclusions drawn by me at that time, and has caused me to believe that influenza is not a distinct and specific disease; in fact, its symptoms are most varied, its origin has remained unproved, its differential diagnosis impossible, its prognosis most difficult, and there is no special treatment. Of course, I do not deny that bacilli may be detected in patients suffering from influenza, but I hold that they are accidental; in fact, it is hardly possible to believe that one definite and specific bacillus can cause such varied symptoms. If there be a specific microbe in the atmosphere so abundant as some would have us believe it is remarkable that it has never been detected in rivers, watercourses, or reservoirs. There is no evidence of infection being carried by water, and if the infection be airborne we might expect the throat and lungs to be always the primary and chief seat of the disease. It appears to me that influenza may cause throat, lung, gastro-intestinal, or skin troubles by a disturbance of the nervous system through atmospheric influences, and I think the most striking feature in influenza is its effect upon the nervous system as evidenced by the numerous and varied symptoms which may be produced, such as delirium, coma, convulsions, and paralysis of various kinds. In support of my views I may advance the following facts: There is no doubt that the disease is much modified by climate; in warm climates most of the cases are accompanied with great nervous prostration and eruptions (similar to that of measles), while in cold climates chest complications prevail. At Gibraltar during a certain time of the year (July, August, etc.) a wind known as the "Levanter" sometimes prevails, which is a moist east wind with heavy cloud over the Rock; and at that time the people, especially the inhabitants (Spanish) suffer from a group of symptoms which are very severe headache and great bodily and mental depression, which come on and pass off rapidly with the advent and departure of the Levanter. The so-called sirocco—a wind which prevails in Malta—is attended, I believe, by a similar group of symptoms. Might not this group of symptoms be dependent upon these east winds?

VII.—FRANK MONTAGUE POPE, B.A., M.B., M.R.C.P.,
Senior Physician to the Leicester Infirmary.

DR. POPE mentioned a case of the comatose type of encephalitis in a boy at an industrial school, and suggested that antecedent injury determined the site of lesion. He had reported a good many cases of nervous affections three or four years after the first epidemic, but on looking over the cases recently he could only find out of a considerable number of different nervous diseases a very few in which influenza was the cause, and he explained it by the hypothesis that in the first epidemic the majority of those whose nervous systems were liable to the infection were affected, and that there were consequently fewer so liable to get similar affections in later epidemics.

VIII.—SARAT K. MULLICK, M.B.,
Assistant-Physician to the Hospital of St. Francis, London.

DR. MULLICK wished to emphasise the fact that there was too great a tendency to accept influenza as the primary cause of the nerve lesions. A little examination would sometimes reveal the fact that there were other causes. He was very cautious in accepting influenza as the starting point of lesions, as there was often a history either of syphilis, alcohol, or rheumatism. He was inclined to believe that many cases which were quoted as influenzal were really due to these causes which had been revivified by influenzal toxins. Influenza generally attacked such a large area that it was difficult to withstand the conclusion that it attacked some specially weak spot in the nervous system, and through it brought about the general symptoms. At one time influenza was thought to be primarily an affection of the pulmonary system, but now the more accepted theory was that the nervous system was first attacked. He did not agree with Sir Peter Eade that influenzal toxins attacked sensory more than the motor areas. It was true that some sensory changes were present, but they were fleeting compared to the permanent changes from motor paralysis. Its effect on the heart was great, he was inclined to believe, through the nerve mechanism, because in many cases the tachycardia, bradycardia, and irregular action of the heart were so rapid in onset that it was difficult to believe that they could have been due to changes in the myocardium pure and simple. He quoted cases of narcolepsy and amaurosis, following influenza, and also referred to cases of locomotor ataxy and diabetes which had been reported as sequelæ. As regards the affections of other special senses, he mentioned cases of anosmia and loss of taste. Cases of aphasia more or less complete were also met with. Lastly he took a favourable view of the question of prognosis, especially in comparison with the disastrous nerve lesions due to other causes.

IX.—S. EDWIN SOLLY, M.D., M.R.C.S.,
Consulting Physician to St. Francis Hospital, Colorado Springs, Colorado, U.S.A.

DR. SOLLY related a case of right-sided hemiplegia occurring in connection with an attack of influenza. The subject was a young lady, aged 25 years, of previous good health and good family history. Investigation revealed no history of any other cause, and examination showed no disease of the heart or other organs. The urine was examined microscopically and chemically, and nothing abnormal found. The blood was also examined without result. The patient was a member of a household all of whom had in turn well-marked but not severe attacks of influenza; she was the last to take it. One morning she was taken with mild fever, nervous depression, pains, and catarrh of the respiratory and intestinal tracts, but did not go to bed. The following morning the hemiplegia appeared, there was motor and sensory paralysis of the right side of the body, facial paralysis and slight aphasia. After thirty-six

hours improvement began, first in the face and speech and then in the hand, and much more gradually in the foot. In twelve days the patient could walk across the room with the use of a stick; at the end of three months all evidence of the paralysis had vanished, except that she complained of a somewhat heavy feeling in the foot and ankle. She could walk two or three miles six months after the seizure, and she still had a slight but lessening sensation of weight in the foot, but otherwise was in good health.

X.—Robert Saundby, M.D., LL.D., F.R.C.P.,
Physician to the Birmingham General Hospital; Professor of Medicine in the University of Birmingham.

Professor Saundby said he could not identify the particular case of post-influenzal diabetes to which Dr. Mullick had referred, but he could say generally that he regarded post-influenzal diabetes as upon the same footing and as produced in the same way as the diabetes which followed other infectious processes such as typhoid, for example. He was a little surprised to hear influenza described by some speakers as a primary disease of the lungs or nervous system; an infectious process might localise itself in different organs and in different cases, a law which was illustrated less commonly in other diseases such as typhoid fever which, while generally localised in the intestine, sometimes assumed the ulmonary type (pneumo typhus). As to the question which organ was affected in post-influenzal diabetes he had suggested that it was the pancreas, and that the interstitial pancreatitis, which was present in a considerable proportion of cases of diabetes, was due to the action of the toxins of infectious disease, but they did not possess the data to enable them to say that this was always the case; it was possible that in some cases these toxins might attack the nervous system or the liver itself.

XI.—Mrs. Elizabeth Garrett Anderson, M.D.,
Consulting Physician to the New Hospital for Women; Vice-President of the Section.

Mrs. Garrett Anderson said: While admitting fully the large number of morbid conditions of the nervous system caused by influenza, it is probable that many affections are wrongfully or hastily referred to influenza as their cause. Practically not much is gained by accepting a condition as due to influenza. A more important practical point is to consider how the influenza poison can be made less or more powerful. Crowding in its many forms seems to be the condition which more than any other increases the virulence of influenza, and it is in crowded houses, rooms, offices, and asylums that it is found in its worst form. She had seen two cases of diabetes and one of complete loss of taste after influenza.

XII.—John Haddon, M.A., M.D.,
Denholm, Roxburghshire.

Dr. Haddon looked upon influenza as a very peculiar infectious disease. Other infectious diseases might be followed by some one serious lesion, but influenza appeared to be followed by any disease. In diphtheria the primary fever lasted 48 hours, and then in 10 days might follow paralysis of various kinds. In influenza also the primary fever lasted 48 hours, but it might be succeeded by various paralyses or mania, pulmonary affections, diabetes, gastric disturbances, etc. The theory that it was through the nervous system that its evil effects were produced he believed to be correct, and that theory alone explained the protean diseases which might follow an attack.

XIII.—William Ewart, M.D., F.R.C.P.,
Senior Physician to St George's Hospital and to the Belgrave Hospital for Children.

Dr. Ewart dwelt upon the peculiarity of some forms of system diseases originating after influenza. Whilst the usual progress of sclerosis was slowly ingravescent those attacks evolved quickly, reaching early an intensity which belonged to an advanced stage of the ordinary affection. The later progress in these cases was not towards aggravation but partial recovery, much of the initial paralysis of the higher centres disappearing, whilst the special system symptoms might long persist. In connection with the etiology of the later post-influenzal paralysis, as also of the late post-diphtheria paralysis, he suggested that there might be a chronic influenzal intoxication due to micro-organisms remaining lastingly in possession in the upper aërial tract. In all patients but particularly in those who were subject to repeated attacks and who probably harboured the microbe permanently, sanitation of the nasal cavities was an important indication. As regarded the causation of the cardiac failure so often witnessed he agreed with Dr. Newton Pitt's remarks and had long recognised the evil effect of gastric distension, not in influenza alone but in many other conditions; at the same time, he could not but attribute a large share to the nervous factor as part of the general prostration of the nervous system which was so prominent in this disease.

XIV.—Sir John William Moore, B.A., M.D., F.R.C.P.I.,
Senior Physician to the Meath Hospital and to the County Dublin Infirmary; Professor of Practice of Medicine in the Royal College of Surgeons of Ireland; President of the Royal College of Physicians of Ireland.

Sir John Moore drew attention to the remarkable mental state which so often appeared in the victims of influenza, and to which, perhaps, many of the supposed nervous lesions of the disease should be attributed. He considered that frequently the supposed nervous lesions were purely subjective—they were psychoses—and he instanced a case in illustration of this opinion. At the same time he had seen very many serious organic nervous affections during or subsequent to influenza. He thoroughly agreed with Dr. Newton Pitt's observation that the influenzal lesions of the heart had reference rather to the innervation of that organ than to changes in the heart muscle. He was also in accordance with Dr. Pitt as to the dangerous influence on the heart's action of a dilated stomach in this disease or in any other infectious process.

XV.—StClair Thomson, M.D., M.R.C.P., F.R.C.S.,
Physician to the Throat Hospital, Golden Square.

Dr. StClair Thomson limited his remarks to his experience in one department of practice. He fully confirmed Mrs. Garrett Anderson's remarks on loss of smell. Cases of complete anosmia were not uncommon, and from the history and from the absence of local lesions there could be little doubt as to influenza being the causative agent. If such cases did not recover spontaneously in a few months, his experience led him to fear that the anosmia would be permanent. After referring to cases of paræsthesia of the pharynx, Dr. StClair Thomson dwelt on the occurrence of paralysis of the vocal cords. Abductor laryngeal paralysis frequently presented great difficulty as regarded determining the etiology; but a number of cases had been observed in which a paralysis of one cord, lasting sometimes for years, was undoubtedly due to a post-influenzal neuritis. While agreeing as to the frequency of merely subjective symptoms in the results of influenza, his own experience showed him the frequency and reality of objective affections of the throat, nose, and ear, paralysis, anæsthesia, anosmia, sinusitis, otitis, and abscess of the mastoid antrum. Finally, while sympathising with Dr. Ewart's observations on the nose as a channel of infection, he pointed out that we should not be tempted to try to render the nasal fossæ aseptic by the use of any chemical germicide. The healthy nose was automatically aseptic, and a lotion strong enough to be germicidal would only destroy the inhibitory action of nasal mucus, paralyse the ciliary action of the epithelium, and strongly irritate the sensitive Schneiderian membrane. At the same time he quite agreed that purulent, catarrhal, or obstructive affections of the nose should be remedied and the cavities rendered as clean and well-ventilated as possible.

XVI.—William Calwell, M.A., M.D.,
Physician to the Royal Victoria Hospital and to the Throne Consumption Hospital, Belfast.

Dr. Calwell drew attention to the importance of obtaining a history of recent influenza before the administration of anæsthetics, especially of chloroform; there had been large numbers of deaths from chloroform administration, and this was especially the case during influenza epidemics. Very suspicious cases had occurred, which were clearly explained by the depressed condition of the nervous system and of the

heart. As a practical matter it was important, and would perhaps cause postponement in operating in those cases where urgency was not an object.

XVII.—THOMAS BUZZARD, M.D., F.R.C.P.,
Physician to the National Hospital for the Paralysed and Epileptic; President of the Section.

DR. BUZZARD thought that the warmest thanks of the Section were due to Dr. Judson Bury for the admirable and lucid address which he had read. He felt, like others, the extreme difficulty of dealing in a very limited time with the interesting and important subject of discussion. His experience in regard to numerous points so nearly resembled that of Dr. Bury and others that it was quite unnecessary to repeat what had been already so well described by others. He thought, with Sir William Broadbent, that there was strong evidence to show that an attack of influenza was prone, by its depressing effect, to reveal previously existing flaws in the physiological condition of patients. As an illustration of this he mentioned a case of tabes of some years' duration, where the patient, who had so much improved as to find no difficulty at all in the use of his legs, was suddenly rendered completely ataxic by an attack of influenza. Similarly, patients with an inherited proclivity to mental disorder were apt to become maniacal or melancholic in the sequel of this disease. It was doubtless open to any one to believe that in every case in which organic disease of the nervous system succeeded influenza it was not a question of direct cause and effect, but merely an illustration of previously existing lesion being as it were displayed under the depressing influence of the attack. His own opinion was that, although this might account for a certain proportion of the nerve disease observed in the sequel of influenza, it by no means held good for the large majority of cases. The immediate incidence of an attack of influenza was distinctly upon the nervous system, and it was impossible to believe that the pain in the back, and bones, the aching head, and eyeballs, which would characterise the attack of a large number of persons simultaneously in a community did not represent the effect of a toxin upon previously healthy structures. And if this, as he thought, was certain, he failed to see any difficulty in equally ascribing the later disease, which not infrequently occurred, to the direct effects of a toxin.

There was another circumstance, too, to which no reference had been made by previous speakers, which he thought bore very strong evidence as to the grave and numerous diseases of the nervous system being a direct outcome of the toxæmia called influenza. In the early days of the study of syphilitic affections of the nervous system when writing upon the subject he had called attention (as Dr. Hughlings Jackson had done before him) to the not infrequent bizarre character of the symptom-complex in those diseases. There might be, for example, paralysis of an oculo-motor nerve alongside of paraplegia, paralysis of one arm perhaps with a like affection of the opposite leg or of both, and so on, pointing to the existence of multiple lesions—a condition which contrasted strongly with the usual picture presented by disease which was not directly of toxic character—and so in more recent times it had been found by Medin, of Stockholm, in Kentucky also, and by Dr. Pasteur in England, that in epidemics of so-called infantile paralysis, whilst the brunt of the attack might fall perhaps on the anterior horns of the cord, there would in many cases be concomitant affection of other parts of the cerebro-spinal axis—localised paralysis of a cranial nerve, lesion of the lateral columns, symptoms of encephalitis—indications, indeed, of an intense and narrowly-localised lesion in various parts of the nervous system. In many cases he had been struck with a similar bizarre distribution of symptoms in disease of the nervous system connected with influenza, and he could not help thinking that this peculiar character, in the circumstances, gave a very strong support to the view that the grave lesions observed in influenza, like those in syphilis and in epidemics of infantile paralysis, were dependent upon the direct effect of a toxin on healthy nervous structure.

He adduced a case, at present under his care in hospital, which well illustrated this. It was that of a previously healthy man who, immediately upon an attack of influenza in May, 1898, became affected with double optic neuritis, resulting in complete optic atrophy, later nystagmus, paralysis of the four extremities of the kind usually ascribed to multiple neuritis, along with marked intention tremor of the upper extremities pointing to lesion of the lateral columns, and at sent jerks.

In another the patient, a man, aged 46, suffered only from a slight attack of influenza, but three weeks afterwards began to have sharp pains in the calves with numbness of the feet. This was followed by a gradually progressive paralysis, slowly invading almost all parts of the body, so that about fourteen months after his attack there was complete inability to move any limb, almost complete paralysis of the diaphragm, intercostals and muscles of the back, and for several days death appeared imminent. But improvement then began, and slowly and uninterruptedly a recession of symptoms took place, so that at the end of six years he was able to resume his occupation.

This was a case widely differing in its character and progress from an ordinary example of multiple neuritis. Another was equally remarkable. A young man of previous good health, influenza having been rife in the neighbourhood, suffered from intense headache, pain in the eyes, neck, and loins, with sharp darting pains in the extremities, a temperature of 101°, and pulse of only 76. In three days the acute symptoms subsided, but a day later a relapse took place, and he began to present a characteristic appearance of extensive multiple neuritis, involving also an oculo-motor nerve, with much articulatory difficulty, great sensory disturbance, and reduced electrical excitability. After a few days improvement occurred in these symptoms, and then, as Dr. Turner of York reported in an admirable account of the case: "A month from the beginning of the illness a curious change was taking place. The impaired sensation and motion continued, but in a less degree; the reflexes, instead of being almost absent, were now exaggerated, and his gait was that of spastic paralysis." Six months later, when he came under Dr. Buzzard's observation, he presented symptoms of spastic paraplegia, with ankle clonus, and at the same time some sensory disturbance and lowered faradic excitability, a strikingly anomalous combination of symptoms.

The earliest and perhaps the most remarkable case which he had seen was in January, 1890, at Margate, in consultation with Mr. Knight Treves, and this was one which could not be classed in any recognised category. The patient, a gentleman aged 65, presented to a remarkable extent the appearance of one in the algide stage of Asiatic cholera, with shrunken and blue hands covered with cold sweat, whispering voice, and vomiting. He was conscious, and perfectly calm. There was no pulse at the wrist, and it was very difficult to be sure that the sounds of the heart were heard with the stethoscope. He had no cramps or diarrhœa, but had been suffering for a few days previously with horrible pains in the chest wall, and there had been elevation of temperature. Death took place in a few days. In view of the symptoms, which pointed to bulbar lesion, Dr. Buzzard procured a microscopical examination of the medulla oblongata, and Dr. Colman, who kindly made this, found in the floor of the fourth ventricle marked changes in the vessels and in the ground substance of the grey matter with pigmentation of the vagal and hypoglossal nuclei.

He instanced also the case of a schoolboy who in May, 1890, felt giddy one evening and went to bed (there had been several cases of influenza just previously). Next day there was bad headache, and a temperature of 101°; two days later intense pain in cervico dorsal region and also in the sciatic region, right side, with loss of power in the right arm and leg. The lad shrieked with the pain in the spine when lifted in bed. The symptoms of the attack appeared to point to one of spinal meningo-myelitis, with probably some multiple neuritis, and the patient had been left with dreadful deformity from permanent paralysis of the intercostal and some abdominal muscles, serrati, and rhomboids.

It appeared to Dr. Buzzard that ten years' experience of this widespread toxæmia made it necessary either to largely increase the nomenclature of disease of the nervous system, or (which he thought was better) to refrain as much as possible from the use of the existing terminology. Do what we could we were unable to cramp and confine examples of the grave nervous disorders of influenza in such narrow cabins as "encephalitis," "neuritis," "myelitis," "polio-myelitis," "meningitis," "Landry's paralysis," and the like.

In many of the instances the influence of the toxin had evidently been extensive, embracing widely separated sensory and motor neurons, and it was quite impossible to include the cases in any recognised category of diseases of the nervous system. He had seen various other cases which he was equally unable to tabulate.

It appeared to him, looking over a lengthened period of special experience, that the relative as well as absolute number of grave diseases of the nervous system ascribable to toxæmia had very largely increased during the last few years, and he was disposed to think that, although this increase was by no means to be attributed exclusively to the invasion of influenza (for he felt sure that there were many other as yet unlabelled toxins at work), yet that a large proportion must be credited to the direct influence of the disease under consideration.

A DISCUSSION ON THE PROBLEMS OF GASTRIC ULCER.

I.—JOSEPH FRANK PAYNE, M.D., F.R.C.P.,

Consulting Physician to St. Thomas's Hospital.

WHEN I was honoured by the invitation to open this discussion, I did so on the understanding that I should endeavour to raise points for discussion, without professing to have anything actually new to communicate. My attention during a long hospital experience has often been drawn to this disease, and I have been led to notice the imperfection of our knowledge respecting certain points, which I propose to call the problems of gastric ulcer.

The first problem, which arises from an inspection of the hospital statistics, is that gastric ulcer seems to be increasingly prevalent. The table which I show displays the statistics of

ST. THOMAS'S HOSPITAL.

Cases of Gastric and Duodenal Ulcer.

Periods of Years.	All.	M.	F.	Died.	M.	F.
1870-4	30	9	21	0	—	—
1875-9	38	14	24	4	3	1
1880-4	70	12	58	0	—	—
1885-9	103	23	80	11	7	4
1890-4	174	15	159	20	6	14
1895-9	216	37	179	24	11	13
Total	631	110	521	59	27	32
Duodenal ulcer	18	18	0	7	7	0
Gastric only	613	92	521	52	20	32

One fatal case of ulcer of the œsophagus.

Percentage of Cases at Different Ages.

Age periods	0-10	— 20	— 30	— 40	— 50	— 60	60 +	All ages.
Percentage of 530 living cases	0.7	13.4	47.4	22.8	10.6	4.0	1.1	= 100
Fatal cases { M.	0	5	16	42	16	21	0	100
Fatal cases { F.	3	10	58	16	10	3	0	100

gastric ulcer in St. Thomas's Hospital for thirty years in six periods of five years each. I pass over the first period, as the hospital was then in a state of transition, but observe that in the period 1875-9 the number of cases was about one-sixth of what it was in 1895-9. There has been some variation in the number of beds, but this would not exceed 10 per cent., so that the present number of admissions for gastric ulcer is at least five times as many as it was twenty years ago. Why this should be I cannot tell. The fact that some cases are now admitted with a view to operation accounts for very little.

I would only point out that there has been a corresponding increase in some other affections of the digestive organs. Thus typhlitis or appendicitis has increased in St. Thomas's hospital from 6 admissions in 1875-79 to 343 in four years 1895-98 (statistics for 1899 not being available), the number of fatal cases having proportionally increased. Now the greater frequency of operations for this disease cannot explain such an increase as this, nor can improved diagnosis altogether, for certainly fatal cases were recognised in the *post-mortem* room as precisely twenty years ago as they are now. It is also notable that cancer of the digestive organs has increased very largely of late years, and in a higher ratio than cancer generally. Again, it is strange that the form of continued fever which affects the digestive organs, namely, enteric, has supplanted the older continued fevers, typhus and relapsing fever.

We seem to be living through a period in which diseases affecting the digestive system, perhaps caused by food, or something introduced with food, are predominant. Without pretending to explain this, I suggest as the first problem of gastric ulcer, "Is it really more frequent now than formerly in this or other countries?"

DIAGNOSIS OF GASTRIC ULCER.

The second problem which I propose relates to diagnosis. Are all the cases recorded (if unverified by *post-mortem* examination) really cases of gastric ulcer? Are some real cases of the affection called by other names? In other words, Are our customary grounds of diagnosis adequate and certain?

The principles of diagnosis in this disease have not varied much since I was a student. Then, as now, we were taught that the cardinal symptoms are: (1) Pain in the stomach of a certain kind, at certain times, and referred to special situations; (2) vomiting of food, or gastric irritability; (3) hæmorrhage, shown usually by hæmatemesis, more rarely by melæna. This was regarded as the cardinal sign; and then, as now, some physicians would hesitate or refuse to make the diagnosis of gastric ulcer without it.

Beside these things we were taught that the diagnosis was more probable if the patient was young, female, anæmic, and especially if a domestic servant; while it was much less probable if the patient was a male, and middle-aged or elderly.

In the last 30 years but one new diagnostic element has been introduced, namely, that of hyperacidity of the gastric fluid, of which I shall speak presently, a few words may be said about the old grounds of diagnosis.

1. First with regard to *Pain*.—The particular kind of pain regarded as typical of gastric ulcer—coming on after food, sometimes limited to one spot, accompanied by limited tenderness, and so forth—is so well known that I need not minutely describe it. In looking over the notes of a large number of non-fatal cases in my own wards, I find that this particular kind of pain and circumscribed tenderness is only mentioned in a minority of cases—I cannot say in what proportion—but the line is obviously difficult to draw. But in most cases the pain recorded—if any—is not at all characteristic or typical. Out of 48 fatal cases confirmed by *post mortem* examination, I find a record of some kind of pain in 33 cases. In 14 cases it is not definitely mentioned, while in 1 it is positively stated that there never was any pain.

2. *Vomiting*.—Independent of hæmatemesis from my own cases as I find the symptoms recorded in more than one-half or nearly two-thirds of the cases. Of the 48 fatal cases it is positively mentioned in 20, and definitely stated to have been absent in two. In the rest it was not a prominent symptom.

3. *Hæmatemesis*.—Having a strong impression of the frequency and importance of this symptom I was surprised to find it definitely recorded only in 17 out of 48 fatal cases. In 27 it was definitely absent, in 4 the records were imperfect. The statistics of more than 100 non-fatal cases in my own wards form a remarkable contrast; in these I find hæmatemesis nearly always recorded, that is, in from 90 to 95 per cent. of the cases. Possibly the proportion in my cases is somewhat above the average since I have always regarded this symptom as a *sine quâ non* of diagnosis. Many cases are admitted in consequence of severe and sudden hæmatemesis, which is, therefore, the one ground of the diagnosis. On the other hand, the fatal cases include a large number of sudden perforation, in which hæmatemesis would not occur. In two cases only was hæmorrhage the cause of death. The difference raises a doubt whether all the non-fatal cases with profuse hæmatemesis were really gastric ulcer.

4. *Hyperacidity*.—Some German workers, especially Professor Riegel, attach great importance to hyperacidity or, more accurately, excess of hydrochloric acid, as a diagnostic

sign of gastric ulcer. Riegel states that he has found in a long series of cases of gastric ulcer, with remarkable frequency, an excessive gastric secretion, or hyperacidity; also that the time of digestion is shortened rather than lengthened, as compared with the normal. He regards this hypersecretion as a predisposing cause of ulcer and especially as the chief cause which prevents its healing. But the ulcer may continue when this condition has passed away. Other observers, as Ewald, Gerhardt, Rosenheim, Dreschfeld have not found hyperacidity a constant feature, while admitting that this condition and ulcer are often combined.

I can say nothing from my own experience on this point, since I should not venture in any case in which gastric ulcer was strongly suspected to wash out the stomach, or use other means for removing its contents for analysis. But this has been done by German physicians and by some in this country; so perhaps we are over-timid on this point.

Therefore another problem which I present to the meeting is this: Is the existence of hyperacidity in gastric ulcer proved; and can it be ascertained without risk?

Conclusions as to Diagnosis.

The general conclusion seems to be that while hæmatemesis, if accompanied by other gastric symptoms already mentioned, is the most trustworthy sign, it is not absolute; it may be produced by many other causes.

One of the commonest is no doubt hæmorrhage from dilated œsophageal and gastric veins in alcoholic cirrhosis of the liver. This occurs most frequently in men at a later age than the average of gastric ulcer, and with other signs of alcoholism.

It may also be caused by strain or direct injury in healthy people. Such hæmorrhage may be apparently the starting point of ulcer, or of a wound in the stomach indistinguishable clinically from ulcer. I have had some well-marked cases. One was that of a nurse, aged 30, who after lifting a heavy patient had profuse gastric hæmorrhage. Symptoms like those of ulcer lasted for a month or two. She completely recovered. Another was that of a man, aged 30, employed on a railway. On lifting a heavy weight he felt sudden sharp pain in the stomach, which two days later was followed by profuse hæmorrhage, with tenderness, etc. He recovered. Injury was the cause in a married woman, aged 30, who was brutally beaten by her husband. Severe hæmatemesis followed, but she recovered. Another remarkable case was that of a man, aged 34, who eight years before had suffered from hæmatemesis following injury. When under observation he had gastric pain and other symptoms, with slight hæmatemesis. In this case injury was probably the starting-point of a chronic ulcer.

Aneurysm is an undoubted though rare cause of gastric hæmorrhage.

Moreover, there may be hæmatemesis without gastric hæmorrhage. When combined with hæmoptysis no difficulty is likely to arise. But there may be other causes. A man was brought into my wards with profuse repeated hæmatemesis and the provisional diagnosis of gastric ulcer.

There was no doubt about the facts, but I was struck with the peculiarity that the vomited matters were not acid. Examination of the throat showed a bleeding adenoid of the nasopharynx. The blood trickled down into the stomach, and was expelled by vomiting. Finally, there are many non-fatal cases of hæmatemesis where the diagnosis is very obscure. The St. Thomas's Hospital *Reports* give 102 cases in 20 years, diagnosed as hæmatemesis. The general impression I have derived is that many cases in men were due to cirrhosis of the liver, while in young women the symptoms mostly pointed to gastric ulcer, though no positive diagnosis could be made. It is a question whether the diagnosis of gastric ulcer can be made if there has been no hæmatemesis, and it is a further question whether even the addition of hæmatemesis to the other symptoms is sufficient. I feel very sceptical as to the certain recognition of cases in which there is no *post-mortem* examination, and propose the problem: Is our diagnosis of gastric ulcer, when not confirmed by *post-mortem* examination, quite satisfactory, with or without evidence of hæmorrhage?

Acute Gastric Ulcer.

The next problem is whether we can draw a clear distinction, as has been done by Dr. Samuel Fenwick and Dr. Soltau Fenwick in their very valuable book, between acute and chronic gastric ulcer. By an acute disease we mean one which is rapid in its onset and short in its duration; that is, the distinction is a clinical one. But in the disease now spoken of this is not enough, since we know that a gastric ulcer may be latent for an undetermined time till sudden symptoms occur. The only absolute criterion is that furnished by *post-mortem* examination, showing whether the condition was chronic or recent. On clinical grounds I propose to call those cases acute in which symptoms lasted one month or less, chronic those of longer duration.

Out of 48 fatal cases	
Symptoms longer than a month	36
,, less ,, ...	12
	48
Judged from *post-mortem* appearances, there were	
Cases of chronic ulcer	42
,, acute or recent	6
	48

There were thus 6 cases of recent ulcer with acute symptoms. Of these, 2 were males, aged 16 and 25: 4 were females, aged from 22 to 29. But there were also 6 cases with very acute symptoms, though the disease was found to be chronic. It thus seems that in fatal cases sudden or acute symptoms are quite as likely to indicate chronic as acute disease. In non-fatal cases, though the symptoms may be acute, it is very difficult to say how long the disease has lasted, since the statements of patients are vague and uncertain. Out of my series of non-fatal cases I find 34 per cent. (10 per cent. being males, 24 per cent. females) with symptoms lasting one month or less, that is, acute; and 66 per cent. (12 per cent. males, 54 per cent. females) with a history of symptoms over that time, that is, chronic. Three-fourths of the acute class and one-half of the chronic cases were under 30. It thus appears that in acute cases the proportion of females to males was $2\frac{1}{2}$ to 1, while in chronic cases it was $4\frac{1}{2}$ to 1; the proportion of females to males generally being about $3\frac{1}{2}$ to 1.

These results do not at all agree with those of the Doctors Fenwick, who state that acute primary gastric ulcer almost exclusively affects young female subjects, and that the proportion of female to male cases is nearly 10 to 1.

In my non-fatal cases the proportion of females to males in patients giving a history of chronic symptoms was much higher than that in those giving a history of recent symptoms; while in the only quite certain cases, namely, the fatal, this proportion was 2 to 1. A partial explanation may be that women pay more attention to their physical state than men; and thus are more likely to give a long history of symptoms. But the discrepancy cannot be thus entirely accounted for.

I must say I fail to find any evidence that the acute primary ulcer is essentially different from the chronic ulcer. It seems to me that an acute ulcer if it does not heal up or cause death becomes chronic; while a chronic ulcer is nothing more than an acute ulcer grown older. I propose, therefore, this problem: Is there an acute form of gastric ulcer different from the chronic form?

Etiology of Gastric Ulcer.

This very large subject can only be briefly discussed. My object is merely to show how imperfect our knowledge is. The absolute limitation of these ulcers to the stomach, with adjacent parts of the duodenum and œsophagus, is strong evidence that digestion plays a part. Hence the appropriate name "peptic ulcers." But it is not enough to conclude that the ulcer as we see it is the result of a solution of tissues by gastric juice. The further question is, why a particular part of the mucous membrane and deeper tissues should be thus destroyed.

Broadly, we can only say that it is due to loss of vitality, a local death of the tissues making them liable to digestion. It cannot be merely due to the loss of the alkaline reaction of circulating blood, since the alkalinity of the blood is very feeble, and quite insufficient to neutralise the reaction of the gastric fluid.

I need not relate the numerous observations and experiments by which these truths have been established. The question remains, What produces in a certain limited area,

this loss of vitality? It appears to me that this, the central problem of gastric ulcer, is entirely unsolved. The peptic theory explains very well why an ulcer persists, but not in the least how it originates. I have always thought it possible that the starting point may be different in different cases, though the subsequent course, dependent upon peptic conditions, may be the same.

Among the causes proposed is, for instance, arterial embolism, suggested long ago by Virchow—a good cause enough, were it shown to exist; but the conditions of embolism are present in an extremely small proportion of cases of ulcer. Capillary thrombosis, ecchymosis, congestion in certain areas, have also been brought forward as causes producing necrosis and digestion. But even were the existence of such conditions more certainly proved than it is, we should still have to ask what causes the congestion, thrombosis, etc. Dr. Hunter has shown that the administration to animals of certain toxic substances (for example, toluylendiamine), produced in the duodenum patches of congestion which might lead to peptic solution or ulcer. But after all they were not ulcers, and it did not happen in the stomach. So that this interesting experiment only furnishes a hint.

As is natural, microbes have been invoked as the cause of gastric ulcer. It used to be thought that bacteria soon perish in the stomach. But it has been shown that colonies may be found on various parts of the walls; though how long they live we do not know. There is no antecedent improbability in the idea of gastric ulcer being a specific bacterial disease. The centrifugal extension of the morbid process may be thought even to suggest some local infectivity. Once I made an observation which gave a hint of this. There were two ulcers in a stomach—one on the posterior aspect comparatively chronic, and one quite recent on the anterior aspect. On placing the organ in its natural empty position the two ulcers came into apposition, suggesting that the newer might have been produced by infection from the older.

There is, however, no evidence at present in favour of the bacterial origin of gastric ulcer.

Again, like many other organic diseases, gastric ulcer has been supposed to depend upon a "neurosis" or "disturbed ervation." But till this conjecture is put into a more definite shape so as to become a true hypothesis, it seems hardly worth considering.

Finally, there is the hypothesis of hyperacidity or excess of hydrochloric acid, to which I have already referred. But this condition, supposing it to be a real factor in producing the disease, ought to act uniformly, and would not account for an excess of solvent action at any special spot on the surface of the stomach. It might account for the continuance of an ulcer, but not for its commencement.

I should therefore conclude that we have not at present an even plausible explanation of the origin of gastric ulcer.

Predisposing Causes.

Youth, the female sex, anæmia, hard work, poor nourishment are most generally accepted as predisposing causes; so that there seems to be an impression that this is chiefly a disease of chlorotic servant girls. Our tables show that this is a great exaggeration, but that women between the ages of 20 and 30 give the largest proportion. With respect to sex and age I may say that examination shows that the second half of this decade supplies the larger proportion. This is a little above the chlorotic age, and I do not think that chlorosis in a definite sense is often associated with gastric ulcer. On the other hand, a large number of the female cases are described in the notes as delicate, pale, weak, or anæmic (though the anæmia is sometimes secondary). Irregularity of menstruation is often noted.

With regard to occupation. It is not surprising that hospital statistics should show a large number of maidservants among the subjects of gastric ulcer, since that class forms a considerable proportion of the young women admitted to any hospital. But beside servants I find a large proportion of married women, and also young women in various other occupations, such as nurses, barmaids, shopgirls, and workers in different trades, and I doubt very much the predominance of servant girls, except as above explained. Some authors have found gastric ulcer specially common among cooks, and have given plausible explanations of this frequency. I have found 3 cases of cooks among 50 female cases specially examined, which seems a large proportion.

The occupations of male patients are so varied that it would be impossible to make any generalisation about them. With regard to alcoholism, I have found few records of this habit: not many even among male patients and hardly any among women.

Tuberculous disease of any kind was only recorded in a few cases. There were also a few of valvular disease of the heart; but the numbers were insignificant. Syphilis does not come into account. On the whole it would seem that gastric ulcer is a disease by itself, not produced or even favoured by any special constitutional condition, though more likely to occur in those who are delicate and badly nourished.

We find it generally stated that this is a disease of the poorer classes, rarely found among the rich or well-to-do. The same statement is made with regard to a great many diseases, but it is open to criticism. Suppose that a particular physician has observed many more poor than rich affected with any complaint. In order to make this statement of any importance we should have to consider what proportion of each class he has under observation. Most of those attached to hospitals see many more hospital patients than private patients, especially if they have been long in the out-patient room. Moreover, we must remember that in this world, such as it is, there are many more poor than rich. Can anyone say what the proportion of the poor or lower classes to the rich or upper classes is? Is it 10 to 1 or 100 to 1? I do not know, but till this is in some degree settled, the statement that a disease occurs more frequently among poor than rich is not convincing. Precisely the converse, I may say, holds with regard to diseases said to be common among the upper classes than the lower, such as gout, hay fever, nervous asthma. Here we may readily trust our general impressions, because we refer the larger proportion to a smaller number of patients.

Gastric ulcer certainly does occur in young ladies. I have seen several cases, and also in middle aged or elderly men of the more wealthy classes, but in what proportion I am quite unable to say.

Prognosis.

The prospects of a patient with gastric ulcer will vary according to the stage, and according to the time that it has already lasted. Nothing can well be more alarming than the symptom of an acute ulcer leading to hæmorrhage, or, still more, to perforation. But experience shows that recovery takes place in most cases where there is no actual perforation. Hæmorrhage was the direct cause of death in 2 cases only out of 48 fatal cases.

Experience shows that a recent ulcer, if not rapidly fatal, tends to recovery; so that in the young the prognosis is on the whole good. But if the alarming symptoms result from a chronic ulcer, as is often the case, the prognosis is not so good. Persistence of chronic symptoms, and recurrence of acute symptoms is to be expected. And our only test of acute and chronic disease during life is the previous duration of symptoms, fallacious though it may be. It follows that the longer symptoms have been observed the worse is the prognosis. Indeed, a really chronic ulcer is probably seldom absolutely healed. Recurrence of grave symptoms may always be expected.

There is a remarkable difference in the proportionate mortality of men and women respectively. The percentage of deaths among male cases is about 22 per cent.; among female cases a little over 6 per cent.; and for both taken together 8½ per cent. It follows that gastric ulcer, though rarer in men than in women, is a much more fatal disease in the former. Also, the liability of men to die of this disease goes on much later in life; having its maximum between 30 and 40; and being very considerable between 50 and 60. In women the liability to death is slight after 30, and very small after 40. If these rates were calculated according to the number of persons living at each age period, the discrepancy would be still more striking.

It would be interesting to know the subsequent history of cases in which there is apparent recovery. The experience of hospital and private cases is that recurrence may take place after several years, so that we cannot hastily pronounce any case permanently cured.

MORBID ANATOMY.

So much has been written on the anatomy of gastric ulcer as recognised *post mortem*, that I will not dwell upon it. This is, however, the real foundation of what we know about this affection, and the only ground of definition, and therefore of diagnosis. It is difficult to attach much importance to the supposed recognition of gastric ulcer before *post-mortem* examinations were made.

TREATMENT.

This is a most important subject, but the limits of time imposed on the present occasion prevent me from making more than a very few remarks.

In acute cases, when profuse hæmorrhage is the marked symptom, the principles of treatment are clear enough. We want to give the injured organ the most complete physiological and mechanical rest. Beside perfect quiet and inactivity, we have to put the functions of the stomach, if possible, into complete abeyance for as long as possible. The only absolute method of doing this is to withhold all food by the mouth and sustain the strength as far as possible by rectal feeding.

Theoretical objections may be made against the possibility of absorption of food by the rectum. I remember the time when experienced physicians were extremely sceptical on this point. But experience has shown that life may be sustained by this method of feeding, though it is after all but a slow starvation. I believe that a great step has been made by the introduction of peptonised foods. It is probable that milk alone is hardly absorbed by the rectum, and beef-tea which was formerly given, we now know hardly deserves the name of a food. Eggs, whether it is the yolk or the albumen that is absorbed, appear to give better results. But I have come in the end to trust almost entirely to peptonised foods.

The general principles and methods of rectal feeding are too well known to need discussion. The chief points appeared to me to be to consider how long a patient can be nourished by this means, and by what method, if any, the possible period may be prolonged.

It is usual to interdict not only food of any kind, but even water by the mouth; and to try and relieve the sensation of thirst by giving the patient small lumps of ice, as recommended in every textbook. I maintain, on the other hand, that water, given in small quantities by the mouth, is not only not injurious, but decidedly advantageous. To begin with, ice does not really relieve thirst, as we may know by experience, and the quantity of water represented by a little lump of ice is absurdly small.

Moreover the patient who drinks water is able to support life under rectal feeding much longer than without. This is shown both by analogy and by direct experience. Rectal feeding, I have said, is but a slow starvation. Now nothing is more certainly established than that we are able to support starvation much longer with water than without. Men have been known to live without food, but, with access to water, for a much longer time than is required for rectal feeding as a therapeutic measure.

We find that rectal feeding for one week without water is a severe strain upon the bodily strength. Some patients cannot even bear it as long as this. But if they are allowed to sip water in moderation, I find that they can bear a fortnight's rectal feeding without more inconvenience than most patients find after one week without water. The danger in rectal feeding is not emaciation or want of nutrition generally, but failure of the heart. During this process or at least in the second week great care is required to avoid this accident. The patient must not be allowed to sit up, especially suddenly, nor to move for any purpose. With these precautions, and allowing water by the mouth, I have often prolonged rectal feeding for a fortnight or longer. We must not forget that the mere act of swallowing has been shown to be a stimulus to the heart. Of course we know that water may be absorbed by the rectum, but giving it by the mouth has this advantage among others. I propose therefore, as one of the problems of gastric ulcer, whether taking water by the mouth should be forbidden during rectal feeding.

There is one small point in connection with rectal feeding to which I should like to direct attention, namely, the occurrence of acetonuria, that is, the presence of diacetic acid or acetone in the urine. We know that this occurs not only in diabetes but in various diseases of the digestive system. The largest amount of acetone I ever found in the urine was in a case of extreme alcoholic dyspepsia. It has also been recorded in cases of gastric ulcer, but I do not happen to have observed it except when the patient was under rectal feeding, or under an extremely restricted diet. In many of my cases the observations were made by my then house-physician, Dr. Dixon, now well known as a physiological investigator, and some were carefully analysed in the hospital laboratory. Under these circumstances the condition can hardly be due to perverted gastric digestion since the stomach is not digesting at all. I have therefore regarded as the result of starvation, since it is known that acetonuria has been produced by artificial deprivation of food in animals; and in extreme alcoholism as in diabetes, the condition is one of virtual starvation. Further observation will show whether this explanation is mistaken. I therefore propose as a minor problem connected with gastric ulcer whether acetonuria is due not to the disease itself, but to rectal feeding or extreme restriction of diet.

About drugs in the treatment of gastric ulcer I have no time to say much. The most useful appear to be salts of bismuth and next nitrate of silver. Their action is, of course, entirely local, and their suitability appears to depend upon the fact that they are not absorbed (or, in the case of silver, very slowly), and therefore, unlike salts of zinc and lead, the local action of which is the same or stronger, they do not produce vomiting or any general toxic effect.

The results of treatment are certainly encouraging. The large number of cases with severe hæmorrhage and other serious symptoms which recover is satisfactory evidence of the success of treatment before perforation has occurred. When this terrible accident has actually occurred, we know of no method which gives any chance except an operation and suturing the perforation with surgical precautions, which I need not dwell upon. We have had some very successful operations of this kind at St. Thomas's, and others which, notwithstanding the greatest care and skill, were unsuccessful. I refrain from trying to state the results, because I could not give them completely, and an incomplete summary would be misleading.

The amount of success which has been obtained leads one to ask the question whether operative measures may not some day be applied to ulcers where perforation has not occurred, and the very probable fatal termination thus warded off.

SUMMARY.

The following are the problems connected with gastric ulcer which seem to me most in need of elucidation:

1. Is gastric ulcer increasing in frequency?
2. Is the connection of hyperacidity with gastric ulcer proved; and can it be ascertained without danger?
3. Are our present means of diagnosis in non-fatal cases quite satisfactory, especially in cases where there has been no hæmatemesis, but even when this has occurred?
4. Is there an acute form of gastric ulcer, different from the chronic form?
5. Is the original cause or starting-point of gastric ulcer really known?
6. Is gastric ulcer so rare in the upper and middle classes as seems to be generally supposed?
7. During rectal feeding should taking water by the mouth be prohibited?
8. Is acetonuria a frequent accompaniment of rectal feeding?

II.—SAMUEL HERBERT HABERSHON, M.A., M.D., F.R.C.P.,
Assistant Physician to the Hospital for Consumption, Brompton.

DR. HABERSHON addressed his remarks first to the last problem enunciated by Dr. Payne. He showed diagrams drawn from some private cases of his late father, and compared them with Brinton's statistics, showing a gradual rise in the proportion of cases from early to old age, as related to the number of people of that age living at the time. He exhibited curves which showed the difference between the incidence of the disease in males and females, clearly indicating some potent cause of gastric ulcer—and probably of acute cases—occurring in young females between the ages of 20 to 35. With regard to the problem of diagnosis, Dr. Habershon described three classes of cases in which the diagnosis was difficult: (1) Cases

of gastric pain and vomiting in young anæmic subjects in whom no hæmatemesis is present. In these one may suspect but cannot always diagnose the condition, which is sometimes revealed subsequently by alarming symptoms. (2) Neurotic cases of irritable stomach and great hyperæsthesia, with the history of pain after food, sometimes introduced a great difficulty of diagnosis. Dr. Habershon described an aid to diagnosis of which he had heard and frequently found of practical value. If pressure was made with the finger upon the carotid artery on one side of the neck or the other, the tenderness and hyperæsthesia of the epigastrium was found to be remarkably diminished. He did not pretend to explain the observation or to do more than state it as an empirical fact, and as to whether the disappearance of tenderness was due to moral effect or to the effect of some control of circulation in the brain. A third class comprised certain rare cases in which the symptoms were anomalous, and consisted of pain not following but relieved by food, and occurring some hours after food, associated with retching and occasional regurgitation. Hæmatemesis occurred in two cases. In both there was an ulcer found after death, near the pyloric end of the stomach. As to the question of whether an ulcer was acute or chronic, Dr. Habershon suggested that acute ulceration was more likely to occur in young females, and that when certain late sequelæ of gastric ulcer were found upon examination—such, for instance, as signs of cicatricial tissue, evidenced by some thickening felt through the abdominal wall, or by some severe irregular pain occurring through the involvement of a branch of the pneumogastric nerve—it was more probable that the case was chronic, even though the symptoms were recent. Further dilatation of the stomach was a result of chronic ulcer of the stomach, though an acute dilatation sometimes occurred in the early stages in conditions of great prostration.

III.—William Gordon, M.A., M.D., M.R.C.P.,

Physician to the Devon and Exeter Hospital.

Dr. Gordon said: At first sight it seems strange that we have so little certain knowledge of the causes of gastric ulcer, but we must remember that until the last few years no one saw these ulcers until they had undergone not only the ordinary *post-mortem* changes common to dead tissues, but also (often, at least) more or less digestion by the gastric juice after death. When we remember this we shall have less difficulty in understanding how it is that we know so little.

Now we are entering on a new field of inquiry; for so long as some surgeons consider it desirable in select cases to excise perforated gastric ulcers, so long shall we have invaluable opportunities of studying these ulcers as they exist in the living body. It seems not unlikely that the systematic examination of excised ulcers would give us a far clearer insight into their causation than has been hitherto possible, and one cannot but feel surprised that apparently no one has yet thought it worth while to make the necessary investigation.

Eight or nine years ago I had an opportunity of examining a very typical example of acute perforating gastric ulcer. The specimen, which had been some time in spirit, showed a clean circular hole, punched out as it were, in the stomach wall, with no naked-eye evidence of inflammation or even swelling round it; and from the edge of this ulcer sections into the surrounding tissue, stained with methylene blue, showed a condition which was at least suggestive. The edge of the ulcer was confused and almost structureless, having apparently undergone digestion, a little way from the edge there was indication of a certain amount of inflammation with aggregation of leucocytes, and (what impressed me most at the time) beyond these leucocytes and reaching for some distance into the stomach wall, were numerous cells stuffed with micrococci and free groups of micrococci scattered in the tissue. On the free edge of the ulcer there were also microbes, but these were of various sorts, both bacilli and cocci. In the tissues there were cocci, and cocci only. One could not help wondering if the ulcer were caused by these cocci. I did not then pursue the investigation, for it seemed to me that without fresh specimens, specimens excised in life, no useful result could be arrived at, and eight years ago no one talked of excising gastric ulcers. Now, in certain cases the material has become available, although none of the cases which have come under my notice operated on by my surgical colleagues have been cases where excision was thought desirable. But I have searched the records of recent operations in the hope of finding some facts which might at all events suggest the true pathology of the disease, and it is to some considerations arising out of this rather limited inquiry that I would venture to ask your attention for a few moments.

The theories which have been advanced from time to time to explain the origin of gastric ulcer may be briefly stated thus:

1. Embolism with digestion of the damaged area. But in the vast majority of cases there is neither evidence of any source for an embolus nor of the existence of any embolism elsewhere in the body. This suggestion may be safely set aside except as a possible cause in exceedingly rare cases.

2. Thrombosis with digestion of the damaged area. But in the vast majority of cases there is neither atheroma nor syphilis, nor suggestion of thrombosis in any other vessels. Here, again, we may safely set aside the suggestion except as possibly true in rare cases.

3. Simple submucous hæmorrhage, with subsequent digestion. Here one fails altogether to understand how such a process could cause the destruction of the whole thickness of the stomach wall.

4. Trophic lesions due to some nervous abnormality. Perhaps this is the most unlikely suggestion that has been made, and rests, so far as I can discover, on no evidence of value.

5. Scalding food and corrosive poisons may in very exceptional instances give rise to this very common disease.

6. Mechanical pressure on the stomach, as by tight lacing. It seems scarcely conceivable that such a cause should be sufficient, protected as the stomach is.

7. Injury to the mucous membrane by swallowed substances with sharp edges. Judging by the rapidity with which stomach wounds heal, we can give no credence to this as a likely explanation.

In short, these theories have remarkably little to recommend them for the generality of cases; but there is another and as I think, a more probable view. There is evidence accumulating, experimental and pathological, that organisms can cause ulcer of the stomach as they can cause ulcer elsewhere. It is curious to see how hesitatingly this theory is put forward in some of our textbooks, and yet surely it is the theory which seems to bear upon it the stamp of probability.

I suppose it would be unscientific to say it is the only theory that in the light of modern pathology appeals to one's common sense. If one were to rub a pure culture of staphylococcus aureus into one's arm and produce a crop of boils there, what would one think of a pathologist who said they were embolic or thrombotic, or trophic or the results of petechiæ, when one knew that one's heart, vessels, and nervous system were free from any discoverable disease?

Now, what might we expect would happen if a culture of staphylococcus aureus were rubbed into the wall of the stomach? We are daily swallowing innumerable microbes, some of which must at least be capable of setting up suppuration in the tissues. These microbes are carried down in an alkaline medium of mixed food and saliva, and in an anæmic servant girl are associated with a surplus of saccharine material which should afford an ideal medium for their multiplication. Then they have twenty minutes or perhaps double that time in the stomach before the alkaline reaction is changed to an acid reaction, and during that time they are being rubbed and scrubbed all over the gastric mucous membrance by the muscular movements of the gastric walls and kept warm by the warmth of the organ which contains them. Should we be greatly astonished under such circumstances if "a boil"—to use a crude term—was produced in the stomach just as a boil may be produced on one's neck? And if there was a patch of gastritis or a mechanical erosion on the stomach surface would not such a result be even more likely to occur?

Next, let us for a moment assume that this might happen, and consider what would be the consequence. The gastric juice performs a twofold purpose. It is at once a digesting and a disinfecting fluid. According, therefore, to the virulence of the microbe and its point of entry we might have one of several results.

(*a*) A rapid and serious injury of an area of the stomach wall. If from the position of this area it were not speedily reached by the acid juice, the injury might easily proceed by acute inflammation of the whole thickness of the wall, which

would naturally tend to affect a circular area wider internally than externally, to a very serious extent and then if the gastric juice did reach it too late to act as a disinfectant, it would simply digest out the injured circle and we should have the acute perforating ulcer of the stomach with a clean punched out opening. The swelling of the surrounding tissue might easily have altogether subsided when we examined it *post mortem*, and as a matter of fact this subsidence of swelling after death has been actually observed. We would then find, microscopically, that the edge of the ulcer was digested, that some indications of inflammation existed round it, and that colonies of cocci were being carried away on all sides by the phagocytes which had enclosed them.

(*b*) Or a less virulent organism or one less fortunately placed would have time to cause only a slight degree of surface injury. The tide of gastric juice would then exercise its protective action by the digestion of the surface, the production of an erosion and the destruction of the microbes before they could accomplish more extensive damage.

(*c*) An intermediate result might follow. The gastric juice might effect an erosion, but fail to destroy the microbe, only succeeding in weakening it. We should then have a slow alternation of progress of the ulcer and digestion of the damaged tissue, together with irritation of the exposed surface both mechanically by food and chemically by the acid, so that inflammation would steadily advance beyond the limits of destruction, the ulcer produced widening and deepening simultaneously, adhering to neighbouring organs, and eating its way into their substance. In fact we should have an ordinary chronic funnel-shaped ulcer.

And there should be other peculiarities about the result of such processes. The part of the stomach where the gastric juice is free from hydrochloric acid at the moment of its secretion—where the secretion of the glands is alkaline—would suffer from ulcers, as Dr. Sidney Martin has pointed out in his valuable book. Therefore the pyloric region would suffer. And the part of the stomach which is most fixed—the part from which the organ depends—would be apt to suffer because it would tend to be away from contact with the acid contents of the stomach. Thus the lesser curvature would suffer. Also the parts of the stomach which are the most remote of all from the acid contents, and where the microbes would remain longest undisturbed by the antiseptic and digestive action should be just the parts where perforations could most frequently happen, whilst those parts which are most continuously or frequently bathed by the gastric juice should be just the parts where perforation would be most infrequent. Perforation ought, in fact—if my suggestion be correct—to occur most often on the anterior surface, and especially near the cardiac orifice, and least often on the posterior surface. And this is just what happens. The analysis of published cases makes that very clear.

It seems to me that a theory of microbic origin will explain the facts of gastric ulcer better than any other. The explanation of the infrequency of posterior perforations, which attributes this infrequency to less mobility, of that surface is very improbable, for it is by no means obvious that the back of the stomach moves less freely over other organs than the front. Moreover, the infrequency of anterior adhesions has been much underrated.

It rests with our surgical colleagues when they excise gastric ulcers to supply us with the material necessary to the solution of this problem. Such an ulcer could be cut in half, and one half hardened for cutting and staining, whilst the other might be immediately used, with suitable precautions, for bacteriological cultivation experiments.

IV.—WILLIAM CALWELL, M.A., M.D.,

Physician to the Royal Victoria Hospital, and to the Throne Consumption Hospital, Belfast.

DR. CALWELL emphasised the question of the necessity of preventive treatment in gastric ulcer. It was too much the custom to temporise with suspicious cases of dyspepsia. The patient was allowed to pursue ordinary avocations, and mild restrictions of diet with medicinal treatment were advised. It was imperative that this mode of treatment should not be pursued for long. The physician must be emphatic in his conduct of the case, and although the affection be but apparently a case of indigestion, if the patient be a young woman she should be put to bed, and an absolutely milk diet, duly prepared, insisted on. This offered the best possibility of preventing the formation of an ulcer, and if an ulcer had formed, it would tend to minimise the formation of adhesions, and so the best had been done to leave a healthy stomach, with the peristaltic action unimpeded. It was commonly believed that adhesions were a protection against perforation; but in some 14 of 16 cases lately operated on for perforation within the last couple of years in Belfast, there were found large adhesions, some of which were very indurated and extensive. This led to the question whether some so-called perforations were not really rents in the coat of the stomach due to the adhesions. The question of the possibility of adhesions to the pancreas being a cause of acute hæmorrhagic pancreatitis was important and as yet undecided. In operating on cases of perforated gastric ulcer, the surgeon could, by enlarging the perforation, and with the aid of a laryngeal mirror and reflector, inspect the mucous membrane of the stomach. The question of rectal feeding and of the return to ordinary diet was one of the greatest importance and the really vital point in treatment.

V.—Miss JULIA COCK, M.D.,

Senior Physician to the New Hospital for Women; Joint Lecturer on Medicine, London (Royal Free Hospital) School of Medicine for Women.

MISS COCK said: I should like to report two cases which illustrate in a striking way the great difficulty in diagnosis which may arise when clinically some of the more important symptoms or complications of gastric ulcer are closely simulated in patients who are not, as a matter of fact, the subjects of gastric ulcer. Such cases are probably not extremely rare. These have been selected from others of a like nature occurring at the New Hospital for Women because in both diagnosis was brought to the test of actual examination. In Case I after death, in Case II by exploration of the abdomen on two separate occasions during life.

CASE I.—A girl, aged 17; housemaid. Admitted to the New Hospital for Women, November 29th, 1895, with certificate from home doctor of urgent hæmatemesis.

History of Present Illness.—Quite well until November 14th (two weeks before admission), when she began to have pain after food in the epigastrium. No vomiting occurred till November 27th, when she vomited twice. On November 28th she became faint and giddy, and vomited "a large quantity" of bright blood.

On admission she was blanched, but not excessively; not collapsed; complained of no pain. Temperature 98.8°; pulse 88. Some epigastric tenderness, not marked and not characteristically localised. Examination of the chest showed nothing abnormal.

Treatment.—Absolute rest in recumbent position; nutrient enemata; sips of water by mouth. She did well until December 1st, when she vomited twice, bringing up first 10 ounces of bright blood, and an hour after 18 ounces, dark and clotted. After this she was blanched and faint. Pulse rapid and feeble 120. Restless, and complained of abdominal pain; temperature subnormal. She rallied, and on December 10th was taking milk by the mouth without pain, tenderness, or vomiting.

December 16th. Patient complained of sudden severe epigastric pain, and the temperature rose to 102°. In the evening the temperature was 105°, and marked epigastric tenderness developed. The abdomen was not distended except in the epigastrium, and moved with respiration in the lower two-thirds. From this time signs pointing to a small subphrenic abscess were developed, namely: (*a*) Fulness and marked tenderness and pain in the epigastrium; (*b*) temperature rising to 103° or 104° in the evening; (*c*) signs at the base of the left lung of pleurisy and pneumonia; (*d*) an area of tympanitic resonance over left lower chest. The question of surgical interference was discussed, but on the whole it was thought best to wait until the collection came within reach, and not to risk the conversion of a localised into a general peritonitis by premature operation.

On December 20th the patient became suddenly worse, and died of heart failure without any change in the physical signs.

The *post-mortem* examination showed the following condition: (1) The right lung and pleura were healthy. The base of the left lung showed pneumonia and pleurisy, marked involvement of the diaphragmatic pleura in the inflammatory process, with adhesions to diaphragm and base of lung. (2) The abdominal organs were normal; the stomach was healthy, and there was not the slightest trace of ulceration recent or chronic; there was no subphrenic abscess. The œsophagus and intestinal tract were healthy. The vessels of the portal area were normal. No source of hæmorrhage was found, and the body showed no trace of disease except that noted above.

This case seems worthy of record on account of the close and coherent simulation of gastric ulcer which it presented in the following points: (1) The age, sex, and occupation of the patient; (2) the history of pain after food, vomiting, and severe hæmatemesis, followed by a resemblance to perforation and subphrenic abscess, so exact as to mislead experienced observers, both medical and surgical.

It would be interesting to hear to-day some suggestion as

to the possible source of hæmatemesis occurring in young women who are not the subjects of gastric ulcer. Clinically, one strongly suspects that such hæmatemesis occurs in these patients more commonly than is usually believed, and in the case quoted the presence of severe and repeated hæmatemesis with no gastric ulcer was conclusively proved. The patient died of pneumonia, having already been debilitated by loss of blood; the source of that loss we did not discover.

CASE II.—A woman, aged 34. Charge nurse at the New Hospital for Women. Warded on December 19th, 1898, with acute epigastric pain, vomiting, and distension of abdomen.

Past History.—Always delicate. Eight years ago had severe hæmatemesis, and was treated for gastric ulcer. A year and a-half ago had pleurisy and congestion of lungs; ordered to Ventnor. While there had severe gastric pain and slight hæmatemesis. After six months went on duty as nurse at the North London Consumption Hospital. While there had three attacks of hæmatemesis. One night was seized with violent abdominal pain, collapse, and distension. Laparotomy was performed by a distinguished surgeon, under the impression that a gastric ulcer had perforated. No perforation was found, no adhesions, and no discoverable sign of gastric ulcer.

Since coming to the New Hospital for Women two months ago she had constant pain after food, with vomiting which only slightly relieved. On the 18th she was put to bed and treated by rest, rectal feeding, and afterwards by careful feeding by the mouth. Progress was unsatisfactory; pain and vomiting continued, there was almost daily distension of coils of intestine, the abdomen was resistent and somewhat tender. No fluid or definite masses could be made out. The temperature rose to 100° each night. Chronic peritonitis was thought to be present, either the result of inflammation set up by a slowly-perforating gastric ulcer, or due to tuberculous infection of the peritoneum, with adhesions hampering the stomach and intestines. As a month of careful treatment had failed to produce any improvement and the patient was losing ground, it was decided to open the abdomen a second time with the intention of searching for peritoneal adhesions, and if possible freeing the organs involved. Laparotomy was accordingly performed by Mrs. Scharlieb on January 22nd. Chronic peritonitis was found with numerous adhesions; two strong bands were attached to the greater curvature of the stomach. All adhesions were divided. The stomach was carefully examined after freeing. Nothing to indicate disease of its coats was detected by the eye or with the finger. The peritonitis was thought to be simple and the result of mechanical interference with the peritoneum at the time of the first laparotomy. Subsequent microscopic examination confirmed this view. The patient made a good recovery and left the hospital on February 17th.

This case also shows how closely the graver complications of gastric ulcer may be simulated by other conditions. One would especially emphasise the hæmatemesis and the resemblance to symptoms of acute perforation at the time of the first laparotomy. It is worth remembering that an exploratory laparotomy may be followed by troublesome and even dangerous chronic peritonitis, as in this case, a fact which should have its weight in deciding on abdominal section for purposes of diagnosis.

VI.—GEORGE NEWTON PITT, M.A., M.D., F.R.C.P.,
Physician to, and Lecturer on Pathology in, Guy's Hospital.

DR. NEWTON PITT said: Undoubtedly the diagnosis of gastric ulcer is most frequently made in young women. Yet if we take *post-mortem* records, we find that at inspections the frequency with which gastric ulcer is found is far greater in old people than in the young; and, allowing for the proportion living at each age, it is found with increasing frequency for each decade of life, that is, a greater proportion of the population between the ages of, say, 60 and 70 die with gastric ulcer than is the case with those between the ages of 20 and 30. It is therefore clear that to reconcile these statements gastric ulcer in the earlier periods of life must generally end in recovery, whereas this is not the case in the later periods when the lesion more often proves fatal. In addition the question is raised whether the diagnosis may not often be at fault. It is generally asumed that whenever there is hæmatemesis in a young woman there is a gastric ulcer. We have, however, all met with cases where the patient has after an attack of hæmatemesis refused to submit to a strict diet, and yet no further symptoms have developed, and the patient has remained well. I cannot help feeling that not infrequently hæmatemesis occurs in young women independently of gastric ulcer, although the pathology of the condition is still obscure. I have twice made *post-mortem* examinations on patients who had died from hæmatemesis but in whose stomachs no trace of ulceration could be found, nor were any of the other lesions, such as cirrhosis of the liver, which might cause hæmatemesis, present; in fact, the bodies were free from any organic lesion which could account for the loss of blood. I am not prepared to satisfactorily explain the causation of the loss of blood in such cases, but would draw attention to the difficulty there is in discovering the seat of an epistaxis after it has ceased, and it is often not easy to find even while the nose is bleeding. Sometimes probably the mucous membrane of the stomach oozes blood in the same way without any actual ulcer. It has been shown that certain materials, such as opium, when circulating in the blood are excreted into the stomach. Possibly some such may be a cause of intense engorgement and or hæmatemesis, in the same way that toluylendiamine is capable of producing ecchymoses in the duodenum when it is being excreted by the bile. Still at present no such facts have been observed. Under the present circumstances it is most desirable that hæmatemesis in young women should not be assumed as necessarily connecting a gastric ulcer.

VII.—WILLIAM STUART-LOW, F.R.C.S.,
London.

MR. STUART LOW said: There are few affections around which medical and surgical controversy has more strenuously striven than that of the pathology and treatment of gastric ulcer, and with less profit either to the suffering patient or the perplexed practitioner. Here pathology has failed to point the way to a proper treatment, and therefore the therapeutics of gastric ulcer is still so much groping in the dark. A series of theories have been propounded, but each in its turn has failed to explain the malady, or serve as a foundation of a successful therapy. The clean, red, and sometimes angry or dry tongue, the clear, hyperacid, non-mucous and scanty vomit, and the constant constipation with the frequently dry scybalous stools, certainly point to deficient secretion of the normal juices of the alimentary canal, but more especially to a deficiency of the mucous secretion—the natural protector and lubricator of the entire passage. Noting these and other features in the semeiology, and the fact that many of my cases of gastric ulcer have been in patients suffering from the accompanying diseases of atrophic pharyngitis, and rhinitis, and amenorrhœa, conditions in which the pathology is admittedly clear, and the dominating feature is that of a deficiency of mucous secretion, I have for some time been treating my cases of irritable stomach, painful digestion, and gastric ulcer with mucin, and with most satisfactory and gratifying results.

I have had prepared for me, by the kind courtesy of Messrs. Burroughs and Wellcome, the mucin in powder form. They manufacture it from animal bile, which contains it in large amount. It is a dark brown powder, and almost tasteless and odourless, and therefore quite unobjectionable to swallow. This I give just before meals, or rather as *hors d'œuvre* at the beginning of the meal in cachet form, with an equal quantity (10 grains) of sodium bicarbonate.

The good effects of this are markedly evident in the immediate alleviation of all painful sensations in the gastric region, and in the establishment of regularity in the action of the bowels. That the constipation is relieved is a most important fact, and the value of mucin as an aperient is a great point in its favour as a therapeutic agent, and of much interest physiologically.

The diet is also carefully regulated and studied, and certain substances having a specially soothing and protecting action, such as animal jellies—calves' foot, mutton and chicken jelly—and thin cornflour, and the frequent use of a jujube of freshly-prepared marsh mallow is allowed. I have the feeding done regularly every two or three hours, according to the severity of the symptoms. The *rationale* of this method of treatment is to protect the irritable gastric surface, and especially the ulcerated part, from attrition by the food and constant worry by the hyperacid gastric juice; therefore the mucin is given first to form a gluey coating over the lining membrane, a kind of Unna's dressing is applied, and the surface thus soothed and protected. If there is any pain or uneasiness still after nourishment then another cachet is given, and thus the increased acidity counteracted. The ulcerated surface on the stomach wall is thus treated just as one on the surface of the body would be—protected from friction and rested, and given a chance to heal.

Mucin is a compound substance, being composed of a proteid and a carbohydrate called animal gum; it is the principal constituent of mucus, and is very widely distributed in the body, occurring in epithelial cells, goblet cells, and

mucous glands. There are probably several mucins, and they are all viscid and tenacious, and precipitated by acetic acid, and are dissolved by dilute alkalies. The contents of one cachet—10 gr. each of mucin and sodium bicarbonate mixed in a glass with a little water, and gradually heated to the temperature of the body—readily changes into a sticky glue, and this is the viscid solution that effectually protects the ulcer and the sensitive and inflamed gastric wall and regulates the bowels. The functions of mucin in the animal economy may be various, but one most certainly is that of the protection of the delicate membrane it pours over, not only from influences from without, but from the effects of other secretions as seen in the urinary and alimentary mucous tracts.

We know that any injury to the healthy gastric mucous lining is healed over with marvellous ease and quickness, because the wounded part is protected by the mucus present in the healthy state from the irritating influence of the gastric juice, and we also know that the gastric ulcers that bleed as evidenced by melæna and hæmatemesis are those that do not perforate but generally get well, as the effused blood, no doubt, takes the place of the deficient mucus, and thus shields the ulcered part, and allows it time to heal over effectually.

VIII.—PHILIP HENRY PYE-SMITH, M.D., F.R.C.P.,
Consulting Physician to Guy's Hospital.

DR. PYE SMITH said: Some statistics I collected nine or ten years ago revealed that the clinical records show a large proportion of cases in young women, while the *post-mortem* records show a much more equal distribution between the two sexes at different ages of life. The pathology of gastric ulcer is still obscure, but provisionally I would separate the acute perforating ulcer with perhaps venous (not arterial) thrombosis preceding it, from the superficial, extensive, chronic ulceration, and would regard hæmatemesis as sometimes occurring independently of ulceration or cirrhosis, as hæmaturia or epistaxis does. With respect to prognosis, I regard hæmatemesis as of little gravity, and it does not, I think, call for active treatment. As to treatment, I believe in rectal alimentation for a short period, and in using spoonfuls of warm water, and not pieces of ice, to alleviate thirst.

IX.—ROBERT SAUNDBY, M.D., F.R.C.P.,
Physician to the Birmingham General Hospital; Professor of Medicine in the University of Birmingham.

DR. SAUNDBY was not prepared to accept without hesitation the views of Drs. Pye-Smith and Newton Pitt that pathological facts contradicted the usual opinion, founded upon clinical experience, that gastric ulcer, etc., was most common in young women. He would suggest the need for collecting a greater number of *post-mortem* cases than had been done at Guy's, as the disease was relatively rare in the *post-mortem* room. He emphasised the difficulty of diagnosis which previous speakers had described, and pointed out the close resemblance of anæmic gastralgia with gastric ulcer, and the differential value of hæmatemesis. If, as Dr. Newton Pitt thought, which he was not prepared to deny, even this symptom might be present without ulceration, they must admit that it was impossible to affirm with certainty during life the presence of an ulcer of the stomach. He urged that in these doubtful circumstances the treatment of all cases presenting this group of symptoms should be uniform. The patient should be put to bed, and if hæmatemesis had occurred no food should be taken by the mouth for 48 hours, thirst being allayed by teaspoonful doses of warm water; but nutrient enemata or suppositories (1 egg beaten up, 1 teaspoonful of brandy with milk to 4 ozs.), might be given every four hours. After the lapse of this period feeding by the mouth should be resumed by giving 1 oz. of milk and lime water every hour, and this quantity should be increased every day, or every second day, until ordinary house diet was reached by suitable stages in the course of from three weeks to a month. The only medicine needed, as a general rule, was sulphate of iron, combined with sulphuric acid and magnesium sulphate in doses suitable to combat the anæmia and the constipation so usually present.

ON INTERMITTENT PULSE.*

By ARTHUR R. CUSHNY, M.A., M.D.,
Professor of Materia Medica and Therapeutics in the University of Michigan.

NONE of the ordinary symptoms are more readily appreciated than intermission of the pulse, and it is remarkable that while many less noticeable abnormalities in the pulse movements have been the subject of exhaustive treatises, hardly any attempt has been made hitherto to describe the different forms of intermission or to classify them on the basis of the cardiac physiology of the present day. According to the views entertained now, the contraction of the heart originates at the junction of the great veins with the auricles and passes throughout the latter almost instantaneously; there follows a short pause occupied by the transit of the impulse to the ventricle, which then contracts, and the open beat is succeeded by the arterial pulse. If the cycle be represented diagrammatically (Fig. 1.)



Fig. 1.

the broken lines may represent the auricular contraction, the unbroken vertical lines the ventricular systole and the familiar undulating line the arterial pulse tracing. The auricular contraction (*a*) is followed by the ventricular (*a'*) and this by the pulse elevation (*a''*), the auricular systole (*b*) by the ventricular (*b'*) and the pulsation (*b''*), etc. The auricular contractions are represented by broken lines because they can be appreciated clinically only in exceptional cases. Our diagnosis must as a general rule be made from what can be learned from those parts drawn in unbroken lines—the ventricular systole and the arterial pulse.

In the diagram (Fig. 1) two intermissions are represented as occurring at A and B, but these are not due to the same cause. Between the pulse *c''* and *e''* an auricular contraction *d* occurs, that is, an impulse has been emitted in regular course by the part of the heart which originates the movement (the orifices of the great veins); but this impulse has not caused a ventricular contraction, either through its failing to penetrate through some obstruction between the auricle or ventricle, or from the inability of the ventricle to contract in response to the impulse. The cause of the intermission lies not in the area controlling the rhythm, but in the ventricle, and the intermission may therefore be termed ventricular. In the case of the other intermission at B, the ventricle is able and ready to contract, but it fails to do so because the rhythmical area has failed to emit an impulse. In this case the fault lies not in the ventricle, but in the rhythmical area, and as this leads to a failure of the auricular systole, the intermission may be termed auricular in contradistinction to the ventricular. Hitherto no attempt has been made to distinguish between these two forms, and in fact, I am not aware of any distinct statement as to their existence. Some physiological experiments, into which I need not enter, suggested the possibility of diagnosing between these forms of intermission, and I find that most cases of intermission in disease may be relegated to one or other class without much difficulty. In the dog, when the ventricle fails to contract and the auricle maintains its rhythm, the intermission is exactly twice as long as the interval between two normal pulses; that is, in Fig. 1 the interval between *c''* and *e''* is exactly equal to twice the interval between *b''* and *c''* or *e''* and *f''*. This may be deduced from *a priori* reasoning also, for when the ventricle fails to respond to the descending impulse, as at A, it must simply wait until another reaches it and rouses it from its inactivity. But if the impulses descend at regular intervals, the ventricle must remain in diastole for twice the ordinary time when it has missed the first impulse.

On the other hand, when, as at B, the emission of the impulse is retarded from any cause, there is no reason why

* A more detailed account of the experiments and the analysis of the sphygmograms will be found in the *Journal of Experimental Medicine*, iv, p. 327.

it should be delayed for a whole cycle; on the contrary, it may be only a fraction of a second late, or may, as far as *a priori* reasoning indicates, be delayed indefinitely. The ventricular rhythm is dominated by the auricular while the rhythm of the originating area is uncontrolled. Accordingly an intermission due to ventricular disorder must of necessity be a multiple of the ordinary pulse interval, while an intermission from failure of the rhythmical area may be of any duration. In animals I have found the auricular intermission to be considerably shorter than two-pulse intervals, and in man I find practically only two forms of intermission: (1) Those in which the interval is about equal to two-pulse intervals and (2) those in which it is shorter than two-pulse intervals. The first I ascribe to ventricular failure, the second to auricular. In order to distinguish between them the sphygmogram must be accurately taken and carefully measured, and for this purpose I have used Jacquet's chromo-sphygmograph and curve analyser (Figs. 2 and 3).

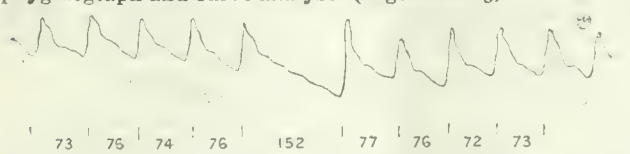


Fig. 2.—Ventricular intermission. The figures beneath the tracing represent the length of the pulse in one-hundredths of a second. The intermission, 152, is exactly twice the length of the preceding pulse, 76.

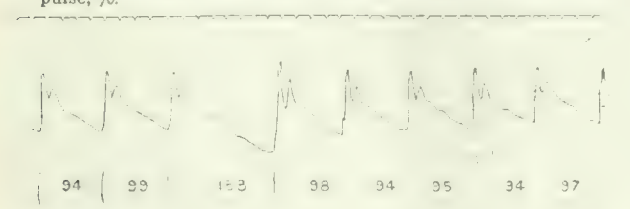


Fig. 3.—Auricular intermission. The figures beneath the tracing indicate the length of the interval in one hundredths of a second. The intermission, 158, is much less than twice the length of the preceding pulse ($2 \times 99 = 198$).

Every case of intermission of the pulse at the wrist does not indicate that the ventricle has failed to contract. On the contrary, such true intermissions are rare in comparison with those of another form first described by Wenckebach.[1] In most instances an intermission is due to a premature contraction of the ventricle, which occurs before the heart has recovered sufficiently from the last systole to allow of its full strength being developed or of the cavity containing enough blood to cause an elevation of the pulse. In Fig. 4 two such

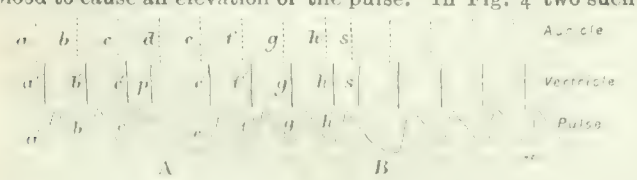


Fig. 4.

intermissions of the pulse are represented. At A the auricular systole *c* is followed by the ventricular systole *c'* and by the pulse *c''*, and the systole *d* would be followed by a similar cycle; but the ventricle contracts prematurely at *p* owing to some excessive irritability of its muscle. This contraction is too weak to expel much blood into the aorta, and the ventricle contains little blood at the time, but it is sufficient to exhaust the ventricle, so that it is unable to respond to the impulse corresponding to *d*, and there is therefore an intermission, the ventricle remaining quiescent until it is aroused by the impulse causing *e* descends from the auricle. At B a process in many respects similar occurs; but here the premature ventricular systole (*s'*) is not due to the excessive irritability of the ventricle, but to an impulse descending from the auricle, in which it has caused a premature systole (*s*). The result is similar, in that the amount of blood expelled by the ventricular systole is too small to cause an arterial pulse. Thus, the form of intermission due to a premature contraction may again be subdivided into two classes: (1) excessive irritability of the ventricle (ventricular intermission) or (2) excessive activity of the rhythmical area (auricular intermission); and the two forms may be distinguished by the length of the intermission in the sphygmographic tracing, the ventricular being exactly twice the ordinary pulse interval, the auricular being shorter. This conclusion may be arrived at by a consideration of the known facts regarding the physiology of the heart, and is confirmed by experiments on animals, in which a premature contraction is elicited by electrical or mechanical irritation of the ventricle or auricle.

Those forms of intermission in which the cause is not the failure of the heart to contract, but rather a premature contraction, may be called false intermissions to distinguish them from the first class, and may be diagnosed from true intermissions by several methods. In the first place the sphygmographic tracing often shows a slight elevation during the apparent intermission. Very often one such intermission occurs among a number of others, or there may be an elevation during each intermission (Fig. 5). But a simpler means



Fig. 5.—Ventricular intermissions. The figures below the tracing represent the length of each interval in one-hundredths of a second. During each intermission there is a distinct elevation, so that the irregularity is due to excessive irritability of the ventricle causing a premature systole.

of diagnosis is offered in the stethoscope, for in the true intermission there is no heart sound in the interval, while in the false intermission there is a dull muffled first sound corresponding to the premature contraction, and following immediately after the last normal systole. It often obscures the second sound of the heart, and may itself be followed by a weak second sound. It seems likely that some cases which have been described as instances of dissonance between the systoles of the two ventricles are really to be explained as examples of a normal beat followed very soon by a premature contraction of the ventricle.

Intermissions of the pulse may thus be divided into several classes, which can be diagnosed from each other tolerably readily:

1. True ventricular intermissions in which the pause is exactly equal to two pulse intervals, and during which there is no cardiac sound.

2. True auricular intermissions in which the pause is shorter than two pulse intervals, and during which there is no cardiac sound. This form is not infrequently seen in healthy persons, and these appear to be due to excessive inhibition, for it disappears on treatment with atropine which paralyses the inhibitory nerves. In other cases it may be due to auricular disease.

3. False ventricular intermissions, in which the pause is equal to two pulse intervals, but is often interrupted by a slight elevation. In every case a first heart sound can be heard during the intermission. This form appears to be caused by excessive irritability of the ventricle leading to a premature systole.

4. False auricular intermissions, in which the pause is shorter than two pulse intervals. There is often a slight elevation of the pulse during the intermission, and the stethoscope reveals a systolic sound very soon after the last regular pulse elevation.

5. Another form of intermission has been described by Wenckebach,[2] who attributes it to imperfect conduction of the impulse through the heart, perhaps especially in the auriculo-ventricular connecting fibres. It appears to be rarer than the other forms, though Wenckebach has had several cases in which it appeared. I have not yet had an opportunity of analysing a pulse of this form, and shall not enter on it. It often leads to allorhythmia, or intermissions recurring at regular intervals, but is not the only cause of this phenomenon.

for very often false ventricular or false auricular intermissions occur every fourth, fifth, or sixth contraction with unfailing certainty.

As regards the prognosis of these different forms of intermission, my experience is still too limited to admit of generalisations. The true auricular intermission seems to be of little significance when it arises from excessive inhibitory action, and is then merely an exaggeration of a physiological phenomenon.

The treatment of cardiac disease accompanied by intermissions may be rendered more exact by the careful examination of the pulse, for this may indicate whether the condition of the heart is one of excessive irritability or of deficient activity. When the intermission is of the true variety, some drug such as caffeine or digitalis appears to be indicated in order to increase the activity of the heart, while if the intermission is due to excessive irritability some sedative acting on the inhibitory mechanism might be suggested, such as aconite. But further experience is required before any definite statement can be made, though it would seem to be justifiable to demand a more careful examination of the heart than is generally performed before treatment is carried out.

REFERENCES.
[1] *Zeit. f. klin. Med.*, xxxvi. [2] *Ibid.*, xxxvii, xxxix.

HEADACHES AND OTHER NERVOUS SYMPTOMS IN RELATION TO POST-NASAL ADENOIDS.

By DAVID MCKEOWN, M.A., M.D., M.Ch.,
Surgeon to the Manchester Eye and Ear Hospital.

HEADACHE, mental dulness, bad memory, languor, lassitude, defective nutrition, and stunted growth are some of the results of post-nasal vegetations. They are commonly held to be due to an imperfect aëration of the blood—that is, a deficiency of oxygen, an excess of carbonic acid, and the presence of organic impurities which should have been removed by the normal interchange in the lungs, the imperfect aëration being the consequence of an insufficient supply of air, and the insufficiency the outcome of the encroachment of the adenoids upon the respiratory channel. It is admitted that during waking hours the supply is sufficient, buccal respiration being then available and ample; but it is alleged that the supply is insufficient during sleep, that "in the vast majority of cases the air enters the lungs almost entirely through the nose during sleep, however great may be the difficulties, and though the mouth be kept wide open." The absence of buccal respiration with a widely-open mouth is ascribed to "a very overpowering instinct in favour of breathing through the nose, which during sleep, when the will power is suspended, strongly asserts itself." Mr. Parker, from whom I have been quoting, does not tell us of the condition, open or closed, of the mouth air channel, which might be mechanically obstructed—for example, by contact or proximity of the tongue and palate, the result of gravity and the suction of inspiration combined—even though the mouth was wide open. It is to be hoped that further investigation may enable our authors to drop the mysterious, to dispense with "a very overpowering instinct," and to give a simple explanation.

Whilst admitting that imperfectly aërated blood would give rise to various groups of symptoms, I submit that the idea that imperfect aëration is the cause—the only cause—of the symptoms is not warranted, for several reasons. First, the symptoms exist in cases (and these not few in number) where the growths are too small to give rise to respiratory insufficiency. Secondly, some of the symptoms are immediately cured or relieved by operation—a fact which is not explicable by the aëration theory. Thirdly, another explanation—complete or partial and applicable to all cases, to those with and to those without respiratory obstruction—is available.

There are some points to be kept in view when dealing with questions relating to adenoids. (*a*) That adenoids are only an accentuation of the normal condition, namely, of the lymphoid tissue composing the pharyngeal tonsil, and that the hypertrophic condition is not regarded as growths and requiring treatment until it has attained such dimensions as to cause derangement of some of the physiological functions. (*b*) That between the minimal quantity causing derangement and the maximum found, a quantity almost sufficient to fill the naso-pharynx, there is a very wide range, which doubtless finds its counterpart in the varying symptoms of the patients. (*c*) That the degree of obstruction depends upon the relation which the capacity of the post-nasal space bears to the size of the adenoids; that the capacity of the space varies with the individual, and in the individual with the age; and that the bulk of the adenoids not only varies with the age, but is subject to considerable fluctuation of a more or less temporary character from the various circumstances which lead to congestion. (*d*) That adenoids imply a diminution of the post-nasal space, but not necessarily such a diminution as to prevent the requisite quantity of air from reaching the lungs when the demands of the economy are at their lowest point, namely, during sleep. There are, therefore, two classes of cases—those in which the obstruction is so great as to lead to an insufficiency of air during sleep, and those in which it is not. In the latter, imperfect aëration could not be the cause of the symptoms; in the former, it is operative, but, as will presently appear, it is not the cause but only one factor.

What explanation can be offered in lieu or in aid of the insufficient doctrine of imperfect aëration? The condition of the tissues in the naso-pharynx and the nasal fossæ, with the consequent obstruction to the vascular and lymphatic circulation and pressure upon nerves, appears to me to be an important factor in the production of the headache and the allied symptoms. I have been led to this view by the following considerations: First, one of the immediate results of operation is the cure or relief of headache and some of the other symptoms. I have operated in a large number of cases without anæsthetics, and have found (*a*) that patients who had headache at the commencement of the operation were free from it within a few minutes after completion of the manipulation; (*b*) that where cerebral troubles were not complained of or were even denied, patients have immediately after operation, and sometimes spontaneously, spoken of the great relief they experienced, "as if a weight had been taken off the forehead," "as if a cloud had been lifted from the forehead," "feeling brighter," "feeling lighter," "feeling quite different." Whatever may have been the cause of the symptoms thus relieved instantaneously, one thing is clear, it was not imperfect aëration of the blood. Secondly, the removal of adenoids is, as a rule, attended by profuse hæmorrhage. Thirdly, headaches are often relieved or cured by epistaxis or by derivative treatment. Fourthly, the anatomical relations of the pathological area with the intracranial contents are so intimate that we could not expect the latter to be unaffected by the long-continued morbid condition of the former. The adenoids are situate on the posterior wall and roof of the naso-pharynx; their site is the seat of marked vascularity, and often of catarrh. Very frequently the nasal fossæ are likewise the seat of catarrh, and probably in all or the vast majority of cases there is more or less hyperæmia. The frontal sinus, the ethmoidal cells, and the sphenoidal sinus are so closely associated with the nasal fossæ and the naso-pharynx as also to suffer to some extent, probably from hyperæmia. The area thus involved extends from the posterior wall of the pharynx to the anterior boundary of the nostrils, comprising a series of cavities separated from the cranial contents by a very thin layer of bone. Fifthly, headache is a symptom of acute nasal catarrh and also of evanescent attacks of nasal congestion, but it is not caused by imperfect aëration of the blood. The conditions present in post-nasal adenoids are somewhat similar—vascular engorgement, tumefaction of the soft tissues, and pressure on nerves—and though from their long continuance they may be less resented by the economy, still their results should be analogous, that is, headache, etc. Sixthly, with headache resulting from nasal catarrh or nasal congestion there is a feeling of weight or oppression in the region of the forehead, an inability or disinclination for mental work or physical exercise, and a general depression of the vital functions. These concomitants of headache we find, as we might expect, in cases of adenoids, and their continuance, not for days or weeks or months only, but for years, affords a simple explanation of the baneful influence of adenoids on the economy as portrayed in the group of symptoms under consideration. Seventhly, the symptoms vary in degree, and the fluctuation

is explicable by the condition of engorgement, whether it be dependent upon the position of the body (recumbent or erect), climatic changes, or other accidental circumstances.

Normal nutrition requires that the nutrient fluid shall be (*a*) of good quality, and (*b*) normally circulated through the tissues. The advocates of the aëration theory have confined their attention to the quality of the fluid, and have ignored the question of circulation, although in the subject under consideration, a disorder in the circulatory mechanism, plays by far the more important *rôle*. Bearing in mind the relationship which has been established between the teeth, the eye, and the nose, on the one hand, and headache on the other, we recognise that our subject raises the question, Does reflex action play any, and if so what, part in the causation of the symptoms in question?

THE DIASTOLIC EXPANSION MOVEMENT OF THE VENTRICLES AS A FACTOR IN COMPENSATION FOR DISEASE OF THE MITRAL VALVE.*

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My object in this paper is to bring forward evidence in favour of the heart having the power of enlarging its chambers by means of a true muscular expansion movement. The possession of this power would constitute the heart a double acting pump, instead of its having the power of single action only with which accepted theories credit it. It would then be able to fill itself by its own counterstroke, just as is the case with most of the pumps which the art of man has devised. The possession of such a power would mean that the heart is a much more perfect mechanism than if it had to depend upon some extraneous mechanism for the filling of its ventricles, as the ordinarily accepted theory asserts.

This view—that the ventricles of the heart possess the power of aspiration in virtue of a true vital expansion of its muscular fibres—was first definitely propounded by Dr. Lockhart Gibson, when assistant to the late Professor Rutherford, some sixteen years ago.[1] He pointed out that in the case of ordinary striated muscular fibre the phase of contraction, which results from a minimal stimulation of the muscle, is followed by a phase of sudden expansion, during which the muscle develops about one-fifth of the force it develops during contraction, but in, of course, the reverse direction. The possession of such an expansile power by the individual muscular fibres of the heart would cause a sudden and moderately powerful enlargement of the ventricles at the commencement of the diastole.

Physiological Evidence as to the Nature of the Expansion Movement of the Ventricles.

So far as I have been able to ascertain, there is but little experimental evidence that the expansion of the ventricles is due to a muscular movement in addition to simple elastic resiliency. We know, however, that the muscular fibre of the ventricles remains active for an appreciable time after the closure of the semilunar valves, and does not at once enter upon its phase of relaxation. The most striking physiological evidence of the possession of such a power which I have been able to find is afforded by some experiments made by Stephani and quoted by Tigerstedt.[2] He found that section of the vagus nerve diminished the force of the heart's recoil after contraction. Where the vagus was divided, less force was required to prevent the diastolic enlargement of the heart than was necessary before section of the vagus.

The confirmation of this observation would seem to prove that the expansion of the heart is, in part at all events, a muscular movement under nervous control, and not simply a mechanical phenomena due to elasticity only.

Clinical Evidence of the Nature of the Expansion Movement in the Normal Heart.

Clinically we have little opportunity of studying the changes in volume which the heart undergoes during its phases of contraction and expansion. Were instantaneous radiography of the heart possible we should have an excellent means.

Our chief source of information is the cardiograph. There are difficulties and fallacies connected with the use of the cardiograph of which we must take account. Of these the interpretation of the cardiogram is perhaps the most important. This I have in large measure overcome by the simultaneous record of the cardiac sounds upon the cardiogram. This can be done by means of an electric time-marker, which makes an audible click as it rises and falls. It is quite easy in most cases to synchronise the clicks of the electric signal with the heart sounds, and thus to distinguish between the systolic and the diastolic portion of the cardiogram.

In the course of the last nine years, since I first used this method, I have had ample evidence of its reliability; and, further, I think I can claim that the beautiful researches of M. A. Chauveau upon the movement of the cardiac valves in relation to the intracardial pressure curves and the cardiogram,[3] fully confirm the interpretation of the cardiograms which I am about to give.

In using the cardiograph for the study of the expansion movement of the heart we must remember the limited area over which we can take tracings, and give due allowance for the changes in form which may occur apart from alterations in the volume of the heart.

Evidence obtained from the Study of the Heart in Valvular Disease.

When considering the process of compensation for incompetence or stenosis of the mitral valve, the possession of such a muscular power as we are discussing would be of very great service to the heart. In the case of mitral incompetence the occurrence of hypertrophy and dilatation would increase the aspiratory power equally with the expulsive power. If this were so we would expect in a case of compensated mitral regurgitation that there would be little, if any, backward pressure on the lungs or right side of the heart, and that the left auricle would have no more than a normal amount of work to do.

Pathological Evidence.

In the only cases of mitral regurgitation with unbroken compensation which I have been able to examine *post mortem* there was evidently much regurgitation, and the left ventricle was much dilated, but the left auricle was of almost normal size, suggesting that the hypertrophy and dilatation called forth by the failure in expelling power was fully sufficient for compensation so far as aspiration also was concerned.

In the first of the cases the left ventricle held 165 c.cm. as against the normal 80 c.cm., while the left auricle held the normal 90 c.cm. In the other case the left ventricle held 235 c.cm. as against the normal 80 c.cm; the left auricle only held 115 c.cm. Considering that it is quite usual for the left auricle to be dilated to the extent of 120 c.cm. in patients dying of pneumonia and other diseases without definite cardiac disease, these figures are remarkable, and cannot, so far as I can see, be explained by the ordinarily accepted theory of compensation in mitral regurgitation. They are, I consider, strong evidence in favour of what I may call the "*vis a fronte*" theory of compensation, namely, that the ventricle by increase in its aspiratory power compensates for the incompetence of the mitral valve, and that so long as compensation remains unbroken the left auricle and right side of the heart have very little extra strain put upon them.

In comparison with the above figures those of another case (Case IV) are striking. Here compensation had failed, and while the left ventricle only held 200 c.cm. as compared with the 235 above mentioned, the left auricle held 250 c.cm. as against the 115 where compensation was good. In such a case there was undoubtedly extra strain on the left auricle and right ventricle.

Cardiographic Evidence in Mitral Regurgitation.

In mitral regurgitation we have cardiographic evidence of increased diastolic expansion of the ventricles. I show some tracings taken from cases of mitral incompetence, and side by side with them some from normal hearts. The time of occurrence of the heart sounds is marked on some of them. In tracings taken over the apex beat the tilt of the heart's apex

* In part taken from a thesis (Gold Medal) for the degree of M.D. at the University of Edinburgh, 1892.

hides any movement due to change in volume, because, as has long been known, the apex remains pressed against the chest wall for an appreciable time after the closure of the semilunar valves. In tracings taken over the ventricle internal to the apex, the diminution in the size of the ventricle during systole causes the heart to recede from the chest wall, and we have more or less of a systolic depression in the cardiogram (*vide* Plate I, Case 1, Fig. 3. In such a situation the enlargement of the heart after the systole may also be expected to show as a rise in the cardiogram if sufficiently powerful. In taking my tracings I used a pressure of about ¼ lb. in the spring of my cardiograph, and therefore any elevation seen in the tracings I show implies that the heart wall was able to overcome a resistance of at least ¼ lb. in causing the elevation of the lever.

I show some tracings from a normal heart where there is some evidence of sudden enlargement at the time of the closure of the semilunar valves (Plate I, Normal heart Fig. 2).

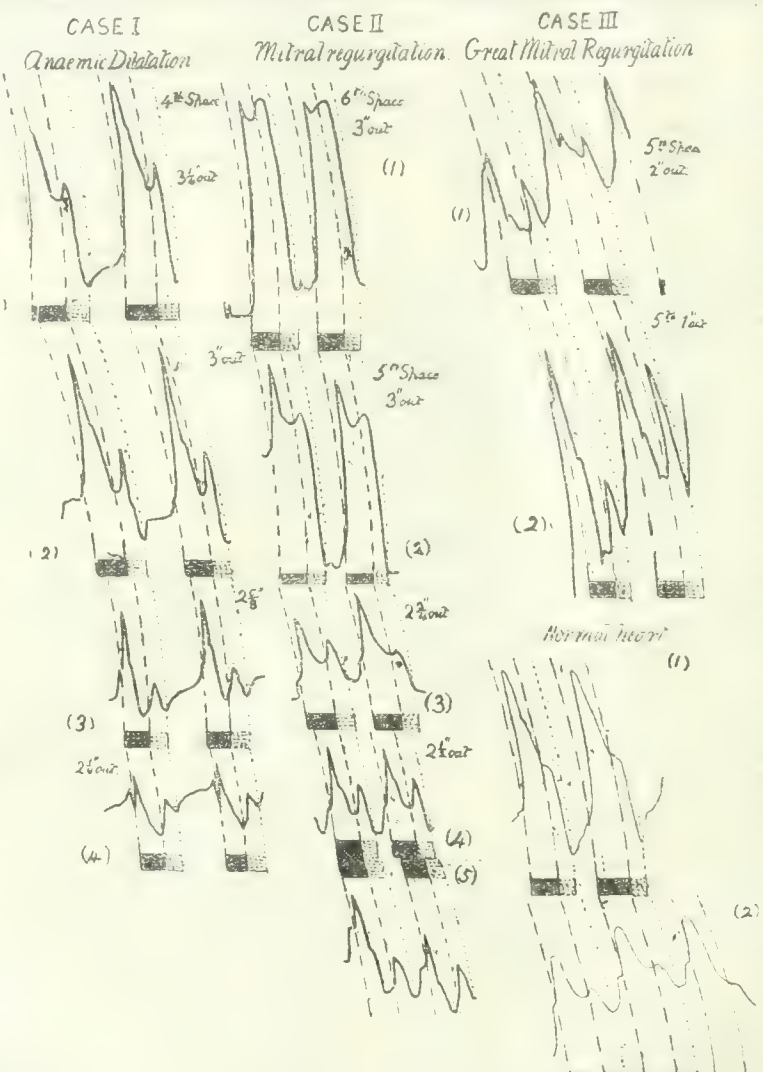
I also show some tracings taken over the right ventricle in a case of anæmic dilatation. They how very well the sudden enlargement of the ventricle after the systole (Plate I, Case 1, Figs. 2, 3). The fact of the lever of the cardiograph rising so rapidly and powerfully is proof that the ventricular wall does not relax till after a certain amount of expansion has occurred, otherwise it would not have strength to lift the lever. I may say that this is quite an ordinary type of tracing. In comparison with these I show some tracings from a case of moderate mitral regurgitation. In this series the diastolic expansion wave is well marked (Case II).

In the next two series (Cases III and IV) there was very considerable regurgitation. In the first the systolic diminution in size of the ventricle is much more rapid than normal, as might be expected, and the diastolic expansion rise is proportionately more marked. In the next (Case IV) there was very extreme mitral regurgitation, the cavity of the left ventricle was enlarged to nearly three times its natural size, and its contents being 7 ounces (200 c.cm.) instead of the 2½ ounces (90 c.cm.), the contents of the left auricle were 9 ounces (250 c.cm.). In this case the systolic diminution was so extreme and the diastolic expansion so great that the tracing is divided into two nearly equal halves by a deep notch.

CASE V.—Finally I show you some tracings taken over the right ventricle in a case of mitral regurgitation with extreme secondary tricuspid regurgitation. So extreme indeed was the regurgitation that a systolic thrill could be felt over the right auricle in the region of the right nipple. The tracings are extremely interesting, though complicated, and I have not time to go fully into them in this paper. I show you, however, a series from the outer part of the fifth left interspace.

I have proved the correctness of the interpretations given in the figures by means of many observations with the electric recorder of the heart sounds, and by the polygraph, and also by taking consecutive series of tracings ½-inch apart over the available part of the heart. The diastolic expansion wave is here very high, and in tracings taken in the fifth interspace in the nipple line—the apex being in the axilla—this part of the tracing is far higher than the rest.

In Fig. 5 is shown a polygraph tracing taken with a Marey's drum cardiograph, with the heart sounds recorded on it. It shows that the closure of the semilunar valves occurs at the notch about halfway up the diastolic expansion rise. It is difficult to me to believe that these phenomena can be explained on the supposition of the expansion movement being simply a mechanical one due to the elastic recoil of the relaxing heart wall. There is far more and far stronger movement than could be explained except by a true muscular expansion movement.



CLINICAL EVIDENCE IN MITRAL STENOSIS.

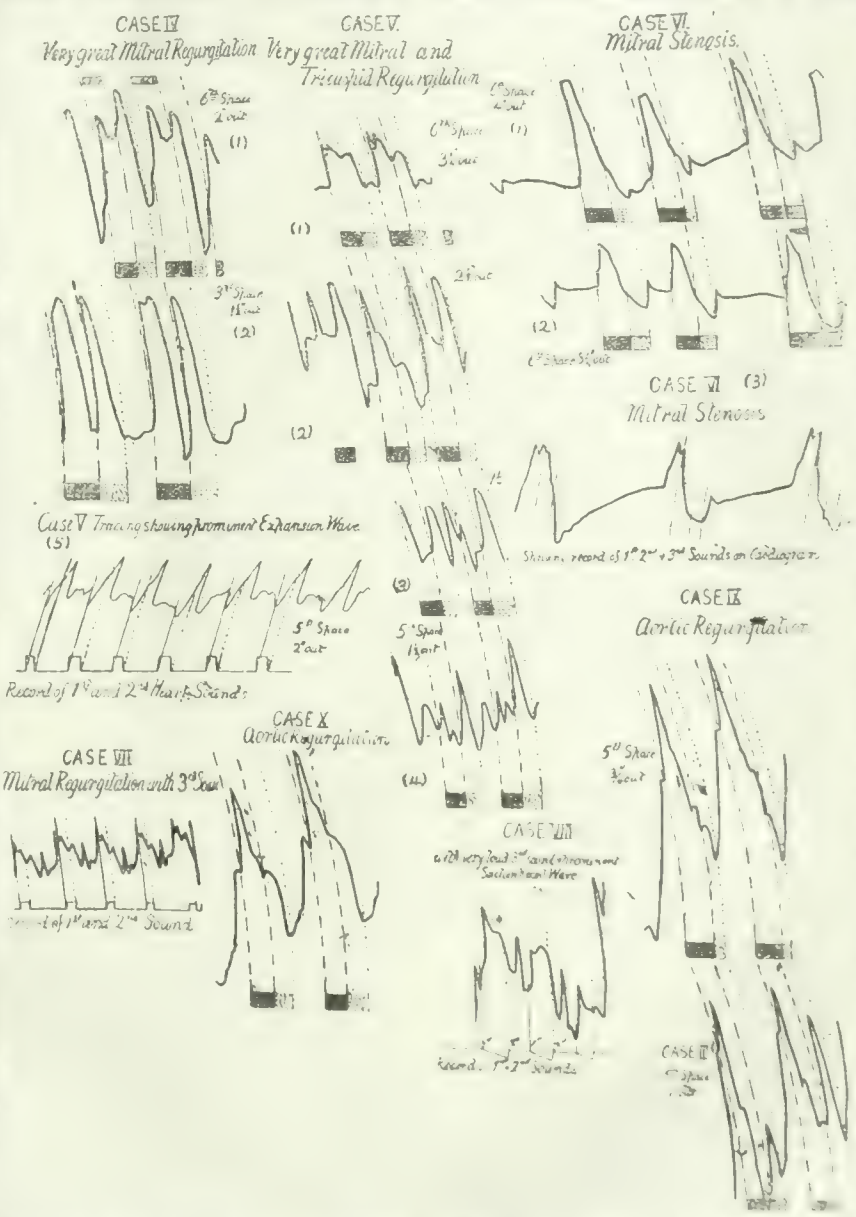
In mitral stenosis we have clinically various phenomena more or less indicative of increased diastolic activity on the part of the ventricles. In the first place there is sometimes *post-mortem* evidence that the left ventricle has increased work to do. Its wall sometimes seems to be slightly thicker than normal. Secondly, the first sound of the heart is louder than normal in mitral stenosis. Now the ventricle has, if anything, a diminished amount of work to do so far as its direct or forward work is concerned, owing to the hindrance to the filling of the ventricle, and we ought therefore to expect that the first sound would not be louder than normal. Thirdly, the first sound ends more sharply than normal.

The explanation of these facts is, I believe, that the ventricle alters its beat. It contracts with greater force and suddenness, in order that the recoil—both elastic and muscular—may be as great as possible, thus developing the maximum amount of aspiration. In this way the ventricle by its altered beat is able to compensate for the valvular disability, without there being any permanent need for increased action of the right heart. Every practitioner must know many cases of mitral stenosis which are fully compensated, and where there is no evidence at all of any increased blood pressure in the lungs. According to the ordinary accepted *vis a tergo* theory of compensation there must be increased pulmonary blood pressure in all cases of stenosis. According to the *vis a fronte* theory this is not necessary, and the clinical acts seem to me more in favour of the latter than the former.

I shall deal with the other clinical evidence of increased aspiratory action after dealing with the cardiographic evidence.

Cardiographic Evidence in Mitral Stenosis.

Owing to the ventricle filling more slowly than normal we expect the expansion wave to be less marked than normal, and we shall not expect it to show in the cardiographic tracings. This is so (*vide* Case VI, Figs. 1, 2, and 3.) Although the expansion movement itself does not show in the tracing we very often have an accessory wave which gives us very important evidence as to the presence of a powerful aspiratory action. I refer to a small sharp wave which occurs just after the diastolic expansion movement has ceased, namely, immediately after relaxation of the cardiac muscle has occurred. This wave is best seen at and near the apex (*vide* Cases VII and VIII) but is sometimes evident over a considerable part of the heart. The cause of this wave is, I believe, as follows: At the commencement of diastole the left auricle is naturally considerably distended with blood, and the ventricular aspiration causes it to rush into the ventricle with considerable force. Owing to the narrowness of the mitral orifice it enters more slowly than normal, and there is not time for all the blood to get through into the ventricle before the expansion movement ceases. When, therefore, relaxation commences there is still a strong stream of blood flowing into the ventricle. It is the impact of this stream upon the relaxed heart wall that causes the small rise referred to. (This wave is clearly not due to the auricle, because when the heart is irregular this wave maintains a constant relation to the beat which precedes it, while its distance from the following beat is variable.)



Suction Recoil Wave.

If this theory be correct we ought to see this wave (which I call the suction recoil wave) whenever the auricle is not able to discharge the bulk of its contents into the ventricle before the onset of relaxation. I show a tracing (Case VII) from a case where there was considerable mitral regurgitation with no stenosis, but where the ventricle could not dilate to its proper amount in consequence of pericardial adhesions. The cubic content of the left ventricle was 90 c.cm., and that of the left auricle 164 c.cm. In this case the suction recoil wave was most marked.

This suction recoil wave is closely associated with a diastolic cardiac sound which is, I believe, due like it to the aspiratory power of the ventricle. I refer to the so-called reduplicated second sound which is heard at the apex in mitral stenosis. This sound has no right to be called a second sound. It can easily be demonstrated that it is neither the aortic nor the pulmonary second sound. With a differential stethoscope it is frequently easy to hear all three sounds. This sound ought to have a name of its own, and I have christened it the third sound of the heart and called it so for many years. It has been described by some authors as the sound of the mitral opening. This is, I believe, not quite correct, for it is produced shortly after the opening of the mitral valve. I have in many instances recorded the time of occurrence of this sound on the cardiogram, and I find that it coincides exactly with the commencement of the suction recoil wave just spoken of. I believe that this sound is caused by the in-rush of blood into the ventricle at the commencement of diastole as was suggested by Dr. Sansom twenty years ago,[4] and the exact mechanism of its production I believe to be as follows:

During the phase of diastolic expansion the auriculo-ventricular valve is kept more or less rigid by the rigidity of the heart muscles. As soon, however, as relaxation sets in the valve is free to move, and if the auricle has not already been emptied by the aspiration during the expansion movement, the in-rushing blood stream will flap the valve back against the ventricle wall in a manner calculated to produce the faint sound we are speaking of.

Mitral Diastolic Murmur.

I now come to the last of the physical signs in mitral stenosis of which I wish to speak, viz., the mitral diastolic murmur. By this murmur I mean the one sometimes called post-diastolic, because of its occurring after the second sound, not with it as in the case of the aortic diastolic murmur. This

murmur is also sometimes, I believe, called a mid-diastolic murmur. It begins loudly and then fades away, although sometimes prolonged through the diastole. Its time relation to the second sound is constant, but its relation to the first is not constant, the reverse being true of the presystolic. This murmur is now, I believe, very generally recognised as being a suction murmur and due to ventricular aspiration, and the fact that it is very often strong enough to give rise to a palpable thrill is evidence as to the force of the aspiration.

On studying the relation of this murmur to the "third sound" of the heart it is evident that the two are closely related. The murmur occurs at the same interval of time after the second sound that the third sound does, and in cases where the third sound is audible a slight alteration in the rate or strength of the heart will frequently transform the third sound into the diastolic murmur and *vice versâ*. The diastolic murmur may accompany or replace the third sound. It never accompanies the true second sound. Also on recording the time of this murmur on the cardiogram it is found to coincide with the suction recoil wave just as the third sound does. The explanation given for the third cardiac sound holds true, I think, for this murmur. The valve segments are not free to vibrate in the blood stream till after the muscular relaxation has set in.

CARDIOGRAM IN AORTIC REGURGITATION.

The last point to which I wish to draw attention in this paper is the evidence given by the cardiogram in aortic regurgitation. If the diastolic expansion movement were purely a mechanical one it ought to be evident in aortic regurgitation as it is in mitral regurgitation. The cardiogram shows that this is not so. A marked feature of all the tracings I have taken in aortic regurgitation is the absence of the diastolic expansion wave. The tracings shown under Case IX, Fig. 1, and Case X, illustrate this point, and show the absence of the expansion wave.

In giving these tracings as typical of the cardiogram in aortic regurgitation I ought to add that my generalisation as to aortic disease is only based upon the cardiographic study of some 8 or 10 cases. There was, however, sufficient similarity in the tracings obtained to make it admissible to generalise from so few a number. The reason for this type of tracing is evident, for in aortic regurgitation increase of ventricular aspiration would only increase the amount of leakage. The heart, therefore, alters its beat so as to produce the minimum of diastolic expansion.

The tracings in aortic regurgitation therefore give us most important evidence that the expansion movement is one under nervous control and not a simple mechanical one.

In bringing this paper to a conclusion, I am conscious that much of it is theory, and therefore may be erroneous. But as a result of many years careful observation and research I have been unable to obtain any evidence except such as seems to point strongly in favour of the expansion of the ventricles being in large measure due to a true muscular movement.

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THE ORIGIN OF GOUT.

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THE discovery of the presence of uric acid in the blood of patients suffering from an attack of acute gout led to the formation of the theory that the symptoms which make up the disease we know as gout are caused by this presence of uric acid. This theory has led most investigation into the cause of gout into a series of inquiries as to the various ways in which uric acid can be formed in the system, ingenious in themselves, but giving no definite results as to the cause of gout, or much practical information as far as the treatment of the disease is concerned.

The object of this paper is to show that the symptoms of gout are not due to the presence of uric acid in the blood, also to suggest another explanation both for the symptoms of gout and for the formation of uric acid in this disease.

When the fact that uric acid was present in the blood in gout was first discovered, it was naturally supposed that the symptoms of this disease were due to the presence of this body, especially so, as when gout becomes chronic it is so often accompanied by the formation of deposits, either of sodium urate in various parts of the body, or uric acid deposits in the kidneys and bladder. A natural corollary of this proposition would be that if a certain proportion of uric acid in the blood was the cause of gout, then gout would be caused whenever this proportion of uric acid was present in the blood, yet we know that this is not the case. In leucocythæmia, for instance, the blood contains a large quantity of uric acid for a long-continued time, and no symptoms of gout arise, the same occurs occasionally in cases of malnutrition in children, yet no symptoms that we can put down to gout occur, although the excretion of uric acid may be sufficient to form uric acid calculi. It is said that gout does not arise in these cases because there is free elimination; there may be free elimination of uric acid, but still there is a higher percentage of uric acid in the blood in some of the cases, and for a longer time than there is in gout, yet no symptoms of gout arise; elimination can make no difference, unless it diminishes the percentage of uric acid in the blood, neither can it if the formation of uric acid still goes on; in short, elimination can do no good unless it diminishes the amount of uric acid in the blood.

Taking the various symptoms of gout, I think it can confidently be said that, with the exception of the presence of uric acid deposits, there are none of them which can be ascribed to the action of uric acid on the organism.

Take one of the commonest—headache. There is no positive evidence that uric acid will produce headache; there is plenty of negative evidence that it will not. In most of the diseases other than gout in which uric acid is found in the blood, headache is absent. The same can be said for almost every symptom of gout. Uric acid is said to be the cause of the headache, the digestive troubles, the lassitude, the high tension pulse, the acute joint troubles, the heart failure, etc., because it happens to be in the blood to be a symptom of gout, not because there is any positive evidence that it can produce any of these symptoms; on the contrary, all these symptoms are conspicuously absent in many diseases in which uric acid is found in the blood in large quantities.

Taking, again, a typical case of acute gout—inflammation of the metatarsal joint of the great toe—it is very difficult to conceive how the presence of uric acid in the blood could cause such inflammation, or, if it does do so, why should it not do so in cases such as I have mentioned before—namely, leucocythæmia and malnutrition in children? The supposition is that uric acid is deposited in gout in this joint for two reasons: one that the joint is one much used and far from the centre of the circulation; the other that the presence of uric acid in the blood leads to a deposition of uric-acid crystals in the delicate tissues of the joint. This attack frequently occurs in people in vigorous health with good circulation. If due to deposition of uric acid from the blood, then such deposition would be more likely to occur in diseases such as I have mentioned above, in which a high percentage of uric acid is present in the blood, and in which the circulation is slow and feeble, which would much assist such a process.

The constitutional disturbance also in a case of acute gout is out of all proportion to the region injured. The explanation given by the holders of the theory that uric acid is the cause of the symptoms of acute articular gout is that a sudden deposition of crystals of sodium biurate occurs in the synovial fluid and delicate tissues of the joints, thus causing the extreme pain and other symptoms of acute articular gout, and that no such constitutional disturbance occurs in the interval between the attacks, because, the deposition of urates being gradual, the tissues become used to them; yet we have frequent acute attacks in the same joint with slow deposition between them.

It is, too, against the usual laws of Nature that, if an irritant foreign body remains in any organ, the symptoms should quickly subside while the irritant actually increases, for after each attack, and during the intervals between the attacks, the deposits of such biurate enlarge.

It is, I think, much more probable that the deposition of sodium biurate which occurs in these cases is secondary to the attack; that inflammation precedes deposition of urates. The

deposition of urates found in the synovial membrane and structures beneath it are shown to be deposited from the synovial fluid. Assuming for a moment that the inflammatory process is not due to the uric acid in the blood, we have a joint rapidly and acutely inflamed quickly distended with synovial fluid rich in sodium quadriurate; as the disease progressed for some days the sodium quadriurate would become converted into sodium biurate, the synovial fluid would also decrease from absorption, the less soluble biurate would be deposited in the tissues surrounding the synovial membrane, especially the edges of cartilaginous structures in which the circulation is most sluggish. The conversion of sodium quadriurate, in which form uric acid exists in the blood, to sodium biurate, the salt of uric acid which forms the deposits in the joints, may take a long time—up to two or three days. The deposition first occurs in that part of cartilage or other structures of the joint immediately under the synovial membrane. At the commencement of an attack the synovial membrane is excreting a fluid rich in sodium quadriurate; after an attack has gone on a for a few days it is absorbing a fluid in which the sodium quadriurate is being converted into sodium biurate, in which process is the deposition of sodium biurate most likely to occur? Obviously during the absorption. Although the presence of uric acid in the blood in cases of gout is undoubted, there is no evidence that an attack of acute gout is preceded by a sudden increase in the amount of uric acid present. The evidence of the latest observers on this point is that uric acid is not increased during the attack. It is difficult to find out whether the amount of uric acid in the blood is actually increased during, say, an attack of acute articular gout, as the attack coming on rapidly there is not often an opportunity for procuring a specimen of blood some days before an attack. The value of the symptom of the presence of uric acid in the blood during the attack, would depend on the comparison with the amount present during the attack, contrasted with the amount present some days previous to the appearance of acute symptoms. As I have said above, the latest observations on this point go to show that there is no such increase.

When one comes to think of the various symptoms that constitute gout, symptoms affecting almost every organ of the body, one must conclude that the cause of gout is some morbid constituent of the blood, even if it is not due to uric acid. The chemical constituents of the blood are so well known that any of the known contents are unlikely to be the cause.

It must also be granted that whatever be the cause of gout, it must be produced in the digestive tract. The one common symptom of all cases of gout is digestive disturbance. Gout is one of the charges we pay for the luxuries of civilisation. In an uncivilised community in which presumably the digestive secretions are normal, no diet, not even a purely proteid one, will produce gout. On the other hand, once the digestion becomes deranged, almost any diet will cause this disease. It must cause it by some product of digestion, either absorbed from the digestive tract or produced by an alteration in the metabolism going on in some of the digestive organs. The only disturbance of metabolism that we know is produced in gout is the increased formation of uric acid, probably from the liver. As we have seen, it is extremely doubtful if uric acid has anything to do with the causation of gout. We are then forced to look further back as it were, for some cause. There must be some body formed in the intestinal canal capable both of causing the symptoms of gout, and also so altering the metabolism of the liver as to cause increased formation of uric acid. It is the fashion at the present time to put a great many diseases down to toxins, but I consider the symptoms of gout are those which are essentially toxic in character the headache, the depression and irritability so frequently found, are the commonest toxic symptoms we know.

The symptoms are widespread, the nervous symptoms are well marked, and we have the grave symptoms of irregular gout which are, I think, undoubtedly due to a toxin acting mainly upon the nervous system. We know that many toxins have a distinct tendency to attack joints, the causes usually given for the selection of the metatarsal joint of the great toe for attack, namely, the distance from the centre of the circulation and consequent diminished resisting power, and the frequency with which the cartilage of this joint is found damaged would explain why the metatarsal joint should be attacked more than another. An attack from this cause would much more likely be attended with great pain and constitutional disturbance than that from the deposition of sodium urate, which is non-irritating when deposited in other regions of the body. I have already given my reasons for believing that the deposition of urates is secondary to the joint inflammation.

I consider a toxin to be the cause of this disease. If so, such toxin must be formed in the intestine. As the symptoms of gout are constant it must be a definite toxin, the product of a definite bacillus acting upon the intestinal secretion. As gout is capable of being induced in any subject it must be one of the bacilli normally found in the intestinal canal.

The toxin of a bacillus varies with its food. It has been shown that the normal intestinal bacilli can produce most virulent toxins when the character of the intestinal secretion is changed. The normal bacilli living in the intestinal canal produce toxins which have no pathological effects upon the organism owing to their being a normal constituent of the intestinal contents. If through long-continued intestinal derangement, such as a specific catarrh of the intestinal canal, helped by a hereditary tendency to change in the intestinal secretion, a condition would be formed in which normal bacilli present in the intestines would produce a definite toxin having a toxic effect on the organism.

The process, then, which I consider produces gout in a patient for the first time is as follows: Owing to continued digestive trouble, sometimes aggravated by a sudden change in the mode of life, a catarrhal change takes place in the intestinal canal often indicated by few symptoms. This gradually becomes sufficient to cause the formation of altered bacterial products, which have a toxic effect upon the organism. This tendency would be transmitted to his offspring, and by their starting life with it they would in all probability have gout earlier and in an aggravated form. My theory is a simple explanation of the cause of gout, and if accepted would indicate a definite line of treatment, would explain the sudden production of gout by an error in diet, and would explain the hereditary tendency of gout to appear unless checked by the most careful regulations of diet. It would explain, moreover, the tendency of gout to attack civilised communities; how the diet which checks gout is that which best approaches to simplicity; how that the empirical treatment of gout which we know to be most successful by experience is that which is most calculated to restore the intestinal canal to a normal condition.

The blood in gouty subjects always contains uric acid, but whether it increases in amount during the actual attack of acute gout is extremely doubtful; its presence is only a symptom of gout, and would be produced by the action of the toxin upon the liver changing the metabolism in that organ. That uric acid is produced in the liver is the most probable solution of the problems that attend the formation of that body. The balance of evidence, clinical and experimental, is against its formation in the kidneys.

The action of two drugs must always be taken into consideration when speculating upon the origin of gout—the action of colchicum in arresting its symptoms, and that of lead in inducing gout. How colchicum acts is unknown; its only definite action in moderate doses is on the intestinal canal, in which it increases the intestinal secretion. It may also cause some change in the constituents of this secretion. The first action of lead when taken in very small doses over a long-continued period is a gradual contraction of the intestinal blood vessels and a diminution in the intestinal secretion, which favours an attack of gout. The action of these two drugs would favour my theory. Certainly neither of them has any influence on the formation or elimination of uric acid.

The supreme test of any theory is its effects upon the treatment of the disease it is applied to. Although it is not within the scope of this article to enter into my treatment of gout I may venture to say that gout treated as due to a toxin produced by an altered intestinal secretion will give better results than if treated in any other manner. If my theory is correct gout cannot occur if the gastro-intestinal secretions are normal.

Therefore, the object of treatment in gout should be to shorten the digestive process as much as possible, especially gastric digestion; to select a diet which will be quickly

digested; to forbid alcohol during treatment; to try to obtain a normal condition of the intestinal canal—this can be done by careful attention for some months and will break that habit of an altered intestinal secretion, which I am convinced is the true cause of gout.

CONCLUSIONS.

1. Gout is not due to the presence of uric acid in the blood, (2) the symptoms of gout are due to a toxin, (3) the concurrent presence of uric acid is due to the action of the toxin on the liver, (4) the toxin is formed by the action of one of the intestinal bacilli on an intestinal secretion specifically altered by diet, this alteration being assisted by hereditary disposition.

Dr. SAMUEL BARTON said: Evidently some other factor besides excess of uric acid in the blood is necessary to explain acute attacks of arthritic gout. The ordinary everyday cases of lithiasis do not develop arthritic gout. Children who commonly get excess of uric acid do not get the arthritic disease. Excess of lithic acid is very common in Norfolk, while arthritic gout is comparatively rare. I agree that the extra factor is probably associated with dyspeptic troubles, and believe that arthritic gout is not now such a common disease as 20 years ago, owing to the fact that people are better educated as to how digestion is best carried out. As to treatment gastric disorder should be avoided by temperance in food and drink, a mixed diet should be enjoined, and the action of the eliminating organs should be encouraged.

Mrs. GARRETT ANDERSON thought it impossible to accept the toxic theory of gout. She could not understand how any toxin could appear again and again at very short intervals under certain conditions, which conditions could be readily reproduced at will by the patient. She believed gout to be a fault of metabolism, the elimination of waste materials being imperfect, and varying with the habits, mode of life, and age of the patient.

SUBCUTANEOUS SALINE INFUSIONS IN PNEUMONIA.

BY

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THE following cases may be worth recording in connection with the occasional use which has recently been made of this method in the treatment of pneumonia, and particularly in connection with the results published by Dr. Clement Penrose of Baltimore[1].

The various kinds of treatment which have been adopted from time to time have been repeatedly shown by statistics not to have modified materially the mortality from pneumonia. Most of the methods have not yielded better results than those obtained by careful nursing without drugs; whilst some have not even come up to the latter standard. This means that a certain proportion of cases recover independently of treatment, and that the percentage of fatal cases is not reduced by any form of treatment below a certain minimum which corresponds closely to that obtainable by proper nursing and the expectant plan, and that the effects of potent drugs is more obvious in the direction of danger than of relief.

Since the prognosis seems to depend chiefly upon the individual features of each case rather than upon the mode of treatment, cases may be classified early in the attack into two groups: (1) The cases likely to recover (pneumonia in children, in healthy young people and in temperate robust adults); (2) the cases almost certain to be fatal (double pneumonia in old age, in confirmed alcoholism, or complicating severe constitutional diseases); (3) the cases with uncertain and exceedingly anxious though not hopeless prognosis (severe pneumonia in unhealthy or debilitated subjects of all ages, but particularly after 30).

The first group does not lend itself to any profitable therapeutical investigation. The second is probably beyond the capabilities of any remedies likely to be available in the near future. But in the third group, if only the suitable remedy could be found, the balance might conceivably be turned in favour of recovery. It is in these cases, in which sometimes, judging from outward appearances, all seems at first to be serene, that a sudden change for the worse supervenes, often about the fourth day of the disease, perhaps owing to the liberation and the absorption of toxins.

The cases reported belong to this third group. The idea which guided their treatment was that since infusion has been found of service in cases of severe collapse and in cases of pneumonia at a late stage, it should be, *a fortiori*, yet more efficacious if administered at an early period, and might conceivably modify in a favourable way the course of the pathological changes. With that view the cases were submitted to treatment as early as possible in the attack. They were all hospital cases, selected because of their gravity. The injections in all of them were administered with strict antiseptic precautions by Dr. Beaumont Percival from a bottle such as is used for intravenous transfusion.

CASE I. *Post-influenzal Apical Pneumonia: Recovery.*—M. B., aged 37, a cook, had influenza commencing on April 3rd, accompanied by coryza and pains all over her body, took to her bed on April 6th, and was admitted into St. George's Hospital on April 9th. No rigor. She was well nourished, with flushed face, rather dusky lips, and some dyspnœa. Pulse 140 full, respirations 42, temperature 103°. Labial herpes present. There was a dull note behind over the whole of the right lung, chiefly marked at the apex. In front the right apex was also dull. On auscultation fine crepitations and tubular breathing were audible, in addition to coarser *râles*, bronchophony and whispering pectoriloquy were present. Saline infusions were carried out as follows: April 10th. A pint of normal saline solution of temperature 110° F., containing NaCl 3j to 1 pint of water, was infused under the skin in the right subclavicular region of the chest by means of a hypodermic needle at 6 P.M. Shortly after the infusion, which occupied an hour, she was reported to have been rather blue and dyspnœic, but this soon passed away. April 11th. She seemed much better, the cyanosis of face was less and respiration easier. The *râles* in the chest were much less noticeable. The infusion was repeated at 11 A.M. No ill results followed. A third infusion was given at 6 P.M. On April 12th a fourth infusion was given at 11 A.M. The patient seemed to be much improved, and the crepitations had almost entirely disappeared. The pulse was firmer, the temperature was falling, and on the next day the temperature fell to normal and remained so afterwards.

Local Effects of the Infusion.—There was absolutely no tenderness or swelling on the right side of the chest. The infusions had been given alternately on the right and on the left. In the second left interspace a small, round, smooth swelling developed, somewhat tender and hard, about the size of half a pigeon's egg. After persisting for several days this gradually disappeared. It was evidently a small hæmatoma caused by injury from the needle. She was discharged on May 2nd, with both lungs apparently normal. No other treatment was given except an expectorant mixture, purgatives, and small doses of brandy.

CASE II. *Pneumo-typhoid Fever in an Alcoholic Subject: Death: Necropsy.*—J. S., aged 21, a metal polisher, a well-nourished man, rather dusky-looking in the face, with laboured respiration, mouth and tongue dry and covered with sordes, was admitted on May 2nd. After an imperfect recovery from influenza he had felt too weak for work, and had vomited on April 28th; no rigor. Respirations 44, pulse 130, temperature 104°. There was no marked dulness on percussion. Numerous rhonchi were heard on both sides, but no tubular breathing. The abdomen was rather tumid, but moved well with respiration; no pain or tenderness. The spleen could not be felt. May 3rd. The diagnosis of early pneumonia having been made, he was infused at 7.30 P.M. with two pints of saline fluid, one in each subclavicular fossa. May 4th. Patient not so well, delirious, and has taken his milk, etc., badly. He was again infused with saline fluid (2 pints) at 6 P.M. May 5th. Patient is more cyanosed and delirious. Vomiting set in, and rectal feeding had to be resorted to. The rhonchi were now less abundant; but on the right at the lower part of the axilla and at the back from just below the angle of the scapula downwards there was dulness and loss of breath sounds; vocal fremitus was present, but there was no tubular breathing. May 6th. An infusion of 1 pint was administered with the addition of a fifth part of a 10 per cent solution of hydrogen peroxide. The patient is still very heavy and drowsy. Numerous spots have appeared upon the abdomen and chest, most of them not characteristic of typhoid. May 7th. The patient is perhaps a little better, more sensible, and of better colour. At 1 P.M. upwards of a pint of oxygen gas was injected with due precautions under the skin of the left leg. Widal's reaction gave a negative result. May 8th. Patient much worse; is in a typical typhoid state with much cyanosis. He died in the night.

Necropsy.—Slight emphysematous swelling of the left leg, extending up to the thigh. On the front of the chest between the clavicles at the seat of the infusion with peroxide of hydrogen a small swelling was noticed. This contained a small cavity filled with a glairy greenish fluid showing under the microscope crystals of fatty acids. The pleuræ presented many petechiæ. The base of the left lung was congested; the right base intensely congested and almost entirely solid, with slight collapse. The solid lung did not float in water. Spleen enlarged, soft, and diffluent. The blood in the vessels was not coagulated. Swollen Peyer's patches in the lower ileum and cæcum were just beginning to ulcerate. These were obviously due to typhoid.

CASE III. *Pneumonia, Empyema, Subsequent Peritonitis, and Secondary Salpingitis*.—L. H., 14, dressmaker, a well nourished girl with flushed face, complained of pain in the left side and cough; had not been well for several weeks, suffering from catarrh of nose, etc. On April 6th she had a rigor accompained by general pains, and was sent to the hospital. She had never menstruated. April 8th. On admission the pulse was 120, small, respirations 50, temperature 103°. The urine was acid of specific gravity

[1] *Johns Hopkins Hospital Bulletin*, July, 1899.

1025, and contained albumen. The chlorides were absent. On examination, at the left upper front there was marked skodaic resonance, and lower down dulness and loss of vocal fremitus and of breath sounds. Behind, the chest was dull as far up as the spine of the scapula, where ægophony was heard. The right lung was normal. The heart's apex was displaced slightly to the right. The abdomen appeared normal. April 9th. Ten ounces of straw coloured fluid with shreds of lymph were withdrawn from the left side of the chest by aspiration. The fluid contained many diplococci, but no streptococci or staphylococci were found. April 10th. Patient worse, with pain and some distension of the abdomen. There was also some diarrhœa, with offensive motions. April 11th. Diarrhœa continued and vomiting set in. She commenced to menstruate for the first time, nothing abnormal being noticed. April 12th. Condition much the same. At 6 P.M. a pint of saline fluid was infused. The abdomen was more distended. April 13th. Much worse; abdomen rigid and tympanitic; much pain, which was relieved by morphine. At 10 A.M. infusion of one pint of saline solution. At 3 P.M. the infusion was repeated with the addition of one-fifth part of a 10 per cent. solution of peroxide of hydrogen. The infusion seemed to give some relief to the breathing. April 14th. She became worse in the night, and vomited many times some fluid which was bilious but not fæculent. She died at 8 A.M.

Necropsy.—The posterior surface of the left lung was covered with a thick layer of yellow lymph. Between the lung and the diaphragm was a small localised empyema containing 6 ounces of pus. The lung was intensely congested and partly solid, but there was no grey hepatisation. The intestines were congested, and covered with flakes of purulent lymph. The Fallopian tubes were congested and contained pus. Uterus normal. Hymen intact. The case appeared to have been one of pneumonia and of secondary pneumococcal pleurisy and peritonitis.

CASE IV. *Double Pneumonia in an Alcoholic Subject: Death: Necropsy.*—J. G., 39, potman. At work up to June 2nd, when he had a rigor at 10 A.M., and went to bed; later in the day he got up and came to the hospital. He was a strong-looking man, with dusky face, and had marked dyspnœa. His lung signs were as follows: At the left posterior base, which was the part chiefly affected, there was dulness and nearly complete absence of breath sounds; fine *râles* and pleuritic friction were heard in the axilla. No tubular breathing. In the right lung some *râles* were audible over the base behind, and the resonance was impaired. Respirations 60, pulse 136, temperature 103°. The disease ran an acute course, with hyperpyrexia and sleeplessness, and at times delirium. June 4th. The first infusion (1 pint of normal saline solution) was given at 11 A.M., in the subclavicular region, and did not appear to be followed by any bad result: he seemed a little easier after it. He received a second infusion at 6 P.M., this time in the thigh instead of the chest, as it was thought that possibly the subcutaneous swelling caused by the infusion might hamper his breathing. June 5th. He had two more infusions morning and evening, both in the thigh. June 6th. He was again infused at 10 A.M. During the day he became more cyanosed, and had an attack of very severe diaphragmatic pain relieved by morphine. Death took place on the morning of June 7th. The other measures of treatment employed were mostly symptomatic: leeches to relieve the pain, cold sponging, and morphine.

Necropsy.—There was recent pleurisy with a thick pad of lymph over the lower lobe. Both lobes of the left lung were solid and the upper lobe in a state of grey hepatisation; some serous fluid could be squeezed from it, but no purulent fluid. The centre of the lower lobe was in a state of red hepatisation surrounded by a zone of crepitant emphysematous lung. Numerous petechiæ were scattered over the right lower lobe. At the apex and base of this lung one or two deep-seated patches of consolidation were in a state of hepatisation. The whole lung was much congested. The other organs appeared healthy. The marks of the punctures remained but no trace of inflammation or swelling could be found.

CASE V.—*Severe Double Pneumonia in an Alcoholic Subject: Death: Necropsy.*—H. S., 51, plateman at a club, was admitted into the hospital on May 6th. He had been in bed about a week. On admission he was in a very exhausted semi-typhoid condition, with dry tongue, low delirium, picking at the bed clothes, etc. A superficial examination only was possible. The base of the left lung seemed to be the part most affected with tubular breathing and dulness. Temperature 102° F., pulse 120, respirations 42. He was infused at 1 P.M. in the subclavicular region with a pint of normal saline solution with no definite effect. An injection of morphine was given to attempt to procure rest, but he rapidly became worse, more cyanosed, and in spite of stimulants and of an injection of strychnine, he died about 4 P.M. apparently of heart failure.

Necropsy.—There were a few old adhesions about the right base and general old adhesions with recent pleurisy and lymph over the affected area of the left lung, and the left pleural cavity contained about half a pint of serous fluid. In the left lung the entire lower lobe was consolidated and in a condition of ordinary red hepatisation. Here and there there were patches where the pneumonia appeared older and in a state of early grey hepatisation. The right base was congested, with patches of red hepatisation.

CASE VI. *Chronic Bronchitis, Granular Kidney, Acute Pneumonia, and Bronchitis: Death: Necropsy.*—G. O., aged 63, medical school porter, gave a history of chronic cough and expectoration through the previous winter. He had had swollen legs for the last three months. On April 5th he became very short of breath and took to his bed, where he stayed until April 10th, when he was admitted into the hospital. He was a well-nourished man, with a red face, not deeply cyanosed, but orthopnœic, with much wheezing and rapid breathing. Owing to the pulmonary emphysema there was very little expansion of the chest. *Râles* and rhonchi were heard all over the lungs. Respirations 42; pulse 104; temperature 101°. Urine 1010, acid, albuminous. He was treated with expectorants, stimulants, steam tent, etc. April 12th. Signs of pneumonia were found at the back of the right upper lobe, with tubular breathing and dulness. He was delirious at times. At 6 P.M. he was becoming much worse and as it did not appear that he could survive many hours a pint of normal saline solution was infused in the infraclavicular region at 6 P.M. This was well borne, and perceptibly relieved his dyspnœa as he himself acknowledged. April 13th. The night was restless, with much delirium, but he seemed quieter and better this morning after another infusion given at 11 A.M. He was again infused at 6 P.M. April 14th. A fourth infusion was given this morning at 11 A.M. His breathing became worse in the afternoon and he became much cyanosed. At 2 P.M. he was infused with one pint of normal saline fluid containing one-fifth of a 10 per cent. solution of peroxide of hydrogen; but no marked improvement occurred. Later in the day his abdomen became distended, and death took place at 7 P.M.

Necropsy.—Abdomen much distended. The tissues over the front of the right side of the chest were slightly emphysematous from the infusion of peroxide of hydrogen. Many old pleuritic adhesions occurred on the right and left side with recent pleurisy at the right apex. The upper lobe of the right lung was in a condition of grey hepatisation, the rest of the lung in a condition of hypostatic congestion, as was also the left lung. The kidneys were small and their capsules adherent.

REMARKS.

Although a final judgment as to the value of subcutaneous infusion cannot be drawn from so limited a number of cases, nor from material presenting no strict uniformity, nevertheless partial conclusions may be based upon the cases taken together and upon the observations made in each of them. The decidedly favourable result obtained in Case I coincided in time with the treatment, and may fairly be thought to have been partly due to the latter. This is the only case in the series in which recovery occurred, and may possibly have been aided by the timely administration of the infusion. Case II was a case of complications, the patient being alcoholic and the disease proving to be typhoid fever with pneumonia. This case could not, therefore, be strictly classified with those of simple pneumonia. It is a question to what extent the typhoid poison itself may have accelerated the fatal result; but the typhoid lesions were not of a fatal order. On the other hand, the pneumonia was extensive, but it did not present the characters usually found at the relatively advanced stage at which the patient died. There was no grey hepatisation, but the solid lung was intensely congested and sodden. It is impossible to say whether this was due to the stage of dry consolidation having passed away or to its never having been reached. It is equally impossible to say whether this anatomical peculiarity was in any way connected with the form of treatment adopted. It, however, represented the kind of result which it is sought to obtain—namely, the avoidance of the degenerative stages known as grey hepatisation. Case III was also one of severe complications. The secondary occurrence of empyema and of acute peritonitis renders it useless as a test of the capabilities of treatment in simple pneumococcal pneumonia. The reviving effect and comfort experienced after the first infusion were not perceptible after the others, probably owing to the rapidly-increasing stupor of the patient. Case IV may be regarded as a fair case of its kind. The first infusion and some of the others appeared to revive the patient, but there was no permanent result, and the advent of grey hepatisation was not prevented, the lung presenting after death the appearances usually found. In Case V the disease had progressed beyond the early stage at which the infusion would seem most likely to be of use. Death was brought about partly by the exhaustion incidental to the violent delirium which supervened, and partly, perhaps, by the effect of the morphine injection which was administered for its relief. Case VI, with chronic renal and pulmonary disease, cardiac debility, and chronic anasarca, was specially unfavourable. The first infusions had a decidedly reviving effect when the symptoms seemed to be almost hopeless, and the patient survived three days; but the conditions were incompatible with recovery, and after death the consolidated parts were found in grey hepatisation.

The general impression gathered from these cases is that the infusions are not followed by any unfavourable complications, and that they would seem rather to delay than to accelerate the fatal result. This was also the experience of Penrose, whose infusions were bulkier than ours. They were not resented by the patients, and by some of them they were acknowledged to be comforting, although they proved powerless to check the fatal results of toxic absorption. The question remains whether infusions of a different composition or of a greater bulk or frequency might not have been more successful. The instalment of relief which was observed in some of the cases reported suggests that in cases of anxious prognosis, but not actually of the worst type, this mode of treatment might be capable of making a favourable and perhaps a life-saving impression upon the attack.

The therapeutical position of the method would be more clearly defined if answers could be given to the following questions: (1) Does it cure pneumonia? (2) Does it act in any detrimental way? (3) Is there any pathological evidence

of its effect on the influencing the morbid changes special to the disease? (4) Is there any clinical evidence that it either mitigates or shortens the disease, or that it prolongs its duration?

On the limited basis of the few cases observed the first two questions cannot be answered without hesitation. Injections such as those which were administered even when resorted to fairly early do not avail to save the worst cases. On the other hand, though carefully looked for, no indications were noticed of the injections having given rise in any of the cases to unfavourable symptoms, much less to a fatal result. No evidence was obtained of the anatomical morbid conditions having been modified in any marked degree by the treatment. Grey hepatisation was found much as usual in most of the fatal cases, and in the case of double pnemonia the early beginnings of this change in the older patches were associated with quite recent extensions of the congested stage of hepatisation, and this seemed to suggest that neither the late developments nor the early lesions were prevented by the infusion.

The clinical evidence suggests that the symptoms were mitigated, the resistance raised, and the fatal result probably delayed. This conservative tendency was particularly marked in Case VI, for the patient seemed as though he must have died within a few hours upon the day of the first infusion; but after the latter he rallied markedly for a time. Again in Case IV where the pulmonary affection was most extensive, although the symptoms were not of the worst type, the patient appeared to be improving until a few hours before he died, his death coming as a surprise to us.

As to the effect upon the duration of the disease, so long as practically hopeless cases are exclusively selected we shall not be able to decide whether the course of the disease is influenced by infusions in the direction of a prolongation or of a shortening of the attack. Upon this point we are unable to speak with any certainty, although in Case I, which recovered, the improvement after the infusions was rapid and that complete resolution was not delayed.

It must be borne in mind that these are merely provisional inferences, and that the failures were perhaps the inevitable consequence of the gravity of the cases, and perhaps also of the mode of application of the method which was adopted by us. The latter may be capable of various modifications and improvements which may add to its efficacy.

CONCLUSIONS.

Briefly stated the practical conclusions are as follows: (1) In the severe cases treated no unfavourable results were observed from the saline infusions; (2) these seemed to delay rather than to accelerate the fatal termination; (3) they were not resented by the patients, and by some of them they were acknowledged to be comforting; (4) they were powerless to check the fatal course of the pneumonia in the worst type of cases; (5) they do not seem, except in Case IV, where no pus but clear serum exuded from the cut surface of the grey hepatisation, to have made any difference in the characteristic appearances of the pulmonary changes.

At the same time, whilst our results have been disappointing they do not suffice to prove that saline infusions are absolutely useless. A different composition, a larger bulk, or a greater frequency of administration might lead to very different results. The cases reported were exceptionally severe, and may have been incapable of recovery. The effects noticed were, nevertheless, in our estimation such as to recommend the method for a more extensive trial in cases with anxious prognosis; for among them cases may occur which are not of the worst type, and in which an instalment of relief, such as that observed in some of the cases reported, might be sufficient to save life.

THE PROGRESS OF THE SANATORIUM TREATMENT OF CONSUMPTION IN ENGLAND.

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IT was once remarked by Sir Charles Lyell that when any novel yet otherwise certain deduction in science appears, the first step objectors take is to assure us that it is not true, the next to tell us that it is wicked and absurd, and, lastly, when they are quite shut up and defeated, their ready but sadly disingenuous assertion is that it was made long before. In 1855 Dr. Henry MacCormac, of Dublin, published a treatise on the absolutely poisonous and infective character of re-breathed air, drawing attention to the prevalence of consumption where conditions of vitiated air exist, to the amelioration of the state of a consumptive individual when he is removed from bad air and surroundings, and also to the possibility of the prevention of consumption by an abundant supply of pure fresh air.

In 1863 a paper by him was read before the Royal Medical and Chirurigeal Society on the true nature and absolute preventability of tuberculous consumption. In it he reiterated his conviction as to the deadliness of re-breathed air and the absolute importance of pure air in the prevention and cure of pulmonary consumption. The *Lancet* of May 1, 1863, reports that, in the discussion which followed, the paper was variously characterised as a waste of time, as stating a truism, which was well-known and more than 500 years old, and finally, the report goes on to say, the meeting concluded with a refusal to pass a vote of thanks to Dr. MacCormac.

We are all more or less in the habit of regarding Germany as the fountain-head of the sanatorium method of treating consumption, but this method was advocated in a book published in 1840 by Dr. Bodington, of Sutton Coldfield, called *The Treatment and Cure of Pulmonary Consumption*. He anticipated the sanatorium treatment of consumption in England by about fifty-two years. He took a house adjoining his own in Warwickshire, a county which has lately been shown by Sir Hugh Beevor in his Hunterian Oration last year, to have a lower mortality from consumption than any other county in England. He there made systematic arrangements with regard to exercise, diet, and general treatment, and himself daily and almost hourly watched over the patients' condition. He lays great stress on the importance of inducing, as far as possible, nervous quietude, and draws attention to the great tendency of the consumptive patient to nervous excitement, both local and general. This must be the experience of all practitioners who have seen much of phthisical patients. Dr. Bodington says, stating in a nutshell the principles of the open-air treatment as we understand it in its completer form at the present day, "the nutrient muscular and sanguiniferous systems must be maintained in the highest perfection that is possible, the nervous system quieted down, subdued and rendered obtuse."

This treatment consisted in a varied and generous diet, of which wine always formed a part, sedatives in the form of morphine, and, the greatest sedative of all, fresh air. He gives six cases which were evidently far advanced, and five of them did extremely well, while the sixth was still under treatment at the time his book was published. He placed very special emphasis on the value of quite early morning air, and impresses upon his readers that no weather is too bad or inclement to cause a patient to remain indoors. He may thus be looked upon as the father of the sanatorium treatment in England. In spite of the encouraging results obtained by Dr. Bodington, all consumptive patients were banished from England in every case possible as a matter of routine, and first a long sea voyage, then moist warmth such as Madeira, next dry warmth, such as Egypt and the Riviera, and, finally, dry cold, such as the higher Alps and the Andes, held the field as far as medical counsel and practice were concerned. Now, finally, we seem to be reaching the belief that climate is unimportant, and that, given suitable arrangements and surroundings, it is possible to cure consumption in any climate.

The advance in medical opinion as to the suitability of various climates for the cure of consumption is shown to be on the right lines by some statistics given in Solly's *Medical Climatology*. He states that consumption is most prevalent in climates in proportion to the temperature and humidity as follows: (1) damp cold climates—for example, some parts of a sea voyage; (2) damp hot climates—for example, Madeira; (3) dry hot climates—for example, Egypt; (4) dry cold climates—for example, the Alps. That is, damp cold is more prejudicial than damp heat to the consumptive, and dry heat than dry cold. The variability of the temperature with dry air has had no bad effects on cases of consumption, but varia-

bility with dampness predisposes to phthisis. The great cause of consumption is overcrowding, and it results infallibly where overcrowding exists, even in climates where it would be otherwise unknown. In the cure of phthisical patients it is not the place nor the climate which plays the principal part, but the mode of treatment. Of course, there is no doubt that a perfect climate for consumptives—by which I must be understood to mean a dry cold climate—is of immense advantage in helping a patient round a bad corner; but still, other things being taken into consideration, it is advisable to cure consumptive patients in the climate in which they will ultimately have to live.

This brings me to speak of the present movement in favour of the sanatorium treatment of consumption in England. With the exception of a few isolated instances, myself among the number, this method of treating consumption is, as far as England is concerned, only two years old. I have treated patients, mostly of the hospital class, since 1893 on a small scale, in a farmhouse in Norfolk, and my results there were so encouraging that I opened a house for better class patients in the beginning of 1898, and finally formed a small company to raise the necessary capital, and to build the sanatorium at Nayland, in Suffolk, which is now approaching completion. At the same time sanatoria are cropping up in various parts of the country, and one has only to read the advertisements in the Journal of the Association to learn how numerous they have become. There is, however, the danger of these establishments being managed by people who do not thoroughly understand the subject.

The sanatorium treatment of consumption is a minute and elaborate system made up of endless details, all of which are important. It is not enough to say, "Open all windows wide in all weathers, and all will be well"; it is not enough even to add, "Feed all patients very plentifully, put them through a process of 'superalimentation,'" as I saw in one of the advertisements of sanatoria. With these two points, essential as they are, must be united careful regulation of exercise and rest and constant medical supervision. No two cases can be treated on exactly the same lines; we must consider not only the "individual sickness but also the sick individual," by which I mean that the reaction of the patient to his environment is a very important variant in the cure of phthisis. The qualities which most aid consumptives in recovery are, first, strength; secondly, wisdom; thirdly, equability of temperament; therefore the essentials of the general treatment of phthisis are to preserve and strengthen the physique, to enforce prudence, and to induce placidity. In a way it is an unfortunate thing that patients in the first stage improve so much. It is hard, though it is the solemn duty of a medical officer of a sanatorium to do so, to convince a patient who has unmistakable signs of phthisis that, although he feels quite well, he is not so in fact, and is in no sense fit to leave the sanatorium or to lead an ordinary life either working or idling, but that he must stay on until he is lifted on to a higher plane physically, and until a higher standard of health is established. Patients are apt to return to their former manner of life, believing themselves to be cured when they are very far from this condition. Especially are patients prone to leave off treatment too early when they are at a paying sanatorium, yet a prolonged stay is often necessary if the improvement gained is to be maintained. Certainly there are incipient cases of phthisis for which a comparatively short period of change in climate and surroundings is all that is required, but these cases need to be very carefully watched for several years after their return home, and all their departures from health require to be most promptly attended to and their daily hygiene raised to as high a standard as possible.

In considering the length of time residence at a sanatorium is necessary, attention must be paid not only to the arrest of the disease but to the permanent raising of the standard of the patient's health, in order that recurrent attacks may be warded off.

Early recognition of phthisis is highly important, and watchfulness as soon as the diagnosis is made. It may seem presumptuous of me to urge upon such an assembly as the present the necessity of examining the chest of every patient who is getting in any way below par without any very obvious cause. But from my own experience I have found that the chest is not listened to by the regular general practitioner with the frequency which is really advisable. Patients are constantly brought to me who have been ailing for months and even for years, who have been constantly attended by medical practitioners, and who have never had their chests examined at all. Some, it is true, have been listened to through their clothes, and others occasionally have been made to take a deep breath with the medical practitioner's hands on their shoulders, but large numbers of the patients have not had any examination of their chests at all. The results of this neglect are most serious.

The recovery of a patient with phthisis in the second stage (by which I mean the stage of cavity formation with septic symptoms) is not only much less certain, but the process is of a much more lengthy and expensive description.

The prognosis in cases of consumption is extremely difficult. Dr. Walther, of Nordrach, whose experience is very considerable, told me a couple of months ago that he felt that time was the only thing that would give any data as to prognosis, and that no opinion of any value could be given on seeing a case for the first time. My own experience has led me to very much the same conclusion. Still there are some points of course which are of bad significance as far as prognosis goes. They are a permanently frequent pulse, a reversed high temperature, diarrhœa, and sickness. But some patients with apparently very slight disease go rapidly downhill, whereas others with widespread local mischief and great general exhaustion hold out for years. There are also points of good significance in prognosis; they are steady gain in weight, dropping of temperature, increase of strength, and improvement in the pulse. Gain in weight *per se*, although such stress has been laid on it as to constitute it an article of faith almost, is not of very favourable import, unless it proceeds *pari passu* with other signs of improvement. It is worse than useless to burden a patient with three or four stones additional weight if at the same time he is not helped to regain the strength necessary to enable him to turn this increase to his advantage, by giving him carefully-regulated exercises to deepen his breathing capacity and to give extra vigour to his heart and muscular system generally. "It is indeed often a matter of pure conjecture to decide whether, and how rapidly, and how severely the existing catarrh may produce ravages. It is only he who has attentively observed his patient for a long time, and has made himself acquainted with all his peculiarities, who can give any opinion as to the effects of treatment on a patient."[1]

The sanatorium treatment of consumption is after all a system of elaborated common sense, applied to a long and tedious illness, and for it to be a success all the factors which make up the convenient term "hygiene" must be introduced: a permanent supply of fresh air, a large quantity of nourishing and digestible food, carefully regulated exercise and rest, and the removal of all causes of worry and anxiety. The medical element is, of course, paramount, and the medical attendant must be of a particularly hopeful and cheerful disposition, and be capable of communicating his hopefulness to his patients. Still, after all, it is but a human agency, and as such, cannot be expected to work miracles. If I may venture to say so, Mr. Gibson's articles, good and useful as they were in educating public opinion, erred very much in the direction of leading the public to suppose that in the open-air treatment is to be found a certain cure for all cases of phthisis, and they gave false hopefulness to many. People in practically a dying condition came to Nordrach from Australia and many other distant parts, on the strength of those articles, and the mortality was considerably increased, and there was thereby some danger of bringing discredit on the whole sanatorium movement.

The sanatorium treatment is capable of still further expansion. For example, children of tuberculous parents, whose physical resistance is presumably below par, might very usefully spend some time in a suitable sanatorium, from prophylactic considerations. There should be sanatoria for children who are definitely tuberculous, and with these should be combined some arrangements for education for those who are able to avail themselves of them. The cure of tuberculosis in growing children is a far slower process than in people whose growth is completed.

What I may call for brevity "maternity sanatoria" might be formed with great advantage to the community. By this I

mean sanatoria where tuberculous pregnant women might be received for three or four months prior to their confinements, and remain there for the necessary period afterwards.

The provision at the present moment for consumptives in England is as follows:—9 urban chest hospitals for consumptives, 7 country chest hospitals for consumptives, 1 urban home for consumptives, 7 country homes for consumptives, 4 sanatoria for the poor, 4 more projected, 22 sanatoria for paying patients and 2 more projected.

My own cases from 1892 to June, 1900, are as follows:—

Total No. of Cases.	Still under Treatment.	Recovered.	Improved.	Going back.	Died.	Lost Sight of.
177	20	45	54	13	27	9

The mortality among these cases is 15.5 per cent.

REFERENCE.

[1] Rohden's article in Julius Braun's book on *The Curative Effects of Baths and Waters.*

Dr. Chowry-Muthu said: I have listened with great interest to Miss Walker, who has been one of the pioneers of the open-air movement. If foul air and overcrowding increase the virulence of infectious diseases, fresh air is highly beneficial in these cases, as I have proved in influenza, scarlet fever, typhoid, etc. The results of the open-air movement in the sanatorium with which I am connected have been so satisfactory as to convince me that it is the remedy that at present holds out the best chance of success in phthisis. As for early diagnosis of phthisis, I have found a single click heard at the end of inspiration to be the most reliable physical sign in the very beginning of the disease. The prognosis very much depends upon the state of the stomach, the state of the pulse and the heart, and the duration of the treatment. We shall have very much better results if patients are early diagnosed and treated, and the duration of the treatment is prolonged at least from six to nine months. Though some cases can be treated satisfactorily at home, a well-conducted sanatorium with a resident physician offers the best chance of cure for the majority of patients. Consumption cannot be cured by fresh air and good feeding alone. Sanatorium treatment includes thorough organisation, strict discipline, and strong generalship, without which the open-air system will be a failure. The secret of the success of the treatment depends upon the strong will and personality of the doctor who takes the different elements, as pure air, exercise, feeding, etc., and distributes them according to individual requirements, who commands the obedience and regulates the life of the patient in every detail, inspiring him with his hope and enthusiasm in the treatment.

Dr. Burton-Fanning said that Dr. Jane Walker's insistance on the necessity of wisdom on the patient's part reminded him of Brehmer's dictum, "that consumptives only died of their character." As regards results of the sanatorium treatment everything depended on the selection of cases, and the sanatorium doctor had less to do with the obtaining of recoveries than the doctors outside the sanatoria. Dr. Jane Walker referred to cases whose chests had not been examined and who came for treatment unfortunately late in the disease, but Dr. Burton-Fanning hoped that practitioners would not wait till physical signs developed which could be detected by the stethoscope. He hoped that more dependence would be placed on the clinical thermometer, the weighing machine, and the examination of sputum, and that cases would be placed under adequate treatment before signs had occurred in the lungs. By this he did not mean to say that improvement was not likely to occur in more advanced cases, but the best results were, of course, to be obtained in the very earliest cases. He did not feel any gratitude to the writer of certain popular articles who had prepared patients to consider that three months was the longest time required for a cure, and that 90 per cent. of all cases were cured at one sanatorium. If a year was stated as the time likely to be spent in obtaining the greatest amount of benefit, and if 90 per cent. improvements were substituted for 90 per cent. cures the truth would be better expressed. Dr. Jane Walker's description of the sanatorium treatment as consisting of "elaborated common sense" was a good one.

CONSANGUINITY AS A FACTOR IN THE ETIOLOGY OF TUBERCULOSIS.

By Charles A. Davies, M.D.,
Ramsey, Isle of Man.

There has long existed a belief that consanguineous marriages are detrimental to the resulting offspring. Morgan in *Ancient Society* declares that exogamy was due in olden times to the observed evil effects of marriages of near kin, and also because it was known that the intermixtures of stocks increased both mental and physical vigour. Sir H. Maine in *Early Law* agrees with Morgan on the ground that mixed marriages would give a better constitution. Sir John Lubbock in *Origin of Civilisation* says that one of the causes of exogamy was "the inferior energy of the children sprung from in-and-in marriages." Howitt in *Kamilaroi* considers the Australians introduced the prohibition against the marriages of near kin to avoid observed evil effects. Much has been written to prove the ill-effects of inbreeding among stock, and authorities are pretty well agreed that enfeebled constitutions commonly result.

The chief diseases that we may expect to find resulting are those that are transmitted hereditarily. We can readily understand how this comes about, as hereditary influence is bound to be intensified when both father and mother transmit the failings of a common ancestor. Dr. Mitchell, in a memoir read before the Anthropological Society of London as far back as 1886, gives an instance of a village on the North-East coast of Scotland. The fishing population was estimated at 779, and contained 119 married couples, of which 11 couples were first cousins and 16 were second cousins. Of these 27 marriages of near kin, 3 were barren, and from the remaining 24 105 children were born, or nearly 4 4 for every fruitful marriage. Of these 105 children, 38 were dead (of which 35 died in childhood) or 33.4 per cent.; 4 were deaf-mutes, or nearly 6 per cent.; 4 were imbecile and 4 were slightly silly; 1 was paralytic, and 11 or a little over 16.4 per cent. were scrofulous and puny. The children of those who were first cousins were described as all of them neither strong in mind nor body. Sir Thomas Watson says of the Faroe Islands that phthisis is very rare, but mental derangement is common, as many as 1 per cent. being thus afflicted. Inbreeding obtains to a great extent there. The *Pall Mall Gazette* for August 5th, 1872, in a biography of the late Mr. Augustus Smith, for a long time owner of the Scilly Islands, says that he removed some of the inhabitants of the outlying islets to better neighbourhoods. On some of these the scanty resident householders—never forming connections out of their own island—had, it is said, degenerated into a condition approaching that of imbecility. The Hon. G. Monson, in the consular reports 1871, No. 4, finds an unnatural frequency of idiocy and enfeebled constitution among the Azore Islanders, which he considers to be due to the prevalence of consanguineous marriages. Without spending more time on the opinions of others, I wish to direct your attention for a short time to the condition of things existing in the Isle of Man.

The Manx of to-day are the outcome of the amalgamation of the original Celts with the conquering Norse. The Norse descents took place during the tenth, eleventh, and half of the twelfth centuries. Since then, although various conquerors have subdued the Manx, they have had very little admixture of foreign blood. A patriotic and clannish spirit arose that resented the introduction of strangers, and so jealous did they become that they went to the extent of enacting a law prohibiting ships' masters from landing foreigners on their shores under a heavy penalty. To all intents and purposes, then, we have a little nation some 10,000 or 15,000 strong, living for 600 years an isolated and detached existence. This in itself would not have been so bad had there been a free and general mixing together amongst them. This was not the case, however. The central mass of mountains formed a natural barrier between the north and south of the island. Intercommunication could only be carried on along the narrow strips of lowland

bordering the eastern and western coasts. But a greater barrier than the physical one existed in the natural aversion in which the norther and southerner held each other. Although speaking the same language, and having the same religion, customs, and laws, they were descended from different races. Even to this day the types are distinct, the fair-haired, tall Scandinavian, being represented by the northener, while the more swarthy and thick set Celt has left his mark upon the southerner. From time to time fierce and bloody battles were waged between them, and enmity existed for centuries. Midway between the two, situated on the east and west coasts respectively, are the village of Laxey and the ancient city of Peel. Laxey, undoubtedly, until recently, was in a particularly isolated condition. The roads, both north to Ramsey and south to Douglas, were simply rugged bridle paths, winding along between the hills and the steep rockbound shore, and continually crossing the narrow glens, through which ran the brawling mountain streams. It is only within the last half dozen years that the old-fashioned coach has given way to the electric tramway, which has brought Laxey into touch with the rest of the island. Peel was not quite so isolated, for as it was the only port on the west, and being from time immemorial a place of residence for the Lords of Man, it had dealings with both north and south.

We thus see that a small nation, isolated by its own independence and by a stormy sea, becomes further broken up into four portions by its physical conformation and racial antipathies—namely, that portion north of the mountains, that portion south of the mountains, and the small aggregation of farmers and fishermen that clustered round Peel and Laxey. But a further subdivision still existed, for the people grouped themselves into the various parishes, and it was very rarely indeed that they migrated from one parish to another. Great resentment was felt against any man who married a wife from any but his own parish. When we come to study the surnames that are most frequently met with in the various parishes, we have very strong corroborative evidence of this consanguinity. To compare in an old directory the surnames met with in a southern and a northern parish one might well believe the two to be a thousand miles apart. The same thing holds in a lesser degree with contiguous parishes; in fact each parish seems to have a few families that may be considered native to it. Thus we have the three families of Christian, Joughin, and Kelly which comprise among them a third of the inhabitants of Bride; and the Corlettes, Quayles, and Teares which comprise a third of the inhabitants of Ballaugh. Many of the farmsteads have been in the hands of the families who now own them for 300 years and more according to the records, and how much longer still we have no means of knowing. The consequence is that undoubtedly these families married and intermarried with their immediate neighbours again and again. It is only when one has dwelt among this people that the extent of this inbreeding becomes apparent, and it is no exaggeration to say that three-parts of the inhabitants are related to each other, and even where relationship is not acknowledged it is often found to exist unknown to the persons interested.

To sum up, we may say, that geographical positon, physical conformation, racial antipathies, and parish prejudices have been at work for hundreds of years, with the result that a very high degree of consanguinity has been attained by the Manx people. Having proved the consanguinity, do we find any of the alleged ill-effects resulting therefrom in the Manx people? The scope of the present paper only admits of our discussing one of these results, namely, tuberculosis.

My investigations cover fifteen years, and prove the average annual mortality-rate for phthisis to be 25.7 per 10,000 living. Roughly speaking, this is about double of what obtains in England and Wales. Such an excessive amount of tuberculosis must be due to some exceptional cause or causes. I shall endeavour to prove to you that the great amount of consanguinity and the great amount of tuberculosis bear to each other the relationship of cause and effect. In order to do this it will be necessary to briefly review the recognised causes of tuberculosis, and show that these are in no way accountable for this special prevalence, but rather that the causes pertaining to the external surroundings and life conditions of the individual would tend to produce a low phthisis mortality. Full details of the climate, soil, etc., will be found in a short treatise on Manx phthisis, published by me last year. At present I must rest content with a brief summary. The temperature of the Isle of Man is more equable than that of any part of the British Isles, the extreme variation being 17.1° F., while the annual mean is 49.0°. By a comparison with the chief watering places of England and Scotland, we find that it is characterised by its cold springs, cool summers, and mild autumns and winters. There is comparatively little frost and snow, and fog is almost unknown. Its sunshine is much greater than in any surrounding district, and stands third on the list of the British Isles. The winds seem similar in velocity to those on the mainland, though being freely exposed on all sides no doubt one feels them more. The combination of mountain and sea air seems to be conducive to an excess of health-giving ozone, and certainly has a most invigorating and bracing effect on the system. From a life-long experience of the island, both as layman and practitioner, I have come to the conclusion that we have a climate eminently suitable for the treatment of lung diseases. The soil of the island is dry and fairly well drained. I have never yet come across a case of malnutrition due to poverty in town or country, and, as a rule, the natives are well nourished in body and happy and contented in mind. The two chief occupations of the people are agriculture and fishing. A very large number also follow the calling of mariners; lead mining is carried on, but not to any great extent. In no part of the island are the men and women herded together in any numbers, either for industrial or any other purposes. The dwellings of the Manx are neither better nor worse from a sanitary point of view than those of their class in England, and I am sorry to say that they have the same aversion to open windows and good ventilation.

In considering these general conditions under which the Manx live, we fail to find any adequate reason for the marked amount of tuberculosis, and so we are driven to conclude that there must be something in the constitutional idiosyncrasy of this people that renders them peculiarly liable to the onslaughts of the tubercle bacillus. With regard to the geographical distribution of phthisis in the Isle of Man, we consider it of comparatively little importance. The whole population, from the Point of Ayre to the Calf of Man, lives under circumstances, as regards climate, soil, and occupation, so similar in character that the slightest variations in the amount of consumption in the parishes from time to time are by no means of a significant character, and are due undoubtedly to a great extent to chance. There is, however, one fact that stands out clearly, and that is, that there is a notorious amount of consumption in Lonan, which parish contains the village of Laxey, and an equally remarkable freedom from it, comparatively speaking, on the western side of the island. This seems to suggest a distributive cause, and we believe this cause to be consanguinity. As I pointed out, Lonan has been exceptionally isolated, owing to its geographical position. This fact has been responsible for a very great amount of inbreeding, in fact we may safely say that Lonan is more consanguineous than any other parish in the island, and here we have the heavy phthisis roll of 41.17 per 10 000 persons living. I also pointed out that Peel and the western parishes lying midway between north and south, and being easy of access from both, and also from the fact of the political importance of Peel, and its being the chief outlet and inlet for the island for many centuries, naturally had more opportunities of introducing fresh blood, and consequently would suffer less from inbreeding than the other towns and parishes. We therefore expect to get a low phthisis rate, and such is the case throughout the whole western division, namely, 21 94, as against 24.19, 28 15, 24 53 for the northern, eastern, and southern divisions respectively; and we also get the lowest parish phthisis rate, namely, Michael, with 15.19.

After a careful study of the whole question I have come to the conclusion that the chief factor in producing the high mortality from tuberculosis in the Isle of Man is consanguinity.

Dr. R. Murray Leslie considered that Dr. Davies's able paper was an exceedingly important one to those who had to deal with the treatment of phthisis. He asked if phthisis wer

more common in families of royal personages than in persons belonging to the general community?

Dr. GORE asked whether the conditions other than consanguinity that caused the prevalence of phthisis on the West Coast of Ireland prevailed in the Isle of Man, such as deficient ventilation. In Ireland, in the cottages of the poorer classes, the windows were usually not made to open, there was great overcrowding, many people sleeping in the same room, and this was an important factor in the production of phthisis there.

Dr. DAVIES, in his reply, proved that the lead mining in Laxey had no influence whatever on the high phthisis rate obtaining there, as the female phthisis rate was more pronounced than the male. He also briefly discussed Dr. Havilland's theory of wind causation, and showed that the windiest parish in the island was also the freest from phthisis.

A CASE OF FATAL MALIGNANT ENDOCARDITIS AND RIGHT EMBOLIC HEMIPLEGIA,

APPARENTLY DUE TO INFECTION FROM DENTAL CARIES AND STOMATITIS, TREATED BY ANTISTREPTOCOCCUS SERUM AND BY SALINE INFUSIONS.

By WILLIAM EWART, M.D.Cantab., F.R.C.P.,
Senior Physician to St. George's Hospital and to the Belgrave Hospital for Children.

THE case to be narrated, although it stands alone, may provide an explanation for many others which may be observed and reported in the future. It is worth recording, in spite of the negative bacteriological result, because it is in other respects complete and clinically conclusive. It is also of interest in respect of the measures of treatment which were adopted, but which proved ineffectual.

J. C., aged 26, groom, was admitted into St. George's Hospital on April 9th, shortly after a sudden seizure whilst at work which left him aphasic and paralysed on the right side. He looked fairly well nourished and healthy, had never been laid up with illness so far as known, and had been fit for his work: but no history was obtainable from himself and there was no other source of information. A careful physical examination could detect no abnormality, thoracic, abdominal, or circulatory, except a systolic mitral murmur. The case ran the following course: The temperature, raised on admission, oscillated from an average of about 100° usually to above 101° in the evening and sometimes nearly to normal in the morning. The pulse ranged from 80 to 100, and at the end to 120: respirations from 24 to 34. There was a trace of albumen in the urine. On April 16th when general and cardiac aggravation occurred he vomited five times and on the 17th once. He had also vomited just before admission. The pyrexial and other peculiarities of the case suggested a complication of diseases, and Dr. Percival, my house physician, suspected during the first few days enteric fever in association with the hemiplegia. The discovery later on of a changing and increasing murmur defined the case as one of vegetative endocarditis. No improvement took place under treatment although he seemed to be progressing fairly favourably; and his rather sudden death was unexpected.

The mental state, except during the initial stupor, was one rather of limitation than of obscuration. There was no delirium. His aspect and gaze were intelligent. He seemed to understand all that was said, but "the way out" was completely blocked; he answered "Yes" to everything to the last. His paralysis was considerable though not absolute. Knee-jerks not present at first were afterwards obtained, but the plantar reflexes were very active on the right. He could move the leg and the arm slightly, but for several days was not able to feed himself. The right side of the face was markedly paralysed and he never recovered the power to whistle. There was apparently no pain.

On admission the apex beat was normal, with an undulatory heaving precordial impulse. A harsh systolic murmur was audible universally, but loudest in the third and fourth spaces to the left of the sternum. On April 16th the patient looked decidedly worse, ghastly pale, and vomiting occurred. On examination that day a diastolic aortic murmur was distinctly heard to the left of the sternum, and a double murmur at the apex. The spleen was found to be rather enlarged. On the 17th a diastolic rumble was heard at the apex. The aortic reflux had become much louder and a Corrigan pulse had developed. The aortic murmur could be heard to the right of the sternum and across it for some distance towards the apex.

The bowel and kidney functions presented no noteworthy abnormality. The blood was examined by Mr. Spitta for micro-organisms, but none could be found. A persistent hiccough began on the 17th and lasted for a few hours. On the 25th an antitoxin rash developed. On the 26th there was œdema of the right hand, perhaps due to the rash. On the 27th a hard and painful swelling had formed on one of the ribs and two others on the inner aspect of the right arm. There were not at the site of the needle punctures, and at the necropsy they proved to be pyæmic abscesses.

The state of the mouth was unusually bad. Besides stomatitis there was an exceedingly foul condition of numerous stumps. The fœtor of the breath was intense and reminded one of the worst smell of decaying or macerating dead bone. Some of the hollow teeth contained plugs of offensive decomposing material. There were no glandular enlargements at the angle of the jaw.

The case was diagnosed as one of embolic hemiplegia due to vegetations and ulceration or detachment of the aortic valve, with either vegetations upon the mitral valve or the condition producing Flint's murmur. The same physical signs persisted with minor modifications to the end, which came rather abruptly.

The diet consisted of light food, milk, eggs, light pudding, and subsequently fish; and on the 27th pounded fish. Brandy was ordered (3 ounces daily) on April 16th.

The medicinal treatment consisted of calomel and senna; sanitas (1 in 6) as a mouth wash; carbolised oil for the nose; and potassium iodide with tincture of iodine internally. On April 16th, in addition to other treatment, antistreptococcus infusion 20 c.cm. was given; on April 17th two 10 c.cm. injections of the same; on the 18th two injections; on the 21st one injection; and on the 22nd one injection. On April 23rd one pint of saline infusion containing sodium cacodylate gr. $\frac{3}{4}$ was administered; this injection was repeated twice on the 24th, and once on the 25th and 26th. On April 30th and May 1st 10-grain doses of sulphate of quinine were prescribed.

The *post mortem* examination was performed by Dr. W. J. Fenton forty-two hours after death. Except three small subcutaneous abscesses (at the midsternal, the right mammary, and the posterior brachial region) the external appearances were normal. Abundant fluid was found in both pleuræ, but no pulmonary lesion except moderate bronchitis. The heart weighed 12 oz. About $1\frac{1}{2}$ oz. slightly turbid fluid in the pericardium; a few petechiæ over the posterior surface of the left auricle; mitral and tricuspid valves normal. Aortic valves: A large, rough, greyish vegetation was attached to the ventricular surface of the left posterior aortic cusp at the point of insertion of which an ulcerative perforation had formed. Ragged vegetations also occurred on the right posterior cusp. The myocardium was free from disease. The liver weighed 4 lbs. 8 oz., and was slightly nutmegged. The spleen, 15 oz., was free from infarcts. A large anæmic infarct occurred in the left kidney; no other renal lesions. The genito-urinary organs were free from lesions. In the cranial cavity an adherent decolorised clot was found in the left middle cerebral artery, about 1 inch from its origin. The tip of the temporo-sphenoidal lobe and the subcortical tissue of the island of Reil as far as the outer edge of the lenticular nucleus were softened. The latter softening extended in an antero-posterior direction for about $\frac{3}{4}$ inch in the tissue of the brain.

N.B.—The small abscesses described above did not occupy the situation of the punctures made by the infusion needle. The mouth was in an unhealthy condition, and most of the molars in an advanced state of decay. The nose, throat, and ears, like the rest of the body, presented normal appearances. The middle ear was not opened, as there was no sign nor any clinical observation suggesting middle-ear disease. The only abnormalities found after careful search were those which have been described.

REMARKS.

By most recent writers on infective endocarditis the etiological factors are given in almost identical terms. Von Jürgensen, in his monograph on *Endocarditis*[1] enumerates the micro-organisms which have been found in the vegetations. The most common are the staphylococcus pyogenes aureus, the streptococcus pyogenes in its various forms, and the diplococcus pneumoniæ. In addition to these the gonococcus has been met with, and Weichselbaum has found the following occasionally: Bacillus endocarditis griseus, the micrococcus endocarditis rugatus, and the micrococcus endocarditis capsulatus, and he also mentions, as admitted by some, the bacillus fœtidus (Passet) and another non-mobile fœtid bacillus that of Fraenkel and Sanger. G. Klemperer has also described the diplococcus tenuis. Besides all these, various microbes have been seen which could not be cultivated; and opinion is divided as to the possible share of the typhoid bacillus, of the bacterium coli, of the tubercle bacillus, and of the syphilitic contagium.

Ludwig Herzog,[2] in his collection of cases of ulcerative endocarditis, refers like the rest to cases where no portal of infection is traced, and these are supposed to belong to the group of "primary ulcerative endocarditis." No reference is made by him to dental disease as a possibility of infection, but it is significant that in Case VIII of his series hæmorrhages from the gums had preceded the attack for a long time. This hæmorrhagic tendency is much insisted upon by Herzog, but as a complication rather than an etiological factor in the case, the derivation of which remained unexplained.

A "primary infective endocarditis" is also admitted by Dreschfeld in his article on Infective Endocarditis[3] by the side of the infective endocarditis arising as a complication of septic diseases (pyæmia, septicæmia, puerperal affections, traumatism) of that set up in pneumonia or meningitis by the diplococcus pneumoniæ, and of infective endocarditis as a

mixed infection due to septic organisms secondary to acute and infective fevers, or secondary to rheumatic endocarditis and to sclerotic changes in the valves. In connection with the digestive tract mention is made of ulceration of the intestine, enteric or dysenteric; and in connection with the respiratory tract the view of Thiroloix that ulcerative bronchiectasis may be a source of septic endocarditis is referred to. Bronchiectasis itself, as suggested doubtless by others as well as by myself, probably suffers infection from septic conditions of the mouth. This would explain recurring periods of fœtor in the expectoration of these patients.

Gibson[4] refers to disease of the middle ear as a source of the disease. The nearest approach to any connection having been suggested between infective endocarditis and infection in the mouth is, so far as I can find, a statement quoted by Dreschfeld[5] from Brissaud and Gilbert, that in one of their cases gangrenous stomatitis and ulcers on the tongue and lip were observed.

In connection with the instance which has been narrated, the choice lies between classing it in the group of "primary or idiopathic" cases, because, had all examination of the mouth been omitted, no disease, recent or old, would have been discovered throughout the body; or, on the other hand, giving full recognition to the fact that the mouth was profoundly diseased, that it was infested with organisms, and that it presented large ulcerated surfaces through which access to the circulation must have been given to infection. To recognise the exclusive presence side by side of these two intense local infective processes, and to fail to admit the possibility of some connection having existed between them, would be to neglect the method of pathological inference which has hitherto been followed with so much success in the etiological study of disease. I have therefore ventured to place this case on record as one in which, though it was not proved, yet it was highly probable that the septic condition of the mouth was the direct cause of the malignant endocarditis.

References.

[1] Nothnagel's *Spec. Path. und Therap.*, Vienna, 1900. [2] Neun Fälle von ulceroser Endocarditis; *Deut med. Woch.*, November 10th, 1898, p. 716. [3] Clifford Allbutt's *System of Medicine*, vol. i, p. 1896. [4] *Diseases of the Heart and Aorta*, 1893. [5] *Loc. cit.*, p. 333.

Dr. Alex. R. Coldstream had met with a similar case some years ago. In a girl of 13, symptoms of ulcerative endocarditis, fever, joint pains and delirium, with a fatal result in four days, followed on a gumboil which was incised. The ulcer of the endocardium was on the tricuspid valves. The case seemed to be a commentary on Dr. Ewart's case, as having a dental origin, and served to show the great importance of mouth and teeth hygiene. There was no other possible source of infection discovered.

Dr. Haddon related his experience of ulcerative endocarditis, three cases of which he saw at Eccles near Manchester within a stone's throw of each other, one after another in a short time, In these cases no cause was suspected. In another case a lady had had several teeth removed under chloroform, and had never been well since, and there might be some connection between the operation and the disease. Whatever the true cause of this disease might be he was inclined to think that like other infective diseases, the germ might enter by the mouth. He could not believe that a decayed tooth or gumboil was to be regarded as a possible cause of ulcerating endocarditis without introduction of some specific cause.

Dr. R. Murray Leslie considered Dr. Ewart's suggestion that the mouth might be the source of infection in some cases of ulcerative endocarditis exceedingly important. The case he quoted certainly went far in support of this theory. Many, if not all, of the so-called idiopathic or primary cases of ulcerative endocarditis were probably simply cases where the source of infection had not been discovered, and in not a few of them the mouth might constitute the source of infection. He thought that dental caries in young persons should be immediately treated so as to avoid such untoward sequelæ.

Notification of Tuberculosis in the United States.—The Board of Health of the City of Trenton, New Jersey, proposes to include pulmonary tuberculosis among notifiable diseases. The Board has further passed ordinances making spitting in the streets and public places a punishable offence.

SECTION OF PATHOLOGY.

E. Klein, M.D., F.R.S., President.

The President made some introductory remarks on Bacteriology in Relation to Pathology, which were published in the British Medical Journal of August 4th, p. 291.

A DISCUSSION ON THE PATHOLOGICAL DISTRIBUTION OF THE DIPHTHERIA BACILLUS AND THE BACTERIOLOGICAL DIAGNOSIS OF DIPHTHERIA.

I.—F. W. Andrewes, M.A., M.D., F.R.C.P.,

Pathologist and Lecturer on Pathology at St. Bartholomew's Hospital.

Most pathologists will admit that Bretonneau's definition of diphtheria requires modification in the light of modern bacteriological knowledge. It requires in one direction limitation, for there are grounds for supposing that not every membranous sore throat or laryngitis is due to infection by the Klebs-Loeffler bacillus; while in another direction it requires extension, for it is clear that many mild and non-membranous sore throats do depend upon infection by this organism. It is the presence or absence of the specific bacillus which is now held to decide whether or not a given case is to be regarded as one of diphtheria.

This being so, a consideration of what is and what is not to be regarded as the diphtheria bacillus becomes an essential preliminary to the discussion of the subject. There exists a fairly definite group of bacteria often spoken of as "diphtheroid organisms," which has with propriety been systematised as a definite genus under the name "Coryne-bacterium." Its members are characterised by a tendency towards a "clubbed" form, and by an irregularity in the staining properties of their protoplasm, due to the presence of granules which are commonly metachromatic, and may even admit of differential staining. Spore formation is not known in the group; its species are devoid of flagella and are non-motile; they stain by Gram's method, and do not liquefy gelatine; in certain cases true branching has been demonstrated.

It has been shown, beyond the possibility of doubt, that diphtheria depends upon the pathogenic action of a bacillus possessing the above characters. It seems also certain that there are allied bacilli which are non-pathogenic, or are at least not concerned in the production of diphtheria. It is thus of the first importance to find criteria by which we can distinguish between the true diphtheria bacillus and its non-pathogenic allies. Unfortunately, the genuine organism varies considerably in its morphological characters. A large well-clubbed form, a much smaller peg-shaped form, or any gradation between these types, may be met with in clinically typical diphtheria. The toxin produced by these different forms is practically identical, and their inoculation into susceptible animals gives the same result. Considerable variation in size and form may sometimes be found, even amongst the individuals composing a single colony. Some of the smaller types of the true bacillus bear so close an outward resemblance to allied species—for example, to the xerosis bacillus—that they may be morphologically indistinguishable. Less commonly, harmless species are found to mimic the large form of the diphtheria bacillus.

It follows that morphological characters alone are an unsafe guide for absolute diagnosis. There is, indeed, a structural character for which some diagnostic value has been claimed—namely, the differential staining of the granules present in the protoplasm by Neisser's method or its modifications. Young cultures of the true bacillus on serum or serum agar commonly show the granules well, while in corresponding cultures of other diphtheroid organisms they are usually feeble or absent. I have employed the test regularly for some time, and my experience is that while it is a useful confirmatory test, often helpful, it is not one upon which absolute reliance can be placed.

Much the same criticism applies to a common chemical test—namely, the production of acid in glucose broth during the first 24 or 48 hours. It is a test of very great value, but

it is not an absolute criterion. Individual strains of true diphtheria bacilli vary in their degree of acid production, and although the majority of allied organisms fail to produce acid, there are said to be some that do so.

A test of much higher value is furnished by animal experiment, and it is upon this that ultimate reliance must be placed. If a guinea-pig, inoculated with a suitable dose of the suspected bacillus, die with the characteristic lesions, the bacillus is pronounced to be the genuine diphtheria bacillus. If, on the other hand, no pathogenic effect whatever is produced, the bacillus is held to be some other species, however closely its remaining characters may approach those of the diphtheria bacillus. Short of a fatal result, the production of pathogenic effects, such as illness and local tumour, in the inoculated animal is consonant with the belief that the bacillus is an attenuated form of the true diphtheria bacillus.

Such are the opinions commonly accepted; but there are certain points as to the absolute reliability even of animal experiment which are open to argument. Is it, for instance, quite certain that if the guinea pig dies the suspected bacillus is necessarily the diphtheria bacillus? Or, in other words, may there not be other diphtheroid organisms pathogenic to the guinea-pig, yet unconnected with diphtheria? It is claimed that there are such organisms, and that hence absolute proof can only be attained by showing that known diphtheria antitoxin immunises a control animal against an otherwise fatal dose of the suspected microbe. Again, is it absolutely certain that absence of pathogenic power proves that the suspected organism is not the diphtheria bacillus? It is certain that under such circumstances no one can affirm that it is that organism; but that is a different thing to affirming that it cannot be. What we know of loss of virulence in artificial cultures may well make us hesitate to deny that such non-pathogenic forms may be lineal descendants of pathogenic bacilli.

It may be that, in searching for absolute criteria, we are striving after the unattainable. No evolutionist need marvel that, amongst the lowliest forms of life, specific distinctions are vaguer and more elusive than higher in the organic scale. After all, it is only in very exceptional cases that a skilled observer who is at pains to apply all the known tests, is left in serious doubt as to the nature of a given diphtheroid organism.

The practical application of the foregoing remarks leads to questions of the highest importance. The diagnosis of the diphtheria bacillus is required under two distinct conditions. It is justly demanded of the man who puts forward new facts about the bacillus, as, for example, about its pathological distribution, that he should neglect no attainable proof as to its identity. The demonstration of this needs several days, perhaps a week or even longer; but scientific work demands it imperatively. Far more frequently, however, the bacteriologist is confronted with the problem of clinical diagnosis. He knows that the tests for absolute diagnosis require several days, a delay which the physician cannot tolerate. For the physician is aware that every day's delay in the administration of antitoxin means an added risk to his patient, and he is responsible for questions of isolation and disinfection. He naturally asks prompt assistance from the bacteriologist, for it is of little service to him unless it is prompt. He wants an answer by telegram in twenty-four hours. The bacteriologist does his best to comply with the request. The physician gets his report, and if we may judge from the increasing demand for such reports, finds it of assistance in diagnosis. But it is of great importance that practitioners generally should apprehend the precise nature and limitations of such a report. It can only represent a pious opinion on the part of the bacteriologist, based on the somewhat uncertain foundation of morphological, tinctorial, and cultural characters. In the hands of a competent and experienced observer the probability that such a report is correct may be very high, and more than enough to justify the practitioner in taking decisive action. It is therefore of obvious utility, but the practitioner must take it only for what it is worth; it has not the value of certainty too often attributed to it; and the report should, in my opinion, be more cautiously worded than is frequently the case. Every bacteriologist who has done much work of this kind has probably, at one time or another, placed himself in a false position by too hasty an assumption as to the nature of the bacilli he has found; for, as a rule, he knows little or nothing of the source of the material sent him, which may be from a suspicious sore throat, but may equally come from a healthy nose, or even from some non-human source. Malicious tricks have been played on bacteriologists often enough.

It may be urged that the practitioner wants an authoritative answer upon which final diagnosis may be based. If so, the sooner he is educated out of that expectation the better. There is a growing tendency to place the responsibility of diagnosis in diphtheria upon the shoulders of the bacteriologist, without furnishing him with any clinical details, or allowing him time for necessary tests. This is partly the fault of bacteriologists themselves, for they have loudly proclaimed that they alone can tell what is diphtheria and what is not. It is true that, given the requisite time for experiment, they can assert the presence or absence of pathogenic diphtheria bacilli, but ultimate diagnosis must always rest with the physician who knows all about the case, and not with the bacteriologist, who may know little or nothing. Virulent bacilli may be present in the throats of healthy persons who have been in contact with diphtheria cases, and it is obvious that this does not constitute diphtheria. Bacilli closely resembling diphtheria bacilli may be abundant in the healthy nose. In every case the ultimate responsibility of diagnosis must rest with the physician and not with the bacteriologist, though the help which the latter can give is of the highest value and importance. In one small branch of practice it is my good fortune to combine the two functions, for I am at once Pathologist to St. Bartholomew's Hospital and medical attendant to the nursing staff, amongst whom sore throat is common. For the diagnosis of such cases the combination is ideal, and I can bear emphatic testimony to the fact that it is from a combination of all points of view that a just and sane diagnosis is most readily attainable. At the same time it is fair to say that the bacteriologist is less liable to error than the physician; indeed, very much less liable to error if he is at pains to control his results by animal experiment. Five years ago I carried out, with the late Professor Kanthack, an investigation of some 70 consecutive cases of sore throats of all kinds amongst nurses—clinical and bacteriological—controlled by animal experiment. We found that, on clinical grounds, I should have made an erroneous diagnosis in one out of every nine cases of apparently simple sore throat.

In my opinion it would be a reasonable thing that the bacteriologist should always be furnished with clinical details concerning the material submitted to him. Much erroneous diagnosis is caused by his working in the dark. The practitioner seems to fancy that he gets a more unbiassed opinion if he withholds clinical facts, but I am sure this is a mistake. Within the last few months I have been concerned with a private school in which cases of diphtheria had occurred. The boys were sent home while disinfection was carried out, and no boy was allowed to return until cultivations from the throat and nose had shown the absence of diphtheria bacilli. Between 50 and 60 boys were thus examined: in no case were any suspicious bacilli found in the throat, but in about 10 cases reports came from different bacteriologists that diphtheria bacilli (or the more cautious report "bacilli morphologically indistinguishable from diphtheria bacilli") were present in the nose. These boys were all in perfect health, but the bacteriologists were not told that the material came from healthy noses, and they fell into the pit. But in no single case were the bacilli found to have any pathogenic effect upon guinea pigs, when more careful tests were applied. Eight out of the ten were submitted to me, and I found only Hoffmann's bacillus or some allied harmless species; the other two were tested elsewhere with similar result. Had the bacteriologists known the facts, the parents of the boys would have been spared a serious panic.

Another point worthy of consideration is the weight to be attached to negative bacteriological reports, especially in cases clinically regarded as diphtheria. It must occasionally have happened to most bacteriologists to find diphtheria bacilli at the second or third attempt when previous results had been negative. It has happened to me to fail in demonstrating the bacilli during life in a case of undoubted clinical diphtheria, in which tracheotomy did not avert a fatal issue in spite of repeated and elaborate endeavours, and even after death to fail, except in a cultivation from the ventricle of the

larynx, in which the bacillus was demonstrable. Such instances make one hesitate to accept as final the cases of fatal membranous laryngitis which have been asserted to be non-diphtherial in nature. It must in any case be conceded that negative results are much less conclusive than positive ones.

I have felt it my duty, in opening the discussion on this very important subject, to deal with general principles rather than with details. I have no new or striking facts to bring forward as to the pathological distribution of the bacillus. It is generally admitted that it commonly remains limited to the original seat of infection, that by direct extension it may spread down the air passages or along the mucous membranes which are in continuity with the throat (so that it is commonly to be found in the lung in fatal cases), and lastly, that in cases of severe type it may be found after death in other parts of the body such as the spleen, usually in scanty numbers, and probably only as a terminal infection.

It is to be regretted that much of the work which has been done upon the distribution of the diphtheria bacillus, as, for instance, upon its occurrence in healthy throats, is vitiated by the absence of convincing proof as to the identity of the bacilli found. The question of the persistence of the bacilli in the throat after diphtheria is also of singular interest and importance. I have myself found bacilli present abundantly and in full virulence three months after the primary attack, and I believe that similar facts are on record. Another matter well worthy of discussion is the relation of the diphtheria bacillus to scarlatinal and post-scarlatinal diphtheria, a subject upon which, unfortunately, I have no personal observations to offer.

The opinions that I have ventured to express are the result of my own personal experience and represent my sincere convictions. But I do not doubt that, in a subject which bristles with so many difficulties and fallacies, there must be many present who will disagree with them, a circumstance which, I trust may lead to an animated discussion.

II.—THOMAS DAVID LISTER, M.D., M.R.C.P.

Registrar and Pathologist to the East London Hospital for Children.

DR. LISTER said: The bacterioscopic test which Dr. Andrewes described is sufficiently accurate for clinical purposes—that is to say, so far as the diagnosis of the presence of the Klebs-Loeffler bacillus is concerned, and is naturally the only one usually adopted for clinical purposes; in the exigencies of practice inoculation is not widely applicable. Cases in which organisms are found presenting the morphological characteristics described by Dr. Andrewes should be isolated and treated antiseptically, whether they present symptoms of true diphtheria or not. At the Royal Medical and Chirurgical Society on October 25th, 1898, I mentioned, in a discussion on a paper by Dr. Lambert Lack on Membranous Rhinitis, the frequency with which such bacilli are found in cases of chronic nasal discharge in infants and young children. I gave statistics of 125 examinations, in some of which a *post-mortem* examination confirmed the views expressed by Dr. Lack as to the relation of the Klebs-Loeffler bacillus to membranous rhinitis. Since then I have been able to trace three cases of true diphtheria following upon the presence of what I am accustomed to call Klebs-Loeffler bacilli in apparently merely chronic nasal discharges. These may of course have been infections by a different bacillus presenting similar morphological characteristics, but they may also have been due to the development of virulence in the organisms found in the nose, though what the factor is which may determine such virulence it is impossible to suggest.

III.—WILLIAM MILLER CROWFOOT, M.B., F.R.C.S.,

Vice-President of the Section.

DR. CROWFOOT said: I entirely concur with what Dr. Andrewes has said as to the necessity for the diagnosis of diphtheria being, in a large measure, dependent upon clinical as distinguished from bacteriological data. As an illustration of this statement I may mention a case which came under my notice. It was that of an individual who suffered from sore throat; a swab was taken from the throat and examined bacteriologically with a negative result. Nevertheless, several other members of the same family contracted the same disease, and I have no hesitation in saying that the cases, whatever they may have been bacteriologically, were clinically diphtheria.

IV.—ROBERT MUIR, M.A., M.D., F.R.C.P.E.,

Professor of Pathology in the University of Glasgow.

PROFESSOR MUIR said that Dr. Andrewes had treated the matter from the common-sense point of view, and he agreed in the main with what had been stated. He thought that the question had a twofold aspect—the strictly scientific and the practical. With regard to the former, the question as to what determined species, was involved, and that was a question in biology—moreover, a question which at present could scarcely be properly answered. An organism might give all the cultural and microscopic characters of the diphtheria bacillus and also produce the characteristic lesions on inoculation; with regard to it no doubt would arise, but another might be like it in all respects except that it was non-virulent to a guinea-pig and yet might produce small quantities of diphtheria toxin; this also would be called an attenuated diphtheria bacillus. But supposing that no toxin could be detected (the other characters being present), could it be said that it was not the diphtheria bacillus? From the biological point of view he thought not. With regard to clinical diagnosis, he thought that the proper course was for the bacteriologist to state the results of his investigations, and for the clinician to use these in association with the results of his own observation; it was only in this way that the best use could be made of the knowledge obtained in the two departments; the clinician ought at least to understand the bacteriology of the disease. It was a great mistake to divorce the two fields of investigation, as was sometimes done.

V.—W. S. LAZARUS-BARLOW, B.A., M.D., M.R.C.P.,

Pathologist and Lecturer on Pathology at the Westminster Hospital.

DR. LAZARUS-BARLOW said: I think there is nothing more certain than the fact that it is absolutely impossible to give a strictly scientific and certain diagnosis in a suspected case of diphtheria in twenty-four hours, and as the result of microscopic examination alone. The only thing that the physician has a right to expect is an opinion of a greater or less degree of probability. As a matter of fact, I decline to give an opinion unless I have been able to learn something of the clinical aspects of the case. Where experimental evidence is obtainable the probability of accurate diagnosis is, of course, enormously increased, so that while the rapid diagnosis must be more or less unsatisfactory, cases in which time is a somewhat less urgent factor can still derive the full benefit from a bacteriological examination. Cases of this description are to be found in the so-called mild cases in which throat symptoms are slight and fugitive. From the point of public health no less than from the point of the proper convalescence of the patient, definite knowledge as to whether the case has been one of true diphtheria or not is of the greatest importance; that is to say, the class of case in which bacteriological examinations are of value are of a somewhat different order than those for which we are commonly asked our opinion.

VI.—E. KLEIN, M.D., F.R.S.,

Lecturer on Physiology at St. Bartholomew's Hospital; President of the Section.

DR. KLEIN said: The opinions expressed by Dr. Andrewes and Dr. Muir are those which commend themselves to all scientific bacteriologists—namely, that the bacteriologist cannot at present do all that the clinician expects. I am of opinion that the sooner and the more forcibly this is placed before the physician the better for the physician, and particularly for the bacteriologist. After all the bacteriologist cannot go beyond what his methods and the particular state of his science allow. For example, diphtheria bacilli or bacilli conforming to all tests we are familiar with as characteristic of diphtheria bacilli occurred in milk, and yet the farm, its *personnel*, and the consumers of the milk negatived the conclusion that the bacilli were those that cause diphtheria.

A CASE OF PURPURA AND INTENSE ANÆMIA, WITH MARKED DEFICIENCY IN THE RED BONE MARROW.

By ROBERT MUIR, M.A., M.D., F.R.C.P.E.,

Professor of Pathology, University of Glasgow.

THE following case is recorded chiefly on account of the remarkable condition of the bone marrow—a condition which

may be of importance in throwing light on the nature of some cases of anæmia occurring in young subjects. The chief conditions found associated in this case were hæmorrhages from mucous membranes and purpuric eruptions, intense anæmia, marked deficiency in the amount of red bone marrow, and deposit of iron-containing pigment in the liver and in the kidneys. The relation of these conditions to one another will be discussed later.

The following are the chief clinical facts which appear of importance in relation to the pathology of the case. For these I am indebted to Dr. Finlayson, under whose charge the case was, and I take this opportunity of thanking him for his kindness in placing them at my disposal:

A boy, aged 14 years, was admitted on January 8th, suffering from bleeding from the nose, vomiting of blood, with purpuric eruption over his body and legs. According to the history he appears to have been healthy till about a month before admission, when he had a chill and suffered from a cough, with slight hæmoptysis. Four days before admission some spots had been noticed on his body, especially on his legs. On the evening of the following day, when in bed, he had severe bleeding from the nose and mouth, which was controlled with some difficulty. A day later he vomited a large quantity of partially clotted blood, of dark colour. The amount of blood lost was evidently considerable, as he fainted on endeavouring to rise from bed. There was nothing of importance in his family history.

On admission he showed marked anæmia. His lips and conjunctivæ were almost bloodless, and there was evidence still of a general oozing of blood from his gums. There were numerous small hæmorrhages all over his legs, trunk, and head. During his stay in the hospital he vomited blood from time to time, and administration of food by the mouth had to be stopped for a period. A slight general improvement resulted, and the purpuric eruption disappeared, but on February 23rd, that is about seven weeks after his admission, the spots reappeared. On the following day he vomited blood, and subsequently passed into a state of stupor, in which he died.

The blood was examined on January 15th, about a week after his admission, when the red blood corpuscles numbered 800,000 per c.mm., the hæmoglobin was 12 per cent., and the leucocytes equalled 7,000 per c.mm. On January 26th the number was practically the same, but on February 9th the number had fallen to 640,000. I examined films sent to me on February 10th, and the following conditions were noted: The red blood corpuscles showed little alteration beyond some variation in size and slight poikilocytosis; there were practically no megalocytes; there were no nucleated red blood corpuscles discoverable. The leucocytes were very scanty—in my opinion about 1,000—and there was a very marked diminution in the polymorphonuclear (neutrophile) forms these numbering only about 25 per cent of the whole. The lymphocytes numbered about 70 per cent, the rest being made up of the hyaline cells. I could find no eosinophile cells. The blood plates appeared to be practically absent, a condition which has been observed in other cases of purpura, and on which importance has been laid by Denys. The urine was examined from time to time; it contained no blood or albumen throughout, and its colour was noted as straw-coloured or pale amber. It was of acid reaction, and its specific gravity varied from 1014 to 1020.

The following were the chief facts ascertained at the *post-mortem* examination:

The body was rather poorly nourished, and showed extreme anæmia; it was also poorly developed in proportion to the age of the patient. There were numerous very minute petechiæ on the trunk, especially over the anterior walls of the chest.

The Thorax.—The serous sacs were normal, with the exception of there being some ounces of serous fluid in each pleura.

Heart.—There were numerous petechiæ of various sizes in the epicardium all over the surface, but especially anteriorly; these appeared to be comparatively recent. The ventricles were contracted, and contained some pale *ante-mortem* clot. The heart muscle was extremely pale, and showed extensive fatty degeneration, this being especially marked in the inner half of the left ventricle. There were a few small petechiæ also in the endocardium. The valves were healthy. The left ventricle appeared very slightly hypertrophied. The lungs showed nothing worthy of note beyond some hypostatic congestion with œdema.

Abdomen.—The peritoneum was normal. The stomach contained about 10 ozs. of fluid material, with considerable admixture of altered blood. Its mucous membrane was rugose, and showed extensive patchy hæmorrhages in its substance, this condition being present throughout the organ, but specially marked posteriorly, where it had a diffuse character. The small intestine also showed a few hæmorrhagic patches in its mucous membrane here and there, and contained a considerable amount of altered blood, especially in its middle portion. There was no sign of hæmorrhage in the large intestine. There were no ulcerations or even abrasions discoverable in any part of the alimentary tract. The liver was of normal size, fairly firm in consistence, and showed a uniform brownish-yellow colour. On testing for iron pigment with hydrochloric acid and ferrocyanide of potassium, there was found to be a considerable quantity in the outer half of the lobules. The central part of the lobules showed fatty degeneration. The spleen was slightly enlarged, fairly firm, and on section showed nothing abnormal in appearance. It gave no iron reaction. The kidneys were extremely pale and of a yellowish tint, and, on applying the usual test, a large amount of iron pigment was found to be present in the cortex, this giving a dark stain of somewhat mottled arrangement. The pancreas and suprarenals were anæmic, and evidently the seat of fatty change.

The brain was extremely anæmic, and showed one or two small subarachnoid hæmorrhages over the cortex of the hemispheres. It was also slightly œdematous.

BONE-MARROW.—When the marrow of the femur was examined, instead of showing the red appearance usually found in anæmic cases, it was found to consist almost exclusively of fat of whitish appearance. Here and there were hæmorrhagic patches, but there was no red marrow (in the proper sense) visible. A similar condition was found in the ribs, the marrow here being of almost pure white colour, and apparently composed almost exclusively of fat. A portion was fixed in formalin-alcohol solution, but, when passed into chloroform for purposes of embedding in paraffin, the marrow became dissolved, leaving scarcely a trace behind. In addition to showing this peculiar character, the marrow was deficient in quantity, the bone being distinctly thicker than normal, and also of unusually hard consistence; this condition of the bone was, in my opinion, distinctly pathological.



Fig. 1.—Section through cortex of kidney; the dark parts are tubules in which a deposit of iron pigment has occurred.

Microscopic Examination.—Portions of the various organs were examined, but only a summary of the results need be given. There was found very widespread fatty degeneration in the various organs—heart, kidneys, liver, etc, also in the small blood vessels—for example, in the heart wall, stomach, etc., where numerous hæmorrhages were present. The change seemed especially to affect the smaller arterioles, and was chiefly marked in the intima. In the blood vessels of the membranes of the brain a similar fatty change was present. Sections of the stomach wall were tested for the presence of iron pigment, but no trace of any was found.

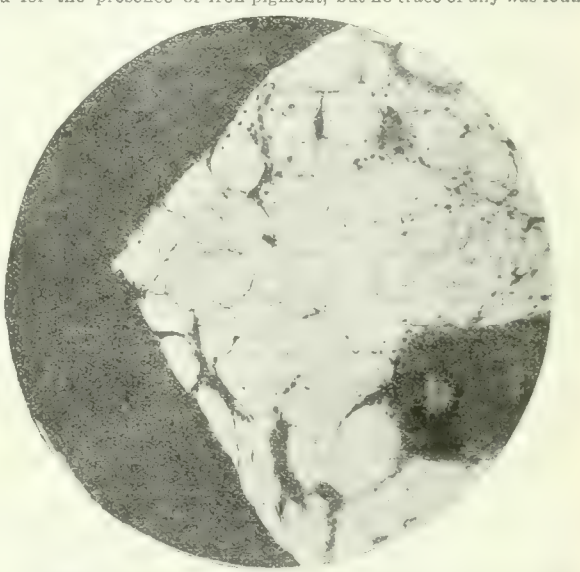


Fig. 2.—Section through rib, showing the relative increase of the adipose tissue, with great deficiency of the cellular elements. The dark part is sclerosed bone

Though the liver gave a well-marked iron reaction on naked-eye examination, similar to that met with in pernicious anæmia, only a small quantity of granular pigment was found on microscopic examination, the cells in the outer zone of the lobules giving merely a diffuse bluish staining with HCl and pot. ferrocyan. In the kidneys (Fig. 1) iron pigment was

found in larger quantities in the granular form within the epithelial cells, but in addition the cells gave here also a diffuse staining. The changes were not uniform, but occurred in patches, affecting chiefly the proximal portions of the convoluted tubules; the glomeruli were found to be quite free.

Film preparations of the marrow were made and fixed in the moist state in formalin-alcohol. In a large number of cases the film subsequently washed off, but in a certain proportion satisfactory specimens were obtained. The great mass of the tissue consisted of fat cells. Red blood corpuscles and the various forms of cells normally present were found in extremely small numbers. Only one or two nucleated red blood corpuscles could be found after a very long search. The finely granular narrow cells were also extremely scanty, and of smaller size than usual. No eosinophile narrow cells could be found. In addition to the usual fat cells there were also some cells of indeterminate nature containing small globules, and there were also a few amorphous broken-down cells. There was no evidence of pigment deposit in the bone marrow. As already stated, attempts to cut sections of the marrow expressed from the bone failed on account of its highly fatty nature. Sections, however, were obtained of the rib, showing the marrow *in situ*. In these sections (see Fig. 2) the marrow resembles adipose tissue, there being only small collections of cells round the capillaries here and there. The marrow from the femur showed a similar condition, cellular elements being there even more deficient. Films of the spleen pulp showed one condition of interest—namely, the presence of a considerable number of nucleated red blood corpuscles. In view of the conditions present in the blood and in the marrow, it is possible that their presence may indicate an attempt at compensatory blood formation in the spleen. The lymphatic glands showed nothing abnormal.

REMARKS.—It would be unwise to dogmatise in interpreting the changes found in this case, but one may with advantage discuss the relations of the more important lesions to one another.

First, as to the condition of the bone marrow: This I believe was a primary change, or, to be more correct, did not occur secondarily to any of the other lesions noted. For several years I have examined the bone marrow in a great many different conditions, and for more than a year I have been making a routine examination in almost every case. The condition of the bone marrow described above is quite new in my experience, and, so far as I can find, it has not been described before. I have spoken of it simply as a deficiency in the red marrow, and beyond this we cannot go, as we have no knowledge of any means by which such a change may be induced. It is well known that after hæmorrhage, as has been shown both experimentally and by observation on the human subject, the red marrow increases in amount, and nucleated red blood corpuscles become more numerous. The fact that in this case there were large hæmorrhages, and the marrow showed no increased regenerative power, emphasises more strongly the pre-existing abnormal condition of the bone marrow. Even in pernicious anæmia, as is well known, when the process of blood formation appears to be exhausted, the marrow is found to be of deep red colour and crowded with nucleated red blood corpuscles. There is in fact no evidence whatever that an accumulation of fat occurs as a result of the long-continued drain on the blood-forming functions. It is also to be noted that the bone was of unusually dense or sclerosed character, but I am not prepared to say how this should be regarded in relation to the change in the marrow.

Secondly, as to the anæmia: Though there is in the history no mention of advancing anæmia before the occurrence of the hæmorrhage, still I think that a degree of anæmia was present, and that this was due to the condition of the bone-marrow; this is almost certain from the fact that a week after the first hæmorrhages occurring on two successive days, the red blood corpuscles numbered only 800,000. The anæmia was of course in the main due to the hæmorrhages, but it is to be observed that after these had practically ceased, the number of red blood corpuscles showed no tendency to rise. The hæmorrhages may have been due to the fatty change in the vessel wall, or, as is more probable, some toxic or infective condition had been superadded. With regard to the iron pigment in the liver and kidneys, there is no need to look further than the hæmorrhages. These hæmorrhages occurred to a great extent in the disease, and it has been experimentally proved that in such conditions the iron-containing pigment resulting from disintegration of hæmoglobin is deposited in the liver, spleen, and kidneys. The large proportion of iron in the kidneys indicates, I think, a pretty rapid absorption of hæmoglobin or its derivatives; a similar condition may occur in paroxysmal hæmoglobinuria. In the present case, if the hæmoglobin was carried as such to the kidneys, the kidney cells were able to prevent its passage into the urine. The view that in pernicious anæmia the pigment in the organs is due to intravascular hæmolysis has been attacked by my colleague, Professor Stockman. It is not my purpose to discuss this question, but in the present case (which, however, differs in several respects from pernicious anæmia) there can be, I think, little doubt that the deposited pigment is due to the hæmorrhages. If this were not so, then there is no alternative but to assume that there were two independent lesions present—namely, a defect in the blood-forming tissue, and an increased blood destruction. My view, therefore, with regard to the case and its progress, is that the condition of the marrow had produced and kept up anæmia, and that, as a result of some intercurrent condition, the hæmorrhage and purpura occurred. From the fact that the patient had enjoyed good health before, it is probable that either the change in the bone marrow was not congenital, or if some congenital defect was present, it had recently become aggravated. The marked diminution of the neutrophile leucocytes is also of importance, as, according to the opinion of Ehrlich and myself, these cells have their chief site of origin in the bone marrow.

Dr. LAZARUS-BARLOW said that he had had a case in the *post-mortem* room which, speaking from memory, bore a very close resemblance to that described by Professor Muir. It occured in a woman of middle age who during life had been supposed to be suffering from pernicious anæmia. At the necropsy the medulla of the tibia was found to be entirely converted into fat and a similar condition affected the marrow of the ribs, the liver and the kidneys showed a marked iron reaction. One difference between his case and that of Professor Muir lay in the fact that the bone in his own case was not sclerosed but on the contrary atrophied.

Dr. ANDREWES referred to a case in which the bone marrow was quite pale, though the anæmia was extreme. The interest of his case lay in the fact that it was not a case of primary anæmia but was definitely secondary to carcinoma.

Mr. ROGER WILLIAMS said: In cases of cancer attended with anæmia, he had often observed extensive degeneration of the marrow and bone of a similar nature to that described by Dr. Muir. These changes might be so advanced as to lead to spontaneous fracture in the absence of any secondary deposits, and he had generally regarded them as secondary to the blood degeneration.

Dr. CROWFOOT referred to a case of very severe anæmia in which there was an enlarged spleen and a great increase of the leucocytes in the blood (a case of leucocythæmia, probably) in which the spleen was removed to the great and lasting benefit of the patient.

Dr. KLEIN asked Dr. Muir to state the condition of the urine of his patient with regard to the presence in it of pigments.

Dr. MUIR, in reply, stated that in regard to pernicious anæmia he was familiar with cases in which the red transformation of the marrow was absent or very feebly marked in the long bones and in some instances recorded by others it had been found that the various long bones presented variation in this respect, for example, the tibia showing the change when the femur did not. But he had not met with any case of pernicious anæmia in the adult where there was an excess of fat in the marrow of the ribs. He was also familiar with the change occurring in cases of cancer, marasmus, etc., but these were also different. In view of all the facts mentioned his opinion was that the change in this case was not secondary to the anæmia or any other condition noted. With regard to the urine he had not had an opportunity of examining it; pathological urobilin might have been present, but from the notes it was clear that at no time had a dark colour been observed. He considered that the diffuse iron reaction preceded the deposits of iron-containing pigment granules.

UTERINE MYOMATA AND DEVELOPMENTAL IRREGULARITY.

By W. ROGER WILLIAMS, F.R.C.S.,
Clifton.

THE pathogenesis of tumours is one of the most interesting medical problems now pressing for solution, and of this problem the pathogenesis of uterine myomata is but a particular instance. It will be well, therefore, to refer briefly to the subject in general terms before discussing the par-

ticular case. It is now evident that out of the confusion of a transitional period but two conceptions as to the origin of neoplasms have emerged—the one based on the cell theory, and the other on the germ theory—and henceforth the struggle must be between these two. Briefly stated, the question now is, Do neoplasms arise, as Johannes Müller believed, through a modification of the formative process; or are they the outcome of the inflammatory process, as Broussais maintained, owing to the intrusion of microbes or other irritants *ab extrâ*? In other words are they essentially of intrinsic or extrinsic origin? I incline to the former alternative. I believe that neoplasms arise mainly from the play of forces generated within the body; and in what follows I shall endeavour to show that this is the case with uterine myomata.

The outcome of recent researches as to the genesis of these tumours indicates that in a large proportion of cases their origin is intimately associated with developmental irregularities; and conditions of this kind are probably the chief morphological factors in their development.

Among the grosser uterine malformations with which myomata may be associated, special mention must be made of uterus duplex, instances of this having been reported by Galabin, Gow, Pick, Graverry, Falk, and others. In an interesting case by Clay, double uterus and vagina was associated with uterine myomata and absence of one kidney. In a uterus didelphys, Czerwenka found two myomata of the left corpus with cancer of the left cervix; and Jackson has seen myomata in an atresiac infantile uterus in which cancer was also present. Pick has met with a case in which the uterine malformation seemed to be due to the presence of a fœtal myomatous nodule, interfering with the union of the Müllerian ducts. Instances have also been reported of the development of myomata in the rudimentary horn of the uterus unicornis (Romiti, Routh, Doran, Mackenzie, etc.); while in a case described by Mundé similar tumours were present in the developed parous horn of a malformed uterus of this kind. In a pseudo-hermaphrodite, aged 50, in whom the female type appeared to predominate, Gruner found myomata of the malformed uterus; and in another defectively-developed person, aged 49, Howitz met with a tumour the size of a cocoanut, due to myomatous disease of the unicorn uterus. In the latter case the left tube was absent, the ovaries were represented merely by small nodules, remains of Gaertner's ducts were found in the vaginal walls, and there was hypospadias with hypertrophy of the clitoris.

Thomas has seen myomata with congenital anteflexion; and in a sterile woman, with an infantile uterus, Keiffer found a large myoma of the cervix.

Myomatous tumours have also been met with having in their interior diverticula from the uterine cavity, as in cases of "uterus accessorius"—bifid, trifid uterus, etc. (Recklinghausen, Ricker, etc.). Such conditions appear to be due to abnormal myomatous growth around persistent diverticula from the Müllerian ducts, such as Meyer and others have described.

Guyot has found uterine myomata associated with vaginal malformation; and Wetherill, in removing a large tumour of this kind, noticed supernumerary oviducts and hydatids. The concurrence of vaginal atresia and uterine myomata has been noted by Jenks.

Neumann has described myomata of the uterus and tube concurrent with Wolffian "rests" in both ovaries; and Russell has discovered Müllerian relics in the ovary, whence structures like utricular glands had evolved, that resembled the epithelial inclusions found in uterine myomata.

This leads me to remark on the frequency with which uterine myomata are complicated with ovarian cystomata (often bilateral), dermoids, and cysts of the adnexa (broad ligaments, round ligaments, etc.). Of his operated uterine myomata, Péan found associated ovarian cystomata in 12.5 per cent., and of Winckel's ovarian cystomata, 18 per cent. were concurrent with myoma uteri. Buffett has described a remarkable case of this kind in which the combined weight of the associated tumours amounted to no less than 216 lbs., the left ovarian cystoma weighing 180 lbs. and the uterine myoma 36 lbs. Leo has found myomata of the uterus coexisting with cystoma of the right ovary and polycystic disease of the left kidney. Thornton met with multiple uterine myomata associated with a large multilocular cystoma of the right ovary, a parovarian cyst of the right broad ligament, and multiple cysts of the left ovary; and in Hodge's case uterine myomata were associated with cystic disease of the ovary and broad ligament. Dartigues and Claisse have lately reported an instance in which a large uterine myoma coexisted with an enormous multilocular cyst of the left ovary and a dermoid of the right. Emmet has seen a large cystic myoma of the fundus, with several solid myomata adjacent to it, and a polypoid intrauterine myoma, concomitant with multilocular cystoma and dermoid of the right ovary.

The frequency with which uterine myomata are multiple might of itself lead us to suspect the association of developmental irregularity with the origin of these tumours, and the occurrence of cases in which the whole musculature is converted into a dense mass of small tumours—of which Emmet has described a remarkable example—points to the same conclusion.

Of like import is the finding of uterine myomata concomitant with similar tumours in the ovary, broad ligament, round ligament, tube, vagina, and in other situations adjacent to the uterus, of which many examples have been recorded. Thus, Neill has met with a case in which myomata coexisted in the uterus, broad ligaments, and ovaries; and Virchow long ago described an instance in which the uterus, ovaries, and vagina were concurrently affected.

I now pass to the consideratian of the connection between myomata and certain less obvious developmental flaws, to which Cohnheim has specially called attention. When Cohnheim first announced his theory of the origin of tumours from sequestrated fragments of the germinating tissues, very few facts could be adduced in support of it. No one then believed in the possibility of such an amount of developmental irregularity as it presupposed. The light of modern science has, however, effectually dissipated this misconception, and our eyes have been opened to the hidden defects of normality. Sequestrated fragments of the various tissues and organs have now been found to exist in every part of the body that has been specially examined for them. The urogenital system is no exception to this rule, for the track of the Wolffian and Müllerian ducts is strewn with *débris* of this kind.

Long before Cohnheim's time the tendency of tumours to originate at the seats of developmental defects had been recognised by Paget, Virchow, and others. Even as far back as 1853, referring to the proneness of melanomata to arise from pigmented moles, Paget said, "It seems a striking illustration of the weakness in resisting disease which belongs to parts congenitally abnormal.....This peculiarity may make us suspect that there may be other, though invisible, defects of first formation in our organs which may render them, or even small portions of them, peculiarly apt for the seats of malignant disease," etc. Recent observations show that most uterine myomata and cysts arise in like manner from dislocated myomatous elements connected with abnormally-evolving "rests" of Wolffian and Müllerian structures, or even of the uterine mucosa itself. Thus their initial multiplicity may be accounted for, as well as the similitude of their structure to that of the uterine wall. The discovery of epithelial inclusions in uterine myomata—for which we are indebted to Babes and Diestweg—was one of the earliest indications of the correctness of this interpretation; and several observers (Meyer, Ricker, Fischel, Coblenz, etc.) have found similar epithelial inclusions in the otherwise normal uterine musculature. By Babes and Recklinghausen these structures are believed to be Wolffian relics, while other pathologists insist on their Müllerian origin. But all such bodies are not necessarily either Wolffian or Müllerian residua, for they may be included sequestra from the uterine mucosa itself. Indeed, Ribbert has found deep in the uterine wall, not only sequestrated utricular glands, but even isolated fragments of the entire mucosa. In like manner the Nabothian follicles arise as sequestrations from the glands of the cervix.

Bearing in mind the developmental correlation between the uterine musculature and its numerous blood vessels—which are so extraordinarily interwoven—it is easily conceived how by a similar process these adenomyomatous inclusions arise, owing to the migrations and changed relations of the

parts incidental to ontogeny. Such is the manner in which I believe the germs of myomata originate, and thus may their association with the small arteries be accounted for.

A DISCUSSION ON THE PATHOLOGY OF CIRRHOSIS OF THE LIVER IN ADULTS AND YOUNG CHILDREN.

I.—ARTHUR VOELCKER, M.D., F.R.C.P.,

Assistant Physician and Lecturer on Pathology, Middlesex Hospital; Assistant Physician to the Great Ormond Street Children's Hospital.

DR. VOELCKER, in introducing this discussion, gave first a historical account of the pathology of cirrhosis of the liver. He considered it due to toxic action on the liver cells and connective tissue, and the degenerative or regenerative processes on the resisting power of the liver. The appearances described as newly-formed bile ducts suggested to him lymphatics or blood vessels. To ascertain what influence alcohol had as a cause of hobnailed liver, he examined the records of 2,020 necropsies made at the Middlesex Hospital; of these, 149 were cases of cirrhoses of the liver, which was hobnailed in 36. Of the 36 cases, alcoholism was acknowledged in 15, denied in 9, and not noted in 15. Of 4,278 necropsies made on children under 12 at Great Ormond Street, there were 23 cases, and hobnailing was present in 13. He concluded that alcohol played an important part in the production of cirrhosis, but in what way was uncertain. Large livers were rather more common in spirit drinkers than in beer drinkers, but the "gin-drinker's liver" could be produced by beer. He alluded to the effect of other poisons than alcohol in producing cirrhosis, and to the associated changes in the spleen, pancreas, and kidney. Points calling for discussion were: (1) Was it possible to distinguish between the various forms of cirrhosis microscopically and macroscopically? (2) What was the source of the newly-formed connective tissue? (3) What was the nature of the so-called newly-formed bile ducts? (4) Under what conditions could cirrhosis of the liver be experimentally produced? (5) Did cirrhosis in children differ essentially from cirrhosis in adults?

II.—LUDVIG HEKTOEN, M.D.,

Professor of Pathology in the Rush Medical College, Chicago.

MR. FOULERTON presented a contribution from Professor LUDVIG HEKTOEN on Experimental Bacillary Cirrhosis. Without entering upon the broad questions of the etiology and genesis of cirrhosis of the human liver, Professor Hektoen wished to refer briefly to some recent demonstrations made in his laboratory on cirrhotic processes in the liver of animals directly induced by two different bacilli. The observations seemed to him to be of some interest in their suggestiveness of a somewhat similar course of events in some instances of human cirrhosis. Similar more or less acute infections in man might induce a diffuse growth of new connective tissue in the liver. Then, whilst the bacteria might be destroyed, and the immediate effects of their presence pass away, the newly-formed tissue of the liver would remain; and as it contracted a vicious cycle was established, the pressure of the resulting fibrous tissue causing necrobiosis of the hepatic cells, which in turn led to renewed, more or less slow, but progressive connective tissue proliferation. With time, aided perchance by other superinduced factors, extensive contraction of the liver would result. One of the series of observations referred to was conducted by Dr. G. H. Weaver, and the main results had already been published under the title of Cirrhosis of the Liver on the Guinea-Pig Produced by a Bacillus and its Products.[1] The bacillus belonged to the colon group, and was isolated from a guinea-pig which died spontaneously. The bacillus lost its virulence rapidly, and before sufficient experiments had been made to establish clearly the relation between the necrotic and proliferative changes in the liver. With early death, necrotic and degenerative changes only were found in the guinea-pig; in those which lived longer proliferation of connecting tissue was associated with necrosis, and in other animals again cirrhosis entirely replaced the degenerative changes. These interesting changes were observed only in guinea-pigs, showing well the influence of species, and were caused by the inoculation of living as well as of devitalised cultures. The second series of observation concerned a bacillus that might be placed in the pseudo-diphtheria group. It was isolated from the lesions of a case of blastomycetic dermatitis of the back of the hand. Inoculations in various ways with this bacillus and its products had been found to produce with a fair degree of consistency more or less necrosis and diffuse cirrhosis of the liver in guinea-pigs and other animals. Unfortunately this bacillus also lost its virulence before many of the experiments planned could be completed. It would have been of great interest to follow out the subsequent course of the cirrhosis set up on some of the animals. After a description of the cultural characteristics of this bacillus, Professor Hektoen alluded to his animal experiments. In guinea-pigs the subcutaneous injection of about 1 c.cm. of bouillon culture produced, in from two to four days, a markedly hard infiltration, followed by the development of more or less extensive punched-out ulcers, which generally healed up. The animals became thin, and died in from three to five weeks. The essential change found was necrosis, with cirrhosis of the liver. The bacillus could usually be recovered from the internal organs and from the cutaneous ulceration. Occasionally the local reaction failed to take place, and the animals at times recovered. In a few cases local infiltration and ulceration took place, but no other changes were found. The general results with intraperitoneal injection were similar, but not so constant. With rabbits the intravenous or subcutaneous injection of 1 c.cm. of bouillon culture did not make the animals sick nor produce any change in the liver. Inoculation into the anterior chamber of the eye of a full-grown medium-sized rabbit resulted in great emaciation and death after 24 days with cirrhotic and other changes in the liver. The subcutaneous injection of 2 c.cm. of bouillon culture in a dog gave rise to a huge swelling which gradually subsided. The animal was killed with chloroform six weeks after the injection. The liver was of about normal size, finely uneven, with occasional single greyish dots or groups of dots. There was slight grating on cutting the organ. Microscopic sections showed numerous small intralobular islands of recent connective tissue cells, as well as of small cells with deeply stained irregular nuclei. There were also branching bands of recent connective tissue along the vessels. Inoculation of a grey mouse and of a white rat with 0.2 c.cm. and 0.3 c.cm. of a bouillon culture respectively made both animals sick for a time, but when killed on the twenty-first day the livers were found to be normal. [Photographs of microscopic sections were shown demonstrating the cirrhotic changes produced in the liver of the guinea-pig by both these bacilli described.]

[1] *Trans. Chic. Path. Soc.*, 1900, III, pp. 241-255.

III.—SIMON FLEXNER, M.D.,

Professor of Pathology, University of Pennsylvania.

PROFESSOR FLEXNER said: Dr. Voelcker has so ably summed up our present knowledge of cirrhosis of the liver and so fully emphasised the problems that press most at this time for solution that in speaking on any topic of the discussion, one will hardly be able to avoid repetition. I shall ask your indulgence for a brief moment only to consider three points: the first, the experimental evidence that lesions of the liver cells precede changes in the connective tissue; the second, the nature of the new tissue formed in cirrhosis and its distribution; and the third, the common cause of death in the disease.

My own experiments cover the inoculation of animals—guinea pigs and rabbits—with poisons derived from bacteria, from the higher plants and other animals. The chief results were obtained with ricin and abrin, from the castor and jequirity bean respectively, and the blood serum of the dog injected into the circulation of the rabbit. In these experiments it was shown that the primary effects of the poisons were exerted upon the liver cells. Necrosis, consisting of a few or many cells and hyaline in nature, were common. In the animals which died from acute poisoning, they were the principal and, excepting for a moderate leucocytic infiltration, the only important lesions. Where the animals survived some weeks, proliferative changes in the connective

tissue, with the production of the so-called newly-formed bile ducts, were met with. When the new growth of tissue came from the surface capsule, indentations were produced suggestive of the granulations of atrophic hepatic cirrhosis. While these results were suggestive of the part played by a primary degeneration and necrosis of the parenchyma they failed entirely to clear up the question, in that they did not exactly reproduce the morbid appearances seen in human hepatic cirrhosis.

We have been in the habit of looking upon the new connective tissue found in hepatic cirrhosis as of the nature of white fibrous tissue. As a matter of fact, it is much more complex in structure. The liver normally contains at least three kinds of connective tissue: (1) White fibrous in the interlobular spaces and the surface capsule chiefly; (2) reticulum within the hepatic lobules; (3) elastic tissue chiefly about the blood vessels, and to a less extent the bile ducts in Glisson's capsule and in the surface capsule. Very rarely a minute quantity of this tissue may be seen in the walls of the central veins. A study of the tissues from cirrhosis by ordinary staining, then after digestion of the sections with pancreatine, and lastly after staining for elastica by Weigert's method, show that not one only but all the connective tissues enumerated are increased or altered. The most surprising result is the great amount of elastic tissue in the perilobular new growth of connective tissue, and now, for the first time, to be found within the lobules. There are differences in the amount and distribution of this tissue as well as in the alteration in the reticulum in the "atrophic" and "hypertrophic" forms of cirrhosis that time will not permit me to attempt to describe at this time, but the specimens which I pass around may enable you to appreciate.

Finally, I should like to remind you of a statement made by Professor Osler in his work on the *Practice of Medicine*. Somewhere in that volume he says, "It is paradoxical but true that few of our patients die of the diseases from which they suffer," etc. Professor Osler refers especially to the causes of death in chronic diseases, recognising that in the last event it is not the sudden failure of hepatic, or renal, or cardiac capacity that ushers in the terminal event. In most instances, as we now understand them, it is a bacterial infection. My studies of several hundred cases of chronic diseases, which had been investigated bacteriologically, convinced me of the importance of such terminal infections. The chief micro-organisms concerned are the pyogenic cocci. They may, moreover, occur as causes of local infections, especially inflammations of the serous membranes, or they may exist in the form of a general invasion-bacteræmia. The portal of entry may or may not be discovered clinically or at the necropsy. It may be an angina, an old ulcer (as in the leg) or the result of a trifling surgical operation, as in paracentesis, or it may baffle every attempt to discover it when we speak of the infection as cryptogenetic. I wish to thank you for the privilege of taking part in this interesting discussion, and to apologise for occupying so much of your valuable time.

IV.—W. S. LAZARUS-BARLOW, B.A., M.R.C.P.,

Pathologist and Lecturer on Pathology at the Westminster Hospital.

DR. LAZARUS BARLOW said: I suppose that it is better, in a discussion of the present kind, that speakers should rather err on the side of dogmatism than on the side of uncertainty, and for this reason I propose to state my views in a somewhat more uncompromising way than truly represents my opinion. The two chief points upon which I should like to lay stress refer to the pathologies of atrophic cirrhosis in adults and in children. In the case of the atrophic cirrhosis of adult life I think that the old idea that the condition depends chiefly upon an undue indulgence in alcohol, and especially in the abuse of ardent spirits, is correct, and I do not propose to enter into the question of etiology at all. But when we come to the question whether the condition is "inflammatory," as was at one time the universal idea, and as is still held by some noteworthy authorities, I think we are on very doubtful ground. This question has for many years been an attractive one, and the idea of cirrhosis as being inflammatory has, to more persons than myself, been a severe stumbling-block. It is certainly curious that we should never be able, on the assumption that the change is inflammatory, to point out a specimen as showing an early stage of the fibrosis comparable with the early stages of true inflammatory fibrosis which is so common a condition, and one which carries such a definite microscopical picture with it. That we under certain conditions meet with an atrophic fibrosis which is accompanied with the presence of a small cell infiltration amongst the adventitious fibrous tissue is indubitable. Such cases are, however, in my experience extremely rare; and even then the fibrous tissue that is present is of a well-formed type, and is totally unlike the material composing a young cicatrix, for example. In these rare cases my own opinion is that we have to do with the superposition of a genuine attack of inflammation on a tissue which is already the seat of a chronic fibrosis, but I do not think they aid us in any other than a negative manner to arrive at a conclusion upon the pathology of the underlying fibrosis itself. Unfortunately, the results of experimenters upon the subject of hepatic fibrosis are more than usually discordant, and although one is aware of the logical fallacy of "arguing" from analogies, there is, I think, more to be hoped for in this direction at the present moment.

If we consider the fibroses as a distinct class of pathological change in which extreme chronicity is one of the predominating features, we can include under one heading (*a*) senile fibroses of all kinds, (*b*) cirrhosis of the liver, (*c*) chronic granular kidney, and (*d*) the scleroses of the nervous system. Whether the fibroses which are found at times in the muscle of the heart are to be included in the same group, is perhaps a question. Until this time last year I should have unhesitatingly so included them, but at the meeting at Portsmouth I had the honour of showing a specimen of gummata in the heart wall, in which true inflammatory products were present in the left ventricular wall side by side with definite fibrosis of the ordinary type in the muscle of the right ventricle. Since meeting with this specimen I have felt some doubt as to the nature of cardiac fibrosis, though it is most certainly true that it is only in the rarest cases that the coexistence of an acute inflammatory change with the chronic fibrotic change leaves us in doubt, and it is probable, therefore, that cardiac fibrosis must be brought into line with the other chronic fibroses to which reference has been made. Now in the case of the scleroses of the nervous system there has never been any tendency to consider the fibrotic change as inflammatory, but on the contrary, it has always been recognised that the adventitious fibrous tissue replaces nervous tissue which has degenerated. That is to say, the essential elements of the part degenerate first, and the overgrowth of neuroglia takes place subsequently to fill up what we may speak of as a potential lacuna caused by the death and degeneration of the nervous elements. It is unnecessary for me to pursue this matter further, as it is clear that I would wish to draw the inference that in the case of hepatic cirrhosis we have first a destruction of the hepatic cells themselves, be it as the result of the action on them of alcohol or some of the bacterial poisons, and that subsequently there occurs an overgrowth of the normal fibrous tissue of the liver to fill up a potential lacuna. Naturally, in any microscopic picture we shall find these features side by side, but since the destruction of hepatic cells must be a more or less gradual process—otherwise the onset of the disease could not be so insidious as it undoubtedly is—there is every reason to expect that signs of a rapidly forming and young fibrous tissue will be wanting, and this is just what we find to be actually the case. It may of course be urged against this view that the dead and degenerating hepatic cells, being foreign bodies, act as irritants, and that in consequence the fibrous tissue which arises subsequently is of the same nature as the fibrous tissue of a cicatrix. To these objections I would suggest that upon this view our conception of inflammation will have to be widened until it embraces the whole of pathology, with the exception of the new growths, and would ask whether we are to regard the umbilicus as inflammatory fibrous tissue—a claim to which designation it has in my opinion far more right than the chronic fibroses we are at the present moment considering.

While I would express my belief that the pathology of the fibrosis is as I have just indicated, I think that this is especially likely to be the case with the atrophic fibroses of the liver. With reference to the so-called unilobular or biliary cirrhosis, the matter is very difficult. Personally I have never

been able to satisfy myself of the separate existence of this variety as a distinct histological type. That one meets with large and fairly smooth livers of considerable weight, in which there is a widespread and small-meshed fibrosis, is true; though it must be noted that they are by no means common. But I have never been able to convince myself in the few cases that I have examined either that the condition is unilobular, or that it has any special relationship with the bile passages. For this reason I do not propose to refer to them further. Intercellular or pericellular cirrhosis is in a special class by itself, and that variety, too, I shall leave on one side. But there is a variety of hepatic fibrosis which is usually very intense, and leads to a more marked lobulation of the surface of the liver than any but the most extreme cases of adult atrophic fibrosis exhibit, and to these I should like to refer for a moment. The cases of which I am speaking are not very common; they affect children at an older age than is the case with intercellular fibrosis (usually the patients are 10 to 16 years of age), they are often associated with great ascites and with a well-marked jaundice of a greenish hue, and distension of the abdominal superficial veins is, as a rule, considerable. The cases are sometimes of long duration, at times extending into years, but they progressively become worse, and ultimately die in the same manner as the adult who is the subject of ordinary atrophic cirrhosis. I well remember that these cases used to be pointed out to the students as illustrating the extreme vulnerability of the liver in youth to the action of alcohol, and it was to the effect of this agent that the condition was supposed to be due.

That alcohol may play its share in the production of this variety of hepatic fibrosis is quite possible; but the view which I first heard put forward by Dr. Rolleston, of St. George's Hospital, seems to me to be more in accordance with the facts. Dr. Rolleston suggests that this form of cirrhosis is really a late manifestation of congenital syphilis—not in the sense that it is a distinctly syphilitic lesion, but that the syphilitic poison when it acts upon the liver cells of the fœtus to a degree less than that which is necessary for the production of the typical syphilitic intercellular cirrhosis, damages them, and thus places the liver in an exceptionally vulnerable position. When, then, some factor arises which would be without effect upon the healthy liver, but which completes the injury commenced in intrauterine life by the syphilitic poison, the way is laid open for the occurrence of that fibrous tissue hyperplasia which ultimately characterises the hepatic condition.

The great difficulty in the way of the suggestion that has just been put forward is the fact that a syphilitic history is, in the cases we are considering, often very poor or, indeed, is quite wanting. Though we may say that this is just what we should expect, it considerably reduces the possibility of proving the point. At times, however, as in a case which I brought before the Pathological Society last year, collateral evidence is fairly strong. In any case, an explanation of the pathology of this variety of hepatic fibrosis is difficult, but on the congenital syphilis hypothesis many of the difficulties vanish.

V.—J. O. Wakelin Barratt, M.D.Lond., F.R.C.S.Eng.

Dr. Wakelin Barratt said: Considerable light is thrown upon the pathology of hepatic cirrhosis by the numerous attempts which have been made of late years to produce this condition experimentally in animals. Most of these experiments—such for example as the administration of drugs by the mouth or the alteration of the animal's usual diet—have afforded results which are inconstant or are incapable of being carried to an extreme degree, and are further open to the objection that the whole of the liver is affected, and thus the general metabolism of the animal is disordered. The only means of producing hepatic cirrhosis strictly localised in extent, and gradually becoming intense in degree, is by ligature of one of the bile ducts, and this method alone possesses the character of being simple in so far that a fraction only of the liver is involved and that no general effects are produced, the functions of the liver being carried out without any recognisable impairment by the remaining portion of this organ. Only this mode of production of hepatic cirrhosis will therefore be considered here, since it alone possesses the constancy and certainty of effect on the one hand, and the definite limitation of area on the other hand, which are necessary to scientific investigation, while, finally, it exhibits the important qualities of simplicity of conception and aim.

The earliest observer who ligatured a single bile duct in the investigation of hepatic cirrhosis was Nasse[1] in 1894, who by this means succeeded in producing increase of interlobular connective tissue.

About the same time Josselin de Jong[2] performed similar experiments. When strict antiseptic precautions were used he could find no change in the liver.

In 1897 Professor Vaughan Harley and myself commenced to investigate the effect of ligature of a single bile duct.[3] We were not aware at this time that other observers had worked in the same direction. Our experiments, which were aseptic throughout, were made upon cats and dogs, and show that cirrhosis always results in the corresponding liver area when a single bile duct is ligatured. The general health of the animals is not impaired, though the cirrhosis, which is always limited in distribution, is slowly progressive in the affected area. Microscopic examination shows that in the area of the liver corresponding to the ligatured duct, there is a development of interlobular connective tissue, rich in elongated nuclei, together with marked hyperplasia of the biliary ducts, presenting in this respect an exaggerated picture of what is seen in human hepatic cirrhosis. The larger bile ducts are dilated and tortuous, and the affected hepatic lobules are much diminished in size. Sometimes multinucleated cells are seen in small collections in the interstitial tissue. There is no appearance of jaundice or ascites.

Our observations, which were continued over lengthened periods of time, furnish a complete demonstration of the fact that simple ligature of a single bile ducts produces cirrhosis in the corresponding liver area. Owing to the simple nature of the operative interference, and the good general health which the animals subsequently enjoy, many of the disturbing factors which are present in the human subject are here absent, and the problem of the mode of production of the changes in the liver is reduced to its simplest form. It is clear also that the processes which are effective in experimental cirrhosis must also under analogous circumstances be in operation in the human subject.

After ligature of a bile duct the functions of the corresponding area of the liver are not abolished. Bile continues to be secreted and is found in the bile ducts, just as in the human subject bile continues to be formed, giving rise to jaundice, after complete obstruction of the ductus communis choledochus. It would appear that this continued secretion of the bile after ligature is a most important factor in the production of cirrhosis. It is well known that fluids injected under increased pressure into the biliary passages find their way into the circulation. This is generally regarded as wholly osmotic in its nature, though it does not appear certain that the absence of rupture of some of the finer biliary passages can be altogether excluded.[4] When bile thus escapes from the blocked biliary passages it enters in the first instance the lymph spaces.[5] It then of necessity acts as a slow irritant, and it would appear that the interlobular fibrosis which takes place in the affected area must be attributed essentially to this factor. To the increased pressure of bile in the biliary passages must also be attributed the dilatation of the larger bile ducts and the hyperplasia of the smaller ones which is so striking a feature in experimental cirrhosis. The atrophy of the liver lobules in the ligatured area appears to be due to the irritation of escaped bile acting upon the cells at the periphery of the lobule; it is not readily explicable as a pressure effect.

The above is a short outline of the leading characters of experimental hepatic cirrhosis, due to the blocking of the biliary channels coming from a limited area of the liver, a cirrhosis which may truly be termed "biliary." Further experimental work is still required to determine the extent

[1] *Semaine Médicale*, 1894, p. 202.

[2] Cirrhosis Hepatis. *Inaug. Diss.*, Leyden, 1894.

[3] A preliminary account is given in the British Medical Journal of December 10th, 1898.

[4] Cf. Wakelin Barratt, On the Effect of Injecting Dilute Sulphuric Acid into the Common Bile Duct, *Journ. of Path. and Bacteriology*, 1898, pp. 340-347.

[5] Vaughan Harley. Leber und Galle während dauernden Verschlusses von Gallen und Brustgang. *Archiv f. Anat. u. Physiol.*, 1897, p. 291.

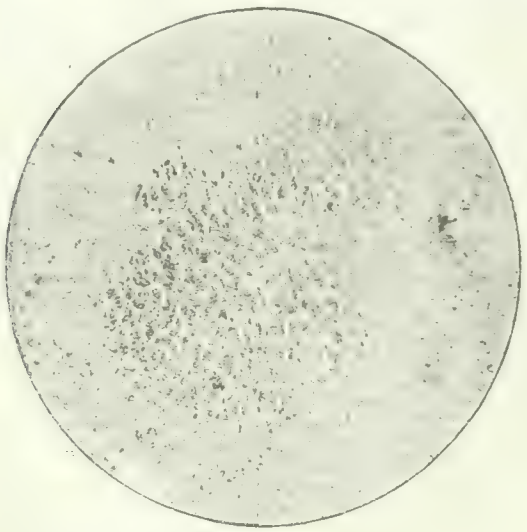
to which hepatic cirrhosis in the human subject is to be regarded as of the same nature as the extremely simple experimental form which has here been described. The study of hepatic cirrhosis is in fact reduced to its simplest conditions when a purely localised cirrhosis is produced by a lesion which involves a fraction of the liver only, leaving the rest of the liver, as well as distant organs, unaffected, and producing no recognisable change in the general condition of the animal.

VI.—THOMAS DAVID LISTER, M.D., M.R.C.P.,

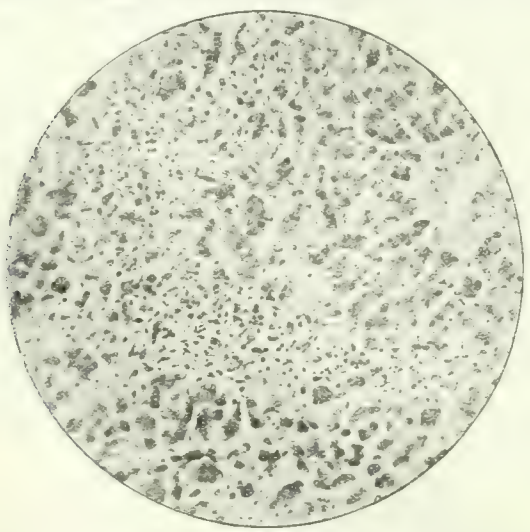
Registrar and Pathologist to the East London Hospital for Children.

DR. LISTER said: Though merely an isolated observation, the following case has an interest in relation to this subject:

The boy, a well-grown, well-developed child, aged 5, was admitted to the East London Hospital on April 11th, 1899, for vomiting and straining at stool, passing mucus and blood only, having been ill for five days. The onset was sudden, with diarrhœa, vomiting, and rigors. His previous history was unimportant, with the exception that he had had occasional



colic and diarrhœa of brief duration at intervals during the preceding ten months. He was placed under the care of Mr. Betham Robinson. On admission his temperature was 99.6°, pulse 150, small, and compressible; his extremities were cold, his respiration was quiet and easy, his abdomen was retracted, his tongue dry and brown; resonance of abdomen



normal; a doubtful tumour was thought to be present in the right iliac fossa. Laparotomy was performed and the abdomen explored for intussusception without result. The operation produced no effect, either of improvement or the reverse. On April 12th (the next day) he vomited three times, and passed three stools with blood and mucus. On April 15th he passed fifteen stools; his temperature was 101.4°; the stools were brown and fluid, and very offensive, and contained much blood. On April 16th, eight stools. On April 17th, twelve stools. On April 18th, ten stools. The stools were now chiefly blood. The patient was very anæmic, pulse 140, and on April 19th he died suddenly after vomiting, being extremely blanched. The vomit had contained blood for the last four days. The wound was perfectly healed. The *post-mortem* examination showed a diffuse ulcerative colitis, intense congestion of the gastro-intestinal tract, and blood everywhere on the mucous surface of the stomach and small and large intestine. The liver was very pale, somewhat fatty, rather firm, but with no lardaceous reaction, no irregularity or thickening of the capsule, and a normal resistance to laceration. There was nowhere any evidence of congenital syphilis, and the family history was good in this respect.

Microscopically the lobules of the liver are surrounded by a zone of small cells; some of the liver cells show vacuolation and hyaline necrosis. Some of the sections show large groups of bacilli; possibly this is a *post-mortem* invasion, as they are not associated with foci of cell deposits. There seems to me to be no doubt that this is a suggestive instance of the association of an acute interstitial hepatitis with an acute diffuse hæmorrhagic ulcerative catarrhal colitis of uncertain origin, which had caused death by hæmorrhage and exhaustion. The appearances resemble those produced experimentally by Professor Flexner and others in guinea-pigs. It is probable that the liver does not always escape scatheless from the very mixed toxins that must be passed through it in some of the intestinal infections of children, and that, as in the guinea-pig, fibroid changes may follow on acute interstitial inflammation.

VII.—THEODORE FISHER, M.D., M.R.C.P.,

Pathologist to the Bristol Royal Infirmary; Physician to Out-Patients, Bristol Hospital for Sick Children and Women.

DR. FISHER differed from the view that all cirrhoses originated as proliferation of interstitial tissue consequent upon degeneration of liver cells, and thought that some might originate in an interstitial hepatitis. He gave brief notes of four cases of acute cirrhoses of the liver present in cases of septicæmia. One was in a woman, aged 22, who died two months after an operation for appendicitis; another in a woman, aged 26, who died of chronic pyæmia; a third in broncho pneumonia in a boy aged 4 years, and a fourth in a child who died of suppurative peritonitis and pleurisy. In the first case not only was there acute proliferation of the interstial tissue, but small-celled infiltration throughout the lobules. In the other cases also the microscopical changes were obviously acute in nature. Dr. Fisher also referred to a case of Banti's disease, which, if Dr. Banti's theory of the causation of the disease be correct, must be allied in nature to cases in which septicæmia sets up interstitial changes in the liver.

VIII.—JAMES LAIDLAW MAXWELL, JUN., M.B., B.S., London.

DR. MAXWELL pointed out the close resemblances between the sections of cirrhosis of the liver after ligature of one of the bile ducts and sections of cirrhosis of the liver in congenital atresia of the hepatic duct. In two cases of the latter condition examined by the speaker the same position of the fibrous tissue was noted with the same freedom of the unaffected masses of liver cells from any intercellular cirrhosis. Also the same resemblance in the multiplication of bile channels, many of them containing inspissated masses of bile. He also wished to question the value of Dr. Voelcker's statistics of cirrhosis of the liver in children taken from the *post-mortem* room. He urged that frequently in pericellular cirrhosis there was no change in appearance or shape of the liver, and quoted in illustration two extreme cases of peri-cellular cirrhosis of the liver in congenital syphilitic infants which he had examined, in which there appeared to be no macroscopic changes whatever. Further, that in stillborn children it was comparatively common to find advanced forms of cirrhosis without any changes in the appearances of the liver. This was not a fibrosis in the proper sense of the word but a large increase in the connective tissue cellular elements between the individual liver cells. He was inclined to believe that these cellular elements grew into the ordinary fibrous elements if the child survived its birth.

IX.—STUART MCDONALD, M.B., C.M.,
Pathologist to the General Hospital, Birmingham.

DR. MCDONALD referred to a case of cirrhosis of the liver in a girl with fatal hæmatemesis.

A girl of 15 was admitted to the General Hospital, Birmingham, suffering from severe hæmatemesis. She died a few hours after admission. The condition was thought to be due to gastric ulcer, but at the necropsy cirrhosis of the liver was discovered; the cause of the bleeding was rupture of a group of varicose veins in the stomach wall. The cirrhosis was of the coarse hobnail variety. Microscopically the condition appeared to be a mixture of polylobular and pericellular cirrhosis. On the cellular areas some of the capillaries showed emboli of micro-organisms. There was no history of either alcoholism or syphilis. The patient had had measles in infancy, but no other specific fever.

REPLY.

Dr. VOELCKER stated that he had brought forward his statistics derived from a general hospital, with the object of showing the relative occurrence of cirrhosis of the liver. He pointed out that the chief ages at which cirrhotic livers were found were either in the first two or three years of life or between 8 and 10 and then not again till after 25. From this he concluded that the severe and frequent intestinal catarrh to which children were so prone could have little if any effect in the production of cirrhosis of the liver. It was known that in enteric fever areas of necrosis of liver tissue, followed by a localised fibrosis, occurred, but he did not think that these played any part in the production of cirrhosis. In the case of children it was certainly true that the microscope revealed a degree of cirrhosis often quite unexpected from naked-eye examination. In his classification of cases of cirrhosis, increased consistence of the organ had been the requisite condition. He did not share Dr. Lazarus-Barlow's aversion to including cirrhosis as an inflammatory affection, and thought that the conditions in the liver were comparable to those in the kidney; and that, although in view of Professor Flexner's observations on the increase of elastic tissue, which certainly did not appear to be inflammatory in origin, yet the increase of connective tissue was more reasonably regarded as inflammatory than as a hyperplasia the result of an attempt to fill up the space left by the atrophy of the liver cells. With regard to the form of cirrhosis in children, he had met with both pericellular and perilobular sclerosis; and while he considered that syphilis was a frequent, he did not think it the only, cause of cirrhosis in children. The formation of new bile ducts he ventured to think was still open to doubt, but he agreed with Dr. Maxwell that in some cases of congenital obliteration of the bile duct there was seen a new formation of tubes lined apparently with altered liver cells, and containing bile in their lumen. In view of the occurrence, often quite unexpected, of cirrhosis of the liver in the *post-mortem* room, he thought it very necessary to hesitate before ascribing a causal relationship to any other factor, such as an appendicitis or remote suppurating focus present at the same time. The pathology of cirrhosis of the liver must still be the subject of investigation by experiment and observation.

THE ETIOLOGY OF TROPICAL DYSENTERY.

By SIMON FLEXNER, M.D.,
Professor of Pathology in the University of Pennsylvania.

THE imperfection of our knowledge of the nature of dysentery is not due to lack of opportunity for, or of energy in, its study. The disease in the past quarter of a century has not escaped the attention of bacteriologists, although it must be confessed that the results of somewhat extensive studies along these lines have been far less conclusive than might have been predicted. The attempt to establish a common etiological factor for all cases of dysentery has thus far failed. This failure has tended to emphasise the existence of several pathological states for which the term "dysentery" is employed merely as the collective designation. That these conclusions regarding the disease may after all not be in keeping with the facts is at least open to suspicion. When we recall the protean nature of other infectious diseases, there can be no *a priori* objection to the hypothesis that the causative agent of dysentery need not necessarily vary for each of the many types of the disease that have from time to time been distinguished.

That the lines of demarcation between the several clinical and pathological types should be inaccurate is not a matter of wonder. Both the beginning and end of any given instance may vary very widely, and the symptoms and lesions of cases arising sporadically in temperate climates may agree with those of dysentery occurring endemically in the tropics or epidemically in both localities. The terms "catarrhal," "tropical," "epidemic," and "diphtherial" are far from signifying sharp-cut entities.

As must always occur when classification of a disease proceeds upon clinical and pathological rather than etiological lines, the literature of dysentery is burdened with an interminable mass of appellations indicating the nature of the disorder or the author's conception of its pathological anatomy. Dysenteries, however, are now divided by the chief writers into several groups, depending upon the clinical history or the mode of prevalence; thus Osler writes of the acute catarrhal, tropical or amœbic, the diphtherial and the chronic dysentery. Davidson considers the subject under two headings: first, according to prevalence—epidemic, endemic, the dysentery of war and famine; secondly, upon clinical grounds—acute, fibrinous, or pseudo diphtherial, and chronic dysentery. Kartulis described endemic, epidemic, and sporadic varieties. Manson speaks of a catarrhal and ulcerating dysentery, while Delafield distinguishes in the environs of New York at least five distinct types of the disease, only one of which appears to be due to a specific agent, the amœba coli.

Bacteria have been urged by many investigators as the cause of dysentery. The earlier studies of Klebs, Prior, and Ziegler have now only a minor historical interest, although Ziegler still holds that the relation of certain bacilli to the lesions speaks for their pathogenic action. The early studies of Hlava upon the epidemic disease yielded quite inconclusive results. Chantemesse and Widal were somewhat more fortunate in that from five cases of tropical dysentery they obtained a bacillus which, when injected into the stomach or rectum of guinea-pigs, gave rise to diphtheritis, an observation, however, which Grigoriew, who believed that he had isolated the same micro-organism from 10 cases of dysentery, failed to confirm. Maggiori obtained from 11 cases of the epidemic disease B. coli communis. This investigator considered it highly probable that the disease was caused by this organism whose virulence was intensified, a conception also shared by Laveran, Arnaud, Celli, Fiocca and Escherich, who isolated the same organism from dysenteric cases.

The studies upon this bacillus by Celli and Fiocca are the most important which we possess. Their cases included examples of the sporadic, epidemic, and tropical disease occurring in Italy and Egypt. They paid special attention to the occurrence and action of the amœba coli, so that they are doubly useful. They exclude this organism as a cause of any form of the disease, and consider that a variety of the colon bacillus particularly pathogenic, which they designate B. coli dysenteriæ, is responsible for the lesions. A toxin separated from growth of the organism was found to act upon the intestines of animals in a manner similar to the bacilli. Results similar to those of Celli were obtained by Del Pino and Alessandri. The colon bacillus is also believed by Escherich to play an important part in the production of colitis contagiosa in children which in its morbid anatomy agrees with catarrhal dysentery.

The bacilli thus far enumerated, except those of Chantemesse and Widal, show no specific properties. They all represent a well-known bacterial species, constantly present normally in the situations from which they were obtained in disease, and whose only unusual properties were increased virulence when tested upon animals, and a capacity to set up enteritis when injected into the intestines of dogs and cats.

Investigation of an epidemic of dysentery which prevailed in Japan yielded different and apparently more convincing results. Ogata isolated fine bacilli, which liquefied gelatine, stain by Gram's method, and set up, in guinea-pigs and cats, intestinal ulcerations. A similar organism was later obtained in Padua by Vivaldi, since which time it appears not to have been found again. This list covers the bacillary species isolated in cases of dysentery, with the exception of an organism obtained by Shiga, who also studied the disease prevailing in Japan. This investigator's studies, which have a very direct value upon my own, are deferred for the present.

On the other hand, a causative *rôle* in the production of

dysentery has also been ascribed to the pyogenic cocci. Besides being found in association with bacilli by several of the investigators already mentioned, they have been regarded as the chief pathogenic agents by Zancarol, whose studies were carried out in Alexandria, and very recently by Ascher, who investigated cases arising in Eastern and Western Prussia. Similar observations were made by Silvestri of Turin, and by Bertrand and Baucher in France. These cocci, especially the streptococci, were capable in certain instances of setting up in cats dysentery and liver abscess. An especial variety of endemic dysentery occurring in Cochin China yielded Calmette the B. pyocyaneus. The same micro-organism was isolated from the small epidemic of the disease occurring in New York State by Lartigan; in another epidemic in children prevailing in Canada by Adami, and in certain sporadic cases by Barker in Baltimore.

Protozoa have also been brought forward as the cause of dysentery. These organisms differ from the bacteria in not existing in easily demonstrable forms or numbers in the dejecta in health, and the number of species occurring under all conditions is small. Among the protozoa the amœbæ have achieved the distinction of being connected in a causal relation with endemic dysentery. Since the studies of Kartulis, Councilman and Lafleur, and Kruse and Pasquale, so firmly has the idea of this connection taken hold of the popular medical mind that the designation "amœbic" as synonymous with "endemic" or "tropical" dysentery has been widely adopted, and yet the evidence upon which this belief is placed cannot be regarded as convincing. Until we shall have gained other means of differentiating amœbæ than we now possess, and, moreover, until we are able to control their development with at least as great perfection as in the case of bacteria, the question of the precise part played by them in dysentery cannot be satisfactorily determined. The last ten years have seen a modification of the views regarding amœbæ as causes of pathological conditions in human beings.

That these organisms exist in diseases other than dysentery was conclusively proved by the early observations (Cunningham, Lewis) upon choleraic discharges. Grassi found them in diseases so varied as typhoid fever, cholera, pellagra, and colitis secondary to tumours. He also found them in the dejecta of healthy individuals, a fact further established by Calandrucci, Massiutin, Kruse and Pasquale, Gasser and Schuberg.

It can, therefore, no longer be held that amœbæ are necessarily pathogenic when found sojourning in the intestine of man. That these organisms when combined with bacteria may cause intestinal lesions and even ulceration is now established. The experiments of Kartulis and Kruse and Pasquale with the contents of hepatic abscesses supposed to be free from bacteria are all but convincing in so far as they are supposed to prove the capacity of amœbæ alone to set up such changes. Councilman and Lafleur believed that the amœbæ alone produced the intestinal lesions. Kartulis, on the other hand, sees in the occasional diphtheritis evidence of the action of bacteria, while Kruse and Pasquale have followed the latter in their penetration into the coats of the gut, where they lie "cheek by jowl" with the amœbæ or even precede them in the invasion.

We may, I think, sum up the present knowledge of the cause of dysentery in the following way:

1. No bacterial species yet described as the cause of dysentery has an especial claim to be regarded as the chief micro-organism concerned with the disease.

2. It is improbable that any bacterial species that is constantly and normally present in the intestine or in the environs of man, except where the disease prevails in an endemic form can be regarded as a probable cause of epidemic dysentery.

3. The relations of sporadic to epidemic dysentery are so remote that it is improbable that the two diseases are produced by the same organic cause.

4. The pathogenic action of the amœba coli in many cases of tropical and in certain examples of sporadic dysentery has not been disproved by the discovery of amœbæ in the normal intestine and in diseases other than dysentery. While amœbæ are commonly present and are concerned in the production of the lesions of subacute and chronic dysentery, they have not thus far been shown to be equally connected with the acute dysenteries even in the tropics. In the former varieties bacterial association probably has much influence upon the pathogenic powers of the amœbæ.

THE DYSENTERY OF JAPAN AND THE PHILIPPINE ISLANDS.

Every year, especially in the summer and autumn, dysentery prevails in Japan. The epidemic studied by Ogata occurred in the province of Oita. Lesions in the intestine are described in one instance, death having occurred on the eleventh day of the disease. The lower segment of the small intestine was hyperæmic. The large intestine was greatly swollen, so that the lumen was almost obliterated. The mucous membrane was hyperæmic and presented a deep bluish-red colour. The mucous membrane of the transverse and descending colon showed small ulcers, which were so numerous as to give to the membrane a sieve-like appearance. The peculiar bacilli described by him were obtained from these cases.

The most recent bacteriological study of Japanese dysentery has been made by Shiga. Out of the considerable number of cases of the disease occurring in Tokyo in 1897, 36 were subjected to examination.

Shiga recognised that in endeavouring to show that an organism which is suspected of standing in etiological relation to a disease is really the causative agent, four points have to be proved; first, that organism must occur constantly; secondly, it must be a species not present normally in the diseased parts; thirdly, it must be pathogenic, and produce in experimental animals lesions similar to those from which it was obtained; fourthly, it should, in virtue of its pathogenic activity in man, show the Widal agglutination reaction with the blood sera of those who have suffered from the disease. From the series of cases examined, there was obtained from the dejecta and intestinal contents and walls, and from the mesenteric glands, a bacillus which fulfilled all these requirements, and which was regarded as the cause of at least Japanese dysentery.

Before describing this organism I wish to direct your attention to the dysentery prevailing in the Philippine Islands, specially in and around Manila. The report of the Surgeon-General of the Army for 1899 contains a tabulation of diseases observed among the American troops during the first four months of the American occupation of Manila. In it the dysenteries are included with the diarrhœal diseases. The total number of cases reported was 445, death-rate being 0.48 per cent. The comment made is that the malarial diseases exceed their prevalence in the United States in the proportion of 370 to 97, and the diarrhœal diseases in the proportion of 445 to 116 or about 4 to 1 in both instances. This compilation fails to give an adequate idea of the extent, severity and mortality of dysentery in Manila. Although the figures were not obtainable, a conviction gained during nearly three months' residence in Manila is that the enteric diseases, of which dysentery was the most frequent and important, were the chief causes of disability and mortality among the land forces of the American army.

The disease occurs in two main forms—acute and chronic. The stools and intestinal contents were scrutinised for amœbæ. These organisms were absent or very difficult to find in the acute cases. In the chronic forms of the disease, in which ulcers were present, they were commonly found, but were variable as to actual occurrence and number. Large hepatic abscesses, usually single, were encountered in a number of these cases.

The morbid anatomy of the chronic disease agrees in part only with that of the so-called amœbic dysentery. The pathological changes in the acute disease differ widely from those of the chronic cases. I shall give an illustrative example in an American soldier, death on the sixth day of the disease The entire large intestine, from the cæcum to the rectum is dilated, and the walls of the gut are thickened. The mucous membrane is swollen, the consistence much increased, and the normal folds are thrown into elevated coarse corrugations. The general colour of the mucous membrane is deep red; there are present many brighter spots evidently due to hæmorrhage. A false membrane consisting of scattered white elevations occurs upon the surface. Distinct ulceration cannot be made out with the naked eye.

The histological changes consists in necrosis of the mucosa with exudation of fibrin and leucocytes, together with more or

less hæmorrhage. The submucosa shows considerable cellular infiltrations, in which the main new elements are Unna's plasma cells. Focal hæmorrhage is common, and fibrin exists, especially in the lower levels. Ulceration is uncommon, and the submucous infiltration may occur independently of profound alterations in the mucous membrane. Bacteria—cocci and short bacilli—are abundant in the necrotic mucous membrane.

Bacteriology of Philippine Dysentery.—In the study of the bacterial flora of the disease acute and chronic cases were utilised. Plate cultures in agar-agar were employed. The material for the cultures was obtained from the dejecta and from the intestinal contents after death. From the separated colonies slant cultures were made. Those consisting of the pyogenic cocci, which were never absent, were not studied further. Portions taken from the several bacillary colonies were tested upon various culture media, with the result that two distinct types of organisms could be distinguished, especially in the acute cases. Their properties are as follows:

Type I.—Bacillus of average size, variable in length; usually occurs singly, sometimes in pairs, but only very rarely in filaments. The ends are slightly rounded. Moderate motility. Gram's stain negative. Morphology: Colon, typhoid type.

Growth takes place upon all culture media at the room temperature, but better in the thermostat. Gelatine is not liquefied.

The colony forms resemble those of B. typhosus; after many successive transplantations upon artificial culture media, colonies and surface growths become more opaque and abundant.

Potato.—Growth takes place along the line of inoculation and spreads beyond. After some days it is a little elevated, and of a pale brown tint. On unfavourable potatoes the growth is slight, moist, and membranous, resembling that of B. typhosus when typical excepting for the greater amount of moisture.

Sugar-agar is not fermented; in glucose media a moderate acid production takes place.

Litmus Milk.—At first a very faint lilac reaction appears. It is discernible after 24 hours, but more marked at the end of 48 or 72 hours. After a lapse of 6 to 8 days alkali begins to be produced, which increases in amount until the litmus is rendered deep blue in colour. No coagulation of the milk ensues.

Indol.—This body is variable in its formation. Even in sugar-free bouillon, it may fail to appear or be produced in small quantities only.

Suitable cultures of this organism when tested for the agglutination test with the blood serum of persons suffering from dysentery, whether the host or another individual, give in many cases a positive reaction.

Type II.—Present in all instances. In the acute cases it may not predominate, being less numerous than the members of Type I. In all others it is the predominating bacterium. Its properties are variable, but agree with those of the group of B. coli communis. The main variations relate to the extent and rapidity of growth upon the several culture media as exhibited by the colour, thickness, etc., of the colonies. The sugars are broken up with the formation of gas. Litmus milk is reddened promptly, but coagulation sets in at variable intervals, sometimes after twenty-four hours, at other times not for several days or weeks. Indol is produced, but cannot be demonstrated in all cases within twenty-four hours. In morphology the bacillus resembles B. coli communis. Some examples are motile at the end of twenty-four hours; in others motility could not be demonstrated.

In agglutination tests the results varied according as the blood of the host or another individual was employed. With the host there was frequently a reaction in low dilutions; with another person the reaction was rarely and very inconstantly obtained.

Before proceeding to the assumption that this organism was concerned with the production of the intestinal lesions of dysentery occurring in Manila, its absence from the stools of healthy persons and those suffering from other diseases must be established. Strong presumptive evidence of its being an unusual inhabitant of the intestine of man may be gathered from the facts already known concerning the ordinary intestinal flora. But as such observations would not suffice for a new region and under new conditions, the organism was searched for in other persons who had been in close association with those suffering from dysentery, and also in inhabitants of other parts of the island of Luzon. The organism was not demonstrated in healthy dejecta or in the evacuations of persons (native Filipinos) suffering from beri-beri. A further argument in favour of its restricted distribution is furnished by its absence from cases of chronic dysentery or its marked reduction in numbers.

Pathogenicity.—The pathogenicity of the bacillus Type I was studied, soon after its isolation, upon mice and monkeys in Manila and upon various animals in this country with cultures brought back from the Philippines. Mice are susceptible to subcutaneous injections, but react more readily to intraperitoneal inoculations. According to the dose, death takes place in from 12 to 48 hours—more rarely after several days. The site of the puncture shows œdema, and when inoculation is made into the peritoneum, a slight turbid exudate is present. Bacilli are present in very large numbers in both situations and there is a general invasion.

Guinea-pigs react much in the same way as mice. The dose required is slightly larger, but successive inoculations quickly increase the pathogenicity. At first the organisms remain confined to the site of injection, but when the virulence has become intensified the body is invaded. Intraperitoneal injections cause a sero-purulent peritonitis, many bacilli being contained within polymorphonuclear cells. The intestines are hyperæmic; the contents are watery and the bacilli can be cultivated from the fluid portions. Swelling of Peyer's patches occurs.

Rabbits.—Subcutaneous injection gives rise to a localised swelling which is sometimes followed by death. At other times an abscess forms and perforates the skin, after which recovery may take place.

Cats and dogs are also susceptible to feeding with cultures, the first after the administration of croton oil, the second directly. In both enteritis is set up, an increased secretion of mucus takes place, hæmorrhages may occur, and bacilli are cultivatable from the dejections and intestinal contents. Ulceration does not occur.

Tests made with dead cultures upon guinea-pigs show them to be highly toxic.

An interesting if somewhat uncomfortable result of the accidental swallowing of a small quantity of a broth culture should be mentioned. While aspirating some of the culture into a tube, one of the laboratory assistants drew the fluid into his mouth. Notwithstanding the use of an antiseptic wash a severe muco-hæmorrhagic diarrhœa set in in about forty-eight hours, accompanied by tenesmus and fever. Recovery did not take place for two or three weeks. I was absent from the city at the time, and the assistant's ardour was so greatly depressed because of his discomfort that cultures were not made from the stools.

If the bacillus described is of significance in the etiology of dysentery, it must occur with regularity in the disease. Whether or not it will be found to have the distribution that is necessary in order to establish this relationship can only be determined when the study is carried on in widely different places and in all forms of the disease. That the bacillus is identical with the organism obtained by Shiga in the epidemic dysentery which prevails in Japan there can be no reasonable doubt.

I have recently been enabled to study bacteriologically and pathologically a case of chronic Puerto Rican dysentery contracted during the Spanish war. The necropsy showed the colon to be greatly thickened, especially along the sigmoid flexure. The mucous membrane presented a roughened surface without showing pronounced ulceration. The submucosa is thickened and there is considerable contraction. A very small amount of pseudo-membrane is present over the lower part of the sigmoid flexure. Bacteriological examination yielded two types of bacilli, the prevailing one agreeing with the type of the B. coli communis, the other with bacillus Type I already described.

The bacteriological studies of Egyptian dysentery published by Kruse and Pasquale contain numerous references to typhoid-like bacteria. Critical examination shows that the majority belong to the group B. coli communis. Still

other examples of bacilli similar to and possibly identical with the B. dysenteriæ have been found in dysentery, although they are not suspected of standing in any etiological relation to it. Pansini studied 4 cases of abscess of the liver, 3 of which had followed dysentery. The bacilli which were isolated resembled B. typhosus—indeed, Pansini could not distinguish between the two series. Babes also, although only in a single instance, isolated such an organism from a case of dysentery.

The question naturally arises, in what way does this organism differ from the B. typhosus? When the properties of Shiga's bacillus and that of the Eberth-Gaffky organism are compared, the criteria of difference are not numerous. The main features, however, are as follows: The former shows less marked motility when isolated and a tendency rapidly to lose motility in artificial cultivations; it displays a more uniform generation of indol; after a brief preliminary acid production in milk there follows a gradually increasing alkalinisation, it is inactive to blood serum from typhoid cases but reacts with serum from dysenteric cases to which the B. typhosus does not respond.

The Agglutination Test.

The tests in the case of the bacillus isolated in Manila were made at the time with blood obtained from acute and chronic cases of dysentery; and after the return to this country with blood serum from the case of the chronic Puerto Rican disease, as well as with blood obtained through the courtesy of Assistant Surgeon Craig, stationed at the Presidio at San Francisco, the last having been taken from convalescent and other soldiers suffering from chronic dysentery who had returned from the Philippines. The results were positive in the cases of acute disease in which infection with the bacilli was established. It was also positive with the blood of the Puerto Rican case of chronic dysentery, but was inconstant with blood from other chronic cases. Dr. Osler has told me of his experience. In several cases of amœbic dysentery that have come to his attention in the Johns Hopkins Hospital the blood serum has not caused agglutination of the dysenteric bacilli obtained in Manila. In a case of the Puerto Rican disease a positive reaction was obtained.

These results are, I think, suggestive of the nature of tropical dysentery. The typical acute and infectious variety is probably bacillary in origin, and the indications are that the particular bacillus which has been described is the cause of this variety of disease. On the other hand, the chronic form of the disease would appear to be dependant upon at least two sets of causes, the first represents the continuation of the acute disease, and probably is due to the same micro-organism; the second is due to a different organism, apparently the amœba coli. The first variety of the chronic disease only gives the serum reaction with the B. dysenteriæ.

Protective Inoculations and Serumtherapy.—It is not unreasonable to hope that with the discovery of the specific cause of dysentery, particularly if it be a bacterium capable of being artificially cultivated, means will be found by which protective inoculation may be carried out with effect and safety. The fundamental conditions underlying such immunisations are now fairly established, and two general methods of accomplishing such results are open to investigation. In the first place, an active immunity may be achieved through the use of cultures of a determined grade of activity; in the second, the serum of animals may be employed either as a therapeutic agent or to provide a passive immunity.

It has been found possible, through the use of cultures destroyed by heat or the addition of chemicals, to protect small animals from the effects of subsequent inoculations of the virulent bacilli. Larger animals such as the goat, when treated first with the dead and afterwards with the living cultures develop a gradually-increasing resistance to the inoculations; their blood serum assumes highly agglutinating qualities for the bacillus, and coincidentally acquires protective and healing properties. My own experiments relative to this topic have been carried out on small animals only, as no patient with acute dysentery has been seen by me since the serum from the goats has been available. Shiga has, however, been able to test the serum upon human cases in Japan.

According to Dr. Eldridge, up to November 1st, 1899, Shiga treated with the serum cases as follows: 1898, in Laboratory Hospital 65 cases, death-rate 8 per cent.; 1899, in Laboratory Hospital 91 cases, death-rate 8 per cent.; 1899 in Hirowo Hospital 110 cases, death-rate 12 per cent. During the same period of 1899 there were under ordinary treatment at Tokyo: At Honjo Hospital 166 cases, death-rate 37.9 per cent.; at Horowo Hospital 53 cases, death-rate 37 7 per cent.; at Komagome Hospital 398 cases, death-rate 34 7 per cent.; in private houses 1,119 cases, death-rate 28.5 per cent.

I should, however, expect greater benefit from a species of vaccination, especially in those exposed to the endemic or the endemo-epidemic dysentery of the tropics. The encouraging results of the injections of the dead bacilli of Asiatic cholera makes the use of a similar procedure in persons exposed to dysentery advisable. The practical details of such inoculations will of course be established only after trials preferably upon human beings who are anxious to submit to this method of treatment.

Very little remains for me to say at the present time. It is only natural to ask whether the results given in the last half of the paper justify a belief in a specific organism of dysentery. My own sense is against that belief, although it must be conceded that the varieties of the disease are fewer than the clinical and pathological-anatomical conceptions of this time would lead one to suppose. I am disposed at this time to view tropical dysentery as consisting of a bacillary and an amœbic form separable in their early and later stages by their clinical histories, their etiology and pathological anatomy. Whether epidemic dysentery may have a simpler etiology future studies will be necessary to decide. The view expressed by Shiga to the effect that the bacillus isolated by him is the cause of the epidemic disease occurring in Japan may be followed by the establishment of the same organism as the principal agent in other epidemics. My own studies lend support to the wide distribution and pathogenic activities of the bacillus, as well as its relation with a certain class of dysenteries.

In conclusion, I should add that the studies here recorded were carried out while acting on a commission with Professor L. F. Barker, sent out by the Johns Hopkins University of Baltimore, to study the disease prevalent in the Philippine Islands.

Dr. Manson said that he had listened with very great interest to Professor Flexner's paper, more especially as it gave distinct ground for hope that he had found the germ of one form of dysentery. Such investigation, however, must not overlook the fact that the expression "dysentery" indicated merely a group of symptoms characteristic of inflammation of the colon, and that as there might be many kinds of dermatitis, each attributable to a different and specific cause, so there might be many forms of colitis, each acknowledging a different origin, each with a different clinical history, and each with a different gravity as regards prognosis. Any one with experience of the dysenterics from different parts of the world soon learned to recognise this. The dysentery of English asylums, so intractable and so deadly, was a very different disease to the dysentery of India, comparatively so curable. The dysentery of Manila was evidently a very different disease to the dysentery of the South Pacific as described by Comry—so deadly, so rapid in its progress, and so contagious. All of these were different from the relapsing or amœbic dysentery of American writers. Dr. Manson was interested to hear that Professor Flexner had, in common with other authorities in America, somewhat modified his views as to the significance of the amœba in dysentery; for, according to the original description of the disease, one was led to conclude that a dysentery associated with the amœba was almost necessarily fatal. His own experience of dysenteries and liver abscess with the amœba in the stools or pus was that they were just as amenable to treatment as non-amœbic cases, and he hesitated to accept the presence or absence of the amœba as of value in prognosis, or as an adequate mark of specific distinction. After alluding to Dr. Durham's discovery of an extremely minute bacterium in English asylum dysentery, Dr. Manson asked Professor Flexner if any intestinal lesions of a characteristic nature had been produced in his experimental animals by the administration of cultures of his bacterium.

NUTRIENT MEDIA OF "STANDARD" REACTION FOR BACTERIOLOGICAL WORK.

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THE reaction of different batches of nutrient media prepared from meat extracts or *Fleischwasser* in different laboratories varies within wide limits and is largely the result of the methods of neutralisation in vogue in this country; a state of affairs sufficiently surprising when one considers the importance attached to the reaction of their media by individual workers. I believe that I am right in stating that hardly two laboratories neutralise their media in a similar or even comparable manner, and none use media prepared to an exact "standard" reaction for ordinary laboratory work; whilst practically every English textbook in describing the preparation of media gives instructions differing in some one or more details from those of its contemporaries.

American bacteriologists, on the other hand, have recently adopted a standard reaction for their ordinary media, largely through the energy of the Laboratory Section of the American Public Health Association, and in this respect a distinct advance has been made and an example set us which I venture to hope we shall not be slow in following.

Instances of the influence exerted by the reaction of the medium upon the biological characters of various bacteria are of everyday occurrence, and are so familiar that it is unnecessary to insist further on the importance of the subject. I will therefore content myself with enunciating, as a self-evident postulate the following thesis: The standardisation of nutrient media by exact titration methods, using a really delicate indicator and accurately standardised neutralising solutions, can alone be depended upon to give consistent and comparable results.

HISTORICAL.

A large amount of more or less exact work has been carried out upon this subject of medium reaction, chiefly in German laboratories, during the last eight or ten years; and many descriptions of methods, applied to the preparation of special media for the cultivation of some one special organism are to be found scattered here and there in bacteriological literature.

From the time of the introduction of solid gelatinised media by Koch (1881), when it was considered sufficient to say that neutralisation should be effected by means of potassium carbonate, sodium carbonate, or sodic phosphate, to the present day variants of this method, the chief work in this field may be summed up as follows:

Behring, in 1888, adopted titration methods for the purpose of estimating the acidity of his media, and used rosolic acid as the indicator.

Schultz (1893) detailed a most careful study of the methods then in use, and described his method of preparing media, which consisted in the use of phenolphthalein as the indicator, and $\frac{1}{10}$NaOH, as the neutralising solution.

Dahmen, in the following year, controverted Schultz's work, declaring that phenolphthalein was useless for this purpose owing to the presence of ammonia and its salts and of carbonates in the media to be neutralised.

Timpe in 1893 published his work on the albuminous bodies present in the various ingredients of nutrient gelatine, and pointed out that they possessed both acid and basic characters, but that the former predominated—a feature that necessitated the use of an acid-sensitive indicator such as phenolphthalein, and caustic potash solutions as the neutralising agent.

Petri and Massen, about the same time, held that the amphoteric nature of the phosphates present in the meat extract was the important factor to be dealt with, and advised the use of phenolphthalein and lacmoid in the neutralisation of the original broth, but themselves used litmus tincture when neutralising the gelatine and agar prepared from such broth.

At the present time most laboratories in this country use litmus paper as the indicator, and neutralise their acid *Fleischwasser*, broth, gelatine, or agar, as the case may be, by the cautious addition of successive small quantities of a saturated solution of sodium bicarbonate to the medium in bulk. Some few use $\frac{1}{10}$NaOH. After the neutral point to litmus has been reached, a varying quantity of the alkali, equivalent to from 2 to 5 c.cm. of $\frac{1}{10}$NaOH per litre, is added by a few.

In *Procedures Recommended for the Study of Bacteria*, published in 1898 under the auspices of the Laboratory Section of the American Public Health Association, the method of preparing standard media already referred to is given in full. It is based on the work published by Fuller in the journal of the Association, and is an improved and modified Schultz's method. Briefly it consists in using phenolphthalein as the indicator, estimating the acidity of original solutions by means of $\frac{5}{10}$NaOH, neutralising by adding the requisite amount of $\frac{1}{10}$NaOH, and finally rendering the media acid to this indicator, to the extent of 1.5 per cent. by the addition of the calculated quantity of $\frac{1}{10}$HCl.

THE REACTION OF THE RAW MATERIALS.

Having summarised the steps that mark the history of the study of these "reaction" problems, it is now necessary to touch upon the factors involved in the production of standard media, and the first point that arises is the reaction of the various ingredients of such media.

Meat extract as usually prepared in the laboratory is faintly acid, or amphoteric—occasionally it is faintly alkaline—to blue litmus, but is always definitely acid when tested with phenolphthalein or rosolic acid. This reaction is due to the presence of weak organic acids and amphoteric organic compounds and salts of phosphoric acid, in which, however, the acid character predominates.

The following table shows the behaviour of some of the phosphates to various indicators, and explains in some measure how neutralisation carried out by the aid of different indicators will affect the final reaction of the finished medium.

TABLE I.

	Phenol-phthalein.	Rosolic Acid.	Litmus.	Lacmoid.	Methyl Orange.
Phosphoric acid (H_3PO_4)	+	+	+	+	+
Monobasic sodium phosphate (NaH_2PO_4) ...	+	+	+	+	+
Diabasic sodium phosphate (Na_2HPO_4)	+	−	−	−	−
Tribasic sodium phosphate (Na_3PO_4)	−	−	−	−	−

+ = Acid. o = Neutral. − = Alkaline.

From this table it will be seen that in neutralising media with a caustic soda solution and using litmus as the indicator, the neutral point is reached as soon as the phosphates present have been converted into the dibasic form, and as these acid phosphates react alkaline to litmus their presence will prevent the addition of sufficient free alkali to effect complete neutralisation.

In other words, as the amount of phosphate present in different samples of *Fleischwasser* necessarily varies, the final reaction of these samples, all neutral to litmus, will vary within very wide limits, and the production of a standard medium by the aid of this indicator becomes an impossibility.

Table II (p. 922) gives the reaction of each of the various ingredients of nutrient media when tested against the several indicators.

INDICATORS.

Thompson, during the years 1883-5, made some important contributions to the study of the possibilities and limitations of indicators in general, and of those derived from the azo colours in particular, and so paved the way for the intelligent selection of a suitable indicator for bacteriological work.

The indicators in general use are litmus, lacmoid, methyl orange, phenolphthalein, and rosolic acid. Of these methyl orange and lacmoid are but very slightly sensitive to organic acids and salts and are therefore practically useless as indicators for the neutralisation of media.

Litmus, rosolic acid, and phenolphtalein are sensitive to weak acid compounds in very varying degrees, as may be

gathered from a consideration of Table I, which shows their behaviour towards sodium phosphates.

TABLE II.

	Phenol-phthalein.	Rosolic Acid.	Litmus.	Lac-moid.	Methyl Orange.
Fleischwasser	+	+	+	+	—
Sodium chloride (0.5 per cent. solution)	o	o	o	o	o
Peptone, Witté (1 per cent. solution)	+		—	—	—
Gelatine, best French (10 per cent. solution) ...	+	+	+	—	—
Agar, powdered (2 per cent. solution)	+	o	■	—	—
Glucose (2 per cent. solution)	+	o	—	—	—
Sodium formate (0.5 per cent. solution)	■	—	—	—	—
Glycerine (5 per cent. solution)	o	o	■		

+ = Acid. o = Neutral. — = Alkaline.
All solutions were prepared with distilled water.

Litmus tincture, being perhaps the most generally used for all ordinary purposes, needs first consideration, and I may state at the outset that for the neutralisation of a solution whose acidity depends on weak organic and amphoteric substances with an acid leaning, litmus is not sufficiently sensitive; the acid in litmus being relatively stronger than the acids of the meat extract, this indicator is not sufficiently delicate for exact work, and we must therefore have recourse to one whose acid is relatively weaker than those present in the solution we wish to neutralise.

Further, free carbonic acid interferes very considerably with the production of the blue colour, and unless the solution is kept at the boiling point during the operation of titration, it is very easy to overstep the "end-point." The end-point, too, in the turbid and flocculent solutions with which we have to deal is by no means a sharp one when neutralisation is being effected by daylight, although it becomes more clearly defined if the titration is performed in a dark room illuminated by a yellow sodium flame, for then the acid red appears colourless, and the blue coloration gives an inky appearance to the solution. Even under these improved conditions, however, it is quite easy to overshoot the end-point to the extent of 2 per cent. when $\frac{1}{10}$NaOH is used.

Litmus Papers.—Apart from the fact that litmus itself is not sufficiently delicate for the work, there are further objections to the use of litmus papers, in that unless freshly prepared at the time of using, their sensitiveness will be found to vary immensely with age, while if purchased ready prepared their sensitiveness will vary not only with age but also with each batch, even from the same maker. For example, a brew of *Fleischwasser* which when titrated against blue litmus required the addition of 2.5 c.cm. of $\frac{1}{4}$NaOH (per cent.) to render it neutral, was found to give a faintly acid reaction in one case, amphoteric in the second, and faintly alkaline in the third, when tested with three sets of red and blue litmus papers from three different well-known manufacturers of chemical sundries.

Rosolic Acid.—Rosolic acid is soluble in 50 per cent. alcohol, and for use as an indicator is kept in 0.2 per cent. solution. It possesses a much greater degree of sensitiveness towards weak organic acids than litmus, but, like that indicator, its reliability is affected by the presence of free carbonic acid: and as the recognition of its end-point (the change being from a faint yellow to a delicate rose pink) is almost as difficult, it may lead to equally large errors.

In spite of all these disadvantages and defects, however, it was the indicator used by Washbourn and myself for many years in our attempt to prepare a medium of standard reaction for the growth of the pneumococcus, and with fairly good results.

Phenolphthalein.—Phenolphthalein is highly sensitive to the weak organic acids, such as lactic, glycocolic, etc. Like rosolic acid it is soluble in 50 per cent. alcohol, and for use is prepared in 0.5 per cent. solution.

The colour change with this indicator is from no color in acid or neutral solutions to rose pink in the presence of the faintest excess of a caustic alkali—a marked excess leading to the development of a deep purple red. The end point even in such a turbid solution as agar is sharp and distinct, so much so that it is difficult to make a greater error than 0.5 c.cm. of $\frac{1}{4}$NaOH in neutralising a litre of medium. Practically its only disadvantage is that it is useless for the titration of solutions containing 0.03 per cent, or more of free NH_3. As, however, both the free and combined ammonia present in the media amount to certainly not more than a tenth of this quantity, this objection need not weigh with us. A more valid objection is that, like the two previously mentioned indicators, the presence of free carbonic acid interferes with its reliability, and even this drawback may be overcome by the keeping the solutions to be neutralised at or near the boiling point.

NEUTRALISING SOLUTIONS.

As the media with which we have to deal give an acid reaction, alkaline solutions must be used for the purpose of neutralisation, and either the hydrates or the carbonates of both sodium and potassium are those generally employed. Of these the hydrates are to be preferred for accuracy in titration and ease of manipulation, whilst of soda and potash the former is generally the more convenient.

An accurately standardised decinormal solution of sodic hydrate will be required for the estimation by titration of the acidity of the medium; but as the quantity of $\frac{1}{10}$ solution necessary to neutralise, say 1 litre of nutrient gelatine, might amount to 250 c.cm., it is needless to remark that the percentage amount of gelatine would be considerably diminished if this solution were used, therefore it is advisable to add a corresponding quantity of an equally carefully standardised normal solution of NaOH to the bulk of the medium.

METHOD OF EXPRESSING THE MEDIUM REACTION.

In dealing with standard solutions for neutralisation, several simple methods of expressing the medium reaction will at once suggest themselves:

1. By the number of c.cm. of $\frac{1}{4}$ alkali or acid required to neutralise each c.cm. of medium.
2. By the number of c.cm. of $\frac{1}{4}$ alkali or acid required to neutralise every 100 c.cm. of medium.
3. By the number of c.cm. of $\frac{1}{4}$ alkali or acid required to neutralise each litre of medium.

The first two of these methods may involve the use of fractions, while the last usually deal with whole numbers, and this is obviously the most handy one for use. If now the symbols + and − are used to represent acidity and alkalinity respectively, the reaction of any particular batch of medium may be easily and quickly recorded, and comparisons readily instituted between any two or more batches, independently of the time or place of manufacture. For example, nutrient gelatine 10 per cent., reaction + 10 would indicate that the reaction of a batch of 10 per cent. nutrient gelatine was such, that it still required the addition of 10 c.cm. of $\frac{1}{4}$NaOH per litre, to render it neutral to the indicator used.

OPTIMUM REACTION.

The reaction which gives the best results may be said to vary within certain limits in the same way that the optimum temperature does with each individual organism, and should, like the temperature, be carefully worked out in those cases where a new organism is being described; yet it appears that the optimum reaction for working purposes is the one corresponding to + 15 or + 10, according to the suggested method of recording reactions; indeed I will go further and say that if the end-point to be described immediately is used, that a reaction of 10 will be found to give the best results, and this is the reaction that temporarily at any rate might be adopted as a "standard."

THE PREPARATION OF A "STANDARD" MEDIA.

Having briefly indicated the factors which influence the reaction of nutrient media, and the most suitable indicator and reagent for neutralisation, I now propose to detail the technique I have adopted for the production of media of standard reaction in my own laboratory, and here I must point out that the method differs in many details from that adopted by American bacteriologists. This fact is to be

regretted, for if media are to be standardised, it would obviously be more convenient to work to a standard already in use by a large number of investigators rather than start off with a fresh method, but after attempts to produce a standard medium (intended primarily for the cultivation of the diplococcus pneumoniæ) extending over a period of at least six years, I find myself unable to accept some of the opinions upon which the American procedures are based.

First and foremost we must consider the preparation of the meat extract which forms the basis of nutrient bouillon, gelatine, and agar, and for which the highly expressive name of "*Fleischwasser*" is suggested by Mr. Pakes.

Fleischwasser.—Five hundred grams of lean beef are thoroughly minced, added to 1 litre of distilled water in a large flask, and a thermometer having a long stem placed in the interior of the flask, its bulb resting on the bottom. The flask is placed in a water bath, care being taken that it does not come into contact with the bottom of the bath. The temperature of the water bath is now gently raised, and for the first twenty minutes the temperature of the contents of the flask, which must be occasionally agitated, is not allowed to exceed 40° C.; after this time the temperature is run up to 60° C., and maintained at this point for about 10 minutes. The *Fleischwasser* is next filtered through two thicknesses of filter paper into a sterile flask, its bulk measured, and the loss from evaporation replaced by the addition of distilled water.

Nutrient Bouillon.—If bouillon is the medium required, measure out 1,000 c.cm. *Fleischwasser*, and weigh up 10 grams of Witté's peptone and 5 grams of sodium chloride. Use 20 to 30 c.cm. of hot *Fleischwasser* to mix the peptone and salt into a smooth paste, and add this to the bulk of the fluid, which is contained in a flask, and warm up again in the water bath until thorough solution is effected.

Neutralisation, or rather the production of a reaction of + 10 is performed as described below. The flask is then replaced in the water bath at 100° C. for 30 minutes, filtered into sterile test tubes, in quantities of 10 c.cm. each, and sterilised in the steam steriliser for 20 minutes on each of three successive days.

Nutrient Gelatine.—Add peptone and salt, as in preparing bouillon, then best gold label French gelatine, equivalent to from 9 to 12 per cent. (the amount of gelatine added varies, of course, with the purpose for which it is intended, and with atmospheric conditions) is introduced into the flask, and the flask replaced in the water bath (100° C.) for about 30 minutes, during which time the contents must be frequently shaken. The gelatine will now be completely dissolved, and the medium mass ready for standardising. After this has been done, the liquid is allowed to cool down to about 50° C., then the whites of two eggs (well whipped) are added, and the flask returned to the water bath, the temperature of which is gradually raised from about 40° C. to 100° C., and maintained at this latter point for a good half an hour. The nutrient gelatine is filtered through papier Chardin into sterile test tubes in quantities of 10 c.cm. each, and sterilised in the steamer for 20 minutes on each of three successive days.

Nutrient Agar.—If nutrient agar is to be prepared, 20 grams of powdered agar, 10 grams of peptone, and 5 grams of salt, are mixed into a perfectly smooth paste, with 200 c.cm. of cold distilled water. This paste is thoroughly incorporated with sufficient *Fleischwasser* to make up 1,000 c.cm., in a 2-litre flask, which is then placed in the steam steriliser and vigorously steamed for about 30 or 40 minutes. At the end of this time it is standardised, allowed to cool down to 50° C., the whipped-up whites of two eggs added, then placed in the water bath or the steam steriliser, which must be started cold, gradually raised to the boiling point, and kept there for a further period of 40 minutes, filtered through papier Chardin into tubes and sterilised in the steam steriliser for 30 minutes on each three successive days.

STANDARDISATION OF MEDIA.

In the first place, the reaction of the original medium must be estimated, and this must be done whilst the solutions are still at the boiling point in order to avoid the danger of error due to free carbonic acid present in the medium or absorbed from the air.

Still more important is the fact that as the acid properties of substances depend upon their dissociation values, and therefore weak organic acids increase in strength with each degree rise in temperature, these latter can only be effectually neutralised at the boiling point. From this a valuable practical point follows. When in titration the end-point is reached, rapid cooling of the solution will cause the characteristic but faint colour to shoot up and become more readily distinguishable, the colour again fading if the solution is once more heated.

Solutions Required.—$\frac{n}{10}$NaOH, accurately standarised. $\frac{n}{20}$NaOH, accurately standarised; 0.5 per cent. solution of phenolphthalein in 50 per cent. alcohol (in bottle with pipette holding 0.5 c.cm. through the cork).

Apparatus Required.—25 c.cm. burette graduated in tenths of a c.cm. 25 c.cm. measure or pipette. Bohemian glass flask, fitted as a washbottle filled with distilled water and kept boiling on a tripod stand. Several 60 c.cm. Ehrlenmeyer flasks or conical beakers. Some squares of white blotting paper.

Method.—The burette is filled with $\frac{n}{10}$NaOH: 25 c.cm. of the fluid medium are measured out into one of the flasks or beakers, the measures rinsed out with a small quantity of boiling distilled water from the washbottle and added to the medium already in the flask, then half a cubic centimetre of the phenolphthalein solution run in. To this colourless fluid $\frac{n}{10}$NaOH is added cautiously from the burette until the end-point, as indicated by the development of a pinkish tinge, is reached. A control, a second or even a third may be titrated, but such is the sharpness of the end-point that after a little experience with this indicator there will not be a greater difference than 0.1 c.cm. of the $\frac{n}{10}$NaOH between the several estimations, and as a matter of fact it is almost impossible to overshoot the end-point of even the first titration by more than 0.2 c.cm. of the decinormal solution. From these estimations, the amount of $\frac{n}{20}$NaOH requisite to neutralise the remainder of the medium can be easily calculated, and from this figure is deduced the amount that is necessary to add to the remainder of the medium in order that it may still remain acid to phenolphthalein to the extent of 1 per cent.; in other words, have a reaction of + 10.

The differences in technique between this method and that recommended by the Americans are:

1. The use of 25 c.cm. of medium instead of 5 c.cm. of medium + 45 c.cm. boiling distilled water.
2. The use of $\frac{n}{10}$NaOH in the place of $\frac{n}{20}$NaOH.
3. Regarding the first appearance of a pinkish tinge as the end-point instead of producing a purple red by an excess of alkali.
4. And, as a result of (3), adopting a reaction of + 10 instead of + 15.
5. And finally, in adding only sufficient $\frac{n}{20}$NaOH to leave the medium of the desired acidity rather than adding enough to render the medium neutral to phenolphthalein, and producing the desired reaction by the subsequent addition of $\frac{n}{20}$HCl.

In the following table is given the initial reaction of a few selected batches of media when neutralised against phenolphthalein, rosolic acid and litmus respectively, the figures quoted sufficiently emphasising the value of phenolphthalein as an indicator for this class of work:

TABLE III.

	May 17th, 1900.			July 3rd, 1900.			July 11th, 1900.		
	Phenolphthalein.	Rosolic acid.	Litmus.	Phenolphthalein.	Rosolic acid.	Litmus.	Phenolphthalein.	Rosolic acid.	Litmus.
Nutrient bouillon	+20	+9	+2	+19	+9	+2	+18	+8	+2
Nutrient gelatine	+38	+26	+10	+30	+16	+9	+30	+26	+7
Nutrient agar	+22	+12	+8	+21	+13	+8	+20	+10	+5

$\frac{n}{20}$ The figures indicate the number of c.cm. of $\frac{n}{20}$NaOH that would be required to render the unfinished medium neutral to the indicator used.

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Mr. ALEXANDER FOULERTON pointed out that for comparative experiments as to the acid-producing power of different bacteria, standardisation of the finished media, prepared as Dr. Eyre had suggested, would be quite useless in many cases unless the meat from which the nutrient broth was made had also been, so to speak, standardised. The amount of muscle sugar in different samples of meat varied with the length of time which had elapsed since the killing of the animal, and with the conditions under which the meat had been kept. And so one might make broths from the meat of two different animals, standardise both samples most carefully, and then after the same stock of, say, bacillus coli communis, had been incubated for twenty-four hours, the amount of acid produced in each of the two samples might be found to differ considerably. The remedy for this—if one wished to get really standardised media—was either to keep the meat in ice from the time that the animal was killed, or else to get rid of all the muscle sugar by fermentation before standardising the broth. There were great practical difficulties on the way of the absolute standardisation of media; different samples of the same brand of commercial meat extract probably were less likely to vary in their composition in this respect than different samples of meat bought under the usual conditions, but many bacteria would not grow nearly so well on media prepared from such meat extracts as they would on those prepared from fresh meat.

Professor MUIR asked whether Dr. Eyre was quite satisfied that accurate results could be obtained with comparative ease with phenolphthalein. In the case of an organic mixture such

as bouillon, the question from the chemical point of view was one of great complexity, and in his experience it was often difficult to say when the exact point of neutralisation was reached.

Dr. LAZARUS-BARLOW said that for all ordinary purposes in the laboratory he used Liebig's or some other meat extract in the preparation of the culture media. It saved much trouble and was fairly satisfactory.

Dr. EYRE, in reply, said he had found practically no difficulty in determining the end-point when using phenolphthalein, as this end-point was sharp and clear, and after having reached the point the addition of even 0.2 c.cm. of $\frac{n}{10}$ NaOH produced a deep red purple colour. With reference to the use of commercial meat extract as the basis for standard media, Dr. Eyre had tried many, and found that media prepared from Wyeth's beef juice gave the best results, but even these results are inferior to those obtained by the use of media made from meat extract prepared in the laboratory.

TWO CASES OF LIPOMA OF THE KIDNEY.

By W. S. LAZARUS-BARLOW, B.A., M.D., M.R.C.P.,
Pathologist and Lecturer on Pathology at the Westminster Hospital.

LIPOMA of the kidney is apparently a very rare condition if one may judge from the statements made about the subject in books. As a rule, it is dismissed with the bald statement that it is "very rare" in the more important textbooks, while in those of somewhat smaller size it is not even referred to at all. During the last eight months, however, I have come across two examples, one of which I show as a macroscopic specimen and the other in microscopic section.

The conditions under which these specimens were met with were curious and highly suggestive. In both instances they were removed from the kidney under the impression that they were small secondary deposits. In the one case the prime lesion was a glioma of the brain and the lipoma of the kidney was removed for histological examination as the sole discoverable metastatic deposit. In the other instance the prime lesion was an intense suppurative meningitis arising from disease of the antrum and the lipoma of the kidney was regarded at the necropsy as a metastatic pyæmic abscess in which softening was just about to commence. The obvious suggestion to be derived from these two facts is that all foci supposed to be "metastatic" should be subjected to microscopic examination because some of them may turn out to be lipomata. In other words, it is possible that lipomata of the kidney are not quite so rare as we have been led to suppose.

In any case, lipoma of the kidney is an extremely interesting tumour from the point of pathogeny, since it offers certain marked differences from ordinary lipomata in the situation which it affects. As a rule lipomata are found in places where fat is normally present, but when they affect the kidney it is not in the region of the hilum that they are found, but on the contrary, in the cortex, a part of the organ which is normally devoid of fat.

Both of the specimens which are the subject of the present communication were found in adults, the one being a man aged 70 and the other a woman aged 30. They were approximately spheroidal, were about the size of a Spanish nut, were situated in the cortex of the organ immediately beneath the capsule, to which they were not adherent, and though they could be sharply differentiated from the surrounding renal tissue by their pale yellow colour, were not surrounded by a capsule. Microscopically they were composed of fatty tissue of the ordinary kind, with fat cells which varied considerably in size and stained an intense black with osmic acid. After removing the fat, a loose connective tissue showed itself, in which the nuclei of the connective tissue corpuscles were few and shrunken. Though this fatty connective tissue could be easily distinguished from the surrounding renal tissue, the lipoma had nothing approaching to a capsule.

Lipomata of the size that have just been described are only pathological curiosities, and have no clinical importance, but occasionally, as in a case recorded by Warthin, a tumour weighing 2 lbs. may be produced which is recognised during life, and is the object of operative interference. Their interest lies, however, in theoretical considerations. It is not at all easy to explain their occurrence, and in this respect they are altogether comparable with the other new growths of the kidney. It has been suggested that they result from a localised metaplasia of the renal substance, but it is more probable they result from a fatty modification of a pre-existing mass of ordinary connective tissue. Even then a difficulty still remains, for we do not consider that a lipoma in such a situation as the subcutaneous tissue arises from a fatty modification of pre-existing fibrous tissue, but hold that its first beginning is fatty tissue, just as we hold that the first beginning of an angioma is vascular tissue. An argument that has been used to support the view that the lipoma originated in a mass of ordinary fibrous tissue is the fact that lipomata have been found in kidneys the seat of chronic fibrosis. This argument certainly does not apply in the case, aged 30, which I have brought forward, for there is no abnormality of the kidney other than the lipoma. Nevertheless, fibrous tissue of course forms an essential constituent of the renal substance, and it is not impossible that though the general bulk of the fibrous tissue of the organ is normal, the seat of the lipoma was a seat of an abnormal accumulation of fibrous tissue originally. Upon this point, however, we can only theorise, and with hardly more satisfactory results than in the case of the new growths elsewhere.

The best account of the condition I have been able to find is contained in a paper in the *Transactions* of the Pathological Society of London for the year 1900, written by Dr. Parkes Weber.

THE SIGNIFICANCE AND PATHOLOGY OF THE ARGYLL-ROBERTSON PUPIL.

By WILFRED HARRIS, B.A., M.D., M.R.C.P.,
Assistant Physician to the City of London Hospital for Diseases of the Chest.

THE loss of the pupil reaction to light, or the Argyll-Robertson pupil, is a physical sign of the greatest value in the examination of cases of nervous disease. Of these it is by far the most commonly met with in two diseases, locomotor ataxy and general paralysis, inasmuch as these diseases are due largely, if not entirely, to previous syphilis, acquired or, in a few cases, congenital. The loss of the pupil contraction to light may be looked on as an almost certain sign of antecedent syphilis, congenital or acquired, and it is therefore to be met with not infrequently unassociated with tabes or general paralysis in syphilitic subjects showing otherwise, perhaps, no symptoms, or suffering from other syphilitic lesions. In addition to tabes and general paralysis with a history of acquired syphilis, I have met with Argyll-Robertson pupil in juvenile locomotor ataxy and general paralysis with marked evidences of congenital syphilis, in progressive muscular atrophy, in lead poisoning, aortic aneurysm, hemiplegia, syphilitic meningitis, ataxic paraplegia, nuclear ophthalmoplegia, choroiditis, and in numerous instances in patients who presented themselves for all manner of symptoms, but showing no signs of ataxy or anæsthesia, and with normal or even brisk knee jerks, but with in almost every case a clear history of syphilis. It has also been described as occurring in poisoning by bisulphide of carbon, and in diabetes mellitus. I have never yet seen it in Friedreich's disease or in disseminated sclerosis, and in only one instance in which a history of syphilis seemed to be fairly excluded, in a man of 30, whose niece suffered from well-marked Friedreich's disease, while he himself suffered from spastic paraplegia, with simple optic atrophy, and some mental dulness, the pupils being small, and neither reacting to light or accommodation. The appearance of the pupils in which the light reaction is lost may vary considerably; both may be very small, in which case they may contract still further on convergence, but the reflex dilatation on stimulation of the skin is also usually lost (reflex iridoplegia). Both may be large, even considerably dilated, and then their power of contraction on convergence is usually lost or very slight, while further dilatation may be produced by stimulation of the skin. All intermediate stages are met with, and the pupils are frequently unequal. The very small pupils often met with cannot be explained simply as paralytic myosis, since they are smaller than is ever met with in sympathetic paralysis; nor can it be believed that thereis any continual irritative process affecting the sphincter centre in the third nucleus. Their small size is probably due

in part to a contracture of the sphincter muscle, as they dilate only partially under atropine. The loss of light reaction may be quite unilateral, as I have seen in some twenty cases, though more often the light reflex is impaired on both sides, being more marked in one than in the other. This is probably only a stage in the development of complete loss of the light reflex in both eyes.

When unilateral reflex iridoplegia is present, it is important to test the consensual reactions to light (Fig. 1), and it

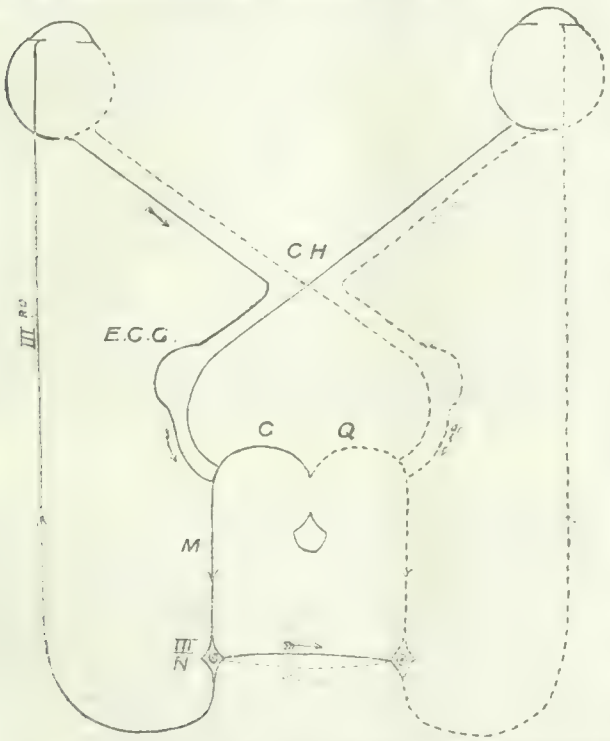


Fig. 1.—Usually accepted scheme to show the path of the reflex for the contraction of the pupil to light in man.

will be found that the sound pupil, if shaded, will contract when light is focussed on the affected pupil from any direction, as when testing for Wernicke's hemianopic pupil. This proves the afferent part of the reflex in the optic nerve to be intact, and, moreover, would disprove the possibility of a nuclear lesion in Argyll-Robertson pupil, if the usually accepted diagram of the course of the light fibres were correct. The morbid anatomy of the Argyll-Robertson pupil has never been demonstrated, though it has been variously surmised to depend on a nuclear lesion, or on sclerosis of Meynert's fibres between the anterior corpora quadrigemina and the third nucleus, or even on a lesion of the ciliary ganglion. The third nucleus, or its anterior portion, is certainly included in the reflex arc, and it is not surprising therefore to find the phenomenon of reflex iridoplegia present in cases of nuclear lesion. That is not however sufficient argument for placing the usual site of the lesion in the nucleus, inasmuch as the vast majority of cases of Argyll-Robertson pupil are unaccompanied by any other sign of nuclear lesion. Analogy, too, would rather suggest sclerosis of certain fibres, in view of its frequent association with posterior sclerosis, in which lesion of nerve cells is a rare exception (Fig. 2). The study of the pupil-reflex in birds and animals, with and without binocular vision, proves that the two third nuclei are not tied together for the light reflex, since only the pupil exposed to light contracts; moreover, in birds and lower mammals there is complete decussation of the optic nerves at the chiasma, and it therefore follows that there must be also a posterior decussation of the fibres subserving the light reflex between the optic lobes and the third nuclei. It is highly probable therefore that in man and other animals with binocular vision, in whom there is semi-decussation of the optic nerves at the chiasma, that a similar arrangement holds good between the anterior corpora quadrigemina and the third nuclei (Fig. 3), namely, that there is a semi-decus-

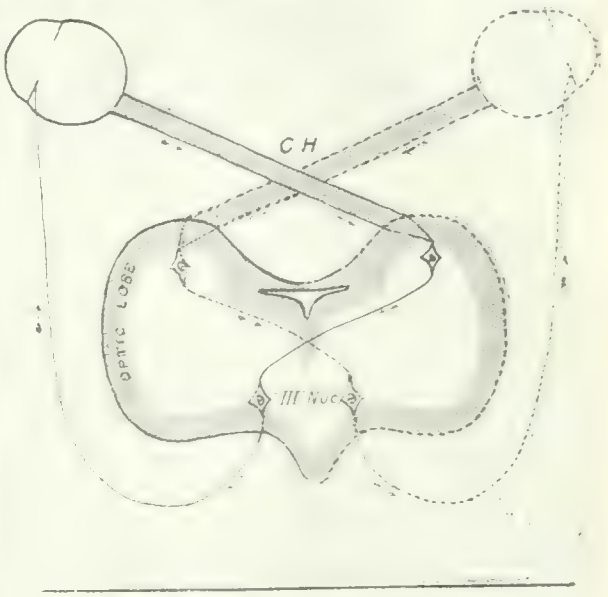


Fig. 2.—Scheme of pupil reflex fibres in birds

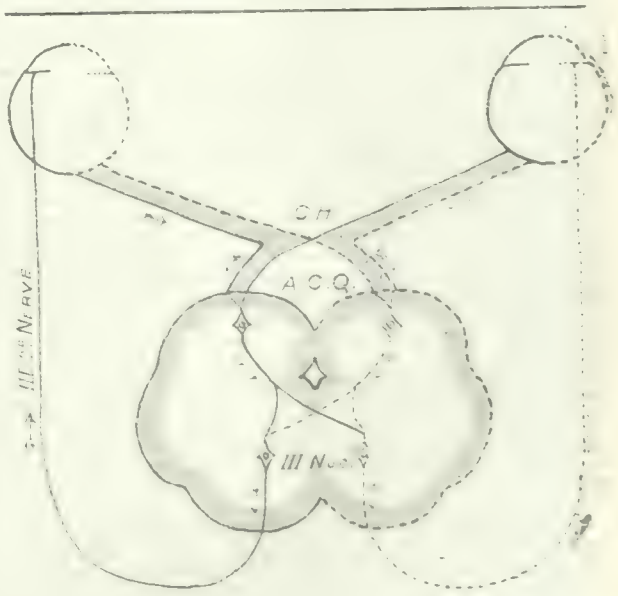


Fig. 3.—Scheme of pupil reflex fibres in man.

sation of the fibres subserving the light reflex between these two parts.

Meynert's fibres have been shown by Boyce and others to be not a complete decussation, some fibres remaining uncrossed in or close to the posterior longitudinal bundle of the same side, and it seems not improbable that these fibres have the above function. This being the case, it is no longer necessary to conceive the two third nuclei being tied together in order to explain the consensual reaction of the pupils to light, as light thrown on either pupil in any direction will thus cause afferent stimuli to reach both third nuclei independently. It seems to me much more probable then, in the absence of direct pathological evidence, that the Argyll-Robertson pupil is due to sclerosis of these fibres on one or both sides according as the loss of light reaction is unilateral or bilateral, rather

than due to any nuclear degeneration, such as has been suggested. It is interesting to note that considerable atrophy of the plexus of nerve fibres beneath the layer of nerve cells of the anterior corpora quadrigemina has been noted in cases of tabes dorsalis, though the sclerosis of Meynert's decussation is probably so slow that it will possibly never be demonstrated by Marchi's osmic acid method of staining, and it would not be sufficient to show by the negative method of staining by Weigert-Pal.

REVIEWS.

SOME RECENT TEXTBOOKS OF CHEMISTRY.

DR. LUFF'S *Manual of Chemistry* has long been a favourite textbook in medical schools, but owing to the rapid advance which the science is continually making, it was essential that a revision of the book should be made, and we are glad to find that this revision has been entrusted to one so thoroughly capable of carrying it out with judgment and experience as Mr. Page.[1] The book is so well known that it is unnecessary to give a detailed description. Mr. Page has very properly added an account of the periodic law, of Victor Meyer's apparatus for determining vapour densities, and of Beckmann's method of determining depression of the freezing point. At the end of the book will be found some notes on the preparation of salts, such as those which may have to be made by candidates at the conjoint examination. We also notice that the old woodcuts representing the preparation of zinc *per descensum* have been displaced by an engraving representing a more modern process. Mr. Page explains why ozone is held to have the triatomic formula; but why does he prepare ozone in a eudiometer containing mercury, seeing that ozone attacks this metal? We are glad to find the subject of equivalent weights introduced, and also that most of the diagrams representing one atom combining with itself are left out, but wish that these peculiar relics of the past could have been omitted altogether. The statement (p. 16) that the atomic weight of an element "is its specific gravity in the state of gas," is, of course, only true of a few elements, and the definition "matter is that which is evident to the senses," would surely include heat and light as forms of matter. It is satisfactory to note that the chemical definition of a metal is added to the physical characters, and that Hofmann's synthesis of steam is carefully described with a woodcut. The authors forget that water must be added to alcohol in preparing chloroform by the bleaching-powder method, and they do not allude to the medically important fact that phosgene is formed by oxidation of chloroform. We also notice the surprising statement that "olein in its pure form constitutes olive oil." These matters might be borne in mind when the next edition of this popular textbook is prepared, but meanwhile we heartily recommend the present edition as very compact and readable, and eminently adapted to the requirements of medical students.

We have already noticed (BRITISH MEDICAL JOURNAL, October 14th, 1899, p. 1021) the first volume of Mr. EDGAR F. SMITH'S translation of Professor ANSCHÜTZ'S edition of Victor von Richter's *Organic Chemistry*.[2] The present volume deals with organic compounds, the molecules of which contain atoms arranged in rings. These are styled "carbocyclic" compounds. There is an excellent index containing the names of between seven and eight thousand of these compounds, and this will give some idea of the immense mass of material crowded into the book. Nevertheless, the arrangement is thoroughly systematic, and although it has been found impossible to give anything like a full description of individual substances, particular attention has been paid to such reactions as throw light upon the constitutional formulæ of the compounds described. The book is to be recommended to anyone who, having a good general knowledge of organic chemistry, desires a handy and concise statement of the modes of formation, melting and boiling points, and structural formulæ of the principal derivatives of benzene, naphthalene, pyridine, quinoline, and the vegetable alkaloids. A good deal of information is also given upon various forms of nomenclature which have recently been introduced. Thus we are told that benzene may be called "cyclohexatrien." At the same time the nomenclature actually employed is fortunately that in common use. There seems, however, to be some carelessness in the printing of names of substituted compounds. Thus, "phenyl-acetic acid" is quite correct, but "Propyl Benzoic acid," without even a hyphen between "benzoic" and the prefix "propyl" is certainly a mistake, and the same may be said of "Dimethyl Aniline," which is usually printed "Dimethylaniline." The translator follows the German custom in using the prefixes "chlor-" and "brom-" instead of "chloro-" and "bromo-", but we think that the usual English form in such a word as "chlorobenzene" is preferable to "chlorbenzene." An excellent feature is the constant reference to original papers. This enables the book to be used to a great extent as a dictionary. It is interesting to note that a large proportion of these references are to recent chemical literature, and this is an indication of the enormous amount of original chemical work which is now annually published. In most cases the references are given without the authors' names; this is a pity, since the association of facts with the authors who discovered them seems to add a human interest to a subject which must at times appear somewhat dry. The names of Richter and Anschütz are guarantees that the work is accurate and thoroughly up to date.

Mr. ALLEN'S *Organic Analysis* has long been recognised as a standard work, and it is to be found upon the laboratory shelves of most analytical chemists. It is published in eight parts, and we have received recently the third edition of Part II of Volume ii.[3] It contains many additions, especially as regards acetylene and as regards drugs, food preservatives, and disinfectants derived from benzene. Dr. Leffmann has added a great deal of information obtained from American sources. In the chapter on petroleum it is pointed out that there are at least three kinds of vaseline in commerce, those obtained by direct distillation of American and of Russian petroleum, and a specious mixture of solid paraffin with heavy lubricating oil. This spurious article is said to be liable to deposit crystals of paraffin on keeping, and is therefore not so suited for the preparation of ointments. We find an excellent and very complete account of the methods for detecting the admixture of alpha-naphthol with its more useful isomeride, beta-naphthol; while the account given of the phenols is particularly thorough from the practical point of view. There is also a good description of the complicated mixture known as wood-tar creosote, and of the tests by which it may be distinguished from the cresols. It is pointed out that owing to the large demand in recent years for guaiacol and its preparations much of the wood creosote now sold has been more or less deprived of its guaiacol, and methods for ascertaining whether this has been the case are discussed. The organic compounds dealt with in this volume are hydrocarbons and phenols, and we feel sure that anyone interested in these subjects will find in this book a large amount of new and useful information.

Professor WALKER states that his main object in writing *An Introduction to Physical Chemistry*[4] was to treat certain chapters of physical chemistry at some length with a constant view to their practical application to ordinary chemical phenomena. From this statement we were prepared to find the book eminently readable, and such is, indeed, the case. We are taken through a wide range of subjects, including the ordinary laws of chemical combination, the kinetic theory of gases, the phase rule, the properties of solutions, electrolysis,

[1] *A Manual of Chemistry.* By Arthur P. Luff, M.D., F.R.C.P., F.I.C., and F. J. M. Page, B.Sc., F.I.C. London: Cassell and Co. 1900. (Cr. 8vo, pp. 541, 40 engravings. 7s. 6d.)

[2] Victor von Richter's *Organic Chemistry.* Edited by Professor R. Anschütz. Translated by Edgar F. Smith. Third American edition. Vol. II. London: Kegan Paul, Trench, Trübner and Co. 1900. Demy 8vo pp. 671. 15s.)

[3] *Commercial Organic Analysis.* By A. H. Allen, F.I.C., F.C.S. Third edition, vol. ii, part ii, with revisions and additions by the Author and Henry Leffmann, M.A., M.D. London: J. and A. Churchill. 1900. (Demy 8vo, pp. 330. 14s.)

[4] *An Introduction to Physical Chemistry.* By J. Walker, D.Sc., Ph.D. London: Macmillan and Co. 1899. (Demy 8vo. pp. 335, 47 illustrations. 10s.)

and thermo-chemistry. With the exception of the chapter on thermo-dynamics, the mathematics employed is quite elementary and such as any ordinary reader would be quite able to follow. With such a wide range of subjects it naturally occurs that some interesting topics are disposed of in a very few words, but, on the other hand, many of the chapters are models of clearness of exposition. For example, whatever view we may take as to the theory that aqueous solutions of salts contain the "ions" in a free state, no one can read Dr. Walker's chapters on this subject without feeling pleasure at the able way in which this doctrine is set forth. Such a chapter as that on the applications of the dissociation theory will no doubt come as a kind of shock to those analysts who have not followed the work of Ostwald and other physical chemists. The very simple chapter on chemical equations should also be read by those who fondly imagine that each chemical reaction can be neatly represented by one single appropriate equation; as a matter of fact, natural phenomena are almost always complicated. The discussion of the so-called cryohydrates and allied phenomena is an example of a difficult subject dealt with in a very readable manner. The information given as to the relation of the chemical constitution of molecules to such physical properties as molecular volume, refractive index, optical activity, and magnetic rotatory power is very meagre, but the whole subject of electrolysis is discussed with considerable detail. The book is illustrated by diagrams of curves and sketches of apparatus, and will be found very useful by those who desire to obtain some acquaintance with modern physical chemistry, but who find such a work as that of Nernst rather difficult to follow.

The bulk of the *Introduction to Analytical Chemistry*,[5] written by Dr. HENDERSON and Mr. PARKER, is devoted to the usual tests for metals and acids, but it differs from most books of similar character by taking quantitative and qualitative work together from the very beginning. Its character will be understood if the paragraphs devoted to one of the metals, let us say silver, are described. We have a description of the physical and chemical properties of the metal, then a "preparation," in this case silver nitrate, then the reactions or tests for silver salts; and, finally, a description of the estimation of silver as chloride. The last forty pages of the book are occupied with tests for various organic substances, but the space devoted to these substances is very limited, and accordingly we find that many important reactions such as that of bromine on phenol, alcoholic potash on chloroform and the extraction of quinine by ether are omitted. We do not recommend the book to medical students, though it will doubtless be found useful by students in the various technical colleges for whose benefit it appears to have been written.

In their *Laboratory Notebook*[6] Messrs. LEWES and BRAME give directions for the preparation of the simpler gases, the usual test reactions of the metals and acids in solutions of their salts, tables for qualitative analysis, and a few simple exercises in quantitative work. Some notes of the testing of lubricating oils and of explosives are added. The book is intended to be used in the laboratory, and to that end it is interleaved throughout, so that students may make their own notes as they progress. The book is well got up, but we could wish that the authors had not used formulæ so frequently instead of names. Students should not be taught to use such expressions as "add dil. HCl." A student who has worked through the exercises in this book will, however, have had a good preliminary training in practical chemistry.

Mr. WEICHMANN'S *Chemistry, its Evolution and Achievements*[7] is intended to be such a sketch of the science of chemistry as might be read by those who intend to make a more thorough study of the subject at a later date. The author also seeks to enlist the interest of non-professional readers. As a matter of fact, however, we have here a concise history first of chemistry in general, then of chemical analysis, electro-chemistry, and of the mineralogical, technological, and medical branches of chemistry. Most of this history is given in such an exceedingly concise form that we doubt if anyone who is not already acquainted with the subject will understand what the author is writing about. He seems to have little idea of the relative importance of the labours of those who have raised the science to its present position; thus although about 250 investigators are referred to by name, we find no mention either of the name or of the epoch-making researches of Professor A. W. Williamson. Half the space devoted to phyto-chemistry deals with Darwin's experiments on earthworms, and we are told that the "mould in a field passes through the bodies of these worms several times a day."

[5] *An Introduction to Analytical Chemistry.* By G. G. Henderson, D Sc. M.A., F.I.C., and M. A. Parker, B.Sc. London: Blackie and Son. 1899. (Crown 8vo, pp. 224. With coloured plate of spectra. 5s.)

[6] *Laboratory Notebook for Chemical Students.* By Vivian B. Lewes and J. S. S. Brame. London: A. Constable and Co. (Cr. 8vo, long form; pp. 170 (with alternate blank pages). 4s.)

[7] *Chemistry, its Evolution and Achievements.* By Ferdinand G. W. Weichmann. New York: W. R. Jenkins, 1899. (Crown 8vo., pp. 176.)

SOME RECENT WORKS ON ANATOMY AND HISTOLOGY.

THIS first edition of Mr. MORRIS'S *Treatise on Human Anatomy* was published in 1893; the second[1] is now before us, and with two exceptions the original authors have been able to revise and bring up to date the sections which they had contributed to the first edition. These exceptions are Mr. H. St. John Brooks, who wrote the articles on the nervous system, and Mr. Arthur Hensman, who contributed those portions which deal with the tongue, ear, and nose, and the thorax and its viscera. The articles by both these authors have been revised by Mr. Arthur Robinson. The illustrations remain much the same as they were in the former edition. In a few instances new cuts have been introduced, and in others new blocks have replaced old ones. Two new chapters have been added, one on the anatomy of the skin by Mr. William Anderson, and the other on "vestigial structures" by Mr. Arthur Robinson. The chapter on the skin is short, clear, and to the point, and makes the volume more complete. From a surgical point of view, however, it would have been better if the lymphatic distribution in the skin, especially as regards the groups of lymphatic glands into which the lymphatic vessels first open, had been described at greater length. This is a point which, as a general rule, is only slightly alluded to in the textbooks on human anatomy. On the other hand, the description of the microscopic structure of a section of the skin might have been omitted, since it has been the object of the editor to publish a complete and systematic description of every part or organ of the human body so far as it is studied in the dissecting room, and not to include an account of the histology and development of the structures dealt with. The other new chapter comprises a short description of the vestigial and abnormal structures more commonly met with. This article forms a useful addition to the volume, and is so classified that it admits of ready reference. In some instances, however, more information from a morphological point of view might have been added. Many of the typographical and other errors which were present in the first edition have been removed. This is especially noticeable in the chapter on Surgical and Topographical Anatomy, where the errors were numerous. In its revised, expanded, and improved form the volume may be recommended to all medical students as a textbook of the subject on which it treats. It will be found to be one of the most reliable of the English textbooks, and to contain a better account of surgical and topographical anatomy than most of them.

The eighth edition of a popular textbook rarely calls for detailed criticism. Professors STEWART and REID have again edited the volume on *Human Osteol gy*,[2] by Mr. HOLDEN. The text has been little changed in the present edition, and remains, with a few minor exceptions, similar to that of the last edition in 1887. Plates LVII and LVIII have been advanced

[1] [illegible] Morris, M.A., M.B.Lond. London: J. and A. Churchill. (Imp. 8vo, pp. 1394, 790 illustrations. 36s.)

[2] Holden's [illegible] delineations of the attachments of muscles to them). Edited by Charles Stewart, F.R.S., Conservator of the Museum of the College of Surgeons, and R. W. Reid, M.D., F.R.C.S., Regius Professor of Anatomy in the University of Aberdeen. Eighth edition. London: J. and A. Churchill. 1899. (Roy. 8vo, pp. 158, 58 lithographic plates, and [illegible] illustrations in the text. 16s.)

from their former position at the end of the book to the pages in which they are described in connection with the temporal bone and the auditory ossicles. The arrangement of the subject matter remains the same. First come general observations on the structure and composition of bone and cartilage; then development; and finally the description of the individual bones. The bones of the upper extremity are dealt with after those of the lower, but the reverse arrangement would probably be the more convenient and scientific. As a well written and profusely illustrated treatise on the naked-eye characters of human osteology the volume can be strongly recommended. The sections on comparative anatomy and osteology, however, are not complete enough to be recommended to the serious study of morphological anatomists and candidates for the higher degrees in this subject.

Professor SZYMONOWICZ's textbook of histology,[3] of which the three first fasciculi are before us, is to consist of five parts. The text does not differ very much from what is found in other handbooks on histology. It is tersely written but the descriptions are all clear. There is naturally not much scope for originality. In connection with the nervous system, where recent new methods have done so much to advance our knowledge, the latest results are stated. In connection with the structure of striped muscle, where there is room for differences of opinion, Rollett's views are followed in the main. The structure of retiform tissue is another subject upon which anatomists are not yet agreed. Support is given to Mall's views. Mall stated that the fibres of this tissue are different from those of ordinary connective tissue because they are not composed of collagen. Mall's views were contested in this country by Schäfer from the histological standpoint, and by R. A. Young from the chemical point of view. Siegfried confirmed Young's statement that gelatin is obtainable from reticular fibres, though he obtained from them also a new material he termed reticulin; the existence of reticulin is, however, very doubtful. It is surprising that in a work like the present no mention is made of these facts. The order in which the subjects are taken is the usual, indeed, the only possible one. First, we have a description of the animal cells, then of the various tissues, and, lastly, of the organs. The description of the organs begins with the blood vessels, the remainder will be described in the succeeding parts. The main excellence of Professor Szymonowicz's production is in the illustrations. All of these are original and well executed; many of the plates are coloured. We shall look forward with interest to the completion of the work, if only to have the pleasure of admiring the merits, artistic and anatomical, of the figures.

The late Professor MILNES MARSHALL'S book on *The Frog*, utilised as an introduction to anatomy, histology, and embryology, is so well known that it requires no praise here. It still fulfils its purpose as an introductory handbook for students of biology. Professor Marshall's work still stands in the main as it left his hands, and the present editor, Dr. Fowler,[4] has only made a few additions and alterations. The chief addition consists in a new series of woodcuts in illustration of the subject of development, which have been drawn by Miss Mabel Green. We would suggest a further addition to the next edition, which would greatly increase the value of the book for students of physiology; and that is the insertion of some descriptions of regional anatomy. In the subject of practical physiology the teacher frequently finds that, although the student knows the anatomy of the circulatory system, and of the cranial nerves in the frog, he is unable to piece together his knowledge and make a satisfactory dissection of the heart with its nerve supply. If, therefore, we had in this book directions for the dissection of important "physiological regions," the book would form an introduction to physiology, as well as to the other sciences mentioned on the title page. The regions in question comprise the gastrocnemius and the sciatic nerve, as in making a muscle nerve preparation; the cardiac nerves and the preparation of these for stimulation, as in experiments on the frog's heart, and several others which will at once suggest themselves to the author.

Drs. RABAUD and MONPILLARD have compiled an *Atlas*[5] of 50 plates illustrating normal histology, which are reproductions of photographs. Each is covered with a piece of semi-transparent paper, on which the principal outlines are marked, together with the names of the structures shown. This method has much to commend it. It hardly seems, however, sufficient justification for adding to the number of excellent histological atlases which already exist. The atlas is incomplete, and, as we have stated in these columns before, the best atlas for a student is the one he makes for himself, even though it does not possess the artistic merits of those which are printed. The text which accompanies the plates is brief but accurate, it also is incomplete; it treats only of the tissues, whereas many of the plates reproduce the structure of the organs.

We have nothing but praise for Dr. HERTWIG'S work on the elements of human and vertebrate embryology[6]. It is authoritative, exhaustive without being exhausting, clearly written, well printed, and profusely illustrated. It is the very book for students, and there is nothing in our own language which exactly corresponds to it. If someone enterprising enough to translate it into English could be found it would in all probability have a deservedly large sale in this country.

RECORDS FROM GENERAL PRACTICE. By J. KINGSTON BARTON, M.R.C.P.Lond. Part I, June, 1900. London: John Bale, Sons, and Danielsson, Limited.

IN his preface Dr. BARTON tells us: "The general practitioner must acquire a vast experience in general matters, no doubt not very scientific, but still very useful, yet his knowledge is personal and passes away with him. With diffidence, then, I purpose publishing from time to time a collection of notes that may be of interest to others. If not they will at all events reveal the kind of work a general practitioner has to deal with." Some of the subjects dealt with have already appeared in print, mostly in our own pages, for example, papers relating to the early decay of the permanent teeth and the value of sterilised milk; they contain the record of careful observations, and were well worthy of republication. Of the new material the most important is that relating to disease in the abdomen; Dr. Barton's "fifty cases of acute abdominal disease" afford a good example of the gradual change that has taken place in the recognition and mode of dealing with the disease of the vermiform appendix and the various forms of intestinal obstructions during the past twenty years. The sections on hysteria and on drugs and remedies contain hints that cannot fail to be of service to young practitioners, whilst the last paper on a point in the life-history of salmon shows that Dr. Barton is capable of doing very good scientific work when the opportunity occurs. We hope that Dr. Barton will continue the publication of these records from time to time, for in so doing he is setting a most excellent example to his professional brethren. His diction, however, leaves something to be desired; for instance, we do not know whether Dr. Barton is responsible for the word "enematas," or whether it was the expression of the distinguished surgeon who was seeing the patient with him, but it is not a word used by physicians.

LES SANATORIA: TRAITEMENT ET PROPHYLAXIE DE LA PHTISIE PULMONAIRE. Par S. A. KNOPF. Deuxième Edition. Paris: George Carré et C. Naud. 1900. (Roy. 8vo, pp. 512; 92 Illustrations. Fr. 22.)

THE first edition of Dr. KNOPF'S work was one of the earliest contributions to the literature on the open-air treatment of phthisis which has now assumed very considerable proportions. The new edition will, we think, maintain the con-

[3] *Lehrbuch der Histologie und der mikroskopischen Anatomie* [Textbook of Histology and Microscopic Anatomy]. By Dr. Ladislaus Szymonowicz, ah ö Professor at the University of Lemberg. Lieferung I, II, und III. London: Williams and Norgate. 1900. (Roy. 8vo, pp. 192, 30 plates. 126 figures. 3s. each.)

[4] *The Frog: an Introduction to Anatomy, Histology and Embryology.* By the late A. Milnes Marshall, M.D., D.Sc., M.A., F.R.S. Edited by G. Herbert Fowler, B.A., Ph.D. Seventh Edition. London: David Nutt. 1900. (Crown 8vo, pp. 168. 38 figures. 4s.)

[5] *Atlas d'Histologie Normale.* Dr. Etienne Rabaud et Fernand Monpillard. Paris: G. Carré and C. Naud. 1900. (Demy 8vo, pp. 200, 50 plates. Fr. 24.)

[6] *Die Elemente der Entwicklungslehre des Menschen und der Wirbelthiere.* Von Dr. Oscar Hertwig. Jena: G. Fischer. 1900. (Roy. 8vo, pp. 406, 332 illustrations. M. 7.50; bound 8.50.)

siderable reputation won by the first. Many additions have been made to the descriptions of sanatoria. New illustrations have been introduced, and the observations upon the treatment of phthisis at home have been extended. Dr. Knopf gives a description of the pneumatic cabinet, which has been more extensively used in America than elsewhere. With certain modifications which he indicates, he expresses the opinion that the use of the cabinet is of considerable value in the treatment of phthisis, especially at places of low altitude. A patient placed in this cabinet, when the pressure is reduced, experiences after some temporary embarrassment a greater freedom of respiration, and Dr. Knopf believes that the air penetrates more freely into the lungs. A course of this treatment diminishes anæmia and the tendency towards pulmonary congestion, while increasing the development of the pectoral muscles. He believes also that if care is taken to make the patient breathe through the nose—a point to which in all cases he attaches much importance—the treatment is of value in laryngeal tuberculosis.

The concluding chapter of the work deals with the provision of sanatoria for the working classes and others who are not in a position to pay the charges ordinarily made in private sanatoria. This is indeed one of the most pressing questions of the day, and one which we trust the National Association for the Prevention of Consumption may be able to solve for this country.

Erkrankungen der Gefässe. Von Professor L. v. Schrötter, in Wien. First Half: Diseases of Arteries. Wien: A. Hölder. 1899. (Royal 8vo, pp. 316, 55 illustrations. M.9.50.)

Professor von Schrötter's volume on diseases of the blood vessels deals with the pathological processes occurring in arteries, and includes a description of the various forms of aneurysm, and a separate detailed description of aneurysm of the aorta and its large branches.

The abnormalities of the arterial system are first briefly described. Inflammatory affections in their varying forms are fully, even elaborately, set forth. Arteritis obliterans (Friedländer), endarteritis obliterans (v. Winiwarter), and periarteritis nodosa are each discussed. The last mentioned, described first in 1866 by Kussmaul and Maier, is of the greatest pathological interest. There is at least room for doubt whether all the cases, limited in number though they are, of this curious disease are strictly of the same order. The chief and most obvious feature is the multiple character of the affections. Indeed Pelletan, Rokitansky, and P. Meyer have described the same disease under the title of "multiple aneurysms." In Pelletan's case 63 aneurysms of different small vessels were observed. Beyond these facts—the multiplicity, the "knot-like" character of the thickening, the restriction to vessels small in calibre (vessels smaller than the coronary of the heart), and the limitation of the disease to the adventitia—there is little to record. Eppinger's view of the essentially congenital character of the disease at present lacks confirmation. Atheroma is described as "arterial sclerosis." The term "endarteritis chronica" is disallowed, as recent investigation goes to show rather that the disease is hypertrophic than inflammatory in its beginning. Tuberculosis and syphilitic diseases are described fully, with some excellent illustrations.

The latter half of the book is taken up by the description of the dilatations of arteries and aneurysms. This description is the most admirable presentation of the subject of which we have knowledge. In the variety of its literary references, in the completeness and the detailed analysis of pathological processes, and in the judicious discussion of debateable points, it is alike remarkable.

The section dealing with treatment is too brief to be of value. All of the usual methods are mentioned, and some of those now obsolete, but the author makes no attempt to express any opinion upon their relative values. The method recently advocated by Lancereaux, based upon the researches of Dastre and Floresco, of the subcutaneous injection of gelatine is mentioned. Its worth has not yet been decided. This work is one which can confidently be recommended as giving an admirable presentment of our knowledge of this subject to-day.

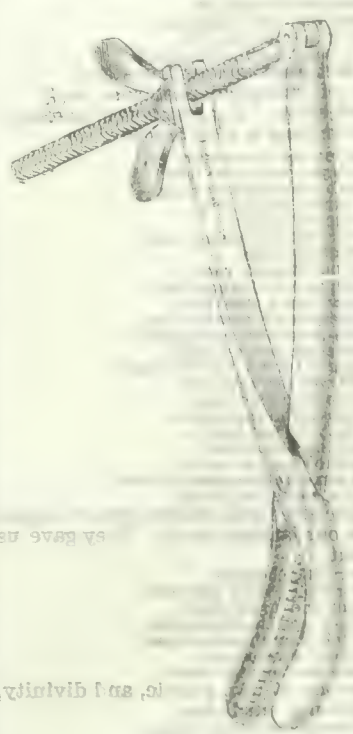
NOTES ON BOOKS.

Dr. T. A. Glover has written a little book of midwifery notes for the use of students attending their first cases (*Midwifery Notes for the Use of Students*. Edinburgh: E. and S. Livingstone. Crown 8vo, pp. 95. 2s. 6d.). It is not to supersede the ordinary textbooks. The student is advised to obtain a pair of forceps and instructed in detail how to apply them. He is informed that eclampsia is a disease of the puerperium; "three kinds of convulsions are described, the hysterical, the apoplectic, and the epileptic."..... "Apoplectic convulsions usually occur during the second stage of labour and are caused by the straining in persons of an apoplectic constitution." Phlegmasia dolens is the "commonest of all puerperal diseases, and begins on the second to the fourth day after labour." Inflammation of the breasts is "caused by a blow or exposure to cold whilst suckling, and probably in many cases there is some constitutional predisposition." When the membranes rupture prematurely "the pressure of the head is apt to set up an irritable condition of the cervix which seems to cling tightly over the head." These quotations taken at random suffice to show the character of the book, and it will raise doubts as to its suitability for the purpose it was intended by the author to fulfil.

REPORTS AND ANALYSES AND DESCRIPTIONS OF NEW INVENTIONS IN MEDICINE, SURGERY, DIETETICS AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

Perineal Stone Crusher.—Mr. A. Neve, F.R.C.S.Ed. (Mission Hospital, Kashmir), writes: In dealing with large stones many surgeons consider that perineal litholapaxy has advantages over suprapubic lithotomy. At any rate, cases may arise in which it is indicated. From recent experiences with perineal stone crushers, both Milton's and Harrison's, as made Down Brothers, I am of opinion that the latter is far the better instrument, but might be advantageously modified in the following details: 1. The circumference of the closed blades should not exceed that of the joint, namely, 2 or 2½ inches. 2. The blades should be less curved; 30° would be enough. 3. The screw should be attached to one handle by a strong hinge, so as to be easily opened or again put into action. 4. The screw need not have more than five threads to an inch: it will then work four times as quickly as the present instrument with twenty threads to 5. The blades should have a triple cut at least 2 inches when fully open and the screw action applied. If the [illegible] blades the instrument will only deal with [illegible] by powerful [illegible] lithotr[illegible]



LITERARY NOTES.

AT the Congress of American Physicians and Surgeons held at Washington in May last, a somewhat novel feature was introduced in the shape of a poem read by Dr. S. Weir Mitchell of Philadelphia, who in the fulness of his fame as a neurologist is earning for himself a literary reputation which bids fair to equal that which he has so justly won in science. The poem was entitled "The Physician." We were favoured by Dr. Gould, editor of the *Philadelphia Medical Journal*, who had the exclusive right of complete publication in the United States, with an advance copy, but unfortunately were prevented by want of space from making use of it. We are sure, however, that many of our readers will be glad to see some passages from a poem which must have so special an interest for them.

The origin of the healing art is thus sketched:

The hunt is o'er;—the stone-armed spears have won;
Dead on the hillside lies the mastodon.
Unmoved the warriors their wounded leave;
The world is young and has not learned to grieve.
But one, a gentler sharer of the fray,
Waits in the twilight of the westering day,
Where 'neath his gaze a cave-man, hairy, grim,
Groans out the anguish of his mangled limb.
Caught in the net of thought the watcher kneels,
With tender doubt the tortured member feels,
And, first of men a healing thought to know,
He finds his hand can check the life-blood's flow.
What sense of pleasure won that helping hand
You best can tell, you best can understand,
Who, looking back across your busy years,
Know what your hands have spared of pain and tears.
First of your guild!

Then, addressing his audience, whom he terms "the latest offspring" of this first healer, the poet goes on:

Heirs of the ages! Heritors of thought
By Galen gathered, or by Celsus taught,
Greek, Arab, Roman, breathe in you to-day,
And the great captains of that long array,
Who through dark centuries led your slow advance
To the proud sun-burst of the Renaissance.
A splendid lineage! Who may hope to trace
The dateless legend of your ancient race?
Lo! through the mist of years I see them rise,
The great, the good, the witty, and the wise.
The poet's laurel crowns your blazoned shield,
Sage, scholar, statesman reap your ample field.
Your names are many on the fearless roll
Of those who signed a nation's birthday scroll.

The last lines refer to the fact that among the signatories of the American Declaration of Independence were not a few members of the medical profession. The progress of medicine and surgery in the present century is thus traced:

With conscience calm you see the century go,
And know how much to you its glories owe.
It saw grow safe beneath the surgeon's knife—
Almost too safe—the sacred human life.
It saw forever stilled the cry of pain.
Which shall we dare to count the higher gain?
Two older victories we gladly place
In the proud annals of our English race:
When some glad seraph gave to Jenner's ear
The whispered spell that slew a giant fear.
And, strangely killed despite his guard of lies,
Touched with a needle's point the monster dies.
When, too, as one amid some deepest night,
Sees the quick lightning fill the world with light,
Our patient, modest Harvey saw revealed
The wonder-secret life so long concealed.
Who would not envy those who share alone
With God the secrets only He had known:
Who win the joy of soaring unconfined
High o'er the levels of the common mind,
Or, humbly searching some well-trodden ground,
Find the rare jewel no one else had found.

Such, says the poet, were the sires with whom our art began, and we are still what these our fathers made. They gave us not only scientific truths, but

The stately oath of stern Hippocrates.
The creed was old before the Christ was born
To give it heavenly light and larger morn
Of ampler meaning, when a white-robed man
Taught—as those wonder-years in sadness ran
Taught as he practised our divinest art.
Who heals the body best can heal the heart.

Comparing the three professions of law, physic, and divinity, the palm for usefulness is given to medicine:

A score of codes the lawyer's learning needs;
The priest is servant of an hundred creeds
That sow dissension and that stir debate,
And in their turn have fed the fires of hate:
But you, o'er all the earth, in every land,
Find the warm greeting of a brother hand.
One creed is yours, and till all time has ceased
Still you are doctor and are somewhat priest
The colder man may vainly try to live
Free from confession such as sorrows give:
The priest hears part of life—you hear the whole.
When fear or anguish racks the tortured soul.
'Tis we who know, and haply we alone,
What grandsire's sin a life has overthrown,
What inborn taint has been the fatal source
That gave temptation such resistless force.
How can we lack the charity that wins
From God-like knowledge large excuse for sins?

A physician must treat his patients with his heart as well as his head:

Our best have owned the rare dramatic power
Which gives to sympathy its lifting hour;
Go learn of them, the masters of our art,
To trust that wise consultant called the heart.
There are among us those who haply please
To think our business is to treat disease,
And all unknowing lack this lesson still,
'Tis not the body but the man is ill.

The bard longs to be rapt into future times and see the conquests of a later age:

Would I might call these grave consultants here
To trace the coming century year by year,
To learn what crippled theories she flings
On to the dust heap of forgotten things,
What blazing head-lights shrink to tallow-dips,
What well-known names must suffer time's eclipse.
Yet hope shines ever in her maiden eyes.
Her silent lips are treasuries of surprise.
What ghastly shapes her stately presence fly!
What ancient plagues beneath her footfall die!

However mere knowlege may have grown, there are some doctrines that will have not grown obsolete:

Our ancient lesson will be ever new:
That priceless lesson will be ever true;
Time did not teach it: time will change it not.
This, this shall last though all our lore's forgot.
To give what none can measure, none can weigh,
Simply to go where duty points the way;
To face unquestioning the fever's breath,
The hundred shadows of the vale of death;
To bear Christ's message through the battle's rage,
The yellow plague, the leper's island cage,
And with our noblest "well to understand
The poor man's call as only God's command."
Ay, under every century's changing sky
Shall the Greek master's triple signal fly,—
Faith, Honour, Duty,—Duty calmly done,
That shouts no self-praise o'er a victory won;
One bugle note our only battle call,
One single watchword, Duty.—That is all.

And what is the physician's reward for the relief of suffering, the abolition of scourges that make human life a misery, the increase of the physical well-being of the nation?

Where are your honours? Ribbons, titles, place,
In other lands reward the winner's race.
But here, to-day, beneath our equal sun,
The simple guerdon of some victory won
Is but to hear your Ave! Hail! Well done!
Alas! not always even this is sure
For him who lessens that which men endure.
We are but mortal, and, with blinded eyes,
May fail to see who surely won the prize,
Or see too late, as once we saw in vain
The fate of him who wrought the death of pain.
Guard well that memory, lest again we flout
Some hero-victim with our torturing doubt.
How thanked we Morton? Ah! "No joy-bells rang,
No pæans greeted, and no poet sang.
No cannon thundered from a peaceful strand
That bloodless victory to a grateful land.
We took the gift, so humbly, simply given,
And, coldly doubting, left the rest to Heaven."

But on the dying eyes of the century
Prophetic glows
Some sweet prediction of a world's repose.
Lo, at her side the coming sister stands.
And bends to hear, and folds those wasted hands.
"What shall I bring which thou hast failed to find?
What nobler hope have I to give mankind?"
Hark! From the lips where life had seemed to cease
Comes the lower murmur: "Thou shalt give them Peace."

CAUSES OF DEATH IN GERMANY.—The following statistics taken from the German *Reichs-Medizinal Anzeiger* show the most frequent causes of death and at the same time give an idea of the prevalence of infectious diseases in the German Empire. In 1897 1,120,000 persons died in Germany in a population of 52 millions. Of these 110,200 fell victims to lung diseases, 26,500 to diphtheria, 21,600 to whooping-cough, 11,000 to measles, 6,800 to scarlet fever, 6,000 to typhoid fever, 467 to tetanus, and 13 to hydrophobia. The number of deaths by suicide in the same period was 10,700.

UNIVERSITY COLLEGE HOSPITAL NEW BUILDINGS.

The splendid clinical work which for many years has been done at the University College Hospital demonstrates that favourable conditions in regard to space and equipment are not indispensable either for the successful teaching of students or for the successful teaching of patients. But it is a matter for general congratulation that, owing to the large-minded munificence of Sir J. Blundell Maple, the work of this leading hospital will in future be carried on under conditions which almost reach the ideal.

On September 24th those of its new wards which have now been completed were informally opened for the reception of patients. The inaugural ceremony is, we understand, to be postponed until the whole building is complete, when it is hoped that a Royal personage will be present to grace the proceedings. Pictures of the hospital, as it is to be when quite finished, with sectional plans of the different blocks, appeared in the Jubilee number of the British Medical Journal, which was published on June 26th, 1897.

Site and General Plan of New Buildings.

The site of the new buildings is immediately to the rear of the old hospital, and is bounded by Grafton Street, Huntley Street, and University Street. When the ground on which the old buildings at present stand is cleared the whole available area will be 232 feet by 225 feet in extent.

The plan of the complete building is, it will be remembered, that of a diagonal cross, a form suggested by Mr. Newton H. Nixon, the secretary of the hospital, as affording the maximum amount of light, air, and accommodation. The arms of the cross radiate outwards, on the pavilion principle, from a central block—north, south, east, and west—but the distinctly cruciform plan is not developed below the level of the first floor. The style of architecture adopted is a free treatment of Renaissance, and the material of the building is red brick with terra-cotta dressings. The central block and one of the arms of the cross were alone brought into use on September 26th. The north, east, and west radiating wings will contain the wards, and the central block contains the main spiral staircase, two lifts, the Board room on the ground floor, and three operating theatres on successive storeys, two being for surgical and one for gynæcological cases. The south wing is intended for the use of the resident medical and surgical officers, the nurses, and the domestic staff.

On the ground floor, in addition to the spacious Board room, the furniture in which was the gift of the Chairman of the Hospital Board, Mr. Henry Lucas, will be the administrative offices and the out-patient departments. At present the old surgical wards are utilised for out-patient purposes, and the large surgical theatre of the old building is, in part at any rate, converted into a dispensary. All the corridors in the central block are beautifully light and airy, and are paved with a tiled mosaic. Viewed from the outside the central block and radiating arms are distinguishable as structures 70 feet high, and each radiating arm is seen to consist of two blocks of similar height; the larger, next the central block, is itself on the cruciform plan, and the smaller, at the extremity of the arm, is nearly square in plan. The three blocks are seen to be connected at each floor by iron bridges or tunnels, leaving a clear space almost as deep as the tunnels between each pair. By this arrangement a free circulation of air is maintained around the different blocks. The larger cruciform block of the wing is the ward block proper, the smaller quadrilateral peripheral block is the sanitary block.

The Wards.

Each of the three ward wings is to contain four large wards, one in each of the four storeys. Only one wing, as we have said, is at present in use, but another is approaching completion. Each ward is reached from the main central block by an iron bridge or tunnel, already referred to, in the sides of which are windows permitting of very free cross ventilation. Each ward has two transepts, giving the cruciform plan. Its dimensions are 80 feet in length, 25 feet in width, and 12½ feet in height, while each transept is 21 feet long. Running through the centre of the ward, from floor to ceiling, is a square column, being part of a ventilating shaft, which extends from the basement to the roof. Its external surface consists of glazed red bricks. On its opposite sides, facing the doors, are fireplaces; on the other two sides, facing the transepts are glazed porcelain tables or ledges, the one being for chemical analyses, and on the other, which is covered with a cowl directly connected with the ventilating shaft is a Bunsen burner and a silver-plated steriliser for instruments. High up on the column are open gratings serving for the escape of vitiated air from the ward by the shaft. Each ward contains 24 beds; the total number of beds will eventually be 300. Over each bedstead, which is of the approved iron chain pattern, hangs an electric light with opal reflector. Porcelain basins with hot and cold water taps are fixed at intervals on the walls; there are to be no wash-stands. There is a minimum of furniture, but it is all of the most solid, not to say luxurious, description. The tables are of highly polished oak and the floors are formed of oak blocks. There are numerous windows on every side so that the ward is wonderfully bright and airy. The walls have an olive-green painted dado, and are coloured a light yellow above. There are to be no pictures or decorations that could collect dust, and for the same reason the junctions of the walls with each other and with the floor and ceiling are rounded so that no sharp corners shall make the cleaning processes difficult. The wards can be efficiently warmed by means of hot water radiators; the comparatively small fireplaces are meant more for ventilation purposes than for heating.

Sanitary Blocks.

The door at the end of the ward, away from the main central block, leads into another iron bridge or tunnel also having very free cross ventilation, which connects the ward block with the sanitary block. The sanitary block is divided longitudinally into two parts by a wall of glazed bricks. The one is the sanitary department proper, and the other is the domestic or nurses' department. The sanitary department contains waterclosets for the patients, which are tile-lined, electric-lighted, and well ventilated, a room containing in particular a large porcelain slop-sink, and a beautiful tiled bathroom at the extreme end of the block, which is also warmed by means of radiators. In the corridor, on the face of the partition wall, are large pigeon-holes, closed with doors composed mainly of wire-netting, which are intended for the reception of the patients' clothing and personal effects after they have been thoroughly disinfected in the hospital sterilising chamber. This certainly seems a vastly better plan than that of keeping the patients' clothing in cupboards at the head of the beds or in baskets under them.

The other half of this outer block parallel with the sanitary department is for domestic and nursery requirements. It includes a large linen closet, a nurses' kitchen, in which is a serviceable cooking stove and a Berkefeld filter attached to one of the water taps, and an inner larder containing an ice chest. The fittings and furniture are of teak, and the walls are either tiled or distempered. Just outside the ward, between it and the nurses' department, there is an iron escape staircase leading to the outside which will be used only on great emergencies. The opening leading to it can be closed by an iron-louvred shutter, which is made to slide up and down.

The Operating Theatres.

Entrance is gained to each operating theatre through a small but well appointed anæsthetic room, separated from the theatre itself by sliding doors. The theatres are perfect in regard to cleanliness and light. The walls up to 6 feet from the floor are covered with highly polished white Sicilian marble, and above that level with opaline tiles. The floors are of the mosaic tile pattern. All the theatres are lighted by large plate glass windows, each of which takes up almost the whole of one side, namely, that situated between the south and west wings. In addition to the wall windows there are sloping toplights. Four porcelain basins are fixed to the walls in each theatre. When the surgeon desires to use one or other of them for purifying his hands there is no need for him to turn any tap with his hand or lift up any plug; all he needs to do is to press with his foot one or other of three pedals, which are below the basin, when either a supply of hot or of cold water is obtained or the waste water is allowed to escape. In each theatre is

a large electroplated steriliser with a bunsen burner underneath for instruments, and a large autoclave for dressings. With their backs to the large window are several rows of iron seats for the students, who gain entry from the floor above at the sides of the theatre. Marble steps lead down to the rows of seats, which are separated from the operating area by a continuous iron rail. On the side of the theatre, opposite the anæsthetic room, are sliding doors, which separate it from a recovery room, in which the patients are kept until they have in great measure recovered from the effects of the anæsthetic before being wheeled back to the wards.

The Scientific Floor.

The entire top floor is devoted to purposes of clinical study and research. It contains a large well-lighted lecture theatre and several smaller rooms, adapted for the microscopical and chemical investigation of clinical material. In what corresponds with the sanitary block is an excellently arranged necropsy room. It is reached by a bridge quite open on one side, except for a brick parapet and arches. The room itself has a concrete floor, tiled walls, and two necropsy tables of white porcelain material with a pedestal of the same, all in one piece. A special lift connects it with the mortuary and ice-chamber in the basement. There is a plentiful supply of water, and the ventilation appears to be perfect.

Some General and Special Features.

Every part of the building is in telephonic communication with every other part—an arrangement the advantages of which can only be thoroughly appreciated by those who have been accustomed to the waste of time consequent on carrying verbal messages between the widely-separated portions of a large institution. Among the general impressions obtained from a rapid inspection of the new buildings is that of the possibility of almost infinitely refined cleanliness, not merely of the ordinary domestic type, but even bacteriological and almost chemical. Another is that of the durable character of the structure and fittings, down to the very tables and chairs. Another is the effect of lightness and brightness; there seems to be no darkness at all. But the special and outstanding feature is without doubt the excellent system of ventilation, which was, we believe, suggested by Dr. Vivian Poore. Each ward is virtually an isolation ward, and each sanitary and domestic department is practically an isolated block. There are no corridors or staircases in the hospital proper, and for all hygienic purposes the bridges give the same effect as if the patients and staff came directly from the outside into the individual wards. These new buildings of the North London or University College Hospital seem to reach the high-water level of hospital construction.

AN INVESTIGATION INTO THE ETIOLOGY OF CANCER.

The report of a Committee which was appointed in March, 1898, by the Birmingham and Midland Counties Branch of the British Medical Association to inquire into the etiology of cancer, and particularly into the question whether locality had any influence on its prevalence, has been reprinted from the *Birmingham Medical Review* of May, June, and July last.

The Committee is to be congratulated on having accumulated a substantial body of evidence derived mainly from the counties of Warwickshire and Staffordshire, but also from Shropshire and Worcestershire. It began its work by inviting certain medical men in the different registration areas of these counties to make lists from the official registers of all deaths certified as due to malignant disease during the previous ten years; and, in the second place, to give a detailed account of the physical conditions both of the localities in which the disease was more prevalent and of those in which it was less so, having particular regard to the dryness and sewage contamination of the soil and to the general conditions of those houses where malignant disease had occurred with marked frequency.

For reasons connected with the fluctuating character of the population of large towns in respect of place of residence statistics from them have been largely set aside. Returns have, however, been freely utilised from fifty registration areas representing a population of 860,000 persons, and including more than 5,300 cases of malignant disease. The conclusions arrived at by the Committee are fully set forth and explained in the report, and they are obviously the collective result of a vast amount of labour. Taking the average mortality from malignant disease throughout the country as about 0.58 per cent. in 10 years, they find that there are certain more or less well-defined areas in which the mortality is markedly higher than the average and others in which it is much lower. They consider that these differences can be in only a very small degree attributed to influences of age and sex. For example, although the female cases largely exceed the male in point of absolute numbers, yet that is manifestly due to the very large number of uterine and mammary cases. If this and other sexual factors be excluded then the case incidence is slightly in excess in the males. They have to acknowledge that the diagnoses tabulated in the register of deaths are by no means an infallible guide to the actual number of cases but they are held to be useful as approximations. The undeniable discrepancies depend partly on the difficulty of diagnosis in the cases of internal disease and partly on the constant difficulty in the matter of necropsies. On the one hand, they consider that some of the cases recorded as cancer are not really such, indeed, they frankly admit, for example, that carcinomata and sarcomata cannot be distinguished from the registers alone, and on the other hand, they believe that many of the cases really due to cancer are not so recorded, and as a result that the death rate from carcinomatous disease is at present under-estimated.

One of the main results of the investigation which certainly seems to be clearly established by the evidence, is that a damp, ill-drained, water-logged soil is more frequently associated with a high cancer death-rate than is a dry, well-drained soil, and that contamination of the soil or subsoil for long periods with decomposing organic matter is a concomitant of, and probably bears a causal relation with, the specially high cancer mortality.

Another of the more important results is that while second and third cases of cancer occur in particular houses with a somewhat greater degree of frequency than can be accounted for by mere coincidence; that, in fact, there may be "cancer houses," yet there is a much greater weight of evidence, almost amounting to real proof, that cancer is found with extraordinary frequency in particular groups of houses, say in the same street, that is, they maintain it to be an ascertained fact, that there are "cancer foci." They suggest that this remarkable grouping may itself depend on an association with contaminated soil. A minor point, bearing in the same direction, is that cancer occurs more frequently in old than in new houses, and in districts inhabited for a long time than in those recently built over. Some evidence was obtained in the course of the investigations which suggests that under certain circumstances the disease may be transmitted direct from one person to another among those who are constantly in close association.

The report is remarkable as showing the valuable character of the scientific work which may be accomplished by the organised effort of the Branches of the Association, and particularly by those whose members work amongst what may be styled fixed populations. Just as the medical man in general practice, in spite of his scanty leisure, has absolutely unrivalled opportunities of studying the beginnings of acute disease, so he has more than any other the greatest facilities for observing, at first hand, the effect both of environment and of heredity in the etiology of disease. This work of the Birmingham and Midland Counties Branch is of great value, not only on account of its intrinsic merit, but also as an example and an incentive to other Branches.

A Popular Sanatorium for Tuberculosis in Italy.—The Italian Minister of the Interior by decree dated February 3rd, 1900, invited competition for a plan of a sanatorium for poor tuberculous patients. He has recently nominated a committee to examine the plans. It includes the names of Professor Bizzozero of the University of Turin, Professor Durante of Rome, Professor A. de Giovanni of Padua, Professor A. Ballori, Director of the Hospitals of Rome, besides those of several well-known architects and engineers.

THE GERMAN SCIENTIFIC AND MEDICAL CONGRESS.

[From Our Special Correspondent.]

Aachen.

The Versammlung Deutscher Naturforscher und Aerzte commenced its annual Congress in Aachen on September 17th, as was stated last week. The first Congress was held seventy-one years ago, but no congress has taken place in Aix-la-Chapelle for fifty-three years. Aachen (Aix-la-Chapelle) is much frequented by Germans as a "Bad," and is well known in England. The baths and waters are recommended in skin diseases, rheumatic affections, and syphilis. The town, however, is not likely to appeal strongly to the English seeker for change, health, or pleasure. The curative effects of the waters are not unique; many seeking change would prefer to go somewhat further from home, and, as for pleasures, the city appears more in the light of a progressive commercial and industrial centre, the "Kurhaus" and similar buildings suffering from a want of modernity.

The work of the Sections began on the second day, when in the room devoted to children's diseases Professor Ponfick (Breslau) read a paper on the Relationship between Scrofula and Tuberculosis. He remarked that in consequence of Koch's discoveries the term "scrofula" was now rarely heard. He held that scrofula should be regarded as a local tuberculosis specially prevalent in children kept insufficiently clean. He hoped, therefore, that the old term would be replaced by a better one in the coming century.

Dr. Feer (Basel) read a paper on a similar subject, the Prophylaxis of Tuberculosis during Childhood. In his opinion every third death and every other case of illness seen is based on tuberculosis. It seems probable that the speaker attributed the deaths of most infants under 5 months to this cause, because he remarked that at this age it is most fatal. He said that in infants it rarely affected the lungs, but invariably the glands. As the best prophylactic measure he regarded the stoppage of marriages between the tuberculous. Though this would always be difficult in Europe, he thought much could be done by warning parents. He mentioned that in Germany more is spent on alcohol than on meat, and advised that the money which could be thus saved should be spent on better dwellings. This naturally brought the speaker to the question of the State supervision of dwellings. He then dwelt on the necessity for absolute cleanliness of the body, and on the improvements which could be made in heating, stating that the open fires were more favourable to the much lower mortality of England. As regards diet he considered fats to be more essential than vegetables.

In the course of the discussion Dr. Valkenberg (Koenigsberg) recommended the more general adoption of lavatories and baths for children such as are to be found in the town he inhabits.

Meat Extracts.

Dr. Fürst (Berlin), encouraged by the researches of others, had continued the inquiries into the "question of meat extracts." He had found the proportion of albumoses so inconsiderable as to be of no importance. On the other hand, carbonate of lime and other carbonaceous material derived from the fibrous and connective tissues were present, and amounting in all to 6 or 10 per cent. of the extract. Fürst therefore insisted that meat juices could only claim to have the virtue of extractives, but not any purely nutritive properties.

German Medical Abstainers.

The young Association of German Medical Abstainers profited by the opportunity to call its 150 odd members together on this occasion. Some very interesting papers were read.

Dr. Kuedin (Heidelberg) read a paper under the title Reaction and Attention as Affected by Alcohol, conceived in the same spirit as the one delivered by Mr. Victor Horsley in London some months ago. Similar experiments were adduced to show that even small doses of alcohol impair rapidity of thought and action.

Surgeon-Colonel Fiehn (Dutch East Indian Army) followed with a paper On the Effects of Alcohol on Europeans Residing in the Tropics. He spoke after a 20 years' experience, during the last six of which he was an abstainer himself, and watched the results in others also. He considered that Europeans arriving in the tropics soon suffer from dilatation of the heart, venous hyperæmia of liver and intestines and neurasthenia as the result of the non-variable climate, landscape, and temperature, whereas those who lived correctly became acclimatised in course of time; others who indulged in alcohol frequently gave way to a severe depression of mind and spirits. Recently the Governor of Atcheen had occasion to send a large military expedition active service for some six months under very trying climatic conditions. All men were limited to 2 ounces of gin daily, and the surgeon with the force set the example of total abstinence. Though all the troops came through the ordeal very well, those men who abstained were generally both mentally and bodily fresher than those consuming the small ration allowed. Similar experiences were gained in the last Russo-Turkish war.

In the course of the discussion reference was made to the late Dr. Kohlf's observation that abstinence from salt diminished perspiration.

School Hygiene.

The fifth meeting of the German Society to Promote School Hygiene was also held on the same day. Its objects are to schools, secure the appointment everywhere of medical officers to the reduction of the weekly hours of mental work at schools to twenty for masters and twenty-four for scholars, the bettering of the master's position, and the achievement of other points bearing more particularly on the German system.

An interesting paper on the Psychological Aspect of School Life was read by Drs. Gerhardi and Dr. Karmann (Leipzig). They advocated the further teaching of first aid at schools, the masters being educated to enable them to instruct the pupils.

Dr. Schmidt-Monard (Halle) dwelt on the cause of deficient aptitude in school children. Since 1898 endeavours have been made in Germany to teach these children in separate classes in which the standard of education aimed at was lower. Already 7,000 such classes were in existence. It had been found that these children were also deficient in physical attributes, and resembled those 1½ to even 3 years younger. As to the causes, he thought that domestic circumstances were chiefly operative, and that in 40 per cent. the parents were morally responsible. When both were addicted to alcohol the children were invariably bad scholars. The sense of hearing was also very badly developed, as many as four-fifths of these children had adenoids. Attention should therefore be given to this point. Such children should not be kept too long with those more capable: many could be weeded out, as idiots or absolutely incapable. For all these purposes he insisted on the appointment of medical officers to schools.

Other papers were read, one being on the foundation of asylums and retreats.

THE BACTERIAL PURIFICATION OF SEWAGE.

Continuous Filtration.

Since the time when Scott-Moncrieff, Dibdin, Cameron and other experts introduced their schemes for the bacterial purification of sewage experience with regard to the relative and special value of the various methods has been rapidly accumulating.

In the light of this experience there can be no reasonable doubt that this purification, through the agency of bacteria, is the most rational, economical, and effective method at our disposal. The questions of chief interest in this connection at the present time are—which of the various schemes for bacterial purification are the best, how the merits of these various schemes are to be decided, how far we may depend upon them for eliminating disease germs from sewage, and how we are to deal with the complication of trade effluents.

The recent publication of Dr. Rideal's excellent book on "Sewage and Sewage Purification" comes most opportunely for those who are interested in this complicated and difficult problem. Dr. Rideal not only gives us the advantage of his wide and practical experience in the subject, but also a clear and graphic summary and review of the best methods which have been employed for sewage purification up to the present

The writer of this article has made free use of the information contained in Dr. Rideal's book, and gratefully acknowledges the help which he has derived from it.

THE SEPTIC TANK AND "INTERMITTENT FILTERS," OR "CONTACT BEDS."

In the early numbers of the BRITISH MEDICAL JOURNAL of this year (pp. 24 and 83) descriptions will be found (I) of the "septic tank," devised for the preliminary treatment of sewage, in which much liquefaction, solution, and molecular disintegration of organic matters are produced by the anærobic organisms; and (II) of the so called "intermittent filters" or "contact beds," in which further disintegration and final oxidation are effected chiefly through the agency of the ærobic organisms.

In the present article the writer proposes to take advantage of inspections recently made by him of certain installations in which "continuous filters" are employed, and to compare them with those schemes in which the septic tank and intermittent filters are used.

The installations inspected were those of Scott-Moncrieff at Caterham, of Stoddart at Horfield and Knowle near Bristol, and of the International Purification Syndicate at Reigate.

SCOTT-MONCRIEFF'S METHODS.

Public attention has been diverted from the valuable pioneer work in sewage purification which Scott-Moncrieff commenced some ten years ago. The revelations made through the genius of Pasteur with regard to the true nature of fermentation and putrefaction, together with his own observations on the wonderful liquefaction of solid organic matters which goes on in the sewers of our great communities first set Scott-Moncrieff thinking "that nature might be capable of purifying sewage without the aid of chemicals," and started him upon lines of inquiry which have closely occupied his time and thoughts during the last ten years.

The problem which he set himself to solve was (I) by means of natural processes to convert the offensive solid matters in sewage into a soluble form and into such compounds as would be readily oxidised (thus doing away with sludge and preparing the organic matters for final mineralisation); (2) to complete the oxidation of the organic compounds contained in the sewage thus treated, with the formation chiefly of water, carbon dioxide, and nitrates.

In 1891 the opportunity occurred to him of carrying on his experiments on a practical scale, and the apparatus was set up at Ashstead for dealing with the sewage of a household containing ten to twelve persons. This apparatus consisted at first only of a "cultivation tank" (Fig. 1, D). The tank is 2½ feet wide, 10 feet long, and about 3 feet deep at its deepest part. The entire sewage and waste water of the house (excepting the grease) finds its way into one end of the tank (at B). The liquid portion rises through a perforated grating (E) at the bottom of the tank, and then through a layer of large flints till it reaches the level of the outflow pipe (J), which is about 2 inches above the level of the invert of the drain. The mean depth of the filtering material is about 14 inches, and the cubic space of the channel beneath the grating is only about 5 cubic feet.

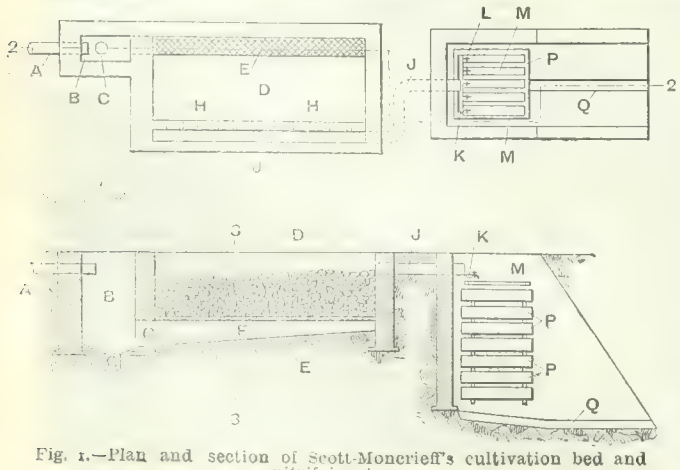


Fig. 1.—Plan and section of Scott-Moncrieff's cultivation bed and nitrifying trays.

The invariable result obtained from this tank, and from other similar installations, where an allowance of 3 to 4 cubic feet of flints is provided for each inhabitant, has been that almost complete liquefaction of the solid matter goes on continuously, and that the sludge in every case is a negligible quantity. By passage through the tank "the compound nitrogenous substances are broken down to a great extent into nitrogen as free ammonia, and the carbon compounds into carbonic acid and water."

PURIFICATION OF THE EFFLUENT FROM THE CULTIVATION TANK BY NITRIFICATION.

Some years were spent in attempts to produce the maximum oxidation of the effluent from the cultivation tank, with the aid only of the aërobic and nitrifying organisms. At last a very simple apparatus was devised by means of which "nitrification" is carried out to an extent which has not been attained by any other method.

Nine wooden boxes (P.P.) the "nitrifying trays," with perforated bottoms, each of them 2 feet long by 7 inches wide and 7 inches deep, filled with coke about the size of beans, are arranged one over the other, with a clear space of 2 inches between each.

The effluent from the cultivation tank is evenly distributed over the surface of the coke in the topmost boxes by "tippers," that is, V-shaped troughs (MM), so arranged that they discharge their contents automatically at intervals of about every seven minutes.

This system, it will be noticed, is automatic, and requires no skilled supervision or repair.

RESULTS PRODUCED BY THIS SYSTEM.

The following results are produced;

1. An almost complete liquefaction and solution of the solid organic matters in the cultivation tank. Consequently a reduction of "sludge" to a negligible quantity.

2. A metabolism in the organic ingredients of the sewage by which they are broken up, rendered unstable, and prepared for final oxidation.

3. A great reduction in the free and albuminoid ammonias and oxygen consumed.

4. An extraordinarily rapid nitrification—that is, oxidation of the nitrogenous compounds, through which nearly the whole of the nitrogen present in the effluents has been converted into nitrates. The fluid passes through the whole series of trays in about 8 minutes at the calculated rate of 1 gallon per square foot per hour, which is equivalent to more than 1 million gallons per acre in 24 hours.

5. A reabsorption of oxygen from the air to the extent of 6 c.cm. per litre of the fluid.

Dr. Rideal, who has made an elaborate study of Moncrieff's installations, states with regard to the final effluent from the Ashstead nitrifying trays that "it could be easily 'finished' by a fine filter without fouling the latter, or could be beneficially applied to a small area of land, or could be mixed with a river of small volume not only without pollution, but possibly with an actual benefit to the stream."

THE CATERHAM INSTALLATION.

The most notable installation of the Moncrieff system is at Caterham Barracks, where works have been constructed to deal with about 16,000 gallons daily of extraordinarily strong sewage.

The whole space occupied by the works is about 200 square yards. The process is here again characterised by its intense activity and rapidity. As much as 35 parts of ammonia per 100,000 have been found in the hydrolysed sewage—that is, the effluent from the cultivation tank—and over 29 parts of nitric nitrogen have been obtained from the trays.

The final effluent escapes as a clear colourless fluid, free from smell, and non-putrescible, even when incubated for some days. It is used for irrigating the side of a very poor chalky-soiled slope of ground. The highly fertilising power of this effluent is made evident by the luxuriance of the crops on the parts where it is applied.

Theoretically Moncrieff's system may be regarded almost as an ideal one, at any rate for dealing with simple domestic sewage. It fulfils those important conditions for bacterial purification upon which Rideal lays such stress, and which

a priori are obviously essential to effective and economic working—namely, the provision of separate zones or areas in which "each class of bacteria can naturally choose its own habitat and work successively to others." For instance, in the cultivation tank anaërobic conditions are provided (excepting near the inlet and surface), in which the anaërobic organisms can continuously carry on their work of hydrolisation, liquefaction, and molecular disintegration.

In the nitrifying trays a transition to aërobic conditions—commenced already at the surface of the cultivating tank—takes place rapidly as the fluid percolates from tray to tray, until in the lowest the nitrifying organisms whose function is to complete the oxidation into nitrates have free and uninterrupted play. These conditions are not merely theoretical. Sims Woodhead "in some experiments on coke-breeze filters erected on the upward filtration principle, found that in samples taken from the deeper parts of the filters anaërobic organisms were more numerous, and ammonia was present in large quantity; whilst, taking the sewage as it ran from the surface, aërobic organisms prevailed and oxygen was present, with the result that nitrates were the predominant feature."

Again, Rideal's numerous analyses of the sewage treated on the Moncrieff system, and of the resulting effluents, show plainly that whilst the anaërobic organisms which produce ammonia, etc., predominate in the cultivating tank, they are replaced in the nitrifying trays, first by the producers of nitrites, finally and entirely by the producers of nitrates.

Finally, the process appears to be capable of conserving nearly the whole of the original nitrogen in the sewage instead of dissipating it in gaseous forms, which is one of the most prominent features of other processes. More than this, nearly the whole of the nitrogen so preserved is transformed from the useless and noxious combinations in which it occurs in sewage into nitrates, that is, into that form of nitrogenous compound which is most essential to the nourishment of plant life. On the high authority of Nobbe, it is calculated that the optimum amount of nitric nitrogen required for the nourishment of plants is about 8 in 100,000 parts of water, which corresponds exactly with the amount found between the eighth and ninth nitrifying trays of the Ashstead installation.

At the present moment disappointment about the broken promises of profit in the past seems to make everone look upon sewage only as a nuisance to be got rid of.

The results achieved by Scott-Moncrieff, however, plainly indicate that by bacterial proceses properly conducted the dreams of Chadwick, the ideals of Warrington, and the demands of Crookes need not be despaired of; in other words, that the foul products of human and animal excreta, together with the foul refuse from households, which at present chiefly contribute to the pollution of our soil, our streams, rivers, and subsoil waters, may by natural processes be converted into the harmless compounds which are indispensable for the nourishment of plant life.

In his book on the *Wheat Problem*, p. 38, Crookes estimates that "in the sewage and drainage of towns we hurry down to the sea fixed nitrogen to the value of £16,000,000 per annum." Scott-Moncrieff points out that by bacterial processes properly carried out 90 per cent. nitrification of the total nitrogen in the effluent can easily be obtained from ordinary sewage; and this, based upon the cost of nitrate of soda, works out to about £14,000,000 per annum for the sewage of the United Kingdom." From a practical point of view it is difficult to conceive a method, or series of methods, more effective than the Moncrieff system for the purification of domestic sewage.

It may be objected that the amounts of albuminoid ammonia and oxygen absorbed in the final effluents considerably exceed the standards usually prescribed; but this excess appears to be more than counterbalanced by the very high degree of nitrification and the large amount of oxygen dissolved (nearly 7 c.cm. per litre). At any rate this effluent has been shown to be non-putrescible; and the primary object of purification—next to the elimination of pathogenic germs—is "the production of an effluent free from putrescibility, and not one in which the chemical ingredients are below some necessarily more or less arbitrary standard."

These statements are not intended to imply that the Moncrieff system is perfect; nor that it is of necessity the most economical.

Excellent results were obtained at Manchester by means of the open septic tank, followed by double contact beds; and though the method of upward anaërobic filtration, as carried out in Moncrieff's cultivation bed, might be expected *a priori* to be more effective than the processes of anaërobic treatment in hollow septic tanks, it still remains to be completely proved whether this is so. Moreover, the addition of large solid fragments to the cultivation bed must add considerably to the initial labour and expense.

Possible Improvement of the Nitrifying Trays.

It is possible that the part of the installation which is designed for the ultimate oxidation of the organic matters contained in the effluent from the cultivation bed may be still further improved as regards economy of space, rate of "filtration," and complete oxidation. This question can best be considered in connection with a study of some of the methods of continuous filtration recently introduced.

(*To be continued.*)

ABDOMINAL OPERATIONS: THE RESUSCITATION OF DR. IMLACH'S CASE.

At a meeting of the Liverpool Medical Institution held recently, some of its members endeavoured to persuade the rest of that body to delete from its records the report of a Committee adopted in 1886. The subject of this report, was the operations of abdominal section performed by Dr. Imlach, although his name was not mentioned. The great majority of our readers have probably either forgotten, or never heard of, the report in question. Some will remember that Dr. Imlach performed abdominal section with much success, but yet with such frequency that some of his professional brethren were led to believe that in many cases the operation must have been unnecessary. These opinions were freely expressed in medical circles in Liverpool, and at length the subject was brought under discussion at the Liverpool Medical Institution. That body appointed a Committee "for the purpose of investigating the grave questions of practice and ethics involved in the performance of these operations." The Committee inquired as they best could, and presented a report, which was adopted by the Medical Institution. One result of that report was that Dr. Imlach lost his appointment on the staff of the hospital, and thereby his prospect of success in the particular line of practice which he had chosen for himself was greatly affected.

Some members of the Institution who at that time accepted the report, and joined in condemning Dr. Imlach, have since come to the opinion that that condemnation was unjust—that he was really a pioneer, and was harshly judged because he was too far in advance of his judges for them to appreciate his work. They therefore summoned the meeting of the Liverpool Medical Institution to which we have referred and endeavoured to persuade the Institution to delete the report from its records. This they failed to do. An amendment was carried by 64 votes to 51, "that this meeting be adjourned *sine die*."

We think that all, whatever their views upon the main question, must admire the sense of justice, and the desire to repair what they consider to have been a wrong, which has led those who moved the resolution to come forward and say that they had made a mistake and acted wrongly, and to try to persuade others to join them, and to undo that wrong in the most complete fashion possible.

It was, however, hardly to be expected that those gentlemen who drew up the report and who remain of the same opinion now as in 1886 would allow the motion to pass without trying to justify their past action. Dr. Imlach's friends cannot reinstate him in his hospital, for his place has been filled; and, if they could so reinstate him, they could not give him back the fourteen years that have passed. We can say these things without fear of being misunderstood, for in 1886 this journal took the same view of Dr. Imlach's conduct as his friends do now. We then said that Dr. Imlach was "passing through a storm of obloquy, raised artificially by persons not in a position to judge either him or the surgical operation with which his name is honourably associated"[1] The conveners of the meeting begin

[1] British Medical Journal, February 13th, 1886, p. 330.

by asking the Institution to delete the report, because they think that the holding of such an inquiry was not the business of the Medical Institution, and because they consider the Committee was not appointed in a proper way. But the Committee having made its report, it stands or fall upon its merits, and how it came to pass that certain persons made it ceases to be material. Dr. Imlach's friends strongly criticise the method of inquiry adopted by the Committee, and we agree with their estimate of the value of the report. But the task of the Committee was a difficult one; and faulty as its methods were, it is not easy to point out in what better way it could have inquired under the circumstances, for Dr. Imlach did not give the Committee the assistance that its members wished for from him. We remarked at the time that "the question of science and practice has been overwhelmed or kept out of sight by the personal considerations involved."

The report made no reflection upon Dr. Imlach's skill as an operator. The only fault found was that the cases for operation had not been well selected; that some operations had been done which were not necessary, and that the nature of the operations had not always been properly explained to the patient. How can these things be gone into again fourteen years after? and how can the signatories to the report who have not changed their view be asked to have it set aside without reinvestigation?

Dr. Imlach's friends would perhaps have done better to show their admiration of his skill and courage, and their confidence in his judgment and integrity, by offering some kind of public tribute to him, as an emphatic expression of their own opinion. No one could object to their doing that, whereas to reopen the old controversy must inevitably lead to differences of opinion.

We would add a few lines on the question of general interest which this local discussion raises and the lesson which it teaches. Dr Imlach's friends think that the Liverpool Medical Institution ought not to have embarked on the inquiry, that it was *ultra vires*. We cannot discuss the by-laws of the Institution; but, speaking generally, there is among a large section of the public an idea that doctors always stick together, that one doctor to shield another will say anything, and that if medical abuses exist in a hospital or elsewhere it is idle for the public to ask medical men to help to put them down. The effect of that idea in the public mind is to make people seek redress for wrongs, real or fancied, done by medical men, in the ordinary courts of law. But to hope to settle questions such as those, for instance, raised in Dr. Imlach's case, in an ordinary court of law, would be, to use a comparison of Sir James Stephen, like trying to pull out an eyelash with a pair of tongs—you may spoil the eye, but you won't get out the eyelash. The only way to avoid such things is for medical men to show that when complaint is made against a medical man, a medical tribunal can be found which will listen with an open mind to what is said, investigate without fear or favour, and report honestly to those whose right it is to have a report made to them. If for a moment we may assume that an inquiry into Dr. Imlach's professional conduct was called for, then we venture to say that, whether *ultra vires* or not, it would have been difficult to find a better tribunal to hold such an inquiry than the Liverpool Medical Institution. The main cause of the acrimony imported into the matter, the imperfect nature of the report, and the unsatisfactory subsequent proceedings lay in the fact that the person chiefly concerned did not co-operate with the inquiring Committee. Had there been such co-operation, and full and frank explanation of everything that seemed to need explanation, the result might, and probably would, have been different.

THE VITAL STATISTICS OF IRELAND.

The fact that we are able at this comparatively early period to review the thirty-sixth annual report of the Registrar-General for Ireland, dealing with the statistics for the year 1899, is worth noting. While making full allowance for the fact that the statistics contained in the corresponding English report are necessarily more elaborate and complex, it is impossible in comparing notes to avoid the surmise that a delay of twelve or fourteen months before the complete English statistics for any given year are available is somewhat excessive. We accept to the full Dr. Farr's dictum with respect to the English annual reports: "It is important they should be done well. It is desirable only in the next degree that they should be done quickly." But would it not be practicable to combine the present "well done" with increased expedition?

A Period of Comparative Prosperity.

We welcome the appearance of three plates in the report for Ireland, which enable one to grasp at a glance certain important facts respecting the vital history of Ireland. It is desirable that such aids to investigation and to comprehension should be more freely utilised in statistical reports. The first diagram shows that since 1880 the marriage-rate has appreciably and fairly steadily increased. The birth-rate likewise has not shown the same decline as in England, for although it fell from about 25 in 1880 to 22 in 1890, it rose again steadily until 1896 when it was 23.6 per 1,000 of the estimated population. Along with this, it is interesting to note that the stream of emigration has declined from 70,477 in 1889 to 32,241 in 1898. It is clear that this distressful country has been enjoying a period of return of comparative prosperity. The birth-rate is so greatly affected by emigration that a study of the birth rate in relation to the number of married women at child-bearing ages would be a most welcome addition to a future report and would throw important light on an obscure problem.

Causes of Death.

Turning to deaths, we venture to draw attention to a deficiency which somewhat diminishes the value of the present report. In Table IX we have a comparison of the death-rates from certain causes of death for eleven years. Their value would be immensely increased if, as in the English reports, the series were given for all the years for which records are available. The value of comparisons increases in proportion to the length of the series for which the comparison is made. The statistical student would be specially grateful if the necessity of referring to back numbers of annual reports could be avoided. It is true that in Diagram 3 the comparison of deaths from certain causes of death is carried back for twenty years, but this is not far enough. Why not go back to 1863, the year in which the first report was issued?

Zymotic Diseases.

We notice in Diagram 3 a curve is formed of the aggregate of all the "principal zymotic diseases." We thought the day was passed when comparisons of the mortality from the sum of these diseases were regarded as having any practical value. What we require is comparisons of single diseases, not of such heterogeneous diseases as diarrhœa and diphtheria, whooping-cough and enteric fever. Thus comparing the eleven years 1889 99, the high zymotic mortality shown in the diagram in 1893 was caused chiefly by a high death-rate from diarrhœa and diphtheria, while whooping-cough and small-pox were below the average; a high zymotic mortality in 1897 was caused in large measure by excessive whooping-cough; while in 1898, a year of comparatively low zymotic mortality, the death-rate from enteric fever was 0.28, as compared with an average from this disease of 0.19 per 1,000 inhabitants. It is clear that the only safe plan is to contrast single diseases, not groups of diseases.

Tuberculosis.

The statistics as to tuberculosis are interesting. A map of Ireland shows the deaths from tuberculosis in every district during the year 1899. From this map it appears that in three of the unions the deaths from this cause were less than 10 per 10,000 of the population; in 83 the rate was 10 and under 20; it was 20 and under 28.3—28.3 being the average for Ireland; in 17 it was 28.3 and under 40; in two 40 and under 50, namely, Cork 46.1 and Belfast 46.7; and in two—namely, Dublin South 57.5 and Dublin 60.0—it was over 50 per 10,000.

The table on page 14, dealing with the different forms of tuberculosis possesses great interest. It may be hoped, however, that those intending to use this table will refrain from quoting from column 10, which gives the percentage of deaths caused by the various forms of tuberculosis to total deaths, a method of statement the well-known fallaciousness of which should prevent its use. In column 7 the death-rate per thousand of estimated population is given for all forms of tuberculosis combined. It appears from this that the death-

rate from this disease has remained stationary, or possibly slightly increased (2 6 per 1,000, average of 1871-80, and 2 7, average of 1891-98). The death-rates from the different forms of tuberculosis are not separately stated. As, however, the numbers of annual deaths and the average number for groups of years are given, and as the population figures are given on page 162 of the same report, we can obtain the following table, from which it is easy to calculate the respective death-rates:

Average Number of Annual Deaths from Tuberculosis Registered in Ireland.

Year.	Phthisis.	Tabes Mesenterica.	Tuberculous Meningitis.	Other Forms of Tuberculosis.	Approximate Population in Central Year of each Period.
1871 80 ...	10,353	1,362	1,108	934	5,280,000
1881-90 ...	10,331	1,060	946	829	4,940,000
1891-98 ...	9,728	968	979	986	4,600,000
1899... ...	9,480	1,047	1,013	1,043	4,531,185

It is clear that the reduction in each form of tuberculosis is much smaller than has occurred in England.

Cancer.

The value of the cancer statistics for Ireland is considerably increased by the classification each year of the deaths from this disease, according to the part of the body affected and according to age. As time goes on these statistics will steadily become more valuable, especially as we find that in 1899 in only 41 out of a total of 2,654 deaths from cancer was the affected part of the body unspecified.

In the preceding remarks we have not exhausted the interesting contents of this valuable report. The meteorological returns supplied by Sir Jno. W. Moore, M.D., are exceptionally full and complete.

SOUTH AFRICAN HOSPITALS COMMISSION.

The Commission left Johannesburg on September 14th, taking evidence at various places in Natal on its way from the Transvaal.

Natal Hospitals.

At Elandsfontein Lieutenant-Colonel Edge, speaking of the hospital at Sterkstroom, admitted that the staff was undermanned, but considered that the patients were well cared for.

Lieutenant-Colonel Hartley, V.C., complained that the medical work was hampered by red tape, and maintained that with a freer hand the medical staff could do better.

At Standerton Lieutenant F. G. Lawrence confirmed the evidence of other witnesses with regard to patients having been kept waiting on the platform at Bloemfontein station.

At Charlestown Sister Dowse, who was in Ladysmith throughout the siege, detailed the arrangements made for patients there, and said she considered they were very good. There was an abundance of everything until towards the end of the siege.

A Staff Sergeant of the Medical Corps, who refused his name, complained that the orderlies were reduced by being taken as servants to officers. He declared that although patients died for want of stimulants and nourishment, a large quantity of food as well as stimulants were found, after the siege, locked away by a medical officer. He also alleged that hospital milk was sold to refugees.

At Newcastle Colonel Gallwey detailed the arrangements made for the care of patients in Natal, and said very few complaints as to the working of the hospital had been received.

Ladysmith was reached on the night of September 16th, and on the following morning evidence was taken on board the train.

The Rev. Mr. Bruce and Archdeacon Barker testified to the admirable manner in which the sick had been cared for.

Major Daly, who had charge of the 19th Brigade Field Hospital, denied that the tents were overcrowded, and also stated that there was plenty of fresh milk, brandy, and port wine. Mr. Burdett-Coutts did not complain to him. Both medicines and food were regularly supplied to the patients. He denied that the dying man referred to by Mr. Burdett-Coutts was rubbing shoulders with a convalescent man.

At Estcourt the evidence given was to the effect that the hospitals at Estcourt, Frere, Chieveley, and Colenso were well managed.

At Mooi River, the Rev. O. Mullineux confirmed the statement that patients were lying in the 19th Brigade Field Hospitals in their clothes, and that they were on waterproof sheets without stretchers, but everything was being done to get them into the general hospital. In the field hospitals there were over 300 men, although they were only equipped for 100. The medical staff was deficient, and there was want of method in the working of No. 9 General Hospital, under Colonel Barrow. There was the same confusion at No. 8 General Hospital, but it was largely due to the inrush of patients. The sanitary conditions of General Hospitals Nos. 8 and 9 were bad.

The Commission at Pietermaritzburg.

On September 19th the Commission sat at Pietermaritzburg. The first witness was Mr. Bale, Attorney-General of Natal, and Chairman of the Association for the Relief of the Sick and Wounded. He had visited almost all the hospitals, and had noticed nothing which could form the subject of complaint.

Bugs and Red Tape.

He had heard, in regard to the Fort Napier Hospital at Pietermaritzburg, that the building was unsuitable for the accommodation of sick and wounded, as it was infested with bugs. The Association directed by witness supplied the military hospitals with necessaries, including brandy and clothing. He admitted that there was too much red tape. Sir William Stokes told him that too much attention was paid to organisation.

Dr. Max Blieden, formerly civil surgeon in the Fort Napier College Hospital, said that the barracks in Fort Napier were full of bugs' nests. These insects were found under the patients' splints. They tried several things to get rid of them, but only one room was cleansed, and that was by burning it down and rebuilding it. There was an insufficiency of fresh milk, and a chronic deficiency of clean linen. The condition of the wards was sometimes scandalous. The orderlies were too few in number, and the work was so organised as to make it laborious. Orderlies stole liquor which had been ordered for patients. Witness gave instances of what he described as the ridiculous red-tapeism which prevailed. The operating theatre was badly equipped.

Unwieldy Official Methods.

Colonel Stoneman, Chief Audit Officer to the Natal Field Force, who was on Sir George White's staff during the siege of Ladysmith, mentioned complaints which had been made in the hospital there. He conducted an inquiry during December, and found that there was a deficiency in bedsteads, bedding, tents, and utensils. This was remedied as soon as possible. Subsequently Sir George White did everything possible in the circumstances. The delay in obtaining stores was due to the unwieldy methods of official procedure. Owing to the faulty condition of the ditches round the tents the water entered the latter. Comforts intended for the patients were stolen, and two warrant officers were now in prison for this crime. Colonel Stoneman handed in his official reports in reference to Intombi Hospital.

Mr. Douglas de Fenzi, Clerk to the Legislative Council, and Secretary to the Sick and Wounded Relief Association, gave evidence regarding the niggardly management of the hospitals.

Nursing Sister Whiteman and Bishop Baynes testified to the satisfactory management of the College Hospital.

Private Fernside, Bethune's Mounted Infantry, stated that he suffered from dysentery for six weeks owing to improper treatment. He had been in seven hospitals, and was attended by 14 different doctors.

Colonel Johnstone, R.A.M.C., admitted that bugs infested the hospital, and also that men of the Hospital Corps were frequently drunk, for which he blamed the inhabitants of the city. No necessaries, he said, were wanting.

Hearsay Evidence.

The Commissioners arrived at Durban on September 19th, and resumed their sittings the next morning.

Among the witnesses examined was Mr. W. T. Edmonds, Honorary Secretary of the Durban Government Hospital, who admitted that the statements contained in a letter written by him to the *Spectator* were based on general allegations which could not be substantiated except by hearsay evidence. Questioned by Lord Justice Romer, he said the statements were made on general complaints, and he was unable to point to any facts to substantiate them. Thereupon the Commissioners ruled the witness's evidence out.

Transport of Medical Stores.

Sir David Hunter, the General Manager of the railways, described the arrangements for the conveyance of medical stores from the base at Durban. Everything was satisfactorily done, and no complaints were made. Articles from England had been delayed owing to [illegible] having failed to address them through some organisation which facilitated their distribution.

The Hospital Ships.

Mr. Sheridan, a masseur employed on the hospital ships (described in the *Times* as "a discharged masseur"), said that [illegible] there was only one nurse to fifty sick men, ten or [illegible] condition. There was considerable grumbling. [illegible] orderlies struck in a body on one occasion. Several ships had [illegible] food, and brandy and vegetables were not to be obtained. [illegible] mentioned the case of a trooper of the Imperial [illegible] board the *Lismore Castle*. The patient needed [illegible] got two glasses of condensed milk daily. The trooper [illegible]

Surgeon-Major McCormack, who was in charge [illegible] replying to Lord Justice Romer, said that he [illegible] daily. He found vegetables, bread, and brandy, [illegible] by the medical officers on board. There was no scarcity, but the supply of milk was somewhat limited. Everything possible was done to meet the demand. The bread supply was ample. Witness made the same remarks with reference to the *Lismore Castle* and the *Simla*. He had not heard of any strike on board the latter, nor any complaint regarding the *Trojan*.

The Rev. Mr. Hodges spoke well of the hospitals in and around Durban.

Mr. Balfe gave the hospital authorities at Estcourt every credit for treating the patients splendidly.

Mrs. Benson, Secretary of the Durban Women's Patriotic League, said that she had visited the up-country hospitals, and thought they were well conducted. Everything possible was done. Some little difficulty was experienced in handling the cases in the initial stages. This was due to the organisation, which was then not completed.

THE "ORCANA."

On September 21st the evidence taken had reference mainly to the hospital ships. The *Orcana*, on board which the witness Sheridan had stated that there was only one nurse to 50 patients, had in the meantime arrived at Durban.

Sister McNeil, the nurse referred to, in reply to Lord Justice Romer, said that Sheridan's statement was absolutely untrue, and it was also incorrect that there was no brandy or chicken essence for the men. There were plenty of necessary medical comforts. It was untrue that there was an insufficient supply of bread. There was no lack of orderlies. The statements that the men were insufficiently fed, and that they were suffering from scurvy and received no vegetables, were quite unfounded. The *Orcana's* patients were well satisfied

Mr. S. Lestrange and Major Gerrard also denied the allegations of the witness Sheridan given above as to bad management on board the *Orcana*.

Major Gerrard put in official returns relating to the ship, showing that there was an ample supply of everything all through.

FORT NAPIER HOSPITAL.

Dr. Stuart, a civilian doctor who acted at Fort Napier Hospital from October 12th to March 13th, said that the patients there could not have been better looked after. Part of the hospital was infested with bugs, but he thought that the men, beyond slight discomfort, did not suffer in health on that account. Most of the wood and iron buildings in Natal were infested with bugs. It was customary at Fort Napier to inspect one or two beds daily, and thus prevent an increase in the vermin. Efforts were continually being made to keep them down. Nobody wanted for necessaries, and there was abundance of medical comforts, and even of luxuries. The doctors did their best, and the orderlies were very good. The patients often asked not to be sent out of hospital. In reply to Dr. Church, the witness said he had had an opportunity of judging the condition of the barracks hospital besides the hospital proper. At Frere Hospital the sick and wounded were well looked after. There was no substantial cause for complaint, but there was a scarcity of fresh milk. He added that he was afterwards placed on board the *Trojan*, having been invalided on July 8th. He heard of no brutality on board, and his own experience was delightful. He was subsequently transferred to the *Orcana*, where he did not find any deficiencies. The men were well supplied with everything, and many were sorry to leave.

Dr. Woods, Civil Surgeon at Fort Napier from December 9th, said that the 3,075 patients were well looked after. There were few complaints. The complaints regarding the bugs were well founded, but he did not think they caused any serious injury. Some difficulty was occasionally experienced in obtaining fresh milk. After the battle of Colenso the patients arrived at the rate of 2,000 in two days. Even then he thought that practically all the enteric patients got fresh milk. On the whole, the civil surgeons worked well with the Royal Army Medical Corps. He heard only of one case of bugs being found in the splints of a patient. This was in the case of a man whose leg had been in splints for seven weeks. On the removal of the splints the vermin were found inside. The bugs were not sufficient to render the place unfit for use as a hospital. The men seldom complained. All possible steps were taken to suppress vermin in the wards. The witness was afterwards employed on board the *Orcana*. The men received the best possible treatment on board. The men were not prevented from complaining. Nurse Lough, although untrained, gave great help and assistance. The principal medical officer on board the *Orcana* produced official papers showing the daily expenditure of each ward.

THE LADYSMITH SICK AND WOUNDED.

Corporal Fraser, of Bethune's Horse, said he was a patient at Colenso after the relief of Ladysmith. He received fair treatment. There was a great rush, and everybody was working at high pressure. Consequently some did not receive the necessary attention. One patient who had not received any attention for eight hours died. There was a scarcity of orderlies. Fraser was subsequently on board the *Orcana* for ten days, where he was well treated. He was afterwards transferred to the *Trojan*. He noticed no serious case of complaint.

THE "SUMATRA."

Nurse Roberts, who joined the *Sumatra* at Durban on November 4th, 1899, deposed that no material for dressing wounds was then on board, but necessaries were obtained in the town. There were two other nurses and twenty five orderlies on board. The patients were satisfactorily looked after, and there was a sufficiency of necessaries on board; but on the voyage from Durban to Capetown the men were only fed on bread and tea.

Lord Justice Romer: Surely they had meat?

The Witness: I never saw it. All was done that could be done.

Lord Justice Romer: It is impossible.

Asked by Dr. Church to give some particulars regarding the arrangements on the *Sumatra*, the witness said that this transport received the first batch of sick and wounded, consisting chiefly of Gordon Highlanders and Leicesters from Elandslaagte. The witness was nursing sister in charge.

Dr. Church: Had they no beef-tea?—The witness repeated her statement that on the voyage to Capetown the men had only bread and tea. Dr. Laig (?), who was in charge, said to the witness that red tape prevented him from ordering necessaries. Besides Dr. Laig there was only the ship's doctor on board to attend to about 300 sick and wounded men.

Lord Justice Romer: Then 300 men on the voyage to the Cape had nothing but bread and tea? I should have thought all would have died. How many did die?

The Witness: None.

Asked whether she had the same fare, the witness replied that she had other food. The witness afterwards joined the *Lismore Castle*. There was no important cause for complaint there.

Replying to a question put by Dr. Church, Nurse Roberts said the wounds were cauterised with nitric acid.

Dr. Church: Then they were bandaged and were not washed again until the arrival of the *Sumatra* at Capetown?—Some were washed.

THE "ASSAYE."

The witness was subsequently attached to the *Assaye*. The man in charge there was absolutely unfit for his post. He refused to allow the men to be properly cared for, and refused to attend them himself.

Lord Justice Romer: What form did his refusal take?

The Witness: I asked him for dressings, and the doctor replied, "Don't trouble." The witness added that men in agony lacked attention. The ship's officers said they would report the doctor, and the captain finally ordered him to attend to his patients, about fifty of whom were suffering from bullet wounds which were still discharging. On arrival at Capetown the witness reported the doctor to Major Latham and Colonel Summer. Although lint bandages were on board, she was denied access to them until the matter was reported at Capetown. The witness proceeded to England on board the *Assaye*.

The Chairman remarked that the witness seemed to have been unfortunate in her associations with doctors.

Nurse Roberts continuing, said she was informed at Capetown that, as a result of her complaints, she would find it difficult to get further work. She had not been employed on hospital ships since.

THE "LISMORE CASTLE."

An orderly on the *Lismore Castle* stated that a patient who alleged that he had only two glasses of condensed milk daily, and who subsequently died, was on diet. He got everything which the doctor thought essential. The patients were supplied with the necessary vegetables.

THE LIGHT THAT FAILED.

At the sitting of the Commission on September 22nd it was stated that Dr. Albert Morison who had been summoned to give evidence with reference to statements made by him in letters to the papers, had written to the effect that ill health prevented him from attending. The President pointed out that no medical certificate accompanied the letter.

SURGEON *v.* NURSE.

Dr. Van Niekerk, civil surgeon on board the *Lismore Castle*, and formerly superintendent of the Johannesburg Hospital, denied the allegations of Nurse Roberts, and stated that she was dismissed as being incompetent. Her statement that wounds had been cauterised with nitric acid was absolutely untrue, and wounds had never been left undressed for days as alleged. He added that he had never seen patients better fed or attended to than on board that ship.

An orderly from the *Assaye* partially corroborated Nurse Roberts's charges against the ship's doctor on board the *Assaye*, and admitted that there was friction between the nurses and the doctor. He did not notice that there was any lack of dressings. There were not more than five or six wounded on board. There was no trouble after leaving Capetown. There was plenty of food, and there was not the slightest undue suffering to the patients on that voyage. The statement that the men had nothing but bread and tea was absolutely untrue. During the two days' voyage from Durban to Capetown things were not properly organised, but the patients were well fed. He admitted that a testimonial was given to Nurse Roberts, signed by about 75 per cent. of the patients on board, thanking her for her kindness to them.

NO LACK OF FOOD.

Captain Van Konghnet, the Senior Naval Transport Officer here, considered that the statements of Nurse Roberts as to a lack of food were absolutely unfounded. The *Lismore Castle* the *Sumatra*, and the *Assaye* were not hospital ships, but invalid ships carrying cases almost recovered. The ships were victualled by the companies owning them, and no complaints had been received.

Captain Holland, Assistant Naval Transport Officer, who fitted up the *Sumatra* before her voyage, and saw all the invalids taken on board, stated that the men on board the *Sumatra* were nearly all wounded, but were fit to travel. He denied that the men were only fed on bread and tea. He had never heard a complaint about any ship until Nurse Roberts gave her evidence.

Lieutenant Brook produced departmental books showing that an ample supply of drugs and dressing was placed on board the ships.

Dr. Gilchrist, civil surgeon, spoke well of the management of the *Orcana*, on which he has been engaged since July last.

A COMFORTLESS SHIP.

Dr. Haggan, a medical missionary, who has had experience in New York and Melbourne, and is Secretary of the Durban Young Men's Christian Association, stated that he had visited the *Sumatra*, and found the arrangements the most comfortless he had ever seen. There were between 200 and 300 patients on board. The men slept in cots, and in many cases they had no pillows, while some were without mattresses. They were served out with chunks of bread. One Gordon Highlander who had been shot through the lower jaw, and was unable to open his mouth sufficiently to get the bread in, told witness it was the first food he had received for thirty-six hours. Witness had no complaints to make regarding the *Spartan*, and on the *Nubia* the arrangements were as near perfection as possible.

The Commission left Durban on September 25th for Naauwpoort and Kimberley.

WE have received from Doulton and Co., Limited, Lambeth, a new catalogue of sanitary appliances manufactured by them especially for use in hospitals.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

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British Medical Journal.

SATURDAY, SEPTEMBER 29TH, 1900.

MEDICAL INTERESTS IN THE GENERAL ELECTION.

Lord Rosebery, when he went on board the Liberal boat last Monday with Captain Lambton, and nailed his colours to the mast, enumerated as the "three great national reforms which cannot wait: Legislation in respect of temperance, the housing of the working classes—not on extreme and visionary, but on sound and practical lines—and fearless administrative reform, more especially of the War Office." Upon certain aspects, at least, of all these reforms the medical profession can speak with authority, and the present moment is opportune for the exercise of personal influence to impress on those who aspire to Parliamentary honours the importance of the medical questions involved. The mind of the candidate, if it is not altogether wax in the hands of electors whom he hopes to represent, is at least more ductile than it is apt to become when he is entitled to write after his name the magic letters M.P.

Upon the reforms which stand second and third on Lord Rosebery's list, the opinion of the profession has been expressed pretty fully and definitely. Whenever the broader sanitary problems of the day are studied, whether it be the prevention of zymotic diseases or of tuberculosis, the diminution of the terrible infantile mortality which now prevails, or the means for checking the increase of insanity, we invariably, when we attempt to probe the matter to the bottom, come down to the fact that the overcrowded tenements of great cities and the dilapidated, ill-ventilated cottages of the country villages are the main obstacles in the way of fundamental improvement.

As to administrative reform, the medical profession has time out of mind urged that there should be a Minister of Public Health, who should be directly responsible to Parliament. Under the present system, or want of system, there is no central Public Health office to deal with such questions as the prevention of the introduction of plague, and other zymotic diseases, into the United Kingdom; or to conduct negotiations with foreign Governments on such matters. The Local Government Boards in England, Scotland, and Ireland, the Privy Council Office, the Home Office, the Board of Trade, the War Office, the Foreign Office, the India Office, and even the Colonial Office, all have their fingers in the pie, but no one Minister is responsible.

Again, everybody, we believe, who has given any attention at all to the working of the Medical Acts, believes that the need for amendment is urgent, though all are not agreed as to the amount of change which is desirable. Yet it is excessively difficult to get any Government to take up questions of this kind. The General Medical Council has a Bill—a small Bill, but useful so far as it goes—to amend the Acts by giving to the Council power to remove a name from the *Register* for a limited period, and to the medical licensing authorities the right to withdraw his diploma from a practitioner whose name has been erased from the *Register*, but it had to be introduced as a private member's Bill, and suffered the fate which commonly overtakes such Bills. The British Medical Association has a much larger measure that would go to the root of many of the public evils which the present law is ineffectual to prevent, and we think that medical men all over the country would do well to take the opportunity of this election to impress on the candidates for their division the fact that amendment of the Medical Acts is urgently needed in the interests of the public, as well as of the medical profession.

In this connection it will be well not to lose sight of the fact that the present Government has practically given a pledge to place on the statute book the clauses dealing with the practice of medicine and of pharmacy by companies, which, though drafted by the Lord Chancellor and approved by the House of Lords, were turned out of the Companies Act of this year at the instance of the Board of Trade. The public importance of redeeming this pledge at an early date ought to be impressed on candidates of both parties, for under the present defective law vested interests are growing up and adding to the weight of the opposition which must be expected to any such measure.

Further it must be recognised that the Midwives Bill is certain to be brought forward again, and that its supporters are likely to make a strong effort to induce the Government, whichever side be in office, to take up the question, and introduce a Bill on the same or similar lines as a Government measure.

Other public questions affecting medical interests which are ripe, or over-ripe, for legislation are the amendment of the Lunacy Acts, the need for giving fixity of tenure to medical officers of health, and for improvement in the position of Poor-law medical officers in relation to the parish and district councils by which they are appointed. It has been impossible to arouse much real interest in the minds of members of the last Parliament in these matters which yet raise administrative questions of great importance to the public weal. It is, however, not improbable that the candidate may be found to have a mind more receptive than the member.

There are signs that an effort is to be made by the opponents of scientific research to make acceptance of their peculiar doctrine in regard to experiments on living animals a test of political faith. It cannot be too earnestly impressed on all who are ambitious to have a share in making the laws of this country that this is not a question to be decided by sentiment: it is a matter of the greatest practical importance for the welfare of the nation and the general progress of mankind. The antivivisectionist fraternity, though small, is active and noisy, and it is not too scrupulous in its manipulation of facts and figures. We recommend all candidates who are likely to be heckled on

this subject to prepare themselves by a study of Mr. Stephen Paget's book.[1]

As to Lord Rosebery's third great national reform, the re organisation of the War Office, Lord Salisbury said in his manifesto on Monday that "it will be amongst the most urgent duties of Parliament and the Government, now that peace is apparently restored, to investigate and remove the defects of our military system in the light of scientific progress and the experience of other Powers." Among the defects of our military system which most urgently call for investigation "in the light of scientific progress" are those in our military medical service, which have again and again been pointed out in these columns. Mr. Wyndham said at Dover on Tuesday that we must have three army corps for home defence, and an army at home to support and supply the army abroad. An efficient medical corps with proper status and authority, and an adequate establishment of officers and men, is an essential part of any properly equipped army. Yet, as has been abundantly proved from the bare official statistics, the Royal Army Medical Corps is below the minimum requirements of the army corps. More officers and more men are required, not only for the treatment of the sick and wounded, but for the conduct of the sanitary administration of the army. Moreover, a way should be found to ensure that representations as to sanitation of camps and the prevention of disease receive due consideration from commanding officers, who should be instructed as to the fundamental importance of these questions.

It is of course part of the wisdom of a candidate to refuse to pledge himself to legislation the details of which he has not studied. But this reply becomes a mere excuse when his attention is invited only to the general principles which should be embodied in the legislation desired. All the points which have been mentioned here—and others doubtless will occur to our readers—involve matters of principle to which candidates may well be invited to give their attention, and upon which they ought to have no difficulty in expressing an opinion.

MR. BURDETT-COUTTS AND THE HOSPITALS COMMISSION.

MR. BURDETT-COUTTS has assured all whom it may concern that he will stick to his guns, adding—doubtless by way of striking terror into his enemies—that he has not yet burnt half his ammunition. So far his ammunition has been mainly of the nature of lyddite, which, according to the Boers, causes more smell than slaughter. The further bombardment which he promises will therefore be awaited by the public without any painful degree of excitement. In the meantime Mr. Burdett-Coutts is maintaining "an attitude of studied, if watchful, reserve." He does not appear to think it inconsistent with this attitude to bring against the press of this country what amounts to a general charge of publishing garbled reports of the evidence taken by the Hospitals Commission in South Africa. He says that the cabled reports have been filled with the evidence of officials, and that one would gather from these reports that there was never any ground for complaint and nowhere any room for improvement.

Whoever gathers anything of the kind from the reports must be as determined to look only on the bright side of the shield as Mr. Burdett-Coutts himself seems to be to see only the black side. The suggestion that at a time when political capital is being made of the "hospital horrors" by some newspapers, these very papers have joined with their contemporaries in a conspiracy of silence, which from a party point of view would be to their own disadvantage, would hardly commend itself to unprejudiced minds. Mr. Burdett-Coutts gives us a specific instance of the suppression of evidence which he alleges in the fact that in the report of a certain day's proceedings reference was made in only one London newspaper to the testimony of seven civilian doctors whom he describes as "the most important and reliable, because the most independent witnesses." The most obvious explanation of the strange unanimity with which able editors omitted the evidence of these gentlemen is that they did not think it worth publishing. We ourselves have throughout been careful within the limits of space at our command to give impartially a summary of all the evidence that we could cull from various sources, and we gave the gist of the evidence of the witnesses to whom Mr. Burdett-Coutts refers. But in point of fact it is, we think, impossible for any unbiassed person to resist the conclusion that what he calls the official evidence is in essential matters the most trustworthy. Much of the testimony that has been given against the hospitals bears upon its face the signs of personal spite, and of what may be called, in a professional sense, the *spretæ injuria formæ*. Already, in more than one instance, when charges made in the newspapers have been tested by the Commission, they have utterly broken down. Mr. W. T. Edmonds, who wrote a sensational letter to the *Spectator*, was forced to admit that he could give no proof of his statements except hearsay evidence, and he was ruled out. The statements of Nurse Roberts, who described an appalling state of things on the hospital ship *Sumatra*, were declared by Lord Justice Romer to be impossible.

Then there is Dr. Albert Morison, who is reported to have written not long ago that if he got a chance of giving evidence before the Commission, he meant to tell all he had seen, and asked people in England meanwhile to believe everything they heard as to mismanagement and even incapacity and wilful neglect. When summoned to give evidence before the Commission, however, Dr. Morison pleaded ill-health. We have no reason to doubt the genuineness of his indisposition, but it is certainly a pity that his letter of excuse was unaccompanied by a medical certificate, a fact to which the President significantly called attention. We may add that Mr. Burdett-Coutts himself does not seem to have much reason to complain of the suppression of some at least of the reports. On August 24th (according to the *Cape Times* of August 25th) Mr. T. R. Price, Traffic Manager, gave some remarkable evidence, from which it would be gathered that at the very time when, as Mr. Burdett-Coutts alleges, the sick and wounded at Bloemfontein were in want of supplies, he used the railway to convey the horses for his private

[1] *Experiments on Animals* (Fisher Unwin). Further information may be obtained on application to Dr. C. E. Beevor, Honorary Secretary of the Association for the Advancement of Medicine by Research (33, Harley Street, W.).

use consigned to the officer at the head of "army remounts."[1] We hesitate to believe this story, but we venture to invite Mr. Burdett-Coutts to depart from his attitude of watchful reserve so far as to explain what looks like an abuse of the privileges allowed him, to use the Traffic Manager's words, as "a distinguished passenger."

THE BONE MARROW IN INFECTIVE DISEASE.

It is now recognised that the bone marrow is one of the places where new red blood corpuscles are manufactured, but more doubt exists as to its relation to white blood corpuscles, at all events in health, for the myelocytes met with in certain cases of leukæmia are not a constituent of healthy blood. MM. Roger and Josué[2] have studied the structure of normal marrow in rabbits, guinea-pigs, and man, and have found certain differences, notably in the degree in which the venous system partakes of the character of blood sinuses. In general terms the structure of these marrows consists of a delicate but very evident connective tissue stroma, in the meshes of which three distinct varieties of cell are packed. These are the giant cells, generally multinucleated, the smaller reddish cells, out of the plasm of which red corpuscles are formed, the nucleus disappearing, and the marrow cells proper which are, roughly speaking, like white blood corpuscles, but somewhat larger. Of the marrow cells proper there are several kinds, the distinction being partly brought out by stains. There are the cells containing granules and a regular and round nucleus; such cells as these are found in the blood in so-called myelogenous leukæmia. Much more numerous are the cells with an irregular and notched nucleus, some of which contain granules taking an eosin stain, while others contain granules which either do not stain at all, or take up basic stains. In addition there is a variable amount of fat, which the authors hold to be characteristic of a resting stage, as it disappears when the marrow is stimulated into full activity. They hold strongly that the marrow is in health a source of a great number of white corpuscles, which for the most part are of the polymorphonucleated kind.

The most interesting part of the research, however, relates to the reaction of the marrow under the influence of various poisons. This is so marked and so constant that they consider the marrow to be the centre of defence of the organism against infections. Subcutaneous inoculations of staphylococcus aureus, of streptococci, of tubercle bacilli, and of other microbes were made, and also of antidiphtherial serum and other antitoxins, and of normal serum; certain inorganic poisons also were administered, such as arsenic, phosphorus, carbonic oxide, and others. Invariably the marrow showed strong reaction, though with distinctive differences according to the poison employed.

After a subcutaneous injection of staphylococcus of moderate virulence, local suppuration and a high degree of general leucocytosis occurred in forty-eight hours. At this time the marrow had become much more red, and an enormous proliferation of cells had taken place. This went on increasing for some days, till the normal marrow structure was lost, and the whole, or nearly the whole, of the fat had disappeared; the disappearance of the fat was confirmed by chemical analyses. The giant cells participated in this increase, but, contrary to expectation, only a few karyokinetic figures were to be seen during the proliferation. About the fifteenth day the marrow began to revert to its normal structure, and the fat to reappear. Streptococci produced practically the same result, but in all cases the marrow remained sterile and yielded no cultures. This fact seems to accord with another—namely, that various toxins free from living bacteria brought about the same result as the living bacilli. Cultures sterilised by heat, and extracts of cultures, that is alcohol precipitates or alcohol solutions of cultures, behaved in the same way.

Normal serum and antitoxins set up considerable reaction, but of a different kind; for whereas toxins and bacilli stimulated the special marrow cells into enormous proliferation, antitoxins and serum acted principally upon the cells producing red corpuscles. In man changes in the marrow have been observed in tuberculosis, and especially in small-pox, in which the changes go so far that Chiari has applied the term "osteomyelitis variolosa" to them. In diphtheria, however, the reaction, though distinct, is far less marked.

It will be noticed that these alterations in the marrow are not unlike those which have been observed in moderate cases of osteomyelitis; and it has long been known that osteomyelitis may be induced by subcutaneous infection in an animal with an injured bone, and that it has occurred in man without bone injury as a result of general infection from a wound elsewhere.

If, as Roger and Josué hold, the marrow is stimulated by some selective action in infections, it may be that the reaction, should it become excessive, passes beyond the stage of a defensive pouring into the blood of new cells, and the marrow may itself succumb to the violence of the process. But it is a little difficult to reconcile these observations upon cell increase during infection with such facts as those cited by Dr. McCrae in the British Medical Journal of March 31st, where septic infections occurring in cases of leukæmia appear to have had the effect of immensely reducing the number of white corpuscles in the blood. Still the experiments appear to have been both numerous and careful, and seem to prove that, under the influence of infections, there was always immense cell proliferation in the marrow, and also that the cells which had increased in the marrow were, in histological character and in staining reactions, identical with those found in increased numbers in the blood of the animal. The observations and arguments of the authors have an important bearing upon the pathology of myelogenous leukæmia and other forms of leucocytosis, and will well repay perusal both by pathologists and physiologists, whether they are disposed to

[1] Questioned as to the statement by Mr. Burdett Coutts as to his horse and two servants being allowed to go through to Bloemfontein at a time of very heavy demand on the stock of the railway, the witness said that that gentleman had interviewed him before his journey as to conveying these, and witness had told him he had better wait until he got to Bloemfontein. Less than a fortnight afterwards Mr. Burdett-Coutts wrote stating that he was anxious to get the mounts (he mentioned two horses in the interview) and the men up as quickly as possible. He asked that they should be consigned to the head of the Army Remounts Department, and that the payment should be made by him at the other end. The letter was sent by Mr. Abercrombie, who was commissioned to see to certain things being sent up with the horses. Witness believed the two horses were consigned as military remounts, and that they went as part of the military requirements.

[2] *La Moelle Osseuse.* Par MM. H. Roger et O. Josué. L'Œuvre Médico-chirurgicale No. 21. Paris: Masson et Cie. 1899.

accept or reject the contention that the activity of the marrow is protective.

ARTIFICIAL LIMBS FOR WOUNDED SOLDIERS.

Artificial limbs in considerable numbers may be required by soldiers who have lost an arm or a leg, or even both, in the South African campaign, and Mr. Fripp puts a very pertinent question when he asks "what general supervision is exercised over" their supply. Several interests have to be protected. First of all there is the wounded man's, but there are also the interests of the generous giver of funds, of the appliance maker himself, and, lastly, those of the public. Everybody recognise hat nothing but due supervision will prevent waste. And it does not impute anything but ordinary human nature to the instrument maker to suppose that he will turn his work out all the better for the expectation that it will be inspected by persons qualified to appreciate its merits or point out remediable defects. The public are concerned because artificial limbs, especially inferior ones, do not last for ever; and whatever the Government and private individuals may do now, sooner or later many of the maimed will, it is to be feared, become a burden on the public at large.

Such a general organisation as we have in mind should not be too centralised, because, apart from other qualities, such as design and material, the essential requirement in a good artificial limb is fit. This cannot be ensured if the appliance for a man who remains in, say, a Yorkshire village is made in London. Obviously a person so placed could, without great expense, pay half-a-dozen visits to Manchester, Sheffield, or Leeds. Unless the sufferer and the appliance maker can both be easily and repeatedly brought together, with the appliance, under the eye of a competent surgeon, there is risk of the instrument maker employing his tongue or his pen to make the patient fit the artificial limb instead of his hands to make the limb fit the patient.

Economy is to be attained not so much by cutting down charges—good work ought to be properly paid for—as by seeing that each appliance is suitable for the case. What, for instance, could be more wasteful than the gift to a patient whose lower extremity has been amputated at the hip-joint of a very elaborate limb which by-and-by the owner will never take out except tucked under his arm?

Perhaps the best arrangement for general supervision would be a small central committee in London, with branch committees in Edinburgh, Dublin, and several great provincial centres. The London committee would collect and supply general and the other committees local information, each committee to be executive for its own district. We are not forgetting the existence of the various surgical appliance societies and funds. If granted due representation on the committees suggested they would probably be willing to co-operate.

EXPERIMENTS ON MALARIA.

The experiments which, as we announced some time ago, were to be made in Italty, under the direction of Professor Grassi, have now been completed. A summary of the results obtained has been published by the Accademia dei Lincei. Two objects were aimed at. 1. To prove that malaria is due to infection by the bite of an *Anopheles*, and not, as the name implies, to any action of the air of infected districts. 2. To overcome the practical difficulties in the way of securing to the inhabitants of a malarious district protection from the bites of the *Anopheles*. The site chosen for the experiments was a stretch of over 12 kilometres of railway. The subjects were the inhabitants of 10 railwaymen's houses and 2 railway stations, and numbered 104 persons, of whom 35 were children under 10 years of age. The first thing to be done was to cure any case of ague during the "dead season" of the *Anopheles*, that is, between January and June. The second was to preserve the subjects from the bites of *Anopheles* by wire blinds to doors and windows, these being otherwise left open to the air. It is hardly needful to say that the district chosen was a notoriously malarious one. By sundown every subject was within doors, for before that hour the mosquitos are dormant. Men who had to be out at night for their duties were provided with a pair of thick and closely-woven cotton gloves, and with a veil attached closely to their hats. With the exception of three recidivists who had not been treated with quinine, the whole 104 persons had up to date remained free from any malarious infection. It was found that 1 per cent. of the *Anopheles* of the district were infected. It is stated that all persons in the neighbourhood who were not protected by the wire gauze, etc., contracted malaria. There is good reason to hope that by an extension of these precautions Italy may be converted into a non-malarious country. Professor Grassi not only devised the experiment, but spent three nights a week on the spot.

THE IDENTIFICATION OF MOSQUITOS.

At the suggestion of the Committee appointed jointly by the Colonial Secretary and the Royal Society at the end of 1898 to exercise a general supervision over the scientific investigation of malaria, Mr. Chamberlain issued a circular despatch to the governors of all the Crown colonies requesting them to take steps to have collections of mosquitos sent to the Natural History Museum for examination and classification. An interim report on the specimens received at the British Museum, Natural History Department, down to July 16th last, has been drawn up by Mr. Fred V. Theobald, M.A., who took the place of Mr. E. E. Austen when that gentleman joined the City Imperial Volunteers for active service in South Africa. Mr. Theobald reports that considerably over 3,000 specimens have been received; the majority belong to the genus *Culex*, but about 400 specimens belong to the genus *Anopheles*, and a few to other genera. Among the specimens of *Anopheles* there are twenty-two species, ten of which are new, whilst four of the remainder have only recently been described by Major Giles, I.M.S. It would appear that *Anopheles*, like *Culex*, has a world-wide distribution, but that the species of *Anopheles* have not, as a rule, a wide distribution. *A. sinensis* is an exception, and it is also an exception in that it shows great variation both in colour and size, whereas all the other species of *Anopheles* appear very constant in colours and markings. The collection contains about 90 species of *Culex*, but so far no purely European species, except those that occur in Malta and Gibraltar, have been examined, as the majority of the collections have come from tropical and subtropical countries. Some other species of *Culex* have a very wide distribution. One species has been sent from the following widely separated localities: Japan, Formosa, Hong Kong, Malay Peninsula, India, South and West Africa, North and South America, West Indies, and Gibraltar. It occurs probably also in Italy, the Celebes, and Java, while closely related forms occur in New South Wales, the West Indies, and South America. A new genus which Mr. Theobald proposes to call *Panoplites* has been formed to receive specimens in which the scales on the wing field differ

very materially from those of typical *Culicidæ*, being in the form of broad flat plates. Some species of this genus have been sent in the collections from India, the Malay Peninsula, South America, and Australia. Most of the collections have arrived in fair condition, but some have been attacked by mites and one or two by mould. Those which have travelled best were pinned to the cork of a small glass tube firmly packed in cotton wool. As many of the species of the genus *Culex* are very obscure, photographs of the wings and drawings of various parts are being prepared, and complete photographs of the majority of species will be given in the full report which is being prepared under the direction of Professor Ray Lankester.

PROTECTION FROM MOSQUITOS.

There is a widespread belief among people in the tropics that a temporary protection from mosquitos (for example, during a shooting expedition in a swampy district) may be gained by rubbing strongly-smelling substances on the parts exposed to their attacks. Professor Fermi and Dr. Lumbao[1] have made a systematic examination of a large number of such substances with a view to ascertaining if any of them did really keep off the insects, and, if so, for how long a period a single application was effectual. The substances employed had, of course, to be harmless, non-irritating, and with not too objectionable an odour. They were divided into three classes: First, "simple substances," such as (1) animal fats—lanolin, cod-liver oil, etc.; (2) vegetable fats—castor, olive, beech oils, etc.; (3) vaseline, petroleum, etc.; (4) essential oils—eucalyptus, mustard, etc.; (5) powders or infusions of tobacco, camomile or chrysanthemum flowers, onions, etc.; (6) tar water, eau-de-cologne, etc.; (7) acids—acetic, carbolic, etc. Secondly, combinations of these in various proportions. Lastly, extracts of animals which are not attacked by mosquitos, such as reptiles, amphibia, and fishes. How these were made we are not told. Between 300 and 400 of these substances, alone or in combinations, were tried, certain places in the Pontine marshes (Terracina, San Giacomo, etc.) and in Sardinia (Sassari, San Martino, etc.) being chosen as the sites for the experiments. To prove really useful in practice, a single application of the remedy ought to keep the mosquitos at bay for from 5 to 10 hours, but the writers found that only a few of the substances employed afforded any protection at all, and that only for from 1 to 2 hours indoors, and for about half that time in the open air. This observation may account to some extent for the prevalence of the idea we have alluded to. If the application allows the traveller to drop off to sleep unmolested by his enemy, he may easily overestimate its value, and ignore the fact that he was subsequently bitten in his sleep. For a list of the substances that succeeded even to a limited extent we must refer our readers to the article. Among them were castor oil, vaseline, 2 per cent. solution of benzine aldehyde, cherry laurel water, etc. While the authors have not succeeded in discovering, and indeed are not sanguine of ever finding, a reliable means of warding off malaria on these lines, they have done useful work in helping to reduce the number of points at which the disease may be profitably attacked. A more successful means of keeping the mosquitos at a distance lies in the use of netting. Evidence in favour of the view that malaria can be avoided, even in deadly districts, by suitable precautions at night is accumulating rapidly. An experiment on the lines of that which is now being carried out in the Campagna under the auspices of the Colonial Office has recently been successfully performed by Dr. Mattei.[2] The place chosen was Valsavoia, a highly malarious spot an hour's rail from Catania, in Sicily. Near the station stands a building, half of which is used as a store-room for machinery, and in the other half of which are two rooms. The experiment was conducted as follows. The windows and doors of these rooms were removed, and fine wire gauze fixed in their place, the entrance door being protected by mosquito netting. Four healthy wharf labourers from Catania, 35 to 45 years of age, who had never had malaria, and in whose blood repeated research found no parasites, were selected. These men, accompanied by Dr. Mattei, left Catania at 4.30 P.M., reached Valsavoia at 5.30 P.M., and rushed into the house and stayed there till 7.30 A.M., when they left to resume their work at Catania. Dr. Mattei remained with them till the evening, returning to Catania by the last train. The men were ordinary labourers, hard worked and ill fed, for no alterations were made in their ordinary diet; they slept for the first part of the experiment on straw, owing to a delay in the delivery of beds. The season was very unhealthy, and malaria was rife at Valsavoia. At the hour at which the men arrived the mosquitos filled the air in dense clouds—so much so that in the hurried passage from the station to the house, to avoid being bitten *en route*, the men had to whirl open umbrellas about their heads so as to clear a lane for themselves through the hosts of their assailants. After entering the house, careful search was made for any mosquitos which might have effected an entrance with the men, and for a few minutes an insecticide powder was burnt. No other precautions were taken, and no quinine was administered. The experiment lasted thirty-three days, during which time and for six months subsequently, the men remained quite healthy. Among the mosquitos *Anopheles* and *Culex pipiens* were found in abundance. Dr. Mattei's experiment is interesting and important, as showing how simply and inexpensively malaria can be avoided in places where the mosquito does not bite during the hours of labour.

[1] *Centralblatt f. Bakt.*, August 22nd, 1900.
[2] *Ibid.*

THE FRENCH AMBULANCE AT JOHANNESBURG.

Lady Briggs, in the *Morning Post*, has directed attention to the help rendered in the care of the sick by well-disposed French residents in Johannesburg, and borne grateful testimony to the financial assistance sent to carry on the work by our neighbours on the other side of the Channel. At the beginning of September, 1899, the Comtesse de Ferrières informed the Superior of the Marist Brothers of her intention to found in Johannesburg a French ambulance, should war be declared between Great Britain and the South African Republic, to help the general hospital of the town in the nursing of the sick, British or Boer. The Marist Brothers approached the Government Committee of War on the subject, through the medium of the French Consul in Johannesburg, and explained that they were able to assist them to the extent of equipment and maintenance of six wards, containing forty beds, for ambulance work. The offer was gratefully accepted. Some six hundred cases of drugs, provisions, and clothing were received from the Association des Dames Françaises, and, in addition to a large sum of money raised locally, a further amount was collected by the French Bank of the South African Republic in Paris. The Boers, however, would have nothing to do with hospitals of any kind. They preferred being nursed by their "vrouws" on their farms, so the beds in the French ambulance remained practically without occupants until the British occupation of the town on May 22nd. Dr. Kanin attended to the few cases that came; and later, after the occupation, he was assisted by Dr. Mangiamarchi, who remained attached until it was closed at the end of August. After the arrival of the troops the beds were increased to fifty-six, and were all occupied by a cosmopolitan crowd, consisting of British officers and men, Russians, Italians, Germans, Austrians, Swiss, Portuguese, Greeks, Dutch, Belgians, Boers, Afrikanders, and Americans. Lady Briggs adds that she often visited the sick in the French ambulance, and had never seen a more perfect establishment of

its kind. At the time of writing there were six British officers benefiting by the devoted care of the Comtesse de Ferrières and the French ladies assisting her, and all the sick that have been treated in the hospital speak in the highest terms of praise of the skill of the doctors, and the care and attention they have received from the nuns of the Doornfontein Convent.

THE MEDICAL ADMINISTRATION OF THE ARMY, PAST AND PRESENT.

THE following passage from Guthrie's *Commentaries on the Surgery of the War in Portugal, Spain, France, and the Netherlands, from the Battle of Roliça, in 1808, to that of Waterloo, in 1815, etc.* (5th edition, 1853, p. 2), has an application at the present day as appropriate as when the words were written: "I have always intended at some distant day to notice the errors committed in the arrangements of the medical department during that war, by which so many lives were lost. Seven-and-thirty years have passed away, and the fitting time has not arrived. My old friends, whether military, civil, or medical, will not depart in peace; and lest I should give offence to even the humblest in pretensions, I shall continue to defer my remarks until perhaps we may all go together, when it will be too late. Whenever another Continental war shall take place, similar errors will in all probability be again committed, with the same disastrous results, as far as regards the health, the happiness, and the lives of many who might be spared their miseries if the great authorities of this country would only be pleased to allow themselves to be taught by those who have been obliged to learn. To be taught or to learn on these points is scarcely possible in England; for there is hardly a great functionary, a member of Parliament, nor even a clerk in any of the several public offices which may have directly or indirectly to do with doctoring, who does not consider himself, by virtue of his station or his office, better qualified to judge in all matters of physic and surgery than any doctor in the empire—a notion too generally entertained by these gentlemen of their functional capabilities; and the more to be regretted, because it is in every way injurious to the public service and to the cause of humanity. This erroneous and too-prevailing notion will never, I fear, be corrected until the head of the medical department of the army shall be placed in relation to the Secretary of War or War Minister in the same confidential situation as the deputy in his immediate department, and alike answerable to him for the correct performance of the duties of the office. The War Minister, who in reality holds the purse and regulates everything, should be the head of the doctors, as the Lords of the Treasury are the head of the Commissaries; the actual chief of the doctors should be his satellite, revolving round his centre of motion as if he were another Jupiter or Saturn. Then, and then only, will the calls of humanity be effectually complied with. A gentleman in civil life is no sooner appointed to an office, of whatsoever importance it may be, and of the duties of which he knows perhaps but little, than he is presumed to be deserving of the confidence of the Government and of the public, and it is granted him. A clergyman or a lawyer is treated in a similar manner. No one disputes the integrity of an archbishop or of a chancellor, but no one in a high official position thinks of trusting a doctor. It is certainly not so acknowledged, but it as certainly is the fact; and the medical department of the army will never afford to the public that quantum of good, of inestimable service, it ought to give, until this is altered; but when will a man be found at the head of the Government strong enough in mind and warm enough with the feelings of humanity to do it?" This was written half a century ago. Guthrie's words might with advantage be carefully studied by the military advisers of Her Majesty's Government.

COMPLETE PRIMARY AMPUTATION OF THE UMBILICAL CORD.

A PLEA for the general adoption of a more scientific method of treating the umbilical cord at birth is contained in a recent paper read before the American Gynecological Society by Dr. R. L. Dickinson of New York. It cannot be denied that the present plan of distal ligature at birth, followed by separation of the stump by a process of dry gangrene, is old-fashioned and difficult to reconcile with modern antiseptic principles. That any evil arises from the old-fashioned plan may, however, be fairly questioned; but Dr. Dickinson lays before us some important facts from which he deduces the conclusion that a large proportion of the heavy fœtal mortality which occurs almost universally during the early weeks of infant life is due to navel infection. The proportion of deaths due to this cause he estimates at from 15 to 40 per cent. of the total mortality. Most of the figures upon which he relies are, of course, obtained from lying-in hospitals or foundling institutions. Miller has stated that in the Moscow Foundling Institution 500 infants perish of navel infection every year, but the mode of treatment of the stump adopted by him is not mentioned. At the Innsbruck Maternity Hospital, out of 81 necropsies on dead infants, in 16 cases the cause of death was made out to be umbilical sepsis, the great majority of them having been unrecognised during life. Arteritis, phlebitis (often causing jaundice), suppuration, erysipelas, pyæmia, and many other conditions have been noted by different observers. Gmelin, writing in 1892, says that there has been a large mortality among the foals of the Marbach Stud from pyæmic joint disease ever since 1767; this mortality has been greatly diminished by careful antiseptic management of the umbilical cord, and there can be no doubt that the navel was the source of the infection. These and many other similar facts recorded by Dr. Dickinson lend much support to his view. The method he advocates is amputation of the stump at birth, and dry dressing of the resulting skin wound. The vessels may be ligated separately, although this is not necessary. If the ligative method is adopted, the cord is partially snipped through around the edge of the skin cuff until only the vessels remain; these are tied all together with a single silk or catgut ligature, and then divided. They at once retract, the skin cuff turns in, and a pad of dry gauze or a collodion dressing is then applied. The child is bathed after the operation, and it is advised that no general bathing should be given again for a week, when the navel wound will be healed. It is not necessary, however, to ligature the vessels; the cord may be cut off at once with scissors, the stump being pinched between the fingers and thumb, and the edges united by suture; a little oozing may follow, but pressure always suffices to control this. Primary amputation has not yet been tried in a sufficient number of cases to allow a judgment to be formed of its effect upon infant mortality or upon the incidence of navel infection.

A CASE OF APPARENT FAILURE [OF THE PASTEUR TREATMENT.

IT is a wholesome process, tending, by the recognition and elimination of error, to the advancement of truth, that, when the apparent soundness of a working hypothesis has been established, every effort should next be made to controvert it. Hence, while keeping in mind the great danger involved in arguing from the particular to the general, we think it right to direct attention to a case, reported by M. Lemaistre, of Limoges, to the Académie de Médecine, of a child, aged 9, who died from hydrophobia seventeen days after having been discharged as cured from the Pasteur Institute in Paris. We are glad to take notice of the case, because it seems to serve as an example of how the resultant equilibrium of attack and resistance, as M. Nocard has described it, may be disturbed by the operation of

external and accidental causes. The little boy, it appears, was bitten by a dog on the right cheek (an exceptionally dangerous position) on March 9th last, with a resulting wound of 4 or 5 centimetres long. The place was thoroughly washed with alcohol, and later with a solution of perchloride of mercury, and three stitches were applied. On the sixteenth day the wound was healed. On the day before the boy was bitten the dog had been thought to be ill, and had been seen by a veterinary surgeon. On March 10th, the day after, it bit a man, and was therefore killed. On *post-mortem* examination it was found to be suffering from hydrophobia, and parts of the central nervous system were sent to the Pasteur Institute; these, when inoculated in animals, produced definite hydrophobia. On March 11th both the boy and the man were taken to the Institute, and energetic antirabic treatment was commenced. The boy was subjected for twenty-one days to extremely intensive treatment, and the man for nineteen days to the ordinary method; then both were allowed to return home. The man remained well up to the time the report was presented to the Académie de Médecine on June 19th. The boy remained well for twelve days until, on April 13th, he received accidentally a pailful of cold water over his head. The same evening he began to vomit, at first simple food material, later this mixed with blood; he had pains in his limbs, abdomen, and neck; swallowing became very difficult and painful. He developed a horror of water and an intolerance of light, and suddenly died from asphyxia on April 18th. The opponents of the Pasteur method will doubtless say that the child never had hydrophobia until it was given him by the inoculations at the Pasteur Institute; or that the treatment had no effect on the disease which was contracted from the bite of the rabid dog. There is, however, a third hypothesis, which seems to us more reasonable. This is that the boy had received from the dog the virus which had been sufficiently antagonised by the inoculations in the then state of his system, but insufficiently when his bodily resistance was subsequently lowered by the cold affusion. For in the first place the dog was proved to be rabid; secondly, the man subjected to the same treatment did not develop the disease; thirdly, there are several known instances in which persons, after having been bitten by a rabid dog, and having been subjected to the Pasteur treatment, have developed the disease after a comparatively long interval on being exposed to cold. It is frankly admitted by the stoutest upholder of the system that it may fail in certain morbid states of the nervous system and in persons who are subsequently exposed to much cold. But, as M. Nocard maintained in the discussion on M. Lemaistre's paper, it is the only effective method of treating hydrophobia that we possess. Before the time of Pasteur 15 out of every 100 persons bitten by rabid dogs succumbed to the disease, while since his method has been in vogue from 1886 to 1898, of nearly 22,000 persons bitten and treated at the Pasteur Institute only 99 have died, that is not 1 in 200 instead of 30. Further, if we take only the cases of persons bitten by dogs proved, and not merely surmised, to have been hydrophobic the mortality is even less. M. Nocard pointed out that as a body of men coastguards afforded a good example of the dangerous influence of exposure to cold during the after-treatment stage. They were frequently bitten by the dogs of smugglers and after inoculation were often required to return to their full work, which involved great exposure to cold during night watches; but since these men have been exempted from night duty by the authorities during the two months immediately following the cessation of active treatment failure has ceased to occur where before it was not rare. There is, moreover, experimental evidence pointing in the same direction. Inasmuch as all the dogs brought to the Institute after having bitten human beings are not hydrophobic it is not to be wondered at that all the animals inoculated from them do not develop the disease. But a too hasty conclusion must not be drawn in regard to the apparently negative cases, because as a matter of fact with the onset of winter cold a certain number of rabbits and guinea-pigs manifest the disease which had not for several months after inoculation with the suspected medulla shown any sign of it. M. Nocard insisted that the effect of cold on these animals was similar to that on the coastguards in disturbing the balance between attack and resistance. It will be remembered that Pasteur long ago showed, in the case of fowls, which are not normally susceptible to anthrax, that if they are exposed to the influence of cold, as by bathing their feet in very cold water after anthrax bacilli have been injected into the blood, they take the disease. It would seem, then, that the case in question clearly shows the wisdom of protecting patients after the active stage is passed both from cold and from other influences that may be expected to lower their vital resistance.

TRAMPS AND VAGRANTS IN RELATION TO CRIMES AND NEUROSES.

Dr. Karl Bonhoffer, of Breslau, contributed an interesting study on tramps and vagrants at the meeting of the Association of German Alienists held in July. His paper was based on the observations made on 400 beggars and tramps that came under his observation at the prison in Breslau. Of the total number it appeared that 70 per cent. were ineligible for military service; while as regards productiveness, it seemed that 100 who were married had only 120 children in all. Inquiries into their ancestry disclosed the fact that among their antecedents 29 per cent. were subjects of alcoholism, 12 per cent. were epileptic, while 9 per cent. were sufferers from various psychoses. The intellectual grade was generally low, and Dr. Bonhoffer regards 22 per cent. as imbeciles. Among the offences for which they were committed to prison were theft and petty larceny, or crimes (violence) against the person, the former class of offences being the most frequent. Habitual drunkenness was observed among 87 per cent. of the prisoners, the majority (four-fifths) being subjects of "hereditary drink-craving," while one-fifth of them were alcoholics from other causes. As regards the connection between crime and age, it appeared that first offences were committed between the ages of 15 and 20 years—the period of adolescence—in the majority of cases, less frequently between the 25th and 30th years, and rather less frequently in the period between 35 and 40 years—the period of alcoholic brain degeneration. In accordance with the period at which criminality began, it was possible to distinguish two groups of cases—namely, one in which epilepsy and imbecility predominated (a congenital and neurastatic group, according to Benedikt), the other in which alcoholism and acquired psychoses (psychoses of adolescence or post-adolescent life) were the chief factors. The former group showed little procreative power, only one-half of the relative fecundity of the latter group.

THE ISOLATION OF SMALL-POX.

A recent report by Dr. James Wheatley, M.O.H. for Blackburn, gives some account of an outbreak of small-pox in that district which illustrates the difficulty of complete isolation. In a total of 23 cases 3 were only discovered three weeks after the illness had commenced, and one of these appears to have been responsible for the direct infection of 13 cases, and the indirect infection of 4 more. Again, the necessity for frequent and detailed inspection is seen in the fact that of 22 cases coming under notice in the month ending August 4th, only 7 were notified in the ordinary way; the remainder were ferreted out by the sanitary staff. No vaccinated child under 11 years was attacked, although many were exposed to infection; nor any person revaccinated within four days of exposure.

though 2 vaccinated respectively after five and seven days had modified attacks. The fatal cases were a woman, aged 38, with no evidence of vaccination, and a man, aged 47, with two fairly distinct marks.

LEPROSY IN COLOMBIA.

THE number of lepers in Colombia is said to have risen within a century from 97 to at least 30,000, and whereas the disease was then confined to three or four departments, all are now more or less infected. Its increase is ascribed to the abandonment of all measures for the segregation of the lepers and to the unrestricted intercourse between them and the healthy members of the population. The leper village of Contratacion, founded in 1862, was at first avoided by the other inhabitants, and all possible precautions were taken for the disinfection of money paid by them in exchange for the articles they needed. The village, which then had but 27 lepers, now—according to a statement quoted in the *Tablet*—contains a diseased population of close upon 1,000, and its weekly market is crowded by the inhabitants of the neighbouring healthy districts, who buy and sell there without restriction. The lepers intermarry, not only amongst themselves but with the healthy, and experience no difficulty in finding wives outside their own community. Although there is rarely offspring of a union between two lepers, this is not the case when one parent is free from the disease. The children of these marriages, even if themselves healthy, have to pass their lives in the tainted atmosphere of the leper village. By the present regulations, according to which a healthy woman marrying a leper receives the same allowance for maintenance from the State as the diseased, these mixed marriages are encouraged, with the result that the taint is transmitted to the next generation. It is to be hoped that the statements which we have quoted are exaggerated.

THE SOUTH AUSTRALIAN BRANCH.

WE publish elsewhere a report of the annual meeting of the South Australian Branch, which was held at Adelaide on June 28th. The occasion had something of the character of a festival in honour of the coming of age of this important Branch, which was the first founded in Australia. The Council was able to report that the Branch is in a flourishing condition, both in point of membership and of accumulated funds. This prosperity is largely due to the activity, tact, and business capacity of Dr. T. W. Corbin, who has served on the Council since the foundation of the Branch, and for the last eighteen years has been its Treasurer. The members of the Branch marked their sense of the value of his services by the presentation of a large silver tea-tray bearing an appropriate inscription. Dr. Corbin has well earned the right to rest after so long a period of self-sacrificing labour, but his retirement must be an almost irreparable loss to the Branch which he has served so devotedly.

THE PERILS OF BRILLIANTLY COLOURED CLOTHING.

THE natural instinct, especially manifested by unsophisticated peoples, to dress in brightly-coloured garments is not without its dangers. And these dangers have been particularly manifest since coal tar derivatives came to be used as a common source of dyes. Aniline itself is a frequent constituent of fluids used to colour articles of apparel. This substance, otherwise known as phenylamine, is an oily liquid, soluble in alcohol, ether, and oils, and slightly soluble in water. It has long been known that it can readily gain access to the circulation through the lungs, respiratory passages, and digestive organs, and much evidence is accumulating that it may enter the system through the skin. In the body it undergoes partial oxidation leading to the formation of amidophenol or its derivatives (a similar result occurs after the ingestion of acetanilide or antifebrin) and these bodies are capable of producing destruction of the red blood corpuscles, cyanosis, and dangerous collapse. MM. Landouzy and Brouardel recently recorded in the *Bulletin de l'Académie de Médecine* ten instances in which the wearing of yellow boots by children had been followed by very grave symptoms. In every case the colour of the boots was due to their being stained with a liquid containing aniline. An infant, 17 months old, was taken out of doors for an airing. Under these circumstances it was accustomed to be very lively, but on this particular occasion its general demeanour underwent an extraordinary change, its face became pale and blue, it fell into a deep sleep, and shortly became quite insensible. After two hours of vigorous treatment the child, which had appeared to be dying, recovered. A few days elapsed, and then a brother, aged 6, was taken out for a walk shod in a similar manner. Three hours later he returned apparently thoroughly chilled and looking very blue. The cyanosis passed off after a few hours, but his face did not regain its ordinary appearance until the following day. On a subsequent occasion a similar outing was followed by a similar train of phenomena. Eventually it was discovered that the fluid which had been used for staining the boots contained aniline, and it was recognised that the cyanosis resembled that seen in aniline makers. Not long after these cases were reported it was ascertained that six out of seven children of one household had developed similar symptoms after wearing yellow boots. They suddenly became ill, complained of chilliness, and exhibited pallor of the face with blueness of the lips and hands. Three of them remained unconscious for several hours; the heart's action became very feeble, and the urine contained a trace of albumen. In still another case the cyanosis was so profound that a diagnosis of morbus cæruleus was made and attributed to a sudden reopening of the foramen ovale. Analysis showed that the liquid used to give colour to the boots contained 90 per cent. of aniline. When it was injected subcutaneously into young guinea-pigs and rabbits they develop identical symptoms in from fifteen to thirty minutes. The same results occurred, but more slowly, when it was given by the mouth. Similar toxic symptoms appeared when a few drops of the liquid were placed on the nasal and buccal mucous membranes; also when the animals were made to inhale the vapour from the heated liquid, and after painting it over a considerable area of shaved skin. In the latter case some of the animals died within thirty-six hours. The red blood corpuscles decreased in number, and the spectroscope showed the characteristic absorption bands of methæmoglobin. Further experiments revealed the fact that absorption by the skin occurred with special facility in a moist and heated atmosphere. Corresponding phenomena have been known to follow the wearing of globes stained red with aniline. Altogether the moral of sobriety in the colour of clothing seems to be distinctly inculcated.

BONE DISEASE AMONG THE ANCIENT EGYPTIANS.

AT a recent meeting of the Paris Academy of Medicine under the presidency of M. Marcy, Zambaco Pasha, M.D., in the name of Dr. Fouquet, of Cairo, presented some photographs showing lesions observed on human remains from the cemeteries of Négadah, Thebes, and Beit-Allam, which date from 2400 B.C. On one skull, at the level of the right frontal bone, there was an irregular triangular surface, having the aspect of a suppurative osteitis. Above there was an oval exostosis. Another skull showed clear evidences of a superficial osteitis. The neck of a femur was thickened and mammilated, and its lower end enlarged and covered with exostoses. The tibia and fibula of the same skeleton presented hypertrophy of their extremities and fusion of the two bones—a condition which also existed in the humerus and radius. There was an exostosis on the occipital bone, and similar lesions occurred in other

skeletons. They were apparently due to a general rather than a local agency, and were probably manifestations of syphilis. In the vertebral column, there were two varieties of lesion, the one limited to the transverse processes, which were fused together and surrounded by rough stalactites, pointing to some arthritic process; the other clearly showing an osseous tuberculosis, a veritable Pott's curvature. There were specimens of mal-unions after fracture, in which the riding of the fragments was well marked. A portion of the sternum contained a perforation with clean, smooth edges, evidencing repair. These lesions demonstrate the existence of syphilis and tuberculosis amongst the Egyptians. Specimens of leprosy and other lesions have not yet been found. In the discussion which followed M. Fournier thought that the diagnosis of syphilis could not be maintained until typhoid, ulcers, contusions, and trophic lesions had been eliminated. Ultimately a Commission, consisting of MM. Fournier, Cornil, Lannelongue, Perrier, and Filhol was appointed to consider and report upon the question.

COMPULSORY NOTIFICATION OF PHTHISIS IN NORWAY.

In consequence of the increasing frequency of pulmonary tuberculosis in the western and northern coast districts of Norway, Dr. Claus Hansen of the Communal Hospital of Bergen and Dr. Holmboe, head of the sanitary service, some time ago drew up a scheme for the compulsory notification and prophylaxis of the disease. The scheme was presented by the Government to the Storthing, and passed with a few slight modifications on May 8th, 1900. The new law, which is to come into force on January 1st, 1901, makes compulsory the notification of all cases of "open" tuberculosis, that is to say, tuberculosis "accompanied by secretions capable of propagating the disease." Every medical practitioner when he first undertakes the treatment of a case of tuberculosis coming within the terms of the Act, is bound to send a notification to the President of the Local Sanitary Committee. If the patient dies he has to send a notification of the event to the same authority. The practitioner must not only give instructions as to the measures to be taken to prevent the propagation of the disease, but he must see that they are duly carried out. If he finds himself unable to do this, he must inform the President of the Sanitary Committee, indicating the possible difficulties in execution. If the patient, or those about him, fail to pay attention to the directions of the Sanitary Committee, he may be ordered to go into a hospital. Married couples, however, who desire to remain together, are not to be separated. In case of death or removal, the rooms occupied by the patient are to be closed and his bed furniture must be disinfected. Full instructions as to agents and methods will be given by the Sanitary Committee. Tuberculous patients cannot be placed under the care of private persons without the permission of the Sanitary Committee. If there is no other way of preventing the danger of propagation of the disease, the Sanitary Committee may forbid tuberculous patients from taking part in the preparation or sale of food. It can also forbid tuberculous women from engaging themselves as wet nurses, or as attendants on children. When there appears to be imminent danger of propagation of the disease by milk, the Sanitary Committee may forbid the sale of milk from farms and other places where persons suffering from tuberculous diseases have charge of cows or have anything to do with the milk. On the advice of the local sanitary committees, the King or his authorised representative may issue ordinances concerning (*a*) workshops, factories, offices, shops and other places where persons not forming part of the household are at work continually and together; (*b*) hotels, sanatoria, and private houses, the inhabitants of which make a business of receiving travellers as lodgers; (*c*) places of assembly, such as churches, schools, salerooms, meeting rooms, theatres, dancing rooms, concert rooms, etc.; (*d*) other places where people live in common, such as prisons, lunatic asylums, hospitals, railway waggons, barracks, fishing boats, etc. The hospital expenses are to be paid in equal parts by the department and the town or commune, the State refunding four-tenths of the amount expended by the department. Not more than one-half is to be borne by the commune. The cost of disinfection is defrayed by the department or the town, but proprietors of sanatoria and other establishments which receive paying patients must themselves bear these expenses. Violations of the law are punishable by fines.

THE ITALIAN RED CROSS SOCIETY.

The Central Committee of the Italian Red Cross Society has published its report for the year 1899. This shows that 630 cases of wine and liqueurs were sent to the English Red Cross Society for use in the South African war, while 66 cases containing an abundant assortment of dressings and surgical instruments were despatched to the Transvaal. To the Italian Expeditionary Force in China 55 cases of wine, liqueurs, and tobacco were sent. For the maintenance of the families of soldiers in Africa there were allocated 280,893 lire, not including previous subsidies amounting to 553,000 lire. In addition to this the Society has undertaken the conduct of the antimalaria service in the Campagna, with the help of a subsidy of 17,000 lire granted by the late King Umberto. The Society has now a membership of about 26,000, and its funds, including capital and *matériel*, is valued at 647,467,523 lire, being an increase of 10,384,207 lire on the amount shown in the accounts for 1898. The Society can furnish in response to a first demand 8 field hospitals of 110 beds, 41 of 50 beds (a number which could easily be doubled), 31 mountain ambulances, 15 hospital trains, 44 railway first-aid stations 2 river ambulances, and 2 naval hospitals. Grateful acknowledgment is made in the report of the steady support which the Society has received from private citizens and from all local and State authorities.

OPHTHALMOLOGY IN SPAIN.

Many travellers in Spain have been struck by the number of blind persons everywhere met with. Dr. Camuset, writing in 1874, said that the streets of the large towns literally swarm with blind folk. They go about in bands of five or six, begging, and rolling about their sightless orbs to excite compassion. For the most part the blindness is caused by purulent ophthalmia or affections of the cornea consecutive to granular ophthalmia. A few years later Dr. Vignes in a trip to San Sebastian saw a number of cases of granular ophthalmia and many of keratitis, which he attributed to the bad food and filthy habits of life of the inhabitants of the whole province of Guypuzcoa. Professor Hirschberg, of Berlin, who was present at the International Congress of Hygiene held in Madrid in 1897, bore emphatic witness to the prevalence of eye diseases in Spain. Nowhere, not even in Egypt, had he met with so many blind persons as in Spain: among other instances he mentioned that he had seen a band of musicians consisting of nine blind men. He attributed this state of things to the neglect of ophthalmology in Spain, where he said there was not a single professor of the subject in any of the medical schools. He added that there was no public institute for the treatment of diseases of the eye, and that such cases were treated either in the general hospitals or in small private institutions. Dr. Emilio Alvarado of Valladolid has recently come forward with a vigorous vindication of his country against these charges. He cites the names of many Spanish oculists, most of whom have finished their scientific education in foreign countries, including that of Professor Hirschberg himself. It is not, he says, the fault of the medical profession that ophthal-

mology in Spain is below the level of the rest of Europe. There are capable teachers, but the medical schools receive from the Government so meagre a subsidy that funds are insufficient for the endowment of chairs. In Madrid there is an ophthalmological institute founded during the reign of King Amadeo on the initiative of Dr. Delgado Jugo, where instruction is given free, and where Dr. Santa Cruz with colleagues of reputation annually perform more than 500 operations. In the Provincial Hospital there are two wards with a fair number of beds for cases of eye disease. The surgeon in charge is Dr. Mansilla, who has recently published a monograph on granular conjunctivitis. More than 400 operations are done there every year. At the present moment an ophthalmic institute is in process of completion in Madrid at a cost of a million pesetas given by a private benefactor. In La Princesa, Latina, and Child Jesus Hospitals and in the Rubio Institute there is accommodation for cases of eye diseases. Among the ophthalmic surgeons in charge of these clinics are Drs. Rodolfo Del Castillo, author of various papers on eye diseases, and Dr. Lopez Ocaña, formerly editor of *El Dictamen*, and author of many monographs, including one recently published on glaucoma. In the Faculty of Medicine a course of ophthalmology is given. There are eye clinics in many of the provincial towns, such as Barcelona, Condal, Valencia, Seville, Granada, Cordova, Santander, etc. Dr. Alvarado denies that there are in Spain many persons who have lost their sight as a result of purulent and granular ophthalmia. Neither the one nor the other disease is so frequent in Spain as has been asserted. When they occur they are treated by the same procedures as elsewhere, and he believes with just as good success as in other countries.

FRENCH MEDICAL COLONISTS.

THE French Society for Colonial Expansion has organised a special branch for the purpose of giving information and other assistance to young doctors who may wish to emigrate. It collects and places at the disposal of its members all information, private or official, as to the resources, needs, and opportunities of the French colonies from the medical point of view. The Paul Bert Committee, which was established with the same object, and which has rendered great services to medical men who have gone to the Colonies and to foreign countries, has now become amalgamated with the Society of Colonial Expansion.

MEDICAL CANDIDATES FO [PARLIAMENT.

AMONG the medical men who are standing for Parliament may be mentioned in addition to those enumerated last week, Dr. Conan Doyle, who is standing as a Unionist for Central Edinburgh, where he is having a stiff contest; Dr. John Smyth Crone, Chairman of the Willesden District Council, who is contesting the Harrow Division of Middlesex as a Liberal against the sitting member, Mr. I. E. B. Cox; and Dr. O'Neill of Coatbridge, Scotland, who is the nominee of the United Irish League for the representation of Armagh (South).

EXPERIMENTS ON ANIMALS.

OUR attention has been called to a leaflet issued by the London Antivivisection Society appealing for five shillings to help its "plan of campaign" in the general election. We would remind all members of the medical profession that if they want literature relating to experiments on animals and to the administration of the Act, they should apply for it to Dr. C. E. Beevor, 33, Harley Street, who is Secretary of the Association for the Advancement of Medicine by Research.

MR. RICHARDSON CROSS.

AT the half-yearly Board of the Governors of the Bristol Royal Infirmary held on September 25th, it was unanimously resolved, on the motion of the Dean of Bristol Chairman, seconded by Dr. Shingleton Smith:

That Mr. Richardson Cross having resigned the office of Honorary Ophthalmic Surgeon, the warmest thanks of the governors be accorded him in recognition of the very valuable services he has rendered to this institution throughout the last twenty-two years, during which period he has successively held the posts of Honorary Assistant Surgeon, Honorary Surgeon, and Honorary Ophthalmic Surgeon, and that he be appointed Honorary and Consulting Ophthalmic Surgeon.

At a subsequent meeting of the Committee of Election, Dr. Alexander Ogilvy, B.A., B.S., M.D.Dub., F.R.C.S.I., was unanimously elected Honorary Ophthalmic Surgeon in the place of Mr. Richardson Cross.

THE annual dinner of the Society of Medical Officers of Health will be held at the Holborn Restaurant on Friday, October 19th, under the presidency of Dr. J. C. McVail.

THE Old and Present Students' Dinner, Faculty of Medicine, University College, London, will be held at the Hotel Cecil on Monday, October 1st, at 6.30 for 7, Dr. G. Vivian Poore in the chair.

SIR JAMES PAGET'S Memoirs and Letters, with Selected Essays and Addresses, are being prepared for publication. We are asked by Mr. Stephen Paget (70, Harley Street, W.) to say that he will very gladly receive any letters, or copies of letters, that may be sent to him for this purpose.

AT a meeting of the West London Medico-Chirurgical Society, to be held at the West London Hospital, Hammersmith, W., on Friday, October 5th, at 8.30 P.M., the President, Dr. F. F. Schacht, will deliver his inaugural address entitled, "A few Observations on the Early Treatment of Abdominal Symptoms."

THE hundred and twenty-eighth session of the Medical Society of London will commence on Monday, October 8th, when an address, entitled "The Romance of Surgery," will be delivered by the incoming President, Mr. John H. Morgan. The Lettsomian Lectures will be delivered in March and April by Dr. Mitchell Bruce, and the Oration in May by Mr. F. Richardson Cross.

AT the *conversazione*, which is to be given by the Medical Society of Charing Cross Hospital on Monday next, October 1st, at 7.30 P.M., Dr. Abercrombie will show some lantern slides prepared from photographs taken during a recent visit to Egypt; *x*-ray and other demonstrations will be given, and a one-act play entitled "An Unconventional Afternoon," by Charles Willoughby Stanhope, will be given for the first time.

MANY members of the medical and surgical staffs of the Portland and the Imperial Yeomanry Hospitals have now returned to this country. Dr. Tooth and Dr. Calverley, of the former hospital, came home last month, and Mr. Anthony Bowlby and Mr. Cuthbert Wallace more recently. These gentlemen served with the Portland Hospital throughout the whole of its career, which extended over nine months. Of the staff of the Imperial Yeomanry Hospital, Mr. Alfred Fripp, Chief Surgeon, returned recently, Mr. Raymond Johnson about two months ago, and Mr. Newland Pedley rather earlier. Dr. Sandwith, of Cairo, who went out to assist in the starting of the hospital, also returned with Mr. Fripp in the *Moor*. Mr. William Turner, Assistant Surgeon to the Westminster Hospital, has accepted a temporary commission in the R.A.M.C., and is acting as P.M.O. in the Imperial Yeomanry Hospital at Maitland Camp near Capetown, where are also Dr. L. F. C. Handson and Dr. H. W. Saunders.

EXPERIMENTAL PROOF OF THE MOSQUITO-MALARIA THEORY.

By Patrick Manson, C.M.G., LL.D., M.D., F.R.S.,
Medical Adviser to the Colonial Office; Lecturer, London School of Tropical Medicine, etc.

Although the theory that the malaria parasite is transmitted from man to man by particular species of mosquito is now accepted by all biologists and medical men who have given adequate attention to the subject, it cannot be said that the general public (including those Europeans who in malarious countries might benefit by the practical application of the theory) unreservedly believe in, much less practically apply it. Endless objections, the outcome of an imperfect acquaintance with the subject and, perhaps, of a disinclination to admit that a pathological puzzle of so many centuries standing could receive so simple an explanation, have been raised by the amateur biologist and sanitarian, so much so that it seemed not improbable that a great principle, pregnant with important issues, might remain barren and unutilised.

Impressed with this fear, and being anxious to see some fruit from a theory which I knew to be true and for which I was in a measure responsible, I cast about for means by which the conversion and co-operation of the public might be secured. I felt that unless the public believed in the efficiency of the sanitary measures so definitely indicated by the mosquito-malaria theory, and, understood the principles on which these measures should be founded, they would not adopt them nor, what is so necessary to the success of all such measures, co-operate heartily in carrying them out. As the histological, biological, and experimental evidence which had satisfied men of science was not understood by the public, it seemed to me that some simple demonstration, such as would be unanswerable and at the same time readily comprehended by laymen, was required.

Grassi in conjunction with Bignami had succeeded in conveying malaria by mosquito bite. Although these experimenters took every care to exclude fallacy, the fact that the experiments were made in Rome, itself of fever repute and in the middle of a highly-malarial district, had an undoubted influence in preventing due appreciation by the public of the conclusive nature of their work. Furthermore, things occurring at a distance and in a strange land do not appeal so strongly as do things happening in our midst. It occurred to me, therefore, that if I repeated Grassi and Bignami's experiments in a more dramatic and crucial manner, that if I fed laboratory-reared mosquitos on a malarial patient in a distant country and subsequently carried the mosquitos to the centre of London, and there set them to bite some healthy individual free from any suspicion of being malarial, and if this individual within a short period of being bitten developed malarial fever and showed in his blood the characteristic parasite, the conclusion that malaria is conveyed by the mosquito would be evident to every understanding, and could not possibly be evaded.

It also occurred to me that if a certain number of Europeans who had never suffered from malaria kept in good health and free from malaria during an entire malarial season in an intensely malarial locality, where all inhabitants and visitors suffered from malaria, and if they kept well without the use of quinine or other medicinal prophylactic, simply by avoiding mosquito bite, the above conclusion would be accentuated; and, also, that if this immunity were attained by inexpensive means—means which did not interfere seriously with comfort, pleasure, or business—the mosquito-malaria theory would not only be proved to the satisfaction of the public, but the public would be willing to accept the sanitary measures which the theory and experiments indicated.

After having obtained promises of support from the Colonial Office and from the London School of Tropical Medicine, and having secured volunteers for the experiments, still further to accentuate my object and to arrest the attention of those principally interested, I publicly announced in a popular lecture at the Colonial Institute that the above experiments were about to be undertaken, and with the same object in view I ventured to forecast their issue.

Experiment I.—London.

Drs. Bignami and Bastianelli very kindly undertook to send me relays of infected mosquitos from Rome. I have to thank these gentlemen for the great care exercised in this somewhat responsible matter. Every case of malaria coming to a general hospital is not suitable for experiment. To have sent mosquitos infected with malignant tertian parasites might have endangered the life

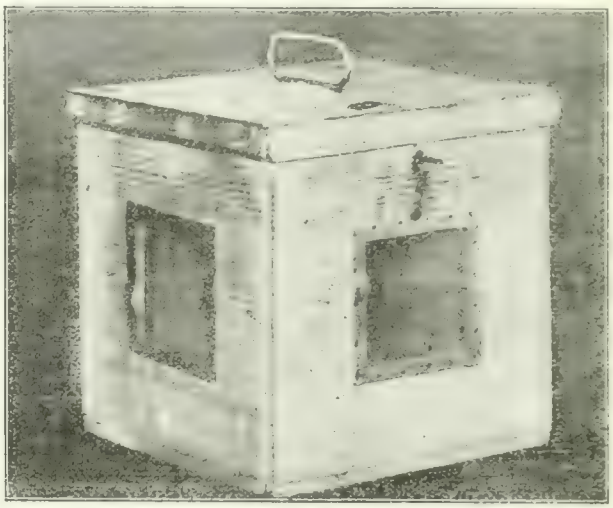


Fig. 1.—Ventilated box for forwarding mosquitos.

of the subject of the experiment; and quartan-infected insects might have conferred a type of disease which, though not endangering life, is extremely difficult to eradicate. The cases, therefore, on which the experimental insects were fed, had to be examples of pure benign tertian—a type of case not readily met with in Rome during the height of the malarial season; the absolute purity of the infection could be ascertained only by repeated and careful microscopic examination of the blood of the patient.

When the insects had fed, Dr. L. Sambon, who had gone to Rome on Experiment No. 2, placed them in small cylindrical cages made of mosquito netting stretched on a wire frame (Fig 2). Four such cylinders were packed in a well ventilated box (Fig. 1) and forwarded to the London School of Tropical Medicine



Fig. 2.—Case for mosquitos.

through the British Embassy in Rome. The box was 9 inches in depth and 8½ inches on the sides. The wire openings were 3 inches square on each side. The cages were each 8 inches in

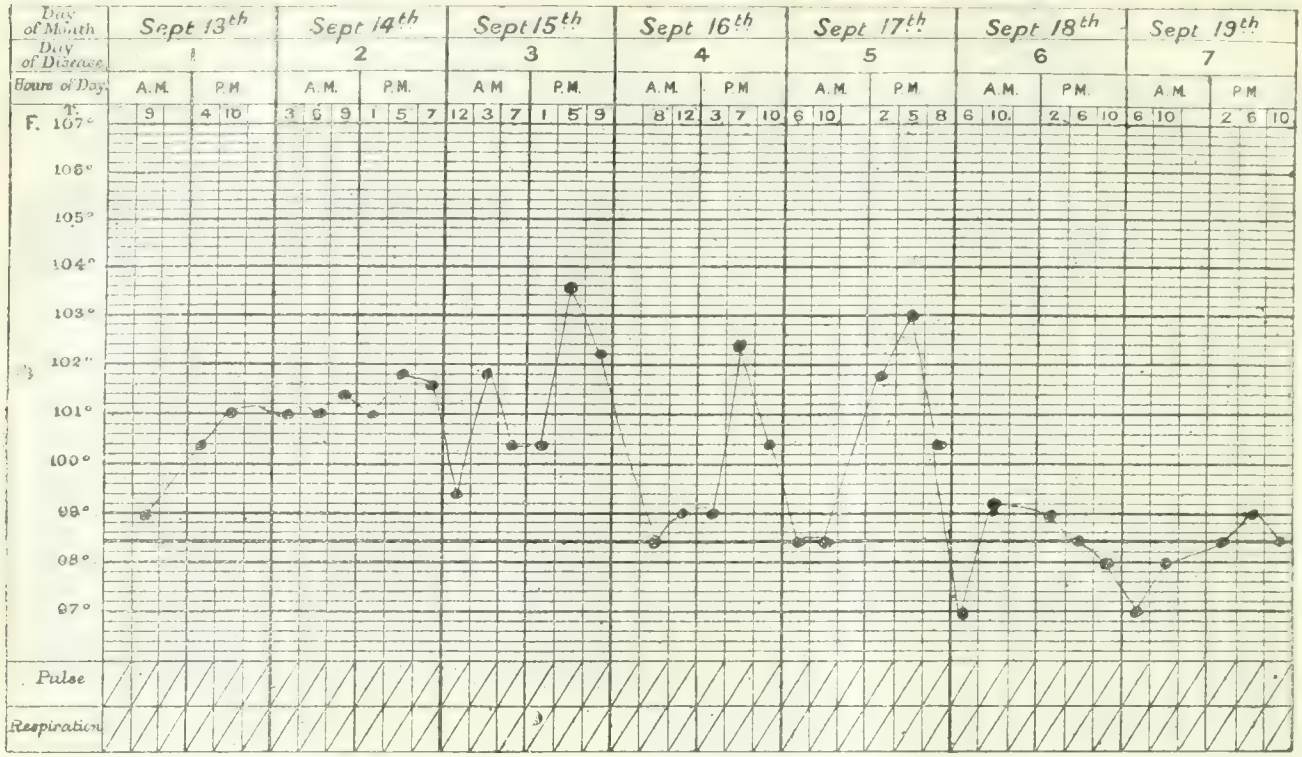


Chart of Temperature after Experimental Infection with Malaria.

length and $3\frac{1}{2}$ inches in diameter. By the courtesy of the Post-master-General they came forward by the Indian mail so that they arrived in London some 48 hours after leaving Rome. A good many of the mosquitos died on the journey or soon after arrival; a fair proportion survived and appeared to be healthy and vigorous. We are indebted to Dr. Sambon for the method employed of caging mosquitos. Future experimenters will find it very useful. To infect the insect, or to become infected by them, the experimenter has merely to place his hand in the cage after carefully untying the netting at one end or, better, by laying the closed cage on his damped hand (Fig. 2).

NOTES OF EXPERIMENT.

By P. THURBURN MANSON, Guy's Hospital.

I AM 23 years of age, was born in China, but have lived in this country since I was 3; have never been abroad since, nor in any district in this country reputed to be malarial. I am healthy.

The first consignment of mosquitos arrived at the London School of Tropical Medicine on July 5th. Only some half dozen had survived the journey. They were in a languid condition, and would not feed satisfactorily. One may have bitten me. By July 7th they were all dead. The second consignment arrived on August 29th. They had been infected in Rome on August 17th, 20th, and 23rd, by being fed upon a patient with a double benign tertian infection. The patient was reported to have had numerous parasites, including many gametes, in his blood. On arrival twelve insects were lively and healthy-looking. I fed five of them on August 29th, three on August 31st, one on September 2nd, and one on September 4th. They bit my fingers and hands readily. The bites were followed by a considerable amount of irritation, which persisted for two days.

The third consignment arrived on September 10th. They had been fed in Rome on September 6th and 7th on a patient suffering from a simple tertian infection, but with very few parasites in his blood. There were some 50 to 60 mosquitos in good condition. Twenty-five bit me on September 10th, and 10 on September 12th.

Up till September 13th I had been perfectly well. On the morning of the 13th I rose feeling languid and out of sorts with a temperature of 99° F. By midday I was feeling chilly and inclined to yawn. At 4.30 P.M. I went to bed with severe headache, sensation of chilliness, lassitude, pains in the back and bones, and a temperature of 101.4°. Repeated examinations failed to discover any malarial parasites in my blood.

September 14th.—I slept fairly well but woke at 3 A.M. with slight sweating and a temperature of 101°. During the day my temperature ranged between 101° and 102°. The symptoms of September 13th were exaggerated and anorexia was complete. Several examinations of the blood were made again with negative result. To relieve headache 10 grs. of phenacetin were given at 6 P.M.; I perspired profusely but slept indifferently.

September 15th.—Woke at 7 A.M. feeling distinctly better, with a temperature of 100.4°. No malaria parasites were discovered on repeated examinations of my blood by my father. About 2 P.M. I commenced to feel slightly chilly; this soon wore off, and I became hot and restless. By 4.30 P.M. temperature was 103.6°. It remained about 103° till 9 P.M., when profuse sweating set in. I am told there was some delirium.

September 16th.—I woke at 8 A.M. feeling quite well; temperature 98.4°. I made several blood examinations and found one doubtful half-grown tertian parasite. In the afternoon and evening there was a recurrence of fever (temperature 102.8°), relieved by sweating.

September 17th.—Again felt quite well on waking after a good night's sleep; temperature 99°. At 10 A.M. several half-grown parasites, a gamete, and two pigmented leucocytes were discovered in the first blood film examined. During the day many tertian parasites were found. Their presence was verified by my father, Dr. Frederick Taylor, Lieutenant-Colonel Oswald Baker, I.M.S., Dr. Galloway, Mr. Watson Cheyne, F.R.S., and Mr. James Cantlie, some of whom saw the films prepared.

About 2 P.M. the sensation of chilliness returned. Temperature 101.8°. By 5 P.M. temperature had reached 103°. There was then copious sweating. The edge of the spleen could be felt on deep inspiration, and there was a slight feeling of discomfort in the region of that organ. Dr. Frederick Taylor and Mr. Watson Cheyne confirmed the presence of splenic enlargement. By 9 P.M. the temperature had fallen to 99.2°, and I was feeling better. Quinine (10 grs.) was given.

September 18th.—Woke after a good night feeling perfectly well (temperature 97°). Ten grains of quinine were taken, and subsequently five grains every eight hours. I continued perfectly well all day. A few three-quarter grown tertian parasites and some gametes were found during the forenoon and afternoon; they were seen by Dr. Oswald Browne, my father, and myself. At 10 P.M. the parasites had disappeared, the last being found at 5 P.M.

September 19th.—No parasites discovered. Temperature normal. Feeling quite well. There is no splenic enlargement, and no tenderness. Appetite returned.

September 25th.—In good health. No recurrence of malarial symptoms.

EXPERIMENT II.—THE ROMAN CAMPAGNA.

A wooden hut, constructed in England, was shipped to Italy and erected in the Roman Campagna at a spot ascertained by Dr. L. Sambon, after careful inquiry, to be intensely malarial, where the permanent inhabitants all suffer from malarial cachexia, and where the field labourers who come from healthy parts of Italy to reap the harvest after a short time all contract fever. This fever-haunted spot is in the King of Italy's hunting ground near Ostia, at the mouth of the Tiber. It is waterlogged and jungly, and teems with insect life.

The only protection against mosquito bite and fever employed by the experimenters who occupied this hut was mosquito netting, wire screens in doors and windows,

and, by way of extra precaution, mosquito nets around their beds. Not a grain of quinine was taken. Drs. Sambon and Low, Signor Terzi, and their two Italian servants, entered on residence in the hut early in July. They go about the country quite freely—always, of course, with an eye on *Anopheles*—during the day, but are careful to be indoors from sunset to sunrise. Up to September 21st, the date of Dr. Sambon's last letter to me, the experimenters and their servants had enjoyed perfect health, in marked contrast to their neighbours, who were all of them either ill with fever or had suffered malarial attacks.

For the present I content myself with announcing this result. Complete details of their experiences will doubtless be made public by Drs. Sambon and Low at the termination of the malarial season, and of their experiment, at the end of October. Suffice it to say that these gentlemen express themselves as satisfied that protection from mosquito bite protects from malaria, and that protection from mosquito bite is perfectly compatible with active outdoor occupation during the day.

Application of the Experiments.

It remains for the public to apply the lesson taught by these experiments. Will this be done? Already I have heard objections and difficulties mooted. I saw it advanced recently that it is impossible to avoid mosquito bite in the tropics, and that it was useless trying to do so. One has sometimes to go out in the evening; a doctor, for example, must visit his patient at any hour. This is quite true; but surely because we cannot escape a risk altogether this is no reason why we should not try to minimise it. Dr. Daniels, who has recently returned from British Central Africa, tells me that not one mosquito in a thousand in that country carries malarial zygotes, that is to say, is infective. If a man exposes himself therefore in British Central Africa to mosquito bite habitually, so that he gets bitten say ten times every night, the chances are that he is effectually inoculated with malaria some four times a year; but if the same man systematically protected himself from mosquito bite, and, in consequence of his care reduced the chances of being bitten to once a month, he might be a hundred years in British Central Africa before he became infected. This minimising of risk is certainly worth striving for.

The question of expense cannot for a moment be entertained in discussing the means for protection. One life saved, one invaliding obviated, would, even in a pecuniary sense, pay for all the wire gauze and mosquito netting requisite to protect every European house in West Africa.

These experiments, together with the work of Ross, Grassi, Celli, Bignami, Bastianelli, and other Italians, the recent observations on native malaria by Koch, and the representatives of the Malaria Commission of the Royal Society and Colonial Office, plainly indicate that the practical solution of the malaria problem lies in:

1. Avoiding the neighbourhood of native houses—the perennial source of malaria parasites.
2. The destruction, so far as practicable, of *Anopheles'* breeding pools.
3. And principally: Protection from mosquito bite.

Female Students at Zurich.—The number of women attending the University of Zurich is steadily increasing. Of 850 students matriculated in the last summer semester there were no fewer than 214 women, more than a fourth of the whole number; of these, 128 were students of medicine, 58 of philosophy, 21 of natural science, and 11 of law. The ladies appear to give theology a wide berth, but as the total number of students matriculated in that Faculty at Zurich last summer was only 9, it is perhaps hardly fair to conclude that the study of divinity offers no attraction to what the Latin Church calls the "devout female sex." Of the total number of women students 97 are Russians, of whom 84 belong to the medical faculty.

Bequests.—Mr. J. R. Jefferies, of the firm of Ransom, Sims and Jefferies, by a codicil to his will executed during his last illness, bequeathed the sum of £1,000 for the endowment of a bed in the new Victoria Wing of the East Suffolk and Ipswich Hospital at Ipswich.

THE WAR IN SOUTH AFRICA.

EXPERIENCES OF MR. PAUL BUSH IN SOUTH AFRICA.

THE MILITARY HOSPITALS.

Mr. Paul Bush, Lecturer on Operative Surgery in University College, Bristol, and late Senior Civil Surgeon in charge of the Princess Christian Hospital, Natal, and Principal Medical Officer H.M. Hospital Ship *Lismore Castle*, returned on September 11th from South Africa. During the seven months of his stay in Africa Mr. Bush saw the hospitals in all the colonies and in the three main lines of communication. He visited every hospital from Durban to Northern Natal, and also those as far as Kimberley in the Western District, and in the central column—Bloemfontein, Kroonstadt, Johannesburg, and Pretoria. He had no opportunity of inspecting the hospitals in the immediate vicinity of Capetown, as he had not been in that neighbourhood. Of "hospital scandals" he saw absolutely nothing. Of course it was impossible on active service to have all the advantages that might be obtained in well-appointed hospitals at home, but in Mr. Bush's judgment the medical arrangements in South Africa generally were excellent. In Natal, in particular, the management of the hospitals was admirable.

Civil and Military Surgeons.

As regards the so-called "friction" between the civil and military surgeons, Mr. Bush expresses disbelief in its existence. There may have been one or two scattered cases, but these were of a purely personal character, if there were any: and between the two bodies, as bodies, everything appeared to be quite normal. There was no attempt to smooth over anything when he was visiting any of the hospitals, and the medical authorities received him with the greatest possible courtesy. This was the case not only with the doctors in charge, but also with the combatant officers. His relations, particularly with Major Mathias, R.A.M.C., D.S.O., with whom he was associated in connection with the Princess Christian Hospital, were of the most cordial nature. In the early days numbers of serious surgical cases were brought long journeys in the magnificent Princess Christian ambulance train, commanded by Colonel Forrester, of the Guards. Later the distances precluded the admission of such acute surgical cases, and the admissions were more of a medical class. The Princess Christian Hospital had the finest *x*-ray apparatus in South Africa, and on that account many special cases were sent in. The apparatus was of the greatest possible assistance. The ambulance train used to land 60 to 70 cases at daybreak, and these constant arrivals taxed the energies of the staff, but not unduly, thanks to the admirable way in which all worked together. The nursing sisters were almost worshipped. Mr. Bush is full of praise for his staff, and the Bristol contingent made him quite proud.

Nature of Wounds.

Mr. Bush was extremely surprised at the remarkable way in which serious wounds had healed in many cases, after penetrating important cavities and organs. As to poisoned bullets, he did not come across any wounds which seemed to have been caused by such projectiles. Many injuries came under his observation that had apparently been caused by soft-nosed bullets, or projectiles that had been tampered with in some way, but he points out that a wound inflicted by a ricochet may easily be confused with one caused by an expanding bullet.

Mr. Bush formed a high opinion of Tommy Atkins as a patient. To use his own words, "If he is properly dealt with, and a little firmness used, he becomes a most amenable person to order and medical discipline, and he will do anything for you." Mr. Bush came home in the *Lismore Castle* in the capacity not only of chief medical officer, but also of a military commander. They brought home a large number of invalids and convalescents, among which were many serious cases.

THE LISMORE CASTLE.

As the *Lismore Castle* is one of the ships which have formed the subject of inquiries by the Hospitals Commission (see p. 938) the following particulars of her homeward journey, which we take from the *Western Daily Mercury*, may be of interest.

The *Lismore Castle*, which is commanded by Captain G. Le Sueur, brought home 12 officers, 129 men, 7 corporals, 5 non-commissioned officers, and 1 nursing sister, all invalided home owing to wounds or sickness. The arrivals were all from the Natal Field Force, the vessel having originally sailed from Durban. Afterwards she touched at Capetown, which was left on the 9th inst., and subsequently she called at Las Palmas, whence she sailed on the 25th for Plymouth. At the outset the voyage was rather rough, but afterwards the weather improved and was of the most pleasant description. Being a fully-equipped hospital ship, the *Lismore Castle* was allotted an unusually large proportion of very serious cases; in fact, more than 60 of the patients were so ill that they had to be carried on board at Durban.

The long sea voyage of between 7,000 and 8,000 miles worked wonders for the majority of the sick, and, despite the precarious condition of many when they embarked, there was not a single death throughout the trip. Everything possible for the health, comfort and happiness of the sick was carried out under the direction of Mr. Bush who had the assistance of Drs. Kevern, Cridland and Phillips, Sister-superintendent Atkins, of the Army Nursing Reserve, Sisters Joel, Clapham, Schwikkard, and Vere Hodge, civilian nurses, besides a staff comprising a dispenser, a hospital steward, storekeeper, wardmaster, and 26 ward attendants. By the time Las Palmas was reached the cot cases only numbered 14 as compared with 61 at the outset. Of these 4 were wounded, whilst the other 10 were victims of dysentery and enteric fever. The other patients were all convalescent. Everything was done to relieve the monotony of the long voyage and to promote the welfare of the sick and wounded. Quite a variety of entertainments were arranged for the benefit of those who were sufficiently advanced on the road to convalescence to participate in them. There were concerts and amateur theatricals, but what found greatest favour with the men was the series of sports, the events being of such a character as to be suitable to the weakened constitutions of the competitors. The men seemed to appreciate highly what has been done on board for their comfort, and spoke in the highest terms of the thoughtful attention which had been bestowed on them.

THE WELSH HOSPITAL.

Professor Hughes, Superintendent of the Welsh Hospital at Pretoria has, we learn from the *Times*, telegraphed to the committee in London stating that the senior staff were returning home on October 3rd by the *Saxon*, and that the hospital would be converted into a convalescent hospital at the end of this month. All the nurses will remain. By the last mail Sir John Williams, Chairman of the Hospital Committee, received a very satisfactory report upon the working of the hospital from the principal army medical officer at Pretoria.

R.A.M.C. SOUTH AFRICA FUND.

SUBSCRIBERS will recollect that the Committee sent £200 to the Principal Medical Officer, India, to be expended on warm clothing for the Indian doolie-bearers and hospital servants. No formal acknowledgment having been received, Surgeon-General Muir wrote on August 10th to the Principal Medical Officer asking if he could give any information. Surgeon-General Taylor, in reply, mentions having duly sent a copy of the subjoined letter soon after he received it, but it never reached its destination:

Copy of a letter dated June 23rd, 1900, from the Secretary to the Government of India, Military Department, to the address of the Principal Medical Officer, Her Majesty's forces in India:

"1. I am directed to acknowledge the receipt of your letter No. 249, dated June 14th, 1900, reporting that a consignment of warm clothing, namely, khaki serge blouses and knickerbockers, puttics, and puggries, provided from funds placed at your disposal by the Committee of the Royal Army Medical Corps South Africa Fund has been despatched by the Royal Indian Marine ship *Clive* to the General Officer Commanding Line of Communications, Natal, for distribution among Indian hospital followers in Natal.

"2. With reference thereto, I am to request that the thanks of the Government of India may be conveyed to the Committee for their generous gift."

THE HALF-CROWN SUBSCRIPTION LIST.

The following additional subscriptions to the Half-Crown Fund have been received:

	Half Crowns.
A. E. B.	8
Per Dr. T. E. Flitcroft (Bolton):	
Dr. C. Macfie	1
Dr. T. Macfie	1
Miss Macfie	1
Miss Cooke	1

The fund is now closed.

THE PLAGUE.

PLAGUE IN GLASGOW.

OUR Glasgow correspondent writes, under date Tuesday September 25th: During the past week no great change has taken place in the position of the plague in Glasgow. Three new cases have been admitted to the Fever Hospital, but these have been brought from the same districts as those already reported. One of them belonged to Govan and came under observation at the Western Infirmary, whence he was transferred to the Fever Hospital, and it may be said that the general hospitals and dispensaries in the city are actively co-operating with the Medical Officer of Health in the efforts that are being made to discover and stamp out all traces of the dangerous malady.

During the week there have been two more deaths due to plague, one of them a recently admitted case, the other that of a patient who had been associated with plague cases but whose symptoms were so ill-defined that the diagnosis of plague was only completed on *post-mortem* examination. The number of cases now in hospital is 22, and in addition there are two cases of suspected plague. The number of persons isolated for observation as "contacts" is now very much reduced, there being only 40, and this in itself would indicate that the risk of any serious spread of the disease is steadily diminishing. At the same time the vigilance of the authorities is maintained, and an indication of the care that is being taken may be got from the not infrequent mention of cases of illness being isolated on suspicion until the diagnosis is confirmed, and in many of them satisfactorily negatived.

The disease would appear to be effectually restricted, and the Glasgow sanitary authorities cannot be too highly praised for the promptitude, vigour, and skill with which they have so far managed to stave off a widespread outbreak. Rats are being destroyed in numbers, but so far Dr. Buchanan, the bacteriologist to the Sanitary Department, has failed to find that the rats in the plague area suffer from the disease.

It should be added that the proposal, which was advocated in the BRITISH MEDICAL JOURNAL, that there should be one sanitary authority for all the ports of the Clyde, with a port medical officer, is not being lost sight of. At the end of last week a conference was held in Glasgow between representatives of the different ports on the river to discuss the question, and after an interchange of opinion the meeting was adjourned so as to give the various corporations interested an opportunity of considering the matter. This is a reform of which more will, no doubt, soon be heard, and there is reason to believe that it will meet the approval not only of the various health departments, but of the shipowners themselves.

It is a useful lesson to hospital authorities to note how the most recent cases of plague in Glasgow were discovered. A man suffering from a bubonic affection went to the Western Infirmary on Wednesday, September 19th, to have advice on his complaint. The bubo excited the attention of the medical officer in charge, and he detained the man for examination when he was found to be suffering from plague. Another case was that of a man who was living in a house in the Gorbals district, from which typhus patients had been removed to Belvidere General Fever Hospital. The man's symptoms were not well defined, but as they were believed to be those of typhus fever, he also was taken to the Belvidere Hospital, where he died. *Post mortem* examination showed that he died of plague. These cases show how plague patients may infect others. Plague is so indefinite in its initial symptoms, that the patient, not knowing his complaint, may seek relief in the out patient room of a hospital; and unless the physician or surgeon who sees him is alive to the possibility of plague causing the pneumonia, "the typhoid state," or the bubo, the patient may be sent home or admitted into a general hospital ward and speedily infect others.

PRECAUTIONS IN OTHER TOWNS.

The effect of the outbreak of plague in Glasgow has had a stimulating and salutary effect upon municipal and sanitary authorities in every part of the kingdom. Cleansing is the order of the day; stocks of disinfectants and of plague serum are being held in reserve against a possible invasion; and

every detail of hospital management is being thought of, so that should plague reach any city in this country it will be found that steps of more or less thoroughness have been taken to limit its spread.

LOCAL GOVERNMENT BOARD ORDER.

The Local Government Board has issued an order to the sanitary authorities of England and Wales, including London, that, in consequence of the presence of plague in Glasgow, all cases of plague shall be immediately notified in the manner provided by the Infectious Diseases (Notification) Act, 1889. To both port and riparian sanitary authorities the order applies, and all vessels within their jurisdiction come under the order. It may be mentioned that the expression "medical officer of health" includes any duly qualified practitioner appointed or employed by a sanitary authority to act in the execution of any regulations made by the Local Government Board in pursuance of any of the enactments referred to in the order. The expression "sanitary authority" under the order means every port sanitary authority and every council of a county borough, and every urban or rural district council, and in the administrative county of London, every sanitary authority for the execution of the Public Health (London) Act, 1891.

In London every sanitary authority of the administrative county, and in the district of the Port Sanitary Authority of the Port of London, will, under the order, have the same powers and duties in relation to the notification of cases of plague as they have under Section LV of the Public Health (London) Act, 1891, in reference to the notification of infectious diseases. The order also directs that the sanitary authority shall cause circular letters to be sent to all legally-qualified medical practitioners in the district informing them of their duties under this new regulation. It is further the duty of every medical officer of health to report to the Local Government Board any case of plague which may be notified to him, or which may otherwise come to his knowledge.

INDIA.

The marked increase of plague which we notified last week in India has not been maintained. The total for all India for the week ending August 28th numbered 629, but for the week ending September 4th the total is slightly lower.

In Bombay about 60 persons weekly have succumbed to plague for some time past, and the numbers are not increasing.

In Belgaum the disease is on the increase. During one day, September 5th, 31 fresh cases of plague were notified and 17 deaths from the disease.

In Poona there would appear to be a marked and serious recrudescence. Although confined to two portions of the city principally, deaths from plague have occurred elsewhere, and dead rats have been found in many parts of the town. Between August 25th and 31st 80 cases of plague and 63 deaths were recorded in Poona. It must be noticed that the new regulations are being tried in Poona. Segregation has been done away with, and the disinfection of infected houses and strict surveillance practised instead. There is to be no compulsory inspection of dead bodies. Inoculation is quite voluntary. Should a householder report sickness in his house his abode is liable to be treated as plague-infected and the house disinfected. The effects of the new measures will be watched with interest.

NOTES ON CASES OF PLAGUE IN GLASGOW.

(Continued from page 686.)

By A. K. CHALMERS, M.D.,
Medical Officer of Health, Glasgow.

ADMISSIONS INTO HOSPITAL.

SINCE September 19th no case of plague is known to have occurred among our own population, the admission to hospital on September 20th being that of a male patient from Govan, who had been sent to one of the general hospitals for treatment for what was regarded as a surgical affection, and was from thence transferred to Belvidere. The following table continues the record of admissions since those formerly published:

In addition to those mentioned in the table 5 persons were removed to hospital during the fortnight, presenting symptoms which at the time gave rise to a suggestion of plague. In three of these the further development of symptoms enabled them to be set aside as definitely not plague, while two cases still remain under observation.

RELATIONSHIP OF CASES.

1. C. McM. has no association which can be traced with earlier known cases. A neighbour had died on August 28th of "pneumonia," and was buried on September 1st. After the death the bed on which he had lain was transferred to McM's. house and was used by McM. and his wife.

10. Mrs. G. is a sister of this patient and sickened under observation on September 18th. On September 19th she had been given subcutaneously 10 c.cm. Yersin's serum. A mild attack.

11. M. G., aged 6 years, a daughter of last patient, also sickened on September 18th. Because of her age and some passing indisposition an injection of Yersin's serum was not given. Her attack has proved fatal.

2. R. M. sickened on August 23rd, a swelling in the groin being observed by herself on August 26th. She had no regular medical attendance, and the nature of her illness was not recognised till September 10th.

3. Mrs. B.'s husband is engaged in plague work collecting clothes for disinfection. Those collectors are provided with overalls to protect their clothing when on duty, and the man alleges that he observed the special precautions recommended in the circumstances. He must be regarded as having conveyed the infection to his own house, and, as he himself is not a sufferer, it can only have been in his clothing. I have in consequence recommended that after each removal the collector must bathe and change his entire clothing.

4 E. R., a ward cleaner employed in the plague ward, and like all the others whose work brings them into contact with these cases she received an injection of 10 c.cm. Yersin's serum. This was on September 3rd, and she sickened on the 12th, her illness being of the mildest possible description. The micro-organism has, however, been recovered from an affected gland.

5. G. H., 46 years, boot-top fitter, residing at 248, Mathieson Street, was admitted to hospital on September 12th, and died on the following day. Examined *post mortem* this was found to have resulted from plague. He sickened on September 8th. His illness was associated with earlier illnesses in a family (G) living at the same address. Mrs. G. was removed to hospital on September 1st, and died on the 4th, of suspected typhus, whilst her daughter at the time of her removal was discovered dead in their house. In Mrs. G.'s case the question of plague was considered, because she was known to have been a visitor at the family B., when the earlier cases occurred, but the diagnosis was held in suspense. On *post-mortem* examination the evidence was still held as inconclusive.

6—9.—M. family. A mother and three children, one of whom was married, formed one household, in which, we were informed by neighbours cases of illness were occurring. They have an indirect association (through a "contact" who visited them frequently) with the family T., of 23, Oxford Lane, and on August 22nd a daughter of the family named Kate, aged 14 years, sickened and died on August 28th, the cause of death being certified as "pneumonia." The friends now describe her illness as having been accompanied by painful swellings about the neck and arms.

Putting together these with the earlier admissions, we have now had a total of 27 admissions from definitely recognisable plague, and of these up till the present (September 26th) 5 have died and 22 remain under treatment, 1 of these being a patient from the adjoining burgh.

MILD NATURE OF ATTACK IN MANY CASES.

Eight only of the cases coming under treatment in hospital can be classed as severe attacks, and of these 5 have died. Seven, on the other hand, are of extreme mildness, so that save for their association with recognisable cases a suggestion of plague would scarcely have been raised.

Twelve fall into a middle class, the severity in individual cases ranging between the severe and mild type just alluded to, but with a tendency to mildness rather than otherwise.

Table showing Number of Admissions for Plague into Hospital since Sept. 9th.

Name.	Address.	Date of Sickening.	Removed to Hospital.	Where Exposed.
1. Chas. McM.... ..	52, Dale Street	September 8th	September 9th	Slept on a bed on which a neighbour had died from "pneumonia" on August 28th, and was buried September 1st.
2. Rosina M.	23, Florence Street	August 23rd	,, 10th	Worker in a hair factory, but with no known association with other cases.
3. Mrs. B.	81, Cubie Street	September 12th	,, 14th	Wife of a clothes' collector in sanitary washhouse.
4. Ellen R.	Belvidere Hospital	,, 13th	,, 14th	Cleaner in plague ward.
5. George H.	248, Mathieson Street	,, 7th	,, 14th	See note in text
6. Mrs. M.	57, South Coburg Street	,, 14th	,, 15th	A married daughter of the other Mrs. M. admitted September 16th.
7. Mary M.	,,	,, 14th	,, 15th	See details in text.
8. Robert M.	,,	,, 14th	,, 16th	
9. Mrs. M.	,,	,, 13th	,, 16th	
10. Mrs. G.	52, Dale Street	,, 18th	,, 19th	Sister and niece of C. McM. above. See note in text.
11. Mary G.	,,	,, 18th	,, 19th	
12. Wm. W.	21 Robert Street, Govan (admitted through one of general hospitals)	,, 1st	,, 20th	

With regard to many of the milder forms, the question of diagnosis is no easy one. We are familiar in small-pox outbreaks with the extremely modified form which the disease may present in persons fairly well protected by vaccination, and where a definite history of exposure alone affords a means of interpreting aright symptoms which would indeed rarely be critically surveyed were the persons not under observation at the time.

We are now learning practically that in a corresponding way plague can become so defaced by mildness in its form of attack that an administrative difficulty of no inconsiderable magnitude is created. Consequently I believe safety lies in disregarding the query which constantly haunts these milder forms, and dealing with the surroundings and associates of the suspect as if no doubt as to the nature of his illness existed.

YERSIN'S SERUM.

Over sixty persons known to have been in association with plague patients have been immunised by subcutaneous injection of Yersin's serum in 10 c.cm. doses. Of these two have sickened of a very moderate form of disease.

Questions of dosage and the method of administration will require consideration in the light of these partial failures. The serum is much more powerful as a curative agent when injected into the veins than when given subcutaneously, and it may be that the full protective value for "contacts" is only to be obtained by a similar selection of site.

DISINFECTION.

To the methods formerly described we have now added a final gaseous disinfection of the house with formic aldehyde. When disinfection and cleansing are finished the windows are left open.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETING.

MEETING of the Council will be held in the Council Room of the Association at 429, Strand (corner of Agar Street), London, on Wednesday, the 10th day of October next, at 2 o'clock in the afternoon.

FRANCIS FOWKE, *General Secretary.*

September, 1900.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

NORTH OF IRELAND BRANCH.—The autumn meeting of this Branch will be held on Thursday, October 18th, in Belfast. The incoming President, Professor Byers, will take the chair and deliver his opening address. Members having any business to bring before the meeting will kindly communicate with the Honorary Secretary on or before October 11th. New members can be elected on giving fourteen days' notice.—WILLIAM CALWELL, M.D., Honorary Secretary, 1, College Square North, Belfast.

SOUTH EASTERN BRANCH: NORTH KENT DISTRICT.—The next meeting of this District will be held in the Bell Hotel, Bromley, Kent, on Thursday, October 4th, at 3.45 P.M., Dr. Chatterton in the chair. The following papers have been promised: 1. Mr. J. Cantlie, F.R.C.S., Plague; 2. Mr. W. J. Walsham, F.R.C.S., Some Cases of Gastroenterostomy for Pyloric Obstruction; 3. Mr. Silcock, F.R.C.S., On Treatment of Some Common Eye Affections. The annual dinner will be held at the Bell Hotel at 6.30 P.M. Tickets 7s., exclusive of wines. All members of the Branch are entitled to attend and to introduce a professional friend. Members who intend dining are requested to notify not later than Tuesday, October 2nd, to the Honorary Secretary, A. TENNYSON SMITH, M.D., The Birches, Orpington, Kent.

SOUTH EASTERN BRANCH: EAST KENT DISTRICT.—The next meeting will be held at the Grand Hotel, Broadstairs, on September 27th, at 3 P.M., the Honorary Secretary in the chair. Agenda:—Dr. P. Lewis: Enuresis in Childhood; its Pathology and Cure. Mr. W. K. Treves: Malingerers. Mr. Raven: Hypnotics. For the convenience of those who travel by the South Eastern Railway, a brake will meet the train at Ramsgate, due at 12.41. All members of the South-Eastern Branch are entitled to attend these meetings and to introduce professional friends.—THOMAS F. RAVEN, Honorary District Secretary, Barfield House, Broadstairs.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.—The next meeting of this District will be held at the Grand Hotel, Eastbourne, on Wednesday, October 10th, at 4 P.M. Mr. C. O'Brien Harding will preside. The following communications have been promised: Dr. Ryding Marsh: On Cancer of the Stomach. Dr. Gabbett: Notes on the Diagnosis of Diphtheria. Mr. Hallidie: A Specimen of an Affected Digit from a case of Ainhum. The Hon. Secretary: A case of Gastric Ulcer. Dinner at the Grand Hotel at 6 P.M., charge 6s., without wine.—J. W. BATTERHAM, Honorary District Secretary.

SOUTH-EASTERN BRANCH: EAST SURREY DISTRICT.—The next meeting of this District will be held at the White Hart Hotel, Reigate, on Thursday, October 11th, at 4 P.M., J. Walters, M.D. (Reigate), President of the South-Eastern Branch, in the chair. Dinner at 6 P.M., charge 7s., exclusive of wine. Agenda: Minutes of Croydon meeting. To decide when and where the next meeting shall be held, and to nominate a member of the Branch to take the chair thereat. The following papers, etc., have been promised:—Dr. Hadley: Chronic Bronchitis in Children. Mr. C. Mansell Moullin: Diagnosis and Treatment of Acute Inflammation of the Appendix. Mr. S.W. Macilwaine: Adjourned discussion on "The Future of the Profession and of the Association" (a paper read at the last Croydon meeting, and published in the BRITISH MEDICAL JOURNAL of July 21st, 1900), when the following resolution will be proposed: "That it is desirable that the British Medical Association should authorise and encourage the formation of local societies amongst its members." Members desirous of exhibiting specimens or reading notes of cases are invited to communicate at once with the Honorary Secretary. All members of the South-Eastern Branch are entitled to attend and to introduce professional friends. N.B.—The Honorary Secretary would be much obliged if members would kindly inform him by postcard whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. By so doing they will very materially facilitate arrangements, and promote the success of the meeting.—HENRY J. PRANGLEY, Tudor House, Anerley, Honorary Secretary.

BORDER COUNTIES BRANCH.

A MEETING of this Branch was held at the Infirmary, Workington, on Friday, September 21st, Dr. J. HIGHET, President, in the chair. Twenty members were present.

Confirmation of Minutes.—The minutes of the last meeting were read, approved, and signed by the President.

New Member.—Harry Ernest Denny, L.R.C.P. and S.Ed. (Longtown), was elected a member of the Association and of the Branch.

Communications.—Dr. J. W. CRERAR (Maryport) read a paper on the Treatment of Carbuncles, and reported several cases in which he had excised carbuncles with success. The PRESIDENT and Drs. NORMAN WALKER and ORMROD discussed the paper, and Dr. CRERAR replied. Dr. NORMAN WALKER (Edinburgh) read a paper on the Treatment of Lupus in General Practice; he described the various forms of local and general treatment which in his opinion were most efficacious, and also referred to treatment by Finsen's method and by *x* rays. Drs. DUDGEON and MATTHEWS made some remarks on the paper, and on the motion of the PRESIDENT, Dr. Norman Walker was accorded a hearty vote of thanks for his communication. Dr. DUDGEON showed a case of lupus that he was treating by *x* rays. Dr. ORMROD showed several cases of a form of skin disease at present epidemic in Workington. In the opinion of various members this disease appeared to be identical with the cases of epidemic exfoliative dermatitis as described by Dr. Savill in a recent outbreak at Paddington.

Dinner.—Afternoon tea was provided at the Infirmary, and after the meeting the members present were entertained at dinner at the Green Dragon Hotel by the members resident in Workington.

ADELAIDE AND SOUTH AUSTRALIA BRANCH.

THE twenty-first annual meeting of this Branch was held at the Adelaide University, Adelaide, on June 28th, 1900, the retiring President, Dr. R. H. MARTEN, in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The following were elected: Edmund L. Archer, M.R.C.S., L.S.A., Alfred Ernest Barratt Hine, M.R.C.S., L.R.C.P., D.P.H., Frederick Steele Scott, M.B., Ch.B., B.A.O. (R.U.I.).

Annual Report.—The annual report called attention to the

fact that the Branch had completed its 21st year—which had been a successful one—and now passed out of its infancy with a larger roll of members and more funds than it had possessed for several years past. Concurrently with the twenty-one years of the Branch's existence, the Hon. Treasurer (Dr. T. W. Corbin) completed twenty-one years of continuous service on this Council, for eighteen years of which he had been annually elected the Treasurer. It was Dr. Corbin who, on June 19th, 1879, moved the resolution which gave birth to the Branch. Fourteen new members had been elected, and four had left the province during the year. The average attendance of members at the monthly meetings showed a distinct increase on past years.

The report was adopted.

Election of Officers and Council.—The following were elected: President, Dr. Brummitt; Vice-President, Dr. C. E. Todd; Hon. Treasurer, Dr. W. T. Hayward; Hon. Secretary, Dr. J. B. Gunson; Ordinary Members of Council—Dr. R. H. Marten (*ex officio*), Drs. T. W. Corbin, A. A. Hamilton, W. J. Gregerson. Dr. C. Morier, 1, Hamilton Place, Regent's Park, London, N.W., continues as the representative on the General Council.

Financial Statement.—The financial statement showed a balance in the bank on June 13th, 1900, of £199 15s. 1d.

Annual Dinner.—In the evening the annual dinner was held at the South Australian Hotel. Nearly fifty members were present. Dr. T. W. Corbin was presented by the Acting President on behalf of the Branch with a large silver tea-tray with a suitable inscription in recognition of his invaluable services.

SPECIAL CORRESPONDENCE.

BELFAST.

Appointment of Dr. E. Coey Bigger as Local Government Board Inspector.—Typhoid Fever in Whitehouse and Holywood. —Visit of their Royal Highnesses the Prince and Princess of Wales to Belfast.—The Brabazon Employment Society.—Medical Candidate for Parliamentary Honours.

IT has just been announced that Dr. E. Coey Bigger has been appointed to the new Medical Inspectorship under the Local Government Board for Ireland. Up to the present the whole province of Ulster has been under the superintendence of one inspector, Dr. C. J. Clibborn, one of the most popular and able men in the service, who has found considerable difficulty in keeping in touch with such a large district; while the counties that are separated off will regret losing him, the remainder are to be congratulated on the prospects of his augmented opportunities to help. Dr. Bigger has seen much service in the Poor-law administration; graduating in it as resident medical officer in the Union Infirmary, Belfast, he soon became dispensary medical officer, and finally visiting medical officer for the Union Hospital, and superintending medical officer of health for the rural portion of the Union. These two latter posts he still retains, but will resign; it is said that there are already fourteen candidates in the field for the probable vacancy. Dr. Bigger exercised considerable influence with the guardians and was successful in procuring many reforms in the fever hospital. Dr. Bigger has also been a member of the Council of the County Borough of Belfast for several years, first as a councillor and for the last three years as Alderman for Court Ward, so that he has a large general public experience; he was a valued member of the Public Health Committee. Dr. Bigger, it is said, will reside in Londonderry; his many friends heartily congratulate him and offer him their best wishes.

Reports are appearing with disquieting frequency of the occurrence of typhoid fever in the neighbourhood of Belfast. Whitehouse is one of the most noted, and Dr. Manley's and Dr. Bigger's reports are always in the same strain—small insanitary houses and filth. Holywood, on the opposite side of the Lough, is also popularly reported to be at present suffering from an epidemic of the same disease. A uniform system of superintendence and of notification would enable one to judge how far the popular report is justified, and to decide upon the best measures to put the water supply and sanitary arrangements in proper condition.

The Lord Mayor of Belfast has received official intimation of the very satisfactory news that their Royal Highnesses the Prince of Wales and the Princess of Wales will visit Belfast early next year to lay the foundation stone of the New Royal Victoria Hospital. After very mature deliberation, and after examination of the plans of most modern hospitals, and inspections of many of the most recent in England and Scotland, the plans of Mr. Henman, of Birmingham, have been passed, and the estimate of Messrs. McLaughlin and Harvey, Belfast, for the building accepted. There are many novel features in the scheme; and if the hopes of the staff and Committee are realised, it may prove the beginning of a revolution in hospital construction. Their Royal Highnesses will nowhere receive a more loyal or hearty welcome than from the citizens of Belfast.

The Countess of Meath and Mrs. Tolerton, at a meeting in the board-room of the Belfast Union Workhouse, explained the system of the Brabazon Employment Society. "It was a very simple society," Lady Meath said; "to see the inmates of workhouses sitting about in hopeless, helpless idleness, their occupation brooding over their miseries, their recreation grumbling, was a spectacle sad in the extreme." The principle of the system was to provide material to be worked up by these poor people in employment which, whilst it occupied their minds, did not inflict upon them any hardship; no attempt was made to introduce the scheme into any workhouse without the goodwill of the guardians, and as regards individual inmates, no compulsion was ever suggested. The scheme had worked well elsewhere, and the Belfast Board of Guardians may be relied upon to take a broad and favourable view of the question.

Notice has appeared in the public press that Councillor Dr. J. King-Kerr, J.P., of Knock, co. Down, has been asked to become a candidate for the representation of East Antrim. Colonel James McCalmont, the present member, is well known and very popular with all classes, and if Dr. King-Kerr is nominated and consents to stand, he will, it is considered, have a very stiff contest in opposing such a general favourite.

INDIA.

Diabetes in India: Prevalence among well-to-do Hindus: Influence of Diet: Treatment.

INDIA should furnish a splendid field for the study of the effect of diet on the prevalence of diabetes, especially as the disease is common in Bengal. Unfortunately the literature on the subject is very scanty, while the views of different writers are somewhat divergent, mainly on account of cases of true diabetes and temporary glycosuria not being kept distinct.

The most reliable information on the subject is contained in a paper by Mr. A. Mitra, of Cashmere, on a collection of 200 cases, which was read before the first Indian Medical Congress. The usual symptoms of wasting, with polyuria, great thirst, and tendency to boils, etc., was well-marked in the great majority of the cases, and they were evidently true diabetes. Hereditary predisposition was present in half the patients, and the majority were between the ages of 35 and 45, while a good many were over 55, which is old for India. The great majority of the cases were Hindus, and though they constitute the greater part of the population, the proportion of cases among them appeared to be in excess. The disease is also said to be very rare in women, but a much smaller percentage of women come under treatment. Injury to the nervous system as a cause has very rarely been noted in India, but on the other hand mental worry and work plays an important part in its etiology, as shown by the fact that nearly one-quarter of the cases occurred in native lawyers, who although they form a large section of the educated classes, still are but a very small proportion of the native population. Pancreatic disease does not appear to have as yet been noted as a factor in the etiology of the disease in India, but it does not follow that it is not one, as it is comparatively rare for necropsies to be performed among the well-to-do classes of natives, who furnish most of the sufferers from the disease. From 8 to 10 per cent. of sugar is said to have been present in most of the cases. If this is a correct estimation, the disease is evidently

not at all of a mild type as a rule. One native physician estimates that one-tenth of the mortality of Calcutta is due to this disease, directly or indirectly, but this certainly appears appears to be far above the mark.

Dr. Crombie's statement that he looks on diabetes as a dietetic disease of the Hindus caused by excessive carbohydrate and saccharine diet combined with hard mental work, just as gout is the main dietetic disease of Northern latitudes on account of excessive nitrogenous food, is of interest in this connection as his experience was nearly entirely in Bengal, the home of the well-to-do Hindu. It is also a well-known fact that the girth of the Bengali babu has a very great tendency to increase in direct proportion to any increment in his pay, for is not a fine "presence" universally recognised among them as a sign of great dignity? This is brought about by excessive consumption of carbohydrate, and especially of saccharine, foods. This is combined with hard mental work, which alone could place these very praiseworthy men in their elevated position. Sedentary habits also add their influence in the same direction. It may be open to question how much of the disease so produced should be classed as glycosuria, on which point it is highly desirable that further investigation should be undertaken; but it is quite certain that true diabetes does very frequently arise under the conditions described, while it is probable that the milder affection would be still more common if it were carefully looked for. The evidence, then, to be derived from Indian experience as far as it goes, is strongly in favour of a combination of mental work and excessive consumption of starches and sugars, aggravated by a completely sedentary life, as the most important factors in the production of diabetes, while the comparative rarity of the disease in the lower class Hindus indicates that a vegetarian diet alone is not a sufficient factor to produce the disease at all commonly. Diabetes is said to be unknown among Hindu widows, who lead a most unexciting life, and are not indulged in excess of saccharine or other farinaceous foods.

With regard to the treatment it seems to be the general experience that strict dieting as understood in England is quite impossible in the case of Hindus, but there is not sufficient material on record to allow of the effect of this being estimated. Opium, or some of its ingredients, appears to be largely used in the treatment of the disease, while about one-third of the patients take the drug habitually. As much as 20 grains a day is sometimes consumed, but apparently without averting a fatal result, although most Indian writers advise the use of the drug and consider it to have its value in these cases.

CHICAGO.

A Typhoid Epidemic.—Formalin as a Food Preservative.—A New Emergency Hospital.—Rush Medical College.—Medical Practitioners in Illinois.

A PECULIAR epidemic of typhoid fever recently broke out at the Midlothian Country Club, located about 18 miles westward of Chicago. The club is largely given over to golf and has a large and fine tract of land. It seems that in some manner one of the wells became polluted, and something like 40 cases of typhoid developed among the caddies and golf players mostly. Notwithstanding there are deep artesian wells located on the ground, a spring was resorted to largely under the belief that, the water containing less lime salts and mineral matter, rheumatism would not be so prone to occur. For this reason the spring gushing innocently from the side hill was favoured, and it was this spring that no doubt was contaminated and drinking from it led to the outbreak. The instance affords an interesting addition to confirmatory reports on the waterborne character of the poison of typhoid fever, for the epidemic was an isolated one and clearly traced to the source given.

The pure food law of the State of Illinois came into effect on July 1st, 1900, and already actions have commenced and at least one conviction has resulted, this being the case of a milk dealer who employed formalin for the preservation of his wares. Prompt legal process was taken against the dealer and his conviction was readily secured. The proper enforcement of this law will be a distinct blessing, especially to the labouring classes.

The Emergency Hospital for the central business district of this city, of which mention was made in this correspondence the early part of the present year, has fully materialised and is now in good running order, with 20 beds and good quarters in Plymouth Place. The location is convenient and the service promises to be of great value in a portion of the city where such emergency service has long been needed.

A large addition is soon to be built to Rush Memorial College, which is in close affiliation with the University of Chicago. The addition will be six storeys in height, and given up largely to medium-sized class rooms. The plan of instruction adopted by this institution is for elective work, small classes, and class-room recitations, which will make close contact between scholar and instructor essential, doing away largely with the old didactic method, substituting therefor the clinical and demonstration course as completely as possible under the present advancement and circumstances.

The general medical register of four years ago credited the State of Illinois with 7,331 medical practitioners, while the register for 1900 (just published) gives the number of practitioners in this State as 8,582. Something of the rapidity of development of this great middle section of the country may be gathered from these figures. This State is distinctly agricultural, and thousands of little towns are scattered over it from one boundary line to the other. Each little community requires its medical adviser, and in this way many new and oftentimes desirable locations are found. Just where the limit lies or when it will be reached is something impossible to foresee or intelligently determine.

SYDNEY.

The Bubonic Plague.—Medical Bills.—Indecent Advertisements Act.—Australian Trained Nurses' Association.

THE visitation of the bubonic plague may now be considered at an end for the present, only two or three sporadic cases having been officially reported during the last three weeks. The total number of cases to date is 302; of this number 152 have been discharged from hospital as fully recovered, 101 have died, and 49 still remain under treatment at the quarantine hospital. A few fresh cases continue to be reported from the other Colonies.

Two medical Bills have been introduced into Parliament during the present session; one, "A Bill to Regulate the Practice of Medicine and Surgery and other matters connected therewith," is the same Bill which passed the Legislative Council in a former session of Parliament, but which lapsed in the Legislative Assembly. Another short "Bill for the Registration of Medical Practitioners, the Restriction of Unqualified Persons from Practising, and to amend such other Statutes as may be inconsistent therewith," contains only five clauses, and was drawn up after consultation between Mr. Price, the member who has introduced it, and the Council of the New South Wales Branch of the British Medical Association. This Bill provides the means of registration of medical practitioners, and penalties for the use of medical titles by unqualified persons, and also confers upon the Medical Board power to remove from the *Register* the names of practitioners who have had their qualifications withdrawn by the licensing bodies, or who have been found guilty of any felony or misdemeanor. At the same time, practitioners thus dealt with have the right of appeal to the Supreme Court of this Colony. It is realised that this is only a fragment of legislation urgently needed, but if this can be passed as a first instalment, we have hopes of further being secured later on. It is much regretted that this Bill is not a Government measure, since the prospect of its being successfully carried through the two Houses by a private member is not very good.

"A Bill to suppress indecent and obscene publications" has been successfully piloted through Parliament by Dr. James Graham, M.L.A. This Bill, which is based largely on the English Act, consists of six clauses, and provides penalties for publishing indecent advertisements in newspapers, or posting such in any public place; and also gives the Postmaster-General power to open, and if necessary to destroy, any packet supposed to contain any indecent advertisements posted in the ordinary way. It is certain that this Act will go a long way towards preventing the large amount of abor-

tion at present carried on in Sydney by means of advertisements in some of the daily and weekly newspapers.

The first annual meeting of the Australian Trained Nurses' Association was held recently, and a most favourable report of its operations was presented. After a considerable amount of difficulty, the formation of the Association was accomplished, and it bids fair to be an immense boon both to the trained nurses and medical practitioners. Dr. Norton Manning is the President, and Miss McGahey and Dr. Arthur Mills are the joint Honorary Secretaries. These officials have devoted a large amount of time and energy to this work, and the chief part of the success of the Association is to be attributed to them. The Association has its headquarters in Sydney, but embraces all the other Colonies in its field of operations. With a view of bringing it more prominently before the general public, and of establishing a Benevolent and Pension Fund in connection therewith, a *conversazione* was held last week in the Sydney Town Hall, under viceregal patronage. The Mayor and Mayoress, Sir Matthew and Lady Harris, received the members of the Association and their friends, and a most successful and brilliant function took place. An appeal was made to the public for subscriptions towards the Benevolent and Pension Fund.

CORRESPONDENCE.

MEDICAL LEGISLATION AND THE MEDICAL PROFESSION.

Sir,—The Accrington and District Medical Society have taken the opportunity given by the General Election to send a deputation to both the candidates before the constituency, asking them to pledge themselves to support any amendment of the Medical Acts br ught forward by the General Medical Council or the British Medical Association, especially with a view to registration being the sole right to practise medicine or surgery, or any of their branches.

The Society further suggests that the medical men in every electoral district shall immediately take similar steps.—I am, etc.,

Accrington, Sept. 26th. ELWIN H. T. NASH,
Honorary Secretary.

*** As we go to press Dr. Nash telegraphs that both candidates absolutely agree with the proposals of the deputation.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

Sir,—It is a gratification that your columns are open to the above. It is an anomaly that assurance societies should make but a half-guinea fee for reports upon proposers for assurances of £250 or £300 and a guinea for those over. The one report entails as much trouble, care and responsibility as the other. No items of examination or of information are eliminated from the smaller proposal as compared with the larger. The company get the same information and advice upon either fee, and would, justly, be extremely hurt if they thought that the smaller-feed report was more perfunctory than the larger-feed one. The prosperity of assurance societies is such that they cannot pretend to be unable to afford adequate fees to medical referees.

In 1898 I was invited to become the medical examiner of candidates for admission into the Hearts of Oak Benefit Society in the (Denbigh) district. The district was not defined, and the tenure was for no fixed period, and subject to revocation at any time by the committee of management. The fees were fixed at 2s. per candidate, and (if married) 1s. for his wife when found necessary that she should be examined at the same time, the fees in all cases, whether passed or rejected, being payable by the candidates. My reply was that the fees were insufficient and inadequate for a thorough and reliable examination and report for what amounted to a life insurance and a possible annuity proposal. I pointed out that the benefit society would be my client, and accordingly, as being presumably hostile to the proposer, he should not be asked to pay direct the fees for examination. I further said that I would take this up with, amongst other conditions, adequate fees to be paid by the benefit society. But I heard no more from the society.

This society had on September 30th, 1898, capital funds of £1,991,733, amongst 230,000 members; an income during 1897 of £494,778, and disbursed in sick pay £215,719. Up to September, 1898, the income was £393,443, and sick payments £109,535. The addition to capital in 1897 was £134,962, and to the end of September, 1898, £115,071.

This society at least cannot claim the necessity of a charitable help, and need not offer such paltry fees for referee reports; but from a commercial point of view they can evidently get what they want for these fees from medical men, so that at last the profession has only itself to thank for this rate of remuneration.—I am, etc.,

Colwyn Bay, Sept. 21st. J. LLOYD-ROBERTS.

Sir,—I quite agree with those who condemn the circular recently issued to their medical examiners by the New York Life Assurance Society, and I cannot but express surprise that a life office of such standing should have had the temerity to issue it. Is it not initiating a species of "sweating" in medical life examination which has been so justly and heartily condemned in all upright and honest commercial life? Is it not an unworthy attempt, which evidently they hope, and I fear, may be successful, to grind down their examiners to work for the lowest possible fee? What can many of the poor examiners do but sign the circular as requested, knowing full well that if they decline they will at once be struck off the roll of medical referees?

In London I fear little can be done to oppose this parsimonious scheme, because, should any examiner refuse to sign, he knows full well, sad to say, there would be a dozen medical men within a radius of half a mile, needy, struggling practitioners, who would come forward and accept the terms and fees offered. But let me appeal to my country medical brethren. They, I think, may help materially. Let all practitioners in any locality agree positively that neither will examine on other terms—or, at least, lower fees—than those existing at the present time. This, I feel sure, must have its effect, because the office must then lose its business in the country and country town districts or pay at least the present fees, or accept lives without medical examination.

Could the Life Assurance Medical Officers' Association take the matter up and assist their more unfortunately-placed brethren by a strong protest, pointing out the unwisdom of such a policy as well as the injustice to the medical profession even in attempting such a system of "sweating?"—I am, etc.,

Sept. 25th. DISGUSTED.

Sir,—I have been requested by the committee of the Portsmouth Medical Union to inform you that the practitioners in this borough have been asked to co-operate with and support the local medical referees of the New York Life Insurance Co. in opposing the new conditions proposed by that company, which will considerably lessen the fees paid to their medical referees.

It is hoped by our union that all the other medical unions and ethical societies in the kingdom will take this matter up, and by a united and strong opposition defeat this fresh attempt to "sweat" the profession.—I am, etc.,

W. CARLING,
Hon. Sec. Portsmouth Medical Union.

Highland Road, Southsea, Sept. 24th.

Sir,—The enclosed will emphasise the importance of the profession taking some united action with regard to life insurance examinations. Of course, I should not accept the terms offered, but no doubt others may be induced to do so.—I am, etc.,

Kidderminster, Sept. 25th. J. LIONEL STRETTON.

*** The document enclosed is headed Medical Officer's Report. This report consists of two parts. One is headed "Queries by Medical Officer to Applicant;" this, on our calculation, would involve a minimum of 37 questions by the medical examiner to the applicant, with a note of the answer to each; it might involve many more. The second part of the document is headed "Queries to be answered by Medical Officer. It is particularly requested that each answer be full and specific." Here there are at least 23 distinct answers required, including details as to the systematic examination

of the circulatory system, the respiratory system, the nervous system, and of the urine, with a request for an opinion whether the life is "unexceptional," "fair average," "under average," or "uninsurable," and space is left for further remarks. The fee offered for filling up this voluminous document is 7s. 6d.

EXAMINATION OF LUNATICS UNDER SCOTTISH POOR LAW.

SIR,—Perhaps "Dementia," who writes in the BRITISH MEDICAL JOURNAL of September 15th, might get some assistance if he would bring his grievance under the notice of a meeting of the Branch of the Association of which he is a member. The medical men in this town are treated in the same manner as "Dementia," the two parochial medical officers filling up the certificates in all cases of insanity. The Inspector of Poor is not acting illegally in giving them this work, and it may possibly be customary as "Dementia" has been told, but nothing more can be said for the practice. It is not just, as the Lunacy Acts state, that any two medical men may certify in these cases. If I am qualified to attend a case of insanity (occasionally for a considerable time) while being treated at home, I am surely qualified, and ought to have as a right, the privilege of signing one of the certificates, if it is ultimately found necessary to remove the case to an asylum. It would be as logical and as just for the Medical Officer of Health (as servant of the local authority) to step in and certify all cases of infectious disease attended by me and pocket the fee, as it is for the parochial medical officers intervening in a case of insanity requiring asylum treatment, under my care, and getting a fee for the purpose. I shall be glad if "Dementia" will communicate with me.—I am, etc.,

Galashiels, Sept. 20th. E. MUNRO TYRRELL, M.B.Edin.

IRISH DISPENSARY DOCTORS' HOLIDAYS.

SIR,—Your observations in the BRITISH MEDICAL JOURNAL of September 22nd, *re* the above, are, alas! not in accordance with the facts as practised by the majority of Boards of Guardians, and require correction.

Since the decision of the Queen's Bench on the subject, my guardians have granted not four weeks' leave but two, and have allowed the munificent remuneration of two guineas weekly. In no case do I know of any dispensary doctors having been fortunate enough in getting four weeks. Some of the neighbouring unions have allowed three weeks at two guineas weekly, whilst others grant two weeks at three guineas weekly.

We are all anxiously looking forward to the issuing of the Order in Council, or "new rule," as promised by the Chief Secretary, knowing as we do full well from past experience, what to expect from our present taskmasters if the question of holidays remains at their bidding as at present.

In reference to the important subject of consultation fees, the guardians are likewise much in fault. In many cases they have fixed the fee at such a low standard that the medical men, who would be likely called in, decline their services, whilst we, on the other hand, are bound by the regulations to call to our assistance the necessary aid. It is quite evident that such a state of affairs cannot continue, and it is high time that the Irish Poor-law Officers or other association should devote their best efforts in trying to remedy these and other hardships in the interests of dispensary doctors as well as the sick poor.—I am, etc.,

September 24th. DISPENSARY DOCTOR.

PROFESSIONAL SECRECY.

SIR,—In the BRITISH MEDICAL JOURNAL of May 12th and of June 2nd there appear leading articles on professional secrecy, in which, after quoting decisions of the highest authorities, you state, "It is thus clear that the courts of this country (Great Britain) will not necessarily support the refusal of a medical practitioner to disclose what has come to his knowledge as to the condition of his patient in his professional capacity, though they would forbid a solicitor to make such a disclosure as to the affairs of his client."

You deplore this unsatisfactory state of affairs, and yet declare that "the course of decisions has lasted so long, and been on the whole so consistent that it seems hopeless now to expect any change." The late Dr. Tidy in his lectures on legal medicine, says:

> No practitioner can claim exemption from answering a question (in a court of law) because the answer may or would involve a violation of secrecy, or even implicate the character of his patient.
>
> This is the law; and however it may be defended on legal grounds, we hope there are not a few medical men who would prefer to sacrifice their personal liberty to their honour. It seems a monstrous thing to require that secrets affecting the honour of families, and perhaps confided to the medical adviser in a moment of weakness, should be dragged into the garish light of a law court, there to be discussed and made joke of by rude tongues and unsympathetic hearts.

In this colony of New Zealand, where we have little regard to the authority of precedents when they bar the way of progress, we have adopted the law of the State of New York, referred to in the BRITISH MEDICAL JOURNAL of June 2nd.

In the Evidence Further Amendment Act, New Zealand, 1885, it is provided that the following confessions and communications shall be privileged, and shall not be admissible in evidence in any civil or criminal proceedings, except with the express consent of the person alleged to have made such confession or communication: (*a*) All confessions made to a minister of any religion, or priest of any denomination whatsoever, in his professional character, in the course of discipline enjoined by the law or practice of such denomination, or under sanction thereof; (*b*) all communications made to a physician or surgeon in his professional character by any of his patients; and the word "communication" herein shall include all information acquired necessary to enable such physician to prescribe, or such surgeon to do any act for such patient.

There follows a necessary proviso that this section shall not protect any communication made for a criminal purpose, or prejudice the right to give evidence concerning statements made for the purpose of effecting an insurance on the life of any person.

It appears to me to be an anomaly requiring immediate rectification that in the old country a person need not incriminate himself, yet if he avails himself of the services of a medical practitioner this proceeding may indirectly incriminate him.

You declare that "the tendency of modern (legal) practice seems to be in favour of maintaining confidence as far as possible." The present time, therefore, seems opportune, and surely if a firm stand were made by the profession the grievous wrong now inflicted on its members, whereby they may at any time be called upon to choose between the sacrifice of liberty or of honour, could readily be set right by the adoption of some such course as has already been taken in this colony.—I am, etc.,

Onehunga, New Zealand, July 15th. W. G. SCOTT, M.D.

MOSQUITOS AND MALARIA.

SIR,—The connection between mosquitos and malaria seems to be now so clearly proved that some experiments should be undertaken by the Indian Medical Department to find out under what conditions mosquitos do not produce malaria. Some years ago when on a hunting expedition in a very malarious district in the Bhotan Terai, I succeeded in escaping malaria by keeping within mosquito curtains till after sunrise, and getting into them again as soon as possible after dark, smoking freely at the same time within the curtains of my camp bed. Two out of the four Europeans of my party, and nearly all the natives who did not take these precautions, suffered so severely from malaria that our camp was unable to march after three weeks in the district. I may mention that it was then observed by experienced officers that from 14 to 18 days was the time which elapsed between exposure to infection and the appearance of severe fever. But there are places in Eastern Bengal and no doubt elsewhere where mosquitos are very numerous and annoying, which do not seem to be subject to severe malaria, and I remember that Dacca, the only place where I was kept from sleeping a whole night by mosquitos, was looked on as a station free from severe malaria, and I certainly, though I had previously been suffering from fever in Assam, never had a touch of it there.

The great importance of finding out as soon as possible what precautions should be enforced by those responsible for the health of soldiers and others who are obliged to live in malarious districts cannot be overrated.—I am, etc.,

Colesborne, Gloucestershire, Sept. 24th. H. T. ELWES, F.R.S.

THE CONTAGIOUSNESS OF LEPROSY.

Sir,—There is an interesting suggestion made in the British Medical Journal of August 18th by Dr. Palm with regard to the above. Possibly the pediculus vestimenti may be a factor in the spread of the disease. Your correspondent mentions the mosquito in connection with malaria, and this leads me to state that in Honolulu and in the Sandwich Islands generally, where leprosy is rife, I have heard the mosquito blamed as the disseminator of the disease. From a considerably long personal experience I may add that the mosquito is a terrible scourge in the Sandwich Islands, being in fact so bad that it is next to impossible to sit outside a house in the verandah in the evening. The natives of the Sandwich Islands, the Kanakas, are scrupulously clean in their personal habits. In Madeira, from where I now write, leprosy is certainly dying out, there being in all probability not more than 50 to 60 cases in the island, as compared with 300 to 400 cases 30 years ago. I may add that segregation though strictly carried out in the Sandwich Islands is not in vogue in Madeira; in the latter place there are very few mosquitos, and the poorer classes are indescribably filthy, being in fact just the sort of host one would expect the pediculus vestimenti to prefer.—I am, etc.,

J. Geddes Scott, L.R.C.P.Lond., M.R.C.S.Eng.

Funchal, Madeira.

"THE DISCUSSION ON 'FIBROIDS.'—A PROTEST."

Sir,—Mr. Roger Williams's letter under this heading reminds me of Bret Harte's lines:

> Now I hold it is not proper for a scientific gent
> To say another is an ass—at least to all intent;

and I should like to remark that Mr. Williams lays himself open to the rejoinder:

> Nor should the individual who happens to be meant
> Reply by heaving rocks at him—to any great extent.

Here are some of the missiles he hurls at me: "Gross breach of good manners," "offensive remarks," "bad mannerism," "abusive remarks," and "I shall treat his abuse with the contempt that such impudence deserves."

The last quotation refers to my fate unless I point out Mr. Williams's errors. My criticism of Mr. Williams's "work" was evoked because his deductions were based on inferences and estimates, not on facts. When this process is applied to statistics dealing with scientific matters, I regard it as "juggling with figures," and when the deductions convey an erroneous impression, I consider such juggling with figures to be "misleading," and such work to be worthless.

If after this explanation I still fail to avert Mr. Williams's contempt, I can only say that I estimate his contempt at precisely the same value as his work.—I am, etc.,

Queen Anne Street, W., Sept. 24th. Arthur E. Giles.

THE ROYAL NAVAL MEDICAL SERVICE.

Sir,—In expressing my concurrence with the opinions of "M.O., R.N." and "N.O." in the British Medical Journal of September 15th and 22nd respectively, I would point out further that combatant officers are given every opportunity to requalify in their professional work, but that there is the greatest difficulty experienced for us to do so. We require a visit—say for three months at least—now and again at some large civil hospital after long sea service, in order to bring our knowledge up to date. The answer given recently in the House why this is not done was simple nonsense.

In your Educational Number we read of the conditions of naval medical officers, page 518, August 25th, "Voluntary retirement and withdrawal will be allowed as follows, every officer to have the option, subject to the approval of the Admiralty, of retiring," etc. This privilege was obtained on the recommendation of a Royal Commission. However, frequent refusal of late to medical officers, more especially of fleet rank, to be allowed to retire is causing much discontent, and it is not in keeping with the conditions on which we enter. Ships not being kept up to complement, one surgeon being only borne in the place of two, necessitating the head of the medical department sharing equally the ship duties with a junior officer, is both irksome and non-conducive to discipline in his own branch. Picture a lieutenant-colonel doing day and day about with a junior lieutenant in the R.A.M.C.; that is what the senior medical officer in a ship, with few exceptions, has to do, in some cases after more than a quarter of a century's service to his Queen and country.

I am sure, Sir, you will agree that all is not well with us in the senior service.—I am, etc.,

September 24th. Naval Medico.

THEORIES OF COLOUR VISION.

Sir,—I have read with great interest the remarks on colour vision of your reviewer on recent works of physiology. It is my opinion that there are very few who believe in either of the two classical theories, and it certainly is extraordinary that though this change of opinion is recorded in some textbooks it should be omitted from any. I am continually receiving letters agreeing with the psycho-physical theory from those who are best qualified to form an opinion. I will give extracts from two which I received a few days ago. One is from a Professor of one of the universities, and the other from one of the most eminent Fellows of the Royal Society. The first says:

> I think I must now have personally tested some 10,000 men and boys for colour blindness, and I have come to the conclusion, independently, that colour blindness is due to a central defect, a brain deficiency.

The second writes:

> What you say in your paper[1] appears to me true.

Then after referring to a person who said that red-green correctly described yellow, he continues:

> If, as you say, however, there are lots of people who object to the names yellow and purple, then there must be something in your classification; granting, of course, that such people are greatly in the minority.

I will not go through the objections which have been raised to any retinal theory of colour vision, because these objections have never been answered; they have either been accepted or ignored. I may say that I totally disagree with the opinion that normal colour vision is trichromic, and I consider that the curves and equations which have been constructed to prove that normal colour vision is trichromic are mathematically incorrect, judged only by the facts on which they were based. I raised this point in a paper which was read before the Royal Society on June 21st of this year. Equal stimulation of the three sets of fibres is supposed to cause the sensation of white light. Red and green when mixed make yellow; violet and green when mixed make blue. But yellow and blue when mixed make white, which makes one portion of green too many, thus: R+G=Y, and G+V=B, but Y+B=white, therefore R+G+G+V should equal white, but R+G+V=white.—I am, etc.,

Hendon, Sept. 22nd. F. W. Edridge-Green.

THE USE OF OPIUM IN CHINA.

Sir,—My attention has been called to a review in the British Medical Journal of December 23rd, 1899, of a book I had the honour of compiling, entitled *The Opinion of over 100 Physicians on the Use of Opinion in China*, and with your permission I will make a few remarks thereon.

After stating that it is evidently our intention to be fair, for which gracious admission he will please accept our thanks, your reviewer says: "The Indian Government, and through it the British Government, is pronounced to be the virtual cause of the consumption of opium in China, owing to the large importation of opium from India and the cheapness of the drug. In other words, the opinion is expressed that the British are morally responsible for the opium habit amongst the Chinese, and that the trade is at once degrading and reprehensible. This may be all true, but it is not in accordance with the evidence laid before the recent inquiry on the opium habit conducted by a specially appointed Royal Commission."

Now I agree with your reviewer that "this may be all true," but I respectfully ask him to name chapter and page where the "hundred experts" said so. The body of the book is made up of medical testimony given in answer to certain questions in regard to opium in China, and neither in the 31 specific questions nor in the hundreds of replies is there a single reference to the Indian Government, the British Government, or the opium trade.

Again, your reviewer tries to belittle the medical evidence against opium, by giving reasons why it should be considered pessimistic, and then says: "If, on the other hand, some other class of the community, say merchants, were to be asked to give their opinion, in all probability they would deny they had ever seen an opium eater or smoker in China; or, if

[1] *Lancet*, August 4th.

they had, that the person who so indulged seemed but little or none the worse." To this let me say that the merchants here live in the treaty ports; they do not as a rule speak the Chinese language, they have little or no social intercourse with the people, and they will not employ opium-smoking servants, so when they deny seeing opium smokers or the evils of the use of opium they are telling the truth, and their evidence is worth just about as much on the subject as if they lived in London or Paris, instead of Hong Kong or Shanghai. Why does your reviewer, in common with other defenders of the opium habit, wander so far from the region of common sense whenever the subject of opium in the East is under discussion? Evidence from such sources would have no weight in a court of law; why should it be so valuable before a Royal Commission or the British public? I might also add that some of the "unprejudiced" evidence in favour of opium in the past has been given by merchants engaged in the opium trade.

On the other hand, we missionary doctors live among the people, we hold social intercourse with them, we speak their language, and while we do not employ opium-smoking servants, yet we travel in boats rowed by opium-smoking boatmen, or go in other conveyances where opium-smoking coolies are employed, so that in addition to treating opium-smoking patients we come in contact with opium smokers in various other ways every day of our lives. Dr. J. G. Kerr, of Canton, the man who has done more operations for stone in the bladder than any other surgeon, has lived thus among the people for over forty years, and it is an insult to his intelligence to say, as does your reviewer, that "no single individual can be in a position to come to a positive conclusion in this matter."

Again, your reviewer says "Opium has only been used extensively in China for about sixty years, and, according to Dr. W. H. Park, one-third of the population smoke it." Surely he must have been asleep when he wrote that.

What I did say was: "Opium has been used all over China for only about sixty years and yet, according to the *Encyclopædia Britannica*, one-fourth to three-tenths of the people are already opium smokers." What the writer in the *Encyclopædia Britannica* means I do not know, but I suppose he refers to the adult population. Whether this estimate is correct or not no one knows, and there is no means of finding out, but opium is more extensively used by the Chinese than by any other nation on the globe, existent or pre-existent, and in most places it is on the increase, and one of the reasons (I do not say it is the chief) of the hatred of foreigners that has resulted in the present cataclysm is the universal belief that foreigners are responsible for the introduction of opium into their country.

Your reviewer also manages to drag in another irrelevant and childish argument that I have run across, *ad nauseam*, ever since I began to investigate this subject. Hear him: "With regard to the benefit to China of stopping the importation of the drug from India it is to be feared that little good would accrue to the Chinese, for they are growing opium extensively themselves." A judge would be ready to call for a commission in lunacy if a lawyer should seriously bring up an argument like that in court.

Not much better either is the admission on the one hand that there is risk to the individual, but the contention on the other that there is no danger to the commercial integrity of the Chinese people as a whole from the continued use of opium.

But the climax is reached in the closing sentences in the review. I copy them in full, for without seeing them your readers could scarcely believe that a great journal like the organ of the British Medical Association would publish such glaring misquotations, misdirected exhortations, and hypocritical regrets as are therein set forth: "In all inquiries of the kind bias is always a dangerous element; remarks calculated to throw doubts upon the integrity of those who differ in opinion, are not likely to bear good fruit. We quote a paragraph from an article headed 'The Opium Habit: The Opinions of a Hundred Experts.' The paragraph refers to the work done by the Royal Commission on Opium in India, and runs as follows: 'The day will come when the bulky report of the Commission will be looked upon as a costly and stupendous monument of sordid bias, special pleadings, and outrageous discrepancy.' If the 'hundred experts' wish the scientific world to take their 'opinions' seriously into consideration, the less they indulge in such language the better. We regret that the value of the mass of evidence before us should be lessened by this and similar unjustifiable indictments." He quotes a paragraph written by a third party (evidently some reviewer of our book), and then proceeds to read the authors of the book *Opinions of Over 100 Physicians on the Use of Opium in China*, a lecture for writing what he ought to know they never wrote a word of. I suppose he counts himself a bright and shining light in the scientific world, to which he refers, so will humbly ask him to explain to us how there can be less of nothing. "Experts" as we are, we do not see how we are to "indulge less" in "language" not one word of which we ever uttered. The last sentence is a gem. Sometimes I think your reviewer says what he does not mean, and, again, I think he means what he does not say.

I am leaving for America soon and my address will be McMeekin, Florida, U.S.A., and I will give a prize to anyone, the reviewer included, who will tell us what he means, what he regrets, and where the point comes in. The reviewer will also please tell us who wrote the paragraph that threw him into such confusion and inform us what "fruit" is likely to result from false imputations.—I am, etc.

Soochow, July 28th. W. H. PARK, M.D.

*** Had we not been requested by Dr. Park himself to publish the above letter, we should, both for his sake, and for that of the advance of the anti-opium crusade in China with which we sympathise, not have printed it. The letter but repeats what our critic condemned, namely, the assumption of exclusive knowledge upon a subject which has been studied and reported upon by competent men outside the pale of the 100 physicians mentioned by Dr. Park.

THE CONCILIATION BOARD.

SIR,—There seems to be some confusion as to the position of the British Medical Association in regard to the proposal for the formation of a Conciliation Board. I am sure many other members of the Association besides myself will be grateful to you if you will clear it up. As one jealous for the honour and strength of the Association and of its Council, I am desirous that there should be no sign of indecision on a subject upon which the profession and large and respected public bodies are waiting for a definite reply.

At the Council meeting at Ipswich the following short—not to say curt—resolution was passed:

That the Conciliation Board Committee be not reappointed.

This seems a very summary dismissal of the Conciliation Board. But I am informed that the resolution in no way invalidates the following resolution passed at a previous meeting within the last six months—a period within which resolutions cannot be rescinded.

That the Council appoints a committee to confer with the representatives of the Friendly Societies with a view to drawing up a scheme for the formation of regulations regarding the powers and duties of the proposed Conciliation Board.

May I ask for information as to the action of this committee (of which the names are Dr. J. Corns (Oldham), Dr. James Craig (Dublin), Dr. J. W. J. Oswald (London), Dr. W. J. Miller (Dundee), and Dr. C. H. Milburn (Hull)), and whether we may hope to have its report presented to the next meeting of the Council of the British Medical Association? I am writing as a member of the Association.—I am, etc.,

Highbury Place, N., Sept. 19th. J. G. GLOVER.

OBITUARY.

FUNERAL OF SIR WILLIAM STOKES.—The remains of Sir William Stokes, late Consulting Surgeon to the Forces in Natal, were interred in the Military Cemetery, Fort Napier, on August 20th, with full military honours. A firing party 300 strong, under the command of Captain Darrah, attended, while in addition there was also present a funeral party, numbering about 150 men, under the command of Major A. L. F. Bate, R.A.M.C., these comprising all available men of the R.A.M.C., the Imperial Hospital Corps, and the St. John Ambulance Corps, the coffin, which was covered by a Union

Jack (on which rested many floral tributes), being borne on a gun carriage drawn by four horses. Colonel Malby Crofton, commanding the troops at Ladysmith, brother-in-law, followed as chief mourner, while the pall-bearers were Lieutenant-Colonel P. H. Johnston, P.M.O., General Hospital, Maritzburg; Lieutenant-Colonel Sandwith, O.C., General Depôt; Major Westcott, P.M.O., General Hospital, Howick; and Major Browning, R.A.M.C. Immediately following were Drs. Fox-Symons and Douglas, who attended Sir William Stokes in his last illness; Colonel Clery, P.M.O., representing the R.A.M.C. in Natal, who journeyed from Newcastle to be present; Captain Meiklejohn, V.C., A.D.C., representing H.E. the Governor; Colonel Rawson, C.R.E., Natal; Colonel Mortimer, Chief Paymaster, Natal; Lieutenant-Colonel Stoneman, A.S.C.; Lieutenant-Colonel Armstrong, R.A.M.C.; Major Hamnett, O.C., A.S.C., Maritzburg; Major Freyer, R.A.M.C., Howick; Major Kennedy, Chief Staff Officer; Captain Gillman, R.A.M.C.; Captain Currie, N.C.; Major Hay, Commanding the Imperial Irregular Corps; Dr. Ward, Dr. Dawes, Grey's Hospital; Dr. Blieden, Drs. Maunsell (2), and many others, both military and civil, including several from Howick and Mooi River. The Natal Government was represented by the Attorney-General (Hon. Henry Bale). The Army Nursing Sisters, including reserve, and also volunteer Sisters, were present at the graveside. The burial service was performed by the Rev. Mr. Twemlow, Chaplain to the Forces. At the conclusion of the service the usual three volleys were fired over the grave. According to the *Natal Witness*, from which the details given above are taken, among the records of the P.M.O.'s Department is an entry stating that during the time Sir William Stokes laboured at Fort Napier he endeared himself to everyone with whom he came in contact, and that the testimony was not an empty tribute was evident from the attendance at the funeral.

Dr. Hunter Maguire, who died at Richmond, Virginia, on September 19th, was one of the few survivors of the men who took part on the Confederate side in the Civil War. Dr. Maguire, who had been surgeon to the famous General Stonewall Jackson's Division, was one of the most prominent figures in the medical profession of Virginia, and had a large practice in Richmond and its neighbourhood. When Stonewall Jackson was wounded at the battle of Chancellorsville, upon May 2nd, 1863, Dr. Maguire amputated his left arm and removed the bullet which had lodged in his right hand. As the wounded General was being carried to the rear one of the bearers of the stretcher on which he lay was killed, and the stretcher fell, throwing the General to the ground and causing him such intense agony that a piteous groan—the only one to which he ever gave utterance—issued from his lips. He fell upon the stump of a tree, which struck him on the right side; this brought on the attack of pneumonia, of which eight days later he died. But for the disease of the lungs, under which he sank, it was the opinion of Dr. Maguire that Stonewall Jackson would have recovered from his wounds. The *Daily Telegraph* says that Dr. Maguire's account of the last eight days of Stonewall Jackson's life was read out to the assembled multitude when Foley's statue of the Confederate chief, given to the South by Mr. Beresford Hope, M.P., was unveiled at Richmond on October 26th, 1875, and brought tears to many eyes.

Dr. Richard Sarell, of Constantinople, who died very suddenly at Candelli, on the Bosphorus, on September 2nd, was the son of Richard Sarell, a member of the Levant Company, who settled at Constantinople in the early part of the century, and subsequently became British Vice-Consul in that city. Dr. Sarell was born in Constantinople in 1829. He was educated first in France and afterwards at the University of Edinburgh, where, after a brilliant career, he graduated M.D. in 1853. He became M.R.C.P.Lond. in 1880, and was a Fellow of the Obstetrical and Epidemiological Societies. He had acquired a great reputation as a daring and skilful surgeon. During recent years Dr. Sarell mixed but little in society, devoting himself almost entirely to his professional work. Since the days of Lord Stratford de Redcliffe, however, successive Ambassadors had had occasion to make use of his wide knowledge of Eastern affairs, his ripe judgment and his unequalled opportunities for obtaining a correct impression of the trend of opinion in the innermost circle of the Turkish official world. Dr. Sarell was recognised as the pioneer of scientific surgery in Turkey. He was buried in the British Cemetary at Scutari, the funeral being conducted at the expense of the Turkish Government, by which Dr. Sarell was held in the highest esteem. He had held for many years the post of Professor of Clinical Surgery in the Imperial Ottoman School of Medicine.

The town of Bervie in Kincardineshire and a large district round it have lately suffered a severe loss by the sudden death of Dr. Aymer, J.P. He had been for some time in indifferent health caused by overwork, but his death was quite unexpected, and came as a severe shock to a wide circle of friends and patients. Dr. Aymer studied medicine at the University of Aberdeen, where he graduated M.B., C.M. in 1880. In 1882 he settled at Bervie, where he acquired an extensive practice, and gained a high reputation for his skill and for his attention and kindness to the patients under his care. At the time of his death he was President-elect of the Forfarshire Medical Association, Chairman of the School Board of Bervie, and a Justice of the Peace for the county of Kincardine. Courteous in manner, kindly in disposition, absorbed in his profession, and unsparing of himself in the discharge of the duties entailed by his practice, Dr. Aymer will long be mourned by many not merely as a physician, but as a friend. He leaves a widow and five children, for whom much sympathy is felt.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. A. Lamouroux, a prominent member of the Paris Municipal Council; Dr. Moritz Marcuse, a well-known practitioner of Berlin, aged 62 years; Dr. Abraham Kuhn, Professor of Otology in the University of Strassburg, author of works on the comparative anatomy of the ear, new growths of the auditory apparatus, etc., aged 63 years, and Dr. Ferreira de Aranjo, of Rio de Janeiro, who, after beginning life as a physician, founded the *Gazeta de Noticias*, which he made one of the most popular newspapers in Brazil, aged 52 years.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

SUMMARY OF MEDICAL ARRANGEMENTS FOR CHINA.

For Europeans, strength about 1,000: for officers, 10 beds; and for men, 200. In field and general hospitals also, 175 beds; for natives, strength about 30,000 combatants and non-combatants, 1,300 beds in native field hospitals; the hospital ship *Maine*, containing about 365 beds, and for reception at the Calcutta General Hospital, 500 beds. The *personnel* sent or going to China are 135 medical officers, 25 assistant surgeons, and 224 hospital assistants; 5 nurses are attached to the general hospital. All hospitals have been fully equipped with comforts, surgical appliances, and mosquito nets. Thirty dandies and 180 bearers to each field hospital have been sent, 9 tongas have gone, and more will follow when the roads are reported fit. One medical store depôt has been sent to the north and another to the south of China.

ROYAL ARMY MEDICAL CORPS.

The Secretary of State for War has offered nominations to the R.A.M.C. to the following universities, colleges, and medical schools:

University of Aberdeen	Yorksh[illegible]
University of Durham	Univ[illegible]
University of Edinburgh	King[illegible]
University of Glasgow	The [illegible] College of Surgeons,
Catholic University (Dublin)	Ireland
Birmingham University	St. Bartholomew's Hospital, London
Trinity College, Dublin	St. Mary's Hospital, London
Queen's College, Belfast	St. Thomas's Hospital, London.
Queen's College, Cork	

The President of the [illegible] of Ireland has nominated Mr. J. Langdale Jo[illegible] Licentiates of the College and pupils of the [illegible].

The President of [illegible] College, Cork, has nominated Dr. West, House Physician to the [illegible] Hospital, Belfast. Dr. West is a distinguished student and graduate of the Belfast school and a capable house-surgeon and physician.

ASHANTI EXPEDITION.

MRS. HAMILTON WILLIAMS, M.B., B.S., D.P.H., has been appointed by the Colonial Office one of the Special Service Medical Officers on the staff of the Ashanti Expeditionary Relief Force. We are informed that there were very few applications for the post, and it is surprising that the pay offered is less than that of civil surgeons to the troops in China. Apparently the only previous instance of medical women doing military duty was in the early days of women's medical education in Russia, when the supply of doctors with the troops on active service in the Turco-Russian war was far short of the demand. Mrs. Hamilton Williams is the Helen Prideaux Scholar of the London School of Medicine for Women, and also won the London County Council Research Scholarship in 1899.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty:—EDWARD P. MOURILYAN, Staff-Surgeon to the *Severn*, October 9th; WILLIAM J. STITT, Surgeon, to the *Australia*, September 17th; HERBERT L. GEOGHEGAN, Surgeon, to the *Diadem*, October 3rd; CHARWORTH L. NOLAN, M.B., Staff-Surgeon, to the *Briton*, September 29th; JOHN H. STENHOUSE, M.B., Staff-Surgeon, to the *President*, for three months' hospital study, September 24th.

ROYAL ARMY MEDICAL CORPS.

MAJOR H. D. JAMES, Captain G. A. T. BRAY, and Lieutenants S. G. BUTLER and H. F. HART, of the R.A.M.C., and Civil Surgeons C. DIPON and S. W. S. RICHARDSON have been discharged from hospital in South Africa to duty.

Lieutenant-Colonel FALVEY and Lieutenant MCLOUGHLIN, of the R.A.M.C., Civil Surgeon F. R. STEWART, and Surgeon-Captain O'CONNOR, of the Militia Medical Staff Corps, are returning from South Africa, invalided.

THE VOLUNTEERS.

SURGEON-CAPTAIN F. W. GIBBON, 1st Durham Engineers, is promoted to be Surgeon-Major, September 26th.

Surgeon-Lieutenant-Colonel W. A. F. BATEMAN, 3rd Volunteer Battalion the East Surrey Regiment, and Surgeon-Major J. H. DAVIES, 2nd Volunteer Battalion the Welsh Regiment, have resigned their commissions, retaining their rank and uniform, September 26th.

Surgeon-Major C. H. GWYNN, M.D., 2nd Volunteer Battalion the King's (Shropshire Light Infantry), is promoted to be Surgeon-Lieutenant-Colonel, September 26th.

Surgeon-Captain W. M. ABBOT-ANDERSON, M.B., and Surgeon-Lieutenant R. FENNER, 3rd London Rifles, resign their commissions, September 26th.

HOME BILLETS FOR INDIAN MEDICAL OFFICERS.

LIEUTENANT-COLONEL, I.M.S. (RETIRED), writes: I see that the unfairness of hospital appointments in India being only held by the Indian Medical Service is discussed in your columns. These appointments may not always be given for personal merit or fitness, but they at least belong to India. But here is a converse matter: A vacancy through illness of the retired incumbent R.A.M.C. falls in a station hospital at home; I apply for appointment on the same semi-permanent footing, but am informed that, as an officer of the Indian Medical Service, I am not entitled to a "permanent post" of the nature, and, if temporarily appointed, would only get the pay of a civilian on "contract rates." What would be said if the R.A.M.C. were similarly treated in India? One would have thought my services would be considered at least better than those of a pure civilian.

*** We notice in the Army List one retired officer of the Indian Medical Service employed at Aberdeen, but we do not know under what conditions; there cannot therefore be any absolute rule against their employment at home. But we cannot quite follow or agree with our correspondent concerning supposed vested interests in medical service appointments at home and in India. They are not on all-fours. The R.A.M.C. officer does serve in India—often two-thirds of his entire service; the Indian officer does not serve at home. The claim of the former on India is therefore quite different from any claim of the latter on home appointments. At the same time, things being equal, we do not think retired medical officers of the Indian Medical Service whose services, failing those of the R.A.M.C., it is desirable to utilise at home, should be placed in the position of civilians on "contract rates." Why not treat them as officers, and if employed, temporarily or permanently, pay them at the rate of £150 a year in addition to pension, as laid down for the R.A.M.C.? At the same time retired medical officers of the Indian service cannot under existing conditions maintain any concurrent claim on such home appointments; they can only fill them as a matter of convenience (or necessity) of the War Office.

FINANCIAL RESPONSIBILITY OF CIVIL SURGEONS IN MILITARY HOSPITALS.

A CIVIL SURGEON, in charge of a military hospital on a salary at the rate of £270 per annum, temporarily employed, states that he has lately been held financially responsible in the sum of £2 1s. 7d. for certain small articles of hospital equipment, such as socks and towels, which were found missing at the periodical stocktaking. He asks, Is this legal? He did not understand on accepting such a medical charge that he was financially responsible for, perhaps, hundreds of pounds in hospital damages. He has had to work single-handed, without proper assistance of regular stewards and wardmasters, and was, in fact, handicapped in every way in his charge.

*** This case, as stated, seems to open a very serious question. The legality of the financial liability seems to us open to grave doubt; of its shortsighted impolicy there can be no question. What man in his senses would accept service on a small temporary salary under such condition? Was this gentleman informed of his financial responsibility when he took over charge? If not, how can he be held responsible? The unyielding red-tapeism here disclosed shows the need of War Office reform.

SOUTH AFRICAN HOSPITALS COMMISSION.

OBSERVER writes: In his evidence before the Hospital Commission in South Africa, Lord Roberts suggested that a departmental committee should be appointed to inquire into army medical organisation, etc. Permit me to protest against the proposed tribunal. To have confidence in any such body would necessitate a belief that the War Office is anxious to do what is right for the medical service. Is that the experience of the War Office methods? Has not it opposed everything considered necessary for the medical department for many years? Is not it a fact that Lord Lansdowne had to ignore the advice of his military advisers, or at least the most important of them, when forming the Royal Army Medical Corps? Who would form the proposed departmental committee. The class that has invariably sat on the army doctors, and opposed their wishes, with perhaps a pliant army medical officer thrown in, for the sake of appearance. What is wanted is an independent and competent commission that will take evidence in public, and record the *pros* and *cons* of the case. The public will then be able to draw its own conclusions, and, knowing something of the subject, will be able to exert the necessary pressure to have what is necessary carried out.

MILITIA SERVICE.

A CORRESPONDENT wants to know how embodiment counts for service in the militia. He has heard that the first month of embodiment counts a year, and the next four months two years. Is this so? Perhaps some of our readers may be able to answer this question.

THE SCARCITY OF CANDIDATES FOR THE R.A.M.C.

AUDAX writes tracing the scarcity of candidates for the Army Medical Service to a purely financial source. It is due, he states, to want of sufficient inducements as to pay and pension. What was deemed, and may have been, sufficient twenty-five years ago is not so now. The whole scale of living has changed, especially as regards the professional classes. The study of medicine is now a very serious and expensive matter, extending over five or six years. He proposes that the salary for a lieutenant R.A.M.C. should begin at £300 a year, but that having been a house-surgeon or physician for six months in a recognised hospital should be compulsory to applicants. Promotion to major should, after examination, come at ten years, but if rejected the officer should retire on a gratuity of £1,000. Pay after twelve years should be £1 2s. 6d. per day, after twenty £1 5s., and after twenty-five £1 10s., after thirty £1 15s. Pensions to be correspondingly increased.

*** We quite agree that the question of pay, chiefly in the junior ranks, must be considered in any scheme for the rehabilitation of the army medical service, but it is only one point. Candidates will no come forward for a service chronically undermanned, and consequently habitually overworked both at home and abroad. General amenity in the conditions of service must go hand-in-hand with sufficient pay and pension for duties freely fulfilled and dangers fearlessly incurred.

INDIAN MEDICAL COLLEGE PROFESSORSHIPS.

I.M.S. writes:—The adoption of Dr. Mullick's motion on this subject by a general meeting of the British Medical Association makes the matter one of public importance, so some of the exaggerated, if not actually misleading, statements, which he made in his speech ought in fairness to be commented on. The very words of his resolution, that the professorial chairs are filled by virtue of grade rank, are utterly misleading, for if it means anything at all it indicates that seniority is a most important qualification, while, as a matter of fact, these posts are all filled by the Government of India on the recommendation of the surgeon-general by the men selected from the whole service quite irrespective of seniority, except in so far that a certain amount of experience in the country is considered essential for the teachers of such subjects as medicine, surgery, etc. The fact that men are brought from even the Punjab to fill appointments in Calcutta is the clearest evidence of the careful way in which the selections are made of the very best men. Secondly, Dr. Mullick's statement that the professors are liable to be called away to military duty at any time is also misleading for, as a matter of fact, they are specially exempted from recall to military service on war breaking out as at present, instances of this having just occurred. The only time they have to vacate is on being selected for promotion to administrative rank at the very end of their service, usually after 27 to 28 years' service, which is decidedly beneficial to the teaching by bringing in younger and more energetic men at intervals, for the trying nature of prolonged service tells and ages in India cannot be compared with those at home for such work. Thirdly, his statement that men are very often shifted from chair to chair is not true at the present time, great care being taken to avoid it as far as possible; leave out of India, which would be equally necessary for professors whether they belonged to a service or not, being the only common cause of temporary moves. So much for the exaggeration s.

Bearing the above facts in mind, let us fairly face the question raised, and admit at once that in the open market, occasionally at any rate, more learned professors could be obtained than in the I.M.S., although, I may be pardoned for thinking, that as prolonged tropical experience would usually be a necessary qualification, this would not very often occur. The other possible sources of recruitment would be in England or the Colonies, or from native Indian medical men, for there are few European practitioners except the planters, doctors in this country outside the services. A man brought straight to this country

would labour under the great disadvantages of ignorance of the language, manners and customs, as well as of the types of diseases more or less peculiar to India. With regard to the latter, as Dr. Mullick's great grievance is that native medical men cannot enter the I.M.S. without going to England, if he considers them fit for these professional appointments, he is in the paradoxical position of believing that the colleges, which he says are so inefficiently manned by the teaching staff, are yet able to turn out men fit to teach in these very institutions without even going to Europe for any part of their medical education.

Lastly, the fact must be faced, that if these appointments are thrown open as suggested, the already waning popularity of the Indian Medical Service would receive a severe blow, and the present standard of competition would fall off, for although I still think the service would under these conditions still obtain most of the appointments, yet the uncertainty introduced would prevent many of the best men entering. We arrive then at the conclusion that the proposed measure might possibly improve a very few of the appointments at the expense of a serious lowering of the standard of the I.M.S., and this position should be carefully borne in mind by the Committee, as they will have to make out a very strong case to have the remotest chance of inducing the Indian Government to subject the country to such a serious loss as any injury to the popularity of the I.M.S. The present condition of the R.A.M.C. being a powerful warning for the sake of a very problematical gain in the teaching of the medical colleges of India.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE OBLIGATIONS OF A *LOCUM TENENS*.

BRISBANE.—A practitioner who has seen a case at the request of and as a substitute for a colleague should not subsequently accept the patient as his own, even though requested to do so, without calling upon the original medical attendant and obtaining his sanction.

LUNATICS IN SINGLE CARE.

L. N. asks whether it is necessary to hold a licence before receiving one lunatic for payment?

"*" No; but all the proceedings must first be taken as for other non-pauper cases of insanity placed under care and control under the Lunacy Act; and copies of all documents and various notices and reports must be sent to the Commissioners in Lunacy, and according to the provisions of the Lunacy Acts.

INTRODUCTION ON SALE OF PRACTICE.

HANDS.—We are unable to answer our correspondent's question, as the case is stated too vaguely and is not altogether intelligible; for example, no one selling a practice would give any introduction to his patients until the sale was complete.

ADVERTISING THANKS.

J. R.—Our correspondent complains that a grateful patient has inserted an advertisement in the local paper thanking her friends for kind inquiries, and her doctors, who are mentioned by name, for their services. He and his colleagues feel somewhat sore at this well-meant but injudicious effusion. We should advise that a short letter be sent to the editor of the local paper asking to be allowed to state that the advertisement of a lady who recently thanked her medical advisers in the advertisement columns of his journal was published without their knowledge and consent, and that they wish to make this disclaimer as it is calculated to prejudice them in the eyes of their professional brethren. This letter should be signed by "The Doctors mentioned in the Advertisement."

MEDICAL ADVERTISING.

B.B.B.—We have previously pointed out the difficulty of condemning the not uncommon practice of non-resident doctors putting up plates upon shops or cottages in places where they call to see patients, as it is sanctioned by established custom, and is obviously convenient, although, like many other things, it may be abused. It is an unfortunate choice to select an unqualified chemist's shop as a place at which to see patients, but if the chemist transgresses the law he can be prosecuted successfully.

MASSAGE CERTIFICATES.

X.Y.Z.—We understand our correspondent to put the following case: A woman of whose work and character he knows nothing, calls upon him and asks him to examine her as to her efficiency as a masseuse and to give her a certificate. We see many objections to such a course. The practitioner under whom the nurse has gone through a course of instruction may be justified in giving her a testimonial.

LIABILITY OF EMPLOYERS FOR TREATMENT OF INJURED WORKMAN.

VICTIM asks for advice under circumstances which may be summarised as follows: He attended a workman who had met with an accident in the course of his employment. The treatment extended over four weeks, and a bill for £5 8s. 6d. was sent to the man's employers. They have returned the account marked "responsibility not admitted," and in subsequent correspondence asserted that our correspondent had attended the man "out of humanity." Both the injured man and the person who brought him are willing to state on oath that the manager told them to go to our correspondent, who, as a matter of fact, was not the nearest doctor. Our correspondent's solicitor has written requesting payment, but the firm did not reply to this letter.

"*" The fact of the firm having paid on previous occasions would be evidence that their manager had authority to engage and pay for medical attendance on their injured workmen. It therefore would in the present case become a mere question of fact whether the manager sent this man. If the two witnesses who say he did are believed, the plaintiff ought to win. The costs on a claim for £5 8s. 6d. are not very heavy. The address of the Medical Defence Union is 4, Trafalgar Square, London, W.C.

UNIVERSITIES AND COLLEGES.

THE UNIVERSITY OF LONDON.

ELECTION OF NEW SENATE.

WHILE the country is engaged in reconstituting the House of Commons those concerned in the reconstitution of the University of London, in accordance with the Act of 1898, are enjoying the excitement of a miniature general election. The registered graduates who compose Convocation are being urged by rival Associations to support candidates who are in favour of rival methods of dealing with the problem of university reform.

A letter signed by Dr. Ringer, F.R.S., and Mr. Quarry Silcock has been circulated to medical and surgical graduates by the Association of Graduates of the University of London, in which they say:

"We are strongly of opinion that the present high character of the degrees of medicine and surgery should be maintained. We are opposed to any curtailment of the privileges of external students, believing that all honours, prizes, and distinctions which the University can bestow should be accessible equally and impartially to all candidates, irrespective of their place of education, collegiate or non-collegiate, metropolitan or extra-metropolitan. We are averse to the over-concentration of the teaching of preliminary M.B. science subjects in a few centres. We think that such a course would be unfair to existing medical schools (in which excellent work in these subjects is being done), would tend to lower their importance as centres of medical learning and teaching, and would destroy that healthy spirit of competition which has hitherto existed among them, to the advantage of teaching in the medical sciences. We would advocate the establishment of a complete system of post-graduate study, both clinical and in the laboratory, to be available to all members of the University. In conclusion, we would, if honoured by being elected to the Senate, do all in our power to further the development of the teaching of the University, the facilities for research, and the improvement of medical education generally in the metropolis."

The Committee of the University of London Graduates Union concerned with the nomination of members to represent upon the Senate of the University of London the medical graduates in Convocation, including, amongst others, Lord Lister, Sir Samuel Wilks, Sir William Broadbent, Sir John Williams, Sir Richard Douglas Powell, Mrs. Scharlieb, Dr. Pye-Smith, Dr. Gee, Dr. Allchin, Mr. Howse, Dr. Montague Murray, Dr. Bradford, Dr. Pasteur, and Dr. Lauriston Shaw, desire it to be known that the selection of Dr. Payne and Dr. Barlow as candidates was made essentially on the following grounds:

"First, that these gentlemen are pledged to no party, and are prepared to consider the many questions that will come before the new Senate without prejudice, and to support and strengthen the reconstituted University as a whole.

Secondly, that Dr. Payne is a member of the existing Senate, and that Dr. Barlow was a member of the late Statutory Commission."

UNIVERSITY OF DURHAM.

THIRD EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.—The following candidates have satisfied the examiners:

Honours—Second Class.—G. W. Smith, Guy's Hospital; T. C. Rutherfoord, St. Thomas's Hospital; J. B. Waters, College of Medicine, Newcastle-upon-Tyne.

Pass List.—E. H. Barrett, M.R.C.S., L.R.C.P., St. Mary's Hospital; A. J. S. Brandon, St. Thomas's Hospital; S. T. Cochrane, College of Medicine, Newcastle-upon-Tyne; C. Fisher, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Ida Emilie Fox, London School of Medicine for Women; G. B. Gill, College of Medicine, Newcastle-upon-Tyne; H. R. Kendal, College of Medicine, Newcastle-upon-Tyne; J. H. McDowall, College of Medicine, Newcastle-upon-Tyne; L. C. Newton, College of Medicine, Newcastle-upon-Tyne; R. R. Pirrie, College of Medicine, Newcastle-upon-Tyne; Monica Lucien Mary Robertson, London School of Medicine for Women; H. H. Ruffmann, College of Medicine, Newcastle-upon-Tyne; F. G. Wilson, College of Medicine, Newcastle-upon-Tyne; N. B. Walker, College of Medicine, Newcastle-upon-Tyne; T. Wilson, College of Medicine, Newcastle-upon-Tyne; R. Younger, College of Medicine, Newcastle-upon-Tyne.

THE CONJOINT BOARD IN ENGLAND.

WE are asked to state that a course of pharmacy, in preparation for the next Conjoint Board Examination, will commence at the Birkbeck Institute on Wednesday, October 3rd, at 6 P.M. The class will be conducted by Mr. F. A. Upsher Smith, recently Demonstrator of Pharmacy and Materia Medica at the Pharmaceutical Society's School.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, September 1900.—The following candidates passed in

Surgery.—J. Black, Manchester; J. W. Bowd, St. [illegible] Hospital; D. J. Ferris (Sections I and II), Manchester; J. Gallagher, Bombay; E. T. Longhurst, St. Mary's Hospital; C. C. Pratt, St. George's Hospital and Bristol; J. M. Ritchie, Durham; H. V. Swindale (Sections I and II), Middlesex Hospital.

Medicine.—A. G. H. Anthonisz (Section I), University College Hospital; M. A. [illegible], Bombay; D. Davies, London Hospital; M. R. Kapadia, [illegible]

Forensic Medicine.—A. G. H. Anthonisz, University College Hospital; D. Davies, London Hospital; D. J. Ferris, Manchester; M. R. Kapadia, Bombay.

Midwifery.—J. C. Baggs, St. Thomas's Hospital; W. A. King, Charing Cross and St. George's Hospitals; V. F. Wall, St. Mary's Hospital.
The diploma of the Society was granted to D. Davies, J. Gallagher, C. C. Pratt, and J. M. Ritchie.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

THE WORKING OF THE VACCINATION ACT (1898).

IN the BRITISH MEDICAL JOURNAL of September 1st, p. 588, extracts were given from the parliamentary paper of August 6th, in which it was stated that the number of children in respect of whom certificates of conscientious objection to vaccination had been received from the date of the passing of the Vaccination Act, 1898 (August) to the end of the same year was 203,413, while during the whole of the year 1899 only 32,357 children had been similarly exempted. Further it appeared, on comparing the whole of the year 1898 with the whole of the year 1899, the births registered being respectively 923,265 and 928,640, that the certificates of successful vaccination received were respectively 500,314 and 669,349, or 52.4 and 72.1 per cent. of the births registered, "an increase in ratio of 33 per cent. in 1899 as compared with 1898."

On referring to the Final Report of the Royal Commission on Vaccination with these figures before us, we find in Paragraph 524 the following statement, on which the Parliamentary paper is such a satisfactory and encouraging comment:

> After careful consideration and much study of the subject, we have arrived at the conclusion that it would conduce to increased vaccination if a scheme could be devised which would preclude the attempt, so often a vain one, to compel those who are honestly opposed to the practice to submit their children to vaccination, and at the same time leave the law to operate, as at present, to prevent children remaining unvaccinated owing to the neglect or indifference of the parent.

The results of the first year's working of the Act appear to justify this sanguine forecast of the Commissioners. Two cautions are, however, necessary. First, it is unfortunate that there is still considerable divergence of practice in the granting of certificates of exemption. The avowed policy of the antivaccinists at the Lincoln Conference in the autumn of 1898 was to advise applications for the certificate in places where they were poor in wealth or in numbers, but where they were strong—no compromise, which meant the refusal to apply for exemption certificates, and an open defiance of the law.

The treatment of some applicants has been such as to give the antivaccinists an argument in justification of an attitude which would otherwise be wholly indefensible. As has been well shown by Dr. F. T. Bond, of Gloucester, in a letter to the *Times*, it is highly important that those in authority should exercise such self-restraint as will prevent the possibility of applicants for certificates posing as martyrs. Any semblance of persecution in the doing of a legal act should be avoided, and the "terrors of the law" should not at this stage be brought to bear on applicants, however misguided they may be believed to be.

It is surely better that 3 or 4 per cent. of the children born should be legally accounted for by means of the certificate of exemption, than that over 20 per cent. of them should have to be entered as "not finally accounted for" from year to year. It is, of course, too early for us to compare the year 1899 with its predecessors in respect of the proportion of children born in that year which will be finally accounted for, but there can be little doubt that the introduction of the conscience clause has not increased the number of children who escape vaccination; while, on the other hand, it has very materially contributed to break the back of organised opposition, and is proving a valuable complement to the introduction of calf lymph and the concession of domiciliary vaccination. It may be urged that if the path of the conscientious objectors be made less deterrent their numbers will increase. This is quite likely, but the possibility introduces us to the second caution, which must be continuously before us if we desire to extract from the Act the maximum of benefit to the community, that is, not to neglect any opportunity of educating public opinion in regard to the importance of vaccination and revaccination. This is being very ably done in the press and in public lectures by one and another, and the reports of medical officers of health to their sanitary authorities are impressing a very valuable section of the public with sound views on the subject. But, after all, for the great bulk of the members of the profession, their part is the exercise of individual influence with patients, an influence guided by an intelligent and comprehensive grasp of the whole question of small-pox, and the means available for checking its ravages.

If these two cautions be observed—a judicial and conciliatory administration of the conscience clause in the courts, and an active endeavour to enlighten public opinion, the new policy initiated by the Act of 1898 will, it seems probable, still further justify the prognostications of the Commissioners.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,356 births and 4,041 deaths were registered during the week ending Saturday last, September 22nd. The annual rate of mortality in these towns, which had been 21.7, 19.6, and 18.2 per 1,000, further declined last week to 18.1. The rates in the several towns ranged from 11.5 in Croydon, 12.3 in Bradford, 12.4 in Halifax, and 13.2 in Cardiff, to 23.5 in Brighton, 23.8 in Hull, 24.3 in Salford, and 25.5 in Blackburn, in Sheffield, and in Sunderland. In the thirty-two provincial towns the mean death-rate was 19.2 per 1,000, and exceeded by 2.7 the rate recorded in London, which was 16.5 per 1,000. The zymotic death-rate in the thirty-three towns averaged 3.5 per 1,000; in London this death-rate was equal to 2.7 per 1,000, while it averaged 4.0 in the thirty-two provincial towns, among which the highest zymotic death-rates were 7.0 in Hull, 7.5 in Preston, 7.6 in Gateshead, and 8.3 in Sheffield. Measles caused a death-rate of 2.0 in Swansea; scarlet fever of 1.4 in Sunderland; whooping-cough of 1.1 in Blackburn, 1.3 in Nottingham, and 1.4 in Gateshead; "fever" of 1.0 in Bolton and 1.1 in Portsmouth: and diarrhœa of 4.4 in Preston, 5.2 in Wolverhampton, 5.6 in Sheffield, and 5.7 in Gateshead, and 5.9 in Hull. The 72 deaths from diphtheria in the thirty-three towns included 30 in London, 9 in Leicester, and 7 in Sheffield. No fatal case of small-pox was registered last week either in London or in any other of the thirty-two provincial towns; and only 2 small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last, September 22nd. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,702, 1,736, and 1,753 at the end of the three preceding weeks, had further risen to 1,804 on Saturday last; 269 new cases were admitted during the week, against 176, 213, and 243 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, September 22nd, 981 births and 584 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.5 and 18.9 per 1,000 in the two preceding weeks, was again 18.0 last week, and exceeded by 0.8 per 1,000 the mean-rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 16.6 in Leith and 16.9 in Perth, to 20.1 in Aberdeen and 22.3 in Greenock. The zymotic death-rate in these towns averaged 3.6 per 1,000, the highest rates being recorded in Paisley and Greenock. The 270 deaths registered in Glasgow included 3 from small-pox, 2 from measles, 3 from scarlet fever, 16 from whooping-cough, 3 from "fever" (including 1 from bubonic plague), and 26 from diarrhœa. Two fatal cases of measles, 3 of diphtheria, and 11 of diarrhœa were recorded in Edinburgh. Two deaths from diphtheria and 7 from diarrhœa occurred in Dundee; 9 from diarrhœa in Aberdeen; and 3 from diphtheria and 3 from "fever" in Paisley.

EXAMINATION OF LUNATIC UNDER THE SCOTTISH POOR LAW.

W. A. M'L.—A parish council in Scotland may pay for lunacy certificates either by a fixed salary or by a fee for each certificate. In the large urban parishes the payment is usually by a fixed salary. This salary must always be separate from the salary paid to a medical officer for duties under the Poor Law Act. The practice adopted in each of the two cases as described by our correspondent is legal. (See Rules, Instructions, and Recommendations to Parochial Authorities issued by the Local Government Board for Scotland, p. 108.)

SMALL-POX IN EDINBURGH.

THREE cases of small-pox occurred in the city of Edinburgh during the week ending September 22nd. Two of the patients were a Polish Jewess and her baby who had just come from Russia through London. The third case was found in quite a different part of the city, one of the healthiest and least crowded parts; its genesis has not yet been quite cleared up. All 3 cases have been removed to the small-pox hospital at Colinton Mains, and means have been taken to avoid spread of the disease from these two foci. The three cases are mild in character.

POLISH MEDICAL CONGRESS.—The ninth congress of Polish Medical Practitioners and Scientists was held at Cracow under the presidency of Professor Kostanetzky. Addresses were delivered by Professor Nencki, of St. Petersburg, on Future Problems of Bacteriological Chemistry, and Professor Baranowski on the Struggle against Tuberculosis as the Common Task of the People. A scientific exhibition was held in connection with the Congress.

MEDICAL NEWS.

We regret to note that the death of Dr. Lewis A. Sayre, the well-known surgeon of New York, is announced in the newspapers.

The West Kent Medico-Chirurgical Society will hold the first meeting of its forty-fifth session at the Royal Kent Dispensary, Greenwich Road, on Friday, October 5th, at 8.45 P.M. precisely, Mr. C. J. Parke, President, in the chair.

Successful Vaccination.—For the ninth time Dr. George Stevens, Public Vaccinator, of Prospect House, Norton, Bury St. Edmunds, and member of the East Anglian Branch of the British Medical Association, has been awarded the Government grant.

The Shah has appointed the Hon. Lennox Hannay Lindley, M.A., M.B., M.Ch.Oxon., to be his assistant physician. Dr. Lindley, who is a son of Lord Lindley, late Master of the Rolls, took his medical degrees in 1898. He was presented at Marienbad to His Majesty on his appointment, and will proceed to Teheran early in October.

The London Hospital Medical College.—The following entrance scholarships have been awarded; Price Science Scholarship (£120), Mr. E. J. Roberts; Entrance Science Scholarship (£60), Mr. G. Worrall; Entrance Science Scholarship, scholarship divided (£35), Mr. A. Salmon and Mr. W. D. Hartley; Price Scholarship in Anatomy and Physiology, open to students of Oxford and Cambridge only (£60), Mr. H. M. Turnbull (Oxford University); Epsom Scholarship (£126), Mr. E. L. Sandiland.

Grants in Aid of Scientific Dental Research.—The Representative Board of the British Dental Association desires to remind members of the profession engaged in researches for the advancement of dental surgery that it is prepared to receive applications for grants in aid of such research. Applications for sums to be granted at the next annual meeting must be made on the printed forms to be obtained of the Hon. Secretary at the office of the Association, 40, Leicester Square, London, on or before December 31st next.

Small-pox in St. Petersburg.—The present prevalence of small-pox in St. Petersburg has induced the city authorities to take energetic steps to check the spread of the disease. Dr. Huber, editor of the well-known *Festschrift*, published on the occasion of the Jenner jubilee, has undertaken the direction of these measures. Appeals have been issued to the inhabitants to repair to the nearest vaccination station, where they are vaccinated gratuitously by the municipal medical officers.

The Medico-Psychological Association.—The autumn meeting of the south-eastern division of the Medico-Psychological Association will be held at Ticehurst House, Sussex, on Wednesday, October 10th. Luncheon will be provided at 1 P.M., and during the afternoon members will inspect the asylum and grounds, and the following papers will be read: Some Incidents in the History and Practice of Ticehurst Asylum, by the Superintendents, and the Present State of Medical Science, by Dr. Bernard Hollander. The Drs. Newington invite the members to dinner at Ticehurst at 6.30 P.M.

Association of Anatomists.—The Association des Anatomistes, which was founded last year, held its second meeting in Paris recently. The session was devoted to the discussion of business matters, the Association having for purposes of scientific work joined forces with the Section of Anatomy and of Histology and Embryology of the International Congress of Medicine. In the absence of Professor Mathias Duval, the chair was taken by Professor Henneguy of the Collège de France. It was decided that the next meeting should be held at Lyons in 1901, on Monday, Tuesday, and Wednesday of the week before Easter, under the presidency of M. Renaut, with MM. Testut, Arloing, and Ledouble as Vice-Presidents. Thirty-two new members were admitted, among them being Professors Waldeyer, His, Golgi, and Eternod. The Secretary of the Association is Professor Nicolas, Faculté de Médecine, Nancy.

MEDICAL VACANCIES.

The following vacancies are announced:

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—Resident Surgeon: unmarried. Salary, £80 for the first year, increasing to £100, with board and furnished apartments. Applications to the Secretary by October 22nd.

BIRKENHEAD BOROUGH HOSPITAL.—Honorary Surgeon. Applications, endorsed "Election of Honorary Medical Officer," to be sent to the Secretary by October 4th.

BOURNEMOUTH: THE BOSCOMBE HOSPITAL.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Secretary by October 8th.

BOURNEMOUTH: NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST.—Resident Medical Officer. Salary commencing at £10 per working month, with board, residence, and washing. Applications to the Secretary by October 4th.

BOURNEMOUTH: ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board. Applications to the Chairman of Committee by October 1st.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—(1) Resident Pathologist. Salary, £70 per annum. (2) Assistant House-Surgeon. Salary, £60 per annum. Board and residence provided in each case. Candidates must be unmarried, and under 30 years of age. Applications to the Secretary by October 10th.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant House-Surgeon," to the Secretary.

CHESTER: COUNTY ASYLUM.—Junior Assistant Medical Officer; unmarried and not more than 30 years of age. Salary £130 per annum, increasing to £160, with board, lodging, and washing. Applications to Dr. Lawrence at the Asylum by October 11th.

CITY DISPENSARY.—Physician. Applications to the Secretary, 98, Cannon Street, E.C., by October 10th.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House-Physician. Appointment for six months. Salary at the rate of £30 per annum, with board and residence. Applications to the Secretary by October 8th.

DERBY COUNTY ASYLUM, Mickleover.—Second Assistant Medical Officer. Salary commencing at £100 per annum. Applications to the Medical Superintendent.

DOUGLAS: NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon; unmarried. Salary, £72 per annum, with board and washing. (Is usually appointed Medical Attendant of the House of Industry at a salary of £10 per year.) Applications to the Honorary Secretary, 25, Athol Street, Douglas, by October 9th.

DOWNPATRICK: DOWN COUNTY ASYLUM.—Assistant Medical Officer; unmarried and not exceeding 32 years of age. Salary, £100 per annum, with furnished apartments, board, washing, and attendance. Applications to the Resident Medical Officer by October 6th.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £40 per annum, with residence, board, and washing. Applications to the Secretary by October 4th.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary, £140 rising to £160 per annum, with board, laundry, and attendance. Applications to the Medical Superintendent.

FRENCH HOSPITAL AND DISPENSARY, London.—Resident Medical Officer; unmarried. Salary, £80 per annum, with full board. Applications to the Secretary, 172, Shaftesbury Avenue, W.C.

HULL: VICTORIA CHILDREN'S HOSPITAL, Park Street.—Lady House-Surgeon. Salary, £50 per annum, with board and laundry. Applications to the Honorary Secretaries by October 3rd.

KENT AND CANTERBURY HOSPITAL.—House-Surgeon: unmarried. Salary, £100 a year, with board and lodging. Applications to the Secretary by October 15th.

KENT COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried, and under 30 years of age. Salary, £125 per annum, with board, lodging, and washing. Applications to the Medical Superintendent before October 19th.

LANCASTER COUNTY ASYLUM.—Assistant Medical Officer. Salary commencing at £125 per annum, with usual allowances. Applications to the Medical Superintendent.

LIVERPOOL EYE AND EAR INFIRMARY.—House-Surgeon. Salary, £80, with residence and maintenance. Applications to the Secretary, Knowsley Buildings, Liverpool.

LONDON TEMPERANCE HOSPITAL, Hampstead Road.—Resident Medical Officer. Salary, 100 guineas per annum, with board, lodging, and washing. Applications to the Secretary by October 13th.

LONDON THROAT HOSPITAL.—Non-resident House-Surgeon for six months. Honorarium at the rate of £25 per annum. Applications to the Secretary of the Medical Committee, 204, Great Portland Street, W.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for the In-Patient Department, Bowdon. Salary, £60 per annum, with board, apartments, and washing. Applications to the Secretary before October 8th.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House-Surgeon. Honorarium at the rate of £50 per annum, and board. Applications to Mr. G. W. Fox, 53, Princes Street, Manchester, by October 13th.

MIDDLESBROUGH: NORTH ORMESBY COTTAGE HOSPITAL.—House-Surgeon; unmarried; non-resident. Salary £200 per annum. Applications to the Secretary, Mr. R. T. Miln, Royal Exchange, Middlesbrough, by October 3rd.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich Road, S.E.—Honorary Surgeon. Applications to the Secretary by October 2nd.

NEWTON ABBOT RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary at the rate of £150 per annum. Applications to the Clerk, Council Offices, Newton Abbot, by October 3rd.

NORTH STAFFORDSHIRE INFIRMARY, Hartshill, Stoke-upon-Trent.—Medical Officer. Salary £100 per annum, increasing £10 per annum at the discretion of the Committee, with furnished apartments, board, and washing. Applications to the Secretary by October 1st.

PADDINGTON UNION.—Medical Superintendent of the Infirmary and Assistant Medical Officer of the Workhouse; unmarried and between the ages of 25 and 35. Salary, £100 per annum, rising to £120, with board, lodging, and washing. Applications to the Clerk of the Guardians, 289, Harrow Road, W., by October 2nd.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Gynæcologist. Applications to the Secretary by October 6th.

PLYMOUTH BOROUGH ASYLUM, Blackadon.—Assistant Medical Officer, unmarried. Salary, £150 per annum, increasing to £200, with furnished apartments, board, and washing. Applications endorsed "Assistant Medical Officer," to Dr. W. H. Bewes, Superintendent, by October 1st.

ROTHERHAM HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to Mr. J. S. Marfin, the Hospital, Rotherham, by October 8th.

ROYAL EYE HOSPITAL, Southwark.—House-Surgeon. Appointment for six months, but renewable. Salary, 50 guineas per annum, with board and residence. Applications to the Secretary by October 6th.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone Road, N.W.—Physician to the Out-Patients' Department. Applications to the Secretary by October 13th.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT) Greenwich.—House-Surgeon. Salary, £50 per annum, with board, residence, and washing. Applications to the Secretary by October 1st.

SHOREDITCH: PARISH OF ST. LEONARD.—Second Assistant Medical Officer at the Infirmary, Hoxton Street, N. Appointment in first instance for six months. Salary, £80 per annum, with rations, washing, and furnished apartments. Applications, on forms provided, to be sent to the Clerk to the Guardians, 213, Kingsland Road, N.E., by October 1st.

SOUTHPORT INFIRMARY.—Honorary Surgeon for the Treatment of Eye Diseases. Applications to the Secretary, 24, King Street, Southport, by October 13th.

STOURBRIDGE DISPENSARY.—House-Surgeon. Salary, £120 per annum, increasing to £130, with furnished rooms, coal, gas, and allowance for travelling expenses. Applications to the Honorary Secretary by October 2nd.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Physician. Salary, £100 a year, with board, lodging, and washing. Applications to the Secretary by October 18th.

MEDICAL APPOINTMENTS.

ADAMS, E. W., M.B., appointed Medical Officer for the South-East District of the Sheffield Union.

CLEMENGER, A. N., L.S.A., appointed Medical Officer and Public Vaccinator for the Skidburn District of the Clitheroe Union.

CRAWFORD, D. R. H., M.R.C.S., L.R.C.P.Lond., appointed Assistant Medical Officer to the Tonbridge Union Workhouse.

CROSS, F. Richardson, M.B., F.R.C.S., appointed Honorary and Consulting Ophthalmic Surgeon to the Bristol Royal Infirmary.

DUCKWORTH, H., M.B., C.M., appointed Medical Officer of Health for the Oswaldwhistle Urban District, *vice* W. Loynd, M.R.C.S.Eng.

ISAAC, R. J., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Northern District of the Gower Union, *vice* B. Jones, M.D.Edin., resigned.

KINNEAR, J. C. M., M.B.Aberd., appointed Medical Officer for the Wickham District of the Fareham Union, *vice* P. J. Molony, M.D., resigned.

MALLETT, F. R., M.D.Edin., L.R.C.P., M.R.C.S., appointed Medical Officer for the Eastern Bolton District of the Bolton Union, *vice* F. B. Mallett, M.D.Edin.

MOORE, Edward J., M.B., B.Ch.Oxf., appointed Medical Officer of Health, *vice* Thomas Moore, F.R.C.S.Eng., deceased.

NICHOLSON, H. Gilbert, M.R.C.S., L.S.A., appointed Surgeon for the Bethnal Green District of the City of London Lying-in Hospital.

OGILVY, Alexander, B.S., M.D Dub., F.R.C.S.I., appointed Honorary Ophthalmic Surgeon to the Bristol Royal Infirmary, *vice* F. Richardson Cross, M.B., F.R.C.S., resigned.

SAUNDERS, J. H., M.B., M.R.C.S., appointed Medical Officer in Charge of the Belle-Vue Camp, Simons Town.

STALLARD, Nigel Frampton, M.B., M.R.C.S., L.R.C.P., appointed House-Surgeon and Registrar to the Royal Orthopædic Hospital, *vice* R. H. Bremridge, B.A.Oxon, M.R.C.S. Eng., resigned.

WEEKS, Courtenay Charles, M.R.C.S., L.R.C.P.Lond., appointed Certifying Factory Surgeon for the Metropolitan Borough of Lewisham.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. T. Colcott Fox: Consultation. (Skin.) 5 to 7 P.M.—Mr. A. E. Hayward Pinch: Class. Clinical Microscopy.

TUESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. J. E. Squire: Consultation. (Medical.)

WEDNESDAY.

Obstetrical Society of London. 8 P.M.—Specimens will be shown by Dr. Roberts and others. Paper: Dr. Herman, on Subcutaneous Symphysiotomy.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Alfred Hillier: Consultation. (Medical.)

THURSDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. R. Lake: Consultation. (Ear.)

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with he notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

DICKIE.—At Moriani, Assam, on August 28th, the wife of J. L. Dickie, M.B., of a daughter.

ODELL.—On September 23rd, at York House, Hertford, the wife of Robert Odell, of a son.

MARRIAGES.

BAYLISS—SIMONS.—On September 20th, at St. James's Church, Boscombe, by the Rev. F. Cecil Bayliss, brother of the bridegroom, assisted by the Rev. Leofric Cutler, Richard Arthur Bayliss, M.R.C.S., L.R.C.P.Lond., youngest son of Richard Bayliss, of Spondon, Derbyshire, to Kate Diana Hester, second daughter of the late Nathaniel Wells Simons, J.P. of Hawkwood, Boscombe.

MACDONALD—WEIR.—On August 18th, at Free St. George's Church, Edinburgh, by the Rev. Hugh Black, Donald J. MacDonald, M.B., C.M., D.P.H.Aberd., of Stornoway, N.B., to Amy Mary Weir, L.S.A., M.D.Brux., eldest daughter of James Galloway Weir, Esq., M.P., of Frognal, Hampstead, London.

OGDEN—STANDRING.—On September 20th, at Cockington Parish Church, by the Rev. J. Henning, Vicar, Charles Ogden, M.R.C.S., L.R.C.P.Ed., of Birkdale, Southport, to Anne, only daughter of John Standring, Mapledene, Cockington, Torquay.

RAY—TAUBMAN.—On September 19th, at Holy Trinity Church, Bolton-le-Sands, Carnforth, by the Rev. H. T. Greaves, M.A., brother-in-law of the bridegroom, assisted by the Rev. A. R. Tomlinson, M.A., Vicar, John Howson Ray, Ch.M.Victt., F.R.C.S.Eng., fourth son of the late Wm. Ray, of Whalley Range, Manchester, to Edith, only daughter of the late Wm. Hy. Taubman, of Blackburn.

SHEPHEARD—PHILLIPS.—At St. Stephen's Church, East Twickenham, on September 19th, by the Rev. W. Murdock Johnston, M.A., the Vicar, assisted by the Rev. W. E. Stewart, M.A., and the Rev. G. W. Kerr, B.A., Henry Shepheard, M.R.C.S., L.R.C.P., of 18, Brook Green, Hammersmith, son of the late John Shepheard, J.P. of North Walsham, Norfolk, to Emma Elizabeth Phillips, daughter of the late Colonel John Cockerell Phillips, H.E.I.C.S.

DEATHS.

THOMSON.—At 11, Coates Crescent, Edinburgh, on September 25th, Thomas Cleghorn, eldest son of John Thomson, M.D., F.R.C.P.Ed., in his 13th year.

LEETE.—At Salcombe, on September 21st, Arthur Henry Leete, M.D., B.Sc., M.R.C.S., L.R.C.P., aged 33 years.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics Tu. Th., 9.30; Children, Tu. F., 1; Rotunda, W., 9.45; Orthopædic, Th., 1. *Operations*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, 1.p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p. Th. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2 o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, i.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, i.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, I.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 2; Th., 2.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations*—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; i.-p., Tu. Th., 2.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9; Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, W., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; i.p., 1; o.p., 12; Obstetric, i.p., Tu. F. 1.45; o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu., F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 3; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 3; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Anglican would be grateful for a complete list of the best books to read for the Durham M.D. examination for practitioners.

Neuron writes: What advice shall I give to a patient, who desires to marry? Her mother became insane immediately after her birth, and continued so for many years, until her death; her father died of cerebral hæmorrhage when about 70 years of age; no brothers or sisters, and no other case of insanity on either side. The lady is now commencing her forty-second year, looks older, hair grey, temporal arteries a little tortuous, and radials rather thick, but I have noticed this in quite young people, and think some people have normally thicker arteries than others. She is naturally thin and "wiry," energetic, endures fatigue well, and has never had any illness; menstruation is regular.

Hydroquinone in Epilepsy.

Alienist writes: I should be glad of any information concerning the medicinal use of this drug. I accidentally heard from a layman of its markedly beneficial effect in a case of long-standing epilepsy, but I was unable to ascertain in what doses it had been employed.

Roentgen Rays for Epilation.

Roentgen Ray would be glad to know where he can find an account of the method of removing superfluous hairs by means of the *x*-rays. What length of spark to use or amperage of current; what distance the tube should be from skin; how long and often the exposures, and when should exposure be stopped. The only information he can get is in the British Medical Journal of May 5th, 1900, and he would like more.

Irregular Heart in a Youth.

L.R.C.P. writes: Lately a youth came under my care; he had been growing rapidly, was very anæmic, and his heart's action was extremely irregular. He had lately commenced work in an office which sometimes kept him late. He is now much improved, excepting the heart's action, which continues very irregular. I should be glad of suggestions as to treatment. I have advised rest in a reclining position in evenings, and to be as much out of doors as possible without much active exercise. I have given iron, strychnine, belladonna, acid hydrarg. dil. and digitalis; the latter seems to produce rather a bad effect. He takes a nourishing diet. There is no constipation.

Attendance on Families of Soldiers and Sailors in South Africa

Pax, who has undertaken to give his professional services gratuitously to the families of soldiers and sailors in South Africa, asks if the parents of a man at the front come within the category of persons for whom such attendance can be claimed. Several cases have been sent to him by the ladies managing the fund. He gives them one bottle of medicine and tells them they are not eligible. On one occasion a man aged 19 was sent to him by the local secretary. He was a warehouse porter, and his only connection with the army was that he had a second cousin in the reserve. He was not given medicine.

Another Correspondent asks, with reference to the same matter, if the "family" should be held to include married daughters and the children staying with the parents whose husbands are alive and in good position.

*** A family includes all those directly dependent on the man who is serving his country in South Africa. It does not include his sisters, his cousins, and his aunts, nor even his mother-in-law and the other relations of his wife.

ANSWERS.

G. R.—We do not know of any treatise on spina bifida which has been published lately.

A. R. E.—Ethyl chloride is used as a local anæsthetic for circumcision, but it is said by some who have used it to be inconvenient, as it obscures the tissues and does not in the case of infants tend to free them from terror. For adults it is fairly satisfactory, but patients commonly cry out when vessels are clamped and stitches placed. It is an expensive body, and readily spoils.

Treatment of Recurring Inebriety.

G. F. R. writes: In reply to "Somerset" (British Medical Journal, September 8th) I suggest a trial of the following mixture: R Acid. nitro. mur. dil. mx, tinct. cinch. co. 3ss, tinct. nuc. vom. miv, tinct. zingib. mxv, syrup. aurant., 3ss, aq. chlorof. ad 3j. M. ter die sum.

To keep Steel Instruments Clean.

Dr. A. Cordes, M.R.C.P.Lond. (Geneva) writes in reply to "Rusticus" (British Medical Journal, 1900, ii, p. 467): I can tell that the best means I know for keeping the steel instruments from rusting is to dip them in a saturated water solution of carbonate of soda, to let them dry, then to wipe them slightly with a clean handkerchief (linen, not silk). Some other substances have been advised, but carbonate of soda is the simplest and the most effective in my experience.

Aix-les-Bains.

Dr. Baines (Cranley Place, S.W.), in reply to "B. G." in the British Medical Journal of September 15th, begs to inform him that the baths at Aix-les-Bains are open all the year round, and that November is often a pleasant month there. Many (in fact most) of the hotels are closed during the winter, but the Hôtel du Centre is open all the year, and is reported to be good and moderate. The Hôtel Gaillard is also named as open. The Hôtel Germain is very good, comfortable, and moderate and is open until the end of October.

Treatment of Neurasthenia.

G. F. R. writes: In reply to "J. L.'s" request for suggestions as to treatment of his case of neurasthenia (British Medical Journal, September 8th, p. 703) I should discontinue the nux vomica at present, giving for a week or two: R Ammon. bromid., sodii bromid. āā gr. v, tinct. valerian. 3ss, spirit. ammon. arom. mxx, syrup. zingib. 5ss. aquæ cinnam. ad 3j, bis terve die sum. at the same time, paying attention to hygienic measures—for example, exercise (cycling, golf, etc.) short of fatigue, the taking plain wholesome food, etc. Gentle massage of the head and neck might be useful. The bowels should act daily. "Sandow's muscular developer" might be beneficial if employed under medical supervision. Later on "J. L." might find a combination of arsenic, quinine, and pil. Blaud in jelloid form very useful.

Treatment of Ringworm.

Dr. Henry Waldo (Dermatologist to the Bristol Royal Infirmary) advises "Tinea" to produce a slight amount of folliculitis by using croton oil, a drachm to an ounce, and if necessary gradually increasing the strength. The following is a useful formula: R Ol. crotonis 3j, sulphur. præcip. 5ss, ac. carbol. 5ss, ol. amygd. q.s., adipis lanæ hyd. ad 3j. Epilation should be practised daily.

Veritas writes: "Tinea" will find the following method effective in ringworm of scalp: Poultice (bread), and remove thoroughly crusts; wash the head and dry well. Apply lin. iodi.; repeat the treatment two or three times with one day's interval between each application of iodine. Apply vaseline to other parts of the scalp and hair; this will prevent the trouble spreading. Caps, hats, brushes, towels, etc., used during the attack should be disinfected or destroyed. "Tinea" will probably find that the cause of the continuance of the disease is re-infection.

Dr. William Mitchell (Bradford, Yorks.) writes: "Tinea" might try the following purely theoretical method of treatment, which I have not had the opportunity of putting into practice, although it seems reasonable that something might be expected of it. It is well known that if the two electrodes of a constant current battery be impregnated with a watery solution of certain salts and applied to the skin, and if the direction of the current be changed from time to time these substances will pass through the skin. It is conceivable, then, that this cataphoric action of the galvanic current might be made to convey a parasiticide substance, for example, common salt, to the bottom of the hair follicles in the affected area, and thus be the means of killing off the trichophyton tinea. I would suggest that sponges soaked with a saturated solution of common salt be used as electrodes, and that they be placed one (the + one) on the affected area, the other about 6 inches off, and that a current of 3 to 4 milliampères be kept up for five minutes at a time several times a day for some time. The scalp should be previously shaved and washed with ether to remove all grease, which might interfere with cataphoresis.

Dr. Geo Steele Perkins (Wimpole Street, W.) writes: In answer to "Tinea" I would suggest his trying the chloride of sodium treatment as described by me in the British Medical Journal of December 7th, 1895, which I think he will find effectual. I shall be pleased to give him full particulars if desired.

S. E. R. suggests the following method of treatment which so far he has not known to fail: Thoroughly wash the part with soft soap and water, dry it. Then rub thoroughly over with ether or turpentine, ether in preference; then wash with water sterilised, and after this rub in pure formalin (40 per cent. solution of formic aldehyde). This repeated once or twice in a week, though painful to the patient, yet is preferable to suffering for months from this troublesome parasite.

Statistics of Deaths under Anæsthetics.

Dr. J. Wyllie (Hull).—No exhaustive statistics of deaths under anæsthetics are obtainable which cover recent years. In Snow's *Anæsthetics*, 1858, pp. 218 to 221, 50 cases are given and analysed. Dr. Anstie, in *Stimulants and Narcotics*, pp. 378, 379, analyses 3,051 administrations and records dangers. In the *Transactions of the Royal Medical and Chirurgical Society* for 1864, vol. xlvii, p. 377, is a further list. Nearly 400 cases are collected in Lyman's *Artificial Anæsthesia and Anæsthetics* at p. 131 (Marshall, 1882). More recently a large number of fatalities are collected in the *Lancet*, and the Hyderabad Commissions on Chloroform (1893, *Lancet* Office, 423, Strand). Some statistics are given in *Anæsthetics* (Dudley Buxton, 3rd edition, p. 297), and a synopsis of deaths in *Anæsthetics and Their Administration* (Hewitt, p. 215). The Report of the Anæsthetics Committee of the British Medical Association is, we believe, in the press, but its figures have not as yet been published.

Friendly Societies and Death Certificates.

A Stickler, etc., is informed that the Friendly Societies Act of 1896, 59 and 60 Vic., cap. 25, section 61, enacts that "a registered society or branch shall not pay any sum of money upon the death of a member or other person whose death is, or ought to be, entered in the registers of deaths except upon the production of a certificate [illegible] the hand of the registrar of deaths, or other person having care of the register of deaths in which that death is or ought to be entered." A secretary of a registered society has no right to accept any certificate of death other than that of the registrar, and [illegible] would no doubt be disposed to follow the [illegible] charge for the registrar's certificate of death of a member of a friendly society is 1s.

South African Plants in Treatment of Dysentery.

Dr. Gordon Sharp (Leeds) writes: In the [illegible] tery" by Mr. Owen Richards and Dr. Washbourn in the British Medical Journal of September [illegible], I find no reference to the use of *Monsonia ovata et biflora*. Mr. J. Mabr[illegible] M.D. [illegible] a 1 in 8 tincture given in 2 to 4 [illegible] malady; and Mr. Clinton Dent in one of his earlier reports incidentally quotes the favourable results obtained by the use of the drugs in the hands of his medical colleagues. Like the Athenians of old, we are con-

tinually on the look-out for a new thing, and one would like to know if Dr. Washbourn or any of the other medical officers have tried the native remedy and what is the result. I have a specimen of *Monsonia ovata*, and I find it is a feeble astringent.

NOTES, LETTERS, Etc.

ERRATUM.—In Dr. George A. Williamson's paper on the Cyprus Sphalangi and its connection with Anthrax in the BRITISH MEDICAL JOURNAL of September 1st, p. 558, the generic name of the sphalangi should have been given as *Mutilla*, and not *Mutille*.

THE CANCER SOCIETY.—The prize of fifteen guineas offered by the Cancer Society, 315, High Holborn, W.C., through the liberality of Miss Scott, for the best original essay on the present state of cancer science, has been awarded to Alex. Fraser, M.D., of Queen's Park, Manchester, the adjudicator being Geo. Brown, M.R.C.S., member of the General Medical Council.

PARISH COUNCIL APPOINTMENTS IN THE HIGHLANDS AND ISLANDS OF SCOTLAND.

A CORRESPONDENT informs us that the parish council of South Uist is seeking a medical officer. Any medical man who may be disposed to apply for the appointment is recommended to make inquiries as to the conduct of the parish council in recent years towards its medical officer. The fate which overtook Dr. Lamont might be forgotten, but particulars were published in the BRITISH MEDICAL JOURNAL, vol. i, 1899, p. 757; vol. ii, 1899, pp. 237, 787, and 793.

WINTER RESORTS FOR CHRONIC PHTHISIS.

DR. D. LIVINGSTONE DAVIES (Criccieth) writes: May I ask you to kindly correct a statement made in the BRITISH MEDICAL JOURNAL of September 22nd, in reply to member's query regarding a winter resort for his case of chronic phthisis, etc.? You state that a copy of the official guide to Criccieth may be obtained from Messrs. Gibson, Terrace-road, Aberystwyth. This is not so, but copies may be had free of charge on application to the Clerk to the Urban District Council of Criccieth; and members of the profession who are looking out for suitable winter health resorts for their patients would do well to obtain and carefully peruse a copy of this excellent guide.

SUMMER DIARRHŒA.

DR. ALEX. MCCOOK WEIR (East Sheen) writes: Dr. Ashby, of Reading, takes exception to my classification of this disease. Now I may say that I have been a close observer of "infantile summer diarrhœa" for above twenty years, and have written a good deal about it, and before Dr. Ballard undertook his long inquiry into its alleged cause I combated the theory of its germinal origin, and attributed it to heat pure and simple. The late Dr. Farr regarded it as a "zymotic" disease, but not in the same sense as the exanthemata, and the late Dr. Ballard, as is well known, attributed it to some "undiscovered" microbe which found its way into the infant's intestines when the ground temperature rose to 65° or thereabouts. The Americans, however, take quite a different view, and without hesitation pronounce it "milk poisoning" (*vide* Starr's *Diseases of Children*). I need not repeat what I have already stated in the BRITISH MEDICAL JOURNAL of August 18th, but will simply add that to call and classify it as "epidemic" or "zymotic enteritis," as advocated by Dr. Ashby, would be to confound it with typhoid on the one hand, and out-and-out cholera on the other. It is neither, and might as justly be called "epidemic colitis," or "the chills" as suggested by Dr. Todd-White. Its etiology is expressed by the compound word "summer-diarrhœa," and as such it cannot be mistaken.

INFANT FEEDING.

DR. W. W. HARDWICKE (East Molesey) writes: Dr. T. D. Cook's proposal to scatter free information for the feeding and care of infants, in order to make the "plea of ignorance a thing of the past," is very philanthropic; but may I ask what the physician is to live upon when the spirit of philanthropy in the profession has reached such a sufficiently high order that advice and prescriptions will be given gratis at every consulting room in the United Kingdom? Already the public are prescribing for themselves, their families, and their friends, keeping a variety of tabloids in their houses, with full instructions for use; and when these fail, is not the country flocked with gratuitous institutions upon which they may fall back? and the physician himself, in many instances, aids and abets this virtual extinction of his own profession. It is no doubt very noble of a young man to spend a small fortune in qualifying himself for a profession, where he will be able to give gratuitous advice all round, and save people the unpleasantness of putting their hands in their pockets; but will this help him to pay his rent, rates, taxes, etc., and why should this noble philanthropy be limited to the medical profession? Does the lawyer, the butcher, the baker, the wine merchant, and the tobacconist supply members of the profession, or anyone, gratuitously? Does he even get his religion gratuitously? Not only does he not do so, but he is expected to subscribe handsomely to every charity that is going.

SERJEANT-SURGEONS.

DR. GEORGE C. PEACHEY (Wantage) writes: In further reference to the query (BRITISH MEDICAL JOURNAL, April 28th, 1900, p. 1071) as to the identity of Monsieur Ronjat mentioned by Sterne as "the King's Serjeant-Surgeon," and my suggestion (June 2nd, 1900, p. 1392) to the effect that since the search for some historical mention of such a person had been futile the name might be a Shandean anagram, permit me to bring the following, which I have just come across, to the notice of those interested in the matter. In *The Goldheaded Cane* (edition of 1827, p. 24, *et seq.*) are to be found full particulars of the illness and accident of William III.; of the quarrel over the treatment between his Dutch physician Bidloo and his French surgeon Ronjat; of the subsequent death of their royal patient; and of the paper war which resulted in the publication of the following: *Verhaal der Laatste Ziekte en het overlijden van Willem de Derde, etc., etc.,*" in Leide, 1702, written by Bidloo in Low Dutch "in order, as his enemies said, that few might read it in this country"; and *Lettre de M. Ronjat, Premier Chirurgien de feu Sa Majesté Britannique Guillaume III; écrite de Londres à un Médecin de ses Amis en Hollande,*" published by Henry Ribotteau, bookseller in the Strand, over against Bedford's Buildings, London, 1703.

SMALL-POX AFTER LIMITED EXPOSURE.

WE are indebted to Dr. H. E. Jones, of Ibrox, Glasgow, for particulars of two cases of small-pox which seem related to one another in an interesting manner. On August 7th, at 11 A.M., Dr. Jones saw at a chemist's shop in Govan a man had been waiting in the shop for five minutes. He proved to be suffering from small-pox on the sixth day of illness, and had an abundant rash, the pharynx especially being studded with pustules. As the man went out a young woman was waiting in another part of the shop, simply to ask the doctor a question, which was attended to in half a minute, and she returned home. Every precaution was taken against spread of infection by fumigation, etc. On August 20th Dr. Jones was summoned to see the young woman mentioned, who had been taken ill with small-pox on the morning of August 17th, just under ten complete days from the extremely limited exposure to infection detailed above. No other source was traceable, the attack was mild but unmistakable; the young woman had been vaccinated in infancy.

LETTERS, COMMUNICATIONS, ETC., have been received rom

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BOOKS, ETC., RECEIVED.

Cancer of the Uterus: Its Pathology, Symptomatology, Diagnosis and Treatment, also the Pathology of Diseases of the Endometrium. By T. S. Cullen, M.B. London: Henry Kimpton. 1900. 31s. 6d.

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THE HUXLEY LECTURE

BY

LORD LISTER, F.R.C.S.,

President of the Royal Society.

Delivered to the Charing Cross Medical School on October 2nd.

When the Council of Charing Cross Hospital did me the great honour of asking me to deliver the third of the lectures instituted by them in memory of Huxley, the illustrious former pupil of their school, at the same time conveying their desire that the subject of it should be my own work, I at first reluctantly declined, on the ground that what I had done had been for the most part already published. But when the Dean, who assured me that he expressed the unanimous wish of his colleagues, urged me to reconsider my decision, I felt unable to refuse compliance with a request so very kindly made. It also occurred to me that, as my papers are scattered through a variety of media of publication, extending over a pretty long period, the earlier ones especially being probably little known to the present generation, it might perhaps be not without interest for me to refer on this occasion to some of the more salient of such observations as bear more or less directly upon the antiseptic system of surgery, while I should at the same time be complying with a wish that has been expressed that I should give some indication of the circumstances that led me to that subject.

As a student at University College I was greatly attracted by Dr. Sharpey's lectures, which inspired me with a love of physiology that has never left me. My father, whose labours[1] had raised the compound microscope from little better than a scientific toy to the powerful engine for investigation which it then already was, had equipped me with a first-rate instrument of that kind, and I employed it with keen interest in verifying the details of histology brought before us by our great master. When I afterwards became House-Surgeon under Mr. Erichsen, I applied the same means of observation to pathological objects.

One of the earliest records that I find of such work is in the form of sketches of the corpuscles in the pus of a case of pyæmia, which occurred after excision of the elbow in a little boy. The cancellated tissues of the humerus at the seat of operation and the adjacent part of the medullary cavity were seen, on *post-mortem* examination, to be occupied by thick, yellow pus, and similar fluid distended the brachial and axillary veins and their branches, including not only those leading from the bone towards the venous trunks, but also those proceeding from other parts of the limb, while the upper part of the axillary was plugged with a firm, adhering clot. There was also suppuration in one knee-joint and multiple abscesses in the lungs. I was struck with the fact that the pus was to be found not only in the course of the channels leading from the original seat of mischief to the main trunk, but also in branches along which it must have advanced in the reverse direction in spite of the valves of the veins. The plugging of the axillary seemed also a very noteworthy circumstance. Sédillot had shown that multiple abscesses in the lungs were caused by introducing pus into the veins of an animal; and it seemed probable that the collections of pus in those organs in the present case had been of similar metastatic origin. Yet the plugging of the axillary, shutting off the pus in the veins from the general circulation, seemed inconsistent with such a view. I took careful camera lucida sketches of the constituents of the pus from the various situations in which it occurred; and I also made a record of the magnifying power employed by sketching with the camera the scale of a micrometer placed upon the stage of the microscope. And I would venture to recommend this practice strongly to pathologists. The sketch which I then made is as valuable to me to-day as if it had been made yesterday. I see from my drawings what I noted at the time, that the solid constituents of the pus were in no case pus corpuscles such as we then knew them, and I also see that they were not leucocytes. I could not explain at the time the facts that I observed, but subsequent investigation has, I believe, made them intelligible.

An epidemic, as we termed it, of hospital gangrene occurred during my house-surgeoncy, and I was charged with carrying out the treatment. This consisted in scraping away very thoroughly under chloroform the brown pultaceous slough and freely applying acid pernitrate of mercury to the exposed surface. The result was, as a rule, that when the eschar caused by the powerful caustic separated under poulticing, a perfectly healthy granulating sore was disclosed which healed kindly under ordinary dressing. The only exception to this rule was in the case of a very stout woman, in whom the disease attacked an enormous wound of the forearm caused by an accident which had raised a very large flap of skin. In that case the caustic application removed indeed the pain and the extensive inflammatory blush; but when the slough separated a small brown spot was seen at one place among the otherwise healthy granulations, and this spread with astonishing rapidity over the entire sore. The treatment was tried again and again with the same result, till, the deep structures of the limb having become seriously involved, Mr. Erichsen resolved to amputate. On the evening before the day fixed for the operation I again put the patient under chloroform, and, after scraping the sore very thoroughly, allowed the liquid caustic to lie in pools upon it for a quarter of an hour in order to destroy as effectually as possible all material in the sore which might otherwise infect the amputation wound. With a similar object I washed the skin of the limb thoroughly with soap and water, including the shoulder, where it had been decided to perform the amputation. The limb having been removed next day, the stump healed perfectly kindly. Here, as in the other cases, local treatment proved efficacious.

I was greatly struck with the clear evidence which these cases seemed to afford that the disease was of the nature of a purely local poison. In the hope of discovering its nature I examined microscopically the slough from one of the sores, and I made a sketch of some bodies of pretty uniform size which I imagined might be the *materies morbi* in the form of some kind of fungus. Thus as regards that form of hospital disease, the idea that it was probably of parasitic nature was at that early period already present to my mind.

On visiting Edinburgh by Dr. Sharpey's advice in order to see something of Mr. Syme's practice, I was fascinated by the prominence that he gave to the pathological side of surgery as well as by his rare diagnostic judgment and his surpassing powers as an operator. Under him I had the unexpected great privilege of a second house-surgeoncy, which extended over upwards of a year, and in the great Royal Infirmary I had ample opportunity for observing the behaviour of wounds under the most varied conditions. I was charmed with the superiority of the treatment of recent wounds which I witnessed there over the "water-dressing" which was used at University College after the precepts of Liston, who introduced it in place of what he termed "filthy unguents." Water-dressing, though cleanly when applied, was invariably putrid within twenty-four hours, and had to be changed daily. Mr. Syme placed pads of dry lint upon the bodies of the flaps, leaving the lips of the wound free for the escape of blood and serum, covering all with a single layer of dry lint and a retaining bandage which gently pressed the cut surfaces together. This dressing was left untouched for four days, during which union by the first intention proceeded undisturbed except in the track of the ligatures upon the blood-vessels, while the discharge found on changing the dressing was scanty and not specially offensive.

But highly successful as this practice was, it could not be continued in the further progress of the case. The ligatures were separated by a process of suppuration, which, even when the tissues had been healthy at the time of operation, became fully established in four days at the latest. The ligatures, on the other hand, were not fully detached till a later and variable period, and so long as they remained they perpetuated the formation of pus in the depths of the wound, the retention of which by a dry dressing long continued would have involved disastrous consequences.

Thus, under the best possible management which the knowledge of those days permitted, suppuration was an inevitable attendant on nearly every wound; and so long as it continued there was no security against the advent of one of the

[1] *Vide Phil. Trans.*, 1830.

various specially unhealthy conditions, then quite inexplicable, which might ruin the results of the most beautifully planned and executed operations.

The very liberal regulations of the University and College of Surgeons of Edinburgh enabled me, on the expiry of my house-surgeoncy at the Infirmary, to start a course of lectures on surgery qualifying for the examinations of both bodies. The first subject with which I should have to deal was inflammation. The stasis of the blood in the capillaries, as the result of irritating applications, had been long studied in the transparent web of the frog's foot; and Paget had described similar phenomena in the wing of the mammalian bat. The latest contribution to the subject had been made by Wharton Jones, one of my former teachers at University College, who had received the Astley Cooper Prize for an essay in which observations were recorded leading him to the conclusion that the cause of the arrest of the red corpuscles in the capillaries of an inflamed part was contraction of the arterioles. According to this view, which he supported by very neatly-executed experiments, the narrowing of the tubes of supply caused sluggishness of flow in the fields of capillaries supplied by them, and this permitted the red discs to aggregate and so obstruct the channels.

There could be no more doubt of the trustworthiness of Wharton Jones's observations than of the beauty of the drawings with which he illustrated them. But their relation to inflammatory stasis was not so clear; and I sought further light upon the subject by investigations of my own. My first attempt in this way may be described somewhat in detail. It occurred to me that it would be interesting, instead of the powerful irritants which had been usually applied in such investigations, to try warm water, the mildest of all stimulants to the human body. Having fixed a young frog upon a plate of glass on the stage of a microscope tilted at an angle of about 45 degrees, one of the webs being extended in the field of view, I watched the effect of throwing a few drops of warm water upon the web by means of a syringe. The application of the water was little more than momentary, and as it flowed off immediately from the sloping surface I could at once observe the result. This filled me with astonishment; and at first I could not understand what I saw. All appearance of blood-vessels—arteries, capillaries, and veins—had disappeared; the field being absolutely exsanguine. In a short time the circulation was resumed with greater freedom than ever; and on repeating the experiment I found that the first effect of the stimulus was a state of extreme constriction of the arterioles, which kept back the blood corpuscles but allowed the liquor sanguinis to pass; so that the capillaries and veins, though retaining their former dimensions, were occupied only by the filtered plasma, itself invisible, while their walls were with difficulty discernible under the low magnifying power that I was using.

Thus was swept away at one stroke the latest theory upon the subject. The condition of contraction of the arterioles, which Wharton Jones had supposed to be the cause of the accumulation of the red corpuscles in the capillaries, had been present in the most perfect conceivable form; but the result had been the very opposite condition.

The explanation of Wharton Jones's mistake became apparent as I proceeded along the path which opened with so much promise. He had never experimented in a perfectly healthy state of the circulation, but had described with great accuracy what could occur only under morbid conditions. For I afterwards learned that the normal temperature of man is deadly to the cold-blooded frog. That animal, which under ordinary conditions exhibits very remarkable persistence of vitality even after somatic death, is killed by being held for about a quarter of an hour in the hand; and if one of its hind feet be similarly warmed, the blood corpuscles will be found packed and stagnant in the vessels of the webs, as if mustard or any other powerful irritant had been applied to them.

If, on the other hand, in securing the frog for observation under the microscope, scrupulous care was taken to avoid needless exposure of the foot to the warmth of the hands, the threads for fixing the toes being tied by means of long forceps, and each half of the knot done separately, with a fair interval between them, a state of the circulation was seen which is, I believe, even to this day rarely witnessed. The white corpuscles, instead of trailing, more or less sluggishly, along the walls of the venous radicles—the normal condition, according to some modern textbooks—move freely along among the red discs; and these being diffused through a due proportion of liquor sanguinis, the vessels present a pallor which would surprise anyone who had seen only the ordinary demonstrations of the circulation, but which might have been anticipated from the appearance, when in health, of the highly vascular sclerotic with its investing conjunctiva, "the white of the eye."

Such a method of arranging the foot could not be carried out if the animal were able to struggle; but this was effectually prevented in the following way:—The frog, wrapped in cold wet lint, is held in the left hand, and the head, left exposed for the purpose, is depressed with the forefinger so as to stretch the ligament between the occiput and the first vertebra. The junction between the brain and spinal cord is then divided with a tenotome, after which the creature remains perfectly passive as long as may be desired. Comparatively dull though we know sensibility to be in an animal so low in the scale as a frog, it is a comfort to feel that this method must be attended with exceedingly little pain. That caused by the division of the cord is probably almost as momentary as the stroke of the tenotome; and sensibility as well as motion being abolished in the limbs, the creature cannot feel the tying of the naturally sensitive toes or the subsequent dragging upon them.

This arrangement had the further great advantage of allowing an irritant, even in the form of a drop of liquid, to remain undisturbed at the particular spot to which it was applied, instead of being diffused over the whole web by the movements of the limb. Under these circumstances the highly interesting fact was disclosed that, while the web generally was affected through the nervous system with active congestion, that is to say, with arterial dilatation and consequent very free flow of blood, the characteristic stasis was limited to the area on which the irritant acted directly. In spite of the widening of the tubes of supply, the blood corpuscles tended to lag more and more behind the liquor sanguinis, till at length complete stagnation occurred. The obstacle to the onward movement of the red discs seemed to be caused by adhesiveness on their part. On careful examination, individual discs were sometimes seen attached to the walls of the vessels. The white corpuscles also showed a tendency to adhere to each other and to the vascular parietes; and this was seen in all degrees, from the disposition to trail along the venous radicles, before referred to as occurring under slight irritation, to piling up of colourless granular masses of leucocytes large enough to block a venous radicle.[2]

These appearances of the blood corpuscles in the irritated area were such as were seen in blood examined outside the body between two plates of glass. I had observed similar granular masses of white corpuscles in blood from my own finger, as well as individual leucocytes adhering to the surface of the glass, along which, as has been since observed, they crawl by amœboid movements.

In the red corpuscles the tendency to mutual adhesion shows itself in different forms according to the species of the animal or its state of health. In the frog the prominence of the nuclei leads to very irregular grouping of the oval cells. In man the biconcave circular discs adhere under normal circumstances in that position which enables their moderate degree of adhesiveness to come best into play, the result being the well-known "rouleaux." The same is seen in the healthy blood of the cow. But in some animals—for example, the horse—the adhesiveness of the discs is so great that they stick to one another by the parts that come first into contact, producing dense spherical masses large enough to be visible to the naked eye, like grains of red sand. These, falling rapidly through the lighter plasma, like a stone in water, leave the upper part of the liquid free from red corpuscles before coagulation occurs, thus giving rise to the buffy coat, whereas in the cow the delicate network of rouleaux remains suspended like dust, and no buff occurs.

I am greatly surprised to learn that the cause of the buffy coat is stated in some textbooks to be slowness of coagulation.

[2] The accumulation of the white corpuscles in the vessels of an inflamed frog's web had been previously observed by Dr. Addison, of Brighton, and had been particularly insisted upon by Dr. C. J. B. Williams in his *Principles of Medicine*.

Special slowness of coagulation does not occur in buffing blood; nor, if it did, would it of itself explain the phenomenon. In whipped horse's blood the red discs aggregate into dense masses as in blood freshly drawn, and falling rapidly soon leave a deep layer of serum. In whipped cow's blood, rouleaux forming in the serum as in the plasma, there will be found, if the animal was healthy, only a thin superficial serous layer, even after the lapse of 24 hours.

I once drew blood from a donkey into two similar glass vessels, one empty, the other half full of water. The diluted blood and the undiluted clotted in exactly the same time; but whereas in the normal blood there happened to be an unusually thick layer of buff, comprising nearly two-thirds of the whole mass, the watered blood gave no buff, and the microscope showed that the red corpuscles had lost their natural adhesiveness.

Human blood, as is well known, shows the buffy coat in some states of inflammation, but it may also occur in anæmia;[3] and it may well make our profession humble to reflect that in days within living memory buffing of the clot was regarded as an indication for further withdrawal of the vital fluid by venesection.

To return from this digression: adhesiveness of the corpuscles, both red and white, was seen in the vessels of an irritated area of the frog's web, as in blood outside the body; but in a perfectly healthy part no such condition was observed. A string tied round a frog's thigh of course made the blood in the vessels of the foot motionless, but on the slightest touch of the web the corpuscles, both red and white, moved along with the plasma with the most perfect freedom.

But I was not altogether satisfied with this evidence of their entire absence of adhesiveness within healthy vessels, because the aggregation of the red discs in the frog is of a somewhat indefinite character. I therefore sought further light upon the point in the mammalian bat. Having placed one under chloroform and extended one of its wings under the microscope, I temporarily arrested the circulation by compressing the main vessels of the limb; and on examining one of the veins I was much disappointed to see the red corpuscles of its contained blood aggregated. It seemed possible, however, that the part of the membrane which I was examining might be suffering mechanical irritation from pressure between the glass slide on which it rested, and the cover-glass which it was necessary to use with the high magnifying power required for the bat's wing. For those were not the days of immersion lenses. I therefore made arrangements to guard against the possibility of such an occurrence; and now, to my great joy, I beheld the red corpuscles, which lay motionless in a considerable venous channel, distributed uniformly through the plasma, without the slightest appearance of aggregation.

The animal having been killed immediately afterwards, I examined a drop of blood from its heart. The contrast with what I had seen in the healthy living vessel was most striking, the red corpuscles presenting a degree of adhesiveness such as I had never before seen equalled, whether outside the body or within the vessels. When forced to separate from each other by pressure made upon the cover glass, they became drawn out like threads of a viscid liquid before becoming completely detached. The animal had been suffering from a bad compound fracture in one of the wings. Whether the great adhesiveness of the red discs of the shed blood was due to inflammation caused by the injury, or whether such a condition is normal to the bat, as it is to the horse and the ass, I do not know.

By such facts it seemed to be established that the stasis of the blood in an irritated area, that is to say, the accumulation of the blood corpuscles, both red and white, in the vessels of that area, is due to a tendency on their part to adhere to each other and to the walls of the vessels; that they do this by virtue of an adhesiveness or viscidity which they do not manifest at all within the vessels of a perfectly healthy part, and which, while varying in degree with the severity of the irritation, never seems to exceed that which is observed in blood outside the body.[4]

What was it that induced the blood corpuscles to assume this adhesiveness under irritation? It was clearly not the result of direct action of the irritant upon them. When the inflammatory congestion, as I ventured to term it, was not carried to its extreme degree, the corpuscles, though closely packed, still moving sluggishly along, successive portions of blood, as they passed through the affected spot, were successively affected in the same way, it might be for hours after the irritant had ceased to act. And some of the agencies which produced the effect, such as gentle warmth and mechanical disturbance in the shape of moderate pressure, were not of a nature to act chemically upon the blood cells, and could not possibly leave behind them among the tissues any active substance.

The tissues, as distinguished from the blood, were therefore the parts primarily and essentially affected by the action of the irritant. And we have seen that, in their relation to the blood corpuscles, they approached more or less closely, according to the degree of the irritation, the behaviour of ordinary solids, such as glass, as distinguished from the living structures. The natural inference was that they had lost more or less, for the time being, certain special properties which they possessed when in active health as constituent structures of the living body. In other words, certain of their vital functions were temporarily in abeyance. I say temporarily because the extreme degree of inflammatory congestion, in which the capillaries appear as homogeneous scarlet threads of densely packed red discs, is susceptible of complete recovery by resolution if the action of the irritant has not been pushed too far.

The same conclusion followed naturally from a consideration of the properties of irritants. Greatly as they differ in their nature, whether physical, as mechanical violence, heat, and the electric shock, or chemical of the most varied characters, one feature they have all in common; if pushed far enough they destroy the tissues on which they act. Extreme inflammatory congestion is the state which they produce when their action is just short of the lethal degree; and it seemed to follow absolutely that the state of the tissues just short of death must be one of impairment of vital power.

This view was beautifully confirmed by a series of observations to which I was led by a most unlooked-for experience. Before I had adopted the method which I have described, of obtaining a perfectly tranquil state of the frog's foot, I sought to study the local effect of an irritant by placing on the middle of the web a small piece of moistened mustard, which could not be shifted in position like a drop of liquid when the animal struggled. On removing the mustard after a while to observe its effects, I was astonished to see the part of the web on which it had lain not only affected with inflammatory congestion, but totally different in colour from the rest of the web, in consequence of a difference of arrangement of its pigmentary constituents. Where the mustard had rested, the pigment appeared as a delicate black network among the tissues, causing an extremely dark appearance; whereas in the rest of the web it was gathered into small round spots, which interfered little with the pallor of the other structures. I at once saw that I had before me direct ocular evidence of an effect of the irritant upon the tissues. The circumstance that I had applied the mustard to one spot only of the web, had revealed what had escaped the notice of the many previous observers who had studied the circulation in the frog. I afterwards learned that changes of colour due to pigmentary variation had been observed in Germany in the green-tree frog by Von Wittich, who had attributed them to contractions and relaxations of chromatophorous cells, more or less analogous to what is seen on a large scale, visible to the naked eye, in the skin of cephalopods. Very different were the real pigmentary functions in the frog. The colouring matter, which was in the form of granules of extreme minuteness, was contained in cells with offsets that rapidly broke up into ramifications of exquisite delicacy, anastomosing freely with each other and with those of other branches and of neighbouring cells, only visible when the frog was at the darkest, when they appeared, under the highest magnifying power at my disposal (a fine $\frac{1}{12}$ of Powell and Lealand's), as fine homogeneous black lines, in which the closely-packed granules were not individually discernible. Under these circumstances the bodies of the cells and their principal offsets were so

[3] In one case of anæmia, when I examined the blood microscopically I found the red discs extremely adhesive.

[4] *Vide* 'Phil. Trans.', t. 59.

cleared of pigment as to be almost colourless, so that it was difficult to define their contour.

On the other hand, when the animal was at the palest, the pigment granules were massed together into a thick circular disc, which did not occupy the whole of the body of the cell, being apparently grouped round its nucleus, while the offsets and their ramifications were were quite colourless. Any intermediate degree between these extremes of complete diffusion and perfect concentration of the pigment granules might occur, with responding changes in the tint of the animal.

Camera lucida sketching here stood me in good stead. I doubt if anyone would have credited my description had I not been able to support it by such evidence. For here was a function entirely new to physiologists. In muscular contraction the entire mass of the shell shrinks, and in ciliary action, the only other visible form of motion then known to occur in animal tissue, the part concerned moves as a whole, so far as we are able to observe it: in the pigmentary changes the form of the cell remained unaltered, but one of its constituent materials was seen to be transferred from place to place among the rest. But drawings made with the camera of a cell in successive stages of concentration of the pigment admitted of only one just interpretation.[5]

These changes in the disposition of the pigment accommodate the tint of the animal to that of surrounding objects. A dark frog placed in a white earthen basin in sunlight soon assumes a dull yellow colour, and a pale one is not long in becoming black in a covered earthen jar.

It was very interesting to find that light produces these effects, not by direct action upon the skin, but indirectly through the retina and optic nerve. A hood of black cloth, carefully arranged so as to exclude light from the eyes without obstructing respiration, entirely prevented a dark frog from becoming pale in bright sunlight. I was naturally desirous of ascertaining through what efferent channels the nervous impulse that caused concentration of the pigment on exposure to light was conveyed from the brain to the foot. Division of the sciatic nerve had no effect whatever upon the colour of the limb. I then tried cutting through all the structures in the thigh except the bone, the femoral artery and vein and the sciatic nerve. This also had no influence. But when I added to the latter procedure the section of the sciatic, the animal being then pale, it gradually grew dark below the seat of operation, till in no long time it presented from the toes to the wound as great a contrast with the rest of the body as if that part had been covered with a miniature black stocking. Thus the regulation of this function, which is probably closely allied to the action of the cells in nutrition, was not carried on exclusively through special nervous channels, as is the case with the contractions of the voluntary muscles, but one nerve could take the place of others in the duty.[6]

Light was not the only agency that induced pigmentary concentration. It might take place rapidly during struggling of the animal, and I once saw a frog grow pale in its efforts to avoid capture. Here mental emotion, perhaps, came into play, if we may use such an expression regarding the frog.

It seems quite astonishing that nervous action should make the pigment molecules rush thus rapidly to the centre of the cell from its remotest and finest ramifications. Yet a sudden gush of tears or outburst of perspiration, although familiar, is perhaps not less wonderful.

Concentration of the pigment took place, as we have seen, under nervous influence, and diffusion on its withdrawal. But diffusion was no mere passive phenomenon, such as might follow according to any ordinary arrangement of matter, when the agency that caused the grouping of the molecules ceased to operate. The transference of the granules from the body of each cell to its remotest ramifications, and their close packing there, were an act such as a living organism alone could have effected. Pigmentary concentration and diffusion were vital functions of a profound character concerned with the relative distribution of different constituents of the cells. Yet from the happy circumstance of the conspicuousness of the pigment, the results of their activity could be observed with the utmost facility, and their behaviour in relation to inflammatory congestion easily studied even under a low magnifying power.

The pigment cells pervade the skin and subcutaneous tissue of which the frog's web consists, and are especially numerous about the blood vessels, round which their branches twine abundantly. They must, therefore, be acted on along with the vascular parietes by anything applied to the surface of the membrane. And to state shortly the result of many experiments, I found that any agency, physical or chemical, which caused the blood corpuscles to lag behind the liquor sanguinis in the part on which it operated rendered the pigment cells in that particular area incapable of discharging their functions. Whatever might be their state at the time of the experiment, whether in full diffusion, complete concentration, or any intermediate condition, so they remained in the irritated spot, while in surrounding parts of the web, as in the body generally, they changed as usual in obedience to differences of illumination or other circumstances. At the same time they were not killed, for if the irritation had not been too severe, they recovered their full activity when resolution occurred.[7]

Thus the pigment cells afforded ocular demonstration of the truth, to which I was otherwise led by inference, that an irritant, when producing inflammatory congestion, prostrates for the time being the vital energies of the tissues on which it acts.

It is to be observed that mere paralysis of the nervous apparatus of the irritated area would have been followed by diffusion of the pigment, as occurred after section of the nerves in the thigh, so that the suspension of diffusion as well as concentration shows that the special pigmentary functions had been arrested.

It was, of course, a familiar fact that nerves may be temporarily paralysed by the direct action of pressure, cold, and other agents upon them. But, so far as I am aware, it had not been known that the tissues generally are liable to be thrown into a state of suspended vital energy by injurious influences.

An experiment upon another form of tissue seems so illustrative of this subject that I am induced to relate it in detail. It was an attempt to study the effect of warmth upon the ciliated epithelium of the frog's tongue. It was easy to obtain the material for observation by gently scraping the surface of the organ and diffusing the product in a drop of water. Individual cells were then to be seen with their cilia in motion, which might continue for a considerable period. But special arrangements were necessary in order to avoid killing them with the warmth, to which, as we have seen, the tissues of the frog are peculiarly sensitive. I succeeded by arranging them in a film of water between two extremely thin cover glasses; the whole mass being so small that it could be very quickly heated and as rapidly cooled. The object being placed under the microscope, I interposed a small cautery at a low black heat between the reflector and the stage and watched the result. The ciliary motion, which

[5] Max Schulze had not yet described the movements of animal protoplasm; and if he had done so, this could have gone but a little way in explaining the phenomena described in the text. The gushing out of homogeneous pseudopodia from the granular body of an amœba may, however, be of an allied nature. I made attempts to see the movement of the pigment granules in cells in which concentration was going on; but their extreme minuteness, together with the excessive rapidity of their apparent motion under the high magnifying power requisite, made them generally elude observation. I fancied I saw an indefinite rush of something through the clear space around the already accumulated mass, but I could not be sure. On one occasion, however, I saw some individual granules leave the mass and make excursions into the colourless fluid, as I could not doubt it to be.

[6] *Vide Phil. Trans., ibid.*

[7] I have in rare instances seen an irritant cause diffusion from a state of concentration as a preliminary effect. This was unmistakably the case on one occasion when mustard was employed. The pigment was in an intermediate (stellate) state when the application was made. In a narrow ring round the mustard, where the volatile oil could only act extremely mildly on the web, the stellate condition gave place to complete diffusion, whereas under the mass, where the irritant had acted at once with full energy, the stellate appearance remained unchanged. Inflammatory congestion, however, had been produced in the ring of full diffusion as well as in the more strongly irritated area. It happened that complete concentration afterwards took place in the rest of the web, while the irritated areas retained the appearances above described. It seems probable that the diffusion under slight irritation may have been the result of the nerves in the irritated part being paralysed before the pigment cells. As is commonly the case with more specialised structures, the pigment cells are a delicate form of tissue, and are more readily killed than other constituents of the web. Hence, if care is not taken to avoid pushing the action of the irritant too far, it will be found, after resolution has taken place, that the pigment cells never recover; the collections of pigment gradually lose their sharpness of outline and are ultimately absorbed, leaving a permanently white spot in the web.

had been somewhat languid, became at once increased in rapidity, but resumed its former rate if the cautery was at once withdrawn. If, however, the application was somewhat longer continued, the active motion soon gave place to a state of complete rest, in which the cilia stood straight like the hairs of a brush. The hot iron being removed the instant that this effect was observed, slight indefinite movement soon began to show itself in individual cilia, and before long all were again in action as before the heat was applied. If the cautery was made somewhat hotter the motionless condition was produced almost immediately, preceded by a momentary period of excessively active motion. But if the warm application was immediately suspended, recovery occurred, as in the former case. And the same experiment might be repeated again and again on the same cells with the same results. But if the warmth was allowed to act for a slightly longer time, or the cautery was made still hotter, recovery never took place, and the bodies of the cells swelled up through the endosmotic imbibition of water, having lost all life and obeying the ordinary laws of chemistry.

This simple experiment was in various ways instructive. It indicated that ciliated epithelium cells, like the pigment cells, when acted on by a destructive agency to a degree just short of that which is lethal, are thrown into a state in which their vital functions are suspended but not irretrievably lost. It also showed that the cells which compose the animal organism are individually capable of recovering from this state of suspended vital energy, without any aid from the general circulation or the nervous system.

It further illustrated the important fact that a most injurious agent when operating very mildly may stimulate function without impairing power.[8]

Active congestion, or arterial dilatation with consequent free flow of blood through the capillaries, is an early and prominent symptom of inflammation of a vascular part in man. Unlike the morbid condition which is produced by the application of irritants to the frog's web, it is brought about indirectly through the nervous system. A striking illustration of this was presented in a case which occurred at the period to which I have been referring. A scirrhous mamma had been removed by transverse incisions, together with a considerable amount of integument and the cutaneous margins had been brought together, in spite of a good deal of tension, by means of a few stitches. Two days later I found the lips of the wound gaping slightly, but the sutures, though subjected to much traction, were still holding, while the skin presented an inflammatory blush extending both upward and downward from the wound, so that it occupied an area of about 4 inches in breadth. I removed the sutures, and I particularly noticed that no blood escaped from any stitch track. The procedure occupied about two minutes, and, to quote from a note taken at the time, "no sooner had I done this than I observed that the redness had almost entirely disappeared; most parts that were before apparently intensely inflamed being now pale." The irritating agents acted directly on only a minute portion of tissue; but they induced widespread active congestion, which subsided at once on their removal. Such results could only have been brought about through the agency of the nervous system.

As I before had occasion to remark, active congestion takes place throughout the frog's web when an irritant is applied to any part of it. It was, therefore, possible to study the phenomenon upon that animal. It was not at that time clearly known by what mechanism the constriction of the arterioles was effected, or by what part of the nervous system it was regulated. Kölliker had recently made his great discovery of the fibre cells of involuntary muscle, and had described them as existing along with elastic tissue in the middle coat of the larger arteries; but the trustworthiness of his observations had not yet been by any means universally recognised, and the structure of the ultimate arterioles, as compared with the capillaries, had not been ascertained.

I found, on dissecting out the vessels from between the layers of the frog's web, and examining them with a high magnifying power, that whereas the capillaries showed only a thin, apparently homogeneous wall beset with occasional nuclei, the finest arteries exhibited three coats, of which the middle one was composed of muscular fibre cells wrapped spirally round the lining membrane. A more efficient mechanism for their constriction could hardly be conceived.[9]

As regards the regulation of the arterial contractions, Bernard's classical experiment of inducing turgescence of the vessels of the ear by section of the sympathetic in the neck, and Waller's converse observation that galvanic stimulation of the distal end of the divided nerve made the distended vessels shrink and the ear assume unwonted pallor, had demonstrated the great fact of nervous control over the local circulation, but it was not known what part of the nervous centres exercised the function.

In entering on the inquiry, I first divided the sciatic nerve, a proceeding which had been stated on high authority to cause relaxation of the arteries of the web. The immediate effect of its division was, indeed, some enlargement of their channels, but this very soon passed off. I then resorted to operations on the roots of the spinal nerves and on the medulla. And, not to weary you too much with details, I may say that removal of all the posterior half of the spinal cord, that portion which alone gives off branches for the hind legs, caused the arteries of the web to relax completely and to remain permanently of about the same calibre as the veins. But if any portion that furnished nerves to the posterior extremities, whether a little caudal segment or a small anterior part was allowed to remain, the arteries, after temporary dilatation, resumed their ordinary and varying dimensions.[10]

It was thus shown that the cerebro-spinal axis is the centre that presides over the contractions of the arteries of the foot, and that the function is exercised by the entire posterior half of the cord; and the temporary effect of section of the sciatic proved that, as is the case with the pigmentary functions, one nerve can take the place of others in the duty. We can thus understand how a flap of skin raised in a plastic operation in the human subject may have its circulation duly regulated through nervous branches in a narrow neck of attachment.

An experiment that greatly pleased Dr. Sharpey would seem to indicate that the vasomotor function for the hind leg is also discharged by the most anterior part of the cord. A frog having been arranged as before described, the point of a fine needle, curved at the end, was introduced into the wound behind the occiput, so as to prick for an instant the divided medulla. The eye of the observer being over the microscope while this was done, the arteries of the web were seen to contract to complete obliteration of calibre, as in the first experiment with warm water.

The contraction of the vessels caused on that occasion by the application of gentle heat to the web was now explained as a "reflex action" through the spinal cord. Their dilatation under irritation remained to be accounted for. In describing that first experiment, I stated that the extreme constriction of the arterioles was followed by relaxation to a larger calibre than they had before the water was applied; suggesting the idea of fatigue after exertion. I have now to add that, if the warmth was longer continued, the subsequent relaxation was more marked and of longer duration; and if the water was made somewhat hotter the contraction that preceded the dilatation was so transient as to be barely discernible.[11]

We seem to have here an exact parallel to what occurred as the result of the action of heat upon the ciliated epithelium. And the natural view seemed to me to be that the ganglion cells of the cord concerned in the arterial contractions were affected by the nervous impulse conveyed to them by the efferent fibres according to the same law that governed the direct action of heat upon the epithelium cells, increased activity or suspension of function being induced according to the degree of energy of its operation. I incline still to believe that this was a correct interpretation of the phenomena of active congestion.

Inflammatory congestion also may be brought about by nervous agency. This fact being of fundamental importance, and not perhaps universally recognised by pathologists, I may

[8] It would appear that all agents that act with destructive effect upon the tissues produce suspension of vital energy without loss of life when operating in a minor degree. Whether all such agents are also stimulants of function when in a still milder form is quite another question.

[9] *Vide Transactions* of the Royal Society of Edinburgh, 1856, vol. xxi.

[10] *Vide Phil. Trans., ibid.*

[11] Brief contraction of the vessels, followed by dilatation, had been previously observed by others as the result of the application of irritants to the frog's web.

describe briefly two unpublished experiments with regard to it which I did shortly after the time of which I have been speaking. Inflammatory phenomena being of a very languid character in the frog, I had resort to a higher animal. One of the experiments was simply passing a silk thread through a fold of skin in a rabbit's back, and knotting the ends together. When forty-eight had elapsed, the animal having been killed, I removed the portion of skin concerned, and examined its under surface. The thread was covered with a yellow line of lymph, around which there was intense scarlet redness for about a quarter of an inch in every direction, contrasting strongly with the paleness of the healthy structures around. And on microscopic examination I found that this depended (to quote from my notes of the time) "partly upon ecchymoses, but chiefly upon well-marked inflammatory congestion of the minutest vessels of the subcutaneous tissue and the deeper parts of the skin."

The other experiment was performed twenty minutes before the first, upon a part of the same animal which, being more sensitive, was more likely to show the effects of nervous disturbance. By means of a fine sewing needle I passed a delicate thread of silk through the superficial layers of the left cornea, and cut the ends off close with scissors. Next day the eye was much inflamed and its condition was aggravated on the day following, while the other eye remained healthy. As I have already said, the rabbit was killed on the expiry of 48 hours. This having been done by pithing, I at once divided the blood vessels in the neck while the heart was still beating, so as to allow all blood that was free to flow to escape from the head. I then removed the two eyes and cut them both across transversely midway between the cornea and the optic nerve, and compared the inflamed eye with the healthy. I will not detain you with a description of the anterior halves of the globes, though they were very interesting, but will at once speak of their posterior portions, more remote from the part where the exciting cause had been in operation on the left side. In that eye the retina was much more readily detached than in the right, and showed small spots of ecchymosis. The two choroids presented a striking contrast; "the vessels in the right eye" (to quote my notes again) "being not at all conspicuous, while in the left eye the membrane was scarlet; and this depended not merely upon fulness of the vessels, but upon darker tint of their contents in consequence of excess of red corpuscles."

It is matter for discussion how inflammatory congestion is brought about by nervous action. It may be doubted whether active congestion could alone give rise to it, though it is by no means inconceivable that the excessive supply of the nutrient fluid might in time exhaust the tissues by overstimulation, and so bring about more or less of that impairment of vital energy which we have seen reason to regard as the essential cause of the blood corpuscles lagging behind the liquor sanguinis.

Or it may be that the nerves produce this weakening effect upon the tissues by immediate action upon them. From that point of view, the proof afforded by the pigment cells of the influence of the nerves over processes going on within cells seemed to me peculiarly interesting. And we can conceive of nervous impulse impairing their energies either by overstimulation followed by exhaustion, or by immediate prostration of their powers as by an electric shock.

That the latter idea is not altogether out of the question seems to follow from a kind of experience familiar to surgeons. I will mention one instance of this which produced a great impression upon me. A healthy man, in the middle period of life, had been operated on by lateral lithotomy. All went perfectly well till about ten days had elapsed, when the renal secretion, which had passed through the wound since the operation, flowed for the first time through the natural channel. In those days, when lateral lithotomy was the routine treatment of calculus, it was well understood that the mucous membrane becomes in a few days unaccustomed to the urine, which then acts upon it with irritating effect, and the result may be a violent general nervous commotion in the shape of a rigor. This may be immediately followed by complete suppression of secretion by the kidneys, and if this does not pretty soon pass off it is fatal. Such was the case with the patient to whom I am referring. In spite of hot applications to the skin—which sometimes work like a charm in such circumstances, operating, as it would appear, by distracting, so to speak, the attention of the nervous system from the affected organs—that man died within a few hours of the rigor. On *post-mortem* examination the kidneys presented on section an appearance that I have never forgotten; scarlet redness throughout what in other respects appeared to be perfectly sound structure.

The previous healthiness of the patient seems to preclude the idea that this grave disorder of the kidneys could have existed before the rigor. We are therefore led to believe that the prostration of vital energy which inflammatory congestion implies was caused by the irritation in the urethra. If such was the case, the remoteness of the kidneys from the source of disturbance makes it certain that the disorder was brought about through the nervous system. This effect could not possibly be produced, like arterial relaxation, by failure of the nerves to act. For we know that the tissues retain their vital energies for a considerable period after entire severance from the body: as is illustrated by the success of Thiersch's method of skin grafting. We are, therefore, driven to the other alternative, and conclude that the inflammatory congestion of those kidneys was caused by nervous action upon the renal tissues. And the suddenness with which the effect was produced strongly suggests the view that the prostration of their vital power was the primary effect of an unwonted nervous impulse.

Abnormal effusion of liquor sanguinis from the vessels, another marked feature of acute inflammatory disturbance in man, would seem a natural result of any degree of inflammatory congestion. I used to illustrate to my class by a simple experiment the enormous increase which takes place in the pressure of a liquid upon the walls of a tube through which it is flowing when an obstacle is opposed to its passage. When, therefore, the corpuscles begin to block the capillaries the plasma will naturally be forced in undue quantity through their porous walls.

When inflammation assumes an intense degree, the effused liquor sanguinis has the peculiarity of being coagulable, producing by its solidification the characteristic "brawny" swelling of the parts among which it is poured out. In this respect it differs from the normal plasma forced by pressure through the walls of healthy capillaries as the result of venous obstruction. Here the swelling has the "doughy" character of œdema, a condition also caused by inflammation of a mild degree. To that point I shall have occasion to refer again.

I designated by the title "direct inflammation" the morbid state produced by the direct operation of noxious agents upon the tissues, as distinguished from inflammation brought about through the medium of the nervous system. This distinction appears to me to be of great importance; and it enables us to understand what would otherwise be quite unintelligible. One beautiful instance of this is the behaviour of a recent wound in tissues previously healthy. When our means of arresting bleeding were less complete than they are at present, it was no uncommon thing to be summoned a few hours after an operation on account of hæmorrhage. It was a sad thing to have to tear asunder the lips of a wound already well glued together by lymph in order to gain access to the bleeding point. This lymph was neither more nor less than liquor sanguinis which had been effused from the cut surfaces and had coagulated. From the quality of the effusion we should suppose that we had to deal with inflammation of a very intense character. Yet the lips of the wound were perfectly pale, entirely free from the active congestion which is the very earliest sign of inflammatory disturbance. How could this inconsistency be reconciled? Very simply, as I believe, by aid of the principles which we have been discussing. Mechanical violence is a noxious agency producing effects proportionate to its degree. A very blunt implement passing through the tissues kills the surface of the parts which it divides, and in former days we had to poultice a "contused wound" till the sloughs separated. A sharp knife does not destroy any part of the tissues, but it throws them in a microscopically thin layer into a state of intense inflammatory congestion, attended with effusion of coagulable liquor sanguinis. But this noxious agency is only momentary in its operation. It has no time to cause active congestion through the nervous system, but at once leaves the injured tissues free to recover by virtue of their own inherent

powers. If the instrument be very sharp the layer of lymph will be very thin, unless some other disturbing cause come into play. But it is always sufficient in amount to serve the beautiful purpose of adhesion.

It is comparatively rarely that direct inflammation is met with thus pure and simple in practice. The two forms, the direct and indirect, are commonly more or less associated. Thus putrid discharge in a wound is an acrid irritant, as I once experienced personally in the keen smarting of an abrasion on the back of my hand, smeared accidentally with the pus of a stump that I was dressing. Hence during the period that elapses before the divided tissues are clothed with that wonderful protecting layer which we term granulations, such discharge causes direct inflammation in the structures on which it acts immediately, while it also induces in neighbouring parts inflammation through the nervous system.

When Marion Sims had published his remarkable success with the silver suture in gynæcology, I resolved to give it a trial in general surgery. At that time, as assistant surgeon in the Royal Infirmary of Edinburgh, I had charge of the Lock Hospital, and one of the patients having an atheromatous tumour of the scalp, I removed it and brought the edges of the skin together with a silver stitch. No vessel required ligature, and the wound healed without suppuration. As the suture created no disturbance I left it *in situ* for about ten days, when I took the patient over to Mr. Syme, and showed him the skin about the wire perfectly pale and natural in appearance without a trace of discharge, whereas a silk stitch would within four days have infallibly caused suppuration with surrounding redness. Mr. Syme at once recognised the importance of the facts, and from that day forward the silver suture was used for all wounds in the clinical wards, until some years later antiseptic measures caused it to give place to the more convenient and no longer hurtful silk.

In thinking over this striking difference between the effects of the two kinds of suture it seemed to me clear that it depended on the silk imbibing blood and serum, which, undergoing decomposition in its interstices, grew more irritating the longer the process continued; whereas the metal gave no hold to the organic liquids, which were shed unaltered as fast as they were effused. From these and other analogous considerations, I taught my class at that time that decomposition of the organic liquids was the essential cause of suppuration.

The coagulation of the blood, while it is a matter of fundamental importance in physiology, has peculiar interest for the surgeon, on account of the special feature of coagulability of inflammatory exudations and the part played by lymph in the healing of wounds, and various other pathological phenomena, such as the sealing of divided arteries by blood clot. Towards the close of the investigations which I have been describing there was published another successful Astley Cooper prize essay, "Coagulation of the Blood" having been the subject selected by the judges for the competition. The author of this dissertation, the late Dr. Richardson, propounded the new theory that the solidification of blood shed from the vessels was due to the escape of ammonia, which, as he believed, held the fibrin in solution. I was at first much struck by the evidence with which he supported this view, and my first experiments on the subject were made with the object of strengthening that evidence where it seemed to me weakest.

In one of these, a sheep having been placed under chloroform, I sought by means of a common tourniquet to constrict the thigh so extremely as to prevent the ammonia from escaping when the vessels were divided, and so keep the blood fluid in spite of amputation. Rigidity of the muscles prevented me from carrying out my intention; but I tied a bandage firmly round the foot, below the joint where the butcher removes it, so as to retain the blood, and, as far as might be, the ammonia also. The foot being severed, I took it home, and, having raised a portion of the skin so as to expose a subcutaneous vein, I investigated the state of the blood in it. I found it, indeed, fluid, with one exception, full of significance, though I did not see its import at the time—namely, where the cord used by the butcher for tying the feet together had pinched the veins against the bone, there, and there only, was the blood in them coagulated. I remember being a little disappointed, as well as puzzled, by that appearance. It was not in harmony with the theory in which I was at the time disposed to believe. And yet how replete were the facts with possible instruction. Compression of the veins had certainly given no opportunity for escape of ammonia. It is equally certain that the cord did not make the blood coagulate by any direct action upon it; for the cord, so long as it remained in position, kept the parts of the feet which it compressed empty of blood. It is clear that the effect was due to the action of the cord upon the walls of the vessels. Not that it had wounded them, nor is there any reason to suppose that it had killed them. No doubt if the animal had been released, instead of slaughtered, the veins would in due time have recovered. But the mechanical violence which the hard round cord exerted, being pretty severe and long continued, had prostrated for the time the vital energies of the tissues on which it had acted, and we had, in coagulation of the blood, a repetition of the class of phenomena we had studied in the blood corpuscles.

But how was it that the blood remained fluid in other parts of the vessels? To my surprise I found that the same continued to be the case for days afterwards. And thus accident led me to recognise what I afterwards found to be the general rule, namely, that the blood, though in mammalia it coagulates soon after death in the heart and main trunks, remains fluid for an indefinite period in minor branches. The clotting in the heart had been an object of familiar observation in *post-mortem* examinations in the human subject, and it seems to have been assumed that the same thing occurred throughout the vascular system.

The sheep's foot, with the blood retained in its veins by a bandage applied before the animal was slaughtered, afforded the opportunity for very simple but instructive experiments on the nature of the relations between the living vessels and their contained blood. For that the veins retained their life, even after the lapse of more than twenty-four hours after severance of the foot from the body, was shown by their shrinking by muscular contraction on exposure.[12]

Thus I found that a piece of glass introduced into a vein occasioned coagulation in its vicinity. The end of a sewing needle pushed through the wall of a vein otherwise uninjured, became after a while encrusted with a layer of fibrin deposited upon the part within the vessel, while the rest of the blood in it retained its fluidity.[13] On the other hand, having injected air into the vessels on another occasion, I found seven hours later that their contents were a frothy mixture of blood and air, the walls of whose bubbles were fluid, but solidified when shed. Sir Astley Cooper had been of opinion that the living vessels kept the blood within them fluid by acting in some way upon it—in other words, his view implied that the blood had a spontaneous tendency to coagulate, which was held in check by the active operation of the living tubes that contained it.[14] Facts such as I have just mentioned seemed to me to indicate that the ordinary solid was the active agent, determining the formation of fibrin as a thread does the deposition of sugar candy, while the healthy living tissue had the remarkable peculiarity of being destitute of this general aggregating property of solids, behaving rather like the self-repelling particles of gases.

It was not only in vessels of small size, like those of the sheep's foot, that the blood remained fluid in parts severed from the body. I found that the same was the case in veins of the dimensions of the jugular of the ox or the horse, and this in spite of their entire detachment from surrounding structures. The vessel being exposed after the animal had

[12] As regards the ammonia theory, an experiment which proved universally convincing was this: Having exposed a vein in the sheep's foot, I pressed the blood out of it at one place, and applied liquor ammoniæ to the empty portion, protecting neighbouring parts of the vessel from the vapour with olive oil. After sufficient time had passed for the volatile alkali to fly off, blood was allowed to return to the part on which the caustic liquid had acted. There it soon coagulated: the very substance, a mere trace of which should have kept it fluid according to the theory in question, having brought about its coagulation through its injurious action on the living vessel.

[13] The results of experiments of this kind vary considerably according to the time which has elapsed after the foot was removed from the body. For the blood undergoes pretty rapid impairment of its coagulability within the vessels of the severed part, and finally loses it altogether. It then, of course, remains fluid long after the veins have lost all life.

[14] Brücke, of Vienna, who had also competed for the Astley Cooper prize, had arrived at a similar conclusion. He experimented largely with the turtle's heart, which, as in cold-blooded animals generally, retains its life long after removal from the body; the blood in its cavities at the same time retaining its fluidity. I had not seen Brücke's important essay when the experiments referred to in the text were performed.

been felled at the abattoir, two ligatures were applied in order to retain the blood in it, after which it was removed and taken home with as little disturbance as possible. The blood in it retained its fluidity for upwards of 24 hours, affording opportunity for most instructive experiments. Of these I must content myself with describing one. A portion of an ox's jugular with its contained blood being held vertically, the upper part was removed along with its ligature, and the lips of the now open venous compartment were held apart with forceps by aid of an assistant, while a thin glass tube, of rather smaller calibre than the vein and open at both ends, was passed down into the vessel with the utmost steadiness, so as to disturb the blood as little as possible. The upper end of the tube had been drawn out with the blow-pipe to much smaller size and a short piece of indiarubber tube adapted, so as to admit of clamping with catch forceps. When blood appeared at the end of the caoutchouc tube the clamp was applied. The whole apparatus was then rapidly inverted and the piece of vein removed, leaving the blood in a vessel of ordinary solid matter without any contact of living tissue. The glass tube was steadily clamped to a retort stand, and its orifice covered with a loose cap of guttapercha tissue to exclude dust, after which all was left undisturbed for 24 hours. On then turning out the blood, I found it all fluid except a layer of clot about one eighth of an inch in thickness, which encrusted the interior of the tube, and also a little clot at the surface, which might be explained by some drying on account of the imperfect fitting of the cap. The fluid part of the blood soon coagulated.

The result of this experiment seemed to me of itself sufficient evidence that the blood requires no action of the living vessels to maintain its fluidity, and that the hypothesis of such action was superfluous.

At the same time the extreme care required in order to ensure the success of such an experiment indicated the subtility of the influence of an ordinary solid in bringing about coagulation. A very simple experiment performed in a butcher's establishment on the way from my father's house at Upton to deliver the Croonian Lecture before the Royal Society, illustrates the same thing. I received blood from the throat of an ox into two similar open earthen jars (gallipots), and slowly moved a clean glass stirring rod through the blood of one of them for a second or two, and then left both vessels undisturbed.

In the course of a few minutes the blood that had been thus gently and briefly stirred was a mass of coagulum, while the unstirred blood was still fluid, except a thin layer of clot encrusting the wall of the jar. In course of time it also coagulated completely. Now we know, from the experiment with the ox's jugular, that coagulation is propagated with extreme slowness, if at all, from a clot in blood perfectly undisturbed. The earlier coagulation of the main mass of the stirred blood was, therefore, not caused by propagation of the process from a layer upon the surface of the jar, but must have been the result of the brief agency of the glass rod.

A little before the delivery of the lecture referred to,[15] I became aware of the recent very important observations of Schmidt, which showed, as had been foreshadowed many years previously by Andrew Buchanan, of Glasgow, that normal liquor sanguinis does not, as had been supposed, contain fibrin in solution, but only one constituent of that substance, the other, which Schwann termed "fibrinogen," being derived from the blood corpuscles. The ordinary solid, therefore, in determining coagulation, does not cause the deposition of fibrin already formed, but so influences the corpuscles as to make them give up an ingredient necessary for the formation of that insoluble body.[16]

With this further light upon the subject, the conclusions derived from the experiments to which I have referred seem to explain the special coagulability of the exudation in intense inflammation. Under intense irritation the capillary walls will naturally be affected by the noxious agency as the veins of the sheep's foot were by the constricting cord, and, like them, act upon their contained blood as if they were ordinary solids. The plasma of that blood will therefore receive from the blood corpuscles the material requisite for forming fibrin, and, passing through the pores of the capillaries with that addition, will constitute a coagulable exudation.[17]

On the other hand, if irritation is less severe, although the tissues are impaired in vital activity, the walls of the capillaries may not be reduced to the condition of acting like ordinary solids in their relation to coagulation, in which case the result will be the effusion of normal uncoagulable liquor sanguinis.

It does not, of course, follow that the absence of adhesiveness of the blood corpuscles is due to the same cause as the fluidity of the blood. It might quite well be, for example, that the corpuscles are maintained in the healthy condition by nervous action, whereas the state of the healthy living vessel which ensures fluidity of the blood would seem to be a profound property of the constituent matter of the lining membrane which, when in active health, behaves, as we have seen, like a gas rather than an ordinary solid.[18]

In point of fact, a very interesting observation which I made long ago, but to which I have not before directed attention in this point of view, proves that an extreme degree of adhesiveness of the red discs may exist within a blood vessel the walls of which are in perfect health with reference to coagulation. If a horse's jugular vein, obtained in the manner I have described, is suspended vertically, the blood in it remains fluid for an indefinite period, but the red corpuscles soon fall from the upper parts of the fluid, leaving a buffy layer of plasma, readily seen through the translucent wall of the vessel, just as occurs in blood outside the body; and this behaviour of horse's blood implies, as we have seen, a very high degree of adhesiveness of the red discs.

If we compare this with the perfect absence of grouping of the red corpuscles which was observed within a vein of the bat's wing, in spite of their extreme adhesiveness in the same animal in blood shed from the body, we cannot but be greatly struck with the contrast. As regards the circumstances of the two vessels, we see that in the bat's wing the vein was a small one in its natural relations to surrounding structures, whereas the horse's jugular was of very large dimensions and isolated from the rest of the body.

It seems impossible that the adhesiveness of the corpuscles in the jugular vein was the result of isolation from other structures, for adhesiveness of corpuscles is not occasioned in the vessels of the frog's web by amputation of the limb; nor does the state of the tissues that causes it result from complete detachment from the body in the human subject, as we may safely infer from the persistent healthiness of a piece of skin entirely transplanted in skin-grafting. We seem, therefore, forced to the conclusion that what keeps the blood corpuscles from adhesiveness is a local function of the tissues, quite distinct from that molecular constitution of their component material which renders them neutral in relation to coagulation of the blood. And it seems necessary to ascribe the adhesiveness of the red discs in the horse's jugular to the mass of the blood in it being too great for that function to control.

This function, unlike that property of the tissues which ensures fluidity of the blood, must therefore exert an active influence upon the vital fluid. It would seem to be much more easily disturbed by noxious agencies; for adhesiveness of corpuscles may exist in every conceivable degree according to the degree of irritation; whereas coagulation seems to imply severe disorder.

The mobility of the black pigment granules of the frog has often struck me as extremely remarkable. Perfect absence of any tendency to aggregate on their part must be fully as essential to the freedom with which they move through the exquisitely delicate ramifications of their containing cells, when diffusion gives place to concentration, as want of

[15] *Vide* the Croonian Lecture on the Coagulation of the Blood, *Proceedings of the Royal Society*, 1863.

[16] Regarding the corpuscular elements of the blood which are concerned in supplying to the plasma the materials necessary for the formation of the fibrin, and the chemical interactions of those substances, various important researches have since been conducted, in which I have had no share.

[17] I once ascertained the coagulability of a drop of clear fluid which had exuded from a recent contused wound by drawing the point of a needle through it, to which it yielded threads of fibrin.

[18] It has been shown of late by Professor Haycraft that an indifferent liquid, such as liquid paraffin, has a similar negative behaviour in relation to coagulation, so that, by proper management, blood may be kept fluid in a vessel of ordinary solid matter smeared with that substance.

adhesiveness of the blood corpuscles is to their free transit through the capillaries; and I cannot but think that the two phenomena are analogous. It may be, for aught we know to the contrary, that the pigment granules may be themselves living entities. Their uniformity in size is in favour of such an idea. Our fathers would have been greatly astonished to learn that the chlorophyl grains of vegetables were, as has been shown in recent years, living organisms, multiplying by division like the nuclei of their containing cells; and though the pigment granules are much smaller, they are probably greatly surpassed in minuteness by many microbes, which, though hitherto invisible to us, we believe from analogy to be the causes of some infective diseases. But however this may be, the perfect mobility of the pigment cells seems to me a special property which they possess as constituents of the living body; in other words, to use once more the expression which in the present state of our knowledge is indispensable, a vital property.

If this be so, we understand what would otherwise be very unintelligible, namely, that when the pigment cells have their functions temporarily suspended by a noxious agent, the granules do not become diffused as they do when withdrawn from nervous influence, but remain exactly as they were before the irritant was applied, whether concentrated, diffused, or in any intermediate state. If we suppose that the pigment cells, like the blood corpuscles, acquire under irritation a tendency to mutual aggregation which they do not possess in health, it follows as a matter of course that when vital energy is suspended by the noxious agency, they will adhere together and retain for the time their relative positions.

After being appointed to the Chair of Surgery in the University of Glasgow, I became one of the surgeons to the Royal Infirmary of that city. Here I had too ample opportunity for studying hospital diseases, of which the most fearful was pyæmia. About this time I saw the opinion expressed by a high authority in pathology that the pus in a pyæmic vein was probably an accumulation of leucocytes. Facts such as those which I mentioned as having aroused my interest in my student days in a cause of pyæmia, made such a view to me incredible; and I determined to ascertain, if possible, the real state of things by experiment. I introduced into a vein of a living horse a short glass tube open at both ends, containing a piece of silver wire in which was mounted a little bit of calico, which I thought likely to give rise slowly to putrefactive change, shutting off the portion of vein concerned from the general circulation by means of ligature. After the lapse of some days I removed the venous compartment, and found that the blood in it had undergone very remarkable changes.

The limits of this lecture, which have been already too widely extended, make it impossible for me to enter into details, as I had hoped to have done, regarding the researches of which this was the commencement. I must content myself with stating the conclusion to which I was led at the time I am speaking of, and which was confirmed by later investigations, namely, that the introduction of septic material into a vein may give rise to the rapid development of large nucleated cells which, growing at the expense of the original constituents of the coagulum, convert it entirely into a thick yellow liquid. The pus so formed contains corpuscles which, like those which I sketched in the early case at University College, are not pus corpuscles in the ordinary sense, or leucocytes, but the variously-sized more or less granular nuclei of the large cells, the pellucid bodies of which constitute the so-called *liquor puris*. Into the question of the origin of these rapidly-proliferating cells I must not enter. This process of genuine suppuration of the blood clot removed all the difficulties I had felt in interpreting the *post-mortem* appearances in pyæmia and also its clinical features.

Having become familiar with the appearances of these cells in suppurating coagula, I was able to recognise them in acute abscesses in the human subject, and to demonstrate them to others by mixing carmine with the pus, so as to render clearly defined the limits of the pellucid bodies of the cells, which otherwise would have been regarded as *liquor puris*.

I am of course aware of the great importance of the emigration of leucocytes discovered by Cohnheim, and rendered immeasurably more interesting by Metchnikoff's observation of their phagocytic powers; and I know that collections of pus have often such an origin. But I am quite satisfied that this is not the exclusive mode of pus formation, and that it is often produced by the proliferation of cells, as was first taught by my illustrious predecessor in this chair of two years ago (Professor Virchow) in the "Cellular Pathologie."

While these investigations into the nature of pyæmia were proceeding I was doing my utmost against that deadly scourge. Professor Polli, of Milan, having recommended the internal administration of sulphite of potash on account of its antiputrescent properties, I gave that drug a very full trial as a prophylactic. I have notes of a case in 1864 in which, after amputating the thigh for disease of the knee-joint, I gave 10 grains of the sulphite every two hours from the time of the amputation; and when on the sixth day an ominous rigor occurred, I doubled the frequency of the administration. Death, however, took place nevertheless; and this was by no means my only experience of such disappointment.

At the same time I did my best by local measures to diminish the risk of communicating contagion from one wound to another. I freely employed antiseptic washes, and I had on the tables of my wards piles of clean towels to be used for drying my hands and those of my assistants after washing them, as I insisted should invariably be done in passing from one dressing to another. But all my efforts proved abortive; as I could hardly wonder when I believed, with chemists generally, that putrefaction was caused by the oxygen of the air.

It will thus be seen that I was prepared to welcome Pasteur's demonstration that putrefaction, like other true fermentations, is caused by microbes growing in the putrescible substance. Thus was presented a new problem: not to exclude oxygen, from the wounds, which was impossible, but to protect them from the living causes of decomposition by means which should act with as little disturbance of the tissues as is consistent with the attainment of the essential object.

It has been since shown that putrefaction, though a most serious cause of mischief in wounds, is not its only cause. In other words it has been proved that there are microbes which produce poisons that do not occasion unpleasant smell. But the principle that first guided me still retains, I believe, its full value; and the endeavour to apply that principle so as to ensure the greatest safety with the least attendant disadvantage, has been my chief life-work.

AN ADDRESS

ON

SOME PROBLEMS OF TROPICAL MEDICINE.

Delivered at the London School of Tropical Medicine on October 3rd, 1900,

By Sir WILLIAM MACGREGOR, K.C.M.G., C.B., M.D., D.Sc., LL.D., etc.

When in compliance with the request of Dr. Manson I consented to deliver to-day the opening address to the students of this School of Tropical Medicine, I felt I was committing myself to a task really beyond my powers. This feeling was deepened on glancing over the formidable syllabus of lectures and demonstrations to be given by the teaching staff. The ground to be covered is so vast, the subjects to be dealt with so very important, the extensive and diversified knowledge required both in teacher and student is so deep and wide, as to make one's own ignorance painfully apparent to oneself. I therefore find comfort in the fact that I am here to-night because I am an administrator, not because I am a doctor of medicine.

I understand that the objects of this school are to convey to its students a special acquaintance with the diseases that are of most frequent occurrence in tropical regions, and to train them for the investigation of such maladies on systematic and scientific lines.

There is excellent reason for believing that Her Majesty's Secretary of State for the Colonies took very seriously to heart the deplorable mortality among public officers and others in our more unhealthy tropical possessions. The calling into being of this school is but one of the many means

devised or fostered by the Right Honourable Joseph Chamberlain for curtailing the death roll of our fellow citizens in those insalubrious, over-sea territories of the empire. This school is but one link in the chain, and the chain is already a long one, and promises to be continuous.

THE TRAINING OF COLONIAL MEDICAL OFFICERS.

The leading idea of the school, therefore, is the appropriate training of colonial medical officers. It is, however, to be hoped that others may take advantage of it, that it may add another ring to the ever-widening stem of the already gigantic tree of medical knowledge. It is certain that there are a great many people in this country at the present moment suffering from what are usually called tropical diseases, and that these sufferers are not, and cannot be, attended by medical men that have had tropical experience. Very many of these patients must come under treatment by the ordinary medical practitioner. Cases could be adduced in which some of the most distinguished men in the medical profession in this country have been completely at sea as to the exact nature of certain tropical diseases and their sequelæ. The teaching supplied by such a school as this should be a useful addition to medical men practising in this country, especially if cases of tropical diseases in sufficient numbers can be made available to them for clinical study. The list of students that have passed through the courses since October 1st, 1899, does not show, however, that the school is patronised by the British medical practitioner. Taking into account the already immense and still growing traffic, the rapid and steadily accelerated communication between this country and the tropics, and bearing also in mind the intolerance of any form of quarantine in the United Kingdom, the probabilities are that the special study of tropical diseases will constantly be more and more forced on medical men in practice in this country, either by the systematic study of such maladies at the ordinary schools of medicine or at specific institutions such as this is. If this branch of medicine is neglected, then the sufferer from the tropics will be a certain loser, but not always the only one.

At the present moment, however, many of us are very specially interested in this school in relation to the medical services of our more unhealthy tropical colonies.

It is probably the case that not a few of those that have so far passed through this institution were already familiar with many tropical diseases, knew them by experience, and understood how to treat them. To students of that category the clinical study of these maladies here is not nearly so important as is the training to be had to fit them to investigate tropical diseases on the spot, on the most advanced systems known to medical science, and with a full knowledge of what has already been done in these matters in this country and elsewhere.

Any average medical officer that has sufficient training in making investigations of this kind will soon master the practical details of all tropical diseases in his district, provided he is given time, the necessary instruments, and proper accommodation. The best and most proper place for making such researches is undoubtedly the tropics themselves. It must be patent to every person that thinks at all on the subject that the training of medical officers to carry out investigations of this kind is of the utmost importance to each colony, to the empire, and to humanity at large. We all know, or ought to know, what has been done in this field by such men as my late highly esteemed friend Dr. Bancroft of Brisbane; by the distinguished Dr. Manson, the inspiring genius of this school; by the father of Strachan's disease, the present chief medical officer of Lagos; and by many others that have practised medicine in the tropics. These men had no specialised opportunities given them; they had not the advantage of any systematic training such as is offered now at this school. We are therefore justified in expecting a great deal from the younger men that now come forward here to learn at once the most suitable and most advanced methods of conducting original investigations in the great and rich tropical field.

STATE ENCOURAGEMENT OF MEDICAL RESEARCH.

But I can tell you that this training and preparation will not yield all that we are justified in expecting from it without the co operation of the Secretary of State and of Colonial administrators. The trained medical officer must have time and opportunity granted him. That the Secretary of State will in every possible way encourage, and suitably recognise, the researches of medical officers may safely be taken as granted. It is, however, at times a very difficult matter for an administrator so to arrange service affairs that he is able to grant to medical officers the time so necessary to carry on scientific investigations of this kind without their being submitted to grave or destructive interruptions. Colonial administrators and others in high authority have not always in the past lent to the head of the medical department the support required by him. They have not always given to their chief medical officer the confidence that Alexander the Great extended to his. I was myself very fortunate in the first new country in which I served in having as chiefs such enlightened men as Lord Stanmore and Sir William des Voeux. Whatever was really required for the new medical service in Fiji was granted. As one result of that there is no doubt that at the present moment the chief medical officer of that colony, Dr. Glanville Corney, is thoroughly familiar with the practical aspect of every disease met with in that country. Many other Colonies have been less fortunate, but if that is so now Mr. Chamberlain, who not only thoroughly understands the value of medical work, but also takes the deepest interest in it, and has done more than any other person ever did before to popularise scientific medicine, is just the man to see that medical matters are put right wherever they are wrong; they are, in my humble opinion, wrong where original work cannot be done. My own personal experience has been that the most unhealthy Colonies are, or were, those in which medical research was most neglected; that, however, is apparently being remedied everywhere. In Lagos, for example, no fewer than ten full equipments for medical officers of the scientific type have been provided by the Secretary of State. An excellent laboratory has been built, and an analytical chemist has been appointed.

This has been done there without any reference to any school of tropical medicine, and would have been carried out precisely the same had there been no such institution and no medical commission in existence. We look, however, to this school now, as a means of better enabling our medical officers to take advantage of the opportunities that will henceforth be given to them in Lagos, and no doubt similarly in other Colonies, for you may depend on it that Colonial administrators will know their duty sufficiently well to follow with zeal the course that has been taken by Mr. Chamberlain. Moreover, there is at the present time in this and other countries a volume and force of public opinion behind sanitary and medical work that has, perhaps, been dormant from the days of Moses and Machaon till now. It was only the other day that the celebrated Grassi lectured on malaria before the Queen of one of the Great Powers of Europe. Such an event is redolent of the times.

It is not my intention to occupy your time in speaking of the details of your training for the investigation of disease, beyond emphasising their very great importance. I would rather in a familiar way give those of you that have not yet practised in the tropics some idea of the extremely interesting and very important work that awaits you there.

OLD DISEASES AND NEW RACES.

You will still, for example, have many opportunities, especially in new countries, of acquiring valuable information respecting the original or natural location of disease, the landmarks of which are fast disappearing before modern civilisation. You will see how old diseases are being communicated to new people, and be able to watch the strange results produced. You will doubtless be in a position to add much to the existing knowledge of tropical diseases already more or less studied, and you will in all probability be able to establish the existence of maladies at present unknown and unrecognised; you will thus reduce the sum of human suffering. Can any man desire greater glory?

As different forms of disease were localised originally, and still remain more or less so, it follows that the experience of tropical medical officers differs largely according to country. Their opportunities are therefore diversified in an unusual degree. Perhaps I may personally have had exceptionally good opportunities of assisting—as a French writer observed some time ago—at the dissemination of disease among new races.

Typhoid Fever.

The late Sir Thomas Watson was very anxious to know whether typhoid fever was known in Polynesia. From inquiries made there in 1875 it appeared certain that this disease did not occur in the islands. In 1875, however, a case was observed in a gentleman recently arrived from Australia. It assumed the virulent form that is accompanied by petechial spots, and the patient died. Soon after this a case occurred in a European in the mountains of Viti Levu. The disease, it appeared, had been contracted in the locality where the first case was treated. Sporadic cases were met with at intervals, but they were, formerly at least, few in number. Perhaps their scarcity was largely due to the fact that houses were supplied by rain water collected from the roof and stored in metal tanks. There was, however, a form of continued fever in Fiji that very accurately simulated typhoid fever up to the ninth day, when it suddenly culminated, and the patient got well in a very few days. Typhoid fever was also unknown in British New Guinea, In that country the continued fever that in Fiji so closely resembled typhoid was not met with. Typhoid fever is also absent in West Africa. It would appear to be a by-product of civilisation, which is perhaps also true of cancer, diptheritis, and some other diseases.

Fiji, by the mere fact of becoming occupied by a considerable number of Europeans, was a centre for the distribution of other diseases to her neighbours; but she sometimes received their maladies in return, as will be seen from what follows. The disease of yaws has been from time immemorial endemic in Polynesia. If a Fijian child escapes yaws terrible results are expected to the future health of a being so abnormally constituted. Yaws represented our measles, scarlet fever, chicken pox, diphtheritis, and whooping-cough in one.

Yaws.

The probability is that no medical officer will be long in the tropics before he is brought into contact with yaws. This disease, like most others in the torrid zone, is of course parasitic. I first met with it in the Seychelles Islands, in African slave children liberated there by our cruisers and indentured as plantation labourers. It is curious that this disease is much more mild in the African and Papuan than it is in the Polynesian. It may be that it is newer to the latter. In the African it is sometimes so ill-marked that only a medical practitioner of some experience can recognise it at first sight. It is not very contagious to Europeans, but when caught it is loathsome and troublesome. I have never looked on yaws as a disease that could be cured under from three to six months.

I was once invited by my superiors to take up the extermination of this disease in New Guinea, but being then the only medical man in a colony larger than Great Britain, and having absolutely no means of dealing with an endemic contagious malady, I was obliged to say, in somewhat different words, that I might as well try to arrest an earthquake. In Polynesia, if not in New Guinea, there is not only the endemic nature of the disease to contend against, but also the very strong native prejudice of "the conscientious objector" in its favour, a prejudice difficult to deal with, though the disease is not made an object of worship there as is the case with smallpox in West Africa.

Though yaws was indigenous to Fiji, tinea imbricata was not known in that colony till introduced by plantation labourers. Many Line Islanders were brought to Fiji as plantation hands, and among them tinea imbricata is endemic, while yaws was unknown to them. The Fijian gave yaws to the Line Islander, and the latter gave his loathsome tinea to the Fijian. The Solomon Island recruit also brought tinea imbricata to Fiji with him, and he in turn left the colony, in a great many cases, with venereal disease in some form or other.

Venereal Disease.

Venereal disease was not known to the Pacific Islanders, nor to the Papuans, till taken to them by Europeans. Certain social habits of these peoples facilitated the rapid spread of these maladies, and they flourished with the usual luxuriance of a crop on new soil. It was very extraordinary how the Pacific Islander was affected by soft chancre. Very frequently the sore developed into a great spongy mass that bled profusely if touched. In not a few cases the ulceration caused death by penetrating the abdominal wall. These specific sores were also remarkably contagious. On the other hand, syphilis, being more slow in its processes, did not immediately effect the ravages that might have been expected. Gonorrhœa was all but incurable in native women. At first many of them were brought to Fiji as plantation hands. It was extremely rare that one returned home with a child. The trader had some small share in spreading these diseases, but it was insignificant compared to what was done by the labour traffic. Yet in the face of all this, some good Churchmen, and at least one Bishop, that visited the recruiting islands expressed themselves as favourable to the labour traffic. These good men did not see behind the calico "Come storpiato è Maometto."

Measles.

Fiji was also the centre for the distribution of measles in 1874, a disease introduced there by one of Her Majesty's ships of war. The epidemic that followed destroyed between a third and a fourth of the whole population, affording a striking example of the exuberance of a new disease among a new people. In this respect, however, measles was not more surprising in Fiji than was the usually insignificant disease of itch in British New Guinea. This latter malady, introduced in some old clothes, sped like a tidal wave along the coast, and in a few weeks thousands of people were covered from head to foot by the most exaggerated form of the disease. It probably spread much faster from the fact that one shirt might be worn by several people in one day. When matters were beginning to assume a somewhat serious aspect, the disease, having spent itself, began to abate, and soon declined to the level it will probably always keep in a community where clothes are common property and itch attacks the human face.

Dysentery.

There are few scourges that require the same thorough and exhaustive study that dysentery calls for. This disease, in its epidemic and contagious forms, was unknown in British New Guinea half a score of years ago. In recent years it has caused many deaths there. It began in Fiji with the advent of a European population, and led to considerable mortality among them, even before annexation. But during the prevalence of measles, and frequently afterwards, it assumed an epidemic form. From the first introduction of the disease there it was regarded as contagious. When settlement became better established, and the houses of Europeans were provided with rain water stored in metal tanks, dysentery among them became much rarer. But on large plantations, and in native villages, it took on at times a very malignant form. Instances occurred in which even 50 and 75 per cent. of the Polynesian labourers on an estate died of this disease, which was new to them. Excessively high mortality from the same cause occurred also on some of the Queensland plantations among the Polynesians employed there. I was once received at a certain plantation by an interesting-looking boy of about 14 years of age, who was evidently not of the usual class of recruits. On being asked who he was, he said he was so-and-so from New Britain. To the question, "How many are there of you," he replied, "Plenty all die, only me." I found there had been 115 of them, and that he was the sole survivor. This was the work of dysentery. The treatment in each epidemic was at first like groping in the dark. In a very deadly outbreak that occurred amongst some three score of recruits landed out of a vessel in which they had had been battened down for thirty hours during a hurricane, an examination of the contents of the intestines of those dead but an hour or two showed that these consisted of a mass of what was then called vibrios. In consequence of this observation a mixture of corrosive sublimate was given to the two score survivors, all in hospital. The remedy acted like a charm and not another case ended fatally. But this remedy failed utterly in two or three succeeding outbreaks elsewhere in the colony. During one season salicylic acid acted with extraordinary success. Then it in turn ceased to be of any use.

From many observations of this kind it appeared that dysentery is made up of entirely different diseases, or of one disease that presents widely diverse stages. It offers a splendid field to the humanitarian and to the enthusiastic scientist that we trust may be sent out from this school. Were I to judge

from my own personal experience I should say dysentery causes more deaths than any other disease in tropical countries. No other malady is so universally distributed and of such constant occurrence.

Laveran says "Le paludisme est certainement la plus répandue des maladies endémiques," and Manson says of malaria "It is the great disease of the tropics." My experience is different. I have served in two countries where there was no malaria; never in one where people did not die of dysentery. Last year of 39 cases of dysentery treated in Lagos Hospital 10 died, say 1 in 4; of 128 cases of malarial fever, 4 died, 1 in 32. Dysentery is the chief agent in the rapid depopulation of the Pacific. It swells the death rate in West Africa, but not so much amongst Europeans as amongst natives. But there one does not see the wholesale depopulation from this disease that is sometimes so clearly observed on a Pacific island from the return home of a single labourer suffering from contagious dysentery. There can hardly be any doubt as to the contagious nature of some epidemics of dysentery. We regarded the common house fly as an active agent in its spread in plantation hospitals, and took precautions accordingly. The communicability of this disease has always to be taken into account in the tropics, more particularly in places like West Africa, where the sewage of a number of houses often flows into the great clay pit from which the houses have been built, and out of which the same houses draw their water.

The man that will work out an effective and practical means of dealing with contagious dysentery will be the greatest benefactor of the races that live in the tropics. He may claim to be the saviour of the Pacific Islander, the most loveable man of men now living. It is a study that I most earnestly commend to your attention and on which I trust you will all turn the searchlight of science. Dysentery is a destructive giant, compared to which strong drink is a mere phantom.

Malaria.

To the tropical European, though perhaps not to the tropical native, the most important study is probably that of malarial fever, the investigation of which has already furnished us with some of the finest examples of human intelligence, perseverance, and observation, and unveiled to us some of the most wonderful workings of Nature. To myself this chain of marvels, full of poetry and religion, nowhere better seen than in the splendid illustrations of Drs. Ross and Fielding-Ould, always recal the words of the second greatest Teuton of the century:

> Wie alles sich zum Ganzen webt,
> Eins in dem andern wirkt und lebt!
> Wie Himmels Kraefte auf und nieder steigen,
> Und sich die goldenen eimer reichen!
> Mit segen duftenden Schwingen,
> Vom Himmel durch die Erde dringen,
> Harmonisch all das All durchklingen!

The prediction that malarial fever would be found to be due to a parasite having its cycle in man and the mosquito, is fit to be compared with Goodrick's theory ot the cycle of Algol; with Leverrier's and Adams's assigned position of Neptune; with Murchison's prediction of gold in Australia. To my own mind it recals the early teaching of the germ theory of antiseptics by the immortal Lister. It may not improbably lead to an equally great revolution in medicine. The position assigned by foreign writers to our British scientists in this, the greatest of recent discoveries, is and must remain most honourable to them and to our nation. The name of Dr. Manson, one of the brilliant lights of this institution, will always be connected with the fertile hypothesis that has led to the astounding revelations of that prince of observers, the great Ross, of Grassi, Celli, Bignami, Bastianelli, Koch, and others.

The whole subject of malarial fever is of more importance to the Italians and to ourselves than to any other nation. The Italians have, they say, eleven millions of themselves exposed to it, which, according to Celli, furnishes them with two million cases a year with an average mortality of 15,000. It is true that it is almost unknown in Great Britain itself. But Laveran states: "Morehead estimait qu'aux Indes les fièvres palustres comptaient pour 40 sur 100 dans la mortalité générale." This is probably not proved. Manson at the Royal Colonial Institute showed what a serious matter malaria is on the West Coast of Africa. This is enough to demonstrate of what vast national importance it is to the British Empire.

There seems to be some tendency at the present time to seek the origin of malarial fever in coloured tropical children. Surely it must be acknowledged to be an old domesticated disease in the United Kingdom and on the Continent of Europe, for which aboriginal children could not at any time have been held responsible. You all remember how in the beginning of this century the *Anopheles* completely routed one of the most powerful British armies ever sent to the Continent of Europe. Then, again, our history supplies few more pathetically ridiculous pictures than the kingly founder of the Royal Society dodging his doctors to take his Peruvian bark on the sly. Of course Dr. Schwalbe would say at once that the King contracted his fever abroad. As the two chief attacks occurred nineteen and twenty years after His Majesty "came to his own," the probabilities are strong that he owed them to the genuine domestic English *Anopheles*.

In these modern investigations into malaria the Italians have nobly done their share; so have the Germans, through the illustrious Koch. We owe, further, a very great debt to Laveran. I have often been asked by non-medical friends who has done this great work, whether it is all British? It appears to me to be more or less like this: Manson was the surveyor, Laveran made the road, Ross built the bridges and laid the rails, and Grassi, Bastianelli, Bignami, and Celli provided the rolling stock.

Grassi says: Preciso perciò che la scoperta che gli anofeli inoculano la malaria umana è uscita dal mio cervello, seguendo una via da me ideata. Naturalmente anche la mia scoperta, come moltissime altre, non sta isolata, ed io non ho mai esitato a dichiarare che sono parvenuto ad essa giovandomi della ipotesi dei mosquitos svolta tra gli altri da Laveran, Manson, etc.

Angelo Celli writes: Sotto i consigli del Manson, cioè del celebre parasitologo che aveva gia descritta la vita della filaria nel corpo delle zanzare, il Ross, maggiore medico inglese nelle Indie, fece pungere da zanzare uccelli.....(e) ricostrusse le fasi del ciclo di vita nella zanzara. He speaks again of "questo che possiamo chiamare ciclo del Ross."

M. Emile Bertaux thus expresses himself: Les deux observations initiales sur lesquelles repose la nouvelle théorie de la malaria n'ont pas été faites en Italie. C'est au docteur Laveran qui revient l'honneur incontesté d'avoir observé, dès 1880, le parasite dont la présence dans le sang humain est la cause directe et unique de l'infection palustre. Mais c'est le médecin Anglais Ross, qui, le premier, determina rigoureusement l'agent de transmission d'une maladie analogue à la malaria humaine.

Koch tells that: Ueber das eigentliche Wesen der Malaria haben wir erst in der neuesten Zeit Erlklaerung erhalten durch Laveran.

As long ago as 1892 Laveran used these prophetic words: "J'ai émis l'hypothèse que les moustiques jouaient un rôle dans la propagation du paludisme comme dans celle de la filariose." You know how powerfully Manson championed that doctrine, based as it was on his own original and independent work.

A great deal still remains to be done in connection with this subject, perhaps much more in tracing analogies in other diseases than in connection with malaria itself. There are now many workers in the field, and doubtless their ranks will be strengthened from this school.

The Destruction of the Mosquito.

To my mind the parasitic cycle in malarial fever is proved by demonstration. Although this is so, the experiments now being carried out by some of our countrymen here and in Italy are by no means superfluous. Those that care to read Dr. Christy's book will find at pages 27, 29, and 69 that similar experiments have already been made by the Italians, by whom they have been fully described. But it is highly desirable that they should be performed in a more sensational form, and in British blood, to impress and convince the British public. These experiments are the more to be commended that they can be carried out without any greater risks to the subjects of them than is incurred by any European that lives for a few days on the west coast of Africa, perhaps beyond reach of doctor, nurse, or any other European. The chief use of these experiments is to demonstrate the truth of the theory advanced. There is, of course, no comparison

between the position of men sent into a malarial region provided with every appropriate appliance, and with the sole duty of protecting themselves from mosquitos, and the case of those that mount guard, that nurse the sick, that tend machinery, at night; or to the case of the man belated in "the bush," or stranded on a mud flat.

Even in its present state of development the new doctrine of malarial fever is such that no conscientious administrator could take the responsibility of ignoring it.

In the West African coast it must now be reckoned with at every step. Hospital management must be fundamentally affected by it. Wards will have to be painted of a colour that will facilitate the discovery of mosquitos; and probably some of them will have to be furnished for fever patients with doors and windows of gauze wire netting. Every bed, without distinction, will have to be provided with a fine muslin mosquito net. All water tanks must be supplied with wire net coverings to prevent the ingress of mosquitos. Wells and reservoirs and flower pots will have to be similarly protected. In hospital discipline it will be considered a serious offence to allow a fever patient to be bitten by a mosquito. All mosquito breeding places near a hospital or other dwelling will have to be made unfit for these insects, as far as this is practicable. Much attention will have to be given to the teaching of the new doctrine. All hospital nurses must obtain a mastery of the subject; and so, of course, must sanitary inspectors, otherwise they will be unfit for their posts. But the general public also must have the leading lines of malaria genesis put before them in a way they can understand. It should form a subject of tuition in all the public schools of a place like Lagos, and prizes should be given to the best scholars in the malaria class. The nervous individual that does not know one genus of mosquito from another will, in future, lead an uneviable life in the tropics. Ladies that understand the mosquito theory will not dine in low evening dresses; nor will gentlemen sup with their ankles under the table and covered only by black thin silk socks.

The steps mentioned above, and many others like them, are all very obvious, and seem very simple in theory. I regret that I cannot completely share the rosy optimism of our leaders and teachers in this matter. I do not overlook the fact that malaria has been practically extingushed in this country, which is not congenial to it for reasons of meteorology. Malaria in the tropics is much more difficult to deal with than typhoid, rabies, or small-pox here, and those are not yet vanquished. It is to be feared that in a country like Lagos, when all that can be done shall have been accomplished there, the results may be somewhat disappointing. Lagos is on a lagoon that crosses the territory from east to west, at some places four or five miles broad. It is all fresh water except near the town of Lagos, where it is brackish. We know from the Italians, and by our own experience, on the great western coast of British New Guinea, where there is no fresh water, that the *Anopheles* can breed in brackish water. The lagoon water is full of aquatic plants; it has very little current; it rises and falls probably five or six feet; it cannot be drained; it cannot be enclosed within banks; it cannot be kept at the same level. One thing could be done; Lagos Island could be surrounded by a sea wall that would render the current there generally too fast for the *Anopheles*, according to the measurements of Celli. It is believed in Italy that the velocity of water, to ensure against the breeding of the *Anopheles*, must not be under about 1,900 yards an hour. Then, Lagos Island contains very likely 200 acres of swamp, with all sorts and sizes of water puddles. These could be filled up. If, however, the statement of Grassi is well founded that "gli *Anopheles* si sviluppano la dove sono.....paludelli anche microscopici," mosquito hunting at Lagos will never lead to the extermination of the *Anopheles* there.

It may be said that the remedy for all this is to abandon Lagos town, and go further inland. Alas! we cannot transport the lagoon, and it is necessary for our commerce. A considerable number of people must remain at Lagos, even if the seat of Government is shifted to some other place. My own opinion is that were the harbour opened, the island surrounded by a sea wall, and the swamps filled in, Lagos would then be fairly well protected from fever, but not otherwise.

In the absence of these costly undertakings we must trust more to the paradox of preserving the *Anopheles* from infection than to anything else. We must give quinine to all and sundry gratuitously, and we must see, especially, that it is given to children. Our fever patients and our convalescent stations must be carefully guarded, and kept, when possible, where there are no mosquitos. Our medical staff is numerically weak. We must train native youths in Lagos itself to the extent of making them able to deal with such things as small-pox, malaria, and dysentery. This has been done elsewhere, and therefore should be carried out at Lagos.

If the sanitation of the Lagos railway now under construction is not thoroughly taken in hand on sound principles two results will follow: the railway will increase malaria; increased malaria will augment the cost of working, perhaps make the railway a financial failure. We have many swamps in our large towns, and huge clay holes in all towns and villages to deal with; add to this that our population is half naked. We have also to face the immense fecundity of the mosquito. Ficalbi says one mother mosquito may in the fifth generation be the progenitor of twenty milliards. Howard shows that one rain barrel may contain 19,110 larvæ, and that they may produce at least twelve generations in one summer. This at seventy eggs a mosquito would produce in a summer a number of mosquitos expressed by twenty-five figures. These are among our difficulties. In our favour we shall have the support and encouragement of the Colonial Office; a chief medical officer that is himself a successful worker at the malarial theory; and we shall have a number of medical officers trained here. It is also in our favour that we have no rice fields; that our soil is sandy and dries very quickly, resting on a shingly subsoil. It will be interesting to watch the result of a malarial campaign under such circumstances.

A very important point to determine at Lagos is the distance an *Anopheles* will fly to a feeding ground. Will they cross the lagoon? To Mr. Fagan I am indebted for the recent work on mosquitos by the American, Howard, referred to above. From it we gather that mosquitos may travel fifteen miles on a light wind. Celli, whose new book cannot be spoken of too highly, admits that mosquitos will extend, probably, three miles in a horizontal direction. I have had painful verification of that on the New Guinea Coast and on Lagos lagoon. Celli seems to cite the case of Sezze to show that the limit of oblique propagation of the mosquito is attained at an altitude of 1,000 feet. Koch finds them at 3 000 feet in fever communities in Java. We were punctured by mosquitos in our camp on Mount Scratchley at 10 000 feet. They were very troublesome at 5,000 to 6 000 feet. Mere altitude cannot therefore be taken as a safe guide to safety from fever. Before we can shift establishments to the Olokemeji hill, 1,000 feet high, and fourscore miles from Lagos, we must station residents for a year on the hill, in order to ascertain how far it would be fever-free.

My own personal experience of the *Anopheles* has been somewhat interesting. I never saw one in Fiji, where malarial fever is, or was in my day, unknown. Dr. Finucane tells me it is still absent there. But amongst the recent consignments of mosquitos from Fiji, Mr. Theobald has found the remains of one *Anopheles*. If it is established that there are *Anopheles* mosquitos there, the matter becomes one of much scientific interest. Fiji would therefore be in the position of Mauritius and Bourbon before the terrific outburst of fever there in 1867; that is to say, there would be given a country hitherto free of malaria, but furnished with Indian coolies with fever blood; from which at any time the propagation of malarial fever may be set agoing in Fiji. So far Mr. Theobald has not had any *Anopheles* from Mauritius. No doubt they will turn up soon. I first saw the *Anopheles* on the afternoon of the first day we visited the west coast of British New Guinea, about nine years ago. I saw something on the forehead of Mr. Cameron, one of my officers, that looked like a small brown peg, and was surprised to find it was a mosquito standing as it were on the end of its proboscis, projecting nearly at a right angle to Mr. Cameron's forehead. It soon filled with blood and began to void it till a drop of blood fell from it to the ground, on which Mr. Cameron thought he had enough of it. We all had sufficient experience of it before night, for it is not the case that the *Anopheles* bites only at night, nor that its puncture is always painless.

On the contrary, we found it often as sharp as a prick from a needle. Of course all mosquitos love dark ways, and will prefer to bite at dusk; but the *Anopheles* will not hesitate to feed, at all events on a dull day or among trees, when it gets the chance. Specimens were then sent to Mr. Savile Kent, who pronounced them a new mosquito.

It seemed strange that we were repeatedly camped for weeks at a time in the mud and swamps of the western or *Anopheles* country and yet left without any cases of fever. The reason is that for some hundred and fifty miles of cost there were no human inhabitants, which would seem to show that blood diet is not necessary to the hatching of *Anopheles*. We had been at work a couple of years in the central and eastern districts and had suffered much from fever there before we visited the west, yet the *Anopheles* was new to me when I saw it there. Koch has, however, shown that the fever parasite is in very common in Kaiser Wilhelmsland, from which it may be inferred that I overlooked the *Anopheles* in Eastern New Guinea. Those that suffered most from fever in British New Guinea were the crew of the steam yacht *Merrie England*, who were far more frequently ill than those people that travelled daily in swamp and forest, no doubt because *Anopheles* had become domesticated in the men's quarters on board.

Now we require to know how and why mental excitement, any considerable change of temperature upwards or downwards, whether caused by the sun, cold draughts, rain, or other agency, should bring on an access of fever long after possible infection and in spite of long-continued and large doses of quinine. In my own person an access of fever seems to be sometimes caused by exposure to bright sunlight, without reference to temperature.

TEXAS FEVER.

In British New Guinea we never doubted that the horse and dog suffered from malaria, but this part of the problem seems to be solved by the experiments of Koch, which show that even the fever parasites of man and of the anthropoid apes are different and not transferable from one to the other.

Although the specific nature of the human parasite seems thus proved, it still leaves open for investigation on the West Coast of Africa a cognate question of great social and economic importance, to which I venture to invite your special attention—namely, that of the disease that makes it so difficult to keep a horse alive in the forest country near the coast. I do not scruple to suggest that you should investigate this equine malady or maladies, for two reasons. In the first place, it is of very great importance; and, in the second place, if medical men do not examine it, it is not probable that any other competent person will do so. I for one shall be surprised if it is not found that the disease is a parasitic one, though poison has been often suspected. Could I find the money, I should be prepared to advise the Secretary of State to offer a handsome prize to whomsoever should discover the means of rendering horses immune to this fatal disease. My fellow-administrators are enterprising men, and something may yet be done in this direction by combination.

Koch[1] is convinced that a practical inoculation against Texas fever can be arrived at. This and his observations on the Surrakrankheit,[2] coupled with the observations of Smith and Kilborne, are sufficient to justify any such expenditure as that proposed, showing as they do that certain breeds of animals are already immune to the tsetse malady and to Texas fever.

ELEPHANTIASIS.

It has been announced lately that the mosquito has been found to be concerned with that strange disease, elephantiasis. This is a malady that I have seen in man on perhaps every part of the body, from the crown of the head to the sole of the foot; but I have never witnessed it in any other animal.

In practice and in origin there does not, according to my experience, seem to be any connection between elephantiasis and malarial fever. In Fiji, where there was no malarial fever, elephantiasis was very common, in certain small islands phenomenally so. The largest scrotal tumour removed there weighed 122 lbs. There were several over 80 lbs. in weight. In British New Guinea, where malarial fever was very common, elephantiasis was rare. The same is true of Lagos. It would therefore seem that these diseases are in those places more or less in inverse relation to each other. I have not heard of any case in Lagos nor in British New Guinea where a European contracted elephantiasis. Two European officers, at least, became affected by it on the Island of Rotumah. Though, therefore, it is a matter of minor importance compared to dysentery or malarial fever, you will still find elephantiasis to be a very interesting subject for investigation.

[1] *Aerzliche Beobachtungen in den Tropen.*
[2] *Reise-Berichte*, 1898.

PHTHISIS.

It does not appear that phthisis was a disease known to the Papuan. The natives of New Guinea are, however, very subject to a form of pleuro-pneumonia common in epidemic form at the beginning of the cold season, apparently contagious and most likely parasitic, to which many succumb. Phthisis was not originally a Fijian disease. Its primal distribution you will find to be a question to the solution of which you can still contribute something.

DIPHTHERIA.

Neither in Fiji nor in British New Guinea was there any such disease as croup or diphtheria; they had not reached the latter colony when I left it in 1898. The first case of diphtheria that occurred in Fiji was about twenty years ago in a little girl 7 or 8 years of age. This little patient brought the disease from Sydney, and both the child and her mother died of it. A few weeks later a case appeared among the prisoners in gaol in the same town. Sporadic cases occurred later, and probably the disease has now become domesticated in that country, but it is, I believe, still rarely met with there. It does not appear to occur in the Lagos territory in West Africa, and Koch notices its absence in German East Africa.

CANCER.

In some of these new countries there are interesting points to note with regard to cancer. I do not remember to have ever operated on a Polynesian or Melanesian for cancer, though I had to do so several times on Europeans in Fiji. For nine and a-half years I never saw a case of cancer in British New Guinea, but at the end of that time there occurred an example of encephaloid cancer of the tibia in the person of a Papuan that had for seven or eight years lived practically a European life, eating tinned Australian meat daily. It seemed hardly possible that he could have become infected from any previous case. Lupus exedens is very common in New Guinea, but it is always clearly distinct from cancer. The latter disease is of course very prevalent in Australia. It may be remarked in this connection that the Polynesian and the Papuan are practically vegetable feeders. Dr. Johnson of Lagos, now in this city, tells me that in Lagos during a practice of fourteen years' duration, he has five times seen cancer in native patients, and that in each case the sufferer had lived as Europeans live. In West Africa there are, however, very marked cases of destructive lupus.

TETANUS.

An equally remarkable experience was met with as regards tetanus. In the disturbances that took place in Fiji in 1876 and 1877, when the mountain chiefs refused to recognise the authority of the Queen, and Lord Stanmore had to reduce them to obedience by force of arms and without any army, we treated about one hundred and fifty wounded men, suffering from all kinds of injury. Although the nursing and dressing must have been very imperfect, and operations were performed under difficulty, there was not a single case of tetanus.

On the other hand, an officer that received very serious injuries from the explosion of a charge of dynamite in the interior of British New Guinea died of true traumatic tetanus. He was camped at the upper end of the alluvial country on a piece of ground cleared by us, close to the foot of the hills, some 60 miles from the sea. Four or five days later, after a journey down the river, during which we camped each night on its alluvial bank, he was got on board the steamer, and a few days thereafter showed the unmistakable symptoms of tetanus. He was taken straight to the Cooktown Hospital, and died there of this disease. No

case of tetanus in man or animal had ever been heard of before in British New Guinea.

It is not clear that the case of Commodore Goodenough, reported to have died of tetanus from an arrow wound received at Vanikoro, is parallel to this one. It is quite possible that the detachable bone point used by Papuans and some Micronesians on the tips of their arrows may in his case have been left in the wound and have caused septic poisoning. These bone points, prepared by scraping down a piece of human bone, would contain septic matter, yet I have not known these to produce tetanus in New Guinea. It may here be mentioned that erysipelas was unknown in those countries.

Tinea Imbricata.

The steady stealthy progress made by a new invading disease was well seen in British New Guinea in the case of tinea imbricata. It was a domesticated disease in the West, on the Fly River, for example, where it is known by the same name that is applied to tobacco. It was also domesticated in the east end, where it is called by a word that in a certain district means "to curl" or "fold up." The central district was still free from it as recently as ten or twelve years ago, but it is slowly and surely gaining on that region, and during the last three or four years cases have been appearing even at Port Moresby. In a few years it will be endemic over the entire coast, a great eastern wave from the Line and Solomon Islands meeting a wave equally great and irresistible coming from the west. There, as in Fiji, the best treatment was found to be sulphur fumigation, but it is not possible to apply the remedy universally in New Guinea so as to extinguish the disease.

Ankylostomiasis.

I can only mention by name several other tropical diseases I have met with that are of special interest and that require investigation. There can be no doubt that ankylostomiasis is indigenous in the Pacific. In 1876 it was found in Fijian mountaineers, and in recruits from the Solomon Islands. Perhaps some of you may be able some day to explain its wide distribution and its exact significance. Cerebro-spinal meningitis was not a native disease but appeared amongst Indian coolies in Fiji. How it came there was a mystery. Beri-beri was not, I believe, a Fijian malady, but has been introduced by plantation labourers from Japan. In New Guinea it is indigenous but not common.

Unknown Diseases.

In New Guinea there is a curious multiple tumour often met with as large as a walnut. It occurs most frequently about the elbows or the parts of the body that touch the ground when one is asleep on it. This has not been investigated. It is probably parasitic. In the Pacific there is a strange *post-mortem* appearance that is extremely common, and that I trust some of you may throw light on. In the hilum of the kidney there is very often half a teaspoonful of brown or purulent fluid. It is found in the greater number of bodies even if dead only an hour or two. Its cause or origin, so far as I know, has not been made out.

Dingoes and Rabies.

As an example of the kind of medical legislation as to which you will have to give advice, I may first cite from my own experience with rabies. As you all know there is a species of dog, the so-called "dingo," native to Australia and New Guinea. Where that animal came from is not clear. My distinguished friend Professor Giglioli, of Florence, gives good reasons for regarding the Australian aborigines as degenerated Aryans. If they are so, they probably brought their dogs with them, and at a time when rabies did not exist in Aryan communities. We shall not consider here whether the barking of dogs is a modern accomplishment, or whether the dingo gradually forgot the art. The dingo and dog cross readily, and the first cross between them barks. Doubtless, therefore, the dingo would be readily susceptible to rabies. There is a wild dingo on the top of the Owen Stanley range in British New Guinea, and a complete specimen was secured and deposited by me in the Queensland Museum, but the result of its examination is not yet known to me. The domestic dingo is very common in New Guinea as a pet, as a hunter, and as a table delicacy. All the dingoes of a village meet several times a day to howl, and they never separate without a fight. They are provided with long, thin, sharp teeth, which they use in season and out of season, but by preference when out of sight. It closely resembles or is identical with the Australian dingo. I have never seen a native dingo in the Pacific Islands.

The point that most concerns us here is that the Australian and New Guinea dingoes were free from rabies. The Australian colonies have protected themselves from rabies by instituting a term of quarantine on imported dogs. It was seen that rabies introduced into a country like New Guinea with swarms of ill-tempered biting dingoes, among a barefooted, bare-legged population, and with a wild dingo in the mountains and numberless pigs everywhere, would be a very serious matter not only for that country but also for the whole of Australasia. The matter was therefore dealt with on the broadest platform. A representation was made to the great colonies that had charged themselves with part of the burden of maintaining British New Guinea, urging that the Secretary of State should try to induce France, Germany, and Holland to introduce laws similar to those of British New Guinea to prevent the introduction of rabies into their possessions in those seas. The then Prime Minister of Queensland, Sir Samuel Griffith, saw at once the importance of the measure and warmly supported it; it was, I believe, also approved by the Government of New South Wales. The then head of the Government of Victoria thought the proposal more or less ridiculous, and was of opinion that France and Germany would give no attention to such a trifle. Lord Knutsford and Lord Salisbury, however, obtained at once the cordial co-operation of the three foreign Governments. There is therefore good reason for hoping that now the whole of Australasia is, with reasonable care, secured for all time against the terrible disease of hydrophobia.

The "Jigger."

The question of the introduction of "the jigger" is one that has recently occupied the attention of the Indian Government. To such matters even as the control and distribution of this flea you require to devote time and study. Guided by our experience in Lagos we could only report to the Secretary of State that "the jigger" does not cause any noticable inconvenience on official expeditions, and appears in private life to claim very little attention. But a medical officer advising his Government in India would require to know a great deal about the insect before he could venture to recommend any legislative steps regarding it, or could suggest that no action whatever should be taken.

Leprosy.

It is probably now generally conceded that the disease of leprosy is communicable, and that the isolation of lepers should be carried out in the interests of the community. No aboriginal people I have known have ever entertained the slightest doubt as to the contagious nature of the disease. The natives of West Africa isolate the lepers. In the South Seas they kept them apart, and often buried them alive when they reached an advanced stage of the disease. More than twenty years ago I read in a German author that leprosy was extinguished in Scotland "durch die Entmannung der Männer." I have not been able to find the authority for that statement, the author of which is dead many years. It was at one time apparently not uncommon in Scotland. In the *L'Histoire Universelle* of M. Rambaud it is stated that Scotland's most celebrated king died of this dread disease.

The whole subject of leprosy now requires to be studied exhaustively in the light of the new pathology.

No doubt some of you must be aware that the native Fijian treatment was to bake the sufferer from leprosy near a slow fire. It was confidently affirmed that cases were cured in that way. It will be very interesting to see whether a fuller knowledge of the disease will offer any explanation of such a cure.

Quarantine.

I would for a moment call your attention to a medico-legal subject of great importance to many Colonies, and to which I trust some passing attention may be given in the courses of this school. I allude to quarantine against the introduction of infectious or contagious disease.

In all international conferences on quarantine matters British delegates take their stand against the imposition of quarantine. Their system is the isolation of affected or suspected individuals; the disinfection of vessels, and sometimes of cargo. This procedure can be carried out success-

fully only in a country where there are highly developed police, health, and sanitary services. It requires ample hospital accommodation where patients and prospective patients can be isolated; it needs a staff of trained and intelligent officers to exercise surveillance over people that may have been exposed to possible contagion, and it requires the means of dealing with any of these wherever he may be found. Here in the United Kingdom cleansing and disinfecting can be carried out with scientific accuracy and completeness, and at small cost.

In this country, then, in the face of the drainage, the ventilation, the accessibility to suspected persons, and the means of dealing with those as well as with infected persons, an outer line of defence may not at any time become necessary. But it is widely different in most colonies. Here the outer line of defence, imposing quarantine on infected or suspected vessels or persons, becomes a necessity. You will find it will tax your powers to the utmost to advise your Governments how best to combine the public safety with the minimum of disturbance to trade, for that in practice is the problem to solve. At Lagos we have tried to combine the two systems, by providing the medical department with the powers necessary to protect us from outside by imposing quarantine on arrivals, and to exercise surveillance ashore over persons exposed to a possible infection, but who cannot or need not be detained in quarantine. Ashore, the medical officers may remove from a community, and isolate, an infected individual; or they may put a house, a village, or a district, in quarantine. The small numeric strength of the staff available, the inadequacy of accommodation, the evil sanitary condition of all towns and villages over a great and populous area, make it practically impossible that we should depend entirely, or even chiefly, on our inner line of defence against epidemic disease. You are perhaps aware that in Australia a system of federal quarantine has been in force for several years. The geographic position of the Australian continent is very favourable to this line of action, yet recent events have shown that both the outer and inner ring of defence may be insufficient to keep out disease. The whole subject is one that will call for special and serious study at your hands.

THE WATER QUESTION.

Let me impress upon you the extreme desirableness of becoming experts in the examination of water. Nothing is of greater importance in the tropics. Although the new doctrine of malarial fever shows that water is only an indirect agent in the production of that disease, it still remains an essential factor in its continuation and spread. It retains all its former importance in respect of other diseases. In West Africa the medical officer should be able to say whether a given well is safe or not on account, for example, of guinea worm. Water is popularly credited with the origin of the "craw-craw" disease in Europeans. It doubtless has much to do with the spread of dysentery, typhoid fever where that exists, cholera, and several other maladies. Altogether it is one of those subjects to which you cannot give too much attention. Personally, I have always contended that the quality of the water used by a community may have as much, or nearly as much, influence on them as has the quality of the food they eat, or of the air they breathe. A medical officer is constantly liable to be asked by his Government to report fully on the water supply of some place or community.

I cannot conclude these somewhat dry and disjointed remarks without offering my hearty congratulations to you that are to become students at this school. In my opinion your lot is the most enviable of any body of men in this great country. You have already travelled over the ordinary road of medical education and have become acquainted with the more frequented parts of the limitless field in which you are to labour. You have become ordinary members of the greatest, most beneficent, and therefore the noblest of all professions. It can be said with greater truth to-day than it could three thousand years ago: *Ἰητρος γὰρ ἀνὴρ πολλῶν ἀντάξιος ἄνδρων.*

Here you are now to be taken into some of the bye-paths of medical study. There you will be brought face to face with some of the most interesting problems of science, questions of vast importance to the life and health of the individual, and that will exert a reflex action that will be felt in many of the transactions of public, national, and even of international life. I trust and hope that you will leave this school well fitted by your knowledge of your profession to do your part in the exercise of your calling, and that you will have securely planted in your mind that high sense of duty that is the life and soul of religion, of patriotism, of every efficient public service, and that enables the medical man to devote by instinct, and unselfishly, all his mind and all his strength to the prevention and cure of every disease that affects humanity.

OPENING OF THE MEDICAL SCHOOLS:

INTRODUCTORY ADDRESSES.

UNIVERSITY COLLEGE, LONDON.

By GEORGE VIVIAN POORE, M.D., F.R.C.P.,
Professor of the Principles and Practice of Medicine.

SCIENCE AND PRACTICE.

IT is nineteen years since I last had the honour of delivering the introductory address to the students of the Faculty of Medicine in this college.

Since October, 1881, inevitable changes have taken place. Many of those who were then our chiefs are now no more; others have retired from the labours of professorial work; their places have been supplied, let us hope, by good men and true, all of them anxious to maintain the high traditions of this college.

In 1881 some of my colleagues were beginning to talk of reconstituting the University of London. That reconstitution has now taken place. The headquarters of the university have been removed from the City of Westminster to the newly-incorporated town of Kensington, and all the medical schools in London have become constituent colleges thereof. Since 1881 the Universities of Oxford, Cambridge, and Durham, as well as the Victoria University at Manchester, have made, and are making, ever-increasing efforts to meet the needs of the medical student. In connection with the new University of Wales, a medical school has been founded in the flourishing town of Cardiff, and the present year has witnessed the foundation of the University of Birmingham, which, under the guidance of the Right Honourable Joseph Chamberlain and Professor Oliver Lodge, both of them former students of this college, may reasonably be expected to attain a large measure of success.

I believe that competition is the very essence of progress and that the largely increased competition in the matter of medical education is full of good omen for the future of medicine in this country. So long as the competition be really free there is nothing to fear. So long as men be really free to back their own judgment in the matter of gifts and endowments and so long as the medical student be free to choose the schools and the teachers to which he will take his educational fees there can be no doubt that the law of the survival of the fittest will continue to exert its beneficent influence and that progress will result.

SCIENCE AND PRACTICE.

I purpose to-day to address myself to those of you who are about to commence the study of medicine proper. Your studies hitherto in chemistry, anatomy, and physiology, studies which are a necessary preliminary to the study of medicine, have been pursued by the aid of dead material, and by methods which are largely artificial; methods many of which have no counterpart as far as we can tell in Nature. You have learnt to recognise and to name the various parts of the human body, and to understand the relation which the various organs hold to each other.

You have learnt by methods which are largely artificial to recognise many of the cellular elements which go to the building of our complex bodies, and by means of anæsthetics and sundry artifices you have had an occasional glimpse of vital movements—a momentary and imperfect glance of the fringe of Nature's robe. You have learnt how the chemist, by methods of his own, tears organic matter into fragments, and designates the bits by dodekasyllables; and represents them by mystic formulæ which sometimes perhaps illustrate

his own imaginings, and show his descent from the astrologer and the alchymist. Your time hitherto has been largely spent in a valley of dry bones, and in the laboratory of a crematorium, and many of you who to-day begin the study of medicine are doubtless asking, "Shall these dry bones live?"

The passing from the study of the dead to the study of the living constitutes the greatest epoch in the life of a medical student, and you will readily believe me when I say that the study of the living demands infinite patience and great humbleness of mind.

I have alluded to the fact that the methods of the laboratory are largely artificial. We are in necessary doubt as to the resemblance between Nature's methods and man's methods, and how far he who works in a laboratory merits the name of artificialist rather than that of naturalist.

It is necessary to say this, because we have to follow Nature. We must not mistake our methods for her methods. We physicians have to find out what is man's true relation to his surroundings in this world. We are powerless to alter the course of Nature, but we may perhaps persuade our fellow men to reform their conduct. Before, however, we begin to persuade, still more before we venture to compel, we must be sure of our ground. We must constantly check the advances of the laboratories by the observations of the broad facts of Nature. Science in its narrow sense must go hand in hand with practice, each must be respectful to the other, like symbiotic organisms living together for mutual benefit. A very dangerous person in this world is the quasi-monocular Polypheme, who holds one eye over an immersion lens, and keeps the other shut. He becomes doubly dangerous if he be the holder of a public position, which may give to his utterances a fictitious value sufficient, perhaps, to tempt the politician to earn a bubble reputation by hasty legislation, than which there is no more effectual bar to scientific progress.

> Man, proud man,
> Drest in a little brief authority,
> Most ignorant of what he's most assured,
> * * * * *
> Plays such fantastic tricks before high Heaven
> As make the angels weep.

Those of you who are passing from the college to the hospital are equipped for your work in a manner which enables you to observe with completeness and to record with accuracy. You may be disappointed in finding that no inconsiderable part of the knowledge you have hitherto acquired is of little practical use to you in the wards, or at least you may fail to see the bearing which it has upon the treatment of the sick. Be not dismayed; the correlation of knowledge is infinite. We cannot tell from hour to hour what may prove to be the practical bearings of the most recondite discoveries of the laboratory. The so-called practical man who is ever asking the question "*Cui bono?*" is certainly not the one by whom advances in knowledge are likely to be made.

If you find that the recording of cases in the hospital has to be done by clerks and dressers instead of by clockwork and drums driven by an electric motor, do not for this or similar reasons rush to the conclusion that you have left really scientific work behind you. It is true that scientific work cannot be done as rapidly in a hospital as in a laboratory, and that in a hospital you cannot control the circumstances and conditions of your work as you can in a laboratory. The collection of facts often extends over years, and those who are in a hurry to make a so-called scientific reputation should remain in their laboratories.

The power of independent observation is a gift which is given to few. The true naturalist—such as Harvey, "Parson" Hales, John Hunter, Gilbert White, Charles Darwin, and Pasteur—would seem, like the poet, to be born and not made, and generally educates himself by methods of his own. We may reasonably hope, however, that the extension of scientific teaching is calculated to bring the unconscious genius within sight of the mental pabulum for which he has, unknown to himself, an inborn appetite.

May I venture to allude to some of the work which has been accomplished by the patient observation of physicians?

First amongst these is the solution by Harvey of the difficult problem of the circulation. This was the result of many years of incessant labour, and the observation of every fact, pathological as well as physiological, which by any possibility could assist him. He is credited with having begun to teach the doctrine at least twelve years before he published it in its final form. He was in no hurry, he had no petty ambitions with regard to priority, and finally left the question completely settled, so that in the 272 years which have since elapsed physiologists have been able neither to add to or detract from the doctrine that remains pretty much as Harvey left it.

Again, the discovery of the cause of the endemial colic of Devonshire by Sir George Baker deserves ungrudging recognition. Baker's essay was published in 1767, and it is very interesting to contrast his admirably arranged and thoroughly scientific discourse with the essays on the same subject which had preceded it. I need not follow Sir George Baker in his collection of facts and his close reasoning upon the facts collected. Having shown that in all human probability the cause of the colic was to be found in the lead fittings of the cyder presses, he finally had recourse to Dr. Saunders, "an ingenious gentleman who practised chymistry" and who extracted a tangible quantity of lead from a dozen bottles of Devonshire cyder.

No better instance can be found of the happy association of the laboratory worker and the clinical physician, to whom all facts connected with his patient are of importance. I may perhaps remind you that Baker's discovery, although limited to a disease which was peculiar to certain districts only of this country was in reality very far reaching, for there were endemial colics in many other parts of the world, such as the colic of Poitou and the "dry belly-ache" of the West Indies and Central America, all of which were ultimately traced to lead as a cause. Lead colic was, prior to Baker's discovery, a very widespread malady, and is now happily very rare.

Scientific in its best sense was the discovery made by Ballard, then medical officer of health for Islington, that certain pestilences—enteric fever, scarlet fever, and diphtheria, which hitherto were supposed to "stalk in darkness,"—walked occasionally with the milkman.

This great discovery, following on that made by Snow and Budd, that cholera and enteric could be conveyed by water, encouraged the pathologist to renewed efforts, and it was not long before the "ingenious gentlemen who practise bacteriology" were able to demonstrate to the clinicians that the true causes of some of these diseases were recognisable by the eye, and that their habits were such as to fit them peculiarly for transit by water and by fluids mixed with water.

The great increase of knowledge which has taken place with regard to infective disease in the last half of this expiring century has been due to the co-operation of the laboratory worker and the clinician. Let us give to Pasteur and Koch their due mead of praise, but do not let us forget the credit which is due to Ballard, Snow, and Lister.

The spread of infective disease is, in the opinion of some of our more enthusiastic and less experienced laboratory workers, to be accounted for solely by the existence of a microbe; and having discovered the microbe, they are anxious to push the fact to what they are pleased to call its logical conclusion. In relation to the bacillus tuberculosis, we hear propositions for killing 80 per cent. of our cows, for making expectoration a misdemeanour punishable by fine at so much per nummulus; for declaring it felony to drink raw milk; and for converting a dairyman into a sort of ticket-of-leave man.

No room is to be left for the exercise of private judgment, albeit that clinicians are feeling that the cause of the spread of infective diseases is still enveloped in mystery, and that notwithstanding the light which recent discoveries have given us, the unknown is certainly greater than the known. The wise laboratory worker will always be chary of moving without the support of the clinician. One great mistake has already been made in Germany in relation to tuberculosis. This should serve as a warning. As a nation we have a reputation for level-headed common sense, and I feel sure that if in these matters we "legislate in haste" we shall "repent at leisure."

The labours of Edward Jenner in relation to the establishment of vaccination were scientific in the best sense. It is only recently that other facts which seem to bear some analogy to vaccination have received attention at the hands of Pasteur, Haffkine, Wright, Fraser and others, and we have

learnt much, but have much more to learn as to the causes of immunity. Practice in this matter has been ahead of theory. The scientific use of theories and the discovery of far-reaching principles give an impetus to practice, and endow it with a degree of certainty and security which it could not possess without it.

Many an antiseptic process has been practised in our kitchens from time immemorial. The careful housewife who long since successfully preserved fruit by bottling was anticipating Pasteur. Pasteur has shown us the principles which underlie the process, and has therefore given such an impetus to the art of food preservation that we seem almost to be in danger of famine in relation to food which is really fresh. This is a most important matter, for the practical man is beginning to feel that stale food is no true substitute for fresh food, all chemical analysis to the contrary notwithstanding.

The frequency with which practice has anticipated theory and a knowledge of principles is most interesting. The "unbusied shepherd stretched beneath the hawthorn" munching bread and cheese and a raw onion is doing that which his ancestors learnt centuries ago by the light of Nature and the craving of a natural appetite. The physiological chemist arrives somewhat late upon the scene to tell him that he has selected for his meal a perfectly correct mixture of proteids, fats, carbohydrates, antiscorbutics, and antiseptics and Corin stares as M. Jourdain stared on learning that his conversation consisted of prose. If, however, the physiologist were to suggest a change of diet in favour of a more portable assortment of dried proteid, starch, oleomargarine, and allyl compounds, the best products of his laboratory, he would probably attribute the yokel's refusal to impenetrable stupidity. The physiologist unfortunately can tell the shepherd nothing concerning those natural appetites which are the mainsprings of every human action.

In Stanley's *Darkest Africa* I find a very interesting example of practice ahead of theory. In the second volume the author has some valuable observations on malaria, among which I find the following: "Emin Pasha informed me that he always took a mosquito curtain with him, as he believed it was an excellent protection against miasmatic exhalations."

Emin's practice was right (a practice, I am told, not unknown in India), albeit that he seemed to have no knowledge that the "miasmatic exhalation" against which he was protected was nothing more nor less than a mosquito. It is needless to point out how recent discoveries have supported Emin's practice.[1]

We must not lightly abandon established practices at the bidding of each unfledged theory. Theory and practice must go hand in hand, each working for the correction and support of the other, if the art of medicine is really to progress and the profession to retain its legitimate hold upon the public.

The New Hospital.

The Council of this College soon learnt that a medical school without a hospital was not complete, and that for the education of medical practitioners science and practice must go hand in hand.

The old hospital, so soon to disappear, was opened in 1833, and in it an illustrious line of physicians and surgeons have done work which has redounded to the credit of the institution, and have sent out students whose subsequent careers have shown how well they were taught and how diligently they worked.

It is now twenty years since the old hospital was condemned as unfitted for its purposes by Dr. de Chaumont, the worthy successor of Parkes in the Chair of Hygiene at Netley. Sir Francis Goldsmid came forward and made a noble offer to help us rebuild it—an offer which the Council, after due deliberation, refused, notwithstanding that the General Committee and the then staff of the hospital were unanimous that rebuilding was necessary. Thus it has come about that we as a medical school have been handicapped in these days of keen competition by being obliged to carry on the most important part of our teaching in a hospital which, when compared with recent hospitals, was obsolete and squalids

[1] In *Hints to Travellers*, published by the Royal Geographical Society, 6th edition, 1880, I find mosquito curtains in several places recommended as "a real safeguard against malaria."

Possibly our ill-fortune has been a blessing in disguise, because the construction of the much-needed new hospital has now been undertaken in a spirit of unbounded generosity and philanthropy by Sir Blundell Maple, whose name will deservedly be honoured as that of Thomas Guy is honoured, and whose noble hospital, the form of which is due to the genius of Alfred Waterhouse, bids fair to be one of the chief ornaments of the new Borough of St. Pancras.

As we are about to take possession of the central (administrative) block and one of the wings of the new hospital, it will not be out of place if I say a few words about it.

The new hospital has about double the area of the old hospital, and occupies the entire "island" bounded by University Street, Huntly Street, Grafton Street, and Gower Street. Not only is it surrounded by streets, but it faces the College Green, and, considering that it is necessarily placed near the centre of a densely crowded city, it may be said to occupy a site which is exceptionally good in relation to light and air. Nearly the whole of the area will be covered by a noble basement 15 feet in height, rising 6 feet above the pavement, and lighted by large windows and skylights. In this basement will be placed the out-patient department, baths, offices, store rooms, etc. The ventilation of this basement has received special attention, and it will be completely cut off from the central and subsidiary staircases and lift shafts which communicate with the superstructure.

The wards have an amount of floor space per bed greater, I believe, than is to be found in any other hospital. This is most important as conducing to purity of atmosphere, and enabling the individual patient to be easily screened off when necessary—a necessity which, for one reason or another, is of frequent occurrence. In a teaching hospital like ours, large floor space is required for the accommodation of students. The wards are amply lighted by windows on both sides, and it is one of the advantages of the cruciform ground plan which Mr. Waterhouse has adopted that the majority of the ward windows command a view which is singularly unobstructed, because there are no buildings which are opposite and parallel to them. The new operating theatres are highly finished, and are arranged and fitted after the best models to be found either in this country or the Continent. In them, as in the rest of the hospital, light and cleanliness have ever been in the mind of the donor, the architect, and the medical staff, whose opinions at all times have received the most careful consideration at the hands of the Hospital Committee and the Building Committee.

We have not been unmindful that science and practice must go hand in hand. If medicine is to advance, morbid products must be minutely studied by all the methods which are available. A novel feature of the new hospital is the range of rooms on the top floor devoted to the chemical, microscopical, and bacteriological study of morbid products and secretions. These investigations often give a certainty to diagnosis which a few years ago was hardly dreamt of, and it must be remembered that upon accuracy of diagnosis depends to a large extent the efficacy of treatment. It may, I think, be confidently said that in no hospital will the latest advances of pure science be more promptly available for the relief of the suffering poor than in the palatial establishment which Sir Blundell Maple is building for us.

We are entering at once into possession of three new wards containing 72 beds, new administrative offices, new baths, new operating theatres, and new scientific workrooms for the purposes of research and diagnosis.

The nurses' wing is rapidly approaching completion, and when this is finished we confidently expect that the accommodation provided for our resident medical staff, for our matron, and for nurses and servants, will compare favourably with that of any other hospital. It need hardly be said how essential it is that young men and women engaged in the arduous duties of attendance on the sick should be housed in the most wholesome manner possible. There can be no doubt that the present and future students of University College will enjoy facilities for the practical study of disease such as were undreamt of a few generations back.

Lecturing.

The medical student differs from other students in this, that his course of study is largely controlled by the General

Medical Council and the Corporations. Seeing that mere examination is a very fallible test of knowledge, and seeing that the public naturally want some guarantee of adequate education from those to whom they entrust their lives, the medical student is compelled to produce proof that he has at least dwelt for a season beside those springs of knowledge from which he may have sipped occasionally when so inclined. He is *compelled*, for example, to produce evidence that he has attended certain lectures, and you will only think it natural for me to make some special allusion to the course of lectures on the Principles and Practice of Medicine which (*inter alia*) he is bound to attend. Formerly he was compelled to attend two courses of such lectures; now the Examining Boards are contented with one course. The medical student is still a very much lectured individual. He has very little time to pick up crumbs of knowledge for himself, but his intellectual pabulum is administered at very frequent intervals, often without regard to his appetite or his powers of assimilation.

There is an idea that mere lecturing is of little use, that practical work in the laboratory is the only true complement of practical work in the wards, and that the printing press has rendered lecturing unnecessary. There is a measure of truth in this, and therefore it is almost incumbent upon me to offer some apology for venturing to stand before you as a professor whose duty it is to give lectures on medicine not at the bedside only but in a class-room. Perhaps I have been tempted to take upon me the duties of professor of medicine by the recollection of my student days and by the consciousness that in listening to the systematic lectures on medicine of my day I spent time more profitably than I have ever done before or since, and obtained a knowledge of medicine which I found in no textbook. In listening to those lectures one's enthusiasm was roused, and one went from the lecture-room to the ward with intenser interest and with greater knowledge of how to observe and what to look for. Not many students, even of this College, had the good fortune to attend the systematic lectures on medicine by William Jenner because his tenure of the Chair extended only to four to five sessions. Sir William Jenner was the greatest lecturer I have ever heard. He appeared to me to have more insight at the bedside than any other physician I have ever met, and assuredly he was the strongest personality with whom I have ever had dealings in this world. As to Jenner's lectures I have never heard but one opinion. That is interesting because a lecturer, even a good one, is not always in sympathy with all the members of his audience, and you will find that among students there are widely different opinions as to the merits of their teachers.

Jenner taught from the fulness of his personal knowledge, and largely used the vivid impressions made upon him by cases he had seen for illuminating and illustrating the principles of medicine. When he suddenly interrupted the thread of his discourse with the words "I saw a case last week which illustrates this," there followed an interesting recital which was vivid beyond belief, and left itself ineradicably fixed on the tablets of the memory. Jenner never talked about things which he did not understand; he was a physician in whom there was little of the metaphysician. He knew that intricate arguments on doubtful points, arguments often difficult to follow even by the best of his audience, were out of place in the lecture room. There was no attempt at oratory, no wasting of the students' time with flowers of rhetoric, no pretentious display of learning, no pedantry, no "side." His style was that of an honest man, brimful of learning, spurred by enthusiasm for his subject, and genuinely anxious to impart knowledge. His manner was his own, at once simple and emphatic. He was a man of transcendent gifts, and willingly gave of his best even to the least intelligent.

Sharpey, who lectured on physiology, was also an expounder of no common merit who devoted much of his time to lecturing, and whose lectures like those of Jenner were a recurring pleasure.

The lectures of Ellis, the professor of anatomy, were highly esteemed by many. To me they proved too soothing even at 9 A.M. He fed us, as it were, on a flavourless gruel of uniform quality, which, though theoretically nutritious, proved unappetising to some of us. Two, among the other courses of lectures which I attended, were thoroughly bad, mere incoherent and incomprehensible drivel. I have used the word "attended," but I will ask you to interpret this word in a "schedule" sense.

It is not always the man with the most knowledge and the greatest intellect who makes the best lecturer. Some of our greatest men have had very little power of exposition. A notable instance of this was Professor Thomas Graham of this College, who became Master of the Mint. He was the greatest chemist of his age, and the worst lecturer conceivable. Such a man—and I take him as a type—is far better employed in research than in lecturing. The laboratory, not the theatre, is his proper sphere of action.

Lecturing is not reading. The man who keeps his nose on a manuscript while his audience takes a nap might well be replaced by a phonograph with a textbook in its magazine. The functions of a lecturer are different from those of a textbook. The lecturer has power of selecting his material and he must be able to keep in touch with his audience. He knows at once when his audience are interested and when they are bored. A lecturer who fails to maintain order in his class has probably mistaken his vocation. The student who pays no attention and who comes to lectures on compulsion is an unmitigated nuisance.

I should not have assumed the duties of the Chair of Medicine unless I were buoyed by the hope of being useful to those of you who are commencing the study of medicine proper, and who, while attending my course, will be mainly occupied in filling the junior clinical appointments. In a former address I took occasion to remark that man, who to our unaided vision appears to be at most some 6 feet by 2, is, when viewed by the higher powers of the microscope, about as tall as Mont Blanc and 2 miles wide across the shoulders. Medical studies have necessarily enlarged with the virtual enlargement of the subject of them, and so it has come about that specialism in medicine is very highly developed—perhaps morbidly hypertrophied. This is inevitable; but a student must generalise before he specialises. As an examiner in medicine of some experience, I have noted that students often have a most imperfect grasp of elementary principles.

Just as it is the business of the professor of anatomy to deal with the entire framework of the body, so it is, I conceive, the duty of the professor of medicine to endeavour to give the student a comprehensive glance of the entire field. If the young student be too early given over to the teaching of specialists, his knowledge is apt to be scrappy, and he obtains an acquaintance with medicine which may be compared to that which we may suppose the aphis has of the rosebush on which it feeds. The young student needs instruction as to the proportionate importance of different subjects. He needs to know the common things, and his tendency to run after medical rarities to the neglect of more important matters must be checked rather than encouraged.

Some of the modern textbooks written by specialists are often misleading to the student, because diseases which are so rare that an ordinary practitioner may never encounter a single case are treated at inordinate length. I was lately dipping into a work in which the diseases of the skin were dealt with by no fewer than fifteen different authors. The knowledge, the half-knowledge, and the no-knowledge of these gentlemen had been elegantly rendered in the dermese language and set before the reader, but the word "itch" did not appear in the index. The child playing with a Noah's ark naïvely remarked that the beetle was as broad in the back as the elephant, and the same criticism may be made on some of our modern treatises, which are apt to mislead a beginner as to the relative importance of different diseases.

I trust it may be my privilege to be of some use to the beginners of medicine, and with the aid of the vast amount of material which is ready to our hand in the museum and the hospital, to give a solid foundation and scaffolding upon which you may securely build hereafter, as your knowledge and experience increase.

Endowed Lectures.

One of the results of the reconstitution of the University of London may be a diminution in the number of lecturers and an increase in the size of the classes. Thus it will be possible for a man to give some of his best

energies to teaching without suffering from comparative starvation. At present few lecturers earn a "living wage." It must be remembered, however, that lecturing is very hard work. Speaking with no little experience I should say that to really hold the attention of an audience for an hour makes very great demands upon one's store of energy. A man who teaches successfully, and lectures day after day, may well be excused if his output of what is called original work is not very great.

Professor Sharpey was one of the most learned physiologists of his time, and yet his fame in the field of discovery is small, and one reason for this is, I believe, due to the fact that his best energies were given to teaching. Not only did he lecture six days a week to large audiences in this College, but his advice was sought far and wide, and when sought was freely given to all workers in the vast field of physiology.

We hear a great deal about the endowment of research, and if such endowments should relieve original workers from the drudgery of lecturing, for which possibly they have no great love or aptitude, there can be no doubt that such endowments would advance knowledge and prove a benefit to the student in many ways. The endowment of lectureships, especially of lectureships which students are compelled to attend, is of very doubtful advantage to the student. Dr. Johnson attributed the failure of Gresham College to the fact that the lectureships were endowed while the students paid no fees. Such an arrangement was not calculated to bring out the energies of the professor, and if by chance a professor, without the necessary aptitude, were appointed to a Chair, failure and boredom were the results. Every professor needs the stimulus of competition, and his emoluments ought mainly to depend upon the fees which are freely paid by students who feel he can be useful to them. In very few cases ought the endowments of a Chair to exceed the amount of fees contributed by students. The best form of endowment would be a provision for old-age pensions, which should bear some relation not only to length of service, but also to the average earnings in the five years preceding retirement. Thus an inducement would be given to professors whose powers are failing to make room for younger men.

Doubtless many of you have heard the story of Gil Blas and the Archbishop of Grenada. It seems *apropos:* Gil Blas, who occupied the post of secretary to the Archbishop, was one day thus addressed by the prelate, "My chief pleasure consists in preaching . . . The honour of being reckoned a perfect orator has charmed my imagination . . . but I would avoid the fault of good authors who write too long . . . Wherefore my good Gil Blas whenever thou shalt perceive my pen smack of old age and my genius flag, don't fail to advertise me of it."

A few months later the Archbishop had an attack of apoplexy, from which he recovered sufficiently to enable him to mount again his pulpit steps, but the fire of his genius was extinct, and his congregation said one to another, "This sermon smells strong of the apoplexy."

Gil Blas faithful to his duty broke the sad intelligence to His Grace, but soon found that it was impossible to appease an incensed author who had been accustomed to hear himself praised. "Go," said the Archbishop as he thrust Gil Blas from his closet, "May heaven conduct you; I wish you all manner of prosperity and a little more taste."

If lecturers and professors are mainly dependent on their earnings there will be no need of any Gil Blas to run the risk of tendering unpalatable advice. On the other hand, the man who has successfully given his best energies to teaching ought to be under no apprehension as to his sustenance in his declining years. Open competition with a fair field is the surest protection against discourses which smell of apoplexy, a protection to which students who are compelled to attend lectures have an undoubted right.

An Antituberculosis League in Brazil.—A Brazilian League against Tuberculosis was formally constituted in Rio de Janeiro recently. Senhor Campos Salles, President of the Republic of Brazil, was present on the occasion. Dr. Hylario de Gouvea is the perpetual Secretary of the League, the formation of which is due to the iniative of the medical profession.

UNIVERSITY OF BIRMINGHAM.

By Bertram C. A. Windle, M.A., M.D., D.Sc., F.R.S., F.S.A., Dean of the Medical Faculty, and Professor of Anatomy in the University.

THE BIRMINGHAM MEDICAL SCHOOL: ITS NEEDS, ASPIRATIONS, AND IDEALS.

It is just seventy-five years since William Sands-Cox commenced to deliver the course of lectures which formed the foundation of the Birmingham School of Medicine. The founder of our school had probably little idea of what his classes would grow into, though, in fact, they did rapidly develop into what we should now call a university college, which its supporters thought of as "the cradle of an infant giant, and of a Midland University." To this distinction it might indeed have attained, for its early success was, for the period at which it was founded, considerable. But its constitution possessed certain inherent defects on which I need not and shall not dwell. Suffice it to say that though, so far as concerns the Queen's College itself, the dream of the promoters did not come true, yet in the personality of our Medical Faculty, once the Medical Faculty of the older College, its first possession and always its strongest department, the dream has been realised, and we appear to-day as a constituent, and I think not unimportant, part of the latest born of British universities. Indeed, looking back upon our history, we may, I think with some pride, plume ourselves upon the fact that our Faculty is the germ from which the present great organisation has developed, the seed from which so flourishing a tree has sprung.

At such a point in our career it seems to me that, in addressing you this evening, it is more suitable that I should direct my observations to a consideration of our school, its needs, its aspirations, its ideals, rather than occupy your time by dealing with some abstract point in connection with medical education or medical politics. And I prefer to look forward rather than backward, for though many valuable lessons may be learnt from the past history of our school, it appears to me that, at this moment, it is more to the purpose to consider what we have gained by becoming part of a University, and what we have still to do in order to make ourselves fully worthy of the position which we occupy.

It can scarcely fail to have struck those who have read the various documents which have been distributed to the public in the course of the movement which has culminated in the formation of this University, that the main idea in the minds of those responsible for it has been to establish a great centre of practical scientific research. There is to be a great Technical Faculty, there is a School of Brewing, there is a Faculty of Commerce, all directly responding to national needs and all providing instruction either of a character wholly new to this country, or on a scale which has not hitherto been attempted. I am sure I am only voicing the general opinion of all my colleagues in this Faculty when I say that we too are determined to make our courses of instruction fall into line with the others, and to bring them into tune with the note of practicality which is to be that of the University at large. It is our desire that the Birmingham medical student shall be afforded every possible opportunity for the practical study of his profession, and that the Birmingham medical graduate shall go forth to the work of that profession equipped with a thoroughly practical knowledge of the duties which he will be called upon to perform.

For the first time we are now in a position fully to strive for this ideal, for now for the first time we have that *Lehrfreiheit*, that freedom of teaching without which it is almost impossible to avoid sinking to the level of the coach or crammer. Human nature is human nature, and the student, however zealous and intelligent, can scarcely fail to be affected by the character of the coming examination and modify his work by what he believes will be its requirements, and insensibly, if not sensibly, his teacher will find himself influenced in the same direction. Thus a school which prepares only for outside examinations must necessarily, however much its teachers may strive against it, partake somewhat of the character of a cramming shop. If the examination for which the student is to present himself is one of a searching and practical nature, then he will avail himself of the opportunities for practical work afforded to him; if this side of the sub-

ject is to be less dwelt upon in the ordeal to which he has to submit himself, then he too often chooses the easier path, and acquires that amount of practical knowledge only which he thinks will be demanded of him. I need scarcely point out how vicious and uneducational is such a system.

Most of us have been reading lately the list of remarkable answers to examination questions which have found their way into the columns of the newspapers, and amongst them there is one which illustrates what I mean. Asked to give some account of the character of James I, a boy replied that he had so much knowledge that he did not know how to get at the fact which he wanted. "The fact is," he proceeded, "the king was crammed by a Scotch tutor. It would have been better for him had he been to a public school where knowledge is kept within bounds and not permitted to run 'wild.'" Waiving the question as to the historical accuracy of this reply, there is a good deal of solid sense in it. The function of education or one of its functions is to prevent knowledge from "running wild," and to ensure that what the pupil knows shall be really known and available for daily use and a foundation for further advancement. Knowledge has indeed been allowed to "run wild" when the only object of the teacher has been to fill the mind of his pupil with facts of which it empties itself, too often for ever, at the examination for which he has been prepared. *Experto crede;* I, who have in my time played many educational parts, once plied the homely slighted trade of an army coach, and speak of the things which I do know. I do not wish it for an instant to be understood that I am stating or even hinting that the Birmingham School of Medicine has had no higher ideal than this in the past. Far from it. I know that we have all of us been actuated by the desire to do the very best educationally for those committed to our charge, but I am also obliged to confess that it has been a hard task, an impossible task, to wholly divorce our teaching from all thought of the various examinations of differing standards for which we have been preparing our pupils. Now, however, all this is changed, and we can frame such a course of instruction as we believe to be the best for our students and make our examinations its logical conclusion. I hope that those who have taken the trouble of studying the syllabus which we have recently made public will do us the justice of admitting that in its composition we have been actuated by a desire to arrange our course of teaching in such a manner as to give our students the opportunity of acquiring an intelligent and practical knowledge of their profession, so far as the limits of time at our disposal permit. In doing this we have had to recognise, and I think we have recognised, that the medical curriculum is one in which the aim must be to realise a thoroughly technical t aining directed towards the acquirement of a particular art Many have been the recent discussions as to the best lines on which to carry out technical training, yet I do not think that those who have written on the subject have often, if ever, seen that in the medical curriculum there is at the present day perhaps the only fully-worked-out scheme of a thorough technical course. The student is first led through the branches of science cognate to his subject, and, if they are properly taught, in such a manner as to direct his mind to the problems with which he will subsequently have to grapple. Then he is inducted into the sciences of anatomy and physiology, which directly bear upon his life's work. Finally, he is confronted with the actual work of his profession in the wards of the hospital, and there he should apply the scientific knowledge which he has accumulated to the problems with which he is brought face to face. *Mutatis mutandis*, this scheme of instruction must be the one adopted by brewers, engineers, mining experts, and others under training for a career in some business, success in which depends upon the proper application of scientific principles to a technical end. Some year or so ago, when I was engaged in assisting in the drawing up of a scheme of instruction for students of brewing, I was much struck and interested by the fact that the lines on which that curriculum had to be framed were quite similar to those which we have been for years applying to the teaching of medical students.

Thus the first and greatest benefit which we gain from becoming the medical faculty of a university is the power to carry out, within the limits marked out by the General Medical Council, our own ideas of what is best in medical education, to make our own regulations for ensuring regular systematic work on the part of our students, and to see that the examinations are so correlated with the teaching that the reasonably intelligent and diligent student may, after properly following out the curriculum provided for him, be able to present himself for the test with a quiet confidence which is unknown to those who enter for one of those educational obstacle-races, such as the University of London has hitherto provided, and for which we have been the unlucky trainers. It is for this reason, that we may fully harmonise our teaching with our examinations, that we have provided in our ordinances that the Birmingham medical graduate must have been a Birmingham medical student for at least the first four years of his medical curriculum. We allow him a *Wanderjahr* in his fifth year, and believe by that time he will be in a position to profit by the extension of his experience to the schools of other parts of this country or of the Continent. Of course, by becoming part of a university we receive the right to confer degrees—to brand our own herrings as it has been described—but this is not the greatest benefit, however much it may appear so to the superficial observer. The real benefit is that we are free and unshackled by tiresome regulations—tiresome even if unexceptionable—drawn up for us by examining bodies, often without knowledge of or sympathy for our aims, and on the governing bodies of which we have no voice or representation.

It is true that we are subject, like all other medical schools, university or otherwise, to the regulations of the General Medical Council, but then we have our representative on that body, whose voice can, if necessary, be raised in support of our views, and who will have his share in moulding the medical education of the Empire. That this is the prime duty of the representative of any great school on the General Medical Council is my firm belief, though at the same time he should be very far from indifferent to the claims of those questions which are related to the honour of the profession and the general welfare of its members.

To turn to our own material position, so far as the ordinary work of a medical school is concerned we are, save in one or two respects, thoroughly well equipped for the task which lies before us. Our departments for the preliminary sciences afford the student every opportunity for learning these branches of knowledge. Our anatomical department will compare favourably with any other in the kingdom and, thanks to the wise and well-timed generosity of Dr. Rickards, we have an excellent laboratory for the study of pathology and bacteriology, though before long we must have larger museums for that department as well as for that of anatomy than those which we now possess. In dentistry, too, we have what, under the incessant fostering care of Mr. Humphreys, has grown into perhaps the most perfect teaching collection of odontological objects in this country. I need hardly remind those who know anything about the history of this department of our school, how much it owes to the gentleman who is its honorary secretary, and the establishment of dental degrees, the first step of the kind in the country, has been largely rendered possible by the energy and perseverance which he has displayed in working up the department with which he is connected. In all these respects we have done well, though I am far from saying that we have come to an end of our efforts, but there are other directions in which we must look for large and early developments. Our physiological laboratory and teaching have been greatly improved of late, but there is much leeway to make up, and I consider that a large development of this part of our work is the next object at which we must aim. Then there are two other laboratories which I hope to see established as part of the general scheme of advance upon which the University is now entering. In the first place we want a first-rate laboratory for the study of the problems connected with forensic medicine and toxicology. I have sometimes thought that these most important subjects receive rather a cold shoulder in medical schools, and that their importance is underestimated; yet there is, perhaps, hardly any direction in which the medical man comes more prominently under the cognisance of the public than in connection with medico-legal inquiries. Certainly there is no more golden opportunity afforded to him of publicly and fatally making an exhibition of himself than in the witness-

box; and, be it remembered, that a medico-legal case, and it may be one of the first importance, may at any moment be thrust upon the humblest member of the profession without his having the chance to decline it or the opportunity of shifting his responsibility on to more competent shoulders. Hence I look forward to the careful practical training of all our students in this branch of our profession as a matter of first-rate importance. In the next place I would point to the necessity for establishing a laboratory for the pursuit of pharmacological studies. There are those who regard such researches as being a little unpractical, perhaps somewhat in the air, a point of view which I in no way share. It is certainly too much to expect that all students should become in any way pharmacological experts, but it is scarcely too much to hope that all may soon have an opportunity of learning practically at least the rudiments of this science. I can imagine nothing of greater educational value to the medical man, apart altogether from the practical knowledge which he will be acquiring at the same time.

May I diverge here, for a moment, to point out that whilst we must teach our students how they are to carry out the work of their profession, it is not less our duty to essay that much more difficult task of trying to show them why certain things are done in certain ways; in other words, to instil into them a scientific and not merely a rule-of-thumb knowledge of their profession. *Madam How and Lady Why* was the title of a series of essays published some years ago by the late Charles Kingsley in some child's magazine, if I remember aright. I forget everything about them except the title, which surely is a suggestive one. The well-educated man must have made the acquaintance of both of these ladies during his career as a student. Madam How is a comparatively approachable person. You can meet her everywhere in the hospital, you can be introduced to her in the smallest country surgery, though perhaps she is not always in the best and most informing of tempers in such places, and, I believe, she sometimes even visits ambulance classes. But Lady Why, as befits her more aristocratic position, is more exclusive in her ways. Her reception room is the laboratory, the home of practical work, the place of research and experiment,

> Esperienza,
> ch'esser suol fonte ai vivi di vostr'arti.

Now, whilst we afford in our hospitals a magnificent opportunity for introducing our students to Madam How, we cannot be said to have done all that is possible in the way of bringing them into contact with her more distinguished relative until we have provided laboratories in connection with every subject in our curriculum which is capable of being illustrated or practically dealt with within the walls of a medical college.

I hope also that we shall be able before long to display the objects which we possess illustrating the subject of public health in a proper museum, and to add considerably to this interesting and important collection.

So far I have been mainly speaking of courses intended for the ordinary students, courses which are or should be provided for all our pupils; but our intentions for the school by no means end here. We want to see all these laboratories of which I have been speaking placed on such a footing as to be available as places of the highest research, to make our school a centre for scientific medical work for the whole of the Midlands, to see it not less generously dealt with than those branches of knowledge which are concerned with material and commercial prosperity. I am sure that all interested in the School were gratified to find that this view was shared by our Chancellor, who in his last appeal to the public set out the creation of a great school of medical research as a worthy object for the benefactions of the wealthy. In our bacteriological department we have been able to do already a great deal in this direction, and I think we shall soon be able to say that it is recognised as the centre for this kind of work by all the sanitary authorities of the Midlands. Already we are carrrying on all sorts of bacteriological inquiries for the counties of Warwick, Stafford, Derby, and Shropshire, for the city of Birmingham, for Wolverhampton, and for other smaller authorities. Thus we are not only finding a field for work for those using our laboratories, but I venture to think, playing a very important part in the preservation of the health of the dwellers in our own immediate district. Beyond this the energetic head of the department to which I have been alluding has already attracted a number of workers to his laboratory, and I hope that the time will soon come when our other laboratories will each contain their band of researchers, for no greater stimulus can be afforded to the systematic students, and, I will add, to their teachers, than the presence amongst them of persons following out independent researches in different branches of science as related to medicine and surgery. It cannot be too often reiterated that every case to which a medical man is called is a little—or perhaps a great—piece of original research, and can only be satisfactorily dealt with if it is approached on the same lines as any fresh problem which presents itself to the worker in the laboratory or practical department. Hence the value of familiarising students, as far as possible, with the notion of original research and with the manner in which it is carried out.

Of late years this country has begun to awake to the fact that it was getting sadly behindhand in matters of medical research, and strenuous efforts have been made to remove this reproach from amongst us. Anyone familiar with the work of the Jenner Institute and with the facilities afforded there for purposes of research, with the Laboratory of the Royal College of Physicians of Edinburgh, and the valuable communications which have emanated from it, will understand the kind of work which we hope to do here, and I may add, the kind of pecuniary support which we require to carry out such work in an adequate manner.

From our inland situation we can scarcely hope to emulate the work done by the schools of tropical medicine in London and Liverpool, schools which owe their inception so largely to the stimulus of the Secretary for the Colonies, schools whose work has already so amply justified the efforts which were made to start them. But there are plenty of other problems for us to attack, problems of the utmost importance to the public welfare, and I am sanguine enough to believe that we shall not long have to want the sums of money, the large sums of money, which will be required to enable us to do all that we desire to do and that we ought to be able to do. The material advantages of improved methods of manufacture are not the only things capable of appealing to the imagination of the wealthy, as has been recently shown by Lord Iveagh's magnificent gift to the Jenner Institute. It is a great thing to teach men to be pioneers in new engineering achievements and to be the future captains of other kinds of industries, but surely it is not a small thing to train men adequately to cope with the forces of disease, to repel the onslaughts of epidemics, to minimise the dangers which arise from overcrowded cities and our complex state of civilisation. The man who invents a new method of locomotion, of heating, or of lighting, confers a benefit upon his race, and his name will live for ever in its history, but he will not deserve so well of mankind as Jenner or Pasteur or that discoverer yet to come who shall unravel the mystery of cancer and point to the cure for that scourge of humanity. We have the workers capable of carrying out researches of the important nature of those which I have indicated, we have the will to carry them out, and I appeal, not without hope of success, to those who are capable of doing it, to find us the funds to establish here in Birmingham institutes of medical research which shall be not less ambitious and not less well equipped than the magnificent engineering and metallurgical laboratories of which this University is shortly to become the possessor.

MIDDLESEX HOSPITAL.

By T. CLIFFORD ALLBUTT, M.D., LL.D., F.R.C.P., F.R.S.,
Regius Professor of Physic, University of Cambridge.

ABSTRACTIONS AND FACTS IN MEDICINE.

[ABSTRACT.]

PROFESSOR CLIFFORD ALLBUTT said that on such occasions as the present his desire to find matter worth an hour's attention was liable, as at the present time, to be swept away in the enthusiasm of seeing before him a great congregation of ardent young men entering full of hope into the profession in in which the best years of his own life had been spent. The education for the calling of medicine was singularly arduous,

yet the fountains of its perpetual youth were at present pure and abundant; and it was an inspiring thought that these waters would not be poured into a morass, as medicine was for many generations, even to the beginning of the great century now closing, but into fertile fields.

He proceeded: A far greater future is preparing for medicine, and this future is in the hands of the young. Yet tradition, even in medicine, is not to be neglected. In the application of all the sciences—one of them biology, the most complex of all—to medicine—that is to say, to a well-meant interference with the most complex and obscure of known machines—there is need, not only for positive knowledge and the scientific habit of mind, but also for a large collection of approximate empirical truths or maxims, for a certain shrewdness and dexterity in the use of such imperfect means, and for some insight into men and society. On the other hand, traditional lore may be handled too reverently; the very provisional nature of practical rules is apt to be forgotten, and classical standards are copied rather than used as guides to new invention. Every man, as Chateaubriand said, is two men, the man of his time and the man of all time; in some the former, in some the latter character prevails; it is for your teachers to guide you between the extremes of reverence and irreverence for authority and tradition.

In early youth man is almost wholly imitative; then, if he is worth anything, turning to the past he enters upon a romantic phase, and then again to the future becomes radical and Utopian, not having yet felt the weight of the social machine; finally, he is too apt to return to the imitative state and to dwell therein. To engage all these qualities of respect for the past, of ardour for the future, and of common sense of the present is the business of education. To prevent the danger of too early and complete a submission in later life to imitation, and thus to mechanical routine, the speaker urged the devotion of a final stage of pupilage to original research. In three, six, or even in twelve months the pupil would make no discoveries for the world, but he would discover for himself that invaluable gift—the scientific habit of mind. He would discover the value of ideas, the ingenuity of methods, and the inexhaustible resources of Nature. Nay, even in later life, partly for this training, partly for useful knowledge, the physician should return from time to time to these sources of regeneration. For this purpose post-graduation courses in medicine had been established in London, an invaluable means of advancement, and the speaker earnestly hoped that now, while the great clinical hospitals are reconsidering their position in view of co-operation with the new University of London, one of them—even anyone which may regard itself as the greatest of them—will have the foresight and the boldness to devote itself (after the fashion of the Johns Hopkins foundation) wholly to post-graduation instruction and research.

In turning to the present state of medicine, the speaker found in it a wholesome tendency to the fall of diseases, as abstract names, and to the rise of the patient. In like manner principles of causation and therapeutics are happily falling out of fashion; and cautious—he might say "opportunist" use of facts and tentative methods are taking their place. The iatro-mechanical principles of medicine were followed by the iatro-chemical, by doctrines of stimulants, of antiphlogistics, of irritability, and so forth. Even in our own day we had witnessed the vogue of such a general principle in *similia similibus curantur*. He trusted that with this healthy reform of method physicians would become even still more careful in reasoning in abstract terms. It must be remembered that every abstract term is such by virtue of more or less negation, it is in itself more or less negative. By these negations we get a language void of much of its contents for purposes of rapidity, as one travels on business from London to Edinburgh; but we are apt to forget that in this convenience we sacrifice nearly all knowledge of the country over which we ride. In congratulating modern physicians on the fall of disease and the rise of the patient, he congratulated them on the growing perception that there is no such thing as say, "enteric fever" or "diphtheria"; these are not things, but abstract conceptions, the realities being large numbers of individual patients, no two of whom are alike, and many of whom are very unlike. By riding in our railway train over all these cases we lose touch with things; in speaking of the causes of enteric fever, for instance, we are tempted to forget that we speak of the causation of an abstraction, and to formulate abstract, that is more or less negative, causes. When by an effort we bring ourselves down to the causes of a particular case, or, again, to the treatment of the particular case, we realise how hollow our conceptions may become if we persist in reasoning in abstract terms only. Thus in therapeutics we persist in writing volumes of empty stuff about tonics, alteratives, and so forth, which is but pasteboard knowledge. The remedy for this easy vice is reiterated and indefatigable reference of every abstract term to its supposed content of facts, and of principles and names of disease to patients; thus each case will be treated, not according to its catalogued routine, but according to its individual needs. The bad habit in "physicians" of resting in abstract terms has been aggravated by the calamitous and absurd accidents which separated one art into two, which divorced "medicine" from "surgery." Specialism is necessary to scientific advancement, but specialists to be of service must be, not a separate caste, but scouts in continual touch with the main army. Practitioners who happen to deal with diseases when they approach the surface can no longer rest in mere abstractions; hourly they are rubbed roughly against unmistakable facts, and thus such practitioners, were it not for the deplorable schism, would have educated their brethren of inferential medicine even more than they have done.

Yet to say that surgery has advanced more than medicine is to fall into the error of abstract terms, and thus to forget that our highly-developed art is not like certain reptiles of which, if cut in half, one part may move forward while the other stands still.

The speaker concluded by urging from the above points of view the pressing need in all hospitals, not in those only which are associated with medical schools, of clinical laboratories, the functions of which he sketched out. Mere observation of disease and morbid anatomy have taken us almost as far as these means can do; we are learning that to keep a patient alive for a year or two who is already, in some part at least, half dead, is but a poor achievement. We must track our morbid processes in their earliest dynamic initiation, so as to arrest them in these stages. The clinical laboratory of a county hospital should be the centre of enlightenment to all the private practitioners of the district.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.

By F. G. Penrose, M.D., F.R.C.P.,
Physician and Lecturer on Medicine, St. George's Hospital.

[Abstract.]

SOME PROBLEMS OF MEDICAL EDUCATION.

Dr. Penrose began his address by offering a welcome on behalf of his colleagues to those who were joining the school for the first time. He mentioned some of the vacancies which death had caused in the ranks of the governors of the hospital, and referred particularly to the late Duke of Westminster, Lord Clifden, and Mr. George Shaw-Stewart. Speaking of the changes amongst the teachers in the school, he mentioned specially the elevation of Mr. Warrington Haward to the consulting staff, and said how much he would be missed from the active work of the wards and the school. He congratulated Dr. Lazarus-Barlow, who had resigned the curatorship of the museum, on his appointment to the charge of the clinical laboratories that had recently been opened at the Westminster Hospital. He spoke of the gain to the hospital and school by the appointment of Mr. Pendlebury as an assistant surgeon. In alluding to the reconstitution of the University of London, he said that it had been recognised for the past twenty years that the original institution was a university in name only, almost its only function being that of an examining body, a work which it had performed admirably, but that it did not in any way fill the position that the university of this metropolis should. It might be hoped that, as newly organised, it would become the centre of the highest learning and the best teaching—that it might attract workers in all kinds of research, whilst still maintaining the high standard in its examinations and in the control of education that the old institution had done. He hoped that one good result would be a reduction in the number of

examinations which the future student would have to pass in order to obtain his qualifications and degree. He thought that a primary, an intermediate, and a final examination would be quite sufficient to satisfy all necessary requirements.

The rest of his address was devoted to a consideration of some of the problems of medical education. He said that, at the present time, owing to the immense range of the subjects included under the term medicine—using the term in its broadest sense—and the minute subdivisions of the practice into numerous special branches, he thought the best way was to ensure that students should be thoroughly grounded in the principles and technique of the chief sciences on which medicine and surgery were founded. These he considered to be anatomy, biology, chemistry, and physiology. The importance of a practical acquaintance with two of them, namely, human anatomy and physiology, was already provided for. As there were only two years available for the study of the fundamental sciences, the time that could be devoted to biology and chemistry was very limited. He thought that chemistry—particularly those branches which were known as physiological and pathological chemistry—were of such importance that he would like every student of medicine to have the opportunity of acquiring as thorough a practical knowledge of these subjects in the laboratory as he had of learning human anatomy in the dissecting room. In order to make this possible he suggested that three years at least should be allotted to the subjects above mentioned. He also looked forward to the establishment of a clinical laboratory, which would provide men with an opportunity of following up chemical and other problems arising directly out of the work in the wards. He alluded to the feeling which was held by some people that the subscriptions and donations to a hospital should be used only for the care and treatment of the patients. This feeling, he felt, was worthy of all respect, though he did not entirely agree. He quoted some remarks made by Lord Lister at the opening of the new laboratories at the Westminster Hospital in the early part of the summer, which were published in the *Lancet* of June 16th, 1900, in support of those who considered that the funds of a charity might legitimately be spent in helping some forms of medical education and research. He thought that the subscribers should know exactly how the hospital funds were expended. He stated his belief that there were many wealthy philanthropic men in the country who would be willing to assist the hospitals and teaching schools by contributing directly to such objects, and mentioned the munificent gift of Lord Iveagh to the Jenner Institute as an example.

Finally, he endeavoured to show that the remarkable advances that had been made in medicine and surgery during the past quarter of a century were due to a combination of work done in the laboratory and in the ward, yet the greatest results had come from the former rather than the latter.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

By Miss Aldrich-Blake, M.D., M.S.Lond.

INFLUENCE OF CHARACTER ON MEDICAL PRACTICE.

[Abstract.]

My most pleasant duty is to welcome in the name of the school those students who to-day begin their life here. I chose for the subject of this opening address—Our common work, the preparation for and the practice of the profession of medicine.

One great advantage of our profession as a field for our energies is the large number of faculties which may, and the considerable number which must, be cultivated in order that we may be passable disciples of that Science and Art. Every good quality either of intellect or character can find scope in the daily life of a doctor, and those who have had the best opportunities of judging consider the influence of character on the career is the greater.

We need courage in attacking difficulties, energy to overcome them, thoroughness to do our best in everything, and truth, which means accurate thinking, as well as right speaking, and we must cultivate them by every possible means. Bacon has said: "Since custome is the principall magistrate of man's life, let men by all means endeavour to obtain good customes. Certainly custome is most perfect when it beginneth in young years." And we see that right habits are no less a public than a private duty, for he continues: "But if the force of custome simple and separate be great, the force of custome copulate and conjoyned and collegiate is far greater. For there example teacheth, company comforteth, emulation quickeneth, glory raiseth, so as in such places the force of custome is in his exaltation." Therefore to the individual and the school the formation of right habits is of extreme importance. The more difficult question is what are right customs in relation to the school, our work, and patients?

This school was found in 1874, and we now find ourselves established in a luxury of housing that is well to bear in mind as a thing to be grateful for. Our gratitude may best be shown by keeping alive in the school that spirit most conducive to good work. Some ancient has said, "What is not good for the hive is not good for the bee." And as members of the school, and afterwards profession, we can give thought to the whole without danger of swamping our individual interests.

The influence of students on one another is far greater than that which can possibly be exercised by the constituted authorities. It belongs to each one of you to make the spirit of this place worthy of its greater body. The spirit needed is of that nature which looks upon obstacles as things to be overcome. If some measure of public spirit has ruled your school life, medical etiquette, I think you will find, seldom requires of you more than the old "Do as you would be done by" would demand of any honourable person.

"With regard to work," Dr. Arnold has said, "I suppose the desirable feeling to entertain is always to expect to succeed, and never to think you have succeeded." Without hope work would, indeed, be a half-hearted sort of thing. Humility is a virtue, and perhaps surprises of life are less apt to take the pleasant form for those whose estimate of their own worth is great, than for those whose estimate is small, but beware of that humility which would paralyse honest effort.

"Never to think you have succeeded" is quite as important. In the lives of all great men we cannot fail to be struck with the enormous energy with which they pursue their work, one thing leading to another; energy which, in our own small way, we ought to exercise, feeling that anything attained is only an opportunity to do something further.

You are preparing for a profession in which learning must continue as long as it lasts, for which self-instruction and self-reliance are absolutely essential, for, as Herbert Spencer has said: "It is not the knowledge stored up as intellectual fat which is of value, but that which has been converted into intellectual muscle." Now, though good teaching is absolutely essential, mere recipients of knowledge do not acquire the power of attacking new subjects on their own account. The difference between being educated and crammed is that in the former the powers of observation and reflection are developed, whereas in the latter the mind is more passive, and the brain is expected to receive an undue quantity of predigested matter to be retained as best it may. The great increase in the facilities for practical work compensates somewhat for the far larger ground which has to be gone over. Your course is accurately mapped out for you, but the liberty of doing or not doing your individual best always remains to you. Learn your anatomy, physiology, etc., not merely on account of examinations, but because your after-work requires that knowledge. Cultivate by every means habits of patient and accurate observation. A diagnosis does not mean the mere fitting of a disease with its name. What you want is a just view of the whole condition of the patient.

Sir James Paget once said it would be interesting if some one wrote a history not of discovery but of oversights. He says, "We never pass a month, never a week, without finding observations made, discoveries made by persons at work in the same field that we are, or suppose ourselves to be at work. And why do we not see these things? Surely that these persons should have seen them clearly and that a crowd of others should not have observed them at all must be a proof that the crowd was either very careless or very idle, or really it was a proof that observation is very difficult and not to be acquired except by the most careful study and self-discipline." Oppor-

tunities for such study are yours if you will but use them. Attend all class examinations, writing upon a subject shows us how vague and indistinct are many impressions which we took for knowledge, and attendance at these minor trials cultivates in one that most valuable quality—presence of mind.

Don't be too much afraid of making mistakes. If, on this account, you avoid answering a question you waste a valuable opportunity of getting the correct solution impressed on your mind. Cultivate the habit of rapid reasoning so that your answer, whether right or wrong, instead of being a mere guess, has some real basis in your mind. The two chief sources of mistakes are ignorance and carelessness; if you avoid the latter, the former will largely cure itself. Carelessness in work must be to us an unpardonable sin, thoroughness in its widest sense our highest aim. Whatever duties we undertake let us remember are ours to fulfil to the best of our ability, and ought not lightly to be given up because something better presents itself. Experience, valuable as it is, will be found to be dearly bought at the expense of a reputation for reliability.

In the treatment of the patient lies the test of the success of our education, and none of you will imagine that treatment begins and ends with the presentation of a suitable prescription. If you are to be as useful as possible, you must keep in mind the fact that you have to treat an individual and not a type, and that wide knowledge—only to be obtained by real study of human nature—will enable you to do this successfully.

There is no incompatibility whatever between science and what one might call wisdom, but one needs both. Remember that your object is to heal; you must never give avoidable pain, either by touch, speech, or manner; and, because one is obliged to do much that must give pain, therefore be the more careful never to do so needlessly. However little a patient may be able to estimate your intellectual and technical attainments, any one of them can appreciate your kindness. To be broad-minded, thorough, kind—the saying of it is easy; the doing will last us all our lives.

ST. MARY'S HOSPITAL.

By H. Stansfield Collier, F.R.C.S.,
Surgeon to Out-patients at St. Mary's Hospital, and Assistant Surgeon to the Hospital for Sick Children, Great Ormond Street.

MEDICINE AS A CAREER.

My colleagues have committed to my care the function of bidding welcome to old and new students at the beginning of this winter's work. We are glad to see you; we look forward to a closer acquaintance with you, since a good deal of the brightness of our lives is reflected from the cheerfulness and enthusiasm of your youth, and you are necessary to us, for without you the work of the great charity which we serve could not possibly be satisfactorily done.

A short time ago I was in conversation with a gentleman from another country who had been diligently reading a new and unpleasant romance of war from the pen of a great authority on the subject of horse breeding. Dealing with this romance, the gentleman said so many things that seemed to be true, so many things more than seemed to be true, and so many things that were less than honest, that he made me visibly uncomfortable, and, being polite, he continued:

"And yet your Government appears to manage the teaching hospitals of your metropolis tolerably well." I explained to him that the hospitals were maintained by the bounty of the charitable, and were under no immediate supervision of the Government. "Is it possible!" he said. "But is there no State Department to look after the maintenance of your medical schools?" "None," I said. "But pardon me," he asked, "permit me to inquire, your salaries, by whom are they paid?" "By the students," I said; "but we are not entirely dependent upon school fees—we practise our profession outside." "For you, yes, but does not the State pay your science teachers?" "No," I said, "the students pay." "Ah!" he ejaculated, "how rich your students must be."

To be quite frank with you here is shown another reason that we welcome you. The fact that medical education in this kingdom is independent of State aid is one of the bulwarks of the dignity of the profession of medicine.

The primary purpose of our hospitals is the relief of the sufferings of the poor. The necessary conditions and facilities for medical education are a by-product in the process of transforming the bounty of the charitable into comfort, hope, and health for the unhappy, and this by-product uses up not one grain of the raw metal, and adds greatly to the amount of the output.

Mr. Samuel Lane and the other founders of this hospital—those who have since added to it, and those who have for so long striven to build a new wing—have had compassion not only upon the sick child and injured man of Paddington, but upon humanity everywhere, for the good which you, by the knowledge acquired here, will be able to do for men will spread widely, even as far as the most distant battlefield and plague-stricken city.

An old custom has placed you at my mercy for the next 30 minutes or so, in order that the Cup of Counsel may be offered to you, and that a trial may be made of your patience, a quality necessary for your success.

For your encouragement, I may tell you that you are happier than your fathers were, in that this is the only written discourse to which you will be subjected. Let me comfort you that your teachers are doomed to suffer with you.

Let my first advice to the newcomers be this, that you hold fast to the good counsel which you have received during the last few days from your parents and friends. There was more to strengthen you for the battle of life in that last hand-grasp of your father than you will find in all the addresses you will ever listen to. No words will help you as much as those which your mother breathed when you parted from her. Keep them ever in remembrance.

Each of you has conceived a picture of his future as a student of medicine, in bright and sober colours according to his temperament, probably cheerful, simple, and perhaps with little meaning in it, but, as the future becomes the present, the visionary picture fades, and in its place is a real and totally different picture, beautiful or ugly as you shall paint it, but always of great significance and never without light and shadow.

Do not work only when the sun shines. Let no discouraging circumstance make you relax your efforts. Remember that some of the best work ever done has appeared for the time to be unfruitful, and that no one can always appreciate his progress. Real work never yet was a continuous pleasure; enthusiasm must ebb, and a sense of duty take its place.

Your energies must at first be devoted entirely to the acquisition and storing of facts; see that they be well arranged and tidily stored. The best student is not necessarily the man who learns most easily, but he who has made it his habit to keep in order the storehouse of his knowledge, that the grain of his harvesting be kept from decay. Of course memory is made up of psychical factors not possessed in an equal degree by everyone, but none the less it is true that effort and the habit of reflection are the essentials, without which the best natural gifts are worthless, and by means of which the least favoured may attain to high proficiency in the art of remembering. But you will not long remain mere collectors of facts; you will soon be able to use them with understanding in the process of thinking for yourselves—an exercise pleasurable even in the smallest matters. May I read to you some quaint words of John Locke?

"He that hawks at larks and sparrows has no less sport, though a much less considerable quarry, than he that flies at nobler game; and he is little acquainted with the understanding who does not know that as it is the most elevated faculty of the soul, so it is employed with a greater and more constant delight than any other. Its searches after truth are a sort of hawking and hunting, wherein the very pursuit makes a great part of the pleasure. Every step which the mind takes in its progress towards knowledge makes some discovery which is not only new but the best, too, for the time at least. For the understanding, like the eye, judging of objects only by its own sight, cannot but be pleased with what it discovers, having less regret for what has escaped it because it is unknown. Thus, he who has raised himself above the alms basket and, not content to live lazily on scraps of begged opinion, sets his own thoughts on work to find and follow truth will, whatever

he lights on, not miss the hunter's satisfaction. Every moment of his pursuit will reward his pains with some delight, and he will have reason to think his time not ill spent even when he cannot much boast of any great acquisition."

In these words does not Locke discover an excellent spirit in which to strive and to meet in the right way the checks, blank drawings, throwings out and fallings off, which are incidental to all work? As your ideas become more complex, and leaving the more sure ground of knowledge you travel towards the unknown, imagination comes to you to be a help or danger as you use it well or ill, a help if firmly linked with what is known, a snare if uncontrolled.

Two words are often abused by students when they are speaking of one another. They are the words "practical" and "theoretical." "So-and-So is a practical man, and So-and So is theoretical." The former is used as a term of commendation, the latter in a disparaging sense. These terms must be thoroughly understood, or they are dangerous to the young student.

In its proper sense, as applied to a student, the word "practical" signifies that he has the faculty of applying knowledge to useful ends, and therefore necessitates the premiss that he possesses knowledge. But this word is so often misapplied that the beginner might almost be led to think it is a virtue to shun books and lectures, to turn out to grass his mind, and with a carpenter-like industry to busy only his neuro-muscular system in the more mechanical parts of work.

When the word "theoretical" is properly made a term of contempt it is used in a debased sense, having no connection with theory and signifying simply "not practical." I have not found that the mind of the unpractical man is overburdened with theory or with anything else save dreams and aspirations. The word "theory" in any of its dictionary meanings commands respect, whether it is used in the sense of "an explanation or system of anything" or "an exposition of the principles of a science or art," or as a hypothesis not yet proved nor disproved by facts. Using the word in the last sense, it is true that a theory is sometimes only a will-o'-the-wisp, but at times it is the dawn of a bright new day of knowledge.

And here is an instance especially pleasant to all of us: until very recently the essential cause of rheumatic fever was unknown. It was conjectured to be a micro organism, but this was not proved, and for the time it was necessary to be content with the germ theory of this disease. It has been the well-deserved good fortune of two St. Mary's men, who not very long ago were in your position, to give this theory substance, and their work will, I doubt not, in the coming time pave the way to the overthrow of that monster which has made desolate so many hearths, which has done to death so many of our loved ones.

Let me commend to the beginner the practical study of anatomy. It is in the knowledge of this subject that now and then a modern student compares unfavourably with his predecessors. The reason is not far to be sought. The studies of modern physiology and biology are so fascinating that the student's interest does not relax until the daylight fades and tired nature demands rest and tea. He learns a great deal about anatomy—all those things which can be taught him by the clever word pictures of teachers and books—he passes anatomical examinations creditably enough; though the impressions on his mind are not vivid and lasting, but one might almost wish that the lecturer and demonstrators were less cunning in the art of teaching, for he relies more upon their words than upon his own handiwork in the dissecting room; he cultivates the memory disproportionately to the faculty of observation, to the detriment and overburdening of the memory.

Examinations will loom large in your horizon in the next few years. They are not pleasant things, but neither are they intrinsically distressful ordeals. It is the imagination of the student which sometimes makes them so. Some men occupy themselves so with anxiety about approaching examinations, with wishing they may pass, with thinking what they will do if they do or do not pass, that they have no time for that work which can enable them to achieve success, and after failing perhaps they spend a month or two in mourning for themselves and in making an exhaustive review of the shortcomings of examiners.

The man who passes an examination brilliantly is to be envied. The man who having been refused in spite of his best efforts, triumphs over his disappointment, not permitting the weight of it to bend him one hairbreadth from his purpose, is even more to be envied.

To-morrow the librarian will sell many note books. The penny note book with its frail binding is the worst bargain; the note book should be small and neat, and the name and address of the owner should be written in it. It will be required for some time, it must be easily carried about, and it is going to be of considerable value.

Each note should be short, and should contain the substance of a thought without much elaboration. It is to be used as a cue to reflection and mental repetition, not as a substitute for the textbook. The value of a note is very small unless it is read over and mastered, while the connections and perspectives given by the teacher are fresh in the student's mind. The beginning of each evening's work should be an overhauling, patching-up, and mending of the day's notes, and to facilitate this, notes should not be crowded together.

Some notebooks are embellished with names of many authorities. The habit of connecting ideas with their authors is a graceful accomplishment, and is believed to produce a "positive emotional state" in the nervous systems of the brotherhood of examiners in physiology. My own efforts in this direction were not without success, for I remember coupling together as the joint authors of an excellent new piece of work the great names of Haller and Brown Séquard. I can vouch for the emotional state of my examiners, who in a kindly manner made it known to me for how many years horses had grazed upon the turf which covers all that is mortal of the once inquisitive Haller.

The question of choosing the course to be followed in the matter of examinations has perhaps not been definitely decided by all of you. It is prudent not to expect or rely upon any considerable changes in the relative value of the various qualifications in the immediate future, but to base your choice upon the present conditions.

The nature of the qualifications which the beginner is to select must depend upon his purse, his industry, and his ambition.

If any of you is hesitating as to the course to follow in this matter, let me urge him to aim at the highest qualifications. No examination is so unreasonably severe as to be beyond the power of an ordinary intellect, nor is the least successful effort without some reward. "All that I strove to be and was not, comforts me," said a great man.

When you are settled in practice, and known by your work, you will be sought for and loved and trusted by the public for your personal worth, and it will matter very little whether you are entitled to wear a hood or a red gown. But in the difficult early days of life's march it is a very great advantage to ride under a grand and imposing banner.

However engrossed in his work the good student may be he does not neglect his personal physiology and anatomy, but goes in heartily for sports and exercise. The majority of our gold medallists and of our best house-surgeons have been keen sportsmen.

When to-morrow you begin work in the school remember that you are putting in the foundations of that house which is to last you your life, and that upon their thoroughness will depend the value of their more imposing superstructure. Above all things do not devote yourselves too exclusively to any one subject. Be good men "all round."

Do not decide upon taking up for your life-work any one branch of the profession until you are qualified, and do not imagine that there is not scope for your genius in any subject. That a particular branch of medicine or surgery is limited and that finality has been reached is a belief which time is continually upsetting.

Here is a good example.

In Erichsen's great work, in the seventh edition published in 1877, we may read:

"When we reflect upon the triumphs of the surgeon's art . . . . we can scarcely believe otherwise than that little remains for the daring to devise or the skill of the most dexterous to accomplish in the extension of that art in the direc-

tion of its operative department, and that the surgeon must in future be content to repeat, though possibly in a modified manner, those operations which have been inaugurated by the genius and perfected by the skill of his predecessors."

In that edition there is not mentioned a single operation upon the kidney.

And there are no higher and no lower branches of the profession. There are two ranks in the profession. The first includes all those who benefit the world by adding new knowledge. The second rank all of the rest of us who apply old and new knowledge to the immediate needs of mankind.

In the course of your work you will have much to do with the London poor. They are perhaps the most intelligent and interesting poor people in the world. There is nothing picturesque about them. The uncleanness of some of them would shock you, and the respect in which you hold mankind may be in danger of falling. Indeed, if you are sufficiently ignorant of the influence of environment upon the good and bad qualities of men, it may be an effort to sympathise thoroughly with all their misfortunes. But look at that poor woman who came in the other day with so many evidences of a miserable life voyage. She is dying, and, as you feel her failing pulse, she fumbles for a handkerchief to save your fingers from being offended with the cold sweat of death.

That little child upon the operating table for the second time is a common little slum child, but she looks into your face and says "Kiss me first, Doctor," and you suddenly think of your own sister. As you come to know our patients you will see among them much that is heroic—such fortitude and patience and self-denial as you feel yourselves incapable of, and you will not blush to think that they are fellow men. Medical students have always been the good genii of the hospital patients.

The poor of London are sometimes said not to be appreciative of what is done for them. I do not think this is the case. It is more true that, as a rule, they are not demonstrative. This story was told me yesterday:

An old and rare 8-dollar American gold piece was sent as a gift to a hospital. Being an unusual kind of donation, inquiries were made and the giver was found to be an old hospital patient. It was a poor woman who was suffering from an incurable disease. The coin had years before been given her by her mother, and now, being unable to earn a living, and feeling the pinch of poverty, the temptation to sell the coin came upon her, and, to resist what seemed to her an impiety, she gave her one treasure to that charity which we may be sure she loved and trusted most.

I had reached this point in my discourse, and had called to mind other stories, and had arranged that each succeeding one should be more pathetic than the last, when—and I daresay you are very glad for it—I was interrupted by a call to the hospital. To return home I took a cab. The cabman thrashed the horse. I remonstrated, irritatingly enough, I daresay. The cabman repeated his cruelty. I got out. "'E's such an awkward 'orse," said he; "no one can't do no good with 'im." Now at this stage I ought to have turned on my heel, but foolishly I returned to the charge. It was not met. "Yes, Sir, you're quite right; I ain't got no mercy on 'im," admitted the cabman, and I thought I had begun to score. "But, cabman," I said, "if you are so cruel you will surely want a great deal of mercy yourself when you come to die." "I don't know, Sir," said he, "as long as it ain't at St. Mary's 'Ospital, and under the care of Mr. Collier. I might do without." There was something familiar to me in the man's voice, and though the night was dark I thought I recognised one of my oldest and most regular out-patients. His chuckle was hearty and his "Good-night" was kindly, and I have seen him here since.

Are you to be congratulated upon your choice of a profession? Certainly not, if you only care for riches and power and yourselves. Certainly not, if you are a dreaming, ease-loving recluse. Yes, if you be good citizens. Yes, if you love mankind and the throb of a full life. But, your minds not being made up, you may say, "Well! but the profession sees so much of the bad side of human nature." True, experience will early rob you of many pleasing illusions, but you will also see more of the good side of humanity than most other people. You will see more of man as he really is, without the disguise—often disfiguring—in which modern civilisation wraps him. "And," you may continue, "one will have to come in contact with all classes of society." Yes, and you will see in each the proofs of man's high destiny. "But is the work of the profession appreciated by the laity?" I think I can give you a good answer. You have read of the great plague of London and how the people fled to Highgate, Hampstead, and Finchley, and the city was for a long time ruined and deserted.

And now the same enemy is knocking at our gates. I do not gather from the morning papers that the good people of Glasgow are shutting up their workshops and fleeing to the mountains. The mainstay of the citizens at the present time is not the false trust that plague cannot spread widely in a modern city, but their confidence in that power of defence which medical knowledge alone can give. The plague will not frighten them. All that the townsmen will do will be to pull down and sweep away those nasty relics of times in which the science of preventive medicine was practically unknown, and to reward, right well we may be sure, the splendid work which the health officers have done.

And about your prospects? As we face the hill which all of us must climb, it must be admitted that it has rather a harsh face, and seems to be high and steep, but all of us, I believe, will sooner or later reach a tableland of modest prosperity, or at any rate contentment.

Are there too many men in the profession? From the point of view of suffering humanity, are there too many? Are all the sick well cared for? Are there too many workers in the field of research? Is all that is possible being done for the protection of our children from tubercle? Is the stamping out of rabies a quixotic achievement not to be imitated? Is the Royal Army Medical Corps overcrowded? Are none of us overworked? But from the point of view of a livelihood—aye, there's the rub. Let us hope that time—which mends all things—may hurry up in this business.

I have now only to wish you a good a time as I have had. May you meet with as much kindness and forbearance as you have shown me, and may this hospital and everyone connected with it become as dear to you as to me.

May I, on behalf of the staff and the students, thank you ladies for your presence. We know how important it is that the armour of our young warriors should be buckled on by your hands.

It is almost customary when a surgeon gives a non-technical address that, in the name of his art, he should pay a tribute to the discoverers of the uses of those great blessings, anæsthetics and antiseptics. I would do so, and would link with them one more discoverer—Miss Nightingale—who discovered the modern nurse.

Leprosy in Germany.—Some particulars are given in a recent number of the German Imperial Health Office Reports as to the prevalence of leprosy in the Empire. On December 15th, 1899, there were in Prussia 22 undoubted cases of leprosy known to the authorities. Of these 16 belonged to the Memel district and 1 to the Rossel district; 1 was infected in Livonia, 2 in Brazil, 1 in Burmah, and 1 in the Island of Penang. Of the 22 cases 10 were under treatment in their own homes and 11 in the leper house at Memel. In addition to the 16 recognised cases there were 4 doubtful cases in the Memel district. In Hamburg there were at the end of last year 10 cases known to the authorities. In 5 of these the patients who were of German origin, were under treatment in private houses. The rest, who were foreigners, were in hospitals. In all of them the infection had been contracted abroad. In the middle of January, 1900, there was a case in the State of Mecklenburg-Schwerin. From the other Federated States of the German Empire no report has been received. The Memel district is the only native focus of leprosy in the German Empire. Whenever leprosy has occurred elsewhere the infection has been contracted abroad. There appears to be some ground for suspicion that as regards Memel the total number of cases is not set forth in the official statistics.

People's Sanatoria in France.—A number of leading medical men of Paris, among whom are MM. Potain, Landouzy, Rendu, Besnier, Terrier, and Letulle have formed a company to promote the establishment of popular sanatoria for lung diseases. The capital is fixed at 300,000 francs.

SIXTY-EIGHTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at IPSWICH, July 31st, August 1st, 2nd, and 3rd, 1900.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

HOWARD MARSH, F.R.C.S., President.

THE PRESIDENT made some introductory remarks at the opening of the Section, which were published in the BRITISH MEDICAL JOURNAL of August 4th, p 289.

A DISCUSSION ON SUB DIAPHRAGMATIC ABSCESS.

I.—RICKMAN JOHN GODLEE, M.S., F.R.C.S.,
Surgeon to the Queen's Household; Holme Professor of Clinical Surgery, University College, London.

INTRODUCTORY.

IN a rash moment I yielded to the persuasion of our President to open a discussion on subphrenic abscess; and I do not see exactly what there is to discuss. Moreover, I am in the unfortunate position of having said a few years ago almost all that I had to say upon the subject in a clinical lecture at the Brompton Hospital, and I cannot help referring again to many of the observations and cases brought forward in it. Another depressing thought is that Professor Karl Maydl of Prague, in 1894, published a vast monograph of 350 pages, with all the minute elaboration which is characteristic of our Teutonic *confrères*, but which the snaps of time snatched from a busy summer session have not allowed me more than an opportunity of glancing at. If anyone is in search of details let me refer him to this monumental work which is published in Vienna. In it he will find a list of the causes of subdiaphragmatic abscess, which are as follows:

Mischief arising from

The stomach.	The kidney.
The intestine.	Metastases.
The cæcum and appendix.	Wounds.
Hydatids.	Various causes.
Subcutaneous injuries.	The ribs.
The liver and its ducts.	The thorax.

It is impossible to amplify a list that contains the heading "various causes."

The first thing that strikes one is that subphrenic abscess is not an isolated disease on its own account. It is an accident or by-product of some other phenomenon, and most probably the symptoms of the disease which causes it will be the prominent ones; it is not improbable that their very aggressiveness may lead to the overlooking of the abscess. Say, for example, that the disease starts as an appendicitis, and the lump in the groin subsides as the abscess tracks up outside the ascending colon and spreads out under the diaphragm, how easily may it be overlooked, or mistaken for a secondary pleural effusion.

The next thing is that it is almost impossible to isolate the symptoms of subphrenic abscess—to say such-and-such are the symptoms by which its presence can be diagnosed for a certainty. This becomes all the more obvious when we consider the varieties in shape and size which the abscess may assume, and the different positions it may occupy. For example, we are in the habit of dividing them primarily into *extraperitoneal*, such as the abscess which starts from caries of the ribs or spine, or spreads up from the kidney, and *intraperitoneal*, by far the commoner form, which starts from the rupture of an abscess in one of the viscera below the diaphragm. It is unnecessary to expatiate upon the great differences both as regards symptoms and danger between these two varieties. The former will present considerable, but the latter a far greater, variety of symptoms. Think only of such a case as that of a very chronic ulcer of the stomach which has caused extensive adhesions between the viscus and the diaphragm; an abscess may form amongst these adhesions, and burrow about by complicated and narrow tracks until it points perhaps through an intercostal space. Then contrast with it one in which a sudden perforation of a stomach ulcer has occurred, but in which the suppuration is to some extent localised and contains air. It is difficult to trace a family resemblance between these two conditions.

What do we mean then by a subphrenic abscess? I think any collection of pus, or pus and gas, the whole or part of which intervenes between the diaphragm and the structures normally in contact with it.

ANATOMICAL.

Before going further, let us consider the precise relations of the under surface of the diaphragm.

To begin with, a considerable portion of it is uncovered by the peritoneum. On the right side it is completely in contact with other structures, without the intervention of this membrane, except in front of the anterior layer of the right lateral ligament of the liver, and for a small portion on the right crus corresponding to the Spigelian lobe, which is covered by the posterior layer of the small sac. The small sac also touches a small portion of the left crus, reaching outward to the inner edge of the left suprarenal capsule, and upward as far as the opening for the œsophagus—that is, as far as the commencement of the gastrosplenic omentum. The remainder of the left side is only covered by the peritoneum above and in front of the gastrosplenic omentum and the splenic flexure of the colon; in other words, in front of a line nearly corresponding to the outer border of the kidney. But from the parts described as covered by the peritoneum, two narrow portions must be cut off; one running outward from the middle line, corresponding to the left lateral ligament of the liver, which extends to the free border of the left lobe near the back; and the other running forward from the same point, corresponding to the upper attachment of the falciform ligament. These two ligaments of the liver, especially the falciform ligament, may form limits of intraperitoneal abscesses beneath the diaphragm. The structures in actual contact with the under surface of the diaphragm are, near the middle line behind, the head of the pancreas, and to the right of this the vena cava and the right renal vein separating the right crus from the second portion of the duodenum, while to the left of it is the cardiac end of the stomach. Each suprarenal capsule touches the corresponding crus, and farther out each kidney touches the diaphragm above the internal arcuate ligament for a short distance, the left to a greater extent than the right. The remainder of the right side is in contact with the liver, that of the left side touches part of the left lobe of the liver, a portion of the stomach, the whole of the convex posterior surface of the spleen, and the splenic flexure of the colon. The precise portions of the more important viscera in contact with the diaphragm may be described as follows:

Liver.—On the posterior border the parts corresponding to the interval between the layers of the left lateral ligament and the back of the Spigelian lobe. The whole of the convex portions of the right and left lobes, except that part of each which occupies the subcostal angle.

Kidneys.—The upper portion of the posterior surface, more on the left than on the right side.

Spleen.—The whole of the convex posterior surface.

Stomach.—A part of the left end of peculiar shape. There is a narrow strip which commences at the left of the cardiac orifice, and runs outward and downward and then forward. It becomes much wider as it descends, and is bounded in front by the free edge of the left lobe of the liver, and behind by the top of the kidney and the anterior border of the spleen, and below by the costal margin (cartilages of the eighth, ninth, and tenth ribs).

SYMPTOMS.

Now, are there any symptoms which can be said to be characteristic of subphrenic abscess? I have already said that none are pathognomonic. In the early stages it may cause hiccough, and a sharp stitch just like that of pleurisy, and friction. This friction may be heard, or friction fremitus may be felt far beyond the limits of the pleura. Later on it

may give rise to dulness at the lower part of the chest on either side, especially—I had almost said only—if the viscus or viscera which bound it below have contracted adhesions to surrounding parts. This dulness may be accompanied by very considerable displacement of the heart, especially if the abscess be on the right side. It ought to be distinguishable from the dulness of a pleural effusion by the following signs:

1. The movements of the chest are not impaired on the affected side.

2. The upper limit of dulness is not so sharply defined.

3. Breath sounds may be heard below the level of the dulness, and, if a deep inspiration be made, the line at which the breath sounds and vocal resonance are heard and at which vocal fremitus is felt is distinctly lowered.

4. There is a sign which may sometimes be observed, and though it is an original observation of mine, and, as far as I can hear, is not generally known to physicians, I find that I have long been forestalled by my friend Dr. J. Mitchell Bruce, who has demonstrated it to his class for a long time past. If you examine a very emaciated person on the right side in a good light you will see, if the pleura be healthy, the lower margin of the lung moving up and down during respiration, and the truth of the observation is easily demonstrated by carefully percussing and auscultating during the process. I noticed it myself first in a case of hydatid of the liver. There was pain and dulness in the left axilla, and I suspected some pleural effusion. But, as we could distinctly see the movements of the lower border of the lung, it was clear that the cause of the dulness was below and not above the diaphragm. *Post-mortem* examination showed that there was a greatly enlarged left lobe of the liver. I have since frequently demonstrated the phenomenon in emaciated subjects; but I cannot say what degree of emaciation is required in order to show it. It should always be looked for in cases of doubt, but it will only be seen if the pleura is free from adhesions. It may be a useful means of enabling the physiologist to ascertain the extent to which the lung descends in forced inspiration into the pleural sinus.

5. Instead of dulness there may be a great extent of tympanitic resonance, and over the resonant area the bell sound may be elicited in a most perfect manner. This only occurs in cases where gas as well as pus is present, and from the similarity of the signs to those of pneumothorax has given rise to the name "subdiaphragmatic pneumothorax." It is astonishing how high this tympanitic area (or the dull area for the matter of that) may extend. I have observed it as high as the second rib, and it may reach down into the iliac fossa. This condition is to be diagnosed in most cases from the genuine pneumothorax by the fact that the movements of the thorax are not impaired.

Classification.

I now propose to say a word about each of the groups in Maydl's list, but changing their order and adding a fresh one.

1. *Stomach.*—If an ulcer of the stomach bursts into the general cavity of the peritoneum, the subdiaphragmatic portion of the collection of fluid cannot be regarded as a separate entity, and does not therefore require consideration here; but occasionally, even when the symptoms of rupture are acute the effusion is localised, and then the collection of fluid is essentially an acute subdiaphragmatic abscess. Under these circumstances it will most likely be limited to the right by the falciform ligament of the liver. Its limits downwards and to the left will vary in different cases. I have seen a case of this kind where the only treatment required was the insertion of a drainage tube into the abscess, but more commonly it is advisable to search for the ulcer and deal with it in the usual way. Cases must occasionally be met with where the rupture occurs on the posterior aspect of the stomach, giving rise to a collection in the small sac of the peritoneum, and this also must be called a subdiaphragmatic abscess. I have, however, not met with such a condition. It must be dealt with by turning up the stomach if the perforation is to be closed; otherwise it may be simply opened through the small omentum. Very different are the abscesses which result from the gradual rupture of an ulcer where adhesions have previously formed. Such abscesses are limited by firm walls, and may either be collections of simple shape or may send out processes in various directions. Like other subphrenic abscesses they may be accompanied by collections of serous fluid in the pleura. I have seen a case where stinking pus was found on aspirating the chest. I repeated the aspiration but did not put the needle in so far, and drew out clear fluid. So on a subsequent occasion I made an incision through an intercostal space below the limit of the pleura, and passing my finger up along the anterior border of the spleen opened the stinking collection which occupied the left dome of the diaphragm. I have also mistaken such a case for an empyema, and opened it at the anterior end of the eighth or ninth interspace. These abscesses may occur in connection with malignant disease.

2. *Intestine.*—Rupture of an ulcer of the duodenum or transverse colon will sometimes cause the condition referred to above as subdraphragmatic pneumothorax. This is a collection of pus and gas which pushes the diaphragm up, sometimes to a quite unexpected height, and may reach down a long way into the abdomen. As the patient lies on the back there may be no dulness, but only tympanitic resonance and bell sound; but if he stand stand up the lower part of this area becomes dull. The heart is displaced, but the movements of the thorax are not necessarily impaired. A simple opening of the abscess is often sufficient to effect a cure; but occasionally it may be possible to reach and close the perforation.

Cæcum and Appendix.—The abscess resulting from appendicitis, especially if the appendix occupies a position on the outside of the cæcum, often tracks up along the ascending colon, and may form a large collection between the liver and the diaphragm. When this occurs the original swelling round the appendix may become less obvious. The burrowing abscess may also pass under the liver across the spine and form an abscess in the small sac under the left half of the diaphragm. Either of these varieties may perforate the diaphragm and reach the pleura; this almost invariably, however, occurs on the right side, though I have seen a left empyema follow appendicitis, presumably by direct extension. The patient to whom I refer had first appendicitis, then right subdiaphragmatic abscess, then left empyema, and this was after an interval followed by obstruction to the bowels by a band, which I divided and the patient recovered. Reference must, however, here be made to a fallacy which I will treat under a separate head.

General Peritonitis.—General peritonitis arising from any cause, perforation of stomach, appendix, Fallopian tube or what not, is not infrequently associated with the formation of pus round the liver and round the spleen. I have seen, for example, a case of appendicitis accompanied by general peritonitis at death's door. Incision and cleansing of the peritoneum were followed by marked improvement, and the patient seemed on the way to recovery. But, after many days a left subdiaphragmatic collection of stinking pus was discovered and opened, but the patient did not recover. This has led to the suggestion that in all cases of general septic peritonitis special attention should be devoted to these regions and drainage tubes should be inserted into both loins.

Hydatids.—Suppurating hydatids of liver and spleen may lead to enormous collections of pus beneath the diaphragm which may be mistaken for empyemata. I have met with one such case which had been opened in the back and a tube had been inserted; but, on opening up the wound, there was no difficulty in proving the true nature of the case, and that the upper wall of the cavity, not the lower, was the diaphragm. This, indeed, should always be easy if the attention is directed to deciding whether the upper or the lower wall of the abscess moves downwards during inspiration.

Liver and Bile Ducts.—Many abscesses of the liver rupture into the subdiaphragmatic space. Mr. Cantlie says that a large proportion of so-called abscesses of the liver are really perihepatic, and thus true subdiaphragmatic abscesses. I am quite sure that a combination of hepatic and perihepatic abscess is quite common. Such a collection may lead to an apparently enormous enlargement of the liver. I have evacuated three pints from this situation, and seen the apparently greatly enlarged liver immediately fall up into nearly its normal position. It is of the greatest importance to recognise this fact in treating cases of hepatic abscess, as by attention to it needless explorations of the liver may often be

avoided. I would again point out the frequency of associated pleural effusions and of the consequent confusion of diagnosis. Such abscesses as these now under discussion may perforate the diaphragm, and enter either the pleura or a bronchus, and if the abscess be in the left lobe it may be the left pleura or the left lung which is involved. A case of this nature is now under my care. Acute suppuration of the gall bladder may also be accompanied by subdiaphragmatic abscess, though more frequently such an abscess is situated further down, and is, therefore, more likely to be confused with suppuration about the kidney or appendix.

Kidney.—Perirenal abscesses, though they usually point in the loin, may be purely subphrenic. They are not, like those we have hitherto been considering, peritoneal, but separate the peritoneum from the diaphragm. They will, however, most likely be associated with a certain amount of plastic peritonitis, with its characteristic signs and symptoms. The diagnosis is sometimes obscure, but when once diagnosed the treatment presents no special difficulties. I have seen a large pyonephrosis which extended upwards and gave rise to all the signs and symptoms of subdiaphragmatic abscess. In this case the diagnosis was wrong and the treatment far from easy, especially when it subsequently became necessary to enucleate this dilated renal pelvis from its abnormal position.

Subcutaneous Injuries.—Cases are recorded of subdiaphragmatic abscess following injuries unaccompanied by wounds. I have not met with such cases, but I fancy that they all depend upon the rupture of some previously existing ulcer, and should be placed in the same category as one or two cases I have met with of patients dying of ruptured ulcer of the stomach within a day or two after a surgical operation on a distant part of the body.

Wounds.—Cases are also recorded which have followed wounds. It is easy to understand that they may occur, but I have never had to deal with one.

Metastasis.—I merely mention this class, but I do not quite gather what is referred to, and certainly cannot adduce any rom my personal experience.

The Ribs.—Caries or necrosis of the ribs may give rise to a peculiar form of subphrenic abscess, which indeed hardly deserves the name, because the suppuration is really in the substance of the muscle, and if it extends downwards will be found amongst the layers of the abdominal muscles. It is conceivable that it might burst inwards but it is more likely that it will point externally, sometimes below the costal margin, sometimes through the anterior end of one or more intercostal spaces. I have seen such a burrowing abscess point in five or six places along the costal margin, rendering the hunt for the original source of the mischief a very difficult one.

Thorax.—Any collection of pus in the thorax may theoretically make its way down to the space below the diaphragm. But it is a much less common occurrence than for collections of matter below the diaphragm to pass upwards into the thorax. I think I have seen an empyema burrow as far as the groin, and I have seen pyopericardium followed by abscess around the spleen, but the latter was probably the result of an embolism of the spleen and not caused by direct extension. Possibly caries of the dorsal spine, and certainly mediastinal suppuration, may cause a subphrenic abscess, but such conditions are excessively rare. This heading, therefore, is not now of much practical importance. It is easy to understand why suppuration tends to pass upwards and not downwards if we remember the course of the lymphatic stream; and I would remind you of the beautiful observations of Klein on the lymphatics of the diaphragm, and of the spontaneous injections of them which he made by simply injecting the staining fluid into the peritoneal cavity and killing the animal a short time afterwards.

Various Causes.—Lastly, we come to the saving clause, which I daresay should contain a number of things I have not thought of; I trust that my audience is ready to supply the defect. Let me briefly mention three items:

1. Actinomycosis so frequently attacks the liver that it almost deserves a heading of its own. The progress of the disease is, however, so slow that as it approaches a serous membrane there is always time for its surfaces to become adherent before the suppuration extends beyond the capsule of the organ in which it has originated. Thus, although collections of matter of considerable size may be caused in this region by the presence of actinomycosis, they are not in the proper sense of the word subphrenic abscesses. The surrounding tissues are confused by the growth, and, though the diaphragm may form the upper boundary of the abscess, it is quite as likely that it will be a ragged cavity with broken-down lung above and broken-down liver below. There should be no difficulty in diagnosing these cases when rupture has occurred; but before that time the difficulty is extreme, and is rendered more so by the fact that the disease is supposed to be one of such rarity that it is not likely to be met with: an idea I have been for some time doing my best to combat. The surgical treatment of advanced actinomycosis of the liver is, I am afraid, hopeless. The masses are so large and the vascularity of the tissue so great that any attempt at scraping on a scale that could by any possibility be of value would most probably end fatally.

I will only mention two other possible causes:

2. Tuberculous peritonitis.

3. Diseases of the pancreas, including calculi in the ducts, and acute pancreatitis.

Having said which, I will appeal to my audience to fill up the rest of the chapter, and also to supplement the many deficiencies of this unworthy account of a very interesting subject.

II.—WILLIAM BRUCE CLARKE, M.A., F.R.C.S.,
Assistant Surgeon and Lecturer on Anatomy, St. Bartholomew's Hospital.

MR. BRUCE CLARKE said: In a discussion of this kind it is essential that each speaker should state his own personal experiences. I will, therefore, make no attempt to discuss the subject generally. The diagnosis, so far as my experience goes, is usually an extremely difficult one. It is no doubt quite possible to lay down a series of symptoms, some one or more of which will be present probably in each case, but though they may be spoken of as symptoms they can scarcely be said to help us much in the diagnosis. The diagnosis is usually arrived at by a method of exclusion, and perhaps only after watching the patient for some time. I cannot do better than allude to a case which came under my care several years ago in illustration of this point.

I was asked to see a patient who had been seized with symptoms of chill, accompanied by pain in the region of the loins, and was said to have passed some blood with his urine. He was obviously ill, and his temperature was raised to just above 100° F. There was some obscure dulness at the base of the left lung, some pain, and some lack of movement on that side of the chest. I contented myself with expectant treatment. When I saw him a fortnight later he was worse and the symptoms were more pronounced. I felt confident there was some deeply-seated pus, the exact situation of which it was difficult to determine. An incision was accordingly made into the abdomen on the outer side of the left rectus and the left hand introduced into the peritoneal cavity, the diaphragm was found to be much pulled up; and above the left kidney, which felt natural, a swelling extended upwards, which was pushing down the left lobe of the liver. With some difficulty the pus was reached through the back muscles and evacuated, and the patient eventually made a good recovery.

Such cases are a very rare complication of kidney mischief, but are infinitely more common in connection with stomach trouble. Mr. Godlee has already referred to them. The symptoms which these stomach cases present will depend on the acuteness of the condition with which they are associated. If an ulcer has been present for some years, as is often the case, adhesions will probably have been formed to the surrounding viscera, and the abscess will be a local one, possibly irregular in outline, but strictly limited in position. If, on the other hand, the ulcer is of recent origin the adhesions may be all but absent, and there is a much greater tendency to general peritonitis. Every intermediate condition between these two extremes may be met with. In the cases which I have come across epigastric pain with limitation of movement of the ribs, accompanied by rise of temperature, were the principal symptoms. An incision just below the sternum sometimes does not reach the abscess without considerable difficulty, as it is tucked up under cover of the ribs, and in one of my cases the pus was only reached after a prolonged dissection. The cases, so far as I have seen, which result from appendicitis, are more likely to occur on the right side of the falciform ligament, and can in many instances be reached from behind in the lumbar region.

In this connection I am anxious to refer to a case under my own care.

The appendix had been removed and the bowels were acting satisfactorily, but the general condition gradually became worse, and symptoms pointed to an abscess in the region of the liver, probably subphrenic. An abscess was found and evacuated, but the patient did not survive. At the necropsy several smaller abscesses were found in the substance of the liver, but no trace of a track could be found reaching from the appendix up along the colon.

Such a case, I think, may be called metastatic, if this term is at the present day applicable at all. What was formerly styled a metastatic abscess is in reality a pyæmic abscess, and now commonly and more properly spoken of as being septic in origin.

Some hydatids no doubt may be described as subphrenic; those, however, that have come under my care have, I think, been situated in the substance of the liver, and in all probability this is the case with most hydatids in this region, though they often lie near the upper surface of the organ.

If I may sum up the principal points to which I wish to draw attention in this discussion, it is to the difficulties of diagnosis, and the varied symptoms which these cases present; and, secondly, to the aid to diagnosis which is invariably given in cases of doubt by introducing the hand into the peritoneal cavity and investigating fully the abnormal condition and the altered positions of the viscera with which one has to deal before one attempts to treat the abscess.

III.—Leonard Arthur Bidwell, F.R.C.S.,

Senior Assistant Surgeon to the West London Hospital.

Mr. Bidwell said: I fear I cannot add any new facts to those brought forward by Mr. Godlee, but as this is a subject on which the experience of all of us is limited, a brief reference to some cases on which I have operated may be useful. I have had about 6 cases, but in three of these the diagnosis was only made after an operation had been performed for empyema, when the persistence of discharge and temperature led to a further investigation.

The first case was mistaken for a simple empyema. The patient was a man aged 35 years, who had previously suffered from flatulence and slight gastric pain, but gave no definite history of gastric ulcer. He suddenly developed chest symptoms and coughed up a quantity of most offensive pus. His temperature became hectic and he was sent up to the West London Hospital. I resected a portion of the ninth rib in the axillary line, and evacuated some very fœtid pus. The cavity remain foul and the temperature high in spite of free drainage and irrigation, and about 14 days after the operation the patient ate some figs and at the next dressing some of the seeds were found in the discharge. Methyl blue given by the mouth also appeared in the discharge. I therefore concluded that the case was one of gastric ulcer, which had given rise to a subphrenic abscess and then had burst into the pleura. After resection of a further portion of rib the patient made a good recovery.

The second case was that of a woman, aged 29, who had a ruptured gastric ulcer into the general peritoneal cavity. She had been treated for seven months for gastric ulcer, but, feeling hungry, one day she ate a mutton chop, and immediately after was seized with severe abdominal pain. This was relieved by opium, but the following day the abdomen was distended, so she was sent to the hospital. I saw her eighteen hours after the rupture, and opened the abdomen, which was full of stomach contents. The rent in the stomach was stitched, and the abdomen flushed out. She did well for the first six or seven days, but on the eighth day her temperature rose, and dulness was found at the base of the left chest; a needle showed pus, so the pleura was opened and some offensive pus evacuated. The patient however died on the twelfth day, and a subphrenic abscess was found.

The third case was that of a lad aged 17 who was admitted into the West London Hospital on May 21st, 1899. He had complained of an abdominal pain for fourteen days before admission, and for three or four days had pain in the right side of the chest. There was absolute dulness in the right flank and over the lower part of the right chest, reaching up to the fifth rib in the nipple line and the seventh rib posteriorly. A needle inserted in the eighth space having demonstrated the presence of offensive pus, a portion of the eighth rib was resected, and a large quantity of very fœtid pus was evacuated. The temperature, however, did not fall, and as there was not a free discharge the wound was examined and a small opening in the diaphragm was found, through which a tube was inserted. The abscess drained better, but a week afterwards the patient had severe abdominal pains and symptoms of obstruction, distended coils of intestine being seen. The abdomen was opened in the upper part of the left linea semilunaris. It was then found that a portion of small intestine was strangulated beneath a band, and this coil was adherent to another distended coil producing a kink; the band was divided and the adhesions were freed. On separating the coils an abscess sac was discovered between the under surface of the liver and the hepatic flexure; a small perforated ulcer was also found in the colon. This was sutured and the abscess drained. The patient was relieved from symptoms of obstruction, but his general condition did not improve, and symptoms of pericarditis developed, and the patient died nine days after the laparotomy. Pus was found in the pericardium in the left pleura and about the liver, and several small abscesses were found in the liver.

The fourth case was that of a lady, aged 65, who had suffered from indefinite gastric symptoms for nine months. About fourteen days before I saw her she had severe abdominal pain, accompanied by vomiting and by a high temperature (103°). She seemed to get better under medical treatment till July 21st, when some crepitations and dulness were found at the base of the right lung. The pulse and respiration became very rapid. On July 25th the dulness on the right side of the chest had increased, and the liver was pushed down and had extended nearly to the crest of the ilium. A needle inserted into the eighth intercostal space withdrew some stinking pus. A portion of the eighth rib was then resected, and about a pint of fœtid pus was evacuated. The discharge decreased and the temperature fell until solid food was given, the temperature then began to rise every afternoon, reaching 103° at 6 P.M. The patient also had attacks of coughing after taking solid food. As the liver was still displaced, and there was dulness in the front of the chest, several exploratory punctures were made without obtaining pus. The wound was again explored and a puncture made through the diaphragm, a tube being inserted. The temperature then went down, and the discharge decreased, the patient making a good recovery.

The only deduction which I have made from these cases is the peculiarly offensive character of the pus withdrawn, and also that in cases of empyema with such discharge which do not improve after resection of the rib and irrigation, a suspicion of subdiaphragmatic abscess should be entertained.

IV.—Mrs. Stanley Boyd, M.D.,

Surgeon to the New Hospital for Women.

Mrs. Stanley Boyd narrated the following case:

A young woman was operated on in the New Hospital for Women. Symptoms of acute perforation occurred three weeks before admission, after a period of vague gastric ill-health. During that period after the initial symptoms, when rest and milk diet were enforced, she rallied, moved about, and was fed on solid food. A point of note was that thrombosis of one vein in the arm came on, leading to considerable swelling, and pointing to a septic condition. Another severe attack of collapse occurred from which she again rallied, and was admitted to the New Hospital under Miss Cock, M.D., who made the diagnosis of subdiaphragmatic abscess. In this case, amongst other symptoms, some of those mentioned by Mr. Godlee were present—friction at both bases, and later amphoric breathing and dulness up to the angle of the scapula on the left side. The character of the respirations was also peculiar, rapid and shallow, yet without the distress characteristic of chest troubles. There was a firm tumour without prominence in the epigastrium on admission, resonance and bulging of the epigastrium developed later. No general peritonitis. Her condition was bad, and operation becoming imperative, she was transferred to my care. An incision was made in the mid line over the prominent tumour, and foul pus and gas escaped. A finger felt the liver in the floor of the abscess. Drainage by a large tube was satisfactory, and the patient did well for two days. Then convulsive attacks, with much difficulty of breathing, came on, and the patient died within a few hours. At the necropsy the case was found to be one favourable for surgical treatment, the abscess cavity being limited and bounded by the liver below, falciform ligament to the right, and adhesions of liver and diaphragm to the left. The stomach showed an hour-glass contraction, in the upper border of which was an ulcer with a valvular opening into a track leading to the lower border of the liver, closed at this end, in the floor of the abscess cavity, by plastic lymph. The general peritoneal cavity was healthy and shut off completely by adhesions of the omentum and anterior surface of the stomach to the abdominal wall. In the right ventricle were vegetations involving the endocardium and columnæ carneæ, but sparing the valves, the cause of death being malignant endocarditis.

V.—Edward Barnard Fuller, M.B., F.R.C.S.E.,

Capetown.

Dr. Fuller, after speaking of the great interest with which he had listened to Mr. Godlee's paper, said that in connection with the diagnosis of these cases he would like to put in a plea for bacteriology. He had seen several cases in which the collections of pus had been shown to have a connection with duodenal or gastric ulcers by the discovery in the pus of the bacterium coli. In all these cases he was of opinion that when pus was discovered by the needle, or otherise, a microscopic and bacteriological emanicipation of the pus should be undertaken, and it would be often found to be a valuable aid to diagnosis in these obscure cases.

VI.—Irving H. Cameron, M.B.,

Professor of Surgery and Clinical Surgery, University of Toronto.

Professor Irving Cameron said: I should like to refer to some of the mistakes I have made in connection with the subject of this discussion, as I have learned much more from my failures than from my successes. My earliest experience of hypophrenic abscess was in the days when the abdomen was surgically not only a *terra incognita*, but actually an *adytum*. The case was associated with ulcer of the posterior surface of the stomach, the abscess giving rise to dulness especially behind, and was evacuated by incision, puncture, and drainage posteriorly. Having had occasion to operate upon five cases of cyst or abscess of the pancreas with success, I imagined I had had sufficient experience to enable me to recognise these cases, but the last one I saw a couple of months ago I failed to diagnose.

I was called late one evening by a medical colleague to see a young lady who, while apparently in good health, had been suddenly seized that afternoon with pain in the abdomen accompanied by extreme collapse. When I saw her she was beginning to recover, and the diagnosis being obscure operation was postponed to the following morning, when the amelioration was so marked that nothing was done. The patient's temperature continued normal and the general condition good for five days, when some febrile movement occurred, and was attributed to influenza or *grippe*, symptoms of which were present in addition. Some indefinite subdulness in the epigastrium, about as wide as the recti and extending from ensiform cartilage to umbilicus, which was the only positive sign present in the case on the first examination, was still doubtfully present. The symptoms subsided in a couple of days, and a few days later the collapse suddenly recurred. When I next saw the patient she was *in articulo mortis*. The necropsy showed a suppurative pancreatitis which had ruptured into the general peritoneal cavity.

A patient was admitted into the Toronto General Hospital suffering from septic symptoms and with a history of abortion a few days previously. Cœliotomy was advised, and done. Nothing was found in the pelvis or abdomen to account for the symptoms. Some weeks later the case came to the *post-mortem* table, and a small hypophrenic abscess was found, attributable to a gastric perforation in its posterior wall.

So far as the so-called metastatic hypophrenic abscesses are concerned, I believe that these cases are most frequently associated with pyelophlebitis, associated in the majority of cases with so called appendicitis.

A patient was referred to me by my medical colleague for operation for perinephric abscess. The signs and symptoms all pointed in this direction. Incision was made posteriorly in the ilio-costal space, and a large cavity entered. The contents were a brownish, watery fluid, with abundant flakes of sloughing connective tissue. A steel sound passed freely downwards along the denuded psoas muscle to the bottom and upwards to and through the diaphragm into the posterior mediastinum and across the spine under the left lobe of the liver and round to the midriff. The patient did very well for many weeks, and then after various vicissitudes died some ten months after the operation. The necropsy showed the source of the trouble to have been an ulcerated carcinoma of the cæcum caput coli in the neighbourhood of the appendix.

VII.—CHARLES FIRMIN CUTHBERT, M.R.C.S.,
Surgeon to the Gloucester Hospital for Children.

MR. FIRMIN CUTHBERT described the following case: A woman, aged 45, came under his care because of sudden symptoms of gastric ulcer, intense vomiting accompanied by diarrhœa, but no hæmorrhage, with pain and tenderness in the epigastrium. After the symptoms had continued for some days, a tense swelling could be felt in the epigastrium, which extended rapidly up to the right hypochondrium. The swelling was resonant, and gave a well-marked bell sound. The liver edge was pushed down below the umbilicus, and an area of higher resonance existed between the liver and diaphragm. An opening was made in the greater intercostal space on the right side in the axillary line, and drained. A quantity of pus—about a pint—was let out at the time of the operation. The patient did well, and the drainage tube was removed in three weeks, and the opening healed about a fortnight later. She has remained well during the last nine months. In this case there was a history of gastric ulcer about five years previously.

VIII.—RUPERT CECIL CHICKEN, F.R.C.S.,
Surgeon, General Hospital, Nottingham.

MR. CHICKEN, in illustration of the extreme difficulty sometimes met with in the diagnosis of subphrenic abscess, narrated a case under his observation in which an enormously-thickened pericardium ($1\frac{1}{2}$ inch in thickness) simulated in several respects subphrenic abscess.

IX.—K. G. LENNANDER, M.D., Hon.F.R.C.S.,
Professor of Surgery in the University of Upsala.

PROFESSOR LENNANDER narrated a case in which subphrenic abscess developed a few days after a severe contusion of the right side of the chest, without evidence of fractured rib or injury to the kidney. The liver was pushed downwards to near Poupart's ligament, and there was abnormal dulness up to the third rib. On an incision being made in the right loin a large quantity of thin fluid containing blood, pile, and pus was evacuated from below the diaphragm. A rupture of the right lobe of the liver—the tear being the size of a hen's egg—was detected with the finger in the wound. The staphylococcus pyogenes albus was found in this fluid. In some fluid drawn off from the right pleura no micro-organisms were discovered. The patient was extremely ill before the operation, and after it he went through pneumonia, first of the right lung and then of the left, but ultimately made a complete recovery.

X.—NOBLE SMITH, F.R.C.S.,
Surgeon, All Saints' Children's Hospital; Surgeon, City Orthopædic Hospital.

MR. NOBLE SMITH recorded two cases in which symptoms of abscess in subdiaphragmatic region simulated those already referred to. One was a case of a lady aged 25, in which the abscess ulcerated into the left colon. The other was that of a man, aged 35, in whom a piece of bone was coughed up from the lungs. In both these cases caries of the spine existed in the region of the twelfth dorsal vertebra.

REPLY.

MR. GODLEE, in reply, stated that he thought the case mentioned by Mr. Bruce Clarke as having been due to metastasis was really one of extension of suppuration from the region of the appendix, and referred to other cases where the abscess about the appendix had completely dried up, although the prolongation of it to the subphrenic region was much in evidence. He said that he considered a suppurating hydatid cyst in the upper part of the liver, especially if the liver was adherent to the abdominal wall, was to all intents and purposes a subphrenic abscess. He cautioned against attempting to diagnose the origin of pleural pus from the smell, it being well known that pus in this cavity, especially if it had originated from an abscess of or gangrene of the lung, often possessed the most frightful odour imaginable. He asked Professor Cameron whether the acute pancreatic suppuration he referred to had burst into the small sac of the peritoneum, and elicited the reply that it had ruptured into the general cavity of the peritoneum—a remarkably rare condition. Referring to Mr. Cuthbert's remarks about the value of the bell sound in diagnosing subphrenic abscess, Mr. Godlee drew attention to the fact that this was observed with absolute perfection in some cases of dilated stomach, and that therefore great care must be exercised in drawing conclusions from the presence of this sign. In conclusion, he expressed his gratification at the very interesting discussion to which his paper had given rise.

PYLOROPLASTY FOR CICATRICIAL CONTRACTION OF THE PYLORUS AND FOR GASTRIC ULCER.

By LEONARD A. BIDWELL, F.R.C.S.,
Senior Assistant-Surgeon to the West London Hospital, and Dean of the Postgraduate College.

IN a paper published in the *Lancet* for April 7th, 1900, on Operations for Dilated Stomach, I described two cases of pyloroplasty for cicatricial contraction of the pylorus; since then I have performed two other operations, in both of which the pyloric stenosis was due more to spasm than to cicatricial contraction. I will only briefly refer to the first two cases, but I propose to give a more detailed account of the recent ones:

The first case on whom I operated was a lady, aged 62, who had suffered from gastric ulcer sixteen years previously; for five years she had been troubled with dilatation of the stomach and periodic vomiting. A tumour could be felt in the pyloric region. On opening the abdomen the tumour appeared to be simply cicatricial, and as the pylorus only admitted a probe with difficulty, pyloroplasty was performed. The patient made an uneventful recovery. She had no more sickness, and could eat all kinds of food. The operation was over sixteen months ago, and the patient remains in perfect health.

The second case was a woman, aged 39, on whom I had performed gastro-enterostomy by lateral anastomosis two years and a-half previously, under the impression that a pyloric tumour was malignant and was too advanced for pylorectomy. Two years after this first operation the stomach began to dilate again, and further treatment was required; the abdomen was reopened, and it was found that the supposed tumour of the pylorus had disappeared, only cicatricial tissue being left. Pyloroplasty was performed with complete success. The operation was over nine months ago, and the patient is in good health.

As the next two cases have not yet been published, I propose to describe them more fully:

CASE III.—A young married woman, aged 29, was sent to me at the West London Hospital by Dr. Clark Wakefield on January 15th, 1900. She had suffered during the last four years from pain after meals, often followed by vomiting, which relieved the pain. This had become more severe and more frequent lately, and the quantity of matter vomited was often very large. The vomit had also contained "coffee grounds." She was a healthy-looking but rather anæmic woman, and was rather emaciated. The stomach was dilated to a point about 2 inches below the umbilicus; there was some resistance felt in the region of the pylorus, but no actual tumour was discovered. A chemical examination of the stomach contents showed an excess of free hydrochloric acid.

On January 20th, 1900, the stomach was washed out in the morning with boric acid solution and in the afternoon the patient was put under the influence of chloroform, and the abdomen opened in the middle line above the umbilicus; some adhesions were found about the pylorus, which were divided after ligature, the pylorus was then brought outside the wound, and was found to be considerably constricted: the stomach was opened by a small transverse incision close to the pylorus and the pylorus explored with the finger; it was found to be contracted to about the size of a goose quill, but was free from any ulceration: the scar of a small ulcer was seen about ½ inch from the pylorus. The transverse incision into the stomach was then continued across the pylorus into the duodenum, extending altogether about 2½ or 3 inches. The mucous membranes of the two ends of the incision were then united with a silk suture converting the transverse wound into a vertical wound; a continuous suture was then passed on each side of this central stitch, closing the mucous membrane. The serous, muscular, and submucous coats were then united by two continuous sutures, one starting at an end and the other at the centre. The new pylorus admitted three fingers easily. The abdominal wound was closed by layers of sutures. The patient had nothing by the mouth except hot water for the first twenty-four hours, but after this she was given gradually increasing quantities of beef tea and barley water. She took solid food a week after the operation, and fourteen days after this the area of stomach resonance did not reach within 1 inch of the level of the umbilicus. She made an uninterrupted recovery, and has had no further pain or vomiting since. The operation was 7½ months ago.

Case iv.—A man, aged 46, was admitted into the West London Hospital on May 2nd, 1900. He had suffered from severe epigastric pain for about four months, and had been losing flesh. At first the pain came on after food but latterly it had become constant, and although he was unable to take solids the pain had been somewhat relieved by liquids. He had also been frequently sick, the vomit containing "coffee grounds." He had been under strict diet and medical treatment for a month without any relief.

On admission, the patient was emaciated and sallow; the stomach was dilated, its lower border extending to below the umbilicus; there was tenderness on pressure but no tumour could be felt. A chemical examination of the stomach contents, withdrawn one hour after a test breakfast, showed absence of free hydrochloric acid. He was kept under observation and on strict diet for a fortnight, but as no improvement took place, the patient was put under an anæsthetic on May 16th, and the abdomen opened in the middle line above the umbilicus. The pylorus was found to be contracted but no sign of malignant disease was detected. A transverse incision was made into the stomach close to the pylorus and the inside of the stomach explored. The pylorus was found to be free from ulceration but was contracted, and would not admit the tip of the little finger. A large ulcer, the size of a florin, surrounded by considerable induration, was found about the middle of the posterior surface of the stomach. The transverse incision into the stomach was then continued across the pylorus into the duodenum for about 3 inches, and was then converted into a vertical wound, and sutured as in the former case. The patient had a little tympanites on the first two days after the operation, and he was fed by the bowel for four days in order to give rest to his ulcer. Solids were given by the mouth on the sixth day and the patient made a perfect recovery, and has had no return of pain or sickness during two and a half months.

Remarks.

This operation is eminently suited for non-malignant stenosis, and in such cases it is greatly superior to either gastro enterostomy or to Loreta's operation, since in these operations there seems to be a great tendency to recurrence of the dilatation due to contraction of the opening. The first two cases are examples of cicatricial contraction due to old gastric ulcer, and it is interesting to note that in Case ii the appearances at the first operation were practically indistinguishable from malignant disease, especially as there was enlargement of the glands in the hilus of the liver. In Case iii there was not much thickening or cicatricial contraction of the pylorus, but the greater part of the stenosis was probably due to spasms in the first instance.

Case iv is perhaps the most interesting since it was an instance of simple spasm of the pylorus due to an ulcer in a part of the stomach which was at a considerable distance from the pylorus. In a paper read before the North-West London District of the Metropolitan Branch, I urged the propriety of performing gastro enterostomy in cases of gastric ulcer which would not yield to medical treatment, and in which there was dilatation of the stomach. I pointed out that the operation was likely to prove beneficial even when the ulcer was not situated in the neighbourhood of the pylorus, since the presence of an ulcer in any part of the stomach may produce pyloric spasm and the dilatation of the stomach, consequent upon this spasm, prevents the healing of the ulcer. The result of this case, however, inclines me to suggest that pyloroplasty is an even more desirable operation than gastro-enterostomy in a case of gastric ulcer where the ulcer is not involving the pylorus. When, however, an unhealed ulcer is situated actually at the part, it would be unwise to pass sutures through the neighbouring inflamed tissues, and so a gastro-enterostomy would be preferable.

I should like to draw attention to the method of passing continuous sero-muscular sutures. It is a modification of Halsted's method. A round sewing needle is used, and if the calyx-eyed variety be used it will be found very easy to thread even with wet silk. The needle is passed through the stomach wall directly backwards, until it meets with a definite resistance, when it is lateralised, and a portion of the submucous coat picked up with the point of the needle; it is then brought out about one-eighth of an inch from its point of entry; this manœuvre is carried out with each stitch puncture. Three ordinary square or quilt sutures (Halsted's) are passed, one at the centre of the wound, and one at each end about one-eighth of an inch beyond each angle; these are clamped, but are not tied. With needles armed with long ligatures, two continuous square sutures are then inserted; each starts from one end, and finishes at the centre. The three interrupted sutures are then tied, and the two continuous sutures tightened, one end of each being tied to the interrupted suture in the centre, and the other ends being united to interrupted sutures in the angles of the wound. By the employment of this central interrupted suture the danger of undue constriction of the new opening on tightening the continuous suture is avoided. In one case I made an even more secure suture by catching up the loop of each previous stitch.

One word as to the mortality of this operation. It has been given by Mikulicz as 11 per cent., but I think that in non-malignant cases it ought not to be so high, since it is accompanied by practically no shock, and, as long as a proper stitch is employed, there can be no danger of extravasation.

I do not think that the operation is suitable in malignant cases, since the parts to be sutured are not healthy; I have only employed it in one malignant case, in which there was a certain amount of apparently healthy stomach at the pylorus; this case, however, died of exhaustion, although the stomach wound had healed.

I should like to point out that in malignant disease of the stomach, operations appear to prove fatal without any sign of peritonitis or obvious cause, but this result does not occur in operations for cicatricial contraction, and so should not be allowed to prejudice our minds when considering the question of operation in a non-malignant case. I feel sure that the occurrence of an unsuccessful result, after an operation for malignant disease of the stomach, has caused many physicians to refuse to advise any operation on the stomach, since they do not grasp the difference between the results in malignant and non-malignant cases. I have therefore felt justified in taking up the time of this Section by recording these cases of pyloroplasty, thereby bringing some evidence to show that the operation, except in cancer, is not at all dangerous, and is followed by good results.

Professor John Berg (Stockholm) said: As I have had some experience of the inconstancy of the results of the operation of pyloroplasty, I beg to make some remarks on this matter. I published in 1876 a series of about 30 cases of chronic ulcer of the stomach surgically treated, and I have since then got that number nearly doubled. Amongst these cases pyloroplasty was performed in 7 or 8, and they all recovered. I so far agree with Mr. Bidwell with regard to the slight risk of this operation. But in no fewer than 3 or 4 of these 7 or 8 cases I have had to make a secondary gastro-enterostomy to relieve them from the symptoms of recurrent stenosis. I have, therefore, given up pyloroplasty entirely, as several other surgeons with greater experience of this matter have done. It seems to me now quite clear that in the majority of those cases where we, in the first days of pyloroplasty, found that operation indicated, the circumstances really would have been more favourable for a gastro-enterostomy. We performed, you see, without hesitation the pyloroplasty in such cases of cicatricial stricture of the pylorus, where more or less sound tissue was still left in the pyloric portion, and if possible we then cut through that sound part. But in so doing we clearly increase by our operation the amount of that cicatricial tissue which is apt to call forth a slowly-recurrent stenosis. Another reason why the pyloroplasty is apt to give unreliable results compared with the gastro-enterostomy is to be found, I believe, in cases of stricture combined with higher degrees of dilatation and ptosis of the stomach. That operation does not drain the stomach as well as the gastro-enterostomy, especially in

those cases in which the cicatricial tissue around the ulcer has diminished the mobility and weakened the contraction of the pyloric portion. My experience, as well as that of others, has at last taught me not to rely upon the good results of the pyloroplasty till after two or three years have elapsed.

Mr. C. H. KILNER described a case of pyloroplasty performed on a man who had swallowed some acid, in which at the operation the pylorus only admitted a crowquill. The man died from exhaustion on the eighth day. On making a necropsy the pylorus admitted three fingers, and the wound was completely healed. Delay in this case was probably the cause of death, and he suggested that patients should not be allowed to become too emaciated before operation.

Mr. T. H. MORSE referred to a case of duodenal ulcer in which it occurred to him that the best treatment would be to include the ulcer in the incision of pyloroplasty, the ulcer being favourably situated for this.

Mr. BIDWELL in reply said with regard to Professor Berg's remarks anent the subsequent contraction after pyloroplasty, he would point out that he had recommended the operation in preference to gastro-enterostomy on account of the frequent contraction of the new opening in the latter operation. He quite agreed with Dr. Kilner's remarks about the necessity for early operation in stomach cases.

THE CAUSES AND TREATMENT OF NON-MALIGNANT STRICTURE OF THE RECTUM.

By FREDERICK CHARLES WALLIS, F.R.C.S.,

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STRICTURE of the rectum, when not congenital and not malignant, is invariably the sequel of pre-existing ulceration. The causes of ulceration are commonly said to be syphilis, tubercle, and dysentery, and of these syphilis has the greatest reputation. Obstetric trauma and operations are spoken of vaguely as occasionally causing stricture, but only slight attention is paid to these causes. Syphilis is said by most writers to be the cause of a large percentage of rectal strictures. Halsted says that one-third of all the cases may be attributed to it. Faure and Rieffel mention on the statement of Julius Burger that in 100 cases 66 were due to syphilis; statements by such authorities as these are difficult to contravene. Yet after very careful investigation of those cases that have come under my care at St. Mark's Hospital and elsewhere, I cannot agree with this somewhat wholesale statement. In an interesting paper in vol. ii, series 3, of the *International Clinics*, Pickering Pick discusses this question very thoroughly. Stricture of the rectum is more frequent in women by at least three to one. The majority of these cases occur in women about the age of 30, and when they come under the surgeon's care have often been progressing for some time. Gummatous deposits do not as a rule occur at this period of life. The usual antisyphilitic remedies are absolutely useless. The patients show no other signs of syphilis, and the most careful questioning fails to elicit any direct or indirect evidence of syphilitic inoculation.

All these points and many more are put very fully in Pick's paper mentioned above. Cripps also mentions most of these points in his book. Three cases under my care were married women with families of healthy children living; I have seen the children and there is no sign whatever of congenital syphilis in any of them. And in two of these cases children (healthy children) were born after the ulceration preceding the stricture had been progressing for some time. I cannot help thinking that all cases of ulceration and stricture of the rectum which could not be definitely accounted for in any other way have been put down to syphilis originally, and the error thus begun has gradually crept in and been repeated by one and the other without any real evidence as to the fact. Syphilis will, no doubt, account for some strictures, but for comparatively few I believe. Dysentery, again, has been classed as a common cause of stricture of the rectum. The present war will furnish some interesting cases if such is the fact, but after the war of the rebellion in America there was not a single case of stricture of the rectum among the soldiers which could be attributed to dysentery. It is extremely doubtful whether dysentery ever causes rectal stricture. Tuberculous ulceration, again, although an occasional cause, is quite a rare one of rectal stricture. When, however, this ulceration is sufficiently extensive to cause stricture the destruction of tissue is so great that the resulting contraction is one of the worst possible.

I believe the most common cause of rectal stricture is septic ulceration. By this I mean ulceration which is primarily started either by some septic discharge from the outside, attacking an abraded portion of the mucous membrane, and once getting a foothold going from bad to worse; or a common cause in the past, and let us hope one which will disappear—post-operative sepsis. Another cause of some of the worst cases of stricture is a protracted labour, where the child's head becomes jammed into the pelvis for some hours, and by direct pressure causes ultimate destruction of an area of mucous membrane: this generally separates, and the denuded surface, exposed to the continual contact of fæcal matter, becomes septic, and progressive ulceration starts in this area. A clinical feature of some considerable importance in these cases is the fact that patients suffering from rectal ulceration are *apt to get attacks of acute synovitis*. This was so in a marked degree in both the cases described below, and also in another case now under my care for rectal ulceration followed by stricture. This patient on various occasions has had attacks of acute synovitis (usually in the knee joint); on these occasions her temperature rises from 101° to 103°, there is pain and distension of the knee, and the patient is bedridden for about ten days. This complication, which, as far as I can discover, has not been before noticed in connection with these cases, is one of considerable interest, and goes some way to suggest the septic origin of the local ulceration.

The following cases are typical of the sepsis following operation, leading to ulceration, and in Case I ultimately to stricture.

CASE I.—A young girl, aged 21, now under my care, was operated on four years ago for hæmorrhoids. Soon after the operation she started with all the signs of septic ulceration, namely, a high temperature, profuse discharge, becoming bloodstained, and great pain in defæcation. She appears to have been treated in a perfunctory manner for this, and to have gone to various places in the hope of relief. At last at one hospital she is classed as syphilitic, and sent to a lock hospital; at this institution she is kept and treated as a syphilitic for some time, when eventually it is decided that colotomy is the only cure, and this is accordingly done.

CASE II.—A butcher, aged 28, a healthy strong man, came to me at St. Mark's Hospital two years ago with marked ulceration of the rectum. Four years previously he had been operated on for hæmorrhoids, and his subsequent history went to show that sepsis started within three days of the operation, and was the primary cause of his present condition. He attended irregularly, refusing to take a serious view of his condition, and I lost sight of him.

CASE III is an equally typical case of septic ulceration *without* operation. A Polish Jew, aged 23, married, came under my care at the Metropolitan Hospital with progressive ulceration of the rectum. In this case the history was negative, there had not been any operation, and there was no history of tubercle or syphilis. There was in a marked degree a condition of personal filth, which was unusual even in a Polish Jew, and it is quite probable that this was the cause of his ulceration. He was in the hospital for some weeks, but was so insubordinate and generally so undesirable as a patient that it was necessary to get rid of him.

Such cases as these, when treated by prolonged rest and frequent irrigation with suitable solutions, may ultimately heal, and at the limit of the ulceration a dense fibrous stricture will form, leading to that distressing condition of partial obstruction which is so well known in these cases. The various procedures in common use for mitigating or attempting to cure this condition of stricture seem to be very inadequate. The constant passing of bougies causes a great deal of discomfort to the patient, and is not devoid of danger. It certainly keeps the lumen of the bowel patent to a limited extent, but beyond this its effect does not extend. And in my opinion it tends to keep up any ulceration which may exist beyond the stricture. One of the great troubles, and a cause of fæcal accumulation in these bad strictures, is the fact that the natural peristalsis and muscular movements of the bowel end at the stricture, and in bad cases the pelvic muscles are of little or no use in evacuating the bowel contents. This condition cannot be affected by bougies, nor indeed by superficial incisions and subsequent dilatation. Neither does posterior proctotomy affect it, except for the temporary passive drainage which takes place until the wound granulates up, when the stricture recurs, as bad as or possibly worse than before. None of these measures are of any permanent benefit, except in those very slight cases which this paper has nothing to do with. The condition of these people, even after many

such operations as above, is a pitiable one, and is well illustrated in the following patient, upon whom I have recently performed colotomy previous to excising the stricture.

This woman has an annular stricture 3½ inches from the external sphincter, which was the ultimate result of either a protracted labour or of infection from a profuse vaginal discharge. She has to take aperients almost every night, and the effect of these lasts until the following midday. During the morning the bowels act from ten to a dozen times. For the rest of the day, except that she is somewhat exhausted, she is fairly comfortable, but unable to do very much. If the bowels do not act every day the woman becomes quite ill, and suffers considerable pain. At times one or more of the joints swell and become hot and tender, incapacitating the woman from doing her work.

So that the whole of her existence is practically given up to the business of either getting rid of her intestinal contents or nursing an affected joint. She has been treated with bougies for some years now, and this has always been a most painful business with her. The misery and distress in which these people live led me to undertake the operations about to be described.

A. T., aged 18, a healthy looking girl, was originally admitted to the Metropolitan Hospital under my care on April 4th, 1897, suffering from ulceration of the rectum. At this time she was 16½ years old. The discharge from the rectum had been noticed since the age of 5 years, at which time she was living in the West Indies. When the patient came under my care her condition was a most lamentable one, The lower part of the rectum, from the anus as far as the finger could reach, was ulcerated and discharging blood-stained pus. Any action of the bowels caused great pain. The girl was quite unable to do work of any kind. Her general health was otherwise good, with the exception that at rather frequent intervals she suffered from attacks which in many ways resembled acute rheumatism. On these occasions one or more joints would become distended, tender, and inflamed, and the general temperature would rise to 101° to 103° F. After a week or ten days this condition gradually subsided. The subsequent history shows that these strange attacks were due to absorption of septic material from the ulcerated bowel.

The ulceration of the rectum was treated by frequent irrigations with a solution of 1 in 2,000 perchloride of mercury, and after a time the ulcerated area was scraped. The girl was kept for some months in bed, and mainly owing to the great care taken of her by the ward sister her condition improved so much that she left the hospital for a convalescent home, having been instructed to continue the irrigations twice daily and also to pass a rectal bougie occasionally, as the now healing ulcerated area showed signs of contracting.

In the autumn of 1898 the girl was readmitted with severe ulceration and a marked stricture commencing between three and four inches above the external sphincter. The patient was anæsthetised, and the stricture was divided by linear incisions of a superficial character. The finger was passed well above the stricture, and it was found that the ulceration was continuing at this place. The former treatment of irrigation and rest in bed were resumed, and after some time the patient was discharged with the ulceration healed, and with instructions to pass the bougie daily.

On April 30th, 1899, she was readmitted for a bad stricture of the rectum which, in spite of the fact that the bougie was passed daily, had gradually become more and more marked, and now only admitted the tip of the index finger with difficulty. The bowel below the stricture was smooth and devoid of ulceration. As the patient was totally incapacitated from doing any work for her living, and as she was entirely alone in the world, I felt that the time had come to try even some desperate course, if by such means the girl could be cured of her present lamentable condition.

On May 5th, 1899, the patient was anæsthetised and placed in the lithotomy position. The sphincters were dilated to their fullest possible extent; a circular incision was then made around the muco-cutaneous margin, and the gut was separated from the sphincters and carefully freed all round up to the stricture. Here the fibrous tissue was very dense and thick and the separation was a matter of considerable difficulty, the strictured part was 1½ inch in length, and before this was freed and brought down the peritoneal cavity had been freely opened. The mucous membrane above the stricture was found to be quite healthy. Slight traction brought the healthy gut to the anal orifice, and after the holes in the peritoneum had been closed, the dissected bowel was cut off, and the healthy margin secured to the muco-cutaneous margin by four silkworm gut sutures, and then by a continuous horsehair. No vessels were ligatured. The length of the piece of bowel removed was over 5 inches. The patient was much collapsed and almost pulseless at the end of the operation. Saline injections improved her condition somewhat. After coming out of the anæsthetic she complained for some hours of severe abdominal pain, and the temperature rose to 101°, pulse 140. Strychnine was injected every two hours and brandy given in 2 drachm doses every hour for nearly twenty-four hours because of the extreme collapse which existed. Vomiting and abdominal tenderness continued for forty-eight hours, but on the night of the 7th (the third day after operation) she slept well, and from this time she began to mend.

On May 11th she had passed flatus, and although the abdomen was still tender she was much better and quite recovered from the collapse. Locally the stitches were holding well except at the anterior part where the mucous membrane had retracted a little.

On May 12th the bowels were well opened after castor oil and an enema. On examining the wound the mucous membrane had retracted anteriorly and posteriorly, and there was a small communication between the rectum and vagina just above the external sphincter. Laterally the mucous membrane held.

The temperature kept up until May 14th, after which date it ranged from the normal to 99°, and occasionally rose somewhat higher. The discharge, which after the first few days was profuse, gradually ceased, and the recto-vaginal opening closed completely.

From now on the wound gradually healed, and on July 5th, two months after the operation, she was quite well, with perfect sphincter control. Just above the external sphincter where the mucous membrane had parted, there was a tendency to contraction, which gradually increased but this was easily counteracted by passing a No. 20 bougie.

The patient was discharged on July 20th, and went into service a month later. She has been seen since, and is in the best possible health. Locally the conditions are most satisfactory; there is no rectal or vaginal discharge. Sphincter control is perfect, and the mucous membrane is quite healthy. All tendency to any contraction had entirely disappeared, and the passing of bougies has been discontinued. The patient looked the picture of health, and has not had any further attacks of synovitis.

L. T., a married woman, aged 40, five children, no miscarriages, was admitted to St. Mark's Hospital under my care on April 10th, 1899, suffering from stricture of the rectum. The woman's past history is as follows: Eight years ago, when the third child was born, she had a very bad confinement. For the last six years there has been increasing difficulty in getting the bowels to act, and frequently during this time she has passed blood. In January, 1897, she was an in-patient at the New Hospital for Women for three weeks for stricture of the rectum. She afterwards continued to attend as an out-patient for several months, and bougies were passed daily.

In 1891 the left knee became swollen and tender, and she attended the Royal Free Hospital for seventeen weeks, and was eventually taken in there, and the stricture of the rectum was again treated by bougies passed daily. (Whilst she was in the hospital she was sent to the Examination Hall to show the knee.) The stricture was temporarily relieved by the bougies, but contraction began again very soon. The patient attended at St. Mark's Hospital in February, 1899, and her condition then was a bad one; the rectum was ulcerated as far as one could feel, about three and a half inches up was a tight stricture which did not admit the tip of the forefinger. The smallest size bougie was passed with difficulty and caused great pain, but gradually the stricture was dilated until a No. 6 could be passed.

The patient's health was very indifferent and she suffered much pain. In fact her life was a misery to herself and not any comfort to her family. Under these circumstances, and bearing in mind the success of the last case, I urged her to become an in-patient and let me do what I could for her, although I was careful not to promise her much in the way of result, as I was not at all sure that I should be able to repeat the result of the first case. Eventually she came in on April 18th, and I performed inguinal colotomy on her on April 20th. After an interval of a few weeks the bowel below the opening was periodically irrigated until no discharge except mucus was washed out through the rectum.

The patient then left the hospital, and was seen occasionally until November, when she was readmitted, and on November 6th the following operation was performed: The patient being placed in the lithotomy position, the sphincters were stretched as much as possible. An incision was then made all round the anus at the muco-cutaneous margin, and the mucous membrane gradually separated from the sphincter by scissors, and the separation was continued right up to the stricture, where considerable difficulty was experienced on account of the toughness of the scar tissue, also care had to be taken here not to wound the vagina. When once the stricture had been passed the mucous membrane was found to be quite healthy. The peritoneal cavity was opened on both sides, particularly on the right; these were closed again by sutures. The bowel was divided above the stricture through healthy mucous membrane, and the lower parts with the stricture were removed; the cut edges of the healthy bowel were brought down to the skin margin by gentle traction and sewn to it by a large number of interrupted sutures of chromicised catgut. No vessels were ligatured. The subsequent course of this operation was uneventful. There was some slight collapse and abdominal pain for the first twenty-four hours, but after that the recovery was an uninterrupted one.

On December 29th the colotomy wound was closed by separating the parietal peritoneum with the adherent bowel from its attachment to the skin and the edges of the gut were brought together by transverse sutures, thus obviating any risk of stricture. In uniting the abdominal walls the tissues were brought together by silkworm-gut sutures which did not include the skin, but the skin edges were approximated when these sutures were tied. The idea of not uniting the skin edges was to prevent the subcutaneous accumulation of any even mildly septic fluid (for it was obviously impossible to get the skin clean) which might, as in former cases, cause the wound to break down. The plan answered admirably in this instance and the woman made an uninterrupted recovery. The bowels acted in the natural way two days after the operation. The patient left the hospital three weeks later and has been seen several times since, and is in the best of health, looking quite ten years younger, having put on flesh, and in fact thoroughly enjoying her life. A very different picture to the thin, miserable, pain-stricken woman of a few months ago.

The success of the first case urged me to attempt the second, but the lessons learned in No. 1 made me modify the operation in No. 2 considerably and with advantage. A preliminary colotomy is desirable for the following reasons: It makes it possible to wash out the bowel from above, and keeping it free from fæcal contact any ulceration which may be, and often is, in existence above the stricture, has a chance of healing. When the strictured part is excised, the peritoneum may be freely opened without any chance of fæcal infection. The chances of suppuration around the muco-cutaneous margin are greatly diminished. If for any reason the operation has to be abandoned half way, this may be safely done when a preliminary colotomy has been undertaken. These operations should not be undertaken without a full knowledge of the difficulties to be met with. The hæmorrhage, in spite of all care, is often extensive. The separation of the strictured parts from the adherent surrounding structures is tedious and anxious work. The peritoneum may have to be freely opened. The post-operative shock is gene

rally alarming, and requires all the attention and care which good nursing alone can give. Halsted reports two cases in the July number, 1898, of the New York Medical *Transactions*, in which he successfully performed this operation without previous colotomy. In his cases the strictures were situated within 2 inches of the anus, and the peritoneum was not opened.

The treatment by perineal excision has been advocated by Dieffenbach, Volkmann, and Van Hook, when the stricture is not above the peritoneal level. The success of the extraordinary operation performed by Mr. F. Treves for "idiopathic dilatation of the colon" stimulated me to do the cases mentioned above. I cannot find any record in which an operation for the cure of rectal stricture has been so extensive as in the two I have just described; and as the results were satisfactory I have ventured to give details of them in this paper.

Mr. TREVES considered that whilst excision of the strictured portion of the rectum was an admirable operation in certain cases, in others it would hardly be practicable. The very unsatisfactory results of treating fibrous stricture of the rectum by dilatation with bougies, incision, etc., made one welcome a method which promised such a measure of success as had followed in Mr. Wallis's cases. With regard to the cause of fibrous stricture of the rectum he had no doubt that as in other parts of the alimentary tract it was sometimes due to congenital defect.

Mr. STANLEY BOYD believed that fibrous stricture of the rectum in some cases was the result of a proctitis produced by infection from the vagina.

Mr. GODLEE asked whether Mr. Wallis purposely left out pelvic peritonitis as one of the causes of simple stricture of the rectum, and suggested that the lithotomy position was not the best for the performance of the operation he had described. Mr. Godlee advocated the performance of the operation with the patient lying on the face, as one in which hæmorrhage was easily controlled and shock much diminished.

Mr. WALLIS, in reply, drew attention to the statement of the joint conditions in these cases, and hoped that others would notify any similar cases.

A CASE OF OBSTRUCTIVE JAUNDICE DUE TO GUMMATOUS INFILTRATION,

INVOLVING THE HEAD OF THE PANCREAS, DUODENUM AND GASTRO-HEPATIC OMENTUM, IN WHICH CHOLECYSTCOLOSTOMY WAS PERFORMED WITH COMPLETE CURE.

BY H. BETHAM ROBINSON, M.S.Lond., F.R.C.S.,

Assistant Surgeon to and Surgeon in Charge of the Throat Department, St. Thomas's Hospital; Surgeon to the East London Hospital for Children, Shadwell.

THE following case which I bring before you to-day presents certain important features for our consideration. In the first place, instances are not numerous in our surgical literature where a communication has been designedly made between the gall bladder und the hepatic flexure of the colon: and secondly, the pathological condition was apparently most unusual, and for that reason hardly anticipated.

H. H., aged 33, an engine driver, was admitted into St. Thomas's Hospital on August 14th, 1899, under the care of my colleague, Dr. Hector Mackenzie.

The family history was unimportant, except that an elder brother had passed a gall stone the size of a filbert.

The patient had had no previous illness sufficient to keep him in bed. He had always worked hard and led an active life; had been fairly temperate and never taken spirits. He had had a somewhat severe attack of syphilis ten years before. Four months before admission he was suddenly seized with severe aching pains in the epigastrium, with vomiting, which lasted for about three days. The pain moderated in about a week, but never really left him. A week later jaundice came on, soon followed by intense itching, which symptoms continued. The appetite and bowels were normal. He was admitted into another hospital and search was made in the fæces for gall stones without any result. On August 12th he was suddenly seized with violent cutting pain in the right hypochondrium which lasted five hours, and was only checked by morphine; he vomited three times, bringing up a small quantity of blood-tinged fluid.

On admission he was fairly well nourished but intensely jaundiced, complaining of the severe itching; on the skin were very evident marks from scratching. On examining the abdomen the liver was made out to be enlarged, coming some two inches below the costal margin, it was somewhat tender but quite smooth. There was also a small round swelling to be made out below the liver edge about the normal situation of the fundus of the gall bladder. The spleen seemed a little enlarged. There was no ascites. The urine was icteric and the fæces clay coloured. The tongue was furred but the appetite was fairly good. The heart and lungs were normal. Temperature normal. His weight was 9 st. 8½ lbs. On the 18th his paroxysms of pain, which had been only trifling since admission, were more frequent and severe but controlled by morphine. Examination of the fæces gave no evidence of any stone, and his temperature was still normal. Sleep was much interfered with because of the severe itching, which was a little relieved by soda baths.

From now to the 27th his attacks of pain increased, his jaundice became more intense and he lost considerable flesh. I was asked to see him with a view to the relief of his bile obstruction and thereby the itching which was becoming unbearable, and agreed with my colleague as to the desirability of performing an operation to attain this.

Accordingly on the 28th he was transferred to my care and an exploratory laparotomy was done. An incision about three inches long was made in the right linea semilunaris over the position of the swelling, which appeared to be the fundus of the gall bladder. On opening the peritoneal cavity the gall bladder presented and was extremely distended and the liver was found enlarged, but smooth, and with no appearance of any growth in it. On tracing backwards along its neck to the common bile duct no stone could be felt but the duct was very dilated. In the lower half of the gastro-hepatic omentum, the duct entered a growth which infiltrated round the upper part of the duodenum and involved the head of the pancreas. No enlarged glands were felt, but the nature of the growth seemed without any doubt malignant. As it was necessary to relieve his symptoms by draining his gall bladder, the question lay between fixing the fundus to the skin and making a fistula, or forming an anastomosis with a portion of intestine. For obvious reasons the latter course seemed preferable, if feasible, which I considered was the case. If possible, approximation of the fundus to the duodenum was the right procedure, but this was negatived by the difficulty of bringing the parts in contact and by the depth and infiltration of the duodenum. The line of action was to approximate the fundus and the hepatic flexure of the colon, which came easily into apposition. Bringing these to the surface, and packing round with gauze, the distended gall bladder was tapped at its fundus with a large trocar; some bile flowed with difficulty, owing to its viscid character, so the trocar was removed, a small incision was made, and the inspissated bile wiped away with swabs, till the bladder was empty; there was no gall stone. As thinner bile then began to flow, an assistant compressed the bladder above. The wall of the gall bladder around the opening was next sutured for a little more than half its circumference to the colon with a continuous fine silkworm suture. A ¾-inch incision was now made in the colon, held by the fingers to prevent any escape of its contents; fortunately it was empty, and no such complication was encountered. The cut edges of the gall bladder and colon were sutured together, and the junction was finished off by continuing round the stitch uniting the serous layers. A gauze drain was placed by the approximation, and brought out towards the lower part of the abdominal wound, which latter was stitched up in layers, one loose stitch being inserted for tying on removal of the drain. The whole operation was completed in about three-quarters of an hour.

The day after the operation (29th) there was some local pain, with a rise of temperature; but on the 30th the pain was very much less, and the jaundice did not seem so marked, this being associated with a darker colour of the fæces; the itching was very much relieved. From the possibility of the growth being other than malignant, potassium iodide was ordered. On the 31st the temperature rose to 103.4°, the wound was dressed and the drain removed, which was quite sweet, with no suspicion of any bile extravasation; the loose stitch was tied.

From this time onwards progress was most satisfactory; the temperature gradually dropped with the exception of one slight rise due to a stitch abscess. The jaundice disappeared, and with it the troublesome itching entirely; the urine and fæces both became normal. He was up on September 20th, and left the hospital on the 27th, with all his urgent symptoms disappeared, no pain, and no jaundice.

On his return from the convalescent home in three weeks he expressed himself as feeling quite well, and on abdominal examination the fulness weight since the operation. The potassium iodide was continued and before felt had considerably lessened. He had also gained 1 st. in increased; the patient was kept under observation till the end of the year, during which period he had gained 2 st., and on palpation no fulness could now be felt.

The progress of the case after the operation leaves very little doubt that the lesion causing the jaundice was an extensive gummatous infiltration radiating from the head of the pancreas. Such a manifestation of visceral syphilis must be extremely rare, and hence unsuspected; still there is a lesson to be learned from the case more particularly pointed to where there is a distinct syphilitic history, and where the age, as here, is early for malignant disease. The length of time during which the improvement continued, with the marked increase of weight, are conditions which I do not think could be accounted for by the laparotomy alone, or from the relief of the bile obstruction. I know that a critic may question the desirability of this line of action, but we are all wise after the event, and it must be remembered that the man's condition made prompt treatment necessary, and, what is more, that it was only the after-progress determined the real diagnosis. There can be no two opinions as to the advantage to the patient of an anastomosis over that of a biliary fistula, a constant source of worry and discomfort. Whatever views may be held as to the means to be employed for approximation, this case, among others, points to the advantage and certainty of suturing over all mechanical methods.

A DISCUSSION ON THE METHODS AT PRESENT AVAILABLE FOR THE TREATMENT OF SIMPLE (SUBCUTANEOUS) FRACTURES.

I.—William H. Bennett, F.R.C.S.,
Senior Surgeon to St. George's Hospital; Member of Court of Examiners, Royal College of Surgeons of England, etc.

In opening this discussion I feel myself somewhat in a difficulty; because when you, Sir, were good enough to pay me the compliment of suggesting that I should introduce the subject of the treatment of simple fractures at the present meeting of the British Medical Association I readily consented to do so, since at that moment my impression was that the matter was one of limited scope which would occupy but little time in laying before you. But upon consideration I found myself in the position, as often happens to people who commit themselves to tasks without sufficient thought, of having undertaken the investigation of a very large subject, the consideration of which must entail the expenditure of an amount of time which may place a severe strain upon your patience if I am to set the question before you in an intelligible form, no matter how brief I may endeavour to be. It is quite clear that if a discussion of this sort is to be of any practical value, the basis upon which it is to be dealt with must be something more than the experience of an individual, however mature an opinion he may have or however large his experience may be. I therefore made it my business to make inquiries amongst a large number of surgeons with a view to obtaining certain facts and opinions in relation to the subject in hand in order that the material at our disposal may be adequate for the present purpose.

In obtaining the evidence upon which my remarks are about to be based I thought it desirable to circulate amongst those who it seemed to me were in a position to give useful information certain questions, the formulation of which presented some difficulty, because, although I should have liked to obtain very precise statistical material, I felt that the getting of information in that form would entail such an amount of labour on the part of those whom I asked to afford it, that it would be unreasonable to expect them to sacrifice the time necessary for the purpose. I therefore framed the questions in a somewhat vague form, which, although it did not entail the supply of statistical details, would afford, so far as I could judge, the necessary evidence. In this expectation I think it will be seen that I have not been disappointed.

It is obvious that the treatment of fractures at the present time is in a state of transition, and, moreover, that the progress of late has tended to rational methods, which contrast favourably with the hard-and-fast prolonged splinting, etc., which held good up to within a very recent period. It is equally clear that the treatment of this class of injury has, until quite lately, been on a very stereotyped basis, and that the form of treatment has depended to a great extent upon the practice of the institution in which the cases have come under observation; in other words, in certain institutions certain methods of treatment have held good for many years without having undergone any material change. For example, it will be found that in some hospitals the early application of plaster-of-paris as a routine plan is in use. Practitioners educated in such an institution will, as a matter of course, pursue more or less closely that particular line of treatment. And so it comes about that it appears to be easy to divine the institution at which a practitioner has been educated by the method which he adopts in the treatment of fractures of the limbs. In fact, there has until quite recently been practically no change in the method of treatment of these injuries, and such varieties in the treatment as exist have been due rather to the different traditional plans used in different institutions than to any other cause.

The Usual Methods of Treatment.

Setting aside these surgeons—a very small minority—who, on the one hand, consider practically all fractures of the long bones as suitable for treatment by operation, and those, on the other hand, who under no circumstances see any justification for operation, there is a large intermediate class of practitioners who, whilst under ordinary circumstances adopting non-operative treatment, are open under certain conditions to use the operative treatment, provided that the circumstances of the patient and of the practitioner, and the nature of the case render such a proceeding justifiable.

Speaking generally, the routine treatments with this large intermediate class of surgeons consist of three main varieties. The first variety is the immediate application of some immovable splint or apparatus—for example, plaster of paris, silicate of potash, and the like; in the second splints which are easily removable for the purpose of examination, or for the employment of passive movement or massage are used; in the third variety there is a tendency to the rejection of splints altogether for any considerable period.

The Use of Passive Movements.

Up to a comparatively recent time the use of anything like effective passive movement in fractures of the extremities was practically unknown until a period of the case had been arrived at in which the union was so good that splints could be discarded. Recently a change, which I think is extremely advantageous, and one which I hope I have been in some measure instrumental in bringing about, has come over the face of affairs, and there is a general inclination to begin to discard the use of all splints which make the limb inaccessible, substituting splints of a kind which are easily taken off for the purpose of submitting the limb to certain movements in order to avoid the matting together of parts, and other inconveniences which arose under the old method.

From a consideration of the answers which I have obtained in reply to the inquiries already referred to, it appears that at the present time the use of passive movement of some kind in cases of fracture is, in the practice of provincial surgeons, carried out by 64 per cent. In London it is used by 90 per cent.; and in Ireland and Scotland by about 85 per cent. of surgeons in large practice in hospital work. Speaking generally, this passive movement may be classified under three heads—the immediate, the intermediate, and the remote. By the immediate I mean that which is employed within the first two days; by intermediate that which is commenced in from two to fourteen days or under, and by remote that which is deferred until later periods.

If, as I believe is the case, a great advantage arises from the use of early passive movements in cases of fracture as opposed to the older-fashioned methods by which fractures were fixed for very long periods in splints, the information which has been forthcoming should show conclusively that those surgeons who use the movements in the early stage are able to report a more rapid recovery of the patients than those who postpone the movements until later periods. In point of fact, this proves to be the case; for upon analysing the evidence at my disposal, I find that almost without exception the quickest recoveries are reported by those who use passive movement the earliest. In this connection it is noteworthy that there is a general tendency to the relinquishing of the use of plaster-of-paris, silicate of potash and other immovable splints of that kind, mainly, it is stated, for the reason that the use of such appliances tends to slow union in the first instance, and prolonged disability after their removal. So that there is on that account, and for other reasons, a steady inclination to discard all splints of that kind, and to resume the use of movable splints, which give easy access to the part.

A few surgeons prefer active movements to passive, but they as a rule are late in commencing any movements. There is no doubt that as soon as union is sufficiently sound to admit of their employment by the patient, active movements are preferable; but in the early stages passive movement is undoubtedly safer, and I think equally efficacious.

The Operative Treatment of Simple Fractures.

It appears that of country practitioners 50 per cent., of London surgeons 35 per cent., of Irish and Scotch surgeons about 25 per cent. have had no experience whatever of the operative treatment of simple fractures of long bones. The number of those who have been good enough to give me information on this subject, who have had experience of the treatment, is sufficient, I think, to enable us to form a sound provisional judgment as to its value. Setting aside those who have had no experience of the treatment at all, whose reasons for not having tried it

are for the most part because they are contented with the results of the plans they already adopt, because they think it meddlesome or dangerous, or because they think it unnecessary if fractures are treated with "brains"—an expression which is used by no fewer than six of those who have replied to my inquiries—setting aside these for the time being as opinions which, since the authors of them have had no actual experience of the treatment, are, for the moment, of minor value, we are left to deal with those surgeons who have had practical experience of this method. With all of these, with the exception of two, the evidence is, generally speaking, adverse, excepting in some special cases and in those which are otherwise unmanageable. In these cases the results are spoken of as good, and there is a general tendency to increase the use of the plan, especially in certain oblique and spiral fractures of the leg and in some fractures in the immediate neighbourhood of certain joints, notable the elbow. The same opinion is held by provincial, Scotch, and Irish surgeons, the upshot of the matter being that the utility and scope of the method, if restricted to its legitimate use, is at present somewhat limited.

The reasons given for coming to this conclusion are various. For example: "The results are no better than without operation," that there is a tendency to "slow union," the "possibility of sepsis," a "tendency to suppuration," the "frequent necessity for the removal of the uniting medium." At the same time a few surgeons speak of the results as good, but not better in the long run than can be attained without operation. Twenty-five per cent. of the surgeons who have used the method in the special cases just referred to speak of the results as excellent when sepsis does not occur, and when the screws, wires, etc., do not give rise to trouble—rather important reservations.

The question of the means employed for the fixation of the bones by operation is of some interest. Those who have had experience of the use of screws and sometimes ivory pegs seem in the majority of cases to condemn them, wire being regarded as preferable. Whilst the screws for the moment seem to afford an ideal fixation method easily applicable without great disturbance of the parts, it is found by many that they give rise to irritation subsequently, and frequently have to be removed before firm union occurs. This accords with my own experience, for in two cases consolidation, although it appeared to be good at first, was followed by softening, and final union did not occur until after the removal of the screws. Moreover, it appears that in a considerable proportion of cases in which screws are used suppuration has occurred, although it has been local; it has, however, always ended in the removal of the screw. Wire, although more difficult to apply, seems to cause less irritation, but that also in some cases (two of such have come under my own observation after having been operated upon by other surgeons) tends to form foreign bodies which prevent union instead of hastening it, although the bones are for the time being held in good position.

In an interesting case mentioned by one of my correspondents, the screw refused to bite, and had to be withdrawn, the hole resulting being used for the passage of stout wire; the case finally united well. The reason of the frequency with which screws give rise to irritation is not quite clear. It has been suggested that the plating of the screw is somehow at fault. This, of course, can be obviated by the use of silver screws. The cause, however, probably lies in the natural tendency of the thread of the screw to cause softening of the bone around, and subsequently loosening of the screw itself, the strain upon which must often be considerable when used obliquely to the axis of a bone. Whatever the explanation may be, it seems undeniable that considerable trouble has arisen in this respect, rendering the removal of the uniting material frequently necessary. In some cases it is mentioned that necrosis, suppuration, and results following failure of asepsis have been sufficient in the minds of my informants to entirely condemn the method. This is, perhaps, too extreme a view, but the general objection by those who have had experience is sufficiently cogent to justify the conclusion that, although in the hands of certain operators the method is reported to have given results which are better in many cases than could be otherwise obtained, with the general body of practitioners it is not suited for anything like a routine treatment, and should be reserved for special cases and those which are unmanageable by other means. Further, that in oblique and spiral fractures of the tibia, and in some fractures near joints, it is, provided that the position of the operator is such that adequate means of securing asepsis are forthcoming, probably not only justifiable but desirable, always with the proviso that the patient is healthy.

In dealing with the operative treatment of these injuries, reference must of necessity be made to

Fractures of the Patella and Olecranon,

since these have been more extensively treated by operation, that is to say, by wiring, screwing, etc., than any other kinds of fracture. It is interesting to note that the practice of wiring the patella as a routine treatment is by no means so universal as one would be led to imagine, since 20 per cent. of my correspondents do not wire the patella under any circumstances whatever, and a considerable number only under certain limited conditions. And, what is really of more moment, that the operation of suturing the patella, whatever method may be used, is by no means so free from risk both to limb and to life as would be gathered from recorded cases and in general conversation. Of the 75 per cent., approximately, of surgeons who operate in fracture of the patella 15 per cent. wire in all cases in healthy subjects without reservation. The remainder are influenced in their decision by the circumstances and age of the patient, 50 years being the general limit, by the condition of the general health, and by the amount of separation, in my opinion a most important point, since the experience of some operators—and this is entirely in accordance with my own—it is found that if the separation is not more than half an inch, or perhaps three-quarters of an inch, a result as good practically as that obtainable by operation is generally to be got without it, mainly because of the escape from laceration of the lateral expansions about the capsule of the joint under such conditions. Of the best means of obtaining this result without operation time does not allow me to speak, but I have recently dealt with the subject fully that in the *Lancet* (June 9th, 1900). It is here interesting to learn three surgeons, who have replied to my inquiries, after a fair trial of the operative treatment of fractures of the patella by wiring, have been so discontented with the results that they have returned to the non-operative measures.

The time at which the operation is performed in cases of fractured patella seems to vary greatly with different surgeons. Speaking generally, the operations are either performed as soon as possible after the receipt of the injury or after an interval of from three to ten days. So far as I can ascertain a considerable majority, of whom I am one, operate after an interval varying from three to ten days, the average time being the seventh day. The material used for the suture is generally stout silver wire; a few surgeons use silk or kangaroo tendon. By far the most satisfactory operation is the open method introduced by Lister, the exposure of the fracture being effected by a flap turned up from one or the other side instead of the vertical median incision originally used. The period occupied in recovery after the operative treatment varies greatly, six weeks being the shortest period quoted from the provinces, and three weeks the shortest period given by London surgeons. Patients are stated to have played football six weeks after the operation, and one patient is said to have danced on the stage within a month of the time of the immediate application of a wire suture. The longest period occupied in recovery after operation is eight months. Here, as is the case in the treatment of fractures of the long bones generally, the time occupied in recovery depends directly upon the period at which passive movement is commenced; in other words, the sooner passive movement is employed after the operation the sooner does the patient get about. The time of commencing passive movement seems to vary from "at once" to a period as late as six weeks, the majority of surgeons commencing movement about the fourteenth day—a little before or after. In this respect there is considerable difference in the practice of London surgeons and those of the provinces; for whilst among the former 30 per cent. commence movement within the first week after operation with the latter only about 8 per cent. commenced movement until after the seventh day. The percentage of recoveries within six weeks is therefore much larger in London than in the country.

I now come to the consideration of the risks and the imperfections of the treatment. The evidence afforded on this score is much more serious than I had anticipated, and there is reason to believe that it does not express the full extent of the dangers and risks, since not a few of my informants, whilst stating that no disastrous result has occurred in their own practice up till now, mention that they know of such cases occurring in the practice of others. And the frequent underlining of the word *own* in some other cases leads to obvious inferences in the same direction. The ill effects appear to occur irrespective of the type of operation; that is to say, it seems to matter very little whether the operation is the open one, as originally introduced by Lister, or whether it is the subcutaneous circumpatellar method, or some other plan. The main disasters occurring in the practice of 111 surgeons giving precise information on this point are the following: Death, which has occurred in the practice of three of my informants; there are in addition several references to fatal cases occurring in "the practice of others." Suppuration, with disorganisation of the joint and complete ankylosis, of which sixteen of my informants have had experience; amputation occurring in the experience of eight. The defects are many cases of partial ankylosis, constantly recurring arthritis necessitating the removal of the wire; necrosis, local suppuration, and other minor evils of common occurrence.

The fact that such disasters and such imperfections happen does not, of course, in itself negative the scientific value of the operation as such, but it limits the scope of its legitimate employment to a great extent by the general body of practitioners, a point to which I attach very special importance. It is quite impossible—and this is a fact that cannot be too strongly emphasised—to estimate the value of any method of treatment upon the evidence of the reports of the successful cases only. It is equally impossible to gauge the real value of any treatment upon the experience of a few individuals. A few individual surgeons may be able, by a certain plan of treatment, we will say, for example, the open operation in fracture of the patella, to produce results which are practically ideal; but this does not in the least degree show that the same result will necessarily follow in the hands of the general body of those who use the same method. The real value of a treatment must depend, as I have said before, not upon the success which a few practitioners may be able to achieve, but upon the results which follow at the hands of the general body of surgeons who have opportunities for practising the treatment. The evidence, therefore, which I have been able to produce to-day simply shows that this method, excellent as it is in itself under certain circumstances, is not one which can be universally practised as an ideal plan by the general body of practitioners. My opinion is that the treatment of fracture of the patella will in the future tend to resolve itself, with the majority of practitioners, into what I call the rational method; that is to say, the early resort to passive movement upon the lines to which I have already referred, and that operation, being reserved for the more severe cases, will become less common than it is now, because in many cases equally good results are obtainable without operation and therefore without the risk that operation entails. Thus the cases of the surgeons referred to who have given up the operative treatment after having found it wanting may, before long, be not altogether exceptional.

The methods of treatment of fracture of the patella when operation is not resorted to are worth mentioning. Practically the methods used are these: (*a*) The fixation by removable splints for long periods; (*b*) fixation by splints *plus* elastic traction; and (*c*) the immediate application of irremovable splints, such as plaster-of-paris and the like. A few surgeons still employ Malgaigne's hooks, and a certain number remove effused blood by immediate aspiration. In a minority of cases what I venture to call the rational treatment is adopted—that is to say, massage and passive movement is used very early after the receipt of injury, and splints are discarded altogether by the end of a fortnight or before.

Fracture of the Olecranon.

It appears that operation in this injury is the exception rather than the rule. The evidence afforded also goes to show that, with a few exceptions, perfect results are obtainable without operation. This is in complete agreement with my own experience, provided that passive or active movements are commenced early and conducted on rational principles.[1] In cases in which the olecranon has been broken at about the level of the centre of the greater sigmoid cavity and the separation is extreme, showing that the aponeurotic expansions are completely severed, approximation of the part by screws or wiring is indicated. When screws are used their removal may subsequently be required in consequence of the irritation produced by them. The ultimate bony union is, however, usually complete. At the same time, complete ankylosis at the elbow has followed in more than one case in which fracture of the olecranon has been treated by operation.

I now come to the last of the points raised in the questions which I circulated:

The Use of Massage and Passive Movement in Recent Fractures.

Of this treatment, I find that 50 per cent. of London surgeons have had no experience whatever; in the country, 70 per cent. have had no experience. Those who have tried the method—and, excepting the case of a very few surgeons, there appears to have been no very complete trial of the plan—are, in the majority of cases, greatly in its favour, and speak in strong terms of approval. On the other hand, it must be admitted that a minority are entirely opposed to it, mainly for the following reasons: One surgeon fears to use it in consequence of the danger of embolism, and he states that he has seen two cases of embolism arising in the course of treatment on this plan.

With regard to this objection, it must be remembered that embolism resulting from venous thrombosis sometimes occurs in patients who are being treated for fractures by the ordinary methods of splinting. Two cases of the kind have occurred in my own practice in the past five years; one in a case of fractured patella on the twenty-first day after the injury, the other in a fracture of the leg on the thirteenth day. Recently a case has come under my notice in which fatal embolism occurred on the tenth day after a fracture of the leg whilst the patient was lying quite still, no movements of any kind having been used.

Another considers it too inconvenient to the surgeon and to the patient. A third considers it absurd, although he has subsequently modified that opinion to some extent. Another is unable to grasp the principle of the method. Yet another does not see how it can be carried out. And, finally, one considers the principle altogether wrong. For my own part, as may be known to some of those present, I have a bias in favour of the treatment, when used with discrimination, and I believe that the treatment of fractures in the near future will really, in a general way, resolve itself into a rational adoption of that method, not always, perhaps, in the complete form such as I have recently described in some communications to the *Lancet*, but with such modifications as the nature of the case and the circumstances of the practitioner may suggest; the main points—namely, the very early use of the passive movements, in order to prevent adhesions and matting of the parts about the fracture, and massage for the purpose of preventing the wasting of the muscles and for the promotion of rapid absorption of the effused products—being practised.

The Diminution of Wage-Earning Capacity following upon Fractures.

A practical question, which is second to none in importance is that of the disabilities which follow upon fractures, especially in relation to the diminution in the wage-earning power of the individual. A consideration, therefore, of it is unavoidable on an occasion like this. With a view to arriving at a useful conclusion on this point, I was careful, in circulating my inquiries, to include amongst those to whom I applied for information a number of surgeons practising more particularly in mining and colliery districts, because it appeared to me that such practitioners would be in a better position than most of us to give information as to the effect upon the wage-earning power of the individual produced by fractures, not only because the fracture experience of such surgeons must necessarily be large, but also because from the circumstances in which they practise the patients often remain under notice for what is practically the rest of their

[1] *Lancet*, June 9th, 1900.

lives. I also took the opportunity of inquiring amongst those who have to do with sailors in large numbers, in whom having met with fractures at sea and under other disadvantageous circumstances the treatment is of necessity often of such a kind that union in bad and faulty positions must be more or less frequent. The result of my inquiries in this respect is that I find the real disability following upon fractures is not so great as one would be led to suppose from recent writings on the subject. It is, for example, distinctly stated by a surgeon who has perhaps a better opportunity for observing badly-united fractures and conditions of that kind in sailors of all nations and in all circumstances than perhaps any other, that he has not noticed any particular disability in this class of patient, and that, in fact, the majority of the seafaring people with whom he has had to deal who have been subjected to fractures, although the union may in the true surgical sense be faulty or even vicious, are able to earn their full pay as ordinary seamen.

The exact words used are as follows: "We see here a great many cases of old badly united fractures of leg bones such as those treated at sea, and after careful inquiry I have never yet been assured, excepting, of course, in cases of greatly exaggerated deformity needing osteotomy, of serious incapacity or of interference with the full discharge of the onerous and active work of a sailor."

A surgeon of extensive colliery practice writes that his experience, extending over many years, shows that the diminution in the wage-earning capacity is "practically *nil* in fractures of the upper extremities, and very little in fractures of the lower extremities," and he believes that "diminution of wage-earning capacity is much overstated in textbooks, etc." "This," he says, "is my experience in a large number of cases occurring in colliery practice, in which I have had the injured under my observation practically all their lives."

Another colliery surgeon of large experience writes: "Have seen no permanent diminution in young men," but in old ones sometimes, especially in compound comminuted fractures of both bones of the leg.

The fact of the matter is, I believe, as follows: In spite of what may be said to the contrary the disability following upon fracture is much more frequently due to matting of the parts about the fracture and about the joints immediately concerned than to any faulty union of the bones themselves, a point which is especially important to bear in mind in connection with this particular question. It is quite impossible to judge of the disability or probable disability which has been associated with any fracture by examining bones which have been found accidentally in the dissecting room or at *post-mortem* examinations, evidence to which far too much importance has been given. The amount of disability which the fracture entails can only be estimated by examination of the living subject. And practically it will be found—I can say this with some assurance, because I have taken much trouble in getting at the truth of the matter—that if a large number of patients be examined the vast majority of those who suffer great disabilities after fractures which have united badly in the ordinary surgical sense, do so in consequence of the want of free mobility about the joint above or below the seat of injury, or from pain upon attempts at movement, resulting from adhesions of the parts about the fracture or in the immediate neighbourhood of the injured bones. In other words, I believe that if in cases of fracture early passive movements were methodically used, so that all chance of adhesion of the parts about the fracture is avoided, very much less would be heard about the disabilities in such cases than we hear now. I wish it to be emphatically understood that what I have just said must not be interpreted to mean that I think there is any excuse whatever for not taking every possible trouble about the proper adaptation of the bones in fracture; what I do mean to say is that the mere fact that the bones of a broken limb do not unite symmetrically and quite in the straight line is not of necessity in itself any reason whatever why disability should occur, or why the wage-earning power of the individual should be diminished.

The Ambulatory Treatment of Fractures.

This is a treatment which, originally recommended in recent fractures about seventy years ago, appears to have received little attention at that time. Recently[2] attempts have been made to revive the method. It may, I suppose, be considered to be a modification of the method of massage and passive movements, the main elements being the application of some form of apparatus which will allow of the upright position being assumed during the healing of the fracture. I do not know that any methodical trial of the method has been made in this country, although the main object is achieved by those who adopt the immediate use of plaster-of-paris. It must, from the nature of things, be practically confined to fracture of the lower limbs. In this connection it is interesting to recall the practice which was in comparatively common use a quarter of a century or so ago, when delayed union and want of union was certainly more common than now, of placing fractures of the lower limbs, in which union was sluggish, in some kind of apparatus which allowed the patient to walk about in order to expedite union by the rubbing of the ends of the bones together—the beneficial effect from the greneral improvement in the nutrition of the limbs resulting from the movembents being entirely overlooked.

Before submitting certain conclusions at which I have been led to arrive by a consideration of the evidence, a summary of which is in your hands, as well as by an extensive personal experience, the following proposition may be laid down without, I presume, much fear of contradiction:

The general value of a treatment cannot be gauged by the results which can be achieved by it in the hands of one or two individuals, but must depend upon its adaptability to the circumstances and requirements of the general body of practitioners who use it.

Conclusions.

1. The treatment of simple fractures at present, although less stereotyped than hitherto, is still conducted generally too much upon lines which are traditional rather than rational.

2. The use of splints for long periods is disadvantageous, especially in the form of irremovable appliances such as plaster-of-paris and the like.

3. Speaking generally, the earlier movements of the joints above and below the fracture in a long bone are used the shorter is the time occupied in recovery.

4. The legitimate scope of the operative treatment of simple fracture is limited, and should be confined to (*a*) cases which are otherwise unmanageable, (*b*) special cases such, for example, as certain spiral and oblique fractures, mainly of the tibia, and (*c*) certain fractures near joints in adults, notably of the humerus at the elbow.

5. The operative treatment of recent fracture of the patella is by no means so generally satisfactory or so free from risk as published cases would tend to show; and further, in cases in which the separation of the fragments does not exceed half or even three-quarters of an inch, as good results for practical purposes are usually obtainable without operation although less rapidly.

6. The use of massage and passive movements immediately in simple fracture when the circumstances of the patient and of the practitioner admit of it either in its entirety or with modifications is, in the majority of cases, the best means of effecting a rapid and useful recovery.

7. The tendency of late has been to exaggerate the degree of disability and diminution in wage-earning capacity following upon simple fractures.

8. Although no pains should be spared in obtaining perfect position of the fracture ends, moderate displacement, provided that it is not rotatory, is not necessarily followed by any disability if care be taken by the use of early movements to prevent any matting of the parts around the fracture; in other words, the disability which follows in certain cases in which the position of the united fragments is not ideal is due, not to the bony deformity, but to the adhesion of the soft parts around, which is easily preventable

9. Having regard to the unavoidable modifications which must be dictated by the circumstances, social and otherwise, of the patient, and by the facilities possessed by the practitioner, no one method of treatment for simple fractures can be insisted upon for routine use even in cases in which the local conditions are precisely alike.

[2] See C. D. Lockwood, *Illinois Med. Jour.*, April, 1900.

TREATMENT OF SIMPLE FRACTURES.

Summary of Information obtained by submitting certain questions to about 300 Surgeons in London, the Provinces, Ireland and Scotland.

The inquiries were limited to members of the Senior Staffs of Hospitals and Infirmaries having no fewer than 100 beds, and to certain Practitioner who, for special reasons, are in the position of having large experience of fractures amongst colliers, etc

The questions were intentionally framed somewhat vaguely, as it was thought that, even if the material for giving accurate statistical information were available, the labour entailed in obtaining it would make any large number of replies impossible; moreover, it seemed likely that the end in view would be better obtained from general opinions based upon large experience.

Question 1.—What is the method which you commonly adopt in the Treatment of Fractures of the Bones of the Extremities? (For example, immediate application of Plaster of Paris or similar kind of Splint, Movable Splints, Wiring, Screwing, etc.)

Immediate use of Plaster of Paris, etc., either with or without anæsthetic, 22 per cent.

Removable splints without Plaster of Paris or similar splints at any period, 47 per cent.

Removable splints replaced by Plaster splints later, 26 per cent.

A small minority (5 per cent.) gave no details, answering only in a general way, for example, "Keep the bones in position by one means or another," etc.

One surgeon advocates operative treatment almost as a routine method, a percentage of the remainder (see Question 4) use operative measures in special circumstances.

The use of fixed arrangements like Plaster of Paris, etc., is considerably more common in the Provinces and in Scotland than in London.

Mention is made by several practitioners that they have discontinued or are giving up the use of Plaster of Paris and similar splints, mainly in consequence of the slow recovery resulting from their use.

Question 2.—Do you use massage or passive movements? if so, at what period after the receipt of the injury do you adopt either or both of these?

Of those replying: 12 per cent. use neither. 25 per cent. use both. 63 per cent. use passive movement without massage.

Period of commencing passive movements:—

London.—"From the first," 35 per cent. Fifth to tenth day, 15 per cent. Tenth to fourteenth day, 10 per cent.
Fourteenth to twenty-first day, 10 per cent. When fragments are immobile, 4 per cent. After firm union, 26 per cent.

60 per cent. reserve passive movement, with or without massage, for cases in which joints are involved in the injury.

Two Surgeons prefer *active* to *passive* movements.

Country.—"From the first," 13 per cent. Seventh to fourteenth day, 30 per cent. Fourteen days to six weeks, 11 per cent.
Twenty-one days to twelve weeks, 8 per cent. Twenty-one days to five weeks, 3 per cent. Six weeks to eight weeks, 4 per cent.
Four weeks to eight weeks, 3 per cent. After union is sound, 25 per cent. When fragments are immobile, 6 per cent.
In slow union only, 3 per cent. "Only when required," 3 per cent. During convalescence, 5 per cent.

Four Surgeons prefer *active* to *passive* movements.

The remaining replies give no definite times.

80 per cent. of Surgeons using movements, etc., reserve the treatment for cases in which joints are involved.

The practical upshot of this information appears to be that whilst the percentage of Surgeons who use passive movements, with or without massage, is about the same in London and the Provinces. London Practitioners use it considerably earlier in their cases, speaking generally, than is the custom in the Provinces.

The information on this head from Ireland and Scotland is too small to base any comprehensive conclusion. The practice in Scotland, however (Edinburgh Glasgow, etc.), seems to correspond almost exactly with that of London.

Question 3.—What is about the average time which elapses in your practice after the occurrence of the injury, before the patient is allowed to resume his ordinary calling, in Simple Fracture:—

a) Of the Femur? *(b)* Of the Leg (both bones)? *(c)* Of the Humerus? *(d)* Of the Forearm (both bones)

London.	Provinces.	Scotland.	Ireland.
Femur.—Extreme periods mentioned, 8 and 12 weeks.	Femur.—Extreme periods, 6 and 36 weeks.	Femur.—Extreme periods, 8 to 12 weeks.	Femur.—Extreme periods, 6 to 15 weeks.
32 per cent. 12 weeks (standard).	60 per cent. 12 weeks (standard).	40 per cent. 12 weeks.	38 per cent. 12 weeks (standard).
50 ,, less than 12 weeks.	25 ,, less than 12 weeks.	60 ,, 8 to 12 weeks.	44 ,, 8 to 10 weeks.
10 ,, more than 12 weeks.	15 ,, from 16 to 36 weeks.		9 ,, under 8 weeks.
Remainder indefinite			9 ,, over 12 weeks.
Leg (both bones).—Extreme periods, 6 and 16 weeks.	Leg (both bones). — Extreme periods, 3 to 16 weeks.	Leg (both bones). — Extreme periods, 6 to 12 weeks.	Leg (both bones). — Extreme periods, 4 to 10 weeks.
33 per cent. 6 weeks (standard).	34 per cent. 8 weeks (standard).	60 per cent. 6 to 8 weeks.	65 per cent. 8 weeks.
57 ,, more than 6 weeks.	45 ,, more than 8 weeks.	20 ,, 8 weeks.	32 ,, less than 8 weeks.
Remainder indefinite.	16 ,, less than 8 weeks.	20 ,, 12 weeks.	3 ,, more than 8 weeks.
	Remainder indefinite.		
Humerus.—Extreme periods, 2 to 8 weeks.	Humerus.—Extreme periods, 3 to 12 weeks.	Humerus.—Extreme periods, 4 to 8 weeks.	Humerus.—Extreme periods, 4 to 8 weeks.
30 per cent. 4 weeks (standard).	38 per cent. 6 weeks (standard).	40 per cent. 6 weeks.	37 per cent. 6 weeks.
42 ,, more than 4 weeks	27 ,, 8 weeks.	40 ,, 8 weeks.	27 ,, less than 6 weeks.
15 ,, less than 4 weeks.	20 ,, more than 8 weeks.	20 ,, 4 to 7 weeks.	36 ,, more than 6 weeks.
Remainder indefinite	15 ,, less than 6 weeks.		
Forearm (both bones). — Extreme periods 3 to 8 weeks.	Forearm (both bones).—Extreme periods, 3 to 16 weeks.	Forearm (both bones).—Extreme periods, 5 to 6 weeks.	Forearm.—Extreme periods, 4 to 8 weeks.
34 per cent. 4 weeks (standard).	30 per cent. 6 weeks (standard).	40 per cent. 6 weeks.	60 per cent. 4 to 6 weeks.
52 ,, more than 4 weeks.	20 ,, 8 weeks.	20 ,, 4 to 6 weeks.	28 ,, 6 weeks.
14 ,, less than 4 weeks.	46 ,, less than 6 weeks.	20 ,, 5 to 6 weeks.	12 ,, more than 6 weeks.
	4 ,, more than 8 weeks.	Remainder indefinite.	

A comparison in detail of the information provided by those who answer Questions 2 and 3, shows that the quickest recoveries follow in cases in which movements, active or passive, are earliest used.

Question 4.—Have you had experience of the Immediate Treatment of Simple Fractures by Wiring, Screwing, etc., if so, what is your opinion of the method, especially with regard to the scope of its application, to the risks entailed by its use and to its results?

Of those giving information, 50 per cent. have had no experience so far as the long bones are concerned.

Of the remaining 50 per cent. who have had experience of the operative treatment, unqualified approval is expressed by 5 per cent.

(One Surgeon apparently considers operation almost a routine treatment.)

30 per cent. are in favour of operation in a few special cases, for example, certain intractable *spiral and oblique fractures of the tibia.*

65 per cent. entirely disapprove of the operative treatment, *unless the cases are absolutely unmanageable without*, on the following grounds:—

Unnecessary, meddlesome, and possibly hazardous	20 per cent.
Experience up to date unfavourable...	5 ,,
Bad results in practice of others	8 ,,
Slowness of union	6 ,,
Results equally good without operation	12 ,,
Various reasons, for example, difficulties as to asepsis, necrosis, necessity for removal of screws, in consequence of interference with union, etc, ...	14 ,,

Eight Surgeons consider operative measures unnecessary, although they allow that good results may follow provided that asepsis can be secured.

Two Surgeons think that no sane person would in the absence of very special indications convert a simple fracture into a compound one.

Question 5.—Assuming that you treat the majority, or at all events some of your cases of Fracture of the Patella and of the Olecranon by Wiring, Screwing, etc., what treatment do you use in cases which you do not treat by operation?

PATELLA.

London.—Of those sending replies, 6 per cent. never operate; 25 per cent. always operate. The remaining 69 per cent. operate, as a rule, unless indications to the contrary exist—for example, absence of separation of fragments beyond half an inch; age of patient; occupation; general health, etc.

Provinces.—22 per cent. of those replying never operate; 4 per cent. always operate. Of the remaining 74 per cent. about half, *as a rule*, operate; the other half operate in exceptional cases only, and never unless the separation of the fragments exceeds half an inch. Two Surgeons have discontinued operating, as they find the results no better in the long run than those obtainable by other means.

In Scotland and Ireland the usual practice accords with that of London.

The material used for fracture is for the most part silver wire, but a few Surgeons use silk or kangaroo tendons.

In cases not treated by operation the following methods are employed :

Fixation by splints with arrangements of strapping, etc. (including the "Middlesex plan")	25 per cent.
Fixation by splints + elastic traction	16 ,,
Inclined plane	8 ,,
Immediate application of plaster-of-paris, etc.	15 ,,
Malgaigne's hooks	5 ,,
Removable splints of wood, leather, poroplastic felt, etc., giving facilities for early passive movement, etc.	17 ,,
Thomas's knee splint (walking)	2 ,,
Various special arrangements for approximating separated fragments in conjunction with splints, sandbags, pillows, etc.	12 ,,

Six per cent. of the total number of those supplying information remove effused blood by immediate aspiration.
The majority of those who operate do so not immediately after the injury but after intervals which vary from three to twenty-one days.

OLECRANON.

In only half of the replies received is specific mention made of the treatment of fracture of the Olecranon. With those giving information operation is the exception, not the rule, mainly for the following reasons : Perfect results easily obtainable without operation ; operation unnecessary ; liability to trouble from irritation, etc., caused by uniting media-screws, wire, etc.

No splints of any kind are used by 15 per cent.
Early movement (*passive* generally, but *active* sometimes) is practically universal.
The position of the limb *when splints are used* varies greatly :

The favourite position is extension	50 per cent.
Semiflexion	10 ,,
Midway between semiflexion and extension	10 ,,
"Slightly flexed"	10 ,,
Hinged splints or other special arrangements	9 ,,
Early movements and massage without reference to splints	11 ,,

QUESTION 6.—In cases of Fracture of the Patella treated by Wiring, when do you commence passive movement at the knee, and how long is it, as a rule, before the patients can return to their ordinary callings with free movement at the joint ?

LONDON.—Earliest period for commencement of passive movement, "at once." Earliest period for walking with free movement, 3 weeks.
Latest ,, ,, ,, 21 days. Latest ,, ,, ,, ,, 24 ,,

Date of commencement of passive movement.—

21 days	20 per cent.	Average time before patients are in a position to resume work, 8 *weeks*.
14 ,,	15 ,,	
10 ,,	8 ,,	
7 ,,	15 ,,	
3 ,, 4 ,, 5 ,, together	12 ,,	
"Early"	8 ,,	
"At once"	12 ,,	

The remaining 10 per cent. commence movement—"after healing of wound," "when safe," etc.
Four Surgeons prefer active movement to passive.
Six use no Splints after operation.
The remainder use Splints for periods varying from 2 days to 6 or 8 weeks.

PROVINCES.—Earliest period for commencement of passive movement, "at once." Earliest period for walking with free movement, 3 weeks
Latest ,, ,, ,, 12 weeks. Latest ,, ,, ,, ,, 18 *months*.

Date of commencement of passive movement.—

14 days	30 per cent.	Average time before patients are in a position to resume work, 9 *weeks* (this is *exclusive* of the very long estimate of 18 *months*).
21 ,,	26 ,,	
28 ,,	10 ,,	
42 ,,	8 ,,	
10 ,,	7 ,,	
7 ,,	7 ,,	
"After healing of wound"	5 ,,	
"At once"	5 ,,	
12 weeks	2 ,,	

SCOTLAND AND IRELAND.—The replies are too few to justify general conclusions, but so far as they go the following results are shown—
Earliest period for passive movement, 4 days. Earliest period of recovery, 3 weeks.
Latest ,, ,, ,, 6 weeks. Latest ,, ,, 16 ,,
In *Ireland* the average period for recovery comes out at 9½ weeks.
In *Scotland* ,, ,, ,, ,, 8½ ,,

Speaking generally, taking the total replies into consideration, there is abundant evidence that the shortest period of recovery follow in the cases in which passive or active movement is earliest used.

QUESTION 7.—In cases of Fracture of the Patella treated by immediate suture, have you had any experience of results which are defective (for example, with partial stiffness of the knee), or serious (for example, terminating in amputation, in suppuration, or in complete stiffness of the knee) ?

111 (one hundred and eleven) specific replies were received to this question, that is to say, from a considerable proportion of those Surgeons giving information who operate in Fracture of the Patella. (*See* Question 5.)

Of these :—7 Have had no unfavourable cases themselves, and make no mention of such in the practice of others.
14 ,, ,, ,, but *know of such* in the practice of others.
7 ,, ,, ,, but *have seen such* ,, ,,
3 Have, in their own experience, had *suppuration* around knee with impaired movement.
16 ,, ,, ,, *suppuration* and disorganisation with *complete stiffness*.
8 ,, ,, ,, to *amputate*.
1 Mentions suppuration with great *danger to life*.
3 Have had *fatal results* (one each).
2 Make reference to (*a*) "More than one fatal case in the practice of others," and (*b*) "Certain fatal cases."
12 Have experienced *stiffness with material disability*.
3 Have seen failure of aseptic precautions followed by "*serious results*."
7 ,, ,, stiffness without disability.
1 Says the movements are never quite perfect.
Have had experience of *re-fracture* or *cutting through* the bone by the wire during attempts at restoring movement, necessitating a second operation.
1 Hesitates to answer the question without first consulting his solicitor.

The remaining 10 mention recurrent arthritis, necessitating removal of wire. Result: "No better than in cases not submitted to ration," etc.

QUESTION 8.—Have you had experience of the treatment of Fractures by the *immediate use of massage* and passive movement; if so, what is your opinion of the method ?

Only 40 of those replying express an opinion upon this method :

In favour of the Treatment, 31	Approve generally	15	Personal experience.
	Results good, especially in fracture into or near joints	2	
	Most useful to obviate stiffness and accelerate union	4	
	Results admirable	7	
	Highly valuable plan	2	
	Believes the method to be the best	1	
Adverse to the Treatment, 9	Unsatisfactory	1	Personal experience.
	Rather dangerous from liability to cause thrombosis*	1	
	Wrong in principle	1	
	"Cannot see how it can be managed"	1	No personal experience.
	"Too inconvenient for surgeon and patient"	1	
	"Should not employ such treatment"	1	
	"Do not grasp the principle"	1	
	"Have seen bad results in practice of others"	1	
	Considers it "Absurd"†	1	
		40	

* This surgeon mentions a fatal case of embolism during the use of this treatment (see remarks in paper.)
† This opinion was subsequently modified.

II.—Charles Bell Keetley, F.R.C.S.,

Surgeon to the West London Hospital.

Mr. Keetley thought the value of the returns as to time occupied in recovery lessened by the difficulty of defining it, and that the general tendency of Mr. Bennett's remarks would be to undervalue the importance of correct reduction of the fracture. They were very apt to deceive and flatter themselves as to the position of fragments. The *x*-rays proved this. The best method of dealing with fractures of diaphyses in which there was much displacement was pinning in the manner described by Mr. Keetley at the Medical Society of London in February, 1893. This was very easy, simple, and safe, compared with wiring a fractured shaft. Wiring was the treatment for fractures into and near joints. In many such besides the patella and olecranon cases, no other treatment could restore the joint properly. The period occupied in union was much smaller than was generally thought, provided the fragments were placed in absolutely correct position, so short that both passive and active movements could be permitted very early; and movements were much more effective than massage in restoring function after fracture. One of the greatest hindrances to rapid restoration of function was a pending claim for damages. This took the desire of quick recovery away from a large number of patients. The removal of a wire was a trivial procedure; unless done prematurely it did not affect the position of the fragments at all. While making these more or less critical observations, Mr. Keetley did not underestimate either the great value of Mr. Bennett's collection of facts, or the general wisdom of his remarks on them.

III.—Robert Jones, F.R.C.S.E.,

Surgeon, Royal Southern Hospital, Liverpool.

Mr. Robert Jones was not impressed with the necessity of early massage, believing it should be adopted when union was complete, and that a fracture should be kept quiet during the early stages. He mentioned the ease with which in malunited femora and Colles's fracture one could make the bones yield by forcible manipulation and wrenching several weeks after fracture. Some years ago he measured a large number of femora treated for fracture, on their dismissal from hospital with union which seemed to be complete. On their return weeks later it was found that in nearly all cases considerable shortening had occurred during the interval of walking. This was a strong impeachment of the so-called ambulatory treatment. The faults which generally gave rise to pain and stiffness consisted of inefficient reduction and in circular compression, which hindered the reparative processes. This was especially true in Colles's and Pott's fractures. Mr. Jones thought Mr. Keetley's advice regarding the wiring of condyles a mistake. There was considerable risk and responsibility in transforming a fracture of the elbow which did well by simple means into a compound fracture. Most fractures of the elbow which were treated by supination and acute flexion without the application of splints did well. Having had a considerable experience of fractures he quite failed to see the necessity in any but the most exceptional cases for wiring of the long bones, and the direful descriptions given by advocates for operation, who predicted long and painful convalescence if wiring were not practised, were not borne out by fact, nor did they accord with the experience of men in large quarry and colliery districts. Hospital statistics were not reliable, inasmuch as the personal care and superintendence of the visiting surgeon could not be secured. Mr. Jones thought that one should be guided by the age and vocation of the patient as to whether a patella should be wired. He had wired 12 cases, and had met unfortunately with a death. The operation was a very simple one, but if an accident did occur it resulted in a tragedy.

IV.—Frederic Eve, F.R.C.S.,

Surgeon and Lecturer on Surgical Pathology at the London Hospital; Consulting Surgeon to the Evelina Hospital for Children.

Mr. Eve said that as regards the operative treatment of fractures his practice coincided precisely with the results obtained by Mr. Bennett. Since last October he had operated on 4 cases of simple fracture in the lower third of the shaft of the tibia. In 2 cases the operation was performed for nonunion after four to six weeks and in 2 cases for irremediable displacement. He did not hesitate to operate without delay in cases with displacement, but it was not often necessary; most of them were oblique. He had also operated during the period mentioned in one case of Pott's fracture of the Dupuytren variety. Here displacement recurred owing to tearing off of a portion of the outer articular surface of the tibia with the lower end of the fibula. He had also found it necessary to treat by operation a case of separation of the epiphysis combined with oblique fracture of the lower end of the diaphysis of the humerus, in which there was displacement backwards of the epiphysis which could not be remedied by position. The fracture was laid bare and the epiphysis wired to diaphysis (skiagraphs were shown). The question of the choice of operation or simple treatment of fracture of the patella must be decided by the conscience of the surgeon. If he operated under favourable conditions and were sure of his asepsis, the speaker believed that the operative treatment was the ideal one, and gave perfect functional results. It was more important to perform it in men than in women, as impaired function in the former from yielding of the uniting material was disastrous to them. Passive movement should be commenced early (on the fourteenth day), or adhesions were liable to occur between the upper fragment of the patella and the front of the condyles of the femur; and consequently, on attempting movement of the joint, the wires might be torn out. This occurred in one of his cases, but was remedied by reopening the joint, rewiring and cutting through the aponeurosis of the quadriceps. He had met with no accident from sepsis in treating any fracture by operation. He concurred with Mr. Bennett in preferring wire to screws. The latter were difficult to insert, and were liable to break through. He thought it unnecessary to commence passive movement in the treatment of fractures by splints, etc., until the tenth day, as organisation did not begin till then.

V.—Jonathan Hutchinson, Jun., F.R.C.S.,

Surgeon to the London Hospital.

Mr. J. Hutchinson, Jun., said that as regards transverse fracture of the patella or olecranon with separation, he had operated by the open method of wiring (using silver wire, the ends of which were hammered down beneath the periosteum so as not to require subsequent removal) in a considerable number of cases. There was no other method by which the surgeon was able to (1) clear the joint of all blood clot; (2) lift up the ragged edges of aponeurosis which dipped down in the gap; (3) obtain perfect apposition of the fragments; (4) allow the patient to actively flex and extend the joint within a few weeks of the accident, and thus to prevent wasting of the extensor muscles, and to dispense entirely with any sort of splint within two months. That perfect bony union occurred under these conditions he had proved by skiagraphs taken a year or two after the wiring. The cases must be carefully selected, the most elaborate and repeated disinfection of the skin carried out, and the operation deferred until the inflammatory reaction following the injury had subsided. There was very little evidence that, in cases not treated by operation, the stiffness of the knee was due to adhesions between the patella and femur; hence the practice advocated by Mr. Bennett of laterally moving the fragments over the condyles to prevent stiffness seemed uncalled for, and hindered the process of union of the fragments. There was no evidence that massage and galvanism applied to the quadriceps muscle after fracture of the patella would succeed in wholly preventing atrophy of the muscle; this could only be done by obtaining rapid and firm union between the fragments, and thus enabling the patient actively to use the muscle within a few weeks of the accident. With regard to immediate massage and passive movement as applied to such fractures as those of the lower end of the humerus in children (where the swelling of the soft parts was often extreme), his conviction was that these measures were quite unnecessary. The best plan was to keep the injured parts in complete rest until union was firm at the end of three weeks, and then to rely mainly on the active movements of the elbow by the patient himself. Again, with certain other fractures, such as

those of the neck of the humerus in adults, early massage, etc., would only run the risk of causing a false joint. In some fractures of the leg the soft tissues were so bruised that the plan might lead the skin to give way, thus converting the fracture into a compound one.

VI.—FRED. FRANÇOIS BURGHARD, M.S., F.R.C.S.,
Surgeon and Teacher of Practical Surgery at King's College Hospital; Surgeon, Paddington Green Children's Hospital.

MR. BURGHARD advocated the immediate wiring of fractured patella and fractured olecranon in all cases where the general condition of the patient did not contraindicate it. He believed it to be the only method by which a perfect result could be obtained—that is, that the fragments were perfectly coapted and that full flexion and extension against considerable resistance could be performed. He called attention to the method of treating fractured patella without any splint after the operation, and claimed for it that the movement was much sooner restored, and the patient thus enabled to get back to work much earlier than where splints are employed. It was common for patients thus treated to be walking about with the aid of a stick in three weeks, often being able to resume work in under six weeks. With regard to the cases of simple fractures suitable for immediate operative interference, he assumed it to be a primary law that it was the surgeon's duty to cut down and fix together the fractured ends in all cases in which it was impossible either to reduce the fragments or to keep them properly in position after reduction. This would include fractures of the olecranon and patella, most of the fractures into the elbow and the knee-joints, and some of the oblique fractures of the long bones. The need for operating upon these latter fractures, however, he believed to be very small, as they could almost all be reduced and kept reduced with proper care under anæsthesia. He believed that Mr. Bennett had finally disposed of the bogey of financial deterioration after fractures in the lower third of the leg, of which so much had been heard lately. He agreed that a great deal of any disability that was occasionally met with was due to matting of the muscles and soft parts, and quoted illustrative cases where simple separation of these structures from the callus had completely cured the disability. He preferred wire to screws wherever the former could be used. The binding power of the screws at present used was only slight, as the thread was small and recent bone soft; after the screw had been in position some hours, the binding power must be lost entirely owing to the softening of the bone produced by the irritation of the thread of the screw. He quoted cases to prove that the screws could work loose within a very short time. Another reason for preferring wire was that it would appear that a large number of the screws set up irritation, and had to be removed, while that was not usually the case with wire, which held firm throughout and did not require removal. With regard to the use of massage in the treatment of recent fractures his own experience was mainly limited to its use in Pott's and Colles's fractures, in which he had found it of the greatest value; he could not agree with those who said that Pott's fracture often required operation.

REPLY.

MR. BENNETT, in reply, pointed out that his paper was not, for the main part, a statement of his own views but a general statement of the present position of the treatment of simple fracture. He was not an enthusiast as had been suggested on the point of massage, but he believed there was sufficient good in the method to deserve more trial at the hands of surgeons that had even now been accorded to it. In young children he did not use it. He was extremely gratified to hear the remarks upon the disability following upon fracture which fell from Mr. Robert Jones and Mr. Burghard, which entirely agreed with his own views as mentioned in his paper. With regard to fracture of the patella he wired all cases in healthy subjects excepting some when the separation did not exceed half an inch. With regard to Mr. Hutchinson's remark concerning adhesion of the upper fragment in some cases of fracture of the patella he pointed out that he had not stated that any adhesion between cartilaginous surfaces existed, on the contrary, he was careful to say that the adhesions were around the patellar fragment affecting the soft parts only.

ON THE BEST METHOD OF REMOVING LARGE STONES FROM THE BLADDER: WITH NOTES OF A CASE.

By S. H. BURTON, M.B., F.R.C.S.,
Surgeon to the Norfolk and Norwich Hospital.

HAVING recently had under my care in the Norfolk and Norwich Hospital a case of very large vesical calculus, I think it will be of interest to record it, and afterwards to discuss the best methods for the removal of such:

S. T., aged 35, a labourer, was admitted into hospital on February 10th of this year, with a history of having been troubled with his water for the previous thirteen years, having frequency of micturition, pain in abdomen, penis, and down thighs during and after micturition. He has only occasionally passed blood, but the urine has often been very high coloured and foul smelling. His symptoms increased in severity the past three months, and for the last three weeks have kept him from his work. On admission, February 10th, he complained of pain in abdomen, aggravated by exertion. He has great frequency of micturition (nine times during the night), and pain during the act in abdomen and penis. Urine, alkaline, 1018, deposit of mucus, blood, pus, and phosphate crystals. Pulse 88, temperature normal except in the evening, when it rises to 99°. He was sounded the day after admission, and a stone was at once struck, fixed as if gripped by the bladder walls, and the bladder itself contained hardly any urine. *Per rectum*, just above a prostate of normal size, a very large stone was readily felt quite 2½ inches across laterally and from above down.

On February 15th I performed suprapubic lithotomy, Mr. Cadge and Mr. Robinson being present. The bladder was irrigated with hot boric lotion, and about 5 ounces of it left in, and the penis was ligatured. No rectal bag was used. The distension of the bladder caused a very definite prominence above the pubes for 3 to 4 inches. A 4-inch median incision was made through the parietes over this swelling, and the bladder was readily exposed for 3 inches. After fixing the fundus of bladder with a sharp hook, it was opened for 3 inches, and the stone, digitally explored, was found to be of its suspected size. After some little difficulty in securing a good hold of it, it was extracted by large lithotomy forceps, a finger in the rectum pushing the stone up to the wound. The bladder was then closed except for ¾ inch near lower part of its wound by interrupted sutures of gossamer fishing gut, the edges of recti were brought together except for 1½ inch, skin brought together similarly, and a tube inserted, but not into the bladder. The wound was dressed with gauze. The patient stood the operation well. The stone weighed 10 ounces 5 drachms, was roughly 3 inches by 3 inches by 2½ inches, fairly smooth externally. On section it showed a uric acid nucleus, then an outer layer of oxalates, then phosphates, then uric acid and phosphates, and it cut very hard with the exception of the outer crust, which seemed inclined to flake off.

His condition was very satisfactory after the operation, and on the fourteenth day the note was that the urine contained much mucus and was all passed through the wound. The skin around wound was in good condition. Bladder washed out daily with iodoform emulsion (gr. iss. to 3j).

On March 7th (twenty-first day) a Jacques catheter was tied in *per urethram*, the urine being still alkaline. On March 23rd no urine came through the wound, and for three weeks there was no leakage, the catheter remaining in all but the last two days, then the suprapubic scar broke down. A catheter was again tied in and irrigation resorted to. He improved in general health, the fistula still remaining, until June 2nd, when he had severe pain in the right loin and vomited three times the temperature rising to 103.4°. This was the beginning of his pyelitis. On June 4th he had a severe rigor with acute pain in the right loin and vomiting. There was an area of dulness with great tenderness in the right loin, corresponding to the kidney. After this he had a succession of rigors, and on June 9th I cut down on the right kidney, opened the pelvis and let out a large quantity of very offensive pus and by a scoop removed many small lithic stones. On June 12th he had improved and there were no more rigors. June 13th he was worse again, skin cold and clammy, and on the 15th he died, remaining conscious to the last, four months after the lithotomy operation.

The cause of the onset of his pyelitis is not yet clear to me, every care having been taken in the matter of antiseptics both in treatment of wounds and of catheters. Probably the secretion from the pelvis of the kidneys, which at one time had been very foul, never became aseptic and some unknown cause made it assume a virulent form.

Necropsy.—Bladder very small, slightly hypertrophied. Wound in anterior part of fundus admitted little finger, having been opened up after the kidney operation. Surface of wound callous; mucuous membrane healthy; openings of ureter admitted a large probe; three small calculi like those in kidney lying loose in bladder. Kidneys both large. Right, operation wound admitted finger; cortex contained many yellow points suggesting early suppuration: pelvis dilated, containing a few small calculi, smooth and facetted; ureter dilated and thickened to size of little finger; near the bladder it contained three calculi the size of horse beans. Left kidney showed the remains of an old cyst or abscess. In the pelvis there were a large number of very small calculi like those found in the right kidney, but some were larger and one irregular; one lay over the mouth of the ureter apparently preventing the descent of any other calculi. Ureter thickened and dilated, but contained no pus, blood, or calculi. Nothing special was noted in the other organs.

Litholapaxy has been so far perfected that it has now become the recognised operation for all stones up to about 2 ozs. in weight, and gradually the scope of lateral lithotomy has been narrowed so that even in the case of children lithopaxy, which has been strongly advocated by Dr. Keegan and is

usually performed by Indian surgeons, is now adopted by most surgeons, and as lateral lithotomy has been pushed back so has lithotrity been advanced, and a new operation under the name of perineal lithotrity has been advocated, but this may turn out after all to be lateral lithotomy under a new name. As I am now only concerned with large stones, my arguments will therefore be narrowed down to the relative advantages of the two operations, namely, suprapubic lithotomy and perineal lithotrity—which is the better operation for dealing with a large stone?

First of all the suprapubic operation. Its history is well known to you—how in the first instance it was undertaken when the perineal operation failed, even as far back as the middle of the sixteenth century, and since then how it has been used in the case of large stones.

In 1878 Peterson, of Kiel, revived the operation, and in 1885 Sir H. Thompson reported 4 successful cases, one of the stones weighing 14 ozs. and two 1½ oz. After recounting these cases Sir H. Thompson says: "I think I am quite justified in believing that unless the operator has had a large experience of lithotrity the high operation would generally be a safer proceeding than crushing for a calculus which is hard and much above an ounce in weight."

Mr. Cadge, in his excellent lectures delivered at the Royal College of Surgeons, June, 1886, after discussing the merits and demerits of the suprapubic operation, says all are agreed that it is to be preferred to other methods for very large stones, those, namely, which exceed the size of a hen's egg.

What are the dangers of the suprapubic operation? It certainly seems to me to be a very scientific procedure to expose the bladder, cutting through no important structures and wounding no blood vessels of any size, to open the anterior wall as freely as necessary, to thoroughly examine the inside of the bladder and to remove any foreign body in it. If the incision be free enough there need be no bruising of the edges of the wound, and after free irrigation the edges of the wound might be brought together with fine gossamer fishing-gut, and the wound closed as for rupture of the bladder after injury, and a catheter tied into bladder or passed at regular intervals, as has been successfully done by Mr. Robert Parker. When the surgeon judges it best not to do this because of the bruising of the edges of the wound, the stone being a large one, then the wound can be left open or a drainage tube inserted.

In the operation itself, then, there is no special danger. The peritoneum ought easily to escape being wounded, and if it is opened, it can be stitched up at once, and the operation carried out. The interference with the patient is not great, and certainly ought to be far less than must result from the protracted measures necessary to crush a large stone into several fragments, as in the perineal method. That there is a wound in the least dependent part, and that that wound may be long in healing, is undoubtedly a drawback to the operation, but on the other hand some cases are quite healed and well in four weeks' time.

What really decides the issue of operation in protracted stone cases is the condition of the kidneys and their pelves, which it is well-nigh impossible to determine accurately. In my case both kidneys were enlarged, the pelvis and ureters were moderately dilated, and both pelves contained calculi, the bladder was healthy but the urine was nearly always alkaline, often very foul, and contained much muco-pus. What at the end of four months gave rise to the fatal pyelitis when the sinus had nearly healed and the general condition of the patient had improved? However, though this patient succumbed four months after the operation, I still claim it as a success for the suprapubic method. That the suprapubic operation is successful in the case of very large stones history records. Notable examples are: Sir T. Smith's case in a man aged 43 with recovery, where the stone weighed 24½ oz., and Mr. Rivington's case, where the stone weighed 25¼ oz. In 1893 Dr. Beverley, of Norwich, removed by this method two stones weighing 4½ ozs. in a man aged 71, who was well at the end of three weeks; and again in this year, about the same time as my own stone case, Mr. Nance, of Norwich, operated on a man, aged 75, by the suprapubic method, and removed a stone of 4¼ ozs., the bladder being thickened and not very healthy, and in four weeks' time the wound was healed and the patient was well. What result could possibly be better than this? I believe none could be better in the hands of the general surgeon.

Perineal Lithotrity.—What is meant by this? By lithotrity is meant litholapaxy. Is perineal lithotrity nowadays different from perineal lithotomy of an older date with the stone broken into several fragments, as described in 1820 by Mr. Earle? Are Bigelow's evacuators used after crushing? or are the fragments removed by forceps? We shall see that both plans are adopted. As far as I can ascertain, though I have no practical experience myself of the methods, there are three whose principles are defined, and they represent three lines of practice. The first, though not so in point of time of its production, is that advocated by Surgeon-Major Forbes Keith, of Hyderabad,[1] which is to open the membranous urethra on a grooved staff, introduce a director, then a giant lithotrite, and to remove the *débris* by evacuator and aspirator. This operation is a genuine perineal litholapaxy suggested to him by a case of stone in the female, and he advocated it because it enabled him to introduce his giant lithotrite, which he could not have done from the meatus.

The second method is that of Dolbeau, who gave the name of perineal lithotrity to the operation, advocated so ably by Mr. Reginald Harrison, to whom I am indebted for the instruments. It is as follows: A median perineal cystotomy is performed, and the finger introduced into the bladder; a pair of crushing forceps resembling an ordinary pair of lithotomy forceps is then introduced, the most powerful having a screw at the handle. By means of these forceps the stone is sufficiently reduced in size as to be readily withdrawn in fragments by these instruments, or to be sluiced out with a cannula and an ordinary wash bottle; a drainage tube is afterwards inserted into the bladder.

Mr. Harrison asserts in his book that the chief points in favour of perineal lithotrity are:

1. It enables the operator to crush and evacuate large stones in a short space of time.

2. It is attended with a very small risk to life as compared with other operations, such as lateral and suprapubic lithotomy, and that it is well adapted to old and feeble subjects when for any reason crushing is inadmissible.

Mr. Harrison bases this statement on mortality on Mr. Milton's 21 cases of large stones with 1 death, and 15 of his own (of all weights, not necessary large) and no death.

Mr. Milton's method is not quite the same as Mr. Harrison's, and might fairly be called a perineal lithotomy. The usual incision is made for lateral lithotomy, the skin being freely divided, the prostate and the neck of the bladder but slightly; the forefinger is inserted into the wound as the knife is withdrawn, and, guided by the staff, insinuated into the bladder, dilating the wound in its progress. The crushing forceps are then introduced through the wound, and the operator, holding a blade of the forceps in each hand, seizes the stone; screw action is then employed to crush the stone, and afterwards to the several fragments, which are removed by lithotomy forceps. In thirty-five minutes he removed a stone 4 ozs. in weight.

He has performed this operation twenty times for large stones, and all were successful. Five weighed between 2 and 3 ozs., seven 3 to 4 ozs., four 4 to 6 ozs., and four 6 to 8 ozs. His twenty first case was a fatal one. Mr. Milton considers the operation much easier of execution than ordinary lithotrity, and to be much safer than suprapubic, and he prefers to cut the neck of the bladder and prostate rather than to dilate, which means rupture.

In discussing these three methods, it seems to me that, though the first appears to answer best to the term perineal lithotrity, because it is a pure lithotrity, yet for stones up to 2 ounces it seems to possess no advantage over ordinary litholapaxy. For stones above that weight and up to 6 ounces in the hands of skilled operators, a giant lithotrite introduced through a perineal wound is a good operation, and ought to ensure success, but in the hands of the general surgeon I still consider that suprapubic lithotomy would be far safer.

Of the second method advocated by Mr Harrison, his first important point is the time taken in crushing, which in the case of a large stone must depend on its hardness and on the facility of the surgeon in handling his instruments. Speaking of the hardness of stones in ordinary litholapaxy, Mr. Cadge, in the lectures above referred to, says there must, I conceive,

be some difference between the texture and composition of those large Indian calculi and those pure red uric acid ones which I often meet with. I can hardly believe that any instrument capable of being introduced could break up a uric acid stone of 3 ounces. On examining Mr. Harrison's instruments, I find that the greatest width at the tips of the crushing forceps without screw power is 4 inches, but no one could crush a large Norfolk stone without screw power. The measurements of the screw forceps are: the larger, 2 inches at tip, 1¾ inch between the teeth; the smaller, 1½ inch. This amount of expansion gives a very limited range for manipulation. Supposing in Mr. Harrison's operation the forceps impinged on a large stone held by the bladder, how would he engage the stone in the blades? It must, indeed, be difficult when the blades of the forceps can only be expanded 1½ to 2 inches, when the hinge must be kept in the dilated prostate, so as not to unduly stretch or tear it. In the hands of the operator who designed these instruments success may be achieved, but not in the hands of the general surgeon, who would do far better with a suprapubic lithotomy. Of the third method as described by Mr. Milton, I should say it was a genuine lithotomy, and he admits it too, I think, when he advises the cutting of the prostate laterally, and after the use of the lithoclast, a strong straight instrument capable of crushing a stone up to 8 ozs., the fragments are removed by a very small pair of lithotomy forceps. Does not this description answer to Mr. Earle's ideal in 1820 for the removal of large stones by lithotomy? Mr. Milton's statistics are highly satisfactory for 21 cases, and if the stones are not very hard the amount of instrumentation ought not to be dangerous, but if the stone be very hard, as our uric acid ones are, then it does become dangerous. This operation for large stones in England has hardly had a trial, but however good this operation may be, I regard the suprapubic as a better one.

To sum up then: the advantages of suprapubic lithotomy are that the bladder can be opened freely, and examined fully, in an almost bloodless manner, and a stone of any known size extracted with least disturbance to the patient of any operation, and in the case of enlarged prostate these advantages are accentuated.

The disadvantages are that the wound may be long in healing, and that occasionally, probably from faulty stitching, phosphates crust on the scar, reproducing another stone.

The advantages of perineal lithotrity are that the bladder wall is not cut, and the neck of the bladder is only incised enough to admit the finger, and afterwards the lithoclast and the opening into the bladder is dependent.

The disadvantages are the frequent instrumentation during the operation, and the disturbance of the neck of the bladder by removal of the fragments of stone; the bruising and perhaps fatal injury of the bladder mucous membrane by the lithoclast, when the bladder is contracted around a large stone; the impossibility of examining the bladder with the finger in the case of a big man with a deep pelvis, and the difficulty, where there is a large prostate, of manipulating the instrument easily, and of removing all the fragments, and lastly, where the kidneys and ureters are diseased, owing to chronic dilating and infective changes, the danger of setting up acute pyelitis and nephritis is increased in proportion to the amount of manipulation.

I must therefore strongly incline to the opinion that the suprapubic operation is the best one for large stones, and I believe increased experience will tend to strengthen me in this opinion.

REFERENCE.
1 *Lancet*, 1892.

ON FIFTY-THREE OPERATIONS FOR STONE IN THE BLADDER,

OF TWO OUNCES AND UPWARDS, FROM THE AUTHOR'S PRACTICE.

By P. J. Freyer, M.A., M.D., M.Ch.,
Surgeon to St. Peter's Hospital.

I have now performed nearly 1,000 operations for stone in the bladder by all methods—the exact number is 993—and had intended placing before you at this meeting the results of these operations, giving at the same time some of my recent experiences of surgery of stone derived from 127 operations performed by me during a period of a little over four ears that I have been in practice in London. Our honorary secretary, Mr. Spencer, however informed me that the question which at the present time most exercised the East Anglian surgical mind in this particular branch of surgery was the best method of removing large vesical calculi, and that you, Sir, had suggested that I should alter the subject and title of my paper accordingly. I have had much pleasure in complying with this suggestion, and now invite your attention to some brief remarks on 53 calculi of 2 ounces and upwards from my own practice.

I shall assume that the practice and literature of recent years have placed beyond question that when we have to deal with a small or moderate sized stone, whether occurring in the male or female, in the adult or child, there is in the vast majority of instances only one operation justifiable, namely, litholapaxy. So much am I myself imbued with this tenet that I have now almost completely abandoned every other form of operation in favour of Bigelow's, the force of which statement will be gathered from the fact that among my last 400 operations for stone in the bladder, in all ages from 1½ to 90 years, the weights varying from a few grains to 6¾ ounces, there were only 13 lithotomies, namely, 4 suprapubic, 8 perineal, and 1 vaginal, the remaining 387 cases having been dealt with by litholapaxy. Indeed, the practised litholapaxist will now approach a stone of moderate size with a confidence and certainty of success unknown in any other great operation in surgery.

When, however, we have to deal with a large stone conditions are changed; and I venture to say that there is not one of us, no matter how experienced he may be, who will not feel, when brought face to face with a stone of the size of any of those placed on the table before me, that he has a serious responsibility thrown upon him, no matter by what method he may decide on removing it. I hope my remarks may be helpful to you in deciding on the best metods of dealing with calculi of this kind.

The question now arises, What are we to regard as a large stone? It is impossible to draw a hard and fast line that will be applicable in all circumstances. The age of the patient and the experience of the surgeon are the most important factors in determining this question. A stone of say ½ ounce, which in an adult would be regarded ordinarily as a comparatively small one, would in a child be considered a large one; an inexperienced surgeon might regard a stone of this size, even in the adult, as a large one, whereas a practised hand would consider it one of very moderate dimensions indeed. For our purpose to-day, however, I shall define a large stone occurring in an adult as one weighing 2 ounces and upwards, of which there are 53 examples before me.

The table on p. 1016 shows at a glance the operation undertaken and important features in each of these cases. The patients were all adults except 2 boys, aged 14 and 15 years respectively. They were all males save 1. The last four operations were performed in England, the rest in India. There were:

Suprapubic lithotomies	4
Lateral lithotomies	13
Vaginal lithotomy	1
Litholapaxies	35
Total	53

The average age, weight, number of days under treatment after operation, and mortality in each variety of operation is given in the following table:

Operation.	Number of Operations.	Average Age.	Average Weight of Stone.	Average No. of Days in Hospital.	Mortality.
			oz. dr. gr.		
Suprapubic lithotomy ...	4	27¼	5 5 0	34	2, or 50 per cent.
Perineal lithotomy ...	14	42¼	2 5 23	30	4, or 28½ ,,
Litholapaxy	35	52⅖	2 4 0	11⅕	4, or 11⅓ ,,

It will be observed that the average age of the litholapaxy cases was nearly 53 years, about 10 years greater than that of the perineal lithotomies, and about double that of the supra-

pubic cases. The average weight of stone in the suprapubic cases was however, twice that of the other two varieties.

The period of treatment after lithopaxy was only eleven days, as compared with thirty and thirty-four after lithotomy. The mortality, which after suprapubic lithotomy was 50 per cent., and after perineal lithotomy 28¾ per cent., was in the lithopaxy cases only 11⅓ per cent.

The time allowed will not permit of my entering into details o the individual operations. I consider, therefore, that I shall best utilise the short time at my disposal by directing your attention to some of the difficulties and complications met with in dealing with large calculi by litholapaxy, and pointing out the circumstances under which a cutting operation is advisable or necessary.

Undoubtedly one of the most essential elements of success in litholapaxy is the employment of proper instruments. Those which I myself employ are a lithotrite (Fig. 1), which was made for me in 1886 by Weiss, and is the model on which all my large lithotrites have since been constructed.

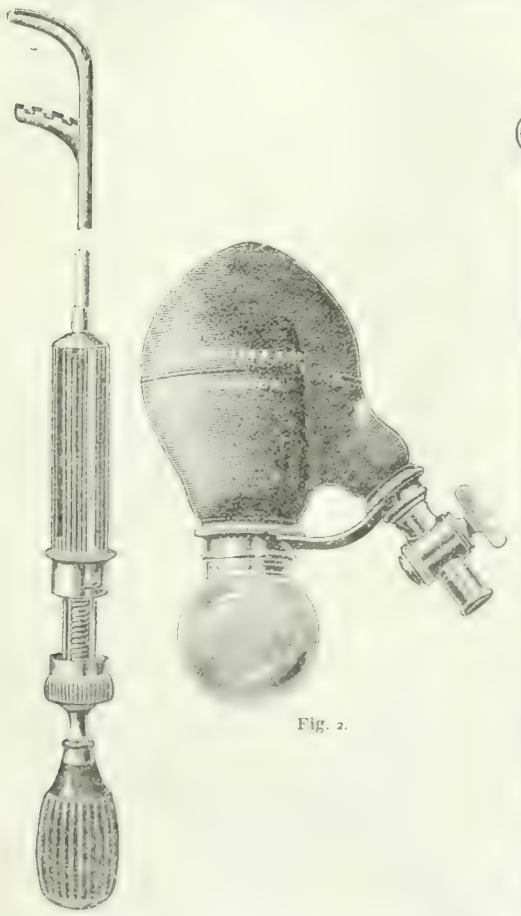


Fig. 1.

Fig. 2.



Fig. 3.

It possesses the handle and locking action of Bigelow with fully fenestrated female blade, instead of a non-fenestrated blade originally used by him. The ball-handle affords a much firmer grip than the wheel, a grip which is essential when dealing with large and hard stones. The locking action is of the simplest character, the instruments being locked and unlocked by a quarter turn of the cap to the right or left by the right hand, the left hand being free to grasp the female blade and hold it steady in the bladder during the various manipulations. The female blade is fully fenestrated, smooth, and bevelled on the inner aspect of the slot, so that it is almost impossible to catch the mucous membrane. I use none but fully fenestrated lithotrites now, regarding the use of any other kind as dangerous, owing to the liability which exists in the non-fenestrated or partially fenestrated lithotrites of *débris* getting impacted in their jaws. To cope with large calculi in the adult, lithotrites from No. 14 to 18, English scale, should be at hand.

The essential requirements in an aspirator are: (1) That the apparatus be light and handy, so that when attached to the cannula in the bladder it can be moved freely and easily in any direction by one hand; (2) that it be devoid of valves and strainers, which are liable to get clogged and out of order; (3) that the distance between the rubber bulb and the bladder be the shortest possible, and the intervening course of the fluid as straight as possible; (4) that the rubber be strong and pliant, so as to give sufficient suction power; and (5) that fragments once entering the receiver cannot return to the bladder. In 1895 I designed this (Fig. 2) simplified form of Bigelow's aspirator. It possesses all the attributes I have indicated. I have now worked with it for nearly five years, and have found it thoroughly efficient in all respects.

The cannulæ (Fig. 3) for adults vary from No. 12 to 18, English scale. They are best when slightly curved at the end to facilitate introduction.

To enable us to pass these large instruments it is essential that the urethra should be of normal capacity. When the stone is of moderate dimensions, stricture is no bar to litholapaxy, the stricture being cut internally or rapidly dilated immediately before the main operation. But when we have to deal with a large stone, repeated introduction of the instruments is necessary, and this is not advisable over a wounded urethra. When, therefore, stricture coexists with large stone, lithotomy should be employed.

Hypertrophy of the prostate does not necessarily bar litholapaxy for large stone. Several of these calculi were successfully removed from patients with enlarged prostates. For instance, this, the last of these large calculi, weighing 2½ ounces, I removed in January, 1899, from a gentleman aged 76, who for several years has passed no urine except through a catheter, owing to hypertrophy of the prostate. He is at the present time in good health, save, of course, that he has to use his catheter. Should, however, the prostatic hypertrophy be very pronounced, with tortuous urethra, suprapubic lithotomy is the proper treatment.

Then, again, we sometimes find in dealing with large calculi that the bladder is thickened and contracted, tightly grasping the stone, so that difficulty is experienced in getting the jaws of the lithotrite on to it. This difficulty may, as a rule, be overcome by injecting water into the bladder, thus separating the mucous membrane from the stone. But occasionally the bladder in such cases, even under profound anæsthesia, resents the presence of the smallest quantity of water. In such cases lithotomy must be had recourse to.

It sometimes happens that when a large and hard stone is grasped by the lithotrite, and the blades screwed home with force, the calculus does not yield. If we wait for a few seconds it not infrequently breaks, and with a loud report. If not, the stone should be caught in another axis and the lithotrite again screwed home. By repeating this process the stone, as a rule, will eventually give way, owing no doubt to the fact that it has less powers of resistance in some directions than in others. Amongst my last 400 cases there was only one instance in which from its hardness I was unable to crush the stone. I show you this comparatively small uric stone, weighing 2 ozs., which occurred in a female, and on which my largest lithotrite could make no impression. And I would here point out that a uric or urate stone may be more difficult to crush than an oxalate one of the same size, the latter being more friable, though composed of intensely hard knobs.

Calculi being frequently irregular in shape, as a glance at those before me will remind you, it may be found that, though the lithotrite will not lock when the stone is caught by the long axis, it will do so when the stone is released and caught by a shorter axis. The calculus is then broken across, and the large fragments attacked in turn and reduced to fine *débris*.

A calculus of such dimensions that the largest lithotrite will not lock may, nevertheless, sometimes be crushed, provided it be comparatively soft, or at least have a soft coating. In cases of this kind we dig the lithotrite into the sides of the stone, and, holding them in position, screw home the blades, scraping off the crust. By repeating this process the stone will as a rule be rapidly reduced in size, so that the lithotrite can lock on it.

In this manner I successfully disposed of a calculus, the *débris* of which weighs 6½ ounces, the details of which have been published in the British Medical Journal, 1894, vol. i, p. 1236.

Illustrative of the rapidity with which a large and hard stone may be removed with practice, I may refer to an oxalate of lime calculus, weighing 3 ounces and 20 grains, which is, I believe, the largest removed in England by litholapaxy. I crushed and evacuated this stone in April, 1897, in 24 minutes, the time being taken by Mr. W. Braine, the anæsthetist. Two days after the operation the patient wrote to Dr. W. Arm-

Table giving Particulars of Fifty-three Calculi weighing Two Ounces and Upwards operated on by P. J. Freyer.

Serial No.	Date of Operation.	Nature of Operation.	Age.	Weight of Stone.	Variety of Stone.	Days in Hospital.	Time occupied by Operation.	Result.
				ozs. drs. grs.			Minutes.	
17	May 19, 1878	Lateral lithotomy	65	2 0 0	Urates, phosphates	40	—	Successful.
66	Oct. 14, 1881	,, ,,	35	2 0 0	Urates	—	—	Died.
72	April 4, 1882	,, ,,	25	2 3 [illegible]	,,	24	—	Successful.
82	April 19, ,,	,, ,,	60	2 1 0	,,	41	—	,,
83	April 19, ,,	,, ,,	40	3 4 0	,,	—	—	Died.
90	June 2, ,,	,, ,,	22	2 0 0	Oxalates	19	—	Successful.
99	Aug. 5, ,,	,, ,,	29	3 0 0	Urates	36	—	,,
126	Dec 6, ,,	Litholapaxy	60	3 2 0	,,	11	66	,,
136	Jan. 11, 1883	Suprapubic lithotomy	17	3 1 0	Uric	32	—	,,
142	Feb. 20, ,,	Lateral lithotomy	20	2 0 30	Urates, phosphates	48	—	,,
146	Mar. 17, ,,	,, ,,	60	4 0 30	Uric	—	—	Died.
164	May 15, ,,	Litholapaxy	45	2 4 0	,,	11	70	Successful.
168	May 25, ,,	,,	45	2 6 0	,,	—	75	Died.
180	July 3, ,,	Suprapubic lithotomy	27	12 4 0	Urates	—	—	,,
209	Nov. 15, ,,	Lateral lithotomy	40	2 6 0	,,	33	—	Successful.
211	Nov. 21, ,,	Litholapaxy	80	2 0 55	,,	17	90	,,
231	Mar. 7, 1834	Lateral lithotomy	75	4 3 0	Uric	—	—	Died.
237	Mar. 17, ,,	,, ,,	36	2 7 0	,,	24	—	Successful.
264	June 21, ,,	Litholapaxy	35	2 [illegible] 0	Phosphates	9	17	,,
276	Aug 12, ,,	Lateral lithotomy	14	2 2 30	Oxalates	22	—	,,
277	Aug. 13, ,,	Litholapaxy	26	3 1 30	,,	—	52	Died.
297	Oct. 20, ,,	,,	55	2 0 45	Urates, oxalates	7	26	Successful.
316	Aug. 30, 1885	,,	60	3 2 30	Uric	24	65	,,
322	Sept. 9, ,,	,,	55	2 2 0	,,	8	47	,,
333	Aug. 23, 1886	,,	50	2 0 0	Phosphates	10	30	,,
403	May 27, 1887	,,	24	2 1 0	Urates	4	35	,,
419	July 6, ,,	,,	30	2 4 0	,,	10	45	,,
494	May 24, 1888	,,	44	2 1 50	,,	5	17	,,
499	May 27, ,,	Suprapubic lithotomy	35	3 2 0	Oxalates	36	—	,,
553	Mar. 25, 1889	Litholapaxy	55	2 6 0	Uric	5	35	,,
554	Mar. 29, ,,	Suprapubic lithotomy	30	3 4 0	Oxalates	—	—	Died.
570	June 3, ,,	Litholapaxy	90	2 0 39	Uric	—	45	,,
604	Dec. 26, ,,	,,	15	3 2 17	Urates, phosphates	31	60, 90	Successful.
625	Mar. 4, 1890	,,	55	2 6 10	Uric	16	45	,,
628	Mar. 21, ,,	,,	80	2 4 37	Urates	9	55	,,
633	April 15, ,,	,,	75	3 1 0	Oxalates	9	75	,,
668	July 30, ,,	,,	35	2 4 19	Uric	7	36	,,
675	Sept. 6, ,,	,,	80	2 4 18	,,	9	35	,,
687	Oct. 20, ,,	,,	70	2 0 39	,,	7	35	,,
712	Jan. 2, 1891	,,	20	3 0 0	Urates	4	35	,,
732	Mar. 19, ,,	,,	20	2 0 4	,,	9	40	,,
763	Jan. 7, 1892	,,	75	2 0 1	,,	11	35	,,
773	Feb. 20, ,,	,,	45	6 1 0	,,	21	120	,,
779	Mar. 19, ,,	,,	50	2 0 2	,,	7	20	,,
790	May 2, ,,	Vaginal lithotomy	70	2 0 0	Uric	11	—	,,
810	Sept. 24, ,,	Litholapaxy	58	3 0 10	,,	6	40	,,
838	Feb. 13, 1893	,,	65	2 0 50	,,	6	22	,,
845	Feb. 28, ,,	,,	60	2 2 40	Oxalates	12	32	,,
865	Mar. 3, 1895	,,	57	2 0 53	Urates	7	20	,,
889	April 29, 1897	,,	34	3 0 20	Oxalates	12	24	,,
894	July 1, ,,	,,	52	2 0 10	Uric	10	25	,,
919	June 15, 1898	,,	60	2 1 33	Urates	—	45	Died.
937	Jan. 7, 1899	,,	76	2 3 39	Phosphates	13	45	Successful.

strong, of Buxton, who had kindly sent him for operation, that he did not know why he was being kept in bed. He left the surgical home on the ninth day, perfectly well.

When from any of the difficulties or complications already alluded to a large stone cannot be removed by litholapaxy, I consider that calculi up to about 2½ ozs. in the adult and a corresponding weight in the child are best dealt with by lateral lithotomy; beyond that by suprapubic cystotomy or perineal litholapaxy.

Those 53 operations may be divided into three groups corresponding to the three difficult periods in my surgical career. The first group of 6 cases belongs to my prelitholapaxy days and were necessarily lithotomies, for no one thought of removing calculi of those sizes by the old operation of lithotrity with its numerous sittings. The second group of 15 cases, down to August, 1884, belong to the transition period, when I was passing from lithotomy to litholapaxy and learning to work by the latter method, the cutting and crushing methods alternating pretty regularly. There were 6 completed litholapaxies, 7 completed lithotomies, and 2 instances where I commenced by litholapaxy, but had to finish by lithotomy. Finally, there is the third group of 32 cases from August, 1884, down to the present time, a period during which I suppose I have been more or less expert with the lithotrite and aspirator. Amongst these there were only three cutting operations, namely, two suprapubic and one vaginal lithotomy, the remaining 29 cases having been dealt with by litholapaxy.

A glance at the column of results in the first tabular statement will show that in proportion as I abandoned lithotomy in favour of litholapaxy, and gained experience of the latter operation, my results improved. The fact that amongst my last 20 litholapaxies for calculi from 2 to 6½ ozs. there was only one death shows what splendid results we may obtain from Bigelow's operation. With results such as these before me, I have no hesitation in pronouncing litholapaxy the safest and best operation in all cases when it is practicable. Those conditions in which it is not feasible I have already indicated. In no case, whether in the male or female, the adult or child, should a cutting operation be entertained till after examination and trial litholapaxy is found to be impossible.

Mr. Cadge said: In the few remarks that I wish to make I will confine myself to the point suggested by Mr. Burton's excellent paper—namely, the best method of dealing with large stones in the bladder. Some of us will recall the meeting of this Association at Brighton in 1886 at which Sir H. Thompson advocated suprapubic cystotomy in preference to lateral or median cystotomy. I think I may say that the discussion at that time contributed to abolish the lateral and median methods for the removal of large stones. I may, however, say that in the discussion no word fell from the reader of the paper or any speaker of the alternative plan of what is called "perineal lithotrity," and it shows, I think, the progress of thought and the development of experience in the last twelve or fifteen years that to-day the question will probably be between suprapubic cystotomy and perineal lithotrity,

and to this I will address myself, premising that I do not presume to advise the best course for an expert in stone practice to adopt—he is familiar in all the plans and can be trusted to do what he thinks best, but what he thinks best in his experienced hands would in all likelihood not be best in the hands of a general surgeon who only treats these cases occasionally. I would say then that the suprapubic is easier of execution than any form of perineal operation or of ordinary litholapaxy; the parts dealt with are under the eye; there are no vessels likely to be met with which will give trouble; the bladder wall to be cut can be incised to any extent, and stitched up after the stone's removal, if necessary. An enlarged prostate, which so often impedes ordinary litholapaxy and perineal operations, causes no difficulty, or very slight, in the suprapubic method, and should a stone be fixed in the end of the ureter or in some form of sac, it can be dealt with far easier than by any other opening. The finger can explore every part of the organ far better than through the perineum, and no surgeon in these days would attempt to remove a bladder tumour or a portion of the prostate except by the suprapubic route. What, then, can be fairly urged against the high operation? The only or the chief objection is that up to this time the mortality attending it has been greater than in perineal lithotrity. It may be so, but in answer I would say that to the present race of surgeons it is a new operation. The technique and best method of doing it and of managing the case after it are not even now settled. The use or non-use of the rectal bag, the closure or non-closure of the bladder wound, and other points to which I need not now refer, these and other details will slowly come to be settled. Surgeons will acquire facility and confidence in doing it, and I predict that ten years hence the mortality will be greatly diminished. Sir Spencer Wells lost 34 out of his first 100 cases of ovariotomy, and in his last 100 only 10, and the same may probably be said with cataract operations and other surgical procedures. Why may not similar results follow suprapubic cystotomy? And now what can fairly be said about perineal lithotrity? Mr. Burton has well described three methods of doing it: the Indian, with a giant lithotrite; the Egyptian, with a lateral lithotomy incision and a powerful lithoclast; and Mr. Harrison's modification of Dolbeau's plan, with a median incision and a large crusher. If I were to adopt any of these plans it would certainly be the Indian, with a median perineal incision and a giant lithotrite; indeed, over thirty years ago I had one of these lithotrites made for a case of large stone in a feeble old man; suprapubic operation at that time was not thought of, and I saw little chance of saving the patient by lateral lithotomy; the instrument, however, took so long to make that the man died before it was ready; it has never been used, and my colleagues seem to prefer, and I think wisely, the high operation to any form of crushing. I cannot admit any strict comparison between the patients and the calculi which our Indian *confrères* have to treat and those which we in England deal with; the Oriental is more tolerant of great operations than the average Briton. Mr. Milton admits this on behalf of the Egyptian, and also that the urethra will carry much larger instruments. The giant lithotrite is beyond doubt a very powerful tool, but I question whether it would crush a 6 or 8-ounce lithic acid stone such as we sometimes see in East Anglia. The Indian and Egyptian stones are far less dense and resistant; anyone may see this on comparing a collection of Indian with English stones; analysis confirms it. Mr. Milton gives the composition of 200 stones, and there was not one pure uric acid amongst them. I have recently examined the analytical report of Norfolk and Suffolk stones by the first Mr. Crosse, and nearly 80 per cent. are stated to be nearly pure uric acid; the oriental calculi are largely composed of urates, phosphates, and oxylate of lime, and these are of a loose texture and easily broken up; but not so are the pure salmon-coloured lithic acid, they are almost of granite hardness. I noticed lately in my notebook 3 cases which occurred some years ago, almost at the same time, in which the lithic stones weighed between 1 and 2 ozs. I could scarcely break them with all the force I could use, and in two out of the three the lithotrite was so warped that I did not dare continue to use it. I can scarcely think that even a giant lithotrite would crush a stone of this hardness which weighed 4 or 6 ozs.; and if it did, I must think that dragging the very sharp angular fragments through the neck of the bladder could not be free from the risk of doing serious mischief. The use of the powerful crushers such as Mr. Milton and Mr. Harrison recommend are open, I cannot but think, to very serious objections. It seems to me something like a delusion to say that these instruments can be opened so as to grasp a stone as large as a turkey or hen's egg without causing laceration of the prostate and neck of the bladder; indeed Mr. Milton admits this, saying in reference to Mr. Harrison's habit of removing some of the broken stone by the crushers, "that this proceeding cannot but be attended by laceration and bruising of the tissues." This proceeding, it is true, has been followed by good results in the hands of these two experts, but the number of cases is at present not sufficient to justify any strong opinion of its safety, and the calculi removed by it have not as a rule been very large. On a fair consideration of the whole subject, I think that these rough proceedings for the fragmentation and removal through the perineum of stones of 4, 6, or 8 ozs. should not be recommended to the average hospital or operating surgeon who only meets with occasional cases of stone in the bladder; he will be on safer ground by preferring the suprapubic operation, and when the details of the operation are well agreed on the results will justify the preference.

Professor Nicolaysen (Copenhagen) said: The disease of stone in Norway is very uncommon. Therefore I have rather small experience in lithotomy, etc. He related a case of a very large stone of the size of a duck's egg; the patient was 81 years of age, and (in 1877, I think) I was rather afraid of the *sectio alta*. Therefore I made a lateral perineal section; but I found the stone too hard to be crushed, too large to be extracted through the perineal opening, and I had to make the then feared *sectio alta*. I found it very easy, and, when the impacted stone (hugged by the bladder) had been loosened slowly with the forefinger, there was not very much difficulty in extracting it rather slowly. The patient made a good recovery.

Mr. Reginald Harrison said: So far as the treatment of the largest and hardest class of vesical stone is concerned, such as the one Mr. Burton removed, I am disposed to think that the great majority of surgeons would have done as Dr. Burton did, and removed it entire without incurring the additional risks incidental to breaking it up, by whatever means this was attempted. There is, however, a good deal to be said in favour of perineal lithotrity where stones are unusually large and where the crushing and evacuating of them must entail a long and difficult operation. I doubt, however, whether this method would have been applicable in the case of Dr. Burton's, where the dimensions of the stone were so large, and where breaking the space in which to crush and to work was so restricted. Perineal lithotrity will be found a safe, quick, and complete method of removing very large stones from the bladder. I have employed it on twenty occasions without a fatal result, and I have not met with an instance where recurrence of stone followed it. These results I attribute to the nature and position of the incision, to the more certain removal of all the stone at the time of operation, particularly in cases complicated with prostatic enlargement, and to the subsequent absence of scar-tissue or cicatrix from the bladder. The latter is a point of considerable importance in relation to one mode in which recurrence of stone takes place and is repeated. Some years ago, when I happened to be present at the Necker Hospital in Paris, the late Dr. Hourteloup, one of the surgeons to the hospital, drew my attention to a case of recurrent stone in the bladder, the like of which I had never previously seen or heard of. On passing my finger into the bladder through the incision for a median cystotomy which had been made, I found what was taken at first, for an adherent stone. It proved to be a linear deposit of triple phosphate, which had concreted in the form of a long calculus on the rough suprapubic scar of an incision through the mucous membrane, as if the scar had been a foreign body. I have seen the same happen to scars in the bladder both in the male and the female, those in the latter occurring for the most part in connection with operations for vesico-vaginal fistulæ, though all the sutures had been removed. I have known several instances in females who first suffered from stone and its recurrence after operative repairs of this kind, and such a consequence would be more frequent in males than it

is if the posterior wall of the bladder in them was the commoner area of operation. Quite recently I assisted in the removal of a rough indurated scar resulting from a suprapubic cystotomy which had been a frequent cause of stone, with considerable benefit to the patient. The precise nature of such scars is a determining cause of this incident. In children where the cicatrix is soft and pliant this result rarely if ever happens, whilst in adults if the incision through the mucous membrane has been lacerated by holding forceps, by much suturing, or by the forcible extraction of the stone, a rough and hard cicatrix may form upon which phosphates concrete just as they would upon a piece of shoe string or other foreign body introduced into the bladder. This may prove in some instances an objection to suprapubic cystotomy, and should not be underrated even in its application to cases such as the one Dr. Burton has narrated where there was little or no choice of operation. This observation relative to the introduction of scar tissue into the bladder, and its possible effects led me to investigate various methods of opening the bladder. I found that such cicatrices rarely happened after lateral lithotomy where the deep incision was kept, as it should be, well within the limits of the prostate, and never after median cystotomy by reason of the incision being limited to the membranous urethra. Further the latter observations seem to be in correspondence with what I have met with since in the course of practice. For of all the varieties of lithotomy recurrence of stone has more frequently been associated with suprapubic cystotomy than with any other method of removing a calculus on this principle. This, however, may now merely mean that of all the varieties of cutting operation the suprapubic is by far the most frequently practised. With the view of preventing the formation of scar tissue or cicatrices within the bladder, and at the same time to provide a means for removing considerable masses of stone with speed and safety, I was led to adapt Dolbeau's operation of perineal lithotrity, or as it should now be called "litholapaxy" for this purpose It will not be necessary for me to describe the steps of this operation, as I have already done so on more than one occasion.[1] The special instruments used in connection with it are before you. It avoids all dilatation of the neck of the bladder except that which is done with the index finger, whilst it involves no damage to its lining membrane. The crushing forceps used in connection with this method are extremely powerful and can be applied as effectively, I believe, as a lithotrite, though I have not tried the giant instrument which Dr. Keegan[2] has specially devised for this purpose. With these forceps I have succeeded in breaking and removing urate stones in a few minutes up to 5 or 6 ozs. in weight, and I have very little doubt they would have been equal to the occasion in the case of the still larger calculus Dr. Burton has showed us. Dr. Burton's case is an admirable one, and I do not think could be improved upon.

Brigade-Surgeon Lieutenant Colonel KEEGAN said that the question was one mainly of the relative advantages of suprapubic lithotomy and perineal lithotrity in cases of very large or very hard calculi which defy the power of the ordinary lithotrites. Suppose a case of uncomplicated stone in the bladder of a man of 40 or 45 years of age, a No. 16 or 18 lithotrite failed to make any impression on a very large or a very hard stone in such a man's bladder. What now was the best operation to perform? He was of opinion that a perineal lithotrity was a better and a safer procedure than a suprapubic lithotomy in such a case, and he based his opinion on statistics. In the North-West Provinces of India twenty perineal lithotrities were performed in the year 1895 without a death. In the five years ending December 31st, 1895, there were 147 suprapubic lithotomies performed in the Punjab, North-West Provinces, and in the Bombay Presidency. Among these 147 operations there were 61 deaths, giving a mortality of 42.17 per cent. He remarked that it seemed very strange that the native of India who was so tolerant of litholapaxy when efficiently performed, should be so intolerant of suprapubic lithotomy. He exhibited a very large and powerful lithotrite, constructed for him by Weiss and Sons[3], which was capable of breaking into fragments a large stone of 8 or 10 ounces. This lithotrite would pass into the bladder through an incision made in the prostate only large enough to admit the index finger, and the fragments could then be extracted by means of a small lithotomy forceps.

Mr. R. C. CHICKEN drew attention to the value of the operation by dilatation in the case of stone in the female bladder. He showed a stone 2 in. long; diam. $1\frac{3}{4}$ in. circumferences; 8 in. × $5\frac{1}{4}$ in. × $4\frac{1}{2}$ in.; and with forceps 5 in., weight 810 grs., which, with three others, made total of 1,230 removed by dilatation. The larger was encysted and was only discovered by digital exploration after the removal of the others. Had any operation but dilatation been performed the stone, being encysted, could not have been extracted, as no sounding had previously detected the encysted calculus until its presence was revealed by the operation which was shown to be necessary by the detection of some of its *débris*.

Mr. CHESTER NANCE mentioned a case of successful suprapubic lithotomy in a man aged 75. The stone weighed $4\frac{1}{2}$ ounces, consisting of uric acid. The points emphasised were the thorough cleansing of the skin, well washing out the bladder with antiseptic solution, irrigation of the bladder with boric acid after removal of the stone, careful suturing of wound, one catgut suture in bladder of the upper part of wound with silk sutures, and dry antiseptic dressings sealed off from lower angle of wound, where a tube a yard long was stitched to the skin and retained for ten days. A perforated piece of jaconet was placed round the tube, and its outside margins sealed down with collodion, its underneath margins with emplastrum saponis, similar to the sheet used in ovariotomy operations. The wound above healed by first intention, and was quite healed in three weeks. The man was now alive and well. He strongly dissented from the high death-rate quoted by Dr. Keegan, 8 cases having been treated at the Norfolk and Norwich Hospital during his house-surgeoncy, with only 1 death. Mr. Cadge, in his lectures in 1886 at the Royal College of Surgeons, quoted M. Garcini's figures as 24 per cent., and M. Tuffier's as 27 per cent.

Mr. FREYER, in reply, said that he did not know from what source Mr. Burton had obtained the statistics attributed to Mr. Barling which represented the mortality from suprapubic lithotomy in a favourable light. The only statistics of Mr. Barling on the subject that he could remember were those published in the BRITISH MEDICAL JOURNAL in May, 1894, and they exhibited this operation in a very unfavourable light. These statistics collected by Mr. Barling were of grave importance. They embraced nearly 200 operations for stone in young persons, performed during a period of five years in twelve large hospitals—six London and six provincial—with the result that suprapubic lithotomy showed the appalling mortality of about four times that of either perineal lithotomy or litholapaxy. To his mind these statistics should have sounded the death-knell of suprapubic lithotomy as a routine practice; but still, in face of these statistics, he observed papers in the medical journals advocating this operation after an experience on the part of the writers of one or two successful cases. He was sorry to find that his friend, Mr. Cadge, had in this discussion lent the weight of his great name to this practice. Mr. Cadge was entirely in error in supposing that there was anything peculiar in the nature of the calculi, or the constitution of the native of India, which accounted for the marked success of litholapaxy in India. This success was due to large experience and the employment of proper instruments. The former was only attainable by a very few in England, but proper instruments were available for all. It was a peculiarity of the British surgeon that when he attained any marked success in any particular operation in surgery he attributed this to his own skill and acumen, but that when any signal success was attained by his *confrères* abroad he imagined this must be due to some peculiarity in the constitution of the patient, his mode of living, or the climate. He (Mr. Freyer) had knocked the bottom out of these absurd theories. He might claim to be the only surgeon who had had large experience of the surgery of stone in England and in India. And, having performed 127 operations for stone in the bladder during a period of about four years that he had been in active practice in London, with practically the same results as those he had obtained in India, he could say that the Englishman was in no respect an inferior subject for

[1] *Selected Papers on Stone, Prostate, and Other Urinary Disorders.* Churchill. 1893.
[2] *Lancet*, July 3rd, 1897.
[3] See BRITISH MEDICAL JOURNAL, 1897, ii, p. 23.

litholapaxy to the native of that country. Being of much larger stature and weight, the Englishman had a more capacious urethra than the native, and thus the introduction of larger instruments was facilitated. The average weight of calculi removed by him in India was two and a-half times that of those removed in England; and an examination of the calculi on the tray before them would satisfy the audience of the large proportion of intensely hard uric and oxalate ones amongst them. Indeed, in England, owing to the large proportion of prostatic cases one met with, the proportion of soft phosphatic stones was much greater than in India. He had no experience of the African, who possibly had a very capacious urethra, but he had to remind Mr. Cadge that the negro was of quite a different race and nature from the mild Hindu, who belonged to the same Aryan family as themselves. There were many other points raised in Mr. Burton's paper and the discussion which he should have liked to refer to, but the President was inexorable as to time, so he must conclude.

(To be continued.)

SECTION OF OPHTHALMOLOGY.

W. A. Brailey, M.D., President.

The President made some introductory remarks on Ocular Headaches, which was published in the British Medical Journal of August 11th, p. 343.

A DISCUSSION ON THE TREATMENT OF CHRONIC GLAUCOMA.

I.—Francis Richardson Cross, F.R.C.S.,

Ophthalmic Surgeon Bristol Royal Infirmary; Surgeon Bristol Eye Hospital.

I may perhaps be allowed to take the opportunity which this annual meeting of the British Medical Association affords to draw attention to the fact that a large number of cases of inflammatory glaucoma are still mistaken for iritis or other forms of inflammatory eye disease, and to insist on the necessity for fully considering in the diagnosis of such cases the possible presence of a glaucoma, more particularly before active treatment by the use of atropine and mydriatics is recommended. We no doubt are agreed that the only reasonable prospect of recovery or improvement in "inflammatory glaucoma" (hæmorrhagic glaucoma to be an exception) is to relieve the strangulation of the eyeball by means of surgical interference, and that even the use of myotics is merely of temporary value until the services of a competent operator can be obtained.

In "simple glaucoma" the danger lies in the insidious and very gradual progress of the complaint. No definite symptoms enforce themselves on the attention of the medical man, and the patient himself scarcely recognises in the early stages that his sight is becoming defective. When he has done so, an incompetent adviser may possibly have satisfied him with the opinion that he is suffering from incipient cataract, and that he must patiently await the development of the disease until a degree of blindness has been reached which justifies extraction of the lens. Ophthalmic surgeons (though fully aware of the serious nature of chronic glaucomas) are not unanimous as to what is best to be done for patients under the different phases of the disease, and it will be interesting to get the opinions and experiences of those present at this meeting upon this important subject.

For the purpose of this debate on "The Treatment of Chronic Glaucoma," which I am invited to open, I have examined such notes as I possess of hospital and private patients, but I find it impossible to draw from them deductions based on statistics; some have paid only one or two visits; in some the notes are brief and incomplete; one can only use them as records of facts upon which one's experience and opinions are based. Forty-seven cases of chronic non-inflammatory glaucoma from my private casebooks give more definite information than a much larger number which have been noted in hospital practice.

Chronic glaucoma, in which the manifestations of increased intraocular pressure are indefinite, and their progress very gradual, may be associated with a distinct increase in eyeball tension or with a degree that is imperceptible.

The disease is usually discussed under two headings:

1. Chronic inflammatory glaucoma—progressive, with occasional exacerbations of congestion, which may be very temporary or of longer duration.
2. Simple glaucoma.

There may be varieties that seem intermediate between the simple and inflammatory forms of the disease.

A case that has been clearly diagnosed as one of chronic inflammatory glaucoma requires immediate operation by sclerotomy or iridectomy as imperatively as does an inflammatory case with acute or subacute symptoms. It is in glaucoma simplex that the difficulties arise in regard both to accuracy of diagnosis and to treatment.

Many of the objective symptoms of glaucoma are absent. There is no pain nor inflammation, and no peculiar appearance of the eyeball. The scleral veins are little if at all enlarged, the pupil is normal or but slightly dilated or sluggish, the aqueous chamber is but slightly shallowed, and the eyeball tension may be scarcely raised. There may be no subjective symptoms of defective eyesight, and central vision is often practically normal.

But a closer investigation with the help of the perimeter and of the ophthalmoscope will enable us to clearly recognise the real nature of the disease. Ophthalmoscopic examination may show the presence of a pulsating artery (noted in ⅓ of my cases) or of a deep and typical cupping of the optic nerve, but the appearances may be less characteristic, some degree of anæmia or atrophy of the disc, with possibly slight pushing of the vessels towards its nasal side, and may leave us in doubt whether the case is essentially an insidious glaucoma or an optic atrophy. Even a shallow cupping over the whole papilla may be due to the degeneration of atrophy and irrespective of any increase in the intraocular tension. Moreover, we commonly find that simple glaucoma, especially in its later stages, is complicated by atrophy. Thus of the 47 cases quoted 20 were associated with definite atrophy, and in 4 the presence of glaucoma was scarcely recognisable. There was no note made of atrophy in the remaining cases, but it may have been present in some degree.

The perimeter is of special value in helping to distinguish between the two diseases. Defect in the nasal portion of the field of vision, though it is occasionally associated with uncomplicated atrophy, is strong presumptive evidence that the case is a glaucoma. A trustworthy observer has recently stated that by a study of the charts taken in some sixty cases of chronic glaucoma he finds that the field may first become defective in other directions, but my experience, based upon the careful chart-taking of my assistants for several years, has satisfied me that diminished vision on the nasal side (on the upper or lower quadrant of the nasal side) is the most important test that we can apply for the early detection of chronic simple glaucoma, while the retention of vision in the temporal and infero-temporal portion of the field is equally characteristic as the disease progresses. In the later stages, where atrophic changes are well marked, the characteristic appearances of the glaucoma field are lost, and there is found to be a general concentric contraction round the fixation point, but even where this is narrowed to within 5° or 10° the central vision is often well maintained.

The colour sense is said to be usually retained in glaucoma until late in the disease; while it is early impaired in optic atrophy.

I may have detained you too long on these points, but it is essential to realise the close association between optic atrophy and simple glaucoma (which has been designated "optic nerve atrophy with encavation") and to estimate accurately the relative importance of each of them in cases where both are present together before we can form an opinion as to the probable value of operative interference.

Progressive simple glaucoma will sooner or later be complicated by atrophy, and if operation is to be of service it should be done before the limitation of vision approaches dangerously near the centre of the field. If the patient is nearly blind, the atrophic changes are not likely to be arrested by the relief of the slight amount of excessive eyeball tension present; on the other hand, if there is sight worth saving, the best chance of doing so is by relief of the glaucoma.

As bearing on the prognosis in a case of simple or chronic glaucoma if left to itself, I would remind the meeting how often in an acute or subacute glaucoma insidious symptoms

of increased eyeball tension have been present for a longer or shorter period, prior to the inflammatory stage of the attack. In 92 of my cases of acute or subacute glaucoma, I have it noted of 50 that definite prodromata had been present for some time previously. The notes were not taken with any special attention of marking this point, so that we may be assured that premonitory symptoms had occurred also in many of the others.

These prodromata are analogous to the symptoms of a simple glaucoma, in fact I find it difficult to distinguish between them, and just as an inflammatory glaucoma is preceded by prodromata, so may any case of simple glaucoma become suddenly blinded by an acute inflammatory attack, or may be converted into a chronic inflammatory glaucoma by occasional temporary congestions. Moreover, the serious nature of even the most insidious cases is evident from the effect produced on them by action of mydriatics, or even by such moderate dilation of the pupil as is associated with anxiety or with mental or bodily fatigue.

The cases of increased eyeball tension which are eventually operated upon with acute symptoms or under unfavourable conditions, have nearly all passed through a less evident but no less real condition of glaucoma, which might have been easily and effectually operated on at an earlier stage. It is comparatively simple to do a good operation on an eye that is painless and not congested, much more difficult on one that is inflamed and strangulated.

But while on the one hand pain and inflammation must be relieved (and if necessary by operative interference) there appears to be no such urgency during the indefinite symptoms of incipient or simple glaucoma. Not everyone will face the risk of an operation upon an eye whose vision is practically perfect, and of which no definite complaint is made. However well executed, it may be followed by at least a temporary deterioration of sight, and the patient and his friends may think that more harm than good resulted from the interference. It is comparatively simple to temporise with myotics and medical treatment. But will these effect a cure, or what is really the proper course to pursue as a remedy against the disease?

A slight simple glaucoma may perhaps occasionally be cured by the use of myotics, under comfortable surroundings, with rest and avoidance of worry. I last week saw a lady 40 years of age in whom I could detect no symptoms whatever of a glaucoma tendency, even under prolonged dilatation by cocaine, who, until within the past month or so had been continuously using for two years pilocarpin drops for "hardening of the eyeball," under advice of an oculist in whose diagnosis I should put absolute dependence. Personally I do not remember to have ever effected a cure by drugs of simple glaucoma where the symptoms were definite, though one has often had suspicious cases in which the symptoms have disappeared, and others where slight definite symptoms have continued in abeyance.

Mrs. E. F., aged 30, consulted me in June, 1889. There was hyperæsthesia of the retina, halo, fogs, and slight subjective symptoms of glaucoma—with wide deep physiological cups and the vessels pushed aside—central vision and fields perfect. She was ordered eserine gr. ¼ ad. ʒj, which relieved the rainbows and discomfort. I saw her once or twice up to August, 1891, when she was in the same condition, using the eyedrops from time to time as symptoms seemed to suggest. I have just ascertained that Mrs. E. F. has had but little trouble with her eyes since she last saw me.

Mrs. T. H., aged 51, came in April, 1892, complaining that for three years past she had seen haloes in both eyes when looking at any lights, candle, fire, match. Fogs and mists often accompanied haloes.

V. = $\frac{6}{5}$, hm. 50. Fields perfect; large full eye; anterior chamber shallow. Nerve not definitely cupped, but central vessels on it pushed a little sideways; indistinct arterial pulsation. T + ?

This patient has been using pilocarpin drops ever since 1892, seeing me once a year. June, 1900: She still has V. = $\frac{6}{5}$. The fields are quite full. The haloes and fogs are at times troublesome; otherwise she has no marked discomfort, but undoubtedly has simple glaucoma. T + ? I have put the question of operation before her; but she declines it until she is distinctly more inconvenienced or until some development of the disease takes place.

Where, as in this case, the glaucoma remains in the incipient stage, it may be justifiable to continue the treatment by myotics until there is definite evidence that despite their use, symptoms of tension are increasing—but then something urther must be attempted.

A retrospect of my cases conclusively shows that, sooner or later, progressive deterioration of sight is the rule in simple glaucomas under medical treatment alone. A number of patients pay each a single visit, at which we can infer from the symptoms present, and from the past history of the sights, how little is the chance of improvement unless operation is resorted to? In many cases I have wished to operate, but the patient has declined it; in others, atrophic changes seemed too far advanced to promise any good prospect from such interference: while an unfavourable condition of the general health is urged against operation in a certain number. I append a few notes of cases, some of which have done fairly well for a long time under the treatment with myotics, some indicate the close association of atrophy of the optic nerve with simple glaucoma. In one, eyeball tension seemed to be kept in abeyance by the progressive development of myopia.

CASE I. *Very Gradual Impairment for Six and a-Half Years.*—Mrs. W. H., aged 60, came in February, 1894, complaining of discomfort and "dryness" of left eye. V. = $\frac{6}{9}$ L. $\frac{6}{9}$, says she sees worse towards the nose, and nasal field is reduced by 10°. Both nerves are pale and depressed, not fully cupped, but vessels pushed aside, and arteries pulsate indefinitely. The patient was delicate, and much inconvenienced by a very large uterine fibroid. I ordered pilocarpin drops. In August, 1898, still general eye discomfort, particularly in the conjunctivæ — V. = R. $\frac{6}{9}$, L. $\frac{6}{6}$. White atrophied nerves in both eyes, vessels somewhat pushed aside; indefinite pulsation. T + 1. July, 1900. This patient says she still sees very comfortably, and has continued the use of the drops for the past 6½ years. Theoretically, I ought to suggest operation, but the patient is quite satisfied, and I know that an operation would be declined, while the suggestion of its necessity might aggravate the glaucoma.

CASE II. *Gradual Loss of Central and Peripheral Vision under Treatment by Myotics for Twelve Years.*—Miss B., aged 70, came on April 20th, 1888, complaining of misty sight and haloes. V. R. = L. $\frac{6}{12}$. White nerves, vessels pushed outwards, arteries narrow, slightly pulsating. T. + 1. No evident congestion of sclera, nor any narrowing of anterior chamber. Eyeballs healthy; iris a good colour. Diagnosis: Simple glaucoma with atrophy. Ordered eserine drops, 1 gr. ad ʒj. November 14th. Sight is better; no haloes nor pain.

April, 1888.	January, 1890. June, 1890.	March, 1893.
R. $\frac{6}{12}$	Each — $1\frac{6}{12}$	..... $\frac{6}{9}$ J.1
L. $\frac{6}{12}$ — $1\frac{6}{12}$		..... $\frac{6}{20}$ J.2
October, 1894.	**January, 1896.**	**May, 1898.**
$\frac{6}{6}$	$\frac{6}{6}$	..... R. fingers
$\frac{6}{24}$	$\frac{6}{36}$	..... L. — $1\frac{6}{36}$

Iridectomy was suggested to Miss B., but declined, as she was deaf, suffered from headache, and did not feel at all equal to any operation. No doubt there was a considerable complication of atrophy in this case, but the glaucoma was quite definite, though to active symptoms or congestions exhibited themselves. She has used eserine or pilocarpin throughout the whole twelve years she has been under my observation

CASE III. *Improvement with Myotics.*—Miss B., aged 65, simple glaucoma of left eye with much impairment of vision, central and peripheral. Marked improvement during eight months' treatment by pilocarpin, particularly of central vision—namely, from $\frac{6}{18}$ to $\frac{6}{9}$, and also to a large degree of field. Right eye has no symptoms of defect excepting a blur on nasal side of field.

CASE IV. *Improvements of Peripheral Sight.*—Rev. W. L., aged 76, came on April 6th, 1899, complaining that his sight (particularly for reading) had been failing much for the past year. Slight incipient cataract; simple glaucoma, pallor of the nerves. The fields of vision contracted, particularly in the upper nasal fields. After treatment by pilocarpin, the peripheral sight improved, although central vision continued to fail from R. $\frac{6}{12}$ to $\frac{6}{18}$, L. $\frac{6}{9}$ to $\frac{6}{12}$; this probably on account of progress of cataract, while the glaucoma element had somewhat abated.

CASE V. *Atrophy with Slight High Tension.*—R. H. P. S., aged 61. Essentially atrophy of optic nerve with deep cupping of nerve and dipping of vessels on nasal side. T. + 1.0. No congestion; smokes more than moderately. Central colour vision defective, worse than peripheral. In July, 1899, no glaucoma was suspected, spectacles gave R. $\frac{6}{9}$, 1 J; L. $\frac{6}{12}$, 4 J. A deep white physiological cup noted. In August, 1900, vision reduced to R. $\frac{6}{24}$, 6 J.; L. $\frac{6}{36}$ 16 J.; this improved a little under pilocarpin and strychnine injections. Operations were judged to be useless.

CASE VI. *Atrophy with Doubtful High Tension.*—Rev. G., 60, came in March, 1895, complaining of failing vision in the left eye for the past two or three years. The right eye saw well 1 J and with — 2.50 = — 1 cyl $\frac{6}{9}$. The left eye saw badly 14 J, — 4 $\frac{6}{9}$. Peripheral fields perfect for white; in the left narrowed for red, and a little more hazy on the nasal side for red. Left nerve not cupped. A small speck of choroidal atrophy. The case was diagnosed as monocular optic atrophy. He continued to work with the right eye until January, 1898, when he returned complaining of the right eye. The left was practically blind; right with spectacles $\frac{6}{9}$, but field concentrally narrowed. Both nerves were white and cupped, the vessels pushed aside and suggestive of simple glaucoma. There was no appreciable tension, but probably an abnormally weak lamina cribrosa allowed of cupping from a very slight degeee of pressure, not definite enough to be detected by the finger. The condition got progressively worse, both in central vision and impairment of the field, but the evidence of glaucoma was never certain, although sections of the eye might probably have proved its presence by showing contact of the ligamentum iridis with the periphery of the cornea at the angle of the anterior chamber. In December, 1898, he could still read moderate print, but was getting worse.

CASE VII illustrates the progress of a case of insidious chronic glaucoma under myotics for seven years, in which definite progressive developmen of a myopia seemed to have a beneficial effect as against a rise of intraocular tension. No alteration has been observed throughout in the cornea or aqueous chamber, nor has there ever been marked deterioration of the vitreous humour Miss J., 51, came in May, 1893, complaining of loss of vision in right eye, which was reduced to letters of 16 J. Left

eye 1 J — 3.50 $\frac{S}{}$. Nothing was noticed to account for the sudden failure. Tension was slightly high. Rather deep physiological cup. Pilocarpin ordered. In a month vision 6 J. — 3.50 $\frac{6}{12}$, and shortly afterwards 1 J. and —3.50 $\frac{S}{}$. Both eyes seemed to have a tendency to simple glaucoma, and pilocarpin was continued for both. This lady has been continuously under observation ever since; she has throughout had distinct symptoms of chronic glaucoma varying much in degree; at times well marked pulsation of the central artery and slight definite rise in tension, but at other times these were absent, and no nerve cupping could be detected; there have never been pronounced symptoms nor congestion. In June, 1895, the myopia slightly increased in amount from 3.50 to 4.50 in the left eye. In December, 1897, it was 6 D. and 10 D.; and in April, 1900, the vision was R — $11\frac{6}{9}$, L. — $12\frac{6}{9}$, and 1 J. in each. The visual fields have continued in much the same condition for the past four years. Possibly here I should have done better by operation, but reasons make it difficult to do more than suggest that something may have to be done.

Case VIII.—A case of high myopia with simple glaucoma under observation for eighteen months; at first improving, lately getting worse. J. C. S., aged 42, a solicitor's clerk, came February 11th, 1899. For several months his eyesight had become very uncomfortable without known cause. He had worn strong concave lenses for many years. V.: R. — 13 — 1 cyl. $\frac{6}{12}$; L. — 13 — 0.50 cyl. $\frac{6}{6}$ — 10; 1 J. each. No defect of right visual field. Well-marked cupping of both optic discs and symptoms of chronic glaucoma which vary. Ordered pilocarpin drops. July, 1900. Spectacles give $\frac{6}{6}$; both fields of vision less good and suggestive of atrophy as well as of glaucoma, but the optic discs clearly indicate excessive intraocular tension. He is to have iridectomy or sclerotomy done in October.

Having endeavoured to show that a chronic glaucoma, however indefinite and insidious its early symptoms may be, will eventually destroy the sight, either from gradual atrophy of the nerve elements or by the accession of inflammatory strangulation, I must now consider how the prognosis is modified by surgical interference. The causation of chronic glaucoma is probably analogous to that of the other more acute forms of this disease. The heightened tension is generally due to local mechanical interference with the excretion at the filtration angle of the eye rather than to some more central nerve irritation which may cause dilatation of the pupil, contraction of the intraocular blood vessels with heightened blood pressure, and increase of the intraocular secretion.

On the latter hypothesis Jonnesco, of Bucharest, has recently advocated resection of the superior cervical ganglion of the sympathetic as a cure for any kind of glaucoma. He has performed this operation on seven patients, and in each case the ocular tension has been, he says, immediately and permanently reduced and the pupil has become markedly and permanently contracted. He considers that the resection is particularly applicable to quiet chronic forms of the disease in which iridectomy seems to give only doubtful results. Demicheri, of Monte Video, reports brilliant results in two other cases of glaucoma, and the operation is a well recognised surgical procedure for thyroidal and other diseased conditions. But even though the patient willingly submits to such a heroic measure and the effects produced on the eye prove to be satisfactory and permanent the surgeon could not undertake it without great anxiety as to the wide ultimate effect on the control of the sympathetic nerve that might be likely to result.

We all admit the great value of a good iridectomy for the correction of the filtration channel in ordinary glaucoma; if it fail us in "simple" cases it is probably either because we hesitate to operate until degenerative changes are too far advanced, or that a nerve atrophy has been the essential element in the case throughout, and continues to impair the sight despite the relief that has been given by operation to the slight increase of tension that has accompanied it.

In my experience the results of iridectomy in simple glaucoma have been satisfactory, particularly when compared with those that follow non-interference. Improvement after operation is not always immediate, especially if there is considerable atrophic complication, but it will ultimately take place; in some cases improvement is permanent, while in others it definitely prolongs the period during which the patient retains his sight.

I append notes of some of my private cases:

Case IX.—Miss B., aged 41, came on May 20th, 1889, complaining of right eye always uncomfortable with ophthalmic neuralgia, and, when tired, fogs and haloes. Vision R — 1 50 $\frac{6}{9}$, L — 1 cyl. $\frac{6}{6}$; R. field narrowed on temporal side. The next visit paid was on January 14th, 1892, when both eyes had simple glaucoma; right eye worse, and field more contracted peripherally. January 22nd. Iridectomy was done on both eyes; this gave comfort, but the sight continued defective for several years, during which the patient was passing through the menopause. In March, 1898, she was very much better; the left eye practically perfect, the right field of vision still defective in the lower nasal portion. Though the fields of vision were defective, and even got worse for a time after the operations, the condition of the eyes was much more satisfactory ultimately. The patient has now perfect vision in the left eye, and practically perfect vision in the right. Without the operations her condition before now would have been very critical.

Case X.—Mrs. B. came March, 1885, complaining of long-continued worry in the left eye. Fifteen months previously she had lost the sight of that eye; it gradually cleared but remained always foggy. Right eye vision good, left eye $\frac{6}{9}$; 1 J. badly; deep white cupping of papilla, not up to disc margin; T. — 1. In June an attack of haze, recovering in a few days; V. $\frac{6}{12}$. November 23rd, 1885. Iridectomy of left eye. March, 1886. In the menopause; both eyes are uncomfortable; no definite prodromata of glaucoma, with lenses; both $\frac{S}{}$ 1 J.; uses weak myotics as required. December, 1886. Haloes over right eye. May, 1888. Continued symptoms of insidious glaucoma both, but vision $\frac{S}{}$ and $\frac{6}{9}$. March, 1891. Still good vision in both, but increasingly liable to haloes, fogs; no conjunctival congestion; anterior chambers not definitely shallow; no arterial pulsation; fields both narrowed; R. T. — 1. December, 1896. R. glaucomatous; no congestion, but vision in both with lenses is $\frac{S}{}$. January, 1897. Right iridectomy. February, 1899. Has used no drops in either eye for a year; has had no symptoms in either for that time. Both see perfectly with suitable lenses, and the fields have been practically perfect since the last operation. She now has no anxiety regarding her eyes. There is a small cystoid cicatrix in the left.

Case XI.—Miss D., aged 67, seen in April, 1893, for left herpes frontalis, apparently not affecting the eyeball. Vision R. + 0.50 $\frac{S}{}$ + 3 J. 1; L. + 0.50 $\frac{S}{}$ + 3 J. 1 (?) Central guttate choroiditis in both. R. media clear, optic nerve normal. L. media hazy, optic nerve pale and cupped. T. + ?. In August eye was better, but was ordered pilocarpin. Miss D. next came in March, 1897; she had used pilocarpin every second day for four years. The right eye was good. The left eye V. $\frac{6}{12}$ + 1 $\frac{6}{12}$ + 3.5. 4 J. The field was narrowed. September 27th, 1897, field very much narrowed. V. + 1 $\frac{6}{9}$. Iridectomy of left, with marked improvement of field and of central vision: but in October, 1898, the eye was less well and the field more contracted. I have not seen her since. The right eye was free from glaucoma.

Case XII.—Miss F. E. P. consulted me February 16th, 1893. She had myopic astigmatism and saw well with suitable lenses. In May, 1899, she returned complaining of great discomfort in the eyes since January. The left eye was the worst, and she had noticed she could only see with it in the temporal field. The perimeter showed the nasal sides of both fields equally narrowed, but in addition the left field was affected on the temporal side. Vision R. eye with spectacles $\frac{S}{}$. Vision L. eye with spectacles $\frac{6}{9}$ letters (only on left of board). Both showed definite glaucoma cupping, no other definite objective symptoms. After using pilocarpin for a few weeks vision and fields somewhat improved; but she returned again in October with the sight more confused and uncomfortable, and on October 16th, I did double iridectomy under chloroform. Since this vision has been much more comfortable, but it is still at times confused. On May 18th, 1900, central vision of each eye with spectacles was $\frac{S}{}$, but with the left eye only the letters in the left field were seen. The fields of vision improved after the iridectomies, have somewhat deteriorated since, but judging from Case IX they are likely ultimately to improve as the glaucoma element is now removed.

Case XIII.—Mrs. F., 72, consulted me on April 20th, 1898. The right eye had been removed ten years previously after an unsuccessful iridectomy for glaucoma. The left eye had given no trouble until an attack of influenza with congestion of the lungs a year ago, when for a time the sight was foggy, and she saw occasional haloes, but it recovered. December, 1897, another attack of congestion of the lungs was associated with other subjective symptoms of defective vision, and the eye continued to get worse. Vision, $\frac{6}{12}$ + $1\frac{6}{9}$ + 4 50 J. 2 badly. Pupil rather full. Anterior chamber shallow. T + 1. No congestion. Scleral vessels slightly enlarged. Eserine ordered. Pale flat nerve. May 9th, 1898, vision worse: looks eccentrically. Field of vision lost at fixation point. Iridectomy on May 14th. June, 1898, central field regained; October, 1899, sight returned to $\frac{6}{12}$. But there is now a very diminished field 10° around the fixation point only; 1900 she retains her sight: but periodically she has a course of strychnine injections in the temple. The nerve in this case was never cupped, but was white and flat; but glaucoma was very distinctly present, and the iridectomy done two years ago undoubtedly saved the patient from blindness.

Case XIV.—C. B., aged 63, consulted me in July, 1889, for peculiar and misty vision in his left eye. V. R. $\frac{6}{6}$, 1 J.; with lens, L. $\frac{6}{12}$, 6 J. Left optic nerve pale, not cupped, artery doubtfully pulsates. Pilocarpin. November, 1890. L. V. $\frac{6}{12}$. Field narrowed up to 10° round the fixation point. T + 1, no cup nor pulsation at the optic nerve. September, 1892. Left eye blind, right normal. December, 1895, while shooting, acute inflammatory glaucoma attacked left eye. I did iridectomy, and shortly afterwards removed the globe. Probably if I had done iridectomy when the eye saw $\frac{6}{12}$, six years previously, I should have saved it. The right eye gave no cause for anxiety till March, 1897, when it began to show slight symptoms of [illegible] was now [illegible] unless I [illegible] vision [illegible] was given pilocarpin, and [illegible] field was [illegible] there was a marked pulsating artery. On January 2nd, [illegible] Central vision still good, but the field narrowed to [illegible] the fixation point. There was no marked tens[illegible] white and flat. There was very definite pul[illegible] branches of the central retinal artery. A gooc[illegible] done on the 6th without trouble, but an unusual a[illegible] followed into the aqueous chamber. On the 7th a[illegible] pied the aqueous chamber, and vision remained [illegible] days. On the 11th patient could [illegible] of the clot with fresh scarlet hæmorrh[illegible] blood continued for three weeks, durin[illegible] kept quiet in bed and could scarcely see at all [illegible] than commenced, and on February 20th a chart was [illegible] widening of the field. Central vision had also improved [illegible] and to J. 6; but there was still slight hæmorrhagic exudation into the aqueous chamber. On March 26th sight still improving; hæmorrhage gone. Optic nerve flat and white, a small central artery showing no signs of pulsation. In May the patient was comfortable and had no unsatisfactory symptoms. He continues to improve.

Sclerotomy seems likely to be of great value as a remedy in the earlier stages of chronic glaucoma, before the sight is much reduced or the eyeball damaged. I have been well satisfied with the results of this operation in a good many cases, and it is of special value when the disease is complicated by degeneration of the intraocular fluids with any forms of uveal inflammation.

The sclerotomy I perform was, I believe, first suggested by Snellen. A broad keratome is passed—as in the first step for making an iridectomy—from a puncture point about 2 mm. outside the corneal margin into the aqueous chamber as nearly as possible at the corneo-iritic angle. The wound is made as peripheral and as wide as practicable, so as not to touch the edge of the lens or its capsule. The knife is very carefully withdrawn to avoid prolapse of the iris, which has been further guarded against by previously keeping the pupil fully contracted under eserine, and may be still further assured by a hypodermic injection of morphine.

Sclerotomy, as usually done by a Graefe knife, appears to me to be more difficult of proper execution. It is less easy to control the absolute anatomical position of the wound—prolapse of the iris is more likely to occur, particularly near the point of counterpuncture—and more definite scarring of the eye is likely to result with the possibility of unpleasant sequelæ. Sclerotomy with a keratome can give a satisfactory result without any trace of the operation remaining.

The following are notes of cases where sclerotomy was done:

Mr. J. L., aged 64. Chronic glaucoma of four years' standing in right eye; one year's standing in left eye. The vision was reduced to: Right eye, V. finger counting in the upper and outer field; the right field was lost excepting a small area on the temporal side of the fixation point. Left eye, V. $\frac{6}{24}$, left field reduced to 5° on the nasal side $\frac{30°}{50°} \times 5°$. Slight choroidal damage in each eye and some synchysis. Tension in each eye + 1. The right optic nerve was white and cupped without strangulation of the vessels; no cupping was observable of the left optic nerve, but the main artery pulsated. After use of eserine for for two or three days, sclerotomy on each eye resulted in improvement of the field and in vision of the left eye to $\frac{6}{9}$. Some improvement of central and peripheral vision in the right eye. Much increased comfort in power of using the eyes. Disappearance of pulsation in the retinal artery and lessened cupping of the disk. The patient has lately written that his left eye continues to improve.

Mrs. K., with chronic non-inflammatory glaucoma of both eyes and very severe discomfort in both. Symptoms in the left eye of seven years' standing, in the right of four years' standing. Vision: left, hand movements; right, $\frac{6}{9}$, with markedly contracted field. Sclerotomy was done on the left eye; iridectomy was done on the right eye. The right vision gradually improved to $\frac{6}{6}$; J. with improvement of the field. The left eye saw 10 J. Both were entirely relieved of discomfort, and from all haloes, fogs, and subjective sensations. The improvement lasted for some months after the operations, and still probably continues. Sclerotomy by the keratome is of great service at the coloboma when eyeball tension has recurred after having been temporarily relieved by an earlier iridectomy. The interval between the two operations can be varied from a week or two to any period, according to the necessities of the case, and under these circumstances may be done again and again without danger to the eye and with repeated relief of the symptoms.

Thus in November, 1894, I did iridectomies for chronic glaucoma in A. E. W., aged 36. His left eye was blind; the right had $-1\frac{5}{6}$. In December, 1895, the right eye had a full field and good vision, but occasional insidious symptoms of glaucoma. In January, 1897, vision was misty, with spectacles $\frac{6}{5}$. Media somewhat hazy and tension + 1. In February I did sclerotomy through the coloboma; a week afterwards vision had improved to $\frac{6}{6}$. He went on satisfactorily with his duties as a solicitor's clerk until November 30th, 1898, when he was complaining of fogs and haloes. T. + —, but the field of vision full. I again did sclerotomy through the coloboma, with restoration of sight and comfort. He continues his work, and saw well in the spring of this year

It would seem possible that a very few eyes in which symptoms of chronic glaucoma have appeared should right themselves, a few others are cured by myotics but, in the large majority of the cases, the glaucoma symptoms progress with increasing damage to the eye tissues and deterioration of the sight. Many of the patients are old and out of health and may not consent to operation in the cases where it is thought the proper course to recommend. But both on theoretical grounds and from the recent study of my cases I am of opinion that, as a rule, when the patient's symptoms lead to an undoubted diagnosis of simple glaucoma, even where sight is good and the field of vision scarcely narrowed, and however serious it may seem to be to subject an eye which some might consider devoid of serious symptoms to the risks of operative interference we ought to advise that a peripheral incision should be made through the corneo-iritic angle to open the filtration channels, either with or without the removal of a piece of iris according to the nature of the case, and then operation should be resorted to before the optic nerve is badly cupped, the retina seriously pressed on or the iris jammed at the corneo-iritic angle before the tissues of the eyeball are permanently damaged or the power of vision definitely impaired.

II. JOHN HERN, M.D., F.R.C.S.E.,
Ophthalmic Surgeon, Darlington Hospital.

DR. HERN said: In the treatment of chronic glaucoma there is the "one thing needful," namely, an early diagnosis, for the earlier the operation the greater the chance of success. The point raised by Mr. Cross is important, namely, the atrophy of the optic nerve, so frequently met with, and this fact has not been sufficiently dwelt on by writers on the subject. In my cases I have taken it to be due to the increased pressure in the vitreous chamber, and therefore due to the glaucoma, at any rate the atrophy was diagnosed after the glaucoma in cases closely watched. My practice invariably is, in cases of chronic glaucoma, to do an iridectomy as early as possible, followed by a method described in a paper read at the Utrecht Congress last year, and published in the *Transactions*. In reply to a question by Mr. Richardson Cross, Mr. Hern said he used a small double-edged Graefe's knife, which he passed backwards through the cornea and suspensory ligament (in coloboma of iridectomy) into the vitreous chamber, taking care to keep the cutting edges away from both the lens and ciliary body. In order to still further open up the communications between the aqueous and vitreous chambers, the handle of the knife was rotated in the direction of its cutting edges.

III.—HENRY WORK DODD, F.R.C.S.,
Ophthalmic Surgeon to the Royal Free Hospital; and Surgeon to the Royal Westminster Ophthalmic Hospital.

MR. WORK DODD said he considered it an undoubted fact that iridectomy had been found to fail in many cases of chronic glaucoma, and that they were now in a peculiarly uncertain state as to the best treatment for this painful disease. If, as Dr. Jonnesco, of Bucharest, stated, the removal of the superior cervical ganglion of the sympathetic had a beneficial effect then they had a totally new treatment for its relief. Mr. Work Dodd having found the following suitable case he performed the operation: The patient was a woman, aged 62, who had suffered from chronic glaucoma off and on for 14 years, during which time her vision had been slowly but steadily diminishing. She was never quite free from pain and exacerbations were frequent, nausea was present but no vomiting, and these symptoms were somewhat relieved by eserine. On January, 1891, her vision in both eyes was $\frac{6}{12}$, but this failed in the right to $\frac{6}{24}$ and in the left to $\frac{3}{60}$. The fields of vision very slowly contracted chiefly on the temporal side. The tension varied, but was never above + 1 in either eye during a subacute attack. The patient was subject to dysmenorrhœa and two years ago had hæmorrhage from the mouth, probably the result of a gastric ulcer. She was thin and anæmic, but otherwise healthy. In the upper temporal quadrant of the field there was a scotoma and the centre of the field was blurred and indefinite. Assisted by Mr. Roughton, Mr. Dodd cut down on the anterior border of the right sterno-mastoid, and after a careful dissection he exposed the cervical sympathetic, the superior ganglion was then seized with forceps and torn away from its upper attachment, while the other end was divided at the lower border of the wound, about 1½ inch, including the ganglion being removed. The wound was closed and the patient did well. The pupil afterwards was found to be contracted and the tension of the eye normal, but sufficient time had not yet elapsed in order to speak as to the permanent results. Mr. Dodd, in summing up, said he thought the operation undoubtedly a severe one as it was usual to perform it on both sides of the neck. In addition very great care was needed in dealing with such important structures as were met with in the dissection. If this operation were found to arrest the disease, preserve the sight, and relieve the pain then he considered that it might be recommended.

IV.—KARL AUGUST GROSSMANN, M.D., F.R.C.S.E.,
Ophthalmic Surgeon, Stanley Hospital, Liverpool.

DR. GROSSMANN said: Chronic glaucoma is a disease which

fortunately does not come as frequently under my observation as might be, neither in my hospital nor in private practice. In the advanced stage the prognosis is, as a rule, unfavourable. Myotics will be tried first, and I prefer pilocarpin to eserine. The operative treatment is either iridectomy or sclerotomy. The latter, done with a broad Graefe's knife, is preferred by me. I have not tried the heroic extirpation of the upper cervical ganglion. Massage has given encouraging results, especially in the form of the mallet driven by a galvanomotor. One mode of treatment, especially when the patient objects to a more serious operation, I should like to mention particularly, namely, subconjunctival injections of (from 6 to 20 per mille), sterilised solutions of sodium chloride. The rapid disappearance of pus from the anterior chamber in hypopyon and the decrease of the intraocular pressure led me to try this mode of treatment, which can be repeated for weeks and weeks, applied every few days and has given very encouraging results in my hands.

V.—Ernest Dykes Bower, F.R.C.S.Ed.,
Surgeon and Ophthalmic Surgeon, Gloucester General Infirmary.

Mr. Dykes Bower said: I suppose we all agree with Mr. Cross when he says that nearly all cases of chronic simple glaucoma if left to themselves ultimately end disastrously with complete loss of sight, at the same time it is undoubtedly true that cases do now and then occur where the disease may be kept in abeyance for long periods of time by the use of myotics. I have at the present time under my care a patient who has been under observation for at least six years with undoubted chronic glaucoma with shallow anterior chamber, occasional attacks of dimness of vision and increased tension, but during the whole of the time mentioned the disease has made no progress, and the patient goes about her work with comparative comfort. While agreeing entirely that as soon as one is certain of the diagnosis of glaucoma operation should be resorted to, still one does sometimes hesitate to operate in the very early stage of the disease where central vision is good and there is perhaps nothing more than slight contraction of the nasal field, because the operation itself will probably give rise to some deterioration of vision, and the patient is thus apt to blame one for leaving him in a rather worse condition than he was before, and it is in these cases that Mr. Cross's suggestion that sclerotomy rather than iridectomy should be performed appears to me to be a valuable one. I do not wish to be understood as arguing against early operation, only one must be careful to point out to the patient that the operation which is performed for the cure of the glaucoma may itself leave the sight a little worse than it was before, and perhaps for this reason, if for no other, it may be advisable in the very early stage of the disease to perform sclerotomy rather than iridectomy, while the latter operation can be resorted to if the former fails. One word as to the ultimate results in chronic simple glaucoma after operation. My experience has been that the majority of cases eventually do badly, but still, if the sight can be retained for a few years only, as is frequently the case, no one can doubt the value or indeed the absolute necessity of early operative treatment.

VI.—George A. Berry, M.B., F.R.C.S.E.,
Ophthalmic Surgeon to the Royal Edinburgh Infirmary, and Lecturer on Ophthalmology in the University of Edinburgh.

Mr. Berry observed that he had seen a number of cases of early glaucoma kept in check for many years by myotics—notably one in which haloes and obscuration had occurred daily for 18 years, and for which pilocarpin was regularly used. His practice was to use myotics until the disease entered the confirmed stage, when he performed iridectomy. He had never, however, seen enlargement of the field as the result of this operation, although his experience of it had been sufficiently satisfactory to cause him to think that it was an absolute duty to perform iridectomy for chronic glaucoma. He had seen many cases 10 to 15 years after operation in which the vision had not deteriorated. In his experience the cases giving the worst prognosis after iridectomy were those in which there existed a central or paracentral scotoma. He preferred iridectomy to sclerotomy, and usually did both with a keratome. The best results were got in cases in which rapid and smooth healing of the wound took place. No doubt this was simply due to a cystoid or irregular cicatrix being the result of tension which had not been reduced. In these cases massage was sometimes useful if forcibly done. Scleral puncture he had tried as recommended by Priestley Smith as a preliminary in some cases (not usually the chronic ones) to iridectomy. He had never done removal of the cervical ganglion. The operation had been done for other reasons by some of his surgical colleagues, and the performance of it did not, he understood, present any great difficulty.

VII.—Charles Devereux Marshall, F.R.C.S.,
Assistant Surgeon to the Royal London Ophthalmic Hospital, and Ophthalmic Surgeon, Victoria Hospital for Children.

Mr. Devereux Marshall thought the operation suggested by Mr. Hern was an extremely dangerous one, for he could hardly imagine that a knife could be passed between the edge of the lens and ciliary body without at least producing a traumatic cataract, and possibly a wound of the ciliary body as well. He asked if an eye upon which this operation had been performed had ever been examined pathologically, so as to ascertain the exact amount of injury caused.

VIII.—William Arthur Brailey, M.A., M.D., M.R.C.S.,
Vice-President of the Ophthalmological Society, London; President of the Section.

Dr. Brailey thought that if the tension were reduced to normal permanently there was no reason to believe that the disease could advance. He thought that there were many fallacies in observations made with a perimeter, and while coarse tests with a rapidly-moving object, whether the fingers or a 10-millimetre white square, showed a good field, yet fine tests gave very great contraction; and this would explain easily the considerable enlargement of the field that might undoubtedly occur under myotics. With regard to prognosis, although he did not consider it good, yet he thought that in every case which resisted the action of myotics, and perhaps paracentesis also, an iridectomy should be done without delay, and in these early cases he had never had a bad result. If the fields were much contracted, and the discs atrophied, he thought that in spite of all treatment as a rule the disease progressed.

THE ETIOLOGY OF PHLYCTENULAR AFFECTIONS OF THE EYE.

By Sydney Stephenson, M.B., F.R.C.S.E.,
Ophthalmic Surgeon to the Evelina Hospital and to the North-Eastern Hospital for Children.

According to my experience, from 20 per cent. to 25 per cent. of the patients who seek relief in the ophthalmic department of a children's hospital do so on account of phlyctenular affections of the eye. In children who have been weaned those ailments are by far the commonest cause of corneal ulceration. There is, nevertheless, no general agreement with regard to the etiology of the cases. In the following remarks an attempt will be made to bring into relief some of the more important etiological points that have been noted during the course of practical work in the out-patient room.

Nearly two decades have elapsed since Professor Horner (of Zurich) suggested that phlyctenulæ were to be regarded merely as an ocular manifestation of eczema. That theory has now received recognition in some of the more advanced textbooks, but anything approaching unanimity of opinion as to its truth or the reverse is still lacking. In the limited time at one's disposal in the out-patient room, a scrutiny of the entire surface of any patient's body, such as would be necessary to exclude small eczematous patches on the trunk or extremities, is hardly practicable. Hospital histories are not altogether trustworthy, and it is often out of the question to follow up patients for any length of time. For these and other reasons my figures tend to understate the frequency of a present, a past, or a future eczematous inflammation.

Before entering into details, two axioms must be granted: first, that phlyctenulæ are essentially the same things whether they happen to be upon the conjunctiva or the cornea; secondly, that ulcerative blepharitis is merely an eczema affecting the edges of the eyelids. It should be stated that no attempt will be made in the figures to differentiate between catarrhal, pustular, and seborrhœic types of dermatitis. For

present purposes, the generic term "eczema" will be held to include the entire group.

My figures have been drawn from an examination of patients at three different places, namely, the North-Eastern Hospital for Children, the Evelina Hospital, and the Ophthalmic School at Hanwell. For reasons that will presently appear the returns must be considered separately.

(*a*) *North-Eastern Hospital.*

Five hundred and twenty-nine consecutive cases of phlyctenular disease were analysed. The results came out as follows:

No cutaneous lesions noted		268
Eczema noted	204	
History of former eczema	28	261
Eczema known to have occurred after inflammation of the eyes	29	

Briefly, in 50.66 per cent. of the 529 patients there was no cutaneous eczema, whereas in 49 33 per cent. eczema was present, had been present, or came on while the patient was under observation.

(*b*) *Evelina Hospital.*

Analysis of 100 consecutive cases of phlyctenular disease:

No cutaneous lesions noted		42
Eczema noted	47	
History of former eczema	6	58
Eczema known to have occurred after inflammation of the eyes	5	

The figures derived from these two hospitals, although trustworthy, do not go far enough. This will be clear on analysis of 40 cases of phlyctenular mischief met with at the Ophthalmic School, where there is ample opportunity to examine patients thoroughly, to watch them continuously, and to trace their medical history from the day of admission.

(*c*) *Ophthalmic School.*

40 Cases.

No cutaneous lesion present		4
Eczema present	22	
History of former eczema	6	36
Followed by eczema	8	

At the Ophthalmic School, accordingly, no less than 90 per cent. of the cases of phlyctenular disease might rightly be termed "eczematous."

To summarise the figures already quoted:

Total number of cases	669.
No evidence of eczema	314 (46.93 per cent.)
Eczema present on examination, once present, or known to have appeared later	355 (53 06 per cent.).

If the hospital figures had been collected with the same care as those at the Ophthalmic School, there can be little doubt that the proportion with coexisting eczema would be far higher than 53.06 per cent. But, as matters stand, the statistics clearly show that eczema is often associated with phlyctenular disease in one and the same patient.

Assuming that eczema of the skin and phlyctenular ophthalmia may be traced as a common origin, one might logically expect to find analogous affections of other mucous membranes. Such is actually the case. I have demonstrated lesions in the mucous lining of the cavity of the nose and the mouth.

The nasal lesions are generally seen (when secretion and scabs have been removed) as shallow ulcers or excoriations lying well within the orifice of the nostrils. An earlier vesicular stage may be sometimes seen. The most characteristic instances of the so-called "strumous lip" occurred in children with eczema of the nostrils, so that it is hard to resist the conclusion that the two conditions are closely connected.

The oral lesions, in my experience, affect the mucous membrane of the lips, the tongue, or the palate. They soon heal, but are prone to recur. So far as I know, these oral changes have hitherto entirely escaped description.

It will be conceded that the existence of changes in the mouth and nose strengthen the view according to which phlyctenular disease is thought to be neither more nor less than eczema of the conjunctiva. In practice, at all events, the theory will be found to work out all round.

[Mr. Stephenson here gave details of four typical cases.]

Aside from the question of eczema, it is of course known to all clinical observers that phlyctenulæ go hand in hand with the tuberculous diathesis. This is exemplified in some of the names bestowed upon the disease by the older writers, such as "strumous" or "scrofulous" ophthalmia or "lymphathic" conjunctivitis. The figures that I have collected upon this point come out as follows: Family history or personal evidences of tubercle were obtained in 167 of the North-Eastern cases, in 37 of the Evelina cases, and in 10 of the Ophthalmic School cases. That is to say, among the total number (669) of patients, tubercle or a tendency to tubercle existed in 214, or 31.98 per cent. The commonest tuberculous manifestations were: Swelling of, or abscess in, the glands of the neck, below the jaw, or elsewhere; affections of joints, spine, or bone; otorrhœa, with or without mastoid disease; scrofulodermata, phthisis, and dactylitis. I cannot doubt that a more rigid inquiry into the family history would show that phthisis is far oftener present than is generally suspected in these cases. Indeed, my experience of individual patients leads me to regard a well-marked tendency to phlyctenular disease as a general indication that the case is likely to be or to become tuberculous.

In conclusion, I investigated one other point of some little practical interest, namely, the influence of various zymotic ailments in exciting phlyctenular mischief. On glancing over my notes I find that measles was assigned as the cause in 70 cases, whooping-cough in 9 cases, chicken-pox in 8 cases, and scarlet fever in 3 cases, In other words, 13 45 per cent. of the cases were thought by the parents to be due to one of the four zymotics named.

To sum up the substance of my remarks, I may say, generally speaking, that I regard phlyctenular disease as due remotely to the tuberculous diathesis, and immediately to an eruption of eczema upon the surface of the eyeball. Anything tending to lower general resistance, as measles or imperfect hygienic surroundings, or local resistance, as slight injuries to the eyeball, may induce the disease in a predisposed subject. It is important to bear in mind that eczematous inflammations may involve mucous membranes other than the conjunctiva, and that such changes when found may help to elucidate the etiology of an otherwise obscure corneal ulcer.

Dr. HERN stated that in one particular his observations coincided with those of Mr. Stephenson, namely, that a large percentage of the cases were tuberculous and many of them proved fatal from pulmonary phthisis.

Mr. E. H. CARTWRIGHT said he considered Mr. Stephenson's conclusions as to the direct connection between eczema and phlyctenular conjunctivitis to be founded on somewhat insufficient data. In hospital cases eczema, either in the present or past, was so common that they ought to know its rate of incidence in children not suffering from phlyctenular conjunctivitis before they could be satisfied that any direct connection between the two affections existed. Mr. Stephenson seemed to include under the term "phlyctenular" inflammations, not only those generally described as "phlyctenular," but also those which were commonly known as "strumous" keratitis. With regard to the former, it was somewhat surprising to be told that they were essentially tuberculous in origin and eczematous in nature. Clinically they had no resemblance to eczematous inflammations elsewhere, and he did not think it was the experience of most surgeons that they had any connection with the tuberculous diathesis. The two classes of "phlyctenular" and "strumous" keratitis were in the main quite distinct, although no doubt borderland cases occurred which were difficult or impossible in the present state of our knowledge to relegate definitely to one class or the other.

(To be continued.)

CARE OF TUBERCULOUS PERSONS IN THE STATE OF NEW YORK.—The trustees of the New York State Hospital for the Treatment of Tuberculosis met recently at Raquette Lake, and elected the following officers: President, Howard Townsend, of New York; secretary, John R. Pryor, M.D., of Buffalo; treasurer, Frank E. Kendall, of Saranac Lake. It is understood that a site will be shortly selected, and that the erection of the hospital will soon be begun. It is stated that the New York State Forestry Commission proposes to purchase 40,000 acres of land at the head waters of each of the three principal rivers of the State, in order to rear forests. This step is to be taken in view of the necessities which will be created in the future by the care of tuberculous persons being undertaken by the State.

REVIEWS.

An Introduction to Pathology and Morbid Anatomy. By T. Henry Green. M.D., F.R.C.P., Physician-Lecturer on Clinical Medicine at Charing Cross Hospital, etc. Ninth Edition, revised and enlarged by H. Montague Murray, M.D., F.R.C.P., Physician to Out-patients, and Lecturer on Pathology and Morbid Anatomy at Charing Cross Hospital. London: Henry Renshaw. 1900. (Roy. 8vo, pp. 596. Coloured plate and 337 illustrations. 21s.)

It is by no means certain that if it were possible, by a great extension in point of time, for every medical student to be an accomplished pathologist, it would be desirable. Having regard to proportion in education, and in view of the remarkable growth in recent years of the science of pathology, there is need for an expert's guidance to indicate to the student what he should learn and what he should not learn. It is difficult to conceive in these directions a better introduction to the subject of morbid anatomy than the ninth edition of *Green's Pathology*. It is the same helpful book as of old, with its terse, clear-cut, lucid exposition, its effective use of headings as "sign posts," its skilful management of light and shade, its avoidance of unnecessary detail, and its admirable sense of proportion. At the same time it is an almost new book, which is tantamount to saying that it has been well brought up to date by Dr. Montague Murray. Half the subject matter has been rewritten, and several new sections have been added. It contains 180 additional illustrations, either new or replacing old ones, those representing the macroscopic appearances of diseased organs being especially good. It is not a perfect book, even from its own point of view; no book is, not even in its first edition. The sections on diseases of the blood are distinctly below the general level; such an observation, for example, as that in a case of pernicious anæmia, the yellow (*sic*) marrow from the humerus is not unlike raspberry jam can hardly be considered illuminating.

The chapters on diseases of the alimentary tract—for example in regard to gastric ulcer and dysentery—do not add to the average excellence. But the great weakness of the book, strange to relate, is in its pathology as distinguished from morbid anatomy. The chapter on tumours is admirable, and the section by Dr. Bosanquet on the etiology of tumours deserves special notice, as also is the chapter on parasites, including the bacteria. If one were, however, to single out a portion in which the good proportion we have praised distinctly breaks down, it is in the last chapter on the pathology of the nervous system by Dr. W. F. Mott, and it is out of proportion on account of its surpassing excellence. It contains the gist of the highly-elaborate neurology of the present day in a simple assimilable form which might constitute with advantage an integral part of every medical student's scientific equipment. The book does high credit to its authors and publisher, and especially to Dr. Montague Murray.

Twentieth Century Practice: An International Encyclopædia of Modern Medical Science by Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M.D. In 20 volumes. Vol. xviii Syphilis and Leprosy. London: Sampson Low, Marston, and Company, Limited. 1899. (Roy. 8vo, pp. 703, 15 illustrations. 30s.)

The eighteenth volume of the *Twentieth Century Practice* is devoted to syphilis and leprosy. Professor Eduard Lang, of Vienna, handles the difficult subject of acquired syphilis in a practical manner, revealing a grasp of the disease in its protean manifestations, the outcome of clinical experience and painstaking observation. It would have been better had the translator not used such expressions as "autopsical findings," "member" as an equivalent both for penis and limbs, "retreating" lesion, and so forth. The changes in the various tissues and organs are reviewed one by one in a systematic way. The remarks on the abnormal course of syphilis are to the point. The section on treatment is very full, a number of formulæ being added, together with practical suggestions as to surgical interference.

Professor Lang insists on the value and innocuity of injections of grey oil. But the importance he attaches to the risk of pulmonary embolism attending intramuscular (gluteal) administration is not in accordance with experience in London, at any rate, as far as the soluble mercurial salts are concerned. The differential diagnostic features are not always quite as clearly brought out as they might be, and the vague term "lupoid" crops up here and there.

Mr. Jonathan Hutchinson's article on inherited syphilis occupies very little space, for it is compressed into some twenty-eight pages. It ought to be read by everybody, although many will not agree with all the views expressed. Those concerning syphilis as a cause of abortion, for instance, clash with generally-accepted ideas on the subject. Mr. Hutchinson uses the designation pemphigus neonatorum for the congenital bullous syphilide. This is a little confusing, as dermatologists employ pemphigus neonatorum for a bullous eruption, non-syphilitic, and, in the great majority of cases, benign in its course. The old-fashioned term, syphilitic lupus, which the author defines, is, with all deference to so honoured an authority, misleading.

The difficult subject of leprosy, with its enormous literature and conflicting opinions, has been thoroughly well handled by Dr. Prince A. Morrow. The reader can be confidently referred to this article for a lucid account of leprosy, including its history, geographical distribution, legislation, and bibliography. Dr. Morrow concludes in favour of the contagiousness of the disease and does not accept the views that it is hereditary or caused by fish eating. He does not discuss the resistance of animals to the bacillus lepræ, and the failure to cultivate the micro-organism outside the body in connection with the spread of the disease in contrast with tuberculosis. A minor point, namely, that beri-beri has been diagnosed in the earlier stages of leprosy, is not dwelt upon.

Tropical Diseases: A Manual of the Diseases of Warm Climates. By Patrick Manson, C.M.G., M.D., LL.D. Second Edition. Cassell and Co., Limited.

The fact that a second edition of Dr. Manson's work on *Tropical Diseases* should thus early be called for speaks well for the popularity and usefulness of the book. There can be no doubt that the second edition is likely to prove even more useful than the first. Compressed into a small space, there is a large amount of new material added, so that without any noticeable increase in the size of the volume the most recent views on the many subjects dealt with are given. In addition to the value of its contents, the book has two other excellent features: one is a good index, and the other is that it is well illustrated. There are considerably over 100 illustrations, and of these no fewer than 35 are devoted to the subject of malaria, which occupies more than a fifth part of the volume. The history of the formulation of the mosquito malarial theory is given, and Ross's discoveries are thoroughly explained. It leaves no doubt as to the definite source of this theory; Manson and Ross are certainly the builders. Manson's observations and Ross's discoveries were quickly confirmed by the Italians, by Daniels, and by Koch. Manson points out that Grassi has shown that several species belonging to the genus *Anopheles*—more particularly *Anopheles claviger*—are the special mosquito hosts of the malaria parasites of man. Step by step he traced the crescent-forming and benign tertian malaria parasites through their mosquito host, finding that in their evolution they closely resembled that which Ross had so successfully demonstrated for proteosoma, and had so clearly foreshadowed and partly demonstrated for the malaria parasite of man. With the confirmatory experiments of Bignami, Bastianelli, Celli, and Dionisi, the mosquito hypothesis has now passed from the region of conjecture to that of fact.

In the chapter on Filariasis Dr. Manson gives some excellent illustrations of sections of the head of the mosquito prepared by Dr. Low, showing the filaria finding their way into the proboscis, an observation made by Dr. Low which is of the highest importance in its relation to the mode of infection in man. The chapters on Plague, Dysentery, and Cholera have been brought up to the most recent date. As a scientific

guide to the practitioner in tropical medicine, this new edition has no rival, and it is one which is recommended for the use of all those interested in tropical subjects.

SOME RECENT WORKS ON PHYSIOLOGY.

(Continued from p. 806.)

PROFESSOR BIEDERMANN'S work on *Electro-physiology*[1] is so well known to all physiologists, forming as it does the standard work on that subject, that any lengthy notice of it would be superfluous. Now that we have the complete book in English dress, we hope it may be still more widely studied in this country. We congratulate Miss Welby on the way in which the translation has been carried out, and, though there is here and there what may be termed German English, these lapses of style become less numerous as the work proceeds. The book is not one which will be largely read by the "average student." In fact, we should recommend this kind of student to avoid it, or he may neglect much more important aspects of physiology in his attempts to assimilate the rich fare provided for him here. Nor does it appeal to the practitioner; the subjects treated are as much removed, so far as one can at present see, from the practical work of his daily life as the higher mathematics or Chinese metaphysics. We fear that, excellent as the book is, it will appeal to a very limited public—namely, the professional physiologists, or to that section of them who have made the subject of muscle and nerve their life study. It is a striking commentary on the high degree of specialisation now existing in the science of physiology that here we have a book of over a thousand pages dealing with a single corner of it, and that by no means the most important one.

One of a series of books partly physico-mathematical, partly biological, which are being issued under the general title, *Scientia*, is devoted to the subject of irritability in the animal series.[2] The work is clearly written, and contains a good account of our present knowledge on the subject, and a historical review of the steps by means of which that knowledge has been obtained. Dr. COURTADE had not added anything new, but the series evidently aims not at being a medium for the publication of original research work, but rather as a means of presenting, in compact form, the principal scientific problems of the day.

Professor HAMMARSTEN'S *Textbook of Physiological Chemistry*[3] is so well known, both in the original and by means of Dr. Mandel's translation, and so justly valued for its merits, that the critic's work on the occasion of the appearance of a fourth edition is reduced to a minimum. The additions and alterations that appear in each edition are necessary in such a rapidly-advancing science as physiological chemistry, and the author's name and his previous work form a sufficient guarantee that the student and researcher will find the book fully abreast of the times. We therefore cordially welcome the appearance of the new edition, and we may add that Dr. Mandel has carried out the translation with his usual care.

The first edition of Dr. SALKOWSKI'S work on practical physiological and pathological chemistry appeared in 1893, and the second edition[4] follows the same lines. It smacks too much of the chemist and too little of the physiologist to be entirely to our liking; perhaps the author may reply that physiologists need a little more pure chemistry in their composition. As a guide to a laboratory course or a practical class the book has little value. It should, however, find a place in the library of all well-stocked physiological laboratories, as a work of reference in performing some of the more difficult analyses and separations which are sometimes necessary. The general arrangement of the book leaves much to be desired, and the first 77 pages on the analysis of inorganic compounds appear to be entirely out of place in a physiological manual. The imperfections in the plate of spectra to which we drew attention seven years ago have not been rectified.

[1] *Electro-physiology.* By W. Biedermann, Professor of Physiology in Jena. Translated by Frances A. Welby. London: Macmillan and Co.; and New York: The Macmillan Company. 1896-1898. (Demy 8vo, vol. i, pp. 534, 136 illustrations; vol. ii, pp. 508, 149 illustrations. 17s. each volume.)

[2] *L'Irritabilité dans la série Animale.* Par Dr. Denis Courtade. Paris: G. Carré et C. Naud. 1900 (Crown 8vo, pp 86. Frs. 2.)

[3] *A Textbook of Physiological Chemistry.* By Olof Hammarsten. Translated from the fourth German edition by John A. Mandel. New York. Third Edition. New York: John Willey and Sons. London: Chapman and Hall. 1900 (Demy 8vo, pp. 636. 17s.)

[4] *Practicum der Physiologischen und Pathologischen Chemie.* By Dr. E. Salkowski. Second edition 1900. Berlin: A. Hirschwald. (Demy 8vo, pp 310, 10 figures 1 plate of spectra. M 8.)

NOTES ON BOOKS.

SOME RECENT BOOKS ON NURSING.

THERE is no lack of books on the art of nursing; it is difficult to know from which side to approach them. Are they intended to assist the amateur nurse? or to supplement the practical teaching in the wards, or are they to help the student to pass examinations? Miss OXFORD'S *Handbook of Nursing*,[5] and the other works of a similar character fulfil only the last of these purposes satisfactorily. They are too full of technicalities for the uninstructed, and do not present the required information in concise terms; as textbooks they are too mixed up with the A B C of training, and with questions of ethics which are irrelevant in a book of reference. And unfortunately when crammed for examination they are distinctly mischievous, as the knowledge contained in their pages should be part of the habit of the pupil, and not just acquired for the purpose of earning marks. Miss Oxford's book, whilst including valuable matter, is deficient in method and arrangement, and contains much which may be given in lecture, but which is hardly worth crystallising in print.

In *Aseptic Duties of a Surgical Nurse*[6] Dr. O'CONNOR, of Buenos Aires, has given a concise account of the author's method of ensuring complete asepsis in the treatment of cases during and after operation. The duty of the charge nurse is first described, and then that of the assistant nurses. They are told how to prepare themselves, how to disinfect instruments and dressings, how to deal with wounds, when to act on their own responsibility and when to seek the advice of the surgeon. There are also paragraphs describing the way to prepare patients for operation, and the way to prepare the operating room, and all the material likely to be required during an operation. Dressers as well as nurses would find the perusal of this book a help to them, but they must bear in mind that other surgeons may require a somewhat different method of proceeding. The book is neatly got up and interleaved, so that the reader may from time to time modify the text as fresh investigations may render it desirable.

Dr. MORTIMER in his *Home Nursing of Sick Children*[7] has fitted his subject into the narrow limits laid down (for some inscrutable reason) by the publishers of this "series" by a process of pruning rather than by one of condensation. The result is that this little book, which is thoroughly practical and really excellent so far as it goes, does not go far enough to be as useful as it might have been. It is intended for those who have already some knowledge of nursing in general, but it is just such persons who, when in charge of sick children, would wish to know more than this little volume tells.

Mr. MACLEOD YEARSLEY'S small book on *Nursing in Diseases of the Throat, Nose, and Ear*[8] will be useful to nurses engaged in throat departments and special hospitals. After giving a brief outline of the anatomy and physiology of the parts, Mr. Yearsley describes the chief operations from the nurse's point of view, and indicates her probable duties and the instruments and dressings she may be required to have in readiness. In describing the operation for adenoids Mr. Yearsley speaks of using Gottstein's curette to scrape laterally. Probably this is a slip, for if really used to scrape laterally (that is, the lateral wall) it is very likely to injure the Eustachian tube.

[5] *A Handbook of Nursing*, by M. N. Oxford (Sister of Philip Ward, Guy's Hospital) London: Methuen and Co. 1900 (Crown 8vo, pp. 292. 3s. 6d.)

[6] *Aseptic Duties of a Surgical Nurse or Dresser.* By John O'Connor, M.A., M.D., Senior Medical Officer, British Hospital, Buenos Aires. (Buenos Aires: J. Grant and Sons; London: H. K. Lewis. Fcap. 8vo, pp. 23.)

[7] *Home Nursing of Sick Children.* By J. D. E. Mortimer, M.B., F.R.C.S. "Burdett Series." London: Scientific Press. 1899. (Fcap. 8vo, pp. 74. 1s.)

[8] London: The Scientific Press. (Demy 8vo, pp. 124. 2s. 6d.)

Dr. William Harding's book on *Mental Nursing*,[9] is mainly, but not solely, intended for those who have the care of asylum patients, yet throughout it the nurse is assumed to be female, and the patient male; "she" must do so-and-so when "he" is so-and so. The turn of expression used occasionally leaves something to be desired. The instructions given are practical and useful; brief and not too fussy and detailed, as nursing instructions are sometimes found to be. The feeding of mental cases; personal attention to them; the importance of carefully observing them; their general management; the subjects of seclusion and restraint; employment of insane patients; the management of suicidal and troublesome cases; the wet pack, hot bath, and a few hints as to forms of insanity and their leading characteristics, comprise the chief subjects of this booklet.

Mr. Hawkins-Ambler has written an unpretentious book on *Gynæcological Nursing*.[10] Its study cannot be productive of anything but benefit. A nurse whose training has been of a general kind, not such as to give her any special knowledge of gynæcological practice, will find it of considerable use. But one who has spent some time in the wards allotted to diseases of women in one of the large hospitals to which schools of nursing are attached, will find little in it that she has not already been taught. The book is clearly and simply written. The advice given is always sound and useful, and the information contained is accurate. There are, of course, some matters of opinion in which the practice of all gynæcologists is not the same, and in which therefore some will think the author should have mentioned their own way of doing things. Thus we would venture respectfully to suggest that biniodide of mercury might have been mentioned as an antiseptic, even had the author only been able to make room for it by omitting something else, and in recommending tincture of iodine as an antiseptic, would it not have been as well to mention how quickly the iodine evaporates, and the resulting necessity of making the solution immediately before using it?

The *Nurses' Report Book*,[11] compiled by K. H., is a notebook for reporting on a case. The first opening is for the name, age, disease, etc.; the other pages are ruled under the headings date, time nourishment, stimulants, temperature, pulse, respiration, urine, bowels, sleep, remarks, concluding with "general remarks." It is doubtful if a nurse has time to keep such an exhaustive record of her patient's career whilst actively engaged in nursing. Another point is that these notebooks, though they only cost sixpence each, would probably be considered rather expensive by the average nurse, since a new book would be required for each case.

The third issue of *Burdett's Official Nursing Directory*[12] shows more careful editing, and we are glad to see that the large metropolitan and provincial infirmaries have been placed among the training schools. In the list of nursing institutions managed by a committee, we notice that in one at least (p 260) the number of beds in the home has been given. We point this out as it may mislead the inquirer into thinking it a nursing home, which it evidently is not. The information compiled for the nurses, especially that which concerns their legal duties, will be acceptable to many. When we turn to the "official directory" (the list of nurses), we are again struck with the large number of names to which the asterisk is appended. We are fully aware of the difficulties which surround the compilation of such a list, which are much increased by the engrossing nature of a nurse's work, leaving her very little time to attend to her own affairs, even so simple a one as the correction of a slip. Still, to issue a list of that nature is only misleading, and as a casual glance down the pages have shown several entries which to our certain knowledge are far removed from the facts, we should advise that the names of those nurses only should be printed concerning whom reliable information is available.

[9] *Mental Nursing*, by William Harding, M.D.Edin., M.R.C.P. London: The Scientific Press, Limited. 1899. (Fcap. 8vo, pp. 91. 1s.)

[10] The Burdett Series, No. 11, *Gynæcological Nursing*, by G. A. Hawkins-Ambler, F.R.C.S., Senior Surgeon Samaritan Hospital for Women, Liverpool, etc. London: Scientific Press. 1900. (Crown 8vo, pp. 103. 1s.)

[11] London: H. J. Glaisher. 1900. 6d.

[12] London: The Scientific Press. 1900. Crown 8vo. Pp. 684. 5s.

THE GERMAN SCIENTIFIC AND MEDICAL CONGRESS.

[From Our Special Correspondent.]

[*Continued from page 933.*]

Medical Testimonials as to New Drugs.

On several occasions a morning or afternoon sitting in one and the same room was devoted to the work of several Sections. Thus at one sitting chemistry, surgery, obstetrics, gynæcology, children's diseases, and neurology were assembled, and on this occasion Dr. W. His, jun., Professor of Medicine in the University of Leipzig, read a paper in which he remarked that by a testimonial a medical man assumes an enormous responsibility, which experiments on living animals will not diminish. Every investigator should possess an intimate knowledge of pharmaceutical procedure. Professor His said that the laboratories of the present day would not suffice to examine all the preparations, and added that the application and wording of these thousands of testimonials showed want of dignity, that few were of real value, and that manufacturers naturally only selected favourable opinions, and therefore did not give the public the opportunity of hearing the other side of the question. As this matter is of equal importance to the English-speaking medical profession, it may be of interest to state somewhat fully the remedies proposed by Professor His. After hinting at the question of remuneration and the undignified attitude of a portion of the medical press, His proposed the following regulations to be framed by a specially appointed Commission as to the relationship between manufacturing laboratories and medical men with reference to testimonials.

Professional opinions should only be confidential.

In the first place, new drugs should never be medically recommended in the lay press.

Where publication results, it should only be in the medical press, and the wording of these testimonials should be most guarded.

References to drugs in the medical journals should be secured against abuse for purposes of advertisement.

No remuneration should be asked for or accepted.

Physicians giving testimonials should be held responsible for the text.

A representative of Bayer's well-known manufacturing firm and a jurist had been specially invited to take part in the discussion. The former hoped that no legislation would unjustly hamper the continued development of German manufacturing chemistry, and the latter explained the laws of Germany as bearing on Professor His's proposals.

Our Present Knowledge of the Neuron.

Professor Verworn (Jena) discussed the hypothesis that the nerve cells (ganglion cells) and nerve fibres (nerves) form one cellular entity, and that the nerve fibres, in the same way as the protoplasmic branches of the cell, are only terminals of the ganglion cell body. In this way the neuron is the cellular element of the whole nervous system. This doctrine the speaker referred to as having been founded on anatomical embryological, and experimental investigations made about ten years ago. Since then many workers have been occupied with the finer structure and the connections between the various neurons. As regards the former point, fibrillæ had been shown to exist which might be the basis for the conduction of stimuli. Concerning the links, the researches of Held, Apáthy, and others seemed to have shown that in many cases there is a real continuity of neuron substance, and that the fibrillæ partially pass from one neuron to another. As to the function of the ganglion cells Professor Verworn described the theory of Mathias Duval, according to which the protoplasmic processes are contractile, fatigue during the course of the day leading to shortening, and producing the sensation of sleepiness, sleep being required to allow the processes to stretch again. This idea was described by Professor Verworn as mere hypothesis. Another point in dispute was whether in every case nerve stimulation must pass through the ganglion cell; whereas there were some arguments against this, there appeared to be no doubt but that these bodies were the real seats of specific nervous processes. Impulses had their origin in them, and in them was regulated the intensity and duration of these processes, the fibres having only the capacity to conduct, not modify.

Dr. Nissl (Heidelberg), who read a paper on the same subject, advocated, on the other hand, the theory that each neuron consists of nerve cells and nerve fibres.

Bacteriological Purification of Town Sewage.

Herr Heuser, architect, of Aix-la-Chapelle, delivered an address on this subject. After describing the various methods of sewage disposal of acknowledged value, he stated that the city in which the Congress was being held was about to undertake the construction of works for the bacteriological purification of sewage. In quoting examples of the various methods, constant reference was made to England and while describing the principle of chemical purification, Herr Heuser stated that when this idea was new in England some five or six hundred patents for chemical substances were taken out. He then stated that the present conception of bacteriological purification was based on the original idea of the German Professor Alexander Müller, and described the results of a visit to England in 1898 by a Commission sent by the Corporation of Aix-la-Chapelle. The first visit was to Barking, and he described the procedure followed there. Other towns were visited, and Manchester was specially referred to. In the discussion stress was laid on the difficulty of always obtaining a suitable material for the bed, though it was acknowledged that with our present knowledge this system offers the largest number of advantages and fewest disadvantages.

Trephining.

In the Surgical Section, Dr. Longard (Aix-la-Chapelle) showed several patients whom he had trephined extensively after serious brain lesions. In two cases the seat of injury was near the centre of speech, and consequently both these patients were subject to strange disturbances resembling a species of monophasia. One subject could only reiterate the word "please," and answered all questions with the same word. In the other case there was a kind of motor aphasia—that is, the impossibility to find the words for simple objects, such as table or chair, even after the words had been pronounced for him.

Thoracic Resection.

Dr. Longard also showed two patients in whom he had resected a large portion of thoracic wall. In one case a fistula communicating with the lung, through which the patient expired a portion of the inspired air, remained for some time. All four patients are now thoroughly well.

Banquet.

On Wednesday evening the annual banquet was held, Professor Leube (Würzburg) occupying the chair.

(To be continued.)

CONTRACT MEDICAL PRACTICE.

Medical Clubs in Lancaster.

The question of fees between the medical men of Lancaster and the workmen's clubs has, we are informed, been settled, at least so far as the Oddfellows are concerned; the rest are such an insignificant minority that it is believed that they will be obliged to acquiesce. As noted in the British Medical Journal of September 15th, p. 762, the doctors refused to attend any longer for the sum of 3s. 6d. a head per annum, and stated that 5s. would be the minimum in future. At a general meeting of Oddfellows held on September 20th, after discussing the feasibility of forming a Medical Aid Association for the town worked by imported medical men, after deciding that it was neither practicable nor desirable, it was decided by a large majority that the terms offered by the medical staff should be accepted.

The result is gratifying, and ought to encourage practitioners in other parts to follow the example set them. All that is required is a little tact in bringing the doctors together into one society, and their reasonable demands backed up by quiet firmness.

Friendly Societies in Glasgow.

Sir,—I send you a copy of a circular sent by me to one of the societies in this district. I wonder how many men who hold half-crown societies know what it means?—I am, etc.,

Tent Surgeon.

To the ..... Rechabite Tent.

Mr.....
Secretary.

Dear Sir and Brother,—For several years I have felt that the work I have had to perform as your Tent Medical Officer has been very heavy, in fact the attendance required by sick and injured Rechabites constitutes a large part of my work, while the remuneration which I receive is, in proportion, small. From the way in which my services are requisitioned by the members, I am persuaded they do not know the actual state of matters. I have gone on, year after year, with the hope that the Tent would take this matter up, and have saved me the unpleasant task which I now face. I do not wish to dictate to the Tent, but I ask it to give some consideration to this question, so that the members may not be in ignorance, and that they should form their own opinions from the facts of the case; and, further, after a record of many years' service and accumulated experience, I hope I will be able to leave it to their own sense of fairness.

The following figures may give you some idea of the work done in 1899, and the amount of medicine dispensed for the members of the Adult Tent:—

Visits to members at their homes	450
Consultations in surgery	803
Bottles of medicine (4-oz.)	530

The following are the figures for 1898:—

Visits to members at their homes	573
Consultations in surgery	721
Bottles of medicine	714

These are the figures for two years, and you will observe that 1898 is heavier in work done than in 1899 there being 1,294 visits and consultations in 1898, and 1,253 in 1899; and, further, the amount of medicine dispensed in 1898 is much larger. Suppose I take the less heavy of these years—1899. If the members had had to pay for the work actually done, at the ordinary rates as charged in this district, I would have received about £120; while paying me at contract rate, I only received about £65 (less fees for examining candidates), that is, about one-half. Suppose you had paid me the ordinary fee for consultations in the surgery, and the ordinary price for medicine, these alone would have amounted to £65, and so last year you practically did not pay me anything for the 450 visits made to members in their own homes. Yet I have to visit at all hours, and am sometimes taken out of bed, and have to visit within a radius of three miles from the Tent meeting place.

The figures for 1898 would show a worse state of matters. These figures can be checked in another way.

The average sick rate per member per annum for this district is about one week; that is, every member of the Tent is off sick on an average one week each year, or thereabouts, while I have to attend him for that time and supply him with medicine, and for these he pays me 2s. 6d.

It may be said that some members when sick are part of their time in hospital away from home, or under some other doctor's care, but against these must be placed the fact that many members get medical attendance and medicine who are not put on the sick list, or who continue to work, and so are not included in official returns. Thus I may still say I have to give a week's medical attendance and medicine for 2s. 6d. Heavy as is the work actually done, how much more so would it not be, nay, how impracticable would it not be, if the letter of the contract were literally exacted and I had to attend all members, such as those in hospital, etc.

Drugs and remedies used in treating disease are dearer than they were fifteen years ago. Further, I have a certain amount of clerking to do, in the matter of medical certificates, putting members on and of the sick list.

Many Tents in England pay their surgeon 4s. per member per annum, and in their own districts there are several societies that also pay that figure. If the members wish to know what, in my opinion, the fee ought to be, then let them distinctly understand that it should not be less than 4s. per member. If there are members who think they are really paying "a fair day's pay for a fair day's work," these should bear in mind that they are dealing with a serious matter, and one that a wise man would not seek to reduce to the simplicity of an ordinary commercial transaction. Medical attendance is concerned with our health and welfare, and involves on the part of the practitioner a continual liability to untimely, urgent, and peremptory calls, often with anxiety and responsibility, necessitating subsequent reflection and study. The issue of illness are often grave, and neither a sick man nor his friends are able to judge of the correctness, value, and integrity of medical treatment except on superficial grounds, so that much necessarily rests in the hands of the practitioner, more so than many people realise. Notwithstanding the temptation, I am not aware that during all the years I have acted as Tent surgeon I have ever failed to give my services according to the necessities of the cases, and not according to the rate of remuneration.

I wish you to bring this matter before the Tent, and thereafter let me know the finding. Again, I ask the members each and all to form their own opinions from the facts of the case.—I am, yours truly,

Tent Surgeon.

Charge for Wives and Families in Clubs

Free Gardener.—A correspondent, who is surgeon to a friendly society, the members of which pay him 4s. per member per annum, has been asked to take as club members the wives and families. He wishes to know what charge should be made for such members if he were to undertake the additional duty; also what difference, if any, should be made in confinements, the usual fee in the neighbourhood being one guinea.

*** Women and children ought to pay a higher rate than adult male members, as they would be sure to give the surgeon more work. As the society would be nearly certain to decline to pay more, our correspondent would be wise to decline the extra duty if possible. As to confinements, he should not accept less than the fee usually paid in the district for such cases. If he were to do otherwise he would be likely to embroil himself with his professional neighbours, for the lowering of his fees would appear to them as an attempt to deprive them of a portion of their midwifery practice by underselling them.

THE WAR IN SOUTH AFRICA.

IMPERIAL YEOMANRY BASE HOSPITAL.

DEELFONTEIN.

Mr. L. V. Cargill, F.R.C.S., Ophthalmic Surgeon, Imperial Yeomanry Hospital, writing from Deelfontein, September 10th, says:

There are 31 officers and 972 men to-day in hospital, 12 officers and 447 men belonging to the Imperial Yeomanry. Since the hospital started we have treated 200 officers and 3,152 men, 1,000 of whom have been Yeomanry. The Royal Hospital Commission visited us on August 30th. They arrived from Capetown by their special train at 9 A.M., and after inspecting the camp and taking evidence proceeded north *en route* for Pretoria at 2 P.M.

Emptying of Enteric Wards.

As regards the medical cases they are still of a mild type. One of our orderlies, who was on night duty in an enteric ward, unfortunately contracted the disease some few weeks ago, and although the attack was of moderate severity, perforation ensued and he died of peritonitis. He was the first orderly we have lost from enteric although others have had it.

The enteric wards are now being emptied and thoroughly cleansed and disinfected in turn. One of the orderlies who has been in bed for some months with acute rheumatism and pericarditis is now convalescent. Dr. Washbourn has gone to Pretoria to visit the branch hospital, and during his absence Dr. Andrew Elliot will be Senior Physician. There has been no further case of measles contracted from the one case we have had. One or two cases of patients desquamating and giving a previous history of rash and sore throat have been admitted and at once isolated.

The Surgical Wards.

The work in the surgical wards has been heavier during the last two or three weeks than for some months past, and six marquees have had to be transferred from the medical to the surgical side to accommodate the patients sent down. Last week, in response to an urgent telegram from Lord Methuen, Mr. Ballance journeyed north to Mafeking to see in consultation Brigadier-General Little, commanding the 3rd Cavalry Brigade, who had been seriously wounded in the right hip by a soft-nosed bullet which had set up against a metal cigarette case that was in the General's pocket at the time. A severe lacerated wound had resulted, the entry being 3 inches vertically below the anterior superior iliac spine, and the exit a little below the posterior superior spine on the same side, the track being immediately adjacent to the hip joint. The General was brought down to Deelfontein in No. 5 Hospital Train, which was at Mafeking at the time; and the rest of the 96 patients, 40 per cent. of whom were wounded, were also detrained here. General Little is now progressing favourably, and it is hoped that some movement in the hip joint will be retained eventually. We have had rather a monopoly of the patients from Mafeking, as this is only the second occasion on which a hospital train has been up there. The first train went up shortly after the seige was raised, and brought us down the sick and wounded among the besieged and from the relief column. The wounded in Mafeking at the present time are from the operations round Malmani, Zeerust, and Elands River. Mr. Hall-Edwards has thus been kept unusually busy in localising bullets and shell fragments in the *x*-ray department.

Antiseptic Treatment of Compound Fractures.

Last week the first amputation occurred in the hospital since its commencement in March last, and this speaks volumes for the efficiency of the modern antiseptic treatment of compound fractures and the merciful character of the Mauser bullet, a large number of compound comminuted fractures having been treated here. The case was one of severe compound fracture of both legs by the same bullet, and Mr. Ashdowne amputated the right thigh in the lower third on account of spreading osteo-myelitis in the bones of the leg, which previous operations had failed to stop. The patient is now doing well, and it is hoped that the fracture in the left leg will heal.

Operation for Traumatic Aneurysm.

The first circumscribed traumatic aneurysm in this hospital was operated on by Mr. Parker a few days ago. The case was one of a man who was shot in the left forearm by a Mauser bullet at a range of 100 yards. The bullet entered the back of the limb 1½ inch below the tip of the olecranon process, and emerged on the flexor aspect, after fracturing the ulna 2 inches below the bend of the elbow at the anterior border of the supinator longus. The posterior wound had closed, the anterior one was still open, and on September 5th the patient suddenly lost 3 or 4 ounces of blood from it. There was a pulsatile swelling 3 inches in diameter on the anterior surface of the forearm just below the elbow. The radial pulse was strong, the ulnar could not be felt. At the operation, after turning out the clots, an aperture was found in the ulnar artery about three-quarters of an inch from the bifurcation of the brachial. The injured vessel was tied above and below the wound, and the patient is now doing well. The aneurysmal cavity extended between the bones of the forearm on each side of the interosseous membrane, in which there was a hole 1 inch in diameter, but by far the largest part of the tumour was situated on the anterior aspect of the membrane.

Shrapnel Bullet Wounds.

We have only had a few wounds from shrapnel bullets, but their lack of penetrating power is very marked as compared with small-bore missiles. Mr. Ballance had a very interesting case of a man in whom a shrapnel bullet entered the back a quarter of an inch to the right of the middle line, and on a level with the sixth dorsal spine. By means of the *x*-rays it was localised under the sixth right rib in front, half an inch to the inner side of the mammary line, and from this position it was removed by resecting a portion of the rib, the bullet being partially imbedded in the surface of the lung.

Another shrapnel bullet has been removed from the upper end of the left femur at the level of the junction of the neck and shaft. It had entered the outer aspect of the hip, and penetrated the great trochanter. One shrapnel bullet entered the outer side of the left leg on a level with the tubercle of the tibia, the shell having burst twenty yards from the patient. The bullet had just enough energy left to perforate the head of the tibia horizontally, and lodge under the skin over the inner tuberosity, from whence it was removed by Mr. Parker.

Bullet Wound of Brain.

A most interesting case of abscess of the brain resulting from a Mauser bullet wound has been operated on in the hospital. The man was shot on April 13th near Wepener, the bullet entering the forehead one inch vertically above the inner end of the right eyebrow, and after traversing horizontally the right cerebral hemisphere, it emerged in the occipital region two inches above and to the right of the external occipital protuberance, along a line drawn from this point to the right parietal eminence. He was helped off his horse and taken to hospital, and from the time of his wound had been completely paralysed in the left arm and leg. Three months later he was brought down to this hospital with wounds long since healed, and in a very drowsy condition, with subnormal temperature and a pulse of 54. The left arm and leg were absolutely paralysed, but not anæsthetic; the left side of the face was partially paralysed. The knee-jerks were exaggerated; the urine and fæces were passed into the bed. Two days later the drowsiness had increased, and external strabismus with dilatation of the pupil had developed in the right eye. Mr. Cargill reported commencing optic neuritis on both sides, more marked on the right. Mr. Ballance then trephined over the lower part of the right Rolandic area, and after puncturing the frontal and parietal lobes without success an abscess was tapped in the occipital lobe, and from 4 to 6 drachms of thick yellow inodorous pus were evacuated. The bony aperture was enlarged posteriorly and a tube inserted. Unfortunately the patient died the next day with a temperature of 104.4°F., never having recovered consciousness from the time of the operation. At the necropsy

the abscess drained at the operation was seen to be situated in the centre of the right occipital lobe, and the cavity was about one and a-half inch in diameter. There were two other smaller abscesses which had been untouched by the operation, one in the upper and one in the lower part of the right parietal lobe near the surface of the brain. In the region of the genu of the right internal capsule a patch of white softening was found. There were no portions of bullet or clothing in the cerebral substance. In an agar tube inoculated at the operation a pure cultivation of the staphylococcus pyogenes aureus grew. Apparently the hemiplegia was due to direct destruction of the fibres of the internal capsule by the passage of the bullet and was not due to the pressure of the abscess.

NO. 10 GENERAL HOSPITAL, BLOEMFONTEIN.

WE have received the following interesting account of No. 10 General Hospital from a correspondent in a position to know the facts. It may be mentioned that the members of the Hospitals Commission were so pleased with what they saw in the hospital that they did not think it necessary to take evidence about it.

No. 10 General Hospital sailed from England on March 12th in the hospital ship *Avoca*, with a staff of 17 medical officers and civil surgeons, an *x* ray expert, 20 nursing sisters, and 133 non-commissioned officers and men, of whom the greater part were Volunteers and St. John Ambulance Brigade. Surgeon-Lieutenant-Colonel W. W. Lake, M.M.S.C., since dead, was the Principal Medical Officer, Major R. H. Clement, since invalided, the second in command, and Major E. C. Freeman the registrar and secretary. The ship carried beside the complete equipment and stores the marquees and tents of the hospital.

No. 10 arrived at East London on April 8th, handed over its tents, in accordance with orders, to the Ordnance Department, and disembarked the same day. The *personnel* reached Bloemfontein on April 11th, and the equipment began to arrive on April 15th. On April 17th St. Michael's Home was taken over, on the 18th the convent, on the 19th Dames' Institute, on the 21st the Artillery Barracks, and on the 24th the Industrial Home.

Between the 24th and 27th the officers' hospital at "Upper Dames" was cleared, cleaned, equipped, and opened with 60 beds. On the 29th Grey College was taken over and the headquarters of the hospital installed, and the different units amalgamated. The only later additions were the Landrosts House for sick officers; St. Andrew's School, used chiefly for convalescents, and a surgical ward with 35 beds in the ballroom of Government House, which was equipped and opened by May 11th. Finally a separate hospital of 16 beds was opened for sick nursing sisters at the Bishops Lodge on June 2nd. Altogether 12 separate buildings combined for administrative purposes into 5 sections were handed over to No. 10, straining its resources to the uttermost. The buildings "taken over" were already in use as hospitals in charge of medical officers and men from the field hospitals and bearer companies who were replaced by the staff of No. 10 Hospital. The buildings "equipped" were taken in hand and converted into hospitals *de novo*. The maximum number of beds in the hospital was 758. The number of cases admitted between April 29th and August 31st, 3,153. Total number of enteric cases, 1,502. Total number of deaths, 207. Enteric deaths, 173. The number of men invalided to the base, 1,439. Number of men returned to duty, 949. The general death-rate, 6.56 per cent. The enteric death-rate, 11.51 per cent.

Of the medical officers and civil surgeons 1 died, 3 were invalided, 4 returned to duty, and 3 are still on the sick list; of nursing sisters 2 died, 6 were invalided, 3 returned to duty; of the non-commissioned officers and men 170 have been admitted to hospital, 8 died and 50 were invalided. Nearly all the cases among the staff were enteric, none were typhus; and, it may be added, no cases of typhus were detected among the patients. As the question has been raised as to the feeding of the sick in military hospitals in time of war the following figures may be of interest; they apply only to the Grey's College Section of 170 beds and not to the whole of No. 10, and are for a period of four months. If multiplied by five they would approximately represent the extras consumed by all the patients in No. 10 for the same period. Rations were drawn besides as required for convalescent patients:

Chickens, 900	Stout, 2,150 bottles.
Arrowroot, 890 lbs.	Soda water, 9,950 bottles.
Bovril, 1,100 4-oz. pots.	Brandy, 1,230 pints.
Calves'-foot jelly, 2,100 pint bottles.	Whisky, 90 pints.
Eggs, 6,360.	Beef tea, 9,300 pints.
Port wine, 910 pints.	Fresh milk, 21,530 pints.
Champagne, 390 bottles.	Condensed milk, 7,400 tins.

It may be added that on account of the hospital being divided up among so many separate buildings, the staff had to be considerably augmented from time to time, and at one period 51 nursing sisters were attached to the hospital.

THE PREVENTION OF TUBERCULOSIS.

LEICESTER.

THE branches of the National Association for the Prevention of Consumption which have been formed in different parts of the country are not wanting in that energy which is necessary to introduce and establish the measures which must be taken if the prevalence of consumption is to be materially lessened. It augurs well for the success of the movement that centres of education, etc., should be instituted all over the country. The first annual report of the Leicester and Leicestershire Branch, issued recently, shows that no time has been lost by this branch in instituting practical prophylactic measures in these districts. The Branch has only been in existence for a year, its formation being the outcome of a public meeting in Leicester on March 25th, 1899. The educational campaign has been carried on by meetings organised in different parts of the county, at which lectures on the subject of the prevention of consumption were given; and by the distribution of pamphlets. The Committee has drawn up a placard setting forth briefly the safeguards to be taken in the prevention of tuberculosis, which have been sent to many of the large factories in Leicester, and have been distributed in the county. Steps have been taken to impress upon urban and rural district councils the importance of availing themselves of the powers which they possess under the Dairies, Cowsheds, and Milkshops Order to make regulations to ensure a pure milk supply, and the Committee have drawn up some clauses which they recommend should be inserted in all contracts for the supply of milk. The efforts of the Committee in this direction have already borne fruit in the appointment by a large dairy supply company of veterinary surgeons to examine periodically all cows from which they receive their supplies of milk, and by the appointment at Market Harborough of a veterinary surgeon, with the powers of an inspector of nuisances, to inspect meat and milch cows. A letter has been addressed to all the sanitary authorities in the county, asking if they would be willing to undertake to disinfect rooms occupied by consumptive patients, on the request of the friends of the patient, and a large number of the authorities have replied in the affirmative. In several instances disinfection after death from consumption had been carried out on these terms. It is satisfactory to find that the financial condition of the centre is good, for such important work cannot be carried out without funds. The Branch numbers 167 subscribers, showing that the Committee and its energetic honorary secretaries, Dr. Pratt and Dr. Sevester, have succeeded in interesting the public in this movement. The work accomplished in its first year of existence by the Leicester and Leicestershire Branch of the National Association for the Prevention of Consumption affords an illustration of the influence of a local organisation in pressing necessary health reforms in a district. We sincerely wish them continued success in their efforts to stamp out tuberculosis.

DEVON AND CORNWALL.

Dr. F. Bushnell, Honorary Secretary of the Devon and Cornwall Branch of the National Association, stated in a recent letter to the *Western Morning News* that the Association has offered to arrange for the honorary services of a lecturer at the request of any representative subcommittee in two counties, consisting, say, of the mayor or chairman of district council or sanitary committee, the medical officer of health, clergyman, veterinary surgeon, etc. He would state the objects of the Association and the elementary truths in the prevention of the disease.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, OCTOBER 6TH, 1900.

MEDICAL STUDENTS AND THE UNIVERSITY OF LONDON.

Many a father sending his son to study medicine in London this October will have noted that the first meeting of the Senate of the University of London, reformed so as to become a "teaching University," has been fixed for October 24th. Some may suppose, and many will certainly hope, that this step is the first in the solution of the question—how to provide a degree "attainable by the majority" for the London medical student; and they may hope that their sons, who are now joining "Schools of the University," will leave those schools with degrees. There can be little doubt that they will do so if the sons have passed the Matriculation and Preliminary Scientific Examinations of the University. These remain the stumbling-blocks, as they have always been, to the attainment of a degree in London. The hope of the London student has been that when his teachers obtained their proper position in the government of the University, they would see that these examinations became such as the average student could pass. A moment's reflection shows that time must elapse before any change which may seem desirable can be effected in an examination. The new Senate must be allowed some grace to settle down to its work, and great questions concerning the organisation of the teaching of the University will probably be regarded as demanding earliest attention. Moreover, a somewhat lengthy notice of changes in examination is necessary; so the fulfilment of a hope, such as that above referred to, must be postponed for a couple of years at least.

We may, however, shortly consider the principles by which, it would seem, the new Senate should be guided in determining the matter and standard of pass examinations: for, among the many influences which bear upon such tests, these are frequently forgotten. In range and standard pass examinations should surely be such as a person of the minimum age fixed, of average ability and industry, and having good aids to study at his disposal, should be able to pass, without injury to mental and bodily health. It has often been said with pride that the pass examinations of the University of London may be regarded as honours examinations when compared with those of other Universities. In so far as this is a fact, it appears to us to be a great wrong to many, and a most unnecessary wrong; for the honours examination connected with each pass examination affords proper opportunity for the display of exceptional ability and knowledge. But the University of London, which undoubtedly did excellent work in raising the general standard of knowledge required of those professing to have had a university education, has in its later career done much harm to the cause of education by increasing its requirements beyond the capacity of a good average student. It has thus encouraged cramming—the passive reception of teaching intended only to facilitate the passing of examinations. The curricula have allowed no time for the average man to think, no time for him to play; he must always be receiving and endeavouring to retain compressed information. Naturally, when he has got his degree a student thus trained is not as good a man as he might have been.

That some turns too many had been given to the screw which "raises the standard" at the University seems to have been recognised by the Senate. In the case of that most important examination—the Matriculation—the demands have been considerably reduced. If it is still unsuitable for boys and girls leaving school at the age of 16, further changes will doubtless be promptly recommended. For Statutes 116 and 117, conferring upon the Senate power to vary the matriculation in relation to the courses of study the students propose to follow or even to substitute for it some "other test of fitness," must shortly bring the Matriculation under discussion.

But with regard to later examinations the action of the Senate has been far less happy. To help them over the stile, candidates have been allowed—following the example set by the University of Cambridge—to split examinations—to devote all their attention to two out of three subjects, and, having passed in these, to cast them aside and devote themselves to the third. This extends even to the Final M.B. Examination, which the University regards as the examination for the general practitioner, but in which the knowledge of surgery expected has been reduced below that of the other subjects; the B.S. degree must be taken to show a knowledge of surgery equal to that of medicine. The Senate has doubtless expected that a better acquaintance with each subject would result if the M.B. examinations were allowed to be passed in sections, but the majority of teachers, we believe, hold the opinion that a better man and better knowledge result from requiring a less extensive knowledge of each of a group of related subjects, while insisting that they shall be taken together. The old Senate had been for a long time considering and hearing evidence upon this matter, and the results of their inquiries will of course come before the new Senate.

Lastly, it is often stated that in certain subjects knowledge is demanded which is of little or no value to the practitioner of medicine either as mental training or in his profession. From this point of view the curricula should be carefully reviewed, and no doubt this will be done.

We believe that thorough revision of the examinations of the University with a view to remedying these defects will have the effect of admitting more men to the degrees while raising the quality of the men who leave the London School; and we take it that this is, or should be, the object of the University.

We are most anxious not to be misunderstood with regard to this question of the examinations of the Uni-

versity of London. We believe that the exaggerated opinions held in the London University as to the actual importance of examinations have been the almost necessary result of establishing a degree-giving body of which the sole function was examination. However much it may be hoped by some that a reputation for severity in examination will remain a chief characteristic and attraction of the University, we are convinced that the whole subject of examination and degrees will gradually sink into the background now that there have been added to the duties of the University those of teaching and of promoting research. In future—unless it prove a failure—the reputation and power of attraction of the University must rest upon its teachers and its teaching; upon the work done in the University, and by its graduates. But nobody, we hope, wants the University of London to give cheap degrees. Whilst deprecating all rivalry and comparisons between the degrees of the various universities, we feel that a London degree should be proof to the world of possession of knowledge up to the true university level. In Medicine it should indicate, also, the best theoretical and practical training. To put the matter on a low ground, it would be suicidal policy for London to offer a degree which any university in Great Britain could rightly regard as inferior to its own.

We have expressed our strong opinion that Pass Degrees should be arranged with regard to average ability. In Medicine there is no reason why the average accepted by a university as its working basis should be other than a high one. It is more or less true that the natural desire of teachers is to see all their students pass; that sympathy with students and their parents is believed to dispose examiners to leniency; that schools and licensing and degree-giving bodies desire the fees of as many students as possible. But every man in the profession who can dissociate himself from these influences, and who is acquainted with the many unhappy results of the struggle for existence which is going on in its overstocked ranks, will join us in asserting that the time has more than come for markedly raising the standard of admission to the profession—for accepting only the better educated. This is the direction in which the greatest interests—those of the public and of the whole profession—point; and it is not for the University of London to do otherwise than lead.

APPLIED BACTERIOLOGY.

In recent years remarkable changes have taken place in the classification, nomenclature, treatment, and methods of prevention disease, as the result of the study of bacteriology. Its methods are not those of clinical medicine. The physician or surgeon has not the time to acquire, or if he acquire has not, when he becomes busily engaged in practice, the leisure continuously to apply the methods of this science in his daily work, and as a result there has sprung up a band of workers devoted to this special branch of pathology.

Professor Windle, in his address at the opening of the first winter session of the new University of Birmingham, alluded to the bacteriological laboratory there, and to the useful work which it is doing, not only for Birmingham and Wolverhampton, but for the Counties of Warwick, Stafford, Derby, and Salop. He pointed out as another great advantage which he hopes will be derived from the laboratory, the acquisition by the medical student of the methods of original research. It will, we suppose, be generally admitted that Professor Windle is right, and that all students should be trained in the methods of original research. It is only by acquiring something of this training that the medical man can hope to cope successfully with the many and varied problems which meet him daily in his practice, problems which at the present time too often remain unsolved. As matters are at present, however, there seems to be little hope that the already overworked student will have the time to acquire this training, and something must be omitted in order to allow him the necessary time. What shall this something be? We can only answer this question by, with bated breath, asking another, Shall it be the systematic lectures in anatomy, medicine, surgery?

Within recent years bacteriology has added much to the knowledge of the causes and methods of prevention of many of the infectious diseases. Although many public health authorities have been slow to avail themselves of this knowledge, they are—some of them after costly experiences—beginning to make use of the means which are at their disposal. Although the bacteriologist cannot as yet help in the diagnosis of all infectious diseases, there are widely-spread infections upon which he is able to obtain definite information at an earlier date and with more certainty than the clinical physician. Many of the sanitary authorities have arranged to have various examinations made for practitioners at the public expense; for example, specimens of sputum may be examined for the tubercle bacillus, swabbings from the throat in cases of suspected diphtheria or serum from doubtful cases of enteric fever. These are the commonest examinations required, but there are others which arise more seldom for which provision is being, or is to be made. At the present moment many of the authorities of the ports are making arrangements for the bacteriological examination of specimens from suspected cases of plague, and occasionally the bacteriologist is asked to diagnose doubtful cases of anthrax, glanders, and influenza. As years go on it is more than probable that other infectious diseases will be added to this list.

The time of the medical officer of health is generally fully occupied in administrative work, or administrative work and private practice. Even if he has the leisure, he may not have the technical skill to undertake the varied bacteriological examinations which are required. Many of the occasional examinations, such as the examination of drinking water, necessitate the possession of a well-equipped laboratory. This difficulty is overcome in different ways by different authorities. Some provide a laboratory and an assistant for the medical officer of health; this is a very simple and effective way when the medical officer has the necessary training to undertake such work. Others, as Birmingham, Wolverhampton, and the neighbouring counties, make arrangements with an already existing laboratory.

There is something to be said for each of these arrangements. On the one hand there are many argu-

ments in favour of the plan which puts the medical officer of health in charge of a suitable laboratory, so that he may really control the whole of the work, or at least be in immediate touch with the bacteriologist. The objection urged against this arrangement is generally the expense which it involves. Sanitary authorities are not too anxious to spend money from which they cannot see an immediate return. Too often it is not until an epidemic is in progress that they realise what they would have saved to the ratepayers had they been able to prevent it. This difficulty could be got over by several small authorities combining to provide a joint laboratory, whether they choose to have only one or several medical officers.

When the other method is adopted, as at Birmingham, there is a danger that there may be too much work for the chief to control personally. Great care and patience are required in bacteriological research, and unless all possible care is exercised, mistakes will arise which will not only cause hardship to the sick, but bring contempt upon bacteriology. The chief of the laboratory, therefore, will require assistants only less skilled and experienced than himself. This, of course, means that the sanitary authorities who make use of University laboratories must make serious contributions to the funds by which such laboratories are supported. It would be disastrous that authorities should be trained to believe that they can get the work done "on the cheap." The duty of a university is to teach and to give facilities for extending the domain of knowledge, not to save the rates. The trend of things seems to be towards a system under which every large authority will have its own laboratory and bacteriologist, just as now it has its own medical officer who spends the whole of his time in caring for the health of his district, while in the case of smaller authorities combination, with the county as the unit, appear to be the natural line of development. Meanwhile the University of Birmingham is doing admirable educational work in teaching sanitary authorities the value of laboratory investigations directed to the prevention of disease.

THE PLACE OF THE LECTURE IN MEDICAL TEACHING.

Among the reforms in the system of medical education that have from time to time been advocated one of the most revolutionary is the abolition of the lecture. It has been urged that the lecture is for the most part a sheer waste of time, since all that the lecturer has to say can be read by the student in his books, without the distracting accompaniments of faulty elocution and struggles with refractory parts of speech on the part of the professor, and of responsive manifestations of suffering on that of his hearers. Probably most of those who have had to sit through a course of lectures, say, on fractures and dislocations, delivered in a dimly-lighted and imperfectly-ventilated room on a foggy November afternoon, will agree that they might have been more profitably employed—unless the physiological rest obtained from the semi-asphyxial sleep induced by the surroundings be counted a compensating gain. It may also be urged that as the teaching of medical science becomes ever more and more practical there is less need for lectures.

The modern student must learn the scientific groundwork of his profession in the laboratory, and its practical application in the wards. The lecture is a survival of the mediæval system of teaching when books were few and much too costly for the average student. Now nearly every lecturer has published a book, and his pupils can often follow him in his progress through its chapters. When he has not himself written a book he not infrequently takes some well-known author as his guide, and makes his lectures a commentary on the text of his authority as the old teachers used to expound the works of Hippocrates and Galen. Whatever advantage this may have for the instruction of the lecturer—on the principle expressed in the old verse *Discere si velis, doceas, sic ipse doceris*, it is of doubtful utility as far as the student is concerned. Hence the latter is disposed to regard the lecture as an evil to be avoided as far as is possible, and when this cannot be done, to be mitigated by such means as circumstances may allow.

It has recently been proposed to introduce what is called the "case method" of teaching medicine at Harvard. In that University law has for some time been taught by the case method. What that method consists in may be gathered from the following passage in a Presidential address delivered by Professor Adami before the McGill (Undergraduates) Medical School: "At Harvard, instead of there being a course of lectures and quizzes upon the different branches of law, the heads of the different departments distribute written or printed statements of actual cases, and by a certain day certain of the students are expected to have turned up or ferretted out the authorities bearing on the subject, and are expected to argue the matter *pro* and *con.* before the class." Mr. W. B. Cannon, a student of Harvard, proposes that a somewhat similar method should be adopted in the teaching of medicine. Didactic lectures are to be done away with; instead of them carefully-compiled notes of actual cases, with clinical history, symptoms, course of the disease, and treatment all duly set forth are given out. The student then works through the cases with the help of such literature as he may have at hand. When he has gathered all the light he can get from textbooks, monographs, and papers, he makes his diagnosis and must be prepared to justify that diagnosis, to discuss the prognosis and treatment, and to defend his opinion against the criticisms of his teacher and fellow students. In this way, with the additional aid of clinical lectures and out-patient work, the student will, it is expected, gain a more solid knowledge than by the present system of medical teaching. There is something fascinating about the plan. If the neophyte does not, like Gil Blas, learn the whole art at once, he at any rate ought to get a very firm grip of what he does learn. He can group his cases and make them throw light on each other; moreover, the work is his own. He feeds himself, and his mental nourishment is not pushed down his throat by his teacher like the food of Strassburg geese. Dr. Adami objects that the method of study suggested by Mr. Cannon is theoretical rather than practical. But surely practical work may be combined with the reading up of the cases. The essential feature of the scheme is the abolition of the lecture, and the substitution for it of a highly educative process of gathering knowledge inde-

pendently from the same sources that, generally speaking, would supply the teacher with the materials for his prelections.

An apologist for the lecture has come forward in the person of Dr. Vivian Poore. In his address to the students of University College, London, published at page 984, he admits that there is a measure of truth in the arguments that have been urged against the lecture as an instrument of medical education. But he gives his own experience as evidence in its favour. He had the rare good fortune to attend the lectures of Sir William Jenner, and he says emphatically that in listening to them he spent his time more profitably than he has ever done, before or since. The lectures aroused his enthusiasm, and he went from the lecture room to the ward with intense interest and with greater knowledge how to observe and what to look for. "Jenner," he says, "taught from the fulness of his personal knowledge, and largely used the vivid impressions made upon him by cases he had seen for illuminating and illustrating the principles of medicine." He was more anxious to impart knowledge than to display his own learning. We may add that he had the gift of putting his experience into terse maxims that stamped themselves indelibly on the hearer's mind.

But Jenner was the bright exception that proves the dismal rule. How often have we seen an eminent person doling out dry crumbs of knowledge which were as ashes in the mouth of the hungry Lazarus on the bench before him! How often again have we heard an illustrious professor discoursing what, from the student's point of view, could only be termed scientific fustian! Dr. Poore himself confesses that some of the lectures which he was forced to attend were "thoroughly bad, mere incoherent and incomprehensible drivel." It is not fair that when the student asks for bread he should be given a stone. It is true there are books which are, like Gratiano's speech, full of nothingness; but then no one is compelled to read them. If all teachers were Jenners, the lecture would be a living and energising influence which could not be dispensed with. But not every lecturer is either inspiring or particularly enlightening, and it seems probable that if the systematic lecture is not formally abolished it will, in the development of medical teaching, become extinct by the operation of natural forces.

WEST INDIAN MEDICAL SERVICE.

WE have on several occasions drawn attention to the changes which are taking place in the pay and position of the Colonial medical officers in the West Indies. We have readily admitted the need for economy which has been forced upon the local administrations by the financial crisis through which these colonies have been passing, but it is right that those who may think of applying for posts in this service should be warned of the changes which are being effected to the prejudice of future holders of these appointments. The new Jamaica Law to Amend the Witnesses' Expenses Law passed on June 30th, 1899, Section v, provides as follows: "A medical officer in the employment of the Government of the Colony shall not receive any fee payable under this law from public funds, other than travelling expenses, for giving evidence before the Court, or for making a *post-mortem* examination. Provided that this section shall not apply to district medical officers now holding appointments under the Government." We know of no precedent for such a rule as this applicable to medical officers who only receive small salaries, and whose time is only partially occupied in the duties of their offices. Such work as is implied in giving evidence in Court may often take up one or more successive days, while for this no extra payment is to be made. As these medical officers receive only £200 or £250 a year and are supposed to make the greater part of their income from private practice the injustice of such a rule is obvious. We trust the attention of the Colonial Secretary will be drawn to this matter, and that he will veto the law in its present form, or, if it is too late to be vetoed, that he will take steps to have it so amended that such witnesses may at least receive the ordinary fees, which do not err on the side of extravagance. In Ireland a dispensary medical officer, whose position is very analogous to that of these West Indian officials, when called upon to give evidence, or to make a *post-mortem* examination, charges the usual fee in accordance with the recognised scale, whether he is called by the Crown or the coroner. We cannot think the Jamaica law fair, except in the case of a man whose whole time is occupied in the duties of his office, and we feel sure that the result of legislation of this kind will be to lower the class from which the service is recruited, to diminish its efficiency, and in the long run to entail far greater damage to the public interest than can be represented by the few pounds saved annually.

METROPOLITAN LUNACY.

THE annual report of the Asylums Committee of the London County Council has just been published, and we propose shortly to publish a detailed review of its contents. Meanwhile we may say that it affords some sombre reading, some cheering details, and much food for contemplation alike to the social reformer and the anthropologist. It is good to know that while the average annual increase of London lunacy is about 500 a year, during 1899 the increase fell somewhat below this figue; it is not less satisfactory to learn that the maintenance-rate of asylum lunatics continues to be less than 10s. a head a week. It is gratifying to know that clinical teaching and pathological research (at the Claybury Laboratory) are now associated with the county asylums of London. The attempt to separate non-pauper patients from pauper, and the increased provision that is being made by the Committee for paying patients, is a sign of the times, as it is becoming more and more the tendency to regard the control and treatment of lunacy as a municipal function, and to resort less to the private asylums. The recent exposures, notably in the case of St. Pancras Union, by which medical men and persons concerned in the management of private asylums were shown to have given secret commissions to the relieving officers who introduced custom, will doubtless tend to reduced confidence in private asylums and increased popularity of those under public representative control. It is all the more important that a Committee like that of the London County Council, with nearly 14,000 patients under its care, should command the services of the most able and and energetic men of whom that body can boast. We are inclined to think that some of their proposals, notably for the establishment of receiving houses, and for some less stereotyped plan of asylum construction and management, have been rather long on the stocks, and that a little more energy might with advantage be imparted into the conduct of the Committee's affairs. Colitis appears to be still unduly prevalent, though happily less so than last year, and the Commissioners also find fault in one instance with the frequency of bedsores. It will be a matter of congratulation if the research on which we are told Dr. Durham is engaged as to the cause of colitis result in its detection, and give more effective means for the prevention of this asylum bane.

WANTED: A BOTANICAL INSTITUTE.

Professor F. W. Oliver spoke out courageously on the degradation of the Botanic Gardens in Regent's Park in the introductory address which he delivered to the faculties of Arts, Law, and Science of University College, London. Some time ago there seemed to be some hope that the Royal Botanic Society would really turn its attention to the advancement of the science for the benefit of which it professes to exist. The Society holds the lease of its gardens from the Crown, and some few years ago, as we pointed out at the time, alarmed by the fact that its lease was running out, it appeared disposed to repent in the hope of obtaining a renewal. There were not exactly promises but hints that if the Government would be merciful and give a new lease the Society would repent and try to be useful. But the Crown has renewed or undertaken to renew the lease, and as Professor Oliver said, "latterly the illuminated *fêtes*, the decorated donkey chaise, the maypole, and the pastoral play have engrossed much of the Society's attention and the gardens had become a kind of modern Ranelagh." The site which some had fondly hoped would be that of a botanical laboratory has been covered by an unsightly lath and plaster "club house" where Fellows who like to pay an extra subscription can get dinners on warm evenings. It is all so sad and so degrading to this country in the eyes of the rest of Europe and of America that we are glad to find that Professor Oliver still hopes against the omens that the Royal Botanic Society will not refuse any well devised plan put forward by the Colleges. By "the Colleges" Professor Oliver no doubt means the colleges of the rejuvenescent University of London. In addition to lecture rooms and laboratories he asks that there should be ample place for the museums and collections, and that around the Institute there should be reserved three or four acres of ground for the use of the Colleges as their botanic gardens. Suitable class houses should be erected and frequent visits to the gardens should be encouraged amongst the students. In fact, Professor Oliver asks that the University of London should have a modest little Botanical Institute such as a small German University would despise. But it would be better than nothing and much better than a kind of "modern Ranelagh" masquerading as a botanic garden.

SIR WILLIAM MACCORMAC ON THE ARMY HOSPITALS.

Sir William MacCormac, speaking at Deptford on September 28th in support of the Unionist candidate, said he was a Liberal, but he endorsed the position of the Unionist candidate in regard to the war. He went to South Africa in sympathy with the Boers, but experience in the country altered his opinions. The Army Medical Service was much undermanned, but as to the charges against hospitals the man who made them ought to have made them on the spot. The work done by the medical staff was beyond praise.

THE HOSPITALS IN SOUTH AFRICA.

Lieutenant-Colonel Ryerson, M.D., Canadian Commissioner of the Red Cross Society in the war in South Africa, delivered an address at the annual meeting of the Canadian Medical Association in Ottawa in the course of which, as we learn from the *Standard*, he made some remarks upon the hospital administration in South Africa. He said that this subject was occupying a large place in the public mind because of the attacks which have been made upon the administration under the guise of philanthropic interest in the welfare of our soldiers. He said the Orange Free State was a land which produced little towards its own support in food for men and horses. Its main artery of communication was a narrow-gauge railway 725 miles long, between Capetown and Bloemfontein, where the alleged atrocities were said to have taken place. Suddenly 100,000 soldiers and 20,000 camp followers were thrown into this country already bare and hardly able to feed itself; in addition to this there were 25,000 horses, mules, and oxen, all of them, men and animals, had to be fed by this narrow-gauge railway. In addition there were munitions of war, horses, mules, guns, and soldiers to be carried, besides miscellaneous hospital and personal stores, passengers, as well as food and merchandise for the residents of the country. With a limited rolling stock it might readily be imagined how difficult was the problem which confronted our army—a problem which was rendered still more difficult by interruption of communication by the blowing up of bridges. Then, almost without warning, a great epidemic of enteric fever broke out. In one day upwards of a thousand were admitted to hospital. Was it surprising that beds and bedding were hard to find, or that orderlies and nurses were overworked? Naturally, under the circumstances, the field hospitals had to be utilised as stationary hospitals, though they were neither equipped nor intended for such work. The officers and men of the Royal Army Medical Corps rose to the occasion, and did magnificent work, heroically sacrificing themselves on the altar of duty, as was proved by the death and disability returns. In short, everything that circumstances permitted was done to meet the emergency, and there did not exist the neglect and misery so graphically and glibly set forth by certain untrustworthy politicians. No one was more keenly interested and sympathetic than the Commander-in-Chief, Lord Roberts, and Dr. Ryerson always found him most willing to grant every reasonable facility in getting up stores and comforts, and in aiding the work in every way. In conclusion, Dr. Ryerson said the history of this war redounded to the credit of the medical officers, civil and military, who worked so faithfully, so energetically, and so successfully to alleviate suffering and assuage pain.

A MEDICAL PEER IN AMERICA.

The death is announced of Dr. Fairfax, of Maryland, who was the eleventh Baron Fairfax of Cameron in the peerage of Scotland. John Contée Fairfax, one of whose ancestors was Commander-in-Chief of the Parliamentary forces at the battle of Marston Moor, while another married the Hon. Miss Colepepper and founded an American family in Virginia, died at his plantation, Northampton, Prince George County, Maryland. Neither he nor his elder brother, from whom he inherited the peerage, would ever take measures to have the title confirmed. The only title by which he cared to be known was that of Doctor, which he held as a graduate in medicine of the University of Pennsylvania. He was born in Virginia in 1830. According to a note published by the *Daily Telegraph*, his family when he was a lad left Virginia and moved to the heights of Georgetown, where he received his first education. When the Civil War began his family, as Southern sympathisers, found matters so disagreeable that they moved to a point near Bellsville, in Maryland. Thenceforth Dr. Fairfax, who in 1857 married the daughter of Colonel Kirby of the United States Army, resided on the lands and modest fortune which descended to him. He inherited the title in 1869 upon the death of his brother Charles, a sturdy democrat, who lived for many years at San Francisco. The Northampton plantation consisted of about 700 acres and a house over 150 years old. The title, although the late peer never formally assumed it, was officially recognised by the Court of Great Britain, and frequently letters bearing official seals, inviting Baron Fairfax to Court functions, arrived at Northampton. Lord Fairfax is succeeded by his son, the Hon. Albert Kirby Fairfax, who was born in 1870, and who resides in New York. Lord Fairfax's death is believed to have been indirectly due to a bad fall he had some

years ago while driving a fractious horse, which came down and injured his spine. It was from the Fairfax family's settlement in America that Thackeray drew the inspiration for *The Virginians*.

SMALL-POX IN HULL, 1899.

The annual report of Dr. J. Wright Mason, medical officer of health to the city and county of Kingston-upon-Hull, is quite an elaborate work, with its fine map of Hull and various coloured graphic charts. The population of Hull is 234,270, and there were 144 deaths from small-pox, but the death-rate from all causes was only 18 per 1,000 inhabitants. The number of cases of small-pox notified was 836; 800 were admitted to hospital. Of the 144 deaths, 10 occurred outside the hospitals. The cause of the epidemic was not made out; it was probably imported, as Dr. Mason thinks, from Russia, and it is highly improbable that it was due to a cargo of onions, as asserted by some persons. The outbreak of small-pox lasted all the summer and autumn of 1899, and 644 houses were involved, containing 3,321 persons. Perhaps the most important part of the report is the following information: "Of the 671 vaccinated persons attacked, 70 died, equal to a fatality of 10.4 per cent.; of the unvaccinated, 64 died, equal to a fatality of 49.6 per cent." These 671 cases belonged to the 800 attacked and admitted to hospital. The total fatality was 16.7 per cent. of the attacks. Turning to the children, we find that of 66 attacked under 10 years of age, 18 were vaccinated, while the rest "showed no evidence of vaccination." "Amongst the 18 vaccinated children, there was no mortality, whilst of the unvaccinated under 10 years of age, 50 per cent. died." The tables given are analysed in the report with the following conclusion: "This demonstrates conclusively the protection afforded by primary vaccination, and that its value lessens in the course of time; and, secondly, that revaccination becomes the only means of renewing protection." Dr. Mason adds: "Those conclusions have been carefully derived from observation and facts, with an impartiality as to whether they would appear in favour of vaccination or otherwise." This is the scientific spirit. Radical measures were adopted to stop the epidemic, amongst others extensive vaccination; but there is evidently a slight mistake in the text of the report on this point, for we are told: "Of the 1,668 persons revaccinated (*sic*). it should be noted that they consisted principally of persons above 10 years of age, and unvaccinated children." An effort was made to ascertain the influence of the prevailing wind in diffusing small-pox around a certain hospital situated amongst timber yards in Hull, and called Garrison Hospital. Into this hospital 394 cases were admitted from March to December. A diagram shows the percentages of the houses invaded by small-pox within zones of half a mile, three-quarters of a mile, and one mile from the hospital in three different directions. These percentages are certainly greatest in the north-east direction, and the prevailing wind was south-west. These observations merit attention, though not decisive by themselves. We read that a permanent shelter and disinfecting station is being erected; the temporary shelter proved very useful in the reception of families while their houses were being disinfected.

THE BETTER HOUSING OF THE POOR.

In a recent report to the sanitary authority of the borough of Workington, Dr. John Highet, the medical officer of health, pointed out very truly that in dealing with the insanitary property in the district, under Part III of the Housing of the Working Classes Act, 1890, it is always necessary to keep in mind the class of people who are to be dispossessed. The breadwinners in such insanitary and dilapidated property are not as a rule skilled workmen, and most of them, even when the greatest care and economy are exercised, make little more than a bare living wage. To close the houses of such people because they are insanitary, and to offer them other houses at a much-increased rental, and often far removed from the scene of their daily work, is not seriously to attack the difficulty of improving the conditions of life of these people. To build houses that could not possibly be let under 6s. 6d. a week (as is generally the case) is doing nothing, as Dr. Highet points out, for a class of people who were formerly paying but 2s. 6d. The provision of the former class of houses may well be left to private enterprise. They will soon be tenanted by those who are in receipt of fairly good wages, and who are really not the class of people for whom it is so necessary to find improved accommodation. The whole question is, of course, beset with great and serious difficulty, and the present state of our legislation does little to assist in its solution. The problem which has to be solved in the near future by local authorities is how to provide healthy houses for poor people of a class that the speculative builder does not provide for. As Dr. Highet states: "That is the real meaning of the better housing of the working classes, as apart from the housing of the better working classes."

TYPHOID FEVER IN SOUTH LONDON.

A considerable epidemic of typhoid fever is in progress in South London; it appears to have commenced in the first or second week in September. The number of cases notified in South London, which had been 25 in the week ending September 1st, rose to 32 in that ending September 8th, to 48 in that ending September 15th, to 82 in that ending September 22nd, and to 98 in that ending September 29th. The districts mainly affected appear to be St. George's Southwark, Lambeth, and Wandsworth. Dr. Waldo has reported to the vestry of St. George's that from September 15th to October 2nd 85 cases had occurred, of which 83 were in one ward of the parish. He said that children of school age were the principal victims, and this appears to be the case also in Wandsworth. The matter is being inquired into by the medical officers of health and also by the medical department of the London County Council.

POOR-LAW MEDICAL OFFICERS IN SCOTLAND.

"Despairing" suggests that, owing to the treatment to which Poor-law medical officers in some parts of Scotland have been subjected, a circular should be sent to every parish council stating that, as it is notorious that several parish councils use their Poor-law medical officers badly, the Association of Poor-law Medical Officers would suggest that a committee of medical men and parish councillors be formed to decide any grievances against a medical officer, and that any parish council that shall dismiss a medical officer without the consent of that committee will meet with determined opposition from the medical profession. The Poor-law Medical Officers' Association of Scotland is, we believe, using every endeavour to remove the undoubted grievances of its members, and the suggestion of "Despairing" is well worthy of their consideration. It is only by constant and united action that reforms can be accomplished. If no medical officer would accept an appointment in the parishes where their professional brethren have received harsh treatment, perhaps a solution of some of the difficulties would be hastened.

RACE AND OCCUPATION IN LIFE ASSURANCE.

In view of the cosmopolitan character of life assurance at the present day, Dr. Theodore Williams's presidential address, delivered to the Life Assurance Medical Officers' Association, on Race in Relation to Life Assurance, will serve as a reminder that we know but little of the comparative value of lives drawn from the different European States and from the United States of America. When we turn our attention to the risk attendant upon assurance on

the lives of Asiatics, we must confess that our knowledge is too slight to be of much value, and a careful collection of statistics will be necessary before we are in a position to properly appraise them. Dr. Williams's paper may be regarded as a point of departure for future investigation. On examining Dr. G. V. Poore's paper on Locality and Occupation in Relation to Life Assurance, it will be seen that his conclusions are based on carefully-selected statistics, and that they are of the utmost importance to all who are interested in life assurance. The difficulty in regard to locality, as was pointed out by one of those who took part in the debate following the reading of the paper, is that we are now living in a period of great activity, the whole population being more or less on the move; nevertheless, the subject of the residence of the applicant for assurance should receive more attention than is commonly devoted to it. The expectation of life of a resident in the Strand, for example, is greatly below that of the resident in Hampstead, or, in the words of Dr. Poore, "the struggle for life increases as we come from the outskirts to the centre of our hugh overgrown towns." The influence of occupation on the expectation of life has always been recognised in life assurance, but the figures brought forward by Dr. Poore will emphasise the necessity of carefully considering this subject. In estimating the incidence of death among any groups of population, it is all-important, as Dr. Poore points out, to allow for age-distribution. The mortality-figure of the inn-hotel servants (London) is nearly four times as great as that of the clergy; and yet out of 1,000 of either group, it will be found that more clergy than London hotel servants die in any one year. The diagrams which accompany Dr. Poore's paper explain this apparent paradox.

THE FLAGELLATED MALARIA ORGANISM.

In the *New York Medical Journal* for December 23rd, 1899, Dr. Craig, of the United States Army, records some observations which he has made with regard to the flagellated malaria organism. He says that both in the benign tertian and in the æstivo-autumnal infections there are two varieties of flagellated bodies; the one he calls the active and the other the passive. The active flagellated body, he says, is characterised by the pigment being evenly distributed throughout the organism, and being usually actively motile or "dancing"; if, however, the pigment is at rest, it is collected in irregularly-arranged clumps. The process of exflagellation can be watched in this variety, and just before it occurs the pigment tends to collect centrally, and then suddenly one or more flagella are protruded. They are long, thin, actively motile filaments, having a lashing or undulating movement. They are often clubbed or bulbous at the free extremity, or they may be nodulated along their course; after a time a flagellum may break away and become free; occasionally in its attempt to detach itself the flagellum drags the whole parasite a short distance. If it fails to separate itself, it degenerates and dies with the parasite. The active flagellated organism in the æstivo-autumnal infections differs from that of the benign tertian by being smaller, more oval, and by having coarser pigment. The passive flagellated body, Dr. Craig says, is characterised by being perfectly round and well-defined, and it appears to contain granular protoplasm; the pigment is arranged in a ring form inside the organism, and it is usually motionless, but occasionally it has a trembling movement. The circular arrangement of the pigment persists until degenerative changes take place in the parasite. Dr. Craig says he has never seen the process of exflagellation take place in these bodies, but in blood preparations in which they exist a certain number of them have one, two, or three flagella attached to them. These flagella are said to differ from those seen in the active flagellated bodies, in that they do not possess bulbous extremities, are not nodular, and do not exhibit the lashing or undulating movement, but they seem to straighten themselves out from time to time, and then relax, revolving rapidly on their long axes. They occasionally detach themselves from the parasite. It was also noticed that usually a nodular swelling existed at the junction of the flagellum with the body of the organism, and that when this did not exist the pigment was more active and had a vibratory motion. The conclusions which Dr. Craig arrives at from his observations are that the active form is the true flagellated body, and that the passive form is a sphere to which some free flagella have attached themselves, tending to confirm, in fact, MacCallum's valuable observations. It is a pity that the term passive "flagellated body" is introduced when the word "ganetocyte" or female granular sphere is already in use. Dr. Craig's work will require very careful confirmation. He states, for instance, that the spheres which have their pigment arranged in ring form do not exflagellate, and are granular. This statement is contrary to the experience of most authorities, for it is with spheres which have the pigment arranged in this manner that the process of exflagellation can be most readily studied. It is generally possible to differentiate in these spheres three zones—the central one contains the pigment, and the outer and inner zones are hyaline and colourless, and exflagellation can be frequently witnessed, and when it takes place the flagella exhibit the characteristic lashing and waving motion. Dr. Craig apparently was not fortunate enough to witness the penetration of a granular sphere by a free flagellum. Up to the present time, we believe, MacCallum has been the only observer to witness this act in the case of human malaria. The point is one of some importance in the life-history of the malaria organism, and we suggest to those who have the opportunities to endeavour to confirm it. So far as halteridium in pigeons is concerned, Koch and others have repeatedly observed fertilisation of the granular spheres take place.

INSECTS AS CARRIERS OF DISEASE.

The group of *Insecta* has recently become the object of considerable attention owing to the general recognition of their power of carrying the seeds of disease to healthy persons. Certain members of the group have long been looked upon with disfavour as being not only objectionable in themselves, but as being an index of dangerous conditions of filth. One familiar species, the common fly, was singled out in the discussion on the prevention of tuberculosis held last year at Portsmouth, by Sir Douglas Powell, the presence of which in any large number in houses indicated a want of domestic cleanliness serious in regard to the incidence of infectious disease. The importance of the relation of mosquitos to malaria is becoming daily more clear. As long ago as 1874, if we are not mistaken, Dr. Manson found the embryos of the filaria sanguinis hominis in the stomach of a female mosquito, and now it would appear that this parasite is one at least of the causes of elephantiasis. But the causal relation of flies to the efficiency of the fighting force of a nation comes home at the present time with especial force to the public attention. A good deal has been heard as to the plague of flies in South Africa, and much evidence in regard to the agency of flies in spreading disease in camps was accumulated during the Spanish-American war. Dr. Veeder, a member of the Committee of Hygiene of the Medical Society of the State of New York, in discussing the comparative importance of flies and water supply in spreading disease, has maintained that in regard to such diseases as typhoid and some forms of epidemic diarrhœa flies exert, as a matter of fact, much greater potentiality for evil than drinking water. He points out that in Cuba, while stringent care was exercised in regard to the water

supply, systematic boiling of the drinking water being included, typhoid still persisted. He asserts that in the case of camps with shallow open receptacles for excreta flies are certainly the chief means of spreading the disease. Certainly there is ample experimental evidence, obtained by the bacteriological methods of plate cultures and otherwise, that flies can with the utmost ease carry typhoid bacilli from infected material say to food substances, which furnish in many cases an admirable medium for their growth. Among other practical measures for meeting this by no means imaginary source of danger, Dr. Veeder insists that infected material should not be exposed to the access of flies for a single minute without being disinfected—in short, that all excreta should be disinfected at once, preferably by keeping a suitable antiseptic agent in the vessels for customary use. The effect of air and sunlight are valuable accessories in camp life, as under other conditions, but the possibility of the entrance of these to infected matters involves also the possibility of the entry of flies, and hence the greater need for artificial disinfectants. Considering the volatility of carbolic acid when used in the manner suggested, Dr. Veeder strongly recommends the use of sulphate of copper as a disinfectant, inasmuch as the greater the action of those influences which tend to dissipate carbolic acid the greater the concentration of the metallic salt. As the Royal Army Medical Corps now in South Africa well knows, "sanitation under the guns of the enemy" is a hard matter, but effort which has been made and will be made cannot fail to lessen its difficulties.

FOOD PRESERVATIVES COMMITTEE.

THE members of the above Committee—Dr. Timbrell Bulstrode and Professor Tunnicliffe, and Mr. Charles J. Huddart, Secretary, who proceeded last month to Ireland for the purpose of investigating the dairying industry of that country in relation to the use of chemical preservatives—have now returned to town. The inquiries made embraced the city of Dublin and the surrounding district, and the great butter-making centres in the south and west of Ireland. In the north time sufficed only for a visit to the county of Cavan, but in that county, as in those which were visited in the south and west, large tracts of country were traversed, and detailed inspection made of farms and farm premises, and the several operations which precede the actual despatch of milk to the large creameries and of butter to the markets and factories. The processes of manufacture at creameries and butter factories, as well as at bacon and margarine factories, also engaged the attention of the Committee at one place and another. In Dublin itself the officials of the Government departments were interviewed, and the Committee had the privilege of repeated conferences with Sir Charles Cameron, the health officer for the city, and with his colleagues. The mass of information acquired as result both of the visit paid to the Continent, especially to Denmark, and of the visit to Ireland just concluded, will need collation and summarising with a view to the presentation to the whole Committee of reports on those results, which reports will need very careful consideration before the Committee proceed to draw up their report upon the evidence before them.

SECRET COMMISSIONS.

WE are very sorry to have to draw attention to a gross instance of an offer of commission to medical practitioners. A prominent physician has sent us a circular received by him from a firm which is organising personally conducted visits to the Thermal Springs of New Zealand, for which the first-class return fares, not including special medical attendance and hotel expenses, are to be 300 guineas. The circular is headed "Private—an honorarium of five per cent. will be paid to medical gentlemen on completion of all successful business introduced by them." This is a very serious matter, as the honour of the profession is gravely concerned. We trust every one will treat this offer with the contempt it deserves, and until this circular is withdrawn will abstain from co-operation with a scheme which is promoted by such objectionable means.

MEDICAL APPOINTMENTS ON THE WEST COAST OF AFRICA.

WE are advised that it would be well that medical men who may be disposed to apply for appointments under the Colonial Office, or to railways or mining expeditions on the West Coast of Africa, or as surgeons of ships voyaging to West African ports, should carefully consider whether the terms are remunerative. According to our information the salary offered is, as a rule, not sufficient to live upon. We are informed that a salary of £40 a month will not permit a penny to be saved, as the cost of living is great and the house accommodation primitive and insanitary, apart altogether from the fact that the officer may find his health undermined and his nervous system impaired by the frequent attacks of remittent fever which few Europeans on the West Coast escape. Unless there is a distinct written understanding that the salary offered in an advertisement published here is increased by local allowances of at least £15 a month, we believe that medical men would be well advised not to accept such appointments. Over and above the question of remuneration there are other unsatisfactory features in the position in which a medical officer may find himself on his arrival at the West Coast. It would appear that there are no properly organised medical departments, and that the medical officer is not responsible to a surgeon-general, but is apt to find himself in a very ill-defined relation to the Colonial Secretary, the Attorney-General, the engineer of the railway, or some person who knows nothing about medical exigencies and requirements.

ELECTION OF A SURGEON TO THE MEATH HOSPITAL, DUBLIN.

ON Thursday, September 27th, Richard Lane-Joynt, M.D., F.R.C.S.I., was elected Surgeon to the Meath Hospital in room of the late Sir William Stokes. Mr. Lane-Joynt has filled the position of Assistant-Surgeon to the hospital for the past seven years. He has devoted special attention to the study of *x* ray skiagraphy, and was offered a position in this capacity on the staff of the Irish Hospital by Sir William Thomson prior to his departure for South Africa, but Mr. Lane-Joynt found himself unable to accept the offer.

THE UNIVERSITY OF BIRMINGHAM.

BY the recent Act of Parliament dealing with this University its Council is empowered, in common with the other universities of the country, to appoint a representative on the General Council of Medical Education. At a meeting of the University Council held on Monday last Professor B. C. A. Windle, M.D., F.R.S., was appointed the first representative of the University upon the Council.

THE first meeting of the Royal Medical and Chirurgical Society will be held on Tuesday, October 23rd. Under the recent changes in the by-laws all papers accepted for reading are, *ipso facto*, accepted for publication in the *Transactions*, but authors are at liberty to publish their papers in medical or scientific periodicals immediately after they are read.

DR. NORMAN MOORE will deliver the first Hunterian Lecture before the Hunterian Society, at the London Institution, Finsbury Circus, E.C., on Wednesday, October 10th, at 8.30 P.M. The subject will be the Clinical Study of Heart Disease, and all members of the profession are cordially invited.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

The opening of the winter session, which will be the last of the nineteenth century and the first of the twentieth, was celebrated formally or informally on Monday at all the medical schools in England, with the exception of St. Thomas's, where the session was opened on Tuesday by Sir William MacCormac, who distributed the prizes won by students earlier in the year. The week has been distinguished also by the delivery on Tuesday afternoon of the third Huxley Lecture to the Charing Cross Hospital Medical School. The first was delivered by Sir Michael Foster in 1896, and the second by Professor Virchow in 1898. Lord Lister's lecture is published in another column, as are also more or less full reports of the other introductory addresses delivered at the various medical schools.

The usual dinners of old and present students have also been held, and have been well attended. We give below brief accounts of these agreeable social gatherings.

ST. BARTHOLOMEW'S HOSPITAL.

Old Students' Dinner.

The annual Old Students' Dinner was held in the great hall of the hospital on Monday, October 1st. Mr. H. T. Butlin, Surgeon to the hospital, took the chair, and 141 persons dined, including several guests, among whom were the Hon. William Rolleston, Crown Minister, New Zealand; the Pro-President of the Royal College of Physicians, Dr. Pavy; Sir Frederick Abel, Dr. Russell, and Mr. Trimmer, Secretary to the College of Surgeons.

The Chairman proposed "The Queen and the Royal Family," and afterwards "The Hospital and School," Sir Trevor Lawrence responding. Dr. Tooth, who spoke of his experiences in South Africa, proposed "The Army, Navy, and Reserve Forces," responded to by Sir Henry Norbury, K.C.B., Director-General of the Royal Navy Medical Service. "The Visitors" was proposed by Dr. Champneys, the Hon. William Rolleston replying. Sir Thomas Smith, Bart., proposed "The Chairman," Mr. Butlin replying, and lastly, Mr. Willett proposed "The Secretary" (Mr. Bruce Clarke), who replied.

ST. GEORGE'S HOSPITAL.

Medical School Dinner.

St. George's Hospital Medical School dinner took place in the Whitehall Rooms, Hotel Métropole, on Monday, October 1st, when Mr. R. Brudenell Carter, Consulting Ophthalmic Surgeon to the hospital, presided over a gathering of about 120 past and present students. After the loyal toasts the Chairman in an eloquent speech, in which he recalled the achievements of two earlier members of the staff, Cheselden and the famous Dr. Thomas Young, the latter being, in addition to his more academic distinctions an accomplished athlete and a consummate horseman, proposed the toast of "The Medical School." To this the Dean, Dr. Isambard Owen, replied, and gave a summary of the events of the past year. "The Lay Governors of the Hospital" were toasted by Mr. W. H. Bennett, the Senior Surgeon, who dwelt on the harmonious relations that existed between the lay Board and the medical staff. Mr. Timothy Holmes, the Treasurer and Consulting Surgeon to the hospital, in reply, expressed the anxiety of the governors to advance the welfare of the medical school. The health of Dr. Penrose, the "Orator of the Day," who delivered the introductory address in the afternoon, was proposed by Mr. Dent, who, in a witty speech, advocated the retention of such traditions, however trying to the victim. In proposing "The Health of the Past and Present Students," Mr. Herbert Allingham laid stress on the mutual advantages to the staff and students that accrued from social meetings and dinners. Mr. W. Coltart replied for the former students, while Dr. J. H. Tallent, in an extremely able speech, reviewed the life of the medical school during the last twelve months. Dr. W. Ewart toasted those members of the school who had fought in the South African war, and drew an interesting reply from Mr. Townroe, a present student, who had held Her Majesty's commission in the Transvaal campaign. The Chairman's health was gracefully proposed by Mr. W. Adams Frost.

GUY'S HOSPITAL.

A house dinner of the Students' Club took place in the College Dining Hall on October 1st. Dr. Hale White was in the chair. Amongst those present were Mr. H. Cosmo Bonsor, the treasurer of the hospital, very many of the members of the staff, and so many past and present students that the hall was full to overflowing. Upon the removal of the cloth the toasts of "The Queen" and "The Prince and Princess of Wales and the other members of the Royal Family" were duly proposed by the Chairman, and prominence was accorded to the fact that the Prince is the President of the hospital.

History of the Students' Club.

In proposing the toast of the evening, that of "The Students' Club," Dr. Hale White said that it was owing to the absence of Dr. Pye-Smith, President of the Club, that it fell to his lot as its treasurer to propose the toast of the evening. The Students' Club, like the British Constitution, had been slowly evolved. Its harbinger was a reading room founded in 1879 or 1880. This was situated where now there was a passage leading past the library to the chemical theatre, for then the library was smaller and then the passage was further to the west. This reading room contained only newspapers, with paper and ink. It was an uncomfortable, cheerless room, and the foundation of it in no way met what had been for years a great difficulty, namely, the getting of lunch. In June, 1882, a school meeting sanctioned the formation of a Students' Club for the purpose of supplying refreshments. This was situated in part of the ward, then disused, known as Mary Ward. The president was the treasurer, Mr. Lushington, and the council consisted of the superintendent, Dr. Steele; the Dean, Dr. Taylor; Dr. Carrington, Mr. Symonds, and the speaker. Their difficulties were great, and on several occasions it seemed as though the committee would have to set to and do the cooking and waiting themselves; but in 1887 the present Club was founded by adding a library and smoking room to the refreshment Club, and merging the old reading room into it. Mr. Durham was president of the new club, Mr. Symonds, treasurer; Mr. Lane, secretary; and Dr. Pitt, the speaker, and six students were on the committee. Much of the success of the new Club was owing to the energy of the secretary, Mr. Lane. In 1890, when the College was opened, the Club moved over to its present premises, and two great additions were made—one the gymnasium, due to the generosity of Dr. Pavy, and the other the library, founded by private subscription at the instigation of Mr. Gladstone. Such was the history of the Club, which he maintained was a good Club in spite of the many suggested improvements which the Committee found in the suggestion book, and to it any new members present were cordially welcomed. Some of the advantages of such a Club were obvious, such as the advantage of being able to obtain lunch and tea on a wet day without going out; the boon conferred by the library and gymnasium was also great. The Club, too, caused men to rub up against one another, to know one another, to polish off their angles, and to strip men of their conceit. There was no profession in which this was more necessary than theirs; the merchant and the lawyer deal with inanimate facts, the physicist and chemist with dead matter, the biologist for the most part with plants and animals, but the doctor all day long was dealing with men and women. When dead there was little difference between a Lord Chancellor and an illiterate dockside labourer; but during their lives the doctor who had to treat both would probably have to deal very differently with them if he wanted men to follow his advice. The Club, too, as it caused men to associate together, gave a man that indefinable happy knack of getting on with people. A man's head might be swelled with knowledge, but unless he trained himself to possess this happy knack he would be like that unfortunate man who was quite miserable, for although his pockets were always full of gold he never had any small change for ordinary occasions. Then again the Club fostered that feeling of pride in the hospital which was the heritage of Guy's men, and with which every new student was expected to invest himself. In an address he gave the other day Professor Osler pointed out the pernicious effects of this form of pride, and he especially singled out the pride felt by Guy's men for their school. No doubt, as he said, when it made men foolishly ex-

clusive and intolerant of others it was a bad thing, but he entirely omitted its good side, for it should help men every day to strive to do their work as well as it was possible to do it, lest we should otherwise bring discredit on the hospital. Such pride and *esprit de corps* used for this purpose was right and proper and was one of the chief glories of any hospital that could succeed in breeding it in those students who belonged to it. Lastly, the Club made life here more pleasant. As Johnson said when he wrote to Reynolds to ask him to join the Essex Club, "The company is numerous and, as you will see by the list, miscellaneous; the terms are lax and the expenses light." And, further, the Club fulfilled Johnson's definition of a Club, for it was "an assembly of good fellows meeting under certain conditions."

Mr. Fripp on Base Hospitals in War.

Dr. Frederick Taylor in felicitous terms proposed "The Treasurer." Mr. Bonsor replied, making a statement about the recent progress of the hospital, and of further improvements proposed to be shortly accomplished. Finally he called upon Mr. Fripp, just back from the Cape, who met with a very cordial reception.

The Imperial Yeomanry Hospital.

Mr. Fripp said that he did not know how to thank them enough for the very kind way in which they had received the toast of his health, and for the hearty welcome back that they had given him. If they could imagine how proud and pleased he was to go out to Africa to help found the Imperial Yeomanry Hospital accompanied by such a large contingent from Guy's, he did not think that it was possible for them to imagine how very glad he was to be back at work at his old school again. The Guy's contingent on the staff of the Imperial Yeomanry hospital had all—sisters, doctors, and students alike—done marvellously well. They charged him on his departure with kind messages to friends at home. Delighted as they had all been to go out to Africa, and happy beyond compare as had been their large party at Deelfontein, still they were nearly all of them longing to come home again. It was very pleasant to be back once again among civilisation after so many months' banishment from all that was homely and comfortable. Throughout the length and breadth of the land, the hospitals, when he left, were little more than camps of convalescence with only a serious case here and there, and there was a general feeling that the end was approaching, and a very general envying of those who were fortunate enough to be able to go home. The Imperial Yeomanry Hospital had broken a deal of new ground, and many people in a position to judge of the organisation and management of hospitals, had expressed to him the hope, in which he very heartily concurred, that from the demonstration which it had been enabled to give of the way that modern scientific methods could be introduced into the service of the sick and wounded in time of war, there might spring so widespread an appreciation and adoption of those methods throughout all military hospitals that in future wars a closer approximation might be attained to the ideas and methods as carried out in the large civilian hospitals. The hospital at Deelfontein might fairly be called an offshoot of Guy's. In its equipment, in its co-ordination to the complex conditions it had to work under, in its administration, and in the methods employed in its surgical and medical divisions, he and Dr. Washbourn (who was still out there, and whose experience in the treatment of typhoid fever had proved of the greatest possible value) had endeavoured, as far as possible, to copy the model of Guy's. Lieutenant-Colonel Sloggett, R.A.M.C., had proved himself exactly the right man for the difficult position of commandant, a position which carried with it the presidency of the largest officers' mess in Africa. It was a difficult position, for there were a great many points in the running of such a hospital which were more complicated than in a purely military hospital. Indeed, there was nothing about the Imperial Yeomanry Hospital which was in any sense military except two things: First, the military character of the patients and subordinate staff, and consequently the method of maintaining discipline; and, secondly, the method of obtaining supplies out of the Army Service Corps. The good reputation which the hospital had evidently earned was due to the employment of ordinary common sense, backed up by modern ideas of cleanliness and by a willingness on the part of the Ladies' Committee in London, with the Countess Howe at their head, who, while always ready to fall in with and to rapidly put into effect any suggestions which were made to them by those whom they had honoured by choosing as their professional advisers, had not—and he was glad to have this opportunity of emphasing the point—even thought of embarking upon the luxurious paraphernalia and extravagant expenditure which had been attributed to them by some people. The fact was there had been no unnecessary expenditure. True, money had been spent in several directions which were novel and were considered open to criticism by those who were only used to the old form of hospital. For instance, the engagement of specialists in ophthalmic and dental surgery as well as in *x*-ray work had proved a great success, and so had the vastly-increased staff of nursing sisters. At the time when the staff left England in February four times as many sisters were sent out as were allowed to a similar-sized military hospital, and their services proved so valuable that ten more were cabled for and sent out shortly after. The immediate result could be seen from the statistics of the hospital, which showed a remarkably small percentage of deaths especially among the enteric patients. Other novelties were the extensive laundry plant, the large steam disinfector, and the large filter, which were all worked by the same steam engine. Then, again, the soda water was made under medical supervision on the spot, and there was a supply of compressed gases in iron cylinders, including laughing gas, oxygen, and carbonic acid. Everyone of these innovations was a great success, and, in his opinion, so far from being in any sense extravagant they all ought to be incorporated whenever possible in the equipment for large base hospitals in the future. Though the work had been hard and the conditions of the life somewhat rough, yet the staff at Deelfontein had no hardships to undergo, and they had been the happiest family conceivable. It was always a sure proof that one was enjoying a phase of one's life if one was sorry to leave it, and glad as he was now to be back at Guy's, he found it quite a sad moment when the time came for parting with this model hospital and the Karroo. "Tommy" was a most refreshing patient to work for. He wished he might never have to deal with any less easily managed, less plucky, or less grateful class. The country was of an extremely unattractive nature and the only future he could foresee for it, after the mineral wealth was exhausted, was as a sanitarium for women with "nerves." But eight months was a long absence, and all likelihood of any considerable number of surgical casualties occurring after the war had degenerated into widely scattered policing movements, he thought it was his duty to get home in time to take his share of work during the winter session.

Risks of Service in Base Hospitals.

During his travels in Africa, which extended over 6,000 miles of railway journeying, from Capetown to Mafeking and Kroonstad and through Natal, he had met over forty Guy's men, and he knew of thirty more in the non-combatant ranks to say nothing of those students who had gone as combatants. Everywhere he found the Guy's *esprit de corps* ringing every bit as true as it did at home. Out of these seventy Guy's doctors, no fewer than seven had died in Africa serving their country and their Queen, a mortality of 10 per cent., which being about double that of the total mortality in the combatant ranks of the army, was so high as to point very clearly to the truth of Dr. Conan Doyle's remarks about the arduousness of the service and the danger run by those sisters, doctors, and especially orderlies who worked in hospitals, even base hospitals, which because far removed from the field of battle were wrongly supposed to be safe. He ventured to say that this point had not hitherto received quite the appreciation it deserved.

Generosity of the Boers.

Another point which he would have liked to have seen better appreciated was the generosity of the Boers in permitting our besieged garrison in Ladysmith to have a safe pitch for their 1,900 bedded hospital at Intombi Camp and to run a train backwards and forwards to it each day from Ladysmith.

Intombi was just at the foot of one of the hills held by the Boers, and, but for their generosity in lending it for the use of our sick and wounded, the latter must have been cooped up in the little town of Ladysmith, and without a doubt their presence must have so far increased the overcrowding and the load its gallant defenders had to bear as to have rendered it impossible for them to hold out to the end of February.

Thanks.

In concluding, Mr. Fripp again thanked them for the extremely kind welcome home which they had given him, and also, he said, he wanted to take this opportunity of offering his thanks, first, to the Treasurer and Governors for allowing him to absent himself from Guy's Hospital for so many months; secondly, to his colleagues, on whom an increased load of work had fallen during his absence; and, thirdly, to all those old friends of his who, while unable from one cause and another to themselves join the favoured few whose more fortunate circumstances had allowed them to go out to Africa, had by many acts of kindness repeatedly reminded him of their goodwill and kind thoughts.

Mr. Durbridge proposed the toast of "The Chairman," to which Dr. Hale White replied. "God Save the Queen" and "Auld Lang Syne" were sung, and the company then separated. It was a very jovial gathering, and the harmony of the evening was enhanced by Messrs. Parrott, Claxton, and Allport, who sang some excellent songs, and by Mr. Soper, who played a solo on the violin.

KING'S COLLEGE HOSPITAL.

Old King's men gathered in force at the Hotel Cecil on October 1st, under the chairmanship of the Right Hon. Sir John Alexander Cockburn, K.C.M.G., M.D. Whether it was due to the change of the usual place of meeting, or to the attraction of the chairman, or to the energy of the honorary secretaries, certain it is that the annual dinner surpassed both in numbers and cordiality those of several passed sessions. It is many years since the numbers ran into three figures, and it is said that the long-winded oratory of previous gatherings interfered with the real sociability of the evening. This year the toast list was limited to three, and the chairman set an excellent example by the brevity of his remarks. It is twenty-six years since Sir John Alexander Cockburn graduated from King's College, taking the Gold Medal at London University. A metropolitan career was open to him, but circumstances took him out to Australia, where, after enjoying an excellent practice, he was drawn into public life, and he rapidly rose till he was Prime Minister at Adelaide. He is now acting as Agent-General for South Australia in this country. Needless to say, that as physician, politician, Colonial, and an old King's man, his speech was greatly appreciated, and that the toast of his health, kindly yet amusingly proposed by his old fellow-student, Professor Rose, was enthusiastically responded to. During the evening reference was made to the very complete way in which both hospital and College had been represented at the seat of war in South Africa. Messrs. Cheyne and G. Cheatle, who had recently returned, were present; Professor Hughes is still with the Welsh Hospital; while Mr. Vernon Cargill's work as Ophthalmic Surgeon to the Yeomanry Hospital was so thoroughly appreciated that the authorities had insisted on retaining his services. Dr. Hadley, lately house-physician, and a number of other old students were still on active service either in the R.A.M.C. or with various volunteer bodies. Touching reference was made to Surgeon-Captain Louis Hughes, who had been present at the corresponding dinner two years ago and who was one of the first surgeons to be killed in action during the campaign. With regard to the future the Principal (Dr. A. Robertson) announced that whatever the number of new entries might be he could promise that the stamp of freshman was yearly improving, while by the appointment of special medical, surgical, and obstetric tutors the creation of special lectureships on pharmacology and pediatrics, and the establishment of a Roentgen-ray department under Dr. Harrison Low, the thoroughness and completeness of teaching offered had been further enhanced. Many of those present silently testified to their affection for their old school by the distances they had come. Amongst the 103 who sat down were Dr. W. S. Playfair and Dr. Burney Yeo representing the consulting staff, while amongst the active members of it were Drs. Ferrier, Curnow, Tirard, Dalton, Sir Hugh Beevor, J. Phillips, Whitfield, Silk, Crawford, Aldren Turner, and Messrs. Carless, Burghard, Cheatle, McHardy, and Professor Crookshank. The old students present included Messrs. Bateman (Richmond), Dimmock (Harrogate), Essery (Southsea), Cheatle (Burford, Oxon.), Footner (Tunbridge Wells), East (Malvern), Brooks (Oxford), Lewis (Folkestone), MacDougall, Makalua (St. Leonards), Rhys Powell (Brecon), Hill-Smith (R.A.M.C.), and Hamilton Russell, of Melbourne. London supporters were represented by Drs. Buzzard, Birch, Fletcher Beach, Shuttleworth, Whitmore, Val Matthews, Stivens, Dent, StClair Thomson, and others. A pleasing interlude—in addition to the usual "flash-light" photograph—was caused by the receipt of a message from Dr. Vivian Poore, who was presiding over a gathering of old students in another part of the same building, announcing that the meeting of University College Hospital students had just drunk the toast of their colleagues from King's. The compliment was gracefully received by Sir J. A. Cockburn, and the toast was most cordially reciprocated. Some cheery songs by Mr. Schartau helped to complete a very agreeable evening.

THE LONDON SCHOOL OF TROPICAL MEDICINE.

The London School of Tropical Medicine entered on the second year of its existence on October 1st. On October 3rd Sir William MacGregor, K.C.M.G., M.D., LL.D., Governor of Lagos, delivered an introductory address which is published at p. 977. In spite of the somewhat out-of-the-way situation of the school, and the inconvenience of the hour (9 P.M.), there was a considerable attendance, among those present being Sir T. Lauder Brunton (who was in the chair), Sir F. M. Hodgson, K.C.M.G., Dr. Harford Battersby (Principal of Livingstone College), Mr. H. J. Read (of the Colonial Office), Commander G. Hodgkinson, R.N., Mr. J. G. Craggs, F.C.A., Professor Crookshank (of King's College), and many Colonial medical officers, with the members of the medical staff.

The School.

In view of the interest which recent events have excited in the public mind respecting plague, dysentery, malaria, and other diseases which either originate or flourish with rankest luxuriance in tropical climes, an account of the school which has recently been founded in our midst for the special purpose of enabling us to cope with such scourges may not be inopportune.

The school owes its establishment mainly to the statesmanlike insight of Mr. Chamberlain, who grasped the truth that the question of the successful combating of tropical disease lies at the bottom of the problem of colonisation, and saw the vast sphere of national usefulness which such a school would have. The Secretary of State for the Colonies accordingly invited the Committee of Management of the Seamen's Hospital Society to co-operate in establishing a school for the study of the diseases which make tropical countries so deadly to white men, and for the training of medical practitioners who intend to follow their profession in the tropics. The result was the foundation of the London School of Tropical Medicine, which began its work just a year ago.

The buildings stand in the grounds of the Seamen's Hospital Societies' Branch Hospital near the Royal Victoria and Albert Docks. (Fig. 1.) This situation, though inconvenient in some respects, has the pre-eminent advantage that it is close to a point where ships in large numbers are constantly arriving from all parts of the tropics. This allows of the immediate transfer of the sick from the ships and thus gives opportunities for the study of cases of tropical diseases in their acute stages. The school buildings consist of laboratories with accommodation for resident students and quarters for a resident medical superintendent and tutor. On the ground-floor are three large well-lighted laboratories and a common room for the staff, with kitchens, lavatories and other offices. On the first floor are the medical tutor's office and rooms and bedrooms for students. The bedrooms are comfortable without being luxurious (Fig. 5, p. 1044), and command an enlivening view of the shipping in the docks and of the river beyond. It may be mentioned that the messing arrangements are on a liberal scale, while the charges are moderate. A student may here find the comforts of home immediately on his arrival from the



Fig 1.—New Wing of Branch Hospital, Royal Victoria and Albert Docks, showing a Portion of the London School of Tropical Medicine in the Background.

tropics. On the second floor is a library with a museum. The laboratories (Figs. 2 and 3) are well lighted and fully equipped with the latest appliances for scientific research. There are properly fitted tables for about twenty workers.



Fig. 2.—Exterior of Laboratories.



Fig. 3.—Interior of one of the laboratories.

THE NATURE AND SCOPE OF THE TEACHING.

The lecturers of the School are Dr. Patrick Manson, Dr. R. Tanner Hewlett, Dr. Andrew Duncan, Mr. James Cantlie, Dr. Oswald Baker, Professor W. J. Simpson, Dr. L. Westenra Sambon, Mr. Malcolm Morris, and Mr. E. Treacher Collins. The following summary of the subjects of the lectures will give an idea of the nature and comprehensiveness of the teaching. Dr. Manson's course includes malarial diseases (tertian, quartan, and æstivo-autumnal fever), kala-azar, blackwater fever, relapsing fever, dengue, yellow fever, plague, Japanese river fever, beri-beri, epidemic dropsy, endemic neuritis, African lethargy, and unclassed fevers. Dr. R. Tanner Hewlett deals with the hæmo-protozoa of animals and the bacteriology of tropical diseases (Mediterranean fever, relapsing fever, yellow fever, plague, cholera, enteric fever, leprosy, mycetoma, etc.); Dr. Andrew Duncan lectures on hill diarrhœa, sprue, enteric fever, cholera, dysentery, gangrenous rectitis, hepatitis, liver abscess, infantile biliary cirrhosis; Mr. Cantlie treats of surgical ailments in the tropics, liver abscess, scrotal tumour, calculi, tetanus; Dr. Oswald Baker's subject is leprosy; Professor W. J. Simpson's the hygiene of the tropics and hospital administration. Dr. Sambon offers a diversified programme, comprising the manners and customs of cestodes, trematodes, nematodes, annelids, arachnida, ticks, scorpions, insects, poisonous fishes, venomous snakes and the harm which they



Fig. 4.—Interior of a ward

severally do to man; the poisonous arrows of native tribes, food diseases (pellagra, lathyrism, manioc poisoning), atriplicism, sunstroke (siriasis), and the geographical distribution of diseases and acclimatisation also fall within his scope. Mr. Malcolm Morris discourses on yaws, verruga peruana, oriental sore, and other forms of skin mischief peculiar to the tropics; while Mr. Treacher Collins takes tropical ophthalmology for his province. There are three sessions in the year, each of three months' duration—namely, from October 1st to December 31st, from January 15th to April 14th, and from May 1st to July 31st inclusive.

The practical teaching is largely in the hands of the Medical Tutor, Mr. D. C. Rees, who, besides conducting systematic courses, is constantly in attendance in the laboratories, where the work is under his direct supervision, and help can be obtained from him by the students at all times. The syllabus of practical work includes a very complete study of the malaria parasite in all its phases and of malaria fever in all its types; of blackwater fever, Malta fever, dengue, yellow fever, plague, liver abscess, dysentery, filariasis, ankylostomiasis, etc.

Research Work.

The school takes all the microscopic flora and fauna of the tropics that have any relation to disease as falling within its province of research. Abundant material for study and research is always at hand, most of it being obtained from the wards of the hospital. Specimens of diseased tissues, tumours, blood films, and parasites are also sent for examination from nearly every part of the world. Thus at the present time preparations of malarial blood from man and from animals and mosquitos are almost daily received from the Roman Campagna, the south of Spain, and elsewhere. Former students of the school are beginning to send home pathological material for teaching purposes, including plague, yellow fever, and leprosy. Organs from cases of these diseases are sent for investigation and specimens for the museum. When our representative visited the school last week he was shown specimens of tissues from a case of malignant malaria sent from the Colonial Hospital, Hong Kong; filarial blood films sent from Persia, the South Sea Islands, Central and West Africa, and other regions; and ticks sent from Central Africa by Dr. C. W. Daniels. These ticks, which in their habits of life resemble bugs, cause by their bite a disease characterised by febrile symptoms with dysentery, and known to the natives as *carapato*. The principal line of research at the present time is the relation of the mosquito to malaria and other tropical diseases. Mr. Rees, the medical tutor, whose courtesy to our representative deserves special acknowledgment, has recently returned from the Roman Campagna bringing with him a large amount of material for study. It may be mentioned as a striking proof of his faith in the mosquito doctrine, that Mr. Rees chose to spend his holiday in the most malarious part of the Campagna, and certainly, as far as can be judged from his appearance, he has suffered no ill effect from the adventure. He informed us that he had lived with Drs. Sambon and Low, and could bear

witness from personal observation to their perfect freedom from any sign of malarial infection. There was, it appears, at one time a little unpleasant feeling towards the Colonial Office experimenters on the part of certain of their Italian brethren, but this had been entirely dissipated, owing largely to the tact and judgment of Dr. Sambon. The representatives of the London School of Tropical Medicine are now on excellent terms with the Italians.



Fig. 5.—Student's Room.

Students and their Destinations.

At the end of the course students who pass a satisfactory examination in the subjects taught receive certificates. In the first working year of the school (from the beginning of October, 1899, to the end of July, 1900) the number of students who went through the course of instruction was 73. Among these were officers of the Naval and Military Colonial Services, and medical graduates from Germany, Sweden, Switzerland, the United States, Canada, Australia, and Japan. Among the students were eight ladies. The destinations of the students give a good idea of the vastness and variety of our Colonial Empire, and also of the immense field of practice for which special preparation is provided by the school. Among them we note India, Burmah, Cyprus, the Congo, Nigeria, the Gold Coast, Rhodesia, Lagos, Uganda, Gambia, the Transvaal, the Haussa States, Sierra Leone, Delagoa Bay, Zanzibar, East Africa, German South-West Africa, China, Manchuria, Japan, Korea, the Malay States, the West Indies, and Mauritius.

It may be mentioned that applications for medical practitioners required to fill appointments of one kind or another are constantly being received at the School. At present the demand is in excess of the supply so that students have a large range of choice.

The Hospital.

Opportunities of studying the most varied forms of tropical disease are afforded by the cases in the wards of the Branch Seamen's Hospital. At the time of our visit there were several cases of malaria of different types—one of malignant tertian from the Southern States of the American Union, one of quartan ague, one of hallucinations associated with malignant malarial infection, and one of post-malarial cachexia. Among the other cases were two of dysentery and one of post-dysenteric arthritis, one of guinea-worm, one of liver abscess which had just been opened, and one of Malta fever. In addition to these cases we were informed that there were several others in the Seamen's Hospital at Greenwich, which would be brought over to the Branch Hospital as soon as the second of the new wards is ready for occupation. Among these were a case of Malta fever complicated with enteric, one of beri-beri, and one of leprosy. It will thus be seen that there is no lack of material illustrating the principal tropical diseases available for demonstration.

The Branch Hospital, which was built in 1890, provided accommodation for 15 patients. To this has now been added a new wing (Fig. 1) with two large wards and private rooms which increases the accommodation to 50 beds. The two principal wards in the new wing contain 18 beds each, and are 87 feet by 28 feet in area, and 13 feet 6 inches in height. The ward is spacious and airy; there is a window between every two beds, and the general effect is one of light and cleanliness (Fig. 4). Each bed is lighted by a separate electric lamp, and at every other bed there is a wall plug fixed both for hand light and for use when it is desired to apply galvanic treatment. Over each bed, instead of the old-fashioned medicine shelf and board for case papers, is a plate-glass shelf supported on gun-metal brackets at a convenient height from the floor; attached to these brackets are brass hooks, upon which are hung the case papers, etc. Nearly all the medical and surgical fittings in the wards are of brass and plate-glass. In the centre of each ward stands a brass and glass medicine and poison cupboard, on indiarubber-tyred castors. The tables are also of brass and glass, as are the wash-hand stands for the staff and the lotion stands. The lockers are of dull oak, and so constructed as to form a seat, a bed table, and a locker. On the top there is an opal slab, which can be removed for cleaning, and at the back a small shelf to hold the patient's porringer, a book, etc. There is also a towel rail at the back. The lockers move upon free running castors. The wards are furnished with Lawson Tait bedsteads 27 inches high from the floor. In the surgical wards the heads of the bedsteads can be raised and lowered for the administration of anæsthetics. Mackintosh cupboards of a new and improved design stand in the wards. These are made of teak and have rails which pull out from the centre; when not in use the whole is covered with a cretonne curtain which is periodically removed and washed. The top is tiled and forms a useful table. The wards are heated by Teale's patent stoves. Each ward is provided with a coal bunker in teak and brass, the top of which can also be used as a table. These are mounted on free running wheels, and thus can be moved with the greatest ease.

The walls of the wards are brightened with tablets, mostly of marble inlaid with coloured cement, on which the benefactions of pious founders are recorded. Among the foundations are the Nairne, the Coote, the America Victoria Jubilee, the P. and O., the Lady Strathcona, and the Sir Donald Currie beds and the Sir William Maxwell cot.

The floors of the new wing are entirely in terrazzo, the principal colours being white and red. There are no angles to the wards, all corners being rounded off.

On the whole we have seldom seen hospital wards where neatness is combined in such perfection with convenience. To anyone who remembers what the ordinary hospital wards were twenty years ago those in the Branch Hospital of the Seamen's Hospital Society at Albert Docks give a measure of the great gulf fixed between the old and the new. The proverbial brightness of a new pin affords an altogether inadequate term of comparison for the effect produced by the brass-bound stands and polished furniture of the ward; only on one of Her Majesty's ships would be found such a combination of shining metal and speckless woodwork and flooring. The dark Oriental and African faces and the white pillows on several of the beds lend an appropriate touch of local colour.

Two rooms are to be reserved for paying patients. Great care will be exercised in the selection of suitable cases for these rooms, only patients who are unable to pay for treatment in a nursing home being eligible. Admission will, except in very special circumstances, be restricted to Colonial officers whose pay does not exceed £400 a year.

The Seamen's Hospital Society and their able and energetic secretary, Mr. P. Michelli, are to be warmly congratulated on their new branch hospital. When the new out-patient department which is to be built is complete and the space of ground enclosed laid out in grass plots, the institution will be a model of compactness and cheerfulness.

The Operating Theatre.

The hospital is provided for the first time with a lift 7 ft. by 4 ft. 6 in., which runs from the basement to the top storey, where is the new operating theatre. This is lined throughout with glass, and so is the sterilising room adjoining. The sinks, basins, etc., are of porcelain, and stand out from the wall, being fitted in each case with hot and cold water, which is turned on and off by the foot. All the pipes supplying the

basins, etc., are of copper, and run about 1 inch off the wall. At the foot of the operating table is a steam towel warmer. It may be mentioned that the number of operations performed is considerable, a good many cases of accident being received from the docks, in addition to the liver abscesses and other tropical diseases falling within the domain of surgery which are admitted to the wards in the ordinary course.

Nurses' Home.

The new Nurses' Home is provided with a cheerful sitting-room well furnished with lounges, and every convenience for the comfort of the nurses. There is a piano and a good collection of books, to which additions are frequently made by grateful patients.

Sanitary Blocks.

The sanitary blocks include bath-room, two w.c.'s, sink-room with bed-pan cupboard on the outside of the building for each floor. These blocks are entirely detached from the main building, and are approached by galleries from the wards. The entire hospital is heated by hot water coils.

The new buildings were designed by Messrs. Young and Hall, architects, and the movable stands for medicine and lotions, the lockers, etc., were supplied by Messrs. Maw, Son, and Thompson.

The Future of the School.

There can be no doubt that the London School of Tropical Medicine has a great future. It meets a real need which is most intimately connected with the prosperity of the Empire, and it meets it in a fairly satisfactory manner. Already in the one year in which it has been in existence three most important pieces of work have been done by its members. Dr. Low's discovery of the relation of the filaria to elephantiasis, announced in our own columns, is a most valuable addition to knowledge. The experiments on the prevention and mode of transmission of malaria which have recently been made in the Campagna and in the School itself, have brought home to the public mind the practical import of the new doctrine as to the etiology of that disease. These things are an earnest of what may be done by the School in the future. But if it is to fulfil the purpose of its foundation, it must be furnished with the necessary means. The most immediate need is additional accommodation for students. At present only six can reside at the School; there should be rooms for twenty. More laboratory room is also required, and a lecture room is an absolute necessity. The library and museum are both in the embryonic stage. For their development, scientific literature and pathological specimens will be gratefully received. The walls of the School are hung with excellent photographs illustrating the life-history of the malaria parasite, and the lessons of various tropical diseases Photographs and coloured drawings of tropical skin affections have been given by different donors; among them are a valuable collection of water-colours from Sir D. Palmer Ross, of British Guiana, and some excellent photographs from Egypt obtained through Mr. Malcolm Morris.

The Need of Endowments.

But the greatest of all needs is money. A great deal could unquestionably be done for the furtherance of the objects of the school by adequate scholarships, which would enable competent men to devote themselves entirely for some years to the study of tropical diseases in their proper environment. At present the scholarship endowed by Mr. J. G. Craggs is the only one. One or two more of the same kind would be most useful. The endowment of lectureships would also be a powerful help. An assistant demonstrator is also required, as the work is already too much for one man, and will steadily increase.

We commend these facts to the attention of any millionaire who may be anxious to escape the disgrace, against which Mr. Carnegie has uttered so earnest a warning, of dying rich. There is no way in which he could more usefully rid himself of a superfluous £100,000 than in helping to extend the sphere of work of the London School of Tropical Medicine.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

The winter session began on Monday, October 1st, when Miss Aldrich-Blake, M.D., M.S., delivered the introductory address, an abstract of which is printed elsewhere.

In introducing the speaker Mrs. Garrett Anderson announced that the third wing had just been completed, and that seventeen students had already entered into residence in the rooms provided for them in the upper two storeys. This wing contains the library, common room, anatomy and materia medica museums, and the pharmaceutical laboratory. The garden, which was always such a pleasant feature, has not been encroached on, and still provides a tennis court. The principal entrance faces Hunter Street, and the wings form three sides of a quadrangle enclosing the garden. Mrs. Garrett Anderson mentioned that at a future date the house and garden forming the north side of the quadrangle might be taken by the school, and a larger number of students' quarters be erected. At present the third wing is unpaid for, and some £12,000 are required for this purpose.

A cordial vote of thanks to Miss Aldrich-Blake was proposed by Mr. Burt, and seconded by Mr. Berry, who spoke of the high regard in which she was held. The students and the guests then adjourned to tea, and the whole of the school buildings were thrown open for their inspection.

ST. THOMAS'S HOSPITAL.

Distribution of Prizes by Sir William MacCormac.

The winter session at St. Thomas's Hospital was opened on October 2nd by Sir William MacCormac, President of the Royal College of Surgeons, who distributed the prizes and certificates to the successful students of the medical school attached to that hospital. The Treasurer of the hospital, Mr. J. G. Wainwright, said that two new children's wards had been provided which would be of use for purposes of isolation.

Sir William MacCormac, in the course of his remarks to the students, said that the prize-winning spirit might be carried too far, and might limit and specialise too much the work of a student; further, it might somewhat foster the spirit of cramming. It was a weak point common to all competitive examinations, but it was the only test available. Perhaps in some respects students had too many examinations, and though he was not prepared with a substitute, he did not consider examinations an unmixed blessing to those who had to undergo them. Examiners in chemistry, physiology, and anatomy were often experts in their subjects, and were apt to consider their special subject a little more important than all the rest put together. Such a system should be adopted as would be calculated to bring to the highest possible degree of efficiency the general average of students; the elect few of men with superior gifts were well able to take care of themselves. In some medical schools there was too much of a tendency to spoon-feed the students. Instruction in this way was given on easy terms but it was forgotten as easily. Sir William then recounted the historical facts concerning eight former surgeons at St. Thomas's Hospital who had been presidents of the Royal College of Surgeons. He concluded by pointing out that though the students entering might not attain the ideals they strove for, still the medical profession would afford a competence. Sir James Paget had analysed the career of some thousand students sixteen years after they had entered practice, and found that one-half had attained a good success in life. Twenty-three of them were distinguished men, 128 had died, and of these between 20 and 30 had died in consequence of illnesses incurred in the discharge of their professional duties. The present was a favourable time to enter the medical profession. London was about to have a great University in reality, and not in name only. In the fine old times, a practitioner and his patients were quite content with the "College" and the "Hall," but now the ambitious practitioner must possess the degree of Doctor of Medicine, to which the public ascribed some cabalistic virtue; and because of this need for the supply of M.D.'s, he was satisfied that men with this degree would be forthcoming. The supply of medical men did not keep pace with the increase of population, as shown by the list of medical students entered on the rolls of the General Medical Council.

Old Students' Dinner.

The annual old students' dinner was held on Tuesday, October 2nd, in the Whitehall Rooms of the Hôtel Métropole. There were 146 present, and the chair was taken by Dr. C. T. Aveling. After the toast of "The Queen" Sir William Mac Cormac proposed the toast of "St. Thomas's Hospital and Medical School Past and Present." He alluded to the cordial relations existing between the staff and governors, and paid a tribute to the work done by the St. Thomas's contingent, which numbered some fifty men, in South Africa. The toast was coupled first with the name of the Treasurer, Mr. J. G. Wainwright, who gave a brief outline of the financial condition of the hospital, and enumerated amongst other improvements the rebuilding of the operating theatres, the ophthalmic and casualty departments, and asserted the determination of the governors to spare no expense in keeping the equipment of the hospital at least second to none. The Dean (Dr. H. G. Turney), in an amusing speech, reviewed the chief changes of the year. He alluded in sympathetic terms to the death of Rupert Fawssett while on active service in South Africa, and to the retirement of Dr. Payne on to the consulting staff. Dr. Nicholson having also responded on behalf of the old students, the health of "The Chairman" was proposed by Dr. Payne, who referred to Dr. Aveling's qualities as a practitioner, to his brilliant hospital career, and to his success in the field of sport. Dr. Aveling, in reply, thanked the company for the way in which they had received the toast, and said he believed he was the first man to score a goal in the interhospital football matches. The usual vote of thanks to the secretaries was proposed by Dr. Solly and acknowledged. Mr. Makins, in answer to repeated calls for a speech, described the conditions under which he had met old hospital men at the seat of war, and pointed out that St. Thomas's students were to be found acting as civil surgeons at the base hospitals and up to the firing line.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.

The Huxley Lecture.

The third Huxley Lecture was delivered by Lord Lister, P.R.S., in St. Martin's Town Hall on October 2nd. The chair was taken by Mr. J. H. Morgan. After the delivery of the lecture, the full text of which will be found on page 969, a vote of thanks was proposed by Dr. Green and seconded by the Rev. J. F. Kitto, and carried with acclamation. Lord Lister, in acknowledging the compliment, spoke of the pleasure with which, after retiring from surgical practice, he came back to speak among colleagues whom he could address with perfect freedom in assurance of their sympathy.

Dinner of Past and Present Sudents.

The annual dinner of the past and present students of Charing Cross Hospital was held on October 2nd at the Hotel Cecil, with Mr. John Harold in the Chair. The number of guests amounted to over 250, and amongst those present were Lord Lister, Mr. R. J. Godlee, Mr. H. T. Butlin, Dr. Sims Woodhead, Mr. Raymond Johnson, Mr. W. J. Walsham, and Mr. J. Tweedy.

The Chairman proposed the toast of "Prosperity to Charing Cross Hospital and its Consulting Staff" and Mr. J. H. Morgan, who replied, referred to a criticism in *Charing Cross Hospital Gazette*, wherein he was severely handled for making promises last year that had not been fulfilled. That promise was now carried out, and the new department for mental diseases under Dr. Percy Smith was to be opened for patients on October 3rd. As he had travelled from the North at short notice to attend the dinner he had no time to prepare any impromptus, but he was able to relate with satisfaction the honours that had been showered on many of his colleagues.

Mr. Cantlie proposed the health of "The Past and Present Students," and suggested that an association of the Charing Cross Medical School should be formed and that each member should have the title of "associate." He considered that one of the first associates should be Lord Lister, who had delivered the third Huxley lecture. Suitable responses were made by Mr. H. Bellamy Gardner and Mr. Candler.

Mr. Waterhouse proposed "The Health of the Guests," coupling with it the name of Lord Lister. Lord Lister, in replying, said that it gave him great pleasure to renew the associations of his ancient days and to go over the work of former times. He could not sit down without expressing his satisfaction at the abundant prosperity of the Charing Cross Medical School, and recalled how when he was a student that school did not rank exceedingly high, whereas at the present day it was admitted to be one of the first medical institutions in the metropolis.

Dr. Mitchell Bruce proposed "The Health of the Chairman," which was duly acknowledged. During the dinner some excellent songs were rendered by Dr. Mott, Dr. Bathurst, and Mr. Charles Baly.

Conversazione by the Medical Society.

On Monday evening, October 1st, the Charing Cross Hospital Medical Society gave a conversazione in the Medical School in Chandos Street, which was attended by about 500 persons. Dr. Abercrombie exhibited and explained a large series of lantern slides made from admirable photographs taken during a recent visit to Egypt. An original one-act play, entitled "An Unconventional Afternoon," by Mr. C. W. Stanhope, was given for the first time by an amateur company with success. Various chemical and electrical exhibits were arranged in the different laboratories, and Roentgen ray demonstrations were given. A souvenir issued by the editors of the *Charing Cross Hospital Gazette* was on sale during the evening in aid of the appeal for the fund of £100,000 for the hospital of which amount £57,570 has already been received or promised.

MIDDLESEX HOSPITAL.

Annual Dinner.

The annual gathering of the past and present students of the Middlesex Hospital, though smaller than last year, on account of many disappointments at the last moment, was nevertheless very successful and enjoyable.

The guests assembled to the number of 130, under the chairmanship of Mr. William Lang, F.R.C.S., Ophthalmic Surgeon to the Hospital, in the Empire Hall of the Trocadero. After dinner the usual toasts were proposed, the speakers being Sir Richard Douglas Powell, Bart.; Mr. Henry Morris, F.R.C.S., Vice-President of the Royal College of Surgeons; Lieutenant-Colonel T. Lambert Mears, Dr. Edwart Stewart, J.P., Dr. J. Kingston Fowler, Mr. E. A. Fardon, and Mr. F. D. Blandy. Professor Clifford Allbutt—who had delivered the interesting and suggestive address at the opening of the new session, which is printed in another column—and Mr. Wilhelm Ganz replied on behalf of the visitors. In the intervals an excellent programme of music was kindly rendered by Senor Guetary, Mr. Paul Stoeving, and Mr. A. Boreth, under the direction of Mr. Wilhelm Ganz.

UNIVERSITY COLLEGE HOSPITAL.

Dinner of Old and Present Students.

After the delivery of the introductory address by Dr. Poore, which is published in another column, a number of those who were present visited the two blocks of wards of the new hospital which have been completed and are now in use. To those who had worked in the murky interior and remembered the squalid exterior of the old building the contrast was striking, for the new blocks not only embody the latest views on sanitation and asepsis, but thanks to the skill of Mr. Waterhouse present an extremely handsome and commanding exterior. The full description, which was published in the British Medical Journal, on September 29th, p. 931, will excuse us from further reference to the building, although it may be said that everyone was struck by the facilities for clinical study and research which will be afforded by the laboratories on the top floor of the north-western block.

In the evening the old students, to the number of over 100, dined together with the majority of the members of the medical staff at the Hotel Cecil. Dr. G. V. Poore, who was in the chair, after the toast of "The Queen" had been honoured, gave that of "The Medical School and University College Hospital." In referring to the new buildings he mentioned incidentally that the basement when completed would cover about one acre of ground, and said that he believed that the area per bed in the wards was greater than that provided in any other hospital. He attached importance to this not only from a sanitary point of view but as contributing to the comfort

and, when desirable, the seclusion of patients. Dr. Poore congratulated Mr. Raymond Johnson on his return from serving with the Imperial Yeomanry Hospital in South Africa, and referred to others, past and present students of the hospital, who had served or who were still serving in South Africa, making special reference to the gallant conduct of Lieutenant E. T. Inkson at Colenso.

The toast was acknowledged by the Dean of the Medical Faculty, Dr. Herbert Spencer, who, in referring to the demolition of the old hospital, said that the railings of the operating theatre, behind which so many generations of students had watched the operations of Liston, Erichsen, Christopher Heath, and many other eminent members of the surgical staff, had been acquired by Dr. Frederick Cock, who intended to preserve them in his garden at Appledore in Kent. Dr. Spencer expressed the hope that the possession of the new hospital erected by the munificence of Sir Blundell Maple would have the effect of renewing the prosperity of the school, and gave a series of statistics drawn up by the sub-dean, Professor Thane, as to the success of students of the Medical Faculty of University College in gaining prize and distinctions at the University of London. He said that in the sixty years 1840 1899, during which honours had been awarded, there had been given at the first M.B. examination (now called the Intermediate Examination in Medicine) 169 exhibitions, of which 63, or nearly two-fifths, had been taken by University College men. At the final M.B. examination 155 scholarships had been awarded, and of these 54, or more than one third, had been taken by students of University College. At the M.D. examination 46 gold medals had been awarded of which 22 had been taken by University College men. If attention were confined to the period since 1864, when the present system commenced, 36 gold medals had been awarded, of which 14, or almost two-fifths, had been taken by graduates of University College. During the last twenty years, eleven gold medals had been awarded to University College men at the M.D. examination, including one in State Medicine, the only occasion on which the medal had been awarded in that subject.

The toast of "The Chairman" was given by Mr. J. Hancocke Wathen (Bristol), who sketched Dr. Poore's distinguished career as a student and a teacher. The toast was heartily drunk, and briefly acknowledged by the chairman.

During the evening congratulations were sent to the past and present students of the Medical Faculty of King's College, who were dining in the same hotel, and Dr. John Phillips and Dr. Norman Dalton attended to acknowledge the compliment. The speeches were interspersed with songs by Dr. Frederick Roberts, Dr. Henning Belfrage, Dr. Beevor, and Dr. Stoddart.

UNIVERSITY OF CAMBRIDGE.

Opening of Term.

Term began on October 1st, when Mr. Chawner, Master of Emmanuel, delivered the annual address, in which the Vice-Chancellor sums up the occurrences of the year. He alluded with satisfaction to the foundation of the Horton-Smith Prize for M.D. Theses, and to the steps taken for the erection of the much-needed medical school buildings. For the latter substantial benefactions are still required. The arrangement with the hospital by which the Regius Professor of Physics becomes *ex officio* an Honorary Physician, and the Professor of Surgery an Honorary Surgeon, was deemed advantageous both to the hospital and to the university.

Dr. Humphry was at the same Congregation appointed Assessor to the Regius Professor.

By the death of Dr. Porter, Master of Peterhouse, on October 2nd, Addenbrooke's Hospital loses the services of a valuable member of its Advisory Council, and the Medical School a good friend.

BRISTOL UNIVERSITY COLLEGE FACULTY OF MEDICINE.

There was no formal opening address or ceremony in connection with the Faculty of Medicine of University College, Bristol, but the session of the College as a whole was inaugurated by a lecture from Professor Stanton, of the Engineering Department, on the relative economy of the power derived from animals, coal, food, and other sources. The lecture was incidentally interesting to the medical profession, for among other calculations as to the amount of heat developed in muscular action, the experiments which were recently conducted in the United States were referred to. The lecture was delivered in the new hall which has been recently erected out of the bequest of the late Mr. Lean, and from a gift of £1,000 from an anonymous donor. The rest of the new building will be devoted to a library, suitable accommodation for which has long been needed, and to class-rooms. The formal opening of the new hall will take place at the annual Colston University College dinner in January.

COLLEGE OF MEDICINE, NEWCASTLE UPON-TYNE.

The opening ceremony took place on October 2nd, the prizes were distributed, and an address to the students delivered by the President, Sir George Hare Philipson, who was accompanied on the platform by the Mayor of Newcastle, by representatives of the University of Durham, the College of Science, and by his own colleague of the College of Medicine.

In his address the President made feeling allusion to the loss the College had sustained within the last twelve months by the death of Professor Arnison and Mr. George E. Williamson. Professor Page had been appointed to the Chair of Surgery. Mention was made of old students who had distinguished themselves in Uganda, South Africa, and elsewhere. In his advice to the students, Sir George Hare Philipson said that there was at the present time rather a tendency to decry lectures owing to the large number of excellent text-books so readily at hand. He was not in favour of slavish note-taking, but he acknowledged its value, and he thought it should within limits be encouraged, for notebooks of lectures were often sufficient for all examination purposes. The large amount of practical work in the curriculum did away with the necessity for note-taking, and formed a difference between the past and present systems of medical teaching. Objects could be better appreciated and understood when seen than read of. Examinations were a necessity, for the real purpose of their study was to fit the students subsequently to practise their profession. Under all circumstances students ought to present themselves at the proper time for examinations. To shirk them was to make a subsequent postponement easier. He was not all for study. Physical recreation was a necessity, excellent opportunities for which had been provided by the College at the Heaton Grounds. The best results were obtained by due attention to the needs of the body. A healthy mind was not to be expected in a feeble frame. Exercise, however, was a comparative term—some required more than others, and in this matter experience alone must be the guide.

In awarding the Heath Scholarship to Major John Richard Dodd, R.A.M.C., and to Dr. Nathan Raw, of Liverpool, the President took the opportunity of specially congratulating these gentlemen who, outside the College of Medicine, had already earned for themselves a much-deserved reputation. To Dr. Gilbert Smith was awarded the Gold Medal for the year of the best Thesis.

YORKSHIRE COLLEGE, LEEDS.

Distribution of Prizes.

At the opening of the Medical Department of the Yorkshire College, Sir John Barran, Bart., Treasurer of the College, distributed the prizes in the Anatomical Theatre, which was well filled.

The Principal, Dr. Bodington, Vice-Chancellor of the Victoria University, made some complimentary remarks on the new Dean of the Medical Department, Professor de Burgh Birch, who has succeeded the late Mr. Scattergood, by whose death the College has sustained a great loss.

Sir John Barran dwelt on the work that had been done by the Medical School, and said that the amount raised by public subscription had extinguished the debt on the buildings. After making complimentary remarks on the medical profession, he gave some sound practical advice to those who were just entering on their studies. He then went on to say that the Yorkshire College needed an additional £50,000 in order that its work might be carried on as successfully as the Governors desired.

The following is a list of students who received prizes and certificates:

Chemistry—H. R. Ibbotson. Junior Anatomy—1, A. Boyle; 2, E. Cundall. Senior Anatomy—1, P. K. Steele; 2, L. R. Braithwaite. Physiology—1, A. Boyle; 2, W. Arnott and J. J. Hummel, equal. Practical Physiology—1, L. R. Braithwaite; 2, P. K. Steele and B. Suggitt, equal. Materia Medica—1, E. Cundall; 2, A. Boyle. Therapeutics—E. Saville. Pathology—E. Saville. Gynæcology—1, A. S. Parkinson; 2, C. J. Brierley. Midwifery—1, J. Acomb; 2, L. R. Braithwaite.

Forensic Medicine (Thorp Prize)—W. Gough, B.Sc. Public Health (Thorp Prize)—1, P. A. H. Radcliffe; 2, J. A. Coupland. Hardwick Prize in Clinical Medicine—C. R. Willans. McGill Prize in Clinical Surgery—W. Gough, B.Sc. Silver Medal of 2nd Year—L. R. Braithwaite. Silver Medal of 3rd Year—E. Saville. Gold Medal (given by Mr. R. Benson Jowitt)—W. Gough, B.Sc. Medical School Scholarship (value 64 guineas)—Edmondson. Infirmary Scholarship (value 40 guineas)—A. Gough.

DINNER TO THE TREASURER.

In the evening Sir John Barran was entertained at dinner at the Hôtel Métropole by the medical men of Leeds and the district, the Dean presiding.

Dr. Dobson proposed "Success to the Medical Department of the Yorkshire College." Professor Mayo Robson, who responded, drew comparisons betweeen the past and the present, and referred to the many eminent men who had entered the profession through the Leeds Medical School. He also remarked that no fewer than twenty-five of the old Leeds men had offered their services and been accepted for work in the Army Medical Department in South Africa. Professor Trevelyan, who also responded, pointed out the need there was in the Yorkshire College for the endowment of at least two new chairs in Pathology and Anatomy.

Mr. Pridgin Teale, in proposing "The Health of Sir John Barran," referred to the great services Sir John had rendered to the College. In his reply, Sir John Barran expressed his belief that the most pressing need was now the endowment of chairs in the Medical Department.

"The Health of the Chairman" was proposed by Mr. Moynihan; and Professor Birch responded.

ENTRANCE SCHOLARSHIPS.

THE following entrance scholarships and certificates have been awarded in connection with the opening of the winter session:

Charing Cross Hospital Medical School.—Livingstone Scholarship, 100 guineas, to Mr. John Heatley Spencer. Universities Scholarships, each 60 guineas, to Mr. C. Rolleston (Oxford University), and Mr. H. M. Joseph (Cambridge University). Entrance Scholarships have also been awarded to Mr. A. G. Whitaker, 40 guineas, and Mr. Alfred Dinnis, 30 guineas.

Guy's Hospital Medical School.—Senior Science Scholarship for University Students, £50, Mr. A. R. Brailey, Downing College, Cambridge, and Mr. S. W. Cole, Trinity College, Cambridge, equal, £25 each; and a Certificate to Mr. D. M. Hughes, University College, Cardiff. Junior Scholarships in Science: £150 to Mr. R. W. Allen, University College, Auckland; £60 to Mr. C. M. Wenyon, University College, London; and Certificates to Mr. H. Thomas, Kingsholme School, and Mr. F. H. Lennox Jones, Latymer Upper School. Entrance Scholarships in Arts: £100 to Mr. H. O. Brookhouse, Blackheath School; £50 to Mr. W. H. Dencer, Colfe Grammar School; and Certificates to Mr. G. Cockcroft, Rossall School, Mr. T. B. Layton, Bradfield College, and Mr. G. F. E. Allison, Rossall School.

St. Mary's Hospital Medical School.—Open Scholarships in Natural Science, £145, Mr. J. H. Nixon; 75 guineas, Mr. V. Z. Cope, B.A.Lond., and Mr. E. T. H. Davies; 50 guineas, divided, Mr. T. E. Francis and Mr. F. R. Howse, equal. Exhibition in Natural Science, 25 guineas, Mr. R. W. Newman. University Scholarships, Mr. R. W. Robbins, B.A.Camb., and Mr. F. W. Goyder, B.A.Camb.

St. Thomas's Hospital Medical School.—Entrance Scholarship in Natural Science, £150, to Mr. George Young Worrall; University Scholarship in Anatomy and Physiology, £50, to Mr. Walter L. Harnett, B.A., Cantab.

University College (London) Medical Faculty.—Bucknill Scholarship (for proficiency in Science), value £30 a year for four years, and Scholarship, 55 guineas, divided equally, to Mr. H. T. Mant and Mr. W. S. Sweet; Scholarship, value 55 guineas, to Mr. H. E. Dyson. Two Medical Exhibitions, value 76 guineas each, to Mr. C. W. Forsyth and Mr. A. M. H. Gray.

THE PLAGUE.

THE PLAGUE IN GLASGOW.

WRITING on Tuesday, October 2nd, our Glasgow Correspondent says: The latest reports regarding the position of the plague in Glasgow are most satisfactory. There have been no new cases for nearly a fortnight, and there remain at present in Belvidere Free Hospital 21 cases of plague and two suspected cases. There have been two deaths during the past week, one of them being that of a child born in the hospital a fortnight ago. The child's mother suffered from plague, and *post-mortem* examination of the infant's body showed that death was due to that cause. The number of "contacts" in the reception houses has been now reduced to 19.

Experience in India has established the fact that the so-called puerperal type of plague is an especially fatal form, and the observation would appear to be confirmed in Glasgow. The police authorities in Glasgow are dealing summarily with cases of overcrowding in the prescribed plague area. Some 70 cases of offence in this direction were brought up at the Southern Police-court of the city, and fines varying from 2s. 6d. to 10s. 6d. were imposed.

There seems every hope that the outbreak is drawing to a close. The advent of colder weather may assist the sanitary authorities in their attempts to get rid of the disease, although it is now well understood that climate and season have but little influence in the behaviour of plague. In no other part of the British Isles is plague known to exist, the report that a case had occurred in a Perth gaol was totally without foundation.

PLAGUE IN SAN FRANCISCO.

We have from time to time heard of a case or two of plague occurring amongst Chinese immigrants during the voyage across the Pacific, and also of a Chinaman dying of plague in San Francisco immediately after landing, but it is only now that we learn that the disease has actually obtained a hold in the Chinatown quarter of San Francisco. From the evidence before us there seems no doubt about the matter, and as many as 14 authenticated cases of plague have occurred any time between the month of March, 1900, and the month of August. It is needless to say that there has been the usual local squabbles as to diagnosis, and the medical men who have detected the disease both clinically and bacteriologically have been subjected to a great amount of the abuse which seems part and parcel of every plague outbreak, and are looked upon as public defamers of the welfare of the city in which they live. Plague is regarded by every citizen as a possibility elsewhere, but not in his own particular city. In Bombay, in Calcutta, in Alexandria, in Oporto the same note of resentment has been struck, and in San Francisco the public press has declaimed against their "healthful" city being so traduced. Let San Francisco be as healthful as its inhabitants declare, there is no gainsaying the part that Chinatown is a blot on the sanitation of the city. Chinatown in San Francisco has been so frequently described that it is not necessary to recall the details. It is enough to know that it has been described as a series of "rat holes" with communications underground between houses and streets, so that the Chinese may escape from detection or arrest when any particularly flagrant breac of criminal law has been committed. Dr. W. G. Hay, in the *Occidental Medical Times* of August, 1900, graphically describes a visit to this foul insanitary quarter: "The rubbish of fifty years was burned, the sewers were repaired; incidentally in one place the rascals did not use the closet provided, but instead cut holes in the wooden sewer, and when the sewer was congested from flushing by rain or by artificial means, the contents, of course, were discharged into the room, and, more nasty yet, under the bunks in which they slept." The efforts the Chinese make to evade the vigilance of plague inspectors is well illustrated by the following incident. "In a room were five Chinese seated at a table and apparently playing dominoes. Several inspectors looked over and under everything. Two hours later one of the Chinese was dead, having been sick for months, and during the inspection—the advent of which the wily heathen seem to know by instinct—he had been braced up against the table and his hand placed

over the dominoes." Experiences of this kind were of common occurrence in Hong Kong, even dead men being fixed in position by a chess-board as if in deep study at the game. There seems no doubt that plague has gained a footing in San Francisco amongst the Chinese, and in all probability it will become endemic, and remain so until such time as the Chinese are compelled to take to habits of life more in conformity with the ways of men than with those of beasts.

INDIA.

The plague mortality for all India amounted during the week ending September 8th to 1,049. By telegrams received at that date in London we were made acquainted with the fact that over 1,000 deaths had occurred during that week, but the details have only now come to hand. The majority, 486, occurred in the Bombay Presidency, and in the Mysore State 410 deaths from plague occurred. In the city of Calcutta 78 deaths were recorded. Thus only 75 deaths out of a total of 1,049 occurred elsewhere in India. During the week ending September 15th 43 deaths from plague are reported from Calcutta, indicating a still further subsidence of the epidemic in that city. In the city of Belgaum on September 7th 46 cases of plague occurred, and 27 deaths from the disease. These are the highest figures yet stated during the present recrudescence in Belgaum. The outbreak has caused a great scare, and the inhabitants of the city are flying in all directions, and although the adjacent villages are as yet free of the disease the exodus from Belgaum is calculated to carry the disease far and wide over the province. In Poona during the first fourteen days of the recrudescence 275 cases and 206 deaths were attributable to plague. It would appear, however, that the outbreak is not likely to be virulent.

MAURITIUS.

For the week ending September 27th, 17 fresh cases of plague occurred, and 14 deaths from the disease.

HONG KONG.

During the week ending September 29th, plague accounted for 5 deaths. Five fresh cases of the disease were also reported.

AUSTRALIA.

Charters Towers.—A telegram from Brisbane dated September 30th announces the fact that a case of plague occurred at Charters Towers. This is one of the great mining centres in the Davenport district of Queensland, situated some distance inland on the line of railway. It is the first intimation we have had that towns other than seaport towns in Australia have been visited by plague.

COMPLIMENTARY DINNER TO SIR GEORGE HARE PHILIPSON.

In recognition of the honour of knighthood recently conferred upon him, the members of the medical profession in the North of England entertained Sir George Hare Philipson to dinner in the Assembly Rooms, Newcastle-on-Tyne, on October 2nd. The chair was occupied by Dr. Hume, senior surgeon to the Royal Infirmary. One hundred and twelve sat down to dinner. Among those present were his colleagues from the College of Medicine, Professor Page, Dr. H. E. Armstrong, Drs. McBean, Drummond, Murphy, R. A. Lyle, and Macdowall; Professors Oliver and Howden, Drs. R.A. Bolam and Hardcastle from the Royal Infirmary, Drs. Limont and Simpson, Messrs. Rutherford Morison, Martin, Wardale, Angus, and Leech, while the University of Durham was represented by the Master of University College and Professor Jevons, and the College of Science by Principal Gurney and Professor Bedson. Among those from a distance were Drs. Outterson Wood and Spicer, and Mr. Noble Smith of London. Drs. Beatley and Beattie, as Secretaries of the Arrangements Committee, were rewarded by the largeness of the gathering for their efforts to make the dinner a success. Nearly all the towns in the North of England sent representatives. Letters of apology for absence were received from the Bishop of Newcastle, Sir Douglas Powell, Drs. Glover and Abercrombie, and others. It was in every sense of the word a memorable and an interesting gathering. So much depends in these matters upon the chairman. In this respect the Arrangements Committee was most fortunate.

After the royal toasts had been duly honoured, Dr. Hume, in well-chosen phrases, gave an accurate portraiture of the guest of the evening. When he himself came to Newcastle more than a quarter of a century ago, he found Professor Philipson occupying the posts of Lecturer on Pathology and Secretary to the College of Medicine. With nearly every medical institution in Newcastle and the immediate neighbourhood Sir George Philipson, he said, had been in one way or another connected. Occupying in each instance at first the lowest position he had risen to the highest. For years he held subordinate and the least ornamental appointments, doing the hard work and thereby qualifying himself for the higher. He made himself master of the details of all the duties he assumed. It was his close attention to these duties, his constancy of purpose, and also his excellent knowledge of business procedure that had made Sir George Hare Philipson's services so valuable to the various institutions with which he was connected. Such as was the work of the man so too was his personality. No one was held in greater esteem in the medical profession in the North of England, and upon no one, therefore, could the honour have been more befittingly bestowed by the Queen than upon their guest of the evening. In the ordinary affairs of life, as in his professional, his punctuality had become a bye-word, while his courtesy and manner recalled an age that is past. In extending to him the congratulations and the good wishes of the profession, the Chairman made a humorous but graceful allusion to the fact—he would not call it altogether a defect in their guest's case—that, like a solitary star, Sir George had no one to share the honour with him. This in no way, however, detracted from the sincerity of their congratulations and best wishes. The toast was received with enthusiasm, the company singing with vigour, "For he's a jolly good fellow."

On rising to reply Sir George Philipson received the heartiest welcome a North Country audience could give. In cordially thanking the medical profession for the honour done him in inviting him to the banquet, and thus marking their sense of appreciation of him, he acknowledged that great as he felt the honour conferred upon him by Her Majesty, this expression of feeling towards him on the part of the profession was a circumstance of which he was equally proud, and in some respects he even valued it more. He had simply striven to do his duty. Referring to the Chairman's mention of the subordinate posts he had held, and especially to work done in kindred institutions, he had found in all this work relaxation, recreation, and pleasure. He was almost afraid to travel over some of the ground that had been so delicately and gently alluded to, but there was an old saying, "Never venture, never win," and he therefore still lived in hope, a statement that was received with the liveliest acclamation.

SOUTH AFRICAN HOSPITALS COMMISSION.

THE COMMISSIONERS AT KIMBERLEY.

THE Hospitals Commission held its opening sitting at Kimberley on October 1st. The doctors and the members of the hospital staffs, in giving their evidence, agreed that the hospitals in the town were well arranged and equipped, and that no complaints had been made. The evidence given by the men who took part in the fighting was exactly contrary. They complained of bad treatment at Paardeberg owing to the lack of administrative ability. The field hospitals there had been so badly placed that many men had to lie in pools of water. The camp at Maitland was placed in a similar position, the men lying in tents full of water, many of them without blankets, overcoats, or oilskins. Two deaths occurred in consequence. The men also complained of the food arrangements, and stated that the supplies were unsuitable for convalescents.

THE FORTHCOMING REPORT.

The Special Correspondent of the *Morning Post* understands that the report of the Commission will be unfavourable to Mr. Burdett-Coutts, and generally favourable to the army hospital arrangements.

LITERARY NOTES.

MESSRS. SMITH, ELDER AND CO. have in the press a second edition of the late E. J. Chance's *Bodily Deformities*, Vol. I, brought up to date by John Poland, F.R.C.S. The hitherto unpublished Vol. II on *Treatment*, by the same author, will also be edited by Mr. Poland.

Among Messrs. Longmans, Green and Co.'s recent publications is *Malaria*, according to "the New Researches," by Professor Angelo Celli, translated from the second Italian edition, by Dr. J. J. Eyre, with an introduction by Dr. Patrick Manson. The same firm has now ready Part I of *Diseases of*

the Rectum, by Messrs. D. H. Goodsall and W. Ernest Myles; and *Living Anatomy*, by Cecil L. Burns, R.B.A., and Robert J. Colenso, M.D., 40 plates, with descriptive letterpress.

Messrs. Hutchinson and Co. announce *Disciples of Medicine*, a series of biographies of leaders in medicine by the late Sir Benjamin Ward Richardson. The sketches are reprinted from the *Asclepiad*.

In the list of announcements of the Cambridge University Press is a book by Dr. R. Caton, of Liverpool, entitled *The Temples and Ritual of Asklepios*. The work is based on two lectures on the subject delivered by Dr. Caton at the Royal Institution in the summer of 1898, and published in the BRITISH MEDICAL JOURNAL of June 11th and 18th of that year.

Mr. Grant Richards announces for publication in November, *Memoirs of Edward Hare, C.S.I.*, late Inspector-General of Hospitals, Bengal, by Major Edward Hare, I.M.S. The work will contain a portrait in photogravure, and other illustrations.

The Sanitary Publishing Company, Ltd., announce as ready shortly a new work entitled *Essays on Consumption*, written by J. Edward Squire, M.D. Sir William Broadbent contributes an introduction.

Messrs. Blackwood will shortly publish a biographical sketch of Sir Rutherford Alcock under the title *An Englishman in the Far East*. The author is Mr. Alexander Michie, a China merchant, to whom Sir Rutherford Alcock's papers were made over by his family. It will be remembered that Sir Rutherford, whom many consider the ablest man ever sent by this country to China, was originally a member of the medical profession.

Among Mr. Young J. Pentland's list of announcements for the autumn are the following works: *A Textbook of Physiology by British Teachers*, edited by E. A. Schäfer, Professor of Physiology in the University of Edinburgh, Volume II, completing the work; *A Textbook of Medicine by British Teachers*, edited by G. A. Gibson, M.D., Physician Royal Infirmary and Lecturer on the Principles and Practice of Medicine, School of Medicine, Edinburgh; *A Textbook of Pharmacology and Therapeutics*, edited by W. Hale White, M.D., F.R.C.P., Physician and Lecturer on Medicine, Guy's Hospital; *Gynæcological Operations*, by Skene Keith, F.R.C.S.Ed., and *Diseases of the Throat, Nose and Ear*, by P. McBride, M.D., Physician to the Ear and Throat Department, Royal Infirmary, Edinburgh.

Messrs. Macmillan and Co. announce the *Life and Letters of Thomas Henry Huxley*, by his son Mr. Leonard Huxley. As the biographer justly observes, Huxley was much more than a simple contributor, however illustrious, to natural science; much more even than a lucid and profound thinker. His style reflected a temperament of great force and originality; and the son's book is not a summary of his father's contributions to science, nor of his philosophic views, but rather a study of the man himself, of his character and temperament, and of the circumstances under which his various books were begun and completed. So far as possible the story is told by original letters, and by extracts from Huxley's correspondence, which, however, was by no means voluminous. The arrangement is simply chronological: seven chapters cover the first eight-and-twenty years; from that to the end a chapter is allotted, roughly speaking, to every year. The illustrations comprise eight portraits of varying dates.

The *Naval and Military Record* of August 30th contains some interesting naval reminiscences by a sexagenarian, whom from internal evidence we should judge to be a retired surgeon of "the Queen's Navee." Among other things there is a story of a naval surgeon of the early Sixties, who was court-martialled for the excessive length of his whiskers, which he declined to curtail when ordered to do so. Unfortunately the reader is left unenlightened as to the result of this highly interesting trial. There is another story of some men having deserted from a sloop anchored at the Island of Taboga, in the Bay of Panama, and making their way to the mainland of Columbia, where they were pursued by the first lieutenant, who caught them asleep some distance inland. One poor carpenter's mate, it is stated, had particularly good cause to regret this false step; the night spent in the malarious country was followed, in his case only, by severe remittent fever, with the unusual sequence of paralysis agitans with consequent lifelong disability.

ASSOCIATION INTELLIGENCE.

COUNCIL.

ALTERATION OF DATE OF MEETING.

IN consequence of a large number of Polls being fixed fo October 8th and 9th, the meeting of the Council will be held in the Council Room of the Association at 429, Strand (corner of Agar Street), London, on **Wednesday the 24th day of October next**, at 2 o'clock in the afternoon, and not as previously announced.

FRANCIS FOWKE, *General Secretary*.

October, 1900.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Room of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of th Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

NORTH OF IRELAND BRANCH.—The autumn meeting of this Branch will be held on Thursday, October 18th, in Belfast. The incoming President, Professor Byers, will take the chair and deliver his opening address. Members having any business to bring before the meeting will kindly communicate with the Honorary Secretary on or before October 11th. New members can be elected on giving fourteen days' notice.—WILLIAM CALWELL, M.D., Honorary Secretary, 1, College Square North, Belfast.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.—The next meeting of this District will be held at the Grand Hotel, Eastbourne, on Wednesday, October 10th, at 4 P.M. Mr. C. O'Brien Harding will preside. The following communications have been promised: Dr. Kyding Marsh: On Cancer of the Stomach. Dr. Gabbett: Notes on the Diagnosis of Diphtheria. Mr. Hallidie: A Specimen of an Affected Digit from a case of Ainhum. The Hon. Secretary: A case of Gastric Ulcer. Dinner at the Grand Hotel at 6 P.M., charge 6s., without wine.—J. W. BATTERHAM, Honorary District Secretary.

SOUTH-EASTERN BRANCH: EAST SURREY DISTRICT.—The next meeting of this District will be held at the White Hart Hotel, Reigate, on Thursday, October 11th, at 4 P.M., J. Walters, M.D. (Reigate), President of the South-Eastern Branch, in the chair. Dinner at 6 P.M., charge 7s., exclusive of wine. Agenda: Minutes of Croydon meeting. To decide when and where the next meeting shall be held, and to nominate a member of the Branch to take the chair thereat. The following papers, etc., have been promised:—Dr. Hadley: Chronic Bronchitis in Children. Mr. C. Mansell Moullin: Diagnosis and Treatment of Acute Inflammation of the Appendix. Mr. S.W. Macilwaine: Adjourned discussion on "The Future of the Profession and of the Association" (a paper read at the last Croydon meeting, and published in the BRITISH MEDICAL JOURNAL of July 21st, 1900), when the following resolution will be proposed: "That it is desirable that the British Medical Association should authorise and encourage the formation of local societies amongst its members." Members desirous of exhibiting specimens or reading notes of cases are invited to communicate at once with the Honorary Secretary. All members of the South-Eastern Branch are entitled to attend and to introduce professional friends. N.B.—The Honorary Secretary would be much obliged if members would kindly inform him by postcard whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. By so doing they will very materially facilitate arrangements, and promote the success of the meeting.—HENRY J. PRANGLEY, Tudor House, Anerley, Honorary Secretary.

PERTHSHIRE BRANCH.—The annual meeting of this Branch will be held in the Station Hotel, Perth, on Friday, November 2nd. Candidates for election will please communicate with A. R. URQUHART, James Murray's Royal Asylum, Perth, Honorary Secretary.

SHROPSHIRE AND MID-WALES BRANCH.—The annual general meeting of this Branch will be held at the Salop Infirmary on Tuesday, October 23rd, at 3 P.M. Members who wish to bring forward any business, to read papers, to show cases or specimens, or to propose any new members, are requested to communicate with the Honorary Secretary, not later than Friday, October 12th.—HAROLD H. B. MACLEOD, College Hill, Shrewsbury, Honorary Secretary.

SOUTH-EASTERN BRANCH: EAST KENT DISTRICT.

THE 156th meeting of this District was held at Broadstairs on September 27th, Mr. RAVEN, of Broadstairs, Honorary Secretary, in the chair. There were 24 members and visitors present.

Confirmation of Minutes.—The minutes of the last meeting (annual) at Canterbury were read and confirmed.

Chairman for the November Meeting.—On the motion of Mr. Treves, seconded by Dr. Tamplin, Dr. Holstead, of Ramsgate, was appointed chairman of the meeting to be held at Canterbury in November.

Papers.—Mr. W. K. Treves (Margate) read a paper on Cases of Malingering. He related many striking cases of malingering, in some of which the impostors had subjected themselves to suffering and even mutilation. Mr. Raven (Broadstairs) read a paper on Hypnotics. Having made allusion to the ignorance that still exists as to the physiology of sleep, and shown that therefore all drugs used for the induction of sleep must be purely empirical, he proceeded to review the various hypnotics most in vogue, and gave from his experience the conclusions he had arrived at regarding their respective merits.

NORTH WALES BRANCH.

The autumn intermediate meeting of this Branch was held on September 27th, at Glynyweddw Hall, Llanbedrog, Pwllheli, by invitation of Mr. Solomon Andrews, who entertained the members at luncheon. The President, Dr. G. R. Griffith, J.P., Carnarvon, was in the chair.

New Members.— Hugh Owen Jones, L.R.C.P.&S.Edin., Amlwch, and Pierce Jones, M.B., Ch.B., Portmadoc, were elected members of the Association and Branch; and William Vaughan Griffith, L.R.C.P.& S.Edin., Coedpoeth, Wrexham, member of the Branch.

Communications.—Dr. T. R. Bradshaw, Liverpool, read a paper on myelopathic albumosuria.—Dr. J. Evans, Carnarvon, showed a specimen of gastric perforation.—Dr. E. J. Lloyd, Bangor, exhibited a skiagraph showing an unusual fracture of the lower end of the tibia, with complications.—Mr. R. Owen, Penygroes, showed a case of aneurysm in the palm of the hand.

Vote of Condolence.—On the motion of the President, seconded by Mr. T. Hunter Hughes, county coroner, Pwllheli, it was resolved:

That this Branch offers its sincere condolence with Mr. W. Jones Morris, ex-President and Joint Honorary Secretary, in his illness, and trusts that he will have a speedy recovery.

Vote of Thanks.—Dr. J. Roberts, J.P., Menai Bridge, proposed, Dr. H. J. Lloyd, J.P., Barmouth, seconded, and it was unanimously passed:

That the best thanks of this Branch be accorded to Mr. Solomon Andrews for his kind invitation to and his hospitality at Glynyweddw.

Spring Meeting.—The President announced that the spring meeting will be held at Wrexham.

SOUTH MIDLAND BRANCH.

The autumnal meeting of this Branch was held in the Board-room of the Stamford Infirmary on September 20th. In consequence of the absence of the President, Ex-President, Readers of Papers and others, there was an unusually small attendance. Dr. Newman took the chair at the request of the President, and gave the members and visitors present a warm welcome.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Election of New Members.—The following gentlemen were elected new members of the Association and Branch, namely: Alexander G. Young, Castle Bytham, Lincoln; R. C. Middlemist, Stamford; and of the Branch only: C. H. Clabburn, Kitton, Rutland; J. W. Lewis, Kingscliffe, Northants; and St. John Stanwell, Stamford.

Communication from General Secretary.—The Honorary Secretary read a letter from the General Secretary, accompanied by a copy of the Report of the Committee on the Early Decay of the Teeth among the Inhabitants of Britain. A copy had been sent to several members, and others were laid on the table.

Papers and Cases.—A short paper by Mr. Paget on the subject of Isolation Hospitals in Rural Districts, and really only intended as a contribution to a discussion on another paper on the same subject which was unavoidably omitted, was read by the Secretary in the absence of the author. After describing what had been done by the Northamptonshire Council, Mr. Paget wrote that he personally favoured the formation of "hospital districts" in the county rather than the erection of a hospital in each rural district, as tending to greater economy and efficiency of the hospitals and their staffs. Dr. Bower (Bedford) wrote that he was in favour of the same plan, which was being admirably carried out by the Leicestershire County Council. Dr. Clark stated, on the other hand, that he was against the formation of combined districts. Other members took part in the discussion which ensued.—Dr. Walker (Peterborough) next read a paper pointing out the danger which he believed would arise by the spread of enteric fever in this country on the return of the troops from South Africa. As indicating this, he related 11 cases arising in the course of thirteen days, believed to have their origin in the source alluded to. He stated that the bacillus of the disease continued in an active state in the urine for a more or less prolonged period after apparent convalescence; for which the only remedy was a course of urotropin. Much interest was shown in the subject, and the Chairman and nearly all the members present joined in the discussion which ensued, some being of opinion that the danger had been rather exaggerated. A vote of thanks was proposed by the Chairman, seconded by Dr. Clark, and carried, to Mr. Paget and Dr. Walker for their valuable and interesting papers.—A communication by Dr. Jones on the subject of chorea was postponed to a future meeting.

Luncheon, etc.—Luncheon was provided at the Stamford Hotel prior to the meeting; and the members and visitors had the opportunity, through the courtesy and under the guidance of Dr. Newman, of visiting Burghley House and many buildings and other objects of interest in the town.

Exhibits.—Numerous skiagraphs were exhibited on the table, and one or two patients shown to the meeting.

SPECIAL CORRESPONDENCE.

ROME.

Professor Grassi's Malaria Experiment.

At the beginning of the present malarial season the Italian Red Cross Society organised a campaign against malaria in the Roman Campagna, with a service of 28 medical officers and 8 ambulances, for the conveyance of the medical officers, with drugs, etc., to the outlying districts, and also for the transport of the most severe cases to the nearest railway station, whence they are sent on by train to the Rome hospitals. The medical officers have not only to treat the malarial patients in their districts, but to make clinical and bacteriological observations, and instruct the inhabitants of the Agro as to prophylaxis. This campaign will be continued till the end of October, the time at which the malarial season generally ends in the Roman Campagna.

Professor Grassi, to whom belongs the credit of having discovered that among the various species of mosquitos in Italy (some 20 in all) those belonging to the genus *Anopheles* are the only ones which are the carriers of malaria, during the malarial season of last year made an experiment to protect a family occupying a house situated in one of the most malarial spots of the Roman Campagna from malaria. A brief account of the result of this experiment was published in the British Medical Journal at the time.

This year Professor Grassi, with the collaboration of Drs. Martirano, Blessich, Druetti, and Gilblas, has been carrying out a similar experiment, but on a much larger scale, in the plain of Capacio near Salerno in South Italy. He selected this region chiefly because it is one of the most malarious in Italy, and because owing to its position it appeared to him to be the most suitable for the purpose. It includes the ancient site of Paestum, which as long ago as the reign of Augustus was notorious for its malarious air.

On September 16th Professor Grassi presented to the R. Accademia Dei Lincei of Rome a preliminary report of this experiment. In making it he had two objects in view, namely: (1) To afford an absolute proof of the fact that malaria is transmitted exclusively by the bite of *Anopheles* mosquitos; (2) to found on the results of recent research a

code of rules to be adopted for freeing Italy from malaria in a few years.

The experiment consisted in protecting from malaria railway employees and their families living in ten railway cottages and at the stations of S. Nicolò, Varco, and Albanella, situated along the Battipaglia-Reggio Railway. They numbered 104 persons, including 33 children under 10 years of age. Of these 104 individuals, at least 11, including 4 children, had never suffered from the disease, not having previously lived in a malarious district; a certain number, it appeared, had not suffered from it for two or three years; and all the others, that is to say the large majority, had suffered from it during the last malarial season, some of them even in the winter.

The following two fundamental rules were adopted by the experimenters: (1) Treatment of the persons still malarial in the non-malarial season, that is to say during the time when *Anopheles* are not infected (from January to June); (2) protection from the bites of *Anopheles* during the malarial season, especially by the employment of wire netting.

Unfortunately, says Professor Grassi, the first rule could not be carried out until March 23rd, when they began treating all the cases of recurrent fevers with tonic doses of quinine, iron, and arsenic, and in particular, with the hope of attacking one time or another the parasite at the opportune moment to prevent the recurrence, 1 gram of quinine was given every seven days in the early morning to those (37 in number) who presumably had malaria during the winter. Unfortunately, also, several individuals did not take this remedy. Later experience taught the doctors that it was necessary to extend the quinine treatment to all persons who had inhabited a malarious place during the last two years, because the railwaymen readily forgot having had a mild attack of fever.

The treatment having been commenced late, it was deemed advisable to continue it till June 25th, and in 5 persons who had recurrent attacks after March 25th it was continued another fortnight. In March there were 6 recurrent cases, in April 16, in June 7, in July 1, and in September 1. In all, 27 individuals suffered from recurrent attacks, some repeatedly. With reference to the figures of the first months, there may be some doubt, because quinine was sometimes given before the examination of the blood had given a positive result.

The malarial season began, so far as could be made out, on June 26th, on which day the disease manifested itself in an individual who had not previously suffered from it, and who lived at a few kilometres distant from the zone of experiment. The first *Anopheles* with its salivary glands infected was found on June 14th, and calculating the twelve days necessary for incubation, it was predicted that the malarial season would begin on June 26th, as in fact has occurred.

Of the cases of recurrent fevers, 3 only (all railway employees) were observed during the malarial season; one at the end of June, with only a single access of tertian; the second at the end of July, with a single attack of summer tertian; the third in September, with summer fever of a distinctly quotidian type. The attack of tertian occurred in an individual twenty-four hours after excessive fatigue, who had stated that he had not had an attack of fever for three years and a half, and who therefore was not treated with quinine. The attack of summer tertian also occurred in an individual who said that he never had had malaria, and consequently was not treated with quinine. The attack of summer fever of a quotidian type occurred in an individual who had suffered much from malaria, but was not treated with quinine. He said that he had not had fever for two years, but later it was discovered that the disease had never left him completely, and that he had concealed this fact because he dreaded taking quinine. It is noteworthy that all these cases occurred in persons who had never before been treated with quinine.

A careful study of these cases convinced the experimenters that they were recurrent fevers. In any case, even admitting them to be doubtful, they would not, Professor Grassi believes, diminish the value of the experiment, because the second individual during July slept at Eboli (a non-protected place), where malaria has been unusually prevalent this season, and all three of them were least willing to carry out the precautions suggested for their protection. For this purpose the inhabitants retired at sunset and remained until after sunrise in their houses, which were carefully protected with wire netting, including the chimneys. In addition almost every house was provided with a compartment made of wire netting within which the inmates slept even during the day. The employees who had to work out of doors during the evening or night wore a veil, fixed round the hat with elastic, and a pair of thick cotton gloves. It was found very difficult to induce the inhabitants carefully to adopt these precautions, especially at first when none of them believed in their efficacy. Consequently in almost all the houses they on several occasions found a stray *Anopheles*, but fortunately the majority of them when captured were found to be empty of blood. However, the protection was not so efficacious against the *Culex pipiens*, because many of them had entered through fissures inaccessible to the *Anopheles*.

The inhabitants were visited twice a day, and the least illness was carefully noted by the doctors. Every precaution was taken to prevent any of the people dosing themselves with quinine, so that the experimenters are quite certain that they had not consumed more than 16 grams of quinine altogether. The greater part of this quantity was administered in gram doses to the individuals who had shown distinct traces of malarial infection contracted a long time before the experiment was commenced, and it was given them during the few days in August when there was a sudden fall in the temperature, not because they showed any signs of malaria, but in order to prevent a recurrent attack. The other few grams were taken by adults who, feeling out of sorts, attributed their condition to the want of quinine which they were accustomed to take.

During the malarial season the health of the protected individuals was good, with the exception of a few cases of bronchitis and a case of acute gastro-enteritis. None of these cases were treated with quinine. The 104 persons, except the three cases above referred to, had remained free from malaria up to September 16th, the date of the report. This has been fortunate because, in spite of the precautions taken, some *Anopheles* had bitten, and though those iniected were not more than 1 in 100, it might have happened that one of them was in a condition to inoculate malaria. In order personally to superintend the experiment Professor Grassi himself has passed three days each week in the place, sleeping with open windows (protected with wire netting). At Albanella the same has been done, but for a shorter time, by Dr. Martirano and by Dr. Blessich, the medical inspector of the railways. Dr. Gilblas, the medical attendant of the inhabitants, has visited the whole *personnel* daily, sleeping four or five nights a week at Albanella. Dr. Druetti, provincial medical officer of health, who also has been watching the experiment on the part of the Ministry of the Interior, has been in the place several days in the week, sometimes sleeping there. Further, a medical student has lived at Albanella from June 24th to August 10th. Not one of them has suffered from malarial fever.

Rightly to estimate the value of these facts, it is necessary briefly to describe the surroundings of the protected area. Towards the north, coming from Battipaglia three railway cottages are situated at a distance of 1, 2, and 3 kilometres respectively. They were not included in the experiment, because they were considered to be through long experience less malarious than those protected. The 25 inhabitants of these cottages, although they were put under the reconstituent and quinine treatment in the non-malarial season, all without exception were taken ill with malarial fevers, in many cases obstinate. The same fact was observed to the south of the experimental area. The station of Capaccio, a few metres distant from the last of the protected cottages, has been occupied during the summer by a pointsman and his family, consisting of 6 persons. All of them have suffered from severe malaria, excepting the wife, who in former years had suffered severely from the disease. This family had also undergone the reconstituent and quinine treatment in the spring, and at the beginning of August they tried to protect themselves, but very imperfectly.

On both sides of the area of experiment and in very similar conditions many farmhouses and country cottages are found. The course of the fevers in the houses situated within a few

metres to about 2 kilometres from the above area was carefully watched. The result is as follows:

Taverna del Comandante, 51 cases of malaria in 52 permanent residents; Masseria Anna Grazia, 10 in 10; Imbrosta, 29 in 29; Torre Paladina, 1 in 1; Verdesca, 6 in 6; Torre Circione, 6 in 6; Papalione, 6 in 6; Masseria delle vacche, 5 in 5; Taverna nuova, 64 in 64; Barrizzo, 33 or 34 in 35 (the person who has certainly escaped getting the disease slept at the protected station of Albanella); Grumola, 48 in 49; Lisena, 9 in 11; Cerro, 16 in 16; Feletti, 4 in 4; Osteria Caperozzi, 4 in 4; Elice, 5 in 5; Tavernadi Capaccio, 5 in 5; Casa di Napoletano, 2 in 3; and Fornelli, 7 in 7. The 5 individuals who had escaped infection up to the date of the report have very large spleens, and have all suffered from malaria in former years. Perhaps these individuals have acquired a kind of temporary immunity.

The diagnosis of the individual cases at the beginning of the malarial season was controlled with the microscope; later this examination was not made each time, because it was considered superfluous. Evidently the experiment had verified, at different times, a new infection in the same individual. The above persons, in all about 300 in number, had consumed an enormous quantity of quinine (about 3 kg.), which was administered when possible, and with the necessary precautions.

Professor Grassi ends his very valuable report as follows: From what has been stated above, it is reasonable to conclude that, in the Plain of Capaccio, the protected individuals all escaped being affected with malaria, while those unprotected all suffered from the disease, even when they lived in houses in better conditions (farms in high positions). Evidently the double object for which this experiment has been made has exceeded every expectation, and the two great precepts, namely, curing the malarial individuals, especially in the non-malarious season, and protecting them from the bites of *Anopheles*, have been shown to be applicable in practice, giving the certainty that it is possible to free Italy in a short time from malaria. It can be positively asserted that, excepting for the *Anopheles* infected by malaria germs, from which one can easily protect himself, the much-dreaded Plain of Capaccio is one of the healthiest places in Italy.

Although the final course of the malarial season, which is evidently declining, cannot compromise the result of the experiment, this nevertheless will be continued till December, the month in which the malarial season ends almost completely.

MELBOURNE.

The New Bacteriological Laboratory of the Melbourne University.

As the Melbourne Medical School was the first of the universities of the world to make practical bacteriology a compulsory subject, a description of its new bacteriological laboratory may be of interest. To Dr. Thomas Cherry is large due the credit of having worked up this branch to the perfection and general recognition with which it is now received by the Government, the public departments, the productive industries, and the profession in Victoria. Dr. Cherry passed through the whole of his medical curriculum at the Melbourne University, where he graduated in 1889; ever since then he has devoted himself to academical work. He held the position of Demonstrator and Assistant Lecturer in Pathology under Professor H. B. Allen. He has visited the principal universities of Great Britain and Europe on three occasions. He made his last trip a few months ago, when he was commissioned by the Department of Agriculture and by the Royal Commission on Technical Education to collect information on various points connected with the economical application of bacteriology. During this visit he made notes of the more recent advances in the erection and furnishing of laboratories connected with his special work, and he has incorporated many of his ideas in the building. The new laboratory is an imposing edifice, situated in a beautiful park of rich horticultural picturesqueness. It is built in the modern Gothic architecture and consists of three floors, and cost for the building alone about £4,000. A Government grant of another £500 for the necessary fittings will shortly be obtainable.

The large hall of the laboratory will have accommodation for 80 students and is about 40 ft. by 60 ft. The walls and ceiling are composed of highly-polished huon pine. Adjoining this is a special room set apart for Dr. Cherry. The staircase leading to the lower floor is made of fireproof wood. Situated on the ground floor there are four research laboratories and one preparation room specially fitted for the professor of pathology, who has, in addition, one room set apart for pathological-histological work and one for chemical pathology. The benches all through the building are carried on iron brackets fixed in the wall so as to obviate vibrations from the floor. Steam is laid on all over the building for both heating and sterilising purposes. One room has been set apart as a plague laboratory, having germ-proof windows and doors. The walls are covered with tiles made of opaque glass and the floor with lead, so that it can be flooded with antiseptics in case of accidents. The sub-basement consists of workshops for engineering and for producing all kinds of apparatus for the laboratory. Another apartment is devoted for glass-blowing, so that any kind of appliance composed of glass, wood, or metal can be manufactured on the premises. A special room will be used for microphotography and a dark room for development. Another feature in the department is a so-called cool laboratory for special work in hot weather. The basement also contains a large refrigerating room for cold storage to enable problems in the economic questions of food, such as fruit, milk, butter, meat, etc., to be worked out. Other rooms are devoted to the preparation of media of all kinds, for the sterilising and disinfecting of all utensils. There also exists a hot room which may be utilised as an incubator.

A large autoclave apparatus has been erected for sterilising by means of steam under high pressure. Adjoining the building there are sheds for animals, *post-mortem* rooms for examining specimens, and for other purposes. The department is subsidised by the Board of Public Health, by the Ministry of Agriculture, by the Metropolitan Board of Works, by the City Council, and by other municipalities, who contribute between them about £800 per annum. The duties of this bacteriological department consist in the examination of water and milk supply, of investigating diseases which are discovered at the abattoirs and amongst stock, and analysing the effluence from the sewage farm. It is also prepared to assist the Board of Public Health, on behalf of the medical profession, in diagnosing diphtheria, typhoid, tubercle, and cases of plague. There are attending the medical school at the University about 260 students, of whom 20 are ladies. Post-graduate courses are held at regular intervals. It is expected that the building will be opened next March. Under the administration of Dr. Cherry the department of bacteriology has assumed immense proportions, and both in teaching and in solving the many economic problems of our producing industries a great deal of responsible work will have to be accomplished. Dr. Cherry has a small staff of four to assist him, and no doubt he will be able to show good results when once in working order.

BELFAST.

Royal Victoria Hospital: Resignation of Dr. Henry O'Neill.—Inspection of Meat in Belfast.—Precautions against the Introduction of the Bubonic Plague.

Many will regret to hear of the resignation of the post of visiting surgeon to the Royal Victoria Hospital by Dr. Henry O'Neill. Dr. O'Neill has been connected with the institution for over twenty-three years and has been on the staff for twenty-one; his was a familiar figure in the wards and in the operating theatre; his energy and kindliness carried him through all difficulties and an immense amount of work; he was an enthusiastic and painstaking teacher. It is satisfactory, however, to know that over-pressure of work and keen interest in and attention to the public health of the city have brought about an event which, in the ordinary course of things, would not have been expected for years. As Dr. O'Neill is still young in years and is distinguished by the exuberance of both mental and physical vitality, it will probably be considered whether his services might not still be retained for the medical school in the delivery of some practical hospital lectures or demonstrations.

Dr. O'Neill lately presented a report on the inspection of

meat to the Market Committee of the City Council. A by-law has just been adopted by the latter body providing that all meat killed outside the city and brought into it for sale, before being sold or exposed for sale, shall be brought into a market for inspection by one of the inspectors; and that it shall not be sold or exposed for sale until it has been passed by him as fit for human food. It will be marked by the Corporation stamp, of which there are two, one for meat from animals killed in the public abattoir, and the other for meat from animals killed in the country.

At the same meeting of the Council the precautions taken to prevent the introduction of plague from Glasgow, and the preparations for dealing with any case that may unexpectedly be discovered, were discussed. The subject has been before special and ordinary meetings of the Health Committee, and the necessity of the utmost vigilance has been impressed on all officials. The City Council, as port sanitary authority, have taken over the Interception Hospital on the West Twin Island, and are putting it in order, and an additional temporary iron hospital to accommodate 16 beds has been approved of. Dr. Clibborn, the Medical Inspector to the Local Government Board, has also recommended that provision shall be made for persons who may have been in contact with those suffering from the disease; and that hospital attendants should be inoculated, additional medical officers to inspect vessels coming to the Lough have been appointed, and the plague is to be brought under the Infectious Diseases (Notification) Act. The lanes and alleys of the city are being flushed with water and disinfectants, filth is being promptly removed, and the houses of the smaller class are being whitewashed. It is most satisfactory to read these reports, and they will to a certain extent allay the uneasiness that exists amongst a large portion of the population; it is unfortunate, however, that the Health Committee does not furnish some public statement or report of the exact measures taken, as the ordinary asseverations reported in the public press that everything is being done, do not carry the same weight, especially when we find that more cases of typhoid and simple continued fever have been notified in one month in Belfast (315) than have ever been notified for a whole year in Bristol, a town now not much smaller.

BRISTOL.

Meeting of Library Association: The Bristol Medical Library: Books and Infection.

DURING the last week of September the Library Association held its annual congress in Bristol, and among the papers two were of special interest to medical men. Mr. L. M. Griffiths, the Hon. Librarian of the Bristol Medical Library, read a paper on various matters and books of interest in the collection under his charge. He referred to the literature of the Hotwell, once one of the most fashionable watering-places in the kingdom. He also showed two rare works by Harvey, and some personalia of Edward Jenner. The second was one by J. Y. W. MacAlister, Librarian to the Royal Medical and Chirurgical Society, and Dr. W. G. Savage, Bacteriologist to the Cardiff and Public Health Library, on the risk of infection being carried by books from public libraries. They held that with notification and withdrawal of infected books the risk was small. There was no need to close public libraries in times of epidemic, any more than to stop the running of tramways, or prohibit religious gatherings. Books used by patients with diphtheria, enteric, and tuberculosis had been examined bacteriologically, with the result that it appeared almost impossible to convey infection by this means. The only exception was when the thumb was licked to assist in turning over the page. A second wetting by another person might convey the infection. It was suggested that possibly in this way the generation of thumb-lickers might become extinct.

HONG KONG.

Bubonic Plague.—The late Lieutenant-Colonel Ryan, R.A.M.C.

THE number of cases of bubonic plague has gradually decreased, until now (August 31st) there is only, as a rule, one case daily. During the week ending August 18th there were 26 cases with 26 deaths, but the week following the number had fallen to 9 cases with 9 deaths. The total number of plague cases since the beginning of the year has been 1,053 with 995 deaths.

At a meeting of the Sanitary Board on August 30th, Dr. J. C. Bell moved that the Board express its deep regret at the death of Colonel Ryan, R.A.M.C. He referred to the active part Colonel Ryan had taken in sanitary matters in the colony as a member of the Sanitary Board. Dr. Hartigan, in seconding the motion, said that Colonel Ryan was a man of very distinguished service in the army, and had shown great interest in everything connected with the improvement of the sanitary condition of the colony, specially in regard to battling with the plague.

CORRESPONDENCE.

THE CONCILIATION BOARD.

SIR,—In reply to the letter of Dr. J. G. Glover in the BRITISH MEDICAL JOURNAL of September 29th on this subject, I have to say that a Special Committee of members of the Association (not necessarily members of Council) was appointed by the Council on July 18th. The resolution appointing that Committee and the members composing it are as stated in Dr. Glover's letter. He asks whether its report will be presented to the next meeting of Council. As I am not a member of that Committee I cannot of course say when its report is likely to be presented to the Council. It may find it easy to make a report on the question referred to it; it may find frequent meetings and frequent conferences necessary before it is able to send to the Council any mature report on this very important question. Owing to the holidays this Committee has not as yet begun its labours.

What I am sure we all wish is that it shall be able to furnish an exhaustive and complete report. This cannot be looked for if the matter is rushed through in any way. I for one desire much more that the report should be thorough than that it should be presented at the earliest possible moment.—I am, etc.,

J. ROBERTS THOMSON,
President of Council.

429, Strand, Oct. 3rd.

EXPERIMENTAL PROOF OF THE MALARIA-MOSQUITO THEORY.

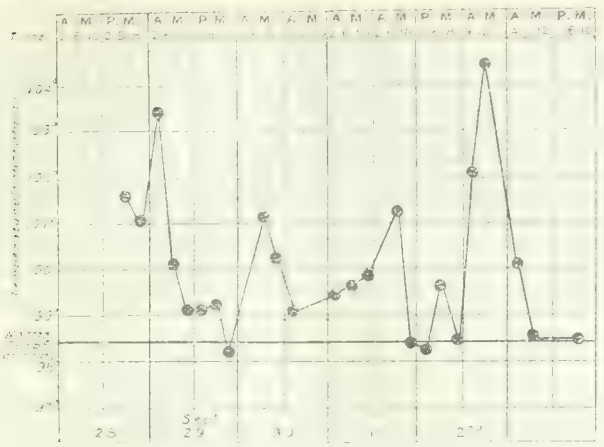
SIR,—In addition to Mr. P. Thurburn Manson another volunteer subjected himself to the bites of infected mosquitos, namely, Mr. George Warren, Assistant in the Laboratory of the London School of Tropical Medicine. He, like Mr. Manson, has in due course contracted malarial fever, and his blood contains the benign tertian malarial parasites.

Mr. Manson, it is almost certain, received his infection from the second consignment of mosquitos. Mr. Warren, on the other hand, was infected with the third batch, which arrived in London on September 10th. This last consignment was fed in Rome on a different patient to that through which Mr. Manson was infected, so that the experiments may be regarded as distinct.

Mr. Warren first began to feel ill in Friday, September 28th. The incubation period in his case seems to have been about fourteen days. His temperature on Friday afternoon was 101.6°F., but a careful blood examination failed to reveal any malarial parasites. The next morning, however, a leucocyte was discovered which contained the characteristic malarial pigment.

On Sunday, September 30th, a specimen of his blood was examined and showed four leucocytes which contained degenerating advanced pigmented parasites. On Monday, October 1st, he was feeling better and his temperature was down. In the evening, however, the thermometer registered 102°F, and at midnight 104.4°F. There was no definite rigor, but a distinct feeling of chilliness. The blood examination the next morning revealed young benign tertian parasites, four to six were present in each specimen of blood examined. At the time of writing this note the parasites can still be observed in the blood. The temperature has remained normal all day. To-morrow quinine will be administered.

It is interesting to note, as might be expected, that as Mr. Warren was infected by a greater number of mosquitos his blood contains more parasites than were present in the case of Mr. Manson. The blood specimens have been seen by



Dr. Manson and a dozen or more of the students working in the laboratory of this school, and I shall feel great pleasure in showing the specimens to anyone who is sceptical.—I am, etc.,

D. C. Rees, M.R.C.S., L.R.C.P.,
Superintendent of the London School of Tropical Medicine.

October 2nd.

ARTIFICIAL LIMBS FOR WOUNDED SOLDIERS.

Sir,—The question raised by Mr. Fripp, and referred to in your leading article of September 29th, is, now that the war in South Africa draws to its close, one of great importance.

The ordering and issuing of appliances for maimed soldiers is vested in the Commissioners of Chelsea Hospital. The appliances themselves (with some special exceptions) are of such regulation patterns as have from time to time been approved by the Commissioners, and samples are kept by them as a record of make and quality. The Commissioners have the supervising assistance of the principal medical officer of their hospital, who is an experienced army officer, and who, even presuming that he had no previous experience of such matters, is in a position to immediately acquire it, for he has charge of the residents or in-pensioners of the hospital, many of whom are maimed by amputation. The provincial distribution (which used to be in the hands of staff officers of pensioners) is also subject to district medical supervision. This being so it would seem that the issue of the proper appliances is provided for by an excellent system which has stood the test of time, and that also the work of the contractor is subject to a supervision that precludes his supplying anything that may run the risk of being returned on his hands.

When therefore I first came to consider the matter it did not seem to me that any faults lay in either issue or supervision, but rather that no provision existed for keeping the construction of the appliances up to modern date. Those that were issued after Waterloo were similar to those issued after the Crimea, excepting that two special artificial arms (Major Little's) were added to the list at this latter period. Some of the older appliances, as the box and bucket legs, were excellent and are still so; but others seemed useless. Further, there seemed to be no provision for promulgating to army medical officers the relationship that must necessarily exist between the points of election in amputation and the regulation appliances that have subsequently to be issued.

In 1885 I published a work, the primary object of which was to point out in general the relationship between an amputation and the possibilities of a subsequent prothetic appliance, and I devoted its last chapter entirely to the consideration of military amputations and Government appliances. As no particular notice was taken of this chapter by the authorities, I wrote in 1887 a short pamphlet on the subject and sent it to those principally concerned; as a result I was asked to draw up a report for the Government, which was printed in the same year, and the improvements I suggested in the appliances were accepted and adopted by the Commissioners. This I think will show that there was every wish on their part to do their best for those in their charge, at all events in this respect.

But my proposals went further, for I pointed out that a necessary revision of the existing system must come under the following heads, which I here quote:

Par. 1. An investigation of the proper relationship that should exist between military amputations and the Government appliances granted after loss of the whole or part of a limb.

Par. 2. A consideration of what are the best operations to be performed in the field or military hospital, and the issuing of a set of instructions in the form of a memorandum embodying these to all executive officers of the medical staff.

Par. 3. A consideration of the most effective forms of appliances to be granted by Government to maimed soldiers, and a complete revision of the present set of regulation patterns, the old and useless forms being discarded, while new and more efficient ones are introduced. At the same time some provision should be made by which improvements in the future could be submitted to competent authorities so that changes that would benefit the maimed soldier might be introduced as occasion arose, and a standstill like that of this last century might be guarded against.

Par. 4. A consideration of the advantages which might accrue if the medical staff had more control over the issue of the appliances.

Par. 5. A consideration of the improvements needed in the existing system by which the construction of the appliances is provided for. This last point is most important. In order to secure the most efficient and most wearable appliance for the maimed soldier, a greater amount of information should be given to the constructor. The medical officer, under whose care the case is, should be empowered to transmit either directly or indirectly to the constructor such extra information or instructions as might be deemed necessary, and further such deviations from the regular patterns as could be made by the guidance of the medical officer's instructions, without material increase of expense, should be permissible. Further, as the maimed soldier requires a new appliance every few years to periodically replace the one which is worn out, exact records of the original should be kept to facilitate the resupply. With respect to construction, it is quite a question whether it would not be more economical (and it certainly would be more satisfactory) for the Government to manufacture their own appliances instead of relegating this duty to various contractors. The interest of the contractor taking the contract for pecuniary advantages to himself would naturally be to produce a good appliance precisely to set patterns, and not to bother his head about such improvements or modifications as might be of benefit to the soldier. There are many distinct advantages to be gained in there being a Government factory for these appliances. It could be located at one of the great military centres—as, for example, Woolwich. If this were so the soldier—in such cases as needed exceptional care in fitting—could be sent up and lodged, either in barrack or hospital, while the appliance was made and adapted to his limb. The factory would become the repository for all records which might serve as guides in future construction. I have said a factory, but this is too ample a name, as a good workshop with three men would suffice in time of peace to produce all the appliances needed, and extra workmen could easily be taken on during and after any great war. This factory could be under the control of a medical officer detailed for the purpose, and medical and mechanical points in the construction of the appliances would thereby be harmonised and go hand in hand.

It is to be observed that with respect to Pars. 1 and 2 the suggestions made in my book have been embodied in Porter's *Surgeon's Pocket Book*, a work that is specially issued for the use of army medical officers.

With respect also to Par. 3, it was covered by the acceptance by the Commissioners of the suggested improvements.

There remain, therefore, only Pars. 4 and 5 which are still open, and it is on these that Mr. Fripp's question and your leading article may throw light. The view of decentralisation expressed in your leader is the one, I believe, adopted in Germany. But it should be pointed out that in England there are very few actual makers of artificial limbs, although there are many dealers in them, and that even if the limbs were contracted for through local channels, their manufacture would probably be central. I am therefore rather inclined to the opinion that a central office (whether it be that of the contractor or of the Government) is the best, and that in special cases the men should be sent up for fitting, and should come under the supervision of a specially experienced medical officer, whilst all records of their cases should be kept centrally and permanently for future use and reference.

As regards the kinds of limbs given to soldiers, I believe the simpler forms are the best. After a war it is very usual for eminent personages and benevolent societies to give expensive artificial limbs to selected soldiers, but when this is done no provision is made by the donors for keeping such limbs in repair or for renewing them, and the recipients have generally to fall back in a year or so on the regulation limbs, which they would really have been better off with in the first instance.—I am, etc., Heather Bigg, F.R.C.S. Edin.

Wimpole Street, W., Sept. 30th.

MEDICAL OFFICERS OF THE HIGHLANDS AND ISLANDS.

Sir,—As a Poor-law medical officer I beg to offer you my thanks for your able and sympathetic leader appearing in your issue of September 15th.

I agree absolutely with everything you say except the suggestion that we approach our parish councils to find if they will grant us the same privileges as that indicated by the Local Government Board.

These parish councils composed as they are of self-interested men, shop keepers, crofters, and ministers (with few exceptions), whose only principal of action is to "keep down rates," glorify themselves in the eyes of an ignorant community, and further their own interests whenever possible, are not the class of men likely to favour any concession conducive to the betterment of the parish doctors' condition.

To my thinking the inability of the Local Government Board to grant our request is a pitiable state of affairs, and sufficient reason for us to go direct to Parliament and insist on our being placed on a similar footing to our English and Irish brethren.

Since the Poor Law Act was passed these Highland and Island parishes have greatly benefited by legislation and are in a better financial condition than they were and are quite able to increase our salaries without feeling it in the slightest.

If parish councils are to be consulted in the matter our case is practically hopeless, as individual members have neither the breadth of mind nor courage to extend justice to the parish doctor in the face of two or three blatant ignorant ratepayers who might deprive them of a little custom.

I again thank you and beg that you will help us as much as lies in your power to gain our proposed appeal.—I am, etc.,

Midyell, Shetland, Sept. 28th HENRY P. TAYLOR.

ABDOMINAL OPERATIONS: THE CASE OF DR. IMLACH.

Sir,—Your editorial on the case of Dr. Imlach in the British Medical Journal of to-day must have been read with very great sympathy and interest by many of the older members of the British Medical Association.

It seems to call for some expression of opinion outside the circle of local interest, where what was done in the past, and all the responsibility then incurred, appears to prevent an impartial view of the consequences of that action and the justice of it as viewed in the light of experience.

For my own part I have always held that if operative gynæcology needed repression and check in 1886 (and perhaps it did) the fault was not confined to Liverpool, but was met with in many cities and in many countries. If it was expedient that one man should suffer for the sins of many it was scarcely just, and the harshness and cruelty which resulted from the action of the Liverpool Medical Institution is surely sufficient reason for the hope that some way may be found of finally healing the open sore which evidently rankles in the mind of Dr. Imlach.

At that date (1886) we were in no position to form an opinion regarding the justifiability and final value of many abdominal operations which were then beginning to engage the attention of surgical pioneers like Mr. Lawson Tait, Dr. Imlach, and others; much less were we fit to sit in judgment on those whose enterprise gave us the comparatively few facts on which we had to rely for guidance. If mistakes were made, these were mostly inseparable from the conditions under which the work was done, and out of this work has emerged a series of recognised and established operations which have been and are of the utmost benefit to humanity. In particular, the operation for the removal of an intraperitoneal hæmatocele due to tubal pregnancy is one which is now saving life daily, and if it was not perfected at once it is none the less due to those who first were bold enough to operate in this condition, to acknowledge the debt of gratitude the public and the profession owe to their enterprise. Among these surgical pioneers Dr. Imlach undoubtedly holds an honourable place.

The conditions under which pioneer work and established work are undertaken are altogether different and must not be confounded. Pioneer work in surgery, as in everything else, is subject to mistake and is almost always accompanied by some excess of effort. Even in quite recent years have we not met with this, and its voluntary repression, in the treatment of appendicitis, post-nasal growths, and lesions of the endometrium?

I venture to think, Sir, that no one in the present day can be altogether satisfied with the personal aspect of what was done at Liverpool in 1886, and late as it is I should like to suggest that those who took a leading part in the unhappy controversy of that date might find a way of ending it more happily for themselves and for Dr. Imlach without any loss of dignity or principle. Now that the meeting you mention has been held with the somewhat lame conclusion of "adjournment *sine die*," might not those who signed the original report reconsider their position, and on the grounds mentioned in this letter (which are, I believe, quite incontrovertible) agree themselves to the deletion of the report?—I am, etc.,

Birmingham, Sept. 29th. JOHN W. TAYLOR.

THE NATURAL HISTORY OF FIBROIDS AND RECENT IMPROVEMENTS IN THEIR TREATMENT.

Sir,—In Mr. Doran's instructive address[1] and protest against unnecessary operations in certain fibroids of the uterus opinions were solicited respecting the value of drugs, such as potassium or sodium bromide, with syrup of the iodide of iron, which, according to the late Dr. Wallace, have "again and again reduced the size of large tumours." Mr. Stanmore Bishop in reply stated that he had collected a large number of written opinions on the subject, and that the verdict might be summed up in the words of the late Dr. Meadows, who believed that drugs, notably mercury and iodides, are utterly inert in promoting the removal of uterine fibroids. With regard at least to the amelioration of symptoms by these drugs in certain cases, I feel sure Mr. Stanmore Bishop will permit me to point out that in the Epitome of the British Medical Journal, March 26th, 1898, Boquet reports very good results from the use of iodide of potassium in the treatment of metrorrhagia connected with uterine fibroma. He notes the case of a woman with a large uterine fibroma with continual metrorrhagia, and in addition evident marks of syphilis in various parts. On the hypothesis that the syphilis had something to do with the evolution of the fibroma iodide of potassium was given. The metrorrhagia entirely disappeared. Encouraged by this result the same treatment was adopted in metrorrhagia from fibroids without any evidence of syphilis. In all these cases the bleeding was stopped, pains ceased, and the size of the tumour was markedly diminished.

Again, Legrain in the Epitome of the Journal, July 16th, 1898, reports 3 cases of syphilitic disease of the uterus, in all of which the uterus was uniformly enlarged and the cervix not ulcerated or eroded. In 2 cases there was metrorrhagia and anæmia, and in the third purulent endometritis. Under specific treatment all recovered, the uterus resuming its normal size. The author considers these cases to be parenchymatous and fungous metritis rather than gummata, and thinks some cases diagnosed as fibroids are really syphilitic.

Before this, as well as at the annual meeting of the British Medical Association in 1899, I myself ventured to draw renewed attention to the treatment of endometritis and metrorrhagia by mercury and iodide, as also to the syphilitic factor or syphilo-septic basis in certain cases of salpingitis and pelvic inflammations. In this latter respect it is interesting to find that Mrs. Stanley Boyd,[2] out of 6 cases of unilateral pyosalpinx or hydrosalpinx with matting of the appendages operated upon, independently finds 3 of these in syphilitic cases, 1 of which initially diagnosed as gonorrhœa developed secondary syphilis.—I am, etc.,

JOHN A. SHAW-MACKENZIE, M.D.Lond.

Grosvenor Street, W., Sept. 27th.

THE LICENTIATES OF THE SOCIETY OF APOTHECARIES OF LONDON.

Sir,—On behalf of the Association of Licentiates in Medicine, Surgery, and Midwifery, now held for literary purposes, in rooms at the Hall, Blackfriars, I shall be much obliged if you will allow me to state that our President, Dr. P. G. Lodge, has been invited on our behalf to confer with a committee of the Apothecaries Society; that such meeting took place on September 25th, 1900, and that as a result I am in a position to state that the Society are intent on doing all

[1] British Medical Journal, September 15th, 1900.
[2] Conservative Surgery of the Tubes and Ovaries. *Ib. d*

they can to maintain and elevate the position of their licentiates, and were favourably impressed with the suggestions placed before them on that occasion by our President.

The misleading, inadequate, and old-world letters (L.S.A.) which do not state any direct connection with surgery or medicine, were fully discussed, and it is hoped that something fair will be done to bring about our recognition by the profession and the public at large, in conformity with the spirit of the Registration Act of 1886, according to which all diplomas whatever leading thereto are of equal standing, that is, are to be recognised as such.

It cannot be too often pointed out that it is this registration which proves the case beyond all doubts; also as to whether a person is doubly qualified or not.—I am, etc.,

GERALD DALTON,
Secretary to the Association of Licentiates.

453, Strand, London, W.C., Sept. 27th.

INFECTIVE ENDOCARDITIS.

SIR,—I regret I was not present in the Section of Medicine at the late meeting when Dr. Ewart's case of endocarditis infected through the mouth was under discussion.

A year ago I had in charge a typical fatal case of infective endocarditis in a girl of 22, the subject of previous mitral disease of rheumatic origin, in whom the infection clearly arose during the making of gums after a large operation for removal of carious stumps.

The marvel is that such cases are not more common; probably the cervical glands are trained by practice and heredity to deal with even acute infections.—I am, etc.,

Westerham, Oct. 2nd. A. MAUDE.

THE PREVENTION OF PLAGUE.

SIR,—Although the cremation of plague-infected hospitals has been recommended, and appears to be the only effectual method for safety, I am not aware that the destruction by fire of infected houses has been advised. As there is the danger that suspected persons on liberation and others may reoccupy the buildings in which plague has occurred, I suggest that such a chance of infection should be abolished by the burning of such houses, after the drains therefrom have been blocked to prevent migration of rats. Fire-engines could limit the extent of the fires, the heat from which would tend to purify surrounding properties, while landlords could be compensated by the sanitary authorities, who could liberate the insurance offices from their liabilities. This would be expensive, but cheaper than recrudescence of plague and all its disastrous results. As such a charge on the rates would be for the benefit of the whole country, it would be but right that some at least of the cost should be defrayed from Imperial taxation. It is manifestly unjust that infected towns should bear all the cost as well as the inconveniences and loss of trade and state of apprehension.—I am, etc.,

Malvern, Oct. 3rd. STANLEY HAYNES, M.D.

QUININE IN MALARIA.

SIR,—I have been much interested in reading in the BRITISH MEDICAL JOURNAL of September 1st the discussion as to the use and mode of administration of quinine in malarial diseases. The results of treatment vary much according to the different speakers. Dr. Manson says: "The value of the drug is apt to be underrated in consequence of its being given in too routine a fashion, and often under conditions in which it cannot be absorbed, as in states of severe gastro-intestinal catarrh."

This reminds me of the practice at Addenbrooke's Hospital, when I was pupil there some fifty years ago, in the hands of Dr. Bond, professor of physic in the university, and of Sir George Paget. At that time the admissions to Addenbrooke's, both of in-patients and out-patients, from malaria were very large. It was found that the quinine treatment, which was always adopted, was more rapidly effective if preceded by an active emetic. Cases even that had been treated with quinine without the preliminary emetic, and did not progress satisfactorily, were often quickly benefited by a dose of ipecacuanha, the quinine being continued without increase of dose. This corresponds with the importance mentioned at the meeting of putting the gastro-intestinal membrane into the best condition for the rapid absorption of the quinine.

During my practice at Brighton for many years I rarely saw a case of malaria, but when occasion presented itself I fell back on this old experience, and with good results.—I am, etc.,

Crowboro', Sept. 5th. F. A. HUMPHRY.

THE PREVENTION OF CONSUMPTION.

SIR,—At the present time when even the smallest tribute with the above end in view is acceptable to the profession, a simple means which I have found both useful and easily managed, may not be unwelcome, namely, in place of the ordinary "spitting cup" the formation of paper cones, the size and shape of a grocer's sugar bag, made by twisting pieces of ordinary stiffish paper (about 11 inches by 8½ inches) round the hand. These are easily held in nests of six or more in one hand, and after expectoration into them the inner one is removed and at once burnt.

This means is open to rich and poor alike and, with the former, obviates the disagreeable and dangerous duty of washing out the ordinary vehicle.

The idea first occurred to me when called in to see the father of a family of six in almost the last stages of the disease and witnessing his, not always successful, attempt to expectorate into the fire upon which the kettle was boiling for tea, and round which the children were crowding for warmth. I have had some made with antiseptic paper which answer better.—I am, etc.,

Wedmore, Sept. 26th. W. J. HENSON (M.S.A.Lond.)

THE PATHOLOGY OF CIRRHOSIS OF THE LIVER.

SIR,—At the recent discussion on the above subject at Ipswich, two views were brought forward as to the nature of the fibrosis: one being that it was of inflammatory origin, the other that it was a replacement fibrosis.

Now the fibrous tissue of inflammatory origin always undergoes subsequent contraction, and the same is true in a lesser degree of the tissue which is the result of replacement fibrosis. These views, therefore, are insufficient to explain those cases of cirrhosis associated with enlargement and a smooth surface.

I think that these latter cases must be looked upon as examples of "diffuse fibroma" of the liver, the fibrotic process being closely allied to tumour formation. We recognise diffuse varieties of several tumours, including, among others, sarcoma, carcinoma, lipoma, angeioma; and we find examples of diffuse fibroma in the so-called neuro-fibromatosis, and in some cases of elephantiasis.

It is, therefore, not unreasonable to suppose that we may have a diffuse fibroma of the liver.—I am, etc.,

Medical School, Leeds, Oct. 1st. CHARLES POWELL WHITE.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

SIR,—I was an examiner for the Mutual Life Office of New York but suppose I am not now, as I refused to examine for half a guinea, when I sent back the form. I have refused for years to examine for any office under one guinea, and all other medical men ought to do the same.—I am, etc.,

Sept. 28th. G.

OBITUARY.

JACOB M. DA COSTA, M.D., LL.D.,

Emeritus Professor of Medicine in Jefferson Medical College, Philadelphia.

DR. DA COSTA, of Philadelphia, whose name is known to medical men throughout the world, died suddenly on September 12th at his country home, Ashwood, Villanova, from a disorder of the heart of some years' duration. He was born in St. Thomas, West Indies, February 7th, 1833, and was thus 67 years of age. His early education was received in Germany. His medical training was obtained in the Jefferson Medical College, where Dr. Mutter was his preceptor. He graduated at the early age of 19, presenting as his thesis a study on Epithelial Tumours and Cancer of the Neck. He then spent two years in the schools and hospitals of Paris and Vienna, beginning practice in Philadelphia on his return. In 1864 Dr

Da Costa was appointed Lecturer on Clinical Medicine at the Jefferson Medical College, and in 1872 was chosen to occupy the Chair of Theory and Practice left vacant by the death of Professor Dickson. He resigned this Chair several years ago to occupy that of Practice of Medicine and Clinical Medicine. For the past few years he has been Professor Emeritus of Practice of Medicine and Clinical Medicine.

Dr. Da Costa contributed largely to medical literature. In 1855 he published his *Pathology of Acute Pneumonia*, and in 1857 appeared *The Physicians of the Last Century*, an interesting historical study. *Investigations on Cancer of the Pancreas* and *Serous Apoplexy* followed in the succeeding two years. His classical volume on *Medical Diagnosis* was published in 1864. Dr. Da Costa joined the Academy of Natural Sciences of Philadelphia the year of his graduation, working with such masters as Leidy and Cope. He was also a member of the American Academy of Arts and Sciences and the American Philosophical Society. Among his contributions to medical literature not already noted are the following: Inhalation in the Treatment of Diseases of the Respiratory Passages, 1866; Diabetes Insipidus and its Treatment by Ergot, 1875; the Fluorides in Medicine, 1881; the Higher Professional Life, 1883; In Memoriam, Biographical Sketch of Samuel D. Gross, read before the Association of American Physicians, 1884; Diseases of the Pericardium (in Pepper's *System of Medicine*), 1885; the Methods of Medicine in the Near Present, 1887; Relation of the Diseases of the Kidney, especially Bright's Disease, to the Diseases of the Heart; the Middleton Goldsmith Lecture, delivered before the New York Pathological Society, April 18th, 1888; Cardiac Asthma, Relations to Heart Exhaustion, 1894; the Coexistence of Typhoid and Malarial Infection, 1897; and Rapidly-recurring Hemiplegia in Acute Lead Poisoning, 1897.

DR. JAMES DIXON BRADSHAW, who died at his residence, Avenue Road, Regent's Park, aged 52, on September 23rd, received his medical education at Manchester and St. Bartholomew's Hospital, graduated M.B.Oxon. in 1877, and took the diplomas of M.R.C.S. (1876) and M.R.C.P. (1881). He then held the posts of Physician's Assistant, Junior House-Surgeon, and Pathological Registrar to the Manchester Royal Infirmary, besides being for a time Resident Medical Officer to the Convalescent Hospital, Cheadle. After settling in London he became Physician to the Western General Dispensary, and a Fellow of the Royal Medical and Chirurgical Society and the Medical Society of London. But he only practised for a short time, as for many years he had to spend the winter abroad on account of his health, and lately he had been altogether incapacitated by paraplegia.

DR. HENRY SAVAGE, author of the well-known *Anatomical Illustrations of the Surgery of the Female Pelvic Organs*, died at an advanced age on Wednesday morning, October 3rd. He qualified as M.R.C.S. in 1837, became M.B.Lond. in 1841, and M.D.Lond. and F.R.C.S. (exam.) in 1845. He spent the last thirty years of his life in the service of the Samaritan Free Hospital as a very active member, and for a great part of that time Chairman, of the Committee of Management. Previously he had been on the active staff of that institution, of which he was one of the founders, and was then well known as a gynæcologist. He advocated the use of the curette long before its advantages as a therapeutic appliance was understood by the profession in general.

WE regret to announce the death of Lieutenant Colonel SAMUEL JAMES FLOOD, Royal Army Medical Corps, which took place recently in Ireland. He entered the service on March 6th, 1880, and had completed twenty years' service, when he was placed on retired pay in July last, on account of ill health, which has resulted in his death at the comparatively early age of 49. Colonel Flood saw considerable service in India, in the Bikaneer Field Force in 1883-4; with the Thoss Valley Expedition in 1884, in which while in medical charge of the 2nd Battalion North Staffordshire Regiment, he passed through a severe outbreak of cholera, for which he received the thanks of the commanding officer and of the Director-General, A.M.S. He also served in the Soudan under Sir Gerald Graham in 1884 (medal and Khedive's Star); and finally, as senior medical officer in the operations in the Hinterland of Sierra Leone in 1898-9 (medal and clasp), where we fear his health was undermined. He was a F.R.C.S.Edin., and a member of the British Medical Association. He was much respected in the service, and he was an enthusiastic Freemason. He leaves a widow and four children.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

PARLIAMENTARY ELECTION.—The election took place on October 1st and was a very tame proceeding. When the Vice-Chancellor, Sir H. E. Roscoe, took the chair at the University, South Kensington, at two o'clock, fewer than two dozen graduates were present. Sir W. H. Broadbent, M.D., nominated Sir Michael Foster, K.C.B., M.D., as member for the University, and Sir Joshua Fitch seconded the nomination. The Vice Chancellor then adjourned the proceedings for one hour. At 3 o'clock the members of Convocation reassembled, and there being no other candidate nominated the Vice-Chancellor declared Sir M. Foster duly elected. Sir John Rotton moved, and Professor Silvanus Thompson seconded, a vote of thanks to the Vice-Chancellor, which was carried, and the Vice-Chancellor briefly responded.

UNIVERSITIES OF EDINBURGH AND ST. ANDREWS.

PARLIAMENTARY ELECTION.—The election of a member of Parliament for the Universities of Edinburgh and St. Andrews took place in the Senate Hall of Edinburgh University on October 2nd. Sir William Muir, Vice-Chancellor, presided as returning officer. Professor Annandale nominated Sir John Batty Tuke, and observed that although he had only sat for a short time in Parliament he had proved himself to be an excellent and most useful member. The nomination was seconded by the Rev Dr. Gray, who speaking as the representative of the University of St. Andrews, observed that Sir John in his address had asked for a free hand in regard to educational and medical matters. Dr. Gray felt sure that no one wished to send him as a fettered delegate to Parliament. There was no other nomination, and the Vice-Chancellor declared Sir John Batty Tuke elected. Sir John Batty Tuke thanked the electors, and said that his unopposed election was due to the solid support he had received from the Unionist party, and the kind consideration he had met with from those members of the constituency who were not at one with them in certain matters of policy. In working for the interests of the Scottish Universities in the House of Commons he felt that he was working for the community at large.

UNIVERSITY OF ST. ANDREWS.

AT the meeting of the University Court held on September 29th the ordinances drafted by a special committee for the proposed chairs of anatomy and physiology were considered and approved with certain verbal alterations desired by Lord Bute. The ordinances will now be submitted to the Senatus Academicus and to the General Council of the University.

UNIVERSITY OF DURHAM.

AT the Convocation, holden on Saturday, September 22nd, 1900, the following degrees and diplomas were conferred, namely:

Doctor in Medicine.—J. E. Baker, M.B., B.S., Durham; F. W. Clark, M.B. Durham (*in absentia*); R. A. D. Daniel, M.B., Durham; E. E. Frazer, M.B., B.S., Durham; J. C. Grinling, M.B., Durham; C. M. O'Brien, M.B., B.S., Durham; L. W. Richards, M.B., B.S., Durham; F. R. Sutton, M.B., B.S., Durham; M. D. Wood, M.B., B.S., Durham.

Doctor in Medicine (Practitioners of Fifteen Years' Standing).—J. J. Berry, L.R.C.P.andS.E.; W. H. Crosse, M.R.C.S., L.F.P.S.G., L.S.A.; C. E. Goddard, M.R.C.S., L.R.C.P.; C. J. Hancock, M.R.C.S., L.R.C.P.E., L.S.A.; R. C. Holt, L.R.C.P., F.R.C.S.E.; M. E. Ling, M.R.C.S., L.S.A.; H. Lloyd, M.R.C.S., L.S.A.; R. A. Milligan, M.R.C.S., L.R.C.P.; A. D. Moffat, L.R.C.P.andS.E.; G. F. Nicholls, L.R.C.P.andS.E.; T. G. Parott, M.R.C.S., L.R.C.P.; G. S. Sims, M.R.C.S., L.R.C.P., L.S.A.; J. Sinclair, M.R.C.P., M.R.C.S., L.S.A.; M. C. Sykes, M.R.C.S., L.R.C.P., L.S.A., D.P.H.

Doctor in Hygiene.—W. E. Harker, M.D., B.S., B.Hy.

Master in Surgery.—H. B. Angus, M.B., B.S., M.R.C.S., L.R.C.P.

Bachelor in Medicine (M.B.).—R. Alderson, College of Medicine, Newcastle-upon-Tyne; Hedda Alström, London School of Medicine for Women; E. T. Born, College of Medicine, Newcastle-upon-Tyne; J. R. Burn, College of Medicine, Newcastle-upon-Tyne; F. W. Burn, College of Medicine, Newcastle-upon-Tyne; S. C. Clapham, M.R.C.S., L.R.C.P., Guy's Hospital; Mary Jane D'Vaz, London School of Medicine for Women; E. J. Evatt, College of Surgeons, Dublin; T. H. Hulme, London Hospital; R. T. Jupp, Mason College, Birmingham; F. W. Lambelle, College of Medicine, Newcastle-upon-Tyne; J. H. Martin, College of Medicine, Newcastle-upon-Tyne; R. A. Morland, College of Medicine, Newcastle-upon-Tyne; T. S. P. Parkinson, College of Medicine, Newcastle-upon-Tyne; R. Peart, College of Medicine, Newcastle-upon-Tyne; P. M. Perkins, St. Bartholomew's Hospital; C. M. Pennefather, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Eleanor Shepheard, London School of Medicine for Women; L. S. Smith, Mason College, Birmingham; H. R. D. Spitta, St. George's Hospital; H. C. Sturdy, M.R.C.S., L.R.C.P., Guy's Hospital; S. D. Turner, M.R.C.S., L.R.C.P., D.P.H., St. Thomas's Hospital; R. Walker, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.

Bachelor in Surgery (B.S.).—R. Alderson, College of Medicine, Newcastle upon-Tyne; Hedda Alström, London School of Medicine for Women; J. R. Burn, College of Medicine, Newcastle-upon-Tyne; F. W. Burn, College of Medicine, Newcastle-upon-Tyne; S. C. Clap-

ham, M.R.C.S., L.R.C.P., Guy's Hospital; Mary Jane D'Vaz, London School of Medicine for Women; E. J. Evatt, College of Surgeons, Dublin; R. T. Jupp, Mason College, Birmingham; F. W. Lambelle, College of Medicine, Newcastle-upon-Tyne; J. H. Martin, College of Medicine, Newcastle upon-Tyne; R. A. Morland, College of Medicine, Newcastle-upon-Tyne; P. M. Perkins, St. Bartholomew's Hospital; R. Peart, College of Medicine, Newcastle-upon-Tyne; T. S. P. Parkinson, College of Medicine, Newcastle-upon-Tyne; C. M. Pennefather, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; H. R. D. Spitta, St. George's Hospital; Eleanor Shepheard, London School of Medicine for Women; L. S. Smith, Mason College, Birmingham; H. C. Sturdy, M.R.C.S., L.R.C.P., Guy's Hospital; S. D. Turner, M.R.C.S., L.R.C.P., D.P.H., St. Thomas's Hospital; R. Walker, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.

Diploma in Public Health (D.P.H.).—W. Hardcastle, M.B., B.Hy., M.R.C.S., L.R.C.P.

HOURS OF MEDICAL CLASSES AT EDINBURGH.

For many years it has been a wise and courteous tradition in the Edinburgh Medical School that the lecturers in the Extra-Academical School should hold their classes at the same hour as the University class on the corresponding subject. The plan was attended with obvious advantages. Of late years, however, the medical faculty of the University, at the instance of this or that professor, has several times changed the hours of lecture on various subjects without addressing any communication to or holding any consultation with the extramural teachers on those subjects. The following table will indicate what is meant. The subjects of Medicine, Midwifery, and Pathology alone are taken, and the hour of lecture in five sessions is given:

	Medicine.	Midwifery.	Pathology.
Session 1896-97 ...	9 A.M.	10 A.M.	11 A.M.
,, 1897-98 ...	10 ,,	11 ,,	2 P.M.
,, 1898-99 ...	10 ,,	9 ,,	2 ,,
,, 1899-1900 ...	10 ,,	2 P.M.	11 A.M.
,, 1900-1901 ...	2 P.M.	10 A.M.	11 ,,

The teachers in the Extramural School complain of this, and several remonstrances have been addressed to us. They say they would not mind a change if the change were made and adhered to, but one class, for example, has met at a different hour every winter for the last five sessions. Perhaps the prospective change in medicine for the coming session is that which presses most inconveniently on a larger number. For long the time from 2 P.M. to 3 P.M., or from 2 P.M. till 3.30 P.M., has been the time during which Edinburgh physicians are to be found at home, and yet this hour of 2 o'clock, for some inscrutable reason, is selected as the hour at which the Professor of Medicine shall lecture, and it is expected on the part of the University that the Extra-Academical School shall follow suit. But as this would obviously be a cause of great inconvenience and loss to physicians and of annoyance to patients, several of the Extramural teachers have indicated that they will not lecture at 2 o'clock. Students, too, are complaining of the frequent changes in the hour of lecture, as making it difficult and sometimes impossible to fit in all their classes.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty:—Charles James, Fleet Surgeon, to Cape of Good Hope Hospital, November 8th; Edward T. P. Eames, Surgeon, to the *Sans Pareil*, September 26th; Gilbert Kirker, Fleet Surgeon, to the *Trafalgar*, October 9th; Percy E. Maitland, Staff Surgeon, to the *Sybille*, October 9th; Alfred Cropley, Staff Surgeon, to the *St. George*, October 9th; Edward H. McSherry, Surgeon, to the *Pallas*, October 11th; Thomas T. Jeans, Surgeon, to the *Thunderer*, for Pembroke Dockyard, October 10th; J. O'Hea, Surgeon, to the *Camperdown*, September 29th.

ROYAL ARMY MEDICAL CORPS.

Colonel C. A. Maunsell, M.D., is placed on retired pay, September 24th. He was appointed Assistant Surgeon, October 1st, 1862; Surgeon, March 1st, 1873; Surgeon-Major, April 28th, 1876; Brigade-Surgeon, December 31st, 1887; and Surgeon-Colonel, December 15th, 1892. He served with the Royal Artillery during the Bhootan campaign of 1864-5, and was present at the capture of Fort Buxa, and at the taking of the Bala Pass, the Tuzagon Stockade, and Fort Chamoorchee (medal with clasp). He was also in the Egyptian war of 1882, receiving a medal and Egyptian bronze star.

The following is substituted for the notification which appeared in the British Medical Journal of September 8th:—Colonel W. F. Stevenson, Principal Medical Officer at Army Headquarters, South Africa, is to be graded as a Surgeon-General, and to have the local rank of Surgeon-General whilst so employed, May 4th.

The following officers are returning from South Africa: Major Sir J. Clark, Major Moir, Civil Surgeons Cralky and Wood.

The undermentioned are returning invalided: Lieutenant-Colonel Battersby, Major Drury, Lieutenant J. Tandy, Quartermaster M. Niblett, Civil Surgeons Robertson, Gowan, Garron, Aitken, J. F. Lees, Stephen May, and W. J. Lindsay.

ARMY MEDICAL RESERVE.

Surgeon-Captains G. Hollies and G. H. Darwin, M.D., 2nd Volunteer Battalion the Manchester Regiment, are promoted to be Surgeon-Majors, October 3rd.

THE VOLUNTEERS.

Surgeon-Major G. W. Brumwell, 2nd Volunteer Battalion the Border Regiment, is promoted to be Brigade-Surgeon-Lieutenant-Colonel on appointment as Senior Medical Officer to the Northern Counties Brigade, Volunteer Infantry, October 3rd.

ANNUAL REPORT OF THE HEALTH OF THE IMPERIAL JAPANESE NAVY, 1897.

These statistics are drawn up on similar lines to those of our navy; the associated tabular statements in the appendix are, however, much more numerous and detailed.

The mean force of the Imperial Japanese Navy for 1897 was 14,664 (cadets 315, petty officers 2,251, seamen 12,056, employees 204, prisoners 138), in 1878 the mean force was 4,528. Officers, including warrant officers, are not included in these statistics, and though it is mentioned that there were 71 entries for disease or injury among them, no particulars are given.

Among the mean force dealt with we find an increase of 108,184 days sickness as compared with the previous year, attributed to the increase of force (1,929 men), and to the "revised regulations for the service of surgeons" enforced in 1897, which are possibly indicated by the classification of the sick as "under ordinary work, under light work, and with complete rest"; the latter class are the only sick recorded in our naval medical statistics, the term "sick" signifying unserviceableness for a time. Under the classification given the ratios per 1,000 of cases was 822.51, of invalids 14.57, of deaths 6.88.

The classification of diseases is that of the Royal College of Physicians of London. Kakké, or beri-beri, in 1882 amounted to a ratio of 404.49 cases per 1,000 of mean force, with a mortality of 26.44. From that date, owing to an improved diet and other hygienic conditions the disease rapidly declined, and in 1887 and 1888 no cases occurred; since then, however, the ratio per 1,000 has varied from 0.10 to 2.64; in 1897 it was 1.47, with a mortality of 0.33. Nineteen cases are recorded, 9 of which "occurred at shore stations," 10 afloat, in six vessels; is it possible that these latter originated ashore? The suggested explanation of these cases is that "the causes of this affection are chiefly attributable to a deficiency of certain kinds of food, which could not be taken owing to navy regulations;" a little more information on this point would be desirable. The Japanese naval authority attributes this obscure disease to defective dietary alone, according to Takaki, nitrogen starvation—a view, however, not endorsed by Manson, who attributes the virtual abolition of beri-beri in the Japanese navy to the favourable influence of other hygienic reforms associated with improved dietary. In support of this view Manson instances an outbreak in the Singapore gaol, where male and female prisoners had the same food and water, yet while the males on one side of the prison were decimated by the disease, not one female prisoner was affected.

There were 169 cases of malarial fever attributable chiefly to service in Formosa; of enteric fever 159 cases, of dysentery 24 cases, both attributed to causes outside the ships of the navy.

Diseases of the respiratory system indicate an increasing percentage, and it is specially noted that "cases of phthisis have increased year by year;" preventive measures, not however specified, were introduced in June, 1897; the results, however, are not indicated.

Venereal diseases show a ratio of 167.40 per 1,000 of mean force; these diseases are classed as gonorrhœa and its sequelæ—soft chancre, bubo, hard chancre, secondary and tertiary syphilis.

The nosological table accompanying the report is one of great detail and interest. Among other details given in the appendix are those relative to vaccination; the physical examination of conscripts, indicating a rejection of 62 per cent, for disabilities carefully recorded: food supply supplemented by money payments for extra supplies—the weights are rendered in the country *momme*, with no European equivalent, however; body weight is shown to have steadily increased in the naval complements during the last thirteen years: it is also stated that, according to lengthened observation, the body weight is at a maximum in March and minimum in September.

This annual report is a valuable contribution to naval medical statistics, and has evidently been compiled by Director-General Yasuzumi Saneyoshi, F.R.C.S.Eng., with great care.

FINANCIAL RESPONSIBILITY OF CIVIL SURGEONS IN MILITARY HOSPITALS.

Cantab. writes: If "Civil Surgeon" will refer to Paragraph 50 of the Regulation for the Army Medical Services he will find it laid down that when a "station hospital is temporarily placed in charge of a . . . . civilian medical practitioner P.M.O.s will direct a quartermaster to take over the buildings, equipment stores and supplies, and to sign the abstract of inventories. When charge of the hospital is resumed by an officer of the A.M.S., the quartermaster will transfer the equipment to him." Therefore as "Civil Surgeon" could not "take over," and ought not to have been allowed to sign the "abstract," even if he was directed to do so, such an act being contrary to regulation, it would abundantly appear that no legal responsibility could possibly be incurred by him in regard to any missing supplies or equipment of the hospital. The claim cannot be substantiated, and I should advise him to resist such a gross attempt at extortion on the part of muddleheaded authorities to the utmost.

The German Hospital at Dalston has received a donation of £1,000 from Baron Schröder in commemoration of his golden wedding.

At the recent meeting of the Committee of the Manchester and Salford Sanitary Association, Mr S. L. Helm, Treasurer, in the chair, Professor Dixon Mann was unanimously elected Chairman in succession to the late Dr. Leech.

MEDICO-LEGAL AND MEDICO-ETHICAL.

ATTENDANCE UPON SERVANTS.

F.R.C.S.E.—It is certainly not a recognised custom for a medical man to decline attending servants in a house where he does not attend the family, but he has the right to please himself.

SURGEONS' CHARGES.

A Correspondent asks if there is any way of getting guidance as to the charges to be made in a long surgical account, the items of which have been required.

*** The charges to be made under such circumstances must depend greatly on the character of the practice in the neighbourhood. A practitioner is entitled to recover the fees he is in the habit of charging, provided they are reasonable A good deal, too, must depend on the social position of the patient and the rates charged by other doctors practising in the same locality. No one can be better informed on these points than our correspondent, and on the whole the best guidance he can have in the matter is his own judgment.

HOSPITAL AND DISPENSARY MANAGEMENT.

EDINBURGH ROYAL INFIRMARY.

The following appointments have been made for six months, from October 1st:—Resident Physicians—Arthur Preston, M.B., Ch.B., to Professor Fraser; Malcolm Campbell, M.A., M.B., Ch.B., to Professor Simpson; Donald G. Hall, B.A., M.R.C.S.Eng., etc., to Dr. Smart; David B. King, M.A., M.B., Ch.B. to Dr. James; H. Crichton Miller, M.B., Ch.B., to Dr. Croom; J. M. A. Macmillan, M.B., Ch.B., to Dr. Bramwell; Frank M. Wigg, M.B., Ch.B., to Dr. Gibson; L. C. M. Wedderburn, M.B., Ch.B., to Dr. Bruce. Resident Surgeons—Hubert D. Shepherd, M.B., Ch.B., to Professor Annandale; Alexander Sharp, L.R.C.P.& S.Edin., etc., to Dr. Maclaren; H. Douglas Wilson, M.B., Ch.B., to Dr. MacGillivray; C. H. J. Watson, M.B., Ch.B., to Mr. Cotterill; J. G. S. Jamieson, M.B., Ch.B., to Mr. Cathcart. Non-resident House-Surgeons—R. J. Johnston, M.B., Ch.B., to Mr. Hodsdon; Thomas Henderson, M.B., Ch.B., to Dr. George Mackay; M. A. Reid, M.B., C.M., to Dr. Berry. Clinical Assistants—J. Stewart Geikie, M.A., M.B., Ch.B., to Professor Fraser; W. Oliphant Nicholson, M.B., Ch.B., to Dr. William Russell; Robert N. Brebner, M.B., Ch.B., to Dr. Murdoch Brown; F. M. Graham, M.B., Ch.B., to Dr. Lovell Gulland; C. M. Pearson, M.B., Ch.B., to Dr. J. J. Graham Brown; H. Torrance Thomson, M.D., to Dr. P. M'Bride; C. Balfour Paul, M.B., Ch.B., to Dr. MacGillivray; William Hope Fowler, M.B., Ch.B., to Dr. Milne Murray. The following were appointed clinical tutors for the ensuing winter and summer sessions—Dr. G. F. Barbour Simpson, to Professor Simpson's University Gynæcological Wards: Dr J. G. Cattanach (reappointed), Dr. J. M. Beattie (reappointed), Dr. Edwin Matthew (reappointed), to the University Medical Wards; Dr. J. Lamond Lackie (reappointed), to Dr. Halliday Croom's Gynæcological Wards; Dr R. B. Purves, to Professor Annandale's University Surgical Wards; Dr. R. Scott-Skirving (reappointed) to Dr. Maclaren's Wards; Dr David Waterston (reappointed), to Dr. MacGillivray's Wards; Dr. T. T. Thomson, to Mr. Cotterill's Wards.

MOORFIELDS OPHTHALMIC HOSPITAL.

The Royal London Ophthalmic Hospital appears to be in serious financial straits. The old building was condemned some years ago as insanitary, and the new building on the new site is all that can be desired, but it cost more than the old building and its site brought in, it is subject to a ground rent of £1,210 a year, and it is rated by the parish at £870 a year. The committee have paid £510 and were summoned last week by the overseers for the balance. The Secretary stated that the hospital had no available money and was heavily in debt to tradesmen. The magistrates, however, said that they had no alternative but to order payment of the amount within fourteen days. A Committee of the House of Commons has recommended that hospitals should be exempt from parish rates. If hospitals were municipalised, and therefore supported by the rates, the question would not arise. Those who do not look upon this as a satisfactory solution of the hospital difficulty will be disposed to think either that hospitals should be exempt from rates, or that the public should give more liberal support.

MANCHESTER ROYAL INFIRMARY.

Some time ago a special Committee was appointed by the Board of Management of the Manchester Royal Infirmary, with the approval of the trustees, to "ascertain whether or not a hospital suitable in every way can be built on a plan other than the pavilion." The Committee had before it an opinion expressed by the Medical Board to the effect "that it is uncertain whether the pavilion system it so absolutely necessary as it has been thought to be up to the present time, and it may be well to consider whether some other system requiring less ground may not be adopted." The Committee addressed a series of questions to some leading members of the medical profession, and received replies as follows: Lord Lister, Sir William Mac Cormac, Sir Thomas Smith, and Professor Macewen expressed the opinion that the pavilion was ideally the best method of construction, but considered it possible to build a satisfactory hospital on other than the pavilion system. Mr. Holmes considered that the H-shape building or blocks radiating from a central administrative building was more satisfactory than the pavilion system; and Mr. Howard Marsh held that the pavilion system was not only not essential, but in some respects inconvenient and open to positive objection. Professor Clifford Allbutt and Professor Annandale considered that the pavilion form of construction was essentially the best. The Chairman of the Committee stated that Mr. Hardie, the Chairman of the Medical Board, had written to him as follows: "Not only has no consensus of professional opinion been before obtained, but no such inquiry as we have made has ever been carried out. Hitherto it has been thought that medical opinion was wholly in favour of a pavilion plan exclusively. We have found that this is a complete mistake. The consequence of this is that in future hospital authorities will be less fettered, and will give effect to their wishes at lessened cost." The report of the Committee, which has been approved by the Board of Management, is as follows: "That this Committee, having taken such professional evidence as it has deemed advisable, hereby reports to the Board of Management that it is unanimously of the opinion that a hospital suitable in every way can be built on a plan other than the pavilion." The Board has now instructed the Special Committee to take steps to obtain plans and estimates and to incur all necessary expenses in connection therewith.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,079 births and 4,110 deaths were registered during the week ending Saturday last, September 29th. The annual rate of mortality in these towns, which had declined from 21.7 to 18.1 per 1,000 in the four preceding weeks, rose again to 18.5 last week. The rates in the several towns ranged from 11.1 in Bradford, 11.9 in Halifax, and 14.7 in Croydon, in Portsmouth and in West Ham, to 23.0 in Liverpool, 23.6 in Blackburn, 26.6 in Manchester, and 27.6 in Salford and in Sunderland. In the thirty-two provincial towns the mean death-rate was 19.6 per 1,000, and exceeded by 2.9 the rate recorded in London, which was 16.7 per 1,000. The zymotic death-rate in the thirty-three towns averaged 3.5 per 1,000; in London this death-rate was equal to 2.5 per 1,000, while it averaged 4.1 in the thirty-two provincial towns, among which the highest zymotic death-rates were 6.4 in Norwich and in Leicester, 7.0 in Preston, 7.4 in Sunderland, and 7.6 in Wolverhampton. Scarlet fever caused a death-rate of 1.1 in Sunderland; whooping-cough of 1.0 in Oldham and in Sheffield, 1.2 in Croydon, 1.5 in Swansea, and 1.8 in Preston; "fever" of 1.0 in Portsmouth, 1.3 in Preston, and 2.1 in Portsmouth; and diarrhœa of 5.1 in Manchester, 5.3 in Sunderland, 5.4 in Burnley, and 7.6 in Wolverhampton. The mortality from measles showed no marked excess in any of the large towns. The 79 deaths from diphtheria in the thirty-three towns included 40 in London, 9 in Leicester, and 4 in Sheffield. No fatal case of small-pox was registered last week, either in London or in any of the thirty-two large provincial towns; and only 2 small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last, September 29th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 1,702 to 1,804 at the end of the four preceding weeks, had further risen to 1,938 on Saturday last; 318 new cases were admitted during the week, against 213, 243, and 269 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, September 29th, 875 births and 584 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 18.9 per 1,000 in each of the two preceding weeks, was again 18.9 last week, and exceeded by 0.4 per 1,000 the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 17.1 in Dundee and 17.2 in Leith, to 20.2 in Perth, and 21.5 in Aberdeen. The zymotic death-rate in these towns averaged 2.9 per 1,000, the highest rates being recorded in Leith, Greenock, and Perth. The 268 deaths registered in Glasgow included 3 from measles, 6 from scarlet fever, 4 from diphtheria, 5 from whooping-cough, 7 from "fever" (including 3 from bubonic plague), and 21 from diarrhœa. Fourteen fatal cases of diarrhœa were recorded in Edinburgh; 3 of whooping-cough and 3 of diarrhœa in Dundee; 4 of diarrhœa in Aberdeen and in Leith; 2 of "fever" and 2 of diarrhœa in Paisley; and 2 of whooping-cough in Greenock.

A POINT IN VACCINATION LAW.

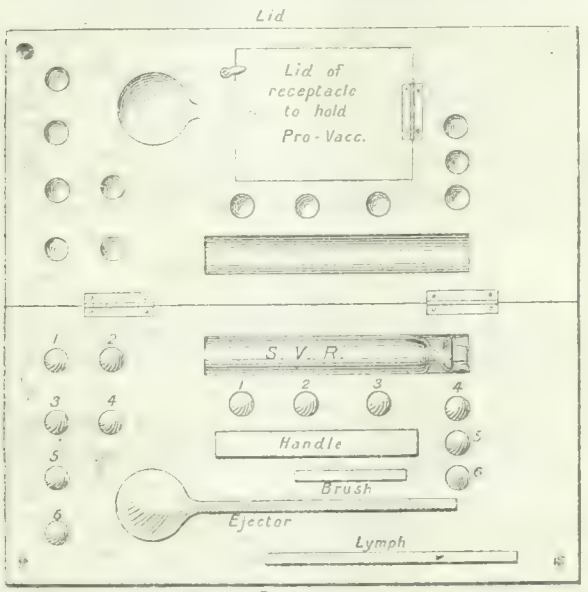
A case decided by Sheriff Boyd at Glasgow with regard to the administration of the law as to primary vaccination is, it is thought, likely to have a bearing upon a number of other cases if his decision is upheld by the High Court of Justiciary to which an appeal has been lodged. The circumstances appear from the Sheriff's decision, which we quote from the *Glasgow Evening News*: "The Vaccination Act provided that in a parish where a birth is recorded, there also after a proper interval shall the vaccination of the child be performed. If the vaccination of the child is neglected, the registrar is required to send the name of the defaulter to the inspector of poor of the parish, who must submit it to the local authority, who in turn orders the vaccinator to vaccinate the child. The assumption apparently is that the defaulter continues to live in the parish of the birth. The Act does not provide for the case of a defaulter who removes from that perish. Section v of the Act authorises and requires the Board of Supervision (now the Local Government Board) to make regulations under the Act. The Board of Supervision made a regulation that when an unvaccinated child was removed from the parish of birth to a known address, the inspector of poor of the parish of birth must give notice to the inspector of poor of the parish of the defaulter's new residence, who must report to his Board, who in turn must order their vaccinator to operate. The regulations authorised by the Act are rules for carrying out the provisions of the Act; but it seems that the regulation in question does more than this, for it provides for circumstances not provided for by the Act. I think the regulation is convenient,

and that it does harm to no person, and accordingly that any objection to it is of a technical nature. But, at the same time, I think there is nothing in the Act providing for the proceedings taken in this case, and I do not think that the regulation can supply the omission."

ANTISEPTIC VACCINATION.

Dr. Henry Renney, Public Vaccinator for Sunderland Union, writes: In reply to the query of "Didymus" in the British Medical Journal of September 8th, *re* antiseptic and dressing for vaccination, I beg to say that I consider spiritus vini rect. the best and cheapest antiseptic. I got the idea from a correspondent in the Journal. I carry a half-ounce of S.V.R., which I find more than enough for nine arms. I moisten a pledget of cottonwool in the spirit, wash the arm with it, and allow it to evaporate while getting my capillary tube broken and ready for use; then having put the wool in a small holder with platinum wire loop on end I vaccinate with a modified Cooper Rose vaccinator; now taking up the wool in the holder I set fire to the spirit and sterilise my spatula in it and rub the lymph into the vaccine insertions on the arm. I then moisten around the four insertions with pure water and apply a sheet of pro vacc. (300 sheets for 3s.), apply a bandage, and the case is finished. I have most excellent results.

The following is a description of a case I invented and made myself. It is made of wood and is 6½ inches long by 4½ inches wide, and when closed 1½ inch thick. I have six circular holes out in the bottom to take six modified Cooper Rose vaccinators. The six holes in top take the



top of the vaccinators when the lid is closed. I put my six vaccinators when sterilised in the holes under the bottle marked S.V.R. I have the dozen holes on the left (in lid and bottom) filled with pledgets of cottonwool. When I have used No. 1 vaccinator I put it into No. 1 hole on left—the sheep on the right (aseptic), the goats on the left (septic) to prevent me using it again. In the space below the vaccinators on the right is a hollow metal handle to screw on to the vaccinators; this handle contains a steel spatula and a loop of platinum wire. The platinum wire loop, itself on a handle, is used to hold the cottonwool saturated with spirit, and when the latter is ignited makes a little lamp which burns quite long enough to sterilise the spatula. When I have used all my vaccinators I thoroughly sterilise them at home. I do not do more than six vaccinations in one morning. Everything I carry is provided for in this box, except bandages, which I take in my pocket. The inspector has approved of these vaccinators and of the method of using them.

NON-RESIDENT DISTRICT MEDICAL OFFICER.

A correspondent asks whether the Local Government Board would sanction (for a newly-constituted district) the appointment of a non-resident medical officer who lives near the centre of the district when the only medical practitioner in the district lives at a distance from the majority of the patients, who could not consequently obtain his services so easily as they could those of the non-resident.

*** The Local Government Board would probably under such circumstances confirm the appointment of the non-resident medical officer if the guardians elect him.

INSPECTORS OF NUISANCES.

A Medical Officer of Health wishes to know (1) whether an urban district council can appoint more than one inspector of nuisances whose salaries are in part payable by a county council; (2) whether it is now indispensable for anyone applying for the post of inspector of nuisances to hold a certificate of having passed an examination in sanitary work.

*** (1) Section clxxxix of the Public Health Act, 1875, states that: "Every urban sanitary authority shall..... appoint fit and proper persons to be medical officer of health, surveyor, inspector of nuisances, clerk, and treasurer.....and shall also appoint or employ such assistants as may be necessary and proper for the efficient execution of the Acts." Section cxc of the same Act states that "every rural authority shall..... appoint fit and proper persons to be medical officer or *officers* of health and inspector *or* inspectors of nuisances."

It would appear, therefore, that an urban authority (outside the metropolis) can only appoint one sanitary inspector, and on this account can only recover a part of the salary from the county council in respect of the one inspector. Any other inspectors appointed would be assistants. In certain borough towns the whole matter is dealt with in local Acts.

(2) No, except in the case of the metropolis.

MEDICAL NEWS.

The new scientific laboratories at King's College, London, will be opened by Lord Lister, on October 30th.

The Berlin Chief of Police has appointed Fräulein Agnes Hacker, M.D., as medical officer for female prisoners. She is the first lady doctor appointed to such a position.

Dr. Yersin, to whom the Academy of Moral Sciences recently awarded a prize of 15,000 francs in recognition of his services to the cause of philanthropy, has devoted the sum to his antiplague serum establishment at Nha-trang.

The Brompton Consumption Hospital.—On the evening of October 2nd, according to a custom which has now become well established the medical staff of the Hospital for Consumption and Diseases of the Chest, Brompton, gave a smoking concert which was attended by a number of old residents of the hospital and others who have been connected with it in various capacities.

"Medical Service in State at St. Paul's."—We are asked to state that the the Bishop of Rochester has consented to preach the sermon at St. Paul's Cathedral on Wednesday, October 17th, at 7.30 p.m., at the annual service organised by the Guild of St. Luke, and attended by the members of the medical profession. A choir of over 200 voices, provided by the London Gregorian Association, will again render the music. Admission to the space under the dome will be by ticket only.

The Cambridge Appointments Association, in the October number of the *Appointments Gazette*, announces that the annual report will be published shortly, but states meanwhile that a satisfactory beginning has been made. The object of the Association is to put Cambridge men in the way of obtaining appointments after graduation by entering into communition with employers, and by notifying wants on both sides. The Secretary of the Association is Mr. W. A. J. Archbold, M.A., 73, Trumpington Street, Cambridge.

The Plumbers' Company.—At the quarterly meeting, on September 29th, of the Court of the Plumbers' Company, Mr. Charles Hudson was sworn into the office of Master, and Mr. Alderman Richard Hind and Alderman Sir John Knill, Bart., into the offices of Warden and Renter Warden respectively for the year ensuing. Dr. F. J. Waldo, M.O.H. for the Temple and St. George's, Southwark, and Dr. Reginald Dudfield, M.O.H., Paddington, were admitted to the Freedom and Livery of the Company.

Lieutenant-Colonel J. R. L. Macdonald, who commanded the Juba Exhibition of 1897-99, contributes to the last number of the *Journal* of the Anthropological Institute, a paper on the tribes inhabiting the country north of the Victoria Nyanza and west of Lake Rudolf. In the course of his notes on the Masai he states that the connection between mosquitos and malarial fever is a well-established article of belief among some tribes of this group. The males, he adds, for the most part go naked, while the females are "more or less decently dressed."

A "Business Association" of Detroit Practitioners.—A "Physicians' Business Association" has, according to the *New York Medical Journal*, been formed in Detroit to promote professional and fraternal goodwill: to correct the abuse which the profession has long suffered through non-payment of legitimate fees; to agree upon a uniform fee bill, and to

regulate the relations of the members to each other and to the public hospitals, dispensaries, and public charities. It is also proposed to found a mutual aid fund for members in full standing. The affairs of the association are to be conducted by the officers and a Board of governors, which will be composed of one representative from each ward of the city, each governor to be elected by the practitioners residing within the ward which he represents. Should any practitioner decline to join the organisation after being duly solicited, the members will be forbidden to consult with the offender. It is proposed to circulate each month among the members of the association a printed "black list" of persons who refuse to pay their doctor's bill. It is reported that nearly 400 signatures to the call for organisation have already been secured.

MEDICAL VACANCIES.

The following vacancies are announced:

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—Resident Surgeon; unmarried. Salary, £80 for the first year, increasing to £100, with board and furnished apartments. Applications to the Secretary by October 22nd.

BIRMINGHAM: CITY FEVER HOSPITAL.—Second Assistant Medical Officer. Salary, £120 per annum, with board, residence, etc. Applications to the Medical Superintendent.

BOURNEMOUTH: THE BOSCOMBE HOSPITAL.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Secretary by October 8th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—(1) Resident Pathologist. Salary, £70 per annum. (2) Assistant House-Surgeon. Salary, £60 per annum. Board and residence provided in each case. Candidates must be unmarried, and under 30 years of age. Applications to the Secretary by October 10th.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant House-Surgeon," to the Secretary.

CHESTER: COUNTY ASYLUM.—Junior Assistant Medical Officer; unmarried and not more than 30 years of age. Salary £130 per annum, increasing to £160, with board, lodging, and washing. Applications to Dr Lawrence at the Asylum by October 11th.

CITY DISPENSARY.—Physician. Applications to the Secretary, 98, Cannon Street, E.C., by October 19th.

CITY OF LONDON ASYLUM (near Dartford).—Second Assistant Medical Officer and Pathologist; unmarried, and under 30 years of age. Salary, £150 per annum, with board, furnished apartments, etc. Applications to the Clerk to the Visiting Committee, Guildhall, E.C., by October 26th.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House-Physician. Appointment for six months. Salary at the rate of £30 per annum, with board and residence. Applications to the Secretary by October 8th.

CROYDON BOROUGH HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer. Salary, £120, rising to £140 at the end of six months, with board and residence. Applications, endorsed "Resident Medical Officer," to Dr. Meredith Richards, Medical Officer of Health, Town Hall, Croydon, by October 18th.

DOUGLAS: NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon; unmarried. Salary, £72 per annum, with board and washing. (Is usually appointed Medical Attendant of the House of Industry at a salary of £10 per year.) Applications to the Honorary Secretary, 25, Athol Street, Douglas, by October 9th.

DUNDEE ROYAL INFIRMARY.—Resident Medical Assistant. Appointment for six months. Salary at the rate of £40 per annum, with board and washing. Applications to Dr. Fraser, Medical Superintendent, by October 10th.

FRENCH HOSPITAL, London.—Resident Medical Officer; unmarried. Salary, £80 per annum, with full board. Applications to the Secretary, 172, Shaftesbury Avenue, W.C.

HALIFAX ROYAL INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing. Applications to the Secretary by October 17th.

HULL: CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer. Salary, £150 per annum, with board, apartments, and washing. Applications (on forms provided) endorsed "Assistant Medical Officer," to be addressed to the Chairman of the Asylum Committee, care of the Town Clerk, Town Hall, Hull, by October 19th.

KENT AND CANTERBURY HOSPITAL.—House-Surgeon: unmarried. Salary, £100 a year, with board and lodging. Applications to the Secretary by October 15th.

KENT COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried, and under 30 years of age. Salary, £125 per annum with board, lodging, and washing. Applications to the Medical Superintendent before October 16th.

LANCASTER COUNTY ASYLUM.—Assistant Medical Officer. Salary commencing at £125 per annum, with usual allowances. Applications to the Medical Superintendent.

LIVERPOOL INFIRMARY FOR CHILDREN (Myrtle Street).—Assistant House-Surgeon. Appointment for six months. Salary, £25 with board and lodging. Applications to the Honorary Secretary.

LONDON TEMPERANCE HOSPITAL, Hampstead Road.—Resident Medical Officer. Salary, 100 guineas per annum, with board, lodging, and washing. Applications to the Secretary by October 13th.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House-Surgeon. Honorarium at the rate of £60 per annum, and board. Applications to Mr. G. W. Fox, 83, Princes Street, Manchester, by October 13th.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for the In-Patient Department, Bowdon. Salary, £60 per annum, with board, apartments, and washing. Applications to the Secretary before October 8th.

NOTTINGHAM CHILDREN'S HOSPITAL.—House-Surgeon. Appointment for six months but eligible for re-election. Salary at the rate of £100 per annum. Applications to the Secretary, Mr. A. F. Kirby, St. Peter's, Church Walk, Nottingham.

ROTHERHAM HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to Mr. J. S. Martin, the Hospital, Rotherham, by October 8th.

ROYAL EYE HOSPITAL, Southwark.—House-Surgeon. Appointment for six months, but renewable. Salary 50 guineas per annum, with board and residence. Applications to the Secretary by October 8 th.

RYDE: ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £70, and £10 for lectures to nurses. Applications to the Secretary by October 16th.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone Road, N.W.—Physician to the Out-Patients' Department. Applications to the Secretary by October 13th.

SUNDERLAND INFIRMARY.—(1) House-Physician, (2) House-Surgeon. Salaries, £80 rising to £100 per annum, with board and residence. Applications, endorsed "Applications for Resident Medical Appointment," to the Secretary, by October 17th.

TIVERTON INFIRMARY AND DISPENSARY.—House-Surgeon, unmarried. Salary, £80 and board, lodging and washing. Applications to the Honorary Secretary by October 31st.

SOUTHPORT INFIRMARY.—Honorary Surgeon for the Treatment of Eye Diseases. Applications to the Secretary, 24, King Street, Southport, by October 18th.

STOURBRIDGE DISPENSARY.—House-Surgeon. Salary, £120 increasing to £130, with furnished rooms, etc., £25 and allowance for travelling expenses. Applications to the Secretary by October 16th.

WESTMINSTER HOSPITAL, S.W.—Assistant House-Surgeon. Appointment for three months, followed by six months as House-Surgeon. Applications to the Secretary.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Physician. Salary, £160 a year, with board, lodging, and washing. Applications to the Secretary by October 18th.

MEDICAL APPOINTMENTS.

CHURCH, Alda L., M.D., R.U.I., appointed Medical Superintendent to the Lady Aitchison Hospital, Lahore, Punjab, *vice* Miss Beilby, M.D., resigned.

COOPER, H. S., M.R.C.S., L.R.C.P.Lond., appointed Certifying Factory Surgeon for the Yaxley District of the County of Huntingdon.

CRAWTREE, W., B.Sc.Vict., M.B., Ch.B., appointed Medical Officer for the Workhouse of the Stoke-upon-Trent Union, *vice* C. D. Outred, M.R.C.S.Eng., resigned.

JOYNT, Richard Lane, F.R.C.S., appointed Surgeon to the Meath Hospital, Dublin, *vice* Sir William Stokes, deceased.

MARSH, James, M.B., C.M.Edin., appointed Certifying Factory Surgeon for the Urban District of Tyldesley and Atherton in the County of Lancaster.

MARTIN, Ernest W., M.B., Ch.B., appointed Resident Medical Officer to the City of London Hospital for Diseases of the Chest, Victoria Park.

O'DONOGHUE, J., L.R.C.P., L.R.C.S.I., appointed Medical Officer for the Howth Dispensary District.

POLLARD, W.B., M.R.C.P.Edin., L.R.C.S.I., appointed Medical Officer for the Blackburn Union Cottage Homes.

RIDDELL, Robert, M.B., C.M.Edin., appointed Certifying Factory Surgeon for the Sandback District of Cheshire.

ROSS, Robert H., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer to the Whitehead Constabulary.

SMITH, W. R., M.D.Lond., appointed Medical Officer for the Beeston and Wollaton District of the Basford Union, *vice* J. Orton, M.D.

WRIGHT, H. T., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer of Health for the No. 3 District of Alston, *vice* E. W. Short, L.R.C.P., L.R.C.S.Edin., resigned.

RHYS, Owen L., M.B., Ch.B.Edin., appointed Assistant House Physician to the Cardiff Infirmary.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 8 P.M.—General Meeting, 8.30 P.M., Ordinary Meeting: Address by the President (Mr. J. H. Morgan): The Romance of Surgery.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Jas. Galloway: Consultation. (Skin.)

TUESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Jas. Taylor: Consultation. (Medical.) 6 P.M., Dr. J. E. Squire: Class. (Applied Anatomy.)

Society for the Study of Inebriety, 11, Chandos Street, Cavendish Square, 4 P.M.—Surgeon-Major Poole, M.D., on Inebriety: a Crime or a Disease.

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 5 P.M.—Sir W. Gowers: Clinical Lecture, "The Diagnosis of Epilepsy."

THURSDAY.

British Gynæcological Society, 8 P.M.—Specimens will be shown by Drs. Elder, R. T. Smith, and Herbert Snow, and Mr. Bowreman Jessett. Paper by Dr. Heywood Smith on Treatment in Gynæcology.

Charing Cross Hospital Post-Graduate Course, 4 P.M.—Dr. J. Mitchell Bruce: Medical Cases in the Wards.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Poynton: Demonstration of Selected Cases.

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Treacher Collins: Consultation (Eye.) 5.15 P.M., Mr. Hayward Pinch: The Clinical Examination of the Blood.

Clinical Society of London, 8.30 P.M.—Address by the President. Papers:—Sir Dyce Duckworth and Mr. Howard Marsh: A Case of Acute Actinomycosis. Mr Mansell Moullin: Three Cases of Gastrotomy for Hæmatemesis. Dr. Norman Dalton: The Sequel to a Case of Hydatid of the Liver, showing also the Result of Abdominal Section in Ascites.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGES.

JOHNSTON—ALLEN.—At the Windsor Hotel, Glasgow, on Wednesday, September 26th, by the Rev. A. Scott Matheson, assisted by the Rev. J. Anderson Smith, Alexander Johnston, M.D. Glasg., to Jean Anderson, eldest daughter of Richard Allen, L.R.C.P., Glenfield, Dumbarton.

PATERSON—GARRETT.—At St. Mary's, Blathwick, on September 27th, Arthur William Paterson, M.B., C.M., Ipswich, to Faith Mary, daughter of Henry Newson Garrett, of Sydney Place, Bath.

TODD-WHITE—WATERHOUSE.—On September 29th, at St. Clement Danes, by the Rev. William Warburg, M.A., Vicar of St. Andrew's, Leytonstone, Arthur Thomas Todd-White, M.R.C.S.Eng., L.R.C.P.Lond., L.S.A., of Wentworth Lodge, Leytonstone, to Elsie, daughter of John W. Waterhouse, Esq., of Forest Drive, Leytonstone. "At Home," October 23rd, 24th, and 25th.

DEATHS.

MASSIAH.—September 30th, at Bournemouth, suddenly, Benjamin Jones Massiah, Esq., M.D., of Didsbury, Manchester, aged 53 years.

ROBINSON.—September 28th, at 116, Stanley Road, Liverpool, after a short illness, Montague George Robinson, M.R.C.S., L.R.C.P.E., aged 39.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.
CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.
CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.
CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Roentgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.
CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.
CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.
EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.
GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.
GUY'S. *Attendances.*—Medical, i.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, i.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, i.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, i.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.
HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12 *Operations.*—M. Th., 2; Th. S., 9.30.
KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.
LONDON. *Attendances.*—Medical, daily, i.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.
LONDON TEMPERANCE. *Attendances.*—Medical, i.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, i.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.
LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.
METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.
MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.
NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.
NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.
NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.
ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.
ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.
ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.
ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.
ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; i.-p., Tu. Th., 2.30.
ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2
ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Th., 9. Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2
ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; i.p., 1; o.p., 12; Obstetric, i.p., Tu. F. 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.
ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.
ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.
ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.
ST. THOMAS'S. *Attendances.*—I.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30 Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M. 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Tu., 3; (Throat), M., 9.30; (Ear), Th., 9.30.
SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.
THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily, exc. M., 10.
UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.
WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 3; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.
WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ Queries, answers, and communications relating to subjects to which special departments of the BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

C. K. M. would be glad to know where he can find a good recent article or monograph on facial neuralgia.

PILOCARPIN asks whether a seaside resort such as Blackpool a favourable place for rheumatism. Could any of our readers recommend a neighbourhood suitable for a rheumatic case, preferably Yorkshire?

INCUBATION PERIOD OF PLAGUE.

INTERESTED asks for practical experience as to the length of incubation in bubonic plague, its early diagnosis, and first treatment.

TREATMENT OF THREADWORMS.

NAVALIS writes: What is the best treatment for threadworms in a child of 8 years old? All the usual remedies have been tried, including two courses of naphthalin, injections, cascara, etc., with only temporary relief. Santonin has been given but not pushed. Has any member any experience of injecting santonin *per rectum?* The condition has persisted about three years.

AUSTRALIAN CLIMATE FOR EARLY PHTHISIS.

W. H. L. asks whether the climate of Western Australia would probably suit an early phthisical patient, or whether some other part of Australia would be more likely to agree.

*** We are indebted to Dr. C. G. Drummond Morier, representative of the Adelaide and South Australian Branch of the British Medical Association, for the following reply: The climate of Western Australia would probably suit an early phthisical patient. But unless he has any special reason for proceeding there, it would be better for him to settle in South Australia, where the cost of living is less and life generally more enjoyable; and where, as a rule, patients in an early stage of phthisis do well.

WINTER CRUISE FOR PATIENT WITH HÆMOPTYSIS.

M. would feel greatly obliged for suggestions as to a good cruise for a patient who has an attack of hæmoptysis, extending from the middle of October to May 1st or 15th.

*** We have referred this question to Dr. Theodore Williams, who has been good enough to return the following answer: The best winter sea voyage in a steamer for a case of phthisical hæmoptysis is the one round the Cape to Australia or New Zealand, as it ensures the most equable climate. When done by the old clippers the results were first-rate, but now the steamers make it too short. Most steamers to Australasia go through the Suez Canal and Red Sea, where in October and November the heat is very great, and only a few choose the Cape route. The Shaw, Savill, and Albion Company (Royal Albert Docks), 51, Pall-mall, S.W., and the Aberdeen Line to Australia (Savill and Crowther, 18, Cockspur-street) go round the Cape and take about forty-two days to reach Australia. Your patient might spend some time in Australia and New Zealand, preferably in the country districts, and return to England by the same route that he came. This is the best winter voyage. Another good voyage is the Brazilian one to Lisbon, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, Monte Video, Buenos Ayres, and back, occupying three to four months.

We may point out that at the present time there are vexatious quarantine regulations at Argentine ports against ships which have touched at Brazilian ports.

ANSWERS.

MIZPAH.—Professor Budin of Paris has had good results from the use of undiluted cow's milk even during the first few months of life. Much must depend on the quality of the milk and the physical condition of the infant.

TREATMENT OF RINGWORM.

DR. A. C. GODFREY (Southampton) writes in answer to "Tinea" to recommend 1 in 4 solution of mercury biniodide in sodium chloride. Take red iodide of mercury 3ss, 1 in 4 solution of sodium iodide in water 3ss; shake until dissolved. Dilute this solution of bromide with three parts of water and apply with a brush.

DR. JOHN ORMSBY (Dover) writes: If "Tinea" will carry out the following treatment he will be surprised that he ever regarded ringworm as a serious or troublesome complaint. Make a mop with a strip of lint wrapped round the end of a pen handle. Soak this in liquor potassæ, and scrub each spot, including a quarter of an inch of the margin, until all the thickened scales are melted off, and the surface is studded over with fine red points. Wipe with a soft cloth, and with a similar mop apply the following four times a day: Carbolic acid 1 part, glycerine 4 parts. The liquor potassæ should be applied once a week by the surgeon; three applications generally suffice. The carbolic acid can be applied by the nurse after instruction, and should be continued until the skin is smooth and the hair grows in a healthy way with natural lustre.

LUMINOUS PAINT FOR NIGHT BELLS.

DR. A. CORDES, M.R.C.P. Lond. (Geneva), writes: "Far Away" (BRITISH MEDICAL JOURNAL, 1900, ii., p. 870) could use Nemitz's luminous paint. When I bought it from him he had his shop in Passage Jouffloy, Paris. The "paint," which lasted a long time, was placed on a sheet of strong paper, under a piece of glass, perforated for the button of the

electric bell. Any indication can be written on the paper or on the glass. I do not remember how much it cost, but I am sure it is inexpensive.

WORKS ON HYGIENE.

HYGIENE.—For preparing a popular course of lectures on hygiene, to meet the requirements of the Science and Art Department (elementary stage), our correspondent would do well to consult either *Hygiene*, by Notter and Firth (Longman, Green and Co., London, 3s. 6d.), or *Hygiene*, by Newsholme (George Gill and Sons, Warwick Lane, London, 3s. 6d.) Probably the latter is the more suitable textbook for the class, but the former should also be consulted in preparing the lectures.

THE M.D. DURHAM FOR PRACTITIONERS.

ONE WHO PASSED RECENTLY sends the following list of books most applicable for the M.D. Durham: Taylor's *Medicine*, Parkinson's *Medical Diagnosis*, Pick's *Surgery*, Treves's *Surgical Anatomy*, Jellett's or Dakins's *Midwifery*, Lewers's *Diseases of Women*, Guy and Ferrier's *Medical Jurisprudence*, Savage's *Manual on Insanity*, Parkes's *Hygiene*, Green's *Pathology*. In addition to the above books, the candidate must have a good knowledge of microscopic pathology and bacteriology. I had to spot eight specimens under the microscope.

M.D. DURHAM writes: "Anglican" will find the following books sufficient for the M.D. (practitioners) Durham University: Gray's *Anatomy* for the thoracic, abdominal, and pelvic viscera, the principal arteries, surgical anatomy of the different regions, such as the axilla, popliteal space, etc.; Holden's *Landmarks* or Ellis's *Dissection* may be used instead of Gray; Starling's *Elements of Physiology*, Whitelegge's *Hygiene and Public Health*, Pepper's *Elements of Surgical Pathology*, Walsham's *Theory and Practice of Surgery*, Roberts's *Theory and Practice of Medicine*, Fagge and Pye-Smith's *Principles and Practice of Medicine*, Blandford's *Insanity and its Treatment*, Hawthorne's *Forensic Medicine*. Read the account of the principal drugs in Ringer's *Therapeutics*. If he resides in the neighbourhood of a medical school he would do well to go over a few dissected parts and attend in the hospital wards. I place the books in the order that most suits the average pocket. The value of a degree is great. A man may be satisfied with the double qualification of the London Colleges for some time; but if, after a few years' practice, he aspires to the post of physician to his county hospital, he finds himself barred, not having a degree. Or, take the difference between two men practising in the British Colonies or South America, one with a degree and another without, it would be very manifestly to the advantage of the gentleman holding the degree. May I take the opportunity to say what a pity it is that the friends of students commencing their professional studies do not place before them the extreme desirability of obtaining a degree in medicine besides the usual diplomas of College and Hall? The old-fashioned plan of two years' pupilage and three years at a hospital has passed away; then why not pass the first two years at one of the English Universities, Durham, Cambridge, or Oxford? Or, in travelling, everyone knows what M.D. means after a man's name, but everyone does not know the meaning of L.K.Q.C.P.I. Much more in favour of a degree might be said.

DR. STENSON HOOKER (Olive Vale, Hastings) writes: If "Anglican" will write to me, I shall be pleased to give him the list of books he asks for, besides other valuable information *re* the Durham examination for practitioners.

MARRIAGE IN A WOMAN WITH NEUROTIC HISTORY.

PSYCHE writes: The patient referred to by "Neuron" (BRITISH MEDICAL JOURNAL, September 29th, p. 967) would appear to have a more pronounced neurotic tendency than is probably suspected. Although actual insanity may not have been present in other relations, there are, in most of these cases, to be discovered some "obliquities" in other members of the family of lesser degree, but (from the point of view of the correspondent) of equal importance. Assuming that this is the case, the tendency for the patient would be to show mental symptoms under any special "stress" late in life; for example, climacteric, or senility, and the tendency to their production would appear to be equally as great whether she marry or not, if the marriage take place late; in many cases is even greater if she do not marry. Therefore, from the point of view of the patient's mental health, permission might fairly be given to marry, always remembering that the marriage in itself has to be regarded as a special "stress" in the sense used above; the value to be put on this factor must be judged from the prospective husband, etc. Naturally the effect of possible pregnancy should be considered from the mother's point of view and the child's. Neither of these questions can, however, be satisfactorily answered from the existing data.

NOTES, LETTERS, Etc.

ERRATA.—In the paper on The Effects of Inhalation of Certain Anæsthetics on the Kidneys by Drs. Dudley Buxton and A. G. Levy, published in the BRITISH MEDICAL JOURNAL of September 22nd, the words "Table III shows the result of the observations of seven cases in which chloroform was administered" (lines 1 and 2 right hand column) were accidentally transposed in the make-up. They should have been before the paragraph beginning "In 5 cases," on p. 838. In the report of Sir William Broadbent's remarks in the discussion on Influenza as it Affects the Nervous System, published in the JOURNAL of September 29th, p. 880 *et seq.*, on page 881, line 31 left hand column, the word "years" should be "hours."

DRINKING URINE.

STAFF-SURGEON W. EAMES, R.N., H.M.S. *Theseus*, Dede Agatch, Turkey, writes: In connection with the correspondence in the BRITISH MEDICAL JOURNAL of September 15th on the subject of "urine drinking," I learn from a brother officer in this ship that the negroes in Barbados drink their urine and apply it locally to the face for the removal of pimples and blotches, the urine used being that first passed in the morning. I am also informed indirectly that the Eskimo takes his yearly, or at least half-yearly bath in urine, which secretion is also used by them in curing the skins of animals obtained by them in hunting.

DR. CORDES (Geneva) writes: Dr. William Craig's note (JOURNAL, 1900, ii. p. 876) reminds me of a similar practice. For ophthalmia it was customary in this country to bathe the inflamed eyes with one's own urine, the urine, when standing for some time, becoming alkaline. It may have some effect in some cases.

THE ROYAL MASONIC INSTITUTE FOR GIRLS.

DR. JAS. GREEN (Brandon House, Mile End, Portsmouth), writes: Will you allow me, through the BRITISH MEDICAL JOURNAL, to ask any medical man who is a subscriber to the Royal Masonic Institution for Girls, to cast his votes for Doris Sall (No. 24 on the ballot paper) the daughter of one of our older practitioners in this town? His health has been very precarious for the past year, and his income has suffered in consequence. It will be, therefore, a great kindness to him if medical subscribers will vote for his daughter and urge their friends to do the same.

A SWALLOWED PIN.

F.R.C.S. writes: If Dr. R. H. D. Pope (Belfast) will use a reel of cotton thread cut down into pieces about an inch long—this can easily be done by cutting on the reel with a knife—mixed with porridge the next time a patient of his swallows a pin or any such object, he will find it is equally efficacious and much more palatable than mixing hairs with the porridge.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Messrs. Allen and Hanburys, London; Dr. A. P. Allen, South Croydon; Australia. **B** Dr. A. N. Boycott, St. Albans; Mr. R. J. Bland, London; Messrs. Burroughs, Wellcome, and Co., London; Dr. J. M. Bruce, London; Mr. J. Butcher, Hove; Mr. B. M. Bond, Poole; Mr. J. Busfield, London; Dr. E. R. Bowen, Barry Dock; Dr. A. W. Beaumont, London; Mr. W. H. Bennett, London; Mr. H. Bigg, London; Dr. A. T. Brand, Driffield; Mr. F. Boehm, London; Dr. T. R. Bradshaw, Liverpool; Messrs. C. Baker and Co., London. **C** Dr. A. K. Chalmers, Glasgow; Dr. A. Cordes, Geneva; S. G. Champion, M.B., Grimsby; Mr. L. V. Cargill, Doelfontein; C. K. M.; Miss Anna L. Church, M.D., Calcutta; T. Colvin, M.B., Glasgow; Mr. J. B. Cooke, Rochester; Dr. F. R. Cosgrave, Rochdale; Mr. W. R. E. Coles, London; Cantab; Cafolin Co., Secretary of, London; Dr. A. H. Carter, Birmingham; Mr. H. S. Collier, London; Mr. T. B. Carlyon, Woolwich. **D** Dr. W. B. Drummond, Edinburgh; Dr. A. Deane, Clifton; Mr. G. Dalton, London; Mr. H. R. Davies, London. **E** Mr. R. Emmett, Portsmouth; Dr. C. S. Engel, Berlin. **F** W. E. St. L. Finny, M.B., Kingston Hill; Mr. R. L. Flood, Bundoran; Mr. A. Finlay, London; Dr. R. H. Fox, London; Dr. A. F. Fergus, Glasgow; Free Gardener; F. A. Floyer, M.B., Mortimer. **G** Mr. J. Green, Portsmouth; Mr. E. M. Grace, Thornbury; Dr. A. C. Godfrey, Southampton; H. N. Ghosh, M.B., Calcutta. **H** Mr. W. J. Henson, Wedmore; Dr. B. Holländer, London; Dr. J. S. Hooker, Hastings; Hylax. **I** Interested. **J** Mr. R. A. Johnston, Belper. **K** Kettledrum. **L** Mr. W. H. Lee, Pilsley; Dr. W. S. Lazarus-Barlow, London; Dr. J. K. Love, Glasgow; L. E. H. **M** Sir W. MacGregor, K.C.M.G., London; Dr. C. F. Marshall, London; M.D. Durh.; Metropolitan District Medical Officer; Mr. H. H. B. Macleod, Shrewsbury; Mr. J. McElroy, Uddingston; Dr. D. Mackenzie, Leytonstone. **N** Mr. E. H. T. Nash, Accrington; Mr. G. A. Nateson, Madras; Navalis. **O** Dr. J. Ormsby, Dover; Oudemia; Mr. W. B. Orme, Port Said. **P** Mr. H. J. Prangley, London; Dr. W. Pasteur, London; Dr. F. Penrose, London; Dr. W. R. Parker, Kendal; Pilocarpine; Psyche; Mr. F. B. Paul, Liverpool. **R** R. I. P.; Dr. T. C. Railton, Manchester; Mr. C. Ryall, London; Mr. T. F. Raven, Broadstairs; Dr. J. Ruxton, Blackpool; Dr. T. H. Redwood, Rhymney; Rochelle; Mr. D. C. Rees, London; Mr. H. J. Roberts, Pen-y-groes. **S** Sanitary and Economic Association, Manager of, Gloucester; Sanitary; Dr. J. A. Shaw-Mackenzie, London; Messrs. Smith, Elder, and Co., London; Suaviter; Sir J. Sawyer, Birmingham; Mr. J. J. Smith, London; Senex; Mr. E. Saywell, Nottingham; Mrs. Sykes, Manchester. **T** Br. C. van Tussenbroek, Amsterdam; H. P. Taylor, M.B., Mid Yell; Tent Surgeon; A. Tuthill, M.B., Upper Parkstone; Mr. J. W. Taylor, Birmingham; Mr. S. G. Trist, London. **W** Dr. G. A. Williamson, Larnaca; Dr. F. J. Waldo, London; Dr. R. Wise, London; "Wealth," Editor of, London; Dr. S. R. Wells, London; Messrs. Wyleys, Coventry; W. Watkins-Pitchford, M.B., Estcourt; Dr. F. Willcocks, London; C. P. White, M.B., Leeds; Mr. H. Waite, Leeds; Dr. W. E. Wynter, London; Dr. W. H. White, London; Dr. B. C. Windle, Birmingham. **X** X. Y. Z. **Y** Mr. M. Yearsley, London.

BOOKS, ETC., RECEIVED.

The Struggle for Success. By A. Stodart-Walker. London: Grant Richards. 1900.

Oeffentliche Massnahmen gegen ansteckende Krankheiten. Von Dr. T. Weyl. Jena: Gustav Fischer. 1900. M. 6.

Formulaire d'Hydrotherapie et de Balnéotherapie. Par O. Martin. Paris: J. B. Baillière et Fils. 1900. Fr. 3.

Consultations Médicales. Par H. Huchard. Paris: J. B. Baillière et Fils. 1900. Fr. 8.

Ora Pro Nobis. By J. B. Stubbs. London: Skellington and Son. 1899.

Malaria according to the New Researches. By Professor A. Celli. Translated from the Second Italian Edition by J. J. Eyre, M.R.C.P., L.R.C.S., D.P.H. London: Longmans, Green, and Co. 1900. 10s. 6d.

Constipation and Some Associated Disorders. By E. Blake, M.D. Second Edition. London: H. J. Glaisher. 1900. 5s.

*** In forwarding books the publishers are requested to state the selling price.

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AN INTRODUCTORY ADDRESS
ON
THE TRAINING OF BODY AND MIND FOR THE PROFESSION OF MEDICINE.

Delivered at the Commencement of the Winter Session of the Faculty of Medicine of the University College of South Wales on October 10th, 1900.

By Sir JOHN WILLIAMS, Bart., M.D., F.R.C.P.Lond.,
Consulting Obstetric Physician to University College Hospital, Consulting Physician to the Royal Hospital for Children and Women, Waterloo Road, etc.

Gentlemen,—When the Dean of the Faculty of Medicine honoured me with an invitation to open the session of this College I accepted it with pleasure. He informed me that it would be my duty to deliver a short address to the students, and more especially to those of them who are devoted to the study of medicine. These students I heartily congratulate upon their selection of a profession. There are some worse professions, but there are few better, and to him who loves the work there are none better. Whatever the social rank, whatever the dignity, whatever the rewards of the profession, it possesses unquestionably one good thing, and that is hard work. From the day upon which you enter upon the special study of medicine to the day when you will lay aside the stethoscope and the thermometer your life will be full of hard and interesting work. You will have work, some with payment, some without payment; some with abundant gratitude, some with none. You will receive much that you will not deserve, both of praise and blame, but the distribution of the two, however unwisely or unjustly each be awarded, will be, perhaps, on the whole, not far from being a fair measure of your due.

Popular Ignorance Respecting Medicine.

That the treatment of the profession and the estimate of its work by the public are often unjust can hardly be questioned, and who can wonder at it when we bear in mind the usual education imparted in our schools and universities? By education is generally meant the study of books and of ancient literature, while nature and its laws, life, with the forces which act upon it, and the circumstances in which it develops and those in which it fades are disregarded. The elementary facts upon which science is built are considered as scarcely worthy of attention. They are treated as if they had but little concern with life and none with learning and scholarship. The result is that ignorance prevails with regard to those laws which govern our life and actions. This is the case generally, in the upper as well as in the lower classes of society, and ignorance and superstition in respect of medicine, of the power of drugs, and of the skill of medical men are as prevalent among the educated as they are among the uneducated classes. "Christian science," with its claim to cure all diseases by ignoring them, flourishes most among the upper classes. Here it appears in gorgeous colours accompanied with the sound of trumpets, while at the other end of society it is found presenting a humble but obstinate front in the coroner's court or before the police magistrate in the persons of its loyal devotees known as the "Peculiar People." Besides these immaterial means of curing diseases such as inflammation, paralysis, toothache, tuberculosis, and cancer, there are a countless number of undiscovered drugs, known only to their proprietors and the officers of the Patent Office, which for good reasons are not made known to the public, each of which, according to their proprietors, and believers in these panaceas, have performed marvels in preventing and curing diseases, known and unknown, fatal and not fatal—indeed, it matters not of what nature, for all diseases, it is said, are cured by these undiscovered drugs. The astonishing fact is that any disease remains to afflict the human frame.

Quack Advertisements.

You ask me where I obtain these extraordinary facts. I reply: Look at any newspaper, daily or weekly, English or Welsh, religious or secular (among the latter, however, there are some notable exceptions), and you will find all that I have stated. You will see accounts of marvellous and impossible cures and statements of effects produced by drugs which everyone possessed of the most elementary knowledge of the laws of health and of the processes which take place in the living body knows to be entirely devoid of foundation. Nevertheless, these statements are published broadcast, day by day and week by week, in newspapers which profess to teach and lead the public and to form public opinion. These newspapers are the property of men who hold more or less influential positions and are respected in the country. They are edited, some by clergymen, some by ministers, and some by laymen. The statements which I have referred to are sanctioned by silence, in speech, or in writing, by all concerned in the publication of these journals. They occasionally contain testimonials to the wonderful virtues of the advertised drug, and these emanate from all manner of men, some of whom are probably like the historical camel evolved in a garret, while others hold positions and make professions which would lead one to expect that they would not be guilty of attaching their names to, or be a party to publishing, anything for the truth of which they could not vouch. Now and again a bard in a frenzy of inspiration pours forth in rhythmic or alliterative measure the wondrous work of quackery and the miracles of ignorance. When I find the religious newspapers of the Principality besmeared with such advertisements as I have referred to, some of them not only false but foul and wicked, I cannot help feeling the blush of shame as I bear in mind under whose ægis they are published. The faithful, finding them in their weekly guide, accept them without question and act upon them as truths tested by the standard, sanctioned by their party oracles, and sealed with their approval. How long will this continue? So long as the practice will pay the manufacturer and purveyor? Is it not possible to cause the purveyor at least to realise the character of the material to which he forms the conduit from the manufacturer to the purchaser? If this be not possible then the remedy must and will be found in the education which, if not now, will by and by be given in our schools. Let the elements of science, the laws of growth and decay, and the laws regulating the functions of the living body be taught in our schools and our young men and young women will themselves be able to estimate this mephitic rubbish at its proper value.

A Noble and Ennobling Profession.

Meanwhile, however, and notwithstanding what I have just said, I congratulate you upon the choice of a profession, for it is a noble and an ennobling one. The circumstances and surroundings in which you will be placed for the next five years will tend to foster in you, if not the graces and polish of society, yet those qualities which are usually admired and sometimes laughed at—but never laughed at either by rich or poor when they are the victims of suffering and disease—and these afflictions come to poor and rich alike. To poverty and pain, suffering and sorrow, disease and death, you will pay your daily visits. Your work will be on the dark side of life—not seductive is it?—and this will enlarge and widen your sympathies (not of the frothy sentimental variety), whet your wit, increase you resources, and humanise you through and through. Yes, gloomy, as the prospect appears, you are to be congratulated, provided you are made of the stuff of which good doctors are made.

The Qualities Necessary for Success.

Now, what are the qualities which are necessary for the exercise of a profession whose work is such as I have indicated? They are many, but I shall be able to refer to two or three of them only. Some of them are gained only after a long training and large experience—"knowledge comes but wisdom lingers"—while others should be possessed from both or acquired in early life. Of the latter the first is health—a sane mind in a healthy body. To the boy destined for the medical profession good health is essential in the first place to enable him to bear the physical and mental strain made upon him by the training through which he will have to pass in order to qualify, and in the second place by the physical demands and mental anxiety arising from practice. Success in medicine, as in some other professions, means survivorship, and survivorship usually

means a good physique. A man with feeble health may be a great preacher, a great lawyer (though I can hardly imagine him to be a great pleader), a great writer, or a great scientist, but he cannot be a great medical practitioner, for disease and suffering recognise no office time or any day of eight hours. The medical man must be ever ready and ever active, and must know no fatigue. But I hear you say, "Health is inherited, a sound constitution cannot be acquired." This is true in a great degree, and a lad of feeble health would do wisely to eschew the profession of medicine. It is, however, also true that good health may be destroyed, that bad health may be made good, and that a feeble constitution may be strengthened, especially during the period of childhood, boyhood, and early manhood.

Delights of Schoolboy Days.

Some years ago elementary schools were not so numerous in the country, or perhaps so efficient in some respects as they are now. I cannot vouch for the accuracy of the latter part of the statement, for I am speaking of that happy time, for schoolmasters as well as for boys, which preceded the period of periodical inspections and payment by results. For the reason which I have mentioned children had to walk to school from one to three miles in the morning and home again in the evening, carrying with them their midday meal. To accomplish this distance a boy took from an hour and a half to two hours in the morning. He reached the schoolroom at 9 o'clock and was supposed to work until 12 o'clock. Then followed a relaxation from work lasting two hours, a few minutes of which was occupied in partaking of a very simple meal, but a meal which was consumed with a relish and an enjoyment which many a luxurious epicure would give all but his dinner to possess. This meal, frugal as it was, was ample for the child's requirements. Then came the great pleasure of the day—hockey, football, or hare and hounds (cricket was unknown in country schools in those days), than which no exercises, games, or gymnastics are better calculated to develop all the organs of the body in a healthy manner. Thoroughly refreshed but untouched by fatigue the boy entered school again at 2 o'clock and remained until 4 o'clock. Then came the journey home, which occupied in winter at least two or three hours and in summer from three to four hours, with all its delightful incidents, unbeclouded by the thought of a home task—a new imposition condemned by every healthy-minded boy. The boy never took the straight path (boys never do) or the shortest route. His curiosity, his inclination, his spontaneous energy, call it what you will, led him to deviate to the right and to the left from the normal course. He, moreover, required amusement and play after his exhausting labours in the schoolroom. There were various objects of interest which had to be visited on the way home. In a pool a mile up the stream on the left was the old trout which had to be tickled or presented with various cunningly-devised invitations to be landed to which his wariness never condescended to reply. On the right was the track of a hare. This had to be carefully inspected, while the discovery of a gin was a source of intense enjoyment, and the division of its string afforded a doubly exquisite pleasure, for it ensured puss a free run, and baulked the cunning and skilful poacher in his nefarious designs. Then the nest of an old crow upon a high and solitary tree should not be forgotten. It was some distance off, it is true, but it demanded a daily visit in the spring of the year, and the strongest and bravest boys climbed up in turn to inspect and count the eggs, and in the end generally to rob the nest. This would sometimes lead to a falling out—an event which is said to happen not rarely among thieves, but in this instance the honest bird did not come by its own. The encounter took some time to come to an issue, and unfortunately the morning told the story of the evening, and this led to the application of the appropriate but unpleasant remedy. This old remedy has now gone out of fashion. Some of you may have known such delightful school days, while others may have not, but may from early days have been subjected to the dull, continuous grind which is productive of a precocious and showy but feeble mind, coupled with a body one would not accept as a gift. Such a boyhood as that which I have described braces the mind and the body, strengthens the weak frame, and makes healthy youths. I confess that I look back upon this period in my life, not only as one of the pleasantest and brightest, but also as one of the best spent, for its effects have been my mainstay during the rest of my career. As so much may be done during boyhood and early youth to establish health and to lay in a store of strength which will serve your turn through life, I would urge you to seize opportunities for physical exercise, for I imagine that during your sojourn here these opportunities will be abundant. When you shall have left Cardiff and have gone for your further training to London or elsewhere, you will find such opportunities scanty by reason of the fuller employment of your time as well as the distance of your lodging from the green fields.

Training of the Senses.

The training of a lad for the profession of medicine cannot be begun too early, and particular attention should be paid in his case to that part of education which should in a greater or less degree be the possession of every youth whatever his position in life when he leaves school—the training of his senses. All boys should be trained to use their eyes, their ears, and their hands—for it may be said of many, "They have eyes but they see not, and ears they have but they hear not"—and to acquire manual dexterity. Every lad should be taught early to use his eyes, to see and recognise the various objects, living and dead, which nature so bountifully supplies in earth, air, and water. To a medical man this training is of special importance, for the faculty of observing is one of his chief aids. Without it he is helpless, he is not fit to visit or to treat the sick. The cultivation of this sense cannot be begun too early. I will illustrate its value, not from a professional visit to the sick room, but from an entirely different phase of life.

A party were once upon a coursing expedition, but their wanderings in search of the hare had proved fruitless. Like incompetent craftsmen who blame their tools, they blamed the land and the farmer, for they had come to the conclusion that there was no game on the land and that the farmer was a poacher. Disappointed and despairing of sport, they were on the point of giving up the search when a man approached who was known to one of their number as an accomplished poacher. He said to the new-comer, "*Dafydd, swllt am scwarnog.*" "*Yn wir?*" queried Dafydd. "*Cewch yn wir,*" was the reply. Satisfied as to the ability and willingness of the would-be sportsmen to pay the shilling, Dafydd walked quietly around, and in a few minutes the cheery cry of "See-ho" fell on delighted ears. The hare was coursed and caught, thanks to the dogs and the cultured Dafydd. "*Swllt am un arall,*" and in a short time the same pleasant cry was heard again. This illustrates well enough the difference between the trained and the untrained physician when visiting the sick room. The sportsmen with the untrained eyes had walked over the land the whole day and had seen nothing, while the poacher, whose delight in the daytime and on shining nights had been the study of puss and her habits, whose eyes had been trained from boyhood to discover her on her form and to watch her on her quiet or hurried rambles or gambolling with her mate in the light of the queen of night, readily and surely discovered her hiding-place. The experienced and cultured physician, in like manner, when he visits the sick room sees at a glance those visible signs which reveal the past and lift the veil which hides the future, while the untrained man sees nothing and learns nothing; to him the past remains a blank and the future hidden.

Again, every child should be taught to use his ears and his hands. Singing is in some degree taught in most schools, drawing, with some amount of handicraft, might also be taught with great advantage. Children are taught to play on the violin, harp, or piano from early years. A small fiddle is obtained for the little fingers which cannot stretch over the stops of the finger-board of the full-sized instrument. It is only by beginning his training at an early age that one becomes an accomplished performer on one of these instruments. A touch, a stretch, a strength of finger, and a certainty are thus acquired which cannot be gained in later life. The ear also is trained to distinguish and appreciate sounds in their tone, pitch, volume, and character. By training the hands a manual dexterity with a delicate sense of touch capable of appreciating slight vibrations and slight differences of

resistance and elasticity are acquired, all of which are of the greatest value to the practitioner in the diagnosis and treatment of disease. A trained hand can often by palpating the chest alone discover the seat and sometimes the nature of disease, while its use in the diagnosis of disease in other cavities is constantly called into requisition. A trained ear, again, is of no less importance in the detection and appreciation of the various sounds which are produced in the different organs of the body both in health and disease, and it renders possible a diagnosis of the nature, seat, and extent of diseases which would not be possible without its aid. Training of the eyes and hands is as essential to a medical man as it is to an artist, and training of the ears and hands is as necessary to him as it is to a violinist or a pianist. The education in elementary schools should be a training and not a cramming, such as it is apt to become when estimated by so-called results. It should be a training calculated to help a lad to live a better, a happier, and a more intelligent life in whatever station he be placed. It should be the same for all. No difference should be made between the education of the son of the labourer, or the son of the farmer, of the parson, or of the medical man.

Classical Education as a Preparation for Professional Training.

To the delightful pursuits I have mentioned must be added, when the lad has passed to a higher school, others of a different character. Books will then be his chief, although perhaps not his only, study. It becomes a question whether in these schools a difference should be made in the education of youths destined for different callings in life—whether that of one should be on ancient lines and that of another on modern lines, that of one classical and that of another scientific, or that of one literary and that of another commercial. It is still held by some that the best preparation for all professions is a classical education, but the more general opinion is that a difference should be made and that other subjects should be taught in addition to Greek and Latin. In many of our schools there is an ancient side and a modern side, and boys destined for certain pursuits are placed in the former while others who intend to follow other vocations are placed in the latter. For all, however, for whatever calling they are destined, a certain general training is given. The subject, however, which is of interest and of importance to you is what is best, or at least the best attainable, general training, the best attainable culture, for a boy who prepares for the study of medicine. The answer to this, made long ago and partially acted upon to this day, is a classical training. This answer, however, should be reconsidered in the altered state of medical knowledge.

In the higher schools a great part of a lad's time is devoted to learning the Greek and Latin languages and to making acquaintance with their literature. Greek was for centuries the language of Christianity and philosophy and it was also the language of theology and science. At a later period the discovery was made that the dogmas of theology could be rendered in Latin, and therefore Latin became the language of the Church and of science. It continued to be such until comparatively recent times. In these two languages, after the revival of learning in Western Europe, was enshrined practically all learning. Greek and Latin became known as the learned languages, and a knowledge of these languages was necessary as an introduction to the learning and "scholarship" of the time. This educational *régime* ruled up to a period not long past, and all boys who received a higher education, whatever their pursuit in life, had to learn the learned languages. I have not a word to say against classical scholarship, but there is much to be said upon the question whether a boy preparing for the medical profession should devote several years to acquire a knowledge of the two languages. The training for the three professions of theology, law, and medicine is in many respects much alike. There is a special training for each, but before this is entered upon a course of general training has to be passed to fit every candidate for admission to either of the three for the pursuit of his special studies. For the three professions this general training is, and always has been, much the same. Take the clerical profession. The preparatory training is chiefly, if not entirely, a study of Greek and Latin and their literature. This study is pursued in the higher schools and afterwards in the university. When the university course is finished the aspiring cleric in the best arranged scheme enters a school of divinity to study his special department of learning for two years before he obtains a licence to practise his profession. In the case of the clergyman, the whole course of his education, from the time he enters a higher school, is a preparation, a special preparation—as special a preparation for the study of his special subject as the study of science is for the special study of medicine. In the case of the law the preparatory studies are the same as those for theology, a knowledge of Latin being essential to a learned lawyer.

Greek and Latin Useless for Doctors.

What is the value of a knowledge of Greek and Latin to a professor of the art of medicine? I will tell you in the words of a distinguished writer and scholar who has recently passed away: "As to doctors, can we gravely admit that they ought to understand the language in which their prescriptions are written, and that they find it instructive to read Galen and Hippocrates in Greek? To men of science it is pointed out that their ever-increasing technical terminology is systematically formed from Greek and Latin words. That is true; and it is also true that a man of science might obtain a perfect grasp of this terminology by means of a list of words that he would learn in a day and the use of a dictionary that he might acquire in a week." Although useless to the medical man in his profession, however, yet it may be necessary to know Greek and Latin in order to understand English, to develop the mental faculties, and to gain general culture—then, indeed, it is worth even the medical man's while to devote the time to learn these two languages. I will let the same writer reply again: "The fact is that the study of Latin (for Greek, except in respect of scientific terminology, has much less to do with the question, and would hardly have been placed on a par with Latin here but for the hasty and random way in which the stock arguments on the question are continually repeated) cannot tell us what the English language is; it can only help us to understand how it has come to be what it is. In order to learn to speak English with accuracy and precision we have one rule to follow—to pay strict attention to usage." But it is said, "If we do not teach a boy Latin or Greek we cut him off from the highest literary enjoyment, and we prevent him from developing his taste by studying the best models. It would avail little to call in question (had I space and inclination to do so) the surpassing excellence of ancient literature. For my purpose I must regard this point as decided by an overwhelming majority of persons of culture. But it will not be denied that in the English, French, and German languages there is a sufficiency of good literature to fill the leisure of a person engaged in any active calling, a sufficiency of work calculated to give a high kind of enjoyment and to cultivate very adequately the literary taste. And if such a person were ever visited by a painful hankering after the time-honoured volumes that were sealed to him he might console himself by taking note how often his contemporaries who had enjoyed a complete classical education were in the habit of taking down these masterpieces from their shelves. For I cannot help thinking that classical literature, in spite of its enormous prestige, has very little attraction for the mass of even cultivated persons at the present day. I wish statistics could be obtained of the amount of Greek and Latin read in any year except for professional purposes, even by those who have gone through a complete classical curriculum. From the information that I have been able privately to obtain I incline to think that such statistics, when compared with the fervent admiration with which we all speak of the classics upon every opportunity, would be rather startling." The fact seems to be that, with comparatively rare exceptions—and these are not in the professions—a classical education is pursued, not for the culture which it gives, but in order to acquire the instruments for special pursuits in after-life, such as theology, law, philology, history, archæology, the profession of teaching, etc. Those who prepare for such pursuits specialise from the first, for they devote themselves from the beginning of their education to gain command of the instruments with which they work in after life, while those devoted to science are made to learn that which is of little or no use to them in their

after-pursuits. For the latter, and to a lad destined for the medical profession, matters at present are still worse; for what command does he acquire over the Greek and Latin languages? Greek is not now compulsory, while the knowledge of Latin demanded of the medical student is so small that it does not enable him to read the easiest Latin book except with difficulty and with the aid of a dictionary. The time—a part of six or seven years—devoted to gain such an accomplishment appears to be wasted.

FRENCH AND GERMAN ESSENTIAL.

What, then, should a boy destined for medicine learn before he begins his special studies at the age of 17 to 18 years? I should say that in addition to those subjects which are generally taught in schools he should have a thorough course of the English language and literature. This will do more to train his intellectual faculties and to give him a command of language, a vocabulary, a taste for good literature, and a culture far larger and better than he can obtain by acquiring an elementary knowledge of Latin which will be of no use to him, is too scrappy to be a source of intellectual enjoyment, and which will in a short time be forgotten. French and German should also be learned, and I believe the power of reading both languages with ease could be acquired in the time now devoted to learning Greek and Latin. A knowledge of these two modern languages is essential to a practitioner who is desirous of being among the leaders of his profession, for the work done in the laboratories and hospitals of France and of Germany is of such a high order that no one who is ignorant of it can be considered abreast of medical knowledge.

WELSH AS AN INSTRUMENT OF CULTURE.

There are, however, some among you who are fortunate enough to have another accomplishment—a knowledge of the Welsh language. You should study it with the same care and minuteness as you study English, or as you would study Greek and Latin were you devoted to classical pursuits. In the time which you now devote to Latin and Greek you would acquire a thorough knowledge of this ancient tongue. I am not in a position to compare or contrast the value of Celtic with that of classical studies—your professor of the Welsh language might do that for you—but there are certain distinct advantages to you in the study of Welsh over the study of the dead languages. You already possess a more or less large vocabulary of the language—you can speak it, you know its idioms, your ear has been trained to its accentuation, the inflexions of its vowels, and the mutations of its initial consonants. A knowledge of its grammar can be gained without much difficulty. Prose composition will prove a pleasant and improving pastime, and if verse writing be of any value in education you may indulge in it with at least the feeling that you know the material in which you are working, and that you are not arranging words of whose meaning you have no full appreciation in a form of which you have still less. The alliterative *pedwar mesur ar hugain*, together with the numerous rhyming measures in the language, will give you an ample field for the exercise of your vocabulary and for the display of your skill in polishing sentences. Translations from English into Welsh, and from Welsh into English, and from French and German into English and Welsh will further add to your linguistic skill and give you accuracy in the use of words. The Welsh language, moreover, will introduce you to a valuable and interesting literature, unknown to, and unappreciated by, our neighbours between Offa's Dyke and the German Ocean, while it is the subject of study to scholars in Western Europe. As a means of culture the language and literature of Wales have not been duly appreciated in England, or indeed in the Principality itself. Some years ago a request was made to the Senate of the University of London that Welsh as well as French and German should be recognised as a voluntary subject in the matriculation examination. Together with others I wrote to some members of the Senate stating the reasons why I thought that body should accede to the request. Among those reasons were: (1) That a number of the candidates for the matriculation examination were Welsh lads, many of whom habitually spoke Welsh, while some did not speak English until they were 13 or 14 years of age; (2) that the whole of the examination was conducted in a language foreign to these lads; and (3) that consequently they laboured under a great disadvantage when compared with English candidates especially and even when compared with French and German candidates, for although English was a foreign language to French and German boys each could select his own language as a voluntary subject. One of the members who appeared to take some interest in the subject replied by asking, "Where are examiners to be found?" The foundation of the Welsh University has removed this inequality, and the Welsh boy may now study his native tongue with the feeling that his knowledge of Welsh language and literature will receive due recognition in the schools of the University.

PROFESSIONAL STUDY.

The course of instruction which I have indicated will, under the circumstances in which you are placed, and especially by reason of the limit of time which you can devote to general subjects, do far more for you than a fragmentary knowledge of Greek and Latin. It will develop your intellectual faculties, it will furnish you with a large store of linguistic and other knowledge, and it will introduce you to the best literature and the highest culture. It will, moreover, place you in the best position to begin and continue your professional studies, it will enable you to follow the progress of medicine in after-life, and it will furnish you with an inexhaustible store of intellectual enjoyment from which you will be able to draw at will in the leisure hours of your active life. While, however, you pursue these general studies a part of your time should be devoted to acquire an elementary knowledge of the natural sciences, so that when you go to college you may be prepared to enter upon those studies which bear directly upon your profession. You should possess an elementary knowledge of the principles of physics, chemistry, and biology, have a grasp of the general character of science, and be disciplined more or less in the methods of all sciences, so that in your first year at college you may be able to take full advantage of the means of study there afforded you. Then you will pursue the study of anatomy, physiology, and chemistry, which will fit you for your further studies in the wards of the hospital. Facts will be pointed out to you and you will have to find and see them for yourselves; their relations and classifications will be indicated to you and you will have to verify them; your minds will be trained in scientific methods. This will occupy the first three years of the curriculum, and then, if you have been diligent, you will pass on to the supreme stage—the study of medicine. In the wards of the hospital you will have to study disease in its relations, its causes, its onset, its course, its terminations, its prevention, and its treatment. You will not only be required to see and to realise what is pointed out to you, but you will also be required to learn how to see and discover for yourselves, to observe symptoms, to discover signs, to classify them and reason upon them—work in which not only your trained intellect but also your trained sense will be called into full exercise. If you shall have availed yourself of the opportunity of learning offered you during the three years you will have passed in college you will find your knowledge of disease and your skill in detecting its seat and nature grow apace. Most of your time will be spent in the out patient rooms or in the wards, performing your duties as clerks or dressers, or attending the physicians and surgeons on their daily visits. You should, however, not be satisfied with discharging the merely obligatory portion of your hospital duties. It is said that the best way to know a man is to live with him. It is equally true that the best way to know disease is to live with it, to reside in hospital; and it should therefore be the aim of each one of you to hold a resident post as house-physician, house-surgeon, resident obstetric officer, either one or all. Such a post will give you in a few months an amount and a kind of experience that private practice will not furnish. It will give you opportunities to watch the progress of disease from hour to hour, to closely observe its features, follow its fatal footsteps, or hail the amelioration of its severity under the treatment administered and the restoration of the patient. Moreover, you will be working under the eye of your master physician or surgeon; you will be required to "get up your case" fully and thoroughly, and to record its progress from day to day. This will implant in you careful and methodical habits, which are invaluable in the practice of medicine.

Independence of Character and Freedom of Thought.

There are a few more words I should like to say. You should cultivate independence of character and freedom of thought. The two generally go together, and both will be essential to you in the practice of your profession, both for your own comfort and for the good of your patients. The curriculum which you will pass through will tend to foster these qualities, and your experience in hospital and in practice will tend to strengthen them. Tradition has no authority in medicine. I have already referred to the ignorance of science and its methods which prevails generally. Ignorance is rarely modest or doubting; it is dogmatic and credulous. You will find it often a source of great annoyance to yourselves and of infinite mischief to your patients. For your own happiness you should cultivate that absolute indifference to the chatterings of incompetence which is based upon a thorough knowledge of your profession, a complete grasp of your cases, and a rigid adherence, undeflected by outside considerations and influences, to the evidences of your senses, and the dictates of your reason.

The Contagion of Sympathy.

From the day on which you enter the hospital until your course is finished, the circumstances in which you will be placed and the influences under which you will work will arouse in you the feeling of humanity and foster its growth and development. It is scarcely possible for you to walk the hospital without becoming infected with the contagion of sympathy, but the sympathy is not of that variety which evaporates in sentimental speeches on platforms and finds its reward in publicity. It is of more lasting stuff. It is not the sort which shows itself in cries of impotence in the presence of difficulties and flees from the presence of suffering. The sympathy which will be yours is at its best in the presence of suffering and danger. These serve but to strengthen it. It is not a sympathy for fine days and holidays, processions, and public meetings; its work is amidst the storms of life; there is no place for it amidst the frivolities. It seems as if asleep or dead when there is no work for it; it is aroused only by the call of distress, to which its response is never wanting, and when aroused it is always to some purpose. I cannot illustrate this better than with the old story of the man who had fallen among thieves. There he lay by the roadside, stripped, robbed, beaten, wounded, bleeding, unable to cry for help, and left half dead. By chance a wealthy and a holy man came down that way, and when he saw the sufferer he passed by on the other side; and likewise another who came and looked upon him, and passed by on the other side. Lastly, a man with an ass came where he was, and when he saw him he had compassion on him, and went to him and bound up his wounds, pouring in oil and wine (the antiseptics and healing drugs of the period), and set him on his own beast and took him to an inn (the nursing home of the day), and took care of him. I verily believe that this good man must have been a doctor. I know of no finer example of that sympathy of which I speak and which you should not fail to cultivate.

The Nightingale Fund.—The Nightingale Fund has now been in existence for over thirty-nine years, and during that period nearly 1,600 candidates have been admitted, and 943 have, after completing a year's probationary training, been placed on the Register of Nightingale Nurses. At the end of that period these probationers are appointed to the staff of nurses in St. Thomas's or obtain appointments elsewhere. During the past year 53 candidates have been admitted at St. Thomas's Hospital. The Fund provides an annual gratuity of £2 for the term of three years to nurses who have completed a year's satisfactory service. This was awarded to 89 nurses in 1899, but the Committee have decided to discontinue these awards, though no official reason is assigned. There is a branch of the training school at the Marylebone Infirmary, and 29 candidates obtained admission there during 1899. The Fund contributes to the expenses entailed in the training of these infirmary nurses. It may be mentioned that the trust funds have been invested in London County stock instead of Consols, as was the case previous to 1899, and that the balance sheet showed there was a surplus of £411 odd at the end of that year.

SIXTY-EIGHTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at IPSWICH, July 31st, August 1st, 2nd, and 3rd, 1900.

PROCEEDINGS OF SECTIONS.

SECTION OF PHARMACOLOGY AND THERAPEUTICS.

Walter G. Smith, M.D., President.

The President made some introductory remarks on the Teaching of Pharmacology, which were published in the British Medical Journal, August 4th, p. 292.

A DISCUSSION ON THE TREATMENT OF INTERNAL HÆMORRHAGES.

I.—Walter George Smith, M.D., F.R.C.P.I.,

Physician, Sir P. Dun's Hospital; Physician in Ordinary to H.E. the Lord Lieutenant; King's Professor of Materia Medica, School of Physic, Trinity College, Dublin.

Let us start with some general statements. Hæmorrhages, whether external or internal, are all due to similar pathological events. The methods by which all hæmorrhages are arrested are identical, whether the bleeding be from an external, visible, and accessible spot, or from an internal and invisible region. That is to say, there can be no contradiction in principle between the medical and surgical treatment of hæmorrhage. We should take care not to do harm by our therapeutic procedures. Few cases of hæmorrhage from the lungs, bowels, or kidneys are in themselves fatal or even imminently dangerous. Patients die *after* hæmorrhage, but not often of it (S. West). The peace of mind of the patient is often more in question than his bodily risk. Many cases of hæmorrhage stop naturally and speedily, if only let alone. Drug treatment *quâ* hæmorrhage is often superfluous, and sometimes mischievous. The sources of hæmorrhage are plainly three, namely: (*a*) Capillary—oozing or rupture, for example in early phthisis; (*b*) venous—oozing or rupture, for example hæmatemesis in hepatic cirrhosis; varicose veins; (*c*) arterial rupture, for example aneurysm, and phthisis in its later stages.

Is it not idle to speak of a common treatment for each and all of these, and absurd to administer the one drug, that is ergot, in all three cases? No sane man treats bleeding from varicose veins by internal, that is so-called remote, hæmostatics. Whenever a bleeding vessel is accessible it is treated on rational principles. When it is hidden from our sight, guesswork and irrational hypothesis seem to have guided our therapeutics.

The processes by which hæmorrhage can be arrested are closure of the bleeding point mechanically, by ligature, simple pressure, acupressure, torsion and the like; coagulation of the blood at the source of bleeding produced by (*a*) certain changes in and around the bleeding vessels, namely, retraction, constriction of the blood vessels, and clotting within and without the vessel; (*b*) diminution of the force of the heart's action, that is, a considerable fall in blood pressure; in some cases of "bleeders" the only cure for hæmorrhage seems to be to faint, that is, to bring the blood pressure to a very low ebb; (*c*) alterations in the chemical constitution of the blood whereby clotting is favoured, and coagulation tends to occur at a damaged portion of tissue: this is the principle of Wright's proposal for the administration of calcium chloride. Leaving entirely out of consideration the approved surgical means of checking hæmorrhage, let us in the light of the above principles look more closely at the medical treatment still commonly in vogue.

1. *Local Styptics and Hæmostatics.*—There can be no doubt

about the efficacy of these remedies, and their *rationale* is quite simple. They operate mainly in virtue of their albumen-coagulating properties, and their action can be analysed into two factors, namely, formation of a primary albumo-metallic compound, and, in a few cases, constriction of the blood vessels in addition. A glance through the text books will soon show that the explanation of the action of internal hæmostatics is at one time explained by the same principles which govern local styptics, and at another time it is shirked. The number of diverse remedies recommended, for example, in hæmoptysis, is, to my mind, at once an example of the "*nimia diligentia medici*," and an additional proof that in a multitude of remedies there is no true cure But what about the so-called internal or remote astringents which are so often prescribed? Most of them can be grouped under three heads, namely (*a*) free acids, chiefly sulphuric, and tannic acids; (*b*) metallic salts, chiefly of iron, silver, lead, and copper; (*c*) ergot of rye.

When in consultation on cases of hæmorrhage, the remark is often heard, "We must do something." Quite true, but let us not do a foolish or a useless thing merely to comply with popular prejudice Of the vegetable astringents, represented by tannic and gallic acids, suffice it to say that there is absolutely no foundation for the reputation which gallic acid has so undeservedly obtained—not even is it a local styptic. Tannic acid is, no doubt, a local styptic by its albumen-coagulating power. But the careful researches of Stockman have demonstrated the futility of using it as a remote astringent. It is absorbed in the form of alkali tannate, which has no styptic power, as indeed is obvious from its presence in the blood. It is excreted in the urine as alkali tannate, and as gallic acid, that is, in a harmless and useless form. It is conceivable that a non-astringent combination such as alkali tannate might be dissociated in the kidney, and free tannic acid liberated, but this is not so. It is therefore childish to continue to prescribe internally either tannic or gallic acids for the relief of pulmonary or renal hæmorrhage. In gastric and possibly in intestinal bleeding, large doses of tannin might have some effect, but they are nauseous and apt to sicken the patient. Ergot of rye is probably the leading favourite with most practitioners, and is recommended in every textbook of therapeutics or practical medicine in the treatment of cases of hæmorrhage. For many years past I have never ordered it in such cases, and I never give a hypodermic injection of "ergotin" Without entering upon the difficult question of the action of ergot upon the gravid uterus, I desire to point out that even if we admit as proven the oxytocic action of a drug upon a large and specialised mass of unstriped muscle under special circumstances, it is unwarrantable to assume that therefore it will cause contraction of the unstriped muscular tissue in the walls of the smaller blood vessels. Moreover, the experimental evidence in support of the proposition that ergot does cause a widespread contraction of the smaller blood vessels is contradictory, and it is only by experimental pharmacology that such a point can be settled. M. Liégeois a few years ago made a vigorous protest against the routine treatment of hæmorrhage by ergot.[1] Ellinger's experiments go to show that "ergotin" induces no vascular contraction. Likewise as to the blood pressure, the evidence is contradictory as to whether ergot raises it or lowers it. Ellinger believes that ergotin may have a specific action upon the blood itself whereby coagulation is more easily induced at susceptible points in the vascular cycle. We must also bear in mind, as Pick shows, that the proof that any given substance has the power of causing vaso-constriction in a certain area allows no positive conclusion to be drawn for its employment as a hæmostatic in other territories of the body because the final effect in the various vascular areas is a variable thing. In his article on Secale Cornutum in Eulenburg's *Real Encyclop.*, Bd. xviii, 1889, Vogl, while accepting the value of ergot in uterine and intestinal hæmorrhage, demurs to its use in hæmorrhage from the lungs and other organs because there is no satisfactory evidence that it causes contraction of the small arteries. At a discourse in the Manchester Therapeutical Society upon the Treatment of Hæmatemesis, Dr. Dreschfeld said that "ergotin injections did no harm and might do good," and the late Dr. Leech likewise stated that 'injections of ergot did no harm and seemed to do good."[2] This is faint praise, and I am not so sure that we can confidently say that ergot does no harm. Apart from the pain and local troubles that sometimes ensue upon hypodermic injections of this drug, it is, if given by the mouth, liable to induce nausea and even vomiting, and to upset the digestion, surely very undesirable things. If ergot did cause a widespread narrowing of the peripheral blood vessels, would not this raise the blood pressure, and so be the worst possible thing to do in a case of hæmoptysis? Dr. Hawkins considers that he has observed in a case of hæmoptysis occurring in a patient with renal cirrhosis that the administration of ergot increased the hæmoptysis. Dr. A. Foxwell gave ergotin a fair trial in hæmoptysis. When he was resident medical officer at the General Hospital, Birmingham, his routine treatment was 30 grs. of Bonjean's ergotin injected deeply into the muscles of the buttocks. He says: "I never saw any injurious effect, local or general, result from such treatment; nor can I say that I was ever able to definitely associate any cessation in the hæmoptysis with its use."[3] He further pertinently asks, "But were it good to contract the arterioles of the lungs, how do we know that ergot will do this?" "It is difficult to understand," says Dr. Hess of the Falkenstein Sanatorium, "how one of the last named drugs (hydrastis, ergotin, stypticin) could directly influence a hæmorrhage which usually originates in a blood vessel, embedded in an infiltrated or diseased mass, the wall of which, especially the muscular coat, has been considerably damaged."[4]

What treatment, then, is rational, say, in an urgent case of hæmoptysis? (1) Reassure the patient and calm his natural alarm and excitement and that of his friends by a few judicious words and simple directions, and emphasise the fact that hæmorrhage *per se* is rarely a matter of urgency. It is curious to observe that gastric hæmorrhages, which are often of much more serious import, have not the same depressing effect upon the patient as a slight tinge of blood in the expectoration. (2) Avoid irritation of the gastric ends of the vagus nerve. Therefore do not administer cold drinks or pieces of ice to patients suffering from phthisis complicated with hæmoptysis. Cold drinks irritate the gastric branches of the vagus, give rise to cough, and thus aggravate the bleeding. Moreover, by causing contraction of the blood vessels of the stomach, they may tend to increase the flow of blood to the lungs, and intelligent patients, the subjects of hæmoptysis, usually discover the truth of this by experience, and avoid cold drinks (Eklund). Allow, on the contrary, warm mucilaginous drinks. An icebag to the outside of the chest is perhaps of use. (3) Keep the patient absolutely quiet in mind and body. (4) Give morphine hypodermically; this is the best thing of all to do. (5) Relieve the bowels freely by magnesium sulphate or by calomel. (6) Let the diet be simple and nutritious, reduce the amount of fluid, and give no alcohol.

[1] *Journ. des Praticiens*, June 22nd, 1893; *Med. Chron.*, August, 1893.

[2] BRITISH MEDICAL JOURNAL, January 7th, 1899, p. 22.

[3] BRITISH MEDICAL JOURNAL, April 21st, 1894, p. 849.

[4] *Practitioner*, November, 1897.

II.—WALTER ERNEST DIXON, M.D.,
Cambridge.

DR. DIXON first showed the results of some experiments performed by Dr. Brodie and himself on the vascular changes occurring in the lung. He was able to show that all drugs which raised the blood pressure as a result of peripheral vaso-constriction increased the total blood in the lung, and hence believed that such drugs were essentially wrong in the treatment of pulmonary hæmorrhage. He discussed the value of urethane in hæmorrhage of the bowel, showing that by the use of this drug the intestines, stomach, and bladder became completely paralysed. He further advocated the use of suprarenal extract in hæmorrhage from the stomach.

III.—ERNEST KINGSCOTE, M.B., C.M.,
London.

DR. KINGSCOTE recommended that in cases of internal hæmorrhage endeavours should be made to attract the blood to other parts of the body by heat applied to the extremities, mustard to the nape of the neck, etc., to avoid a local chill by seeing that the skin was not exposed to draught, etc. Any local chill constricted the cutaneous vessels and increased the

tendency to internal hæmorrhage. For this reason apoplexy was more common in the winter than the summer. The semi-erect position was better than the supine, because on account of gravity it rendered the pulse wave less vigorous. This was the reason that sudden elevation of the arms tended to stop nasal hæmorrhage.

IV.—Edward Liveing Fenn, M.D., M.R.C.P.,
Physician, Essex and Colchester Hospital.

Dr. Fenn asked if any member of the Section had had any experience of the effect of saline and gelatine solutions in internal hæmorrhage. He further drew attention to the marked effect of suprarenal substances on the small blood vessels and so indirectly on the heart's action, instancing a case of acute Graves's disease which steadily got well under this treatment, the heart's action falling gradually from 160 to 100 in the minute.

V.—Robert Murray Leslie, M.A., B.Sc., M.B., M.R.C.P.,
Medical Registrar, King's College Hospital; Assistant Physician, Royal Hospital for Diseases of the Chest, City Road.

Dr. Leslie said: The most important principle in the treatment of hæmorrhage is undoubtedly the lowering of the blood pressure. The syncopal condition of the patient consequent on a severe hæmorrhage acts as an excellent cardiac depressant, and so reduces the general blood pressure. Absolute rest—local, general, and mental—is all-important. Thus, in gastric hæmorrhage nothing should be administered by the mouth, while in hæmoptysis coughing should be checked as much as possible. At the same time the patient should be reassured by a few encouraging words. Morphine, especially subcutaneously, is by far the most important drug in the treatment of internal hæmorrhage. It lowers the blood pressure, calms the general excitability, and soothes the mental distress. As regards the use of astringents, they are distinctly contraindicated in the treatment of hæmoptysis. Bradford and Dean have shown experimentally that ergot and other astringents actually raise the blood pressure in the pulmonary circulation. Clinical experience is also against their use, as they simply disorder digestion and induce constipation, and are accordingly better withheld altogether. I have never had to use them at Brompton Hospital or at the Royal Chest Hospital. One of the most important points in the treatment of hæmoptysis and one curiously enough ignored in the general textbooks is that which relates to the decubitus of the patient. In every case of hæmoptysis the patient should at once be turned on the affected side. The hæmorrhage comes from the corresponding lung. The regurgitation of blood which occurs as the result of inspiratory efforts will then take place into the affected (more or less functionless) lung, and will do little harm, while, on the other hand, if the patient is lying on the sound side or on the back, the blood will regurgitate into the functioning lung, with the result that breathing becomes difficult or impossible, and fatal asphyxia may ensue. This untoward result would very rarely occur if the decubitus above mentioned were always insisted upon. In threatened death from asphyxia one may occasionally save a life by having resort to artificial respiration. I have found suprarenal gland of value in the treatment of hæmaturia.

VI.—W. Essex Wynter, M.D., F.R.C.P.,
Assistant Physician and Lecturer on Pharmacology and Therapeutics, Middlesex Hospital.

Dr. Wynter referred to the method of increasing the coagulability of the blood by the subcutaneous injection of gelatine solution and cited the original cases of Drs. Lancereaux and Paulesco, in which this effect was produced in three sacculated aneurysms with a curative result. The solution used consisted of sterilised white gelatine in normal saline solution having a maximum strength of 5 per cent., of which 250 c.cm. were injected at intervals of a week on ten to twenty occasions, the quantity and strength varying, and sometimes falling as low as a 1 per cent. solution and 100 c.cm. The practical result in a large sacculated aneurysm protruding in the left mammary region recently treated in this way under the speaker's observation had been to produce almost immediate hardening of the tumour with some pain, and after six weeks temporary convalescence of the patient. The same means had been employed in the arrest of internal hæmorrhage, and as a preventive measure in operations on specially vascular organs.

VII.—Thomas Herbert Morse, F.R.C.S.,
Consulting Surgeon, Cromer Hospital.

Mr. Morse said the treatment of the consequences of internal hæmorrhage—for example, that after extrauterine rupture, etc.—was often to give time for operative measures directed to stop the source of the bleeding. He injected 15 ounces of warm water into the rectum, then gave about the same amount by the mouth, then proceeded to inject into the cellular tissue of one or both axillæ about 10 ounces of warm normal saline solution; in about half an hour there was a sufficient pulse to operate with a local but not a general anæsthetic.

A CONTRIBUTION TO THE STUDY OF THE VASCULAR MECHANISM OF THE TESTIS.

By Walter E. Dixon, M.D., B.Sc. Lond.,
Assistant to the Downing Professor of Medicine in the University of Cambridge.
(From the Laboratories of the Royal Colleges of Physicians and Surgeons, London.)

[Abstract.]

Although the vascular mechanism of the circulation in most of the organs of the body has been widely investigated, the origin of their vasomotor nerves traced, and the effects produced by the injection of various substances determined, yet we possess little accurate knowledge of the testis with reference to these points.

It is well known to surgeons that the testis in man, being surrounded by a tough fibrous tunica albuginea, have a check placed upon their power of expansion, and hence the severe pain which may be developed during inflammatory conditions of this organ. This being the case, one would not *a priori* expect to find any highly developed vasomotor mechanism, a supposition which is completely borne out by experimental investigation.

The testes in different animals vary considerably in the details of their anatomy. In many carnivorous animals (cat and dog) the testes are relatively small, and the tunica albuginea is more highly developed than in *Herbivora*, such as the rabbit, or in animals which periodically or habitually retain the testis in the abdomen. Herbivorous animals, on the other hand (goat and ram) have relatively large testes, which, although provided with a well-developed fibrous coat, are yet capable of more considerable changes of volume than occur in *Carnivora*. It cannot, therefore, be assumed that the vascular changes occurring in this organ in any one animal are necessarily the same as those in another, and indeed such is not the case.

Method.

In this research the plethysmograph has been employed to record the vasomotor changes of the testis. The animals used were principally dogs, but goats and other animals were also occasionally employed. In all cases the animals were anæsthetised with A.C.E., and morphine was sometimes injected. The operation consists in making a median incision over the scrotum, separating and shelling out the testis as rapidly as possible, and incising the tunica vaginalis; it is not necessary to remove the tunica, but much care is required to avoid injury to vessels whilst cutting it. All bleeding being arrested, both testes in the case of the dog, but only one in the goat, are introduced into an air oncometer, communicating with a tambour or piston recorder. Tracings obtained by this means on smoked paper show the alterations in pressure due to respiration, and also the cardiac beats, though the latter are but poorly marked.

Effect of Operations on the Testis.

In some of the experiments on dogs where the testes were subjected to considerable handling and exposure, it was noticed that the blood pressure was low. With the object of investigating this condition, experiments were undertaken so that the anæsthetised animal was kept warm for a considerable time before the testes were touched, the height of the

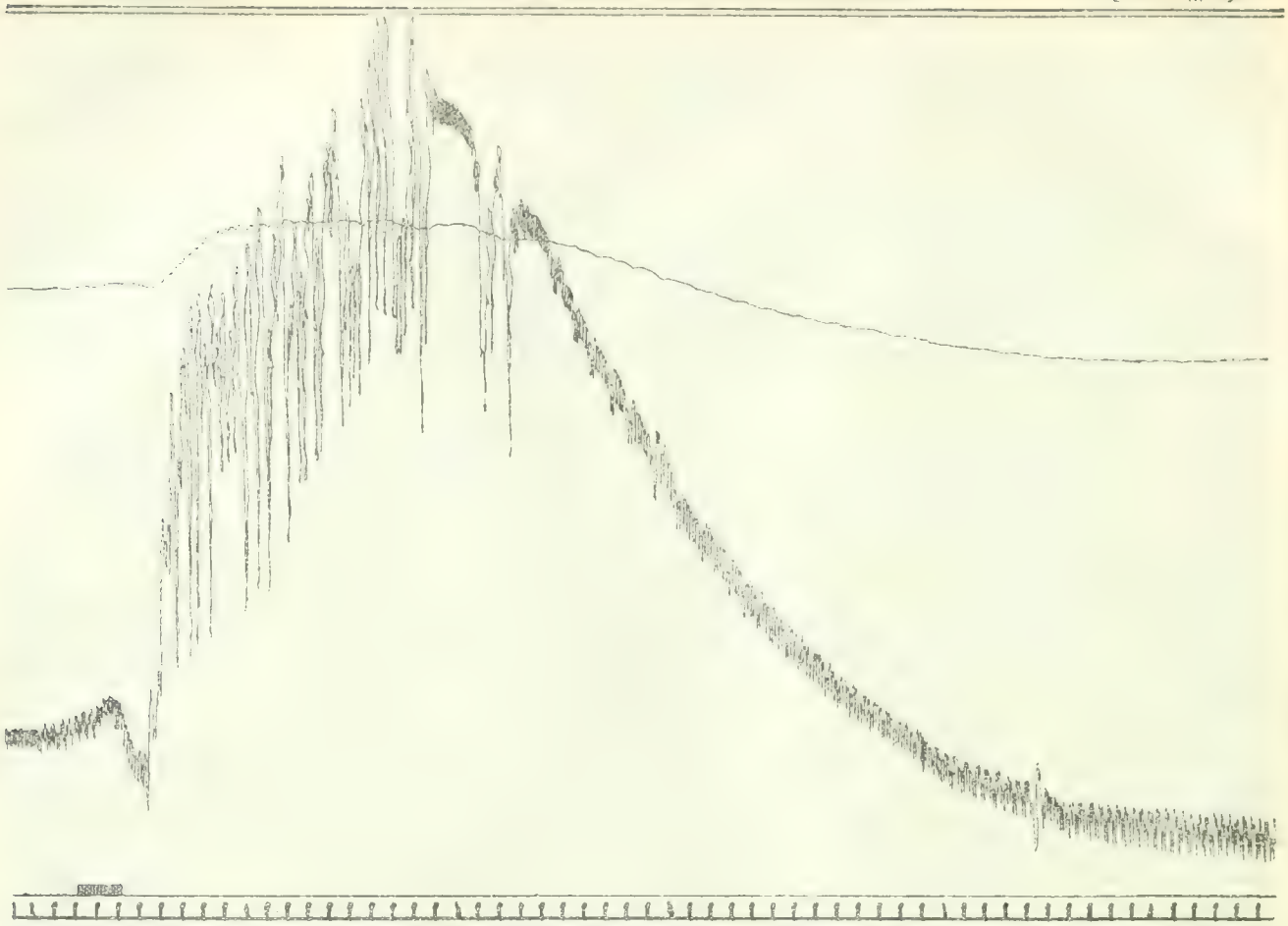


Fig. 1.—Dog (terrier), upper tracing represents testicular volume, lower represents blood pressure. Shows the effect of injecting 3 mg. of nicotine. Time marker = 2 seconds.

blood pressure being periodically noted until it was found to remain quite constant. On now exposing the testes a fall in the blood pressure slowly develops, which, however, by taking reasonable precautions as to warmth, exposure, etc., may be almost entirely eliminated.

From further experiments it appears probable that this fall may be vasomotor in origin, due to dilatation of the vessels in the splanchnic area.

EFFECT OF INTERFERENCE WITH THE VESSELS AND MUSCULAR MOVEMENTS.

Pressure on the abdominal aorta, as would be expected, produces some diminution in the volume of the testis. If the medium used for making the oncometer airtight be of too stiff a consistency, it has the effect of hindering the flow of blood through the tortuous spermatic veins without interfering directly with that through the arteries, hence the volume would be continually increasing. This error may give rise to considerable trouble, especially in the case of big animals such as goats. Bleeding from the carotid leads to a diminution in the testicular volume, but this may be looked upon as entirely passive. Muscular movements are always associated with an expansion, generally a direct result of rise in the blood pressure.

EFFECT OF ASPHYXIA ON THE VASOMOTORS OF THE TESTIS.

Asphyxia first produces an increased force of cardiac beat, together with some constriction of the splanchnic vessels, resulting in a rise of blood pressure. This constriction of intestinal vessels subsequently gives place to dilatation, whilst the blood pressure still remains above the normal.

The volume of the testis may show a slight increase at the commencement of asphyxia, but this initial dilatation is unusual, and when present is both insignificant and short. The important alteration in the testis is its diminution in volume during the rise in arterial pressure. This constricted condition persists throughout the rise in arterial pressure, and the testicular vessels do not, as in the case of the intestines, subsequently fill with blood, so that the volume increases.

If all the elements passing to the testes be severed in a dog, except the vascular, different results are observed after asphyxia. The testis is now a more passive organ than before, and its volume, as shown by the plethysmograph, generally follows the blood pressure, the rise of pressure during asphyxia, for example, being associated with a rise in the plethysmographic lever.

This experiment demonstrates two facts, first that the effect of venous blood on the testis itself is comparatively slight, and that such constriction as occurs is of central origin; and secondly, that the testis is provided with a vasomotor mechanism which, however, judging by the changes in volume that occur, is quite insignificant compared with that which is present in the kidneys or intestine.

THE EFFECT OF INJECTING DRUGS WHICH RAISE THE BLOOD PRESSURE.

These may be conveniently divided into two groups:

1. Those which produce their effect mainly as a result of cardiac stimulation.
2. The vaso-constrictors.

Drugs belonging to the former group produce a passive dilatation of the testis, as would occur with all other viscera.

Small injections of drugs producing vaso-constriction, such as suprarenal extract or nicotine, into the vein of a dog, whilst in each case causing a considerable rise in blood pressure mainly as a result of peripheral constriction, nevertheless in-

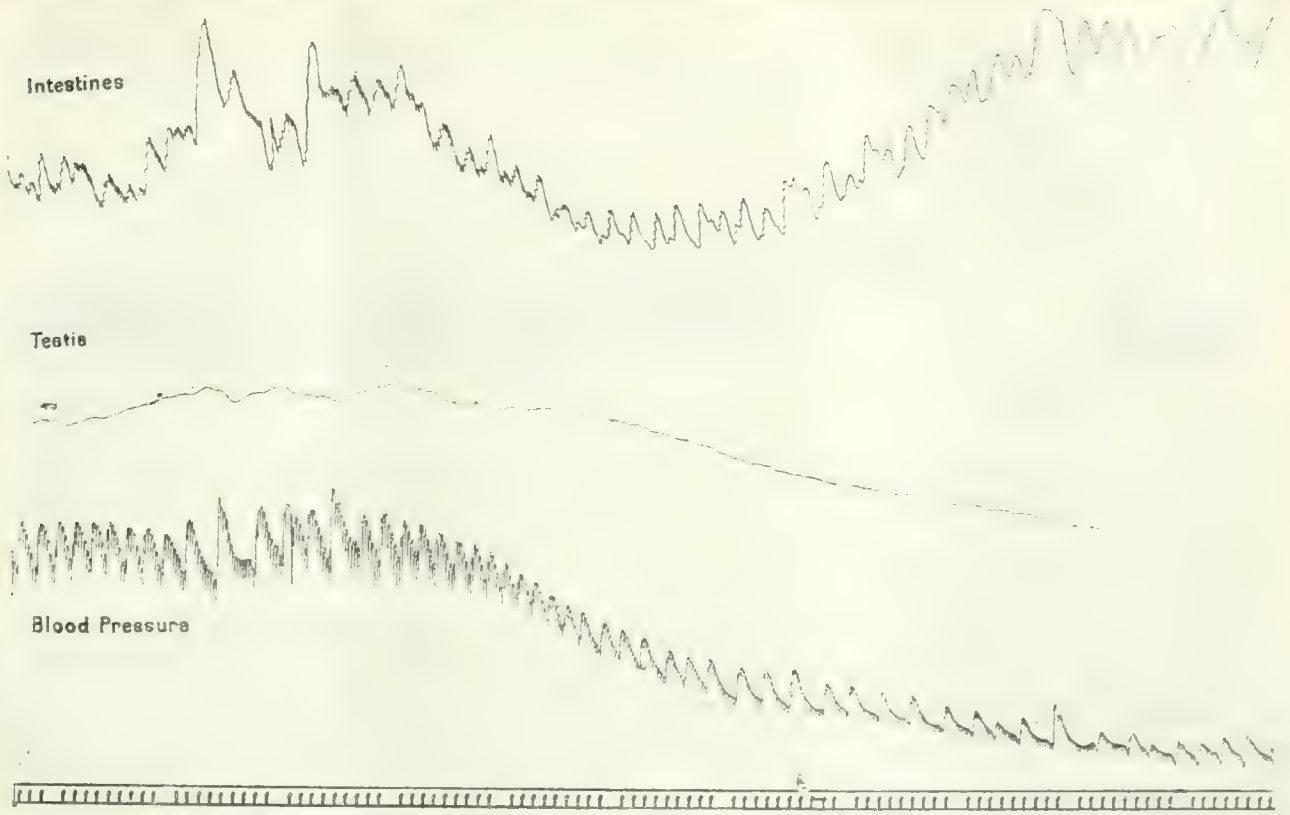


Fig. 2.—Dog (terrier), shows the effect of injecting 2 mg. of cantharidin. Time marker = seconds.

duce testicular dilatation. This dilatation only lasts so long as the pressure remains up, and is followed by a more prolonged constriction (Fig. 1). In certain animals, notably in the goat, the effect of such injections is different. In this animal the testis behaves as most other organs towards vaso constrictors, and the rise in arterial pressure is associated with a corresponding constriction of the testis.

This difference in behaviour may be explained by the difference in the anatomy in the two cases. In the dog the alteration in volume of the testis is comparatively to its size less than that which occurs in the goat, which would indicate a more highly-developed vasomotor mechanism in the latter animal. In the case of the dog it is therefore possible that the rise in blood pressure is sufficient to overcome the tendency to constriction of the testicular vessels, and hence the volume is increased. Dilatation of the intestinal vessels has been noted by Bunch as an unusual occurrence after the injection of nicotine.[1]

The Action of Vaso-dilators.

Small injections or inhalations of amyl nitrite may be conveniently considered as representing this group. In the goat the testes behave to vaso-dilators in the usual manner—that is, with inhalation of amyl nitrite dilatation occurs corresponding to the fall of blood pressure. In dogs the contrary results obtain, the testes shrink passively with the fall of blood pressure but when the inhalation ceases and the pressure again rises to normal, the testes swell to a volume considerably greater than the usual.

The Action of Various Drugs.

Cantharidin was employed both as a dilute alcoholic solution and as an emulsion with almond oil; the latter was prepared by dissolving crystalline cantharidin in hot almond oil, and converting into an emulsion of such a strength that the cantharidin should not exceed 1 in 1,000 parts. Control experiments were performed in each case. When injected into the jugular vein of dogs in doses of 0.001 to 0.003 grams the blood pressure rapidly falls, the force of the cardiac beat is diminished, and the rapidity of the pulse is increased.[2] The pressure remains low a considerable time, and recovery is very gradual. At the same time that the fall of pressure occurs the vessels of the kidneys and testes constrict. This constriction is more intense and more lasting than that which I have observed with any other substance; recovery is very gradual, and is followed by a condition in which the organs mentioned become much congested. During this constriction of the kidneys and testes the vessels of the splanchnic area dilate, except for an occasional transient constriction immediately after the blood pressure falls; the congested condition of the splanchnic area remains till the pressure regains the normal height (Fig. 2).

Extract of Testis.—From the most ancient of literature it is evident that the testis has from time immemorial been used as a therapeutic agent. Satyricon, an aphrodisiac of this class, belonged to classic Greece, and the "aquæ amatrices" hawked about the streets of Imperial Rome purported to be derived from the genitals of the goat and wolf. In more recent times Brown-Séquard has been the principal advocate of this form of medication. The extract employed in these experiments was prepared by macerating the testes of freshly killed white rats with normal saline in the proportion of 1 testis to 10 c.cm. The extract was then filtered and used immediately. Extracts prepared from the goat, dog, cat, guinea-pig, etc., gave similar results. The effect of this extract is very complex, the action being due to several bodies, but it is only necessary here to note its specific action on the testis. Immediately after injection the testis slightly dilates, but in a minute or two regains its normal volume. This dilatation is followed by a second and much greater dilatation, which is also prolonged over a much longer period. Sometimes the dilatation begins soon after injection, and is continuous, reaching its maximum in about two or three minutes. This condition, as will be shown in a further communication, is mainly due to the presence of the nucleo-proteid; the initial dilatation is due to leucomaines, the most important of which

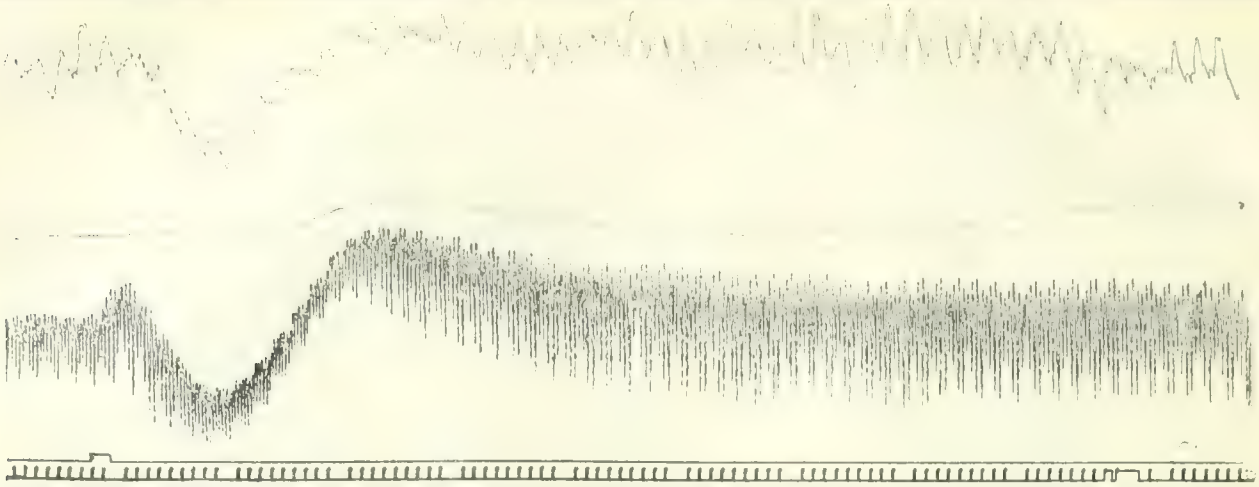


Fig. 3.—Dog (terrier), upper tracing represents the volume of a loop of intestine, the lowest represents blood pressure, and the centre one the volume of the testes. Time marker = seconds. Shows the effect of injecting 3 c.cm. of a concentrated infusion of valerian into the jugular vein.

is spermin.[3] It is noteworthy that while the testis and splanchnic area are dilated after injection of testicular extract, the kidneys are constricted.

Valerian.—A concentrated solution of this substance was employed. When injected into a vein it was found to produce an immediate fall in blood pressure without cardiac slowing. At first the volume of the testis and splanchnic area, as registered by the plethysmograph, passively followed the blood pressure, but later very distinct dilatation of the testes resulted (Fig. 3). Control injections were made with the inorganic salts prepared from the same infusion with negative results.

Other Substances.—Caffeine has a very noticeable effect in dilating the testis without to any noticeable extent altering the blood pressure. Solutions of gold chloride made by dissolving the salt in normal saline, when injected into the dog in small doses produces a fall in pressure, the testis first contracts and then gradually dilates, the dilatation being considerable and permanent. In larger doses the fall of pressure is more marked and is accompanied by slowing. Recovery is very slow, and the initial constriction is more marked than with smaller doses, but the ultimate dilatation is more considerable although longer postponed. Strychnine gives rise to a slight constriction with a subsequent small dilatation, and alcohol also produces a slight increase in volume.

CONCLUSION.

Enough has been said to show that the testis is supplied with vasomotor nerves, that it undergoes changes in volume passively with the blood pressure, and actively as a direct result of vasomotor activity. These alterations, although well-defined, are insignificant in comparison with the changes in other organs such as the kidney. The testis does not necessarily follow the vascular alterations of either the kidney or splanchnic area; thus, after injections of testicular substance the volume of the testis and intestine expands whilst the kidney contracts. On the other hand, after smaller injections of cantharidin the testis and kidney contract whilst the splanchnic area becomes dilated; in contrast to both these nicotine usually produces immediate constriction of both intestine and kidney, but induces dilatation of the testis. Of the substances inducing vaso-dilatation of the testis the following are among some of the most defined. Cantharidin (late), valerian, gold (late), spermin and allied bodies, caffeine and fresh extracts of testis. The question of "internal secretion" and the significance of a dilated condition of the testis need not be discussed, but it is evident that, as in other glands, an active dilatation of vessels will lead to increased activity.

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[1] *Jour. of Phys.*, xxiv, p. 79. [2] *Schmidt's Jahrb.*, clxv. p. 237. [3] *Jour. of Phys.*, xxv, p. 356.

THE CHEMISTRY OF THE JABORANDI ALKALOIDS.

By H. A. D. JOWETT, D.Sc.

PILOCARPIN was discovered by Gerrard and by Hardy in 1875, and shortly afterwards two other alkaloids (pilocarpidin and jaborin) were isolated from the mother liquors. Of these latter alkaloids, pilocarpidin had a similar physiological effect to pilocarpin but weaker, whilst jaborin had an antagonistic effect, resembling atropine in its action. The properties and reactions of these alkaloids were studied by various chemists, but their results were incomplete and in some cases contradictory, and left the subject in a confused state. The complete investigation of this group of alkaloids was undertaken by the author in order to remove this confusion, and a brief account of the results obtained is here given. The original source of pilocarpin was the leaves of true jaborandi, but of late years this variety has become extremely scarce, and the leaves at present on the market are those of *Pilocarpus pennatifolius* and the Maranham jaborandi or *Pilocarpus microphyllus*. The leaves vary considerably in the amount of pilocarpin they contain, rarely more than 0.5 per cent. and sometimes none at all. In addition to pilocarpin, an isomeric alkaloid, isopilocarpin, is found in both varieties of leaves, but pilocarpidin has been found in small quantity only in the true jaborandi leaves (*P. jaborandi*). A most careful search has been made for jaborin in the three varieties of jaborandi above mentioned, but no trace of any substance with an atropin-like action has been discovered. The jaborin of commerce was found to consist of colouring matter with a small quantity of the above-mentioned alkaloids, and it had, as was to be expected, a mild pilocarpin physiological effect. Pilocarpin ($C_{11}H_{16}O_2N_2$ is the principal alkaloid of the series, and is a thick syrup becoming thinner on warming; it yields crystalline salts, and of these the most useful are the nitrate and hydrochloride. The nitrate occurs as distinct crystals, fairly soluble in water (1 in 7) but somewhat sparingly soluble in strong alcohol. The hydrochloride occurs as large cube-shaped crystals, very soluble in water and moderately so in alcohol (1 in 10). Of these salts the nitrate is the most convenient to use in medicine on account of its stability in the air, the hydrochloride being hygroscopic in moist air. The nitrate of commerce is fairly pure but contains a varying amount of the isomeric isopilocarpin nitrate.

I have shown good reason why this salt should replace the galenical preparations of the leaves. The character and tests, therefore, become of great importance, and since isopilocarpin nitrate, the most likely impurity, has been shown by Marshall to have a similar though weaker effect to pilocarpin, a suitable standard can be adopted. From further experience I would suggest that the melting point of the salt should be from 173° to 178°, and its specific rotation +80° to +83°. These factors would be correct for a salt containing a very small trace of

isopilocarpin, and which would be "commercially producible yet medically reliable."[1] As additional tests and characters, the behaviour of a strong solution with excess of ammonia and the formation of a crystalline picrate of sharp melting point (147°) might be suggested.

Isopilocarpin is isomeric with pilocarpin, and is formed by the action of heat or alkalis on this base. It was discovered, but incorrectly named pilocarpidin, by Petit and Polonowsky. Pilocarpin is converted quantitatively into its isomer by heating with water in a sealed tube at 180° for four hours. Isopilocarpin is very similar in its chemical properties to pilocarpin; it is a syrup which can be distilled unchanged in a vacuum, and forms crystalline salts. The nitrate is not quite so soluble as the pilocarpin nitrate, but the difference in solubility is so small that they cannot readily be separated by fractional crystallisation unless one salt is present in only a small quantity. Isopilocarpin nitrate is present as an impurity in the commercial pilocarpin nitrate, and this impurity has been confused with pilocarpidin nitrate, which is not present, as it is easily separated owing to its much greater solubility, and remains in the mother liquors. Isopilocarpin occurs in small quantity in the leaves, but the greater portion is formed during the process of manufacture in a similar manner to the conversion of hyoscyamine into atropine. It is curious that as the optically active hyoscyamine is converted in alkaline solution into the inactive atropine, so in alkaline solution the optically active pilocarpin is converted into the optically inactive isopilocarpin (in neutral solution isopilocarpin is optically active).

Pilocarpidin $C_{10}H_{14}O_2N_2$ is found only in the leaves of true jaborandi, and differs from pilocarpin and isopilocarpin in its chemical composition and in other respects. The nitrate is much more soluble in alcohol or water (1 in 2 parts of water) than the other nitrates. I have definitely proved it to be absent in the pilocarpin nitrate of commerce and the Maranham jaborandi. From 7 lbs. of true jaborandi leaves I obtained a very small quantity of a very soluble nitrate, which appeared from its melting point (137°) and its crystalline form to be pilocarpidin nitrate. The yield was 0·017 per cent. of the leaves taken, and as the supply of genuine jaborandi leaves is almost exhausted nothing further can be done with this alkaloid. It is now, however, definitely proved that this alkaloid exists, and is found only in small quantity in the leaves of the true jaborandi and not in the other varieties.

Jaborin.—I had previously shown that no alkaloid answering to the description of jaborin occurs in the Maranham jaborandi or in the jaborin of commerce, so a very careful search was made to ascertain whether such an alkaloid is present in true jaborandi. Seven pounds of genuine jaborandi leaves yielded 0·35 per cent of pure pilocarpin nitrate, a small quantity of isopilocarpin nitrate, and an amorphous substance soluble in excess of acid but precipitated on adding ammonia insufficient to neutralise the excess of acid. This substance was not alkaloidal, and proved on examination to have no atropine action. This amorphous product obtained was 0·016 per cent. of the leaves taken. No substance having an atropine like action has been found in any of the leaves examined. It is thus proved that no such alkaloid as jaborin occurs in either the true or Maranham jaborandi, and that the jaborin of commerce is impure pilocarpin.

The Constitution of Pilocarpin.—Hardy and Calmels have assigned a constitutional formula to pilocarpin and pilocarpidin, and have claimed to have synthetised these alkaloids, obtaining a synthetic product identical in its physiological action with the natural alkaloid pilocarpin. As the work of these chemists has been proved to be inaccurate by the author, and also by Pinner and Kohlhammer[2] and others, no further reference need be made to it, but for many years their work was accepted, and even now finds a place in all textbooks and dictionaries. On account of the interest attached to the relation between physiological action and chemical constitution an attempt is being made to determine the constitution of pilocarpin, and considerable progress has been made. Since pilocarpin readily changes into its more stable isomeride isopilocarpin, experiments are first being made with this base, as the nature of the isomerism would probably follow the determination of the constitution. Isopilocarpin acts not only as an ammonia base, but as a lactone, and forms salts with hydrates, and can even be titrated by hot alkali. On oxidation it yields ammonia, methylamine, acetic acid, and an acid of the formula $C_7H_{10}O_4$, which is probably the lactone of hydroxy-isobutyl-malonic acid. Isobutyric acid is formed by the fusion of pilocarpin with caustic potash. By the action of potash on methyl-isopilocarpin methylamine alone is formed, and further experiments prove that the nitrogen atoms occur as the groups :NH and :NCH_3. There are thus indications of the existence of the following groups in isopilocarpin $(CH_3)_2$:CH.CH.CH(CO_2)C, :NH,:NCH_3, leaving three atoms of carbon and of hydrogen to be accounted for. It is hoped that results will be obtained which will throw some light on the reason of the physiological action of this group of alkaloids.

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[1] *Digest of B. P. Researches*, p. 85. [2] *Ber.*, 1900, xxxiii, 1424.

THE PHARMACOLOGY OF THE JABORANDI ALKALOIDS.

By C. R. Marshall, M.A., M.D.,
Professor of Materia Medica in the University of St. Andrews.

In the previous paper Dr. Jowett has stated that until recently three alkaloids were supposed to exist in jaborandi leaves—pilocarpin, pilocarpidin, and jaborin. Pilocarpin exerts a stimulating influence on the nerve terminations of involuntary muscle and most secreting glands; pilocarpidin was believed to produce a similar but somewhat weaker effect; while jaborin was said to antagonise these substances. The last-named compound was isolated by Harnack and Meyer. They did not obtain it in a pure form, although they state that in constitution it is closely allied to pilocarpin. Jowett, as already stated, has been unable to isolate any such body, and from the crude products he has sent me I have failed to obtain any atropine effect. As Harnack and Meyer undoubtedly obtained an atropine action I am at present unable to explain their results, but criticism I shall leave until my own experiments are published in detail.

From different specimens of jaborandi leaves, Jowett has isolated pilocarpin and a small amount of an isomeric alkaloid isopilocarpin, and from true jaborandi leaves a small quantity of pilocarpidin. Jaborin has been carefully looked for but without success. The substances submitted to me as possibly containing this body invariably turned out to be mixtures of pilocarpin and isopilocarpin with some resinous substance. And this seems to be the composition of the jaborin sent out by Merck; it gives a weak pilocarpin effect, no atropine action.

As both pilocarpin and atropine affect the same structures—certain nerve terminations, or what we may regard as such—in various parts of the body, it is evident that a comparative investigation of such substances might be carried out in a variety of ways. I have chosen their influence on the heart as being the simplest and, I think, the most exact. These results were controlled by observations on the excretion of saliva, and by experiments with minimal doses on myself. The animals used were rabbits and cats. Both were anæsthetised with chloroform before the operation was commenced. In both the blood pressure was taken from the right carotid artery, and the injection cannula tied into one of the right facial veins, so that its mouth projected into the external jugular vein. Sometimes one vagus, sometimes both vagi were ligatured and cut. After obtaining a constant vagus effect, a solution of the drug was injected and the vagus again stimulated.

After the injection of pilocarpin the heart beats became slower and the blood pressure fell, and after a short but variable interval both gradually returned to normal, the blood pressure sometimes slightly beyond it. During the rise of the blood pressure the vagus was generally less irritable, but on reaching its normal height it became, for a short time, slightly more sensitive. This effect is produced by an injection of ½ to 1 c.cm. of a 1 in 5,000 pilocarpin solution; such a dose also produces distinct salivation. After somewhat larger doses the heart ceases to beat for a time, and then gradually returns to the normal. After still larger doses the heart is stopped permanently and the respiration is paralysed. By careful gradation of the dose, however, the vagus terminations may be paralysed, and then large doses can be given without much effect upon the heart.

Isopilocarpin produces a similar but much weaker effect to pilocarpin. In the rabbit its action on the heart seems to be comparatively less powerful than its influence on the salivary glands, but in cats and man this is not so obviously the case. Roughly, we may place its activity as one-eighth to one-tenth that of pilocarpin.

Pilocarpidin is very slightly active; it may almost be said to be inactive. Solutions of 1 in 200 injected into the circulation cause a slight fall of blood pressure and in cats slight salivation.

In all experiments the nitrates of the alkaloids were employed, but in all cases the dose is given as pure alkaloid.

In the experiments on myself the substances dissolved in water were taken by the mouth. My endeavour was to obtain the least dose causing salivation and perspiration; and under the conditions of the experiment this was obtained by pilocarpin 0.005 gram, isopilocarpin 0.04 gram, jaborin (Merck) 0.09 gram. Pilocarpidin 0.38 gram (4 grs.) did not produce distinct salivation or sweating, but it caused slight nausea. It may also be said that the resin of jaborandi in doses of 2 grams (31 grs.) is inactive.

Certain derivations of pilocarpin have been investigated, but these are of no practical interest, and their action will therefore be described elsewhere.

REMARKS ON EXTRACTUM JABORANDI LIQUIDUM (*B.P.*).

BY

H. A. D. Jowett, D.Sc., and C. R. Marshall, M.A., M.D.,

Professor of Materia Medica, University of St. Andrews.

Investigations with this preparation were made in order to determine whether any active principle other than pilocarpin and its allies was present in jaborandi leaves. Earlier investigators had noticed that crude products sometimes gave results different to those of pilocarpin, and consequently they had concluded that at least two active substances, antagonistic in action, were present in this plant. We have, however, failed, as stated in the previous communications, to detect chemically or physiologically any substance antagonistic to pilocarpin, and in none of the liquid extracts examined have we found an atropine-like effect. But apart from this question of the active ingredients, the action of the preparation itself is of some interest. It is the most important galenical preparation of jaborandi in our *Pharmacopœia*, and we believe, although we do not know to what extent, it is used in practice.

As samples, three specimens were obtained from three large manufacturing druggists. They were assayed by a method described in the *Year Book of Pharmacy* (1899, p. 438) for "total alkaloid" and pure alkaloid (chiefly pilocarpin) with the following result:

Sample.	Total Alkaloid.	Crystalline Nitrate (chiefly Pilocarpin).
A	0.21 per cent.	*Nil.*
A_2	0.34 ,,	*Nil.*
B	0.50 ,,	0.082 per cent.
C	0.25 ,,	0.082 ,,

The supply of A was exhausted before the experiments were finished, and consequently another sample, A_2, which proved to be similar in composition, was obtained from the same source. Owing to the small quantities at our disposal, the comparatively slight amounts of alkaloids, and the presence of resin, the assay could not be expected to give accurate results. The "total alkaloid" invariably contains resin, and this interferes with the crystallisation of the alkaloidal salt. A and A_2 may have contained a small amount of pilocarpin or its allies (0.01 to 0.02 per cent.), and B, which contained a large quantity of resin, may have contained more than that given.

This is what we found physiologically. When injected into the circulation of animals these preparations, although crude and containing 45 per cent. of alcohol, were found to be fairly well borne. Fig. 1 shows the effect of the three samples on the blood pressure of a small rabbit. It is the first experiment made. The animal had been chloroformed, the right carotid artery joined to the manometer, a cannula introduced into the right external jugular vein, and the right vagus ligatured, cut, and stimulated several times before the injections were commenced. Extractum jaborandi liquidum A (1 c.cm.) undiluted was first injected.

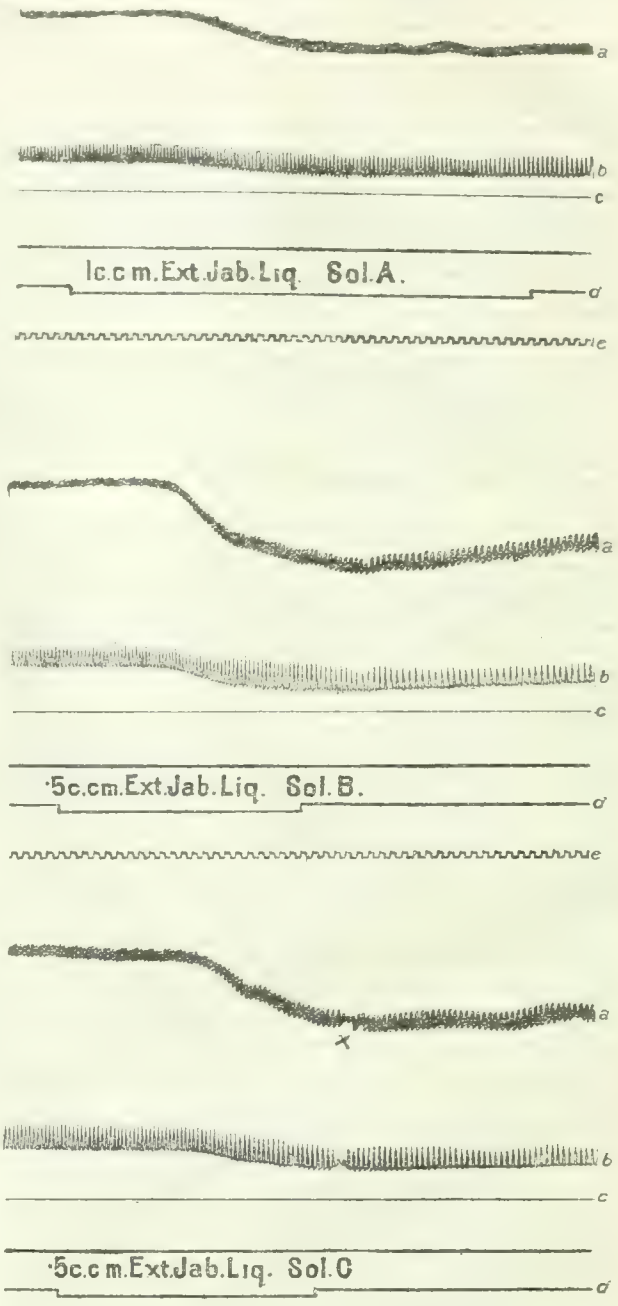


Fig. 1.—Action of extractum jaborandi liquidum (*B.P.*)—three samples—on blood pressure of rabbit. Tracing taken by Hürthle's manometer. *a*, Ordinary blood pressure; *b*, same showing individual heart beats; *c*, zero line; *d*, time of injection; *e*, time in seconds.

The blood pressure, which was rather low, fell somewhat, and the heart instead of beating 17 in 5 seconds only beat 12. Afterwards the blood pressure rose considerably above its previous height, and then fell slightly. The vagus was also less irritable than before the injection, but there was nothing to suggest an atropine action. No salivation occurred. The

fall of blood pressure may have been due to the crude nature of the solution, as a slight fall occurs on injecting alcoholic preparations of this kind into the veins, but it is not unlikely that a minute amount of pilocarpin was present.

About 17 minutes afterwards 0.5 c.cm., Sample B, was injected. This time a more marked fall of blood pressure and slowing of the heart (17 to 9 beats in 5 seconds) occurred. Salivation also quickly followed, and the vagus, after the return of the blood pressure to normal, was slightly more sensitive to stimulation than before. All these are pilocarpin actions. A similar but less powerful effect was produced by the injection of the same dose (0 5 c.cm.) of Sample C. There was a fall of blood pressure, slowing of the heart, and a slightly increased sensitiveness of the vagus, which at once suggested pilocarpin or isopilocarpin. Afterwards 1 c.cm. of Sample C was injected, and later 1 c.cm. Sample B. Both produced the same, but correspondingly more marked, effects as before, and B caused failure of the respiration (also a pilocarpin effect), which could not be permanently re established until a small dose of atropine (1 c.cm. of 1 in 20,000 solution) had been injected.

In later experiments the liquid extracts were diluted or otherwise modified, but the same results were obtained. In all B was found to be more powerful than C, and C than A or A_2. The relative action of B and C on the blood pressure of a cat is seen in Fig. 2. The samples were diluted with three

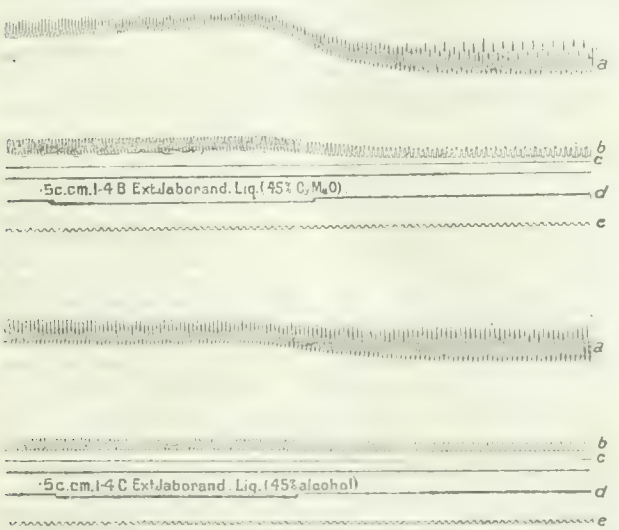


Fig. 2.—Effect of extractum jaborandi liquidum on blood pressure of cat. Letters as before.

times their volume of saline solution and 0.5 c.cm. of these solutions was injected into the external jugular vein in each case. Previously twice the amount of sample A_2 (0.5 c.cm. of 1 in 2 solution) had been injected with comparatively little effect. There was slight slowing of the heart and slight salivation, but no distinct fall of blood pressure. After B the saliva excreted in 16 minutes was 2.4 c.cm., after C 2.1 c.cm. in the same time, but as salivation had not ceased when this was injected, the amount, as compared with B, is relatively large.

Confirmatory experiments were made on one of us (M) who perspires freely. The various extracts were taken by the mouth and as far as possible under the same conditions. The results were as follows:

Sample A ...	20 c.cm. (340 minims) ...	No action (except slight alcoholic one).
Sample A_2 ...	15 c.cm. (250 minims) ...	No action.
	20 c.cm. (340 minims) ...	Very slight transient effect.
	30 c.cm. (510 minims) ...	Slight salivation in 20 minutes; slight perspiration in 30 minutes; continued more than an hour.
Sample B ...	5 c.cm. (85 minims) ...	Very slight and transient salivation and perspiration.
	10 c.cm. (170 minims) ...	Salivation in 28 minutes; followed by perspiration; both continued more than an hour.
Sample C ...	10 c.cm. (170 minims) ...	No effect.
	15 c.cm. (255 minims) ...	Commencing salivation in 8 minutes; very distinct in 18 minutes, when perspiration was perceptible; both diminishing in 45 minutes; almost ceased after 1 hour.

In some of the experiments a little nausea and palpitation were experienced.

A point we wish to emphasise in these experiments is the enormous dose necessary to produce an effect. Of one preparation more than an ounce was required, and of the most powerful 85 minims; ¾ oz. of another was inactive. These results, coupled with the experiments on animals, prove the extreme variability of this preparation,[1] and cast considerable doubt on its utility as a medicine. Moreover, its inclusion in the *Pharmacopœia* is unnecessary. The whole therapeutic activity of jaborandi leaves is due to the pilocarpin, or isopilocarpin, they contain, and preparations, which cannot be standardised with accuracy, only contain a variable proportion of these with alcohol and inert resinous and colouring matters. The inactivity of the preparations seems to be due to the absence of pilocarpin, and not to the presence of an antagonistic alkaloid.

NOTE.

Compare the assays of Farr and Wright (*Year Book of Pharmacy*, 1899, p. 383).

TREATMENT OF ASTHMA AND HAY FEVER.

By Ernest Kingscote, M.B., C.M.,
London.

Asthma is a symptom and not a disease, just as headaches, coughs, and epileptic convulsions are symptoms. Indeed, Trousseau aptly described asthma as an "epilepsy of the lungs." By asthma I mean the spasmodic variety. This must not be confounded with cardiac dyspnœa, which often accompanies it. It consists of spasmodic contractions of the involuntary muscles surrounding the bronchioles and of the over-action of the voluntary muscles of respiration in their efforts to overcome these contractions. It is of little avail, therefore, to attempt to eradicate asthma by local applications to the lungs or by constitutional remedies which tend to lower nervous excitability, because, when the effect of these has passed off, we remain *in statu quo*. Now, there is one way and only one of artificially producing asthma. It is as follows: If we anæsthetise a dog, divide the left vagus in the neck and gently stimulate the proximal end with electricity, we produce asthma in the right lung and spasmodic contractions in the right half of the diaphragm.

We must look, therefore, for the cause of asthma in some tissue or tissues supplied by the vagi and sympathetic nervous system (Gaskell has pointed out that the sympathetic system is physiologically an extension of the vagi) or in a lesion of the nerves themselves, as none but a nervous irritation could influence so wide an area as that of the 750 millions of bronchial tubes contained by the average lungs. When we consider what a wide range these nerves have, it is clear that we shall discover any known cause or causes of asthma in the area of their origin or distribution, for instance, the brain, the heart, the lungs, the liver, the spleen, the uterus, the kidneys, etc., as exemplified by dyscrasic asthma, cardiac asthma, bronchitic asthma, hepatic asthma, splenic asthma, pelvic asthma, renal asthma, etc. There are, however, three pretty constant factors in cases of asthma of long standing; these are cardiac dilatation, acute vesicular emphysema and chronic congestion of the liver. These conditions must be dispersed, in addition to any other causes, in order to cure the patient. With regard to cardiac dilatation I have endeavoured to show in a series of papers how the dilated organ may impinge on the vagi (which lie immediately behind it on the bony spine) and so irritate them as to produce the asthmatic spasm. Emphysema tends to produce asthma by (*a*) dilating the heart and (*b*) interfering with the pulmonary circulation.

In some cases either or all of these conditions (I have seldom seen a case without them) may be the sole remaining causes of asthma, the original cause or causes having worn itself or themselves out.

TREATMENT.

(*a*) *Special.*—Having ascertained the vagal or sympathetic irritation (which is not such a long business as might appear from the fact that there are generally leading symptoms—for

example, dyspepsia, cough, uterine discharge, albuminuria, headache, etc., which serve to indicate the site), endeavour to remove it. If there be a plug of wax in the ear, or polypi in the nose, remove them; if bronchitis, hepatic congestion, dyspepsia, uterine discharge, adopt appropriate treatment.

We now have to deal with cardiac dilatation and emphysema. I know of no better or surer means to reduce the former than the Schott treatment, whereas the latter may be reduced by breathing exercises suggested by Harry Campbell in his work *Breathing Exercises in Disease*. The following is my special manner of conducting them. The upper part of the thorax being fixed and the breathing therefore mostly abdominal, it shall be our endeavour to modify these relations. I instruct the patient to place a towel at the back of the waist, then to quickly blow out as though he were trying to inflate a paper bag (this is to empty the lungs of their residual air), and as he does so to firmly bring the ends of the towel forward until the hands meet in such a manner that the towel shall overlap the lower ribs. The lungs are now empty, and the lower ribs fixed by the constriction of the towel. I now instruct the patient, while being careful to retain the towel in its position, to inhale slowly but forcibly through the nose. As the lower part of the thorax cannot expand owing to the pressure of the towel, the upper thorax is compelled to do so, so powerful are the voluntary muscles of inspiration; and as the thorax is not a rigid box, but a very adaptable cage, by means of these exercises it soon recovers its normal respiratory movements, unless the costal cartilages have become fixed by calcification.

I have seen quite a number of cases gain as much as 2 to 3 inches in chest expansion by these means, that is to say, before the commencement of the treatment the difference between the chest measurements, in complete expiration and full inspiration at the level of the nipples, has been 1 inch, whereas on its completion it has increased to 3 to 4 inches. Further, as nearly all the cases suffer from suboxidation of the blood and anæmia, I am in the habit of giving them inhalations of pure oxygen gas several times a day, and the peptonate of iron, which is not assimilated until it reaches the alkaline influence of the intestines, and does not therefore upset the stomach, neither is it astringent. The patient should also be encouraged to be in the open air as much as possible.

2. *General.*—It is unnecessary for me to say anything on this score, as any intelligent practitioner will be able to treat symptoms as they supervene.

ILLUSTRATIVE CASES.

Asthma.

A. L., aged 36, suffered from asthma from childhood, emphysema, cardiac dilatation, and thickened nasal mucous membrane. These three causes were removed. Is now entirely free from asthma, and has been for three years.

J. H., aged 41. Asthma from boyhood, cardiac dilatation, and emphysema. Asthma disappeared after treatment three years ago, and has not since returned.

Hay Fever.

R. W., aged 14. Cardiac dilatation and emphysema, treated by resisted exercises and breathing exercises only. Cured two years ago. Hay fever has not returned.

Mrs. L. Hay fever and asthma, cardiac dilatation, emphysema, and congested liver. Hay fever and asthma persisted all the summer. Treated in spring of last year. Completely cured.

Dr. HARRY CAMPBELL pointed out that under normal conditions the heart did not press upon surrounding structures, being placed in a partial vacuum. He asked why Dr. Kingscote was so particular about expanding the upper part of the chest. In Dr. Campbell's own experience the chest was always sufficiently expanded in the asthmatic, generally, indeed, over-expanded.

A DISCUSSION ON SERUMTHERAPY.

I.—T. J. BOKENHAM, M.R.C.S., L.R.C.P.,
London.

THE subject of serumtherapy, which is to engage our attention this morning, is one of engrossing interest to all who have during the past few years watched the crystallisation of our knowledge in this direction. There must be very few engaged in active practice who have not at some time or another had personal experience of its efficacy or the reverse. I trust that this morning we may have an opportunity of hearing the views of those now present as to its value.

And first, I think that before considering any of the practical applications of serumtherapy, it will be as well to go back and see upon what scientific facts this new mode of treatment has been built. It is only by a more or less thorough knowledge of groundwork that we are able to fully appreciate the lines on which the advocates of serumtherapy are endeavouring to proceed.

"Serumtherapy" is primarily based on the observation that individuals either possess or may acquire resistance to a given infection or poison. Such immunity may be the natural attribute of a species, enjoyed by all its members to a greater or less degree; this we term "natural immunity." In other cases the same power of resistance must be artificially imparted, in which case the immunity is termed "acquired." We must further distinguish between resistance to infection and insusceptibility to the action of a toxin.

Seeing that the symptoms of most bacterial diseases are mainly due to the poisons which the invading bacteria produce (whether in local foci, as in diphtheria or tetanus, or in the blood itself, as in septicæmia), it is evident that the problem of immunity must be to a great extent at least a chemical one. Scientists have been, and are still, unable to agree that any one theory will explain all the facts of immunity with its various practical side issues, and at present we find it profitable to accept the working hypothesis which will fit in with the greatest number of observed facts. Such is the theory which has recently been presented to us by Professor Ehrlich, and which has earned for him a reputation throughout the whole world of scientific medicine.

I have said that in order fully to apply the outcome of biological study to the treatment of disease we ought to have a good preliminary knowledge of root principles. I offer this as my excuse for going into some detail concerning this "side-chain" theory of immunity as enunciated by Ehrlich, and into the experimental evidence on which it rests. Before doing this, however, I would just allude to another theory, largely adopted by the French school—the "biological" theory of immunity. According to this view, the body is said to be protected from invasion by the activity of the phagocytes, certain specialised cells whose function it is to seize upon and dispose of all bacterial invaders, thus preventing their growth and multiplication in the body. To my mind, however, such a theory is by itself insufficient. Although the phagocytes do actually seize upon and digest invading microbes, they are probably unable to tackle virulent organisms until other agencies have first been brought into play, such as the enzyme-like action of the blood and lymph. Such enzymes appear to be themselves the result of cell activity; they probably exert a solvent action on the bacterial cell envelope, and produce on the invaders effects closely related to those accompanying the phenomenon of "agglutination."

Ehrlich's theory is based on a chemical consideration of the structure of protoplasm, and while still nothing more than a working hypothesis, it not only fits in with existing facts, but, like the universally accepted "periodic law" of the chemical elements, it indicates to us the lines on which future advance may be anticipated. It explains why and how the blood of an animal which has been treated with diphtheria toxins may suddenly come to contain a substance which is "anti" to diphtheria and inert to all other microbes and poisons. It explains also why and how, although there is no conceivable relation between alcoholic fermentation and the physiological processes normally going on in an animal, the serum of an animal treated with yeast cells may acquire specific "antifermentive" properties.

The proteid molecule is extremely complex, and is represented by chemists as a nucleus of closely-welded atoms to which other more or less complex radicles are loosely attached. These radicles are termed by chemists "side-chains," and are themselves often composed of a central more or less compact nucleus surrounded by other less stable groups. The proteid molecule is probably of immense size and capable of great variety in its structure; upon these varieties will depend its reciprocal affinity towards other molecules; by cleavage or by substitutions in these side-chains the original molecular properties may be completely altered. Ehrlich

holds that cellular activity has a very intimate relation to the nutrition of these complex molecules. He holds that for a substance to act as a poison it is necessary that its molecules should have side-chains of such a structure as to enable them to unite with the side-chains of the proteid molecules of the susceptible animal. A simple example of "natural immunity" will make this perhaps more clear: Belladonna can be eaten with impunity by goats, although to most other mammals it acts as a poison. Ehrlich would suggest that goats are immune because there are no side-chains in their proteid molecules capable of uniting with those of the belladonna molecule.

Explanation of Antitoxin Production.—A given poison may combine with certain definite side-chains, and in so doing will affect the value of the molecule in the cell of which it forms a part. The cell functions will consequently be embarrassed. Such disturbance need not, however, cause the death of the cell, nor need it give rise to clinical symptoms; but it will affect the cell metabolism, and stimulate efforts to replace the altered side-chains. But according to a well-known biological law—the law of functional hypertrophy—there will now be a production of fresh side chains in excess of those fixed by the poison; such formation will go on so long as the cell nutrition is embarrassed by the action of the poison. Ehrlich assumes that such excess of side-chains is ultimately set free from the parent molecule and poured into the blood. These liberated side-chains retain their ability to unite with the corresponding poison whenever and wherever they may meet with it. In fact, they are antitoxin.

Ehrlich's Theory accounts for the Observed Specificity of Serums.

Of such a theory of the formation of antitoxins the specificity of these bodies is the only natural outcome. A given poison can only unite with side-chains of a given and corresponding structure. The resulting nutritional embarassment can only give rise to the formation of similar side-chains. Specificity will be result of this structural coincidence between poison and its antidote.

I want to lay particular stress on this explanation of specificity. It explains why diphtheria antitoxin is useless in blood poisoning or in any other disease than the specific one of diphtheria. It gives us a scientific basis for the interpretation of our clinical experience.

Ehrlich's Theory and Natural Immunity—Susceptibility.

In proportion as a body contains more or fewer side-chains capable of fixing a given poison, so will that body be more or less susceptible to the action of that poison. Absence of suitable side-chains implies "natural immunity." A highly susceptible animal will, on the other hand, be one possessing many such suitable side-chains. The theory explains why (1) naturally immune animals will not furnish antitoxin, (2) the most susceptible animals capable of being immunised are the best yielders of antitoxins. In other words, side-chains attached to their proteid nuclei are a source of danger, side-chains freed from their attachment are a means of defence.

Active Immunity.—By the inoculation of a susceptible animal with gradually increasing doses of a given poison a condition of tolerance may be set up, described as "active immunity." The immunity is active, according to Ehrlich's theory, because it involves the active formation of specific side-chains, which are able to neutralise further doses of the same poison. To set up this condition toxic symptoms need not be produced, but it is found that the rapidity of formation of antitoxins bears some relation to the amount of toxin introduced. Of course, the toxin must only be given in amount sufficient to stimulate, not to destroy, the cellular activity, or the production of specific side-chains would naturally cease.

Passive Immunity.—The side-chains formed in an actively immune animal pass into the blood and persist in its serum, where they retain all their characters. Introduction of these into a fresh animal produces a condition of passive immunity proportional to the amount introduced, the immunity passing off as the antitoxin is gradually eliminated, and no fresh antitoxin being formed.

For curative purposes a much larger amount of antitoxin is needed than to produce passive immunity. It seems probable that when a toxin has combined with an attached side-chain and subsequently finds itself in the presence of the detached side chains constituting antitoxin, it will let go its connection with the already partially satisfied radicle and enter into combination with the less saturated antitoxin, provided always that the free side-chains are in considerable excess.

Immunity to infection is quite distinct from antitoxin immunity. An animal may be immunised to a given bacterial infection, and yet be quite susceptible to the corresponding toxin. Thus, while an animal immunised by dead cultures of diphtheria bacilli gives both an antitoxic and anti-infective serum, another immunised by means of bacilli (dead) freed from toxin is anti-infective only.

Ehrlich's Theory and Cytolytic or Agglutinating Sera.

Under this heading one must include all the "cell-dissolving" serums described by Metchnikoff and his associates, and also the bacteriolytic serums. The theory as already enunciated would account for the formation of free side-chains in the blood of an animal prepared, say, by the injection of a foreign cell, for example, injection of lamb's red corpuscles into a goat. Such free side chains might unite with fresh lamb's corpuscles when mixed with them, but we want something more to account for the fact of cytolysis which occurs. The presence of some other factor appears necessary for the complete explanation; this other factor has been called an alexin. The presence of such a substance can be demonstrated in a striking manner: Heat some of the cytolytic goat's serum to 40° C.; it loses its cell-dissolving power; now add to the mixture of serum and undissolved corpuscles a minute trace of serum from a normal goat; cytolysis at once commences. The alexin occurs, therefore, even in normal serum, and is destroyed at 40° C., while the specific substance is unaffected under the conditions of temperature.

That the so-called "immunising substance" can really fix itself to lamb's corpuscles is demonstrable as follows: Add a good deal of lamb's corpuscles to prepared goat's serum at 40° C., then separate the serum from the corpuscles. The addition of normal goat's serum will not restore the cytolytic properties of the serum, but the separated red corpuscles, even after thorough washing, will dissolve when added to normal goat's serum.

The proof can be obtained in another way: Add lamb's corpuscles to prepare serum kept at zero C. Hæmolysis does not occur at this temperature. Now separate the serum from the corpuscles, adding (1) the corpuscles to normal goat's serum, solution occurs; (2) the serum to fresh corpuscles, no hæmolysis occurs; (3) mixture 2 to specific serum, which has been heated to 40°, and therefore contains no alexin, solution again occurs. Ehrlich compares this alexin to a proteolytic enzyme. It would not appear to be specific, but to be able to promote the solution of any kind of cell, leucocyte, erythrocyte, spermatozoön, bacterium, etc., provided the corresponding "immunising substance" be also present.

Quite recently it has been suggested that the alexins contained in normal serums or extracted from normal leucocytes might with advantage be combined with specific serums in the treatment of pneumonia, typhoid, cholera, and other infective diseases; there is much experimental evidence in favour of such a combined serumtherapy, and it is in this direction that great advances are likely soon to be made.

Time does not permit me to enter further into theoretical considerations. I trust that what I have already said has been sufficient to draw attention to the fact that serumtherapy is no longer a mysterious form of treatment, the outcome of haphazard experimentation, but a treatment based on sound scientific principles; that the specificity of a given serum is absolute, and that it is, therefore, illogical to expect the least benefit to follow the use of, say, diphtheria serum in whooping-cough or any other disease than diphtheria; that the apparent benefit which has been said to follow the use of a specific serum in a non-corresponding affection might be due to the alexins present in all serums, but certainly not to any specific element contained therein and absent from normal serums. Before giving place to other speakers I should like to make a few very brief observations on the clinical value of the various serums, so far as these have come within my personal experience.

Antidiphtheria Serum.—As a curative agent this serum

has certainly quite fulfilled the expectations of most of us. Its use has practically deprived diphtheria of most of its terrors. A case which required tracheotomy was, in my student days, almost a hopeless one; this operation I have had to perform lately in a few cases in order to relieve local embarrassment and to give time for the serum to act, but under the new conditions success, not failure, is the rule. To get the best results the serum must be given early and in large doses. I am convinced that this reduces the risk, not only of manifest paralyses but also of subsequent heart failure at a later stage.

As an immunising agent, my personal experience, extending to nearly 500 inoculations, is altogether in its favour. At first I used to find some difficulty in getting people to submit to protective measures. A little tact and judicious reasoning has, however, in most cases sufficed to overcome fear or prejudice, and I am now able to add to my arguments the assertion that wherever I have made protective inoculations the disease has ceased to spread, fresh cases being confined to the uninoculated.

Another point of much practical importance is the fact that certain samples of serum—and such may be found among those of high as well as those of low antitoxic strength—are specially prone to produce unpleasant rashes. No method is at present known of obviating this very real difficulty. The only thing to do is for the makers to discard all serums found to possess rash-producing properties, even if they are satisfactory as regards antitoxic strength. This should furnish another argument against cheap serums and competitive prices.

Antistreptococcus Serum.—I am not at all surprised at the very varying opinions which have been expressed as to the efficacy of this serum. When we come to consider that a great number of cases are deemed streptococcic without any direct evidence, and that the symptoms in many of these are actually due to some other cause, it need cause no wonder that the treatment with specific serum should often fail. Again streptococci differ greatly in their pathological action according to the source whence they are obtained; the serum from an animal immunised against one strain is often quite powerless against other varieties of streptococci. Professor Denys, of Louvain, and myself seem to have almost simultaneously come to the conclusion that the only way of securing better results with antistreptococcus serum was to immunise the animals destined to furnish it against as many different strains of streptococci as possible. In this manner we have each obtained serums of far greater activity than could be got in the ordinary way. My own clinical results were most encouraging so long as I had at my disposal a fresh active serum, recently prepared by myself. The great labour and expense of maintaining animals in a satisfactory condition of immunity compelled me, however, to give up the personal preparation of serums, and I must confess that the serums I have since used did not give results equal to my earlier ones. It seems certain that antistreptococcus serum rapidly deteriorates, so that when purchased from a commercial firm its strength may be quite other than that estimated when the sample left the laboratory. In fact, I fear that unless means can be devised whereby a perfectly fresh polyvalent serum is supplied direct by an expert to the user, the results are likely to be disappointing, or at best far from uniform. (I believe that the antistreptococcus serum obtained direct from the Jenner Institute of Preventive Medicine is now prepared according to the plan of Professor Denys and myself, but to be efficacious it ought certainly to be used within three or four weeks of being obtained from the animal.)

Antipneumococcus Serum.—Of the clinical use of this serum I have no personal experience. Judging, however, from published reports the serum does not seem to reduce the duration of the disease, nor to produce a "crisis," nor to cut short the pneumonic processes in the lungs. What it does apparently do is to prevent a general septicæmia, especially noted in inoculation experiments, and it may thus in some cases help to save life. As regards its mode of action we may say definitely that it is not bactericidal, as pneumococci will grow readily in it. According to recent work by Cacciopo and Mennes the serum has by itself no action on virulent pneumococci, but when the serum is combined either with normal leucocytes, or even with dead ones, a mixture is obtained which is capable of changing and shrivelling pneumococci, although neither the leucocytes nor the serum by themselves are active. When, therefore, pneumococci are injected into an animal which has either been vaccinated or treated with antipneumococcus serum the animal shows immunity because the serum has combined with the "alexin" contained in its leucocytes. This combination then acts on the microbes, which become shrivelled, and are then cleared away by phagocytes. The chief difficulty in the clinical use of this serum arises from the immense number of bacteria present in the lung exudation, and from the fact that the action of the serum seems limited to preventing the entry of the organisms into the blood vessels.

This practically end the list of serums, if we except tetanus antitoxin, concerning which we have not at present any extended clinical experience. I have little doubt that further research will lead to the addition of other serums to the list available for clinical use, but I maintain that at present we shall do well not to expect too much from the application of serumtherapy to the treatment of typhoid fever, cholera, or plague. I am aware that much has been done in this direction, and that very valuable work is still in progress, which may at any time bring the serum treatment of one or all of these diseases prominently before us. Had time permitted I should have liked to epitomise what actually has been done in this direction, but there are doubtless others who wish to speak on this most interesting subject, and as the time at our disposal is limited I will content myself with pointing out that while science has so far failed to give us serums which are unquestionably efficacious against either typhoid, cholera, or plague, the researches of Wright, Haffkine, Yersin, Lustig, and others have given us a series of vaccines the timely use of which will certainly do much to prevent their spread. Preventive inoculation rather than serumtherapy should for the present be our sheet anchor.

II.—FREDERICK WILLIAM FORBES ROSS, M.D.,
London.

DR. FORBES ROSS referred to that part of Dr. Bokenham's paper in which he mentioned that in a school outbreak he stopped the epidemic by prophylactic treatment. He wished to mention that though Roux of Paris said that the more of the coccoid organisms that were present the milder the case, and *vice versâ*, lately, in an outbreak of diphtheria among some soldiers sleeping in one barrack-room, the mildest cases were those where the Klebs-Loeffler bacillus was purest. The soldiers were not treated with serum, either as for cure or prophylaxis, yet after a few cases the epidemic died out. In this case, if serum had been used the cure of all the cases and the stopping of the epidemic would have been attributed to that as a cause. He had seen two cases of erysipelas complicated with double pneumonia, where not antipneumococcus serum, but antistreptococcus serum, rapidly stopped the pneumonia, but not the erysipelas itself.

III.—JOHN HADDON, M.A., M.D.,
Denholm.

DR. HADDON said he had not practised since serumtherapy was introduced, and had no experience of its use, but from his experience of diphtheria it was by no means a fatal disease, except in the laryngeal form. If serum were of use in curing it, it ought to prevent it, and he was glad to hear of the result of the use of the serum in the school mentioned by the reader of the paper. But any use they might make of the serum ought not to prevent them doing what they could to discover the cause of diphtheria, so that it might be removed, and the disease would then disappear.

IV.—DAVID SOMMERVILLE, B.A., M.D., B.Ch.,
London.

DR. SOMMERVILLE said: I think it rather a pity that the serumtherapy of diphtheria should be viewed exclusively either from the clinical or from the bacteriological standpoint. It is much better to combine these points of view. To estimate the position justly we must take into account several factors, the susceptibility of the patient to the influence of the Klebs-Loeffler bacillus, his susceptibility to the influence of accompanying cocci, the magnitude of the infection, and the virulence of the micro-organisms. I have seen cases of almost pure infection of Klebs-Loeffler bacilli quite mild, and

others where streptococci were in abundance with but few Klebs-Loeffler bacilli very severe; but on the whole I believe the majority of severe cases are found to contain the Klebs-Loeffler bacillus, and that the use of antidiphtherial serum is of real value in the treatment of diphtheria. I further believe that the presence of accompanying cocci as a rule increases the gravity of the case.

V.—F. J. Lorimer Hart, M.B., C.M.,
Assistant-Surgeon, Home and Infirmary for Sick Children and South London Dispensary for Women.

Mr. Lorimer Hart thought that any destructive criticism of the serum treatment was not legitimate and could have no weight unless it came from men who were prepared to say that they had tried it fairly and had found it fail rather than their taking the line, as had been done by the previous speaker, of saying that general evidence was not convincing. This was itself not the case, as so far adverse criticism had been of a general character, and was tainted by unprogressive and unscientific thought rather than being the actual experience recorded. As one who had used serums almost from their first being issued for general use, he could say that their results had been uniformly successful. As far as their use as a protective was concerned he had no experience, but had no reason to doubt it. As a treatment for disease he believed only one answer could be given and that a most favourable one. Antipneumococcus serum he had not had an opportunity of trying, but even in septic cases of scarlatina, pneumonia, etc., he intended using the antistreptococcus serum, or indeed in other diseases, such as diphtheria of a malignant type, he would be prepared from his experience of its use to inject antistreptococcus serum as well as diphtheria antitoxin should it appear that more than one poison was in action. He had used antistreptococcus serum frequently in erysipelas and once in a case of puerperal fever, and all the cases not only recovered but showed marked and immediate effects of the treatment. In two cases of erysipelas he found it necessary to give more than one dose, and one required four. He thought if used early enough one dose was as a rule sufficient. In puerperal septic cases douching must of course be kept up as well. The occasional occurrence of a rash, generally localised over the seat of injection was the only untoward symptom he had seen. Children required the same dose as adults. He was surprised that the profession had not long ago universally adopted the serum treatment in those diseases for which it was suitable.

Reply.

Mr. Bokenham, in reply to the earlier speakers, said the best results from the use of serum would be obtained when serum (whatever its kind) was used early, often, and strong. It was not fair to any treatment to postpone its adoption until the patient was moribund. Early and free use of diphtheria antitoxin did certainly in his experience enormously reduce the risk not only of visible paralyses, but also of cardiac failure at a later stage.

A DISCUSSION ON DIET IN THE TREATMENT OF DISEASE.

I.—Harry Campbell, M.D., F.R.C.P.,
Physician to the North-West London Hospital; and to the West-End Hospital for Nervous Diseases.

Dr Campbell referred to the influence of stimulating and "fibrous"—or indigestible—substances in the food. Stimulating substances were most abundant in meat, and food was chosen by man and animals not only for its nutrient properties, but also for the amount of stimulating substance it contained. In regard to the fibrous element, it was much more abundant in the food of our primitive ancestors that at present. The food of civilised man had much of its indigestible portion removed; it was, furthermore, cooked. It had, therefore, these two characters—concentration and softness. The concentrated state of our food explained the great frequency of constipation among the civilised; the intestines were not sufficiently stimulated by voluminous contents. The softness of the food led to defective mastication, and this Dr. Campbell contended was the chief causes of dental caries and adenoids.

II.—Lindley Scott, M.A., M.D., C.M., D.P.H.,
London.

Dr. Scott said the question of diet may be conveniently considered under three heads: (1) Quantity—the tendency usually being to overfeeding—a tendency accentuated by the increasing introduction of highly concentrated artificial foods. The consideration of quantity is probably the most important heading, especially in the preventive treatment of disease as in gout, gravel, etc. (2) Quality—may be practically regarded as simplicity. (3) The idiosyncrasies of the patient.

III.—David Sommerville, B.A., M.D, B.Ch.,
London

Dr. Sommerville said: I wish to indicate a few points of interest which have exercised my own mind recently with regard to the quantity and the kind of food to be used in certain diseases. In approaching the subject it is necessary to keep clearly before one the physiology of digestion, absorption, and metabolism. In diseases of the stomach one must make an accurate diagnosis, determine what constituents of the gastric juice are increased or decreased, and administer food accordingly, instead of, for example, in excess of hydrochloric acid to feed with proteids principally. To the physiologist we owe much in the matter of ascertaining the true state of the digestive organs and juices, and as our knowledge increases in this direction we may confidently hope for increased therapeutic skill. In pulmonary tuberculosis the quantity of food ingested should be pushed to a very large degree; appetite here has no relation to digestive power, and on the recognition of this fact the outdoor treatment owes much of its success. In the treatment of fevers, where rapid metabolism leads quickly to degeneration of important organs, care should be taken to replace as easily as possible lost proteid material. Facing this vast and important subject one must insist on a thorough knowledge of the chemical physiology of foods and digestion, and of the chemistry of the pathological conditions (especially of the alimentary tract) we are called on to treat.

IV.—Sarat K. Mullick, M.B., C.M.,
Assistant Physician to the St. Francis Hospital, London.

Dr. Mullick agreed with the previous speakers that the greatest of modern ills was excessive drinking and eating. In the course of his remarks he said: In the administration of diet in disease the sensation of hunger or the desires of the patient play but a subsidiary part to the experienced dictates of the physician. The opposite parallels of starvation on the one hand and over-indulgence often in the most obnoxious forms on the other may be manifest. To maintain the nutritive balance is the dietetic dictum which should guide us, for then indeed we should promote the metabolic function of converting potential into kinetic energy and maintain the equilibrium of metabolism. Our choice of elements of food and their amount, whether of albuminates, hydrocarbons, or carbohydrates would necessarily depend on the nature of the disease, on the physical development and body weight of the patient, and his climatic environments. We choose the albuminates when we desire to check the waste of nitrogenous tissue, regulate oxygen absorption, build up muscular and nerve energies, and finally for the creation of fat and heat. The use of hydrocarbons is to lessen tissue waste. Thus during the stage of convalescence, and later when a liberal or stimulating diet is given, it is well known that if lean meat alone were given a large quantity would be required to maintain the equilibrium of metabolism, but the addition of fat subtracts from the amount of meat which would otherwise be required. Fat also brings about the storage of albumen. Experiments have proved that if 1,500 grams of lean meat alone be given the whole of it is decomposed, but if 100 grams of fat be added 1,422 grams of waste only are required, leaving 78 grams of albumen as a reserve store. The guiding principles in the treatment of all febrile states are (1) to administer food in the simplest forms for absorption and assimilation, (2) to administer food in such a form as will not only build up tissue waste with the least effort, but flush out of the system the toxins which have accumulated in the body as a result of the excessive metabolic process, especially of the albuminous tissues, from the high temperature and also partly from defective

digestion. Urea, for instance, is largely increased, due to excessive metabolism of the albuminates. A will-o'-the-wisp which has to be guarded against is the fact that the destruction of fat is not in proportion to that of the albuminates. The visible degree of emaciation is not a true test of waste is proved by the increase of potash salts, which indicate the destruction of the cellular elements of muscle tissues. In diabetes mellitus the great difficulty is to choose not only the diet which would reduce sugar in the system, but to make it liberal and varied enough to suit the fancy and palate of the patients. Cases which are most difficult to treat are those in which the sugar passed is out of all proportion to the starch taken. The mechanism may be faulty either on account of the incomplete combustion or inability of the liver to transform glucose from the alimentary canal into glycogen or the overaction of the liver in producing glycogen, in which case the blood contains more than 3 parts of sugar in 1,000. In ulcer of the stomach we have to avoid as much as possible the peristaltic movements, we have to debar all food which irritates the surface of the ulcer directly or by producing acid secretions. We have also to prevent the stomach from distending as the mucous membrane of the contracted stomach diminishes the extent of the ulcer, and thus facilitates healing. Diet in Bright's disease must be not only to prevent an increase of albumen, but the extension of renal changes.

V.—JOHN HADDON, M.A., M.D.,
Denholm.

DR. HADDON said he rejoiced that the subject of diet had been brought up for discussion in this Section, but it would have been better if the first discussion had been on the Natural Food of Man, and the next on Diet in the Prevention and Treatment of Disease, but he hoped that this discussion would inaugurate a new era in medicine, and that in the new century our physicians would, instead of a conglomeration of drugs of which they knew little, prescribe a correct diet and regimen, which few now paid, attention to. He then related a case of Ménière's disease cured by omitting butcher's meat from the diet. As to milk and eggs, which some of the speakers had spoken of as natural foods, he said that milk was natural only to the young animal, and disappeared when the animal could feed itself, while wild birds only laid eggs which they hatched. As to the use of the flesh of animals, he questioned whether any animal was originally a beast of prey. Dogs when they killed a hare ate the intestines containing vegetable food, and a New Zealand bird had changed its food from vegetable to animal since white men went to the country. What might not take place in time through evolution?

VI.—WILLIAM RINGROSE GORE, M.D.,
Surgeon to Whitchurch Cottage Hospital, Shropshire.

DR. GORE wished to remark with regard to the point that excess of proteid was desirable in fever, that in acute febrile diseases the gastric functions were to a very great extent in abeyance. Albumen was only converted into peptone in a very small quantity, so that to make up the proteid waste it was necessary to give proteid in the form of peptone. If the necessary quantity of undigested proteid were given it decomposed in the stomach, causing gastric dilatation and putting an extra strain upon the heart.

THE TREATMENT OF GOUTY ECZEMA.

By GILBERT JOHN KING MARTYN, M.D.Cantab., B.C., D.P.H.,
Bath.

THE epidemics of influenza which every successive year seems to bring leave amongst other sequelæ an eczema of an exhausting and irritating type in the gouty subject. The number of cases which in a resort for the gouty pass through one's hands cannot but fail to impress one with many cardinal points in the etiology and treatment, and not a few at variance with the traditional ideas of treatment. Again, I would urge that few of the protean manifestations of gout are so distressing, bodily and mentally, to the patient as eczema, and also that in the vast majority of cases of eczema gout will be found as the fundamental dyscrasia. The older school of medicine regarded an eczema as the boiling over from the system of a poison to check which was to court a more serious inward disaster. Even now the laity, ever prone to confuse *post hoc* and *propter hoc*, say that, because the eczema is "out," their other gouty symptoms are in abeyance. And in saying so they give us in great measure the key both to etiology and treatment. For, paradoxical as it may sound, the right course to pursue to cure and avert the eczema of gout is to encourage some of the factors that have produced it, while at the same time the other factors are eliminated.

The factors producing the eczema are briefly those which bring about a gouty condition of the blood, those which produce irritation, and those which produce hyperæmia of the skin. The first two factors must, as far as possible, be eliminated; the last factor must in part be encouraged. The gouty subject may be not inaptly compared to an ill-tuned piano. There is a lack of harmony, a want of co-ordination between skin, mucous membrane, kidneys, liver, and the other organs of secretion and excretion. That great tuner, the nervous system, is idle or at fault. The control of nutrition and the vasomotor mechanism is out of gear. We must as far as possible, keep the whole gamut of organs in tune.

Of the treatment of those factors which bring about a gouty condition of the blood it is not my province to speak. I shall in the course of this paper endeavour to point out how irritation of the skin may be avoided. A healthy hyperæmia of the skin is necessary for the free dilatation of the enormous area of capillaries which feed the sweat glands, and so helps to eliminate the toxic products of metabolism. I shall later point out how this may be attained and maintained. The types of eczema met with in gout are roughly the acute dry, the acute moist, the chronic, and what I would term the latent. By this last I mean a burning, itching, tormenting sensation beneath the skin; nothing is visible on the surface. There is no eruption, no roughness, no redness, and, as a rule, no heat. It is one of the commonest complaints of the gouty, and often renders their life intolerable. It is usually worse when the patient is in bed, and nearly always associated with gouty acid dyspepsia. The treatment consists in enforcing a rigid dietary. All those articles which experience has shown to produce dyspepsia must be avoided; alcohol especially must be prohibited. Bismuth and alkalies must be freely given, and for periods of three weeks with short intervals. To relieve the intense burning and itching, nothing answers so well as a lotion or ointment containing carbolic acid. Other points in the treatment of this type will be included in the following summary of the treatment of the eruptive types.

First, as regards the clothing of a patient subject to attacks of eczema. The object to be attained is the production of a healthy action of the skin and the avoidance of extreme loss of heat with sudden chilling of the surface; while, at the same time, irritation is kept at a minimum. This is one of the most essential points in the treatment of gout and gouty eczema. As little change as possible should be made in the winter and summer clothing and such change should be confined to the outer coverings. The underclothing must not be varied. Wool, if it can be borne, is good, but has many disadvantages. It is apt mechanically to irritate the skin. Washing and sweating produce in it a change of texture rendering it felt-like. In this condition it absorbs the sweat instead of allowing the moisture-laden hot air to slowly escape without entirely condensing. This, of course, applies more especially in hot weather and when exercise is taken in cold weather. The wet clothing cools and produces a serious chilling of the surface, and the acrid sweat, unable to escape or be absorbed, reacts on the skin and produces irritation, and finally eczema. A more rational form of underclothing is undoubtedly cotton in the cellular woven form or in the form of Lahmann's cotton wool clothing. Such a clothing allows of a certain amount of ventilation of the skin, while at the same time it protects against undue chilling. I have repeatedly found that patients who cannot tolerate wool next to the skin wear cotton prepared in this way with comfort and benefit. One very essential point in the clothing is the protection of the extremities. Gouty subjects are extremely prone to to peripheral stasis of circulation evinced by cold, blue hands and toes. Probably accounting for the irregular nutrition of the nails the palmar discoloration of the hands, the chilblains, the early alopecia, and all those symptoms of epithelial degeneration. Hence,

vests should have long sleeves, mittens or gloves should be worn out of doors, and warm socks with spats over the boots in winter. The success of treatment depends on such minutiæ.

Climate in gouty eczema is of great importance. Of all localities the sea is the worst—as indeed it is in all forms of gout. I believe this to be due partly to the fact that the action of the liver is deranged, partly to the presence of sodium chloride in the air, and partly to the sudden daily changes of temperature produced by the land and sea breezes in the morning and evening. The best climate is an equable, fairly bracing one, where the action of the skin will not be suddenly interfered with—such a climate, in short, as is difficult to be found in this country.

As regards the diet of a patient suffering from or liable to gouty eczema, it is not necessary to detail here the *pros* and *cons* of each article of food in gout. Suffice it to say that the diet must be a typical gouty diet with the minimum of proteid and starchy foods, and all those articles which produce an acid fermentation. There are, however, some forms of food which in eczema are particularly irritating, and which must be altogether withheld. First and foremost is alcohol. Then all forms of raw or cooked fruit containing much fermentable sugar or acid, especially strawberries, gooseberries, apples, lemons, and rhubarb. All stimulating foods should be avoided. The patient himself is the best judge of many articles of diet, as those injurious will never fail to make the burning and itching worse.

Next, as regards the value of internal remedies in gouty eczema. The textbook statement on this point usually is that those drugs which are used as gout specifics, such as colchicum, lithia, or piperazin, should be given. Personally, I have never seen them have the slightest influence in controlling or curing the eczema. Of real value are those drugs which benefit dyspepsia and increase the alkalinity of the blood, such as bismuth, the alkalies, and the bromides. Antimony will at times relieve the intense itching, but when the patient is kept awake and tortured by the eczema, when the temptation to scratch or rub is too strong to be resisted, and when there is no strong contra-indication morphine should be injected hypodermically. By so doing we secure a peaceful night, and place a moist acute eczema under the most favourable conditions for healing. Arsenic is a difficult weapon to handle. Roughly speaking, the less irritation there is, and the more the eczema inclines to the dry and scaly type, the more will arsenic be found of value. The daily use of some mineral aperient water, such as Carlsbad water or Æsculap, taken in the morning when fasting, should never be omitted. More important than the internal medication is the local treatment of the eczema. For the very acute moist inflammatory type soothing lotions containing lead and opium should be constantly applied. As soon as the irritation begins to disappear, and the exudation lessen, I always substitute a dusting powder of carbonate of magnesia and Fuller's earth. For the dry, irritable type, I find nothing excels the old-fashioned tar in the form of the liquor carbonis detergens, and it should be used in a very diluted form as an ointment, 10 minims of the liquor to an ounce of lanolin. The great area of the body which eczema so often occupies renders the employment of lotions and ointments difficult, and it is in these cases that the employment of baths is so valuable. The time-honoured tradition that all eczema is to be kept religiously from water is still fostered by many patients, and it is one of the hardest points to decide whether an eczema will be made better or worse by immersion in a bath. My experience teaches me that the amount of irritation is not the criterion of this point. Intensely itching eczema is frequently soothed and ultimately healed by such treatment. But when there is much redness or inflammation or exudation, baths only serve to make matters worse. A lime sulphated water, like the Bath water, is admirably adapted for cases of dry, irritating, scaly eczema. Too much care cannot be taken over the detail of the bath. This should never be given at a temperature exceeding 98°, and the usual hot pack after the bath must be omitted. The whole body must be very carefully dried and powdered after the bath, and the patient must go straight home after thoroughly cooling, so as to avoid any chill to the surface. In the more obdurate chronic types I order the addition to the Bath mineral water of sulphur water prepared by boiling sulphur and slaked lime.

This is by far the best preparation of sulphur to use, as it closely resembles the natural sulphur springs. It is easily made, and will keep for a considerable time if it be kept cool and the air excluded.

One word as to the treatment of gouty eczema in the aged. For them severe treatment, such as baths and rigorous dieting, is out of the question, and yet they more especially require soothing treatment, or their strength soon gets exhausted by sleepless nights and days of torment. The treatment must, as a rule, be simply palliative. A generous diet with a small amount of stimulant is necessary when the patient gets worn out. Daily sponging with warm sulphur water is of the greatest value, and the free use of a dusting powder after drying. Sleep must be procured, if necessary, with bromides or nepenthe.

Dr. John Given objected to the labelling of these cases of eczema as gouty, for the bulk of them showed no other symptoms of gout. Moreover, the lines of treatment which proved successful were not those which relieved the well-known symptoms of gout, but were those which were mainly local in nature, and directed to correct any simple digestive error, or to quiet an excited nervous system. Most of these cases, which occurred mainly after middle age, appeared rather to be neurotic in origin.

Dr. E. L. Fenn pointed out that the word "gouty" was made to cover a wider field than where there were any recognised gouty features, and that these cases were really due to the retention in the blood of half-oxidised products, due partly to imperfect activity of the excretory organs, and often associated with chronic gastric catarrh and imperfect assimilation of the food.

The President expressed his doubts as to the reality of the frequent connection of eczema with gout. In Ireland gout was very rare among the poor, yet eczema was as common as in England, and presented the same clinical features.

Dr. Martyn, in reply, said: I call an eczema a gouty eczema when it is associated with a certain combination of symptoms which in my experience are, briefly, an extreme irritability of mucous membrane and skin. The gastric mucous membrane will pour out an excess of acid on the slightest provocation as a strawberry; the skin and the other mucous passages show the same susceptibility. Take, for example, a group of diseases which I have termed the gouty triad—that is, asthma, hay fever, and eczema. How often these occur in the same patient, alternating with one another. The physiologists are as far as ever in telling us the *rôle* of uric acid in gout. In my opinion it is a by-product and an unimportant one in gout. Its presence or absence in the urine is no criterion in gout. Far more important in the diagnosis of that group of symptoms known as gout are the other numerous manifestations of the inherent irritability and inadequacy of the various secretive and excretive organs.

CONTRIBUTION TO OUR KNOWLEDGE OF PROTEID METABOLISM IN CHILDREN.

BY

F. W. Tunnicliffe, M.D., M.R.C.P., and Otto Rosenheim, Ph.D., F.C.S.

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In the nutrition of children two stages are to be distinguished. The first is represented by the period during which mother's milk is to be regarded as the ideal food, failing which other milks and milk foods may be substituted for it, their value depending upon the degree to which they approach it in composition. This stage is succeeded by a period during which the exigencies of growth demand a more solid diet, in that the ideal food of the suckling becomes, on account of its dilution, inadequate. A growing child from two years on, to obtain the amount of proteid nourishment necessary for it, would have to drink an inconveniently large amount of milk were this its sole article of diet. This difficulty is, however, overcome by adding to the diet proteids in a more concentrated

form; in other words, by giving the child either meat juices or meat, supplying mostly proteid deficiency, and bread supplying both proteid and carbohydrate deficiency, especially the latter. It is, however, to be observed that we have by this means not only effected a concentration of food stuffs, but also an actual change in the intimate nature of these. So far as the proteids in which we are more especially interested are concerned, we have replaced milk proteids by vegetable proteids in the case of bread, and by animal proteids in the case of meat. The mutual equality, from the standpoint of flesh-forming power, of these three varieties of proteid has been the subject of various physiologico-chemical investigations.

We know from experience that bread and meat are adequate for the growth of the human child. With regard to the adequacy of milk proteid, or of milk itself, to furnish the nitrogenous constituents necessary for the growth of children during what we may regard as the intermediary period—namely, the period preceding ordinary adult diet, there appears to be very little or no direct physiologico chemical evidence.

Camerer[1] and Magnus Levy[2] made experiments upon children of 10, 12, and 16 years, and found that milk was an adequate source of diet proteids. In the case of adults, however, milk does not seem to form a sufficient proteid diet. Nevertheless, the conclusion is not justified that milk proteids as such are in this respect inadequate, in that it has been shown by Rubner[3] and confirmed by Rudenko[4] that the addition of more concentrated milk proteids in the form of cheese, improve the assimilation of milk. From this it seems to follow that *the inadequacy of milk as a sole source of proteids depends upon the diluted state in which the proteids are present.* This explanation is supported by later experiments upon adults with solid milk proteid in a soluble form. We refer to the experiments with the soluble solid milk proteid, manufactured on a commercial scale, and known as "plasmon." With regard to this substance, Prausnitz[5] has shown that it is capable of completely replacing meat in the food of adults. This has been confirmed by Bloch,[6] Caspari,[7] and Wintgen.[8]

Under these circumstances we thought that it would be of interest to determine whether milk proteid was capable of replacing meat in the food of children between 3 and 6 years. For children of this age it might be useful to have a food which, while capable of supplying the necessary nitrogen in convenient bulk, differed to a less degree from the ideal food of the suckling period—namely, milk—than ordinary meat. Such a food might be of especial value in the bringing up of delicate children. It was in this connection that plasmon recommended itself especially to us, being an unaltered milk proteid prepared from skimmed milk upon a large scale.

The source of plasmon increases the interest of this subject from an economic standpoint. For although the advancement which has taken place in cold storage has greatly facilitated the transport of meat, and thus cheapened one of the most important sources of nitrogenous food, nevertheless an abundant supply of a cheap food equal in dietetic value to meat, is a distinct economic desideratum.

Before we enter fully into the experiments undertaken to determine the nutritive value of milk proteid as compared with meat, we think it advisable to describe briefly the method of preparation and chemical and physical properties of the milk proteid we selected, namely, plasmon.

This substance is prepared from skimmed milk, warmed previously to 70° C., by precipitation of the casein by means of acetic acid (50 per cent.). The precipitated moist mass is then kneaded with an amount of sodium bicarbonate corresponding to that of the acid added. An evolution of CO_2 takes place, and by this means a snowy spongy product is obtained which is further dried at low temperature (30° to 40° C.) by means of dry air in a special apparatus, and afterwards reduced to a fine state of division.

The finished product is a yellowish white, fine powder with a feel somewhat like sand, and may be regarded as a natural milk proteid.

So far as its proteid constituents are concerned, it shows a remarkably constant chemical composition, and hence was especially adapted for our experiments. Our analysis and those of previous observers are given in Table I.

TABLE I.—*Analyses of Plasmon.*

	Prausnitz-Poda.	Bloch.		Caspari.		Bender and Hobein	Wintgen.	Authors ¶
	I.	I.	II.					
Water ..	11.17	12.67	12.01	13.58	12.56	10.32	10.66	11.94
Nitrogen ...	12.93‡	12 54‡	11.22	11.09	—	—	11.19	11.07	11.01
Proteids* ..	—	—	—	72 53	74·54	—	70.51	70.13
Fatt	0.15‡	0.45‡	0.66	0.64	1.80	1.76	0.25	4.40	0.29
Lactose ...	2.25‡	2 48‡	—	—	2.61	2.75	—	4.20	4 33
Ash	7.62‡	8.14‡	8.76	8.23	6.95	8.39	7.95	6.96	7·37
Phosphoric Acid ...	—	—	—	—	—	—	—	38.56‖	2.64

* The proteid numbers were obtained by multiplying the nitrogen found by 6.37. † Under this term is included substances soluble in ether after previous treatment with alcohol, according to A. Voit (*Zeit. für Biologie*, xxxvii, p 555). ‡ In dry substance. ‖ In percentage of ash. ¶ The sample analysed by us was bought in the open market, and was used throughout for our experiments.

Plasmon is without odour or taste; when boiled with water, however, it develops a faint milky smell. In sufficient quantities of water, depending upon the temperature, it forms an opalescent solution, showing like milk an amphoteric reaction. Upon the addition of small quantities of cold water it swells up, forming a more or less gelatinous paste. Hot concentrated solutions solidify to a stiff jelly upon cooling. From these properties it follows that it lends itself to cooking manipulations, in that it can be easily admixed with almost any dish without altering its taste or odour, and can further be given according to the temperature at which it is served, in a solid, semisolid, or liquid form.

Among the many articles of food which may have their nutritive value increased from the proteid standpoint by the addition to them of plasmon, we may mention the following—bread and biscuits to which from 10 to 20 per cent. of plasmon may be added, vegetable and meat soups, cocoa and chocolate, etc.

COMPARATIVE DIGESTIBILITY IN VITRO OF SOLID MILK PROTEID (PLASMON).

Before beginning the actual metabolic observations on children we thought it advisable to conduct a series of experiments *in vitro*. The object of these was to compare the digestibility of foods, after their nitrogenous content had been enriched by the addition of solid milk proteids, with that of the natural corresponding food, and of ordinary meat, which latter may be regarded as the typical example of a natural concentrated nitrogenous food. We thought that the results of these experiments, although not conclusive, would give us valuable indications with regard to the actual nutritive value of milk proteids. Two sets of experiments were made, in the first of which bread enriched with plasmon was compared on the one hand with ordinary white bread, and on the other with meat. In the second set, milk fortified by the addition of plasmon was compared with ordinary milk. The respective foods were submitted at blood temperature under similar conditions to the action of the gastric and subsequently of the pancreatic ferments. The nitrogen was estimated in the undigested residue.[9] The results are expressed in the following table:

TABLE II.—*Showing Relative Digestibility of Ordinary Bread, Plasmon Bread, and Meat.*

	Original Substance.			Water-free Substance.		
	Solids.	Total Proteids.	Percentage of Proteids digested after 3 hrs. peptic and 3 hrs. pancreatic digestion.	Total Proteids.	Total Proteids digested.	Ratio of Total Proteids digested to Total Proteids = 1 : x.
Plasmon bread	50.32	12 56	9 41	24.96	18.70	74·92
White bread ...	5[illegible].12	8.56	2 04	14.47	4.07	34·34
Meat (fillet of beef)	33.02	19.56	11.15	58.28	33.70	57·80

From this table we are justified in drawing two main conclusions. First, that the baking of plasmon along with the dough has not affected its digestibility; secondly, that in a given time the quantity of proteids digested in the case of plasmon bread was more than double that of the proteids of whole bread, and about one-third more than that of meat. The practical value of the theoretical conclusions drawn from these artificial digestive experiments has been demonstrated by the observations of Prausnitz (*loc. cit.*).

So far as the second series of experiments is concerned we first convinced ourselves that plasmon as such is practically completely dissolved by the digestive juices. It was therefore *a priori* to be expected that when added to milk it would be digested along with the milk proteids in the proportion added. We have been able to confirm this *a priori* reasoning by experiments. Milk was fortified by the addition of plasmon and subjected to the action of the digestive juices as in the above experiments. The digestibility of this as compared with ordinary milk is expressed in the following table:

TABLE III.—*Showing the Relative Digestibility of Ordinary Milk and Plasmon Milk.*

	Original Substance.			Water Free Substance.	
	Solids.	Total Proteids	Percentage of Proteids digested after 1 h. Peptic and 1 h. Pancreatic Digestion.	Total Proteids	Total Proteids Digested.
Plasmon milk	15.04	5.65	57.02	37.50	33.31
Ordinary milk	12.15	3.88	3.52	31.93	28.97

From this we are entitled to conclude that we can by means of plasmon increase the proteid content of milk almost *ad libitum*, without appreciably increasing its bulk, and further that the digestibility of this fortified milk is not inferior to that of ordinary milk.

COMPARATIVE OBSERVATIONS UPON METABOLISM IN CHILDREN DURING ORDINARY AND MILK PROTEID (PLASMON) DIET.

These observations were made on three children, Bertie (aged 2½ years), Elsie (aged 4 years), and Joe (aged 5 years). Two of these might be regarded as typically healthy children, namely, Bertie and Joe. Elsie, on the other hand, was naturally a badly-nourished child, and was just convalescent from pneumonia. The children during the whole time of the research lived in the house of one of us, and were by these means under perpetual observation. They were attended to by an experienced nurse, who under our continual personal supervision, had complete control of all ingesta and excreta. The children were taken out daily into one of the parks, and allowed to take each day the same amount of exercise in the open air. Their habits were in every respect perfectly regular. Before the actual observation period began the children were kept under conditions similar to those to which they were exposed during it, except that the food was not accurately weighed. This was done in order that they might get used to their new surroundings. The research was carried on during the months of April and May, and extended in the case of Bertie and Joe over a period of three weeks, in the case of Elsie over fifteen days. Each period was subdivided into three—a fore period, a middle or milk proteid period, and an after-period. The relative lengths of these periods may be seen from the tables. The total length of each observation is somewhat in excess of that usually adopted for this purpose, and on this account we think the conclusions have more value.

With regard to the quantities of the different food stuffs, we were at first guided by the work of Camerer.[10] This was subsequently modified to a small extent by our own observations concerning the establishment of nitrogenous equilibrium in which the children were approximately placed before the fore periods began.

Every article of food was carefully analysed with regard to its percentage composition, and in no instance were so-called "average figures" used.

TABLE IV.—*Showing the Percentage Composition of the Foods.**

	Water.	Fat.	Carbohydrates	Nitrogen.	Proteids.	Phosphoric Acid.	Ash.
Bread I	29.83	0.23	59.13	1.78	11.34	0.27	0.89
Bread II	34.42	0.11	66.18	1.55	9.88	0.19	0.89
Bread III	37.90	0.13	55.97	1.20	7.64	0.16	0.79
Cake	23.12	19.29	50.80	1.27	8.09	0.22	0.67
			Lactose.				
Milk I	87.36	3.50	5.21	0.49	3.15	0.24	0.69
Milk II	87.76	3.37	4.81	0.51	3.22	0.23	0.64
Milk III	88.05	3.00	4.61	0.52	3.31	0.23	0.69
Meat I	69.04	7.12	—	3.52	22.42	0.46	1.07
Meat II	74.48	4.62	—	3.74	23.84	0.46	1.00
Meat III	72.85	2.58	—	3.88	24.72	0.45	1.16
Meat IV	69.22	10.23	—	3.12	19.87	0.42	1.08
Butter I	12.89	85.31	0.40	0.12	0.79	—	0.61
Butter II	12.68	86.00	0.14	0.11	0.68	—	0.50
Butter III	14.56	84.37	0.29	0.08	0.29		0.29
			Dextrose				
Apple compote I...	69.86	—	30.25	0.05	0.32	0.04	0.33
Apple compote II	63.02	—	29.84	0.05	0.32	0.04	0.43
Toffee	1.00	2.30	81.24	0.03	0.19	—	—

* The usual methods of analysis were adopted. The "Fat" figure represents the ether-soluble substances after treatment with alcohol (according to E. Voit, *Zeit. für Biologie*). The carbohydrates were calculated as dextrose. The proteid figure was obtained from the nitrogen figure by multiplication with the factor 6.37.

The excreta were collected (except in the case of one subject during two days which were discarded) absolutely without loss, in twenty-four hour periods from 8 A.M. to 8 A.M., and worked up the same day. The moist and dry fæces for each day were weighed, the nitrogen estimated in duplicate in the mixed fæces of three or four days, and calculated to the quantity passed upon each respective day. In the further treatment and analysis of the excreta the usual methods were followed.[11] The fæces at the beginning of the fore, middle, and after-periods were coloured by means of the administration *per os* of animal charcoal, and could thus be easily referred to the period to which they belonged. The results so far as each subject is concerned will be expressed in a separate table.

OBSERVATION 1. BERTIE, AGED 2½ YEARS.

TABLE V.—*Showing the Comparative Nitrogenous Metabolism under Meat and Milk Proteids (Plasmon).*

Meat Period I.

	Date.	Urine. Quantity.	Urine. Specific Gravity.	Urine. Nitrogen.	Fæces. Moist.	Fæces. Dry.	Fæces. Nitrogen.	Nitrogen of [illegible]	Balance.	Weight.
		c.cm.		g.	g.	g.	g.	g.		kg.
	April 23	355	1.0269	5.47	57	14.8	0.87	7.31	+0.07	14.75
	April 24	295	1.0272	5.09	54	10.8	0.63	7.31	+1.59	
	April 25	370	1.0215	4.89	61	13.2	0.77	7.30		
	April 26	370	1.0230	5.28	48	12.0	0.67	6.6[illegible]		
	April 27	350	1.0200	4.47	—	—	—	[illegible]		
	April 28	415	1.0200	6.01	—	—	—	[illegible]		
	April 29	345	1.0200	4.86	106	14.9	0.84	[illegible]		
Total	7 days	2500	—	36.97	326	65.7	3.78	49		
Average for	1 day	300		[illegible]	[illegible]	9.4	0.54	[illegible]		

Milk Proteid (Plasmon) Period.[12]

	April 30	265	1.0200	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15.00
	May 1	425	1.0220	6.00	71	17.5	[illegible]	[illegible]	[illegible]	
	May 2	375	1.0252	5.91	46	9.7	[illegible]	[illegible]	[illegible]	
	May 3	315	1.0243	5.08	49	10.4	[illegible]	[illegible]	[illegible]	15.05
	May 6	280	1.0267	5.30	—	—	[illegible]	[illegible]	[illegible]	
	May 7	285	1.0270	5.28	20	3.5	[illegible]	[illegible]	[illegible]	
	May 8	285	1.0279	5.16	123	23.3	[illegible]	[illegible]	[illegible]	15.28
Total	7 days	2230	[illegible]	37.01	309	64.4	3.65	49.05	+8.39	
Average for	1 day	320	[illegible]	5.29	44	9.2	0.52	7.00	+1.13	

Meat Period II.

	May 9	240	1.0290	4.52	11	1.9	0.11	7.03	+2.40	15.28
	May 10	310	1.0268	5.42	[illegible]	14.5	0.86	7.17	+0.89	
	May 11	345	1.0230	5.15	17	2.7	0.16	7.17	+1.86	
	May 12	445	1.0195	5.59	114	18.0	1.06	7.17	+0.42	
	May 13	440	1.0180	5.13	65	9.9	0.59	7.23	+1.52	
	May 14	325	1.0235	4.95	60	7.6	0.49	7.23	+1.79	
	May 15	285	1.0226	4.21	47	7.7	0.50	6.70	+1.99	
	May 16	245	1.0238	4.11	116	21.4	1.39	6.28	+0.78	15.01
Total	8 days	2635	—	39.08	518	83.7	5.16	55.98	+11.64	
Average for	1 day	325	—	4.88	56	10.5	0.65	6.99	+1.45	

* 10 grams plasmon per diem.

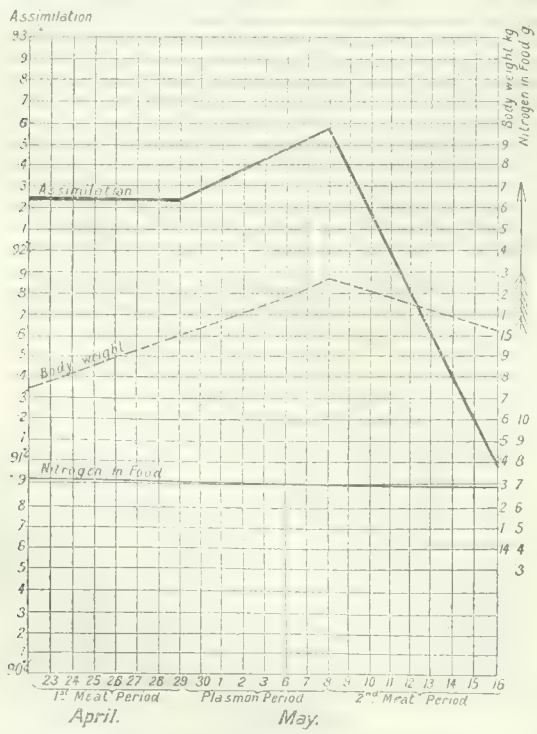
§ The ingesta during the first and second meat period consisted of 200 grams of bread, 550 c.cm. of milk, 20 grams of butter, 36 grams of meat, 50 grams of apple compote, 10 grams of sugar, 50 c.cm. of water, and 5 grams of toffee per diem. In the plasmon period the 30 grams of meat was replaced by 10 grams of plasmon brought up to the fat content of the meat by the addition of butter.

The daily quantity of nitrogen given in the food amounted to 7.09 grams in the first meat period, of which 0.54 gram was not assimilated, being lost with the fæces, corresponding to 7.61 per cent.

During the plasmon period 7.00 grams nitrogen were given daily in the food, of which 0.52 gram was not assimilated, corresponding to a loss of 7.43 per cent.

In the second meat period the daily average quantity of nitrogen in the food amounted to 6.99 grams, of which 0.65 ram was not assimilated, corresponding to a loss of 9.01 per cent.

From this it follows that during the milk proteid period the assimilation of the nitrogen amounted to 92.57 per cent., during the first meat period to 92.39 per cent., and during the second meat period to 90.99 per cent. From this the conclusion may be drawn that milk proteid in a child of this age is assimilated as easily as meat. The above results may be expressed graphically as follows:



The nitrogen balance in the respective periods requires but little comment. The slightly-diminished balance of the plasmon period is probably due to the increased assimilation of nitrogen and the increased tendency of the body under these circumstances to approach nitrogenous equilibrium.

It is also to be observed that there was an increase in body weight in the first meat period of 250 grams, and in the plasmon period a further increase of 280 grams, whilst in the second meat period the child lost 270 grams in weight.

The net result of this experiment entitles us to conclude that milk proteid, both from the point of view of its assimilability and flesh-forming power is equal in a child of this age to meat.

The next observation was made on a healthy boy, aged 5 years (Joe).

OBSERVATION 2. JOE, AGED 5 YEARS.

TABLE VI.—*Showing the Comparative Nitrogenous Metabolism under Meat and Milk Proteids (Plasmon).*

Meat Period I.

	Date.	Urine. Quantity.	Urine. Specific Gravity.	Urine. Nitrogen.	Fæces. Moist.	Fæces. Dry.	Fæces. Nitrogen.	Nitrogen of Food.	Balance.	Weight.
		c.cm		g.	g.	g.	g.	g.		kg.
	April 23	395	1.0276	6.18	50	11.6	0.69	8.76	+1.89	17.75
	April 24	495	1.0180	5.49	—	—	—	9.21	+3.72	
	April 25	410	1.0275	7.39	88	21.8	1.31	9.32	+0.62	
	April 26	535	1.0190	6.41	—	—	—	8.59	+2.18	
	April 27	480	1.0210	6.55	51	12.4	0.75	8.59	+1.29	
	April 28	560	1.0190	7.38	61	14.9	0.89	8.59	+0.38	
	April 29	455	1.0200	6.62	87	16.2	0.97	8.59	+1.00	17.75
Total	7 days	3330	—	46.02	337	76.9	4.61	61.68	+11.08	
Average for	1 day	476	—	6.57	48	10.9	0.67	8.81	+1.58	
	*Milk Proteid (Plasmon) Period.**									
	April 30	410	1.0150	5.08	—	—	—	8.65	+3.57	17.75
	May 1	430	1.0210	6.41	33	10.5	0.57	8.65	+1.60	
	May 2	415	1.0260	7.10	68	17.3	0.93	8.65	+0.62	
	May 3	380	1.0260	6.78	—	—	—	8.65	+1.87	18.08
	May 4	360	1.0265	6.76	58	15.0	0.81	8.64	+1.07	
	May 5	415	1.0260	6.78	13	1.9	0.10	8.51	+1.63	
	May 6	385	1.0270	7.02	98	24.9	1.35	8.51	+0.14	
	May 7	345	1.0275	6.96	—	—	—	8.51	+1.55	
	May 8	295	1.0314	6.33	92	21.3	1.15	8.57	+1.09	
	May 9	360	1.0293	7.25	135	22.1	1.38	8.57	−0.06	
	May 10	370	1.0265	6.61	103	12.4	0.78	8.71	+1.32	
	May 11	425	1.0236	6.58	60	11.3	0.71	8.71	+1.42	18.53
Total	12 days	4590	—	79.73	660	136.7	7.78	103.33	+15.82	
Average for	1 day	382	—	6.64	82	11.4	0.65	8.61	+1.32	
	Meat Period II.									
	May 12	510	1.0194	6.47	—	—	—	8.99	+2.52	18.53
	May 13	395	1.0240	6.59	110	27.2	1.84	9.05	+0.62	
	May 14	390	1.0185	4.64	—	—	—	9.05	+4.41	
	May 15	450	1.0228	7.21	94	22.2	1.50	8.33	−0.38	
	May 16	470	1.0226	7.41	107	25.2	1.71	7.78	−1.34	18.36
Total	5 days	2215	—	32.32	311	74.6	5.05	43.20	+5.83	
Average for	1 day	443	—	6.46	62	14.9	1.01	8.64	+1.17	

* 15 grams plasmon per diem.

During the first and second meat period the ingesta consisted of 250 grams of bread, 600 c.cm. of milk, 20 grams of butter, 50 grams of meat, 50 grams of apple compote, 10 grams of sugar, 50 c.cm. of water, and 5 of toffy per diem.

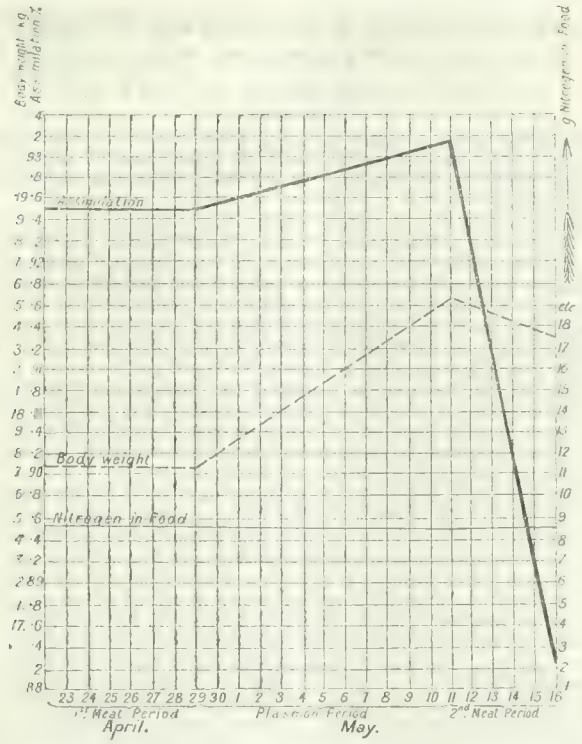
In the plasmon period the 50 grams of meat was replaced by 15 grams of plasmon, brought up by the addition of butter to the average fat content of meat.

The daily quantity of nitrogen given in the food in the first meat period amounted to 8.81 grams, of which 0.66 was not assimilated, being lost in the fæces, corresponding to 7.49 per cent. During the plasmon period 8.61 grams nitrogen were given daily in the food, of which 0.65 grams were not assimilated, corresponding to a loss of 6.8 per cent. In the second meat period the daily average quantity of nitrogen in the food amounted to 8.64 grams, of which 1.01 was not assimilated, corresponding to a loss of 11.68 per cent.

From this it follows that during the milk proteid period the assimilation of the nitrogen amounted to 93.15 per cent. during the first meat period to 92.51 per cent., and during the second meat period to 88 32 per cent. From this the conclusion may be drawn that milk proteid in a child of this age is assimilated as well as meat.

The above results are expressed graphically in the chart (p. 1087, col. 1). In this observation the tendency of the body to approach the condition of nitrogenous equilibrium seems equally marked in each period.

The increase of body weight during the plasmon period is much more marked in this instance. In the first meat period the weight remained constant, in the milk proteid period it increased by 780 grams, whereas in the second meat period the child lost 170 grams in weight.



The net result of this experiment entitles us to conclude that in a child of this age milk proteid, both from the point of view of its assimilability and flesh-forming power is equal to meat.

OBSERVATION 3.—ELSIE, AGED 4 YEARS.

TABLE VII.—*Showing the Comparative Nitrogenous Metabolism under Meat and Milk Proteids (Plasmon) in an Invalid Child.*

Meat Period I.

	Date.	Urine. Quantity.	Urine. Specific Gravity.	Urine. Nitrogen.	Fæces. Moist.	Fæces. Dry.	Fæces. Nitrogen.	Nitrogen of Food.	Balance.	Weight.
		c.cm.		g.	g.	g.	g.	g.		kg.
	May 2	300	1.0281	5.24	21	4.4	0.30	7.08	+1.54	15.34
	May 3	275	1.0272	4.92	113	22.0	1.48	7.08	+0.68	
Total	2 days	575	—	10.16	134	26.4	1.78	14.16	+2.22	
Average for	1 day	287	—	5.09	67	13.2	0.89	7.08	+1.11	

*Milk Proteid (Plasmon) Period.**

	May 4	280	1.0286	5.68	28	3.6	0.21	7.06	+1.17	15.34
	May 5	270	1.0293	5.01	165	18.1	1.07	6.92	+0.84	
	May 6	260	1.0293	6.57	47	8.5	0.51	6.92	−0.16	
	May 7	210	1.0276	3.81	87	13.9	0.83	6.92	+2.28	
	May 8	255	1.0318	5.80	31	6.6	0.39	6.97	+0.78	
	May 9	290	1.0286	5.57	117	15.7	0.94	6.97	+0.46	
	May 10	285	1.0290	5.64	100	11.7	0.71	7.11	+0.76	
	May 11	300	1.0297	5.87	72	13.6	0.81	7.11	+0.43	15.62
Total	8 days	2150	—	43.95	396	91.7	5.47	55.98	+6.56	
Average for	1 day	268		5.49	49	11.5	0.68	6.90	+0.82	

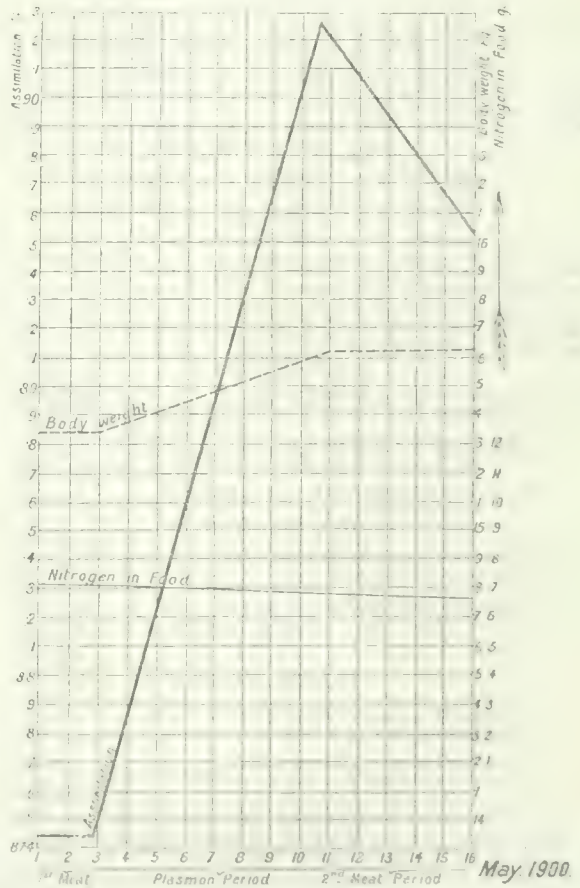
Meat Period II.

	May 12	445	1.0200	5.74	26	7.3	0.46	7.17	+0.91	15.62
	May 13	400	1.0226	5.72	—	—	—	7.23	+1.59	
	May 14	480	1.0100	6.48	69	15.6	0.99	7.23	−0.24	
	May 15	350	1.0227	5.00	48	9.6	0.61	6.46	+0.76	
	May 16	275	1.0270	4.59	100	24.8	1.57	6.28	+0.12	15.62
Total	5 days	1950	—	27.62	252	57.3	3.63	34.37	+3.12	
Average for	1 day	390	—	5.52	50	11.4	0.72	6.87	+0.62	

* 10 grams plasmon per diem.

The quantity of food given was the same as in Observation I, although this child (Elsie) was 18 months older than the other child (Bertie). This apparent anomaly is to be explained by the fact that Elsie was a delicate, ill-developed child, convalescent from pneumonia. The daily quantity of nitrogen given in the food during the first meat period amounted to 7.08 grams, of which 0.89 grams were not assimilated. During the milk proteid period the 6.99 grams of nitrogen were given daily in the food, of which 0.68 grams were were not assimilated, whilst in the second meat period the daily quantity of nitrogen was 6.87 grams, of which 0.72 grams were not assimilated.

From this it follows that during the milk proteid period the assimilation of the nitrogen amounted to 90.27 per cent., during the first meat period to 87.43 per cent., and during the second meat period to 89.52 per cent. It may be concluded from this that in the case of a delicate convalescent child the milk proteid was better assimilated than meat. This result can be expressed graphically as follows:



The nitrogen balance presents the same features as in the former case.

With regard to the body weight, it may be seen from the table that during the plasmon period there was an increase in weight of 280 grams, whilst in the after-period the weight remained constant.

In each of the above observations the phosphoric acid of the food and of the excreta was estimated with a view of collecting data for the study of the heretofore somewhat neglected subject of phosphorus metabolism. Our results in this regard, together with other observations, will form the subject of a later paper. But it might be interesting to give here an account of the phosphorus metabolism in the instance of the invalid child, since it confirms the observation of earlier workers (made solely on animals[12]) that by the administration of proteids containing phosphorus organically bound a retention of phosphorus in the body can be obtained.

In Table VIII (p. 1088) we give the results obtained in that direction.

TABLE VIII.—*Showing Comparative Phosphorus Metabolism in an Invalid Child under Meat and Milk Proteid.*

Meat Period I.

	Date.	Phosphorus in Urine.	Phosphorus in Fæces.	Phosphorus in Food.
	May 2	0.412	0.511	
	May 3	0.377	0.102	
Total ...	2 days	0.789	0.613	1.563
Average ...	1 day	0.395	0.307	0.782
	Milk Proteid Period.			
	May 4	0.384	0.974	
	May 5	0.371	0.490	
	May 6	0.357	0.230	
	May 7	0.353	0.376	
	May 8	0.420	0.179	
	May 9	0.488	0.396	
	May 10	0.479	0.291	
	May 11	0.505	0.338	
Total ...	8 days	3.366	3.274	8.114
Average ...	1 day	0.421	0.409	1.014
	Milk Proteid Period II.			
	May 12	0.504	0.178	
	May 13	0.453	—	
	May 14	0.543	0.380	
	May 15	0.396	0.234	
	May 16	0.311	0.605	
Total ...	5 days	2.207	1.397	4.271
Average ...	1 day	0.441	0.279	0.854

If we consider the phosphorus balance of the above observations we obtain the following results:

I.—MEAT PERIOD.

	Grams.
Phosphorus given in food per diem	0.782
Phosphorus excreted in fæces per diem	0.307
Phosphorus assimilated per diem	0.475
Phosphorus excreted in urine per diem	0.395
Phosphorus retained in the body per diem	0.080

II.—MILK PROTEID PERIOD.

	Grams.
Phosphorus given in food per diem	1.014
Phosphorus excreted in fæces per diem	0.409
Phosphorus assimilated per diem	0.605
Phosphorus excreted in urine per diem	0.421
Phosphorus retained in the body per diem	0.184

III.—MEAT PERIOD.

	Grams.
Phosphorus given in food per diem	0.854
Phosphorus excreted in fæces per diem	0.279
Phosphorus assimilated per diem	0.575
Phosphorus excreted in urine per diem	0.441
Phosphorus retained in the body per diem	0.134

It will be seen from the above figures that in the case of the invalid child a considerable increase of the amount of phosphorus retained in the body took place during the plasmon period.

GENERAL CONCLUSIONS.

1. Milk-proteid (plasmon) is capable of replacing meat as a nitrogenous food in the mixed diet of children according to its nitrogen percentage.

2. A greater increase in body weight took place during the milk-proteid periods in all three cases than during the meat periods.

3. The phosphorus of the milk-proteid is capable of being assimilated and retained in the body.

REFERENCES AND NOTE.

[1] *Zeit. für Biologie*, xvi, 493. [2] *Pfluger's Archiv*, 1893, Band liii. [3] Rubner, *Zeit. für Biologie*, 1879, Bd. xv [4] *Inaug. Dissert.*, St. Petersburg (quoted). [5] Prausnitz and Poda, *Zeit. für Biologie*, xxxix, 1900, p. 277. [6] *Zeit. für diätet. u. physikal Therapie*, 1899, Bd. iii, Heft. 6 [7] Caspari, *ibid*, Heft v. [8] Wintgen, *Zeit. für Untersuch. der Nahr-u. Gen. Mittelr.* ii, 761. [9] The filtration and washing of the digestive mixtures, usually very tedious, was greatly facilitated by preliminary centrifugalisation. [10] *Der Stoffwechsel des Kindes*, Tübingen, 1896. [11] Compare Carl v. Noorden, *Grundriss einer Methodik der Stoffwechsel Untersuchungen*, Berlin, 1892. [12] Marcuse, *Pfluger's Archiv*, lxvii, 373; Steinitz, *ibid*, lxxii, 75; Zadik, *ibid*, lxxvii, 1.

THE MEDICINAL AND DIETETIC TREATMENT OF HEART FAILURE IN THE AGED.

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THE scope of this paper, judging from its title, must necessarily be of a clinical rather than an experimental therapeutic character. None the less is its aim practical rather than theoretical.

It is proposed to deal here rather with that condition known as "gradual failing heart" than with those emergencies of heart failure and immediately impending dissolution, springing from the untreated and unchecked influence of the above. When dealing with problems presented by cases of heart failure in the aged, the choice of therapeutical remedies having a direct or indirect action on the circulation becomes a matter of the greatest moment.

In making this choice we must be guided not only by the intrinsic therapeutic properties possessed by the agents used, but also by the existing conditions presented by the heart as the propulsive factor primarily, and by the condition of the peripheral circulation secondarily.

In the next place due consideration must be paid to the exact effects of these agents: first, on the heart, as to their influence on propulsion as its immediate function; secondly, as to their influence on the condition and nutrition of the heart itself as a muscle; thirdly, to their effects on existing conditions of the peripheral circulation, and any subsequent modification likely to be brought about in that circulation, either directly or indirectly, by means of their primary cardiac action. Finally, the somewhat complex problem presented by the effects, direct or indirect, probable or possible, on the heart and the peripheral circulation considered together as the outcome of these agents. That there is difficulty in dealing with cases as they arise is generally acknowledged. This is well shown by the number of remedies put forward as cardiac therapeutic agents. It suffices only to mention digitalis, strophanthus, scilla, convallaria, adonis vernalis, cactus, caffein, spartein, belladonna, etc.

This paper proposes to deal more particularly with results observed and obtained by means of the therapeutic action of strophanthus and digitalis, and modifications of their action likely to occur under the influence of certain dietaries. The problems presented for solution in cases of heart failure in the aged are many and various, tedious and trying. Primarily we have conditions peculiar to, and the natural concomitants of, the habits and the period of life dealt with by this paper. These are conditions which may be regarded as almost naturally pathological; indeed, paradoxically physiological to old age, quite apart from pathological mechanical conditions such as valvular disease, aneurysm, etc.

These conditions may be briefly summarised as "degenerations" of old age, and are as follows:

First, of the heart itself.

1. In which the cardiac muscular fibre undergoes a process of intrinsic oily transformation as the result of defective metabolism or deficient nutrition, brought about by either insufficient or unsuitable dietary, defective supply of blood to the heart wall through diseased coronary arteries,[1] or defective nervous trophic influences.

2. A deposition of fatty tissue amongst the muscular elements of the heart wall, with or without a general systemic adiposity.

3. Fibroid degeneration as the result of chronic irritation, or as part of a general systemic fibrotic change, or of the presence in the blood of the residual products of defective elimination, as in chronic renal disease, etc., and of diathetic conditions as "gout," syphilis, etc.

4. The so-called brown or granular degeneration of the heart said to be peculiar to old age.

5. Atrophic degeneration which may be simply a phase of the foregoing, or may be the direct after-result of a persisting increase of cardiac muscularity, such as that atrophic degeneration described by Allbutt[2] as setting in in the hypertrophied biceps muscle of file cutters after a few years, which causes the muscle to become progressively reduced below its previous normal bulk, and to continue so permanently atrophied. This increase of muscularity in the heart being brought about

by resistance in the circulation due either to renal or pulmonary disease as chronic bronchitis, emphysema, etc., or to changes in the vessel walls leading to loss of resiliency, increase of friction and consequent failure of the normal resilient propulsive force inherent in an elastic arterial system.

And perhaps to that general systemic condition described by Savill as chronic arterial hypermyotrophy[3] leading to muscular thickening of the arterial walls with consequently increased blood pressure—a condition the existence and nature of which may not be different after all from the old fibroid arterial thickening.

Another cause of increase of cardiac muscularity may be engorgement of the portal system in elderly persons as the result of past excessive indulgence in food with deficiency of exercise, and also that aldermanic abdominal enlargement with overstretching of the abdominal walls of very stout persons, quite apart from the condition described by McAdam Eccles as muscular relaxation, but which tends from the alteration of the contour of the abdomen to convert the upward and backward resilient pressure of the abdominal walls compressing the abdominal contents into the angle formed by the junction of the diaphragm and the rigid posterior wall, into a negative gravitation curving downwards and forwards along the inner surface of the overstretched anterior wall ending in compression of the larger pelvic veins in a direction from above downwards and backwards, with concomitant engorgement of the veins of the rectum, other pelvic organs, and lower limbs, with a negative sagging of the venous blood column in the abdomen producing a *vis inertiæ* for the heart to overcome. This condition is more common in elderly women, especially elderly multiparæ.

Finally, in aged males excessive indulgence in strong tobacco[4] smoked in a foul pipe will lead to increase, for although tobacco produces symptoms of vascular relaxation, vertigo, and vomiting in persons unaccustomed to its use, yet, in persons accustomed to it, abuse leads to hypertrophic high tension pulse with mental depression, all at first evanescent and temporary, but eventually becoming habitual and confirmed. These latter facts I have noted from observation of myself and of the cases of others addicted to the abuse of strong tobacco.

6. The rarer calcareous degeneration of the cardiac wall, of which a few cases have been recorded.

Secondly, of the blood vessels, near and peripheral, as fibroid, fatty, and calcareous degeneration of the aorta and larger arteries, and calcareous and fibroid degeneration of the smaller systemic and coronary arteries, due mainly to certain of the aforementioned causes of cardiac degeneration and failure. In addition to the above must be borne in mind the frequent presence of valvular disease existing at the same time with the various cardiac tissue degenerations complicating and rendering difficult the problem of correct therapeutical procedure as regards medicines and dietetics.

Again, there must be considered the factor of the increase of years with concomitant senile changes. The peculiar deprivation of the subject from enjoying and assimilating the foods necessary to the maintenance of muscular tone, cardiac and general, and their efficiency as regards contractile power and the repair of wear and tear. So that the problem to be dealt with is often one of cardiac hypertrophy with dilatation with or without degeneration and valvular disease, or a progressive condition of actual cardiac atrophy, aggravated in the vast majority of cases by the results of exocardial vascular degeneration. Finally, it is imperative that the nervous degenerations, central and peripheral, which are the natural concomitants of advancing years, be taken into due consideration and adequately dealt with as these latter play no small part in the causation and ultimate issue of many, nay, almost every case of senile cardiac failure.

Case I.—Eighteen months ago I was called to the North of England to see an old gentleman, aged 77 years, who was dying from failure of the heart, due, it was alleged, to old age and to his heart being "worn out." He was a tall spare man of over 6 feet, with a sleek, silky skin; arcus senilis well marked. His previous history was that he had had repeated trouble with his heart, accompanied by attacks of diarrhœa on numerous former occasions. I found him lying in bed with the following history of this his last attack: He was taken ill with shortness of breath, diarrhœa, and dyspepsia, œdema of ankles, scanty and albuminous urine, inability to obtain sleep, feeble action of the heart. He had been unable to take proper food for some time owing to dyspepsia, and at the time of my seeing him was, and had been, on a milk diet for six weeks, which was his sole nourishment with the exception of a little beef tea. This had been restricted, as it was supposed to increase his diarrhœa. In addition he was taking stimulants to the amount of 8 ozs. of alcohol per diem and sundry increases at night, in order to relieve the dyspnœa and keep his heart going. His medicinal treatment had been, first of all, strophanthus administered as tincture, dropped from a bottle into water immediately before its administration; the dose was 10 minims every four hours. This not improving him and his heart seeming to continue to fail, digitalis was substituted at first in small doses, gradually increased, till finally he was taking 10 minims of the tincture three times a day, and at the same time medicines to stop the weakening diarrhœa. He had not had two consecutive hours' sleep for over a month. His condition when I saw him was: Pulse slow, 37 to 39 beats at the wrist per minute; bigeminal, irregular and occasionally markedly intermittent. His heart was dilated, the first sound was almost totally inaudible, and the apex impulse was frequently abortive—a condition of hemisystole and asystole; he was semi-conscious, delirious, and had had no sleep for nights. There was Cheyne-Stokes respiration, awake and asleep. There was frequent scanty diarrhœa, nausea, very scanty albuminous urine, about 4 to 6 ounces in 24 hours, both lungs congested at their bases posteriorly, liver much enlarged, œdema of legs and ankles. His apparent condition was extremely grave and precarious. There was no doubt here that in addition to the original cardiac failure, he had symptoms of the exaggerated action of digitalis as one finds it in senile cases where it has proved unsuitable. The first thing that was done was to procure him much needed sleep. Four grains of calomel were given to relieve the engorged portal system and to act as a diuretic; this was followed by a fairly large dose of bromide and a little ice to the head. His brandy was at once stopped and milk was forbidden. He fell asleep for four hours, and during this night there were 21 watery evacuations of the bowel; but although he had slept intermittently, he expressed himself as feeling much better on the following morning. His pulse was still varying between 38 to 45 beats per minute. The following evening at 7 A.M. he was given 10 minims of the tincture of belladonna,[5] and 10 grains of potassium nitrate, and at 11 P.M. the same night he was sleeping soundly, skin acting, regular respiration, no Cheyne Stokes breathing, and had a full open easy pulse of 78 to 80 beats, which never fell below this on any subsequent occasion. The next morning he was much better, and his urine rose from 10 to 40 ozs. during the day—his bowels were quiescent for the first time since his illness. He was allowed a little champagne twice during the day, into which was put 10 grains of sodium hypophosphite on each occasion. His diet from the first day was myosin albumen extracted from minced steak by a cold 0.5 per cent. sodium chloride solution. The extracted albumen was curdled out by boiling and was then used as sandwiches, in custards, and as meat panada with eggs and cream. His drink was restricted to small cups of very strong cocoa, to which was added one teaspoonful of Mellin's food per cup as well as sugar. All fluids were restricted. On the third day he was not so well, the diarrhœa returning, so the calomel was repeated, causing 18 evacuations during the night and then ceased finally. From the first moment of treatment he was placed upon a mixture containing tr. strophanthus mx, ammon. carb. grs. v, tr. nucis vomic. mv, ext cocæ liq. dr. ss, tr. cinchonæ co dr. ss, aq. ad oz. At bedtime he had every night potassium nitrate v grs., potassium citrate x grs. In four days his first sound was audible and showed a systolic and diastolic *bruit* for the first time. The Cheyne-Stokes respiration at first was present only during sleep and finally left him; but occasionally has returned for a short while. In seven days he was up and out of bed, restored to comparatively good health, and has continued so up to the date of this paper, with the exception of nine months ago when he was temporarily allowed to resume a milk diet. He has continued to take strophanthus to date, the dose being raised or lowered as desirable. There have been no gastric or intestinal symptoms and no evidence of intolerance or accumulation.

The main point of this case was the rapid manner in which one single dose of tincture of belladonna undid the effects of digitalis, as recommended by Morison. The benefit derived from strophanthus, which had previously failed, was due to the fact that the patient was fed on myosin albumen, and not on milk. That the strophanthus did not have any effect like that of digitalis on the cardiac rate, even though it was given immediately on top of symptoms of exaggerated digitalis action. That attention to the failing nervous system played a great part in the restoration. The administration of calomel recommended by Stokes, Germain Sée,[6] Sir W. Broadbent,[7] was not contraindicated by persisting diarrhœa, indeed, was called for, and the very frequent stools, instead of weakening him, left him stronger. And finally, the relatively small amount of alcohol needed and used beneficially, at the same time that a proper nutritive diet was allowed.

Case II. was that of an old lady in her 81st year, who had resided in the tropics until sixteen years ago, who was totally deaf in the right ear and partially so in the left, presumably from the previous use of quinine. She was taken ill in 1897 with three separate attacks of epileptiform vertigo, accompanied with marked cardiac degeneration and failure, advanced degeneration of arteries, high tension pulse, irregular and intermittent, feeble and faintly audible first sound. Owing to dyspepsia she had been existing mainly on milk, but had had no heart tonics. Her urine was scanty and contained a trace of albumen. The signs of fatty heart present were silky skin, arcus senilis, slapping high-pitched ventricular sound, and paroxysmal attacks of panting, of which she herself was unconscious. Her condition was such that many times a day her heart used to threaten total syncope. She was at once put on tinct. strophanth. m x, ammon. carb. grs. v, tinct nucis vomicæ m v, sod. hypophosph. grs. x, tinct. cinchonæ co. dr. ss, aq. ad oz. All milk was interdicted, a small allowance of brandy (3 ounces) per diem was allowed. Myosin albumen in various forms was ordered and an occasional dose of calomel.

She made a rapid and complete recovery, and was able to walk out

some distance without any sign of cardiac discomfort, and is at the present moment, after three years, alive and in good health. She continued to take strophanthus up to date; but one year ago she was allowed to indulge a whim for milk diet unknown to me and again developed all her old symptoms, and in addition inability to correctly articulate, or to swallow her food, solid and liquid alike, without choking, owing to paresis of pharyngeal muscles. Her diet was changed to meat albumen and the nervine tonics increased, which at once had the desired effect.

It is noteworthy that once when given strophanthus in the same mixture with a mineral acid she complained of fatigue and lassitude, want of power to get out of bed, the pulse becoming quicker and somewhat irregular; but showed prompt improvement when the mineral acid was eliminated from the mixture and an alkaline carbonate substituted.

This case illustrates the value of the nervine as adjuncts to cardiac tonics in senile cardiac failure. The apparent connection of the symptoms of bulbar degeneration and the derangement of the heart at the same time that these symptoms showed themselves is of more than passing interest. At the present time she is in good health, and has taken strophanthus continuously since 1897 with the greatest possible benefit—there have never been at any time signs of gastro-intestinal irritation, intolerance or accumulation.

CASE III.—Mrs. S., aged 62, of stout habit was first seen by me in May, 1899. Her previous history was one of recurrent bronchitis in the winter, which she usually spent abroad on the Continent. In April, 1899, she was taken ill with what was undoubtedly epilepsy of frequent recurrence. For this she was treated by a physician in a nursing home for epileptics and put upon a milk diet. Her experiences were the reverse of pleasant, and as she was rapidly getting worse she was removed by her friends to other quarters. When seen by me her tongue was much bitten, and she was covered from head to foot with numerous large bruises, the result of falls and struggles during her fits, which amounted to as many as sixteeen seizures per diem. Her aspect was that of a person of extreme old age, her hair snow white, her face worn and anxious looking, pale and anæmic, sitting in the orthopnœic posture. She suffered from paroxysmal dyspnœa, both lungs were congested at their bases, she was coughing up prune juice sputum; temperature normal. Her heart was dilated, first sound short, flapping, and high pitched, and partially replaced by a soft blowing murmur at the apex. Her pulse was rapid (130 per minute), weak and compressible, irregular and intermittent. Her liver was much enlarged, and her urine was scanty and albuminous. There was some recurrent diarrhœa. She had been taking digitalis and bromides without any benefit to the heart or to the epilepsy. She was at once given 3 grs. of calomel and 15 grs. of chloride of ammonium morning and evening. Also a mixture containing tinct. strophanthus m x, tinct. cinchona co. dr.ss, ext. coccæ liq. dr ss., sod. hypophosph grs. x, tinct. nucis vomicæ mv to the ounce dose, every four hours. Her diet was at once limited to raw meat juice, cold drawn myosin curd, strong cocoa, and Mellin's food with sugar. Milk was markedly restricted. The calomel and ammonium chloride caused a free depletion of her portal system, which at once stopped the diarrhœa, and had only to be repeated once on a subsequent occasion for the same reason. She was given at bedtime a mixture of potass. bromid. grs. v, potass. nitrate grs. v, potass. citrat. grs. x, to be given every night. The immediate result was that all her distressing symptoms rapidly disappeared, her epilepsy promptly and totally disappeared and has never returned. Her heart toned up, lost the mitral *bruit*, her pulse fell to 85, her urine became copious and free from albumen, and at the end of three weeks she was unrecognisable as the same woman. She was bright, cheerful, moving about, looking younger than her age, and her hair, which was previously snow white, had resumed its former light brown colour streaked with grey. Believing that a chloride spa would be beneficial, I sent her to Droitwich under the care of Dr. Cuthbertson, under whose advice she took the baths with so much benefit that at the present moment she is alive and in good health, with a total absence of all epilepsy. She continued to take strophanthus, nux vomica, iodides, and hypophosphites with permanent benefit.

The interesting point of this case was the epilepsy in addition to cardiac failure; and whether they were interchangeable as cause and effect, the fact remains that treatment of the nervous symptoms with tonics and proper food quickly sets matters to rights. Tripier, of Lyons, makes a point of cardiac irregularity in certain cases of epilepsy. Sir W. Broadbent, in a criticism of Tripier's views,[8] attributed the so-called epilepsy really to mistaken cases of cardiac syncope; nevertheless, here are two cases of undoubted epilepsy in the aged with cardiac irregularity and failure, whose hearts markedly improve with the clearing away of signs of central nervous degeneration, or *vice versâ*.

Other interesting points are that carneous food was not apparently inimical to epilepsy in her case; also that, although undoubtedly gouty, she mended on a gouty diet, and finally the benefits she derived from her convalescent sojourn and treatment by the chloride bath of Droitwich.

Having by the relation of these three cases brought before you the main points bearing on the subject in hand, we can now more easily get to close quarters with the therapeutic agents useful in conditions of cardiac failure. The discussion of digitalis will be taken incidentally with the more germane subject—the action of strophanthus as a heart tonic.

Professor Fraser,[9] in his historical communication on strophanthus to the Therapeutic Section of the British Medical Association, put the drug forward as a substitute for digitalis, and from his description of its actions and his experiments led us to hope many things. His paper has been followed from time to time by communications to the medical press of accounts and experiences of strophanthus, some glowingly appreciative, others seemingly the reverse. Fraser claimed for it, briefly, increased force, power, and tone of the ventricular systole, with slowing of the rate by prolongation of the systole and any rise of tension in the peripheral circulation as due both to its action to a slight extent, and indirectly to the increased force of the heart beat, increased flow of urine, non-cumulative action and tolerance in its use. The consideration of the physiological action of strophanthus cannot but be profitable when advancing it as a useful drug in cardiac failure in the aged. Inasmuch as cardiac muscle and its degenerations are mainly factors for attention in the treatment of heart failure in old persons, it is well to consider first its action on the heart.

Fraser found that strophanthus had an effect on the heart within 20 minutes of its subcutaneous injection, which was maintained for 24 hours. Wild[10] found that muscular tissue was markedly contracted by strophanthus in 10 minutes, reaching its maximum in 15 minutes.

Bahadhurji and Langgard[11] found that striped muscle placed in a watery solution of strophanthus became contracted and increased in consistence. Fraser[12] asserts that strophanthus acts by prolonging the systole of the heart. This is also speculatively advanced by D Evans[13] in a report on its action in seven cases of mitral disease with low tension pulse, where he extols the benefit of combination with nux vomica, and states in his opinion strophanthus causes continuous contractile tone of the apex extending to the base, and that dilatation never takes place to the full extent of that existing before its exhibition. This is strangely borne out by Bahadhurji and Langgard[14] who state from experimental observation that the ventricle shows continuous contraction at the apex extending to the base, causing a gradually narrowing ventricular cavity with a centripetal tendency towards the base of the heart. Paschkis and Zerner[15] found that the inhibitory fibres of the vagus were paralysed, as section and stimulation of the cut end produced no effect on the heart, whereas the accelerator fibres of the sympathetic were intact. Digitalis[16] stimulates the vagus as stimulation of the cut end of the vagus stops the heart; digitalis also directly paralyses muscle in toxic doses. Experiments of digitalis on the severed apex of the heart as tending to prove direct action of the muscular tissue is somewhat discounted by the fact that Alexander Morison[17] describes a section of the apex of the heart of a mouse showing ganglion cells in relation to a nerve plexus among the muscular fibres of the heart. These cells I have seen for myself in his original preparations of the heart. Bahadhurji found that if the vagus be cut, larger doses of strophanthus were required to stop the heart than if it were intact. From this he argued that strophanthus had a central action on the vagus not unlike digitalis; but this might mean that the apparent similarity was really a difference, this difference being merely the absence or presence of the action of the vagus in the case of strophanthus, requiring here a greater or less dose according as the natural action of the vagus was absent or present, whereas digitalis acts by direct stimulation of the vagus to inhibitory action. Balfour,[18] quoting Professor Fraser, states that arrest of the heart in diastole, which occasionally occurs with strophanthus, is not prevented by the previous use of atropine. This last may be due to over-fatigue.

Fraser[19] found that strophanthus in small doses slowed the heart; in large doses it stopped the heart in rigid systole. Digitalis circulating in a frog's heart in strength from 1 in 100,000 to 1 in 4,000 did not stop the heart within 2 hours; but strophanthus in strength of 1 in 100,000 stopped it in systole at once, and even up to 1 in 1,000,000, and killed the heart in about 20 minutes with a continuous circulation of a solution of 1 in 6,000,000. This was also found by Paschkis and Zerner.[20]

Thus a very much smaller dose of strophanthus is necessary to affect the contractile power of the heart than of

digitalis. This is important, as their relative actions on the blood vessels are exactly the reverse. The above points tend to indicate a direct action on the muscular fibres of the heart, apart from indirect nervous agencies. Fraser[21] asserts that strophanthus is 3,000 times more powerful in its action on the heart than digitalis, and 100 times less so than digitalis on the blood vessels.

Balfour[22] uses the continuous contractile action of strophanthus in a trenchant adverse criticism of strophanthus to argue against the use of strophanthus in favour of digitalis, for, as he says, digitalis slows the heart by prolonging the diastole, and that gives time for chemical physiological repair, whereas strophanthus causes prolonged contraction and tends to exhaust the heart by using up all its reserve force in its continuous influence on cardiac muscle; on the other hand, where the heart is arrested in diastole, the heart is enfeebled by the ventricle being delayed to the extent of one beat to three of the auricle, thereby depriving the ventricular wall of increased metabolism and thus wearing out the heart. This may or may not be strictly the case, and brings out the important factor in treatment of the value of proper feeding aimed at counteracting and supplying adequate nutriment to the heart wall to meet the results of the direct action of strophanthus on the cardiac muscle.

Balfour[23] lays stress on strophanthus arresting the heart in diastole in small doses, and in systole in large doses. The first action may be due to the presence of any small percentage of strophanthidin acting where there is not sufficient strophanthin to overcome the action of the former in small doses. This is most noteworthy, inasmuch as cases taking strophanthus in the same mixture as a mineral acid show signs of cardiac delay in diastole, with slow, soft pulse, general lassitude and langour, and all other signs of loss of cardiac tone. For Fraser[24] shows that strophanthus in the presence of a mineral acid is decomposed into strophanthidin and glucose, 1.5 per cent. of dilute sulphuric acid in three days causing a solution of strophanthus to show 37 5 per cent of strophanthidin and 20 per cent. of glucose. This is interesting, as in Case 11 of this paper, and in many other patients taking strophanthus in a mixture containing a mineral acid signs of cardiac asthenic retardation were most marked, as well as loss of nerve tone. This must have led Quinlan and Hill[25] to speak of strophanthus being inert or poisonous in a mixture. This apparent failure of strophanthus in the presence of a mineral acid is significant and important in practice, though paradoxically some few cases, the vast minority, are distinctly benefited by a short exhibition of an acid strophanthus mixture followed by one which is alkaline containing nux vomica. These cases are those with a tendency to nervous erethism, cardiac and general. It is highly likely that this peculiar action is due entirely to strophanthidin, and will go far to explain many unaccountable so-called failures of strophanthus, for it is an undoubted fact that the vast majority of cases taking a mixture containing strophanthus at the same time as an acid are decidedly influenced in an adverse manner. It is also significant that the withdrawal of the acid and slightly increasing the dose of strophanthus at once brings about the desired improvement.

Fraser found that the action of strophanthus on the heart was the same even when the cerebro-spinal system had been previously removed.

With regard to the action on the blood vessels Fraser[26] found that digitalin in strength of 1 in 20,000 passed through the vessels in six minutes, produced such a contraction as to prevent the further passage of the solution. Strophanthin, on the other hand, in strength of 1 in 20,000 had no appreciable effect and only a slight transient one when used as strong as 1 in 2,000. Langgard[27] found that frogs' capillaries were not affected by strophanthus; but Philips, Thompson, and Langgard[28] found that in mammalia contraction of the vessels was caused just the same as by the others of the digitalis group. On the other hand Popper[29 30] divided the splanchnics and also the cords of dogs at the first cervical nerves and found not only no rise but even a marked dilatation of the blood vessels. Paschkis and Zerner[31] found an alternate rising and falling of tension and that in large doses the tension sinks, also that the pulmonary rise was less than the aortic.

Delcaux, of Liége, found no difference in the oncometer tracing when strophanthus was being used.

Bahadhurji and Langgard[32] found no appreciable rise in tension through a marked fall before death. Bucquoy[33] states that he observed no rise in arterial tension. When considering the action of strophanthus on arterioles, it must be borne in mind that the action of the acid gastric juice may tend to cause the occurrence of a trace of strophanthidin, and this may lead to vascular relaxation; and when strophanthus is given in a dose as low as 5 minims, there may not be enough strophanthin present to sufficiently influence the heart muscle in a case of low-tension pulse, but in a case of high-tension pulse this very fact can, and has been made use of by me to produce the desired vascular relaxation leading up to a gradually increased dose of the tincture till the full cardiac action of strophanthus is brought out. I have noted that in the high-tension pulse of old persons it is far better to commence with a moderate dose and then gradually to increase, than to adopt the reversed method. This last action is important, as the failure to recognise this peculiar action of a small dose may mislead as to whether strophanthus will fail or not. The tendency of strophanthus to actively dilate capillaries is in inverse proportion to the strength of the dose, due mainly, I think, to the action of the acid gastric juice generating free strophanthidin or some other dilating derivative, in greater relative percentage in the smaller than in the larger dose, where there is a greater relative proportional percentage of strophanthin. The above points are interesting, as bearing on previously expressed opinions.

Suckling[34] states that strophanthus was decidedly inferior to an equal quantity of digitalis where an immediate effect was required. At the same time he did not state whether in the case of low or high-tension pulse. When an immediate effect is required in a low-tension pulse, bearing in mind the acid gastric juice, it is necessary to begin with a large dose with nux vomica, or inject an aqueous solution of the drug subcutaneously, and in the case of a hard pulse begin with a moderate dose and gradually increase, having first used a mercurial purge and perhaps a nitrate. Hochhause[35] found strophanthus inferior in action as regards rapidity, safety, and completeness of action; yet Drasche[36] found in 40 cases of loss of compensation, that strophanthus acted more speedily than digitalis. Bucquoy[37] found that the action of strophanthus was rapid and sustained. Holroyd[38] publishes two cases. In one with feeble soft pulse and mitral obstruction he found 5 minims of strophanthus no good, whereas digitalis and iron was at once satisfactory in action and result; in the other case, with violent heart impulse, scanty urine, and presumably a high-tension pulse, 3 minims of tr. strophanthus was marvellous in its action, the patient getting quite well. These results, judged from the foregoing contents of this paper, are not surprising and were to be expected.

Makuna[39] publishes a case of fatty degeneration of the heart in a patient aged 45, who took 5 minims of the tincture for six months, was at first improved and then gradually failed. The question at once arises as to what benefit in addition would have been derived from a diet of muscle albumen. Budd[40] relates a case aged 67, of weak and feeble pulse, and another case of small irregular and intermittent pulse, in both of which digitalis, squills, and blue pill failed, yet strophanthus succeeded. He found no cumulative action after six weeks' continuous administration, nor any gastro-intestinal disturbance. Quinlan[41] says that in cases of fatty degeneration of the heart, the cardiac action is steadied and irregularity is diminished, but no permanent good is accomplished; whereas in a non-fatty case, aged 72, there was much improvement from the use of strophanthus. Reilly[42] relates a case of an old lady, aged 76, dyspnœic and of feeble pulse who took strophanthus with syrup hypophosph. co. and was much improved, and after quoting Quinlan as to temporary benefit only, asks: Does strophanthus lose its effect after prolonged use? and is the mixture liable to deposit? The answer to the first is, No, there is no tendency to lose its effect, and adequate feeding of the patient ensures continued success in its use, and from personal experience in practice, it can be administered for from one to three years continuously without signs of intolerance, accumulation, or gastro-intestinal derangement. To the latter question the reply is No, unless it is decomposed by the action of a mineral acid present in the same mixture. Drasche[43] found no accumulative effect for three weeks after he had administered 10 to 20 minims daily, and that 40

minims daily for six weeks produced no digestive disturbance.

Bucquoy[44] found no evidence of nausea, only diarrhœa without colic. Dujardin Beaumetz[45] came to the same conclusion. Personally speaking, I have found as often as not obstinate constipation in old persons taking strophanthus, and the only symptom is slight gastric irritation at first, which quickly subsides as the stomach gets used to the action of the drug. Bucquoy,[46] however, thought that the action of strophanthus was less permanent than that of digitalis. This, I think, is debatable, as cases improved by induced cardiac reparation and tone due to strophanthus remain well, even when taking no cardiac tonics, if care be taken to insist on full and proper diet.

Balfour[47] adversely comments on strophanthus as to the loss of rise in peripheral arterial pressure and empty arterial circulation tending to retardation of blood current. He states, on the contrary, that the use of digitalis is advantageous to cardiac metabolism without any risk of blood pressure ever becoming so high as to be injurious, whereas strophanthus acts at the expense of the cardiac reserve. Digitalis may be advantageous to cardiac metabolism, but so can strophanthus be made, by adequately feeding a case in order to promote repair of wear and tear, and thereby lead to additional beneficial metabolism. Hale White[48] states, also, that "the contractive action of digitalis on the peripheral arterioles is never enough to seriously hamper the increased cardiac power." This may be so if the increase of cardiac power precede the increase of capillary pressure, but in old persons the reverse is often the case, and then digitalis must do harm.

Hale White[49] significantly states that in non-waterlogged cases digitalis is of little good," and with this one must agree, for in old persons digitalis most frequently fails because they have either already a high tension pulse or develop a high tension on the slightest increase of pressure. That the peripheral pressure caused by digitalis does, however, lead to cardiac embarrassment is undoubted, in spite of the opinions of such eminent authorities. We must have all seen the aged person with degenerated vessels, scanty and albuminous urine, œdema of legs, hard or soft pulse, apparently improve rapidly under digitalis, mercury and squills; the pulse steadies down, the tension rises, the œdema disappears and matters look most promising for a week or so when suddenly, without the least warning, the patient is seized with sudden cardiac syncope, after food, perhaps usually fluid, even whilst resting in the recumbent posture and dies before anything can be done; it usual consolatory aphorism being that the patient being old the heart was "worn out," as indeed it was, especially if the case had been kept on the usual senile invalid diet. I have never seen a single instance of the above occurrence when using strophanthus in adequate doses, properly backed by nervine stimulants and full adequate dietary, even in those far advanced in years.

The action of strophanthus on the nervous system is variously stated, apart from its action in producing death by tetanic spasm of the whole muscular system. Hochhause[50] found that it had an action on the nervous system. Langgard[51] found that in rabbits strophanthus produced lassitude and paralysis, and frogs lost their reflexes. Bahadhurji and Langgard[52] found that toxic doses on rabbits, altered respiration, in that abdominal respiration was abolished and thoracic respiration was established. This last, if correct, is an advantage which is obvious in cases of cardiac embarrassment; that the diuretic action was most free when the nervous phenomena were most marked. There was hyperæsthesia of the hind quarters and trunk, and weakness of the fore limbs, finally total paralysis. In cases where the heart was not affected there was tetanus.

These were, of course, instances where strophanthus was pushed to physiological poisoning and beyond the extent of its cardiac action. The main action on the nervous system, if any, which is of interest, is that peculiar mental and motor languor and lassitude, producing a general sensation of "goneness" which is complained of by patients taking strophanthus in a mixture containing a mineral acid. Whether this is due to the strophanthidin produced by the splitting of strophanthin by the mineral acid, or to another derivative contained in the brownish residue, I am unable to say.

To summarise, digitalis stimulates the vagus, and depresses the reflex action of the cord and motor nerves. It acts by prolonging the cardiac diastole and increases the peripheral resistance, is irregular in results, is cumulative, is irritating to the alimentary canal, and induces suppression of urine in the aged. Strophanthus does not stimulate the vagus, prolongs the cardiac systole, renders the nervous system hyperæsthetic primarily, and does not have any effect on the peripheral circulation till long after it has increased the force of of the cardiac systole, is non-cumulative, is not any more, if as much, an irritant to the alimentary canal than digitalis, acts regularly, and can be given with benefit for very lengthened periods, even up to four years continuously without any other effect than a good one. Its cardiac stimulant dose does not affect the nervous system adversely, with the exception of its administration with a mineral acid. Finally, strophanthus does not act like digitalis on the heart, as it can be given at once even after digitalis has produced ill effects; yet these effects pass off whilst the patient is actually taking strophanthus.

The drug next to a direct cardiac stimulant that can be classed as most useful to a senile heart, is mercury, recommended by Stokes, Germain Sée, Broadbent, and others. In high tension cases it acts as a direct diuretic (Germain Sée), opens up the peripheral circulation, and is said by some to be actually a heart tonic; it relieves portal engorgements in this and in conditions of low tension and feeble pulse, with cardiac embarrassment. The existence of diarrhœa must rather be regarded as an indication for the repeated use of mercury, preferably as calomel, rather than the contrary.

Iodide of potasium as a diuretic and cardiac tonic is highly spoken of by Germain Sée, and as such I have found it, apart from its well-known beneficial effects in cases of chronic bronchitis and emphysema and its antigout and antirheumatic alterative action.

Nitrates, as potasium and sodium nitrate, recommended by Bradbury,[53] and commended by Morison [54], as causing a dilation of the peripheral circulation longer maintained than in the case of the nitrites, will be found of great service in permitting the heart to move the blood current more easily and giving the direct cardiac tonic just that start needed to initiate a satisfactory state of affairs.

There is a hitherto undescribed physiological effect of potassium nitrate and potassium citrate given in combination as a nocturnal dose, which seems to me most interesting. If given to an elderly person, even one in good health, whose hair has gone white or nearly so, it will be noticed that at the end of a week or ten days the hair over the ears, the nape of the neck, and the beard, begins to resume its former colour, which progresses all over the scalp, till the colour is in great part restored but streaked with grey. This I take as my barometer, and so long as I can see this condition setting in and continuing, I feel confident of success. Whether it is due as much to improved circulation or returning vitality as the result of better nutrition and improved dietary may be debatable; but the fact remains that I have best seen it where the nitrates and citrates were also exhibited. Anyone can prove this for himself. I would here raise a warning note concerning the use of such rapid and violent arterial dilatants as the nitrite of amyl and nitroglycerine, quite apart from their value in angina, and that is, that in cases of obstruction to the venous return from the portal system, as pressure in the abdomen from accumulated fluid, or obstruction of hepatic origin, where one may be tempted to use them to relieve recurrent cardiac embarrassment, there is a great tendency to the induction of fatal hæmorrhage from the bowel. For the blood is packed into the abdominal arteries and capillaries and being unable to pass the portal veins, first diarrhœa, then capillary oozing, and finally a serious hæmorrhage take place. An attack of bleeding piles with persistent headache and constant vomiting occurring when using these nitrites, are urgent indications for prompt discontinuation. The desired benefits can be more safely and completely brought about by calomel and a nitrate. I have never myself used a nitrite with the above results, though I have seen the same on several occasions elsewhere.

Bearing in mind the central nervous degenerations of the aged, it is well to follow the advice of Alexander Morison,[55] and endeavour to deal with the neuro-muscular rather tha merely the muscular factor of heart failure. With this

end in view such medicines as the phosphates and hypophosphites of lime, soda, potash and iron, cod-liver oil, and bone-marrow for those who cannot take oil, will be found most useful.

The researches of Chossât and Benekè showed that in those conditions where phosphatinuria was most constantly present the administration of phosphorus was decidedly beneficial—indeed, was imperative. That a large percentage of the ash—about 7 per cent.—of red blood corpuscles is potassium phosphate is, I think, a significant matter.

The sluggish reflexes of old age call for the aid of an excito-motor and excito-reflex drug. Strophanthus itself, though strongly a muscular convulsant, is markedly assisted in its action by such a drug. This drug is nux vomica *par excellence*. Nux vomica serves to initiate the muscular contraction which strophanthus makes more decided. To do this efficiently and continuously without using up the cardiac reserve necessitates a highly nutritious and easily assimilated dietary.

Mündinger[59] cites cases of cardiac failure with dilatation occurring in persons doing hard and fatiguing work, and at the same time living on puddings and potatoes, etc., with no meat food. This condition is technically spoken of as "Tübingen heart."

Old persons, with edentulous jaws, badly-fitting false teeth due to alveolar absorption, are too often precluded from gaining the necessary carneous nutriment so vitally important in repairing the wear and tear of an already degenerated heart muscle. They take refuge in delusive "slops" and the futile cup or so of milk, and, with their resistent peripheral circulation, can be aptly likened to persons doing hard and fatiguing work on only "puddings and potatoes"; in other words, sooner or later "Tübingen heart" becomes the pressing condition. We then endeavour to combat the condition by ingeniously-devised invalid dietary, based on the misconception that supposed easy digestibility is all that is necessary, and pay little or no attention to what ought to be the end and aim of such a dietary. We pin our faith to one or other of the cardiac tonics, and are surprised when they do not succeed. It is a mere platitude to state that continuous and efficient muscular action can best be sustained on muscular tissue albumen. Milk is the natural food of the infant; the prominent feature of an infant is not muscularity; muscularity is a feature of the adult. Milk is not the only food of the adult as it is of the infant; muscularity is the sole feature of the heart, therefore milk ought not to be expected to replace essential muscular albuminous food. Casein of milk is not an iron-carrying hæmoglobinous albumen, therefore ought not to be expected to usurp functions for which it was not intended, though it may otherwise be useful.

The problem here is to see that an aged patient taking a cardiac tonic also gets the wherewithal to renovate the cardiac machine. This is quite apart from the generation of muscular energy, which has its origin in the muscular burning off of fats and carbohydrates with the production of carbonic acid.

Mairet and Combemale[57] found that the urea in the urine was markedly increased by strophanthus. I myself, having occasion to administer strophanthus to a patient suffering from senile absorption of the centre of his vertebræ, and who was on a fixed diet, for the purposes of measuring the amount of urea per ounce excreted, noticed that while taking strophanthus the urea ran up 2 to 2½ gr. per ounce—apart from the increase in volume of the urine excreted. The urea fell 2 to 2½ gr. per ounce on withdrawing the strophanthus, though the amount of urine remained the same. This was an accidental observation, and led me to adopt the plan of increasing the myosin albumen in senile cases taking a cardiac tonic, with marked success in my results. The condition of heart as shown by the irregular and intermittent action in most senile cases is merely a chronic condition which in muscle we know as fatigue, and recognise by its weak, irregular and irritable action. It is well to bear in mind here the file-cutter's atrophy described by Allbutt,[58] and other degenerative conditions rendering fatigue more likely. The condition, looked at from a dietetic point of view, is not so much a question of those food stuffs utilised to produce the contraction, but rather those used to repair and renovate the wear and tear of the muscle producing the energy.

Fatigue is possible under all conditions in the presence of abundance of the former—the carbohydrates and fats—but wear and tear is only reparable by the latter—myosin albumen. So that the chronic condition known as irregularity and intermittence can and does become a condition of acute fatigue when the heart is driven by powerful alkaloidal stimulants with a dietary deficient in certain essentials, the heart here being driven practically to a standstill by over-taxation.

The heart, more than any other organ of the body, for obvious reasons, is peculiarly fitted for and able to effect almost instantaneous metabolic reparation even under stress of work, provided the material be of proper character and in sufficient quantity. The myosin is obtained from raw minced steak extracted by cold 0.5 per cent. sodium chloride solution and then curdled out. It is tasteless when so made, and can be put into a rice or custard pudding, into milk, or made into meat panada with egg and cream. I attach no importance to stimulant beef teas or extracts containing only excretory extractives, as they tend to call out wear and tear which they are incapable of themselves repairing. The difficulty of gastric fermentation of starchy foods in senile cases is best met for the time being by malted foods such as extract of malt alone, or in combination with cod-liver oil, and, in the case of those who cannot take oil, in combination with bone marrow. Mellin's food, cane sugar in small quantity, and a limited amount of alcohol either as such or in an effervescent wine will be found useful.

Many hearts which are regarded as worn out and are regretfully abandoned as too old to continue their function, can indeed, comparatively speaking, be "made young again," and the helpless excuse of inability to provide a "new heart" may indeed be nearer refutation than is generally believed; under suitable dietary and a judicious course of continuous cardiac stimulation by tonics; endeavouring under certain limitations as it were to build up anew on the framework of the old, when treating heart failure in the aged.

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SOME WORK BEARING UPON THE PREVENTIVE TREATMENT OF OXALATE OF LIME, GRAVEL, AND CALCULUS.

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It is now generally agreed that oxalic acid is a normal and constant constituent of the urine. The quantity excreted daily is variously estimated at from 10 to 70 mg., so that we may say that the average adult, upon the ordinary mixed diet, excretes 40 mg. in the twenty-four hours.

The oxalic acid of the urine has its origin partly in the food and partly in tissue metabolism. Since the work of Neubauer[1] and Modermann,[2] it has been said to exist in the urine as the oxalate of lime, this salt being held in solution chiefly by the acid phosphate of soda present in the excretion.

Calcium oxalate is stated by most writers[3] to be deposited in from 30 to 40 per cent. of all urines; I believe it to be the most common crystalline deposit in fresh urines, that is to say, in urines which have not undergone alkaline decomposition. The great practical point, however, is that it not infrequently becomes precipitated from the urine while still within the urinary tract in the form of gravel and calculus; and I will endeavour to bring before you some work tending to show that there are influences ready of application which seem to retard or prevent the precipitation of oxalate of lime in the urine, both inside and outside tho organism.

Several writers[4] have reported cases showing recurrent attacks of pain, generally referred to the loins, less often to the region of the umbilicus, accompanied by hæmaturia or slight albuminuria, etc., and a plentiful deposit of calcium oxalate crystals in the urine, the attacks disappearing with the disappearance of the crystals. It is reasonable to suppose that the sudden deposition of numerous crystals within the kidney tubules would give rise to sufficient irritation to account for the symptoms recorded.

It is certainly known that oxalate of lime contributes largely towards the formation of calculus, especially renal calculus. Thus Beale,[5] after analyses of numerous urinary concretions, came to the conclusion that the origin of nearly all calculi is a nucleus of oxalate of lime. Carter,[6] on examination of the specimens in the Grant Medical College Museum in India, found the oxalate calculi to be in the majority.

Fagge[7] observes that in his experience small calculi of calcium oxalate are more common as a cause of hæmaturia, pyelitis, and renal colic, in middle-aged persons, than any other form.

The urine depositing calcium oxalate is reported by most observers as of an acid reaction (often very acid), of an increased specific gravity, and frequently with a high proportion of urea and other solid constituents.

Oxalate of lime is precipitated in the urine generally in the form of two pyramids joined base to base, and flattened in one axis; many other forms, however, are mentioned by writers, the most remarkable being the colloidal varieties.

When a dilute solution of oxalic acid or one of its salts such as potassium oxalate is added to urine, crystals of oxalate of lime invariably form. When one wishes the crystals to form slowly, the oxalate solution must be added drop by drop, and be very dilute (from 1 in 1,000 to 1 in 5,000). When calcium oxalate crystals are once formed, they rapidly fall to the bottom of the vessel, and are easily detected on being lifted up with a pipette. Thus when a few drops of a urine containing oxalate of line were poured on the top of 10 c cm. of urine in an ordinary test tube, calcium oxalate crystals could always be found at the bottom of the tube in from 4 to 8 minutes. Advantage was taken of these facts in the following experiments:

No. XXI.—Into a series of clean test tubes (A, B, C, D, and E) 10 c.cm. of freshly voided urine were put with a few drops of chloroform to retard decomposition. A was retained as the control tube. To B was added 25 c.cm. of distilled water, to C 50, to D 75, and to E 100 c.cm. To each tube was next added, drop by drop, a small quantity of a dilute solution of oxalate of potash (0.6 c.cm. of a 1 in 2,000 solution), and the contents of the tube well mixed. The tubes were then placed in a cultivation chamber and kept at the temperature of the body. A few drops from the bottom of the tube were gently lifted up with a pipette at frequent intervals, and examined under the microscope for calcium oxalate crystals. In the control tube A, octahedra were found in thirty minutes, in tubes B and C they were found after four hours, while in tubes D and E they were not precipitated even at the end of thirty-six hours.

No. XXVII.—The next experiment was carried out in a similar fashion, a solution of a salt being added to each tube instead of the varying percentages of distilled water. Tube A was again retained as the control tube; to tube B ½ c cm. of a 10 per cent. solution of potassium bicarbonate was added, to tube C the same quantity of sodium bicarbonate, and to tube D the same of magnesium sulphate, this being equivalent to an addition of 0.45 per cent. of the salts to the urine. In tubes A, B, and C the presence of oxalate of lime crystals was well established in forty minutes, while in tube D, that is the one with the magnesium sulphate, they were not found even after standing thirty six hours.

No. XXIX.—Next the urine of a subject known to have a tendency to the precipitation of oxalate of lime was taken; 10 c.cm were poured into two test-tubes, A and B and a few drops of chloroform as before. To B was added 45 per cent of magnesium sulphate. In three days, the urine being still acid, octahedra were found in tube A, but could not be detected in tube B, the magnesium tube.

These experiments were frequently repeated, and the result almost invariably showed that dilution of the urine and the addition of magnesium salts had a noticeable effect in retarding the precipitation of oxalate of lime. This applies, I believe, to all the salts of magnesium, at any rate it was found true of the sulphate, nitrate and chloride, even when only in the proportion of 0.1 per cent. The sulphates of potash and soda were not found to have any retarding influence

The next endeavour was to ascertain if these results could be applied to the individual.

Duckworth[8] pointed out, many years ago, that when oxalic acid or an excess of lime in the form of liquor calcis is taken internally calcium oxalate crystals will be certain to deposit in the urine. Accordingly, 3 ounces of liquor calcis were given to a healthy adult at bedtime; the urine of the following morning deposited many octahedra within twelve hours of elimination; on a following night 1 drachm magnesium sulphate was administered in addition to the liquor calcis, and the morning urine, after standing 24 hours, showed only four octahedra after putting up 10 slides from the deposit; on the next night the dose of magnesium was increased to 1½ drachm with the 3 ounces of liquor calcis, but no calcium oxalate crystal could be found in the morning urine during the 48 hours after its elimination.

Again, 1 grain of oxalic acid was given at bedtime; the morning urine was centrifugalised immediately on being passed, and showed at the bottom of the centrifuge tube well-shaped octahedra. On tho following night 1 drachm magnesium sulphate was given after the same amount of oxalic acid. The morning urine showed no octahedra after being put in the centrifuge, although it began to deposit them soon afterwards; on the next night, when under the same conditions the dose of magnesium was increased to 2 drachms, and given in a pint of water, the retardation was very noticeable; for no octahedra were deposited in the morning urine, while it stood for 36 hours.

There are a considerable number of people, sometimes children, but generally middle-aged subjects in good circumstances, who suffer from recurrent attacks of gravel, or who after outbursts of renal colic repeatedly pass small oxalate calculi. In such subjects the prolonged administration of small doses of magnesium, say 40 gr. of the sulphate, given in the afternoon and at bedtime, in a well-diluted solution or combined with some mild diuretic, such as the citrate of potash, would seem to be a suitable form of treatment. Attention to general health, regimen, and diet must also be kept well in view.

Lastly, I must express my indebtedness to one whose name is well known in connection with the study of gravel and calculus. It was the late Sir William Roberts, who, some years ago, kindly suggested to me this subject of research, and the lines on which to work.

No. XXI.—*Influence of Dilution.*

Experiment.	Result.
Tube A. Urine + potas. oxalate (control)	Octahedra precipitated in 30 minutes.
Tube B. Urine + potas. oxalate + 25 per cent. of water	Octahedra precipitated in 4 hours.
Tube C Urine + potas. oxalate + 50 per cent of water	Octahedra precipitated in 4 hours.
Tube D. Urine + potas. oxalate + 75 per cent of water	*No* precipitation during 3 hours.
Tube E. Urine + potas. oxalate + 100 per cent. of water	*No* precipitation during 36 hours.

No. XXVII.—*Influence of Magnesium Sulphate.*

Experiment.	Result.
Tube A. Urine + potas. oxalate (control)	Octahedra precipitated in 40 minutes.
Tube B. Urine + potas. oxalate + 0.45 per cent. of potas. bicarb.	Octahedra precipitated in 40 minutes.
Tube C. Urine + potas. oxalate + 0.45 per cent. of sod. bicarb.	Octahedra precipitated in 40 minutes.
Tube D. Urine + potas. oxalate + 0.45 per cent. of magnesium sulphate	*No* precipitation during 36 hours.

No. XXIX.—*Influence of Magnesium Sulphate.*

Experiment.	Result.
Tube A. Urine (control)	Octahedra precipitated in 3 days.
Tube B. Urine + 0.45 per cent. of magnesium sulphate	*No* precipitation in 3 days.

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A DISCUSSION ON THE THERAPEUTICS OF OPEN AIR.

I.—Frederick William Burton-Fanning, M.D.Cantab., M.R.C.P.Lond.,
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Dr. Burton-Fanning said: The discussion, I take it, is to be limited to the consideration of only one of the factors in the so-called open-air treatment; the others—hyperalimentation, appropriate use of rest and exercise, and general management—are beyond its intended scope. The fact that the system should be known as the open-air treatment indicates the relative importance, however, of open air. By way of digression, I do not think a title, descriptive of only one—if the most important—of the constituents of a system, is a good one. Nor is the name "sanatorium treatment" satisfactory, as that implies that it is impossible similarly to treat the patient outside a special institution. The term "hygienic treatment" commends itself to me, but it has not passed into general parlance, and there are always difficulties in the changing of an accepted title.

One of your secretaries encouraged me to undertake the task of opening this discussion by remarking that the subject was not a controversial one. Now, if we come to think of it, the complete absence of any opposition to a form of treatment, which is anyhow novel in some particulars, is a very remarkable and exceptional form of testimony for a medical departure. The statements made about it which most nearly approach to adverse criticism, are that there is nothing new in the vaunting of open air for certain maladies, and that the results are not commensurate with the enthusiasm lately manifested in regard to open air as a therapeutic agent. The victims of tuberculosis have certainly been advised from time immemorial to be as much as possible in the open air, but *as much as possible* meant when the weather was fine or when the patient was inclined; and it was not always recognised that whatever meteorological conditions obtained, still open air was the right place for these patients, nor was it urged that the purification effected by the day must not be undone by fouling the air in which they spent the night.

Though an open-air life has always been known to exercise a favourable influence on phthisis, it is only recently that we have come to justly appreciate its all-importance and to know that at least 90 per cent. of all cases of phthisis will derive material benefit, if only the agent is used in large enough doses. Our conviction of its efficacy leads us now to use open air as the essential constituent of a well-recognised system of treatment. If this new gospel has been proclaimed with unnecessary noise I think that chiefly arises from the extensive distribution of the disease it attacks.

The chief feature of open air I take to be its comparative freedom from microbes, in which respect it contrasts favourably with the air of the best ventilated room. Some experiments on the noxious qualities of confined air have been made with animals in a bell-glass. Oxygen has been replaced as absorbed and carbonic acid gas has been removed as produced, and yet the animal dies. The injuriousness of confined air, therefore, is not due to its lacking oxygen, nor to its containing too much carbonic acid, but to the presence of organic matter, which collected and injected under an animal's skin causes its death.

Beside the absence from open-air of pathogenic germs allowance should probably be made for the presence of ozone, which according to some experiments of Dr. Ransom, exercises a distinctly beneficial effect in cases of phthisis. The same observer's researches on the fate of tubercle bacilli exposed to currents of fresh air need only be mentioned, as they are so well known to everybody. Lastly, the view is held by many that some peculiar property belongs to air in motion.

Generally speaking the effects of life in the open air are increased sense of well being, increased appetite and assimilation, resulting in gain of weight and physical development, reduced frequency and increased strength of the pulse, nerve tone is improved, and healthy sleep is encouraged, the blood is improved in quality, the lungs work more actively, and there is comparative immunity from respiratory catarrh.

Taking these effects separately as they concern our patients with pulmonary tuberculosis, the patients' own statements can be accepted as to the feeling of well being, one's universal experience is that they express themselves as infinitely better in the open air and feel unable to remain in a close room. The increased appetite that ensues on exposure to open air is familiar to all of us and is of fundamental importance in the treatment of phthisis. In the persistent absence of appetite we are met with an insuperable obstacle to the restitution of a consumptive. But I have been surprised how seldom one has had any real difficulty in getting the large amount of food comprised in a sanatorium dietary eaten by the majority of one's patients. I think there is a tendency among writers on the open-air treatment to forget that it is not the ingestion, but it is the assimilation, of much nourishment that is to be aimed at. Open air not only helps the patient to grapple with his large meals, but it also promotes their absorption. One has learnt that the persistent use of open air, perhaps for many months, is one's surest remedy for the furred tongue, anorexia, nausea, and dyspepsia of phthisis.

In a general hospital I have had patients under observation on a specified amount of food and under the same conditions of rest; then these patients have been continually exposed to open air, and, without any alteration in the amount of food or rest, they have gained more weight. I should say that the promotion of assimilation constitutes one of the most striking advantages of open air.

The salutary effects of hyperaëration on the other organs combine to produce the total result of reinforcement of the consumptive patient. And herein lies the chief action of open air, fortifying the natural powers in their resistance to the disease. In about one-third of my patients distinct gain in weight and general health has preceded reduction of fever; in this class I think open air is exerting its influence, especially in increasing the patient's natural powers of resistance. In another class one notices that weight is not made till after fever, night sweats, and other toxic manifestations have been lessened. Here it is probable that the advantage of open air depends chiefly on its checking septic processes in the lungs. We are now approaching the difficult question of mixed infection, upon which there is no time to dwell now. One would only say that the examination of sputa in phthisis invariably leads to the detection of innumerable varieties of cocci. My own personal experience has been that in the expectoration of patients with typical hectic streptococci are by no means invariably present, while they have been detected where no fever existed. On the other hand, the differentiation between the other forms of coccus always found in these cases and streptococcus may be impossible, so the best bacteriologists tell us. As regards the tubercle bacillus ensconced in the lungs, fresh air probably does nothing direct, but the chances of reinfection are hindered by it.

Let me now, in conclusion, pass briefly in review some other diseases which respond to open air. First of all come other tuberculoses. Now tuberculous peritonitis is treated on the same broad lines as tuberculosis of the lungs, excepting those cases which are operated on. I have lately submitted all such to open-air treatment with distinct advantage, but not with the same definite response as in phthisis. For tuberculosis of glands, bones, and joints surgeons have long believed in open air as the best remedy, and at my own hospital demonstrably better results have been obtained in such cases, since they were made to spend the whole day in the garden. Then there are the acute specifics which have been

treated in open air—typhoid, small-pox, scarlet fever, measles, and whooping cough. I have no personal experience on the subject, but in all we are told that a more favourable course is run. The testimony from South Africa is all one way; it is universally agreed that typhoid as well as other patients have done better in the open air, or in tents, than in closed buildings.

Certain nervous diseases are benefited by open air. I could mention some personal observations on the improvement that follows the use of open air in cases of insanity. I have seen such patients only improve when kept out of doors, when weight and general health so improved that the mental condition reflected the amelioration. I have been struck with the frequent association of migraine with phthisis and the favourable effect of open air treatment on these attacks has been remarkable. Neurasthenics also are singularly benefited by life in the open air and their improvement in spirits is most satisfactory. Lastly, I would mention anæmia, and such disorders of infancy as rickets, marasmus, and diarrhœa.

II.—Sir John William Moore, M.D., F.R.C.P.I.,

Senior Physician Meath Hospital and County Dublin Infirmary; Professor of Practice of Medicine in the Royal College of Surgeons of Ireland; President of the Royal College of Physicians of Ireland.

Sir John Moore observed that within recent years he had become more and more convinced of the paramount therapeutic influence of open-air treatment in chronic as well as in acute diseases. He had seen excellent results from keeping chlorotic and anæmic girls in the grounds of the Meath Hospital, Dublin, as long as possible each day. The windows in the hospital wards were also kept open whenever possible on the leeward side. The spirits of the patients improved, they put on flesh, and gained in weight and colour much more rapidly than was formerly the case. He had been rather amused by a passage in the sermon preached before the Association by the Bishop of Norwich, in which the preacher spoke of an open window at night as "an accident." It would be more proper to speak of a shut window at night as "an accident," for fresh air was even more necessary by night than by day. In pulmonary consumption the best treatment was certainly that by life in the open air. So satisfied of this were the authorities of the National Hospital for Consumption at Newcastle, co. Wicklow, that in the additional wings now in process of construction, natural ventilation was to take the place of the system of artificial ventilation already in use.

III.—D. J. Chowry-Muthu, M.D.,

Physician, Inglewood Sanatorium, St. Lawrence, Isle of Wight.

Dr. Chowry-Muthu was glad that the open-air movement was slowly gaining ground and creating a wide interest in this country. Evidently it had passed the stage of trial, and was rapidly becoming the recognised remedy in phthisis. It had taught us to go back to Nature to show the path as to the treatment of disease. The open-air treatment was something more than pure air and sunshine. It was an organised effort to put into practice those hygienic principles and reduce them into a more or less perfect system under medical supervision. The speaker had been personally carrying on the open-air treatment for the last eighteen months at St. Lawrence, Isle of Wight, and the results had been so satisfactory as to convince him that it was the remedy that at present holds out the best chance of success in phthisis. One of the most remarkable things one noticed very early in the treatment was the reduction of temperature and the disappearance of night sweat without any special medicine. After a few days of the admission of the patient he lost his nervousness and began to take an interest in his new surroundings. His appetite returned, his colour came back to his cheeks, his sleep was more calm and natural, and his pulse and general condition improved. The real improvement in the physical signs took place about six to eight weeks after the patient's admission. In the first stage and in a good constitution the patient had every hope of complete recovery. Out of twenty-two patients treated in the sanatorium during the first eleven months five entirely recovered, all physical signs being absent when they left, eight were relatively cured, that is sufficiently cured as to be able to return to work, and six out of the remaining nine, who sought admission in the advanced stage, were greatly benefited. Cases unfavourable to the treatment were: 1. Chronic cases which had run a mild course, where the system had been vitiated by the toxin of the tubercle bacilli and other pathogenic organisms. 2. Cases where the stomach was feeble with a tendency to nausea and vomiting, and where the stomach trouble was much more serious than the lesion of the lung. 3. Cases associated with bronchial catarrh. Strong winds, especially east wind, acted like an irritant, and therefore very injurious to consumptive patients. Apart from these contraindications Dr. Chowry-Muthu was perfectly satisfied that the open-air treatment was the only rational method of treating this disease, and much better results would be obtained if it was early diagnosed and treated, and the duration of the treatment was prolonged at least from six to nine months. In fact, the prognosis very much depended upon the state of the stomach and the duration of the treatment. It was impossible to carry out the treatment at home, and for the majority of patients a well-conducted sanatorium offered the best chance of cure. The open-air treatment did not merely mean fresh air and good feeding. These were only parts of a system. A strong man was wanted to control the system, to administer the means according to individual circumstances. Sanatorium treatment included thorough organisation, strict discipline, strong generalship, without which the open-air system would be a failure. Consumption would not be cured by pure air or sunshine any more than a battle was won by guns and ammunition. The secret of the success of the treatment lay in the medical supervision, in the strong will and personality of the sanatorium doctor who commanded the obedience and regulated the life of the patient in every detail, inspiring him with his hope and enthusiasm in the treatment. Dr. Chowry-Muthu referred to the value of inhalations of formalin (igazol) in phthisis, and thought that patients undergoing sanatorium treatment were cured a few weeks earlier after its use than they probably could have been without it.

IV.—Ernest Kingscote, M.B., C.M.,

London.

Dr. Kingscote said that pure air stimulated the red blood corpuscles and invigorated the phagocytes, and, therefore, made them better able to combat bacilli, while impure air did the reverse. Light was hostile to the bacilli, and the cessation of epidemics amongst cattle was secured by admitting more light to the sheds. He referred to the cheering effect of open air tending towards recovery. The precautions necessary were to avoid draughts. Draughts produced local chill resulting in vaso-motor effects of constricting capillaries and consequent tendency to internal congestion. Wild animals hated draughts. The burrowers, such as the fox and rabbit, made their burrows with arms or "spouts" to avoid air currents. Further, cattle could not be fattened in draughts. To wear clothing of pure wool, which was warm, light, and was a non-conductor of heat, and to take plenty of food, especially carbohydrates, was the proper course.

V.—William Calwell, M.A., M.D.,

Physician, Royal Victoria Hospital, and Throne Consumption Hospital Belfast.

Dr. Calwell agreed with Dr. Burton-Fanning as to the suitability of the term "hygienic treatment." It was a pity to label a general principle with the name of but one of its factors. The open air helped both ways: it undoubtedly increased the resisting powers of the patient, and it reduced to a minimum the secondary infection. The most important of the former was the promotion of assimilation. The pathology of increased resistance could not be defined; whether a more powerful leucocytosis, an increased power of manufacturing antitoxin, or an increased appetite one saw at any rate the effect, and the effect was good. The increase of weight in consumptives was important, but was not at all an absolute guide; patients increased in weight with no change in the physical signs, and even patients with a temperature of 102° might for a little time put on a few pounds. Tuberculous glands were improved by open air as long as they were vascular, but a caseous gland always required the aid of a surgeon. Many other diseases were benefited and to those already mentioned might be added influenza, pneumonia, and ordinary catarrhs; the latter were undoubtedly rarer in proportion to the open-air practised. The

nursery, perhaps even more than the sick room, required open air; the change that came over children when removed from a stuffy nursery to an open-air life would convince the most sceptical; catarrhs, rhinitis, and pharyngitis were prevented and often cured. The hygiene of daily life was slowly changing, and there was little doubt that in a few years rooms, houses, and clothes would be marvellously improved, and the Germans must be recognised as the first to put this on a definite system with military precision. In all probability later on open air for the domestic animals would be advocated. The unsuitable phthisical cases were those suffering from chronic rheumatism, kidney complications, bronchial catarrh, and the very mild form of Raynaud's disease that was not uncommon, although unnamed. Bearing on the open-air question the problem of ventilation of large hospitals in the middle of a smoky, manufacturing town might be considered: this seemed to be one of the very few cases where the Plenum system was suitable.

VI.—Jane Harriet Walker, M.D.,
Physician, New Hospital for Women, London.

Dr. Walker said: My experience of this treatment extends over more than six years, first in patients of the hospital class to which I added an establishment for paying patients in 1898, and one of the most striking results of the treatment that I have noticed has been the improvement in the health of the staff; delicate servants and nurses improve enormously in physique. It has been taught that patients do best in cold weather. My present opinion is a modification of this, and I think that at any rate in England patients do better in warmer parts of the year. No real discomfort need be caused by cold, every adjunct should be brought to bear to make patients more comfortable. Another most marked result of open-air treatment is the diminution and final disappearance of expectoration in a comparatively short time. Cases of bronchitis in tuberculous patients are a great difficulty. I have tried them with full open-air treatment, with the same system modified and in a warm room at an equable temperature, but no method is really very satisfactory.

VII.—Esther Lillie Colebrook, M.D.,
Henley-on-Thames.

Dr. Colebrook asked Dr. Burton-Fanning for his experience as to the desirability of keeping febrile patients in the open air. The question of wind in the treatment in England was the greatest difficulty. Even in open-air shelters intolerable stuffiness might result, as seen by her at Falkenstein.

VIII.—David Sommerville, B.A., M.D., B.Ch.,
London.

Dr. Sommerville said: I think that all the beneficial conditions of the life of the patient undergoing the open-air treatment have their effect in destroying the bacilli, or in so improving assimilation and metabolism generally that the result is the destruction of the micro organisms. The bacteriology of the subject, which we owe in the first instance to Koch, if thoroughly considered, will give us an intelligent view of the rationale of the treatment in its varied aspects and details. We know that the action of light is of the first import in destroying many pathogenic bacteria, and that light and oxygen in numerous instances transform highly pathogenic bacteria into harmless saprophytes. I agree with Dr. Calwell in emphasising the necessity of promoting in the highest degree assimilation, and in this connection we do well to recognise the fact that in pulmonary tuberculosis appetite has no relation to digestive powers; hence in most instances overfeeding is of the first necessity and mostly always remarkably and rapidly successful. Whilst admitting that in sanatoria one can most easily procure the necessary conditions of successful treatment, I think there are cases in which under the care of an intelligent and skilful nurse the treatment may be admirably carried out at home, in cities, even in London, and here I may cite a case which I published last year of a patient who in ten weeks completely recovered from an acute attack of pulmonary tuberculosis in London who, by reason of what he had seen of an exceedingly depressing nature at Davos, could not by any means be induced to go to a sanatorium. A like successful case in a lady who came under my notice since confirms me in this view.

Reply.

Dr. Burton-Fanning referred to the valuable suggestion of Sir J. W. Moore, that in private and district nurses we possessed a great power for disseminating knowledge on the value of open air and on other points in connection with the prevention of tuberculosis. Dr. Chowry-Muthu's experiences as a sanatorium worker were of great interest, and the statement that the average gain of weight was 8 lbs. per month in his sanatorium was a useful piece of information, as some writers appeared to think all patients should gain this amount in a week. He had known this to occur often, but the average was lowered by the many patients who made flesh more slowly. As to Dr. Chowry-Muthu's dietary, he thought that 16 ozs. of meat per diem was a little too much, and that 1 oz of butter was too little. He was in perfect agreement with Dr. Calwell that increase of weight was compatible with advancing disease, and that patients frequently gained weight under treatment up to the time of their death. His experience had been that winter was more favourable for consumptives undergoing the open-air treatment in England than hot weather, and he believed this was the conclusion arrived at in Continental sanatoria. Otherwise he agreed with all that had been said by Dr. Jane Walker, and thought with her that the effect of open air in diminishing expectoration was very remarkable. Dr. Esther Colebrook asked about the management of febrile patients. He was getting to use confinement to bed—of course with open windows—more and more for a large class of patients, anyhow in the early days of treatment. His general rule with febrile patients was to keep them in bed until he was quite sure that the fever was habitual, and not the result of some intercurrent inflammatory affection such as pleurisy. He thought many forms of shelters were not at all in keeping with open-air treatment, and that provided protection from wind and sun was obtained the less confined the patients' resting places were the better. Dr. Kingscote thought that hypnotic suggestion played a part in the effects obtained by open-air treatment. The speaker was reminded of an anecdote of a great believer in open air who declared that he was quite unable to sleep in a particular room until he had opened a window. After fumbling about in the dark for the bolt of the window, and failing to find it, he became desperate and thrust his fist through the glass, saying as he got back to bed, "Now I shall be able to sleep at last." Next morning, after a sound night's sleep, however, he found that he had only broken the glass in front of a bookcase. He agreed with Dr. Sommerville that the treatment could be followed outside a sanatorium, especially with the help of a specially-trained nurse, and for this reason he had dissented from the title "Sanatorium Treatment."

THE OPEN-AIR TREATMENT IN IRELAND.

By Francis Howard Sinclair, M.D., M.Ch.,
Physician, Belfast Hospital for Consumption.

To my friend Dr. Calwell belongs the credit of having first demonstrated the practicability of carrying out open-air treatment in Ireland in connection with the Throne Hospital. A few months later my colleagues and I adopted it at the admirably-situated Forster Green Hospital. The National Hospital in Wicklow, an establishment on Lough Erne, and my own sanatorium on the Mourne Mountains, sum up the institutions where a systematic open-air treatment of consumption is being carried out in that country.

The climate of Ireland, as a whole, is a more equable one than that of England, being less hot in summer and milder in winter. Though the rainfall is as a rule greater, there has been no day since two years ago I began to make use of systematic open-air therapeutics that patients have not been able to take exercise without exposure to wet.

The reputed moist character of Irish weather has, therefore, been no hindrance to the successful carrying out of this method. I believe, however, that climate alone has much less to do with successful results than other conditions of which, perhaps, less is heard.

In a conversation recently with Dr. Dettweiler (Falkenstein) he emphasised strongly the advantage of treating

patients in their own climate, and during the past few months I have been much impressed with the correctness of this view by three instances in which patients who had resided for lengthened periods in South Africa and Australia had when there developed extensive tuberculous diseases of the lungs, but on returning to Ireland the disease under open-air treatment became quiescent.

I believe that as in every other form of treatment of disease the adoption of any rigid system, or any empirical rule which necessitates indiscriminately the administration of so many ounces a day of food to every patient must in the long run prove unsatisfactory.

On several points open-air treatment lends itself to adaptation to circumstances, though one must have a routine or basis which in the majority of cases will be adhered to, but there will always be a large minority who require special tabulating according to their peculiar idiosyncrasies in dieting, rest, and exercise.

In dieting it has been my practice while avoiding the reliance on alcohol which has distinguished Dr. Detweiler's treatment, to follow his method of giving meals, as being more rational and also more easily carried out than the exclusive three-meal-a-day system of Dr. Walther. The three-meal-a-day practice was some time ago abandoned at Gobersdorf, which as well as being one of the oldest is the largest sanatorium at present in existence.

The question as to the use of verandahs is one also which must be decided by the temperament of the patient. On the one hand some patients are inclined to mope when resting in their own room or in an isolated revolving shelter. On the other hand one occasionally notices that in those of an excitable disposition a few hours on a verandah with six or seven other patients the temperature will rise as much as two degrees higher. With these latter a verandah is deserving fully of the opprobrious epithet "quarrelling hall." The advantage, however, of a proper verandah is so great that it seems unfair to condemn it because cases are met with for whom it is unsuitable. In the Forster Green Hospital, near Belfast, my patients remain on the verandah until bedtime, even in winter, and in my own sanatorium verandahs take the place of a sitting room in its construction. The mistake is often committed of making it too narrow. If 12 feet is allowed a room is practically formed with one side wholly absent; and if the structure is well placed as regards its local surroundings, there is no reason why it should not prove free from draughts.

In sanatorium practice the idea that must always be paramount is that the reason of the patient's being there is to get well and not to amuse himself. But while this is so it is the physician's duty to map out each patient's life in the sanatorium so that his individual partialities are considered, and if one could find congenial occupation for every patient, the ideal principle of a "consumption colony" would be worked out. For example, some patients have been successfully interested in gardening, each one who cares for it having a small plot of ground allotted. This has proved quite a source of interest, and the progress of seedlings and bedding-out flowers becomes quite a matter of importance. Certain of the operations of photography, too, may be allowed, namely, exposing plates and the processes of printing, toning, and fixing papers. The dark room must, however, be prohibited, as the non-actinic rays of light and the absence of ventilation generally prevalent there are, of course, favourable to bacillary growth.

Chip carving in soft canary wood is a form of occupation which is allowable. Painting in water colour and oils is an occupation which appeals to a few artistic spirits As to out-door games, put-put and croquet are the most suitable for a sanatorium. The solution of chess problems during the colder months proves the main interest, and the occasional introduction of a chess tournament helps to ward off the danger of monotony. Target shooting with an air gun which has little recoil can be practised under cover.

In a sanatorium too much emphasis cannot be laid on the infectivity of sputum. An instructive incident occurred in the Forster Green Hospital which impressed me with the necessity for a good deal of caution in the matter of the utensils used by consumptives. One of my colleagues presented the matron with a fine cat, which rapidly became a favourite with the patients, and at mealtimes especially Thomas reciprocated their affection by accepting various contributions from their forks, with the result that in eight weeks the cat developed tuberculous disease and died of hæmorrhage.

In case after case I have been able to trace to an infected house the origin of tuberculous attacks. And if an original attack may arise thus, why may not self-infection assist in keeping up the disease? With a view to lessening the danger of reinfection all utensils used by patients should be thoroughly disinfected. It is a good thing to place on the table at the bedside of each patient a bowl in which the handkerchief should be placed, as under the pillow is vetoed. To prevent smearing with sputum the upper part of each blanket is covered with muslin, which is frequently washed. Washing pockets are provided for the reception of the handkerchief during the day time, though of course the handkerchief is not used for receiving the expectoration.

Though in sanatorium practice I have not found much difficulty in getting the Dettweiller flasks used, it requires constant drilling to get hospital patients to believe that the ground was not made for the purpose. With a little pressure it is quite possible to enforce the use of the flasks even on hospital patients.

It is astonishing how many patients are in the habit of swallowing their expectoration with the idea that they are less likely to lose weight than if they dispose of it into a spittoon. When the practice has continued for any length of time the patient is almost certain to develop a troublesome diarrhœa.

With regard to the use of drugs in connection with open-air treatment, I must say that I have found that those treated with creosote and guaiacol appear to suffer more from nausea and sickness after eating than those who have altogether knocked off the use of such medicines. For the treatment of symptoms quinine, sulphonal, and some preparation of opium are the drugs found most useful.

With these brief notes, Mr. President, I trust I have been able to show that something is being done in the Sister Isle in taking advantage of the purity and freedom from contamination which its atmosphere possesses.

Dr. BERNARD O'CONNOR referred to the results obtained by the open-air treatment of tuberculous lung diseases during several years, and instanced the information obtained in its favour at the North London Consumption Hospital at Hampstead, and drew attention to the importance of looking out for œdema and albumen in all cases of increase in body weight, of a concurrent rational drug treatment, such as by means of hypophosphites of calcium or sodium, and of avoiding stimulants.

Professor WALTER G. SMITH said that the normal organism might be represented diagrammatically by (1) a living mass, possessing a certain store of energy, moving with a certain velocity, and subjected to (2) retarding forces, the most variable in health, (3) impelling or accelerating forces. Tuberculosis and many other diseases reduced the first and third factors and increased the second. The objects of a rational system of therapeutics were to increase the first factors by ample feeding, etc., and the third by improving assimilation, and to reduce the second by abundance of fresh pure air.

REMARKS ON THE TREATMENT OF TOWN PHTHISICALS IN THE COUNTRY,

WITH SPECIAL REFERENCE TO THE NEED OF CONTINUED TREATMENT AFTER LEAVING THE SANATORIUM.

By H. DE C. WOODCOCK, L.R.C.P.&S.ED.
Leeds.

PHTHISIS is a disease depending largely on three factors: (1) trade, (2) wages, (3) infection. The third cause, infection, is of little importance apart from the first two; by which I mean that, since the standard of comfort among the poor has increased, since the masses of the population have decided to demand improved sanitation, including the provision of open spaces, the provision of decent dwelling houses and such luxuries as the possession of convalescent homes; in other words, since the poor have become comparatively

rich—the index of all this being a higher rate of wages—phthisis has declined, though even now the percentage of deaths from phthisis is two and a-half times greater in the industrial than in the middle and upper classes. Given all the above facts, infection as a cause of disease becomes a factor of no very great importance, at least in this country. I have not mentioned general hospitals in the above list, because hospitals have had very little curative effect on lung consumption. A surgical hospital is a factory working at fever heat; a medical hospital is a museum of rare disease; an out-patient department is—so far as anything but the palliation of consumption is concerned—a disastrous failure. If there were in every city a home of rest, a hospital without a surgeon, patients requiring the surgeon going elsewhere; if there were a hospital for broken-down invalids, especially women, in which rest, quiet, and nursing were obtainable, I should bracket such a hospital with the convalescent home as a preventive of many deaths, of many acute and chronic diseases, and especially of deaths from tuberculous diseases.

To these preventives of deaths from consumption, especially phthisis, we shall have in the future to add the effect of sanatorium treatment, educational as well as curative, and I hope we shall also have as the outcome of sanatorium treatment the formation of hygienic colonies to allow of the transference of the cured phthisicals from the town to the country. Every large industrial sanatorium should supply a colony with recruits. A sanatorium containing 100 consumptives would, according to German statistics, cure absolutely 10 to 12 of the 100 patients, that is, to turn out 10 or 12 per cent. of the patients showing no clinical signs of disease, and also almost cure another 20 per cent. of its patients. There is no question of the advisability of providing healthy outdoor work for all of them, and certainly there could be no serious objection from any quarter to the planting of the absolutely cured among the rural life of an English village. The only difficulty is the finding of suitable employment where there would be anything like a living wage. Still, in this matter my paper is suggestive and not exhaustive.

The sending to work in the open air among hygienic conditions under medical inspection of a limited number of cured consumptives is roughly a consumptive colony. I use the word somewhat loosely, as in some cases it would only be possible to plan out situations for individuals. The details and management of such a plan could be worked out by six ordinarily intelligent men, such as sit on Boards of Guardians or sanitary committees of corporations, but they should be assisted by medical opinion. Arrangements could be made in case a patient relapsed for his immediate return to the sanatorium whence he came.

Whether the 20 per cent. of the nearly cured should be sent to such a colony is a moot point. Possibly the villagers might object, at least they would at first. Time will, however, prove, I am convinced, that such an experiment would not be a source of danger to the surrounding district. Personal inquiry which I made of the medical staff at Falkenstein and at Nordrach has convinced me that no case of infection has ever been traced from these institutions to the villages in which they are situated. This is peculiarly interesting in the case of the Falkenstein sanatorium, which is enclosed on three sides by public roads and houses. You could throw a stone from the sanatorium grounds into the inn yard, and coming out of the sanatorium gates you may, in two or three strides, reach the door of the village bootmaker. Walters, in his book on sanatoria, goes into this subject carefully and, amongst other facts, mentions that the death-rate from phthisis has decreased in the village of Falkenstein since the sanatorium was erected. The point is that it has not increased. As to the population of Falkenstein and the trades there I have at present no information.

The sanatorium treatment for the working classes will hardly at first be a complete success because of its expense and because of its tediousness, and also because of the vast army of consumptives clamouring for treatment. A patient costs £70 and should stay in a sanatorium for two years. But if a patient after serving a rigid apprenticeship in hygiene is, after six months, turned out from a sanatorium without physical signs of disease he might by accepting suitable employment in a healthy country district or in the healthy suburbs of a town carry on the treatment which he had already mastered.

Dr. Walther of Nordrach told me he had little faith in sanatorium treatment for the working classes, for they had generally to return to their old surroundings, and there was great danger of their relapsing into their old condition. One finds all Walther's patients repeating the same dirge-like tale, with, however, more dogmatic assurance than ever their master assumed. With the colony system, however, no such objection can hold; indeed, such a system puts into the hands of the poor the advantages which Walther's rich patients obtain. Common sense is not a monopoly in the possession of Walther.

What means should be taken with the patients who are not fit for work in a hygienic colony is not the scope of this paper. A very long sanatorium treatment might leave them either among the half cured or among the incurables. We must recognise that no one yet has (so far as I know) exhaustively explained why some cases are curable and others not. A dying consumptive may easily infect many, unless he is rigidly isolated. A cured consumptive will infect none. A half cured consumptive should not infect any if ordinary precautions are taken, remembering that a consumptive who has passed through a sanatorium has taken a diploma in discretion.

Objection has been seriously made that by keeping alive our consumptives we are courting disaster for future generations. Objectors should remember that Herodian methods are not permissible in our day, and we must remember that consumptives will not die to suit our convenience; that from 20 to 30 years of age is, roughly speaking, the dying period; that during that time they frequently marry and beget children, and that after the age of 30 they frequently thrive and become comparatively healthy. By making a consumptive a healthy man you surely make him a healthy parent.

Already the doctrine of heredity has been gravely called in question, and it is common knowledge that the consumptive who masters his malady may beget children of perfect physique. The average child of the consumptive is in a better physical condition, both for the present and for the future, than is the cured consumptive himself.

Grabowsee, Ventnor, Edinburgh, Selby, Cromer, and other consumptive health resorts tend to show that altitude in reference to consumptives is not a matter even of importance. The poor consumptive would frequently be cured in the rich suburbs of a town if the rich would let him use their grounds. Bowden is a suburban village. Falkenstein I have already referred to.

As to the financial aspect of this question. If the Poor Law is not elastic enough to help; if the British public, which sends its missionaries, its money to support the sufferers from famine, from flood, or from fire all over the world, will not supply means for this humble experiment, itself partly self-supporting, there is a possibility of the workmen's sick clubs helping to solve the problem. Grabowsee is partly supported in this way. In Germany where compulsory insurance for the industrial classes is a rule, the industrial insurance companies insuring against illness, as well as against old age and death, it has been found to be a business-like proceeding to support workpeople's sanatoria. Money, which would otherwise be sent to the invalid at home, is diverted to the sanatorium, and this plan has even been proved to be economical. If in Germany this plan obtains, why not in England? If for a sanatorium, also for a mode of treatment which would carry on the sanatorium treatment without the consequent expense.

THE SUBCUTANEOUS ADMINISTRATION OF OXYGEN.

A NOTE ON THE HYPODERMIC INJECTION OF OXYGEN GAS AND OF SOLUTIONS OF PEROXIDE OF HYDROGEN.

By Wm. Ewart, M.D.Cantab., F.R.C.P.,

Senior Physician to St. George's Hospital and to the Belgrave Hospital for Children.

Opinion is still divided as to the therapeutical value of oxygen; and its physiological action upon the blood is still under study. Clinical observation as well as physiology suggest that when pure or concentrated oxygen is supplied by

inhalation it may not effect much more for the cure of disease than the atmospheric oxygen itself is capable of doing when freely supplied in proportions adequate for the respiratory needs. But there remains the question which arises in connection with the method to be described whether, when supplied to the lymphatics and through them to the blood, oxygen might not act in some different way. Even if useless or superfluous by inhalation, it might, perhaps, be serviceable when administered under the skin.

Methods of administration analogous to the present one may have been suggested or even carried out, although I have not found any reference to them. As regards the infusion of peroxide of hydrogen solutions, I believe that it has never been practised in the human subject, although in dogs this agent was injected subcutaneously and into the veins by P. W. Farrah[1] in the endeavour to counteract the effects of experimental poisoning by carbon monoxide, which it failed to do. Blood transfusion from healthy dogs was the best means of resuscitation, saline infusions were of only temporary benefit, and injections of peroxide entirely negative.

I—Subcutaneous Infusion of Solutions of Peroxide of Hydrogen.

The possible advantage to be derived from a different mode of administration of oxygen was one of the reasons which led to my using this method, other reasons being the well-known difficulties of the inhalation method in some of the worst cases, its failure to supply any respiratory stimulus, and, lastly, the small quantities in which the gas is probably inhaled into the lung in advanced conditions of exhaustion. Owing to delays, I had not hitherto put to the test my original intention of injecting a saline solution freshly charged with oxygen gas, but meanwhile Dr. Buckmaster suggested to me that a more abundant supply of oxygen might be derived from a solution of peroxide of hydrogen, if this could be injected. This suggestion I carried out in several cases to which I need not refer at any great length, since they are reported in a joint paper brought before the Section of Medicine on "Saline Infusions in Pneumonia," by Dr. Percival and myself. Altogether five cases of severe pneumonia were treated in this way. The supply of peroxide of hydrogen was obtained from a 10 per cent. solution of the latter, and a fifth of a pint was added to four-fifths of a pint of ordinary saline solution and the mixture infused under the skin. In none of the cases was any discomfort observed in the patients, and no inflammatory or other local complications were set up, except in one case, where, after death, a small lump was noticed in the track of entry of the needle which had been introduced three days previously. This lump contained a small collection of greenish, semi-transparent material, which under the microscope presented some crystals of fatty acids, and was apparently the altered remains of an extravasation of blood. In all the cases the usual swelling produced by the saline infusion gave emphysematous crackling under the pressure of the finger, and this condition persisted during the short periods of about two days during which the patients survived.

The infusions were well borne, and did not set up local pain, inflammation, or any constitutional symptoms, and there was no rise of temperature observed after them. Incisions made after death in the emphysematous region which had received the injection did not present any appearances of cellulitis. The amount of gas in the tissues was too small to furnish any samples for examination, but there are physiological reasons for supposing that it was oxygen. The proportion of peroxide of hydrogen actually injected in each pint was 2 per cent. I have no clinical experience of the use of any greater strength. The general condition of the patients was such that only powerful measures could possibly have relieved it, and the treatment was not followed by any lasting benefit. The slight improvement which was observed in some of them may perhaps have been due rather to the infusion itself than to the peroxide.

II—Subcutaneous Injections of Oxygen Gas.

On May 6th, 1900, a case of pneumonia and typhoid which I was treating being in a desperate condition, and the infusion of peroxide of hydrogen not having produced any marked results, I determined to supply the oxygen yet more directly and in greater abundance by injecting the gas with due precautions immediately under the skin. This operation I first tried upon my own self by introducing a long needle into the subcutaneous tissue of the leg, carefully avoiding any veins. The oxygen was supplied from an ordinary cylinder provided with a proper gas check, and the gas was conducted through a small wash-bottle containing water, where the bubbling roughly indicated the rate of delivery. A glass tube charged with antiseptic wool was inserted near the needle in the length of indiarubber tubing. The operation having been found painless and apparently free from danger, my house physician, Dr. Beaumont Percival, proceeded to inject the patient in the same way. A bandage was tied temporarily round the upper part of the left thigh, so as to limit the spread of the emphysema, and the hypodermic needle was inserted in the front of the leg. The gas was allowed to escape slowly into the areolar tissue, causing the leg and thigh as far as the ligature to swell. The amount injected must have been considerably more than one pint, judging from the bulk of the limb, which was greater than that observed after a one-pint saline infusion. There was no complaint of any pain. After a while the bandage was removed, but the subsidence of the swelling was gradual and slow.

The fact that at the autopsy which occurred three days after the injection the leg was still slightly emphysematous indicates that the absorption of oxygen gas when administered in this way is not a rapid process. In my own case, although the amount injected was much less, the crackling could still be recognised on the third day after the injection.

Remarks.

The subcutaneous method is the only reliable means of ensuring that the oxygen administered is taken into the system. Much of the oxygen supplied to patients by inhalation never enters their mouth or nose. This is manifestly the case when the "funnel" is used, which favours a diffusion and a dispersion of the gas into the surrounding atmosphere. Moreover, it is doubtful whether the fractional amount which is inhaled penetrates to any great depth in the lung. And, again, the inhalation of oxygen tends to induce apnœa rather than increased activity of breathing, and for that reason may not be effectual in remedying respiratory paralysis in the exhausted subjects to which it is often administered.

The subcutaneous administration both of the peroxide of hydrogen and of oxygen itself not only provides for the complete introduction of the dose, but enables us to determine the quantity actually absorbed.

The mode of action of oxygen when inhaled into the lung is known up to a certain point, but we know little concerning its behaviour when it is placed in contact with the tissues. In the case of hydrogen peroxide, the emphysema which is produced shows that oxygen is liberated, and that it is, therefore, supplied in the nascent state. This establishes an essential difference between the two methods and between their possible modes of action; whilst, as regards the relative amount of gas introduced, it should be noted that the gaseous injection is capable of supplying much larger quantities than the peroxide method.

In both methods the emphysema ultimately disappears. Part of the oxygen may be taken up by the cells—this might be described as the physiological or local form of absorption; another part is probably dissolved and carried away by the circulating fluids—this would be the chemical form of absorption, not a purely local process. We have no means of estimating in what relative proportion these two processes may be carried on, but it may be regarded as likely that some portion of the supply reaches the lymphatic system, and probably the blood also.

The reoxygenation of the "reduced" pericellular fluids and of the lymph stream which probably takes place is a factor the physiological and the therapeutic significance of which, particularly in connection with diseases of the lymphatic system, may deserve further investigation.

Conclusions.

No conclusions can be based upon so limited an experience of these two methods of supplying oxygen locally to the systemic circulation. Neither would I venture at this stage to recommend their employment, except in urgent conditions, where oxygen cannot be inhaled.

The two series of observations show that we may set up a local oxygen emphysema of the areolar tissue without any evil result, and that the gas will be gradually absorbed, though the process is a slow one.

The diluted peroxide of hydrogen infusion is, perhaps, of the two methods that presenting less risk. On the other hand, the oxygen gas injection is easier to carry out, and the possibility of wounding a vein seems to be its only danger. This may be readily guarded against with sufficient care; and the remote risk is much limited by the preliminary precaution of applying a ligature to the upper part of the limb.

The clinical value of the subcutaneous method as a general stimulant has yet to be made out. It is to be hoped that the future observations of others may furnish more light than can be gathered from the cases in which it has been tried, and which were ill adapted to serve as fair tests.

REFERENCE.
[1]Philad. Pathol. Soc., Nov. 1st, 1899; *cf.* BRITISH MEDICAL JOURNAL EPITOME, March 3rd, 1900.

SECTION OF OPHTHALMOLOGY.

W. A. BRAILEY, M.D., President.

A DISCUSSION ON THE TREATMENT OF LACHRYMAL OBSTRUCTIONS.

I.—GEORGE A. BERRY, M.B., F.R.C.S.E.,
Ophthalmic Surgeon to the Royal Edinburgh Infirmary; Lecturer on Ophthalmology in the University of Edinburgh.

NOTWITHSTANDING the frequency of lachrymal obstruction, there cannot be said to be any unanimity as to its treatment. In other common affections with which the ophthalmic surgeon has to deal, such as cataract and glaucoma, though the treatment may vary somewhat at different hands, the variation, with few and unimportant exceptions, is confined to minor details in the technique of operations which are universally acknowledged to be most suitable. Given a certain amount of skill and experience on the part of the operator, these various modifications probably do not materially influence the average result. To some extent it is otherwise with the treatment of lachrymal obstruction. Two surgeons of equal experience may habitually treat the same condition in such different ways that it is hard to believe that they can both be equally successful. My experience of lachrymal obstruction and its treatment is not wholly confined to cases which have been treated throughout by myself. I have had occasion to see examples of the work of many British and of not a few colonial and foreign oculists. This is a consequence of practising and teaching in an important centre for medical education.

As regards the treatment of lachrymal obstruction, it seems to me, in the first place, that there is a pretty general tendency to do too much. This appears to arise from too great importance being, as a rule, attached to the blocking of the tear duct as the cause of epiphora, and to a too general assumption that the blocking is of the nature of a stricture. It should be remembered that it may possibly be a questionable advantage to maintain the patency of the duct at the expense of frequently bruising and otherwise irritating its mucous lining.

The two consequences which in my experience are apt to follow the use of the very large probes and repeated probing are the conversion of a blocking, from mere catarrhal swelling of the mucous membrane, into a blocking from actual submucous stricture, and the tendency to provoke a dacryocystitis. The latter would possibly be more frequent than it in reality is from such treatment were the mucous membrane of the sac bruised to the same extent as that of the duct, as the change from the catarrhal condition (blenorrhœa of the sac) to the phlegmonous inflammation characterising a dacryocystitis is undoubtedly due to the microbic invasion of the submucous tissue.

Another very frequent result of excessive probing is the production of a stricture at the canaliculus entrance to the sac. This is especially caused by large probes and more particularly when the opening along the canaliculus has not from the first been prolonged well up to the sac. The raising of the probe, which is necessary to cause it to descend into the duct, constantly overstretches and even lacerates the tissues, and thus this troublesome form of stricture arises. It is owing to the tendency to this disagreeable complication that I prefer to open the upper instead of the lower canaliculus. The direction of the channel thus made lies more in a line with the duct, and there is consequently less stretching at the mouth of the sac.

Another advantage in this proceeding is that the lower canaliculus, which is physiologically the most active, is left intact. Sometimes the slitting of the upper canaliculus presents considerable difficulty. In these cases and always where there is any ectropion of the lower lid, I slit the lower. To those who are wedded to the use of large probes the opening got by slitting the upper canaliculus will be less satisfactory as it is not so ample.

As regards epiphora, it is interesting and instructive to note the differences commonly met with in the ordinary cases of blenorrhœa of the lachrymal sac when compared with cases in which there is a complete obliteration of any channel for the excretion of the tears. In all blenorrhœa cases the epiphora is more or less constant and very troublesome. Yet in the vast majority of such cases there is no difficulty experienced in passing a good-sized probe down the duct. After thorough obliteration without catarrh or complete removal of the sac, on the other hand, there is almost invariably little epiphora. Not infrequently this symptom is practically absent. It is clear therefore that faulty excretion cannot be the main cause of the symptom for the removal of which one is mainly called upon to interfere. In fact there can be little doubt that much of the epiphora is due to hypersecretion of tears caused by an irritation which originates in the mucous membrane of the sac and possibly also of the duct.

The consideration of these facts affords one a guide to a rational treatment. And the first point that suggests itself is this: Is it necessary in order to bring about a return to the normal condition of the mucous membrane to attempt to maintain a constant patency of the duct?

No doubt stagnation and decomposition of the mucous secretions and other products in the sac is greatly, if not entirely, the cause of the continuance of the state of irritation. The opening of the duct by probing not unreasonably therefore appears to be indicated to overcome this stagnation. As in addition there is always the risk of a catarrhal inflammation in the sac developing into a phlegmonous acute dacryocystitis, there can be no question that the sooner attempts are made to check stagnation the better. As soon as we have occasion to diagnose blenorrhœa of the sac, by finding more or less regurgitation through the canaliculi on pressure over the sac, a canaliculus should be slit, preferably the upper, for reasons already stated, and the duct probed. The object of this proceeding should not however be, as it seems to me it so often is, to bore, as it were, a passage for the too copious overflowing tears, but rather to hasten the recovery of the mucous membrane and to remove the risk of dacryocystitis. This being the case, as I believe, the frequency and severity of the manipulations required will be determined solely by the extent to which the mucous membrane will tolerate the necessary interference.

In my experience there is too much risk entailed by the use of both very small and very large probes. The former are apt to cause laceration, the latter bruising. Too frequent probing, even with the sizes of probe such as I have found most suitable, one of a diameter of a No. 6 Bowman to one of 1.75 mm. diameter, also generally defeats its object by irritating the mucous membrane too much. My own practice is to probe at intervals of a fortnight to begin with, and then, if necessary, at longer intervals. Generally, however, three or four probings are sufficient, nearly always so if the case has come under treatment early.

A number of years ago I used to syringe the duct at similar intervals, using for this purpose a hollow probe, which was first passed down into the nose, and the liquid, a mild antiseptic, forced through it as it was slowly withdrawn. The liquid in this way came in contact with the whole course of the duct. This I was led to discontinue as it did not prove any more effective than the simple probing.

There is one class of case, however, in which I still find

syringing useful. This is the condition in which the sac has become overdistended, and fills up with mucus or muco-pus, notwithstanding that a probe passes quite readily down the duct. In this rather troublesome complication syringing the sac alone freely with sterilised water until all the secretion is removed, and then with a solution of protargol, is certainly useful. A carefully applied pad of cotton wool may with advantage be used afterwards to check the refilling of the dilated sac. These syringings should be repeated daily. The treatment is in fact much the same in principle as that for cystitis caused by an overdistended bladder, and though it may have to be continued for some time is on the whole eminently successful.

The treatment for epiphora due to catarrhal inflammation of the sac, which consists in early opening through the upper canaliculus followed by probing with a moderate-sized probe at intervals of a fortnight is almost invariably satisfactory, and leads to rapid improvement or recovery. It is otherwise, however, with cases which have gone on to dacryocystitis before treatment has been begun. They very often prove more troublesome. My experience of such cases, which are unfortunately far from uncommon, is that it is far safer to avoid probing altogether until all acute symptoms have subsided. If the case be seen before the tissues in front of the sac wall have become infiltrated, an opening should be made through the canaliculi—usually I slit both upper and lower.

When an abscess has actually formed, sufficient drainage can only be got by an incision through the skin into the sac. The incision should be free, and be made in a line with the duct, but should not be begun too high up, so as not to involve the palpebral ligament to any great extent. I find it a good plan to stuff the opening thus made with iodoform gauze, and to continue this method of dressing until the discharge has practically ceased, or the inflammation of the tissues has subsided

A single simple incision, not followed by any attempts at draining, or at best a poultice or wet antiseptic dressing is no doubt sufficient in some cases. As a general rule, however, it does not seem advisable to rely upon this. Cases which are allowed to heal slowly are most likely to do best in the long run. In most of them the epiphora eventually passes off, or is so slight as to cause little trouble. As, however, there is a risk of recurrence at some time or other, I think it is a good plan after the dacryocystitis has disappeared, to slit freely either one or both canaliculi. This need only be followed by probing if there is much epiphora. Usually the passage of probes in such cases presents more difficulty than in cases of simple blenorrhœa of the sac. This is owing to loss of substance followed by fibrous stricture at the lower opening of the tear sac In fact, it is, with possibly a few exceptions, only where there has been a dacryocystitis that any real stricture of the duct is met with naturally. But where large probes, too frequent probing, and styles have been used for epiphora due to blenorrhœa alone a stricture not infrequently results.

In the presence of a stricture naturally or artificially producen, a certain degree of forcible probing is probably quite justifiable. And here I have found conical probes the most efficient. These should not, however, either be too large or passed too frequently. It is often necessary, however, to continue fortnightly probings for much longer than in the treatment of simple blenorrhœa. Whether it is advisable to go on for months with this treatment or not will depend greatly upon its effect. If it keeps down the epiphora nothing else need be done. If, on the other hand, the epiphora continues to be very troublesome, or still more, if a subacute state of dacryocystitis persists or frequently recurs, complete destruction of the tear sac is unquestionably the most satisfactory treatment.

Dacryocystitis treated in the manner just described is with rare exceptions either slowly recovered from without any probing being required, or only leaves a degree of epiphora which is greatly improved or cured by the occasional use of probes. Cases of dacryocystitis which have burst spontaneously and afterwards remained untreated, are apt to be much more troublesome. They not infrequently leave a fistula, and, it may be, a sort of lupoid scabbing over and round the site of the opening in the skin. They also much more frequently recur or remain chronic. In a considerable proportion of cases which have this history, removal of the sac is the best treatment to follow. An attempt should, however, first be made to treat them on the same lines as that described for cases first seen at an earlier stage.

The lupoid scar tissue if present should be thoroughly scraped away with a Volkmann's spoon before a free vertical incision is made into the sac. Where only a fistula without any marked inflammation remains, this may be treated by the actual cautery, the point of a small thermo-cautery or galvano-cautery being passed down the fistula and the canaliculi slit. Large probes, frequent probings, and the use of styles are, in my opinion, to be avoided. Removal of the lachrymal gland, or any portion of it, is altogether uncalled for.

II.—Ernest H. Cartwright, B.Ch., M.D.Oxon.,
Maidstone.

Dr. Cartwright said that in his opinion a canaliculus once slit never acted so satisfactorily as a normal one; therefore they should make it a golden rule not to use the knife until other methods had been thoroughly tried and had failed. The severe cases which required the use of the knife and probes separated themselves roughly into two classes—those which responded to occasional probings and those which persistently closed up again within a few days. In the latter a style must be used. He considered the ready-made straight ones (hollow or solid) to be most unsatisfactory, and much preferred to mould a lead one accurately and have a similar one made of gold, and this might be worn if necessary for years. He thought it a great pity there was not a generally-accepted system of numbering probes. As regarded the form of probe, he much preferred Theobald's, provided they were given a reverse curve, as in the common type of Couper's, but saw no object in using the very large one. The most difficult cases were those with an impermeable bony stricture of the duct. It was a question whether the best treatment in such cases would not be to make an artificial passage through the lachrymal bone rather than to attempt to drill an opening in the normal position.

III.—Kenneth Scott, F.R.C.S.E.,
London.

Mr. Kenneth Scott said: In the treatment of lachrymal obstruction the most essential point is to ascertain the position and extent of the stenosis as well as its nature. There are two factors which have to be considered—the lachrymal duct, which comprises a venous plexus upheld in tissue covered by epithelium, and constitutes the lining of the other structure, which is the osseous passage, and is termed the nasal canal. If there is any seriously obstinate obstruction in that part of the passages lying above the lachrymal sac it can usually be remedied by slitting either canaliculus and with scissors removing the posterior wall of the newly-formed canal, thus obviating any tendency to reclose. The stenosis is, however, most usually found below the sac, at the upper end of the lachrymal duct, but it may also be situated at the lower end, and still less frequently does it occupy the intermediate part of the passage; for the purpose of gauging these positions the bulbous pointed probes of Couper are very suitable When due to chronic inflammatory thickening very good results are obtained by the introduction at repeated intervals of probes of increasing size, the progress thus made being retained by the constant presence of correspondingly graduated styles. Astringent and tonic lotions are also used, and it is often advisable to introduce these by means of a syringe, so as to more thoroughly ensure their copious local application. When this is carefully carried out a comparatively short time generally suffices to restore the natural condition, and enables the patient to discard the further use of styles. When the obstruction is osseous, or even densely cicatricial in character, a good effect is produced by enlarging the lumen of the passage with a rose-headed burr or drill, which is most conveniently worked by the ordinary "dental engine," and the only alteration necessary in such a series of drills, is to have their shafts made about half-an-inch longer than usual. They are as readily handled as the ordinary dilating probes, the guide for their line of direction being one which joins the mesial inner canthus of the eyelids with the anterior edge of the first upper molar tooth

(Testut). There are numerous forms of styles, but the most useful are those made from ordinary lead wire which can be readily drawn to any desired thickness, and when boiled in water becomes quite soft and pliable, and when introduced adapts itself to the natural curvature of the passage. The use of a cannula seems unnecessary, as the capillary movement along the side of the style sufficiently imitates the natural escape of the lachrymal secretion. The method of drilling referred to quite obviates the necessity for any heroic operation of destruction or ablation of the lachrymal sac, or for the extirpation of the lachrymal gland, all of which have been advocated in cases where there is occlusion of the duct; further also, by quickly re establishing a permanent effluent passage in troublesome cases of fistula of the sac, the local defect becomes quite amenable to ordinary surgical measures, such as scraping, cauterisation, or fuller reparation. Styles may be numbered according to the British standard wire gauge, though the preferable method would be metrical notation. The great and essential point in all cases of this nature is to establish perfect drainage, and the abatement of the other inflammatory conditions will follow in natural sequence in response to ordinary remedial measures, as obtained elsewhere in the body.

IV.—StClair Thomson, M.D., F.R.C.S.,

Physician to the Throat Hospital, Golden Square; Surgeon to the Royal Ear Hospital.

Dr. StClair Thomson approached the subject entirely from the point of view of the rhinologist, whose acquaintance with the lachrymal duct was limited to its nasal extremity. In most of the cases he had examined he had not found pathological conditions in the nose to account for the obstruction. He showed a drawing of a section of the nose to illustrate the large diameter of the nasal end of the duct, and also the large space between the inferior turbinate bone and the outer nasal wall. He thought that this explained the frequency of gross lesions of the nose causing as a rule little or no obstruction of the lower end of the tear duct. If, therefore, the nose was the cause of this trouble, was not by causing mechanical obstruction, but direct infection of the duct In some cases the examination of the nose had led to the detection of syphilis as the cause of the lachrymal trouble, and by appropriate treatment great benefit had resulted.

V.—Ernest Dykes Bower, F.R.C.S.Ed.,

Surgeon and Ophthalmic Surgeon, Gloucester General Infirmary.

Mr. E. Dykes Bower thought that the treatment of chronic lachrymal obstruction was most unsatisfactory, and that this was frequently brought about by over-treatment. For some time past, in cases of chronic non-purulent epiphora, he had adopted the plan of slitting the lower canaliculus, and using a mild astringent lotion without passing a probe at all, and he thought that in such cases the less one had to do with styles and probes the better. In the light of their present knowledge he felt that more harm than good was done by their use. In the treatment of acute dacryocystitis with a stricture of the duct, he considered it necessary, after the acute condition had subsided, to pass a probe occasionally, but he much deprecated frequent instrumentation.

VI.—Ernest Clarke, M.D., F.R.C.S.,

Surgeon, Central London Ophthalmic Hospital.

Mr. Ernest Clarke thought that a good deal of harm might result from over-treatment. He preferred, in the first instance, to dilate the punctum and syringe down the duct; if, however, the fluid would not pass, he then slit the canaliculus and passed a small probe, and after removing the ocular surface of the slit canaliculus he inserted a nail-headed gold style, and did not pass the probe again. The advantage of the nail-head was that it rested in the slit canaliculus, and helped to form a gutter which served to conduct the tears into the sac. As many cases were, in his opinion, due to swelling of the mucous membrane of the duct spreading from the nose, he considered it most important to treat any rhinitis which might exist.

VII.—Francis Richardson Cross, F.R.C.S.,

Ophthalmic Surgeon, Bristol Royal Infirmary; Surgeon, Bristol Eye Hospital.

Mr. Richardson Cross thought that cases of catarrh of the lachrymal sac might occasionally be cured by syringing through the uncut punctum. In dacryocystitis, however, the sac must be opened if possible through the canaliculus, or if not through the skin, and in the latter case the canaliculus ought to be opened as soon as the swelling had subsided and a probe passed in order to ascertain if a stricture were present. In some cases of prolonged catarrh he advocated the slitting of both canaliculi, as this facilitated the application of astringents. If a stricture existed some form of dilatation was necessary, either "immediate" by the use of large probes, "gradual" by probing at intervals or "continuous" by the use of styles. He did not advocate the use of large probes, but occasionally he thought they might be useful. Obstruction would occasionally be found in the nose and this must be sought for and treated. Sometimes persistent and well-planned syringing would rid the patient of a localised collection of pus which might have been causing obstruction by pressure on the lachrymal canal.

VIII.—Sydney Stephenson, M.D., F.R.C.S.E.,

Ophthalmic Surgeon to the Evelina and North-East London Children's Hospital.

Mr. Sydney Stephenson recognised two classes of cases. First, those which yielded readily to simple measures, and, secondly, those which refused to yield to anything but probing. In the treatment of the latter he advocated the employment of large probes such as those recommended by Theobald, of Baltimore, and he thought that the opposition to their use rested entirely upon theoretical grounds, for at all events anatomical measurements proved that such could be passed easily. In a really difficult case Mr. Stephenson preferred to give an anæsthetic and to dilate the duct by the passage of large probes at one sitting. He drew attention also to mucoceles in newly-born children, and pointed out that simple digital compression over the lachrymal sac with or without the use of astringent lotions sufficed to cure the majority of cases.

IX.—Ernest Edmund Maddox, M.D., F.R.C.S.E.,

Opthalmic Surgeon, Royal Victoria Hospital, Bournemouth.

Mr. Maddox recommended the attachment of a simple nipple to the nozzle of a Weber's syringe for the injection of cocaine or cocainised oil before slitting the canaliculus. He described two cases which were cured by treatment of the nasal cavities. When styles were used he thought that the best plan was at first to insert a soft one, such as the end of a fine silk catheter, so as to accustom the duct to the presence of a foreign body, and then to place a permanent metal one in it.

X.—Henry Collen Ensor, M.R.C.S.,

Assistant Ophthalmic Surgeon, Cardiff Infirmary.

Mr. Ensor in severe cases strongly recommended the use of Couper's large probe, while the patient was under anæsthetic; this to be followed immediately by the insertion of a leaden style made of double wire which allowed a free passage of fluids down the duct. Such a style might be left *in situ* for two or more years.

XI.—Henry Work Dodd, F.R.C.S.,

Ophthalmic Surgeon to the Royal Free Hospital; and Surgeon to the Royal Westminster Ophthalmic Hospital.

Mr. Work Dodd drew attention to the fact that in some cases of lachrymal trouble the condition of the general health played an important part, and this should be treated as the local condition.

XII.—Charles Samuel Blair, F.R.C.S.,

London.

Mr. Blair thought that it was very important to keep the opening into the sac very free. If this were done the inflammatory condition of the sac and the obstruction in the duct generally subsided without any or much probing and the epiphora ceased.

Reply.

Mr. Berry, in reply, quite agreed that there was a tendency with many surgeons to do too much, and he considered the epiphora was chiefly caused by hypersecretion due to irritation from the mucous membrane of the sac and duct. He did not at all agree with Mr. Cartwright when he spoke of the unsatisfactory result of treatment; he looked upon these cases as most satisfactory in their results. His chief reason for slitting the upper instead of the lower canaliculus was because there was less tendency for a stricture to form at the orifice into the sac, as this passage was more in line with the duct and consequently less laceration and bruising of parts occurred when a probe was passed by way of the upper one. He had never seen anything but harm arise from the passage of large probes, but thought that those of an intermediate size were most useful.

DACRYOCYSTITIS AGGRAVANS, RESEMBLING TUMOUR OF FACE.

By Kenneth Scott, M.B., F.R.C.S.E.,
London.

Summary.

The patient was an undersized but well-preserved peasant woman, aged 75, living in Upper Egypt, who was admitted to the surgical wards of Kasr-el-Aïni Hospital last year, suffering from a large tumour involving the front of the face. She was afterwards transferred to the eye section of the hospital. The case was one of double dacryocystitis, which on the left side had attained to enormous dimensions.

The history of the condition was meagre, but for some time close to the inner canthus on each side there had been occasional and rapidly-evanescent swellings, whose subsidence was accompanied by the escape of discharge from the nostrils. The left eyelids were greatly swollen and inflamed, effectually closing the palpebral fissure, but later the eye was found to be intact. There was an oval-shaped tumour on the left side of the face, extending from the eye to the angle of the mouth; its outer border was in line with the external canthus, and the level of its surface lay anteriorly to that of the bridge of the nose. It had a well-defined margin and was completely sessile. The surface was smooth and showed no redness; although it was tense there was some fluctuation present, and there was also pointing over its lower and outer aspect. There was much local pain, but no general disturbance of the system. On the right side of the nose there was also the condition of dacryocystitis with retention, but in an ordinary degree, which yielded to appropriate treatment. On the left side, as neither punctum lachrymale could be exposed, the tumour was incised near its outer border, and the escape of a large quantity of pus was followed by collapse of the swelling. Twelve days later it was possible to explore the lachrymal passages, when they admitted No. 8 of Couper's probes (= diameter of 3 mm.). The sac was multilocular and quickly refilled with mucus, which became converted into pus. Irrigation with solution of cyanide of mercury, 1 in 1000, and other measures enabled the patient to be discharged cured in five weeks from the date of her entry.

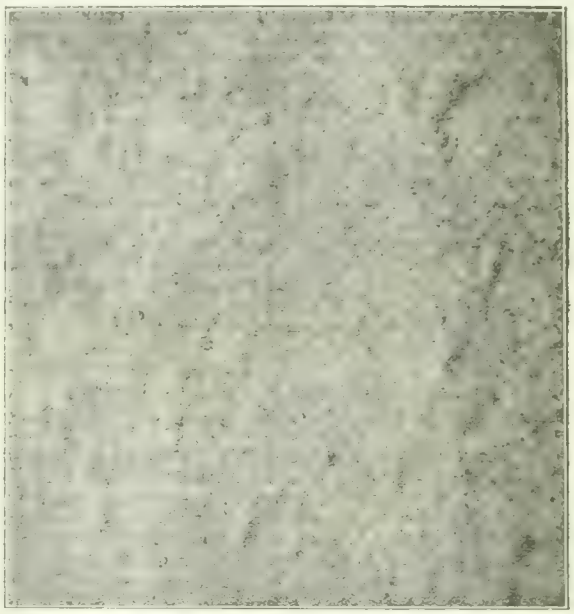
A CASE OF LEUCOSARCOMA OF THE IRIS, SHOWING FIBRO-HYALINE CHANGES.

By W. Watson Griffin, F.R.C.S.,

Leucosarcoma of the iris is of rare occurrence, as is evident from the following statistics: Fuchs,[1] out of 259 collected cases of intraocular sarcoma, found only 3 of leucosarcoma of iris; Martin,[2] out of 43 cases, did not meet with one; and of the 161 cases collected from records at Moorfields by Lawford and Collins,[3] and by Marshall,[4] not one was a leucosarcoma of iris. Van Duyse and Van Schevensteen,[5] in a paper in the *Archiv d' Ophtal.*, 1897, give references to 7 cases which had been described up to that time, and add one which had come under their own observation. Since then a case has been reported by Marshall,[6] and 2 cases are described by Kerschbaumer[7] in a monograph on ocular sarcoma which has just appeared.

The notes of my case are as follows.

Miss M., aged 19, was sent to me by Mr. A. H. Buck, June 15th, 1899. In the left eye there was a growth, visible in part to the naked eye through the pupil and pushing forwards the lower and outer quadrant of the iris against the back of the cornea, with obliteration of the anterior chamber in that part. As seen through the iris the growth appeared brownish in colour; as seen through the pupil it was white and opaque, and its surface slightly irregular. The pupil was somewhat drawn down-



wards and altered in shape, but mobile in its upper inner half, which reacted to light. The lens was displaced inwards and was partially opaque. Vision was limited to counting fingers at two yards. There was no pain, the tension of the eye was not increased, and there were no signs of inflammation. The history of the failure of vision dated back only three weeks. While the patient was in France she was seen by an oculist there, and several subconjunctival injections were made. There was no antecedent history of injury. As there was little doubt of its being a malignant growth, I excised the eye on June 25th.

Prognosis in a case seen and treated so early as this should be very favourable. As regards treatment iridectomy has been practised by some for sarcoma of iris, but I think there can be no doubt that prompt excision of the globe is called for, inasmuch as tumour cells may very early have made their way into the ligamentum pectinatum, the vessels of the canal of Schlemm, the ciliary body, and the lymph spaces of the anterior ciliary vessels.

The growth is about the size and shape of a pea, and of a dense white colour, and takes its origin in the posterior layers of the iris, the front of the iris being in close apposition to the back of the cornea, with consequent blocking of part of the angle of the anterior chamber. The lens is displaced, cataractous, and partially atrophied; the ciliary body is becoming involved.

Microscopically the tumour is a small spindle-celled sarcoma, traversed by numerous irregular bands of hyaline or myxomatous degeneration; while here and there a disposition towards the formation of fibrous tissue is evident. These changes may indicate that the tumour was of low vitality. It is conspicuously poor in blood vessels.

In conclusion the points of interest in the case seem to me to be:

1. The age of the patient, who was only 19. Most intraocular sarcomata occur much later.
2. The extensive hyaline changes in the growth.
3. Its dense white appearance, probably accounted for by the hyaline changes and its non-vascular character.

References.

[1] *Das Sarcom des Uvealtractus*, Wien, 1882. [2] *Inaug. Dissert.*, Halle, 1885. [3] *Royal London Ophthalmic Reports*, 1891, vol. xiii, pt. ii. [4] *Ibid.*, 1899, vol. xv, pt. i. [5] *Arch. d'Ophtal.*, vol. xvii, p. 219. [6] *Trans. Ophthal. Soc.*, vol. xvii, 1897. [7] *Das Sarkom des Auges*, 1900.

CEREBRAL TUMOUR WITH OPTIC NEURITIS.

By Ernest Clarke, M.D., F.R.C.S.,
Surgeon to the Central London Ophthalmic Hospital.

[Abstract.]

Mr. M., aged 36 years, married, no children. No history of syphilis nor of a blow on the head. He enjoyed fairly good health until October, 1898, when he had a sudden short attack of aphasia which was followed by a definite nervous illness marked by langour, more or less headache, and on several occasions slight attacks of sickness. About Christmas, 1898, tremors on the right side made their appearance, at first most marked in the right hand, but later on numbness of the right leg and occasional attacks of aphasia were complained of. In July, 1899, he went to Wales for a month, and while there lost his headache, and then first noticed defective vision of the right eye. He was first seen by me last September. On examination there were marked tremors of right limbs, especially of the right hand. Exaggerated reflexes. Slowness of speech, but no aphasia. He answered all questions with perfect intelligence, but lapsed into an apathetic, listless condition when not spoken to. He was well nourished, and all the organs of the chest and abdomen were healthy.

Examination of Eyes.—Right eye: Vision barely fingers at half a metre; post-neuritic atrophy. Left eye: Vision normal; "choked" discs; papilla swollen to three dioptres; vessels engorged and tortuous; no hæmorrhages and no retinitis; some slight infiltration of the retina in the neighbourhood of the disc.

A tumour of left frontal lobe was diagnosed, limited behind by the ascending parietal convolution (the leg and arm centre) and below by the third frontal convolution or speech centre, the growth impinging on these parts evidently causing irritation manifested by the tremors, but not implicating them sufficiently to cause paralysis.

Mr. Arbuthnot Lane saw the patient and agreed in the diagnosis, and it was decided to open the skull, if only to relieve pressure, but as the patient was so well to postpone the operation for a few days. This was on the Saturday, and he went into a home that afternoon. The next day patient became very ill, and was sick the whole day.

On Monday he was worse and was rapidly becoming comatose when placed on the operating table at 2 o'clock. Mr. Rowell administered the chloroform, and Mr. Lane made a large opening in the left parietal bone over the ear. On opening the dura mater the brain bulged through, forming a lump the size of a child's fist. No tumour was discovered here, and the soft parts were brought together. The patient died early next morning, and the same evening the brain was examined.

Examination of Brain.—A tumour occupied the left frontal lobe exactly in the position diagnosed; it was almost cartilaginous, and gritty particles—some as large as a big pin's head—were scattered throughout. Microscopical examination showed an overgrowth of connective tissue atrophy of ganglion cells, and an abundance of small round cells invading the whole structure—a psammoglioma. Scattered throughout the tumour were areas consisting of numerous small vacuoles. Both optic nerves were swollen, and section through them shows marked separation of the nerve bundles, atrophy of the nerves, and round cell infiltration, the changes most marked on right side.

The special interest of the case lies in:

(1) The confirmation of the diagnosis.

(2) The absence of serious symptoms until within 48 hours of death.

(3) The character of the tumour.

The presence of so large a tumour without serious symptoms is probably explained by the fact that the area affected governs the higher mental faculties, and is not concerned with movement or sensation. The rapid onset of serious symptoms may have been a coincidence, or have been hastened by the mental anxiety connected with the preparations for his treatment.

The condition of the two optic nerves tends to show that both the "mechanical" theory and the "inflammatory" theory of "choked disc" may be correct.

The presence of normal vision in the left eye with such a swollen papilla was probably due to the gradual increase of pressure allowing the nerve fibres to accustom themselves to the change.

SOME FORMS OF OPTIC NERVE DISEASE, PROBABLY OF SYMPATHETIC ORIGIN.

By Freeland Fergus, M.D.,
Surgeon to the Glasgow Eye Infirmary.

Sympathetic ophthalmitis is a disease too well known, at any rate in its ordinary clinical aspects, to require any detailed description from me. The general features of a sympathetic irido-cyclitis or of the disease in its serous form are thoroughly known to, and as a rule easily recognised by, any ophthalmic surgeon. Opinions, however, still differ as to its pathology, and at the risk of laying myself open to the charge of digressing from the subject under discussion, I may perhaps be allowed to make some observations on this subject. It is only fair to say that I do not profess to be in the strict sense of the word a pathologist, nor to have given much special study to the pathology of this disease beyond the perusal of the current literature of the subject.

To McKenzie's genius we owe the description of the disease, but the possibility of its being due to micro organic growth was not, so far as I am aware, suggested before the address given by Snellen at the International Medical Congress held in London in 1881.

It is true that actual experiments by Deutschmann and others cannot be said to have afforded complete confirmation of Snellen's suggestion, but probably this does not to any serious extent invalidate the theory that the origin of this inflammation is parasitic. It means nothing more than that the micro-organism has not as yet been isolated. Possibly in this very disastrous disease we have to do with a special and specific parasite just as is the case in tetanus. Yet the inflammation has all the features of a micro organic process.

Such inflammations have two marked characteristics—they are self-sustaining and tend to be self-propagating. So far as we know disease processes due to micro-organic growth, those are their two chief features. The inflammation with all that it involves is no doubt due to irritation, but the irritant is the poisonous exudations of the parasites. It may in general terms be said that so long as the parasites live so long will the inflammatory process be sustained. This explains the first characteristic of a septic inflammation. How different are the conditions in inflammations caused by, say, mechanical irritation is well seen in the classical experiments conducted by Leber. As soon as the sterilised irritant was removed from the anterior chamber, then all inflammation subsided. Certain tissues, no doubt, might have been altered during the action of the irritant, but as soon as the latter was all absorbed the process at once passed off.

Wherever then an inflammation seems to be self-sustaining, a constant supply of an irritant must be kept up, and such a view points to, indeed almost necessitates, the theory of a micro-organism living in the tissues reproducing itself, and causing by its exudations the constant irritation. That the sympathetic process spreads from one eye to the other by the nerves is an idea as old as the days of McKenzie. One important channel of intercommunication is the optic nerve of one eye, the chiasma and the optic nerve of the other eye.

The question then naturally arises, can we by constant and repeated observations of the functions of the optic nerve and of the retina, its terminal expansion, predict an onset of sympathetic ophthalmitis? This question led me to the investigation of the fields of vision in every case occurring in my own practice in which one eye was injured, and the following selected cases seem to me to be of sufficient importance to warrant their being brought before this meeting of the British Medical Association. Hitherto I have investigated only the field of vision. Probably the evidence would have been more complete had the minimum light sense also been investigated. Before long I hope to make some investigations in this direction also.

Case I.—J. G., aged 40, manager in a coal pit, was admitted to the Glasgow Eye Infirmary on November 26th, 1898. On admission it was found that there was a penetrating wound of the left eye caused by the explosion of a cartridge. There was found to be intense chemosis of the conjunctiva so that it was difficult or even impossible to make out the exact nature of the injury. The right eye had a visual acuteness of $\frac{6}{6}$. A few days later the right disc was found to be hyperæmic, its outline was somewhat hazy and

there was slight exudation along some of the vessels, in part obscuring them. The left eyeball was enucleated on December 8th. This small operation was followed by great œdema of the eyelids accompanied by a purulent discharge. The patient, however, improved rapidly, and was dismissed sixteen days after the operation with the remaining eye looking quite healthy. He was readmitted on April 21st, 1899, that is, about five months after he first came under notice. On his readmission the following facts were noted: He had not resumed work till about a month before readmission, and the left eye did not cause him any trouble till a fortnight after he had again returned to his work. He then observed that it felt weak in the mornings, and the discomfort gradually increased, the eye becoming positively painful as the day wore on. It was found on examination that the pupil responded widely and regularly to atropin, there was slight photophobia, and my house-surgeon was of opinion that the edge of the disc was slightly hazy. Of that, however, I could not be certain. The vision is noted on May 3rd, 1899, as being $\frac{6}{12}$, and on the 6th of that month the patient was dismissed. Since then he has attended the hospital at intervals, and there has been no marked change since the time that he was dismissed. He was seen so recently as June of this year. Every now and again he has an attack of severe pain in the eye accompanied by conjunctivitis.

The fields of vision in this case are instructive (Figs. 1 and 2). The first was done on May 5th, 1899, during his

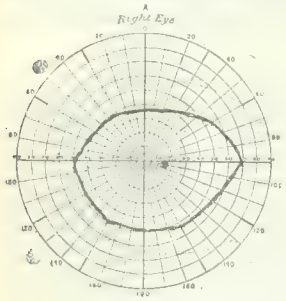


Fig. 1.

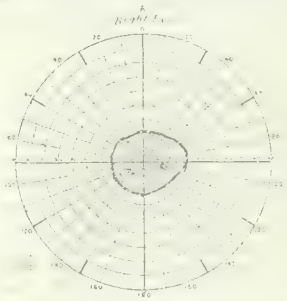


Fig. 2.

second residence in the hospital, the last so lately as February 1st of this year.

It may be remarked that the right eye was not enucleated till the disc of the second showed irritation, for there was an acute purulent discharge from the conjunctiva of the injured eye. When a student I once saw a fatal issue from purulent meningitis in a case in which a suppurating eyeball had been enucleated, and, therefore, throughout my practice I have as far as possible avoided enucleating where there is much pus.

CASE II.—M. G., a steel worker, who was admitted to the hospital on September 21st, 1899. He was found to be suffering from a wound of the right cornea, and a small piece of steel was seen penetrating both the cornea and the lens. It was easily removed with forceps. Passing over minor details in the report, I shall only give those which seem to be of importance for the purposes of this paper. On September 28th, that is, seven days after admission, as the lens was beginning to swell, an iridectomy was performed and a portion of the lens substance removed. On October 16th the tension was noted as being normal, and the eye fairly quiet. The fundus of the other eye at this date was said to be in all respects normal in appearance. On November 1st the patient was dismissed at his own request. He was readmitted on December 14th following. In the right eye the vision was light and shade, in the left it was $\frac{6}{60}$. In the right eye there was found to be a minus tension with slight irido-cyclitis. In the left the media appeared slightly hazy. A few days afterwards the right eyeball was removed. The field of vision of the left eye was taken on January 1st, 1900, and subsequently on April 26th, on which date vision was found still to be $\frac{6}{60}$.

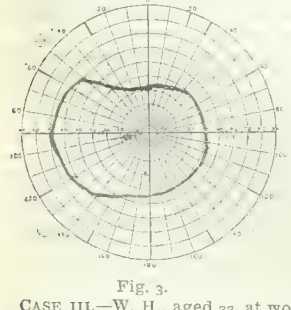


Fig. 3.

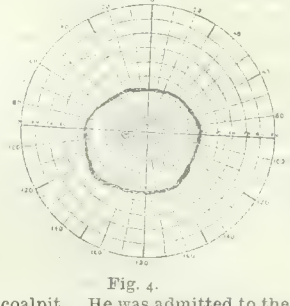


Fig. 4.

CASE III.—W. H., aged 22, at work in a coalpit. He was admitted to the hospital on September 29th, 1899. There was found to be an injury of the cornea from a piece of coal. The cornea was hazy, the aqueous muddy, and there was much chemosis. On October 6th following the case was noted as being one of acute panophthalmitis. During the inflammatory attack in the left eye, the right fundus was noted as being healthy as seen with the ophthalmoscope, and the vision was found to be $\frac{6}{6}$. The injured eye gradually shrivelled up, and the patient was dismissed on November 8th. On February 16th of the present year he returned complaining of pain in the stump and slight photophobia in the right. The field of vision, moreover, was somewhat contracted. For these reasons the painful stump was at once removed. On March 3rd, or about a fortnight after the operation, the patient was dismissed, with visual acuteness of $\frac{6}{6}$, but the field of vision still somewhat contracted. The field of vision was taken on December 16th, 1899, when it was found to be normal; on January 20th, 1900, when it was found to be slightly contracted; and on March 3rd, 1900, when it appeared to be still further altered for the worse.

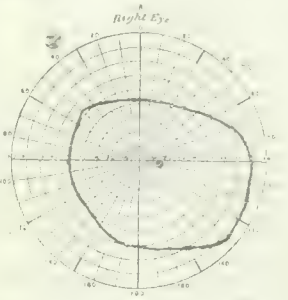


Fig. 5.



Fig. 6.

CASE IV.—A. B., aged 24, admitted October 14th, 1899. This patient had received a blow from a piece of coal on the right eye on the morning of admission. There was found to be a penetrating wound of the cornea.

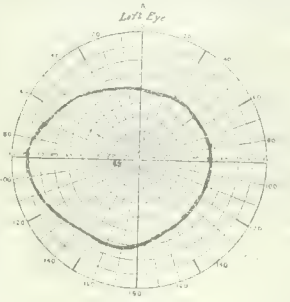


Fig. 7.

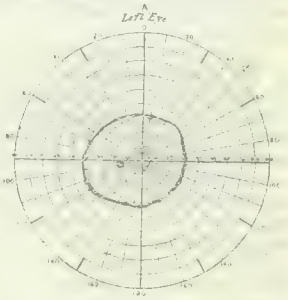


Fig. 8.

The lens was cataractous. Two days later it was observed that the wound had become infiltrated and that a hypopyon had formed. There was also a considerable discharge of pus from the conjunctiva. The lens was seen to be considerably swollen. On the 19th, that is five days after admission, an incision was made through the cornea, and a considerable quantity of lenticular matter removed. The wound was thoroughly washed and dressed with sterilised dressings. On October 28th, fourteen days after admission, the following note was made by myself as to the condition of the left eye. V. A. $\frac{6}{12}$, disc distinctly red, media appear slightly hazy, there is photophobia and lachrymation. The injured eye was accordingly enucleated, and the patient was dismissed shortly thereafter. On November 11th, having been only a few days out of the hospital, the patient was readmitted complaining of lachrymation and of weakness of vision. The pupil was found to dilate freely and regularly to atropine, but there was slight hyperæmia of the optic nerve, which condition was still present on his second dismissal. Annexed are two fields of vision, one taken about ten days after his first admission, the other during his second residence in the hospital.

The next case I regard as one of special importance, since it is the only one of the series in which there was anything like a sympathetic ophthalmitis. During his residence in the hospital this patient was for a great part of the time under the care of my colleague, Dr. McMillan. This is another case in which enucleation was delayed on account of an attack of panophthalmitis.

J. C., aged 32, was admitted on February 10th, 1900. He had received a blow with a piece of glass on the left side of his face. The skin in the neighbourhood of the orbit was found to be badly cut, and on opening the eyelids of the injured eye there was seen to be an infiltrated ulcer of the cornea with a hypopion. A few days later the hypopion had disappeared, and the pain, which on admission had been very severe, had greatly diminished.

The corneal ulcer, however, did not heal, and on February 26th, that is, 16 days after admission, there was perforation and prolapse of the iris. On this date it was noted that the right eye appeared normal, and that the nerve seemed to be quite healthy.

On March 4th a note was made that the right disc was unduly red, and two days later acute panophthalmitis was established in the left. As soon as the symptoms abated the patient was allowed to go home, but almost immediately returned, complaining of failure of vision in the right eye. The following note is from the ward journal: "Pupil sluggish, V. A., R. = $\frac{20}{60}$, some deposit of pigment on the anterior surface of the lens." The stump of the left eye was consequently at once removed by Dr. McMillan.

The patient then underwent what was to all appearance a fairly acute attack of sympathetic ophthalmitis. The pupil would not respond to atropine. The first indication given by the ophthalmoscope of anything being wrong with the optic nerve of the uninjured eye was on March 4th. The field of vision was taken four days later, and it was found to be contracted concentrically, but most to the outer side (Fig. 9). The pupil ultimately yielded, and this patient left the hospital with fair vision.



Fig. 9.

In connection with these cases one or two observations may be made. The contraction of the field of vision of the uninjured eye takes place after the injury to the other, and there can be little or no doubt that it is the cause. The contraction is not due to the enucleation, for it has invariably been noted to exist before this operation.

The diminution in the field of vision may be due either to changes in the optic nerve or in the retina. In none of these cases has any morbid process been seen in the retina on ophthalmoscopic examination, and in nearly all hyperæmia of the disc has been observed. Yet sometimes the contraction of the field is seen before any alteration of a definite kind is noticed in the disc. This is another proof that a mere ophthalmoscopic examination of the nerve is not sufficient. What would be thought of a surgeon who, on examining an arm, merely looked at it and failed to test its functions and to satisfy himself of the movements of the joints? Yet how often is a similar examination made by an ophthalmic surgeon! He simply looks at the nerve, but neglects to employ such tests as will inform him regarding the minimum light sense and the field of vision. Too frequently still are reports prepared for the information of physicians in which no mention is made of these important matters.

Several very important questions also arise. Most important of all is the question, Can we by repeated perimetric examination predict an attack of sympathetic ophthalmitis? Personally I cannot as yet dogmatise on the subject. I can but regard it simply as additional evidence in a case; but certainly, when I find a contraction of the field of vision in the uninjured eye, there will need to be excellent prospects of sight in the injured one before I consent to its remaining in the patient's head.

In view of the Employers' Liability Act, medico-legal questions of very great moment arise. Is, for example, an eye with a contracted field of vision to be considered an eye injured by the accident to the other? Probably the answer to this depends on an examination of the vision. In some of these cases the vision improved after the enucleation, but the field of vision has not yet been observed to do so.

Further, investigations such as this should stimulate us to be much more careful in our perimetric work than heretofore. In most observations made there is the great defect that the illuminant used for the test objects is ordinary daylight. Were it—or, indeed, could it be—suitably and properly arranged, no illuminant is more desirable.

In large and smoky cities daylight is a most inconstant quantity, and in certain months of the year cannot be relied upon. Wherever a supply of electric light is available this difficulty can easily be overcome. A box containing an electric lamp can readily be moved along the arm of the perimeter. In front of the box a small opening can be made, and ground or coloured glasses introduced at pleasure. Moreover the lamp can be standardised to a nicety by the following simple modification of Förster's light sense box.

The observer who wishes to standardise his lamp first closes the slit of the box, lights the standard candle, and applies his eye to the eyepiece. He then in the ordinary way admits light into the interior of the box by opening the slit. He continues to open the slit till he can just see the test objects on the side of the box opposite to him. Probably the best objects are black lines ruled on white paper. He keeps the opening at that size and substitutes for the candle the lamp which he proposes to use. This lamp is in circuit with a source of electrical current, a galvanometer, and a rheostat. He applies his eye once more to the eyepiece, and by means of the rheostat reduces the resistance till with the opening of exactly the same dimensions as in the last experiment he is just able again to see the test objects. The lamp must then be of one-candle power. It can now be removed and used on the perimeter arc.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

TREATMENT OF POISONED WOUNDS.

The application of a ligature in the treatment of poisoned wounds is an adjunct so well known that I feel somewhat diffident in referring to it. Many a wound inflicted by a septic instrument will heal by first intention and give no further trouble if it be washed at once and a ligature applied to prevent absorption of the virus and to encourage bleeding. A bandage, pocket handkerchief, a piece of string, or a rubber band, tightly applied above the wound will prevent as far as possible absorption of the virus and diffusion into the general circulation.

In the case of punctured wounds inflicted by blunt-pointed instruments, there may be scarcely any hæmorrhage, but if a ligature be applied above the wound in a few minutes the part below will become œdematous and pressure will readily expel blood and serum from the water-logged tissues, and thus eliminate some of the virus. The wound is then treated in the usual way, laid freely open (if necessary) and thoroughly washed out with some antiseptic solution, and a drainage tube inserted if deep, and shortened gradually as the wound heals.

If an infective inflammation be set up the wound, of course, would be freely incised and fomented, and any abscess that might form opened early, and constitutional treatment adopted. It is acknowledged that the virulence of *post-mortem* wounds depends upon the length of time the corpse has been kept. As decomposition of the corpse sets in by the bacteria of putrefaction the "infective" organisms lose their powers. Hence the longer the corpse is kept the less dangerous the wound. Bodies in which death has resulted from septicæmia, pyæmia, puerperal peritonitis, etc., should not be examined within forty-eight hours of death.

Old Burlington Street, W. Percy Augustus Longhurst.

NOTE ON THE FREQUENCY OF VENTRAL HERNIA IN CHILD-BEARING WOMEN.

The constant occurrence of this preventable lesion in child-bearing women is, I consider, not sufficiently recognised, either as a cause of some of the many reflex symptoms complained of when seeking the advice of the gynæcologist or of the violent pains observable after labour in cases of multiparæ. The indiscriminate application of the obstetric binder without any examination of the abdominal walls has, in many cases, given rise to severe pain. Too often regarded (when complaint has been made by the patient) as an exaggerated form of after-pains, and no examination made even then to discover their true cause, I have always considered this form of hernia in women preventable by the timely application of an abdominal belt which should be worn by every pregnant female during the last four months of gestation. I can only wish its value were universally recognised and prescribed by every obstetrician. Nothing can be more unsightly than the wrinkled, lax, and scarred appearance of the abdominal surface of the multiparous female, all of which, in my opinion, could have been avoided by the wearing of the belt. And when, in addition to this, there exists a separation between the recti muscles, it becomes a source of weak-

ness, pain, and discomfort, as well as danger to the patient herself.

I have, I regret to say, seen several cases where a binder had been applied and tightly pinned, when the excessive pain complained of by the patient soon afterwards led to its removal and a hernia was easily discovered, the protruding intestine being tightly nipped between the recti and the tightly applied binder adding to the misery. I have more than once traced habitual constipation in women to this source, and am fully convinced that it is in numerous instances the cause of many of the reflex symptoms complained of, and exists to a much greater extent than is commonly supposed, and for this reason I wish to draw the attention of the obstetrician and gynæcologist to the subject.

I think it will be admitted, for instance, that a female patient presenting herself in a doctor's study complaining of abdominal pain or soreness (more especially in conjunction with some discoverable uterine lesion) will hardly be examined for "ventral hernia," the fact of her not being undressed rendering such an examination both difficult and unsatisfactory. When the existence of such is suspected an examination in bed will be found more satisfactory; but, in any case, the abdomen should be exposed, and while patient is lying on the back directed to raise herself without the help of her arms the lesion will at once become apparent. The universal adoption of the abdominal belt by every pregnant female would, I am persuaded, shorten labour, preserve the symmetry and appearance of the abdominal surface, and undoubtedly prevent the existence of this too common form of hernia.

ALEXANDER DUKE, F.R.C.P.I., etc.
Ex-Assistant Master, Rotunda Hospital, Dublin.
Cheltenham.

FOREIGN BODIES IN HERNIAL SACS.

WHILE making a *post-mortem* examination on a man, aged 59, with irreducible scrotal hernia of long standing, a small yellow body the size of a pea dropped out of the lower part of the sac. In character it was cartilaginous, and could be indented by the finger nail. On further examination another similar body was discovered in a small vein of the sac wall, about 2 inches above the testicle, about to ulcerate through, and only prevented from doing so by a thin band of the vein wall.

These bodies are evidently phleboliths, fibrous in nature. Another case of a cyst of the paradidymis was operated on by Mr. Nash, and a similar body fell out of the tunica vaginalis. The patient in this case was only 22 years of age.

The explanation seems that in these cases there has been some old inflammation causing the formation of blood clots in the valves of small veins, which, becoming organised and fibrous, ulcerate through, resulting in the formation of these so-called foreign bodies.

W. R. E. WILLIAMS, M.B., M.R.C.S., etc.
Bedford County Hospital.

OSSIFICATION OF THE LEFT STYLO-HYOID LIGAMENT.

THE two cases of ossification of the left stylo-hyoid ligament, reported in the BRITISH MEDICAL JOURNAL, one by Mr. G. W. Farmer, on June 9th, and the other by Mr. C. Frank Wightman, on June 30th, recall a similar condition which came under my notice in October, 1898. It occurred in a gentleman about 38 years of age, who had been under treatment for recurring follicular tonsillitis. About a month after finishing treatment he complained that he could feel something in the left side of his throat. The diagnostic points were practically identical with those noted in the above-mentioned cases. Nothing abnormal could be seen in the pharynx, but on passing the left forefinger over the place indicated, an elongated hard substance, which could be moved laterally, was felt beneath the mucous membrane and rather below the posterior pillar of the fauces. Its direction was from above downwards and forwards. No such body could be felt on the right side. Suspecting the nature of the substance, I reassured the patient, who seemed relieved, as he had dreaded something serious.

Glasgow. ROBERT FULLERTON, M.D.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

GENERAL HOSPITAL, BIRMINGHAM.

RUPTURE OF LIVER AND KIDNEY: ABDOMINAL SECTION: NEPHRECTOMY: RECOVERY.

(Under the care of Mr. GEORGE HEATON.)

S. T., a schoolboy, aged 11, was admitted on February 24th suffering from hæmaturia, shock, and intra-abdominal hæmorrhage.

History.—About 2 P.M. on the day of admission he was playing in a gymnasium and fell from a height of six or eight feet on to the ground, striking some parallel bars in his fall. He vomited soon afterwards, but after being carried to bed, rallied, and it was not until some hours afterwards, when he began to rapidly become very anæmic and to pass considerable quantities of almost pure blood, *per urethram*, that his friends became alarmed and had him removed to the hospital.

On admission he was extremely blanched. He lay in bed in a semi-conscious state, constantly tossing his limbs about and complaining of pain in the right side of the abdomen. His temperature was 96; pulse 95, very small. There was some superficial bruising over the right loin. The abdominal walls were tense and rigid, the abdomen itself was dull all over save for a small area in the umbilical region. The bladder contained almost pure blood.

Operation.—An hour after admission the anæmia had increased, his surface temperature was lower, and his pulse smaller and irregular. Abdominal section was decided upon and performed seven hours after the accident. Chloroform was administered. Dr. Lewis, the house-physician, opened the left median basilic vein, and infused about 15 ounces of saline fluid while anæsthesia was being induced. The abdomen was opened by a 4-inch incision in the right linea semilunaris. The peritoneum contained a large quantity of fluid blood, and there was a collection of blood clots in the right lumbar region. The right kidney had an irregular-shaped rent in it, and the peritoneum covering its anterior surface was lacerated. It was separated from its connections; and, as the hæmorrhage from it continued to be very free, it was decided to remove it. The ureter was separated from the renal blood vessels, and the latter tied with stout silk. After removal of the kidney, hæmorrhage still continued in the right lumbar and hypochondriac regions. The abdominal wound was enlarged by a transverse incision through the abdominal muscles, and the liver then examined. A large ragged rent was found on its under surface, from which blood was freely oozing. The rent was firmly packed with long strips of iodoform gauze, the ends of which were brought out through the abdominal wound. No attempt was made to cleanse the abdominal cavity of blood or clot. The incisions were rapidly closed, and the patient sent back to bed after a second quantity of saline fluid had been injected.

After-History.—Injections of saline fluid were given *per rectum* during the next twenty-four hours, together with small quantities of fluid by the mouth, and his strength was maintained by repeated hypodermic injections of strychnine. For the first five days he progressed well; the urine passed was clear and free from blood, and at the end of the third day all the gauze packing was removed from the abdominal wound. From the fifth to the fifteenth day he lay in a uræmic condition. His urine became very scanty, and was loaded with albumen; while he himself was extremely drowsy, and vomited repeatedly. After that time he improved somewhat, but his temperature remained high and his pulse rapid until a localised peritoneal collection of bile and pus was tapped through an incision in the right loin on the seventeenth day after the operation. From that time his temperature was normal, and he slowly convalesced, and was discharged from hospital well on May 7th. On his discharge from hospital he was passing daily between 30 and 40 ounces of acid urine, which contained no albumen recognisable by

chemical tests. Under the microscope a few scattered granular epithelial casts were seen in the centrifugalised deposit.

Remarks by Mr. Heaton.—The case is an interesting one for several reasons. In the first place, it is strange that so small a fall as from a height of under 8 ft. should produce a rupture of two such important organs as the liver and kidney. It was obvious that the boy on admission was dying from loss of blood, which was being lost partly by way of the bladder and urethra, but chiefly into the abdominal cavity. Until I had removed the ruptured kidney and found that the hæmorrhage still continued, I did not realise that the liver was also ruptured, but I am of opinion that the main hæmorrhage came from the tear in the kidney. The onset of the uræmic symptoms, with scanty, highly albuminous urine, within a few days of the nephrectomy, all point to an acute nephritis of the remaining kidney. There was no history to be obtained of any previous kidney trouble, though of course there may have been some latent nephritis before the accident. The only other explanation is that the extra work suddenly thrown upon the left kidney was sufficient to set up in it an acute congestion followed by acute tubal nephritis, which afterwards slowly subsided. The localised abscess which formed in the bed from which the kidney was removed, was no doubt due to an infection of the blood clot by the cut end of the ureter. Owing to the boy's condition it was quite impossible to sterilise this before it was dropped back into the abdomen, and there was no time to attempt any removal of the blood clots. Recovery after rupture of both liver and kidney must be rare owing to the severity of the accident which usually causes such injuries, and the rapid loss of blood. The excellent assistance at the operation, and careful after-nursing helped in no small measure to the successful issue in the present case.

REPORTS OF SOCIETIES.

OBSTETRICAL SOCIETY OF LONDON.

Alban Doran, F.R.C.S., President, in the Chair.

Wednesday, October 4th, 1900.

Adenoma of the Body of the Uterus.

Dr. Hubert Roberts read notes of a case of cancer of the cervix associated with an adenomatous growth of the fundus. The patient was a multipara aged 38 years, who had advanced cancer of the cervix, the history dating from about four months before her admission. Except for discharge and hæmorrhage the patient was in good health. Though not a favourable case for vaginal hysterectomy, this was performed on March 12th, 1900. The patient recovered well, and was still without recurrence. The interest of the case was centred in the specimen, which showed a uterus with advanced cancer of the cervix associated with a curious growth in the fundus uteri, which proved, on microscopical examination, to be adenoma, and to have no connection with the columnar-celled epithelioma of the cervix. Mr. Targett and Dr. Walter Tate carefully examined the microscopical sections which were prepared by Mr. Corrie Keep. Dr. Cosens kindly prepared the excellent microphotographs shown. The simplest forms of adenomatous growths occurring in the cervix uteri were erosion, mucous polypi, and the follicular hypertrophy of pregnancy. There were also some rare cases of true adenomatous tumours, which were sometimes almost indistinguishable from columnar-celled carcinoma. As regards adenoma of the body of the uterus, great confusion existed. Endometritis, so-called, was a misleading term, for, although a true septic endometritis existed, many conditions called "endometritis," associated with overgrowth, were really adenoma, some apparently simple, others verging on malignancy if they recurred. Reference was made to adenoma malignum, in which glandular elements invaded the muscular tissue of the uterus. Such growths were clinically malignant. Mere curettings in adenoma were untrustworthy, and he looked upon recurring adenomatous growths in the body of the uterus, in old women, with grave suspicion.

The President said it was clear that two different forms of new growth had developed in the same uterus. The tumour in the body was a pure adenoma, according to its microscopical appearances, but to the naked eye it looked malignant. Much remained to be learnt about the earliest stage of cancer of the uterine body.

Dr. A. H. N. Lewers said he had met with a case presenting all the clinical characters of cancer of the cervix, in which the microscopic examination merely showed large cavities lined by a single layer of columnar epithelium. Supravaginal amputation of the cervix was performed. For a time the patient remained well, but about a year after the operation the disease recurred in the scar, and before long there was a large typically malignant ulcer at the top of the vagina. The principal cause of the uterus being fixed in advanced cancer was probably extension of the malignant growth to the tissues in the neighbourhood. This seemed proved by cases where, as the impairment of mobility was only slight, an attempt had been made to remove the uterus. In several such cases the operation revealed infiltrated tissue beyond the uterus at the situation where the mobility of the uterus appeared to be checked.

Dr. W. S. A. Griffith made some remarks on the nature and significance of periuterine indurations in cases of presumably operable uterine cancer.

Dr. Amand Routh said he believed that any definite growth developing from the lining membrane of the uterine body after the menopause tended to become malignant, and should be treated as such. He instanced a case of recurrent papilloma, innocent microscopically, in which after hysterectomy the growth was seen to have deeply invaded the muscle of the uterus. He did not consider that hysterectomy was justifiable if the broad ligament or utero-sacral folds were indurated, for as all the disease could not be removed the growth was sure to progress.

Dr. G. E. Herman could not agree with Dr. Griffith that fixation of the uterus in early cancer was often due to adhesions. He agreed with Professor Sinclair, of Manchester, that the usual direction of extension of uterine cancer was into the cellular tissue of the utero-sacral ligaments. The situation of the induration due to spread of cancer in this direction was different from that of induration from pelvic peritonitis. In some doubtful cases in which he had commenced operation, but found that there was too much extension of cancer laterally for the operation to be completed, he had opened Douglas's pouch and found it free from adhesions. He had seen cases of large adenomatous polypoid growths in the uterus recurring again and again after removal. The microscopical signs of such growths were distinctive; and they were not solid and friable like cancer, but pulpy, gelatinous, and translucent. When such recurrence took place more than once he thought hysterectomy was indicated.

Dr. Herbert Spencer thought the report of the case a most valuable one. It clearly showed the association of a simple adenoma of the body with cancer of the cervix. He had no doubt that these adenomata had often been described as secondary deposits of cancer. Cases of simple adenoma of the body had often been removed for cancer. He had met with simple adenoma in old women, even recurring after curetting, and yet the patient remaining well and the uterus atrophying after as long as six years from the second curetting. The diagnosis between these cases and cancer was often very difficult.

Dr. Hubert Roberts, in reply, said that he thought that in Dr. Lewers's case of suspicious recurrent adenoma of the cervix, hysterectomy would have been a better proceeding than supravaginal amputation. He criticised Dr Griffith's remarks, and thought it was impossible clinically to decide whether fixation of a malignant uterus was inflammatory or cancerous, and he considered that if the uterus could not be drawn down by traction with a volsella, owing to parametric invasion, it was unsuitable for operation. He considered vaginal hysterectomy was the best treatment for recurring adenoma of the body of the uterus in old women.

Subcutaneous Symphysiotomy.

Dr. G. Ernest Herman read a paper on this subject, pointing out the advantages of the subcutaneous operation, especially as regards its simplicity, quickness, small risk of sepsis, insignificant hæmorrhage, absence of a gaping wound, and subsequent scar. He urged that if the maximum benefit from symphysiotomy was to be secured, it should be done

under the most favourable conditions. It ought not to be postponed until the necessity for some kind of operative delivery had been demonstrated by the complete failure of the natural powers. The accoucheur should ascertain the size the pelvis before labour, and estimate also the size of the child. If he decided upon symphysiotomy, it should be done at the most favourable time, that is, immediately after full dilatation of the os uteri. The frequency with which in contracted pelves the membranes ruptured prematurely, would make the dilatation of the cervix with Champetier de Ribes's bag usually adventageous. The one risk at present inseparable from symphysiotomy was that of injury to the urethra; and that this was likely to happen in cases in which an attempt was made to deliver by symphysiotomy a child too large to be delivered in that way, and thus the pubic bones were excessively separated. This was to be guarded against by carefully estimating the size of the child beforehand.

Dr. W. S. A. GRIFFITH described an easy method of ascertaining the relative sizes of the fœtal head and the maternal pelvis. The woman was made to sit on the edge of the bed at such an angle that the long axis of the fœtus was vertical. The fœtal head, if smaller than the pelvis, would then spontaneously dip into the cavity, owing to the weight of the fœtus being free to act. He discussed the relative indications for induction of premature labour, symphysiotomy, and Cæsarean section in cases of contracted pelvis.

Dr. LEWERS said he had seen some of the operations described in the paper, and regarded subcutaneous symphysiotomy as a great improvement on the method involving a large open wound. It was not applicable, however, in all cases. In his own case of symphysiotomy, for instance, there was a sort of "bite" or dovetail at the middle of the joint, and a saw had to be used before the joint surfaces could be separated. His case had incontinence of urine for some weeks after the operation, but ultimately recovered complete control in this respect, and micturition was now quite normal.

Dr. HERBERT SPENCER thought the subcutaneous method recommended by the author had advantages over the open method, but it was to be remembered that many cases of severe hæmorrhage from division of large vessels had been recorded, and this had led some to advocate the open method and packing the wound with iodoform gauze. Wounds of the vagina were also very apt to occur, and if these communicated with extensive effusions about the pubes, the danger of sepsis would scarcely be diminished by the subcutaneous method of dividing the joint.

Dr. HERMAN, in reply, said he was much interested in the method of ascertaining the relative size of pelvis and child described by Dr. Griffith, and hoped to put it in practice. He had included lacerations of the vagina in the injuries of the urethra of which he had spoken, for lacerations of the urethra usually affected the vagina also, and a laceration of the vagina so slight as not to reach the urethra was not important.

SPECIMENS.

The following specimens were shown:—Dr. H. RUSSELL ANDREWS: Three specimens of supernumerary digits, with microscopical section and skiagrams.—Mr J. H. TARGETT: (1) Pregnancy in a rudimentary uterine horn; successful removal of gestation sac five months after full term. (2) Squamous-celled epithelioma of the body of the uterus.

MANCHESTER MEDICAL SOCIETY.—At the first meeting of the session, held on October 3rd, Dr. T. C. RAILTON, President, in the chair, Dr. DAVID BRIDGE LEES read a paper entitled Acute Dilatation of the Heart in Diphtheria, Influenza, and Rheumatic Fever.

GLASGOW SOUTHERN MEDICAL SOCIETY.—The opening meeting of this Society was held on Thursday, October 4th, in the rooms of the Southern Medical Club. The following office-bearers were elected:—*Honorary President:* Sir Hector Clare Cameron, M.D., F.F.P.S.G. *President:* William Watson, M.D. *Vice-Presidents:* John Stewart, M.D.; William McMillan, M.B., C.M. *Treasurer:* Andrew S. Tindal, M.D. *Secretary:* John Fraser Orr, M.D. *Editorial Secretary:* Andrew Wauchope, M.B., C.M. *Seal Keeper:* John Coulson Howie, M.A., M.B., C.M. *Extra Members of Council:* Alex. C. McArthur, M.B., C.M.; Duncan McGilvray, M.B., C.M.; Alex. Roxburgh, M.D. *Court Medical:* Hugh Kelly, M.D.; Robert H. Parry, L.R.C.P., F.R.C.S.; James W. Allan, M.B., C.M.; Alex. Rankin, M.D.; Robert W. Forrest, M.D. *Representative to Victoria Infirmary:* Charles E. Robertson, M.D.

REVIEWS.

RECENT WORKS ON OPHTHALMOLOGY.

MR. SYDNEY STEPHENSON has written a small work on *Contagious Ophthalmia*,[1] forming the first volume of a series the aim of which "is to sketch in brief compass the chief features of given subjects of every day interest to students and practitioners." Mr. Stephenson has had so large an experience in the treatment of ophthalmia in the Hanwell Schools and elsewhere, and has done so much work in connection therewith that he is particularly well equipped to write a book of this sort. The frontispiece is a plate showing the appearances of the chief forms of organisms to which ophthalmia is due, while there are a few woodcuts scattered through the work. The subject is treated in a masterly fashion and the book is well written. Great stress is laid on the importance of bacteriological examination of the discharges for diagnostic purposes and also for purposes of treatment. A good description is given of the chief forms of the diseases with clear and explicit directions regarding treatment. At the end there is a large number of useful formulæ. The author is no advocate for retaining mediæval relics in treatment as the following sentence proves: "Blisters, setons, and dark rooms are now regarded as so many relics of barbarism." This first volume is an excellent commencement of a series which will be most useful to a large number of practitioners, and we can thoroughly recommend it.

DR. PUTIATA KERSCHBAUMER has written a monograph on *Sarcoma of the Eye*,[2] to which Professor Sattler has prefixed an introductory note. The first part of the book deals with the anatomy and histology of ocular sarcomata (pp. 1-56), the second gives details of 67 cases, which for the most part were met with in Professor Sattler's clinic at Leipzig (pp. 56-217), while the third is devoted to the clinical aspects of these sarcomata (pp. 217-256). At the end over 800 references are given to the literature of the subject. The following classification is adopted by the authoress (*a*) angiosarcoma, (*b*) melanotic sarcoma, (*c*) leucosarcoma with hæmatogenous pigmentation, (*d*) spindle-celled sarcoma, (*e*) mixed forms, (*f*) degenerative processes. But such a classification is obviously faulty, for example, both (*a*) and (*d*) may be melanotic, and certain rare forms do not come under any of these headings. They are further considered according to their situation. Of the 67 cases, 9 were epibulbar, 7 diffuse, 2 of iris, 8 of ciliary body, 41 circumscribed sarcoma of choroid. Pains are taken to discriminate between the pigmentation which originates in blood changes, and is therefore secondary, and the melanotic pigmentation, which is primary. This work throws little fresh light on ocular sarcoma but gives a fair idea of the present state of knowledge of the subject, and brings together for convenient reference the notes of many interesting cases.

IT is difficult to see the necessity for a special book on *Injuries to the Eye in their Medico Legal Aspect*,[3] especially when translated into a foreign language, as the legal points must differ much in each, while every practitioner must treat each accident under his care on its own merits, and reference to books will not help him much. Such a work must necessarily describe even the most obvious forms of injury, and indeed there is but little that is not known to those having the most elementary knowledge of eye diseases. If an eye be ruptured

[1] *Medical Monograph Series.* Edited by David Walsh, M.D. No. 1 *Contagious Ophthalmia.* By Sydney Stephenson, Ophthalmic Surgeon to the Ophthalmic Schools, Hanwell, etc. London: Baillière, Tindall, and Cox. 1900. (Cr. 8vo, pp. 94. 2s. 6d.)

[2] *Das Sarkom des Auges.* Von Dr. R. Putiata Kerschbaumer. Wiesbaden: J. F. Bergmann. Glasgow: F. Bauermeister. 1900 (Roy 8vo, pp. 286. 10 plates. 16s.)

[3] *Injuries to the Eye in their Medico-Legal Aspect.* By S. Baudry, M.D., University of Lille, France. Translated by A. J. Ostheimer, jun., M.D., Philadelphia. Revised and edited by C. A. Oliver, M.D., M.A., Philadelphia. With an adaptation of the Medico-legal Chapter to the Courts of the United States by C. Sinkler, member of the Philadelphia Bar. Philadelphia: The F. A. Davis Company. 1900. (Crown 8vo, pp. 171. 1 dollar.)

and severely injured it is hardly necessary to refer to a book like this to inform us that such an organ had better be excised, while everyone will know that a foreign body had better be removed and a prolapsed iris cut off. The chapter dealing more especially with the legal side of the question is concise and doubtless is in strict accord with American law. There is an extensive bibliography at the end to which reference is given in the text, these being chiefly derived from French sources.

Dr. James Thorington is so well known as an authority on refraction that we are not surprised to see another and larger volume[4] from him dealing systematically with the whole subject of refraction. It commences with a chapter on optics, and then proceeds to explain the refraction of the eye and the various methods used to correct ametropia and muscular anomalies. The last chapter deals with spectacles and eyeglass frames. The book is eminently practical, and presupposes only an elementary knowledge of optics and mathematics. The chapter on retinoscopy is of course very similar to that found in the author's book dealing with this subject Chapter VII, dealing with muscles, consists of 27 pages, and explains in a short and lucid manner the various anomalies met with, together with their diagnosis and treatment. The volume is well written, and comprises all points which are essential to know in order to become proficient in the art of refraction. It will be found extremely useful to students, and will also be of great use to practitioners who want a handy book of reference, and one which is not overcrowded with minute details which are of theoretical interest only.

Dr. Davis's volume, entitled *The Refraction of the Eye*,[5] is almost entirely devoted to the description of the construction and use of the ophthalmometer. As the author but rarely uses any other method of working out a refraction, he considers the subject almost entirely in relation to this instrument. He hardly ever uses a mydriatic, and then only when an unsatisfactory result is obtained with the ophthalmometer and with the test cards. His method of employing atropine is somewhat peculiar: he uses a solution of 4 grs. to the ounce in adults, and half that strength for children, though he gives no reason for acting as though accommodation were stronger in the former than in the latter. In order to show how large a proportion of the book is made up of illustrative case, it need only be said that not only are 150 cases described in the text, but also there is an abstract of them at the end, while the same diagrams of ametropic eyes occur over and over again all through the book. There is a short chapter on the insufficiencies of the ocular muscles, followed by pages of illustrative cases. Every possible cause of refractive error is mentioned, and thus a portion of a small subject is made to fill a comparatively large volume. A lengthy appendix describing the latest modifications and improvements of the ophthalmometer ends the book.

NOTES ON BOOKS.

Transactions and Reports.

The *Transactions of the Sixth International Otological Congress*, which was held in London in August, 1899, under the presidency of Professor Urban Pritchard, were issued in August, 1900. They have been edited by Mr. E. Cresswell Baber, the Honorary Secretary-General of the Congress, and form a large octavo volume of some 500 pages (London: The Southern Publishing Company. 1900) Reports of the Congress were published in the British Medical Journal at the time, but the papers are here printed in the language in which they were written, and the same rule is followed in the reports of the discussion. Drawings, diagrams, and charts are inserted where necessary, Mr. A. J. Hutchinson, M.B., has provided indexes of subjects and authors, and the volume altogether has clearly been edited with care.

The *Transactions of the American Pediatric Society*, vol. xi, contain the papers read at the session of June, 1899, together with brief reports of the discussions which took place. The volume, which contains many communications of great interest, is edited by Dr. Floyd M. Crandall, and the matter which it contains is reprinted from the *Archives of Pediatrics*, of which he is the editor.

The new volume of the *Transactions of the German Society for the Study of Children's Diseases* (*Verhandlungen der sechzehnten Versammlung der Gesellschaft für Kinderheilkunde*. Wiesbaden: J. F. Bergmann; Glasgow: F. Bauermeister. 1900) contains the papers read at the meeting at Munich in September, 1899. The chief subjects discussed were: The growth of children, with special reference to the first year of life, introduced by W. Camerer, jun., of Stuttgart; convulsions, spasm of the glottis, and tetany, introduced by Lange of Leipzig, Thiernich of Breslau, and Ganghofner of Prague; the treatment of eczema, introduced by Reile of Innsbruck; and the mortality in childhood at different ages, introduced by Escherich of Graz; and the pathological anatomy of the bone changes in Barlow's disease. The volume, which consists of some 350 pages, is edited by Dr. Emil Pfeiffer of Wiesbaden.

The *Transactions of the Society of Alumni of Bellevue Hospital* for the year 1898 99 (New York: D. Appleton and Company) contain reports, as a rule brief, of the papers read at the meetings, of the society. These papers range over a great variety of subjects from "gastro diaphany in the infant," which is discussed by Dr. Koplik, to a description by Dr. Clifton Edgar of the obstetric outfit which he considers desirable for use in private practice. The longest paper in the volume is that in which Dr. Charles Phelps reviews the medico-legal questions relating to pistol-shot wounds of the head in connection with a case in which the question whether the wound was suicidal or homicidal had arisen and caused much difference of opinion. The paper is interesting, and belongs to a class of which perhaps too few find a place in British and American medical literature.

The fourth volume of the *Medical and Surgical Report of the Presbyterian Hospital in the City of New York*, edited by Dr. Andrew J. McCosh and Dr. W. Gilman Thompson (New York: Trow Directory Printing and Bookbinding Company. Royal 8vo, pp. 223), contains many interesting and instructive papers, most of which deal with practical subjects and with such details of treatment, both medical and surgical, as are well adapted to the present needs of medical men. Among the more important of these contributions we would refer to that on tuberculous degeneration of the patent urachus in the adult, by Drs. Bridston and Eliot; to remarks by Dr. McCosh, one of the editors, on biliary surgery; to statistics collected by Dr. McWilliams, of operative treatment in 100 cases of cancer of the breast, and a report, also by Dr. McCosh, of 20 cases of penetrating bullet wound of the chest. The introductory paper, on the operative treatment of ascites due to cirrhosis of the liver, will be found an able and useful review of the present condition of this novel but not very promising experiment in abdominal surgery.

The *Transactions of the American Orthopedic Society* have done much to advance the interest in a knowledge of orthopædic surgery in that country and in our own. The *Transactions* embody the latest ideas of surgeons who are both progressive and practical and keenly enthusiastic in their subject. Year by year for the past twelve years these volumes have appeared, and it is evident that no time or expense or care have been spared in their production. The twelfth volume (Philadelphia. 1899. Royal 8vo, pp. 367, 8 plates, 114 figures) is even better than its predecessors. Forty-one papers, with the consequent discussions, are printed, and ten notices of new apparatus. That the supply of material is ample is evident from a statement in the President's opening address, that there are in Greater New York alone more than 500 beds devoted exclusively to orthopædic surgery. There is an interesting "In Memoriam" of C. F. Taylor, one of the greatest of the pioneers in the treatment of Pott's disease of the spine. A full account is given of congenital deformities of the spine by Dr. A. Thorndike, and Dr. J. E. Goldthwait contributes reports of cases of paraplegia relieved by the correction of the spinal deformity. Congenital dislocation of the hip is ably handled by Dr. Royal Whitman, who regards the Paci method of reduction as preparatory to a modified form of the open opera-

[4] *Refraction and how to Refract.* By James Thorington, A.M., M.D., Philadelphia. London: Rebman, Limited. 1900. (Demy 8vo, pp. 306. 7s. 6d.)

[5] *The Refraction of the Eye* (including a Complete Treatise on Ophthalmometry). By A. Edward Davis, A.M., M.D., Assistant Surgeon to the Manhattan Eye and Ear Hospital, etc. London and New York: Macmillan and Co. 1900. (Demy 8vo, pp. 444, 12s. 6d.).

tion of Lorenz. Of great value is an article by Dr. C. W. Wilson on joint infection in typhoid fever. Among the English contributors is the late Mr. William Adams, who wrote an article—probably the last which came from his pen—on rotation of the spine. The report of the Committee on the Recording of Lateral Curvature sums up the whole question by concluding that photography with certain precautions is the only sound and reliable method. Altogether the volume affords striking evidence of the enthusiasm with which the subject of orthopœdic surgery is pursued on "the other side."

The *Guide Médical Parisien*, compiled by the staff of the *Indépendance Médicale* (Paris: A. Maloine, 1900, Frs. 4) will be found a useful companion by any medical man visiting Paris, who wishes to understand the conditions of medical practice in France and the organisation of medical relief, or desires to see something of the practice of the hospitals or the work of the laboratories in Paris. The volume is furnished with a useful table of the hours of attendance of the various professors, and is provided with an alphabetical index.

The second edition of Dr. George Herschell's *Constipation and its Modern Treatment* has been translated into French by Dr. Michel Cohendy. For the translation, which bears the title, *La Constipation Habituelle; son Traitement* (Paris: O. Doin), Dr. Albert Mathieu has written a preface which praises the author's contention that in all cases care should be taken in the diagnosis of the cause of the constipation, and also the ingenuity of the mechanical means recommended in certain cases.

Mrs. PENNELL having gone over certain well-known Alpine passes with a bicycle, gives an account of her experience in *Over the Alps on a Bicycle* (London: T. Fisher Unwin. 1s.). She got very dusty and very wet, very hot and very cold; she hated pushing her bicycle up the passes, and enjoyed coasting down the other side. She did not like the Swiss roads nor the Swiss hotels, and though she was for five weeks riding over the Alps she did not meet a single Englishman on a bicycle. Wherein we think the Englishman showed wisdom. No district in Europe is less suitable for the bicycle, and July was a bad month to choose for the experiment. The pamphlet is embellished by a number of black and white sketches by Mr. Joseph Pennell, some of which give a very good idea of the engineering of Alpine roads, though the perspective is sometimes a little wonderful.

REPORTS AND ANALYSES

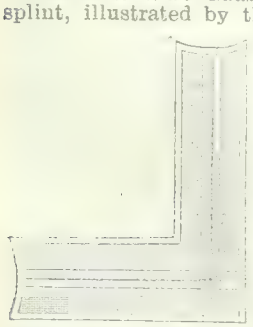
AND

DESCRIPTIONS OF NEW INVENTIONS

IN MEDICINE, SURGERY, DIETETICS AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

Sterilisable Wire Gauze Splints.—A modified form of wire splint, illustrated by the accompanying drawing, has been



invented by Mr. Alexander Thomas Scott, M.R.C.S. Its claim to novelty consists in its construction. The splint can be made to fit any limb, and is electro plated, so that it can be readily boiled or sterilised after use. The necessary strength is obtained by metal edging and moulding fitted from end to end. These additions, though they certainly help to strengthen the splints and to maintain their form, seem likely to prevent their close adaptation to the limb, and by their weight and tendency to give way, must interfere with the usefulness of this form of appliance in military surgery, for which it is specially recommended. They are supplied by Sydney Brothers, Sunnyside Road, Upper Holloway.

Anæsthetic Inhaler.—Dr. ALFRED ORCHARD, of Ashby-de-la-Zouch, has sent us a simple form of anæsthetic inhaler made for him by Messrs. J. S. Wood and Co., of York. It is illustrated in the accompanying drawing, and Dr. Orchard considers that it possesses the following advantages:

(*a*) It is very simple in construction and not likely to get out of order, consisting of a closely fitting box of metal without any fastenings, containing a movable cover for a piece of folded lint or gauze.

(*b*) It can be easily and quickly cleansed and rendered aseptic, and a fresh piece of lint or gauze inserted.

(*c*) It only requires one hand to open or close it, as there are projections at either end of the lid for the thumb and middle finger with a stud in front of lower part or box for the forefinger to push down and away from the lid.

(*d*) Either size may be carried in the waistcoat pocket and thus takes up very little space if carried in midwifery (or surgical) bag.

(*e*) To ease labour pains it is not necessary to use a towel as well; only to charge the lint with a few minims of chloroform and close the inhaler until a pain commences, then to open it and let the patient smell of it, just enough to get relief, then close it again until the onset of a fresh pain. It will not require charging every time, and a very small quantity of chloroform will suffice to give great relief even over a period of several hours without distressing the patient, whilst economising considerably and scarcely causing any perceptible odour in the room. Patients who have once used it usually ask for it if they have subsequent labours.



(*f*) For producing surgical degree of anæsthesia either in midwifery or in surgical operations it will of course save much time to cover the patient's face and the inhaler with a towel. The same hand of the administrator which holds the inhaler can easily hold up the patient's chin with one finger or more, and also can feel the breath of the patient, enabling the administrator to watch the respiration readily and leave the other hand free.

(*g*) It does not frighten patients, and thus prevents a great amount of nervousness and shock.

(*h*) The bars across the movable cover for lint (or gauze) not only serve to prevent the latter from falling out, but help to keep the patient's face from coming into actual contact with the chloroform (so avoiding blistering).

(*i*) It may be used for the A.C.E. mixture and answers very well indeed. Also it might be useful in some cases for nitrite of amyl or other volatile remedies.

(*j*) It is requisite that the administrator should have had proper training.

(*k*) It has been suggested that this inhaler would be useful for army medical officers in camp, etc.

Gelatine Envelopes for Surgical Dressings.—These envelopes supplied by Reynolds and Branson, Limited, of Leeds, will be found useful by the general practitioner, and help to overcome the difficulty of keeping a small quantity of surgical dressing in a compact form and free from direct contact with possible sources of infection. The dressing thus packed in small quantity—one yard or less if required—is always visible and is hermetically sealed. This neat and cleanly method of storing the different forms of gauze dressing may be commended to those who in their professional work meet only with occasional needs of using such appliances.



CARRIAGE ACCIDENTS.

CAPTAIN W. DIXON, 15, Dents Road, Bolingbroke Road, Wandsworth Common, has invented a wheel gravel iron for hansom cabs and dog-carts, which seems to be worthy of attention. Underneath the ordinary gravel iron a wheel is mounted with a stop stud which allows half a revolution. If the horse stumbles on to its knees the wheel takes the ground and makes a half revolution, thus checking the shock and giving the horse some assistance in recovering his footing. After making the half revolution the wheel is locked by the stud, which then acts as a drag or skid. He has also invented a strap for hansom cabs, which consists of a band of stout woollen webbing, to each end of which is attached an indiarubber ring. One ring is permanently fixed inside the cab on the right hand side of the passenger, while the other can be slipped over a hook fitted on the left hand side. If the horse stumbles the elasticity of the ring diminishes the jerk, and the band will prevent the passenger from falling forward.

A CONVERSAZIONE and smoking concert will be given by the staff of the Post-graduate College, West London Hospital, in the out-patient waiting hall on Wednesday, October 24th, at 8.30 P.M.

THE BACTERIAL PURIFICATION OF SEWAGE.

(Concluded from page 935.)

Stoddart's Improved Sewage Filter.

A continuous bacterial filter of the very simplest description has lately been brought into use at Bristol and elsewhere by F. W. Stoddart, F.I.C., F.C.S. In 1893 Stoddart obtained some remarkable results by allowing samples of polluted water and of sewage to drip on to a small model filter consisting of coarsely-powdered chalk contained in 1 inch condenser tubes 5 feet in length.[1] The chalk particles were previously infected with fluids containing those organisms which take part in the various stages of converting nitrogenous organic matter into nitrates, namely, (1) putrid urine containing ammonifying organisms; (2) water from a polluted well rich in nitrites; and (3) water from a polluted well rich in nitrates. Crude sewage as well as polluted water, when allowed to drip on to and trickle through the model filter thus prepared, underwent extraordinarily rapid purification and nitrification. The sewage passed through this 5 foot filter at a rate calculated as equivalent to 1,001,880 gallons per acre in twenty-four hours; the reduction produced in the ammonias and oxygen absorbed amounted to more than 90 per cent., nearly the whole of the nitrogen, 99·6 per cent., being converted into nitrate. This experimental filter was exhibited at the meeting of the British Medical Association at Bristol in 1894. But neither the apparatus nor the experiments appear to have received the attention which they deserve.

The results of these experiments confirmed Stoddart in his opinion that the "intermittent system," so strongly insisted upon by the Rivers Pollution Commissioners and other more recent experts, is radically incorrect in principle and practice when applied to artificially-constructed filters. He was convinced that the continuous passage of both sewage and air through the filter simultaneously would prove to be a far more effective method.

Since that time Stoddart has been engaged in perfecting his methods, his object being to devise a filter of the simplest possible construction, and also a method for distributing the sewage effluent over the surface of the filter in such a way that the whole of the filter should be kept in constant use, and that the fluid show flow constantly over the surface of the filter particles in a thin film, without allowing any coalescence to take place by which the free passage of air might be interrupted.

His first successful working filter was erected on a small scale at Horfield, a suburb of Bristol, in September, 1899, to deal with the sewage of some 500 people. This sewage is generally of above the ordinary average strength, but varies considerably, the dry weather flow being about 11,000 gallons per diem. The sewage has been treated previously by precipitation and sedimentation. For it must be understood that the "filter" is not intended to deal with crude sewage, but only with sewage which has previously been treated by precipitation or by anærobic methods.

Construction of Stoddart's Filter and Patent Distributors.

The filter consists merely of a heap of coarse rubble, clinker, ballast, coke, or other material placed upon a concrete floor, laid with sufficient fall to cause any liquid that reaches it to flow towards the nearest external surface. (Fig. 2.)

The size of the particles originally varied from ½ to 1½ inch; but better results have been obtained since the size has been increased to a minimum of 2 and maximum of 4 inches. It is unnecessary to provide retaining walls.

The filter in Figure 3 is surrounded by a retaining wall. Superficial area = 8 square yards. Depth = 6 feet.

In order to maintain the continuous filtration with the maximum efficiency, it is considered essential that the sewage should be applied over the whole upper surface of the filter in fine streams of drops at such a rate that the maximum amount shall be passed without charging any part of the filter with visible liquid. This even distribution of the sewage over the filter is secured by patent "distributors." Each distributor consists of corrugated iron presenting alternate sharp ridges and gutters (Fig. 4). The ridges are notched by V-shaped openings at regular intervals. A series of vertical points is provided beneath the lower surface of each gutter by driving nails through the bottom. The distributors (E E, Fig. 3) are fixed at right angles to the supply channel (D) in such a way that the sewage effluent flows evenly along the gutters, overflows through the notches, and, on reaching the under surface, falls from each of the vertical points in a series of fine drops. The distributors work continuously, have no tendency to be blocked, requiring merely to be brushed out once a week; and beyond this trifling attention the filters appear to need no attention or interference, working continuously and automatically, with little or no supervision.

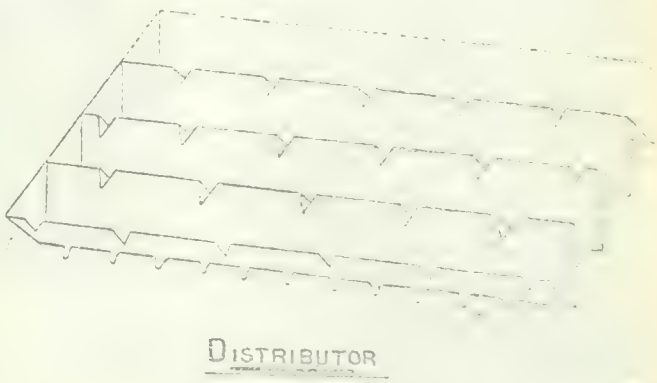


Fig. 4.—Stoddart's "distributor."

The filter at Horfield proved so satisfactory that a second one was constructed at Knowle, another suburb of Bristol, to take the place of three intermittent filters, each thirty square yards in area, which had failed to purify the effluent sewage from a septic tank.

This new filter exactly resembles the one at Horfield,



Fig. 2.—Section of Stoddart's filter without retaining wall.

[1] *Practitioner*, 1893; *Analyst*, xviii, 293 and xix 18-39.

excepting that the distributors are set at wider intervals apart, and that it has an area of 29½ square yards.

The chief advantages claimed for Stoddart's filter are the extreme simplicity of its construction and management, the small area required, and the extraordinary rapidity with which the sewage may be passed through the filter with the production of a satisfactory effluent.

At Horfield, for instance, "an exceptionally strong sewage" was passed through the filter at the rate of 576 gallons per square yard in twenty-four hours, with remarkable reduction in the albuminoid ammonia, and the production of a nonputrescible effluent. It is premature to predict how much purification this filter will produce in strong sewages under various conditions until it has had further trial, but the results of analysis show that it is capable of producing great reduction in the ammoniacal and other oxidisable compounds, a large amount of oxidised nitrogen, and non-putrescible final effluents when used for treating fairly strong effluents from precipitation or septic tanks. Weak effluents have been passed through the filter, with very satisfactory results, at the rate of nearly 2,000 gallons per square yard for twenty-four hours, and even at far greater rate than this in times of flood or thaw. The development and future use of this filter will be watched with great interest, and there is good reason for accepting Mr. Stoddart's claim for the advantages of his filter over those of the intermittent form, which advantages he has tabulated as follows:—

1. Flow continuous.
2. Capacity 1,000 to 2,000 gallons per square yard per 24 hours.
3. No retaining walls or foundations required.
4. No labour.
5. Effluent consistently good.
6. No land treatment.

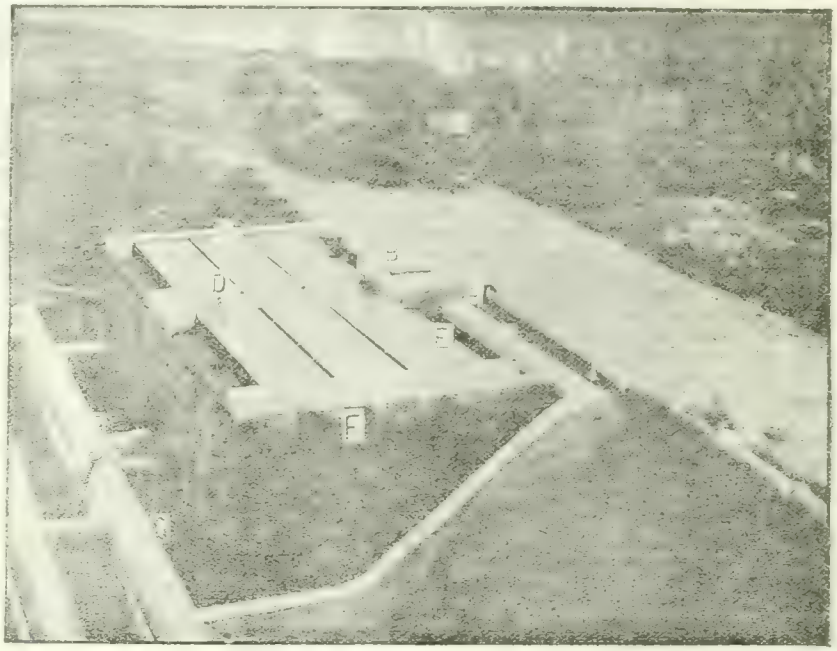


Fig. 3.—Stoddart's filter at Horfield. A, pipe containing effluent from sedimentation tank; B, gauge; C, baffle plate: D, supply channel; E, distributors; F, filter; G, effluent channel.

7. Depth unlimited and purification in proportion.
8. Manurial value of effluent considerable.
9. Effluent capable of purifying foul waters.
10. Can be altered in dimensions at any time without any difficulty.

THE CANDY BACTERIAL SYSTEM OF SEWAGE PURIFICATION OF THE INTERNATIONAL PURIFICATION SYNDICATE (REIGATE).

In this system the sewage is first passed through a small detritus tank, in which the grosser particles are retained, and then through patent "Candy-Caink sprinklers" on to two "all-aërobic" beds in succession, by a process of continuous filtration (Fig 5).

The sprinkler consists of two hollow perforated arms attached to a central basin which runs on special bearings. The sewage is delivered into the central basin, from which it flows into the arms, and issuing therefrom in jets, due to the eight inches or so of head, causes the whole sprinkler to revolve. In this way "the sewage is showered evenly upon every part of the bed, so that perfect automatic distribution is obtained. The size of the perforations being progressively arranged according to their distance from the centre every square inch of the bed receives its proper dose and no more, so that no part of the bed is wasted and no part overworked." In order to secure a continual current of fresh air through the bed it has been found best to make the action of the sprinklers intermittent, at intervals of a few minutes. This brief intermission is secured by means of a siphon discharging at regu-

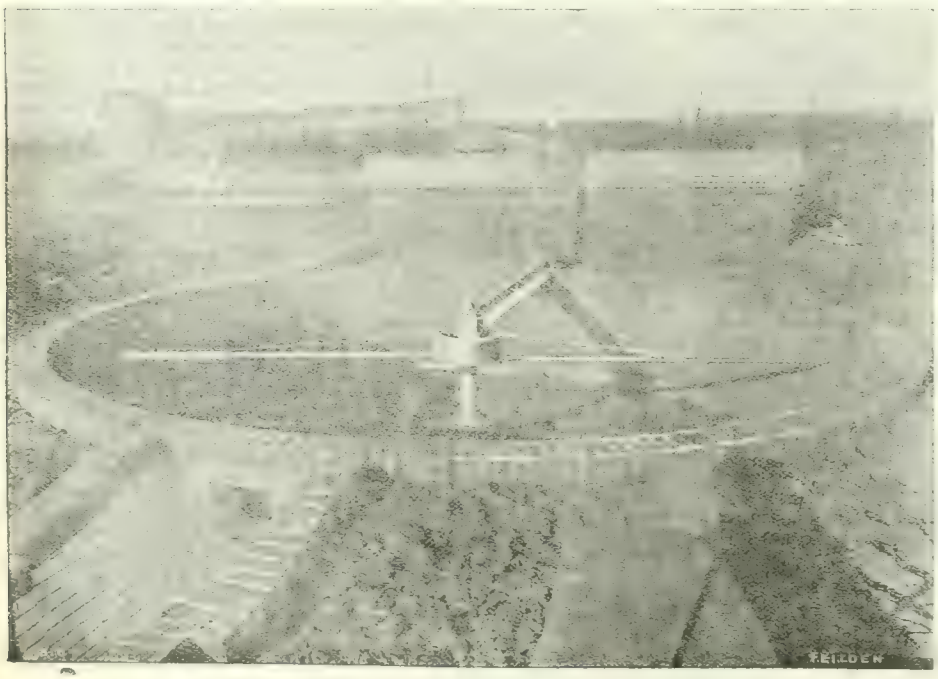


Fig. 5.—Candy-Caink sprinkler before the bed is filled.

lar intervals. There are two filter beds, circular in shape, and containing coarse particles of broken brick, etc. At first the upper of the two beds was worked as an anaërobic tank. Subsequently, however, it was converted into an aërobic filter, differing from the lower one only in containing coarser particles. It was found that better results were obtained by this alteration.

According to the reported analyses, the Reigate sewage is a strong one and the amount of purification highly satisfactory. The average reduction in the amounts of albuminoid ammonia and oxygen absorbed was 90 and 93 per cent. respectively with the original combination of anaërobic with aërobic bed, still greater when the anaërobic bed was replaced by another aërobic bed. The average amount of oxidised nitrogen was 4.6 per 100,000. These satisfactory results were obtained when as much as 500 gallons of sewage per square yard were passing through the system in twenty-four hours. Drs. Kenwood and Butler, of University College, London, have examined the effluent of the sprinkler bed, and found that it contained dissolved oxygen varying from 4 5 to 7.5 milligrams per litre. Although the beds have been working without interruption since installation, no signs of choking either of the beds or sprinklers have been detected; no labour or alterations have been required. Equally satisfactory results are reported from Southwold, where the sewage is exceptionally strong, and from Southampton. With ordinary weak domestic sewage the rate of filtration has been increased up to 1,000 gallons per square yard per twenty-four hours with a very satisfactory amount of purification.

From the above statements it is seen that this system is also very simple, automatic, comparatively inexpensive, and capable of treating large volumes of sewage with great rapidity within a very small area and with very satisfactory results.

There are various other systems of continuous filtration, for example, those of Ducat, Whittaker, etc., which the writer has not had the opportunity of visiting. They are fully described and criticised in Dr. Rideal's book. The above instances, however, will serve to illustrate the advantages claimed for the methods of continuous as compared with intermittent filtration, those advantages being chiefly greater rapidity of filtration, great reduction of the area and bulk of the filter, and, in Scott Moncrieff's system, at any rate a far more complete oxidation, an oxidation almost attaining the maximum possible.

A study of the reports of the various methods employed in bacterial purification of sewage reveals the great want of a system by which the collection of samples, the methods employed for analysis and the construction of standards ought to be regulated in order to compare and judge between the different methods of bacterial purification.

Experts are not likely to agree upon the value of arbitrary standards of purification as gauged by the amounts of albuminoid ammonia, "oxygen absorbed," or oxidised nitrogen in the final effluent. Nor can such standards be of value for testing the actual efficiency of different schemes until some standard methods have been adopted for determining the character of the sewage under treatment.

Scott Moncrieff has urged that such standards should be determined by observations on crude sewage submitted to treatment in anaërobic beds of a certain size for definite and varying periods of time, and subsequently treated in aërobic and nitrifying trays of a standard size containing particles of definite size, the flow of sewage being so controlled and regulated as to pass through the apparatus in definite quantity.

It may be confidently hoped that when observations of this kind have been carried out and completed—but not till then—we shall have obtained some definite means for estimating the actual relative values of the different schemes for sewage purification.

THE MEDICAL SICKNESS AND ACCIDENT SOCIETY.

The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held on September 28th at 429, Strand, London, W.C. There were present Dr. de Havilland Hall in the chair, Dr. G. A. Heron, Dr. J. B. Ball, Mr. J. Brindley James, Dr. F. J. Allan, Mr. F. S. Edwards, Dr. M. Greenwood, Dr. Walter Smith, Dr. J. W. Hunt, Mr. William Thomas, and Dr. Alfred S. Gubb.

The list of sickness claims was unusually long for this season of the year. The extra number was mainly made up of cases of nervous breakdown, many of which seem to be the result of past attacks of influenza. There are also not a few accident cases, for the most part connected with bicycles, which appear to be largely used by medical men during their holidays.

Several of the members of the Society volunteered for service in South Africa, and of which, so far, three have been invalided home with enteric fever, causing them to be on the Sick Fund for many weeks. The list of those who are permanently incapacitated steadily grows, and there are now seventeen members on the books who will in all probability never be able to resume professional work. A few months back death removed from this list a member who had been continuously drawing sickness pay for more than fifteen years, and had received in all more than £1,800. This is the heaviest amount yet drawn by one member, but there are some on the present list who may require even more than this before they lose their need for the sickness pay of the Medical Sickness Society.

Prospectuses and all particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

THE VOLUNTARY NOTIFICATION OF PHTHISIS.

By William Rushton Parker, M.A., M.D.Cantab.,
Member of the Town Council of Kendal.

Not much headway is likely to be made against consumption until some uniform action is taken throughout the country, and this must be preceded by some agreement as to the best policy to adopt. Probably one of the earliest and best steps to take is the adoption by the various sanitary authorities of a system of voluntary notification of phthisis, with payment of the usual fees to the notifying practitioners, and of free disinfection of dwellings vacated by persons suffering from phthisis.

Advantages of Notification.

1. *Number of Consumptives.*—Each district becomes aware of the number of consumptives at large in its midst, each of whom is a possible centre of further infection. The knowledge of this should facilitate the institution of sanatoria for the milder curable cases, and of isolation homes for the severer incurable ones. In the meantime, every such case needs instructing about spitting, cleanliness, and ventilation, for which the notifying practitioner should be responsible so long as in actual attendance.

2. *Distribution of Cases.*—Each district becomes aware of the distribution of its cases, the knowledge of which should induce it to improve or get rid of such dark, dirty, badly-ventilated, overcrowded, noisome dwellings as are found by experience to specially harbour the infective material of consumption, and to keep a close supervision of common lodging-houses and public houses, where cases appear to arise with special frequency, and also to improve the subsoil drainage of its damper quarters.

3. *Source of Infection.*—Occasionally the source of infection may be traced to workrooms infected by other consumptives, or to dwellings vacated by consumptive tenants (as in New York, Manchester, and Oldham), or to tuberculous milk. The knowledge of this should encourage the frequent cleansing of all dwellings occupied by consumptives, and their disinfection when vacated by removal or death; also the improvement of cowsheds in the matter of air space, ventilation, lighting, cleansing, and drainage, and the search for diseased udders.

4. *Isolation of Certain Cases.*—In the case of consumptives beyond the adequate supervision of any medical man, as where no practitioner is in attendance, or where living in common lodging houses, or attending school, or working in factories or crowded workrooms, or dealing in such easily infected articles as milk, food stuffs, clothing, etc., it becomes a matter of public concern that a check should be placed upon

a dangerous source of infection, and in such cases the medical officer of health might advantageously step in. The treatment of such cases in sanatoria is most desirable from the the point of view both of isolation and of education.

Objections to Notification.

The principal objections to voluntary notification seem to be based on the idea—

1. *Breach of Confidence.*—That it involves a breach of confidence on the part of the medical attendant; this can be avoided by the practitioner invariably securing the sanction of his patient first; if a patient refuses consent, and continues a dangerous source of infection among the public, doubtless the practitioner should notify without consent.

2. *Intrusion of Sanitary Officials.*—That private patients would be subject to interference and annoyance from medical officers of health or other officials; this can be avoided by such officials invariably working through the private practitioner, provided the latter has any real supervision of the case.

Results of Notification where Adopted.

So far, very satisfactory results have been obtained in several places where the usual notification fees are paid, as in Brighton, Manchester, and Sheffield; but in several others sufficient time has not yet elapsed for the system to have been thoroughly tested, as in Stockport, Blackburn, Stonehouse (Devon), Plymouth, and Kendal. On the other hand, wherever adequate fees are not paid, the system is a miserable failure; for instance, in Norwich, where a fee of only 1s. is paid, 11 notifications came in during the first three or four months, and none at all during the following six months; in Carlisle, where a fee of only 1s. is paid, and only parish, hospital, and dispensary doctors asked to notify, few notifications come in; in Liverpool, where the payment of fees has been omitted, very few cases are reported; and in Cardiff, Blackpool, Chiswick, and Clacton-on-Sea, where fees are not allowed, very few notifications come in; so complete is the failure that in several of the above places adequate fees are about to be proposed.

Conclusions.

It appears, then, that a general adoption of voluntary notification of phthisis by the various sanitary authorities, with the payment of the usual notification fees, followed by the offer of free disinfection of dwellings vacated by consumptive persons, will unquestionably lead to useful results. The mere notification by registrars of deaths due to phthisis, even though accompanied by the disinfection of the dwelling concerned, as in Birmingham, Huddersfield, Louth, St. Thomas (Devon), and Saltburn-by-Sea, seems an altogether inadequate measure.

THE GERMAN SCIENTIFIC AND MEDICAL CONGRESS.

[From Our Special Correspondent.]

Some Cell Problems.

One of the most interesting papers from the biological point of view was read by Professor Hansemann, the pathologist of Berlin, entitled Some Cell Problems and their Importance for the Scientific Evolution of Organo-Therapeutics. He said that organo-therapeutics was originally intended to be a specific form of treatment. Its employment for other purposes, such as the use of thyroid gland for the removal of suprarenal fat, really lay outside the range of specific methods. The latter was based on the importance of every organ as regards the whole organism. All organs, not only the larger ones, were essential for the maintenance of health and well-being of the body, and every one of these glands had a so-called internal secretion which assisted in the manufacture of lymphatic fluid and blood. Thus one organ was brought into relationship with the others, and each undertook a function for the others. This dependence of one on the other, and *vice versâ*, was termed altruismus. Hansemann proceeded to give instances of this altruismus in the thyroid, suprarenal, pancreatic, genital glands and cerebellum, describing their relationship to the rest of the body, showing the altruistic activity of the organs; and, secondly, that atrophy of one organ produced an altruistic atrophy of the remainder of the body, and hypertrophy an altruistic hypertrophy. The speaker declared himself to be a believer in the theory of preformation as opposed to epigenesis, the main argument against the latter being the absolute and constant specificity of cells. Based on the latter he advanced the following conclusions bearing on organo-therapeutics. (1) It could only be of use to employ organo-therapeutics in diseases of organs having an inner secretion. (2) Success could only be expected where there is altruistic atrophy, not in cases of altruistic hypertrophy. (3) It was not immaterial from which animal the serum was prepared, but that species must be selected whose organic products more particularly resemble the human ones. (4) We know practically nothing of the chemical composition of the inner organic secretions. (5) Even though it may be impossible now to foretell the ultimate utility of organo-therapeutics the biological basis seemed to be secure.

Repair of Fractures.

The Changing Relationships between the Form and Function of the various Organic Tissues was the title of a paper by Medical Councillor Professor Julius Wolff (Berlin), in the course of which he showed by numerous lantern slides that Roentgen rays had disproved the old belief that during the healing of fractures Nature reverted to the original form, and that the marrow cavity assisted in the formation of the repair. Two processes must now be distinguished—the process of mechanical repair and a transformation. In no case did Nature revert to the old form; it only restored the original function by repairing the fracture with new formations.

Infant Feeding.

Sanitary Councillor L. Fuerst (Berlin) first described the changes ideas as to infant feeding had undergone during the last forty years, beginning with the recommendation of Liebig's extract. The speaker pronounced as physiologically sound the modern endeavours at preparing a humanised milk by adding to the natural secretion of the cow a certain quantity of fat, by diminishing the quantity of casein, and by the conversion of the latter into a more soluble albumen.

Professor Schmidt (Bonn) read a paper on a similar subject, entitled, Artificial Bottle-Feeding of Infants. He considered the latter to be detrimental to the child as compared with breast-feeding, partly because the swallowing was not so easily performed, causing the infant to swallow also a certain amount of air. This he regarded as unavoidable, and as being the cause of the more numerous gastric derangements in such infants. Various endeavours had been made to prevent air being sucked in, and more inventiveness should be shown in that direction.

Dr. H. Conrads (Essen), who read a paper on the Inability of many Mothers to Nurse Infants, dwelt on the necessity of mothers rearing their infants, and gave as causes of their inability, artificial feeding during their own infancy, sedentary stooping occupations without exercise, and chlorosis. As remedies he suggested gymnastic exercises in girl schools, and mentioned that in Berlin the mortality among artificially-reared infants was six or seven times as great as among those nursed at the breast. On the other hand, Norway was stated to have the lowest rate of infant mortality owing to the prevalence of the opposite custom. Where artificial feeding was unavoidable, it should not only be necessary to watch the percentage of water and fat in purchased milk, but the quantity of dirt should also be watched, as it was hardly creditable how much of this was contained in average samples of milk.

Intro-Mathematicians of the Fifteenth and Sixteenth Centuries.

This paper was read by Dr. Sudhoff (Düsseldorf) in the Section of Historic Medicine. The speaker related that in the fifteenth and sixteenth centuries the origin, course, and cure of an illness were held to depend on various accidents, and systems were elaborated basing all ailments on all the possible signs and phenomena of the heavens. One system which had been referred to Hippocrates was connected with the constellations and the time of birth, each constellation foretelling the illnesses a particular person would be subject to. From one sign it was even foretold that the newborn would suffer from the results of over exertion. Another school had prepared two tables of letters from the Greek alphabet, a different set for each illness. The first letter of the patient's

name was compared with the two tables and the issue, fatal or otherwise, thus prophesied. Again, another astrologer had connected the various parts of the body with the different stars and planets; thus, the sun stood for the right eye, the moon for the left, and the star under which a child was born determined the part of the body which would eventually suffer. When ultimately these doctrines were put to the test by an unbelieving public, a writer went so far as to add a chapter as to how to overcome misrepresentations and doubts on the part of patients.

Prosthetic Apparatus after Excision of Lower Jaw.

In the Dental Section Dr. Witzel (Dortmund) showed a patient, a child, in whom he had resected the whole of the lower jaw. In this case an artificial jaw was inserted immediately, and became fixed in its position and to a certain extent performed the work of the natural jaw.

Epidemic Dysentery and the Dysentery Bacillus.

Professor W. Kruse (Bonn) stated that dysentery, so far as Germany was concerned, dated from the war of 1870. Some 30,000 soldiers were then affected, 3,000 dying. The returning troops spread the disease throughout the country, and since then it had not disappeared. Various local epidemics were described which in different localities had in one year caused the deaths of 100 to 150 persons. During recent years the disease had shown itself in a larger number of areas which caused the Government to commission the speaker (who had eight years' experience in Egypt) to study the disease at home. Last July he had occasion to witness an epidemic and perform eight *post-mortem* examinations on victims of the disease. In the case of Egyptian dysentery, Kruse established the existence of a certain amœba which, however, he only once discovered in the above cases. On the other hand, from the fæces he had obtained a bacillus resembling closely the typhoid bacillus. Inoculation of animals which readily suffered from dysentery—cats and monkeys—gave no results. The Egyptian bacillus was found in small intestinal ulcers, but his recent cases showed a membranous formation. These indications were given as an incentive to further research in this direction.

Pathological Changes in Bile.

Dr. Brauer (Heidelberg) stated that former knowledge of bile was based entirely upon *post-mortem* examinations. On the other hand, observers could now by means of fistulæ make comparative investigations, some of which, as for instance those with phosphorus, were fairly well-known. He had never found sugar in the bile of healthy individuals, but it was discovered in cases of diabetes, diseases of the pancreas, and after its removal. In cases in which parenchymatous changes of liver tissue took place these products had been traced in the bile. Thus, in cases of alcohol poisoning, alcohol acted detrimentally on the liver substance, and the bile showed epithelial cells.

Antidotes.

Dr. J. F. Heymans (Ghent) said that an antidote should not only arrest the action of a poison, but also arrest and reduce the symptoms of poisoning. He then proceeded to give some examples, such as the administration of oxyhydrate of iron in cases of arsenic poisoning. In this case only the poison remaining in the stomach was affected. Again, an antitoxin had no effect on the toxins circulating in the blood, but only protected the cells from the further injurious effect of such poisons and therefore was only preventive. As a more striking instance he described the result of poisoning by potassium cyanide in an organism previously saturated with sodium hypophosphite. As no effect was produced it might be assumed that a certain amount of free CN which was circulating might change to CNS, which was far less harmful in the case of the rabbit, for instance, 100 times less poisonous.

Conclusion.

Hamburg has been chosen as the next meeting place of the Congress, and officers were elected for the various sections. As previously stated, some hundred papers were down for reading, and it would be impossible in a small space to even give the names of those that have not been referred to. Every section, however, was full of interest, and a specialist would have heard a large variety of subjects discussed in his respective department, that of obstetrics and gynæcology, for instance, being particularly well supported by eighteen speakers with original papers. The Congress passed off very well and seemed to be thoroughly enjoyed by those present.

THE WAR IN SOUTH AFRICA.

THE IRISH HOSPITAL AT PRETORIA.

By Sir William Thomson,
Surgeon-in-Chief.

Pretoria, September 18th.

Dr. Coleman's Services in the Actions outside Pretoria.

I have just seen in print the notes which I sent you late in June from this place. They were written under great pressure, and were unrevised. I am sorry to see that I have made one important omission. In describing our work in the action outside Pretoria I have failed to mention the services of my colleague, Dr. Coleman. My staff had been so depleted by illness that I was able to send only Dr. Coleman and a few orderlies with the stretchers and ambulances. That duty he did every day when fighting was expected, and when our division was actually engaged he was always well to the front with his men, fearlessly doing whatever the circumstances of the moment demanded. My bearers—some constabulary and some civilian—behaved also with great coolness and bravery, and I had to use threats to only one Cape boy driver, who pleaded that he did not come out to be shot.

Results of Three Months' Work.

Since I wrote to you last the Irish Hospital has completed nearly three months' work in Pretoria, and I am able to give you some figures as to the results. Up to August 31st we had admitted 1,593 patients, of whom 445 were enteric cases; of these last 52 died, showing a mortality of 11.6. Deaths from wounds were 8 4, and from other conditions 0.91. At Bloemfontein, where a section of the hospital remained under Dr. George Stoker's charge until June 22nd, 150 enteric cases were treated with a mortality of 12.6. Deaths from wounds were 5 per cent., and there were no deaths from other causes. The total number treated in the stationary hospitals, which therefore does not include field-hospital work at Prieska or on the advance to Pretoria, was 1,864, with a general death-rate of 4.8. It is right to state that 6 enteric cases died within 48 hours of admission and 4 within 72 hours; these were in the last stages of exhaustion, but they are of course included in the figures given. Up to September 13th the admissions to the Irish Hospital in Pretoria were 1,813; 1,313 were discharged, 70 had died, and 430 patients remained under treatment.

In his evidence before the Commission at Bloemfontein the Principal Medical Officer, General Wilson, gave the following particulars as published in the report.

The death-rate of wounded at the Irish Hospital was 7.3 per cent., whereas at the Langman it was 7 15; at No. 5 Stationary Hospital 6.98; and at No. 9 General Hospital 4.04, whereas at the Portland it was 7.33. The enteric death-rate was: At the Irish Hospital 13.10 per cent.; at No. 5 Stationary 15.19; and at No. 9 General 14.05; whereas it was at the Langman 18.78 per cent., and at the Portland 14 07.

The Volks Hospital, Bloemfontein.

I have just seen the report of the Volks Hospital at Bloemfontein, ranging from January 1st to August 31st. The summary is interesting:

Died from enteric fever, 39; died from other causes, 4; total, 43.

Rate of mortality.—The death-rate on 1,004 cases is 4.3 per cent.: the death-rate on 462 enteric fever cases is 8.5 per cent.

Of the 1,004 cases were: Civilians (mostly Boers), 493; military, 511.

Amongst the 511 military patients were: 302 privates, 41 corporals, 24 sergeants, 1 sergeant-major, 1 quartermaster, 28 lieutenants, 7 captains, 3 majors, 1 general, 3 war correspondents, 1 war artist, 3 clergymen, 6 medical officers.

The different diseases of which the 511 military were suffering were: 311 enteric fever, 166 shot-wounds, 4 pneumonia, 3 asthma, 6 bronchitis, 2 phthisis, 1 Bright's disease, 15 dysentery, 3 sunstroke.

Of the 511 military patients 24 died, giving a death-rate of 4.7 per cent.

Of the 311 military enteric patients 24 died, giving a death-rate of 7.75 per cent.

Fever, Enteric Fever, and Simple Continued Fever.

The low death-rate in enteric fever in the Boer Hospita will at once be noted, and it may serve to justify that ridiculou

statement of some local nurse, which has been published in England, that she "would be ashamed to lose a case of enteric." That kind of wild statement carries its own contradiction. But the return shows once more how fallacious statistical results may be, and what a false impression they may convey. I have learned that all febrile conditions which cannot be otherwise classified are put down as enteric. At all events, in the detailed lists which are before me, only one fever (rheumatic) other than enteric is noted. On the other hand, the Army Medical Department have a class for simple continued fever. It will be seen at once how the inclusion in one set of figures diminishes the apparent death-rate; and how in the case of the army returns the grouping of fevers increases the apparent death-rate of enteric. There is undoubtedly a form of fever which, whether it is essentially enteric or not, has not any of the characteristic symptoms of that disease. It is obvious that the only way of arriving at a result such as that now published from Bloemfontein would be to include all febrile conditions under one heading. Of course, it would be unscientific, but it would be a result arrived at from similar premisses.

Although this hospital happens to stand first on the results, I think the returns given by the principal medical officer are distinctly satisfactory everywhere, when the conditions prevailing in a campaign are considered; and they will compare favourably with those which are obtained in the best hospitals at home.

Prospects for Spring and Summer.

The decrease of enteric cases goes on, and we now get down to about one fifth instead of one-half of our admissions. The death-rate, too, is steadily falling. But we are now in the springtime; already the temperature is distinctly warm. Pretoria looks at its best, for the young grass is brightening the veld, and various blooms and the tender green of expanding leaves make softness and brightness everywhere. But alas, we have yet to face dust storms, then rains, then myriads of flies, which already are beginning to infest our rooms; and to make things worse, local authorities assure us that we shall have a second outbreak of enteric. The season for malaria, too, is just opening along the line of railway to Koomati, and there will be an increased death roll. Hospitals are being instituted at Middleberg and other places east of this.

Hospital Accommodation at Pretoria.

In Pretoria itself there is, at least at present, as much accommodation as is required. No. 2 General, under Colonel Keogh; the Langman, under Mr. Gibbs; the Imperial Yeomanry, under Dr. Sandwith; the Welsh Hospital, under Professor Hughes; and Nos. 1, 2, and 3 at the State Model School, under Major Cummins and other officers of the R.A.M.C., are now well equipped and at work. The No. 2 General Hospital, the Langman, and the Welsh are grouped on the veld two miles out overlooking the town. They have been well fitted, tents and streets are lighted by electricity, and all the essentials—good beds and good kitchens—are present. The Yeomanry Hospital occupies a private house with some 40 beds, and these are supplemented by numerous marquees which accommodate 200 patients. There is of course in all these cases plenty of room for rapid expansion, and therefore I think we are not likely to have the experiences of Bloemfontein repeated here.

The Hospitals Commission.

The Royal Commission to inquire into the charges concerning the hospitals in South Africa arrived here from Bloemfontein on September 8th and forthwith proceeded to take evidence. On September 10th and 11th they spent some hours in visiting the hospitals and inspecting the wards. What impression these made upon their minds I cannot say, but I do not think the most fastidious critic could find any indication of inhumanity in the treatment of the patients in Pretoria. Every consideration is given to them, and I am, on the other hand, able to say that there are no better or braver patients than our soldiers. It is a pleasure to treat them, they are so docile and grateful. I am sure that is the impression that "Tommy" has made upon the civilian doctors at all events, and if he has been hardly treated now and again it has been for reasons that were overmastering.

THE SCOTTISH NATIONAL RED CROSS HOSPITAL.

By Henry E. Clark, F.F.P.S.G.,
Surgeon in Charge; Professor of Surgery, St. Mungo's College, Glasgow.

Kroonstadt O.R.C., Sept. 14th, 1900.

The Temporary Hospitals at Kroonstad.

This hospital has been settled at Kroonstadt since the end of May. The first detachment, consisting of the staff and equipment for 100 beds, reached Capetown on May 12th, the date of Lord Roberts's entry into Kroonstadt, and this circumstance determined our destination. I was myself sent forward by the night mail on May 15th with four doctors and seven nurses, the condition of matters at Kroonstadt being urgent, but the railway line was so seriously damaged beyond Bloemfontein that we were detained at that town five days. During that time the rest of the staff and the equipment went round to Port Elizabeth, disembarked, and actually reached the capital of the Free State on the day we left it to go on. My party reached Kroonstadt on the morning of May 25th, the only change in our arrangements made at Bloemfontein being that six student-orderlies of the Scottish Hospital staff and the nurses of No. 3 General Hospital were sent on, the Scottish nurses being put on duty at the Bloemfontein hospitals. I shall never forget the scene presented by the temporary hospitals at Kroonstadt when we arrived. There were about 600 patients in the town nearly all suffering from enteric fever. These occupied the Dutch Reformed Church, numerous bell tents in the compound round it, the Town Hall, the Grand Hotel, and the Kroonstadt Hotel.

The schools were used as a hospital before the arrival of the British and continued to be so used, being worked by a Russian-Dutch ambulance. The patients in these buildings lay, for the most part, on the floor. Some had mattresses but many had none, and they were thickly crowded together clad in their ordinary garments and wrapped in their own blankets. Until we arrived there were no nurses (excepting at the Russian-Dutch ambulance), and but few orderlies. There were 7 medical attendants, including 2 Russian surgeons and a local doctor; but there was a deplorable lack of medicines, medical comforts, bed clothing, and personal clothing for the patients. I recognise that these conditions were unavoidable and have nothing but praise for the admirable work accomplished by Major Ford and his staff under peculiarly trying circumstances. I agreed to take charge of the Kroonstadt Hotel Temporary Hospital, and continued to have charge of it till it was vacated. Although I had come out with the idea of doing surgery I could not refuse to take my share in the treatment of enteric fever patients, seeing that the conditions were such as I have described. No. 3 General Hospital and the equipment and the rest of the staff of the Scottish Hospital reached here two days later (May 27th) and from henceforth the condition of matters speedily improved. In a marvellously short time the temporary hospitals were put in a satisfactory condition, and the tent hospitals were soon able to take in all the new cases of disease and injury.

The Completion of the Scottish National Red Cross Hospital.

A month after the sending off from Glasgow the first detachment consisting of 100 beds, a second section consisting of the staff and equipment for 210 beds was forwarded, and still a month later a third section of 210 beds, to make up the full complement of 520 beds for a general hospital. Thus our hospital has become the largest voluntary hospital sent out, with the exception of the Yeomanry Hospital. During our short stay at Bloemfontein we had visited the hospitals and had marked the prevalence of enteric, and were not surprised to find a like condition of matters at Kroonstadt.

Bullet and Shell Wounds.

Our dreams of interesting surgical cases, and valuable experience of bullet and shell wounds seemed likely to be dissipated, but thanks to the energy of Christian de Wet we got a fair share of bullet wounds from Rhenoster, Lindley, Bethlehem, and the east country generally. Many of these exemplified the comparative innocuousness of the Mauser bullet, so often referred to by your correspondents. Thus we had cases of bullets passing through the lungs, the liver, the

stomach, and the brain, and possibly one of a Mauser bullet passing through the heart, without any serious consequences following; the wounds healing in the course of a few days. Some of these I hope to publish more fully on my return. Many of the wounds, however, were septic when we got them, and this was especially the case with shell wounds. Our most important operations have been for traumatic aneurysm of the profunda femoris artery, and traumatic aneurysm of the common carotid artery, the latter involving the ligature of the innominate artery. We have also had a successful case of resection of the bowel (by Mr. James Luke) with the use of Murphy's button for Mauser bullet wound of the intestine. Latterly, the cases have become less interesting, and our admissions now consist largely of the tired, footsore, and rheumatic brought in by the various columns as they pass through Kroonstadt.

THE EDINBURGH HOSPITAL.

Our Edinburgh Correspondent writes:

The Edinburgh Hospital on reaching Capetown was sent round to Port Elizabeth and thence up to Norval's Pont, where it arrived on April 17th. Originally meant for 100 beds, the number was increased to 160. At first the sick found at Norval's Pont were treated in it, but later patients sent from the front arrived, chiefly cases of enteric fever, as this was the time that the disease was epidemic at Bloemfontein.

Mr. David Wallace, who was Chief-Surgeon (Professor John Chiene having been appointed one of the Consulting Surgeons with the Forces in South Africa), himself was laid up with an attack of enteric fever at the beginning of June and had a very severe illness. Dr. Cooper and a Sister, together with four other members of the staff of the hospital, also suffered from enteric fever. Mr. Wallace unfortunately subsequently developed an affection of one eye, due to a veld sore, and went to the Imperial Yeomanry Hospital at Deelfontein to be under the care of Mr. Cargill, the ophthalmic surgeon attached to that hospital. He was afterwards invalided home, and arrived at the beginning of September. He has now entirely regained his health, we are glad to say. He speaks in high terms of the Edinburgh Hospital and its equipment. Everything worked well, even the electric lighting by their own dynamo. Mr. Wallace also gives a glowing account of hospital work in South Africa, and in so far as the wants of the Edinburgh Hospital were concerned, he was surprised at the rapidity and completeness with which they were attended by the military authorities.

The other members of the staff of the Edinburgh Hospital are still in South Africa, but we are led to understand that they may be expected home by the end of November.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

(Continued from page 1048.)

ST. VINCENT'S HOSPITAL, DUBLIN.

The introductory address at St. Vincent's Hospital was delivered by Dr. Michael McHugh, Physician to the hospital, who after some introductory remarks proceeded as follows:

Bubonic Plague.

The bubonic plague, which will be the subject of my observations this afternoon, has, after an interval of nearly two centuries and a-half, again made its appearance in the British Isles. It has effected a definite lodgment in Glasgow, and owing to the great freedom of communication which exists between that city and other parts of the United Kingdom, one may say that it is almost at our own doors. The efforts to isolate all cases and to stamp out the disease in Glasgow are no doubt being prosecuted with great vigour and circumspection. Nevertheless, it is obvious that if anything like an epidemic should occur in that city, to prevent it from spreading to others is a task which will tax the energies and resources of their sanitary authorities to the utmost, and will form the chief hygienic problem with which the inhabitants of these countries will have to deal in the near future.

Rats and Fleas and the Spread of Plague.

[After a brief sketch of the history of the plague, and reference to the discovery of the specific bacillus by Kitasato and to the modes in which it gains entrance into the human body, Dr. McHugh proceeded:]

I have already alluded to the great susceptibility of some of the lower animals to plague, and of these it is beyond question that rats take first place in order of importance as vehicles of transmission of the disease, whilst the fleas which infest them co-operate in the way just described, not only in the diffusion of the infection amongst the rat tribe, but also in its transference to human beings. Rats are exceedingly prone to the disease; so much so, indeed, that it has been said that the plague is in reality a disease of these rodents, and one which infects man in the second instance only. It has been generally noticed that the occurrence of an epidemic in a city is preceded by an outbreak amongst the rats, and the bodies of such as have died of the plague are frequently found lying in the streets or in the basements of houses. It has also been observed that the first cases in a population occur precisely in those quarters in which the dead rats are discovered, and that the propagation of the epidemic from one town to another does not follow the route taken by fugitives from the human population, but rather that taken by the rats in their flight; for it would seem that, when the plague has extended widely amongst them, the healthy majority become panic-stricken, just as human beings do, and fly from the infected locality in large numbers; whilst, in the meantime, the sick animals, losing their habitual dread of man, run through the streets in broad daylight, until they fall dead in the gutters or cellars.

Some ingenious investigations have been made in order to demonstrate that fleas are capable of transferring the infection from rat to rat, and from them to other species, and to human beings. A healthy, self-respecting rat, who makes his toilet regularly, carries very few fleas about him. The sick rat, on the other hand, being careless of his personal appearance, becomes absolutely covered by these insects, who, in seeking for nourishment in the usual way, naturally charge themselves with the plague bacilli. When the rats die, and their bodies become cold, the fleas take their departure, seeking food and warmth on the bodies of living animals, whom in turn they are almost certain to inoculate.

Professor Montenegro, of Madrid, to whose admirable monograph on the subject I am indebted for many of the facts just mentioned, describes the following interesting experiments:

> In the first two rats were placed in a cage—one ill with the plague, and having fleas on it, the other being healthy, and having none; the animals being separated by a wire partition. Shortly afterwards the sick rat died, and at the expiration of a few days the other became ill, and died also. The fleas were found to have abandoned the body of the first rat and to have passed over to the second one; and their intestines were found, on examination, to be engorged with the plague bacilli. In a second experiment two rats were again placed in a cage, separated as before by a wire partition—one ill with plague, and the other healthy; but both without fleas. Shortly after the sick rat died, but the other remained uninfected and healthy.

There can be little doubt, in fact, that the disease is diffused amongst rats, mainly through the instrumentality of the fleas, which desert the bodies of the dead animals and convey the infection to the living, and also that not only other animals, but human beings also, may become infected by the same process. This explains to some extent the fact that the lower storeys of buildings suffer most severely. It has been said that "the plague does not make upstairs." Also that as rats are the vehicles of contagion, the disease frequently makes its first appearance in grain stores or other warehouses, in buildings in which rats abound, whilst on the contrary, well constructed new buildings, to which the rodents have no access, remain free from the disease. Another useful observation may be mentioned in connection with the disposal of rats found dead in the streets or elsewhere. Contact with those recently dead is highly dangerous, but when dead some time and quite cold, that is, when the fleas have entirely disappeared they may be touched or handled with impunity.

The Extermination of the Rat.

With a knowledge of these circumstances it is not surprising that the sanitary authorities of a district invaded or threatened with invasion by the plague invariably direct their attention to the extermination of rats, either as is done at present in Melbourne, by putting a price on the head of every rat killed,

or lately in Oporto by attempting their wholesale destruction by poisoning the sewers with strychnine. It is also evident that the duty devolves on the owners of houses or buildings infested by rats to take early and radical measures to prevent their ingress. All possible channels of approach should be carefully sought out and stopped, and, on the other hand, it is the plain duty of the municipal authorities to see that the main drains are kept staunch, so that the rats cannot escape from them. Many of the city houses are, I understand, infested with rats, because the connection of the local house drains with the main sewer is not in a sound condition. It will be a relief to many to hear that our principal domestic pets, dogs and cats, are not very susceptible to plague infection. Nevertheless, as they are apt to be busy in the basement storeys of houses, they may readily act as carriers of infected fleas. Not only, therefore, must we keep our houses free from rats, and if possible from mice, but we must also rid them as far as possible from fleas, flies, and in fact from all varieties of insects.

I have already mentioned that epidemics of the disease are commonly preceded by outbreaks amongst rats and mice. This has been distinctly observed in Hong Kong and in India, and I believe also in the Australian Colonies. In the latter it is the case, as I am informed, that whilst in Sydney there have been undoubted cases of plague, with several deaths, the disease in Melbourne has so far shown itself only amongst the rats.

In Glasgow, on the other hand, a large number of rats have been killed in the infected area and carefully examined for the plague bacillus, in all cases I understand up to the present with negative results. It is of course readily conceivable that owing to the importation of actual cases of plague or of infected clothing this disease may affect human beings in the first instance, and that the rodents may be only infected subsequently, and this may possibly furnish an explanation of the slow progress of many epidemics in their early stages. In the Great Plague of London in 1665 it is recorded that in the first three months but three or four cases of the disease occurred, and nevertheless before the close of the year many thousands of the inhabitants were destroyed. In other words, as long as the disease was confined to human beings, owing to the possibility of isolation, its progress was slow, but when the rats became affected it disseminated itself rapidly.

Isolation of Early Cases.

It is a truism to say that whenever plague makes its appearance in any given locality, it is of the most vital importance to the residents that the very earliest cases should be promptly recognised, and at once isolated. As the disease has, however, not been seen in these countries for more than two centuries, it is obvious that medical men are thus placed in a position of great responsibility, and also of great difficulty. This will be more manifest when I mention that, in spite of the strict supervision which is being exercised over arrivals at the Port of Dublin, if this epidemic should reach our shores, the first cases are just as likely to be met with in the purlieus of the city, or in the public dispensaries, as anywhere else. Medical men will, therefore, be called upon to diagnose cases of a disease of which they have had no previous experience.

Under these circumstances, I feel that I cannot occupy your time better than by devoting the remainder of my observations to a brief clinical account of this terrible disease. Before doing so, however, it is but just that reference should be made to the public spirit shown by the Board of Management of the Cork Street Fever Hospital in sending their Senior Resident Medical Officer, Dr. Marshall Day, to Glasgow, for the purpose of enabling him to investigate the cases there on the spot, and of informing himself, by personal observation, as to the treatment employed in hospital, and as to the various measures adopted for the safety of the community at large. This action of the Cork Street Hospital authorities, which, in my opinion, might be imitated with great advantage by our city and suburban sanitary authorities, furnishes merely an additional instance of the vigilant attention which they have so constantly exercised in safeguarding the interests of the public.

[Dr. McHugh concluded with a review of the main clinical and pathological facts known in regard to plague.]

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

DINNER OF PAST AND PRESENT STUDENTS.

THE annual dinner of the Past and Present Students of St. Mary's Hospital was held on Wednesday, October 3rd, at the Hotel Metropole, Dr. W. B. Cheadle, Senior Physician to the Hospital, occupying the chair. The gathering was one of the most successful that has ever been held, the number present being 150, and including Sir William Broadbent, Surgeon-Colonel A. B. R. Myers, Dr. Sidney Phillips, Mr. H. W. Page, Mr. Pepper, Dr. Handfield-Jones, Mr. Field, Mr. Plimmer, Dr. Waller, Dr. H. A. Caley (the Dean), and Mr. Ernest Lane, Secretary to the Dinner Committee. In response to the toast of "The Imperial Forces," eloquent replies were made by Colonel A. B. R. Myers and Colonel C. D. Leyden.

In proposing the toast of "Prosperity to St. Mary's Hospital Medical School," Dr. Cheadle compared and contrasted the condition of the School when first he was appointed to the staff with its present status, and enumerated the many improvements which had been effected in recent years, and the advantages accruing to the students by these improvements. The response to the toast was entrusted to Dr. H. A. Caley, who has recently been appointed Dean of the Medical School. He pointed out the high position held by the School both in the fields of science and of athletics. The array of cups and shields on the high table was a unique one, comprising the United Hospitals Athletic Shield, the Rugby Football Challenge Cup, the Cricket Challenge Cup, the Inter-hospital Swimming Cup, the Cycling Challenge Shield, and the Association Football Junior Challenge Cup.

The toast of "The Past and Present Students" was ably proposed by Mr. Page, and responded to by Mr. W. Cox and Mr. R. Butterworth. "The Staff and Lecturers" was proposed by Mr. Field, and responded to by Mr. Pepper, Mr. Plimmer, and Mr. Laurie; and the toast of "The Chairman" was entrusted to Sir William Broadbent.

UNIVERSITY OF BIRMINGHAM.

FIRST SESSION OF THE MEDICAL FACULTY.

ON October 1st the University of Birmingham began its existence as a teaching and examining body. A number of circumstances have arisen which render it desirable that the formal opening of the University proper shall be postponed until a more convenient date in the near future. But the inaugural meeting of the first winter session of its Medical Faculty took place on the evening of Monday, October 1st, and proved a great success.

The newly-elected Vice-Chancellor of the University and the Council had issued invitations for a *conversazione* on that day, and in the evening some three or four hundred of the most prominent local medical practitioners attended and were received by the Vice-Chancellor and the Dean of the Medical Faculty, Professor B. C. A. Windle. The new pathological laboratory and bacteriological research laboratory were open for inspection under the direction of Professor Leith, and the new dental museums and materia medica museum were also thrown open.

After the reception Professor B. C. A. Windle delivered the opening address, a full report of which appeared in the BRITISH MEDICAL JOURNAL of October 6th. It was listened to with keen interest and attention, and at its close a hearty vote of thanks was passed to Dr. Windle on the motion of Professor Barling, seconded by Sir James Sawyer. Principal Lodge then announced that Professor Windle had that afternoon been appointed the Representative of the University on the General Medical Council.

DISTRIBUTION OF PRIZES.

The annual distribution of the clinical prizes gained during the year by students attending the General and the Queen's Hospitals took place under the chairmanship of Mr. Thomas F. Chavasse, F.R.C.S., President of the Clinical Board, on Monday, October 8th.

The meeting took place in the large lecture theatre of the General Hospital, and was attended by the majority of the professional staffs of the two hospitals, a large number of medical men from the city and surrounding districts, besides medical students both past and present.

Sir Henry Littlejohn, Professor of Forensic Medicine in the

University of Edinburgh, was present, and gave away the prizes to the successful students. The chief prize-winners were as follows: Senior Medicine, Mr. B. H. Roberts; Senior Surgery, Mr. B. S. Hollick and Mr. E. W. Jones (equal); Junior Medicine, Mr E. G. Bark and Mr. W. H. Wynn (equal); Junior Surgery, Mr. W. H. Wynn; Midwifery, Mr. E. L. Wynn. A special prize given by Professor Chiene was won by Mr. B. S. Hollick, in Surgery; and one given in Medicine by Sir H. Littlejohn, by Mr. W. C. Dawson. Mr. W. H. Wynn also won a special prize in Junior Surgery, given by Mr. Chavasse.

After the distribution of prizes a most interesting and scholarly address was given by Sir Henry Littlejohn to the assembled students. At its close a hearty vote of thanks was proposed by Dr. Hill, seconded by Professor Morrison, and carried with acclamation. This Sir H. Littlejohn acknowledged in suitable terms.

A most interesting afternoon was brought to a close by a vote of thanks paid to Mr. Chavasse, the President of the Clinical Board, for his hospitality, proposed by Sir James Sawyer.

GUY'S HOSPITAL.

Meeting of the Physical Society.

The first meeting of the session of the Physical Society of Guy's Hospital was held on October 6th, when Sir Samuel Wilks, Bart., M.D., F.R.S., occupied the chair. In welcoming the freshmen, he said that as the human body was subject to a thousand ailments and was influenced in a thousand different ways, they would find that different branches of science were intimately connected with it. This had been well noticed by a very large number of speakers at the late meeting of the British Medical Association at Ipswich. They had remarked how the medical profession was making use of a large number of sciences. The great discovery of late years, that of specific diseases due to bacteria, unknown to our forefathers, was known to us only through the discovery of the microscope; that discovery was really outside the profession, and the same might be said in regard to the ophthalmoscope and to the Roentgen rays.

Professions and Trades.

I can imagine some of you saying, he continued, "That sounds all very well, but I entered the profession to get a living." Well, I do not think you did. If you really did enter the profession for money-making, you have made a mistake, and I think it is not too late to retire now. I do not think any of you did enter the profession with that as your sole object. There is plenty of competition in our profession, as in every other vocation, and the best men come to the front and the weak ones go to the wall. There are some 20,000 doctors in our country, but life is short, and they are dying out, and others must take their place. You will have to take their places. You ought to see clearly the difference between a trade and a profession. A man follows a trade for money-making alone. He knows what the public want, and he supplies them with that, whatever it may be, and he obtains a return. But to introduce a principle of that sort into a profession is dreadful to think of. A professional man is a man who gives advice, whether it is in the Church, or in the law, or in medicine, and nothing is more dreadful to conceive than what one hears of sometimes—that a parson in the pulpit is thinking of himself, of what a great man he is, instead of thinking of his congregation. Or, what is worse still, a doctor, perhaps, has a patient before him, and is thinking whether there should be an operation, and his first consideration is whether he will have a good fee. I think that is a dreadful principle to carry out. The first consideration should be to do your duty to others, and then you will get a proper emolument. That, then, is the difference between the professional man and the tradesman.

One Portal or Many Portals?

I do not want to go into questions of medical politics, but I have been very sorry lately to see that organisations exist amongst medical men mainly for these material objects. And more than that they want the General Medical Council to ask Parliament for protection against certain abuses affecting the profession. I have no sympathy with any of these movements at all. I think the profession is to be raised individually, that is by individuals doing their duty. A medical man who talks about protection in this sense forgets, I think, that he is an Englishman. An Englishman is known by his independence; he does not go to Government for help. We start our own hospitals, universities, and colleges. Some forty years ago, in England, inasmuch as diplomas became unequal in value, it was thought necessary by some that the State should step in, and there was a movement set on foot that those diplomas should all be done away with and a uniform State examination should be established. There was a great outcry at the time from the old colleges and universities against any such proposal, and eventually it appeared that the Government itself had not contemplated doing anything of the kind. The report of the Committees of the House of Lords and the House of Commons of forty years ago on this matter shows that the general feeling was that not a single one of our great educational institutions ought to be touched in any way; so it was decided that the General Medical Council, as representing all these different educational bodies at Oxford, Cambridge, Edinburgh, and other places, should make a fixed standard of examination, and that they should visit all these places and see that the examinations were up to a certain standard, and then those who took diplomas were to be put on the *Register*, and being on the *Register* they were granted certain legal privileges; therefore you may have diplomas from all these different places, and they must reach the standard set by the General Medical Council; and a very good arrangement that is, but I am sorry to say there are men now in the medical profession who want to do away with that system and make a State examination.

Conclusion.

Sir Samuel Wilks then expressed the opinion that it was useless and undesirable to ask Parliament to put down quackery, and in conclusion congratulated the newly-entered students on having chosen Guy's Hospital, where they would find every facility for learning their profession, and a remarkable *esprit de corps* and enthusiasm.

Bird Life in the Artic Regions.

Mr. F. Curtis read a paper entitled, "Notes from an Ornithological Cruise in the North Polar Seas." The voyage was made in 1897, on the coast of Russian Lapland, by Mr. H. J. Pearson and Colonel Feilden, with a Norwegian captain and crew—14 in all, in a ship of 160 tons register. The vessel left Bergen on June 4th. On the shores of the Kara Sea and elsewhere eighty-five species of birds were found, including snowy owls, rough-legged buzzards, swans, ducks, geese and gulls, divers and guillemot. On Novaya Zemlya the colonies of Brünnich's guillemot were so numerous that about two miles from the shore the sound of the birds calling and crying was like the baying of a pack of hounds from a distance; the air, too, was full of birds flying hither and thither, and a strong pungent smell was very noticeable. The cliffs for five miles were white with birds and their excrement. On landing the noise was deafening, every rock was thick with evil smelling slime and if in climbing the hand was put too near a nestling, a vicious old parent or neighbour would nearly transfix the hand or finger with his beak. Ledge after ledge was so crowded with birds that those constantly arriving would settle upon the backs of the others already there. It was not possible to frighten them, except by the noise of a gunshot, and then only a fraction of the birds would fly. So many, however, flew down to the sea at one report that they collided with one another in their flight, and when the main body had swept out, nearly 50 maimed and crippled birds lay upon the water, with wings broken by striking against their neighbours. Two birds flying from opposite directions collided with a third above Mr. Curtis's head, one was killed outright, and the other left gasping *in extremis*.

Conversazione.

After the meeting a conversazione was held in the physiological laboratories and class rooms, and there was an exhibition of surgical instruments, physiological apparatus, drawings, pathological specimens, etc.

A Congress of Scandinavian Ophthalmologists, which is to meet biennially, was held recently for the first time at Stockholm. The meeting in 1902 is to be at Copenhagen.

THE PREVENTION OF TUBERCULOSIS.

SANATORIA FOR THE CONSUMPTIVE PAUPER.

THE question of providing for the consumptive pauper has a wider bearing than the welfare of the individual himself. In the case of the advanced consumptive, whose disease has at length incapacitated him from work, admission to a Poor-law infirmary ensures for the patient the necessaries of life and such medical attendance and nursing as his condition requires. But in addition it removes a source of infection from surroundings which make infection particularly dangerous. Useful and necessary as is this provision for the advanced consumptive, it is, however, not sufficient. If the consumptive can be treated in the earliest stage of his disease he may be cured, and instead of joining, in a few months or years, the large number of advanced cases which form so great a proportion of the inmates of our infirmaries, and who, once admitted, usually remain till death releases them, he may take his place again as a bread-winner. Provision for the treatment of early consumption amongst the poorer classes would then gradually but surely diminish the number of advanced cases for whom provision must be made by the guardians of the poor. This is not by any means the only advantage which would result from the provision of sanatoria for the treatment of early consumption amongst the poor, but it is one which will have some weight amongst the business men who provide, and those who administer the poor-rate.

The question of the duties of the Guardians of the Poor in the matter of the erection of sanatoria for the consumptive pauper is being discussed throughout the country, and was one of the subjects considered at the North Midland District Poor-law conference at Buxton where a paper by Dr. J. Nall, a guardian of the Chapel-en-le-Frith Union was read, who pointed out that there were various ways in which sanatoria might be supported—by State aid, local rates, private subscriptions and donations, the formation of ass ciations analogous to the Swiss societies, workmen's assurance clubs, etc. Dr. Wm. J. Howarth, M.O.H., Derby, discussed the subject of rate-aided sanatoria for consumptives, and pointed out that there were proper means available for the treatment of the early stages in the bread-winner of a family an economy in expenditure would be effected. Three months' residence at a sanatorium at the expense of the guardians, with grants to the family during that time, would result in many cases in the addition of several years' capacity for work, and if the disease then returned and death ensued one member of the family would probably have arrived at working years and thus the necessity for further charge on the rates would be avoided.

Dr. Milson Rhodes, President of the Poor-law Union Association, said that as an aid to the prevention of phthisis the guardians were equally interested in its early diagnosis and bacteriological examination and its modern rational treatment, which could best be described as the open-air method. If a man with a family of four could be sufficiently restored to health by an expenditure of about £25, so that his family could be kept off the parish for a period of, perhaps, two years or more, the expenditure was an excellent investment. While he did not think that the time had come for the provision of large sanatoria for consumptives he considered that in each large county or group of small counties a sanatorium should be provided for: (1) (*a*) The wealthy, (*b*) the artisan class and the friendly societies; (2) (*a*) for the poor who obtain recommendations, (*b*) for such pauper cases as the guardians select to send for treatment. As a part of the scheme it would be necessary for the guardians to provide a few cottage homes in situations where the occupants could engage in agricultural or horticultural pursuits.

Mr. Herbert, who has been recently appointed Local Government Inspector for the No. 10 District, said that his experience in London led him to believe that the proportion of cases of phthisis coming before the various Boards for relief was far in excess of that in the provincial districts. He believed that if those town-dwellers in the first stage of consumption could be induced to become agricultural labourers the prevalence of the disease would be reduced to a very large extent.

It is satisfactory to note that this subject is being faced with the careful consideration which its importance demands. Already several vestries, with Liverpool as the first, have made some provision for the treatment of their early consumptives. A conference of the London vestries to consider this question is announceed, and its decision will be awaited with interest, for by it many Boards of Guardians throughout the country will assuredly be influenced.

A CHESHIRE SANATORIUM FOR CONSUMPTION.

On October 6th the Earl of Derby, Vice-President of the National Institution for the Prevention of Tuberculosis, laid the foundation stone of a sanatorium for consumptives in Delamere Forest, Chester, which is to be established in connection with the Liverpool Hospital for Consumption. The sanatorium, which is situated in pretty, undulating country at an elevation considerably above the sea level, is the gift of Lady Willox and Mr. W. P. Hartley, of Aintree. It is to cost about £15,000, and, as there will be practically no accommodation except dining and sleeping rooms, an open-air life for the patients will be almost compulsory. Among others present at the ceremony were the donors, Sir John Willox, M.P., Sir William Mitchell Banks, Dr. Caton, and Dr. James Barr. The portion of the building at present being built is to consist of three detached blocks; the largest will contain the bedrooms for the patients; behind this and communicating with it only by a corridor is to be a dining hall; behind which, again, is a completely detached block containing the kitchens and servants' quarters. The portion of the sanatorium to be first completed is estimated to cost £7,000 and to provide 13 or 14 beds.

LITERARY NOTES.

THE recollection of the graphic letters which Mr. Treves wrote the BRITISH MEDICAL JOURNAL from Natal will induce many of our readers to look forward with particular interest to the publication of his book, *The Tale of a Field Hospital*, which Messrs. Cassell announce as nearly ready.

The *Times* not long sold a very large number of copies of the *Encyclopædia Britannica* on a system analogous to that which has long been followed by dealers in pianos. The *Daily Mail* has now taken up the running, and for a payment down of 5s. and a promise to pay 12s. a month for thirty months, supplies at once the whole twenty-five volumes bound in cloth; for 17s. a month for the same number of months the work can be had in a special three-quarter levant binding. It would be superfluous to praise the *Encyclopædia*, which is in its way a British institution. The only article which seems to be thoroughly out of date is that on vaccination, but its fallacies have already been sufficiently pointed out in these columns.

Among new works recently presented to the Académie de Médecine is a treatise on bilious hæmoglobinuric fever in Greece, by Dr. J. Cardamatis, of Athens. The work was originally written in Greek, but has been translated into French by the author. Another book presented to the same learned body contains the results of an investigation as to the predisposition of the Arab race to pneumonia by Drs. Testivent and Remlinger, medical officers of the French army stationed at Tunis. Arabs enjoy comparative immunity from typhoid fever, but on the other hand are particularly liable to pneumonia of a severe type which seems to be independent of climatic factors. The Academy also accepted a work on the surgical history of the naval war between China and Japan in 1894 and 1895, by Baron Y. Saneyoshi, a Fellow of the Royal College of Surgeons of England, Director-General of the Health Department of the Japanese Navy. The work, which was printed at Tokio in 1900, is illustrated with numerous plates showing the nature of the wounds, and contains valuable statistics as to the wounded at the great sea fight of Ya-lu.

The *Journal of Surgical Technicology* is the title of a new monthly periodical which has recently begun to appear in New York. According to the prospectus it is to contain each month a series of original papers on surgical technique, "the contributors being men of international reputation and especially identified with the subject on which they write." There also will be given an epitome of the new instruments and appliances invented throughout the world during the preceding month.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, OCTOBER 13TH, 1900.

HOSPITALS FOR PLAGUE.

No one who has acquainted himself with the precautions taken in the seaports of the kingdom against the inroad of plague can withhold a high meed of praise from the sanitary authorities. In all instances which have come under our observation they have been admirable. If watchfulness and inspection can ward off plague then there should be no question of its establishment in the United Kingdom.

This is the first line of defence, but when we come to study the second line of defence we are driven to ask, Is our hospital accommodation sufficient to deal with an outbreak? In London it is proposed to admit plague patients into the fever hospitals of the Metropolitan Asylums Board. Are the hospitals of the Board so ample that they can bear the extra strain, should it come? We are constantly hearing of cases of diphtheria and scarlet fever being refused admission owing to lack of accommodation, and experience elsewhere tends to prove that when plague prevails there is no diminution in the demand for admissions of cases of other infectious disease. How, then, are the extra numbers to be accommodated? We are afraid the Asylums Board is undertaking a duty which it would be unable to fulfil.

Moreover, it would, we believe, be unwise to use the ordinary fever hospitals for the reception of plague patients The tenacity with which the infection of plague sticks to a house is proverbial, and to expose any permanent building, especially a hospital, to such a contingency of infection is highly undesirable. Plague hospitals ought to be temporary structures, so that they may be destroyed or burnt when they are no longer of use for plague purposes. It would be imprudent and, in the long run, costly to turn fever hospitals into plague hospitals.

Again, should plague appear, whence are the nurses to be obtained? There are no doubt many heroic women willing to give their services, but there is no disease for which so many skilled nurses are required. Plague is a most deadly illness, but there is none in which careful nursing can effect so much. The supply of nurses must be ample. If the greatest good is to be done one nurse must be assigned for every two patients, and as the work is hard and a continuance on duty for more than eight hours in the day for any nurse, however willing, inadvisable even if possible, the question of the supply of nurses quickly becomes urgent. In plague the patient must be constantly watched. He must not be allowed to sit up or get out of bed for any purpose; the hypodermic syringe must be at hand for the immediate injection of ether or other stimulant; delirium must be controlled, vomiting and diarrhœa attended to, and all exertion by the patient restrained or forbidden, as death from heart failure is never far off. What are the provisions made for of nursing such patients should plague appear, in London for instance? Moreover, the question of the infection of the nurse is a serious one. It is true that but few nurses contract plague, although out of a staff of some six nurses in Hong Kong two died of the disease. As a precautionary measure nurses before attending plague patients should be treated by Haffkine's prophylactic fluid. Nurses ought to be asked to volunteer now, and the volunteers should be protected at once. It will not do to wait until they are called upon to nurse plague cases.

These are not small matters, and they require as careful consideration as the detection and isolation of plague patients. We may well ask where are our plague hospitals? Where are our nurses for plague patients should the disease appear amongst us? We have no plague hospitals; it is intended to use our fever hospitals, which are already insufficient for endemic ailments, and, moreover, are permanent buildings, and therefore unsuitable. Inspection, isolation, and detention are all necessary in the interests of public health, but at any moment it may become necessary to house and nurse plague patients. So far as we are aware these matters have not yet received from the authorities the attention they require.

We do not wish to be alarmist or to raise a scare. There is no reason for alarm, but there is every reason for the exercise of a prudent foresight. The case of plague which has occurred on the confines of Cardiff is particularly instructive. The patient reached the port not by sea but by railway. It is perhaps too much to expect, with the small number of plague patients we have yet had in the country, that railway inspection should be enforced. Still there is here an ever-present danger; ships are arriving on our coasts from almost all plague infected countries and the crews or passengers can reach almost any inland city, town, or village in a few hours. It is not only, therefore, at seaports that a strict watch must be kept. Medical practitioners in our most remote villages and districts may meet with cases of plague in their practice.

The captain of the ss. *South Garth* reported that the crew of the vessel were in good health and a clean bill of health was granted. This is a matter that demands inquiry. We have yet to learn who the fellow-passengers of this seaman during his long journey by train were, or if they have been placed under observation. Two or three members of the crew of the *South Garth*, who also journeyed to Cardiff, have been mostly placed under observation, and it would appear that once more the sanitary authorities have proved their efficiency, and that the country may rest assured that, so far as the admission of plague cases go, its interests are being well watched and cared for.

The Harveian Oration will be delivered at the Royal College of Physicians of London on Thursday next at 4 P.M. by Dr. T. Clifford Allbutt, F.R.S., Regius Professor of Physic, University of Cambridge.

THE BACTERIAL PURIFICATION OF SEWAGE.

THERE seems to be good reason to anticipate that before long the advocates for the bacterial purification of sewage will be divided into two rival camps, made up of those who maintain a preference for so-called "contact beds"—an expression which has come to be associated with the filling and emptying of bacterial beds—and of those who prefer continuous or intermittent downward percolation through a similar kind of material. The articles which have appeared in our columns during the earlier part of the present year,[1] and the further report on various installations which is concluded in the present number of the JOURNAL, together with the review of Dr. Rideal's work published some two months ago,[2] will enable the reader to form an opinion upon the point at issue.

Minor rivalries are already beginning to disappear. The advocates of "contact"[3] processes, unaided by previous breaking down of the organic matters by anaërobic fermentation, are beginning to be few and far between. It remains to be seen whether "contact" or "percolation" will survive in the interesting struggle for survival which is now going on.

The report concluded in the present issue deals only with percolation systems, and we believe it is one of the first monographs to give a clear indication of the radical differences which exist between the rival systems. These are already accentuated by the opposite conclusions, which have just been arrived at by the cities of Manchester and Leeds. The former, on the advice of its expert advisers, is about to commit itself to an expenditure of more than £400,000 upon a system which includes anaërobic fermentation followed by treatment in "contact beds"; while the latter, after a great expenditure in experiments, has shown a preference for continuous percolation beds.

It is unfortunate that all this independent work should have been done and action taken without there having been any possibility of referring the methods to a common standard of any kind. Ultimately, no doubt, the community generally will reap benefit from the experience which has been obtained at great cost by Manchester and Leeds; but, for all we know to the contrary, the work may be completed without any information being available as to the character of the various sewages in terms of any intelligible standard.

Since the appearance of Dr. Rideal's book we have had the benefit of the autumn science meetings. At Aberdeen, Professor Percy Frankland discoursed upon the backwardness of the State in providing funds for the solution of the sewage problem. We have no great sympathy with the views he expressed. In such cases the assistance of the State is only justified when State funds are bestowed in the right quarters, and these are not always easily discovered. Doubling or tripling the amount of money expended on any particular inquiry does not necessarily double or triple the value of the results obtained. There is every reason to believe that if a moderate sum had been put at the disposal of Pasteur he would have brought the whole process, at any rate in its scientific bearings, to a satisfactory conclusion. On the other hand, it is no disparagement to the members of the Royal Commission now sitting to say that they have spent more than would have been sufficient in the hands of Pasteur. Work that is of importance in the sense of its being either epoch-making or possessing finality of any kind has generally fallen to the lot of an individual.

So far the honours lie with the inventors—men whose position in the world of science gave them no title to State assistance. They have, as a matter of fact, placed the bacterial processes on the solid footing of practical appliances. In this particular matter of the bacterial purification of sewage, due recognition of the labours of inventors ought to be given to them. The report concluded in this number gives a description of what some of them have done. As experience is gained it will become easier to detect mistakes and provide remedies. An ever-increasing number of workers will be attracted to the task of perfecting what has already been begun. Later on the student of the latest textbook will almost have cause to wonder where the difficulties came in. The apparatus itself, even when it has been elaborated by engineers long trained in its use, will remain almost rudimentary in its simplicity. The natural operations which occur are familiar to everyone who has studied the matter, and the appliances required for utilising them are equally well known. It is this aspect of the problem that is one of its most interesting features. To the average official of a corporate body, from a city corporation to a rural district authority, and from a highly-paid city surveyor to a newly-appointed inspector of nuisances, an empty tank and a heap of cinders must convey the impression that their manipulation for the purposes of the bacterial treatment of sewage must fall well within the margin of their intelligence. Yet the city of Leeds has spent something approaching to the sum of £20,000 in experiments. The total cost of ringing the changes upon the many ways of disposing of these simple appliances must have been enormous in this country during the last two years, but as matters stand the process is probably fairly safe in the hands of the experts and the professional advisers of sanitary authorities. So many doubtful points are being cleared up that the number remaining is being constantly reduced.

Meanwhile we again urge upon everyone interested in this most pressing business that to make direct deductions from one sewage to another and to base arguments upon analogies which may be quite misleading is productive of endless mistakes and failures. When any sewage can be referred to a definite standard, enabling the chemist and the engineer to make a statement as to the kind and extent of the plant required for treating it, and when they can report with the same certainty as they do in the case of other long-established processes, then and then only can the sewage problem be spoken of as having been solved in the proper sense of the term.

[1] BRITISH MEDICAL JOURNAL, 1900, vol. i, pp. 24, 83, 154, 525, 1414.
[2] *Ibid*, 1900, vol. ii, p. 226.
[3] These processes are probably very complex, and include molecular disintegration and liquefaction of organic matter as well as oxidation.

A NEW out-patient department for mental disorders has been opened at the Charing Cross Hospital, and Dr. Percy Smith has been appointed Physician-in-Charge. Patients are to attend on Wednesdays at 9.30 A.M.

THE CONSTRUCTION OF HOSPITALS: PAVILION OR NON-PAVILION?

For many years it has been considered that the only way in which a hospital should be built was on the so-called "pavilion system." This has generally been supposed to require a large area of land, and as a result trustees of old hospitals (especially of those situated in large towns) who wished to rebuild have found themselves compelled to choose between acquiring an additional area of expensive land in the centre of the town or removing the hospital to some distance outside the town where land is cheap and plentiful.

Putting aside the important question whether it is better to have a hospital in the middle of a town where it is undoubtedly most convenient for everyone concerned or to remove it to the outskirts where there is better air and less noise, let us consider the case of a hospital which it has been decided to rebuild or enlarge in the centre of a city where land is dear and scarce.

This appears to be the condition of affairs at the Manchester Royal Infirmary. The trustees of this charity are anxious to build a larger and more modern hospital on the present site in the centre of the city. A special Committee was appointed to ascertain whether or not a hospital suitable in every way could be built on a plan other than the pavilion, as "it is uncertain whether the pavilion system is so absolutely necessary as it has been thought up to the present time." We are glad to notice that this Committee collected evidence from medical men rather than from architects, for a more valuable opinion can be given by those who have to live and to work in hospitals than from those who merely carry out certain requirements which have been put before them. Eleven of the most distinguished members of the profession in England and Scotland were appealed to, of whom three expressed no opinion "for various reasons." Of the remaining eight, according to the Chairman of the Committee, six arrived at the conclusion that a modern hospital up to date in every particular could be constructed on a plan other than the pavilion, and two only maintained their preference for the pavilion plan. It may be mentioned, in passing, that this does not seem to us to represent the views given quite fairly. According to the report before us, it would be better expressed by saying that two gentlemen were opposed to the pavilion system, and considered other methods of construction more satisfactory; two considered the pavilion system essentially the best, and the remaining four were of opinion that the pavilion was ideally the best method of construction, but considered it quite possible to build a satisfactory hospital on other than the pavilion system. In other words, two gentlemen were opposed to the pavilion system and six considered the pavilion system either essentially or ideally the best.

The question thus raised is extremely important, for if it be conceded that a non-pavilion hospital which is supposed to require less land can be built so as to be absolutely satisfactory that is as good as the best then one of the great difficulties of rebuilding large hospitals in the centre of towns is much diminished.

It will probably be granted that former estimates as to the number of patients who may safely be housed on a given superficial area of ground are too low, for the modern rapid lifts do away with the inconveniences pertaining to a many-storeyed building; and the more modern and probably more correct view that hospitalism is more a matter of actual contagion than of infection from the surrounding air would tend to lessen to a certain extent the large cubic capacity supposed to be essential for each patient. But, in spite of this, it is just as necessary as ever to remember that plenty of pure air and sunlight are even more necessary for the sick than for the healthy. Other essential points to be borne in mind in hospital construction are, ease of classification of patients in different departments ease of isolation either of a ward or of an individual, ease of administration and freedom from danger in case of fire.

Before discussing the best methods for fulfilling these requirements, it may be well to ask what types of hospital can be constructed, because there seems to be much misconception on this apparently simple point. Apart from all departments common to the whole hospital, such as administrative offices, lecture rooms, operating theatres, nurses' home, *post-mortem* rooms, clinical laboratories, and so forth, a hospital should be made up of a number of ward units, each of which should contain the ward itself, a small separation room, lavatories and waterclosets, ward kitchen, a nurses' room, store room, coal and dirty linen room, and possibly a patients' day room and a small laboratory. These units may be arranged in pavilions, in separate blocks, or in the corridor form.

In the pavilion system each unit is separated from the others save that there is a connecting corridor which is in some hospitals provided with windows on each side, so as to allow cross ventilation. Each ward is generally rectangular in shape, with windows at each side, and a row of beds on each side. But if the ward is circular, with, of course, windows and beds all around, the requirements of a pavilion hospital may be said to be fulfilled. The most extravagant pavilion system as regards use of land would have a ground floor only, but as we have already said, there seems to be no reason, save the risk of fire, why there should not be three or even more floors. Provided the above-mentioned arrangement of windows and patients is adhered to, it seems to be immaterial whether the connecting corridor is a single straight long one, with the wards giving off at right angles on one or both sides, or whether the wards are arranged like the arms of the letter H, or whether they radiate from a central administrative building, as at the new University College Hospital. On this pavilion principle almost all hospitals have been constructed for many years past, and in this way all the requirements laid down as essential are fulfilled, namely, fresh air, sunlight, classification of patients, isolation, and ease of administration. The objections raised to such a hospital unit, are: first, the ward may be too cold, but this is often due to an excessive window space or to bad heating appliances; secondly, that there is too much light; but if this annoys any particular patient it can be obviated by blinds, though the great disinfecting power of sunlight must not be forgotten: and, thirdly, that there are too many patients in each ward. It would probably be wise to provide not more than 24 beds as against the 30 or more generally put into such wards.

The next variety of hospital may be called the block system, in which each department—such as those for male medical patients, for children, for gynæcological patients, and so on—is represented by an entirely separate building unconnected by corridors, each building being more or less like a separate house, with a central staircase, the separate rooms being separate wards, without, as a rule, windows on opposite sides. On this principle several of the Continental hospitals are built, but much land is required, the ventilation is not necessarily better than or so good as in the earlier system, and for administrative purposes the method is very inconvenient.

We now come to the corridor hospital. In this there is generally a central corridor from which the wards are entered; these are generally arranged on each side of the corridor, not at right angles to it, but parallel. The result is that there are windows on one side only of each ward, the opposite side being the wall of the corridor; the beds are arranged on each side of the ward, so that one set look towards the windows, the other side towards a blank wall. Opening off the corridor are some of the other rooms pertaining to the ward unit, such as the nurse's room, kitchen, storeroom, etc., and sometimes even the lavatories and waterclosets. We have thus in most cases, instead of more or less disconnected buildings, a single large building in which it is difficult to differentiate at first sight between ward units, administrative offices, nurses' home, and other parts. In these buildings administration may be easy, and classification of patients may be easy, but the arrangement of the various parts of each ward unit is not simple; isolation of the ward unit is practically impossible, and certainly the admission of pure air and abundant sunlight is much more difficult than in the case of the pavilion ward, and in some parts may be almost impossible. It does not require any chemical analysis to prove this point; a keen sense of smell is sufficient. Let anyone possessed of such compare the air in the wards of a corridor hospital with that of a pavilion, and the difference in favour of the latter will be noticed at once.

There is one form of ward which has not been included in this classification because it seems to present no advantages. This is a more or less square ward, with windows on opposite sides, a screen down the centre, and four rows of patients, two with the heads towards the screen and two with the heads towards the outside walls. Such a ward is to be found in at least one of the new workhouse infirmaries in London; it is a method of packing as many patients as possible under one roof. The air in such a ward is generally bad, and is always close, and the number of patients in each ward unit is too great for purposes of administration.

It would seem, then, that there are practical objections to the block and corridor hospitals inherent and essential to these designs. It is, to say the least, difficult to bring any such charge against the pavilion hospital and its varieties; but the subject is well worthy of discussion, for it is not given to many men to have lived and worked in various types of hospital, and eminent as are the gentlemen who have given their opinions to the Special Committee of the Manchester Royal Infirmary, yet it would be prudent to carry the investigations further before definitely deciding to construct a hospital of a different type to that most usually considered the best. We do not say that a perfect non-pavilion hospital cannot be designed, but it would be interesting not only to see the plans, but even more to know the opinion of its staff a few years after it has been in use.

OBJECTIONABLE PAMPHLETS.

Many of our readers have complained to us that pamphlets of a very objectionable kind issued by American druggists are circulated through the post, and have asked whether it is possible to put a stop to the nuisance. We are informed that some time ago the President of the Royal College of Surgeons drew the attention of the Postmaster-General to a particularly disgusting pamphlet—not one of those now before us—and that in consequence representations were made to the Postal Administration of the United States, which took steps to prevent as far as practicable the despatch to Great Britain of the objectionable publication referred to. We must all feel grateful to the President of the Royal College of Surgeons for his action in this matter, as the result shows that both our own Post Office and that of the United States are willing to interfere when proper evidence is supplied to them. We shall be glad if any of our readers who may send us these objectionable pamphlets will do so as far as possible in their original wrappers, so that they may be submitted to the postal authorities in the shape in which they are received. We believe that several of these of which complaint has lately been made do not come from the United States, but are posted in London, but in order to be sure of this we must see the original wrappers. A serious feature of these circulars to which our attention has been drawn was that they contained a certain number of testimonials—we are glad to say only a few—given by medical men holding British qualifications, and the attention of the licensing bodies concerned has been drawn to the matter. Not all of these have probably had time to act, but we are glad to acknowledge the prompt and ready response of the Royal College of Physicians of Edinburgh to our appeal.

THE SENATE OF THE UNIVERSITY OF LONDON.

On October 9th Convocation added its quota to the new Senate in the shape of sixteen elected representatives. In Arts, Mr. Fletcher Moulton, F.R.S., Dr. McClure, Sir Albert Rollit, Dr. Napier, Dr. Benson, and Dr. Mears were elected. Of these Mr. Moulton, Sir Albert Rollit, and Dr. Napier are members of the expiring Senate; the other three are new. Dr. McClure, as Principal of Mill Hill School, will represent the schoolmasters; Dr. Benson was the unsuccessful candidate at the last election to the Senate, when Mr. Moulton was returned; he has, along with Dr. Napier, been especially identified with the "compromise" which secured the passing of the Act of 1898. Dr. Mears has served long on the Annual Committee, and is a governor of Middlesex Hospital. In Medicine, Dr. Barlow and Dr. Payne were elected. Dr. Barlow was a member of the Statutory Commission, and Dr. Payne was recently added by the Crown to the late Senate. In Law, Sir H. Cozens-Hardy, who was a member of the late Senate, and supported strongly the reconstitution scheme, was elected. In Science, Sir Philip Magnus returns to the Senate; and Mrs. Bryant is the first lady senator sent by Convocation. The first meeting of the new Senate will take place on October 24th.

DEATH CERTIFICATES AND UNREGISTERED PRACTITIONERS.

It is to be hoped that the Government, with the large majority at its back which it undoubtedly will possess, will

take steps by legislation to bring the matter of death certification within the lines of the recommendations made by the Select Committee which sat some years since, under the chairmanship of Sir Walter Foster, M.P. These recommendations would, if carried out, prevent the scandalous evil which exists at the present time, whereby bodies are buried upon certificates issued by other than duly qualified—that is, registered—practitioners. It should not be possible, as we have urged repeatedly, for such certificates to be accepted by district registrars. At the present time there are hundreds of deaths thus illegally certified greatly to the danger of the public and the detriment of statistics. An inquest was held lately, as we read in a report in the *Leeds Mercury*, which once more illustrates the evil of which we have written so often. The inquiry was as to the cause of death of a man named Robert Ross, of Dewsbury. The deceased, according to the evidence, had been in poor health, and was paying a visit to his daughter at Crackenedge. He became suddenly worse and "Dr. Haworth, a medical man, represented on his door-plate as 'M.D. of Canada,' was sent for 'because he was the nearest,' said the daughter, and prescribed." The man's condition became worse, and he died in a few days. A certificate of death was procured from "Dr. Haworth" who upon it described the cause as being due to "Hemorhage" (*sic*) of the lungs, in another place describing it as "hemorage." This certificate was refused by the registrar, and the coroner was communicated with and an inquest held. A solicitor who appeared for Haworth stated that his client had practised at Dewsbury for over twelve months, that he was an M.D. of Canada and well qualified, and that he had given previously four death certificates which had been accepted by the registrar. The coroner in his remarks to the jury said that the registrar had done rightly in refusing the certificate in this case, the giver not being "a properly qualified medical man"; he should report the matter to the Registrar-General. He also pointed out that the certificate was both wrong in form and ungrammatical. The verdict of the jury was in accordance with the medical evidence, which was to the effect that death was due to hæmorrhage from the stomach secondary to ulceration. No certificate of death, or, indeed, any certificate which is required by any Act of Parliament, can be valid if not signed by a registered practitioner. No irregular certificates should be accepted by any Government authority. Many registrars do, however, accept such, evading their responsibilities by treating them not as "certificates," but as information, and marking in their registers "uncertified." This system should not be allowed to continue. It was never contemplated by the Act under which their authority lies; in the interests both of the public and the medical profession it should be strongly reprehended by the Registrar-General. It will be interesting to our readers to know that in August, 1898, a Dr. Haworth, calling himself M.D. Canada, was prosecuted under the Medical and Apothecaries' Acts at Accrington by the Medical Defence Union. The penalties of £10 and £20, with costs, were inflicted. Neither of these amounts were paid, as Dr. Haworth absconded after distress was levied, and a warrant was issued for his arrest. Up to this time Dr. Haworth has successfully evaded arrest, but inquiries will now be made, and should it turn out that the practitioner at Dewsbury is the former practitioner at Accrington, the necessary legal results will follow.

NEW SCIENTIFIC LABORATORIES AT KING'S COLLEGE, LONDON.

The new laboratories at King's College, which have been in course of construction during the past year, are finished and ready for occupation, and, as already announced, the opening ceremony has been fixed for Tuesday afternoon, October 30th. Lord Lister, P.R.S., will deliver an address at 5 P.M., after which the laboratories will be open for inspection. The Lord Mayor and Sheriffs have signified their intention of being present. When the Council of the College decided to take the important step of extending their laboratory accommodation they had to face an expenditure of many thousands of pounds, and, although a considerable sum has already been subscribed by friends of the College, much has still to be raised, and it is hoped that those interested in higher education may see their way to assisting the Council to defray the debt. It is hoped that funds also may be available from the reconstituted University of London for the same purpose. King's College may be now congratulated on possessing laboratories second to none in the kingdom; they are spacious and fully equipped for teaching and research, and the professors have spared no pains to have fittings and apparatus of the most recent and approved kind. The movement for the extension of the College primarily arose from the difficulties experienced by the Professors of Bacteriology and Physiology in dealing with the great increase in their classes which has occurred during recent years, and at the same time to afford space to those who wish to prosecute original research. The already spacious bacteriological laboratory has been nearly doubled in size, and a complete bacteriological library added to it. The physiological laboratory is completely new, the rooms are handsome, well lighted, and fitted in a most complete way. The old physiological laboratory has been absorbed by the extension into it of the anatomical department, which was previously much cramped for room. The museum has been completely rearranged; the old museum now becomes the architectural department. Geology and botany are provided with new laboratories, and other departments which have benefited by the change are physics, materia medica, and State medicine. King's College has shown that it aspires to take its due place in the new London University by thus proving that it is in earnest, and does not intend to be behindhand. The modern idea of teaching is to make it as practical as possible, and this idea can only be realised by having adequate, and what may seem at first sight lavish, accommodation in the shape of laboratories. We are requested to state that many thousands of invitations have been issued for the opening ceremony, but if any gentleman interested in these matters has been omitted from the list an invitation ticket can be obtained by writing to the Secretary of the College.

A FOREIGN VIEW OF THE PLAGUE IN GLASGOW.

Professor Zabolotny, of the Imperial Institute of Experimental Medicine, St. Petersburg, who in recent years was a member of the Russian Expedition for the Study of Plague in India, Arabia, and Eastern Mongolia, has recently spent several weeks in Glasgow on behalf of his Government. Before leaving on October 6th he conveyed to the medical officer of health his conclusions regarding the outbreak there, and we are indebted to Dr. Chalmers for the opportunity to reproduce them here: 1. The epidemic in Glasgow, when compared with that of India, China, and Africa, and with those in Europe of recent years (Oporto, Kolobowka), is of the most mild description. 2. The extension of the epidemic is not great and the mortality quite insignificant, which may be attributed to the medical and sanitary measures which have been here practised with so much energy. 3. For the most part bubonic cases, which are less dangerous from the point of view of epidemiology than the pneumonic forms, are met with. The latter are excessively contagious, because the sputum of the sick person teems with plague bacilli. 4. Since in the bubonic form the sickness does not spread except by contact with the skin, the measures of isolation and cleansing of linen and clothing play a most important

part in prevention. 5. For persons in contact with the sick the best method of protection is by preventive injection with serum (10 to 20 c.cm.) as is practised in Glasgow. 6. Treatment of the patients is most effective when the serum is injected in large doses (60 to 120 c.cm.) intravenously. 7. The *post-mortem* examinations of fatal cases have presented a picture of protracted illness (suppuration, *nodules pesteuses*, mixed infection), and not that of an acute malady terminating fatally in from two to three days.

SANITATION AT WINDSOR.

Despite the existence of a Sanitary Committee of the Town Council, and its recognised officials, it would appear that the representations of the Medical Officer of Health and the Inspector of Nuisances have till quite recently been largely controlled (or censored) by the Town Clerk. This has militated against the true interests of the borough. Exactly how the blame is to be apportioned is not at once evident. The Local Government Board, in consequence of representations made to it some time ago, directed Dr. Bulstrode to report upon the sanitary condition of the borough of Windsor and upon the character of the Town Council's administration. He has recently presented a report in which there are noted certain facts which go far to prove that the Sanitary Committee has been dilatory in acting upon recommendations made to it and weak-kneed in enforcing necessary alterations, and that the Town Clerk, acting upon his own discretion in a manner which Dr. Bulstrode appears to consider inadvisable, has omitted portions of the reports of the Medical Officer of Health before placing them in the hands of the Town Council. It would appear that Dr. Casey, the Medical Officer of Health, has not received much encouragement to aim at a high standard, and that Mr. Mellows, the Inspector of Nuisances, has lost zeal. The sanitary condition of Windsor has twice previously formed the subject of departmental inquiries, once in 1858 and again in 1886. Dr. Bulstrode finds that many of the undesirable factors found at the latter investigation are either still in existence or have only quite recently been removed. The water supply of the town is not above criticism, as it is obtained from wells so near the river that during severe floods Thames water may gain access to them, and the sewage system was at the time of the inquiry so inefficient that during the greater part of every twenty-four hours the main outfall sewer was made to act as a storage tank whereby the sewage was periodically dammed back beyond the barracks. The sewage farm is worked on antique methods, and at the time of the inquiry there was no refuse destructor. With regard to the houses in the poorer part of the town there was much to condemn—damaged and leaking roofs, broken ash-pits, insanitary w.c.'s, etc. Again, Windsor is devoid of any isolation hospital except a "tin tabernacle" erected during the small-pox epidemic of 1893, and reserved entirely for the admission of small-pox patients. This want is, however, due very largely to the M.O.H., who apparently has no very strong belief in the value of isolation hospitals. Another great defect is found in the existing by-laws of the borough relating to matters of hygiene. The majority are so antiquated that their very existence has been forgotten, and consequently their provisions are not enforced. Thus with regard to common lodging-houses, slaughter-houses, dairies, etc., there was a complete ignorance on the part of many of the persons responsible of the existence of any such by-laws, and the officials of the Council were unaware of the powers of which they were legally possessed. It is satisfactory to hear that since Dr. Bulstrode's visit these by-laws have been found, reprinted, and copies issued to the various trades affected. The Council has been awakened, somewhat rudely one fears, and has instituted quite an array of reforms, to which they proudly point in an appendix to the report, but it is sorry reading to find that its newly-born ardour has been damped by the magistrates, who dismissed with costs against the Corporation two test cases brought by the Council. It is sincerely to be hoped that the various authorities concerned will in future work more harmoniously together, and act with greater celerity and determination. Dr. Bulstrode, however, appears to think that there is wanting at Windsor the initiating and guiding force necessary for vigorous administration.

"P. S." ON THE BIRTH-RATE.

"P. S.," who a year ago wrote a letter to the *Times* rejoicing at the declaration of war by the Boers, foretelling the speedy extinction of British rule in South Africa, and deriding the incompetence of British officers and the physical feebleness of the British soldier, has written another letter to our contemporary, from which it appears that the writer is a native of Colesberg. His first letter displayed a very un-Christian spirit of hatred of the Briton, and though he admits himself to be disappointed with Europe, and in particular will not trust himself to speak of Germany, he is as boisterous and aggressive as a year ago, and not at all deterred by the events of the war from again attempting to prophesy. The safe retreat from which he launches his thunderbolts, and in which he weathered the storm of the war, must be somewhere in Europe, perhaps even in this country. He naturally, therefore, considers that Mr. Kruger has shown "a grand example, and has proved in his own person that he would rather leave the land of his birth than submit to live in peace and luxury under the British flag." No doubt these letters—the vapourings of a conceited old man—are not in themselves of very much importance, but as he disclosed last year the hopes of the Boers, so this year he makes a point which is worthy of note because it is true as statistics: "You cannot," he writes, "swamp us by sending your people to settle in South Africa. You have lost the power to colonise, as is evidenced by the vast reduction in the number of emigrants from your shores. Your race has not vigour, virility, or virtue to produce children as formerly, whilst we Africanders can and do increase and multiply, and can swamp you by that means alone in a very few years." It is difficult to understand why the fact that the birth-rate is declining very steadily and rather rapidly in England has attracted so little attention from statesmen and writers on social questions. The last report of the Registrar-General showed that the birth-rate for 1899 was 29.6 per 1,000—almost the same as the rate for 1898, when it was 29.4 per 1,000. These are the lowest rates on record in this country, and have come after a long period of almost continuous decline. In 1876, since which year the registration of deaths has been effectually carried out, the birth-rate was 36.3 per 1,000. There has thus been a fall of 20 per cent. within the experience of a generation. In some of the large towns the fall in the same period has been much greater; in certain places it has amounted to 40 per cent. In Germany, in 1897, the birth-rate stood at the same level as the birth-rate in England in 1876. The new German *Welt-politik* is not unconnected with this high rate. In France the birth-rate is low and the population practically stationary. What surprises the census to be taken next year in this country may have for us it would be rash to prophesy, but it will not be surprising if it appears that the rate of increase of the population has again become slower. We may therefore commend to Imperialists the warning which M. Delcassé, the French Minister for Foreign Affairs, uttered some time ago to his countrymen when he pointed out the incompatibility between a population which does not augment and an expansive colonial policy.

THE SALE OF CARBOLIC ACID.

As pointed out in a recent issue of the British Medical Journal, carbolic acid has lately been included among "scheduled poisons." This very desirable result was attained at the instance of the Pharmaceutical Society by an Order of the Privy Council, which was published in the *London Gazette* for July 31st, and came into force on September 2nd. The importance of this new regulation is so obvious that we must take exception to the inefficient means which have been adopted to bring the rule before the notice of those upon whom it is to have a material effect. The necessity for further advertisement is clearly shown by what took place at an inquest at St. Bartholomew's Hospital on September 27th. According to a note which appeared in the *Morning Advertiser* for September 28th, an oilshop keeper was asked why he sold a certain poison—to wit, carbolic acid—in an ordinary whisky bottle with no poison label. He said that there was no need to put on any such label, and denied any knowledge of the fact that carbolic acid was a "poison" in the legal acceptation of the term, although the Order relating to it had been in force since September 2nd, 1900, and had been published in the *London Gazette* for July 31st. It is clear that unless fresh Orders relating to the sale of poisonous substances are brought to the notice of those who have been in the habit of selling them without restriction, the public must stand to lose the benefits which the Pharmaceutical Society are able to confer by entering fresh poisons upon the schedule. The old maxim *ignorantia legis non excusat* can hardly be applied to cases of this kind. Here was an oilshop keeper who had probably been in the habit of selling carbolic acid, whether in the pure state or combined with other substances for years; an Order declaring it a poison is published in the *London Gazette*, which neither he nor any person in his position ever reads or sees. Surely it would not be impracticable for the Privy Council to publish their Orders in some of the daily papers, so that they may reach and be read by the parties affected by them.

HAPPY-GO-LUCKY INSANITATION.

It is said that the city of Kilkenny holds a record almost unique in the annals of sanitary administration in Ireland. With a population of 11,000 inhabitants the Urban Council, which is the sanitary authority, has over and over again neglected, in spite of protests from successive Local Government Board Inspectors, and of reports from their own medical officers of health, to establish either a proper water supply or a system of sewerage for the city. With a record of 300 cases of diphtheria in the past year and with enteric fever endemic it was left for a private individual, Mr. Bor, the agent of the Bank of Ireland in the city, whose child had died from diphtheria, to impeach the sanitary authority for the neglect of duty, a power which he possessed under Section xv of the Public Health (Ireland) Act, 1896. Two officers of the Local Government Board in Ireland, Dr. Edgar Flinn, Medical Inspector, and Mr. P. C. Cowan, Chief Engineering Inspector, have recently held an inquiry, and although the memorial calling for the inquiry was signed by the Marquis of Ormond, the Protestant Bishop of Ossory, and many of the leading residents, merchants, and traders in the city, the Urban Council as a body took no part in the proceedings, though the Mayor attended and declared that the water supply was good. Dr. James, one of the medical officers, stated that the wells were contaminated by sewage matter and drainage from overcrowded graveyards, and that the town was in a dreadful state for want of proper sewers and water. Dr. Flinn quoted from a report made to the Local Government Board by one of its inspectors eight years ago the statement that "in almost everything which is needed to make a town healthy Kilkenny is deficient." It was stated in evidence that the reports of the medical officers and of the inspectors of the Local Government Board had been merely marked "read" from time to time, and that nothing had been done and no rate had been struck for sanitary purposes. Mr. Cowan might well say that he had never known such a happy-go-lucky way of managing a city. Dr. Flinn in closing the inquiry said the apathy shown by the Urban Council was remarkable, and probably most people will agree with him. We know nothing about the political opinions of the Mayor and Corporation, but it almost seems to be a case for a dose of "strong government," since they have neglected advice, reports, and warnings for over a quarter of a century.

THE DEFENCE OF THE PEKIN LEGATION.

The long account which the *Morning Post* has published from its correspondent in Pekin of the defence of the Legations contains a brief statement of the medical arrangements made. Dr. Wordsworth Poole, C.M.G., the Physician to the British Legation, was appointed chief medical officer, and with him was associated Dr. Velde, Physician to the German Legation. Dr. Dudgeon, an old resident of Pekin, was appointed sanitary officer along with Drs. Inglis and Ingram, American medical missionaries. Dr. Lippet was medical officer with the American guard until he was wounded on June 29th by a stray bullet which fractured his thigh. He was succeeded by Dr. Lowry. At the French Legation was Dr. Matignon, while Dr. Nakagawa, of the Japanese Army Medical Department, was attached to the Japanese detachment. In the hospital itself was Miss M. Fuller, a lady physician of the London mission, Dr. Saville and four American lady practitioners, Drs. Gloss, Leonard, Mackey, and Martin. A corps of nurses and assistants was organised, and included Nurse Lambert and Deaconess Jessie Ransome, of the Church of England Mission; several Sisters of Charity from the South Cathedral; several Russian ladies, including Madame De Giers, Mrs. Woodward, an American lady, a guest of the Minister; the sick-berth steward of H.M.S. *Orlando*, and an American and Italian sick-berth steward. The medical staff and nurses had much work to do for the Europeans within the Legation who first numbered 600 were gradually reduced to a little over 400. The British losses, the correspondent states, were among the 82 Marine Light Infantry 3 killed and 16 wounded; among the civilians 2 killed and 7 wounded. The Russian contingent consisted of 84 of whom 4 were killed, 14 wounded and 2 died from sickness, while 1 civilian was killed and 1 wounded. The American force numbered 63, of whom 7 were killed and 10 wounded, and they had 1 civilian wounded. The German contingent numbered 50, of whom 11 were killed and 16 wounded. The French contingent numbered 45 of whom 11 were killed and 21 wounded, while among the civilian Frenchman 3 were killed and 4 wounded. The Austrian contingent numbered 35, of whom 4 were killed and 10 wounded, and 1 civilian was wounded. The Italians numbered 31 of whom 7 were killed and 12 wounded. The Japanese numbered 29 of whom 5 were killed and 13 wounded, while they had 5 civilians killed and 5 wounded. Among the Chinese converts the casualties amounted to 10 killed and 16 wounded.

EPSOM COLLEGE.

For some years past the boys in this school have done themselves no little credit in various public examinations, and the work of the staff continues to yield excellent results. In the last five years the school has gained twelve open scholarships at the Universities for classics, mathematics, history, and natural science. One boy has passed direct into Woolwich and passed out in the Engineers. No fewer than 73 boys have passed the London Matriculation, 21 boys have passed the whole of the preliminary scientific examination at one time direct from the senior modern form, and 21 others have also passed one

part of the same examination; 3 boys have passed the intermediate examination for the degree of B.Sc., and 2 others successfully prepared for the first conjoint examination. Each summer several whole forms enter for the higher and lower certificates of the Joint Universities Board. Thirty-six higher certificates (with 4 distinctions) and 144 lower have been won, and in this period the total failures in these whole forms amounted to 50 only. In making such a summary as this it is useful to turn to the doings of boys who have left the school. Amongst other distinctions gained we may notice a first and a second class in Classical Moderations at Oxford, and a second in the Classical Tripos at Cambridge; three first-classes and five second-classes in the Science Tripos at Cambridge, besides honours in Law and in History; the "Sword of Honour" at Sandhurst; a Gold Medal in the Honours Examination at the Final Examination for the M.B.Lond., and many other distinctions in various medical examinations. There is scarcely a hospital in London at which important posts have not recently been held or are now held by former members of the school, and those who have proved failures after leaving the school may be counted on the fingers of one hand. The pupils of this College, being drawn from all classes of society, a breadth of educational and school life pervades the whole school, with results much to the advantage of the students in their after-life.

THE ATTACK ON DR. CLARKE, OF LEICESTER.

DR JULIUS ST THOMAS CLARKE, one of the oldest practitioners in Leicester, Surgeon to the Leicester Infirmary, and widely known in the town and district, was on Monday morning shot in the back by a man discharged from the Borough Lunatic Asylum a few weeks ago. Dr. Clarke had left his house in the London Road, Leicester, and had only walked a few hundred yards when a man came up behind him as he had stopped to look at a novel street sweeping machine. The man fired a shot from a revolver at a distance of three or four paces. Dr. Clarke was hit by the first shot, reeled, and nearly fell; the man then fired three more shots. Two constables who witnessed the attack immediately closed with the assailant, and he was removed. Meanwhile, Dr. Clarke, who was able to walk with assistance, was helped to his own house not many yards away, and several of his colleagues and his son, Dr. Astley Clarke, were soon in attendance. It was found that one shot only of the four fired had struck him, and the wound of entrance was found to be slightly above the sacrum a little to the left of the middle line. There had been some loss of blood, and he was suffering considerably from shock. Later in the day Mr. C. J. Bond, assisted by other surgical colleagues, made an exploration. The bullet, from the size of the revolver (an antiquated weapon), was judged to be of about 0.200 calibre. A probe could be passed freely above the sacrum and past the vertebral bodies, and the track of the bullet appeared to traverse the pelvis. As there were no symptoms indicating injury to any of the more important pelvic contents, it was decided to explore no further. The prisoner was brought up before the borough magistrates on Tuesday, and charged with attempted murder. He proved to be one Sydney James Kirby, aged 46, described as a dairyman. He is also a retired cattle dealer, and is in good circumstances. Mr. M. W. Williams, of London Road, gave medical evidence, and the police constables described the attack. The accused was remanded. It appears that Kirby had been in the Borough Lunatic Asylum on more than one occasion, and he was discharged from there six or seven weeks ago, the medical superintendent and the Asylum Committee considering him quite recovered. Dr. Clarke had once signed a certificate of lunacy in his case, and he had in consequence frequently threatened Dr. Clarke, but the threats were not taken seriously by his relatives or the asylum authorities. They had, however, caused Dr. Clarke's family much uneasiness. We are glad to learn as we go to press that Dr. Clarke has had no bad symptoms. The Roentgen rays show that the bullet is in the pelvic brim.

LOCAL AND TEMPORARY RANK IN THE FIELD.

WE have on several occasions drawn attention to the anomalous—and indeed scandalous—fact that, while we had an army of 200,000 men in the field in South Africa, there was for that immense body only one officer of the rank of surgeon-general. He, moreover, in accordance with a regulation forced on the service by petty military jealousy, was relegated to far distant lines of communication, instead of being at the right hand of the Commander-in-Chief. There ought to have been half-a dozen surgeon-generals in the field, with the senior at headquarters. But, worse still, those called upon to discharge the duties of surgeon-generals did not, in accordance with the invariable custom in other branches, receive even local and temporary rank. After protests, such rank has lately been given to certain principal medical officers, but it is, we learn, still withheld from principal medical officers of divisions of 10,000 men or upwards, who are merely lieutenant-colonels instead of colonels. Such deprivation of the usual status and emoluments of chiefs in the field is grossly unfair to the medical service, which in such respects is handicapped as no other branch of the army is. This is a vital question, which must be fully considered in any coming reorganisation of the Army Medical Service.

THE LONDON COUNTY COUNCIL.

THE London County Council resumed its sittings on October 9th. Mr. Dickinson, the Chairman delivered the annual address, reviewing the Council's work during the preceding year. He made special allusion to the increased activity of the Housing Committee, and expressed the opinion that overcrowding and its accompanying misery were potent factors in the production of lunacy, remarking that when human beings ceased to live as befits human beings, human minds ceased to be human minds. The Public Health Committee and Technical Education Board presented a joint report in reference to the Board for Examination of Sanitary Inspectors, suggesting that the Local Government Board should be invited to sanction the appointment by the County Council of five members of that composite body. The Public Health Committee further reported action taken during the recess with a view to restrict the spread of plague in London should an introduction of that disease into the metropolis unfortunately occur. As is more fully set out in another column, the Council has made provision for the isolation of "suspects" or "contact" cases, a function it may well assume as a central health authority for London. It is satisfactory to learn that a special inspection of common lodging-houses, shelters, and seamen's lodging-houses made last month discovered no single case in London that even gave rise to a suspicion of plague.

THE ST. JOHN'S HOSPITAL, LEWISHAM.

THE handsome building which has been erected on Morden Hill, Lewisham, in connection with the work of the nursing sisters of St. John the Divine, is now nearly completed, and has already commenced to receive in-patients. The money expended upon the building and furnishing appears to have been judiciously used. The wards, including private rooms for special cases, will contain forty beds, and as the work of the sisters, whose headquarters are at South Kensington, extends even to Deptford, it will be seen what a boon these forty beds may become. There is an able and experienced medical staff, including several

consultants, attached to London hospitals, so that those admitted to the wards will have the full benefits of hospital treatment. We regret, however, to have to add that on one important point a grave mistake is about to be made, as announced in the local press, in the starting of an out-patient department on Thursday afternoons for the supposed convenience of shop assistants and others, who are free from work in consequence of early closing on that day. It is intended, we understand, to follow the bad example of Guy's and charge each patient 3d. for medicine. As there is no provision made in the hospital buildings for an out-patient department, and as only one of the five medical officers—and that the most junior—can spare time to attend to out-patients, it may not be too late to have this matter reconsidered. If the plan is persisted in, it will surely alienate the sympathies of surrounding practitioners. Not only is there no poverty-stricken district in the immediate vicinity of the hospital, but the neighbourhood generally is well supplied with dispensaries, which can do out-patient work much more satisfactorily than their proposed threepenny rival. The staff, both consulting and ordinary, owe it to their profession and themselves not to let their new hospital degenerate.

THE NEW PARLIAMENT.

Since the last issue of the British Medical Journal Dr. Farquharson and Sir Walter Foster have been returned by substantial majorities for the constituencies for which they had previously sat. Politics apart, it will be generally felt by the profession that the return of these two members, who have done so much valuable work for the profession and for the public health, is a matter for congratulation. The other members of the medical profession who have been returned in Great Britain are: Mr. R. J. Price, who, like Sir Robert Finlay, who is also returned, long ago deserted medicine for the Bar; and Dr. Rutherfoord Harris, better known perhaps as a financier than as a medical man. In Ireland Dr. Ambrose, Dr. MacDonnell, Dr. Tanner, and Mr. John Dillon, who, it may not be generally known, is a member of the medical profession, have also been returned.

THE EAST SUFFOLK HOSPITAL, IPSWICH.

Dr. W. A. Elliston, President of the British Medical Association, has resigned the office of Surgeon to the East Suffolk and Ipswich Hospital. Dr. Elliston, who has been a member of the staff for twenty-five years, was until his resignation the senior surgeon. Mr. Branford Edwards, who stood next to Dr. Elliston in order of seniority, has resigned also after a long period of service. We gather from the *East Anglian Daily Times* that these resignations are both due to the desire to give to younger men the opportunity of reaping the advantages attached to the holding of hospital appointments. By a rule adopted recently, members of the medical staff will in future be appointed for ten years, but will be eligible for re-election. On October 9th Mr. Thomas Warner, M.D.Lond., F.R.C.S.Eng., and Mr. Francis Ward, M.D.Edin., were elected to the vacant posts.

ABANDONMENT OF THE INTERNATIONAL CONGRESS OF GYNÆCOLOGY AND OBSTETRICS IN LONDON.

We are requested by the Council of the Gynæcological Society to state that the Secretary of the Society has received a letter from Dr. Jacobs, of Brussels, Permanent Secretary of the Congress, expressing, in the names of the foundation members of the Congress, their thanks to the Society for the efforts made with the view of holding the next session of the Congress in London. In consequence of circumstances which have arisen, and with which our readers are familiar, the founders now find it impossible to ask the British Gynæcological Society to continue the organisation of the Congress in London in 1902. They, however, express the wish that at some future time the Congress may meet in London.

THE CHAIR OF CLINICAL MEDICINE IN GLASGOW UNIVERSITY.

Dr. Samson Gemmell has been appointed Professor of Clinical Medicine in the University of Glasgow, the vacancy having occurred through the transference of Professor McCall Anderson to the Chair of Practice of Medicine. Dr. Gemmell is a distinguished graduate of Glasgow University, where he took the degree of M.B., C.M., with honours in 1872, and that of M.D. in 1880. After graduation he was Resident Assistant to Sir William Gairdner in the Royal Infirmary, and subsequently for three years Resident Physician in the Glasgow Fever Hospital. For eight years he discharged the duties of Assistant to Professor Gairdner in connection with the Chair of Practice of Medicine in Glasgow University, and he was also Clinical Assistant to Sir William in the Western Infirmary for four years. In 1887 he was appointed one of the Physicians to the Royal Infirmary, and conducted classes on clinical medicine in that institution. Five years later he became Physician to the Western Infirmary, a position which he has held since. Dr. Gemmell has also filled the Chair of Practice of Medicine in Anderson's College Medical School since 1880. He has thus during the whole of his professional career been intimately associated with the medical schools of Glasgow, and for many years has been one of the most popular and successful of medical teachers.

THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

The annual meeting of the Royal College of Physicians of Ireland will be held on St. Luke's Day (Thursday, October 18th) for the election of the President and officers for the ensuing year. Sir Christopher Nixon, M.D., has been nominated for the position of President. The annual dinner will take place in the College Hall on the evening of St. Luke's Day.

The first meeting of the Society for the Study of Disease in Children will be held at the house of the Medical Society of London on Friday next at 5.30 P.M., when cases will be shown by various members.

We regret to have to record the death of Mr. J. F. France, F.R.C.S. Mr. France was born in 1818, and was at one time Ophthalmic Surgeon to Guy's Hospital, but had long retired from practice.

The twenty-fifth year of the professorship of Professor Senator was celebrated in Berlin on September 30th. Representatives of various societies made congratulatory speeches, and Professor Lesser, as Senator's oldest pupil, presented a *Festschrift* containing seventeen papers by past and present assistants.

The Odontological Society of Great Britain is now prepared to receive applications for grants in aids of scientific researches in connection with dentistry. Full particulars can be obtained from the Honorary Secretary of the Scientific Research Sub-committee, Odontological Society, 40, Leicester Square, London, W.C.

The University of Bordeaux has authorised M. Le Dantec to give a course of lectures on Tropical Medicine. Similar provision has been made by the University of Utrecht, in which Dr. J. H. Kohlbrugge is the lecturer.

THE PLAGUE.

THE DEATH FROM PLAGUE AT CARDIFF.

A SEAMAN died on October 4th, of plague, at the Isolation (Plague) Hospital in Cardiff. The man, named William Garnett, was a donkey man on board the ss. *South Garth*, which left the port of Rosario, on the River Plate, about the beginning of September. Plague is prevalent at Rosario and in several other South American towns, but although several of the crew were ill on the way to England, no suspicion of their illness being due to plague was entertained. The first British port at which the vessel called was King's Lynn, in Norfolk. There a member of the crew was so ill that he had to be sent on shore, when the nature of the illness was diagnosed as typhoid. The vessel then proceeded to South Shields, on the Durham shore of the Tyne. At South Shields Garnett felt ill, so ill, in fact, that although he contemplated making a return voyage in his ship, he left and took train from Newcastle to his home in Glamorgan Street, Pontcanna, close to, but outside the boundary of Cardiff. He arrived there on September 27th, and was immediately seen by Dr. John Evans.

On October 2nd the symptoms became so suspicious that that Dr. Evans notified the illness to Dr. Pritchard, the medical officer of the Llandaff and Dinas Powis Rural District Council. Dr. Pritchard when he saw the case immediately communicated with Dr. Walford, Medical Officer of Health for Cardiff, and with Dr. Savage, Superintendent of the Cardiff and County Bacteriological Laboratory. An examination of the fluid from a bubo in the groin was made locally, and specimens sent to the Local Government Board. The patient was removed to the isolation hospital, but he succumbed on October 4th.

A *post-mortem* examination was made, and specimens sent to Dr. Klein, who by bacteriological investigations confirmed the diagnosis of plague, the same conclusion being arrived at by Dr. Savage at Cardiff. When plague was suspected immediate precautions against infection were taken. The patient's clothes and the bedding at his house were burnt, the furniture and rooms were disinfected, and all persons who had been in contact with Garnett during his illness were placed under observation. The portion of the hospital to which he was removed was completely isolated, and the nurse who volunteered her services was, and is still, placed in quarantine.

The Local Government Board sent down Dr. Buchanan, one of their medical staff, to institute inquiries at Cardiff; and it is satisfactory to know that Dr. Buchanan's report as to the immediate steps taken, and as to the general sanitary arrangements adopted was highly commendatory.

The Local Government Board has also made inquiries concerning the nature of the illness of the man who was put ashore at King's Lynn. The result of the inquiry has been that the original diagnosis of typhoid has been confirmed.

We are indebted to Dr. Plowright of King's Lynn, who in response to our inquiry has sent the following particulars of this case:

G. S., third engineer on board the ss. *South Garth* which left Rosario on August 20th, and arrived at King's Lynn on September 12th, was taken ill about September 13th, and applied to a medical practitioner in the town who recommended him to go into the West Norfolk and Lynn Hospital. This he did on September 15th, stopping on board his ship in the meantime.

His temperature was 105° a few hours after admission. During the first week of his illness it fell gradually to normal; during the second week it was subnormal for the most part, but rose to 100° on three separate occasions. During the third and fourth weeks it has been subnormal.

Being an Italian who speaks English only imperfectly it was not easy to make much out, but he complained of his head and of "plenty pain all over." On September 17th he became so delirious and violent that he had to be removed to a special ward. He continued in this state for about a week, his temperature gradually falling, but still having delusions about being on board ship. He had no glandular enlargement, no pneumonia; his bowels were confined; there was no rash.

At the present time (October 10th) he attributes his delirium to having taken a "bottle of quinine" while on board ship. He denies that any other cases of illness occurred on board the vessel on her voyage between Rosario and King's Lynn. At the present time he is in the King's Lynn Infectious Hospital. He was seen on Monday last by Dr. Manly, Local Government Board Inspector, with Mr. S. M. W. Wilson, the Medical Officer of Health, under whose care he is.

GLASGOW.

Except for the fact that another of the patients suffering from plague has died in Belvidere Hospital on October 6th, making 5 deaths in all since September 24th, there is nothing new to report. There remain 20 cases of plague, 2 doubtful cases, and only 6 "contacts." The city authorities are exercising the greatest possible care and vigilance, and fortunately with success, as in spite of various alarms and rumours of new cases, it is now almost three weeks since the last patient was admitted to hospital with this disease.

MEMORANDUM ON PLAGUE BY THE LOCAL GOVERNMENT BOARD IN ENGLAND.

In a memorandum headed "Plague Memorandum," signed by Mr. W. H. Power, Medical Officer to the Local Government Board of England, attention is called to the order recently issued by the Board requiring immediate notification to the medical officer of health of the district, and by him to the Board, of every recognised case of plague. The memorandum also gives a short account of the symptoms of plague, and warns medical men concerning such forms as "pneumonic," "septicæmic," and "ambulant," types of plague in which buboes are absent or not a prominent feature.

Bacteriological Examination of Suspected Cases.

The Local Government Board, with the view to assist in the identification of plague newly developing in one and another district, has arranged for bacteriological testing, without cost to the local authority, of material from the earliest suspected case or cases in the district. This material can be received only from the medical officer of health. The Board has issued the following directions for obtaining and forwarding for bacterioscopic examination material from suspected plague cases.

A.—*From the Living Person.*

1. Clean with soap and water and then with alcohol the last phalanx of either the second or third finger. When dry, or after mopping with a clean cloth, put a piece of tape round the proximal end of the last phalanx so as to cause venous congestion. Prick the palmar surface of this phalanx with a sterile needle, and immediately take up the exuding blood in two sterile capillary tubes such as are used for collecting vaccine lymph. These tubes when charged should be sealed at both ends.

2. When there is a discharging bubo, collect fluid therefrom in capillary tubes as in the case of blood. When this discharge is not of a sufficiently fluid character for collection in this way, place some of it in a small glass-stoppered phial, previously well washed out with alcohol, care being taken that no alcohol remains in the phial.

3. If expectoration be obtainable, collect some in a phial in the manner prescribed in Section 2.

B.—*From the Dead Body.*

1. Cut out any inflamed lymph gland, together with some of its surrounding tissue, and place the whole in a wide-mouthed glass stoppered bottle, previously well washed out with alcohol, care being taken that no alcohol remains in the bottle. The bottle should have the stopper well secured and sealed.

2. Obtain also a piece of the spleen, dealing with it in the same manner.

All suspected plague material should be carefully packed so as to avoid risk of breakage.

It is to be addressed to "The Medical Officer, Local Government Board, Whitehall, London."

Full particulars as to source should in each instance accompany the material forwarded.

PRECAUTIONS AND PREPARATIONS IN LONDON.

At a special meeting of the Public Health Committee of the London County Council, held on September 26th, a letter from the Local Government Board with reference to the steps which it would be necessary to take if cases of plague should occur in London was considered. The Local Government Board pointed out that it was very important that arrangements should be completed for dealing with any persons who may have to be isolated owing to their having been in contact with cases of plague, and asked whether the Council had any, and, if any, what accommodation actually available for this purpose; and, if not, how long the Council would require to get such accommodation ready for immediate use; say for 1,000 persons in 200 families.

The report of the Committee, which was approved by the Council at its meeting of October 9th, was to the effect that it was very desirable in the interests of efficiency and economy in administration that the Council should provide the whole of the accommodation required rather than that the duty should be divided among a number of local sanitary authorities. The Council has in its possession a number of properties acquired under various improvement or other schemes, some of which could, at a few hours' notice, be rendered fit for occupation, while the repairs necessary at the others would not take more than a few days. A list showing the premises in the Council's possession which could be adapted for the

purpose, and the time which it would take to render them fit for occupation has been sent to the Local Government Board, which has also been informed that, in addition to the premises mentioned in the list, the Council has other buildings which could, in case of great emergency, be adapted as isolation homes, and that, should these eventually prove inadequate, the Council would provide or obtain any further accommodation that might be necessary.

Instructions have been given that as soon as the Board intimate their acceptance of the Council's offer one of the properties shall be made ready for habitation and the necessary furniture stored therein, two or three of the other properties repaired, and generally lists of furniture, provisional arrangements with contractors, arrangements as to diet, etc., shall be made, so that the demand for accommodation may be kept pace with should plague appear in London. The actual cases of plague would be sent to the hospitals of the Metropolitan Asylums Board, while the medical inspection of infected areas and disinfection of premises and articles after cases of plague would no doubt be undertaken by the sanitary authorities. Mr. Shirley Murphy, the medical officer, has sent a circular letter to the various medical officers in London inviting them to give him immediate notice of cases or suspected cases of plague, with a view to these cases being inquired into by a medical man familiar with the disease, and also with a view to material, if necessary, being sent for bacteriological examination at the cost of the Council. Mr. James Cantlie, M.B., F.R.C.S., formerly medical officer in one of the plague hospitals in Hong Kong, who has had large experience of the disease, has been retained to examine and report upon any suspected cases of plague in London in which there is any doubt as to the diagnosis, and to make *post-mortem* examinations when necessary. An arrangement has also been made with Dr. Klein for the bacteriological examination of material from suspected cases.

Mr. Cantlie has prepared a memorandum giving an account of the clinical characteristics of plague, and a printed copy of this memorandum will be sent to each medical practitioner in London.

When in 1898 certain cases of plague occurred among the members of a ship's company in the Albert Docks, the medical officer caused inquiry to be made by the Council's inspectors in all common lodging-houses, shelters, and seamen's lodging-houses in sanitary districts in the eastern half of London on both sides of the Thames for cases of sickness which might possibly prove to be plague, and in all cases of sickness of a doubtful nature were inquired into by one of the Council's medical officers. In July of this year this inquiry was repeated, and it was again repeated in the middle of September. No single case has been found that raises suspicion of plague. All the premises are now being periodically visited for the same purpose, the seamen's lodging-houses being inspected twice a week.

Inspection of Passengers and Crew during a Voyage.

The following suggestions for the observations of passengers and crews in transit have been issued by the Health Officer, Port of New York:

1. No sick person shall be allowed to embark unless the illness is declared to be non-infectious.
2. A daily inspection of all on board ship shall be made, the sick isolated, special attendants told off to wait upon him, and the sick person's clothing, etc., disinfected.
3. The day before arrival in port the temperatures of all members of the crew and steerage passengers are to be carefully taken, and the first and second cabin passengers medically inspected.

India.

The plague returns for the week ending September 15th for all India show 1,136 deaths from the disease, an increase of 85 over the previous week. The number of cases of plague have steadily increased during the past five weeks, and there seems almost a certainty of the usual recrudescence during the approaching cold weather. In the Bombay Presidency 593 deaths from plague occurred during the week ending September 15th, including 72 deaths from the same cause in Bombay city. The plague seems to be increasing in Poona city, where the daily average of fresh cases and deaths are 50 and 40 respectively. In Belgaum there is evidently no abatement in the disease—30 to 40 cases occurring daily. In Calcutta during the second week of September, 81 deaths from plague occurred. In the Mysore State, 363 persons are reported to have died of plague.

Hong Kong.

During the week ending October 6th, 3 cases of plague occurred in Hong Kong, and 3 deaths from the disease.

Mauritius.

For the week ending October 4th, 43 fresh cases of plague are reported from Mauritius, and 31 deaths from the disease. This marks a pronounced recrudescence of the disease, and the outlook is not satisfactory.

San Francisco.

We learn from the *Occidental Medical Times* that on August 11th a man, William Murphy, described by the authorities as a Caucasian, died of plague after five days' illness; on August 15th a Chinaman also died of plague in the same street, Dupont Street, in San Francisco. These are the fourteenth and fifteenth deaths from plague that have been reported in San Francisco since the disease was first diagnosed in March, 1900. The tardiness of the spread of plague and its peculiar endemicity was never better illustrated than in the case of San Francisco. We have no exact parallel to such a behaviour in any of the numerous records of plague outbreaks since the present pandemic began in 1894.

METROPOLITAN LUNATIC ASYLUMS.

Rate of Increase of Persons under Care.

The reports of the Asylums Committee to the London County Council have each year increased in bulk and in the value of their contents. The eleventh annual report for the year ending March 31st, 1900, deals with the care and treatment of 21,393 patients as compared with 21 069 in the previous twelve months. On January 1st, 1900, there were 15,061 certified lunatics in asylums and licensed houses as compared with 14,645 on January 1st, 1899. There were in addition 5,770 imbeciles in the asylums of the Metropolitan Asylums Board, 325 in workhouses, and 237 with relatives and friends.

The increase of 416 is below that of last year, which was 613, while the increase of certified lunatics during the ten years the asylums have been under the management of the Asylums Committee is 4,961, which roughly works out to close upon an average of 500 a year. The average maintenance rate is 9s. 11d. a head a week.

Non-pauper Patients.

The Committee has taken a commendable step in removing out of the category of pauper patients a number of those whose means are just sufficient to pay the bare cost of maintenance and classifying them as being on the "private list," that is, removing from them the stigma of being pauper lunatics. The Committee draw attention to the fact that in estimating for the purposes of future accommodation, it will not be possible to overlook the requirements of this increasing class of patients.

"Boarded-out" Patients.

Although the Committee have provided, and are still actively providing, increased accommodation for the lunatics of the metropolitan area under their management, there are still 731 patients boarded out at county asylums under contract, and there are in addition 564 patients in out-county asylums and licensed houses under arrangements made by guardians. The total number boarded out was 1,295, as compared with 2,492 on the same date last year. The reduction in the number has been achieved by bringing in boarded-out patients to the accommodation provided at the various asylums by the Committee. The financial result of this operation is that, in spite of an increase of 416 pauper lunatics, there is a reduction in the total annual cost of £27,640. As the average rate for boarded-out patients is 23s. 5d. a week, if the Asylum Committee had not by strenuous efforts been able to have accommodated these 416 additional patients, the cost to the county for maintenance would have been much heavier, whereas the actual saving to the county for the year ended December 31st, 1899, in the cost of maintenance of patients is £53,037.

Accommodation of "Recent Cases."

The number of applications for beds for recent cases during the year was 4,149, and the Committee is glad to record that from September, 1899, to March, 1900, it was not necessary to refuse admission to any recent case on the ground of there being no accommodation.

Schemes for the Future.

The Committee, recognising the necessity of keeping abreast with the steadily increasing number of lunatics coming under their care, have obtained the sanction of the Council for the expenditure of £1,000 for inquiries and preliminary designs for a further asylum.

Another important step is being taken by the Committee with regard to the founding of an epileptic colony for [illegible] patients. The plans are already in hand, and the [illegible]

hopes shortly to be able to report to the Council the proposed scheme and the estimated cost.

The principle of providing receiving houses for lunatics in place of the lunatic wards of the workhouse infirmaries having been approved by the Council, the Committee has been authorised to elaborate a complete scheme, and now has the matter in hand.

As an additional relief to the pressure upon the asylum accommodation, the Committee is endeavouring to obtain further powers to board out suitable cases, and has had clauses to that effect inserted in the Lord Chancellor's proposed Lunacy Bill.

Clinical Teaching.

Clinical teaching is given at Banstead for St. Bartholomew's students, at Colney Hatch for those of the London School of Medicine for Women, and at Hanwell in connection with St. George's Hospital Medical School; and at all of the asylums special training lectures and demonstrations are systematically carried out for the Medico-Psychological Association's certificate and St. John Ambulance Association.

Rates of Recovery and Death.

The total percentage of recoveries on the admissions, numbering 4,555, was 23 95, the number discharged recovered being 1,091, relieved 424, not improved 373, and the deaths 1,194. It is to be regretted that the tables giving the causes of insanity in the different asylums are not uniform, as this compels the Committee to add a note "no summary compiled owing to the form of the separate tables not being uniform." As thus a most valuable calculation is lost, doubtless before another report is issued this defect will be made good and a table of percentages added in this and other matters.

Pathological Investigations.

The Committee makes mention of the high praise which has been accredited to Dr. Mott by the medical journals and the scientific world on the publication of his *Archives of Neurology*, to which we called attention in a former issue of the British Medical Journal, and Dr. Mott states in his report he would embody in the Croonian Lectures (delivered at the Royal College of Physicians last June) his experiments and researches which he had carried on at the laboratory. These lectures were fully reported in this Journal at the time.

The Committee states that in consequence of the prevalence of ulcerative colitis (otherwise asylum dysentery) at some of their asylums they have asked Dr. Mott to make a special inquiry and report upon the subject to a special subcommittee. At Dr. Mott's request Dr. Durham was joined with him in this inquiry as bacteriologist, and his services were retained for six months at a fee of £250. This will be money well spent, and any light that can be thrown upon this troublesome affection will be welcomed by all asylum superintendents.

The various large and important asylums under control by this Committee will be referred to later in detail.

SOUTH AFRICAN HOSPITALS COMMISSION.

The Commissioners at Capetown.

Evidence given before the Commissioners on October 4th by Surgeon-Major D. R. Hamilton was to the effect that typhoid fever as it occurred among the troops at Bloemfontein was of a much more virulent type than that met with in India. He denied that the hospital beds were infested with vermin; the men themselves were verminous, and had become so as a result of the conditions existing during the campaign.

The Commission subsequently received evidence of the good management of the Rondebosch Hospital at Sterkstroom and of some alleged neglect of the patients at the Maitland Hospital. In particular the food, it was alleged, was unsuitable. It was said that dead horses were allowed to remain near the hospital tents, and that it was not possible to procure necessary medicines. One of the hospital ships was described as filthy, and the food and milk bad. The evidence showed that the treatment of the Boer sick was most satisfactory.

Return of the Commission.

The Commissioners were to have left Capetown on October 10th on their return to England, where they will take further evidence.

REPORT OF THE METROPOLITAN ASYLUMS BOARD FOR 1899.

This last report of the Metropolitan Asylums Board contains the usual amount of interesting and well-arranged detail concerning the work performed by the Board and its staff. As these excellent reports succeed each other, one is more and more impressed by the large proportions of the Board's work and its rapid increase. In 1890, for instance, we were told that the Board had in occupation nineteen institutions (hospitals, asylums, ambulance stations, wharves, and training ship); now the number has increased to twenty-nine, with eleven others not yet occupied; and the number must inevitably increase in the near future. The current annual expenditure of the Board has reached a figure exceeding three-fourths of a million, and the normal accommodation at the existing fever hospitals is about 5,500 beds.

Hospitals and Homes.

Bearing in mind the somewhat irregular proceedings connected with the erection of the latest completed hospital of the Board, which at one time threatened to assume the proportions of a public scandal, the managers have done well to adopt a form of agreement upon which every architect appointed by the Board will be engaged in future, and it is hoped will obviate the state of things which lead to an enormous increase in the amount of an originally authorised expenditure, without the sanction or even knowledge of the managers.

The Committee which deals with the contracts for provisions, clothing, furniture, etc., reports the interesting circumstances that whereas during the first year the stores were opened the proportion of goods rejected after examination as being inferior to sample was as high as 50 per cent., the proportion has since fallen to 25 per cent.; and that the daily population for which provision had to be made was about 15,500 persons, the estimated annual cost of supplies being £294,000.

The Works Committee reports that of the contracts completed during 1899, the more important were the erection of (1) the Grove Hospital, (2) a nurses' home and a new isolation pavilion at the Northern Hospital, (3) a new pavilion at the South-Western Hospital; (4) a small-pox shelter at Rotherhithe, (5) an isolation pavilion at the Eastern Hospital, and (6) a home for female attendants at the Caterham Asylum. Plans have been passed for two schools for children suffering from ophthalmia, one at Brentwood and the other at Swanley, at an estimated cost of £256 264; and tenders have been received for the building of the Joyce Green Hospital, to be erected between Dartford and Long Reach, in Kent, at an estimated cost of £227,000. The hospital will contain accommodation in the first instance for 400 small pox patients, with administrative accommodation capable of serving for 940 patients, 500 of whom are to be accommodated in pavilions of a temporary character.

Children.

The Board is also acquiring sites and properties to enable it to deal with the five classes of children committed to their care by the Local Government Board in 1897. The ophthalmic schools have already been referred to, but provision is also being made for children affected with ringworm, defective children, convalescents, and remand children (that is, children remanded from the police-courts under the Industrial Schools Act, 1866).

The "Exmouth."

The training ship *Exmouth* continues to do excellent work. During the year 341 boys were admitted and 372 were discharged, most of whom entered the Royal Navy or the mercantile marine. The Committee report that it is a little disappointing that the Metropolitan Boards of Guardians do not avail themselves of the ship to the extent that could be expected considering the creditable record of the ship.

Pauper Lunatics and Imbeciles.

Until the Managers' Asylums were opened there were no institutions, except the workhouses, to which idiots or imbeciles of the pauper class in London could be admitted. Lunatics could be removed to the county lunatic asylums, but imbeciles were retained in the workhouses, in which no satis-

factory provision was made for them. Last year the managers had under their care 6,564 imbeciles.

Infectious Diseases.

The cases of infectious disease notified under the Public Health (London) Act, 1891, during 1899, numbered 42 285. They included 18,089 notified as scarlet fever, 13 346 as diphtheria, 4,453 as enteric fever, 13 as typhus fever, 1 as relapsing fever, 69 as continued fever, and 29 as small-pox. The remainder were cases of other diseases notified under the Act, but not admissible into the Board's hopitals.

Amongst the notified cases admitted to the Board's hospitals it is usual to find many cases of mistaken diagnosis. In the past year the percentage of such cases was as regards scarlet fever cases, 3 9; diphtheria cases, 7.4; and enteric fever cases, 17.3.

Of the total notified and legally admissible cases, 68.08 per cent. were admitted to the Board's hospitals, as against 65.50 per cent. in 1898, and 33.59 per cent. in 1890.

The percentage of the notified cases of each disease removed to the Managers' Hospitals was, as regards scarlet fever, 74.34, enteric fever 40.78, typhus fever 84.62, and diphtheria 69.69. The average duration of residence of scarlet fever cases was 69.1 days, or 70 4 days if the fatal cases be excluded; of diphtheria the length of residence was 51.2 days, and 59.2 if the fatal cases are omitted; while the average residence of enteric fever cases was 50.7 days, and 58 6 days if the fatal cases be excluded. The duration of residence is of the utmost importance from an economical point of view, for any possible shortening of the period would effect a saving in the cost of maintenance, and also admit of a larger number of patients being treated in the same number of beds.

The decreasing percentage of the mortality amongst scarlet fever patients treated in the Board's hospitals continues to be a noticeable feature, but more noticeable still is the decline in the percentage mortality amongst diphtheria patients, from 22.85 in 1895 (when the antitoxic serum treatment was first adopted) to 13 95 in 1899.

The immunity from small-pox which the metropolis continues to enjoy is a matter for sincere congratulation. Of the 28 small-pox patients sent for admission to hospital during the year, the diagnosis of small-pox was confirmed in 10 only, the errors in diagnosis amounting to 64 3 per cent.

Medical Reports.

In conclusion, it must be pointed out, although space does not admit of more than reference, that certain papers by members of the managers' medical staff are included in the report. We think that the publication of these papers is valuable, and should be encouraged, for the medical profession at large will appreciate any information which can be culled from the vast stores of experience which must accumulate in these institutions. Moreover, the reports of the medical superintendents are in some cases something more than statistical statements of the year's work, and prove instructive reading, more especially on the two subjects of post-scarlatinal diphtheria, and the results of the antitoxin treatment of diphtheria.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

The correspondence under this head, which has appeared in these columns during the last three or four weeks has attracted the attention of the *Daily Mail*. According to an article recently published in its columns one of its representatives called upon the managers of a number of the larger insurance companies, by whom he was informed that it was impossible to pay more than half a guinea where the policy was for a sum less than £250. "The Secretary of the New York Life Insurance Company," the article continues, "excused their action by saying that all they had done was to reduce the scale of fees to the average scale for such fees in England. 'It would be suicidal,' he said, 'to pay a guinea where the policy is next to nothing.'"

We have made a few inquiries on the subject, and Dr. A. S. Myrtle, who raised the subject in the British Medical Journal of September 15th, p. 755, writes as follows: "I have never been offered less than 10s. 6d. Some few offices look on this as sufficient, no matter how large the amount the applicant may propose to insure his life for. Other offices give £1 1s. when that goes over £250. The higher class companies give £1 1s. when the amount is above £100. Such is the case with the Scottish Provident Institution. The Clerical, Medical, and General gives £1 1s. invariably. Contrast the payment of the medical referee with that allowed to the local agent. He receives £1 per cent. on all sums; £150 insurance gives him £1 10s., £5,000 £50 on payment of the first premium. He then has his percentage on all future premiums. These agents hunt up cases for their own advantage. They urge the tradesman they employ, the people they travel with and all personal friends to insure through them, and were it not for the conscientious reports of the medical referees this excessive zeal of the agents might prove disastrous to the offices they act for. What I maintain is that, granting we accept the 10s. 6d. in cases under £250, we should receive a larger amount when the insured makes a proposal for, say, £1,000 and over. Then I think the fee should be £2 2s. I have frequently received that amount from high class companies."

ASSOCIATION INTELLIGENCE.

COUNCIL.

ALTERATION OF DATE OF MEETING.

In consequence of a large number of Polls being fixed for October 8th and 9th, the meeting of the Council will be held in the Council Room of the Association at 429, Strand (corner of Agar Street), London, on **Wednesday the 24th day of October next**, at 2 o'clock in the afternoon, and not as previously announced.

Francis Fowke, *General Secretary.*

October, 1900.

BRANCH MEETINGS TO BE HELD.

North of Ireland Branch.—The autumn meeting of this Branch will be held on Thursday, October 18th, in Belfast. The incoming President, Professor Byers, will take the chair and deliver his opening address.—William Calwell, M.D., Honorary Secretary, 1, College Square North, Belfast.

Perthshire Branch.—The annual meeting of this Branch will be held in the Station Hotel, Perth, on Friday, November 2nd. Candidates for election will please communicate with A. R. Urquhart, James Murray's Royal Asylum, Perth, Honorary Secretary.

Shropshire and Mid-Wales Branch.—The annual general meeting of this Branch will be held at the Salop Infirmary on Tuesday, October 23rd, at 3 P.M.—Harold H. B. Macleod, College Hill, Shrewsbury, Honorary Secretary.

Staffordshire Branch.—The twenty-seventh annual general meeting of this Branch will be held at the Victoria Hotel, Wolverhampton, on Thursday, October 25th, at 5 P.M., when an address will be delivered by Dr. Alfred H. Carter, President-Elect. Business: Election of new members. Reports of Council and Ethical Committee. To decide place of holding nex annual meeting. Election of officers and Council for the ensuing year.—F. Milnes Blumer, Stafford, Honorary General Secretary.

Border Counties Branch: Section for the Counties of Roxburgh, Berwick, Selkirk, and Peebles.—The annual dinner of this Section will be held in the Abbey Hotel, Melrose, on the evening of Thursday, October 18th, at 7 o'clock. Dr. Blair (Jedburgh), chairman; Dr. Young (Earlston), croupier. All intending to be present are asked to communicate with the Honorary Secretary, who will be glad to secure tickets. All members of the Border Counties Branch now resident in the area of the Section are cordially invited. Dinner ticket (exclusive of wines), 5s.—W. Hall Calvert, The Laurels, Melrose, Honorary Secretary.

Southern Branch: Isle of Wight District.—The next quarterly meeting of this District will be held at the Pier Hotel, Sandown, Isle of Wight, on Friday, October 19th, at 4 P.M., the President, Mr. T. A. Buck, M.B.Lond., in the chair. Agenda: Minutes to be read and confirmed; election of Dr. R. W. Collis, of Sandown, as member; Dr. J. Cowper will read a paper on An Unusual Case of Intestinal Obstruction; subject for discussion at next meeting: time and place of next meeting. Dinner will be provided at 4s. per head if members intimate their intention of remaining to dine on or before October 18th to the Honorary Secretary. The Honorary Secretary will be glad to receive immediate notice of any communications which it is intended to bring before the meeting.—J. B. Thomas, Sandown, I.W., Honorary Secretary and Treasurer.

YORKSHIRE BRANCH.—The next ordinary meeting of this Branch wil be held at the Hotel Majestic, Harrogate, on Wednesday, October 24th, at 3.30 P.M. Members intending to read papers, to propose new members of the Branch or of the Association, or to make any communication, are requested to write to the Secretary at once. The members will dine together at 6.30 P.M.—ADOLPH BRONNER, M.D., 33, Manor Row, Bradford, Honorary Secretary.

DORSET AND WEST HANTS BRANCH.—The next meeting of this Branch will be held at Bournemouth, on Wednesday, October 17th. The business meeting will be held at the Hotel Mont Doré at 3 P.M. Agenda:—Election of officers for 1901, namely, President, Vice-President, Honorary Treasurers and Secretaries. Place of the May meeting. Dr. Lush to move "That a donation of 10 guineas be granted to the British Medical Benevolent Fund." Address by the President, Mr. Curme. Discussion: Pneumonia in the Aged, to be opened by Dr. Whittingdale, one of the Vice-Presidents. Communications: Dr. Spooner, The Bite of an Adder. Dr. Alderson: A Case of Hepatic Cirrhosis; Recovery. Dr. Lawrie: (1) A case in which a Floating Kidney produced the usual symptoms of Gall Stones, successfully treated by Nephrorrhaphy; (2) a case of Obstruction of the Bowels of six days' duration, relieved by Abdominal Section. Dr. Kinsey-Morgan: On the Modern Treatment of Phthisis. Dinner at the Hotel at 5.30 P.M.; charge, 6s. each, without wine. Members intending to be present are requested to notify the same to Dr. J. Davison, Streate Place, Bournemouth, by Monday, October 15th.—WILLIAM VAWDREY LUSH, M.D., Weymouth, and C. H. WATTS PARKINSON, Wimborne, Honorary Secretaries.

NEW SOUTH WALES BRANCH.

THE regular general meeting of the Branch was held at the Royal Society's Room, on Friday, July 27th. Dr. FOREMAN, Vice-President, in the chair; there were 38 members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The CHAIRMAN announced the election of Drs. Stacy, Mackenzie, Holmes, Reissmann, and Donald MacMaster.

Cases and Specimens.—Dr. GORDON MACLEOD showed a case of double abducens paralysis with extreme contracture of both recti interni, and read some notes on the case.—Dr. BARRINGTON exhibited (1) carcinoma developing in an ovarian dermoid; (2) Myxosarcoma of the uterus, removed by vaginal hysterectomy from a single patient, aged 34; (3) a peach-sized right hydrosalpinx removed by abdominal section from a primipara, aged 27 years; (4) incomplete tubal abortion removed from a 5-para, aged 35; (5) mesometric myoma complicated by cystic disease of both ovaries.—Dr. WILKINSON exhibited microscopical sections of the specimens.—Mr. HANKINS exhibited a case of neoplasm (?) in the neighbourhood of the larynx, causing suffocation; tracheotomy was performed and subsequently the growth was removed by external operation.

Paper.—Dr. CHARLES MACLAURIN read a paper on a new operation for the radical cure of hernia.

SPECIAL CORRESPONDENCE.

SYDNEY.

The Australian Natives' Association.—Professor Anderson Stuart.—The Bubonic Plague.

THE medical profession in this Colony is again threatened with the establishment of a huge medical sweating institution in the shape of the Australian Natives' Association. Some four years ago a medical benefit society called the Sydney Clerks' and Warehousemen's Benefit Society was established, and the projectors contemplated the formation of a large society amongst clerks and warehousemen of all classes in society, quite irrespective of any wage limit. After several attempts to induce the directors to fix a wage limit of £200 per annum had failed, the Council of the New South Wales Branch of the British Medical Association declared this society to be "a society prejudicial to the interests of the medical profession" in accordance with the Articles of Association. The medical officers of this Society were thus debarred from membership of this Branch of the British Medical Association. This action on the part of the Council had the effect of checking the progress of the movement, and it has languished ever since. The Australian Natives' Association is an institution which has been in existence for several years, having been originally formed as a purely political society. For several years it has also been a medical benefit society in Victoria, its medical officers being very poorly paid, and as there is no wage limit they have to attend bank managers, stockbrokers, members of Parliament, etc., as club patients. Now the attempt is being made to establish branches of this "patriotic" society in this Colony, and as the directors have refused to listen to any proposal for the establishment of a wage limit, it also has been declared by the Council of the New South Wales Branch of the British Medical Association to be "a society prejudicial to the interest of the profession." A large and enthusiastic meeting of the profession in Sydney was held last week, Dr. Sydney Jones being in the chair, and the following resolutions were passed unanimously:

1. That medical aid and benefit societies are intended for the poorer members of the community, and not for the well-to-do, and that it is unjust to the medical profession that people in receipt of incomes of ove £200 per annum should receive medical attendance and medicine from such societies.

2. That this meeting approves of the course adopted by the Council of the New South Wales Branch of the British Medical Association in drawing attention to the action of the Australian Natives' Association, and declaring it a society prejudicial to the interests of the medical profession.

3. That this meeting earnestly appeals to those members of the profession whose advice is sought in consultation, to refrain from meeting medical officers of associations which have been declared prejudicial to the interests of the medical profession.

4. That it be an instruction to the Council of the New South Wales Branch of the British Medical Association to appoint a permanent Investigation Committee with a view to collecting and circulating information which may be of use to the medical profession in their dealings with friendly, benefit, and medical aid societies, hospitals, and kindred institutions; and any other matters affecting the welfare of the medical profession throughout Australasia; and to frame such by-laws as may be necessary for the control of this Committee.

Any medical man who accepts the position of medical officer to this Association as at present constituted is debarred from membership of the New South Wales Branch of the British Medical Association, and will not be met in consultation. It is hoped that the firm stand thus taken by the profession will result in this medical sweating Association being nipped in the bud. The officials of the Australian Natives' Association and of the Sydney Clerks' and Warehousemen's Benefit Society admit that their institutions cannot be made successful except by the aid of medical benefits; in other words, the profession has to be sweated to ensure the success of these "illegitimate" friendly societies.

At a recent meeting of the Faculty of Medicine in the University of Sydney, Professor Anderson Stuart, as Professor of Physiology in the University, was again nominated to an *ex-officio* seat on the Senate.

No further cases of bubonic plague have been reported for several weeks, and the quarantine hospital contains now only two or three convalescent patients. During the height of the outbreak some large business houses in which three or more cases had occurred were quarantined, and some of these houses are now bringing actions against the Government to recover damages for unnecessary interference with their business.

ROME.

Professor Celli on the Epidemiology of Malaria.—Distribution of the Parasites in Italy.—"August Fevers."—Multiple Malarial Infection.—Recurrent and Pseudo-recurrent Cases.

PROFESSOR CELLI has published[1] a third communication on the Epidemiology of Malaria. It contains a summary of the results of his very important epidemiological investigations carried out during the present malarial season not only, as last year, at Cervelletta in the Roman Campagna, but also at Trinitapoli, in the province of Foggia, Argenta near Ferrara, Mantua, the Ospedal Maggiore of Milan, and Curnignano, in the province of Cremona. The paper also contains a summary of his observations made in the districts surrounding the province of Navara and in the Alpine valley of Sondrio.

With regard to the distribution of the malarial parasites in continental Italy outside Latium, Martirano has found in the provinces of Foggia and Salerno the same predominance of the parasites of the severe fevers as in the Roman Campagna. Also in the valley of the Po the parasites of the æstivo-

[1] Supplement to the *Policlinico*, September 29th.

autumnal fevers are met with in great numbers. The people dread them, and call them August fevers.

These fevers are so prevalent during August and September near Ferrara, Mantua, Crema, Milan, Novara, and Vercellese, that Professor Celli has found in September 12 cases to 2 of tertian and 1 of quartan at Vercellese, and 8 cases to 1 of mild tertian at Nevarese. In the valley of Sondrio all the cases were examples of these fevers. Consequently he has come to the conclusion that the parasites of the severe fevers are diffused not only in the valley of the Po, but also along its confluents in the Alpine valleys. In these places the August fevers have clinical characters similar to those of the æstivo-autumnal fevers of the Roman Campagna—that is to say, they are of the tertian type, and rapidly give rise to severe anæmia, etc. On the other hand, cases of fatal pernicious fever are very rare there compared with Latium. He attributes this to the wonderful curative effects of quinine, which the inhabitants take freely for every kind of fever without calling in the doctor. Formerly, when they had a repugnance to this drug, the cases of pernicious fever were more frequent. In spite, however, of the large use of quinine for some years past, the zone of diffusion of malaria has not diminished, nor does it tend to diminish. This is further evidence that it is impossible to free a locality from malaria by quinine alone.

Professor Celli had in a previous communication called attention to the remarkable number of multiple malarial infections, that is, double and triple in the same individual. Thus at Cervelletta, during two years of observation he had noted among 95 cases of malaria 27 double infections (28 per cent.) and 6 triple infections (6.3 per cent.) He has also begun to study the recurrent cases, which are of vital importance, in connection with the preservation and propagation of the malarial parasites and the succession and persistence of the epidemics. Cases of true recurrent fevers must be distinguished from the pseudo-recurrent. In the former there is a successive reappearance of one or more infections which remain latent in the blood either during all the healthy months till the beginning of the new epidemic year or occasionally longer, as it may be observed in those who after contracting malaria go to live in a perfectly healthy place and still continue to suffer from time to time from malarial attacks. The pseudo-recurrent fevers, on the other hand, are those of new invasion, which arise in those persons who had already suffered from the disease, and who after they have been cured remain for successive epidemic years in the unhealthy place. In the case of the mild tertian it is not yet possible to distinguish the true from the false recurrent, but in the quartan a diagnostic criterion is afforded by the fact that the gametes are very abundant in the blood stream, especially during the last recurrent attacks of July and August, while on the contrary they are absent or very scarce in the new primary infections. The severe tertian in the successive attacks becomes clinically attenuated until the patients are not obliged to take to their beds, while the new infections, even in those who have suffered before, are always accompanied by prostration. Further, in the first attack the parasites in the blood are very scarce, sometimes even absent, and the gametes (crescents) are never seen as they are in the recurrent attacks.

The course of the true recurrent fevers during the various months of the epidemic year extends, as Professor Celli has already shown,[2] from one summer to the other. Three principal types of malarial fevers must be distinguished when the new infections cease in October as they did last year; the number of the recurrent cases of severe tertian is at its maximum in August and September, and then gradually declines to a minimum in June or July. The recurrent cases of quartan, on the contrary, increase from October till July and August. The severe tertian recommences before the quartan, which in Latium and in North and South Italy is the last to recur and the last to commence. The mild tertian has the maximum of its recurrent cases during the spring months. This is specially observed in Lombardy, where it precedes the development of the severe tertian in June. Even in individuals who have been free from fever for months recurrent attacks appear after long intervals of perfect health. Professor Celli has seen cases of severe tertian recur after nine months, and of mild tertian after eight months from the last attack. The quartan is more persistent and continued in its recurrent attacks in spite of quinine. Even with a lengthened treatment of quinine in biggish doses, with the addition of iron and arsenic, though the recurrent attacks become more rare, they are not always completely prevented. This further shows the impossibility of extinguishing malarious foci by means of the specific treatment alone, at least until a way is found of completely disinfecting the blood, killing both the forms destined to maintain the recurrent accesses and those destined to the reproduction of the species in the mosquito, and resistent even to such an efficacious remedy as quinine.

Professor Celli states that wherever he has found cases of malaria he has also found *Anopheles*, most commonly the *claviger* but also the *pictus* and *pseudopictus* abundantly at Ferrarese and Vercellese and the *bifurcatus* in the Alpine zone. *Anopheles* is more diffused than previously supposed, inasmuch as the insects can be transported in hay, carriages, etc., long distances from the malarial centre proper. Consequently the geographical distribution of *Anopheles* does not coincide with the map of malaria. As regards the relations between air temperature and malaria, Professor Celli states that his observations render it probable that a malarial epidemic must be preceded and accompanied by a temperature of about 25° C., but on this point he reserves his final judgment.

[2] British Medical Journal, January 14th, 1899, p. 95.

CORRESPONDENCE.

THE PLACE OF THE LECTURE IN MEDICAL TEACHING.

Sir,—I was very pleased to see your leading article on "The Place of the Lecture in Medical Teaching" in the British Medical Journal of October 6th. I quite agree with the opinions expressed there and in other parts of the same issue. I well remember what a waste of time I used to think lectures were when I was a student; I always found I could learn more and understand more thoroughly by taking a textbook and reading for twenty minutes than I could by spending sixty minutes in a lecture room. Most of the lectures were merely extracts from standard textbooks interleaved occasionally by often stale and usually not very funny jokes, which were, I suppose, introduced to keep the attention of the student fixed on the lecture—a not wholly unnecessary precaution for most of the lectures were dull, and fell far short of oratory. I feel sure, and I think I am only expressing the opinion of the majority of students, the time could be more profitably spent in practical work and in reading.

If the Harvard system of teaching were introduced into this country, students would take a keener interest in their work, and would go much more deeply into the subject than, I am afraid, is now the case; and, what is more important still, their reasoning faculties would have a better chance of becoming more highly developed, a condition of affairs that would stand them in good stead later on in life.

I should also like to see what I may call "observation classes" introduced—that is to say, classes to develop the students' powers of observation. Cases should be brought to the class-room and certain of the students called out and made to describe (1) what they can see; (2) what they can make out by palpation, etc.

I am fully aware that this is done, more or less, in the wards, but I would have these classes held before the student enters the wards, where, it is true, that observation powers should be further developed and receive the final touches (as a student). The value of these "observation classes" might be further enhanced if the "deductory powers" of the students were developed at the same time. By freeing the student from the necessity of attending lectures more time could be spent in the bacteriological laboratory, in the museum and other special departments, and thus the student would be fitted for his future life, less would be heard of diagnostic errors and therapeutic mistakes, and there would not be such a plethora of unscientific and worthless medical publications. The future generation of medical men would be more highly trained, more scientific, and consequently more highly thought of and respected.

Clinical lectures should still be delivered, and might with advantage, I think, be increased in number.—I am, etc.,

Cornwall Gardens, S.W., Oct. 5th. C. FRANK WIGHTMAN.

SIR,—Your recent article on the above subject deals with a matter of great interest and practical importance. The respect paid to the lecture fetish seems visibly declining. Once thoroughly laid it is to be hoped that not even Plato's year will witness its resurrection.

It is of course evident that two factors must enter into the training of the medical, as indeed any other, student, practical observation resulting in first-hand knowledge, and some means by which he may be brought into contact with the observations of others, this latter having both a direct and an indirect bearing upon the former, serving at once to widen and direct it. These means resolve themselves into two—the lecture and the textbook. The lecture is a kind of middleman's product coming between observation and reading, and is unnecessary, as such products usually are. I dare affirm that very few students, even the most brilliant, ever come away from a lecture with the consciousness of a thorough mastery of the subject descanted upon. A good lecture delivered by an impressive speaker instinctively sends a man to his book "to read the subject up." His practical work will do this even more surely. No one, however, having mastered a division or subdivision of a subject in his textbook ever feels impelled to attend a lecture to cement his knowledge. He may go to the wards.

Then, again, it seems to me that the psychological processes involved in earnest book study are more conducive to comprehension and retention than those called into play in listening to a lecture. If invoked, the shade of Macaulay's schoolboy would doubtless tell us that visual perception, at least in adult life, is the most important of the psychological processes underlying cognition. The eye, moreover, is capable of a more prolonged stimulation that the ear without lapse of attention or sense of fatigue. In listening to an ordinary lecture the presentative aspect is purely auditory, the visual element being merely representative (as regards subject matter). In conning one's textbook the visual process is both presentative and representative, and we can get auditory presentation as well if we read aloud. We can also invoke the powerful aid of repetition. Who would not rather follow a long close uninterrupted stream of reasoning from his book than from a lecturer however eloquent?

Lastly, the matter gained from a chapter in a good textbook well-digested and self-arranged is far more the product of one's own mind, and the action and interaction between the knowledge thus gained and the first-hand knowledge born of observation far more valuable than can ever be the case with the predigested pap of the explanatory lecture, or the undigested encyclopædic lucubration which does duty for the ambitious one.—I am, etc.,

Broomhill, Oct. 9th. E. W. ADAMS.

INTRODUCTORY ADDRESSES FOR THE ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF EDINBURGH.

SIR,—After reading in the BRITISH MEDICAL JOURNAL the various introductory addresses given to the students on the occasion of the opening of the session of some of the universities and colleges of London and the provinces, it occurred to me what a pity it was that at the Royal College of Physicians and Surgeons of Edinburgh (one of the oldest, if not *the* oldest college), on the commencement of a new session, no such address of welcome and advice is given to the students.

There is no doubt that such an address, which need not necessarily be a lecture, would appeal to students at once, especially to those coming probably direct from school or home, loaded with good advice perhaps from relatives, but not such advice as would be of use in giving them an all-round view of their studies. What an amount of guidance they would obtain at the commencement of their medical career—advice and guidance of such a kind as they could only get from a lecturer or professor of their college.

There always appeared to me to be some want of co-operation on the part of the lecturers and a lack of interest in the students as a body, which cannot but have some effect on the students individually.

It must be evident to a good many that a good introductory address, such as is delivered at other colleges from time to time, given by one of the lecturers or by one of the members of the Governing Board, would be of infinite worth to a young student fresh to his work, and probably with not over-abundant knowledge as to the best steps he should take in his education for a medical career.

The Royal College of Physicians and Surgeons of Edinburgh has many things in its favour and it ought to be to the fore; but is that interest for the well-being of its students shown to them by the lecturers which should ever be evident in a well-organised college, and which would do much to improve the tone of a college, not altogether in the background?—I am, etc.,

Rusden, Northants, Oct. 9th. P. ASHWORTH WEDGWOOD.

THE PREVENTION OF PLAGUE.

SIR,—It may interest Dr. Haynes to know that an officer in India offered to stop the plague in Bombay by burning down all infected houses when the disease was somewhat limited, and thus (so he thought) effectually putting an end to plague in Bombay. His offer was declined by the municipal authorities. A large number of houses and outhouses were, however, levelled to the ground (without fire) with the hope of destroying every possible nidus for the plague germ, but without success, and many of the inhabitants were put to a great deal of inconvenience for want of houses. Other and less expensive methods have since been adopted, and appear to have been equally if not more effective, and certainly less inconvenient to householders. Would it not be as well, therefore, to study these methods before adopting the somewhat radical cure suggested by the officer referred to above and Dr. Haynes, which will of necessity increase the troubles of the already overburdened taxpayer, and may after all be of little use in staying the disease, or preventing a recrudescence of it, as it must be remembered that it is always liable to appear in one of our large ports.—I am, etc.,

Bedford, Oct. 10th. G. F. POYNDER.

THE DEBATE ON ANKYLOSTOMIASIS: A CORRECTION.

SIR,—In the recent debate on this subject at the British Medical Association meeting, Major Giles is reported in the BRITISH MEDICAL JOURNAL of September 1st to have said:

> I will not here enter into the old controversy as to whether this increased mortality known by that name (kala-azar) is due, as I maintain, to ankylostomiasis *plus* malaria or to malaria *plus* ankylostomiasis, as advanded by Captain Rogers and Major Ross.

What an utterly incorrect statement of my views this is will be at once evident from the following quotation from my original report on the subject, in which I sum up the conclusion derived from a large amount of evidence on this point, thus:

> These facts prove incontestably that whatever kala-azar may be it is not ankylostomiasis, and, what is more, the latter disease is not even an essential factor in the production of the disease, and only complicates it in some 6 or 7 per cent. of the cases, just as it occasionally complicates every disease in Assam, and especially on tea gardens, and also I have no doubt in nearly every other part of India.

Many other passages to the same effect might be quoted, but that my meaning was quite clear is evident from the fact that Surgeon-Colonel Stephen in his review of my report writes that he quite agrees with me that the facts I have recorded "prove incontestably that, whatever kala azar may be, it is not ankylostomiasis, and that ankylostomiasis is not an essential factor in its production." I have never, then, advanced the view that kala-azar is malaria *plus* ankylostomiasis, but have always maintained that it is purely malarial in its causation and pathology, so that I regret to say that the differences between Major Giles and myself are not so slight as he has deemed it convenient to assume, since Major Ross has so definitely confirmed my work upon the subject, as shown in the quotations of my contribution to the recent debate.

I may also take this opportunity of pointing out that when Major Ross says, in his paper in the same issue, that Giles's work on the life-history of the ankylostoma has not yet received either confirmation or rejection, he appears to have overlooked the paper of the late Dr. Macdonald in the report of the first Indian Medical Congress, in which he states that

he investigated the life-history of this worm both before and after Major Giles's work was published, and failed to confirm it, but on the contrary all his results agreed closely with those of Sonsino.—I am, etc.,

October 6th. LEONARD ROGERS, I.M.S.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

SIR,—For some time I have examined for the New York Life Insurance Company. Lately I received a circular saying the examination fees would be reduced to 10s. 6d. I took the circular with me, and showed it to every medical man in my town, and all unanimously agreed not to examine for the lowered fee. I then wrote to the company, declining to examine except at the old fees. I find I cannot fill up the paper and make a satisfactory examination under forty-five or fifty minutes.—I am, etc.,

October 8th. J. P.

SIR,—My attention has been called to a letter from "G." in the BRITISH MEDICAL JOURNAL of October 6th, in which he states that he refused to examine a case for this company for half a guinea.

The practice of the Mutual Life Insurance Company of New York is, and has always been, to pay the fee of one guinea for each medical report completed in the United Kingdom irrespective of the amount of insurance applied for. I regret that "G." has not given his name and address, as it would have afforded me an opportunity of investigating what ground he had for such a statement.—I am, etc.,

D. C. HALDEMAN,
General Manager, The Mutual Life Insurance Company of New York.
Cornhill, London, E.C., Oct. 8th.

SIR,—I, in common with your previous correspondents, have received the circular from the New York Life Insurance Company, and have refused to accept the terms offered, as I hope that all will who can possibly do so. If the principle on which it is based were a just one, then there should be an additional 10s 6d. fee for every £250 insured; but there is no suggestion of this. The company merely expect the same amount of work and responsibility to be undertaken for half the fee.

I should be glad, with your permission, to make one or two remarks on the subject of the company's policy in this respect from a medical point of view.

1. This company has always passed as a first-class company, based on sound methods, and requiring a thorough and *bonâ-fide* physical examination, yet they are doing this at a time when they claim to be in a most prosperous condition.

2. Their form for applicants is, so far as I know, the most complicated which exists, and in addition they issue elaborate practical suggestions to medical examiners. They are very useful, and to be properly carried out require the highest exercise of medical skill, tact, and conscientious application that can well be imagined. To leave no loophole there is a special rubric at the end of the application form, saying that as "the policies are incontestable, etc., every endeavour should be made to make this report as complete and precise as possible, the object being to give the principal office a pen-picture of the applicant as he presents himself. If in addition, therefore, you know of any fact or have any impression not expressed above, please note it below." All this, and a pen-picture included, for 10s. 6d. forsooth!

3. My experience of agents exactly coincides with that of your correspondent "Experience" on September 22nd. They always try to minimise the physical examination, objecting to patients being stripped, suggesting that albumen is of little importance, etc. In fact, I can parallel every single thing that your correspondent has mentioned.

With the lever of a reduced fee to work upon, and the retirement of a certain number of examiners who can afford to do so without such fees, it will be odd if they do not succeed in many cases in reducing the physical examination to a minimum. They have hinted to me more than once that the company's head office really did not want to know too much. In fact, I do not hesitate to say that their interests on the commission system are dramatically opposed to those best interests of the company, and that the independence of the medical officer examining is the only safeguard.

I enclose the form of the New York Company in case you have not seen one, to show what they expect.

I would suggest that the hands of others would be strengthened if all who have refused to accept the terms would send their names to your office, and make a sort of joint protest. If others who feel strongly that this attempt should be resisted will join, I will gladly add my name.—I am, etc.,

October 7th. ZETA.

*** The form enclosed by our correspondent quite bears out what he says as to the minute examination desired by the head office.

POOR-LAW MEDICAL OFFICERS IN SCOTLAND.

SIR,—Might I call the attention of "Despairing" to the fact that the Scottish Poor-law Medical Officers' Association have for several years had a Bill to amend the Local Government (Scotland) Act, 1894, before Parliament? Unfortunately, on its introduction it has always been blocked. If this Bill could be passed into law, it would give Scottish Poor-law medical officers an appeal (against unjust treatment) to the Local Government Board, and so give that protection which is so greatly wanted. Many other grievances could then be attended to—such as the payment of *locum tenens* during holidays; providing a suitable residence, in outlying Highland districts; payment for vaccination defaulters; payment for all lunacy certificates, etc. These are grievances which medical officers dare not approach their parish councils about under the penalty of dismissal from their appointments.

Our Association has sent a circular to each Poor-law medical officer in Scotland, asking them to bring our grievances before their Parliamentary candidates, and I am pleased to say the response has been gratifying.

In regard to a Conciliation Board, I am dubious about its practicability, but if "Despairing" can point out how such a scheme would work I am certain our Association would do all in its power to help it on.—I am, etc.,

W. L. MUIR, L.R.C.P., etc.,
Secretary, Scottish Poor-law Medical Officers' Association,
Oct. 8th. 1, Seton Terrace, Dennistoun, Glasgow.

THE MORTALITY OF SUPRAPUBIC LITHOTOMY.

SIR,—In the report of the Ipswich meeting[1] I read that Mr. Keegan has given the mortality of suprapubic lithotomy as 42.17°F. per cent. for India, and that Mr. Freyer has condemned the operation on account of the "appalling mortality" which has followed it in London.

From my own experience (9 cases in patients between 10 and 82 years of age with no death), I consider the operation as not more dangerous than litholapaxy, but as my own cases are so few in number I may be allowed to give the results of some other surgeons. Fabrikant,[2] whilst writing on sectio alta, says that of 42 patients who had stones removed at Professor Grube's Hospital by the suprapubic method between 1889 and 1894 none died.

Golischewsky,[3] in a paper on primary suture of the bladder, states that of 41 cases of suprapubic lithotomy done by Rasumowsky 3 died. Two of these died from complete anuria soon after the operation; the third, whose death was hardly due to the operation, died nearly four months later from general tuberculosis. Mortality not quite 5 per cent.

Assendelft,[4] who in a Russian village, far away from skilled assistance and without proper nurses, saw 630 cases of stone, did the suprapubic operation 460 times, and in spite of unfavourable conditions lost only 15 patients. Three of those who died suffered from very extensive cancer of the bladder, and should therefore not be included amongst the operations for stone. The mortality of the remaining 457 cases is therefore 12 or 2·6 per cent. A careful perusal of Assendelft's paper with its large number of bad cases which could hardly have been treated by a non-cutting operation will, I have no doubt, convince every reader that the mortality of the suprapubic operation can be kept just as low as that of litholapaxy. Assendelft states that

[1] BRITISH MEDICAL JOURNAL, October 6th.
[2] *Archiv. für Klin. Chirurgie*, Vol. lv. Heft 1.
[3] *Ibid.* Vol. lx. Heft 3.
[4] *Ibid.*

of his 457 cases three have had a recurrence, and it would be very interesting if the advocates of litholapaxy would publish their permanent results as, the mortality of both methods being equal, the choice of one or the other must depend on the more or less frequent recurrence of stone which follows it.—I am, etc.,

Finsbury-square, E.C., Oct. 6th. J. P. ZUM BUSCH.

MEDICAL SERVICE ON THE WEST COAST OF AFRICA.

SIR,—Now that we read and hear so much of the grievances of the medical departments of the army and navy, it may not be out of place to bring forward the conditions under which colonial medical officers are required to serve on the West Coast of Africa. Most of them, it is well to remember, have had "war experience" in the many punitive expeditions which are so frequent in that unknown and benighted country.

With the exception of Nigeria, which may be said to be in a state of evolution at present, the following conditions apply to the other British possessions (I cannot call them colonies) on the west coast.

I.—PAY.

£300 to £500 by varying increments annually, biennially, triennially, as the case may be.

II.—PENSION.

There are only two conditions under which a pension can be drawn

(*a*) Old age: One man alone draws a pension under this head.

(*b*) Bad health: If an officer is permanently invalided out of the service and has already served seven years, he is allowed one-fortieth of his salary multiplied by the number of years served. Under this heading I should mention the existence of some rule whereby a man having served ten years is allowed to add five years to the time served but nobody seems to benefit by it. The fact remains, when the invalid comes home he is allowed nothing in proportion to his service.

III.—QUARTERS.

Most if not all the quarters supplied are not fit to put Europeans to live in, in the tropics.

IV.—ALLOWANCES.

Ten shillings per diem may be said, generally speaking, to be the allowance, whether travelling or fighting, it does not matter which.

V.—MESSING.

No provision whatever is made in this most important branch of tropical hygiene.

VI.—LEAVE.

Six months' leave for every twelve months' service. This is as it should be.

The above, with the exception of No. 6, are not enticing, and can only be considered repellant when applied to such an unhealthy climate.

It is notorious that service under the Colonial Office is unpopular, and now that candidates are scarce it is impossible to fill any vacancies. Here, by the way, I may draw attention to the fact that a lady doctor has just been appointed to the Ashantee expeditionary force.

The Ashantee revolt which is now raging, though overshadowed by events in South Africa and China, has been the means of bringing to notice several doctors who, though nominally "civilian," have done their share of fighting, which has caused them to be mentioned for their bravery and devotion under the most trying circumstances it is possible to imagine.

The rules governing employment under the Colonial Office are out of date, and should at once be redrafted to meet the requirements of a rapidly-growing department. There are at the present time over 100 Colonial surgeons on the West Coast of Africa.

It is easy as a rule to complain, but not always easy to suggest a remedy; fortunately in this case the treatment is obvious.

I.—PAY.

£400 to £800 rising by yearly increments of £50. Private practice to be allowed wherever expedient.

II.—PENSION.

After 15 years' service at the rate of £1 a day.

III.—QUARTERS.

Properly constructed tropical quarters in accordance with the teachings of sanitary science.

IV.—MESSING.

In each district a thoroughly organised mess should be established.

V.—RECOGNITION.

Recognition should be granted for any work outside medical duty.

VI.—ORGANISATION OF MEDICAL SERVICE.

A medical service for the whole West Coast might be easily constituted whereby all might serve under the same conditions and one principal medical officer, etc.

This suggestion I have placed last is really the most important, but one feels shy in throwing out practical hints lest there might be an epidemic of "fits" should this letter find its way to Downing Street.

A system on these lines would be bound to attract young men of the right sort, for not only would the pay, etc., be adequate but the chance of "seeing service" combined with pleasurable excitement, would appeal strongly to the manly instincts of junior medicos. I apologise for taking up as much of your valuable space, but should you succeed in improving a worthy branch of the service you will deserve the thanks of all.—I am, etc.,

October 8th. M. D.

THE LICENTIATES OF THE SOCIETY OF APOTHECARIES OF LONDON.

SIR,—I am sure all licentiates will receive with feelings of entire satisfaction the effort that is being made by the Association of Licentiates of the Society of Apothecaries to bring about a more satisfactory position for its diplomates. The idea has been talked about at various times ever since the L.S.A. became a double qualification, and I trust that now we shall see this thing through.

Cannot a Royal Charter be applied for, and the licentiates who qualify in future and those who have obtained their diplomas since 1886 be allowed to style themselves Licentiate of the Royal Hall of Medicine (L.R.H.M.), Licentiate of the Royal Hall of Surgery (L.R.H.S.), and Licentiate in Midwifery (L.M.)?

Some may be disposed to think that L.M.S. and M. (Licentiate in Medicine, Surgery, and Midwifery) would be quite adequate; but surely the examination itself compares only too favourably with that of the Edinburgh Colleges, which send forth their licentiates with L.R.C.P.Ed., L.R.C.S.Ed., L.F.P.S.G. and L.M.

A Royal Charter would at once elevate and maintain the position of the licentiates of the Apothecaries' Society, and bring the qualification more into conformity with the spirit of the Registration Act of 1886.

As another alternative, could not the L.S.A. be renamed the Faculty of Physicians and Surgeons of London without in any way interfering with the rights of the Royal Colleges?—I am, etc.,

October 9th. L.S.A.Lond., L.R.C.P., etc.

ABDOMINAL OPERATIONS: THE CASE OF DR. IMLACH.

SIR,—Mr. J. W. Taylor's letter on this subject will, I am sure, be widely endorsed by the profession, and particularly by those of us who practise gynæcology. As I have hitherto been outside the controversy, I am able to approach it unbiassed by the painful local and personal considerations by which its higher and scientific aspects have been obscured. What should be constantly borne in mind is the dangerous precedent by which a member of a scientific society has his practice examined into and himself penalised by a committee of that society. I maintain that such functions are quite foreign to the aims and constitution of the Liverpool or any other medical society. The question was one that lay between Dr. Imlach and his hospital committee as representing the public, and the public aspect of the matter had been largely settled, in Dr. Imlach's favour, by a court of law.

For a judgment on any question of general medicine, surgery, or ethics, the constitution of the Committee of Inquiry was ideal, and would now, as then, command the respect of the profession here as everwhere else. But I invite the members of that Committee to say what members of the profession then in Liverpool, and how many outside it, were as competent as Dr. Imlach to speak with authority on the matters of practice in dispute. He would have had to be much more adventurous a surgeon than he was shown to be by his bitterest foes before he had been justly sacrificed by a liberal profession at the end of the nineteenth century.

A study of established textbooks for ten years after the adoption of the resolution that so many of us wish to delete will show that Dr. Imlach's practice was still recognised as proper. I believe that the only thing in the way of an amicable and, we think, a just settlement of this matter is the feeling of the Committee of Inquiry that it would involve cen-

sure of themselves, and some imputation on their integrity and good faith. If I could for a moment look on this as a necessary result of the deletion of the report, I, and I am sure every other member, would cease to agitate for its deletion, as I have the pleasure of knowing most, and of sincerely respecting all, the members of that Committee. I believe they all sympathise with Dr. Imlach. I believe, further, that they have enough skill and diplomacy amongst them to initiate amongst themselves an honourable, dignified, and graceful way out of a difficulty that lies on the conscience of the profession; and one that the profession will not rest till it has purged itself of. May we not ask the Committee to make a friendly move in this direction?—I am, etc,

Liverpool, Oct. 7th. GEORGE A. HAWKINS-AMBLER.

SIR,—I have read with much interest your remarks and Dr. Taylor's letter in the BRITISH MEDICAL JOURNAL on Dr. Imlach's case; and I heartily endorse the sentiments expressed in both articles. Now that the question has been again fully discussed and considered, I venture to hope that those who signed the original report will voluntarily agree to its deletion—a course they can well take without loss of dignity.

The views of authorities have changed so much in recent years regarding the justifiability or otherwise of operations in gynæcology, that it seems to me impossible to dogmatise or even to condemn the practice of a well-qualified expert without the strongest possible evidence, and I cannot see that this has been produced in Dr. Imlach's case.—I am, etc.,

Weymouth, Oct. 7th. MACPHERSON LAWRIE.

OLD STUDENTS' DINNERS.

SIR,—I recently undertook a railway journey of some hundreds of miles for the purpose of enjoying the society of old friends at an annual hospital dinner. It appeared, however, in the light of subsequent events, that certain gentlemen in authority who were present considered the occasion to be more favourable to an exercise of what they were doubtless pleased to consider their oratorical powers than to the pleasures of social intercourse. Conversation was almost a matter of impossibility. I would not venture to bring these remarks to notice if I were not aware that they admit of a fairly general application, and that the old student is apt to regard the inevitable presence of the postprandial orator as a sufficient reason for remaining absent from what should be one of the pleasantest of social functions.—I am, etc.,

October 10th. OLD STUDENT.

OBITUARY.

R. STRAFFORD SMITH, M.D.,

Physician to the Royal Victoria Hospital, Belfast.

THE intelligence of the death of Dr. Strafford Smith has caused the keenest regret, not only among the profession, but also among a large section of the public in the north of Ireland. About three to four weeks ago Dr. Smith suffered from a carbuncle. From this, however, he had recovered, and was congratulating himself on the prospect of a well-deserved holiday when, about September 24th, he was seized with a sharp pain in the course of the sciatic nerve. Symptoms of a general intense septicæmia set in, which chiefly manifested themselves in a low form of pneumonia and in spinal irritation, probably meningeal, but the whole system was evidently affected, and he sank rapidly, and died on the morning of October 5th.

Dr. Smith was the elder son of the late Dr. J. W. T. Smith (Belfast), one of its leading physicians, well known as an indefatigable worker and an acute clinician. He inherited many of his father's qualities; the excellent sense of humour, the gentle touch of irony, his marked enthusiasm, and what may be termed his delight in his professional work. He was 40 years old, and had studied medicine in Belfast, London, and Vienna. His connection with the old Royal Hospital, now the Royal Victoria Hospital, was lifelong. He was in succession Resident Pupil, House Physician, Assistant Physician, and in 1895 he became Visiting Physician in succession to the late Dr. Ross. Amongst the students he was a general favourite, and his sound practical clinical teaching was clear and precise, and of that quality which stands to the practitioner in after-life. At the time of his death he was also Consulting Physician to the Belfast Charitable Society, Honorary Physician to Nurses Home, the Lord Chancellor's Visitor in Lunacy, and the Honorary Secretary to the Medical and Surgical Staff of the Royal Victoria Hospital. He also enjoyed a large practice amongst the better class, and, like his father, he gained the warm friendship of his patients as well as their entire professional confidence. Apart from the many close and life-long personal friends who so deeply regret the loss, everyone must deplore the death of one who had just reached his zenith of usefulness, and will extend to his widow and child their deepest sympathy.

WE regret to learn that the family of Dr. A. E. LOVITT of the China Inland Mission have abandoned all hope that he has escaped the massacre at Tai Yuen-fu. The news has been received from Chinese sources but it is believed in Cheefoo and Shanghai. He was the son of Mr J. Lovitt of Camden Road, N.W., and early developed a desire to engage in mission work. He first went to the Harley House Missionary Training College, and after a year there, on the advice of Dr. Harry Guinness, he determined to take the full medical course and entered at the London Hospital. He obtained the diploma of L.S.A. in 1895 and those of M.R.C.S. and L.R.C.P. Lond. in 1897. He was for a year Resident Medical Officer of the Mildmay Mission Hospital, Bethnal Green, and also worked with friends in Castleford and in Kent. He married the eldest daughter of Mr. Alexander Grant, a missionary of Singapore, who was trained as a nurse, and who along with her children are believed to have been killed by the Chinese. They went out to China in August, 1897, and commenced work at Taiyuen-fu Hospital. The attitude of the people and their rulers was perfectly friendly until a new governor was appointed who was known to be a bitter enemy of foreigners. The hospital was attacked on June 27th; it was defended as long as possible by the mission party, but was eventually burned by the Chinese, who clubbed one of the members of the mission, Miss Coombs, and threw her body into the fire. The other members escaped to the residence of Mr Farthing of the Baptist Missionary Society, and remained there until July 7th or 9th, when, under promise of safe escort to the coast they were enticed into the Governor's Yamen, and, it is believed, all murdered.

DR. ALEC STEVENSON of South Shields, who died in Glasgow at the early age of 31 years, on September 3rd, was a native of Dumbarton. After showing considerable ability as a schoolboy, he spent a short time in a lawyer's office, but, having determined to devote himself to medicine matriculated at the University of Glasgow. During his student's career he obtained first-class certificates in the classes of anatomy, physiology, materia medica, and pathology; and special certificates of merit for collections of specimens in practical physiology and in pathology. The drawings and descriptions he made in the latter subject were the envy and admiration of his fellow-students, and called forth high encomiums from the professor of pathology. He also gained first class certificates in midwifery, clinical surgery, and medical jurisprudence, and worked hard to make himself a competent practitioner in all departments, including diseases of the eye, the skin, fever, and insanity. During his student career he found time to do a considerable amount of temperance and religious work in his native town. He graduated as M.B., C.M. Glasgow with commendation in 1895, and settled in South Shields as a partner to Dr. Drummond. He showed himself to be an earnest, skilful, and patient practitioner, and an honest and upright Christian man. He will be much missed by a large circle of professional and other friends, to whom he had endeared himself. He leaves a young widow and an infant to mourn his loss.

HAVING had evidence of a demand for such things the Council of the Sanitary Institute has made a collection of lantern slides (relating to sanitary arrangements and appliances, and to bacteriology) which can be borrowed by members and Associates for lecture purposes at a small charge.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

INDIAN MEDICAL COLLEGE PROFESSORSHIPS.

A CORRESPONDENT in India writes: The adoption of the motion with regard to the professorships of the Indian medical colleges by the general meeting of the British Medical Association has come as a great surprise to those in India who are acquainted with the real facts of the case.

In the first place it is quite untrue that the chairs are filled by virtue of "grade rank" which evidently implies seniority, for all these appointments are filled by strict selection of the best man available either in the province in which the college is situated or from other provinces, the posts being filled by the Government of India in consultation with the Surgeon-General.

Again, it is not true that the professors are liable to recall to military duty on war breaking out, for as a matter of fact they are specially exempted from such moves. Apart from ultimate retirement, or promotion to the administrative grade after about twenty seven years' service, when it is in the interests of the teaching that they should give way to younger and more energetic men, owing to the colleges being placed in the very trying climate of the presidency towns, no breaks occur in these appointments except when the professors proceed on leave, which would be equally necessary whether they belonged to a service or not.

In those instances in which one man has held several professorships this has been mainly attributable to his having thus officiated for short periods for another officer who is on leave, and in the case of privilege leave for from one to three months this will usually be taken during the long vacation, when no lectures are being given. It is evident, then that on such occasions there is no interference with the continuity of the teaching, and the omission of these important facts from the speech of the mover of the motion enabled him to convey a very exaggerated notion of the frequency of the breaks in the teaching of these institutions to the meeting.

After all, the ease with which the graduates of the Indian Medical Colleges pass the examinations of the Boards in Great Britain is the best proof of the efficiency of the teaching of the former schools. It should also be remembered that if professors were appointed from England they would be greatly handicapped for a long time in their clinical teaching by being unable to understand the language of their patients, while even with the advantages of the new schools of tropical medicine it would be a long time before they would have as intimate a knowledge of Indian diseases as a man who had devoted nearly twenty years to their study in this country. Lastly, it must not be forgotten that if the professorships were taken away from the Indian Medical Service it would very seriously affect the competition for the service, so that a somewhat doubtful gain for the teaching of the medical colleges would be obtained at the expense of the efficiency of the whole of the other institutions all over India, a risk which the Government of India is not likely to run, especially in view of the great difficulty in restoring the lost popularity of a service, which is well illustrated by the last examination list for the R.A.M.C entrance, in which nine qualified candidates were obtained for fifty vacancies.

In the above remarks the question has been discussed on its merits, although in India we are well aware that such resolutions as the one recently passed are moves in the struggle of the men, who have been educated in these very colleges, to oust the Indian Medical Service from its present position, as anyone who will take the trouble to read the jubilations in their organs in this country over the adoption of this motion will at once see for himself—a side of the question which the Parliamentary Bills Committee should thoroughly understand before committing themselves to any action which may stultify both themselves and the Association.

ROYAL ARMY MEDICAL CORPS.

AMONG the officers returning to England are the following: Lieutenant J. W. SMITH, attached to the R.A.M.C; Civil Surgeon MILLER (invalided); Civil Surgeons BARRAS and MCKITCHEN. The undermentioned are returning for duty on the voyage: Civil Surgeons PASLEY, P. J. SUFFIED, F. E. FREEMANTLE.

The following have been discharged from hospital in South Africa to duty: Quartermaster R. O. ROBERTS, Major T. ARCHER, Civil Surgeon LITLER-JONES.

ARMY MEDICAL RESERVE

SURGEON-LIEUTENANT H. M. BROWNFIELD, 3rd Volunteer Battalion the Hampshire Regiment, to be Surgeon Lieutenant, October 10th.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL R. C. SANDERS, M.D., Bengal Establishment, has retired from the service from July 13th. He was appointed Assistant Surgeon, April 1st, 1869, and became Brigade-Surgeon-Lieutenant-Colonel, October 4th, 1893.

Lieutenant-Colonel P. F. O'CONNOR, M.D., Bengal Establishment, has been appointed Principal Medical Officer to the troops at Shanghai.

No fewer than 110 Indian Medical Service officers have been deputed to military duty since the commencement of the operations in China. Of this number, 87 have been withdrawn from civil employ in India, 17 are lieutenants who have recently passed out of Netley, and six are officers already in military employ who have been recalled from leave. It is proposed, in connection with the withdrawal of medical officers from civil employ, to place civil surgeons where possible in collateral charge of native troops in addition to their own duties.

MILITIA MEDICAL STAFF CORPS.

MAJOR WARING died of dysentery at Princess Christian's Hospital, Pinetown Bridge, South Africa, on October 6th.

THE VOLUNTEERS.

THE undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps respectively specified, dated October 10th:—SAMUEL H JOHNSON, 2nd Volunteer Battalion the East Yorkshire Regiment; WILLIAM HAIG, M.B., 4th (Perthshire) Volunteer Battalion the Black Watch (Royal Highlanders); JOHN E MOLSON, M.B., 2nd Volunteer Battalion the Essex Regiment; FREDERICK J. P DALY, 4th London Rifles.

Surgeon Lieutenant S. MACLEAN, M.B., 1st (Cumberland) Volunteer Battalion the Border Regiment, resigns his commission, October 10th.

MILITIA SERVICE.

DR. J. BENSON COOKE (Borstal, Rochester) writes: In answer to the query of "A Correspondent" at page 962 of the BRITISH MEDICAL JOURNAL of September 29th, I would inform him that the printed regulations now before me show that one month's service with an embodied battalion counts as one annual training; and four months' continuous service as two annual trainings.

FINANCIAL RESPONSIBILITY OF CIVIL SURGEONS IN MILITARY HOSPITALS.

HENRY BIOKE writes: I think "Cantab's" interpretation of Paragraph 50 (Regulations Army Medical Service) is open to question. This paragraph applies to surgeons of militia and medical practitioners who are employed on contract rates, and do not devote their entire time to military duties. The civil surgeon seems to me to stand upon a different footing; he is appointed under "special authority," ranks as a lieutenant, draws the pay of a lieutenant with allowances, and is employed in connection with the Army Medical Corps, and is required to devote his entire time to military duties. He therefore incurs all the responsibilities of an officer of the corps. P.M.O.'s ought to show great consideration to civil surgeons placed in charge of station hospitals, and see that an efficient and reliable non-commissioned officer is present.

If "Cantab's" reading of Paragraph 50 be correct, does it not open up the whole question as to the "validity of the civil surgeons' orders" so to speak? Is it legal for him to sit as a member of an invaliding Board? Is his evidence at court-martials admissible?

MEDICO-LEGAL AND MEDICO-ETHICAL.

UNQUALIFIED PRACTICE AT BIRKENHEAD.

AN inquest was held lately by the Birkenhead Borough Coroner, Mr. C. Holden, on the body of one Alice Richardson, an infant of 5 months. From the evidence given before the Coroner, it appeared that the child falling ill, the mother took her to a Mr. Pleavin, whom she knew as an American doctor. "Dr. Pleavin" prescribed for the child, who was said to be suffering from "ulceration of the bowels." A certain improvement was said to have taken place, but later on the child died suddenly at night. In her statement before the jury the mother said that "Dr." Plearin was very well known at Birkenhead; that he had a shop at Exmouth Street, and placed upon his bottles of medicine and over the shop door the words "Dr. Pleavin," U.S.A." She also stated that she was quite satisfied with his treatment. Mr. Pleavin himself gave evidence and swore that he was a Doctor of Medicine of Ohio, Buffalo, United States of America. Asked to produce his diplomas, he showed about half a-dozen, according to the report in the *Birkenhead and Cheshire Advertiser*. All the diplomas were framed; one was from the "Buffalo (U.S.A.) University of Medicine;" another from the "Bradford College of Botanic Physicians and Surgeons;" another from the "British School of Electric Medicine." Mr. Pleavin stated also that he had given death certificates repeatedly, and that he had "enjoyed" a very large practice for sixteen years. Questioned as to the possession of his diplomas, he replied that he had never been to America, but that "he qualified himself in England before the legal representative of a university from which he obtained his diploma. The examination took place at the residence of the representative."

A qualified medical practitioner gave evidence as to the cause of death, which he attributed to marasmus, the result of improper feeding.

The coroner in his summing up said that it was pertinent to the enquiry to consider how the child was treated prior to its death, and if it was properly treated under the care of Mr. Pleavin. It was quite clear that the medicines prescribed by him did not cause any direct harm and had nothing to do with the child's death. It would be useless to suggest any prose-

cution of a criminal nature so far as that case was concerned. It was perfectly clear that Mr. Pleavin was holding himself out as a qualified medical practitioner, and as he was not, it was wrong and improper that people of the town should be led to believe that he was so qualified. There was no objection if they were treated by a herbalist calling himself such, but the great objection was that he led people to believe that he was a person thoroughly qualified for the position. Here was a child who had died who perhaps with careful, proper and skilful treatment might have lived. The jury after consulting in private brought in a verdict in accordance with the medical evidence.

We may mention here that Mr. Pleavin was summoned by the Society of Apothecaries under their Act at the instance of the Medical Defence Union in August 1895, at the Birkenhead County Court with the result that he paid into Court the full penalty of £20, thereby avoiding the hearing of the case in open Court and the necessary publicity attendant thereon. We are informed that the matter will again be taken up by the Medical Defence Union. The statement made by Mr. Pleavin himself that he has signed medical certificates of death which we must presume were accepted by the registrar, deserves the consideration of the Registrar-General. An inquest should be held on any case in which the death is certified by an unqualified practitioner; this would aid in the repression of such improper practice.

ADVERTISEMENTS OF MEDICAL SCHOOLS.

A CORRESPONDENT sends us a cutting from the advertisement columns of an Irish provincial newspaper containing a displayed advertisement of a hospital medical school, in which the names of the members of the staff with their qualifications and appointments are set forth. Our correspondent asks, "If this is not advertisement pure and simple I do not know what to call it. What can we expect from the rank and file of the profession when men who ought to be leading lights descend under cover of a charitable institution to such self-glorification?" We think that such advertisements are open to objections, and therefore if it is necessary to advertise the medical school in the lay papers it would be better if the staff did not allow their names to be set out in this way. We are aware that in many cases such advertisements have appeared for years past and have obtained the sanction of old-established custom, yet we believe that the custom would be more honoured in the breach than in the observance.

UNQUALIFIED ASSISTANTS.

KETTLEDRUM.—The case put to us is that of a man who joins another in partnership in a medical practice, and after all formalities are concluded discovers that there is an unqualified assistant whom the original partner declines to dismiss. We should advise B, the incoming partner, to consult a solicitor as to what steps he can take to compel A to comply with the regulations of the General Medical Council, and, failing this, to put upon record his protest against the man's retention.

MIDWIFERY ENGAGEMENTS.

GUAVITER states that some time ago he was engaged to attend a lady in her confinement. The time when this was expected is now past, and he has since seen another medical man attending at the lady's house. Should he send in a bill to the husband for the full fee or half the fee, or would it be better to ignore the affair altogether?

*** He should claim the whole fee if he claims anything, and he should be prepared to go into the county court if the money is not paid. It would probably, however, be wiser to ignore the whole matter.

THE APOTHECARIES' HALL, DUBLIN.

MC.C. (Belfast).—We are not in a position to answer this question, but would refer the gentleman to the Secretary of the Apothecaries' Hall, Dublin, from whom he should obtain the information. We should be glad to know the tenour of the reply.

MEDICAL ATTENDANCE GRATIS.

SENEX.—C. is perfectly within his right in refusing to attend without payment, but each man must judge for himself, and the facts submitted do not justify condemnation of the conduct of A and B. Young men who are not fully employed may often be willing to do unpaid work which their seniors rightly decline. We think that there would be great advantage to the profession if senior men were more willing than they are to give up unpaid or ill-paid work to their juniors.

A NURSE'S TESTIMONIAL.

F. A. F.—Our correspondent sends us an amusing lithographed circular letter which is being issued as testimony to the value of Mellin's Food by the proprietors of that article. It is from a nurse, who writes to the company to say how much benefit her mother has derived from the use of the food, and she adds: "A Dublin doctor who was here a few days ago remarked: 'If Mellin only knew how enthusiastically you recommend his food and all the customers you get for him, he would present you with a nice clock or barometer such as he sent me!'" We hope she got it, but we refuse to believe in the "Dublin doctor" without better evidence.

MEDICAL ADVERTISING.

OUR attention has also been drawn to a temperature chart issued by Mellin's Food Company, Limited, which is said to have been suggested by a medical practitioner. On the front of this chart are the name and hours of consultation of a practitioner, and on the back of it an advertisement of Mellin's Food. We regret that any member of the medical profession should allow his name to be associated with a trade advertisement in this manner.

LOST IN THE POST.

ANTIQUARY.—Assuming, as appears to be the fact, that our correspondent expressly or impliedly ordered the instrument to be sent to him by post, the makers do not appear to be responsible for its loss, and are therefore entitled to charge for both the instruments supplied. Of course if our correspondent has any reason to suspect the truth of the makers' story he had better put the matter into his solicitor's hands.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

ELECTION OF REPRESENTATIVES OF CONVOCATION ON THE SENATE.

A GENERAL meeting of Convocation was held at the University Building, South Kensington, on Tuesday, October 9th.

A Vote of Condolence with the Queen.—On the motion of the Chairman (Mr. Busk), seconded by Sir Albert Rollit, M.P., a resolution of sympathy with Her Majesty as Visitor of the University on the death of the Duke of Saxe-Coburg and Gotha (Duke of Edinburgh) which had been adopted by the Senate on the previous day, was carried unanimously.

Election of Members of the Senate.—Scrutineers were appointed, and the results of the voting were subsequently announced as follows:

Arts.

Elected.	Not Elected.
John Fletcher Moulton, M.A., 1,140.	Sir Joshua Girling Fitch, M.A., 686.
John David McClure, B.A., 1,134.	Edward John Routh, M.A., 434.
Sir Albert Kaye Rollit, LL.D., B.A., 1,063.	Talfourd Ely, M.A., 395.
Thomas Bateman Napier, LL.D., 910.	Thomas McKinnon Wood, B.A., 365.
James Bourne Benson, LL.D., B.A., 906.	Timothy Smith Osler, LL.B., B.A., 340.
Thomas Lambert Mears, LL.D., M.A., 752.	Richard William Hinton, B.A., 280.
	George Armitage-Smith, M.A., 209.
	Albert Bassett Hopkins, M.A., 82.

Law.

Sir Herbert Hardy Cozens-Hardy, LL.B., B.A., 127.	Joseph Walton, B.A., 106.

Medicine and Surgery.

Thomas Barlow, M.D., B.S., B.Sc., 381.	Sydney Ringer, M.D., 243.
Joseph Frank Payne, B.Sc., 314.	Arthur Quarry Silcock, M.D., B.S., 212.

Science.

Sir Philip Magnus, B.A., B.Sc., 432.	Sydney Russell Wells, M.D., B.Sc., 213.
Sophia Bryant, D.Sc., 429.	Sydney Howard Vines, D.Sc., 219.
Charles William Kimmins, D.Sc., 364.	George Carey Foster, B.A., 213.
Frank Clowes, D.Sc., 333.	Robert Davies Roberts, D.Sc., 147.
Silvanus Phillips Thompson, D.Sc., B.A., 239.	Charles Henry Draper, D.Sc., B.A., 142.
Francis Sowerby Macaulay, D.Sc., 226.	

Music.

Joseph Watson Sidebotham, Mus. Bac. (Oxon.)

The candidature of Mr. McClure, Sir Philip Magnus, Dr. Kimmins, Dr. Sophia Bryant, and Mr Sidebotham was supported both by the Graduates' Association and by the Graduates' Union, and they were all elected. Among the other successful candidates, all five in the Faculty of Arts and two in the Faculty of Science were supported by the Association, and one in the Faculty of Science. Both the representatives of the Faculty of Medicine and Surgery, and the single representative of the Faculty of Laws were supported by the Union. The Graduates' Association is concerned more particularly to protect the interests of external students.

HOURS OF MEDICAL CLASSES AT EDINBURGH.

WE are informed that the lecturers on practice of physic in Edinburgh, whose lectures are recognised by the University Court as qualifying for the University, have addressed a memorial to the University Court directing its attention to the unsuitable hour fixed for the lectures on the practice of physic during the present winter session. Some particulars with regard to this matter were given in the BRITISH MEDICAL JOURNAL of October 6th, page 1,059. We are informed that it is to come before the governing body of the School of the Royal Colleges for consideration. It is suggested that probably the best solution of the difficulty would be for the various teachers of medicine in the extra-mural school to lecture at the same hour session after session, selecting that hour that is conducive to "the greatest happiness of the greatest number." If they would act with cohesion and uniformity the difficulty would soon come to an end.

UNIVERSITY OF GLASGOW.

FIRST PROFESSIONAL EXAMINATION FOR THE DEGREES OF BACHELOR OF MEDICINE (M.B.) AND BACHELOR OF SURGERY (Ch.B.).—The following have passed in the subjects indicated (B., Botany; Z., Zoology; P., Physics; C., Chemistry):

A. B. Aitken (B., P.), W. S. Allan (B., Z.), A. Allison (B., P.), A. W. Anderson (B., P.), D. Arbuckle (P.), R. J. Arthur (B., Z.), J. Bain (C.), E. Barr (B.), A. R. Barrowman (B., P.), A. G. Bisset (B.), C. Brown (P.), J. Brown (C.), G. Y. Caldwell (B.), J. P. Carmichael (Z.), P. Carrick (B., Z.), R. B. Carslaw, M.A. (P., C.), W. S. Craig (C.), R. W. Dale (B., P.), T. T. M. Dishington (Z., C.), A. C. Douglas (B., P.), C. M. Drew (B., Z., C.), W. Duffy (B.), J. S. Dunn (B., P.), J. Ferguson (B., Z., P., C.), C. C. Fitzgerald (Z., C.), E. J. Fitzgerald (Z., C.), R. H. Fulton (B., P.), W. Gilchrist (C.), W. H. Gilpatt (P.), J. Glaister (B.), J. Glover (P., C.), A. Graham (B., P.), D. L. Graham (B., P.), D. J. G. Grant (B., P.), A. R. F. Hay (B., Z., P.), J. W. Hay (B., Z.), J. C. Henderson (Z., P., C.), L. Hislop (B.), R. Howell (B., Z.), A. Hunter (C.), J. Hunter (B., P.), A. Y. Hutchison (B., Z., P., C.), R. S. Hutchison (B., P.), A. Jamieson (B., C.), A. E. Jones (B., P.), D. R. Kerr (B., Z.), J. R. Kerr (B.), G. N. Kirkwood (Z., C.), R. W. Leckie (C.), D. McAulay (B., Z., P., C.), E. B. Macaulay (Z., C.), T. S. Macaulay (B., P.), D. C. M'Cormick (C.), J. G. M'Cutcheon (B., C.), J. F. Macdonald (B.), N. M'Dougall (C.), J. B. M'Ewan (C.), T. D. M'Ewan (B., P.), D. Macfayden (B., P.), J.

M'Farlane (B., P.), R. Macfarlane (B., P.), A. S. M. Macgregor (B., P.), M. M'Intyre (B., C.), C. G. Mackay (B., C.), D. J. M'Leish (B., Z., P.), N. A. Macleod (P.), R. Macleod (P.), A. S. M'Millan (P.), M. T. D. M'Murrich (B., P.), N. S. MacNaughtan (P., C.), R. C. Macpherson (B., C.), W. Main (P., C.), J. Marshall (Z., C.), W. B. M. Martin (B., P.), A. Meek (B., P.), J. Moffatt (P., C.), W. S. Moore (Z., C.), G. D. Muir (P.), J. Muir (Z., C.), M. Munro (B.), F. A. Murray (B.), G. C. Nielson (B. P.), T. Orr (B. Z., P.), H. H. Patrick (B., P.), A. G. Paxton (Z., C.), J. Pearson (B., P.), J. C. Pickup (B., Z.), A. M. Pollock (B., P.), H. S. Ranken (B., P.), D. R. Reid (B., P.), D. F. Riddell, M.A., (Z., C.), D. S. Richmond (P., C.), J. W. Richmond (C.), A. Robertson (B., P.), B. H. Robertson (C.), W. Rolland (B., P.), J. M. Ross (P., C.), E. L. Sieger (P.), R. W. Simpson (B., Z.), A. H. Sinclair (Z.), M. W. Smith (B., P.), J. A. Somerville (Z.), J. Stevenson (P.), A. Stewart (B.), W. Stewart (Z.), W. C. Stewart (C.), W. Templeton (Z., C.), J. W. Thomson (B., P.), A. M'M. Watson (P.), T. M. Watt (C.), A. C. West (B., P.), D. W. Wilson (P.).

Women.—B. S. Alexander (Z., C.), A. A. Baird (B., Z., P.), R. Campbell (B., Z.), M. Hardy (Z.), A. M'Phun (B.), F. Mann (B. Z.), J. E. Munro (P.), E. Oversby (Z.), J. D. Rankin (B. Z.), H. R. L. Reid (P., C.), M. E. Robertson (B., Z.), J. R. Shaw (B., Z.), L. Smellie (Z.), M. Spence (B., Z.)

The following passed "with distinction":

In Physics and Chemistry: R. B. Carslaw, M.A. In Botany and Physics: D. J. M'Leish, W. B. M. Martin. In Botany: J. S. Dunn, A. E. Jones, D. R. Reid, W. Rolland. In Zoology: Jessie D. Rankin. In Physics: T. D. M'Ewan, D. Macfadyen, A. M. Pollock, A. Robertson, J. W. Thomson. In Chemistry: J. Bain, C. M. Drew, J. Glover, D. Mac-Aulay, B. H. Robertson.

SECOND PROFESSIONAL EXAMINATION FOR THE DEGREES OF BACHELOR OF MEDICINE (M.B.), AND BACHELOR OF SURGERY (Ch.B.).—The following have passed this examination in the subjects indicated (A., Anatomy; P., Physiology; M., Materia Medica and Therapeutics):

W. Armitage (P.), T. Ballantyne (P., M.), A. G. Banks (M.), A. Baxter (P.), A. F. Bell (M.), J. C. Bringan (A.), R. Bruce (M.), R. Bryson (P.), G. F. Buchan (A.), A. Campbell (M.), R. H. Campbell (A., M.), A. A. Carruthers (A., P., M.), R. P. Cartwright (A.), W. B. Chapman (A., M.), J. C. Christie (P., M.), S. C. Cowan (A., P., M.), E. H. Cramb (A.), H. W. Crawford (M.), J. Cross (P., M.), A. Dick (A., P., M.), W. Dick (P.), D. Douglas, M.A. (A., P., M.), A. R. Dow (A.), W. Dow (A., P., M.), J. Ferguson, M.A. (P.), T. Forsyth (A., P.), J. A. Garden (A., P., M.), G. Garry (A.), J. R. Gilmour (A.), J. M. Gordon (M.), J. A. Hagerty (M.), R. D. Hodge (P.), J. M. Huey (M.), J. B. D. Hunter (M.), N. M'C. Hutchison (P., M.), E. D. Jackson (M.), G. R. Jeffrey (M.), W. F. Kay (M.), A. M. Kerr (M.), W. H. Kirk (A.), A. Leitch (P.), S. E. Lewis (A.), T. Lovett (M.), D. D. M'Douglas, M.A. (M.), A. Macintyre (M.), I. M'Kenzie, M.A. (A., P.), J. C. M'Kenzie (A., P., M.), T. M'Laren (P.), J. R. M'Vail (A., P.), R. H. Manson (A., P., M.), H. S. Martyn, M.A. (A., P., M.), R. Menzies (P., M.), A. J. Mitchell (M.), J. Muir (A., M.), J. S. Nicolson (A., P.), D. Penman (M.), T. Rankine (M.), J. M. Reid (M.), D. Riddell (M.), W. Robertson (P., M.), J. Russell (A., P., M.), J. Samson (M.), R. C. J. Schlomka (P., M.), F. D. Scott (M.), M. B. G. Sinnette (A.), J. W. Smith (M.), R. C. Smith (M.), J. Stevenson (A., P., M.), J. B. Stewart (P.), R. R. Swan (A.), J. A. Thom (A., P., M.), J. R. Thomas (A., M.), W. W. Turner (A., P., M.), R. Wallace (P.), T. I. Wallace (P., M.), R. Watson (M.), A. B. Watt (M.), P. M. Waugh, (A.), R. T. Wells, M.A. (A., P.), J. F. Weston (M.), J. White, M.A. (A., P.), J. Wilson (M.), E. Wright (M.), W. Young (P.).

Women.—H. S. Baird, B.A. (A., P.), J. Campbell (P., M.), K. Fraser, B.Sc. (A., P.), E. MacLeod Lochhead (M.), M. H. Scott (M.), E. C. Wallace (P., M.).

The following passed "with distinction":

In Anatomy and Physiology: J. White, M.A. In Physiology: D. Douglas, M.A.; Kate Fraser, B.Sc. In Materia Medica and Therapeutics: A. G. Banks, J. C. Christie, J. B. D. Hunter, G. R. Jeffrey, A. M. Kerr, D. D. MacDougall, M.A., J. Muir, J. M. Reid.

THIRD PROFESSIONAL EXAMINATION FOR THE DEGREES OF BACHELOR OF MEDICINE (M.B.) AND BACHELOR OF SURGERY (Ch.B.).—The following have passed the examination in the subjects indicated (P., Pathology; M., Medical Jurisprudence and Public Health):—

J. Anderson (M.), R. W. Auld (M.), J. S. Barr (M.), E. C. Burnett (P., M.), S. J. Cameron (M.), A. Currie (P., M.), J. S. Dale (M.), D. B. Davidson (M.), J. Davidson, M.A. (P., M.), G. H. G. Davie (M.), W. Elder (P., M.), W. W. Farrar (P., M.), G. Ferguson (M.), D. J. Fletcher (P.), W. Gemmell (P., M.), M. Hunter (M.), D. Kyle, M.A. (M.), A. Linn, (P., M.), F. J. Lochrane (M.), J. P. Lusk (P.), W. M. M'Glashan (P.), H. A. M'Lean (P., M.), A. M'G. M'Millan (P., M.), A. D. Mitchell (P., M.), S. J. Moore (P., M.), J. Morison (P. M.), R. Orr (M.), J. N. Prentice (P., M.), R. Ramsey (M.), J. W. Renton (P., M.), W. Robertson (M.), J. C. Ross (P., M.), J. Smith (P., M.), J. G. Tomkinson (M.), J. W. Turner (M.), R. G. White, M.A., B.Sc. (P., M.); J. Wilson (P., M.).

Women.—M. Adams (P., M.), J. T. Miller (P., M.), A. Moorhouse (P., M.), A. B. Sloan (P., M.), E. M. Sloan, (P., M.).

The following passed "with distinction":

In Pathology: J. C. Ross. In Medical Jurisprudence and Public Health: J. S. Barr, S. J. Cameron, R. Ramsey.

ROYAL UNIVERSITY OF IRELAND.

M.B., B.Ch., B.A.O. DEGREES EXAMINATION.—The Examiners have recommended that the following candidates be adjudged to have passed the above-mentioned examination.

Upper Pass.—T. Gray, Queen's College, Belfast; J. McCrea, B.A., Queen's College, Belfast; Everina S. I. Massy, Catholic University School of Medicine; J. C. Rankin, Queen's College, Belfast; J. H. Reford, Queen's College, Belfast; H. E. Rutherford, Queen's College, Belfast; H. B. Steen, Queen's College, Belfast; H. Stevenson, B.A., Queen's College, Belfast; J. Torpey, Queen's College, Cork; A. Welply, Queen's College, Cork.

Pass.—J. W. Brown, B.A., Queen's College, Belfast; W. J. Cousins, Queen's College, Belfast; M. Crowley, Catholic University School of Medicine; J. P. Dee, Queen's College, Cork; A. J. Frost, Catholic University School of Medicine; E. Heskin, Queen's College, Cork; O. E. Jackson, Queen's College, Belfast; W. E. J. Jones, Queen's College, Belfast; S. McClure, Queen's College, Belfast; J. A. Mills, B.A., Queen's Colleges, Galway and Belfast; W. Nicholson, Queen's Colleges, Galway and Belfast; P. L. O'Driscoll, Queen's College, Cork; J. J. O'Mahony, B.A., Queen's College, Cork; J. Stewart, Queen's College, Belfast; S. Waddell, Queen's College, Galway.

THIRD EXAMINATION IN MEDICINE.—The Examiners have recommended that the following candidates be adjudged to have passed the above-mentioned examination:

Upper Pass.—S. H. G. Blakely, Queen's College, Belfast; R. J. Bethune, Queen's College, Belfast; H. M. Johnston, Queen's College, Belfast; E. J. Tuckey, Queen's College, Cork; W. Warnock, Queen's College, Galway.

Pass.—J. H. Campbell, Queen's College, Belfast; A. A. Chancellor, Queen's College, Belfast; W. Cummings, Queen's College, Belfast; P. F. Dolan, M.A., Catholic University School of Medicine; A. J. Foot, Queen's College, Cork; Elizabeth S. Graham, Queen's College, Belfast; J. Hartigan, Catholic University School of Medicine; S. T. Irwin, Queen's College, Belfast; J. W. Killen, Queen's College, Belfast; M. J. Landy, Catholic University School of Medicine; M. M. Lee, B.A., Catholic University School of Medicine; G. F. Luke, Queen's College, Belfast; J. L. Lunham, Queen's College, Cork; F. E. McCune, B.A., Queen's College, Belfast; F. C. Mann, Queen's College, Belfast; J. F. G. Martin, Queen's College, Belfast; P. J. Murray, Catholic University School of Medicine; J. F. O'Mahoney, Queen's College, Cork; M. A. Shinkwin, Queen's College, Cork; J. Shipsey, Queen's College, Cork; J. E. Simpson, Queen's College, Belfast; J. K. Small, Queen's College, Belfast; W. A. Stoops, B.A., Queen's College, Belfast; C. E. Suffern, Queen's College, Belfast; T. H. Suffern, Queen's College, Belfast; A. T. Swan, Catholic University School of Medicine; Margaret Toner, Queen's College, Belfast.

SECOND EXAMINATION IN MEDICINE.—The Examiners have recommended that the following candidates be adjudged to have passed the above-mentioned examination:

Upper Pass.—Lily A. Baker, Catholic University School of Medicine; M. Cagney, Queen's College, Cork; W. M. Crofton, Catholic University School of Medicine; H. P. Devlin, Catholic University School of Medicine; Mary K. Gibson, Catholic University School of Medicine; D. Gillespie, Queen's College, Belfast; T. Lyle, Queen's College, Belfast; J. C. McPherson, Queen's College, Belfast; J. N. Meenan, Catholic University School of Medicine; R. G. Meredith, Catholic University School of Medicine; W. Menford, B.A., Queen's College, Belfast; J. H. Moore, Queen's College, Belfast; Mary E. Simms, Queen's College, Belfast.

Pass.—A. P. Barry, Catholic University School of Medicine; C. Baylor, Queen's College, Cork; C. J. Boucher, Queen's College, Belfast; C. Byrne, Catholic University School of Medicine; P. T. Crymble, Queen's College, Belfast; J. Dawson, Queen's College, Cork; M. F. Farrell, Catholic University School of Medicine; E. Fitzgerald, Queen's College, Belfast; M. FitzGerald, Catholic University School of Medicine; Marie E. Hayes, Catholic University School of Medicine; C. G. Lowry, Queen's College, Belfast; J. Macarthur, Queen's College, Belfast; F. McDonald, Catholic University School of Medicine; J. W. McFarland, Catholic University School of Medicine; D. McGrath, Queen's College, Belfast; J. C. McHugh, Catholic University School of Medicine; G. B. Moffatt, Queen's College, Belfast; J. Morris, Queen's College, Cork, and St. Bartholomew's Hospital, London; M. J. O'Flynn, Queen's College, Galway; J. J. O'Keefe, Queen's College, Cork; J. W. Pitt, Queen's College, Belfast; P. Power, Queen's College, Cork; D. H. Vickery, Catholic University School of Medicine, School of Physic, Trinity College, Dublin, and Royal College of Surgeons; G. W. W. Ware, Queen's College, Cork.

FIRST EXAMINATION IN MEDICINE.—The Examiners have recommended that the undermentioned candidates be adjudged to have passed the examination:

J. W. Allen, Queen's College, Belfast; W. J. McL. Baird, Queen's College, Belfast; J. A. Beamish, Queen's College, Belfast; J. A. Boyd, Queen's College, Belfast; A. E. Browne, Queen's College, Belfast; W. A. Burke, University College, Dublin; H. J. Byrne, University College, Dublin; J. Dempsey, Queen's College, Belfast; J. Houlihan, University College, Dublin; W. Irwin, Queen's College, Cork; J. Kelly, University College, Dublin; J. A. Lowry, Queen's College, Belfast; J. McConaghy, Queen's College, Galway; R. H. McGiffen, Queen's College, Belfast; G. Madden, University College, Dublin; J. P. Moore, University College, Dublin; W. Murphy, Queen's College, Cork; Jeannie R. Murray, Queen's College, Belfast; S. Porterfield, Queen's College, Galway; T. West, Queen's College, Belfast; W. M. Woods, Queen's College, Cork.

CONJOINT BOARD IN IRELAND.

PRELIMINARY EXAMINATION.—Candidates have passed this Examination as undernoted:

Honours (in order of merit).—B. Bury, R. F. O'T. Dickinson, R. A. Browne, J. Molyneux, J. O'Donnell, A. Hipwell.

Pass (alphabetically).—M. J. Ahern, J. M. Alison, J. Allaun, C. W. N. Anderson, C. J. D. Bergin, B. N. Blood, R. J. Bonis, W. R. Burton, P. M. Carroll, W. C. Carson, E. J. Clarke, S. C. Clarke, V. J. P. Clifford, T. W. Conway, J. J. Dove, R. Fyffe, B. C. M'C. Hannan, P. E. Hayden, F. N. Hillis, W. P. Kennedy, J. A. Laughton, L. Lucas, B. Martin, H. R. Matthews, S. Miller, J. J. Murphy, R. V. Murphy, J. J. McNelis, R. A. Odlum, C. L. Pemberton, R. K. Ronagne, L. P. Schlegel, A. H. Smith, H. C. Smyth, J. R. Talbot, L. P. Vernon, M. P. Walsh, W. G. Wright.

FIRST PROFESSIONAL EXAMINATION.—Candidates have passed this examination as undernoted:

In all Subjects.—T. A. Bennett, J. Bradley, C. W. O'Keeffe, J. O'Kelly.

Completed the Examination.—J. R. P. Allin, E. A. Bernard, G. P. A. Bracken, M. Campbell, W. S. Carter, P. I. Casey, W. J. Connolly, J. M. G. Foley, E. P. Harding, L. A. Hynes, A. E. S. Irvine, Miss F. J. Lardner, J. M. Moriarty, J. Murnane, Ed. Purcell, A. J. Swantor, S. W. Talbot, M. J. Trimble.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Queen's Visit.

When the Queen was in Dublin last April the Royal College of Surgeons in Ireland presented a loyal address, which was printed in our columns at the time. The Home Secretary has now transmitted to the President the following reply from Her Majesty:

"I thank you heartily for the loyal and dutiful address which you presented to me during my recent stay in Ireland. It gave me a particular pleasure to receive the representatives of your distinguished profession, the reputation of which for skill and devotion to duty has lately been so conspicuously maintained under the severest tests."

SOCIETY OF APOTHECARIES OF LONDON.

Primary Examination, Part II.—The following candidates passed in:

Anatomy.—H. Archer, Leeds; St. C. G. Ballenden, Birmingham; H. A. S. Gover, St. Mary's Hospital; R. V. Khedkar, Bombay; F. C. R. M. Knight, Guy's Hospital; W. Lovell, St. Mary's Hospital; E. H. McMahon, Charing Cross Hospital; H. P. Margetts, St. Bartholomew's Hospital; S. Northwood, Birmingham; W. V. Peglar, Leeds; A. C. Stark, Westminster Hospital; S. H. Sugden, Manchester; R. W. Taylor, Leeds; M. L. Tyler, Royal Free Hospital; M. G. L. Walker, Leeds; S. H. R. Welch, Charing Cross Hospital.

Physiology.—G. H. Almond, Cambridge; H. Archer, Westminster Hospital; St. C. G. Ballenden, Birmingham; E. W. C. Bradfield, St. Mary's Hospital; W. L. Crabtree, Leeds; H. A. S. Gover, St. Mary's Hospital; I. Griffith, London Hospital; A. F. Heald, Cambridge; H. S. Jones, Guy's Hospital; R. V. Khedkar, Bombay; F. C. R. M. Knight Guy's Hospital; W. Lovell, St. Mary's Hospital; H. E. Scoones, St. Bartholomew's Hospital; C. M. Scott, Royal Free Hospital; J. B. Stephens, St. Mary's Hospital; M. L. Tyler, Royal Free Hospital; M. G. L. Walker, Leeds.

Primary Examination, Part I.—The following candidates passed in:

Chemistry.—A. Bernfeld, Royal Free Hospital; A. G. Elsworthy, Charing Cross Hospital; M. S. Jevons, R. Khedkar, Bombay; R. H. Rigby, Leeds.

Materia Medica and Pharmacy.—J. B. Bradley, Birmingham; E. C. Curtis, Aberdeen; A. T. Greenhill, St. Bartholomew's Hospital; T. E. Johnson, London Hospital; R. Khedkar, Bombay; O. Millauro, Westminster Hospital; J. M. Worswick, Manchester.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,087 births and 3,964 deaths were registered during the week ending Saturday last, October 6th. The annual rate of mortality in these towns, which had been 18.1 and 18.5 per 1,000 in the two preceding weeks, declined again last week to 17.8. The rates in the several towns ranged from 8.7 in Croydon, 13.8 in Nottingham, 14.2 in Cardiff, 14.3 in Brighton, and 14.4 in Bristol to 24.1 in Norwich, 24.8 in Salford, 25.1 in Sunderland, and 26.0 in Manchester. In the thirty-two provincial towns the mean death-rate was 19.1 per 1,000, and exceeded by 3.3 the rate recorded in London, which was 15.8 per 1,000. The zymotic death-rate in the thirty-three towns averaged 3.0 per 1,000; in London this death-rate was equal to 2.2 per 1,000, while it averaged 3.6 in the thirty two provincial towns, among which the highest zymotic death-rates were 5.7 in Leicester, 5.8 in Sheffield, 5.9 in Norwich, and 6.7 Burnley, in Sunderland, and in Gateshead. Measles caused a death-rate of 1.0 in Swansea and in Huddersfield, and 1.1 in Newcastle; whooping-cough of 1.3 in Preston and 1.4 in Gateshead; "fever" of 1.0 in Swansea and in Sheffield, 1.4 in Sunderland, and 1.9 in Portsmouth; and diarrhœa of 4.2 in Sunderland, 4.0 in Burnley, 5.0 in Norwich, and 5.2 in Gateshead. The mortality from scarlet fever showed no marked excess in any of the large towns. The 92 deaths from diphtheria in the thirty-three towns included 29 in London, 11 in Leicester, 9 in Leeds, 7 in Sheffield, and 7 in Liverpool. No fatal case of small-pox was registered last week, either in London or in any of the thirty-two large provincial towns; and only 1 case of small-pox was under treatment in the Metropolitan Asylum Hospitals on Saturday last, October 6th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 1,703 to 1,938 at the end of the five preceding weeks, had further risen to 2,071 on Saturday last; 313 new cases were admitted during the week, against 243, 269, and 318 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 6th, 968 births and 595 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 18.9 per 1,000 in each of the three preceding weeks, rose to 19.3 per 1,000 last week, and showed an excess of 1.5 over the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 13.5 in Perth and 15.3 in Paisley to 21.9 in Aberdeen and 23.2 in Greenock. The zymotic death-rate in these towns averaged 2.5 per 1,000, the highest rates being recorded in Glasgow and Greenock. The 285 deaths registered in Glasgow included 1 from small-pox, 6 from measles, 5 from scarlet fever, 2 from diphtheria, 7 from whooping-cough, 11 from "fever" (including 1 from bubonic plague), and 26 from diarrhœa. Three fatal cases of measles, 3 of diphtheria, and 5 of diarrhœa were recorded in Edinburgh. Ten deaths from diarrhœa occurred in Dundee, 5 in Paisley, and 4 in Aberdeen; and 9 deaths from whooping-cough in Greenock.

PLAGUE ORDERS OF THE LOCAL GOVERNMENT BOARDS IN SCOTLAND AND IRELAND.

Following hard on the footsteps of the Local Government Board, England, the similar authority for Scotland has issued a strongly-worded Order to the various sanitary bodies under its control. The Orders for England were noticed in the British Medical Journal of September 29th, and these are of a like nature. Local authorities, medical officers of health, etc., are reminded of their duties and powers, and it is rightly pointed out that these should place their houses in order, render void all noisome dens, demolish slum areas, and abolish whatever may be a favouring soil for the bacillus, rather than to wait for the advent of the germ and then adopt panic measures. The principles of prevention are to be enforced whereby the practice of cure may be rendered unnecessary. The statutory duties, so far as they were adopted by the Convention of Venice, and lists of susceptible articles and goods, the importation of which may be prohibited, are set forth. The measures to be taken at ports are detailed. In 1898 the Edinburgh Board issued "Regulations as to Cholera, Yellow Fever, and Plague." These regulations are again brought to the notice of local authorities, and they are informed that since the Venice Convention certain new facts concerning the method of spread of the disease have become known, and more efficient methods of combating its spread have been under trial. Quite apart from the special disease with which the Order deals, it may fairly be hoped that it will stir some of the procrastinating or recalcitrant sanitary authorities (of which the Order speaks) to more vigorous action in the near future. The Local Government Board in Ireland has also issued a similar notice urging sanitary authorities to exercise the utmost vigilance in view of the outbreak of bubonic plague in Glasgow. The circular points out the measures which should be taken and recommends the adoption of the Infectious Diseases Notification Act.

THE METROPOLITAN ASYLUMS BOARD.

Diphtheria and Small-Pox.

The latest returns of the Metropolitan Asylums District show that during the fortnight ending Thursday, October 4th, 1,152 patients had been admitted into the hospitals of the Board, and that 3,639 were on that date under treatment, being 387 more than the number under treatment a fortnight previously. There were amongst the 3,639 no fewer than 2,021 sufferers from scarlet fever, 1,255 from diphtheria, and 363 from enteric fever. There were only 2 cases of small-pox in the hospital ships. The managers are now prepared to admit cases of small-pox into the hospital ships at a charge of 4 guineas a case from various extra-metropolitan district authorities.

Enteric Fever.

The considerable prevalence of enteric fever, especially in East London, has compelled the managers to resume occupation for three months of the 36 beds which they hired last year at the Metropolitan Hospital, at the rate of £50 a week, including (as before) medical attendance, nursing and domestic staff, the managers undertaking the laundry.

Classification of Imbeciles.

The managers have recognised for some time past the necessity of providing additional accommodation for imbeciles, both for adults and children. An asylum for 750 patients is being erected at Tooting Bec, and premises have lately been acquired at Little Ealing for the temporary reception of 150 improvable imbecile children. Property is also being purchased at Sutton for the accommodation of imbeciles. Complaints were made at the Board meeting that impediments had been placed in the way of bringing about a better classification of imbeciles at Darenth Asylum, and that imbecile children were being kept in workhouses in London because of the lack of proper accommodation. One member considered it nothing short of a scandal that children and adults were herded together at Darenth Asylum, and that the necessary accommodation had not been sooner provided. The Committee's recommendations were agreed to.

PAUPER CONFINEMENTS IN SCOTLAND

Hylax (Scotland) asks whether as parochial medical officer he is entitled to a fee from the parish council for attending a pauper in her confinement?

*** We are informed that parish councils in Scotland generally make their own arrangements with the medical officers. If there is no special arrangement about midwifery fees, the parochial medical officer may be required to attend midwifery without further remuneration than his salary.

HOSPITAL AND DISPENSARY MANAGEMENT.

EDINBURGH ROYAL INFIRMARY.

At their weekly meeting on Monday, October 8th, the managers of the Royal Infirmary made the following appointments for a period of six months as from October 1st: Mr. Rob. A. Ross, M.B., Ch.B., Resident Physician to Professor Greenfield; Mr. H. Torrance Thomson, M.D., C.M., non-Resident House Surgeon; and Mr. George K. Grimmer, M.B., C.M., Clinical Assistant to Dr. P. M'Bride; Mr. F. P. Simpson, M.B., Ch.B., Clinical Assistant to Professor Simpson; Mr. J. Matheson Cullen, M.D., B.Sc., and Mr. F. Mayes Willcox, M.B., C.M., Clinical Assistants to Dr. R. W. Philip in the medical waiting room and Ward Six respectively. Mr. Geo. Mackie, M.B., C.M., was appointed Resident Medical Officer at the Convalescent House, Corstorphine, for six months as from October 1st.

The German Anthropological Society hold its thirty first annual meeting at Halle from September 23rd to 27th.

London (Royal Free Hospital) School of Medicine for Women.—The following scholarships have been awarded: Entrance Scholarship (£30) to Miss J. Copland; St. Dunstan Scholarship (value £60) to Miss Nora Smith.

MEDICAL NEWS.

MEDICAL MAGISTRATE.—Mr. M. Cursham Corner, of Mile End Road, E., has been appointed a Justice of the Peace for the County of London, Tower Division.

DR. W. A. DOW, of Lewes, has recently been appointed Deputy Coroner for East Sussex by the Coroner, Dr. G. Vere Benson, with the approval of the Chairman of the County Council. Dr. Dow is an M.D. of Durham, and holds the appointments of Medical Officer to H.M. Civil Prison and the Naval Prison, both in Lewes.

AT the opening meeting of the Chelsea Clinical Society, which will be held at 8.30 P.M. on Tuesday next, at the Holy Trinity Parish Hall, Pavilion Road, Sloane Square, the President, Dr. William Ewart, will give an address on a Clinical View of some of the Mechanisms of the Heart and its Valves. This meeting will be open to all members of the medical profession on presentation of their card.

THE autumn session of lectures at the Hospital for Diseases of the Skin, Blackfriars, begins on October 23rd, when Mr. George Pernet will deliver a lecture at 5 P.M. on Animal Parasitic Diseases. Seven subsequent lectures will be given on successive Tuesdays at the same hour, and cases of interest illustrative of various cutaneous diseases will be shown at each lecture.

THE SANITARY INSTITUTE.—Examinations in practical sanitary science for inspectors of nuisances under the Public Health Act, 1875, will be held by the Sanitary Institute during 1901 in Bristol, Edinburgh, Birmingham, London, Dublin, Bradford, Liverpool, Cardiff, Norwich, Newcastle, and Manchester; for inspectors of meat and other foods in Birmingham and Liverpool; and in practical hygiene for school teachers in London and Bradford. Examinations in practical sanitary science are also held in Sydney, New South Wales, where a local board of examiners has been appointed to conduct the examination. The regulations and syllabus are practically the same as in Great Britain.

THE LEBANON HOSPITAL FOR THE INSANE.—On August 6th there was opened on one of the lower slopes of Mount Lebanon, Syria, near to the carriage road from Beyrout to Damascus, a newly-built hospital for the care of lunatics. It has been founded by Mr. Theophilos Waldmeier, a veteran missionary in Abyssinia and Syria, and consists of a central administration block, and two pavilions, for male and female patients respectively, accommodating twenty of each sex. Seventeen patients are already under care. Land and gardens for the growth of wheat, olives and other fruit surround the houses. Dr. Wolff, from the Munsterlingen Asylum, Switzerland, is the Medical Superintendent. This is the first organised lunatic hospital in Syria, and the need for such institutions in the East is great. It will probably be dependent upon support from Europe for a good many years. Dr. Percy Smith is the chairman of the committee in London, which includes amongst others Dr Robert Jones, of Claybury, and Dr. Bedford Pierce, of York; Sir Richard Tangye acts as treasurer.

MEDICAL VACANCIES.

The following vacancies are announced:

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—Resident Surgeon; unmarried. Salary, £40 for the first year, increasing to £100, with board and furnished apartments. Applications to the Secretary by October 22nd.

BANBURY: HORTON INFIRMARY.—House-Surgeon and Dispenser. Salary, £80 per annum, with board and lodging. Applications to Mr. C. H. Davids, Honorary Secretary, 21, Marlborough Road, Banbury.

BATH: EASTERN DISPENSARY.—Resident Medical Practitioner. Salary, £130 per annum, with furnished apartments. Applications to the Honorary Secretary, 10, Darlington Place, Bath, before October 27th.

BIRMINGHAM: CITY FEVER HOSPITAL.—Second Assistant Medical Officer. Salary, £120 per annum, with board, residence, etc. Applications to the Medical Superintendent.

BODMIN: CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £120, rising to £150 per annum with board, furnished apartments, etc. Applications to the Medical Superintendent.

BRADFORD ROYAL INFIRMARY.—House-Physician; unmarried. Salary, £100 per annum, with board and residence. Applications endorsed "House-Physician" to the Secretary.

BRISTOL: HAM GREEN FEVER HOSPITAL.—Resident Medical Officer. Salary, £100 per annum, with board, lodging, and washing. Applications to Dr. D. S. Davies, Medical Superintendent City Hospitals, 40, Princes Street, Bristol, by November 1st.

BUXTON DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant House-Surgeon," to the Secretary.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—House-Surgeon. Salary at the rate of £50 per annum, with board and residence. Applications to the secretary.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon; unmarried. Salary, £80 per annum, with board and apartments. Applications to the Honorary Secretary by October 27th.

CITY DISPENSARY.—Physician. Applications to the Secretary, 98, Cannon Street, E.C., by October 19th.

CITY OF LONDON ASYLUM (near Dartford).—Second Assistant Medical Officer and Pathologist; unmarried, and under 30 years of age. Salary, £150 per annum, with board, furnished apartments etc. Applications to the Clerk to the Visiting Committee, Guildhall, E.C., by October 26th.

CROYDON BOROUGH HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer. Salary, £120, rising to £140 at the end of six months, with board and residence. Applications, endorsed "Resident Medical Officer," to Dr. Meredith Richards, Medical Officer of Health, Town Hall, Croydon, by October 18th.

DERBY COUNTY ASYLUM.—Second Assistant Medical Officer. Salary, £100 per annum, rising to £130, with board lodging, and washing. Applications to the Medical Superintendent, County Asylum, Mickleover, Derby.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon for six months. Salary at the rate of £40 per annum, with board lodging, and washing. Applications to the Chairman of Medical Committee by October 25th.

HALIFAX ROYAL INFIRMARY. Third House-Surgeon unmarried. Salary £80 per annum, with residence, board, and washing. Applications to the Secretary by October 17th.

HULL: CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer. Salary, £150 per annum, with board, apartments, and washing. Applications (on forms provided) endorsed "Assistant Medical Officer," to be addressed to the Chairman of the Asylum Committee, care of the Town Clerk, Town Hall, Hull, by October 19th.

HULME DISPENSARY, Dale Street, Manchester.—House-Surgeon. Salary, £150 per annum, with apartments, etc. Applications to the Honorary Secretary of the Medical Committee by October 20th.

KENT AND CANTERBURY HOSPITAL.—House-Surgeon; unmarried. Salary, £100 a year, with board and lodging. Applications to the Secretary by October 15th.

LANCASTER COUNTY ASYLUM.—Assistant Medical Officer. Salary commencing at £125 per annum, with usual allowances. Applications to the Medical Superintendent.

LEICESTER INFIRMARY.—House-Surgeon. Salary, £120, rising £10 per annum until the third year, with board, apartments, and washing. Applications to the Secretary, 24, Friar Lane, Leicester, by October 20th.

LONDON: FRENCH HOSPITAL AND DISPENSARY.—Resident Medical Officer. Salary, £80 per annum, with full board. Applications to the Secretary, 172, Shaftesbury Avenue, W.C.

LONDON SCHOOL BOARD.—Medical Officer for the training ship "Shaftesbury," off Grays. Salary, £100 per annum, increasing to £150, and 1s. for each boy examined prior to admission to the ship. Applications to Mr. W. Mason, Acting Clerk to the Managers, School Board Offices, Victoria Embankment, by October 13th.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant Resident Medical Officer. Appointment for six months. Honorarium at the rate of 50 guineas per annum with board, residence, and washing. Applications to the Secretary by October 29th.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee.

MARGATE: ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon. Salary, £100 per annum, with board and residence. Applications to the Secretary, at the offices, 30, Charing Cross, London, S.W., by October 25th.

NOTTINGHAM CHILDREN'S HOSPITAL.—House-Surgeon. Appointment for six months but eligible for re-election. Salary at the rate of £50 per annum. Applications to the Secretary, Mr. A. F. Kirby, St. Peter's, Church Walk, Nottingham.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—Surgeon to Out-patients; must be F.R.C.S. Applications to the secretary by November 3rd.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Assistant Resident Medical Officer. Appointment for four months. Salary at the rate of £50 per annum, with board, residence, and washing. Applications to the Secretary by October 22nd.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Two House-Physicians. (2) One House-Surgeon. (3) One Casualty Surgeon. Appointments for six months. No salary, but board, etc. provided. Applications to the Secretary by October 29th.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—House-Physician. Appointment for six months but eligible for re-election. Salary at the rate of £40 per annum, with furnished apartments board, and washing. Applications to the Secretary by October 23rd.

RYDE: ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £70 per annum, and fee of £10 for lectures to nurses. Applications to the Secretary by October 16th.

ST. PANCRAS AND NORTHERN DISPENSARY, Euston Road, N.W.—Two Honorary Physicians. Applications to the Honorary Secretary, 23, Gordon Street, W.C., by November 3rd.

SALFORD ROYAL HOSPITAL.—Second Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the Board of Management by October 15th.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with rooms, board, and washing. Applications to the Secretary before November 1st.

SUNDERLAND INFIRMARY.—(1) House-Physician, (2) House-Surgeon. Salaries, £80 rising to £100 per annum, with board and residence. Applications, endorsed "Applications for Resident Medical Appointment," to the Secretary, by October 17th.

TAUNTON: TAUNTON AND SOMERSET HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £30 per annum, with board, lodging, and laundry. Applications to the Honorary Secretary.

TIVERTON INFIRMARY AND DISPENSARY.—House-Surgeon, unmarried. Salary, £80 and board, lodging and washing. Applications to the Honorary Secretary by October 31st.

STOURBRIDGE DISPENSARY.—House-Surgeon. Salary, £120 increasing to £130, with furnished rooms, etc., £25 and allowance for travelling expenses. Applications to the Secretary by October 15th.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Physician. Salary £100 a year, with board, lodging, and washing. Applications to the Secretary by October 18th.

WORCESTER GENERAL INFIRMARY.—House-Surgeon. Salary, £100 per annum, with board and residence. Applications to the Secretary by October 27th.

MEDICAL APPOINTMENTS.

BROWN, John, M.D., D.P.H.Vict. Univ., reappointed Medical Officer of Health for the Borough of Bacup.

BROWN, J. Percival, M.B., Ch.B.Vict. Univ., appointed Junior House-Surgeon to the Macclesfield General Infirmary.

DURRANT, Charles E., L.R.C.P.Lond., M.R.C.S.Eng., appointed House Physician to the General Lying-in Hospital, York Road, London.

FISHER, Charles, M.R.C.S., L.R.C.P., appointed Resident Medical Officer to the Victoria Hospital for Sick Children, Chelsea.

GEMMELL, Samuel, M.D.Glasg. appointed Professor of Clinical Medicine in the University of Glasgow, *vice* McCall Anderson, M.D.Glasg., resigned.

GILLIBRAND, William, M.R.C.S., appointed Medical Referee under the Workmen's Compensation Act for Bolton in County Court Circuit No. 5.

GIMSON, K. C., M.B., B.C.Camb., appointed Certifying Factory Surgeon for the Witham District of Essex.

HALL, J. Basil, M.C.Cantab., appointed Honorary Assistant Surgeon to the Bradford Royal Infirmary.

LAURIE, Langworthy, M.B., Ch.B.Edin., appointed House-Surgeon to the Victoria Hospital, Bournemouth.

MENZIES, F. N., M.B., Ch.B. Edin., appointed Senior Resident Physician at the Brompton Hospital for Consumption and Diseases of the Chest.

MILLIGAN, W. J., M.A., M.B., C.M., F.R.C.S.Edin., appointed Anæsthetist to the Great Northern Central Hospital.

MULES, P. H., M.D.Edin., M.R.C.S.Eng., appointed Ophthalmic Surgeon to the Wrexham Infirmary, *vice* William Charnley, M.D., deceased.

PLUMLEY, Arthur George Grant, M.B.Lond., M.R.C.S., L.R.C.P., L.D.S.Eng., appointed Dental Surgeon to the Clayton Hospital and Wakefield General Dispensary.

RUBBA, H. H., M.B.Brux., M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant Anæsthetist to the Great Northern Central Hospital.

SLATER, B. H., B.A., M.B.Camb., M.R.C.S., L.R.C.P., appointed Honorary Assistant Surgeon to the Bradford Royal Infirmary.

SMITH, F. Emslie, M.B., C.M., appointed Junior House-Surgeon to the Great Northern Central Hospital.

SPENCE, Arthur D., M.B., Ch.B.Edin., appointed House-Surgeon to Tottenham Hospital.

DIARY FOR NEXT WEEK.

MONDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Abraham: Some Skin Affections.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Malcolm Morris: Consultation. (Skin.)

TUESDAY.

Pathological Society of London, 20, Hanover Square, W., 8.30 P.M.—Dr. Churton: A Case of Pulmonary Valvulitis. Dr. Poynton and Dr. Paine: The Etiology of Rheumatic Fever. (Lantern Demonstration.)

Chelsea Clinical Society, Holy Trinity Parish Hall, Pavilion Road, Sloane Square, S.W., 8.30 P.M.—Opening Address by the President, Dr. William Ewart, on a Clinical View of Some of the Mechanisms of the Heart and its Valves.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Sir W. H. Broadbent: Consultation. (Medical.)

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. James Cantlie: Consultation. (Surgical.)

London Throat Hospital, 204, Great Portland Street, W., 5 P.M.—Dr. Furniss Potter. Examination of Larynx.

THURSDAY.

Central London Throat, Nose, and Ear Hospital, 5 P.M., *or* Wyatt Wingrave: Morbid Anatomy and Pathology of the Pharynx.

Harveian Society of London, Stafford Rooms, Twyborne Street, Edgware Road W., 8.30 P.M.—Mr. C. W. Mansell Moullin on the Advisability of Early Operation in Cases of Acute Inflammation of the Appendix.

Ophthalmological Society of the United Kingdom.—Patients and Card Specimens at 8 P.M. Chair at 8.30 P.M. Papers:—Mr. Nettleship: Cases of Blindness from Bullet Wound of the Orbit. Mr. C. Worth: Orthoptic Treatment of Convergent Strabismus. Mr. R. D. Batten: Eclipse Blinding, with Choroido-retinitis and Obstruction of a retinal Artery. Dr. David Wood: Case of Cysticercus in the Eye.

Charing Cross Hospital, Post-Graduate Course, 4 P.M.—Mr. Stanley Boyd: Surgical Cases.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Robinson: Vulval and Vaginal Discharges.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Hutchison: Infant Feeding.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.) 3 P.M.—Dr. Harrison Low. Class. Practical Application of Roentgen Rays. (Demonstration 5.)

Royal College of Physicians of London, 4 P.M.—Dr. T. Clifford Allbutt. The Harveian Oration.

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. St.Clair Thomson: Consultation (Nose and Ear cases) 5.15 P.M., Mr. Hayward Pinch: The Clinical Examination of the Blood.

Society for the Study of Disease in Children, 11, Chandos Street, W., 5.30 P.M.—Cases will be shown by Drs. D. B. Lees, James Taylor, George A. Sutherland, George Carpenter, James H. Sequeira, and by Messrs. R. Clement Lucas, Alfred H. Tubby, Sydney Stephenson.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BANHAM.—On October 4th, at the Cedars, Wool, Dorset, the wife of C. W. R. Banham, M.R.C.S., L.R.C.P., of a daughter.

COPEMAN.—At Cowes, I.W., on October 6th, 1900, the wife of Alfred H. Copeman, B.A. Cantab., M.R.C.S., L.R.C.P., of a daughter.

MARSH.—On October 6 h at St. Martin's, Addington, Hythe, Kent, the wife of H. Rupert Marsh, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

MASTERMAN.—On September 13th, at Jerusalem, the wife of E. W. G. Masterman, F.R.C.S., F.R.G.S., D.P.H.Cantab., of a daughter.

POTTS.—On October 5th, at the Bethnal Green Infirmary, N.E., the wife of W. J. Potts, M.D., of a son.

ROBERTSON.—On October 6th, at 5, Rhodes Street, Halifax, the wife of Andrew Robertson, M.A., M.B. and D.M.Edin., of a son.

THOMSON.—On October 6th, at 14, Coates Crescent, Edinburgh, the wife of John Thomson, M.D., F.R.C.P. Edin., of a son.

MARRIAGES.

GODSON—ENTWISLE.—On October 3rd, at the Parish Church, Cheadle, Cheshire, by the Rev. J. Godson, M.A., Vice-Principal of Sanderson Hall, Oxford, assisted by the Rev. N. Brooks, M.A., Rector of Wennington, uncles of the bridegroom, and the Rev. F. A. Wood-man, M.A., Rector, John Herbert Godson, B.A., M.B., B.C.Cantab., D.P.H.Camb., second son of Alfred Godson, M.A., M.B., M.D.Cantab., J.P., of Cheadle House, Cheadle, to Alice Maude Grace, the youngest and only surviving child of the late Thomas Entwisle, of Linden House, Cheadle.

SPONG—PICKERING.—On October 4th, at St. Luke's Church, Newtown, Pennsylvania, by the Rev. Edward Ritchie, M.A., D.C.L. Spong, B.Sc., F.R.C.S., D.S.O., youngest son of the late William Nassau Spong, F.R.C.S., of Faversham, Kent, to Mary Barnsley, only daughter of the late Henry Y. Pickering, of Titusville, and of Mrs. Pickering, Newtown, Pennsylvania.

DEATHS.

CORNER.—Ann Corner, wife of Frances Mead Corner, Manor House, Poplar, aged 68.

COWAN.—On October 8th, at Wigan, on Thursday, of pneumonia, Richard Hamilton Cowan, M.R.C.S. Eng., L.S.A., youngest son of the late Richard Hamilton Cowan, Esq., R.N., of Southsea. No cards.

SEMPLE.—On October 4th, 1900, at 14, Kenilworth Park, Rathgar, Dublin, Major John Semple, R.A.M.C., aged 45 years, late of Kasauli, India.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30. Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics Tu. Th., 9.30; Children, Tu. F., 1; Roentgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, 1.p., M. Tu. Th. F. S., 1.30; o.p., M. W. Th. F., 12; Surgical, 1.p., daily, 1.30; o.p., M. W. Th. S., 12; Obstetric, 1.p., M. Tu. Th. F., 1.30; o.p., Th. S., 12; Eye, 1.p., M. Tu. Th. F., 1.30; o.p., M. Th. F., 12; o.p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12 *Operations.*—M. Th., 2; Tu. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Tu., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, 1.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p. M. Tu. W. F., 1; Surgical, 1.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2, Tu. F., 6. *Operations.*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30. Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.* Medical and Surgical, daily, 2, Diseases of Women, Tu. S. 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; 1.-p., Tu. Th., 2.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9; Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; 1.p., 1; o.p., 12; Obstetric, i.p., Tu. F. 1.45; o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., S; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9 *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th. 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F. 2; Eye, Tu. F., 9.30; Ear, Tu., 3; Skin W., 2; Dental, W. S., 9.15. *Operations*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial mat[illegible] Acton Street, Strand, W.C., London; those [illegible] delivery of the JOURNAL, etc., should [illegible] Strand, W.C., London.

ORIGINAL ARTICLE[illegible] *be offered to the* BRITI[illegible]

AUTHORS desiring [illegible] NAT[illegible] are requested [illegible]

CORRESPONDI[illegible] nicate them wi[illegible]

CORRESPONDENTS [illegible] to Correspondents of the [illegible]

MANU[illegible] FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY [illegible]

IN ORDER [illegible], it is particularly reques[illegible] that ALL letters on the editorial business be addressed to the Editor at the Office of the JOURNAL, and not at his [illegible]

TELEGRAPHIC ADDRESS.—T[illegible] the EDITOR of the BRITISH MEDICAL JOURNAL is Al[illegible] the address of the MANAGER of the BRITISH MEDICAL JOURNAL is Attenti[illegible]

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

APERIENTS IN CONVALESCENCE FROM TYPHOID FEVER.

KINGSTONIAN asks: How soon after the temperature reaches and remains normal is it generally considered safe, in a case of typhoid fever of moderate severity, to administer aperients? I refer, of course, to a case in which the usual enemata have proved ineffectual. I take it that when admissible castor oil is the best aperient to give. Although there are rules as regards diet and the time of commencing solid food, I do not find anything in the textbooks bearing on aperients in convalescence. I should also like to know whether biniodide of mercury is used for washing out the bladder in cystitis, and, if so, of what strength?

TREATMENT OF RECURRING GONORRHŒA.

D. C. S. asks for advice in the treatment of the following case: A patient contracted gonorrhœa about four years ago in Germany, and was presumably cured after a couple of months with great difficulty. Since then he has lived in India, but during every monsoon and the cold weather the latent mischief shows itself with all virulence. The discharge is at first thick and purulent, and each bacteriological examination has revealed gonococci. He was under treatment during the last two years, and temporary cure was each time obtained with difficulty by the ordinary methods. D. C. S. also asks for advice as to the choice of recent works on the treatment of gonorrhœa, gleet, and venereal diseases, in addition to those of Mr J. Hutchinson.

ANSWERS.

TREATMENT OF THREADWORMS.

J. E. P. writes in reply to "Navalis": I have never failed to cure threadworms in children by passing a small portion of unguentum hydrarg. mitius into the rectum every night for two or three nights, followed by a small dose of castor oil next morning.

TREATMENT OF TAPEWORM.

DR. J. F. ELLIOTT, L.R.C.S., C.P.I. (Tongaat, Victoria County, Natal), writes: In reply to "Verax's" query in the BRITISH MEDICAL JOURNAL of August 18th, regarding treatment for tapeworm, I find it a very common condition out here, and have like "Verax," tried every known and unknown remedy, and am now on my own initiative trying creosote 2 minim capsules three times a day, on the principle of an intestinal disinfectant.

TREATMENT OF HYPERTRICHOSIS BY X RAYS.

DR. EDWARD SCHIFF (Wallfischgasse, Vienna) writes: I notice in the BRITISH MEDICAL JOURNAL of September 29th a request by "Roentgen Rays" for further details concerning the treatment of hypertrichosis by *x* rays. If your correspondent will again refer to my article in the JOURNAL of May 5th I think he will find therein all the salient points of this treatment. The rest is only to be gained by practice. May I add that others of your correspondents appear to be unaware of the history of this method of treatment? Dr. Schofield in the JOURNAL of May 5th publishes a case of lupus treated by *x* rays without any reference to previous work in the same field. At the annual meeting of the British Medical Association held in Portsmouth last year I had the honour to give a full account of the work which I had up to that time performed in this department, which, I believe, I may fairly claim to have been the first to originate and develop. Moreover many articles from my pen and Dr. Freund's have already appeared in the Continental medical papers upon this subject.

IRREGULAR HEART IN A YOUTH.

DR. H. G. SHORE (Newquay, Cornwall) writes: In reply to "L.R.C.P." in the BRITISH MEDICAL JOURNAL of September 29th, I would suggest inquiry as to health conditions at the patient's office. Is it gas-lit by day or below ground? Is ventilation adequate? Assuming that the general conditions in the patient's life have been made as healthy as possible, with special attention to those points bearing upon his present state, I would suggest the administration of iron (reduced) and a mixture containing a reliable tinct. cacti grandiflor., with tinct. valerian. Complete change for a few weeks with pleasant surroundings, a minimum of active exercise and a maximum of fresh air would doubtless be very beneficial. Tobacco is, of course, to be forbidden.

NOTES, LETTERS, Etc.

PROSPECTS IN SOUTH AFRICA.

As we have received a number of inquiries recently with regard to the prospects of medical practice in South Africa, it may be well to reproduce here the official notice issued by Sir Alfred Milner on October 4th:

"Arrangements are being made for commencement of return during week beginning October 15th. Return will be slow at first, about 1 000 per week, but hope pace may increase after the first few weeks. It will take at least three months to repatriate those at the present time waiting in South Africa. I strongly deprecate anyone coming out from England in the mere hope of getting employment for another three months at least; business will only gradually regain its former activity, and it takes a long time to re-start even the old numbers. On the other hand, I see no reason why people having property in the new colonies or assured of employment immediately on arrival there, or able to support themselves without it, should not now return at any time, though it is impossible to promise that they will be allowed to go up at once on their arrival in South Africa.

LONDON DIPLOMAS AND HOSPITAL APPOINTMENTS.

DR. FREDERICK W. COLLINGWOOD (Grosvenor Club, W.) writes:—As to the remarks of "M. D. Durham," in issue of BRITISH MEDICAL JOURNAL of October 6th, "A man may be satisfied with the double qualification of the London Colleges for some time," I submit that he has every right to be satisfied with these qualifications. First, the Colleges of London maintain a high standard of efficiency in their examinations; secondly, where men with London diplomas compete for the services they are able to hold their own with graduates, therefore for the authorities of county hospitals to exclude holders of the L.R.C.P., M.R.C.S., London diplomas from the post of physician is unjust, and should be remedied by the said authorities. I have always thought it a slight on the Royal Colleges of Physicians and Surgeons that their diplomates are asked to wait fifteen years before being allowed to take the M.D. of Durham.

CIDER AND GOUT.

LANCASTRIAN writes:—I frequently receive literature from the vendors of cider and perry advising me strongly to adopt the same as a diet beverage, especially if I am subject to gout in any of its many forms. I am assured cider is a specific in these conditions, and such complaints are unknown amongst cider-drinking populations. But Sir B. W. Richardson tells me, in his *Diseases of a Sedentary Life* that cider causes rheumatism, and under this term he describes a number of painful conditions which are certainly as much related to gout as to rheumatism, which, indeed, he admits. But I have heard that the frequency of gout and rheumatism in cider-drinking communities is due to the presence of lead from the use of improper utensils.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Mr. W. Anderson, London; Antiquary; Antikamnia Chemical Co., Manager of, Paris; Asylum Medical Officer; E. W. Ad ms, M.B., Macclesfield. **B** Messrs. T. B. Browne, Limited, London; Mr. A. C. Butler-Smythe, London; F. M. Blumer, M.B., Stafford; Mr W. H. Bennett, London; Messrs P. B. Burgoyne and Co., London; Messrs. Burgoyne, Burbidges and Co., London; Dr J. P. zum Busch, London; Mr. L. A. Bidwell, London; Messrs. Burroughs, Wellcome and Co., London; Dr. A. Bronner, Bradford; Mr. E. S. Bishop, Manchester; Mr G. W. Brabyn, London. **C** Mr E. C. Cripps, Cirencester; Mr. J. M. Cuthbertson, Droitwich; H. M. Cooper, M.B., Hampton-on-Thames; Mr. H. E. Clarke, Kroonstadt; Carnos Co., Manager of, Great Grimsby; Mr. F. W. Collingwood, London; Dr W. H. Calvert, Melrose; Dr. A. E. Cooper, London. **D** Dr. T. Dilworth, Fermoy; D. C. S.; Dr L. C. T. Dobson, London. **E** Mr. J. F. Elliott, Tongaat; Edinburgh; Egypt; Enquirer. **F** Dr. A. F. Fergus, Glasgow; Mr. R. Foskett, London. **G** G. P.; Dr. A. E. Giles, London; Miss Gray, Nottingham; Mr. T. P. Gostling, Worcester. **H** Dr S. Haynes, Malvern; Dr. J. Hardie, Manchester; Mr. P. E. Hill, Prickhowell; Mr. J. Hutchinson, jun., London; H. B.; Mrs Haworth, London; Mr. D. C. Haldeman London; Harveian Society, Secretary of, London; Henry Blake; Mr. G. A. Hawkins-Ambler, Liverpool; Dr. F. Hall, London. **I** Dr. F. Imlach, Liverpool. **J** Mr. F. W. Jolliye, Alresford; J. E. P.; J. P. **K** Kingstonian; Dr P. Kidd, London; Kilgerm Co., Manager of, Cleckheaton; King's College, Secretary of, London; Mr. R. Kershaw, London. **L** Mr. J. E. Lane, London; Lex; Lieutenant-Colonel, R.A.M.C.; Dr. J. M. Lawrie, Weymouth; Liebig's Extract of Meat Co., Manager of, London; Dr. W. V. Lush, Weymouth; Llama; Lancastrian; L.S.A.Lond., L.R.C.P.; Lic. of Society of Apothecaries. **M** Mr. A. Maude, Westerham; Medical Practitioner; Dr C. Mansell Moullin, London; Mr. A. Macpherson, Middlesbrough; N. O. McConnell, M.B., Belfast; M.D.; Mr. W. L. Muir, Glasgow; Mr. J. McKay, London; M.B., M.R.C.S.; Mr. S. Morton, Sheffield. **N** Mr. C. P. Newcombe, London; Niobe; Naval Surgeon; Mr. E. E. Nicholl, Billinghay; **O** Observer; Obstetrical Society, Secretary of London. **P** Dr. J. E. Platt, Manchester; Dr. W. R. Parker, Kendal; Plodder. **R** Mr. C. Rogers, London; Dr. J. C. Renton, Glasgow; Rutland; Mr A. Rose, Nairn; Rosin. **S** Mr C. G. Stuart-Monteith; London; Mr. H. Sell, London; Sir J. Sawyer, Birmingham. Mr M. C. Corner, London; Mr. C. Stuart, Dewsbury; F. A. Southam, M.B., Manchester; Scotland; A. Stuart, M.B., Glasgow; Dr E. Schiff, Vienna; Dr G. A. van Someren, Mosman, N.S.W.; Mr. H. G. Shore, Newquay, Sanitary Wood Wool Co., Manager of, London. **T** Mr. E. W. Thomas, London; Mr. H. G. Turner, Manchester; Dr F. W. Tunnicliffe, London. **W** West Indian; W. A. L.; Mr. C. F. Wightman, London; Sir Samuel Wilks, Bart., London; Dr. F. Willcocks, London; A. Wauchope, M.B., Glasgow; Dr. G. B. White, Dublin; Dr. J. Watson, Newbury; Mr. A. H. Ward, London; Mr. P. A. Wedgwood, Rushden; Dr. E. Walford, Cardiff. **Y** Dr. W. J. Young, Cambridge; **Z** Zeta.

BOOKS, ETC., RECEIVED

Essentials of Surgery. By E. Martin, A.M., M.D. Seventh Edition. London: Henry Kimpton. 1900. 4s.

Des Haarschwunds Ursachen und Behandlung. Von Dr. Jessner. Zweite Auflage. Würzburg: C. Kabitzsch. 1900. M.0·80.

Ambulance Catechism. By W. Roxburgh, M.B., C.M. Glasgow: G. A. H. Douglas and Co. 1s 6d.

Angiona, and Other Papers. By J. Duncan, M.A., LL.D. Edited by J. Hodsdon, F.R.C.P.E. Edinburgh: Oliver and Boyd. 1900. 5s.

Guy's Hospital Reports. Vol. liv. London: J. and A. Churchill. 1900.

Die Blutzusammensetzung bei den verschiedenen Anämien. Von Dr. H. Strauss und R. Rubinstein. Berlin: August Hirschwald. 1901. M.7·60.

Cancer of the Stomach. By W. Osler, M.D., F.R.S., F.R.C.P., and T. McCrae, M.B., L.R.C.P. London: H. K. Lewis. 1900. 6s.

Kurzgefasstes Lehrbuch der Kinderheilkunde. Von Dr. C. Seitz. Zweite Auflage. London: Williams and Norgate. 1901. 11s.

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PRESIDENTIAL ADDRESS
ON
THE STUDY OF CLINICAL MEDICINE.

Delivered at the First Meeting of the Clinical Society of London for the Session 1900-01.

By Sir R. DOUGLAS POWELL, Bart., M.D., F.R.C.P.,
Consulting Physician, Middlesex Hospital; President of the Society.

After thanking the Society for the honour done him in appointing him President for a second year, and calling attention to the 32nd volume of the *Transactions*, Sir Richard Douglas Powell spoke as follows:

Empirical Use of Remedies.

Sir Thomas Watson, in his inaugural address, 1868, laid it down as the great object of the Society to attain "more exactness of knowledge and therefore more direct and intelligent purpose and more successful aim, in what is really the end and object of all our labours—the application of remedies for the cure and relief of disease."

Whilst rational therapeutics must follow in the wake of advancement in pathology and etiology, it is very remarkable how many of our remedies have preceded in their employment any adequate knowledge of the maladies for which they were used. Thus for nearly four centuries mercury has been used for syphilis, and I doubt if anyone could even now tell the precise method of its action. Dr. Withering 115 years ago was shown a family receipt for dropsy concocted by an old woman in Shropshire, in which he recognised foxglove as the essential ingredient. Yet, familiar as we have so long been with digitalis, it is only within very recent years that we have had piece by piece explained to us by physiological experiment the phenomena of slowing and increased regularity of pulse with concentration of force and an increased flow of urine, which bedside observation had taught us to be the beneficent effects of the drug. Cinchona bark has for three and a-half centuries been used for intermittent fever, and Fowler's ague drops were employed in the same disease more than a hundred years ago, yet it is only with the discovery of the ague plasmodium by Laveran (1880), twenty years ago, that the use of quinine and arsenic could be regarded as rationally justified. Again, no one who has any recollection of rheumatic fever in the days preceding the introduction of the salicin treatment by Dr. Maclagan in 1874 can fail to appreciate the great value of that therapeutical discovery, yet our knowledge of the exact method of its action is at present but inferential.

We may then be thankful for much in empiricism which is but unexplained observation, the well-attested results of which we should be as foolish to reject because unexplained as to refuse to profit by the sunshine until we knew the composition of its rays. The great object of this Society is to gain increased knowledge of practical medicine by "the collection of cases, especially such as bear upon undetermined questions in pathology and therapeutics," and by pursuing it concurrently with the advance of contributory scientific research and discovery we have vastly improved our handling of drugs often empirically found, in decision and definiteness, when to employ, how far to push, and when to withhold.

The Etiology of Acute Specific Diseases.

Great strides forward have been made since, twenty-five years ago, Sir W. Jenner spoke here of "the contagious quality of acute specific diseases" as "a something given off from some part of the sick which can, when properly applied, excite the same disease in another person, and which can excite no other disease." What that something is has been rendered plain to us mostly within the last fifteen years in nearly every one of the acute specific diseases, and in some others which, although specific, are not acute. Leprosy, pyæmia, dysentery, enteric fever, ague, tuberculosis, pneumonia, diphtheria, erysipelas, cholera, tetanus, syphilis, plague may be enumerated, the organism specific to each of them having in the sense employed by Jenner been discovered. This exactness of knowledge of the *materies morbi* of these maladies must ultimately give greater precision and effectiveness in treatment, and especially in prophylactic treatment. The report of a Committee of this Society on the periods of incubation and contagion of specific fevers is of standard value and authority, and the further inquiry as to the duration of infectiousness in convalescence, which must be based upon bacteriological observations, is now possible, and might properly be undertaken by the Society. Already some fruits have been gathered in therapeutics. The triumphs of surgery that have ensued upon increasingly exact recognition of the organisms responsible for suppuration so fill the mind's eye that it can scarcely penetrate to the Dark Ages that ended less than a generation ago. The great terror of the early days of diphtheria has been almost removed by antitoxin treatment; the prophylactic treatment of tuberculosis has been greatly stimulated. A measure of success, encouraging for the future, has as least been attained in tetanus, septicæmic conditions, plague, cholera, anthrax, and we hope this session to receive some valuable contributions presenting for discussion and comparison the experience of those who have in the African war and in India watched the results of the preventive inoculations against enteric fever devised by Professor Wright. Important, however, as are these increased powers of prophylaxis and treatment, the direct fruits of recent combined laboratory and clinical labours, encouraging too, as they are, for further work, we must yet admit disappointment that they have failed to help us in some of our more homely diseases—diseases which in so great a degree account for the discomforts and death-rates of large communities.

The death-rate from pneumonia has remained unaltered for fifty years; the influenza bacillus thwarts our best efforts and carries on its guerilla warfare year after year with a gay elusiveness worthy of a De Wet; nor can we yet cure a common cold!

Proclivity, Heredity, and Immunity.

In the light of recent combined laboratory and clinical work the ideas of proclivity, heredity, immunity, and epidemic influence have acquired a more definite and practical shape—nay, have been resuscitated from an oblivion threatened by the natural intolerance of new inquiry for old notions. We are learning how such accidents as shock, chill, pyrexial incidents, local injury, checked secretion, etc., may supply the exciting cause of acute general disease—for example, rheumatic fever, ague, pneumonia, influenza, coryza, acute tuberculosis—since in some cases we know, and in others we may infer, that the organism specific to such diseases may long dwell with us in abeyance until permitted to assume active cultivation by depression or modification of the vital conditions under which they have been held restrained. The same conditions that lead up to a common cold in an otherwise healthy man would elicit an attack of ague in a fair proportion of persons who harbour the germs of that disease. And as I have elsewhere hinted, a careful study of the antecedents and bacteriology of a common cold would probably prove rich in illustrations and elucidations of this thesis in its application to many allied diseases, and in competent hands would furnish matter for a paper well worthy the attention of this Society, or to form the graduation thesis for a university degree.

The question of artificial immunity must become one of increasing importance to our military, naval, and civil services, as our improving home sanitation renders us increasingly sensitive to diseases which must for long remain endemic in the distant or tropical regions of our vast empire. With our home populations, except for small-pox, the need of artificial immunity is unlikely ever to be felt, and it is to be hoped that the day will even come when we shall no longer need to devitalise our milk and drinking water, killing the kindly ferments in order to protect us from adventitious and poisonous microbes.

Sir Prescott Hewett in his presidential address in 1872 noted the fact that pyæmia occurred not only amongst the crowded inmates of hospital wards, but also in private patients isolated in luxurious and sanitary houses. Dr. Greenhow—a great sanitary authority in his time—referring in 1879 to Sir Prescott's experience suggested "that it would seem to indicate some state of the patient

predisposing him to the disease, or possibly some peculiarity of season favouring its development." We smile with the lofty tolerance of more exact information that such inferences should pass muster in this Society only twenty years ago. Cases, however, I venture to think, come within the experience of physicians and surgeons that would justify Dr. Greenhow's shrewd remark, cases in which incidents of a septic kind—for example, phlebitis and secondary embolism of organs—occur after operations for appendicitis, varicocele, varicose veins, thyroid resections, not to mention parturition and operations about the nose and ear passages. In some of these cases which have come under my observation the accidents could be accounted for by no imperfection in the operation nor in the sanitary surroundings of the patient. The wounds have soundly healed, yet the patient has perhaps an embolic pneumonia or a cardiac embolism. These cases are not very frequent, but one meets with them, and they are more common, if I may judge from my own experience and inquiry, in private than in hospital practice. They are, too, the more striking when met with, since they are relatively more frequent in slight than in very severe operations. My impression is that they are accounted for by an unpreparedness of the patient for surgical injury. In some acute and urgent cases, for example, of strangulated hernia, suppurative appendicitis, and the like, the surgeon has no option but to take the risks and operate immediately, but in chronic cases a few days' preparation, or, if necessary, a few weeks' regulation of the patient's habits and secretions would serve to purify him of those effete products of impaired, imperfect, or exuberant tissue change, and inadequate excretions which cause a morbid reaction to local injury. The methods of procedure may be aseptic, but the patient in many instances can scarcely be said to be so.

Electricity, Myxœdema, and Organotherapy.

In the lifetime of our Society the use of electricity for diagnostic purposes has made great strides, the employment of the electro-magnet for detecting and removing foreign bodies, especially from the eye, of electric light for exploring hollow cavities, and lastly of radiography have been closely watched and studied here with excellent results for diagnosis, but little, so far, of a direct kind for treatment. One of the most valuable contributions to the science of medicine to which this Society has largely contributed, is the description and thorough elucidation of the disease now known as myxœdema, having been first so named by our esteemed member and late treasurer, Dr. Ord. Sir William Gull was the first to describe the disease under another name, and it was afterwards thoroughly investigated by Dr. Ord, and reported upon in a special volume of our *Transactions* by a Committee presided over by him. Apart from the intrinsic value of investigations which have thoroughly established the nature and treatment of this important disease, the study of myxœdema and its treatment by thyroid extract gave an impetus to, if it did not actually originate, the pathological and physiological lines of thought and experimental inquiry, which have shown the influence of secretion products absorbed from ductless glands, and from some glands which are not ductless (ovary, testicle) upon mental and physical health and upon formative symmetry. The sexual glands, the adrenals, bone marrow, spleen, and pituitary body have in this comparatively new light been reinvestigated, and the practical physician is already reaping the fruits therefrom in a greater insight into many previously inexplicable groups of symptoms. The most recent and suggestive outcome in this category is that of the relationship between disease of the pituitary body and that want of growth-control which characterises acromegalous disease, the first case of which recognised in this country was brought before this Society by Mr. Godlee.

Another idea that has arisen from the closer association of laboratory and clinical research is the analogy between the affinity of stains for certain tissues and the selective tissue-affinity of certain poisons. The affinity, for instance, of the toxins of the tetanus and diphtheria bacillus for nerve tissues, and the very analogous selection of the nervous system by the influenza poison are rendered tangibly intelligible to us from our laboratory experience of the affinity of different stains for muscle, nerve, fat, cell nuclei respectively.

I must not further trench upon your patience by reflections founded upon the work done by this Society and a glance at some of the questions which it has helped to solve. The retrospect is laden with encouragement and suggestions for work yet to do.

PRESIDENTIAL ADDRESS

ON A

CLINICAL VIEW OF SOME OF THE MECHANISMS OF THE HEART AND ITS VALVES.

Delivered before the Chelsea Clinical Society on October 16th,

By WILLIAM EWART, M.D.Cantab., F.R.C.P.,
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Good work achieved is a pleasant retrospect and the best incentive to further efforts; and in that direction this Society may be congratulated upon having earned satisfaction and encouragement. But, in view of the work which lies before us, I must not dwell at any length upon the past, and I shall not attempt more than to thank you for the honour conferred upon me, and to express a regret, shared by all of us, that our rules should have imposed upon us a change in the occupancy of this chair. The early fulfilment of the aims which originally brought our members together has been largely due to our retiring President, Mr. Foster Palmer, ably seconded by Dr. Austin Cooper, our senior Honorary Secretary. His successful management of our affairs has done more for us even than our good fortune, and, though we lose him as a President, the prospect of his continued service in another capacity is for the Society a pledge of continued prosperity.

The Clinical Method.

Some of our difficulties in interpreting and discussing the physical signs and the mechanism of valvular affections might perhaps be lessened if we could take a clearer view of the normal mechanisms of the heart. We need more anatomy and physiology. But, in spite of our anxiety to be guided by physiology, we cannot quicken its measured step to suit our clinical urgencies. Upon some points which are essential to us physiologists differ, and physiology reserves its verdict. Perhaps we might endeavour to help ourselves; and something might perhaps be achieved by applying to the study of the normal heart our own clinical method. Without invidiousness the latter might be described as one less exact and less exacting than the methods of pure science, as one confessedly opportunist; weak it may be in the lack of strict experimentation, yet strong in an endless supply of the unerring experiments of disease. Conceived upon these lines, the following fragmentary sketch of the heart's action has been based upon anatomical observations illustrated by specimens, upon postulates which may obtain your assent, and, lastly, upon inferences which are clinical rather than physiological, and which claim the privilege which belongs to the clinical method—that of being put forward provisionally and without prejudice. A few instances drawn from the clinical field may in conclusion serve to illustrate the purpose of this address.

I.—Anatomical Introduction.

This must be limited to a few essential points. As regards the intricate directions of the muscular fibres, we need only note that, whilst the predominating circular and spiral fibres of the ventricular wall are mainly constrictive, the septum is chiefly made up of fibres which in contracting increase its thickness without lessening its vertical length or that of the ventricle. The top of the septum affords a partial attachment to the foot of the pulmonary artery and to that of the aorta, but it presents underneath the latter a strong declivity, and the interval between it and the vessel—the so called "undefended space"—is filled by a thin tough membrane which is continuous with the membranous extension of the anterior mitral flap. The papillary muscles are mainly vertical, as well as most of the columnæ carneæ.

When freed by boiling from their fibrous superstructures, the ventricles appear as cones, the right with two basic orifices, the left completely open without any muscular roof whatever, or any trace of mitral and aortic orifices. The mouth of the left ventricle is clearly not an ordinary sphincter; for, were it a simple sphincter, it would periodically constrict the aortic orifice, which should always be free, together with the mitral orifice which alternately contracts and relaxes. We therefore find two sets

of fibres: the constrictive fibres from the ventricular wall which work the mitral orifice, and those passing up to the aorta from the septum, which are not constrictive.

Looking through the cavity of a suitably prepared left ventricle, a thin partition is seen between the small aortic and the large mitral orifice. This membrane, which is continuous with the aortic wall, is the great anterior mitral flap stretched antero-posteriorly between the front and the back of the ventricle by means of two powerful insertions, to which I shall refer again. Thus the mitral and aortic orifices are not circular, but D shaped; and in each of them it is only the loop of the D which is formed by muscle.

Two of the aortic sinuses with their semilunar membranes are continued below into this membrane and its lateral prolongations, and they face respectively into the left auricle and into the right auricle. The third or "septal" sinus, which is firmly implanted at the top of the septum (Savory), bulges downwards into the right ventricle where it is covered by the muscle of the "fleshy pons" which separates the tricuspid from the pulmonary orifice. This circumstance bears upon the question of the wide conduction of the aortic second sound and of the singularly restricted conduction of the pulmonary second sound—points to which attention has been drawn elsewhere.[1] The pulmonary artery rises above and in front of the septum at its highest point, the posterior pulmonary sinus resting upon it just in front of the aortic "septal" sinus. The two anterior sinuses are also controlled by muscular fibres, the vertical fibres of the conus arteriosus.

The Curtain Valves and their "Fibrous Ring."

The auricles which rise in a dome above the two ventricles are wedged apart by the aorta in front, and are separated behind by a thin septum. Whilst the ventricles have no muscular vault, the auricles have no muscular apex and practically no floor, except when the valve flaps rise as a diaphragm at each systole. The valves themselves and particularly the mitral may be regarded as wide inverted cones conducting the blood into the depth of the ventricles. A fusion or adhesion of their fringes would provide the auricle with a floor; this is the tendency of mitral stenosis. The typical smoothness of their internal or auricular surface which is made rough by valvulitis, and the exclusive attachment of the chordæ to their parietal or ventricular surface are points worth remembering. Whilst the fine marginal and submarginal chordæ control the delicate fringes, a different but essential purpose is served by the two powerful chordæ which ascend to be inserted into the upper fibrous part of the great mitral flap.

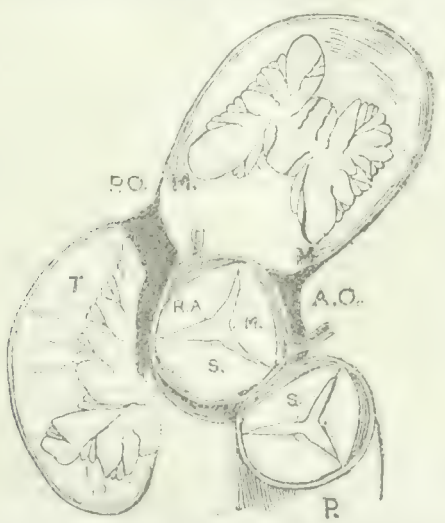


Fig. 1.—Dissection from the bullock's heart showing the relations of the bones of the heart to the aorta, to the mitral and tricuspid valves, and to their fibrous loops. P O and A O, the posterior and the anterior bone; M M', the insertions of the anterior mitral flap jointly with those of the fibrous loop; T, the tricuspid valve and fibrous loop attached to the posterior bone only; P, the pulmonary artery; S S, the "septal" sigmoid flap of the aorta and of the pulmonary artery; M, the "mitral" or "left auricular" sigmoid flap; R A, the "right auricular" sigmoid flap of the aorta.

The so-called fibrous ring at the junction between the left auricle and ventricle, from which the posterior flap is suspended, is thin and pliable even in the ox. It is not a ring but only a horse-shoe-shaped loop, the ends of which, together with some of the muscular fibres of the orifice, have the same attachments front and back as the two insertions of the anterior mitral flap, the latter completing the circle.

The Fibrocartilages of the Heart.—These relations are well seen in this preparation of the valves and of the basal fibrous apparatus removed from a bullock's heart. Dissection has brought into view two bony plates, a large posterior plate, 1½ inch long, corresponding to the central fibrocartilage of Sibson, and a much smaller triangular one, ⅝ inch long, no less important. They each respectively receive one of the mitral insertions, and they stretch horizontally backwards on either side of the aorta along the base of those two sinuses which are not attached to the septum. In man they are rarely ossified, seldom cartilaginous, usually densely fibrous. In this specimen of a female heart they feel like fibrocartilage. The large posterior bony plate also affords attachment to both ends of the tricuspid fibrous loop. This demonstrates the intimate relation (Sibson) which exists between the fibrous structures of the aorta and those of the mitral and of the tricuspid valves. The connection of the aorta with the adjacent pulmonary valve is established by the septum to which they are both attached.

The Attachments of the Aorta and its Mobility.

At first sight the most striking peculiarity of the aortic attachment is its looseness. Except over the septum the aortic wall passes into a membrane much thinner than itself, the mitral portion of which ends free in the ventricle. Mobility is the most obvious purpose; another object may be the suppression of any damaging recoil. Closer investigation shows, however, that special provision is made for strength in addition to pliability. The stability of the vessel is insured by the muscular fibres directly inserted into it, and also by powerful muscles acting indirectly; on the one hand the papillary muscles through the two great chordæ steady the anterior portion, and at the sides extensive muscular masses from the two horns of the septum and from the posterior wall of the ventricle respectively are inserted at the edge and upper surfaces of the fibrocartilages.

The traction communicated by these fibres to the fibrous connections of the fibro-cartilages, namely to the mitral fibrous loop, to the mitral membrane, and to the foot of the aorta, occurs in a direction downwards, backwards, and to the right, whilst they exert no lateral pressure upon the foot of the aorta. The combined effect of these fibrous and direct as well as indirect muscular attachments seems to be: (1) To protect the ventricular insertion of the aorta against any systolic overstrain; (2) to keep the aortic orifice widely expanded; (3) to shift the latter slightly backwards, downwards, and to the right, thus probably increasing the prominence of the fleshy pons, and helping to protect the pulmonary valve and the conus arteriosus from pressure; and (4) to change the obliquity of the aorta to a more vertical axis.

You may ask what evidence I can offer for the occurrence of these changes. In the many human hearts examined for them I have invariably found as part of the systolic attitude (*a*) an erect aorta tending to recede out of sight into a deepened aortic corner; (*b*) a puckering and a grooving of the infra-aortic surface of the septum; and (*c*) a disappearance, partial or complete, of the space and membrane which rather unfairly go by the name of "undefended," the systole itself tending to close the space, whilst their special function seems to be to facilitate the slight lateral movement of the aorta across the septum and along with it. According to this view the office of the muscles in question is not merely passive; they do more than steady—they adjust the vessel.

The Internal Fulcrum or Axis of Cardiac Contraction.—The external attachments of the heart by means of the great vessels are all basic, forming a system of hinges the complicated working of which is easier to understand than to describe, and sufficiently loose to permit considerable mobility of the heart as a whole, and particularly of the ventricles. But clear notions are also needed as to the internal fulcra. When a long looped cardiac fibre contracts, which of its two ends is the travelling point and which the stationary, or do they both move? I believe that in spite of the slight oscillations described, the foot of the aorta, steadied by its septal and fibrous attachments, and the septum, are at the time of systole the central axis towards which everything else moves. The central fibro-cartilages being firmly connected with the aorta are an integral part of the same fulcrum, and the numerous ventricular and auricular fibres which are attached to them find in them their relatively fixed point, although I have said enough to indicate that the fibro-cartilages are themselves perceptibly acted upon by the muscular contraction, and with them the orifices and the curtain valves, with which they are closely connected. In strictness, therefore, the centre of the septum might be regarded as the most stable point in the whole heart.

II.—The Mode of Contraction and the Systolic Changes in the Shape and Size of the Heart.

Passing over the familiar outward changes, three significant facts have been determined by Ludwig and Hesse[2] by means of the so-called Leipzig method, a lucid description of which you may read in Dr. Donald MacAlister's admirable lecture on the Form and Mechanism of the Heart.[3] By careful measurements of the heart in full diastole and in complete systole, it was found that in systole (1) the length of the left ventricle is not decreased; (2) the circumference at the base is reduced almost one-half; (3) the mitral and tricuspid orifices are almost completely closed by the ventricular contraction.

Thus the systolic action is mainly constrictive; it approximates to the septum almost every point in the heart wall. It is not unlike the action of the hand-bellows, the moving flapper of which alternately approaches and recedes from the stationary flapper, whilst the excursion of any point is much less at the narrow end than at the broad one. Locally slight shortening of the longitudinal fibres must take place to adapt at every point the considerable convexity of the heart wall to the length of the septum; but there are three situations at which a perceptible shortening occurs, namely, the anterior wall of the conus arteriosus, the musculi papillares, and lastly the auriculo-ventricular orifices, which are carried downwards and backwards, thereby aiding auricular aspiration and ventricular compression.

The Infra-aortic Space and the Suprapapillary Space.

Efficient systolic emptying of the ventricle is dependent upon a rapid increase in the intraventricular pressure and upon a free way into the aorta—in other words, upon early

and tight closure of the auricular valves and upon freedom from untimely contractions checking the outflow *a fronte*. The so-called "aortic channel" which lies along the septum must have afforded passage to the entire ventricular charge before it finally contracts, and we may fairly assume that the progressive obliteration of ventricular space must begin at the extreme left and end at the aortic region. The entrance into the aorta is kept unconstricted by means of the "infra-aortic space," which remains permanently patent and charged with blood; and a similar arrangement probably prevails in the pulmonary infundibulum. Into this space the sigmoid flaps play without any solid contact or friction, bathed in blood above and below, and to this they owe their life-long preservation as delicate filmy membranes.

Of greater practical interest to us is the "supra-papillary space," a varying space complementary to the aortic space. Within it we notice the important "retro-mitral space," which is included between the posterior mitral flap and the heart wall, although it would be warrantable to apply this term to the entire ventricular district beyond the plane of the anterior mitral flap. During systole, when the lower ventricular space is a solid mass of contracted, tightly-packed muscles, the suprapapillary region is imperfectly filled by the valve membrane and its chordæ. According as we assume that it retains much or little blood, our ideas as to the mechanism of mitral closure and of its pathological failures must vary. There can be little doubt that the great mitral flap is driven to the left by the systolic blood pressure, and that the infra-aortic space absorbs a great part of the suprapapillary space. If blood could be entirely excluded from the suprapapillary district, the chance of any leakage into the auricle would be reduced to *nil*. This would mean complete adaptation of the membranes to the left ventricular wall itself, such as is observed in the case of the internal tricuspid flap. There are, however, reasons for supposing that the retro-mitral space may not be completely drained, and that a retro-mitral cushion of blood may remain as an additional help to secure the obliteration of the orifice. We shall see that whatever the precise mechanism of the mitral closure may be, it must be credited with considerable adaptability to varying conditions.

The Progress of the Blood through the Heart.

This is too familiar a subject to call for many remarks. The muscular contraction and the elastic recoil of the myocardium, which are the driving forces, are also the indirect means of interrupting the flow by shutting off the cavities from each other. Ample provision is made for a continuous supply to the cardiac pump, as, for instance, from the pulmonary veins; but the heart's action renders it intermittent.

On the left side the first delay is produced at the auricular orifice of the pulmonary veins, which have been credited with a systole of their own. Whether it be their independent contraction or the systole of the auricle that bars the way, the blood accumulates within them for a brief period, but during the much longer remaining time it is pouring steadily into the auricle after the initial sudden aspiration of their delayed contents by the auricular relaxation.

The second stoppage and accumulation begin within the auricle with the closing of the mitral and continue during the ventricular systole. The third stoppage is brought about by the closure of the aortic valves, and blood then begins to fill the ventricle. The powerful ventricular aspiration rapidly unloads the auricle through its now widely patent orifice. This is the great suctional ventricular inrush. The volume of the heart as a whole is not altered, but merely that of its component parts. For a while blood continues to flow in unobstructedly from the auricle and the pulmonary veins, but with diminishing speed. When the negative ventricular aspiration is exhausted active contraction follows. The veins and the auricle contract and rapidly complete the ventricular repletion. This is the second and final ventricular inrush soon to be followed by the ventricular systole. But the delay is not at an end. During a brief and variable interval the blood is held by the ventricle, and its charge neither grows nor lessens. But its pressure is being raised; a struggle between the incipient ventricular contraction and the resistance of the aortic blood pressure is proceeding within the pressure chamber which the mitral valve maintains closed.

Potain,[4] however, contends that the closure is not yet completed, and that meanwhile, as described by Samways, the persisting auricular contraction is the means of preventing regurgitation. He terms this short delay the "ventricular presystole." Chauveau,[5] who refuses to admit any overlapping of the two systoles, and who believes in an immediate relaxation of the auricle, defines the interval in question, under the name of "intersystole," as a period for internal adjustments, and in particular for the closure of the mitral by the papillary muscles. Almost alone among physiologists he assumes that the contraction of the latter precedes that of the ventricle.

I would suggest provisionally that the mode of closure to be presently described as membranous or diaphragmatic may belong normally to this presystolic period, and that it may be made more secure by a continued contraction of the lower part of the auricle and of its appendix, which may last up to, but probably not outlast, the first sound. From that moment the ventricle works alone and at high pressure. Every fibre within it shares in the effort to set in motion in an instant the vast column of blood which lies beyond the semilunars, and not least is the share belonging to the papillary muscles. The rest of the systole needs no further comment. The outflow continues, but the blood pressure steadily falls until the sigmoids, closing once more, mark the end of the cardiac cycle.

THE MITRAL VALVE AND THE MECHANISM OF NORMAL MITRAL CLOSURE.

The normal mitral closure is due to the contraction of the orificial fibres and to the close adaptation under blood pressure of the valvular membranes. The older view, which was based upon misleading schemata, and which failed to take into account the systolic contraction of the muscular orifice, need not, however, be entirely discarded. Clinical observers familiar with the singular adaptability of the heart to the varying conditions of disease are prepared to consider that the normal cardiac mechanisms are not of necessity uniform in all subjects. Two identical hearts are probably as impossible to find as two identical faces, and differences in function must follow the differences in structure. Moreover the same heart may vary in its contraction during periods of vigour or of exhaustion. This reservation should never be omitted in our discussions.

The mitral membrane is not made up of separate flaps, but is a single membrane extending continuously all round the orifice (see specimens). It forms a shallow wide-mouthed funnel, of which the narrowing funnel of stenosis is merely an exaggeration. Nevertheless the anterior and posterior flaps are well individualised both in their anatomy and in their function. The great anterior flap fulfils various purposes, but it never ceases to be a ventricular partition, and during systole it is kept spread out and smooth. The posterior flap, which forms the greater part of the circular membrane, but is much shorter in the vertical direction than its fellow, is essentially mobile, being attached to the entire length of the fibrous loop and of the contractile border of the ventricular wall. During systole it is folded into numerous pleats like a purse; but the pleating is done not by the pull of a string, but by the contraction of the orificial fibres, and the pleats are arranged by the chordæ from below. The stretching of the great flap is effected by its two strong diverging chordæ and higher up by the two mitral insertions which connect it with powerful muscles and with the aortic roots and fibro-cartilages; its lower part and its fringe alone are capable of flapping to the extent which orificial space and chordæ will allow, but during complete obliterative systole there is neither much space nor much rope, and this flap as well as the posterior flap is drawn almost vertically downwards.

The High Closure and the Low Closure of the Mitral Valve.

These are the two extreme types associated respectively with an uncontracted and with a contracted orifice. The first, seen in dilated, in partly paralysed, and perhaps in some peculiar normal hearts, is relatively precarious, the second, which is distinctive of thoroughly normal and strong hearts, is made doubly secure.

As often as I have opened hearts in fairly good systole—for absolute systole must be quite exceptional in dying hearts—I have found the flaps drawn down by the papillary muscles. I

do not regard this attitude as due to rigor mortis or as exaggerated by it, but on the contrary as falling short of the yet greater contraction which must occur at the acme of systole. More or less depression of the flaps is the inevitable result of systole, and its extent may be taken as a measure of the quality of the mitral closure, which may be accordingly perfect, barely efficient, or defective.

Should the systole fail to empty the retro-mitral pool or to obliterate the muscular orifice, the closure will be almost exclusively membranous, the anterior flap much more oblique and at its lower part almost horizontal, the posterior flap less pleated and likewise horizontal, the opposed fringes of the flaps alone coming into apposition in a vertical direction. This is the high closure, or purely membranous closure by horizontal adaptation. In the normal type of low closure the orifice is contracted, the membranes are vertical, and they are in apposition not only at their fringes but over a considerable part of their surfaces, which are pressed back to back and applied to the outer ventricular wall by the intra-ventricular blood pressure, whilst their attachments may either meet if the muscular orifice should be tightly closed or be separated by a small wedge of auricular blood, and at the same time bulged slightly upwards by the ventricular blood. This is the perfect and secure musculo-membranous closure of a completely contracting and emptying heart; and it is obvious that the farther down the membranous funnel is drawn, so much the more extensive is the surface of mutual contact, and so much greater will be the tendency of the long anterior flap to apply itself to the ventricular wall below the level of the posterior flap, as a first defence against regurgitation, and thus to shut off entirely the mitral corner from the main pressure chamber of the ventricle. Compared to this there is little security in the mere diaphragmatic closure by membrane, which is suited only to meet the diminished pressure associated with an imperfect contraction of the orifices, of the heart walls, and of the papillary muscles.

The Functions of the Papillary Muscles, Valves, and Chordæ; and the First Sound of the Heart.

How is the normal systolic position of the valves brought about after their diastolic elevation? As soon as the auricular systole and the early presystolic contraction of the ventricles have overstretched everything, the powerful and rapid papillary contraction probably takes place simultaneously with the first sound. By this the chordæ and their membranes would be stretched downwards and made taut, helping to depress the ventricular orifices. The anterior mitral flap, whilst transmitting additional tension to the aorta and to its extensive membranous and fibrous connections, would probably remain moulded by blood pressure into a concave shape as part of the infra-aortic space. Its rapid tension between its upper and lower attachments imitates in action, in driving force, and in sound that of a sheet skilfully shaken from both ends. It also acts as a tendon with an extensive insertion, and its function as a pressure-pad has been fully explained. These varied results of the contraction of the papillary muscles almost suggest that the latter supply from a distance the place of the absent basic muscles for the open side of the ventricular cone.

Another important function of the papillary muscles is their share in the production of the first sound. The fact that this sound is still obtained in a heart contracting without any fluid contents, in which the valves cannot be made tense by blood pressure, has been used as a proof that the sound is largely one of muscular vibration. It is, I think, equally compatible with a view that the sonorous tension of the valve is due to the papillary contraction, whilst counter tension is kept up by the systolic retraction of the two mitral insertions and of the aorta. The characteristic booming sound is exactly that which we might expect from the tension not of one membrane, but of a long range of membranes varying in size, in shape, and in quality.

I need hardly repeat that not the least of the papillary functions seems to be that of steadying and of adjusting the aorta from below and of providing for its patency. The papillary muscles are tensors of the aorta, a duty which is shared by numerous muscular fibres working upon other points of its circumference. The relation of the papillary muscles to the movements of the mitral flaps can hardly be questioned, but it is strikingly demonstrated in some strange hearts such as those exhibited, in which one of the muscles is continued upwards and is directly inserted into the surface of the flap without any chordæ. The powerful depression of the orifice which so long a muscle must be capable of effecting also suggests that the ventricular systole by depressing the orifice must exercise a pumping action upon the auricular contents.

The Automatic Regulation of the Auriculo-ventricular Peristalsis and the Diastolic Function of the Valves and Chordæ.

Continuity of muscular fibres across the auriculo-ventricular groove does not seem to obtain in man; of this you may judge from the specimens. A. F. Stanley Kent[6] has however described in animals bridging fibres which he believes may transmit the systolic stimulus. He has also traced some continuous fibres passing from the auricular into the ventricular septum. W. His, jun.,[7] limits this continuity to a single bundle of septal fibres, but he has demonstrated it in man as well as in animals. In the vertical sections which I have made through the left auriculo-ventricular region, you will notice that the descending bundle of auricular fibres and



Fig. 2.—Vertical section through the auriculo-ventricular junction, from the human heart, showing the complete separation of the auricular from the ventricular myocardium and the connection of the two cavities by endocardium only: E, endocardium: P, epicardium; U, the "fibrous loop" at the bottom of the auriculo-ventricular groove; V, the posterior mitral flap with chordæ and papillary muscle; R, the "retro-mitral" space; M, the delicate external sheath enclosing the myocardium and uniting with the endocardium and fibrous loop at U.

the thick rising shoulder of ventricular orificial fibres are both isolated between their endocardium and a delicate outer sheath, these two membranes uniting before they are inserted into the fibrous loop. The loop also gives attachment on its internal aspect to the duplicature of endocardium which constitutes the posterior mitral flap. Between the two sets of muscles there is no visible, I might say no probable, continuity, and the connection between auricle and ventricle is absolutely reduced to the slender endocardial membrane: this, however, is amply protected from outside by the soft auriculo-ventricular fat embedding the vessels, and it is rendered more elastic by the epicardium which passes over it and consolidates the groove. By removing the fat the fibrous loop is easily exposed. This is an admirable arrangement from our clinical standpoint, ensuring complete independence between the two myocardia, and allowing them and the valvular attachment also to play up and down, auricle into ventricle, in obedience to the papillary function; but it does not explain the automatic punctuality of the systolic events.

Possibly—but this suggestion is made under all reservation—the regulation of the rhythm may be in part mechanical, and analogous to that of most of our muscular adjustments, namely, essentially myotatic. It is not unreasonable to look

for a double function in the valve flaps and chordæ, under the opposites of systole and diastole, analogous to the two opposite functions of the myocardium. The "open parachute" diastolic attitude of the flaps is only a partial closure incapable of stopping the continued inflow of blood, much less the final inrush due to auricular systole. After the latter, and during the brief presystole of the ventricle, it may provide a complete membranous closure for the still imperfectly contracted orifice, but papillary contraction would soon bring down the flaps to their vertical or systolic attitude. The chordæ likewise would have two positions of tension, a momentary diastolic tension upwards when the flaps are fully floated up, and a more sustained systolic tension downwards; and the latter might conceivably be called forth by the former.

More broadly we might regard the auricular systole, which presumably increases the diastolic elevation of the valves and the upward tension of the chordæ, as an inducement for the ventricle to contract. Each of the chordæ would be likely to exert a pull upon its own set of muscles in some definite succession, according to its individual length. This might perhaps account for the partial presystolic contractions which are so difficult to explain, and for the equally mysterious lateness of the papillary jerk. It so happens that the retro-mitral groove is the seat of very short tendons hidden beneath the posterior mitral flap; their early tension might be the means of exciting the extreme left of the ventricle to early contraction. MacWilliam's experimental sections of the chordæ seem to have been carried out entirely below the level of these tendons. Once started the mechanical excitation would travel from segment to segment of the fibres till it reached their most distant end; and I do not lose sight of this alternative explanation for the lateness of the papillary contraction. Another myotatic agency might exist in the pull exerted by the auricular systole upon the fibrous loop itself.

A different explanation is that by a direct overtension of the heart wall, its various fibres being unevenly stretched by the growing ventricular charge, and therefore successively excited according to the different length of their course in the ventricle. In both cases the regulation as to time and as to energy of contraction of various parts of the heart would be under the influence of the highly variable scale of internal pressures, one of great delicacy and capable of affording some explanation for the great variations of the cardiac rhythm in health, and for some of its remarkable pathological abnormalities.

III.—Clinical Illustrations.

Functional and Organic Mitral Murmurs.

1. The common systolic functional murmurs are still imperfectly explained. Their eventual disappearance suggests that the valvular structures are sound, and that there is merely some muscular or neuro-muscular derangement, with temporary failure of orificial closure as a result. 2. Orificial defects may also arise from structural causes. The murmurs are then organic, but more commonly these murmurs are associated with valvular deformities. Leaving aside vegetative valvulitis and ruptured valves, the structural changes at the onset may be so slight as to elude a superficial inspection, and they may produce little more than transient limitations of movement. But unlike the rheumatic joint, the heart can never be absolutely rested, and if the infiltration is not merely myocardial, but should also affect the valve, it is likely to progress to the verrucose stage, and to those roughenings, thickenings, puckerings, and obstructions which we all know tend to leakage by faulty apposition.

Myocardial Stiffness as a Cause of Valvular Defect.

If, as originally contended by Sturges, acute rheumatism is capable of affecting the whole heart, the chief stress of minor attacks might variously fall upon the fibrous and membranous, or the muscular, or the tendinous structures. And bearing in mind the special liability of the orificial and of the papillary muscles, it is conceivable that, short of any serious damage to other structures, these muscles might suffer in their finer adjustments. Systolic orificial closure might be impeded or delayed, with regurgitation as a result; or muscular stiffness might have the opposite effect of delaying the diastolic expansion of the ventricle, and the rapid release of the valves and chordæ, a circumstance which, if coupled with any passing œdema of the flaps themselves, might well account for the premonitory sounds of mitral stenosis. A majority of the mitral functional murmurs not due to atony may be of this kind, and the recovery from the myocardial engorgement and stiffness may be permanent. Too often, however, it is only temporary, and the seeds are laid for structural changes.

Epicardial Stiffness as another Cause.

We have studied in vertical sections the normal auriculo-ventricular groove. See how severely in this instance (Fig. 3) its contents have suffered. Replacing its delicate fat

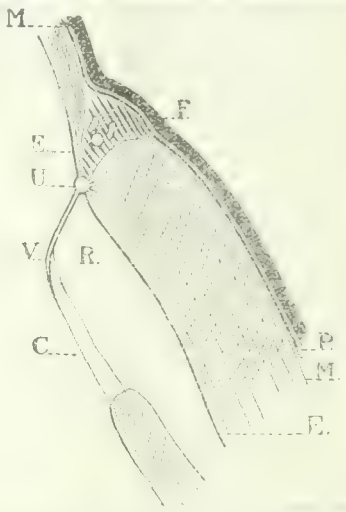


Fig. 3.—Vertical section from a case of indurative pericarditis showing fibrous thickening in the auriculo-ventricular groove, in contact with the "fibrous loop" and endocardium. F, dense fibrous false membrane; P, epicardium; M, delicate external sheath enclosing the myocardium; E, endocardium; U, the "fibrous loop" in section; V, the posterior mitral flap; R, the "retro-mitral" space.

a tough flesh-like fibrous deposit has crept into its recesses, welding together the auricular and the ventricular muscles, destroying their finer mutual play, and crippling the orificial contraction. But it has also attacked the fibrous loop and the outer surface of the endocardium, that slender and only barrier between the groove and the valve. We now realise how pericarditis may determine a valvulitis by extension.

Early Mitral Disease and its Evolution into Opposite Types.

In the earliest stage of mitral disease we discover none of that differentiation which afterwards is so marked. The mitral lesion is almost invariably localised near the edge of the flaps where their auricular surfaces meet, and have to bear friction and pressure during the "soft" stage of their rheumatic swelling. Why should the late result be in one case pure mitral incompetence, in the other pure mitral stenosis? When and where does the difference originate? I am impressed with the probability that there is from the first an essential difference; but I doubt whether it can be mainly traced to any peculiarities, observed or assumed, in the early valvular lesions.

Anatomically there is room for differences which may have been overlooked, particularly in connection with the chordæ tendineæ. These may be in the one set of cases much more extensively involved than in the other. Again, the anterior and the posterior incisures, which are peculiarly rich in chordæ, are perhaps more liable than other parts to the change. Attention must also be called to the fact that shortening of the chordæ may be secondary. Where there is puckering of the flaps the retreating edge of the fibrosed valve must drag upon the fine chordæ attached to it—nay, probably they are involved in the fibrosis. These changes often pass unnoticed at necropsies, but they may be sufficient to bridle the flaps, to cripple their free swinging, and to transform them from flaccid into stretched membranes. Lesions of this sort are probably not limited to any special set of cases, and do not, therefore, supply the desired explanation.

Clinically definite distinctions exist. The murmur of structural mitral incompetence is audible, practically speaking, from the first, and once heard it is always heard again. But, whilst mitral incompetence develops early and abruptly, mitral stenosis can only be slowly produced. The stethoscope may catch its early forebodings, but these are often inconstant, and it is significant that they are in most cases not complicated with any audible regurgitation.

Perhaps the determining factor resides less in the peculiarities of the lesions than in those of the action of the valve. In early valvulitis I am led more and more to ascribe mitral incompetence to defective orificial closure and the early disposition to stenosis to the absence of this defect. A fairly safe guide in this study is the nature of the ultimate deformity of the valves. In mitral stenosis the flaps are drawn down and often elongated to an extraordinary extent; but in pure mitral incompetence there is no shortening of the chordæ and no elongation of the flaps, which, on the contrary, are much retracted towards their attachment. We are reminded of the contrast between the high closure and the low closure, and this contrast seems to provide us with a rational theory.

Assuming as a common factor the inevitable fibrosis and retraction incidental to all warty valvulitis, the direction of the progressive change will vary with the habitual attitude of the valve. If the valve be constantly kept well down in the ventricle, fibrosis and shortening are likely to overtake the chordæ. But if from abnormal patency of the orifice the flaps be raised high at each systole, the flaps and not the chordæ will be the chief seat of shrinkage. The chordæ will be submitted to a systematic elongation at the time when, owing to rheumatic or inflammatory softening, they are most easily stretched, their weakness thus becoming a protection against all danger of stenotic shortening. Stenosis, according to this slightly paradoxical view, would be the disease overtaking strong, normally-acting hearts; incompetence the disease of yielding, atonic myocardia. And this, I believe, will agree with your experience of the great prevalence of the stenotic affection, and of its predilection for young and healthy hearts with good cardiac sounds.

The Late or Funnel Stage of Mitral Stenosis.

(Auricula in Ventriculo.)

I now turn to the totally distinct conditions of advanced mitral stenosis by which I do not understand the terminal condition of broken compensation. There may exist in exceptional cases as a "horizontally" stenosed mitral valve, one without any cupping or depression. My remarks will not apply to that condition. The usual anatomical features are the enlargement of the auricle in every direction, but particularly downwards, either in the shape of a funnel or of a cup, and the considerable stretching of the mitral membrane by the retarded auricular contents. I regret to have to add to the complexity of the problem of mitral stenosis and of its physical signs by introducing an additional unknown quantity. The funnel seems to me to take a large share in all the aspects of this stage. Its presence entails a radical alteration in the cardiac mechanism. Whilst normally the auricle is intended to contract independently of the ventricle, in this affection it permanently invades the upper ventricular space—an auricle inside the ventricle, and it is thenceforth subject not only to its own contraction, but to that of the ventricle also. I can only touch upon a few of the features of this strange complication, as it respectively affects the ventricular, the mitral, and the aortic and arterial functions.

(*a*) *The Ventricle.*—The most obvious fact is the encumbrance of its space. During systole the mitral membrane of the thoroughly healthy heart is stowed away like a thin empty bag, but in stenosis the bag is at its maximum distension. We must remember that whilst the auricle proper is straining with all its muscle to deliver its blood into the funnel there is no contractile element in the latter; it is a passive reservoir, a dilated channel. In the first place, then, it plays the part of a foreign body wedged into the ventricular orifice, and distending it at the moment when it should be contracting. Great delay must follow, and there is little wonder that an unusually long presystole should be a distinctive, and in the matter of impulse a tangible, feature of stenosis. This presystolic delay and impulse have of late attracted much notice, and we owe to Potain, Chauveau, Bard, Sansom, Samways, Brockbank, Gibson, Gibbes, and others some interesting literature which it is impossible to discuss otherwise than by suggesting this additional explanation.

(*b*) *The Systolic and the Mitral Events.*—Of the normal behaviour of the mitral valve little is left but the tension of the stiffened membrane by papillary effort, which to my mind is a sufficient cause for the loud first sound. Everything else is changed. The long presystole has been spent in a struggle with the contents of the funnel which delay the rise of ventricular pressure, for they are steadily leaking away, possibly, I would suggest, in two directions, though I speak with some hesitation, believing that things must vary with cases, and the cases vary greatly. For instance, has the ventricle already completed its charge or is it still further dilatable by the auricular pressure? Is the auricle empty or still full and stretched by residual blood? In a word, on which side of the valve is the maximum pressure in the individual instance? Without due answers no general statement can be made. One thing, however, seems to be certain; however long the auricular systole may be assumed to last, it relaxes earlier than the ventricular systole, and therefore if any blood still remains in the funnel, this would find at that moment an easier way into the auricle than into the high-pressure chamber of the ventricle. I regard it as possible that in the average cases—those cases which adapt themselves most successfully to their mechanical difficulties—the ventricular orificial fibres close up early upon the bag and drive the blood from it with rising speed and pressure into the ventricle, whilst a great part of it also is forced back into the auricle, this reflux continuing if necessary after the onset of the true ventricular systole, which probably checks the intraventricular flow.

The Diastolic and Presystolic Murmurs.

I may now briefly refer to the influence exercised by the funnel upon the sounds and murmurs. In those cases where the ventricle is still struggling successfully, and manages to empty the funnel, Sansom's rational explanation is that which I adopt, with a slight modification, for the first and earliest diastolic *bruit*—namely, that it is due to the sudden descent of the blood dammed up in the auricle into the capacious funnel. As to the "rumble" kept up in some hearts throughout the diastole, I am not prepared to express any positive opinion. I incline to regard it as due to the injection of a strong stream of blood from the often irregular and rough orifice across the stiffened papillary tackle.

The presystolic murmur is, I believe, that of a fluid vein likewise making for the apex. It might be compared to the stream from a syringe forcibly emptied under water, for the ventricle is already nearly full, and the chordæ less apt to vibrate. Its crescendo character may be explained by the growing pressure of the ventricular orificial presystole upon the funnel.

The Systolic Murmur.

The occurrence in many cases of a murmur absolutely continuous with the first sound has been the strongest argument of the supporters of Barclay's theory which regards the presystolic murmur as essentially systolic and regurgitant. I have just stated my belief that it is produced by that portion of the ventricular systole which we are agreed to define as the presystole; but that it is not a regurgitant but an onward murmur. Its continuity with any subsequent regurgitant murmur is compatible with that view, and I know of no other means by which it could be accounted for. My provisional explanation is that, during the presystole, there are two streams from the funnel, the auricular systolic pressure preventing, however, much regurgitation, but that as soon as the first sound marks the cessation of the intra-ventricular flow the reflux is so much increased and accelerated as to cause an audible fluid vein. According to this view there is no absolute reversal of current: some blood was previously being driven back into the auricle, and therefore there need be no interval between the first sound and the murmur.

The Disappearance of the Second Sound.

In all this I have assumed that lateral pressure is brought to bear upon the funnel, and finally succeeds in emptying it.

But if the contractile fibres of the ventricular orifice had been worn out by the invincible resistance of a permanently distended auricle and funnel some of the murmurs would be obscured. This is precisely the condition observed at the later stages. Not only the presystolic murmur disappears, but with it the second sound at the apex. I am not sure that any explanation has been given for this mysterious disappearance, but I believe that it is to be found in the presence of the funnel. You are aware that the aortic second sound is not really extinguished in these cases, and that it is still audible at the base, though often much enfeebled. The fault is clearly one of conduction, and until lately I had failed to account for the causation of the defect. My present opinion is that the conduction of the sound is "blocked" by the funnel, which at the time of maximum systolic contraction of the heart usurps the infra-aortic space. Doubtless its pressure may sometimes be felt by the semilunar flaps themselves, and may damp their vibrations with corresponding enfeeblement at the base. But apart from this the pressure upon the septum may so much interfere with their conduction as to render them inaudible at the apex.

(c) The influence exercised upon the arterial system is not limited to the aorta and to its valvular sound, but may be traced in the pulse. The pulse of mitral stenosis is of two opposite kinds, according as compensation is perfect or failing. In the former case it closely resembles that of moderate aortic stenosis, and I believe that it is due to a slight obstruction in the aortic current. Formerly I supposed that the aorta suffered pressure in its first portion just beyond the ventricle, owing to the distension of both auricles and of the pulmonary artery; for further details I must refer you to a paper which I published on that subject.[17] That view may have been partly correct, but I am now disposed to regard the obstacle as intraventricular, and situated in the "aortic channel" rather than in the aorta. In the compensated stage the funnel merely encroaches upon and narrows the infra-aortic space, but when compensation fails its increasing size sets up a dangerous obstruction.

My present task is at an end. A few illustrations were needed to justify the mode of study which I have ventured to recommend, and to show you that its opportunities are not exhausted but almost inexhaustible; but these were merely incidental. The main purpose was to indicate the importance of an adequate groundwork for our intricate clinical studies and the greater use which might be made by clinicians of our yet imperfect insight into the anatomy and physiology of the heart.

The crude sketch which I have ventured to present to you invites criticism and claims future revision, but it may perhaps be of temporary use in reminding us of the complexity and of the variability of cardiac conditions even in health, of the need of a closer inspection of the footprints of disease, and of the futility of discussions which do not discriminate between its variations, its extremes, and its essentially dissimilar stages.

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The Molokai Colonists.—From the *Medical Age* we learn that there are at present 1,100 lepers residing in Molokai, 625 being males and 475 females. Of these 3 are German, 4 are British, 5 Americans, 6 Portuguese, 37 Chinese, 62 half caste, and 984 are Hawaiians.

New Dog-Muzzling Orders.—In consequence of the recurrence of rabies in South Wales, the Board of Agriculture has published orders reimposing the regulations as to the muzzling of dogs in parts of the counties of Brecon, Carmarthen, and Glamorgan. The orders came into operation in each case on the 15th inst.

A CLINICAL LECTURE

ON THE

PREVENTION OF VALVULAR DISEASE OF THE HEART IN CASES OF ACUTE RHEUMATISM.

Delivered at the Liverpool Royal Infirmary.

By RICHARD CATON, M.D., F.R.C.P.

Physician to the Infirmary.

Gentlemen,—It is your constant experience and mine day after day on the medical side of this hospital to meet with cases of organic heart disease. These poor people come to us suffering from dyspnœa, dropsy, and weakness, after too often a severe struggle to accomplish the daily task needful for the earning of a livelihood. They have striven hard against increasing difficulties, until at length Nature can do no more, and they come to us almost in despair. We treat them as out patients, or more frequently take them into our wards, and give what temporary help we can. Nearly always we get the same sad story from them—a bad attack of rheumatism, after which they were never the same as before; increasing breathlessness, then swelling of legs and feet, and inability for hard work. It is a painful experience for the doctor, especially when, as so often happens, the patient is young, and his whole life is blasted by this terrible breakdown of circulation, a breakdown the urgent symptoms of which we can often alleviate, but the underlying essential defect of which we can never repair. Under these circumstances it is not wonderful that some of us have felt the urgent need for efforts to prevent this injury of the cardiac valves in rheumatism from which so much suffering and disablement result. No one can deny that the inquiry is important and is worthy of our best efforts. Nevertheless it is the fact that the great majority of our profession at present, while treating the rheumatic affection to the best of their ability leave the cardiac risk to fate; they are deeply concerned if endocarditis occurs, but believe themselves powerless to prevent or influence it in any way.

Many of you have observed the care with which in my wards the heart is examined daily in every case of acute rheumatism, and also that certain rather unusual measures of treatment are applied. They are employed with the object of preventing organic valvular disease. I have told you why I employ these measures; let me explain to you the theory on which the measures are founded, and give you a brief summary of the results which have hitherto been attained, and finally I wish to lay down one or two principles which it seems to me we should always keep in mind in the treatment of these cases:

1. On what theory can we reasonably hope to exert any influence on the endocardium, to prevent or assuage rheumatic inflammation, to remove the products of such inflammation, and prevent the crippling of the valve?

In the first place we must stop the rheumatism as rapidly as possible, and prevent all aggravation of it by chills. We therefore keep the patient absolutely at rest in bed; profuse sweats usually occur, in which there is great danger of chill, I therefore clothe the patient from head to foot in a warm flannel garment; a large stock of these vestments is kept in my wards expressly for rheumatic cases. Salicylates are given in full dose, often with alkalies, and cholagogues in such measure as to cause free evacuations but no diarrhœa. The diet is confined to milk and light farinaceous food; no red meat is given for a long time. The patient is kept in bed long after all pain and fever are gone, for never forget that the salicylate treatment, while removing pain and fever in twenty-four or forty-eight hours, does not remove the rheumatic entity itself (whatever that unknown entity may be) after less than two or three weeks of steady administration. The treatment I have thus far mentioned has nothing particularly new in it, but if you carry this out with strictness you will have a low percentage of cardiac complication. Out of many hundreds of cases, I have only had about 15 per cent. of cardiac troubles, which is a low average.

But even if you do all that, you will have some cases of cardiac trouble, and of course it will often happen that the mis-

chief in the heart has begun before you see the patient. What are you to do when you find that the first sound at the apex is getting soft, that a *bruit* has developed which you can often hear in the axilla, and that the second pulmonary sound has become accentuated in consequence of reflux through the mitral? (*a*) You must keep the patient most stringently at rest; no raising the head, no excitement; he must have the most perfect physiological repose you can devise. And why? In order to give the heart all the rest possible, to make the intervals between the systoles as long as you can, to keep down blood pressure as far as is practicable. The endocardium when inflamed has dilated vessels and effused lymph and leucocytes in its deep layer. The valve cusps being thickened and softened, become unable to withstand the pressure waves produced by a powerful systole; it is possible, in fact, that the the regurgitation which occurs, and which alarms us so much, is in itself a beneficial and a protective arrangement of Nature, lessening the pressure on the cusp of the valve. You know that there are no vessels in the valve cusp itself, but there are many connective tissue canals; these are affected by the inflammatory process, and from them are effused those vegetations which project from the inner border of the free margin of the valve. Well, in order to protect the damaged valve during its period of infirmity and to give a chance to the restorative processes of Nature to repair the damage done, we must give the heart a long and complete rest—a rest of several weeks, say five or six at least. (*b*) Next, is it possible to give any help to the natural powers in their strife with the rheumatic dyscrasia in the endocardium? Can we give Nature local help against rheumatic ailments anywhere, in the joints, for example? Yes, we can unquestionably; by the application of small blisters close to or just above a joint we can almost with certainty remove rheumatic swelling and pain. No one who has witnessed the results of the late Dr. Herbert Davies's method of treating acute rheumatism by blisters can doubt this for a moment. How is this relief afforded by these very small blisters? I believe it is solely through their action on the cutaneous nerves and by the resulting stimulation of the trophic nerves of the affected part; that, I believe, is the explanation of the efficacy of every form of so-called "counter-irritation." We get a stimulation of trophic and vasomotor nerves, and in consequence extra nutritive and reparative activity, and restoration takes place which without such aid might not have been accomplished. We see the same principal exemplified in a most simple and rudimentary form in the healing of an ulcer; if Nature is making no progress towards a cure, we stimulate the indolent tissues by applying such an agent as silver nitrate or some other excitant, and then healing and cicatrisation begin.

Can we in any way stimulate the trophic and vasomotor nerves of the heart? Is there any channel by which we can reach an organ which seems so peculiarly inaccessible? Yes, I think there is one way, and only one. Every viscus has relations with cutaneous sensory surfaces, as we have learned from the work of Gaskell, Sherrington, Head, Ross, and other observers; the heart is in special relation with the first four dorsal intercostal nerves. As those of you who have been clinical clerks have often observed, morbid trophic changes in the heart, such as those involved in angina, degeneration, overstrain, etc., constantly manifest themselves by referred pains in the region supplied by those nerves. Now these are afferent nerves. Is it not at least possible that we can influence the heart by transmitting afferent impulses along these channels? If we stimulate these nerves a portion of the impulse traverses the cord and reaches the cerebrum in a sensory form, but as they are in special relation with the cardiac plexus, is it not probable that a portion of the message produces its effect on the heart, not in a sensory form, but as a stimulus to trophic function, as appears to be the case when we stimulate the nerves adjacent to a joint?

This is, of course, merely a hypothesis, and an entirely new hypothesis so far as I am aware, but it does seem to have much to support it, and as our methods of reaching the heart were so few, it seemed worth while to make all the use one could of this one. I have, therefore, for the last fifteen years, applied small blisters, each in size rather larger than a shilling, in the course of these nerves—that is to say, over the upper part of the chest between the clavicle and the nipple on either side. Only one blister is applied at a time, and after each a small poultice is placed on the blistered surface. Practically no pain or discomfort results if the small blistered surfaces are properly dressed and attended to.

(*c*) It is important that all inflammatory exudation should be absorbed and removed from the endocardium and valve cusps as early as possible. If the effused products remain in the substance of the valve and organise, probably the cusps never regain their normal mobility. I have seen a mitral cusp thickened after endocarditis to fully the extent of one-eighth of an inch. Such a cusp, of course, cannot flap back and forward in the quickly-changing flux and reflux of the blood current with each systole and diastole. It must necessarily cause stenosis or regurgitation or both. We have some drugs which are believed to influence absorption, and particularly to attack such effusions into the tissues as are not fully organised and fortified by the ingrowth of nerve filaments and capillaries. The iodides and mercury are of this order. I always give one of the iodides, usually sodium iodide, during the treatment of one of these cases; and sometimes with caution a mercurial.

2. What has been the result of following this method of treatment which I have now carried out for fifteen years? Let me first tell you what were the results following a merely expectant treatment carried on during several previous years, treating only the rheumatism and leaving the heart to take care of itself. In a number of my cases which I watched and followed carefully, the patient went out of hospital with a *bruit* which unhappily was the origin of permanent heart disease, in almost all cases the mitral being the valve in fault. It was this succession of ill consequences which caused me to seek after some better system. After that I experimented with several methods which had been proposed by old writers, but without any encouraging result.

During the last fifteen years I have treated 85 cases of valvulitis in hospital on the plan above described. Of these, 54 already had signs of cardiac trouble, apparently recent, when they came under my charge. Of these, after being subjected to the treatment above detailed, 34 left hospital with apparently sound hearts, while 20 had, I fear, valvular disease. Of course, in many of these cases one could not be sure that the valvular mischief was really of recent occurrence. Thirty-one cases came into hospital with sound hearts (or at least having no *bruit*), and valvulitis occurred in hospital; they were treated *ab initio*. Of these, 27 went out with apparently sound hearts, 3 lapsed into permanent disease of the valve, and 1 remains under treatment. This has been a highly satisfactory result. Some of you have seen certain of these cases, but rarely more than one or two, because the series has extended over a period of fifteen years.

After prolonged treatment the *bruit* is found to become soft and to be heard with increasing difficulty; it then becomes variable, sometimes heard and sometimes not. A time comes when it is heard when the patient is recumbent, but disappears when he sits up; at length it disappears altogether, and the accentuation of the second pulmonary sound also vanishes. But even after this satisfactory point has been reached rest and care are required for a time. Many such a case have we watched in these wards. Whenever practicable we keep the patient under observation for months or years after, and provided no fresh rheumatic attack occurs, he usually does well.

3. Let me now briefly sum up the principles which in my judgment should regulate our treatment of acute endocarditis: (1) The chief importance of rheumatism consists in the cardiac risks involved. The complaint itself is rarely fatal, and, since the discovery of the utility of the salicylates, it involves a greatly-lessened amount of pain and suffering. Its great seriousness consists in the fact that it may, and very often does, cripple the heart for life, leaving the patient incapacitated for much of the enjoyment and for all the physical activity which were his birthright, not to speak of the suffering and brevity of such life as remains. If there are any means by which there is even a hope of this great calamity being averted, surely we ought to give it a trial. (2) My own experience has convinced me that in the great majority of cases this calamity can be averted; but only at the cost of a prolonged rest, which in itself is more irksome to the patient than the other details of treatment which accompany it. If, however, the patient is told, in such a manner as not to alarm or distress him, what are the issues involved, he is

usually quite willing to give himself a fair chance of recovery. So far as I can judge, the treatment is more efficacious if begun early; if delayed beyond a certain time it is of no use, at any rate in the case of adults. In childhood it has seemed to me that the restorative power is greater. I have seen a few cases of restoration of a damaged heart when no treatment but rest was adopted, and even one or two in the absence of a sufficient amount of rest, but my experience tells me these cases are few. Among children rheumatism is not infrequently devoid of pain. A sore throat, a little fever, some aching in limbs, perhaps a few largish spots on the skin, may be all that indicates an attack of rheumatism which, if unobserved, may leave the heart crippled. I advise you to examine the heart carefully in all such cases. Lastly, two brief cautions: If your patient's heart after rheumatic endocarditis appears to have become normal under treatment, warn him to avoid active or violent exertion for two or three months, and also to take every precaution against another attack of rheumatism. If that recurs within three months, the heart is almost certain to be again involved.

ON THE RESTING POSITION OF ANOPHELES.

BY

L. W. SAMBON, M.D.(Naples). and G. C. LOW, M.A., M.B., C.M.(Edin.).

MAJOR RONALD ROSS AND MR. E. E. AUSTEN, in the report of their expedition to Sierra Leone in August, 1899, laid great stress on the position taken by mosquitos when resting. They considered the attitude taken to be a character of easy recognition and of great importance in distinguishing the malaria-bearing mosquitos of the genus *Anopheles* from those of the genus *Culex*, which so far seem foreign to the spread of human malaria.

Mr. Austen, in the natural history report of the expedition, says:

> It was noted that they always choose the darkest spots in which to rest, and sit in a highly characteristic attitude, their bodies being maintained at an angle of at least 45° to the surface..... It frequently happens that the tips of the palpi are in contact with the wall on which the insect is resting, and the body is elevated so much that it is practically at right angles to the surface, so that the insect appears as if standing on its head. Owing to this extremely characteristic resting attitude of *Anopheles*, it would be impossible for anyone who had once seen a specimen at rest to mistake it for a *Culex* for the latter, when at rest, allows its body to hang down vertically. Since, as already stated, so far as we know at present, *Anopheles* alone (and not *Culex*) carries the malaria parasite, the practical importance of this distinction is evident.

The statement that the relative positions assumed by *Culex* and *Anopheles* are so strikingly different is erroneous, and it is to be regretted that it has been incorporated in all recent literature on malaria, because it is likely to linger long in the writings of copyists.

When we first came to the Roman Campagna this year we observed thousands of *Anopheles* in the houses and stables of Ostia, Maccarese, Fiumicino, and other intensely malarial places, but none of them ever assumed the position described by the members of the Liverpool Malarial Mission. These *Anopheles* belonged to the species *claviger* (Fabr.), which is by far the most common in Italy. They were usually found in the darkest corners, not infrequently beneath tables and chairs or behind pictures. On painted ceilings they were generally found on the darker colours, which protected them best. A very favourite haunt were the cobwebs, especially in the stables, the ceilings of which were always heavily curtained. But wherever found the *Anopheles* never stood on their heads, but rested on their feet with the posterior part of their body slightly inclined away from the support on which they were resting. The inclination of the body was less when the insect rested on its three pairs of legs and formed a maximum angle of about 45 degrees when it poised on the two first pairs and stretched out the last pair free. Both *Culex* and *Anopheles* frequently sit with the last pair of legs lifted away from the support. But whilst the legs of *Anopheles claviger* stretch out with the tarsi pointing downwards, those of the various species of *Culex* which came under our observation presented the tarsi curled upwards in a very characteristic manner.

Professor Grassi, in his admirable memoir on malaria, published on June 4th, 1900, reproached Ross with inaccuracy and described very differently the position assumed by *Anopheles*. His description answered exactly to what we had observed ourselves in *Anopheles claviger*.

Lately, having brought up a number of *Anopheles pseudopictus* from larvæ collected in the neighbourhood of Castel Fusano, we observed that in this species of *Anopheles* the body forms a much wider angle with the surface of support. The angle is so wide at times that one might almost be justified in saying that the insect holds its body perpendicular to the wall. It is evident, therefore, that the observations made by Ross and Austen in Sierra Leone were quite correct, but that unfortunately these two authors erred in extending to the whole genus a character which is peculiar to a few species which they had observed only in *Anopheles costalis*.

We have also studied the position assumed by *Anopheles superpictus* in specimens which Professor Grassi kindly brought to us from Southern Italy and we have found that they take a position similar to that of *Anopheles claviger*.

Although the resting attitude of mosquitos loses all the importance attributed to it as a diagnostic character between the *Culex* and *Anopheles* genera, it will always be of value in the differentiation of species, and it is to be hoped that scientific observers in different parts of the world will likewise study the attitudes assumed by other species.

ANTISTREPTOCOCCUS SERUM IN PULMONARY TUBERCULOSIS.

BY THOMPSON CAMPBELL, M.B., C.M.,
Physician to the Consumption Sanatorium, Bridge-of-Weir, N.B.

SOME authorities assert that, if the evening rectal temperature in a patient suffering from pulmonary tuberculosis exceeds 100.4° F., the case is one of mixed infection, that is to say, streptococci and other pyogenic organisms are taking part, along with the tubercle bacilli, in the destructive process in the lungs. In that case one might expect that antitoxin treatment, aimed at the destruction of these accessory micro-organisms, would prove beneficial, and as the following case records a trial of this method, it may be worthy of being put on record.

To summarise the case which is under treatment at the present time, it may be stated that there is extensive softening of both lungs, though no cavity formation has yet taken place; the duration of the disease is apparently only a few months; the average evening temperature—when no antipyretic remedy is administered—reaches 102° to 103°, the pulse-rate has ranged from 84 to 112 per minute, and the respirations from 24 to 30 per minute.

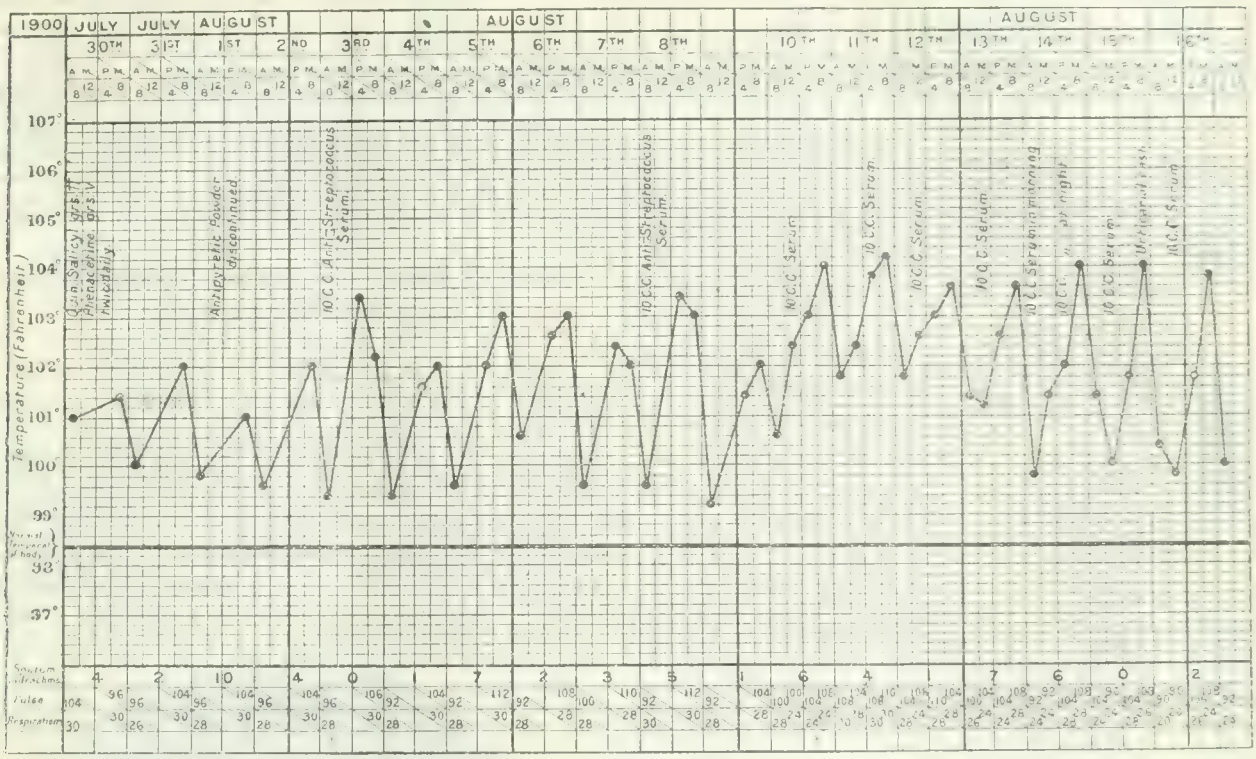
The following is the extended history:

B.S., aged 18, dressmaker, admitted to the Consumption Sanatorium, Bridge-of-Weir, on June 28th, 1900, complaining of cough, debility, night sweating, and loss of flesh, of only a few months' duration to patient's knowledge.

Family History.—An aunt, a sister of her father, died of consumption; but no other relative suffered from tuberculous disease as far as patient is aware.

Personal History.—She considers that she was always regarded as delicate, though she had no serious ailment until the onset of the present one. Menstruation commenced in her 15th year, and was regular until two months ago, but has been in abeyance since. Patient dates her first symptom of ill-health from three months ago, when she began to feel her strength failing, and found she was easily fatigued. A month later cough first became a troublesome feature attended with a yellowish expectoration; this led her to consult her medical attendant, who pronounced her to be suffering from consumption. Coincidentally night-sweating was complained of, and though somewhat profuse at first, was latterly less so. There has also been a gradual loss of flesh and diminution of vital power, with progressive loss of colour. For a month at the onset she was entirely confined to bed, but of late was in the habit of rising for an hour or two each day. There has not been any severe hæmoptysis, and only occasionally a streaking of the expectoration with blood has been noticed; otherwise sputum has been yellow and fairly abundant according to patient's own statement. Breathlessness has been present on exertion, and at times a severe pain is experienced in the left side of the chest. About a year ago patient got employment as a dressmaker, but her work was light and was given up shortly before the onset of the present complaint owing to domestic circumstances. Eight of a family occupied a room and kitchen dwelling, and three sisters shared patient's sleeping apartment.

Present Condition.—She is considerably emaciated; face pale, with an expression of marked enfeeblement; fingers tapering but not distinctly clubbed; skin is warm and moist; voice indicative of debility; pupils dilated but react to light and on accommodation. Pulse small, soft, and compressible, numbers 112 per minute. Respirations shallow, number



28 per minute. Temperature, morning 101.6°, evening 102°. Height 64 inches. Weight, 6 st. 12 lbs., 60%

Examination of Chest.—Front of chest is flat and expansion weak; intercostal spaces are hollowed, and the clavicles equally and unduly prominent. Vocal fremitus and vocal resonance are slightly greater on the right side. Circumference of chest, 29½ inches; right side, 14½ inches: and left, 14¾ inches. Percussion resonance is diminished on the right side above the level of the second rib, especially in the supra-clavicular region. All over both lungs prolongation of expiration is found, with a series of large metallic clicking *râles* over left back accompanying both inspiration and expiration, and a series of smaller clicking *râles* from apex to base of the right lung, anteriorly and posteriorly. The heart's sounds are normal. Urine, normal. Sputum: Not abundant; highly purulent; contains swarms of tubercle bacilli, including many clumps; abundant micrococci; and yellow elastic tissue in small quantity.

Progress of Case.—During the first week of residence, when the only antipyretic measure employed was cold sponging of the whole body two or three times daily, the average morning temperature was 101.2°, the afternoon record 102.4°, and the evening average 102°. During the ensuing three weeks, quin. salicyl., 2 grs., and phenacetine, 5 grs., were administered at 10 A.M. and 3 P.M., to keep the pyrexia within moderate limits and allow the patient to take a proper amount of nourishment with comfort, the average evening record then, 100.8°, including one register of 104.4°. A day or two before the commencement of the serum treatment the antipyretic powders were discontinued, leaving the evening register running at 102°. The physical signs at date of this report present little difference from those recorded on admission seven weeks before, but weight increased 8 lbs. in the first four weeks, and has remained practically stationary since: sputum has been scanty throughout.

Employment of Serum.—Only one phial of the antistreptococcus serum could be obtained locally when the trial was decided on, and this quantity (10 c.cm.) was injected subcutaneously in the anterior abdominal wall at 11 A.M. on August 3rd; it apparently caused an exacerbation of the evening temperature to 103.4°—an increase of 1°, judging from the average of the previous records. Then four days elapsed before a supply of serum (Burroughs, Wellcome and Co.) came to hand; and during this time the average evening temperature was 102.5°. On August 8th, again, 10 c.cm. were injected, giving rise to an evening record of 103.4°, as on the previous occasion. Then a day's intermission was allowed, as patient complained of tenderness at the site of injection. During the ensuing seven days—from August 10th to 16th—the administration was continued at 11 A.M. each day, and on one occasion only the injection was repeated tentatively in the evening. In all 10 injections were given, and during this period the average morning temperature was practically 101°, and the evening average 103.8°, although cold sponging of the body was carried out three times daily. With regard to the effect of the serum, it cannot be said that this has proved beneficial; indeed, judging from the temperature records of the first week of residence, the treatment has apparently caused a slight increase in the pyrexia, without, however, having much effect on the pulse and respiration rates.

All that can be deduced from this trial is that if the marked habitual evening exacerbation of temperature in cases of pulmonary tuberculosis is really due to the action of pyogenic organisms, the antitoxin treatment is apparently of little value. In reports of cases of puerperal septicæmia and erysipelas, in which it is claimed that improvement has resulted from the use of antistreptococcus serum, it appears that a defervescence of temperature has occurred within a comparatively short time; though on looking over several memoranda in the medical journals I find that in a number of instances no such improvement resulted. Taking into consideration the fact that these are cases in which the influence of pyogenic infection on the temperature is undoubted, it is the less surprising that no benefit should be obtained in pulmonary tuberculosis, in which the cause of the pyrexia has not been so definitely ascertained. In this case, however, I submitted a carefully-taken specimen of the expectoration to Dr. Paterson, of the West of Scotland Clinical Research Laboratory, who reports that on cultivation large numbers of streptococci pyogenes were found; so that a measure of support is given to the assumption that persistent evening pyrexia in phthisical patients is due to "mixed infection."

As strict antiseptic precautions were adopted in giving the injections, the only ill effect experienced was some tenderness at the site of inoculation; but the treatment is also responsible for the development of an urticarial rash in various parts of the body. No untoward effect was produced, such as the irregularity of the pulse or faintness, which have been attributed to its use in a case of puerperal septicæmia reported in the British Medical Journal of February 17th, 1900.

On the whole I should not feel warranted, from my experience in this case, in again resorting to the use of the serum, as phthisical patients in whose case pyrexia has been a feature for a considerable time are in a somewhat critical condition, and can ill afford to be subjected to a form of treatment which causes an exaggeration of the febrile state.

Alvarenga Prize of the College of Physicians of Philadelphia.—The next award of this prize, which is of the value of about £36, will be made on July 14th, 1901. Essays may be on any subject in medicine, they must not have been published, and must be sent to the Secretary of the College on or before May 1st, bearing a motto. The prizeman for 1900 is Dr. David De Beck, of Cincinnati, the author of an essay entitled Malarial Diseases of the Eye.

A NOTE ON TREATMENT OF ABSCESS OF THE LIVER.

BY EUGÈNE LAURENT, B.S., M.B.LOND., M.R.C.S.ENG.,
Curepipe, Mauritius.

DURING the last fifteen years, in the course of hospital work and of private practice in the Mauritius, I have had the opportunity of observing, treating, and operating upon 110 cases of tropical abscess of the liver. I am, consequently, fully alive to the difficulty of finding some central abscesses of the right lobe, or even some abscesses of the convexity of the liver, although clinical symptoms point clearly to their presence.



Exploratory laparotomy is a severe measure, and in a genuine central abscess is of little avail. I grant, however, that it has been of great service to me in abscesses of the convexity of the liver.

Exploration by means of the trocar is the means we resort to most readily, and the trocar coupled with the aspirator is our sheet anchor in those cases. When we are fortunate enough to hit upon the purulent focus, the next step is free incision of the intercostal space, and of the healthy liver substance intervening between the abdominal wall and the abscess. This second part of the operation is frequently difficult, because when the cannula is withdrawn after the exploration, and when pus has been found, there is always a slight displacement of the liver, which might prevent the operator from getting directly into the abscess after the incision of the parietes. Another source of difficulty arises from the free bleeding of the liver substance if the operation be slow and gradual.

To obviate this, some practitioners leave the cannula *in situ*, and make the incisions upon it as a guide. But from personal experience I am bound to condemn such a procedure, having been an eye-witness to a sad accident: a very good surgeon having explored with the trocar and cannula the liver of one of his patients and found pus, used the round cannula as a guide to open up the liver, and thrust his knife into the intercostal artery. I have heard of two similar accidents happening under identical circumstances.

Struck by those mishaps, I devised the trocar and double-grooved cannula shown in the accompanying drawing. It ensures rapidity of operation, diminishes the chances of septic absorption by the bleeding liver tissue, and practically prevents all hæmorrhage, because a large drainage tube may at once be inserted, and stops any further bleeding.

The advantages which I claim for my trocar are:

1. It is flat (oval on section) and therefore penetrates more readily between the ribs than the ordinary circular form.

2. It is 1 inch longer than the ordinary trocar and cannula of Dieulafoy. This is of great service, because on several occasions I had the moral certainty that abscess of the liver existed; I punctured in two or three different spots and found no pus.

From ten days to a fortnight after, I explored again and found a large abscess which had come within the reach of the 4-inch trocar. The shortness of the trocar accounted for the failure of the first explorations. Mr. Cantlie, by experiments on frozen bodies, has proved that the inferior vena cava is from 4¼ to 5 inches from the surface in a normal liver, and that the danger of wounding the trunk of the portal vein before it breaks up in the liver is still more remote. I accordingly feel certain that in a diseased liver, which is always enlarged, although this may not be apparent externally, the risk of injuring the above-mentioned veins is practically *nil*.

3. The grooves on either side of the cannula are two invaluable directors which ensure safety, precision, and rapidity of operation.

I have demonstrated practically on the dead body at the London Hospital and at the French Hospital, through the kindness of my friend Dr. Dardenne, the utility of such an instrument. It has been made for me by Mr. Charles Baker, 244, High Holborn. When the pus is very thick and cannot flow through the cannula, irrigation or aspiration can be resorted to by adapting an india-rubber tube to my cannula.

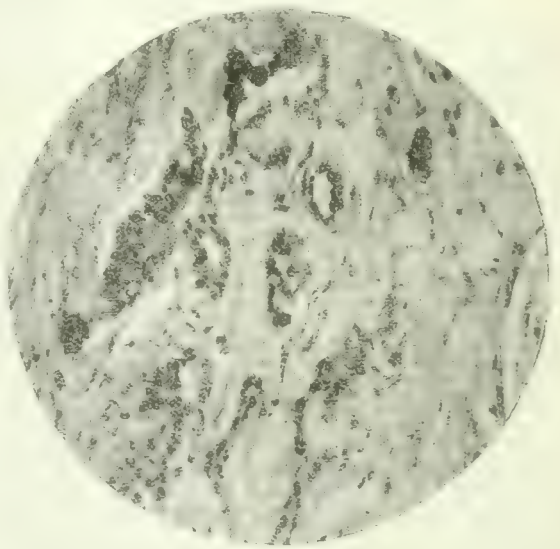
UNUSUAL CASE OF MALIGNANT DISEASE IN EARLY INFANT LIFE.

BY H. J. CLARK, M.R.C.S., L.R.C.P. LOND.,
Swanage.

THE exceptional rarity of malignant disease in early infancy justifies the publication of the following case:

Mrs. O. was delivered of her second child in January, 1899. At birth neither testicle presented any abnormality in size or position. When ten weeks old some enlargement of the child's left testicle became apparent, wholly unassociated with any accidental cause. This enlargement was of steady growth, until at the end of eight months it had attained the size of a small hen's egg, smooth and firm to the touch and without any implication of neighbouring glands. On December 19th, 1899, the testicle was removed in the usual way, and weighed 1 oz. 13 gr.

The accompanying drawing from a slide prepared for me by the Clinical Association shows fairly well a group of tubules with columnar-celled lining, while other spaces are empty or filled with mucoid substance.



With the exception of congenital renal tumours, columnar-celled carcinoma is rare in infants. In this case neither parent presented any suspicion of malignant history.

POST-OPERATIVE HÆMATEMESIS. — Dr. Kenelm Winslow has recently recorded in the *Boston Medical and Surgical Journal*, a case in which three days after an operation for umbilical hernia, the patient, a woman of 65 years, began to vomit blood in very large quantities, and died a few hours later. There was no lesion of the gastric mucous membrane discoverable on the most careful search, or indeed any pathological condition of importance.

THE AGGLUTINATION METHOD FOR TUBERCULOSIS.—M. Arloing made a communication at the recent Congress in Paris on the possibility of diagnosing early tuberculosis, before the onset of any physical signs, by means of the serum-agglutination method. He considers the method even more delicate for tuberculosis than for typhoid fever, and far preferable to the tuberculin method, because only a small drop of blood is required, and the reaction takes place *in vitro* and not within the body.

SIXTY-EIGHTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at IPSWICH, July 31st, August 1st, 2nd, and 3rd, 1900.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

HOWARD MARSH, F.R.C.S., President.

ON OÖPHORECTOMY IN CANCER OF THE BREAST.

By STANLEY BOYD, M.B., F.R.C.S.,
Surgeon, Charing Cross Hospital.

IT was at Ipswich in May, 1897, before the East Anglian Branch of our Association, that I made my first communication upon this subject, which was then in its early infancy. It is still young—too young for final conclusions to be drawn from the material at our disposal—yet I believe that it will be useful and not without interest to again consider the matter.

HISTORY.

In May, 1896, Dr. Beatson, of Glasgow, suggested that the removal of both ovaries might be useful in the treatment of inoperable cancer of the breast. He was led to this by the following considerations, if I correctly understand his reasoning. In lactation there is rapid multiplication of mammary epithelium; the cells undergo fatty degeneration as fast as they are formed, break down, fall into the lumina of the gland acini, and come away in the milk. Beatson learnt that certain farmers spayed lactating cows in order to maintain permanently or for a long time the above state of matters, resulting in the secretion of milk. In cancer also the mammary epithelium multiplies rapidly, but instead of undergoing fatty degeneration and being cast off, it distends the acini, penetrates into the lymph spaces of the breast, and there, floating in a nutrient fluid, it continues multiplying and forcing its way onwards towards the lymphatic glands. As oöphorectomy in the cow maintains fatty degeneration of the epithelium of the lactating breast, Beatson thought it might induce fatty degeneration of the epithelium of the cancerous breast. Accepting menstruation as the evidence of ovarian activity, Beatson was inclined to believe that the cessation of lactation was due to the re-establishment of the influence of the ovaries, which influence had been suspended by the gravid uterus, and thus removal of the ovaries resulted in the indefinite continuance of lactation. It further occurred to him as possible that cancer of the mamma might actually be due to some "ovarian irritation" or to "some defective steps in the cycle of ovarian changes," and that removal of the ovaries might bring cancerous cell-proliferation to a standstill or induce fatty degeneration of the cells as seen in lactation.

Whatever may be thought of the analogy which Beatson sought to establish between lactation and cancer, and of the argument which led him to remove the ovaries for cancer, the result obtained in the first case (No. 1) which he thus treated, was very remarkable.

Dr. Beatson's First Case.—A woman of 33 had noticed a tumour in her left breast when nursing her first child three years previous to her coming under observation, but it did not increase until her second lactation 20 months later. After nursing for 10 months she applied for relief from a breast tumour 5 by 3½ inches, with nodules and an ulcer in the skin over it. An extensive operation was done, and was followed by immediate and inoperable recurrence. Shortly after she came under Beatson's care with one large mass (3½ by 2½) in the scar, adherent to the chest-wall, and smaller nodules scattered around. The viscera and bones seemed to be normal, and the patient was in fair condition. Eight months after a double oöphorectomy all trace of disease had gone; and this was certified by many of the best surgeons in Edinburgh when, 3 months later, the woman was shown at a Society there.

It is right to mention at once that oöphorectomy was not the sole remedy employed. Believing that the so-called cancer bodies were not parasites, but merely cells undergoing mucoid degeneration, Beatson thought that a free administration of thyroid extract might influence the growth and in time work a cure. In this particular case, thyroid extract was given fully for a month without appreciable result. Oöphorectomy was then performed, and as soon as the immediate effects of the operation were over, thyroid was again administered steadily—15 to 20 grs. a day—and the result above noted was obtained.

This case altered my whole feeling with regard to cancer. Previously my only hope of curing it lay in earlier and wider operation; and I shared to the full the scepticism of the profession with regard to reported cures by other means. But now it was clear that the relation between a cancer and the body could be so altered that the latter could prevail over the former. Indeed, this change may occur spontaneously, as shown by the following case:

Mr. Gould's Case.—In November, 1896, Mr. Pearce Gould showed a woman who in March, 1896, was apparently near death from secondary cancer about a breast scar, in the supraclavicular glands, in the right lung, and left femur, but when exhibited she seemed to be well; and she was in better health and still free from obvious cancer in April, 1899 (three years). This patient had had no treatment whatever, and the menopause had occurred more than a year before the rapid disappearance of cancer began.

In these two cases the diagnosis and the disappearance of the cancer were alike indubitable. A main object of my first paper was to draw attention to these cases, and to endeavour to direct observation and experiment towards the discovery of the conditions which lead to atrophy and disappearance of cancer masses.

Thanks to the kindness of the surgeons whose names are mentioned in the first column of my tables, I have been able to obtain more or less full details of 41 cases of oöphorectomy in cancer of the breast. The cases are in no way selected; they include all which the surgeons mentioned had done down to a certain date. I know the result in 13 other cases, making a total of 54.

How often does the Improvement occur?—Desiring in the first place to ascertain how often and in what kind of case oöphorectomy leads to improvement, I have divided the cases into two groups: (1) Those in which oöphorectomy seemed to produce a clear and considerable result; (2) those in which oöphorectomy had little or no effect, or in which the effect was doubtful. In the first group I have included only cases in which marked wasting, often amounting to disappearance of the superficial disease, occurred. In all cases except No. 11, in which death occurred from a cause other than cancer, life seemed to be prolonged by the oöphorectomy at least six months. In the second group I have placed not only the more or less complete failures, but also certain cases in which it was impossible to determine whether or not the oöphorectomy had any effect, because all obvious superficial disease was removed at the same time as the oöphorectomy was done (Nos. 2, 3, 4, 5, 6). Thus classified, and assuming that the term "cured" of the *Edinburgh Reports* would justify me in placing cases so described in my first group, I find that of the 54 cases 19 (35 per cent.) were more or less markedly benefited, 34 were not benefited or were only doubtfully benefited, and 1 died of exhaustion. Using only cases of which the result is accurately described—that is, eliminating the 8 Edinburgh cases—I have 46 cases, of which 17 (37 per cent.) benefited at least to the extent I have mentioned. On the standard adopted this result is the least favourable to oöphorectomy which can be obtained from the cases I have collected. A glance down the columns headed "General Condition" and "Superficial Disease" will show that many extremely serious cases have been submitted to this treatment, some really very close to death. It is likely that even with our present experience we should be able to select more wisely and to obtain a better result. My own experience of 13 cases would not have led me to expect a result quite so good as the above; indeed, had it not been for the encouragement I derived from my first case I should probably have abandoned the treatment. The numbers are too small, however, to yield reliable results.

The Result not Due to Chance.—These statistics seem to me to prove that atrophy of cancer masses after oöphorectomy is no accidental concurrence, as some would have us believe, and anyone who has seen a successful case will decline to allow that there is anything fortuitous about it.

Nor to Laparotomy.—It is more difficult to disprove the sup-

Cases in which Effect of Oöphorectomy seemed Clear and Considerable.

No. Surgeon.	At Date of Oöphorectomy. M. S. Ch.	Age.	Menses.	General Condition.	Superficial Disease.	Viscera, etc.	Dates of Oöphorectomy and other Operations.	Effect of Oöphorectomy.	Thyroid.	Total known Duration	Last Note, after Oöphorectomy.
1 Beatson	M. Ch.	33	Regular	Fair	One large and several small recurrent nodules along scar and back into axilla	*Nil*	1895.—Removal of left breast, etc., for growth present 3 years. June, 1895.—Oöphorectomy; left ovary cystic	Complete disappearance of all cancer in 8 months	Given steadily	More than 5 years	July, 1900 (2½ months). Two small nodules growing slowly. Feb., 1898 (44 months).—Nodule below left clavicle and in right breast; pain in back 12 months, and marked cervico-dorsal curve. Died April, 1899 (46 months).
2 S. Boyd	M. Ch.	44	Regular	Good	Much, infiltrating skin and fat of chest wall, scars especially, axilla, and great pectoral; gland above clavicle?	*Nil*	September, 1892.—Excision of tumour. June 1893.—Amputation of breast. June, 1896.—Recurrences in chest wall imperfectly removed. December, 1896.—Oöphorectomy	Complete disappearance in 5 months of all disease except mass in pectoral which went by fits and starts, with long stationary periods between, in 3 years	None	7 3 years	July, 1900 (43 months).—Health excellent. Viscera normal. No local recurrence.
3 S. Boyd	S.	37	Regular	Feeble	Many skin and subcutaneous nodules on chest wall, many adherent; a gland above clavicle; a large nodule in clavicular portion of pectoral; a nodule in left breast and gland in axilla; left sciatica	*Nil*	March, 1896.—Removal of breast, pectoral, and glands. February, 1897.—Oöphorectomy	For 6 months rapid disappearance of almost all skin, fat, and gland growths; then recurrence. Flesh and strength gained for 8 months	Given for 1 month; 5 lbs. lost	2½-3 years	July, 1898 (17 months).—Died. Innumerable nodules on chest and abdomen, in liver and sternal end of clavicle. Gain of life probably 1 year.
4 S. Boyd	M.	9	Regular	Feeble from heart disease	Small inoperable recurrences in axilla	*Nil*	October, 1895.—Breast and glands removed. May, 1898.—Two small subcutaneous nodules removed from chest wall. September, 1899.—Oöphorectomy	Complete disappearance of recurrence in one month	None	4½ years	May, 1900 (8 months).—Free from obvious cancer till 2 months ago. Then fresh nodules in axilla. June (1 months).—Painful nodule in abdominal scar; those in axilla larger. Health good, for her.
5 Herman	M. Ch.	47	Irregular 3 years; *nil* 3 mos.	Good	Nodules in pect. maj.; growth around axillary vessels; mass adherent to subclavian vein	*Nil*	October, 1890.—Breast removed. December, 1896.—Attempt to remove axillary glands. March, 1897.—Oöphorectomy	November, 1899 (6 months).—Steady disappearance of all growth; 11 pounds gained	Given steadily	7 years or more	July, 1900 (18 months).—Quite well.
6 Herman	M. Ch.	49	Irregular for 3 months; nothing last 3 months	Good	Ulcerating recurrence in scar 3½ by 1½ in. (since April, 1896). Growth in left breast 3½ by 2 ins. (November, 1897) Glands in left axilla	*Nil*	June, 1895.—Removal of breast, etc. October, 1895. Skin growth and more glands removed. July, 1898.—Oöphorectomy only	October, 1898 (3 months).—Scar sound and movable; no distinct lump in left breast, no glands in axilla; nipple still retracted; only "keloid-like" nodules in and about scar; slight swelling of arm since first operation	Given steadily	7 years	April, 1899 (10 months).—Excellent health; 2 st. 7½ lbs. gained. Feb. 1900 (15 months).—Ulceration has recurred. July, 1900 (24 months). Nodules round ulcers; glands enlarging; 1 st. lost; health good.
7 Herman	M. Ch	44	Regular	Good	Clumps of nodules 3½ by 2½ by 1½ ins. in and around scar; nodules above clavicle and in axilla; 2 in left axilla	*Nil*	June, 1895.—Right breast removed.—May, 1899.—Oöphorectomy	Nodules began to shrink within 10 days	Given steadily	5 years or more	Sept., 1899 (4 months).—; or 4 nodules in right axilla; 17 lbs. gained. July, 1900.—Many nodules and glands; weight same.
8 Herman	S. Ch.	43	Regular	Good	Four nodules in and around scar, the largest fixed to sternum or third cartilage	*Nil*	1893.—Partial operation. August, 1897.—Breast removed. April, 1898. Recurrence removed. June, 1899.—Oöphorectomy	Nodules gone in a month; cessation of pain	Given steadily	7 years or more	February, 1900 (9 months).—Two small recurrent nodules; 12 lbs. gained. July.—*In statu quo.* No pain.
9 Hopkins Walters	M. Ch.	41	Regular	Very feeble; emaciated.	Seven large scattered nodules on chest wall; skin and subjacent tissues deeply involved: ulcer from mid-axilla to middle of clavicle. Glands above clavicle and behind sterno-mastoid	*Nil*	November, 1899.—Right breast and glands removed. October, 1896.—Oöphorectomy	Three weeks' dementia. Ulcer healed completely. Nodules and glands almost disappeared. Appearance, appetite, and strength improved; nearly a stone gained	None	7 years	February,, 1898 (10 months.) Died of intrathoracic recurrence. Had performed household duties and care of children for about a year in good health.
10 Hopkins Walters	S.	51	Ceased 18 months	feeble cachectic	Enormous left breast of stony hardness, immovably fixed. Skin extensively involved. Glands in both axillæ and above both clavicles	*Nil*	March, 1897.—Oöphorectomy only	Rapid softening and diminution of breast, improvement in skin, shrinking of glands. Improvement in strength, weight (slight), appetite, and appearance. Able to resume household and social duties	None	18 months	December, 1899 (9 months).—Died after very short illness. No *post mortem* examination. Local disease was increasing again, but never reached original state. Comfortable life prolonged at least 9 months.

11 Pearce Gould	S.	—	Regular	Good	Right mamma infiltrated with new growth, fixed to skin and chest wall; ulcer over it 1¾ by 2½ ins., many nodules around; walnut-sized mass in left breast; glands in both axillæ, above right clavicle and under sterno-mastoid; œdema of arm and forearm; shoulder almost fixed	*Nil*	January, 1900.—Oöphorectomy only; appendages normal	In one month most of this extensive disease had gone. Ultimately only one nodule, size of large pea, remained. Stationary for a short time, it seemed to increase slightly in spite of thyroid	Thyroid colloid tabloids, 3 a day	—	April, 1900 (3 months).—Died of intestinal obstruction due to general matting. *Post mortem* the nodule on chest, size of Barcelona nut, was the only trace of cancer found.
12 Cheyne	W. Ch.	54	Regular	Fair	Inoperable mass about axillary vessels	*Nil*	Breast removed. October, 1896.—Oöphorectomy	For 6 to 7 months marked diminution of skin and gland growths	Given	4½ years	March, 1898.—Extensive glandular recurrence. Much pain.
13 Cheyne	M. Ch.	43	Regular	Good	A fixed gland (walnut) beneath clavicle and sterno-mastoid; several enlarged in posterior triangle; arm slightly swollen	*Nil*	1893.—Breast only removed. October, 1898.—Axillary recurrence removed. July, 1899.—Oöphorectomy	In 3 months enlarged glands could not be felt. Still slight swelling of arm and forearm. Went abroad In January, 1900 (6 months) swelling again above clavicle. Thyroid given, and swelling subsided. Much depression and loss of strength, so she gave it up	Given for 2 to 3 months	5 years	July, 1900 (12 mos.).—After abandoning thyroid she quickly improved in health & strength. Both now satisfactory. Superficial glands in subclavian triangle are enlarged; the deep one cannot be felt.
14 Cheyne	S.	—	Was losing free ly large fibroid	?	Large local recurrence	?	Had had several operations for cancer of breast. May, 1899.—Oophorectomy and incomplete removal of recurrence	October, 1899 (5 months).—Reported free from obvious cancer	Given steadily	—	July, 1900 (14 months).—In better health than for some time past. Recently had large gland above clavicle. Fibroid almost gone.
15 Eve	S.	41	Regular	Good	Recurrence in scar; two nodules above it; some supraclavicular glands enlarged	*Nil*	1895.—Removal of ulcerating breast and glands; latter not markedly affected. August, 1898.—Oöphorectomy only. November, 1899.—Affected skin and supraclavicular glands removed	In 2 to 3 months all sign of cancer disappeared. After a year 2 nodules formed in scar and glands swelled above clavicle	?	8 years	July, 1900 (25 months).—General condition good. Paralysis of left fifth nerve. Two small nodules on chest wall. Glands and viscera seem sound.
16 Eddowes	S.	51	Regular	Good	Large mass in axilla, involving skin widely; mass in pectoral	*Nil*	September, 1898.—Removal of breast. June, 1899.—Oöphorectomy only	October, 1899 (4 months).—No sign of disease; skin and fat quite soft and flexible, and the axilla quite free	Given 2 tabloids daily	4 years	February, 1900 (8 months).—Red spots appeared in skin below axilla. Health excellent. Walks better than for a long time. Went to Rome July, 1900 (13 mos.).—Returned in perfect health: "skin healthier and less inflamed."
17 Waterhouse	M. Ch.	—	Regular	Fair	Much pain in and swelling of arm; mass behind pectoral fold fixed to rib; fulness above clavicle, and a gland; a gland above right clavicle also	*Nil*	May, 1897.—Left breast, etc., removed for rather soft tumour (noted only 5 weeks), with several axillary glands. August, 1899.—Oöphorectomy; appendages normal	In less than 4 months, pain, swelling of arm, axillary and supraclavicular swellings disappeared	Given for 4 months	3¼ years	April, 1900 (8 months).—Free from obvious disease. Health better. Much stouter. Suffers still from flushings and perspirations.

Cases in which Oöphorectomy had Little or No Effect, or in which the Effect was Doubtful.

No.	Name	M. or S. Ch.	At Date of Oöphorectomy. Age.	Menses	Health.	Superficial Disease.	Viscera and Bones.	Dates of Oöphorectomy and other Operations.	Effect of Oöphorectomy.	Thyroid.	Total known Duration.	Last Note after Oöphorectomy.
18	S. Boyd	M	49	Ceased months	Bed ridden emaciated	None	Liver, sternum, humerus	August, 1891.—Removal of breast, etc. March, 1897.—Oöphorectomy	None	None	At least 6 years	Died in 14 weeks.
19	S. Boyd	M. Ch.	64	Ceased many years	Good	Mass in right second space, fixed to sternum	Sternum	April, 1896. Removal of breast, etc. March, 1897.—Oöphorectomy; ovaries excessively atrophied	Probably none, though primary growth was large and grew fast, the later course being slow	Taken for many months; effect (?)	4½ years	July, 1900 (40 months). For 18 months health kept good and parasternal lump about same; then lump grew to large size, ulcerated, and bled, and health failed. Now near death.
20	S. Boyd	S. Ch.	—	Ceased year	Poor	Left breast small, seat of diffuse tumour, large foul ulcer, adherent to pectoral and serratus; axilla full of glands; several nodules in fat around, several shotty glands in neck.	*Nil*	January, 1900.—Removal of breast, pectoral, axillary contents, and skin nodules; and oöphorectomy because unfit for merely local treatment	Probably none. For a short time health improved, but glands in neck did not, and fresh growths at once appeared round scar	None	18 months, acute	July, 1900 (6 months). — Died with diffuse infiltration of skin and large nodular and ulcerating recurrences spreading from scar. Four growths in right breast. Much pain.

No. Surgeon	M. Ch.	S.	Age.	At date of Oöphorectomy. Menses	Health.	Superficial Disease.	Viscera and Bones.	Dates of Oophorectomy and Other Operations.	Effect of Oöphorectomy.	Thereafter.	Total known Duration.	Last Notes after Oöphorectomy.
21 Hopkins Walters	M. Ch.		52	Ceased some years	Feeble	Arm swollen. Growth beneath outer end of pectorals. Nodules, one ulcerated, in and beneath skin of chest and axilla	Suspected (see last column)	August, 1899.—Left breast and glands removed. March, 1897. —Oöphorectomy	Growth and ulcer in axilla much smaller	None	7 years at least	April, 1900 (1 month). — Died. Was tapped for double hydrothorax. Growths in omentum, stomach, and liver developed later. No *post-mortem* examination.
22 Berry	M.		54	Ceased 13 years	Good	Three or four rather large growths about breast scar, one ulcerating. General axillary swelling	Mass size of half-orange on left parietal since Christmas, 1898	November, 1898. Ulcerating right breast, etc. (2 years' growth removed. October, 1899.—Oöphorectomy	Probably none	Grave	1½ years	March, 1900 (5 months). Hemiplegic and dying.
23 S. Boyd	M. Ch.		46	Regular	Good	Large growth in breast, ulcerated, slightly adherent to pectoral; axilla full and firm. One or two glands in posterior triangles	Liver edge felt (see last column).	May, 1897.—Removal of breast, pectoral and axillary contents; and oöphorectomy. Ovaries rather small	Possibly some in preventing local recurrence, which seemed likely	None	4½ years	July, 1899.—Excellent health; no local recurrence; pain in right thigh and lameness since. Feb., 1899. June, 1900 (37 mos.) - Near death. Much wasted. Liver enlarged. Pain in back and both legs and apparently paraplegic since Feb., 1900.
24	M. Ch.		32	Thrice in last 6 weeks (pregnant)	Good	Supraclavicular glands which could not be completely removed	*Nil*	March, 1896.-Removal of right breast, etc. November, 1897 —Oöphorectomy and partial removal of supraclavicular glands. March, 1899.—Nodules pressing on axillary nerves removed. January, 1900. — Amputation below tuberosities	Possibly some restraining influence, having regard to patient's age, acuteness of onset, and occurrence of pregnancy	None	4¾ years	July, 1900 (32 months).— Died. Œdema of arm crippled her by weight and dragging. Amputation wound healed in 6 weeks, and she then could get about and do some work till 3 weeks before death. Finally stump ulcerated, as also did the breast scar and scar above clavicle; right chest was dull and liver probably enlarged. Much pain.
25	M. Ch.		46	Regular every 3 weeks	Very feeble	Ulcerating and sloughing scirrhus of large size adherent to pectoral. Axilla full of cancer.	*Nil*	November, 1897.—Removal of left breast, pectoral and axillary contents; much disease left; oöphorectomy	Probably none. Considerable general improvement was probably due to removal of foul cancer, feeding, etc.	Taken persistently in spite of physiological effects	4 years	September, 1898 (14 months) — Large fungating local recurrences. Nodule in right breast. No visceral growths detected
26	M.		40	Regular	Good	Large recurrence in scar. Dense mass in axilla. Many glands in posterior triangle	*Nil*	November, 1898.—Left breast removed. January, 1899.—Recurrence in axilla removed. March, 1899.—Oöphorectomy and free removal of recurrences. Left ovary cystic, right small	Doubtful if any	None	10 months	March, 1900 (12 mos.).—Dying. No local recurrence. "Sciatica" since Christmas and a nodule in left forearm. Emaciation, œdema of legs, jaundice, and enlarged liver.
27	S.		39	Regular	Good	Nodule below breast scar; two movable masses in axilla; one hard gland above clavicle; arm and forearm slightly swollen. Many small nodules found in dense tissue in axilla at operation	*Nil*	November, 1894.—Breast and glands removed. July, 1898. —Removal of 2 subcutaneous nodules from chest wall. June, 1899.—Oöphorectomy; nodule below scar excised, axilla cleared, and vein freed. January, 1900.—Amputation at shoulder; the wound healed	Probably none	Taken for some weeks	6 to 7 years	Many neck glands enlarged and a nodule appeared in right breast. Œdema of arm, pain, sleeplessness, anæmia, loss of flesh and strength all increased. Liver considerably enlarged. After removal of arm she got about more easily. April, 1900 (11 months). —Died.
28	M.		41	Regular	Good	Infiltration of skin round scar from near sternum to posterior axillary fold; many ulcerating small nodules; tender mass in axilla and a considerable supraclavicular gland	*Nil*	June, 1899.—Removal of right breast, subjacent pectoral and axillary contents (a bad case). April, 1900.—Oöphorectomy; old adhesions about ovaries and tubes	Probably none. Steady spread of disease in chest wall	None	A short case	Seen once after discharge from hospital; disease progressing.
29	M. Ch.		38	Regular	Excellent; rather stout	Large diffuse tumour of right breast, involving skin widely, not pectoral. Axilla contained large and small nodules up to clavicle. First part of vessels "set" in rigid cancer sheath	*Nil*	July, 1900.—Removal of breast, skin, pectoral, and contents of axilla. Oöphorectomy	Probably none	None	5 to 6 months	Recurrence in 3 months

Beatson	M	Every 4 weeks	Fair	Large fixed growth in breast; many glands in axilla and above both clavicles. Much pain	*Nil* (see last column)	October, 1895.—Oöphorectomy only	Marked relief of pain. Slight wasting of cancer	Given	6 years	1896.—Died. Secondary growths in liver.
Clayton	F	Regular	Very feeble	Breast inoperable	*Nil* (see last column)	May, 1897.—Oöphorectomy only	Very slight effect	Given	14 months	October, 1897 (5 months).—Died. Growths in lungs and liver.
[illegible]	F	Regular	Poor	Recurrence in scar spreading rapidly over chest	*Nil*	April, 1899.—Large scirrhus with involved skin and glands removed. Oöphorectomy 2 months later	None	–	10 months	Died about 2 months after oophorectomy.
[illegible]	F	Regular	Fair	Small recurrences round scar; indefinite mass behind clavicle; swelling of arm	*Nil*	November, 1897.—Removal of breast, etc. July, 1899.—Oöphorectomy	None	?	2½ years	April, 1900 (9 months).—Worse in all respects. Under care for religious melancholia, which had threatened for years.
[illegible]	F	Irregular	Fair	Three nodules at outer end of scar, growing fast	*Nil*	March, 1897.—A bad breast removed. May, 1897.—Recurrences removed on two occasions. August, 1899.—Oöphorectomy	None	?	An acute case	Three months later, recurrences growing fast, arm beginning to swell.
Bloxam	F	Regular	Good	Several small nodules in fat above scar. One gland above each clavicle	*Nil* (see last column)	December, 1896.—Removal of right breast and axillary contents. June, 1897.—Oöphorectomy	Slight if any. In one month nodules became smaller and firmer	?	2 years	She was driven from hospital some 4 miles. When she arrived she was "paralysed from the chest downward." Died in 4 months; the recurrent nodules remained small.
Mac Boyd	F	Regular	Very bad [illegible]	Tumour of nearly whole breast, adhering to pectoral and to covering skin; small ulcer (3 weeks) outside nipple; 2 small nodules round breast (2 weeks); 5 hard axillary glands	*Nil*	December, 1899.—Oöphorectomy (appendages normal). Removal of right breast superjacent skin, all nodules but 2 in mid-axilla sternal part of pectoral and contents of axilla up to subclavius	In 4 months upper axillary nodule had disappeared; lower did not and was excised; only lymphoid tissue under microscope. Gaining weight	None	4½ years	July, 1900 (7 months).—Looking well but thinks she is losing weight. Signs of growth in dorsal spine 8 weeks. No local recurrence. Small hard gland deep to right sterno-mastoid.
Bidwell	F	Regular	Good. [illegible] fat	Starting from scar at end of Mercier infiltration of skin began and now extends more than half round body, that is, from spine over right breast, which is completely infiltrated, down to below left ribs, up to above clavicle. Arm œdematous. Much pain and broken sleep	*Nil*	January, 1900. Removal of breast, axillary contents, and most of great pectoral for a large tumour involving nearly whole of left breast, but neither skin nor pectoral. Noticed only 2 to 3 weeks May, 1900.—Oöphorectomy. Right ovary cystic; large fibroid of uterus	Pain ceased and did not recur. Vascularity of skin and œdema of arm diminished at once. By fifth day induration had receded ½ inch all round. No further change	–	6 months	June, 1900.—Died suddenly 5 months after removal of breast, 24 days after oöphorectomy. She had had dyspnœa, attributed to cuirasse. No growth detected in viscera. No *post-mortem* examination
[illegible]	F	Regular	Very feeble	From spine across right axilla to beyond left nipple and down arm nearly to elbow, skin was hyperæmic and inelastic, strewn with small nodules and vesicles (lymphatics) which occasionally burst. Supraclavicular glands not enlarged.	*Nil*	February, 1898.—Right breast and axillary contents removed December, 1898.—Coley's fluid for 2 weeks with slight result. Oöphorectomy (adhesions about left ovary)	Infiltrated skin became much less red and more supple, but no nodules disappeared	?	An acute case.	Disease progressed, and patient died in a few months.
Clutton	F	Regular	Poor	Two nodules in axilla and one by other breast	*Nil*	1896.—Excision of 2 tumour 1898.—Removal of breast and axillary contents. 1899.—Oöphorectomy	Nodules were stationary during observation	Given in hospital	2 years or more	Lost sight of a few months after discharge.
[illegible]	F	Regular	Anæmic	Extensive enlargement of the supraclavicular gland	*Nil*	1899.—Removal of breast and axillary contents. 1899.—Oöphorectomy	Glands diminished at first, then remained stationary for months	Given	?	August, 1900.—Readmitted with paraplegia due to spinal growth.
[illegible]	F	Regular	Good	Recurrence in scar and glands	*Nil*	1899.—Removal of breast and axillary contents. 1899. Excision of recurrence. 1899.—Oöphorectomy	Little improvement noted	?	?	– –

Beatson has also spoken, without giving details, of 3 cases treated by oophorectomy and thyroid in which the effect was *nil* or very slight.

Pearce Gould tells us that, in 2 cases he performed oöphorectomy only with no result. In another no trace of ovary could be found in either broad ligament. No effect from operation. In 4 cases fairly recent oöphorectomy and thyroid feeding were combined; the disease has advanced little, if at all, and an ulcer has become shallower, the [illegible] spread.

To the Editors of the [illegible] Edinburgh [illegible] cases are recorded without details; 2 are said to have been "cured," 3 "relieved," 2 unrelieved, and 1 died from [illegible]

position that it is the abdominal section and not the removal of the ovaries which starts the wasting process. The suggestion is based upon recorded cases of exploratory laparotomy in which apparently malignant disease has been discovered, the abdomen has been closed, and the patient has recovered not only from the operation, but from the disease. Apart from the possibility of mistakes as to the real nature of these cases, the assumption that opening the peritoneum might cause wasting of cancer on the chest wall seems to be entirely without support. Pearce Gould attempted to do an oöphorectomy for cancer, but could find no trace of ovarian tissue in either broad ligament: no improvement followed. In one case I found that the removal of the second ovary would have necessitated an operation more severe than I thought the patient would bear. I accordingly left it, and no benefit ensued. Similar cases could no doubt be found, but hardly a sufficient number to prove that laparotomy alone is never followed by atrophy of mammary cancer.

Nor to Thyroid.—Lastly there is the question of the relative influence of the oöphorectomy and of the thyroid extract in producing the atrophy. When endeavouring to ascertain the effect of one mode of treatment based upon highly theoretical considerations it is surely unwise to combine it with another method resting on still more shadowy grounds. I have consequently never given thyroid until satisfied that the oöphorectomy was failing in its effect. Then I have given it (Nos. 19 and 25), but without obvious benefit; on the contrary it has sometimes seemed to have a damaging effect (Nos. 3 and 13). Considering that the age of one of my cases (No. 19) was 64, and that several fell into the category of "effect doubtful," all of which are in Table II, it will perhaps be considered that to have 3 out of 13 cases in Table I is a sufficiently near approach to the general average of success to show that the thyroid is not an important element in the treatment, especially when I add that one of the three (No. 2) has had a longer immunity from cancer than any case yet recorded. It has been argued that the success of oöphorectomy alone does not prove that thyroid has no action upon cancer, which is true; but it throws the burden of proof upon the believers in thyroid, and proof of its value has not yet been given. The tables show that, with the exception of Mr. Hopkins Walters, Mrs. Stanley Boyd and myself, practically all surgeons have given more or less thyroid.

How Long does Improvement Last?—Interesting as it is to know that more or less wasting of cancer will occur in more than 1 out of every 3 cases submitted to oöphorectomy, the fact will be clinically valuable only if the improvement is of some duration. When it occurs, how long does it last? More time must elapse before this question can be answered, for in some patients the improvement has not yet ceased. There are several gaps, too, in my last column. But, so far as it goes, it shows that in the majority the cancer growths reappear or begin again to increase in six to twelve months. This is not, however, a fair way of expressing the advantage gained by the patient; for health and strength are gained during the disappearance of the disease, and even after recurrence (Nos. 3 and 8). So the patient meets the fresh outbreak with renewed vitality, and life is obviously prolonged thereby. A year or more of useful life seems often to have been gained. There is also some reason to think that progress of the disease is sometimes delayed when it is not arrested. No. 17 was free from obvious disease at eight months; No. 14, at fourteen months, had a gland enlarged above the clavicle; No. 6 was free from recurrence for eighteen months. No. 1 remained free for twenty-five months, then she developed slight local recurrence, and later a spinal growth, which killed her in fourteen months; No. 5 is quite well at forty months, and No. 2 at forty-three months, after the oöphorectomy. Thus it would seem that, although the list contains all kinds of unfavourable cases, nearly 6 per cent. obtained immunity for two years and over. This is not a very brilliant result, but it is at least as good as that of many operations for recurrent or even for primary cancer which we do not hesitate to perform, though they may be much more serious than a simple oöphorectomy.

Why do not all Cases of Cancer or of Mammary Cancer Improve?—So far as I know, cancers other than mammary are not benefited by oöphorectomy; even uterine cancer is not, though atrophy of the uterus follows more quickly and certainly upon oöphorectomy than does atrophy of the breasts. There would seem to be differences between cancers not hitherto suspected. Stranger still is it that all mammary cancers are not affected by oöphorectomy; either mammary cancers or the ovaries differ in the different cases. My theory is that certain ovaries, probably by pathological variation in their internal secretion, favour the growth of cancer by action either upon the growth or upon the tissues; the removal of such ovaries alone will be of benefit. I have not discovered any clue to their recognition. The ovaries removed have usually been normal to the eye.

COMPARISON OF SUCCESSES AND FAILURES.

If we contrast the two groups of cases and look for points of difference between the cases which improved and those which did not, we shall note:

1. *Age.*—That the average age of Group I is considerably higher than that of Group II; if we remove the post-menopausic cases from each group the average ages are 42·5 years for Group I and 37·2 for Group II. It has often been supposed that the cases in which oöphorectomy would be most likely to do good would be those in young women; this would seem not to be the case. Yet Beatson's first and most successful case was only 33. Possibly my supposed ovarian variation occurs more commonly after than before 40.

2. *Type of Case.*—That the cases in Group I are of a more chronic type than those in Group II, though this is not very clearly shown in the table. One or two acute cases may be found in Group I (Nos. 3 and 10); but they were not highly successful.

3. *Effect of Menopause.*—That with one exception all the patients who had certainly passed the menopause (Nos. 18 to 22) are included among the failures. Until Mr. Hopkins Walters's important case (No. 10) reached me I thought that improvement had never resulted after the menopause, though I bore in mind that Dr. Herman's first cases (Nos. 5 and 6) were either at the menopause or close to it, and were both successful.

4. *Effect of Amount of Disease.*—That as regards the amount of disease present, the cases in Group II are rather worse than those in Group I. The quantity of superficial disease does not, however, make the difference between failure and success, for an enormous amount may disappear (Nos. 11, 10, 5, 2, 1). But wherever it has been evident that viscera or bones have been infected, no improvement in them has taken place; and in several cases after improvement of local disease, secondary growths, almost certainly present at the time of the oöphorectomy, have declared themselves and caused death (Nos. 1, 23, and 26; no local recurrence in these). On the other hand, quite a small amount of disease may be affected only transiently or not at all by an oöphorectomy.

5. *Time of Appearance and Course of Improvement.*—That evidence of success appears early. Pain often ceases at once, and may be permanently relieved. Within a week vascularity and general fulness are diminishing and nodules are shrinking. Within two to four weeks much of the growth may have gone (Nos. 11 and 9). Sometimes progress is not so rapid, or it is intermittent, and it does not equally affect even neighbouring nodules in the same tissue. Nodules in skin and subcutaneous tissue are first affected—first the axillary, then glands, then the supraclavicular, and then nodules in muscle. There is no evidence to show that bony and visceral growths are benefited, but it is quite possible that they may be.

Effects of Oöphorectomy.—Amenorrhœa and sterility, atrophy of the uterus and more slowly of the breasts are constant. Unpleasant effects seem to be rare: premature ageing, greyness, growth of hair on the face, stoutness, flushings and perspirations, mental changes (Nos. 9 and 33). Sexual feeling seems to be unaffected as a rule.

PRACTICAL RESULTS.

I think that oöphorectomy should be offered in cases other than the very acute, in women over 40, with no visceral or bony lesions, in fair condition, and before the menopause. In extensive primary cases and recurrences it seems advisable to remove what is possible of the disease; but healing

should be attained, lest the oöphorectomy fail in its object and malignant ulceration be started. It may be offered in other cases, and some justification for doing so will probably be found in the table. The operation is as a rule a slight one; but one death (from "exhaustion") has been recorded at Edinburgh and one from intestinal matting at the Middlesex Hospital. No. 8 was much depressed by the operation.

Work must still be experimental. The surgeon must decide what it is right to do in each case, and the patient or the patient's friends should understand the experimental nature of the treatment. Believing oöphorectomy to be of value in the treatment of cancer of the breast, I have felt obliged to recommend women suffering from the disease, in such an advanced form that I could not hope for prolonged immunity from a local operation, to allow me to perform oöphorectomy at the same time that I removed the disease as completely as possible (Nos. 23, 25, 26, 27, and 29). Mrs. Boyd treated a case (No. 36) similarly. Such was the condition of these cases that they would not have been touched but for the chance that the oöphorectomy held out. The operations lasted about two and a-quarter hours, and were well borne. I have entered them all in Group II, as it is impossible to prove that any benefit derived was not due to the local operation.

As arising from the tables presented, thought not directly connected with my subject, I should like to point out the frequency with which secondary nodules appear in the second breast. They are mentioned in 7 cases (Nos. 1, 3, 6, 11, 20, 25, 27, and perhaps in 39), certainly once in every 6 cases. So far as I know, this is not what is usually taught.

Finally, I should like to raise the question of the desirability of amputating arms so heavy from œdema that, by their weight and dragging they prevent women, otherwise capable of doing so, from getting about. Two of my patients (Nos. 24 and 27) begged me to relieve them of such limbs and I refused, believing that I should not give them the relief they anticipated. Other surgeons yielded to their entreaties, and both patients told me that they in no way regretted having had the operation performed. One of the patients was exceptionally sensible and reliable. After the operation she was able for some months to go out and busy herself with her house and children; before it she could hardly get about. I think, therefore, that if a patient in fair condition, who is suffering severely from the weight of a swollen arm, desires relief at the cost of a high amputation, it should not be withheld.

FOUR CASES OF RECURRENT MAMMARY CARCINOMA TREATED BY OOPHORECTOMY AND THYROID EXTRACT.

By G. Ernest Herman, M.B.Lond., F.R.C.P., F.R.C.S.,
Senior Obstetric Physician to the London Hospital, etc.

The first case of recurrent mammary carcinoma which I treated by oöphorectomy and thyroid extract was reported in the *Lancet* of June 11th, 1898, p. 1612. The operation in that case was done on March 2nd, 1897. The patient is still alive and well, and free from cancer.

The second case was reported in the *Lancet* of April 22nd, 1899, p. 1088. The operation in this case was done on July 12th, 1898. It was followed by healing of the cancerous ulcer, softening of a scirrhous lump in the opposite breast, and eighteen months' good health. Then the cancerous ulcer reopened and the opposite breast began to ulcerate. But the ulcer is not yet so large as before the oöphorectomy and the patient's general health is but little affected. On July 24th, 1900, her weight was 13 st. 7 lbs. (Her maximum weight since the operation was in March, 1900, when it was 14 st. 8½ lbs.) There was an ulcer on the site of the scar, roughly oblong in shape, measuring 2 inches by 1¼ inch; a triangular ulcer in the left breast, measuring 2½ inches long by 1 inch at the base. Numerous scattered nodules were in the skin around the ulcers. The right supraclavicular glands were enlarged and hard.

I now report a third case:

A patient was admitted into the London Hospital on April 28th, 1899. She was then aged 44. She had had three children, the last seventeen years previous, and one miscarriage between the second and third children. On June 25th, 1895, her right breast was removed by Mr. Godlee at University College Hospital. The Surgical Registrar, at the request of Mr. Godlee, has supplied the following facts: "The whole breast was dissected off with the pectoral fascia from the muscle, the part of the pectoral beneath the tumour being cut away with it. The dissection was carried up to the axilla, the whole of the fat and lymphatic glands being removed in one piece with the breast. The growth on section was typical and measured 2½ inches radially outwards and downwards. It extended as far as the areola, the outer part being thin, about a quarter of an inch in thickness, the thickest part being three-quarters of an inch. Superficial to it was a layer of fat an eighth of an inch thick. Beneath the growth had begun to invade the fascia, but had not reached to the muscle removed with it. From the under surface could be felt numerous small hard masses; these on section were seen to be masses of growth in the lymphatics, and formed an incomplete chain as far as an enlarged lymphatic gland along the pectoral border. The glands in the axilla were numerous and all were infected, the largest being the size of an almond. Microscopically the growth was a spheroidal-celled carcinoma. The arrangement was peculiar and resembled somewhat that of breast tissue. There were lobules separated by fibrous tissue. These lobules were much larger than those of normal breast. Throughout the lobules there was a fibrous stroma, rich in cells and round cell-infiltration. The stroma supported the epithelial elements, which also in places resembled those of the breast, in parts forming a single layer of cubical cells, in other parts the space was filled with spheroidal cells, and in others, and particularly in some of the ducts, the epithelium formed branched processes across the space, leaving small gaps between the reticulum."

Before a year had passed after the operation the patient felt lumps in the right arm-pit, and these lumps had increased in size and number. She complained of pain in the right side of the chest reaching down to the costal margin, down the right arm as far as the wrist, and up the neck on the same side. She had lost strength and weight. She stated that in February her weight had been 8 st. 7 lbs., but on admission she only weighed 7 st. 1 lb. Menstruation had always been regular except between May and December, 1898. She knew of no reason for this amenorrhœa. Since the latter date she had been regular. On admission there was a scar reaching from the costal margin to the right axilla. On the upper and inner side of this was a clump of hard, fixed, not tender nodules, some about the size of half a cobnut, others a little larger. The clump of nodules measured 3¾ inches in length by 2½ inches in breadth at its upper part, 1¾ inch in breadth at its lower part. There was a smaller mass of hard nodules above the right clavicle, measuring 1¾ inch in length by an inch in breadth. There were also isolated lumps in the right axilla and two small lumps at the posterior border of left axilla. There were some bronchial *râles* over the right chest, with deficient expansion and some dulness at the apex. No cardiac murmur. No hepatic or splenic enlargement. No albumen in urine. On May 3rd, 1899, both ovaries were removed. On May 6th she was put upon thyroid extract, 5 grs. twice daily. On May 8th this had to be discontinued, as it caused vomiting. On May 10th she was again put on thyroid extract, 2½ grs. twice daily. On May 11th the dose was altered to 5 grs., once daily. On May 12th she took 5 grs. twice daily, and from May 16th onwards she took 5 grs. three times daily, without experiencing any discomfort from it. Even at this time diminution in the size of the growth was perceptible. On May 23rd the patient got up. The nodules were by this time diminished to the size of peas. On May 30th she left the hospital. Her weight on May 23rd was 6 st. 9 lbs.

September 15th, 1899. Dr. C. M. Leakey, of Caistor, Lincs. (her medical attendant who had sent her to the London Hospital) supplied the following report: "The present condition of the patient is good. She has practically no pain, and can use both arms freely. She eats and sleeps well, and is much stronger. All the enlarged glands in the neck and left axilla have disappeared. In the right axilla there are three or four about as large as a big pea, but they are not so bound down, nor are they tender. The site of the recurrent growth, just above the operation scar on the right breast, is occupied by two small depressions, the growth having entirely disappeared. Her weight on September 16th was 7 st. 12½ lbs."

On July 30th, 1900, Dr. Leakey wrote: "The patient looks fairly well, but very thin. Her weight is now 8 st. (or just below). She has a certain amount of pain, but not of an acute character. She has been complaining a good deal of pain in the right hip, but she says there is nothing to see or feel. The lumps under the right arm are increased in size, there being one now as big as a walnut. It appears to have grown outward from the axilla, and is fairly movable. The glandulæ [illegible] and the neck glands generally are enlarged, there being numer[illegible] of the size of a BB shot. There are numerous growths around [illegible] cularly above, the scar left by the removal of the breast. There are, believe, none on the left side. She had taken thyroid continually since the operation except for about a fortnight, when I had to stop it owing to a skin eruption. On the whole, her condition is greatly [illegible] an before your operation, which has undoubtedly prolonged her life, and changed it from one of pain and misery to a comparatively comfortable one, in which she is now able to do her usual domestic [illegible]

Fourth Case.

A patient, aged 43, was admitted into the London Hospital on June 1st, 1899. She was unmarried, but had had one child twenty-four years previously, which only lived a day. No other pregnancy. Menstruation had been regular since her confinement.

On August 6th, 1897, her right breast was removed for cancer by Mr Davies-Colley in Guy's Hospital. I am indebted to Mr. Davies-Colley for the following information: In 1892 s[illegible] an d one upon the same breast by someone else. The nipple and the greater part of the gland had been left. When she came under Mr. Davies-Colley's care, "it was undoubtedly a case of scirrhus of the breast and axillary glands." The breast was removed and the axilla cleared out. In April, 1898, Mr. Davies-Colley operated again for recurrent nodules in the cicatrix of the breast wound. Mr. C. H. Fagge, Surgical Registrar to Guy's Hospital, thus reported upon a section of one of these nodules: "There are several

nodules of recurrent carcinoma in the parts removed. The new growth is of a soft (medullary) spheroidal-celled type, of rather rapid growth, I think from its very cellular form." Two or three months ago the patient noticed that the growth had again recurred. She has had at times considerable pain in the breast. Does not think she has been losing weight.

On admission there was a vertical scar about 4 inches long over the second, third, and fourth ribs. An inch and a-half from the centre of the sternum another scar, 5⅝ inches long, ran transversely out from the centre of the vertical scar as far as the mid-axillary line. Another branching off from the transverse scar about an inch from its origin, ran along the anterior fold of the axilla for about four inches. There was a large hard nodule an inch and three-quarters long by three-quarters of an inch broad to the inner side of the vertical scar, and feeling as if growing from the sternum or from the inner end of the third rib. Below this was a small nodule in the scar and connected with it, about the size of a pea. There was another about the same size just outside the upper end of the vertical scar, not connected with the skin. There was also a nodule about the size of a split cobnut at outer end of scar along anterior axillary fold and above it. This nodule was movable. There were no glands enlarged enough to be felt in either axilla, but there was one about the size of half a walnut fixed at the inner end of the supraclavicular fossa. There was no sign of disease about the left breast. Inguinal glands not enlarged. No physical sign of disease in the pelvic organs. Weight, 7 st. 6 lbs.

On June 2nd both ovaries were removed. For a few hours after the operation the pulse was very slow and irregularly intermittent, and breathing was also slow, but there were no other bad symptoms.

June 6th, patient took 5 grs. of thyroid extract, June 7th 10 grs. of thyroid extract. June 9th thyroid extract made her vomit; its use was therefore suspended. June 12th 5 grs. of thyroid extract given; June 14th thyroid extract 5 grs. twice daily recommenced. June 16th patient began to take thyroid extract 5 grs. three times a day, and she continued to do so during the remainder of her stay in hospital.

The nodules at the site of the breast rapidly diminished in size, and when patient left the hospital on July 1st they had completely gone, and the enlarged gland in the supraclavicular fossa was no longer felt. Her weight was then 6 st 6 lbs.

I saw and examined this patient on February 27th, and again on July 17th, 1900. At the latter date the condition was as follows: Her weight was 7 st. 4 lbs. There was a nodule the size of a pea an inch and a-half below the top of the vertical scar. In the situation of the large nodule present at the time of the operation there was a nodule about the size of a split pea. These nodules were present in February, and have not got larger since. There were no other nodules. The patient says she has had no pain since the operation. Before the operation it was severe enough to keep her awake at night.

In discussion on the two papers Dr. HERMAN pointed out that Mr. Stanley Boyd's table comprised 17 cases in which oöphorectomy seemed to have favourably influenced the course of cancer. Of these 12 had been given thyroid extract. There were 21 cases in which no benefit had followed, and only 5 of these had had thyroid. This looked as if the thyroid extract had something to do with the result. He thought that the first thing was to establish the fact that benefit did follow the combination of oöphorectomy and thyroid extract, and if possible to define the cases in which benefit might be expected. When this had been done, then it would be time to discover how much was due to oöphorectomy and how much to thyroid.

THE SURGICAL TREATMENT OF EXSTROPHY OF THE URINARY BLADDER.

By Professor Dr. JOHN BERG,
Stockholm.

IT is well known that in spite of the numerous contributions which so many eminent surgeons of different nations have given to improve our treatment of this deformity, the opinions as to the best way to do so are still very far from agreeing. In taking a survey of the abundant literature on the subject, we receive the impression that almost every surgeon to whose share the treatment of such a case has fallen has felt himself called upon to treat it in his own way.

This paper is written in the hope that the experience I have gained in treating 18 cases of exstrophy of the bladder may be of interest.

All attempts hitherto made to find remedies against this deformity are to be considered only as different modifications of those three principal methods, which were indicated in the beginning and middle of the past century by Dubois and Dupuytren, by Jules Roux and by John Simon. These methods may briefly be characterised as (1) the plan of directly joining the sound edges of the bladder and of the abdominal wall; (2) the method of completing the bladder by means of transplantation; and (3) the radical method of transplanting the ureters and excising the bladder. Shortly before I had my first case of vesical exstrophy, in the autumn of 1886, I had seen in the wards of Professor Trendelenburg, in Bonn, one of the first patients on whom he had performed his bold synchondroseotomy for the purpose of diminishing the diastasis of the symphysis pubis. I was attracted by the probabilities this operation gave of creating a bladder totally lined with mucous membrane. But as to the healing after the synchondroseotomy itself, I felt rather uncertain. It would either succeed, I said to myself, to keep both the halves of the basin together by means of bandages, and in that case the joining of the vesical edges could certainly be more easily effected, but the patient's faculty of walking would probably suffer; or, on the other hand, the basin would, in spite of the pressure, retake its form, and then the operation would have been of no use. To obtain better chances for reliable healing in a correct position I preferred an osteotomy, and I made the division of the iliac bone in a vertical line drawn from the upper point of the incisura ischiadica upwards through the whole height of the squama. My experience of this osteotomy is now founded on 14 operations, performed on 8 patients. Of these, 2 are dead, one three days and the other twelve days after the operation, both in consequence of an acute pyelonephritis, without any septic changes in the wounds. In all the other cases a good osseous healing has been obtained.

The greatest difficulty for me, as for Trendelenburg, was to retain the correct position of the halves of the pelvis. After many fruitless attempts with different bandages and apparatus the idea occurred to me of trying to keep the correction by inserting an ivory wedge between the thickest parts of the osseous surfaces. I thus succeeded much better than before in gaining my purpose, and the patient was saved from all the discomforts of the compressing bandages. The wedges were faintly rifled on their sides to prevent their gliding out, and in all the five cases where they were used the wounds healed around them without any disturbance. But still, the diastasis between the pubic bones could in neither of the cases be completely done away with. An interval of 1 cm. to 2 cm. generally remained. Even in those cases where the original diastasis had been 5 to 6 cm. the loosened edges of the mucous membrane and of the skin could still be stitched together without tension after the osteotomy. As everyone knows who has performed these operations it happens, as a rule, that the wounds partly reopen and after operations prove to be necessary. It is, of course, an advantage for the healing if the suturing can be made shortly after the osteotomies. In one of my last cases I did the three capital operations in intervals of about ten days, and in another the second osteotomy and the suturing of the bladder at the same time.

Nevertheless, the result depends not only on the breadth of the diastasis but even on some other circumstances. Amongst these I might mention the state of the mucous membrane of the bladder and the condition of the neighbouring skin. If the ectopic bladder is much thickened, shrivelled, and papillomatous, destroyed in consequence of chronic cystitis and of mechanical irritation continued during years, it offers not only difficulties in healing but, still worse, great danger of an acute ascending infection of the urinary organs. On the other hand, it is quite clear that a thin scar-like state of the weak parts of the abdominal wall in wide extension around the bladder must essentially influence the suturing and its tenacity.

My experience has shown me that it is best in some cases to abstain totally from all attempts at direct joining, and that in other cases, where the chances for this treatment originally seemed good, we afterwards were obliged to take refuge in the autoplastic method. The method of transplantation I have found to answer best in these cases. All the methods used are thus characterised that towards the bladder is turned either the granulating under surface of the skin or its upper hairy epidermis side. We may use either a single or a double flap, but we still form an anterior wall of the bladder which predisposes to cystitis and lithiasis. In several cases thus treated a reopening of the bladder has been necessary. In all the operations after the autoplastic method, which I have performed since 1890, I have proceeded in the following way: A skin flap a little larger than the opening of the abdominal wall, is dissected from the groin with its shaft downwards and inwards close to the border of the

ectopic bladder. Totally dissected from its bed, this flap is turned towards the thigh and there fastened by some small stitches, so that its deep side falls forwards. On this surface skin is then transplanted after the method of Thiersch. After 8 to 14 days the edges both of the skin flap and of the bladder are roughened, the flap is fitted in and so stitched, that its deep surface comes in continuity with the mucous membrane of the bladder and its front with the abdominal skin.

This method, which I have used even in remedying great defects of the mouth, nose, lids, and urethra, has in my opinion the following advantages:

1. It gives solid and well-nourished flaps.
2. It spares material.
3. It gives a good substitution for mucous membrane, as I have had opportunity to ascertain especially by some operations on the mouth.
4. It does not predispose to incrustations; it also can be used very well in after-operations performed for the healing of remaining fistulæ both of the bladder and of the urethra.

Lastly, regarding my results in the cases where the treatment has been finished, they will agree with those of Professor Trendelenburg mentioned on different occasions. They are most satisfactory in the cases where the diastasis in the symphysis pubis has been so much reduced that a direct union could be realised, and a bladder exclusively lined with mucous membrane attained. The patient presents then a single median scar, a pendulous penis of almost normal length, a bladder holding up to 250 grams and sometimes possessing a rather good passive retention. One patient could, for instance, when in the recumbent position, hold 60 grams; several patients could even during work hold water 3 to 6 hours by means of a bandage slightly pressing against the radix penis; some of them still preferred to use a urinal. That we with our treatment would be able to restore a true continence, as Trendelenburg still seems to hope, I dare not believe.

My opinions on the whole question are summed up in the following conclusions:

1. There is as yet no method of treatment suitable for every case of exstrophy of the bladder. In selecting a method we must take into consideration the local changes as well as the patient's age, general state and especially the functioning of the heart and the kidneys. In so doing I think we shall meet a certain number of cases where all the circumstances are so extremely favourable for the less dangerous treatment—I mean the direct union—that no other method ought to be thought of, at least not until this has been tried in vain.

2. We are able in a number of cases to create such favourable circumstances—which could not be effected by means of orthopædic measures—by a synchondroseotomy after Trendelenburg or an osteotomy after Berg. The last named operation may have the advantages of a quite reliable osseous healing and of a more easily corrected position of the two halves of the basin. It can even be performed on older patients. Trendelenburg puts as the highest age for the operation 8 years. I have successfully osteomised a patient of 15 years. With both these operations the direct danger of the treatment no doubt becomes greater, and thus we are left to make our choice between the autoplastic method and the transplantation of the ureters.

3. I suppose that many surgeons yet prefer the autoplastic method, as probably less dangerous. Personally I prefer, for reasons before named, to recommend the above described method with single skin flap, covered by Thiersch's plan on its deep surface.

4. Considering the improved technique and the diminished danger which the operation of John Simon in our time has achieved, especially through Professor Magell in Vienna, it seems probable that this operation will be found to supersede other methods in a number of cases. For my own part, I should not hesitate to make use of it in old cases where the bladder is deeply destroyed or the other methods have failed.

Though I fully join in Professor Bergmann's opinion expressed two years ago, that our present treatment of this deplorable deformity is far from ideal, I still believe that the work of the past century even in this field has given us sufficiently firm ground for further labour, and that it would be unwise to make any wide departures from that which has already been gained.

ON THE SUBSTITUTION (WHEN PRACTICABLE) OF SUBASTRAGALAR FOR SYME'S AMPUTATION.

By J. Hutchinson, Jun., F.R.C.S.,
Surgeon to the London Hospital.

Syme's method of amputation of the foot has so high a reputation and is employed so widely by English surgeons that it may seem presumptuous to point out its defects and to suggest that in many cases it might with advantage be replaced by another method. That the stump of a Syme is often admirable no one can deny, and I would bring forward the following case as an excellent example of this.

A dock labourer came to me to be supplied with a new apparatus (he was then wearing an exceedingly heavy boot) for a Syme's amputation done twenty-two years previously by my late colleague, Mr. James Adams. During this long period the heel flap had become very thin, but it was as tough as leather, the man never had the slightest trouble from the stump, and had never lost a day's work on account of it.

It is, however, the fact that the immediate results of Syme's amputation are often far from perfect, and in seeking for the cause of this it may be noted that (1) the skin of the heel is very troublesome to disinfect, and the vitality of the flap is not good, owing sometimes to the posterior tibial artery being divided before the origin of the calcaneal branches. (2) There is difficulty in fitting the flap, with its central cavity left by enucleating the os calcis, against the perfectly flat surface of the sawn tibia and fibula. (3) It is by no means an easy operation to do well, and the heel flap is apt to be scored and bruised in the necessary dissection. From one or other of the above reasons perfect union by first intention after Syme's amputation appears to be the exception rather than the rule.

The following is an analysis of 27 cases of Syme's amputation performed by different hospital surgeons during the last nine years, that is, since antiseptic methods came into vogue:

In 3 cases, that is, 10 per cent., the result was complete failure, the flap sloughing away; one of these 3 cases proved fatal from septicæmia and renal diseases. It should be noted that in this last case—the only fatal one out of the 27—the amputation was done for compound fracture of the foot, and its performance was delayed by the patient's obstinacy. In 12 cases either free suppuration occurred with partial sloughing of the flap, or for other reasons the healing was very slow; in 1, for example, the patient was in the hospital five months, in another three months, in others sinuses still existed, or the flap was painful and inflamed at the time the patient was discharged. The operation was done for a great number of conditions, and at all ages from 5 up to 60 years. It is probable that most of these 12 patients were ultimately able to bear weight on their stump but in some the condition was not promising, and at any rate the percentage of poor immediate result, that is, 45 per cent., is rather striking. In the remaining 12 cases of Syme's amputation the immediate result was good, though in several some slight suppuration occurred; at least 5 of the 12 were examples of primary amputation for crush of the foot.

In one (a case of my own) the operation was performed for a very rare condition—congenital absence of one fibula and of some of the corresponding outer bones of the foot. Not only was the foot deformed and useless, but the leg was several inches shorter than the other. The amputation was performed in the hope that the patient would be able to bear some weight on the stump and to abandon the use of crutches, but the result was disappointing. In considering the immediate result of an amputation, one may describe it as good if the stump is soundly healed within four or five weeks from the date of operation. Applying this test to the 27 cases of Syme's amputation, we find that less than half came up to this standard, whilst in 10 per cent. the operation wholly failed. But here an important reservation should be made, namely, that Syme's amputation is sometimes done in most unpromising cases, such as those where cellulitis of the foot is still active, or where the tissues round the ankle-joint are

riddled with tuberculous sinuses, and that after prolonged suppuration a useful stump is even then obtained.

I cannot adduce for comparison anything like the same number of cases of subastragular amputation, but have performed the operation myself six times. Amongst several inferior methods there is one in which a heel-flap is cut by an incision which crosses the foot from one malleolus to the other like that of a Syme, but further forward; the reflection of this flap is therefore an even worse affair. There is sure to be tension on the flap when it is finally dragged forward over the head of the astragalus; it, moreover, fits badly, and it may be added that, as in Syme's method, that part of the flap on which the patient bears pressure comes from the end of the heel rather than its under surface on which he has been accustomed to stand. In a good subastragalar amputation the under surface of the flap is that which has always borne the pressure in standing and walking.

One of my cases was operated on by the method referred to above, and the result was imperfect as it always must be.

In all the other cases the method described by Farabeuf was employed, and the result was excellent. Of course the real test of a method of amputation is to follow up the cases after one or more years have elapsed from the date of operation. Doing this I have been most favourably impressed with the ultimate results of the subastragular methods.

Fig. 1 is from a skiagraph taken one year after the amputation, which was done on a young man for extensive tuber-



Fig. 1.—Skiagraph from case of subastragalar amputation, taken one year after the operation.

culous disease of the front part of the foot (conservative operations having failed). It shows well what a wide base of support is obtained, how thick the flap continues to be, and how well the astragalus is adapted for transmitting the weight on to the end of the stump.

The patient from whom this photograph was obtained has been constantly engaged in work which includes pushing a heavy trolley about, and finds no inconvenience arising from his stump. This is surely as good a test as could be applied. Another patient is a coach painter, on his legs all day, and finds no trouble whatever in getting about. The result in the other cases has been equally satisfactory.

As to the advantages which may be claimed for the subastragalar method over Syme's amputation they are as follows:

1. The stump is some two inches longer.
2. It gives a broader base of support.
3. The elasticity due to the ankle movements is a marked advantage in walking.
4. The pad of soft tissue at the end of the stump is much thicker.
5. The arterial supply of the flap is better, and runs less risk during the operation.
6. An artificial foot can be better fitted to the stump.

On the other hand, Syme's amputation can sometimes be done when the tissues are quite insufficient for the subastragalar method, and for these cases one would suggest it should be reserved.

My friend and teacher Mr. Treves for many years has advocated the advantages of subastragalar amputation, but it is certainly true that amongst English surgeons this method seems to be but rarely performed (as is the case with Syme's amputation in France). To bear out this statement I would quote from the admirable reports of Mr. Clinton Dent on the military surgery of the present South African campaign.

AMPUTATIONS OF THE LOWER LIMB.

"In a number of cases—probably not very large—Syme's amputation was practised. This operation does not appear to me to be very suitable for traumatic cases, and the resulting stumps were not invariably all that could be desired. The condition of the foot in these traumatic cases, and of the tissues about the heel from which the main flap is formed, were very different from those met with in tuberculous disease of the tarsus, which is, I imagine, by far the most common condition for which Syme's amputation is practised. Sloughing of the flap sometimes occurred, necessitating amputation higher up. It may not be, perhaps, too invidious to remark that the success of a Syme's amputation depends perhaps, more than that of any other on attention to very careful detail in the matter of operating on the part of the surgeon. The personal equation, in short, counts for much. I saw no instance in which subastragaloid amputation was practised, though in not a few cases it appeared to me that this admirable operation might very properly have been employed. There is decidedly less demand made on the vitality of the tissues in subastragaloid amputation than in Syme's method, while the additional inch and a-half or so that is gained by preserving the astragalus is a very great boon to the patient. Moreover, subastragaloid amputation can be performed in various ways, all of which seem to give equally good results, whereas in Syme's method it is really impossible to depart from the lines laid down by Syme himself in fashioning the flaps. English surgeons, generally speaking, appeared to me to be rather too limited in their methods of operating on the foot, and they have a good deal to learn from their French colleagues, who have done much in this branch of operative surgery."[1]

The reasons for the neglect of the subastragalar method are probably the following:

1. It is not taught in many courses of operative surgery, nor is it often required at examination.
2. It is badly described in some of the textbooks, and wholly omitted from others.
3. To obtain a good result the soft parts of the sole ought to be in good condition nearly as far forwards as the base of the fifth metatarsal bone (it is obvious from this that the condition of the heel may allow of a Syme being done and not a subastragalar amputation).
4. The only method which will give a really good result must follow the lines laid down by Farabeuf, and it is not at all easy for the surgeon to recollect these on the spur of the moment.

The right incision should be made along the outer border of the foot from the fifth metatarsal back to the outer border of the tendo Achillis, curving upwards along the latter and then passing forwards a finger's breadth below the external malleolus, across the dorsum of the foot to the extensor pollicis over the scaphoid bone, and then sweeping across the sole with a slight convexity forwards. It would be out of place to describe in detail all the steps of the operation, but it may be noted that the flap cannot be too thick, in other

words, that everything is taken from the inner and under aspects of the os calcis, and that working from the outer side there is no difficulty in dissecting out the latter bone.

The flap seems to be redundant, especially on the dead subject, but it is not really so, and it is most important to have no tension over the head of the astragalus. The racquet incision of Perrin is easier to remember, but with it the operation is rendered much more difficult, the soft tissues left are in excess, and the result suggests the pad of an elephant's foot. The V incision of Roux and Nelaton is an improvement on this, but is not so convenient as that given by Farabeuf, in which the two lines of incision run a finger's breadth below the external malleolus and along the outer border of the foot. It was mentioned just now that the operation is poorly described and figured in several of the operative surgery books, and the accompanying illustration (Fig. 2) taken from one of the most



Fig. 2.—Diagram (see text) showing wrong incision along the middle of the sole. To give a sufficient flap it should be made along the outer margin.

recent German works is an example of this; the lines of incision if followed out would give a most unsatisfactory result. Thoroughly bad methods, which should now be neither taught nor practised, are: (1) By two lateral flaps; (2) by a large heel flap cut after the manner of Syme's amputation; and (3) (worst of all) by a large flap from the dorsum of the foot (Baudens). In a subastragalar amputation if carefully done there should be no risk whatever of damaging the arteries which nourish the flap, a risk which is well known in the case of Syme's amputation.

It is advisable to dissect out the plantar nerves, and the tendons which are cut in front of the ankle may be stitched to the fibrous tissues in the sole flap. It is remarkable how much movement is retained in the astragalus, although, of course, none of the tendons are directly inserted into this bone. This

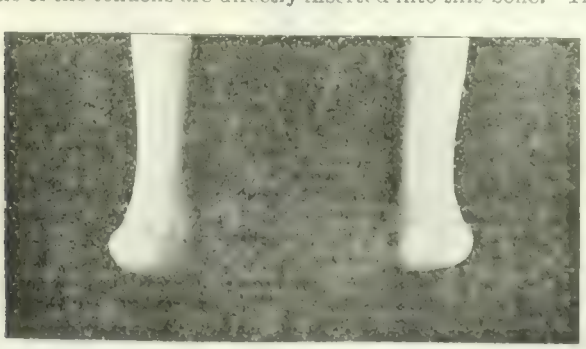


Fig. 3.—Stump of sub-astragalar amputation showing the favourable position of the scar and the broad base of support.

range of mobility I found present in every one of the cases followed up. Farabeuf speaks of the frequent tilting downwards of the astragalus in the stump, resulting from the pull of the tendo Achillis; if this often occurred it might form a distinct drawback to the operation, but it has not been present to cause any inconvenience in one of my cases. I should suspect that marked tilting, if it occur, is due to the flap having been insufficient to cover well the astragalar head, or to slow healing due to suppuration, in either case a tight, painful scar may have caused reflex spasm. If the flap is sufficiently large, if primary union occurs, and hence, if the patient is soon able to bear some weight on the stump, no tilting of the astragalus will occur. (See Fig. 3.)

One word as to the treatment of the astragalar head, M. Dolbeau, who had performed the operation some half a dozen times, considered it essential to scrape all the cartilage off this end of the bone in order to obtain rapid healing. We should now consider it much more important to thoroughly disinfect the skin before the operation. Of course sometimes it is advisable, where the flap is scanty, to cut off the head of this astragalus, but the best result will be obtained if it can be left.

Whilst it may be contended in favour of the subastragalar amputation that the resulting stump is superior in several points to that resulting from amputation through the ankle joint, yet it must be admitted that the surgeon may find his selection hampered by the state of the sole tissues. But where it is possible to choose, provided the method of Farabeuf is followed, he will have no cause to regret performing a sub-astragalar amputation in preference to a Syme or Pirogoff.

The opinion taught by some that "the stump left by an amputation through the ankle joint is eminently superior to that made at any other point of the foot or leg,"[2] can no longer be maintained.

References.

[1] Clinton T. Dent, British Medical Journal, May 26th, 1900. [2] Stephen Smith, *Operative Surgery*, p. 62.

Mr. W. G. Spencer thought the amputation an admirable one to be added to Syme's and Pirogoff's amputation. It took rather more sole flap than a Pirogoff, hence sometimes when the foot had been crushed, there would be a danger of sloughing, and a Pirogoff would have to be done.

OBSERVATIONS UPON INJURIES TO THE INTERNAL LATERAL LIGAMENT AND TO THE INTERNAL SEMILUNAR CARTILAGE OF THE KNEE-JOINT.

By Joseph Griffiths, M.D., F.R.C.S.,

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The observations which I am going to make upon the structures of the knee, namely, the internal lateral ligament and the internal semilunar cartilage are based upon clinical data and upon experiments on knee-joints removed after death. The uncertainty of what actually occurs in the living person makes it almost impossible to arrive at any definite conclusions with regard to the nature and extent of damage done unless the clinical data are supplemented and studied by the light of experiments. Much important information may be gained from such inquiries, and it is chiefly upon the results thus obtained that I have formulated the views I am going to put before you.

The bones entering into the formation of the knee-joint are moulded, as you well know, so as to allow of free hinge and gliding movements and rotation of the tibia upon the femur. The ligaments are likewise arranged so as to permit no other than these movements taking place. Although there is free movement backwards and forwards, yet there is no lateral movement even in any position of the joint—extension, semi-flexion or full flexion; in the last position, however, rotation can take place to a considerable degree. Indeed, lateral movement in such a joint as the knee would render it almost useless, for according to the degree of such movement the joint would become more or less a flail-like junction between the tibia and femur. Accordingly there is provision to make the joint quite secure from lateral movement in whatever position it is placed, and, as we shall later see such provision

is to be found in the lateral and crucial ligaments which are strong, almost inelastic, fibrous structures. These ligaments are fixed to the bone in such a way that under ordinary conditions of strain they are fairly pulled upon, and it would require a considerable force to rupture or tear them from their attachment to the bones; but if there is any screwing motion (twisting) in addition to a pull, then they would give more readily.

With these few general remarks I shall draw your attention to the *internal lateral ligament*. It is a flat, riband-like band of dense, glistening, almost inelastic fibrous tissue, of about ¾ inch in width, and about 3½ inches in length; its upper extremity is attached to the most prominent part of the internal condyle of the femur, and its lower end is fixed to a rough ridge on the upper portion of the internal border of the tibia, about 2 to 2½ inches down the shaft. (See Fig. 1.) The exact relation and attachment of the intermediate portion of this ligament need not at present detain us. When the knee is extended or slightly flexed, this ligament remains tense: in the fully flexed position it is relaxed so as to allow of rotation of the tibia upon the femur. If any attempt be made to bend the tibia outwards upon the femur—that is, to bend the knee inwards in the extended or semi-flexed position of the joint—it will be found that no movement whatever takes place the internal lateral ligament being put on the stretch. Now if the internal lateral ligament be divided either above or below the level of the joint line, the tibia, when the joint is more or less extended, can be bent outwards to a very appreciable degree, and the inner part of the upper articular surface of the tibia may under these conditions be separated as much as one-third of an inch from that of the femur (Fig. 1, *a* or *b*); if the same joint be flexed, there is, however, no lateral movement obtainable, the crucial ligaments preventing in this position any such movement. Similarly the division of the external lateral ligament allows of lateral movement—bending outwards of the knee-joint in the extended position—but in the flexed position the crucial ligaments hold the tibia and femur firmly together. Accordingly, bending inwards of the knee-joint is prevented by the internal lateral ligament in the extended position, and by the crucial ligaments in the flexed position the inner lateral ligament being in the latter position, under natural conditions, relaxed to allow of rotation of the tibia upon the femur. Similarly outward bending of the knee is controlled by the external lateral ligament in the extended position and by the crucial ligaments in the flexed position. It therefore follows that if there is a strain thrown on the inner side of the knee-joint, resistance is offered by the internal lateral ligament when the joint is extended, and by the crucial ligaments when it is flexed. The most common attitude when a person makes a great effort is the one in which the limbs are slightly bent with one foot slightly advanced and the other drawn back with the limb rotated outwards, and in this position the severest strain is borne by the internal lateral ligament of the knee of the limb placed behind. Such a strain is much increased when the body tends to turn upon the hinder limb, when this ligament is often unequal to the pull upon it, and consequently it may either give way and be torn across, partially or completely, or it is simply overstretched.

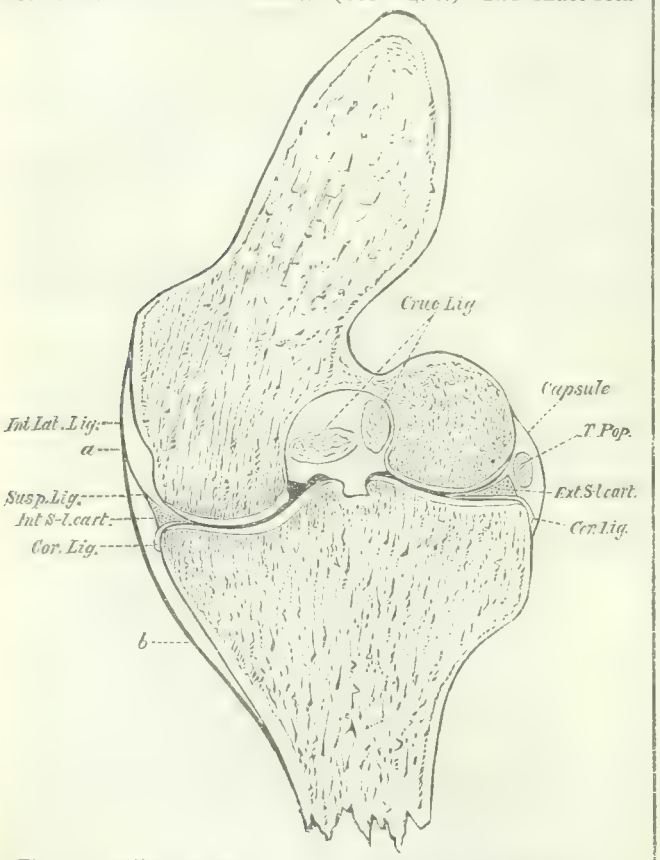


Fig. 1.—Vertical transverse section through the left knee-joint, showing disposition of ligaments and internal cartilages.

This internal lateral ligament, so far as my experience goes, is the most frequently damaged structure in this joint, and the reason for this is not far to seek. Not only is the knee bent inwards to a more or less degree owing to the obliquity of the femur inwards and of the tibia outwards, but it is subject to severe strain whenever the limb is abducted and the foot planted on the ground as in boxing, tennis playing, etc. The strain in such positions is borne by this ligament, and at times it is very great, for as has been shown above, it is the only structure which resists inward (lateral) bending of the joint in these positions; accordingly whenever we plant a foot directly outwards to give us greater stability or greater advantage to push or pull, the effectiveness of the work done depends upon the degree of resistance to strain offered by the internal lateral ligament of the knee, and one's strength may be measured by the degree of yielding of this ligament, which as you know should not give more than an inappreciable de-



Fig. 2.—A figure of a man in an attitude showing one of the positions in which the knee is so placed that severe strain is borne by the internal lateral ligament.

gree, for it is almost inelastic. If the foot be planted outwards and forwards, or outwards and backwards, the strain is again borne by this ligament, but now there is not a fair pull upon its fibres, but rather a pull and a twist which is far more effective in overstretching or tearing its substance; hence it is that in either of these latter positions the resistance of the ligament is not so great as in the former. (See Fig. 2.)

In the living subject overstretching or rupture of this ligament, which, as I have said, is very common, if not the commonest injury to the knee-joint, may be recognised (1) by locating the exact spot of tenderness in the damaged ligament, and this is usually at one or other end; and (2) by testing whether there is any lateral movement in the joint in the extended or semi-extended position. When a knee-joint is distended with fluid there can be obtained lateral movement of the leg upon the thigh in either direction inwards or outwards, but before the effusion occurs, or after it has cleared away, lateral movement of the leg takes place only in one direction, outwards if the damage be to the internal, and inwards if it be to the external lateral ligament.



Fig. 3.—Back view of splint applied to left knee.

Accompanying this injury there is always more or less effusion into the joint cavity owing to tearing of the capsule and synovial membrane; this effusion usually clears away in a time varying from two to six weeks, but after this has passed away the joint is weak and insecure, and any slight and sudden strain will frequently make the knee "give," the expression used by those who suffer from a "weak knee." This insecurity or weakness is mainly due to the inefficiency of the internal lateral ligament as a lateral tie or stay, and in part only to the smallness and weakness of the thigh muscles. The atrophied muscles may regain their size and former strength, but the knee will still show lateral movement, and will still remain liable to "give" on the slightest provocation. Such insecurity in the knee arises from the fact that it takes such a time for the complete restoration and due shortening of the damaged ligament, and however strong the muscles of the thigh may be the knee does not regain its strength until the ligaments are firmly united and of proper length.

As practitioners, the question we have to ask ourselves is how can this be remedied, or how can strength be imparted to the joint? Of one thing we are, I may say, quite sure, and that is, any ligament overstretched or torn will take a long time to recover and be as short and as strong as before the accident. This time may be measured in months or years but not in days or weeks. If, then, it takes so long for the ligaments to regain their former size and strength, and if the process is liable to be periodically interfered with by the knee giving way, it would seem necessary to adopt some mechanical means which will effectively prevent outward lateral movement of the knee under conditions of the severest strain, and thus secure to the overstretched or torn ligament quiet for the gradual process of its restoration. This problem was forced upon me during the last year, and by the help of Mr. Offord, surgical instrument maker at Cambridge, I have devised an apparatus which does, I venture to think, meet all the requirements. It absolutely prevents lateral movement of the knee: it is light, it is simple in its construction, it has



Fig. 4.—Side view of splint applied to knee.

nothing of any importance that can go wrong, and it is not very expensive. Two flat bars of steel about 1 inch in width are fixed together by a free hinge joint which lies horizontally at the middle of the back of the knee. Each bar at the distance of half an inch from the joint is split longitudinally into equal halves, the bars are then opened from the centre, and at a distance of 1½ to 2 inches from the hinge are gently curved outwards and forwards until they encircle the limb for nearly three quarters of its circumference (see Figs. 3 and 4). Each bar is closely applied on its face to the skin surface, and is of an oval shape in transverse section so as to diminish the weight without decreasing to any material extent its strength.

In this way the bars diverging from the joint behind are so placed as to resist any lateral pressure put upon their anterior extremities in a most favourable way, that is, they resist bending on their edge just as the beam in the roof of a house

does. To the anterior ends of these bars four large thin adjustable aluminium plates are fitted; these plates are enclosed in leather and by means of buckling straps the upper and lower pairs of plates are joined behind and in front of the limb. The lower pair of padded plates come just below the level of the head of the fibula externally and in the hollow below the head of the tibia internally where they can be easily fixed and retained; the upper pair comes just above the projecting condyles of the femur. The steel portions, except where the joint is, are covered with leather so as to prevent any injury to the skin. Such an apparatus for a man weighs between 9 and 10 ozs. and for a woman about 7 ozs.

When applied the movements of the limb are limited in some ways; rotation is prevented, flexion can only take place to the degree of a right angle but extension is complete. The limitation of flexion occurs in consequence of the hinge joint being behind the line of the axis of flexion of the natural joint but this cannot be avoided except by the construction of an elaborate joint at the back the principle of lateral supports and lateral joints having been discarded.

The next structure that I wish to draw your attention to is the *internal semilunar cartilage* of the knee. It enjoys but a limited range of movement on the tuberosity of the tibia in flexion, in extension and in rotation of the joint. It is fixed in front and behind at each extremity to the tibia, near the middle it is firmly fixed to the capsule of the joint and adjoining internal lateral ligament; at its circumferential border it is loosely attached to the tibia just beyond the articular margin (see Fig. 1). The connections with the tibia at each end are so strong that it is most difficult to tear the cartilage away from the bone even when considerable force is used. The anterior extremity of the internal semilunar cartilage is fixed to the tibia (1) by a narrow and slender band running directly outwards to the rough part in front of the tubercle, and (2) by a broad fibrous band running outwards, forwards and downwards so as to reach the front part of the head of the bone (see Fig. 5). That between the circumferential parts and the head of the tibia is loose and allows lifting of the cartilage from the tibia at least quarter of an inch; that in the middle is firm and depends upon a strong fibrous band passing upwards and inwards from the fibro-cartilage into the capsule, which becomes firmly incorporated with the upper portion of the strong internal lateral ligament. This band may indeed be regarded as a "suspensory ligament" to the fibro-cartilage, and it is of considerable importance as we shall presently see. Owing to this last attachment the cartilage is kept fixed to the femur in rotation of the joint movement taking place between the under surface of the cartilage and the upper articular surface of the tibia; further, a pull upon the upper portion of the internal lateral ligament exerts direct traction upon the cartilage, more especially upon its anterior extremity. The position of this cartilage is such that it is fixed in a wedge-like interval between the two bones, from which place it cannot be pushed or pulled inwards owing to the close apposition of the bones, nor can it be pulled outwards owing to its attachment to the head of the tibia (see Figs. 1 and 5).

Displacement or rupture of this cartilage, as you are aware, takes place not infrequently in athletes and in those who take active exercise. When it is displaced, and the displacement it will be remembered is usually partial and not complete, some portion of it gets jammed between the articular surfaces and the anterior portion is thrust forward and constitutes as a rule a definite tender swelling lying in the angular interval between the tibia and femur in front. As one part is thrust outwards another must of necessity, so long as the cartilage is not completely torn through, be carried inwards between the two bones and this portion it is that causes fixation of the joint in a semiflexed position. Now what must occur in the joint structures to allow of this new disposition of the internal cartilage? It is clear from what has been said that unless the articular surfaces on the inner side of the knee be separated from one another the cartilage can neither be drawn nor pushed inwards between the two bones; and in the extended position such separation of the two bones on this side is prevented by the internal lateral ligament and in the flexed by the crucial ligaments. Therefore to allow of displacement of the internal semilunar cartilage in the extended or semiextended position of the knee it is necessary that the internal lateral ligament be rendered ineffective either by the overstretching of its fibres or by rupture, partial or complete. If the internal lateral ligament gives from either of these conditions then the articular surfaces may be separated to such a degree as to separate them about one-third of an inch from one another, a space sufficiently large to allow of the passage of the cartilage in between the two bones.

Now if the internal lateral ligament be divided below the level of the joint (Fig. 1 *b*) and the bones be separated from one another on the inner side, the semilunar cartilage is carried upwards with the femur as we would expect from its attachment to the capsule and to the internal lateral ligament by what we may for convenience call its "suspensory ligament." If the ligament be divided above the level of the joint (Fig. 1A) and the bones be again separated as above, the fibro-cartilage remains on the tibia. Again, if the internal lateral ligament together with the capsule of the joint be divided both above and below the level of the fibro-cartilage, which will then be free except at each end and the bones be separated as before, the semilunar cartilage can be pushed inwards between the two articular surfaces, and by letting the tibia and femur go it may be nipped between them in imitation of that which takes place in displacement without rupture of its substance. This result is similar if not identical with that which takes place in displacement of the internal semilunar cartilage without rupture of its substance, and the conditions in each instance are in all probability alike. If the internal lateral ligament together with the adjacent capsule be divided below the level of the joint, and the bones be separated as before and the tibia be turned outwards, the pull is now transmitted from the upper end of the internal lateral ligament through the fibro-cartilage to its anterior extremity where it is fixed to the tibia. When this is done it becomes clear that the fibres of this attachment are slightly untwisted upon themselves, and are thus strained in an unfavourable position; hence it is, I believe, that occasionally the fibro-cartilage gives way at its anterior extremity (see Fig. 5).

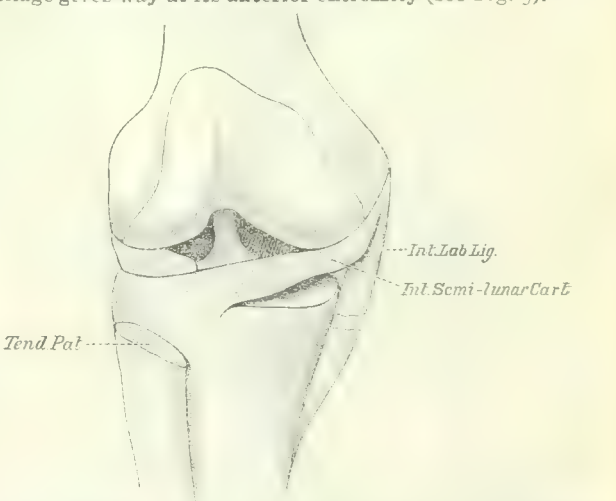


Fig. 5.—Front view of the right knee-joint, in which the internal lateral ligament is divided, and the tibia bent and rotated outwards.

With the above data we may proceed to study the conditions essential to the displacement and rupture, partial or complete, of the fibro-cartilage. It would appear clear that displacement of the cartilage can only take place (1) when its suspensory ligament and circumferential attachments are torn, and (2) when the internal lateral ligament is stretched or ruptured. The first condition allows of the displacement inwards of the cartilage, and the second the separation of the tibia and femur—one condition being as essential as the other. If the internal lateral ligament and the capsule be torn below the level of the fibro-cartilage, then it cannot be displaced because of its firm attachment to the femur through the strong fibrous band (suspensory ligament) connecting it to the capsule, and to the internal lateral ligament; on the other hand, if the internal lateral ligament be torn above the

level of the cartilage there will again be no tendency to displacement, for the coronary ligaments will suffice to keep the circumference of the cartilage fixed. Accordingly, the injury necessary to allow of displacement of the internal semilunar cartilage should consist of overstretching or rupture of the internal lateral ligament, of rupture of its suspensory ligament and of its circumferential attachments to the head of the tibia.

Now, it seems to me we are in a position to offer suggestions with regard to displacements of this fibro-cartilage, and I venture to give the following explanation. When the joint surfaces are separated from one another the circumferentially loosened fibro-cartilage is drawn in between the femur and tibia, and as the bones snap back towards one another the indrawn cartilage is caught between them and the joint gets fixed, severe pain being produced by the squeezing of the cartilage. The internal semilunar cartilage forming part of a large circle, and the middle portion being free, can with but little force be carried inwards the remainder bulging outwards to an equal degree. In practice we may observe that it is the anterior portion which usually bulges forward just in the interval between the tibia and femur.

At the present time, replacement of the dislocated cartilage is usually accomplished by full flexion followed by a sudden extension of the joint. This, as one knows but too well, is very painful; henceforth, I shall be inclined to adopt the method suggested by the above investigation—namely, lateral flexion to relieve the cartilage from pressure, and as soon as this occurs it is probable that the cartilage from its own elasticity will spring back to its proper form and place. This method of reduction has been suggested by someone before, but by whom I cannot for the moment find out. The late Mr. Hutton adopted a combination of these two methods, as may be gathered from an illustration and the accompanying description in Dr. Wharton Hood's book on bone-setting.

When the fibro-cartilage is torn from the tibia at its anterior extremity the internal lateral ligament must give way below the level of the attachment of the suspensory ligament of the cartilage to the capsule and to the internal lateral ligament. Thus in this accident as in the simple displacement without rupture the main lateral stay of the joint in the position of extension gives way and the knee can be bent inwards.

After displacement for the first time effusion into the joint cavity occurs, and after some weeks or even months the patient is again able to use the joint. But sooner or later the same cartilage gets again displaced, and after the second displacement it frequently happens that but little or in some instances no appreciable amount of effusion into the joint occurs. Recovery takes place after the second, third, or fourth displacement quicker than after the first. The question that now presents itself is how can recurrence of the simple displacements be prevented? To do so it is necessary to prevent lateral bending of the knee, and so long as this is prevented it is practically impossible to dislocate the internal semilunar cartilage of the knee. The apparatus already described does this and effectively serves the purpose of lateral ligaments. In no case under my own observation has this apparatus failed under the most trying circumstances that the knee can be subjected to, and so long as the apparatus fits acurately I venture to predict it will serve its purpose.

The apparatus now in use for the purpose of preventing dislocation of the internal semilunar cartilage of the knee, and the best is made by Mr. Ernst, Fitzroy-square, London, depends upon lateral supports and upon pads to keep continuous pressure upon the place where the cartilage is usually forced outwards. The effectiveness of this apparatus mainly, perhaps I should say solely, depends upon its lateral supports, which prevent lateral movement in the joint; for in order that the pad may exercise any influence on the retention of the cartilage in its place at least an accurate adaptation of the pad to the place where it comes out at all times and in all positions of the joint is necessary—a condition that is rarely if ever fulfilled. It is heavy, weighing about 1 lb. 5 ozs.; its mechanism is complicated, and thus it is liable to get out of order and it is very expensive.

Mr. Noble Smith complimented Mr. Griffiths upon his paper and the apparatus which he had devised for supporting the knee. He criticised the assertion made by some surgeons that in no case of displacement of the internal semilunar cartilage could the case be cured without opening the joint freely. He thought that Mr. Griffiths's modified operation would be very good in cases which could not be cured by manipulations alone.

THREE CASES IN WHICH THE SUPERIOR CERVICAL GANGLION OF THE SYMPATHETIC WAS REMOVED, WITH REMARKS UPON THE OPERATION.

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The three following cases seem to be worth recording, not so much because they throw any light on the value of the treatment, as because all the symptoms produced by the removal of the ganglia were carefully watched and they therefore furnish some data upon which to base a knowledge of the immediate and remote physiological effects of removal of these structures. Besides this, there are one or two points of practical importance with regard to the operation itself. I am indebted for the notes of all three cases to Mr. Stephen Mayou, the House Surgeon.

Case 1.—The first case is that of a married woman, aged 63, admitted into King's College Hospital under the care of my colleague, Professor McHardy, on January 4th, 1900, suffering from sub-acute glaucoma. Her history was that three months before admission, while doing her work, she suddenly noticed shadows crossing both eyes, the left being first affected. This was very soon followed by almost complete blindness, some imperfect perception of light, however, remaining. She was sent to bed by her doctor and there was a temporary remission of the symptoms for a month, when another attack supervened in both eyes, accompanied by vomiting and considerable constitutional disturbance. During this attack the pain was so bad that narcotics had to be administered.

On admission the patient was totally unable to see and complained of intense pain in the eyes and frontal region. There was no perception of light in either eye. Tension = T + 1. The episcleral vessels were dilated, the corneæ steamy, pupils dilated and irregular. The anterior chamber was very shallow, the fundus was not visible. A quarter of a grain of eserine was instilled without any result, and seeing this, and being of opinion that iridectomy would be likely to give no benefit, Mr. McHardy transferred the patient to my care.

On January 6th, 1900, two days after admission, an incision was made parallel to the anterior border of the right sterno-mastoid muscle, with its centre opposite the angle of the jaw, and about 3 inches in length. The various layers of the cervical fascia were divided, the anterior margin of the sterno mastoid was hooked well back, and the sheath containing the vessels exposed. The outer margin of this was defined and pulled inwards towards the middle line by means of a blunt hook, when the superior cervical ganglion was found lying behind it and removed.

When the ganglion was picked up with forceps preliminary to its removal, the pulse increased markedly in rapidity, and became somewhat feeble. A similar operation was performed on the opposite side, the increased pulse-rate being then much more marked during removal of the ganglion. There was no immediate effect upon the pupils.

Ten minutes after the patient's return to bed the face was markedly flushed, and the tension in both eyes was normal. Pulse, 80; respirations, 28. Two hours later the patient was recovering from the anæsthetic, and complained of intense pain in the head. There was very marked congestion of the face, with some ptosis on both sides. Tension = T + 1; the condition of the pupils and the eyes was the same as before the operation; there was no retraction or protrusion of the globe.

Next day the pain in the head was intense, and half a grain of morphine had to be given hypodermically to relieve it. It far exceeded anything from which the patient had suffered previous to operation. The patient was very restless, and there was some œdema of the soft structures over the root of the nose. The head and face were still flushed. Pulse 80, respirations 28, eye condition as before. On the fourth day after the operation the wounds were dressed and found healed. Up to this time the patient had to have morphine night and morning to relieve the intense pain in the head, which, however was slowly getting better. The flushing of the face had now nearly disappeared. The patient sat up in bed holding her head and moaning with the pain.

The patient was discharged on January 10th, thirteen days after the operation, when the flushing of the face had disappeared [illegible] the head had very much improved but was still present, and was worse than before the operation. The pulse was 80, respirations 28, the eye symptoms remaining *in statu quo*. Tension = T + 1. When seen some weeks later the pain in the head had resumed its normal level. It will thus be seen that the operation had [illegible] or, while it actually caused the patient intense [illegible] ds of a fortnight. The ganglia on section were [illegible]

It may first of all be of some interest to make a few remarks on the best method of removing these ganglia, as it is obviously of importance that the removal should be practised as rapidly as possible consistent with complete extirpation. Two incisions have been suggested, either along the anterior or the posterior border of the sterno-mastoid. Of these there can be no doubt that the former is the more convenient; the parts are more easily exposed through it, and a

shorter incision is necessary. Should the incision along the posterior border of the muscle be employed it will have to be unduly long in order to allow the sterno-mastoid to be efficiently retracted. The wound is much deeper, and the identification of the ganglion—not always an easy matter—is hindered. The posterior incision should only be used when it is desired to remove the entire cervical sympathetic chain, ganglia and all; it then gives the best access, especially to the inferior ganglion. This is an operation that Jonnesco claims to have carried out on both sides with very good results in epilepsy and exophthalmic goitre. The next point of practical importance is how to expose the ganglion. Jonnesco recommends that the carotid sheath be opened, the vein separated from the artery, and the ganglion found behind it. I have tried this plan, and have found it much more tedious than the one I adopted above, namely, to expose the outer edge of the carotid sheath, and then with a blunt hook to pull the sheath and its contents inwards towards the middle line, when the ganglion is at once exposed.

As is well known, the superior cervical ganglion probably represents four coalesced ganglia and lies upon the longus colli muscle over the transverse processes of the second and third cervical vertebræ, immediately behind the internal jugular vein, which is enclosed in the carotid sheath. It is a comparatively easy matter to displace the sheath as a whole and thus to immediately come down upon the ganglion; this, moreover, has the great advantage that the vagus is either not seen at all or else it is so closely applied to the posterior aspect of the internal carotid artery that it is not possible to mistake it for the sympathetic. This may sound somewhat absurd, but, as a matter of fact, the variations in the size, shape and aspect of the superior ganglion are so great in different cases that such a mistake is quite possible, especially to one who is doing the operation for the first time. If the ganglion be removed by separating the vein and artery, the operation is likely to be considerably longer, as a much more delicate dissection is required, there is always a risk of considerable bleeding and time may be lost in identifying the ganglion.

When the ganglion has been identified, the easiest way to remove it is to seize it with forceps, pull it forcibly forwards, and then to slip a fine pair of blunt-pointed strabismus scissors beneath it and to divide the sympathetic chain as far above the ganglion as the scissors can be made to reach. This allows the ganglion to be pulled well into the wound, when its other connections can be similarly divided. Some care is necessary to see that the entire ganglion is removed; this structure varies so much in size, structure, and appearance, that it is sometimes difficult to be sure that the whole of it has been removed. Thus in the case above narrated the ganglia were widely different on the two sides of the same subject; on the right side—the one first operated upon—it was a rounded cord, closely resembling in shape and colour the vagus nerve; on the other side it had the characteristic flattened ganglionic enlargement, was greyish in colour, and could not have been mistaken for anything else. Having regard to this possible source of error, it is well to remove a good inch and a half, or even more, so as to make quite sure of removing the ganglion.

As to the time taken by the operation, I see that Jonnesco states that "the bilateral operation can be completed in 15 minutes." This is perhaps a somewhat sanguine estimate. In the case just recorded the time was taken for each side; that on the right side occupied just over 20 minutes; that on the left just over 10; the longer time on the right side was due to a slight uncertainty as to the identity of the ganglion, and perhaps also to the fact that it was the first operation.

And now a few words as to the results of others. The operation was first done by Jonnesco, of Bucharest, in September, 1897, and since that time he has done, in all, 8 cases, particulars of which will be found in more or less detail in the *Wiener klinische Wochenschrift* for May 4th, 1899. Since the publication of this paper I believe that the operation has been done by others both in England and abroad, but as they have not been published as far as I am aware, I am unable to give details of them; perhaps some of those present may be able to do this. As far as I know the case I have described is the first one performed and recorded in this country.

In Jonnesco's list there are 7 cases of subacute or chronic glaucoma accompanied by more or less complete loss of vision and one acute case. The results of these are summarised by the author as follows:

(*a*) Immediate and lasting decrease of intraocular tension in all the cases.

(*b*) Marked contraction of the pupil, which was permanent, even in the cases that had been previously iridectomised.

(*c*) Loss of the frontal headache.

(*d*) Disappearance of the paroxysms in the cases of irritative glaucoma.

(*e*) Marked and permanent improvement of vision in all the cases in which the persistence of definite vision or even perception of light showed that the papilla had not undergone atrophy. This improvement was remarkable in its suddenness and its progressive tendency, but was absent in the case of acute glaucoma, and in two of the chronic irritative forms.

CASE II.—Man, aged 63, admitted into King's College Hospital February 5th, 1900. Some two and a half years previously (September, 1897) he had had a portion of the right side of the tongue removed for epithelioma. This was followed in June, 1898, by an operation for recurrence in the glands on the right side of the neck. For two months before admission the patient had been suffering from the most intense and agonising pain on the right side of the neck, extending from the right ear downwards, as he says, into the chest and the right arm. This at first was intermittent, but for the last month it has been practically continuous, and has been so severe as to prevent him sleeping even with the aid of narcotics. The patient was a strong healthy man. There was a swelling about the size of a small walnut beneath the mucous membrane of the pharynx on the right side; this was very hard to touch, but painless on pressure and freely movable beneath the mucous membrane. It was thought to be a recurrence in one of the post-pharyngeal glands, and it was determined to dissect it out.

On January 7th an incision, 3 inches long, was made parallel to the anterior border of the right sterno-mastoid, with its centre opposite the angle of the jaw. After this muscle had been defined and retracted, the carotid sheath was exposed and drawn inwards, in order to allow of dissection being carried out behind it. It was soon evident that the superior cervical ganglion was firmly adherent to the enlarged gland, which lay behind and to its inner side, and therefore the connections of this structure were severed above and below, and the ganglion was removed along with the gland, which on section proved to be infected with epithelioma. As the ganglion was handled, the pulse was somewhat increased in rate (from 74 to 98). Immediately after removal the right pupil contracted very markedly and remained contracted, although it still reacted to a strong light. Three hours after the operation the right pupil was intensely contracted, but reacted to a bright light. The whole of the right side of the face was markedly flushed, and the patient complained of considerable pain on that side. Pulse 82, respirations 18, slight ptosis, no apparent alteration in intraocular tension or in the position of the globe. Three days later the pain in the head and the condition of the pupil remained the same. The congestion of the face was, however, less marked. The latter completely disappeared on the fifth day, but the headache remained for two days longer—namely, a week after operation, when the patient was discharged with the wound healed, but with the pupil still markedly contracted and the ptosis the same as before.

This patient was seen quite recently, when the ptosis had improved considerably, although it was still quite evident; but the pupil was still almost as much contracted as it was a few days after the operation. The patient was very clear upon the point that there was some actual protrusion of the globe, and declared both he and his friends had noticed it. We could not, however, definitely satisfy ourselves as to this point; there was clearly no recession of the globe. The intense pain from which the patient suffered previous to the operation ceased from the time he recovered consciousness and never recurred.

It is perhaps worthy of note that this patient, in addition to the intense and deep-seated pain in the neck, suffered also from pain about the distribution of the musculo-cutaneous and median nerves; this probably can be accounted for by the fact that the superior cervical ganglion sends rami communicantes to the fourth cervical nerve, which in its turn sends a filament to the outer cord of the brachial plexus.

CASE III.—A dentist, aged 44, admitted into King's College Hospital on January 23rd, 1900, suffering from a small swelling in the neck. Ten years ago the patient noticed a swelling in the neck, accompanied by some pain radiating deeply down the neck and gradually increasing in severity. The tumour slowly got larger, and about two years ago the pain became particularly severe, being excruciating in the early morning and gradually subsiding as night came on. During the last six months the patient has hardly ever been free from pain, and has found it quite impossible to do his work or to get any sleep. He says that the pain radiates from the neck down deeply into the chest, giving him, as he calls it, spasm of the heart, and extending down to the tips of the fingers on the right side. On examining the neck there is a soft, semi-solid, indefinite swelling high up upon the right side, beneath the anterior margin of the sterno-mastoid just opposite the angle of the jaw. The carotid artery can be felt to its inner side, and it appears to have some slight but definite deep-seated attachment. There are also several small fusiform swellings over the temporal and occipital bones, corresponding to the distribution of the lesser occipital nerve. These are slightly adherent to the skin, and are not very movable on the deeper structures.

The patient was convinced that the pain arose from the swelling in the neck, begged to have that operated upon alone, and would not consent to

those upon the head being touched. An incision was therefore made over the tumour, and, as soon as the layers of deep cervical fascia had been divided and the carotid sheath opened, it was seen that the swelling protruded between the artery and the vein and had the vagus nerve stretched over it. Processes extending upwards from the swelling towards the base of the skull were divided, and also several smaller branches coming off from the tumour itself passing forwards and backwards. As the swelling was traced downwards in the neck it was found to be a thick cord-like structure to which was attached another swelling found in the situation of the middle cervical ganglion. It was obvious that the structures were the enlarged superior and middle cervical ganglia with the connecting branches between them. The whole was therefore removed.



Specimen removed from Case III. It consists of the superior and middle cervical ganglia, the sympathetic cord between them, and certain communicating branches. The actual size of the tumour is seen by the scale, the comparative size may be inferred from *a*, which is the healthy ganglion removed from the left side in Case I.

No alteration was noticed in the pulse-rate, but the right pupil became markedly contracted. The next day the right pupil was contracted to a pin point and there was some slight ptosis. The pulse was 72, respirations 18. No proptosis. Slight increase of heat on the right side of the face and conjunctival vessels dilated. The patient complained of moderate headache on the right side. No alteration in intra-ocular tension. Five days later the right pupil still remained contracted but reacted to light. Ptosis also unaltered. The flushing of the face and headache had gone and the patient was entirely free from the pain from which he had suffered before the operation. Four days later the patient was discharged with the wound healed, the right pupil being still contracted and the slight ptosis being unaltered. He was entirely free from pain. This patient was seen a month ago when the condition of affairs was much the same as on discharge from the hospital. There had been no recurrence of the pain, and the patient refused to have the swellings in the head removed.

The tumour clearly belongs to the group known as "false neuromata." On microscopic examination it shows large quantities of fibrous tissue arranged in long bundles, through which run in places the nerve elements. In one corner of the section several ganglion cells are to be seen, in others there is some myxomatous tissue.

Following the nomenclature given by Alexis Thomson in his able monograph, On Neuroma and Neuro-fibromatosis, I have called this a case of neuro-fibromatosis rather than one of circumscribed false neuroma on account of the diffuse tumours present along the course of the lesser occipital nerve, although there was no evidence of the presence of such a condition anywhere else in the body; it should, perhaps, be looked upon as a sort of transition between the true solitary cases and the really diffuse ones.

The case is perhaps worthy of record on account of the size of the tumour. Neuro-fibromatosis of the cervical sympathetic is well known as part of an extensive general condition but the tumours are generally quite small and give rise to so little trouble that they are only discovered after death. The only case that I can find at all resembling this is one reported by Robert Abbe and mentioned by Alexis Thomson, in which the tumour was so large as to resemble enlarged cervical glands. This was the case here. The deep-seated and extensive agonising pain is also worthy of note. It closely resembled that in the preceding case except that it was much more extensive in its distribution, and was doubtless accounted for by the extensive communications of the two ganglia with the cervical nerves.

It may not be amiss to sum up the various symptoms produced in these three cases by the removal of the ganglion, and it would appear justifiable to group them into those that are constant and those that are variable.

The Constant Symptoms following the Operation.

These in my cases were only three, namely, ptosis, severe pain in the head upon the side operated upon, and congestion of the vessels of the face. To them no doubt should be added, in all cases where the nervous mechanism of the eye is unimpaired, contraction of the pupil. It is true that this was not observed in the case of glaucoma, but that no doubt was due to the extensive local affection. The ptosis, arising from paralysis of the superior palpebral muscle of Müller, was immediate, marked and lasting in all cases, although it improved a little as time went on. The headache, although present in all three cases, was variable both in degree and in duration. The contraction of the pupil in the two cases in which it occurred was very marked indeed, and followed the section at once. It was also a symptom that persisted, although the degree of contraction became slightly less as time wore on. It is, of course, much too soon after the operations to hazard any guess as to its permanence. Congestion of the side of the face affected occurred in all the cases but varied widely in degree. In the first case it was so extreme that there was actual œdema of the tissues over the bridge of the nose, and the condition lasted several days. In the third case, on the other hand, it was scarcely marked at all.

The Variable Symptoms following the Operation.

The remaining symptoms were very variable. Foremost among these was the decrease of intra-ocular tension. This, while decidedly marked in the first case, was only fugitive, and was certainly absent in the other two, or at any rate so little marked as to entirely escape notice. Then as to the question of enophthalmos or the reverse. In only one of the cases is there any note of anything of the kind—and, curiously enough, it was exophthalmos that was observed. In this connection it is interesting to notice that at the discussion upon the subject at the Clinical Society, Mr. Mackay stated that he had seen a case in which exopthalmos had followed an injury to the cervical sympathetic in the operation for the removal of enlarged cervical glands.

Mr. W. G. Spencer (London) congratulated Mr. Burghard. Jonnesco had excised the cervical sympathetic often for epilepsy, which had prejudiced general acceptance owing to failure of previous attempts. Exophthalmic goitre was, in addition to resection of part of the thyroid gland, perhaps suitable for this operation. But the future of the operation seemed to be in giving relief for the pain due to sympathetic irritation. Mr. Burghard's operation was a most important improvement, especially when bilateral from the stretching or division of the vagus, causing rapid pulse-rate and laryngeal paralysis.

Mr. Burghard, in reply, stated that he had purposely not referred to the treatment of exophthalmic goitre by resection of the sympathetic, as he had no personal experience of it. Jonnesco, however, had reported several cases either cured or greatly improved, and although the operation he recommended—namely, removal of all three ganglia and their connecting cords on both sides—might seem a severe one, yet it was probably not more severe than resection of portions of the gland. With regard to the results in epilepsy, he should await more extended observations before trying the treatment, as it was eminently a disease the cure of which must be spoken of with great caution. He was much interested in Mr. Spencer's remarks concerning the *rôle* of the sympathetic in connection with pain, and quite agreed as to the disturb-

ance of the heart being probably due to interference with the vagus; this could not happen if the route he advocated were adopted.

PLASTIC OPERATION FOR INCONTINENTIA ANI.

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IN September, 1898, I performed a plastic operation upon a patient, whose sphincter ani and a part of the rectum had been destroyed in a previous phlegmonous inflammation, by a junction of the levatores ani and glutei maximi muscles. He was almost driven to commit suicide from the intense discomfort, but has since become again a useful member of society. In December, 1899, I similarly proceeded in a case in which extirpation of a tuberculous prostate and urethra had been followed by incontinence of flatus necessitating a second operation, which resulted in a urethro-rectal fistula with fæcal and flatal incontinence. This patient is much improved, and is restored to the community. In a third case on which I operated in March, 1900, the incontinence arose through extirpation of the rectum for carcinoma, and the patient has regained a certain degree of continence. The operation seems to be of considerable value for similar conditions. In the two latter cases the levator ani was destroyed through previous operations, and the continence was obtained therefore by transplantation or moving of parts of the glutei maximi. The operation is somewhat intricate, and will be best described in an account of Case 1, which has already been published in the *Upsala Läkareförenings Fordhandlingar* (*Transactions of Upsala Medical Society*) N. F. Bd. iv, and in the *Centralblatt für Chirurgie*, 1899. The two other cases have not been published before.

CASE 1.—R. V., a government clerk, aged 36, was admitted to hospital on September 14th, 1898. In the winter of 1891 he suffered from tænia solium which yielded to the ordinary remedies. Previously he had been quite well. In the autumn of 1892 he had an attack of enteric fever, which left his intestinal mucous membrane in a very sensitive condition. Attacks of severe gastro enteritis occurred in October, 1893, and February, 1894.

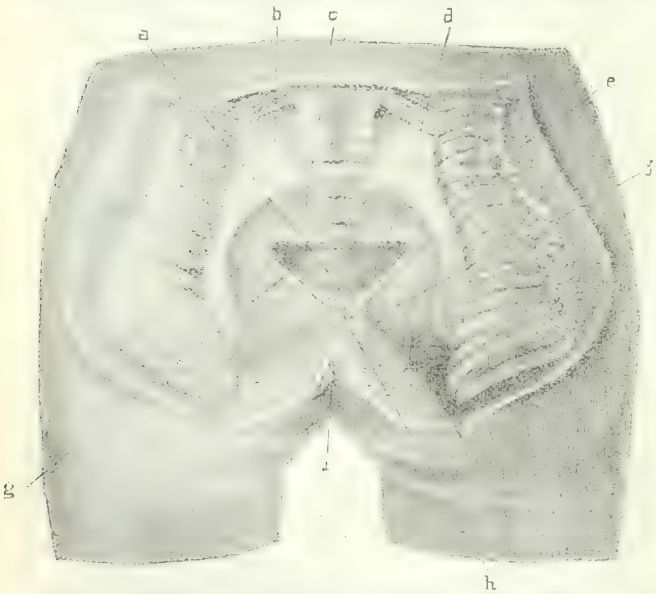


Fig. 1.—*a*, Defect in pelvic diaphragm through separation of levator ani from the coccyx; *b*, sacro-sciatic ligament; *c*, fatty tissue in ischio-rectal fossa which covers the M. coccygeus; *d*, edge of M. coccygeus; *e*, M. gluteus max.; *f*, fatty tissue in the ischio-rectal fossa covering lev. ani; *g*, edge of lev. ani freed from coccyx, etc., and stitched to rectum; *h*, sutures by which the lev. ani has been united to rectum; *i*, anus.

Figs. 1 and 2 show dissections I made after the operation in Case 1.

Fig. 1.—To the horseshoe incision there has been added a 5 to 6 cm. transverse incision over the sacrum and glutei maximi. These muscles have been freed from the sacrum, coccyx, and sciatic ligament, the knife being kept close to the ligaments. In the gluteus maximus a slanting transverse incision has been made at the upper part, in length equal to that of the skin. The levatores ani have been freed from the coccyx and coccygeus, and with sutures united to the rectum at the place for the sphincter ani.

In July, 1894, he was laid up with cholera, but afterwards was well until August, 1897. During several years he had been troubled by external hæmorrhoids. In July they bled profusely, and the following month caused a severe phlegmonous inflammation extending over the scrotum and anus. For this he underwent an operation in the Stockholm Serafimer Hospital, and since then has had complete incontinence for fæces and flatus. To prevent soiling his clothes he uses tampons of cottonwool and a T bandage, and takes internally opium, bismuth, and tannalbin.

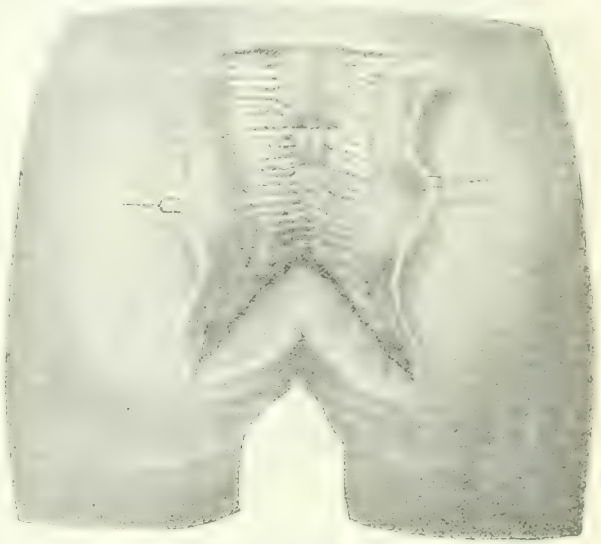


Fig. 2.—The glutei maximi have been fixed to rectum (anus) and the levator ani to each other, and to the coccyx and sacrum.

On admission his general condition was good. There is a scar, 7 c.cm. long, over the coccyx and posterior border of anus. From this two scars pass outwards, one on the left (8 c.cm. long) extending in a semicircle towards the tuber ischii, and one on the right (15 c.cm. long) passing about 1 cm. from the middle line and ending at the upper part of the right genito-crural fold. There are also scars on the scrotum; one, 5 cm long, posteriorly, and another 1 cm. long on the right side. The anus does not consist of the usual median aperture surrounded by characteristically arranged radial folds of skin, but is shaped like a half-moon, with concavity towards the left in which there is an external hæmorrhoid about the size of a sixpence. Through the anal opening, the rectal mucous membrane appears ruddy in colour. Three fingers can be passed into the rectum without causing the patient any pain. There is no ulceration, and the front and sides of the rectum can be stretched normally. Posteriorly, the rugæ are almost absent, and the mucous membrane is tightly stretched over the submucous layers, feeling like a hard convex bank. No contraction of the sphincter could be obtained when patient was asked to contract over the introduced fingers, neither could it be elicited by electric currents. When, however, the electrode was introduced 5 cm. within the rectum contractions of the levatores ani were obtained. With stronger currents the glutei maximi also contracted. These electric currents were repeated on several days and always gave the same result. Professor Akerman and Under Surgeon Dr. Akerblom, who treated the patient in the Serafimer Hospital, state that there was a serious gangrenous inflammation occupying both ischio-rectal fossæ and extending over the borders of the glutei and over the perineum and scrotum. By this the sphincter ani and part of the posterior rectal wall was destroyed.

At the time I could not remember any procedure of treatment recommended, except the stitching together of the sphincter ani and torsion of the rectal wall (Gersuny); and having no time for literary research I decided to dissect up the anal region in the cadaver.

I thought it would be possible to divert the most posterior median muscle fibres of the glutei maximi, bring them around the anus, securing them both posteriorly and anteriorly, and connect them with the bulbo-cavernosus, transversus perinei, and levator ani muscles. The first dissection showed this would be useless, as these fibres were innervated and vascularised from the neighbourhood of the tuber ischii, and to move these fibres and retain their nerve supply was quite impossible. After dissection of the anal region in three more cadavers I saw that it might be possible to replace the sphincter ani if one used the levator and glutei muscles. Regarding the levatores ani muscles, Henle[1] says "that a part of their function is to help the sphincter ani."

The operation should consist of the following steps: (1) An incision over lower part of sacrum and over coccyx is continued from the lowest point of the coccyx in horseshoe shape around the ischio-rectal fossa; (2) the posterior part of the

levatcres ani and the anterior part of the coccygeus are opened up; (3) the levatores ani are completely separated from coccyx and coccygeus muscles, but care must be exercised in not too closely approaching the pelvic walls so as to avoid the nerves to the levator ani, which, emerging from the sacral plexus, course along the side of the pelvis, over the upper surface of the muscle, just median to its origin from the arcus tendineus; (4) this opening in the pelvic diaphragm should be filled up by the median part of the glutei maximi. These fibres are next made loose from the sciatic ligament, the sacrum and coccyx; (5) the portions of the levator ani springing from the coccyx and coccygeus muscle are brought forward and affixed to the rectum in such a way that they will compress the rectum on either side; (6) the parts of the glutei previously removed from their origin, are now stitched together in the middle line, anteriorly to the levator ani and the skin at the anus, and posteriorly with the periosteum upon the sides of the coccyx. These united muscles sink deeply between the point of the coccyx and anus, and form a horizontal foundation for the pelvis, at the same time embracing the anal portion of the rectum posteriorly and laterally. By a simultaneous contraction of the levatores ani and glutei, the rectum should be laterally compressed and lifted upwards and forwards, the anterior and posterior walls also meeting. Such conjoint effects of the glutei and the levatores should be thus equal to the action of the sphincter ani and fully replace it. For the topographical anatomy, which is important in this matter, Toldt's anatomical figures 887, 888, 889, 890, 891 and Waldeyer's monograph *Das Becken* are very useful. I had no opportunity, however, to see these plates until some time after the operation. Additionally there is considerable help in the accompanying diagrams, for which I am indebted to Herr Prosektor Ramstroem and Herr F. Lundberg.

Operation.—On September 28th an incision over the sacrum and coccyx was made as described, and both glutei maximi separated from the sacrum, coccyx, and greater sciatic ligaments. Above the ligaments each muscle was divided by an incision 3 to 4 cm. long, extending from the sacrum in the direction of the muscle fibres. The scar tissue around the posterior half of the rectum was freed, together with the "raphe partis analis" from the point of coccyx, and the border between the levator ani



Fig. 3.—The innervation of M. sphincter ani, levator ani, and coccygeus.

and coccygeus muscles defined. These muscles were stretched and divided almost to the entire breadth of the pelvis, avoiding, however, any injury to the "arcus tendineus" and the nerves supplying them. It was impossible to separate the levator ani from the coccygeus without transversely dividing the inner layer of the pelvic fascia, which covers the upper surface of these muscles. The levatores ani were then brought forward to the rectum and anus and stitched there in the middle line with four No. 3 catgut sutures. The space between the rectum, anus, and coccygeus posteriorly was obliterated by bringing the gluteus maximus down to the anus. The glutei were united by coarse catgut sutures together, and each also to the levatores ani (where these muscles were newly attached behind the rectum) and to the periosteum of the coccyx. The glutei permitted themselves to be so stretched as to entirely cover the sciatic ligaments and the sacrum. Two drainage tubes were inserted, one on each side on the pelvic side of the glutei, and brought out through the upper part of the wound. The whole wound was closed with deep silkworm gut sutures. The anus had been sutured together during the operation. Afterwards a rubber tube covered with iodoform gauze was inserted into the rectum and the parts covered with dermatol ointment and sterilised gauze.



Fig. 4.—The innervation of M. glutei maximus.

September 29th. The drainage tubes were removed. Temperature afebrile.

October 2nd. Patient feels ill from the narcosis. In spite of opium and tannalbin, thin fæces passed out by the side of the tube and soiled the linen. The skin was also discoloured over the coccyx, so the sutures were removed from this part of the wound.

October 2nd. The rectal tube was removed and 150 c.cm. of oil injected into the rectum. Patient at once felt a "bearing down," but could retain the oil, which passed away the next morning, when the bowels were moved after pulv. glycyrrh. co.

October 7th. Patient seemed well after the effects of the narcosis had passed off, but had a restless night and little sleep. Slight rigors to-day. Temperature 38.2° C. The wound over the sacrum and coccyx, which was completely healed, had to be opened. Under the skin was found a chocolate coloured stinking collection of pus. There was no suppuration in the deeper parts. Patient has generally lain upon his back, and this probably contributed to the pus formation, partly by pressing the skin wound against the sacrum, partly by constant moving of the neighbouring skin against the bone. Temperature 38.3° C.

October 9th. Temperature 37° C. evening; since then afebrile.

October 17th. Under treatment with "itrol" powder and glycerine tampons, and later with "airol" and glycerine tampons, the part quickly cleansed itself. To practise the new anal muscles, injections of 100 c.cm. of water were given three times a day which the patient was directed to retain as long as possible, and the bowels were regulated by mild laxatives and water enemata.

October 24th. Patient is able to walk about immediately after he has had his injections of water, and is able to retain the latter. Electric treatment was commenced, one electrode over the lower portion of the gluteus maximus, the other inserted into rectum.

November 3rd. Daily movements of the bowels occur without injections. During the last few days patient has paid several [illegible] despite attacks of flatulence has been able to [illegible] *per anum*. If during the electric treatment a finger is [illegible] rectum, muscular contractions were plainly felt. The water injections were increased to 200 c.cm.

November 2[illegible]th. For three weeks patient has been [illegible] day, and made visits to the town. [illegible] There is perfect control [illegible] attacks. The wound is almost [illegible]

December 18th. Immediately [illegible] to travel into the country for [illegible] taking food unsuited to his sensitive [illegible] liquid fæces passed *per anum* without his knowledge. Otherwise he has [illegible] continence, has performed his usual duties, and mixed with his

comrades and society, and the sensibility in the anal region is diminished, but the patient can certainly retain his fæces and flatus when conscious of their presence. This area obtains its nerve supply from the nervi pudendi interni through the inferior or hæmorrhoidal nerves; most probably, therefore, these nerves share the fate of the other tissues during the phlegmonous inflammation. Defæcation is now quite normal.

February 7th, 1899. A further examination of the anal skin area demonstrated that sensibility to needle pricks is diminished in the parts over the ischio-rectal fossæ. Behind the anus and in the mucous membrane lining the posterior border it is absent. In the anterior half it is normal, but at the lateral borders of the anal ring it is decreased. The motions have been loose since December 18th, at best only thick as porridge. Involuntary evacuation has not occurred, even after diarrhœa, although the fæces have been thin as water. After morning defæcation he fills the anal gap with cotton wool. If this is removed an hour later there is a brown streakiness upon it, but upon its replacement by another piece the wool does not become soiled. Such streaking may depend upon a small amount of fæces remaining at the anus after defæcation. I therefore advised him to wash the anus after each motion. Probably the condition is not uncommon in healthy persons. He can retain flatus so long as he retains one position (he may be sitting or standing or lying down), but in changing position quickly or mounting staircases he has less control.

March 26th. Patient writes that the cold washings have been of benefit. After such application each morning the cotton wool remained quite clean. When in the country he frequently had diarrhœa from the unsuitable dietary there provided. A severe chill in connection with cough had sometimes caused slight ejections of flatus and fæces, but "so soon as the attacks of cough and sneezings had ceased he again controlled his functions."

May 11th, 1899. Patient says his condition is much improved. When he feels the necessity for evacuation in the morning, he can without difficulty first dress and breakfast before obeying Nature's calls, in spite of the fact that the fæces are always "thin." On examination with the finger, the medial part of the gluteus maximus was felt to contract strongly on both sides of the anus. It is therefore probable that the better result may be expected the more the glutei become attached anteriorly.

In a letter of July 11th, 1900, patient says he has learnt to cycle; and on one occasion of very severe diarrhœa with thin fæces he managed to avoid soiling his underclothing. He concludes: "My sphincter is such as I could best wish it. I have sometimes to take unsuitable food, but I am so strong now in the art of retaining fæces that I can postpone my visit to the watercloset for as many hours as I wish."

The operation has led to an almost normal continentia ani where the sphincter ani and posterior rectal wall had been destroyed by inflammation below the pelvic diaphragm. One may expect similar results to follow such procedure in extirpation of the rectum for carcinoma, if there has been no important injury to the levator ani.

CASE II.—A philosophy student, aged 35, was admitted to hospital on October 28th, 1899. During the winter of 1893 I removed the prostate, both seminal vesicles, the left vas deferens, testis, and epididymis, which were all affected with tuberculosis. The posterior portion of the urethra around the colliculus seminalis was also involved, and 3 cm. taken away. A transverse incision anterior to the anus, combined with a para-rectal cut to left of the anus was employed. In August, 1894, patient was well, the urethral fistula had healed, but he had slight incontinence for flatus. He lived some distance away in the country, so saw his local doctor with a view to relief. The old scar was then opened and the sphincter ani narrowed by sutures. Apparently, however, the incision was too close to the urethra and rectum, for after the operation a urethro-rectal fistula appeared, through which about one third of the twenty-four hours' urine passed. The incontinence for flatus increased, and when the fæces were soft they escaped involuntarily upon any sudden movement. Through these several lesions, he could only pass urine by sitting over the watercloset or a vessel, and had to isolate himself from all society.

On inspection of the anus it was found not to consist of the usual median aperture surrounded by radial folds, but to form a circle to the left of the middle line, through which one could see the ruddy rectal mucous membrane. The sphincter contraction was very weak. A little leftward displacement of the anus could be felt. It was on the left side that the nerves were cut in the para-rectal incision.

Operation.—On November 3rd an incision was made anterior to anus, and extended backwards in the old scar on the left side of anus. It was very troublesome to free the anal part of the rectum from the perineum, which consisted of one whole mass of scar tissue. Ultimately one came to the fistular channel between rectum and urethra. Each opening in these organs admitted the forefinger, so that the greater portion of the prostatic portion of the urethra was completely destroyed. In order to close the opening in the rectum it was necessary to divide the whole anal portion up to the fistula. The rectum was afterwards stitched together with No. 3 catgut sutures, which were tied on the outer side of the rectum, and two silkworm gut sutures tied on its inner surface. The rectal fistula had opened into the urethra about the level of the colliculus seminalis. The front of the rectum was tamponned with iodoform gauze. At an earlier stage the bladder was incised (sectio alta), and a Pezzer's catheter inserted to draw off urine from the perineum.

November 13th. Under cocaine, the sphincter ani was divided posteriorly to enable the anterior wound to heal more surely.

December 8th. Patient's general condition good. Urine normal, and none passed *per rectum* since November 3rd. The perineal wound was healed, and the fistula after sectio alta wound was closed.

Operation.—December 9th. On the anterior rectal wall over the old fistular opening there was a small granulation around which the mucous membrane appeared to penetrate into the pre-rectal sheath. Through the granulation an ordinary large bulbous sound could be passed *per urethram*, so that the mucous passage between the rectum and urethra was reforming. This mucosa was destroyed by the thermo-cautery, and a No. 16 *coudée* sound catheter passed into the bladder and fixed to the glans. A sphincter from levator ani and 1 glutei maximi was next made. Through previous operations, the greater part of the left levator ani and the pars pubica of the right levator ani had been injured. One could, therefore, not expect to produce the same result as in Case 1. Freeing of the posterior fibres of the levator ani from the coccyx and coccygeus made it, however, possible to bring forward the posterior rectal wall, and so obtain better position for the transplanted portions of the glutei maximi.

December 10th. The catheter was connected with Cathcart's aspirator, to ensure better drainage of the bladder.

December 11th. Drainage tubes removed.

December 12th. Patient's general condition good. Urine normal.

December 15th. After sensations of urination during the night, some urine passed at the side of the catheter and throught the rectum. The catheter was removed and found blocked; unfortunately, it could not again be introduced. Patient can now retain both flatus and fæces. An oil injection was to-day retained for several hours.

December 17th. Since the operation the temperature has been febrile and to-day reached 30.20 C. (rectum), During the last 48 hours patient has felt ill and had rigors. The outer wound is healed, but on examination of the rectum its posterior wall is very tender and bulging and pus formation in the pelvis above the newly-fixed portion of the glutei maximi is indicated. All urine passes now *per rectum*. The muscles closing the bladder (in this case the muscles around the collum vesicæ act normally, the urine being passed voluntarily every three hours but *per rectum*.

Operation.—December 18th. The scar after the sectio alta was opened. Bladder wall was everywhere normal. A Pezzer's catheter was passed into the bladder. The incision was well healed. On freeing the right gluteus from the coccyx a thick pus flowed out, and one entered a large pus cavity which extended upwards into the true pelvis between the rectum and sacrum. It was drained with tubes and glycerine dipped gauze.

January 23rd, 1900. Temperature fell to normal after the operation on December 18th, 1900. The urethro-rectal fistula was still open, and immediately Pezzer's catheter is at all blocked the urine passes *per rectum*. Yesterday oil or water injections of 1 to 200 c.cm. were commenced, in order to exercise the new anal-closing muscles. At the first attempt the patient could retain 200 c.cm. for 10 minutes, but after this the liquid emerged *per anum*.

February 6th. Lately, patient has held the injection for an hour. A small portion has, however, passed into the bladder and appeared in the sectio alta wound.

February 13th. A secondary suture of the December 18th wound was made. By May 18th all the operation wounds were healed. The urethro-rectal fistula seemed closed, as all the urine had passed *per urethram* for the last weeks. There is a distinct sensation of defæcation. The introduced finger feels a contraction around the rectal wall acting both laterally and posteriorly. Lately, the faradic current has been applied—one pole in the rectum, the other over the glutei—and contractions are always elicited by moderately strong stimulations.

May 18th. He writes about his condition during the last two weeks (during which time he has gone about as he pleased): "I can retain an injection of 200 c.cm. when walking about, and hold my fæces during diarrhœa. In attacks of flatulence I can control the flatus when walking or sitting (less if lying down), and even if distension increases, the wind only escapes in little puffs." In a letter dated June 25th, he writes: "The urethro-rectal fistula dribbles a little, but so far as concerns the anal incontinence, I am much improved. I can hold wind in the sitting position, and almost restrain it when walking. With care I can take part in meals and join in sociable duties." I replied, asking him to measure the quantity of urine that passed each time *per rectum*. About this he writes on July 11th: "The fistular leakage is not large; only 15 to 20 drops pass out into the rectum on each occasion. The urine does not smell badly. My bladder is much improved, and I do not urinate during the night."

I trust his condition will be much improved when the glutei have learnt to respond reflexly to the hints from the rectal and anal mucous membrane.

This case does not give support to the possibility of replacing the function of the sphincter by the combined action of the levatores and glutei, because first, the right side of the sphincter was capable of contraction; secondly, the frontal portion (pars pubica) of both levatores ani, and the lateral portion of the left levatores ani had twice or thrice (1893, 1896, 1899) been incised and healed over. Hence it is most probable that the greater portion of the levatores ani was useless for contraction. As I already have said, we have most to trust to the glutei maximi. A difficult complication in this case was and is the urethro-rectal fistula.

CASE III.—John L., farm labourer, aged 65, admitted to hospital March 19th, 1900, discharged May 16th, 1900. Patient is a tottering old man, who on September 9th, 1898, underwent an operation for carcinoma recti by my friend, Dr. P. Soderbaum of Falun, who now sent him to me for a plastic operation. I learnt from a letter he brought with him, that he had had a malignant rectal ulceration, which commenced 3½ cm. above the anal fold and extended 7 cm. upwards in the rectum. Dr. Soderbaum had extirpated the rectum after Gussenbauer's method, and removed about 14 cm. of rectum, including the anal portion and the sphincter ani. He was discharged from hospital two months after, but the wound was not quite healed until January, 1900. On his return home, he had mostly to stay in bed. He was unable to control his fæces and also had lost the power of expulsion.

March 21st: Patient is delicate, but has no metastatic indications. There is arterio-sclerosis in peripheral vessels and heart. No albumen nor sugar in urine, but a few hyaline and granular casts and renal epithelium. He has a large right scrotal hernia. There is a constant desire to defæcate. When the bandage covering the anus is removed, it is invariably soiled, although the fæces are of normal consistence. A rectal

stricture can be felt about 5 cm. upwards from the anus. There is a skin scar extending upwards in the middle line 7 cm. from the anus, and transversely at its upper end another scar of about 10 cm. long which passes horizontally. Examination of the blood showed 4,420,000 red blood corpuscles, 8,800 white corpuscles, and the hæmoglobin 52 per cent. (Fleischl.)

March 28th.—*Operation.*—The skin incision was as in case 1 and 2. The rectum was firmly fixed to the coccyx and right sciatic ligament by fibrous tissue, and it could only be imperfectly separated from the coccyx, because the muscular coat of the rectum was exposed and injured and its mucosa in danger. The muscular coats were united by catgut sutures. The plastic sphincter was made by use of the glutei as in Cases 1 and 11. The drainage was, however, different. A small ½-inch diameter tube was inserted on the pelvic surface of each gluteus, and two narrower tubes left in between the muscles and the skin; both of these passed the whole length of the wound, and ended therefore freely through the skin, in the upper transverse and the lower horseshoe incision around anus. April 3rd.—The anterior superficial drainage tubes, which had been daily shortened, were now removed. April 7th.—The deep drainage tubes were removed. April 20th.—Operation wound is completely healed. May 14th to 16th.—Patient has been up two weeks and had electric (faradic) treatment. One pole in the rectum, the other over the glutei maximi. If a finger is introduced with the electrode, contractions of the muscles are felt laterally and posteriorly. Patient can himself contract the glutei maximi, but it is much weaker to the finger than the electrically-induced response. Injections of water have also been used for exercise of the anal muscles. Patient has retained 125 c.cm. water for about 15 minutes; during such time he has walked about. He can now control flatus and fæces, but cannot retain flatus if the pressure is sudden; both are better retained when walking or sitting than when lying down. Probably in the latter position the old, delicate man takes less care or notice of his functions. The opposite results were, however, to be expected, as in walking at each step one of the glutei must be slackened. Ideally, of course, the removed parts of the glutei should always be contracted upon the rectum, compressing it laterally and lifting it forward, whilst the untouched fibres should contract and relax according to the demands of walking, etc. When the patient changes position, for example, gets out of bed, flatus or injected water is passed involuntarily. If the anal parts are cleansed after the morning evacuation, and covered with sterilised cotton wool, the dressing has been several times unsoiled the next morning. On palpation of rectum, the bowel is felt to go backward 4 cm. at an angle of 45° from horizontal, then upwards where a narrowing is felt, above which the bowel enlarges like a funnel. Patient still experiences an almost constant desire for evacuation, although he rarely has more than one motion per day. He is not sure that defæcation has occurred unless he sees the fæces. Soon after the operation he thought he could expel his fæces better than before, but this probably depended upon the fact that solid fæces after the operation did not escape involuntarily, but needed expulsive efforts, therefore attracting more attention.

The weakness in abdominal pressure probably depends upon the inguinal hernia, but might be caused by the stricture and the rectangular curve of the bowel. The desire for defæcation and the non-appreciation during the act are perhaps due to the loss of rectal mucous membrane and the impaired sensibility of the upper rectal mucosa, which was brought down to the anal opening during the operation Additionally, the stricture and rectangular curve (*vide supra*) may also contribute. Similar conditions may be observed in cases of resectio recti with suture of the bowel, and Hochenegg[2] explains the accompanying discomfort of an impaired sensation and inability to judge when the rectum is empty, and of the fæces really passing away in small quantities, as due to the fact that the rectum normally expands in ampulla-like fashion immediately above the sphincter ani; but in resected patients this ampulla occurs first above the more or less protruding scar. In my patient the rectal enlargement commences 5 cm. above the anus. The sensibility of the rectal mucous membrane was tested, and he could only distinguish the head from the point of the needle in one quadrant of the mucosa. The sensibility to touch was therefore impaired, but probably the rectal mucosa has the function of appreciating distension rather than touch. I discussed this with Dr. Thunberg, of the Physiological Laboratory, and he suggested that the matter might be investigated by filling cylindrical rubber balloons with water. This, however we were unable to do, because the patient longed for home, and although I wished to retain him for several weeks in order to exercise his new anal muscles I had to allow him to be discharged. I therefore asked Dr. Soderbaum, who resides in the same district as the patient, to visit him. This he did on June 26th.

Patient, who was very poor, was in better health than during his stay in hospital. The anal parts were fairly clean; there were only a few dried fæcal streaks. When a cylindrical instrument made of rubber and a glass tube was introduced into the rectum, it did not produce any bearing-down sensations. These occurred, however, when 35.50 c.cm. of water 37° C. was injected through the glass tube. The feelings disappeared when the water was withdrawn. If the injection was made rapidly, the bearings-down appeared more quickly than after slow injections. The cylinder was next filled with 40 c.cm. of water and should then have had a length of 10 cm. and a width of 10 cm. Its upper end, however, reached 15 cm. above the anus, that is to say, the whole of the cylinder was above the narrowed portion. In mentioning these primitive trials upon the rectal mucosa, I only do so in order to point out that some investigation in this matter would be of great interest and materially assist any operation for incontinentia ani. It is possible that the rectal sensibility can respond to the chemical changes in diarrhœic fæces. Concerning the anal functions, the patient stated that when the fæces are of normal consistency, he does not feel the need for defæcation more than once in 24 hours; he can then retain the fæces for five minutes, but not longer. When the fæces are thin and loose he does not feel any need for defæcation, and only knows of it when the fæces pass, and then at first he can try to retain them.

After experience with this patient I think it would be well to bring down the rectum as far forward in the perineum as possible, so as to obtain room for transplantation of a large muscle mass from both glutei. There is the question in these cases if it is not best to remove the coccyx, so as in its place to make room for an elastic muscular wall capable of contraction. If the patients are not too weakly, the sphincter operation and rectal operation may be done at the same time. It is best to drain the whole area thoroughly with tubes, as I did in Case III.

As it is necessary in this operation to be thoroughly acquainted with the innervation of the musculature of the part, I have asked my friend Prosector Ramstroem to report upon this. We have been unable to find in any anatomical handbook or atlas sufficient details, etc., as regards the surgical aspect of the nerves to the glutei maximi, so Ramstroem made an anatomical preparation, which admirably demonstrates the ramifications of the nerves in the muscle (Fig. 4).

SOME REMARKS UPON THE INNERVATION OF THE MUSCLES WHICH ARE CONCERNED IN THE PLASTIC OPERATION FOR SPHINCTER ANI.

By Martin Ramstroem.

In Fig. 4 is shown the innervation of the gluteus maximus, and especially how its median part and coccygeal portion obtains its nerves. This figure is drawn from a preparation which was thus made: After the muscle had been cleansed on its surface, the upper and lateral edges were loosened and turned inwards over the firmly-fixed median and lower border; the inferior gluteus nerve was next dissected out, and its branches were carefully followed to their ramifications on the deep edge of the muscle. These parts were marked by needles, the muscle returned to its position, and then transversely divided so as to demonstrate the area supplied by each branch. The coccygeal fibres were not cut, but separated from the other parts of the muscles and diverted inwards over the medial edge. One sees now how the nerves of the ileo-sacral portion (1) radiate from the lower edge of the pyriformis, superiorly and laterally; (2) how the nerves to the part arising from the upper three-fourths of the sciatic ligament run laterally and inferiorly and meet their muscle fibres at and below the tuber ischii; (3) and how the coccygeal nerves form a branch which courses downwards just laterally to the tuber ischii, and send out successively median branches which in upward concave arches pass inwards to the area they supply. The first of such arches occurs at the lower edge of the sacro-sciatic ligament. It runs over that part of the ligament (lower fourth) which the origin of the sacro-tubal portion of the muscle leaves free, and branches in the upper lateral fibres of the coccygeal portion. During this part of its course it lies beneath the deep surface of the muscle. Immediately below the tuber ischii a second branch or arch arises which supplies the middle part of the coccygeal fibres, and more inferiorly, a third arch whose branches innervate the median lower part. These last named are followed by several branches of N. cut. glut. inf., which penetrate the lower part of the muscle.

The nerve supply of M. coccygei and M. levator ani appears in Fig. 3, drawn partly by aid of Fig. 84 in Waldeyer's *Das Becken*, Bonn, 1899.

The principal nerves to these muscles arise from the fourth sacral and form sometimes one main branch, sometimes, as here, two main branches, of which the median one quickly enters the M. coccygeus on its upper or pelvic surface, the lateral branch being continued forward on the levator ani, also entering its superior and internal surface.

The same figure (Fig. 4) shows also how the inf. hæmorrhoid. nerves supply the external sphincter (from N. pudend. comm. s. int.). The divided branches from the same nerves pass to

the skin of the anus and surrounding parts. Below the pyriformis a part of the N. gluteus is visible.

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PROSTATECTOMY IN TWO STAGES,

WITH AN ACCOUNT OF SEVEN CASES.

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TWELVE years have now elapsed since McGill brought his first case of prostatectomy before the British Medical Association, but the operation has not attained to that popularity for which at one time it seemed destined. Two causes have co operated to prevent its general acceptance: the immediate mortality of the operation is considerable, and the final results, so far as the power of voluntary micturition is concerned, are, in some cases, unsatisfactory. Treves, quoting Belfield's statistics, gives the mortality of perineal prostatectomy as 9 per cent., that of suprapubic as 16 per cent. The after-history of some of these cases is admittedly imperfect, so that in all probability the mortality is in reality higher than the statistics indicate.

In estimating the cause of the percentage of failures it is interesting to note that by the perineal route there were 7 failures and 17 successes, by the suprapubic 12 failures and 29 successes. When the combined method was employed there were 3 successes and no failures. The number of cases in which the combined operation was employed is too small for purposes of comparison, but it is very significant that all those who recovered from the operation were able to micturate naturally.

A very considerable experience of prostatectomy has led me to come to the conclusion that it is quite impossible in all cases to determine how much of the enlarged prostate needs removal unless the combined operation be employed. The sketches of enlarged prostates which are here appended will, I think, make it abundantly clear that the extent and direction of the enlargement varies in almost every case. No two are exactly alike. They are selected from some that I have made when opportunity offered, either from museum specimens or on the *post-mortem* table, to illustrate the various directions in which enlargement takes place. Hitherto the objection to the combined operation has been its mortality. It must be borne in mind that those patients in whom prostatectomy is called for are advanced in years, and usually much exhausted by vesical irritability and consequent lack of sleep, and, in addition, the bladder is foul and the urine septic. Those who are suffering from prostatic disease cannot be young, but it is possible to eliminate many of the sources of danger which attend an operation, and yet obtain the advantages which the combined operation affords.

In Nicoll's operation[1] a suprapubic cystotomy is first performed, and the bladder fastened to the edges of the skin, and cleansed. The patient is then placed in lithotomy position, and an instrument introduced into the urethra. An incision somewhat on the lines of Dittel's is carried down between the urethra and the rectum, and the prostate is pushed down by an assistant, and shelled out through the perineal incision. If there is any considerable growth of the prostate in the direction of the bladder, Nicoll advises that it should be removed by the suprapubic route some few days later. Simple as such a description is on paper, it is by no means so when undertaken upon a patient who has been suffering for months and is weakened by disease.

With a view of limiting the severity of the operation the following plan has been adopted, and its success has far exceeded my expectations. The operation is performed in two stages. On the first occasion the patient is prepared by shaving the pubes and purifying the skin of the abdomen as if for an ordinary suprapubic cystotomy. Great care should be bestowed on the purification of such patients. They have many of them suffered from incontinence for a considerable period, and have been obliged to wear portable urinals, and the skin is often sore and eczematous from the irritation of the decomposing urine.

A staff is introduced into the bladder, and it is opened by the usual incision above the pubes. A couple of stitches are passed through the bladder wall, one on either side, and the finger is introduced into the interior of the bladder in order to ascertain its exact condition. In some instances an electric light may be employed with advantage in order to light up its recesses, or a reflector may be employed to throw the light into the interior of the bladder. The fewer foreign bodies that are introduced the better, but the exact conditions that require to be dealt with must be fully determined. Such cases are sometimes complicated by stone, and sacculi may be present as well.

The exact relationship of the prostate to the neck and floor of the bladder can be easily determined, and the extent to which the prostatic urethra has been encroached on. Unless there is an obviously pedunculated third lobe extending up into the bladder, which is capable of easy removal, a suprapubic tube should be introduced and the patient returned to bed. The first part of the operative procedure is ended in far less time than it has taken to describe it, and the surgeon has ascertained the exact condition of his patient's prostate.

After a few days' rest in bed, coupled with free drainage, the patient's condition rapidly improves, and in a week or ten days he is ready for the second part of the operation. It is impossible to lay down an absolute rule as to how much time should elapse between the two parts of the operation. This must depend on the age and general condition of the patient. So long as he continues to improve in his local condition and regain his lost strength, everything is to be gained by waiting. If possible the urine should be quite sweet, clear, and acid before the second part of the operation is undertaken. A good-sized tube must be retained in the suprapubic opening between the two stages so as to prevent too much contraction of the opening, which should easily admit the surgeon's first finger at the time of the second operation.

After the anæsthetic has been administered the patient is placed in the position of lateral lithotomy and a grooved staff is introduced into the bladder. An incision is made in the perineum as for lateral lithotomy until the prostate is reached. The index finger of the left hand is then introduced into the suprapubic opening and the prostate pushed down towards the perineum. As a rule this is not a difficult procedure, as the prostate is of course considerably enlarged. Each lobe can be shelled out separately, if necessary piecemeal, with the right hand, and the middle lobe can be easily pushed down as well when the lateral masses are removed.

Occasionally a Volkmann's spoon or periosteum elevator may be needed to separate it from its surroundings. It is not necessary to open the urethra in the perineum, but by doing so the operation is considerably facilitated, as the patency of this tube can be readily determined with both hands, and there is no chance of accidentally tearing through its mucous membrane during the process of extraction of the prostate; moreover, good subsequent drainage is essential and is by this opening readily obtained.

The duration, extent, and difficulty of this stage of the operation depend entirely on the kind of prostatic growth which the surgeon has to deal with. It may shell out easily in a few minutes, or it may demand a considerable time longer for its complete removal; but there is no doubt that it can be removed effectively by this method, and that with proper care there is but little danger of injuring or removing adjacent parts. An exception to this latter statement must, no doubt, be made so far as the vesiculæ seminales and possibly the vasa deferentia are concerned. If the prostatic overgrowth is intimately mixed up with and involves these structures, parts of them are sure to be removed with the prostatic tissue.

If subsequent atrophy of the testicles should take place (though I have never seen it occur), this is but of minor importance in the case of an old man who is in all probability already impotent, and who if the operation had not been performed, must have gradually succumbed to the effects of prostatic obstruction.

My own experience would lead me to believe that the vasa deferentia can be easily located by the fingers and preserved intact, but that outlying parts of the vesiculæ seminales are certain to be removed, but there is no reason why this should interfere with their function, though it undoubtedly diminishes the size of the reservoir.

In all the cases in which I have employed this method, the hæmorrhage has been insignificant, a state of affairs no doubt



Vertical sections of enlarged prostates. A series of sections taken immediately after death, illustrating some of the different forms which prostatic enlargement may assume.

largely to be attributed to the subsidence of the congestion around the prostate and base of the bladder which occurs in between the two operations. It is remarkable how much harder and smaller the prostate feels on its bladder aspect at the second operation than it does at the first, and its removal is certainly easier and less attended with danger to surrounding parts when the congestion has subsided.

The after-treatment consists in introducing a tube into the bladder through the perineal wound, and lightly packing it with gauze, which is usually allowed to remain *in situ* for about forty-eight hours. At the end of this time the gauze is removed, and a small piece only reinserted so as to ensure the wound healing from the bottom. The perineal tube is usually retained for some days, as it facilitates the flow of urine and ensures the more rapid healing of the suprapubic wound.

Cases.

Seven cases in all have been submitted to this plan of treatment, and all have recovered. Only one of them gave the slightest cause for anxiety.

Case I.—The first case was under my care several years back in St. Bartholomew's Hospital; the patient, who was an old man, aged 67, was admitted with prostatic retention, and though treated in the usual way by washing out did not improve. I was summoned to see him in consequence of a severe attack of hæmaturia. His bladder was almost full of clots, which could not be satisfactorily washed out. His prostate was large, and an instrument was difficult to introduce. He was obviously too weak to attempt prostatectomy by the combined method, and as far as one could ascertain from examination before opening the bladder, it was unlikely that suprapubic prostatectomy could be satisfactorily performed. I determined, therefore, to make the attempt to operate in the manner above described, and proceeded to perform the suprapubic operation as a preliminary. To my surprise, when the bladder was opened and the clots evacuated, two stones lay in a pouch behind the prostate, and a pedunculated middle lobe was present which was easily removed. After a somewhat prolonged but uneventful recovery, he left the hospital about six weeks later, able to pass most of his water unaided, and three months later could dispense with the catheter altogether. The second part of the operation had, after exploration of the bladder, proved to be unnecessary.

Case II.—About a year later a second case came under my care in hospital, in which the introduction of a catheter was a matter of considerable difficulty, and the patient was much exhausted by cystitis coupled with frequency of micturition. A suprapubic operation was performed in the usual manner, and a tube inserted. At the end of [illegible] days the patient's temperature had dropped to normal, and the [illegible] perfectly sweet. He was placed again under an anæsthetic and a [illegible] inced into the bladder *per urethram*. An incision was made [illegible] cum as if for lateral lithotomy, and as soon as the pr[illegible] the left index finger was introduced into the bladder [illegible] easily pushed down. It was enucleated without much trou[illegible] secting forceps being used to detach some of the deeper parts. No incision was made into the urethra. The cavity was packed with gauze. For several days all went well, but on the sixth day after operation the upper wound did not appear to drain well, and the [illegible] to be foul. A staff was introduced into the bladder [illegible] into the prostatic urethra, with a view of [illegible] through the lower opening. The desired effect was produced, and the patient was washed through from the suprapubic opening daily for a few days. Five weeks after the first part of the operation the patient was able to get up, but a few drops of urine passed by the suprapubic wound for several weeks. It eventually closed, and the patient four months later passed his water naturally.

CASE III, sent to me by Dr. Beauchamp of South Kensington in October, 1898, was a man aged 61, who had been troubled with his prostate for some time. It was not very large when examined by rectum, but great irritability existed, and prostatectomy was decided on. When the suprapubic opening was made, and the finger introduced into the interior of the bladder, a large growth about the size of a pigeon's egg was found extending into the interior of the bladder and raising its floor, and I had some misgivings as to the advisability of removing it by the perineal route. Finally it was decided to adhere to the original intention, and eight days later the perineal incision was made and the urethra opened. The prostate was enucleated without any difficulty, and recovery was uninterrupted. Three months later he could pass the whole of his water naturally.

CASE IV was sent to me by Mr. Oakley of Hornchurch in January, 1900, and was in some respects similar to the last. Where the bladder was opened above the pubes the mucous membrane felt soft and thickened, and a large mass of prostate projected into and raised up the floor of the bladder. The mucous membrane bled very easily when the finger was introduced for the purpose of exploring the interior of the bladder cavity. A suprapubic tube was inserted in the usual manner. Twelve days after the first operation the patient was again anæsthetised, and an incision made into the perineum through which the prostate was extracted without difficulty. The change in the consistency of the interior of the bladder which had taken place since the first operation was very remarkable. The prostatic projection felt harder and firmer, and the mucous membrane showed little or no tendency to bleed. A good recovery resulted, and in May of the present year he was able to pass all his water unaided, but he is obliged to void it a little more often than natural.

CASE V.—I saw this patient with Dr. Hinde (Sawbridgeworth) in February of the present year. He was 72 years of age and somewhat feeble. He had suffered from hæmaturia off and on for some eight months, and there was some doubt as to whether the bladder might not be the seat of malignant disease. As the prostate was considerably enlarged it was decided to perform a suprapubic cystotomy, and remove the prostate later if it appeared desirable. No epithelioma was discovered in the interior of the bladder; but the patient did not rally well from the operation, and seemed so feeble, both in mind and body, that it was decided to postpone the second part of the operation indefinitely.

CASES VI AND VII.—Quite recently two cases have been under my care in St. Bartholomew's Hospital. Both have made an excellent recovery. It is as yet impossible to speak for certain of the powers of micturition of the last case, as he has only just left the hospital, sooner, indeed, than I could have wished, but he already passes most of his water unaided.

REMARKS.

Of the 7 cases here referred to in which this plan of treatment was decided on, it was carried through with complete success in 5. In 1 the second part of the operation was not proceeded with because complete relief was obtained by the first half. In the remaining case the second half was abandoned because the patient's condition did not appear to warrant further operative procedure. When he was last heard of he was fairly comfortable, his suprapubic wound having healed.

As to how far this operation which has just been described is generally applicable to cases of enlarged prostate, it is beyond the scope of this paper to inquire. There can be little doubt that many prostates are capable of being made to shrivel both after castration and vasectomy, but this is not the case with all.

Reginald Harrison[2] has called attention to the fact that for hard fibrous prostates neither castration nor vasectomy is likely to be of any avail. If the power of natural micturition is to be restored, some removal of prostatic tissue is demanded. For such cases at least this plan of operation is eminently suitable.

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THE OPEN OPERATION FOR TALIPES (EQUINO-VARUS).

ITS INDICATIONS AND ITS ABUSES.

By A. M. PHELPS, M.D. A.M. of New York,

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[ABSTRACT.]

IN 1878 I performed my first operation of open incision upon a relapsing case of club-foot. It was a case which had been operated upon by various surgeons and subsequently healed, and also by myself, by subcutaneous tenotomy, and the mother requested me to straighten the foot or amputate. When I proceeded with the open incision method I was astonished to find that I had corrected the deformity perfectly without cutting bone.

I read a paper before the eighth International Congress which met in Copenhagen in 1884, reporting there 36 cases operated upon by myself and other surgeons. Subsequently I published in the *Post-Graduate Medical Journal* a report of 538 cases from that clinic. Since the first operation in 1878 I have operated on 1,650 cases. In my first series of 538 I performed osteotomies in 17 cases. In the last 1,200 cases I have never resorted to osteotomy, but have amputated four times. Over 100 of them occurred in adults varying in age from 20 to 60 years. The introduction of subcutaneous tenotomy by Stromeyer in the Forties was an innovation, and one of the steps in the operative treatment of club-foot. The operation of cuneiform resection by Davy of London, and the resection of astragalus by Lund, of Manchester, marked another period in the operative treatment.

I find the mortality from bone operation amounts to from 3 to 5 per cent. Davy's operation gives a mortality of 3½ per cent., while that of Lund gives a mortality even greater. The mortality in 1,650 by open incision, 17 of which were attended with bone operations, was *nil*, and I have yet to find the history of a single case where death was recorded.

I have urged upon the profession in America the importance of performing the operation, for the following reasons: (1) There is no mortality attending it; (2) any foot at any age can be straightened; (3) the results from the operation are as good or better than from any bone operation or mechanical treatment whatever.

The important argument against bone operation is: (1) the resection of the tarsus means the shortening of the foot just in proportion to the amount of deformity; (2) the removal of any bone results in a shortening of the foot; (3) the removal of the astragalus the shortening of the entire limb from ¾ to 1½ inch, depending entirely upon the age of the patient.

In the series of 538 cases I find that the relapses amounted to 6 per cent. Those relapses were entirely due to negligence upon the part of the patient or parent.

The idea of performing tenotomy or any operation, leaving the foot in a deformed position, and afterwards straightening it by mechanical methods, has been entirely abandoned in America. The application of club-foot shoes and other mechanical devices for straightening club-foot, requiring months and years of careful work, has also been discarded. We now believe in America that these feet should be immediately attacked and placed in a super-corrected position, utilising the weight of the body to prevent relapse, and results are obtained in a few weeks.

The question arises as to the time to perform the operation. I beg to state that if every case of club-foot could be treated at birth by manipulation and fixation, not more than 1 case in 10 would require any operation. But, unfortunately, these cases come into our hands months after the child is born, and nothing short of an operation, or years of treatment by mechanical appliances, would be of any avail. Therefore we have come to this conclusion in America: if the foot remains deformed at the fourth month after birth, manual manipulation is employed for a short time, varying from a few days to a few weeks, when it should be immediately operated upon if the mechanical treatment fails. And the plan which we follow is this—in the order which I enumerate: (1) Manipulation; (2) subcutaneous tenotomy; (3) open incision; (4) linear osteotomy through the neck of the astragalus; (5) cuneiform resection from the body of the os calcis; (6) Pirogoff's amputation.

So, understanding this law which we now follow, we can readily observe that open incision stands between subcutaneous tenotomy and osteotomy. Osteotomy should never be performed as a primary operation, and should always be secondary to open incision.

The normal foot is in a plastic condition up to birth, and it is not until the fourth year that the bones of the tarsus become ossified. For this reason, the earlier the treatment of club-foot is begun the better.

This consists in subjecting the foot to such manipulation with the hand as will restore it as nearly as possible to the normal position. The next step is to apply a number of strips of adhesive plaster in such a way as to draw the foot around towards the normal position, and hold it there. If the adhesive plaster causes irritation of the skin, first apply a roller bandage, then the adhesive plaster, and finish this simple effective

dressing by another roller bandage. This is a beautiful dressing. If a more fixed dressing is deemed necessary, and plaster is not at hand, melt a paraffin candle and rub the melted paraffin into the gauze bandage, or apply a plaster-of-paris bandage, flexing the leg at the knee. The manipulation and the application of this simple dressing is continued at short intervals. If the deformity has not been overcome by the time the infant is three or four months old, it is then an imperative duty, in the vast majority of cases, to operate.

How shall the operation be done? My rule is to tenotomise, beginning with subcutaneous tenotomy of the tendo Achillis, to bring the heel down. As the parts are put on the stretch cut every part offering resistance. Where the skin is short cut it, and likewise the other tissues, and do not stay the hand until you have succeeded in putting the foot into a super-corrected position. If we stop short of this we shall produce what was formerly known as "relapsing club-foot," a condition which is solely due to not over-correcting the foot, and hence allowing the weight of the body to operate in such a manner as to cause the deformity to recur. If, however, the foot is super-corrected, the weight of the body will tend to increase the super-correction, and therefore there will be no relapses.

An inward twist of the tibia requires osteoclasis or osteotomy. How much better is such orthopædic work than the old plan of interrupted traction, a method in which the foot was subjected to traction eight or ten times every day for many years. The best orthopædic appliance ever devised is the human hand.

At the time of the publishing my first paper in 1881 on the operation of open incision in club-foot, and in a subsequent paper, read before the eighth International Congress, Copenhagen, in 1884, my observations were not extensive enough to enable me to speak with any degree of authority on the subject. My convictions as to the advisability of the method, however, were strong, and upon theoretical grounds, sustained by a limited number of cases, with results, I advised the operation. Mature experience now enables me to correct, or I might say more clearly define, many points which at that time could not be made perfectly clear. I argued then for operation. Now I desire to present a method which should govern all operative procedures in club-foot, giving to the operation its proper place in surgery.

The method which I propose to govern the management of club-foot requiring operative work is this:

1. Exclude all cases which, by manipulation or force, can immediately or in a reasonable length of time, say a few weeks, be cured; then the following rule should be followed:

2. Cut the contracted parts as they first offer resistance, cutting in the order of those parts which first contracted when the deformity was produced, beginning with the tendo Achillis. The shortened inner side of the foot with short skin indicates the operation.

The operator will then proceed, after strong manipulation or force is applied with a club-foot machine or with the hands, to subcutaneously divide first the tendo Achillis. If the skin is not short, subcutaneous tenotomy in the sole of the foot will usually suffice. If the skin is short an open incision one-fourth the distance across the foot should be made, beginning directly in front of the inner malleolus and carried down to the inner side of the astragalus. Through this incision the following tissues can be cut, if they offer strong resistance, in the order given: (*a*) Tenotomy of tibialis posticus; (*b*) division of abductor pollicis; (*c*) division of plantar fascia through the wound; (*d*) division of flexor brevis muscle; (*e*) division of long flexors; (*f*) division of deltoid ligament, all its branches; (*g*) peroneus longus; (*h*) posterior ligament.

3. Linear osteotomy through the neck of the astragalus.

4. Resection of a wedge-shaped piece of bone from the body of the os calcis, the point meeting the linear osteotomy through the neck of the astragalus. The foot will now swing to a straight position.

This method of osteotomy is a correction of my former paper, in which the cuneiform section was taken from the cuboid bone. In the management of club-foot it often becomes necessary for the operator to apply more force than can be done by the hands, not only during the time of the operation, but in the subsequent treatment of the foot as well.

In nearly all cases of varo-equinus there is a shortened condition of the ligaments posterior to the ankle-joints, and also an inward rotation of the os calcis. In such cases there is not sufficient power in the hands of the operator to overcome the ligamentous contraction. In these cases a wrench may be used.

The Operation.—Prepare the foot by scrubbing, scraping, and antisepticising with bichloride of mercury solution 1 to 1,000, the night before. Carefully see that every detail of antiseptic surgery is followed at the time of operating. Then cleanse the foot with iodoform, 1 part; sulphuric ether, 8 parts. Apply the Esmarch bandage. Keep up a constant irrigation with bichloride solution, 1 to 2,000, during the operation. After strong manipulation, either manual or instrumental, and subcutaneous tenotomy, make the open incision. Use strong force after each tissue cut. Nothing will be gained by dividing soft parts more extensively than suggested above. If the foot still resists and cannot be placed in a super-corrected position, linear osteotomy, and finally cuneiform resection, should be done. In two cases, in adults I found it necessary to remove both cuboid and scaphoid bones. Open incision in children under one year of age I have seldom found necessary. Flaps of skin can be turned into a wide gap.

The Dressings.—Sponge out the wound, then apply (1) Lister's protective, not rubbed tissue, (2) antiseptic gauze, large quantity, (3) antiseptic bandage, (4) absorbent cotton to knee, (5) over all, a plaster-of-paris bandage, holding the foot in the super-corrected position, until the plaster sets, avoid making pressure either by dressings or twisting the foot too far outward, (6) remove the Esmarch bandage, (7) sling the foot to a nearly perpendicular position for six hours or longer. Organisation of blood-clot usually occurs, but it is not essential to a good result. My last cases were dressed as indicated, but the wound was filled with chopped up fine catgut. Organisation was perfect in each case.

After Treatment.—The plaster-of paris shoe, water-glass shoe, and the hooks and plaster or adhesive plaster answer well. The hooks and plasters are well adapted to children under two years of age.

Equino-varus, after any operation or mechanical treatment, is quite likely to relapse. For months, and even years, the surgeon will need to carefully look after many of his patients. I have seen relapses following mechanical treatment which has been carried out for years, after every form of osteotomy, and more particularly excision of the astragalus. In my travels through Germany I made casts of feet which had relapsed after these osteotomies in the hands of some of the most eminent and distinguished German surgeons, and the same observations are to be made in every country. An operation only straightens the feet; when this has been accomplished, the treatment (and not until then can treatment be said to begin) is really commenced. The slight twist in the neck of the astragalus will not be found a serious obstacle in the way of cure, unless excessive, in which class of cases it should have been divided with a chisel at the time of operating.

Conclusions.

1. All feet at any age after the fourth month with shortened skin and ligaments should be operated upon by open incision.

2. Prolonged mechanical treatment covering a period of months and years in any case is wrong.

3. While I am prepared to admit that many such cases can be benefited or cured the surest and easiest plan for the patient is to operate.

4. The operation is not completed until the foot is placed in the super-corrected position, fixed upon the leg and the heel prominent so that it strikes the ground in walking before the anterior segment of the foot does. Such feet will take the weight of the body in such a direction as to turn them still further outwards and prevent relapse.

5. Club-foot shoes of every name and nature I have entirely discarded. The human hand is the best club-foot machine ever devised, and by manipulation the foot is carried to the super-corrected position and fixed there with a plaster-of-paris shoe or adhesive plaster.

6. The treatment just begins after the operation is completed.

7. Osteoclasis should be performed in all cases of inward twist of the tibia or relapse may be looked for.

8. Bone operations should never be performed primarily.

9. Open incision should supplement all cases of subcutaneous tenotomy when it fails to super-correct.

10. Short tendons and ligaments should be cut and not stretched, because prolonged stretching results in deformities of the entire tarsus.

11. A case cannot be said to be cured and free from the dangers of relapse until the heel strikes the ground first in walking.

12. A cure is effected when new facets are formed on the tarsal bones.

13. Pirogoff's amputation was required in one-fourth of 1 per cent. in my series of cases.

14. Open incision should never be performed unless the skin resists, and will not stretch sufficiently to allow of supercorrection and the proper unfolding of the foot.

15. The weight of the body falling upon any club-foot shoe or brace nullifies the action of the apparatus. This was the reason why the late Mr. Adams treated one foot at a time with his club foot shoe, putting the patient upon crutches until the foot was cured.

Mr. JACKSON CLARKE was indebted to Dr. Phelps for the trouble he had taken to explain so fully the nature of his operation; but at the same time felt that very much harm would be done to medical education, and so to society at large, if it became generally believed that cases of congenital club-foot usually or even frequently required any kind of extensive operation. By the use of the ordinary gradual methods first fully formulated by the late William Adams, perfect feet could be obtained without any operative proceeding beyond section of the tendo Achillis. Dr. Phelps's and similar operations had in Mr. Clarke's hands yielded disappointing results; and the results he had seen as obtained by other surgeons had not been more encouraging. Mr. Clarke thought that the leading principle on which congenital club foot in growing children should be treated was to direct the growth of the part as much as possible, and to operate as little as possible.

Mr. A. H. TUBBY wished to express his appreciation of Dr. Phelps's paper and to thank him for the clear description of his present method of procedure. Mr. Tubby understood from Dr. Phelps that his original method was open section of the soft structures on the inner side of the foot, but that now he had added linear section of the neck of the astragalus and removal of a wedge from the cuboid. He (Mr. Tubby) wished to say that he had a most unfavourable opinion of the open section of the soft tissues, because a large gap was left which had to be filled by cicatricial tissue, and this infallibly contracted, leading despite treatment to some return of the varus, that is, to relapsed varus of a very obstinate kind, which was entirely non-amenable to any treatment except wide bone operation, ultimately resulting in much shortening and mutilation of the foot. In fact, Dr. Phelps's open operation was like some other operations—for example, excision of the knee and hip—a most promising and seductive procedure on the table, but one of the most disappointing afterwards. It could not stand the test of time. The superadded section of bone described by Dr. Phelps might have the desired result, but he had not tried the operation, and preferred to express no opinion on it. He entirely dissented from Dr. Phelps in this particular—namely, that if at the age of 4 months the foot could not be straightened by manipulation and subcutaneous tenotomy, the open section of soft tissues should be practised. In his opinion this was a very pernicious proposition, and he protested against it, because he felt that if this operation were practised indiscriminately in infants the result would be most disastrous. One great reproach levelled at orthopædic surgery was that it was in many instances a slow procedure, and the enticement held out by these wide and open methods was that of the saving of time and trouble. Yet if the results were not so good by the rapid method there was no justification for it, and he claimed that in nearly all cases, provided that it was the first course of treatment, the slower methods were preferable to the more radical and bony operations. He hoped to be able to accept at some future time the invitation he had frequently received from the American Orthopedic Association, and he should then have the opportunity of seeing Dr. Phelps's cases.

Mr. NOBLE SMITH referred to Dr. Phelps's statement that "he would only operate by cutting through all the soft tissues in those cases which could not be satisfactorily treated by manipulations, splints, and subcutaneous tenotomy." With this view of treatment Mr. Noble Smith perfectly agreed, but as a result of his experience during the last twenty years at the City Orthopædic Hospital no cases had required Dr. Phelps's operation. Mr. Noble Smith exhibited casts of a case of severe varus. The soles of the feet were turned inwards, backwards, and even upwards. Other casts showed the gradual unfolding of these feet, until at the age of 3 the deformity was removed. From this time the patient used light, simple supports, which gave so little trouble that he wore them persistently for years afterwards without any difficulty, and without having to pay a visit to the surgeon. The feet were cured, and at the age of 15 casts were again taken (which were shown), the feet remaining perfect in shape and elasticity. This case was typical of the results obtained by manipulation, splints, subcutaneous tenotomy, and sometimes division of the internal lateral ligament. Upon the other hand, judging from cases of relapse after Dr. Phelps's operation which presented themselves at the City Orthopædic Hospital—cases which had been operated upon by eminent English surgeons—he, Mr. Noble Smith, was not in favour of the operation described by Dr. Phelps. Moreover, the cases which had been exhibited at medical societies in this country as "cures" by Dr. Phelps's operation were invariably, as far as he had seen, unsatisfactory. The elasticity of the feet was gone, and the patients walked about in a "stumpy" manner. Mr. Noble Smith was an advocate for as much reduction of the deformity as possible at the time of tenotomy, and for division of the deltoid ligament, but he was not in favour of the complete operation described by Dr. Phelps.

Mr. CHISHOLM WILLIAMS said: Regarding the vast number of cases that Dr. Phelps has come across, and on whom he has thought it necessary to operate, I would like to remark that at the City Orthopædic Hospital we do not meet with cases that are in our opinion fit cases for any open incision or bone operation. I have met several cases on which the operation has been performed by our leading surgeons at some of our largest hospitals, and I have thought what a terrible condition must have preceded the operation. The operation has been thoroughly tried, and the results over here are to a great extent unsatisfactory, and all I have seen less satisfactory than by the usual measures. The resulting scar in Dr. Phelps's operation is a constant source of danger, and I am surprised that Dr. Phelps gets linear scars; those I have seen were never linear, but some were an inch wide and deep in proportion. Dr. Phelps lays great stress on thoroughness, and seems to think that non-success is due to this cause. My experience is that these so-called relapsed club-feet have generally had excessive cutting treatment; that the best cases for treatment are those who have had no previous cuttings or manipulations.

REPLY.

Dr. PHELPS, in reply, said: Mr. Clarke states that the feet after the cutting operation are not elastic. This is positively an error, because I have not observed this result in 1,650 operations. He quotes Mr. Adams's work. We are all familiar with it, and also with the work in many of the orthopædic institutions in London, where the teaching of Mr. Adams, I am informed, is not carried out to the letter. Mr. Adams taught that the patient should be put upon crutches and one foot straightened at a time by his orthopædic apparatus, because as he stated: "The weight of the body would nullify the action of any club-foot apparatus, which is a fact." With this idea I fully agree, and not following out this plan is the reason why so many failures occur in treatment and years are required to prevent relapse by means of cumbersome braces. Any club-foot appliance which does not take its base of support at the pelvis is worthless, because it will turn round upon the leg and can exercise no considerable force upon the varus. Mr. Clarke also states that thousands of cases would be ruined by publishing these ideas. This is also an error, because any man endowed with average surgical knowledge can straighten these feet permanently and can easily keep them straight; whereas by not publishing the idea hundreds of thousands of cases would be condemned to a cripple's life by the application of braces and mechanical contrivances, the principles of which originated during the ages of surgical ignorance. I have already in my paper indicated the class of cases suitable for operative procedure, and those which should be treated by manual force and fixation, and those conclusions are arrived at after treating thousands of cases, both in private and hospital practice, during the past thirty years. In answer to Mr. Tubby, he states the operation is a bad surgical procedure. His position is identical with that of the doctor who states that the operation for appendicitis is useless and bad practice. He opposes his personal opinion, not based upon an actual personal experience, against that of our most distinguished orthopædic surgeons and surgeons in

America, notably that of the Sayers, Gibney, Bradford, and Lovett, of Boston; Sherman, of San Francisco; Wilson and De Forrest Willard, of Philadelphia; Senn, of Chicago; Bryant, Weir, and Myer, of New York; Sir William Hingston, of Montreal; nearly every surgeon of Europe; Mr. Edmund Owen, of London; and hundreds of others had I time to mention them. He says that the large gap produces a scar which will contract. The late Mr. Adams said the operation left a large scar which would stretch. This is my understanding of the action of scar tissue under pressure, verified by observation. He would not operate at the fourth month. If skin and ligament is short, and will not stretch sufficiently, an operation is imperatively demanded, and no bad results will follow. If mechanical treatment is continued for years in such cases, a hopeless deformity of the tarsus or a relapsed club-foot will be the result. I differ with him, and know that my results are better from the operation than I ever attained from any mechanical means whatever. He states that these cases are not followed and seen years afterwards to determine what the final result is. In answer to that, I present here a series of photographs out of the scores of cases which I have observed until they have grown to womanhood and manhood, which contradicts this statement absolutely. Mr. Smith states that by my rule there would be no cases to operate upon. I stated in my paper the rule for operation. I again state here that 90 per cent. of cases occurring in babies do not require operation. The other 10 per cent., which would require bracing for years, resulting in a failure in nine out of ten, require the operation. Of the 1,650 cases upon which I operated, nearly all of them have been handled in the orthopædic institutions of New York or in private practice, when they follow precisely the same kind of treatment, followed in many of the orthopædic institutions of London. Mr. Smith has a fear of non-union of tendons. Unless infection takes place, the fear is entirely unfounded. The specimen which he presents is an excellent result, after years of careful mechanical work and suffering and inconvenience upon the part of the patient. An equally good result could be obtained within two months by resorting to open incision. Mr. Williams cannot find cases to operate upon. Every case that he has treated by mechanical means for more than six months, which still has a shortened inner side of the foot, should be operated upon by an open incision, or else, sooner or later, a large percentage of such cases drift into the hands of the surgeon, who will operate with varying results, because, as a rule, he is not so well equipped to carry out the after-treatment as the orthopædic surgeon. He states that they get these relapse cases from the large hospitals. I have already stated one of the reasons why. In America, these cases which come from the large hospitals to my clinic after an open incision operation had already served their years of apprenticeship in some orthopædic hospital. He says the operation is fascinating, which is true; and if he will permit me to add that when the operation is performed as I have already described and the after-treatment judiciously followed by an orthopædic surgeon, the results are more fascinating. The orthopædic profession of every country on earth has accepted the operation as one of the surgical procedures in our speciality excepting England. By so doing they have prevented these cases from drifting to the large hospitals and falling into the hands of the general surgeon. The operation belongs to orthopædic surgery and not to general surgery. I wish to thank you for your honest criticisms and the very great courtesy which you have extended to me. I also desire to thank the President, Mr. Howard Marsh, for his very kind invitation to me to present this subject.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

GLAUCOMA FULMINANS.

On August 10th, at 4 P.M., a young powerful man came to have a straw mote removed from his eye. The eye was examined under cocaine, but nothing was found, and being relieved he went away, with instructions to come in when passing home later if uncomfortable. At 7 P.M. he reappeared, with the eye tied up, suffering acutely, saying he was certain something was in the eye, as a neighbour could distinctly see it. There was of course no foreign body in the eye, but tension and rapid exfoliation of the cornea, the fundus being obscure, and the vision of the other eye being so impaired that he had to be led from one room to the adjoining one where the ophthalmoscope lamp was. With Dr. Donovan's aid I immediately operated, and applied eserine. The vision is now normal, excepting a nebula of the cornea, the result of the exfoliation. This occurred in concentric circles, producing flakes of epithelium, evidently mistaken by the neighbour for a corn husk, a circle of ¾-inch being produced. The patient was in good health at the time, has a hazel-coloured iris and excellent vision, though hypermetropic.

Axbridge, Somerset. A. V. Lèche.

MASTOID ABSCESS IN THE ABSENCE OF MIDDLE-EAR DISEASE.

Mr. H., aged 70, states that in January, 1899, he sat in a draught at church, and soon after felt intense pain in the right ear. This, he says, he had to put up with till the end of August, although he consulted a specialist. The hearing was unaffected, and there was no discharge. I saw Mr. H. on August 30th. He complained of unendurable pain. There was a circumscribed swelling behind the right auricle without any sense of fluctuation. The next day I operated. The mastoid bone was found to be swollen and somewhat softened. I removed a disc of bone with a small trephine, and found a cavity the size of a small walnut. It contained inoffensive pus. The parts were irrigated with a solution of salufer and plugged with iodoform gauze. The wound was allowed to heal after three weeks. Recovery took place without any complication, and there has been no return of trouble during the past year.

Cases of simple abscess of the mastoid from cold are certainly far from common. It is a point of practical interest that, as in this case, we find acute disease in the mastoid that has not spread to the middle ear, so we may see cases of suppurative otitis media in which the disease has not, after many years, spread to the mastoid bone. And, generally speaking, I am for operation when I believe the hard tissues are involved. But diseases of the soft tissues of the middle ear will generally yield to hot antiseptic irrigations, if properly carried out.

Coventry. F. Faulder White.

A WELL-MARKED FAMILY PREDISPOSITION TO THE VARIOUS MANIFESTATIONS OF THE RHEUMATIC STATE.

Drs. Cheadle, Garrod, and Goodhart have recorded cases which clearly demonstrate a family predisposition to the various manifestations of the rheumatic state. The following family history will, I think, prove interesting in this relation. The father and mother of this family had not suffered from acute rheumatism; the paternal grandmother, however, had had seven attacks of this disease and ultimately died from heart disease. The following is the history of the children: (1) Male, aged 25, suffered from a first attack of acute rheumatism at the age of 15, and had a second attack six weeks after convalescence from the first. He now has mitral stenosis and regurgitation, and aortic stenosis and regurgitation. (2) Female, aged 22, has not had rheumatism. (3) Male, died at the age of 15 from acute rheumatism and heart disease; he was an epileptic. (4) Female, aged 17; a general servant. Had a first attack of acute rheumatism at the age of 15. During this attack she developed mitral regurgitation; was in bed a month, and developed chorea immediately on leaving bed. At the age of 17 she had a second attack of acute rheumatism, which was ushered in by tonsillitis. During the course of this attack she developed pericarditis, pleurisy, aortic stenosis, and regurgitation, and later subcutaneous nodules appeared over both external malleoli. (5) Female, aged 15, a school girl, had chorea every spring for three years; the fourth year she had an attack of acute rheumatism, during the course of which mitral regurgitation developed. (6) Female, aged 12, a school girl, has not had acute rheumatism, but had chorea at the age of 11, and has now mitral stenosis.

(7) Female, aged 10, school girl, had acute rheumatism and has now mitral stenosis and regurgitation. (8) Female, aged 8, has not had acute rheumatism. The only manifestation (of those given by Dr. Cheadle in the Harveian Lectures for 1888) of the rheumatic state absent in this history is erythema. I may mention that four of this family were attacked with rheumatism one after the other and were in bed at the same time. I should hesitate, however, to place this on record as an instance of the direct infection of acute rheumatism when a factor as important as I consider heredity to be comes into play. That this factor is of considerable importance is shown by the consideration that I have obtained a rheumatic family history in 62 per cent. of my 103 cases.

Liverpool. H. T. NIXON, M.D.Vict., F.R.C.S.Ed.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL HOSPITAL FOR SICK CHILDREN, EDINBURGH.

CASE OF TRACHEOTOMY IN A CHILD OF FOUR MONTHS: RECOVERY: NOTE ON DIFFICULTIES IN RE-ESTABLISHING NATURAL RESPIRATION.

(Reported by T. C. MACKENZIE, M.B., Ch.B.Edin., late House-Physician to the Hospital.)

FOR permission to publish the notes of the following case I am indebted to the kindness of Dr. Melville Dunlop, Physician to the hospital, under whose care the child was admitted.

C. S. M., female, aged 4 months, was admitted to the hospital on March 31st. The child was much exhausted and collapsed, the pulse was 160; temperature was 101.2° F.; the breathing was very rapid, irregular, and much laboured, with a rough croaking stridor and great indrawing of the lower chest wall with inspiration; the lips were blue and the alæ nasi widely dilating. There was slight congestion of the uvula, soft palate, and tonsils, but no appearance of membrane, and there was no sign of lung disease.

Two and a half hours after admission, other means having been tried, and the child's condition being, if anything, rather more serious, tracheotomy was performed. The operation was somewhat troublesome owing to the small size of the parts and great amount of subcutaneous tissue, the child being very fat and well-nourished. On opening the trachea there was an immediate change for the better. No membrane was coughed up. From a sterilised swab taken at the time of operation a culture was obtained of a slender bacillus which was not the bacillus of diphtheria; no streptococci were obtained.

For two days after the operation the child's condition was very precarious, but thanks to careful and assiduous nursing it then began to improve. On the eighth, ninth, and tenth days after the operation the tube was plugged several times both when the child was asleep and awake; on each occasion great dyspnœa almost at once resulted, and the plug had to be removed. On the eleventh day after operation the tube was removed, and the child showed no distress. A moist pad of gauze, allowing a good deal of air to pass through, was laid on the wound, which gradually healed up, and three weeks after the operation the child was discharged well and breathing normally.

REMARKS.—The case is of interest on account of the age of the patient. Though cases of successful tracheotomy in children between 1 and 2 years are not uncommon, success under 1 year appears to be rare, and, according to statistics collected by Dr. A. Hurst Watkins,[1] the percentage of recoveries in children aged 1 year and under is *nil*. Of a large number of recorded cases of successful tracheotomy in young subjects the following appear to be the earliest:

In 1830 M. Scoutteten[2] of Strasburg successfully operated on his own child, aged only 6 weeks; and in 1880 Dr. Steinmeyer[3] reported a case in a child of 9 weeks. Three cases have occurred in children between 6 and 7 months, one of them being that of Mr. Joseph Bell, who performed the operation in the Edinburgh Sick Children's Hospital. From seven months onwards cases become more frequent, and in an analysis of 1,600 cases collected by Cohen, Schüller, Birnbaum, and Martin,[4] the recovery-rate in children less than 2 years old was 20 per cent. In the *Revue de Laryngologie*, 1893, Martha draws attention to the fact that weeks, months, and even years after operation, children are unable to breathe if the tube is removed; but, as soon as the tube is replaced, the child breathes calmly again. He mentions that this may be due to the presence of fleshy granulations or polypi in the trachea or larynx, but goes on to state that if a child from whom the tube has been removed becomes frightened or begins to fret, the same symptoms appear, even though some respirations have been taken, from which one must believe that the glottis is free. These phenomena, he says, may be explained by a spasm of the glottis, which may be due to either some physical cause or a purely nervous influence. Of the former, he lays stress upon the presence of adenoids in the naso-pharynx, giving notes of two cases by Dr. Coupard in which there were no vegetations or polypi of the larynx, and nothing abnormal to explain the phenomena, except adenoid growths, which were removed in both cases, with the result that the tube was no longer required.

Dealing with the same subject, Sir Thomas Smith[5] mentions a case in which, four days after operation, the tube was removed after ascertaining that the larynx was permeable, but within a minute or two the rima glottidis seemed suddenly to close, and the child ceased to breathe until the cannula was replaced. Ten months later the child could breathe through the day with the tube closed, but as soon as she fell asleep a violent attack of dyspnœa would come on; also, though she could breathe freely with the tube closed, yet she could not bear its entire removal for more than a minute or two without suffering greatly from dyspnœa, which soon became insupportable. In explanation of these phenomena he suggests that mental agitation is sufficient to derange the normal action of the laryngeal muscles, the sudden symptoms of asphyxia being due to spasm of the muscles which close the glottis, namely the arytenoids and lateral crico-arytenoids. The withdrawal of mental influence might perhaps account for the fact of the dyspnœa coming on as soon as the child fell asleep.

The whole subject is one of great interest and considerable difficulty, and though by no means exhausting their number, nor to be taken as separately sufficient to account for the observed phenomena, the following may be put down as among the factors which hinder the establishment of natural respiration after tracheotomy in young subjects: (1) The age of the patient, and as a corollary to this; (2) the absence of properly established co-ordination; (3) the temporary disuse of the laryngeal muscles; (4) obstruction to the entrance to the larynx from below; (5) thickening and adhesion of the vocal cords; (6) thickening of the epiglottis and arytenoepiglottidean folds; (7) presence of granulations or new growths (papillomata) in the larynx; (8) presence of adenoid growths in the naso-pharynx.

REFERENCES.

1 *Edin. Clin. and Path. Journ.*, December, 1883. 2 *Medical Times and Gazette*, 1853. 3 *Ibid.*, 1880. 4 *International Journ. Med. Sciences*, vol. xciv, 1887. 5 *Med.-Chir. Trans.*, vol. xlviii.

REPORTS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.

W. WATSON CHEYNE, F.R.S., President, in the Chair.

Tuesday, October 16th, 1900.

THE PATHOGENESIS OF RHEUMATIC FEVER.

DR. F. J. POYNTON AND DR. A. PAINE read a communication upon the above subject, which was illustrated by microscopic preparations and lantern slides. This communication was based upon the original paper of the same title published in the *Lancet*, September 22nd and September 29th, 1900, and consisted of three parts. The first was an outline of the experimental results obtained in rabbits with a diplococcus isolated from cases of rheumatic fever up to the date of the completion of the original paper in June. To these results were added some new facts ascertained since that date. The second was a demonstration by a series of lantern slides of the identity of the lesions in rheumatic fever with those produced by the diplococcus in rabbits. The third consisted of a series of microscopic specimens illustrating the morbid changes that were produced by the organism in man and rabbits. Sketches and cultures were also shown with these specimens, and also one macroscopic specimen of mitral valvulitis in a rabbit. The authors laid stress upon the characteristic examples of rheumatic fever that had been chosen as the clinical basis of

the paper; not one of them presented doubtful features. They then briefly recapitulated the experimental results which had been obtained until June, and described in more detail some new facts. In one case they had isolated the organism from the throat in a case of rheumatic angina. The diplococci had been grown in pure culture, in a medium of milk and bouillon slightly acidified with lactic acid, and then transferred to blood agar. Injected by Mr. Plimmer, pathologist to St. Mary's Hospital, intravenously into a rabbit, they rapidly produced death from acute valvulitis. The organisms were then isolated from the blood and cerebro-spinal fluid, and cultivated as before. Injected into a young rabbit, they produced polyarthritis and endocarditis. The joint effusion was marked, but eventually disappeared entirely, and the animal made a complete recovery. Since June they had detected the diplococci in three more cases of rheumatic fever, and had obtained them from the bladder, after death from rheumatic pericarditis. They had also isolated them from the urine during an acute attack of pericarditis. The diplococci isolated from the urine were grown on blood-agar, and injected intravenously into a rabbit. Acute pericarditis and aortic and mitral valvulitis, with pyrexia, wasting, and arthritis, resulted in death on the twentieth day. There was no suppuration in any of the viscera. They also detailed another experimental result in which for some days definite involuntary clonic movements were noted in a rabbit. The movements had the character of a chorea, and the animal was in addition very nervous. With the chorea there was valvulitis. The microscopy of these tissues had not yet been completed. One detail they had ascertained of late which was, they believed, of some importance. In the pericardial exudate of a rabbit that had suffered from pericarditis they had found, in addition to the diplococcus which was present in scanty numbers, large solitary cocci. These they had already noticed as occurring when the diplococcus was grown upon an unsuitable medium, and they had also seen them in the human tissues. They were, they believed, an altered condition of the micro-organism, dependent either upon loss of virulence or alteration in the chemistry of the tissues in which they were located, or upon both factors. They appeared to be an evidence of subsidence of the lesion. The converse of this condition, namely, the occurrence of very numerous and minute diplococci, were found in some cases of malignant endocarditis. This, they thought, pointed to a local increase in virulence of the diplococcus. The latent energy and vitality of the solitary cocci were possibly important from the view of rheumatic relapses. Finally, they felt sure that the rheumatic fever was a disease to which there was great local resistance, hence the fugitive character of the arthritis, pericarditis, chorea, and other lesions usually met with in the disease. In several of these lesions they had seen the diplococci taken up by connective tissue and endothelial cells in great numbers.

Professor E. Crookshank remarked that various forms of streptococci had been encountered in a large number of conditions and diseases, in which they were not causal but epiphenomenal. In the present communication, however, he thought the evidence was very strong in the other direction. It was necessary to eliminate the possibility of the organism being that of rabbit septicæmia.

Dr. F. E. Batten remarked that in dogs affected with chorea the hind limbs might in advanced stages become paralysed. This was in harmony with the paralysis of the hind limbs in the rabbit recorded by the authors.

The President inquired how the cultures were made from the tonsil, and whether any similar organism had been found by the authors in osteo-arthritis.

Mr. S. G. Shattock asked how the authors had determined that the organism from the tonsil was not a pneumococcus.

Dr. Paine stated that every precaution had been taken to exclude contamination in the rabbit inoculations. The organism from the tonsil was obtained with the loop from the mucus over the tonsil.

Pulmonary Valvulitis with Stenosis.

Dr. T. Churton exhibited the heart of a girl who had rheumatic fever when 5 years of age, and who showed the signs of pulmonary tuberculosis at 8 years: at the age of 9 an attack of pneumonia occurred, and this was accompanied with effusion into the joints, apparently of a rheumatic kind. The speaker was inclined to think, after the paper by Drs. Poynton and Paine, that the pneumonic condition might have been part of a rheumatic process.

Card Specimens.

Dr. O. K. Williamson: (1) New growth in the lung; (2) new growth in the adrenal.

CLINICAL SOCIETY OF LONDON.

Sir R. Douglas Powell, Bart., M.D., F.R.C.P., President, in the Chair.

Friday, October 12th, 1900.

Presidential Address.

The President delivered the address, which is published at page 1149.

A Case of Acute Actinomycosis.

Sir Dyce Duckworth read the notes of a case of a young man, aged 19, admitted into St. Bartholomew's Hospital complaining of pain and swelling in the lower part of the chest. Respiratory movements were deficient in the left lower lateral region of the chest, where a gradual bulging was apparent, partly thoracic and partly abdominal, dull to percussion and very tender. The swelling moved to some extent with the diaphragm, and an abscess of the left lobe of the liver was suspected, but attempts to locate the abscess failed. The temperature on admission was 99° F., but rose to 102.8° F. Mr. Howard Marsh performed laparotomy, and found a swelling below and behind the left lobe of the liver, but no pus was reached. The patient's condition became worse and he died. At the necropsy a softened patch was found near the cardiac end of the stomach, and a probe readily passed through it into a mass of spongy actinomycotic growth in the left lobe of the liver. The growth had evidently spread indiscriminately, involving the liver, diaphragm, left lung, etc. There was a subphrenic abscess of considerable size containing pus of a yellowish-green hue with numerous dark green or black granules, which proved to be masses of ray fungus. No septic organisms were present. In the absence of data enabling the diagnosis to be made during life, potassium iodide was not given. The author questioned the probability of the infection having taken place through the gastric ulcer, since had that been the case other infective matter must have entered also. He recalled a very similar case in the *St. Bartholomew's Hospital Reports* for 1895.

Mr. Howard Marsh remarked that subdiaphragmatic abscess as a result of actinomycosis was fortunately rare, but was sometimes met with as the sequel of actinomycosis of the liver, and also in the neighbourhood of the appendix, with extension of the disease upwards behind the colon. A specimen from the museum of St. Bartholomew's Hospital (which was exhibited) illustrated this, and showed that purulent pericarditis had also been produced by spreading of the growth to this structure. In the case under discussion it was at first believed at the *post-mortem* examination that a subdiaphragmatic abscess had followed the escape of the ray fungus—accidentally present in the stomach—through a perforated gastric ulcer; but though such an occurrence was no doubt possible, further investigation proved that this view was erroneous, as the opening in the stomach wall had evidently been caused by extension of the abscess into it. The case clearly demonstrated once again that the ray fungus was pyogenic, for no other micro-organism was present in the pus contained either in the subdiaphragmatic abscess or in the pericardium. It might be remembered that the late Dr. Kanthack had described a form of pyæmic actinomycosis.[1] Actinomycosis appeared to be more formidable in man than in cattle. Thus in the present case it ran a rapid course, was attended with considerable rise of temperature and loss of flesh and strength, and ended fatally in about three months. The gravity of the disease was shown at the *post-mortem* examination, when, besides the subdiaphragmatic abscess, there was extensive invasion of the liver and the lung, together with a large collection of pus in the pericardium. A correct diagnosis of the condition, though it was suspected, could not be made as no pus containing the fungus was reached. This was a difficulty

[1] *Path. Soc. Trans.*, 1894.

which was not unlikely to present itself in actinomycosis in the abdominal cavity and other deep-seated parts. Whenever its presence could be reasonably suspected potassium iodide, in doses of 30 or 40 grains three times a day, should be given. Active surgical treatment in this instance failed to be of any service, and probably in cases of acute actinomycosis in this situation operative interference must be attended with doubtful results.

Mr. R. GODLEE remarked that operative interference was not always unsuccessful in these cases. Several instances were now on record of abscesses caused by actinomycosis in the cæcum, abdominal wall, face, and neck having been cured by scraping and the administration of potassium iodide. He had come across 15 such cases. The present case showed how the disease spread indifferently in all the tissues. It was an acute case, similar to another case in which the trouble was noticed early in May, and the patient died in December. The patient developed pleurisy, followed by suppuration of the chest (which was evacuated), abscess of the forearm, and abscess over the sternum, hectic temperatures, and death. The treatment by potassium iodide was often very disappointing, but in other cases was quite successful in curing the disease. He had witnessed its great curative properties in two cases, one of which had been sent to him as an obstinate case of empyema, followed by tumour of the abdominal wall supposed to be tuberculous. Upon incision, however, the pus was found to be small in quantity and much distributed, whilst the hæmorrhage was free. He scraped the abscess freely, gave potassium iodide, and the patient recovered.

Mr. W. G. SPENCER considered that the case probably followed perforation of the stomach; as in some cæcum cases there had been found a grain of wheat or other substance which had conveyed the infection. He had lately seen, with Dr. Maurice of Marlborough, an acute case that commenced in the preauricular gland, extended down to the clavicle, and covered the trachea, whilst a mass projected into the larynx and bled readily on being touched. There were sinuses in this spongy growth in the neck, from which came very little pus but much hæmorrhage. The diagnosis lay between actinomycosis and pharyngeal cancer. He wiped out the sinuses under chloroform, and gave small doses of potassium iodide, which were of no use. But when the dose was raised to 40 grs. of the drug three times a day the disease began at once to abate, and in three months there was complete recovery. He still remained well, and had quite discontinued the drug. In some neighbourhoods the farmers were alive to the disease in their cattle, which they treated with potassium iodide. They also fatted the beasts and killed them for the market, whereas the farmers should be compensated and the cattle destroyed. The disease was transferable from cattle to man, and in this country it caused a considerable amount of disease amongst human beings.

In reply to the PRESIDENT,

Mr. GODLEE said his patient, a girl aged 19, took 40 grs. of potassium iodide thrice daily.

Mr. MARSH said that Dr. Kanthack had said that the clubs could not be found in the pus after the first few weeks, but could often be detected when first the abscess was opened. In speaking of the uselessness of operative interference, he was referring only to actinomycosis of internal organs.

Mr. SPENCER said that three cases had been published in which carbolic acid was freely applied after scraping, and all recovered.

Sir DYCE DUCKWORTH, in reply, said that great difficulty in diagnosis existed when internal organs alone were involved in the disease. Potassium iodide caused the disappearance of tumours other than syphilitic formations.

THREE CASES OF GASTROTOMY FOR HÆMATEMESIS.

Mr. MANSELL MOULLIN read the notes of three cases in which he had performed gastrotomy for hæmatemesis. In two the source of the hæmorrhage was a superficial erosion of the mucous surface, the base of which was strangulated by means of silk ligatures. In the third, as the ulcer was too large and the base too soft, a stout silk ligature was tied tightly around the portion of the stomach wall upon which the ulcer was situated, and the union of the serous coat secured by some Lembert sutures passed from the peritoneal surface. Recovery in the first was uneventful. In the third there was some fresh hæmorrhage a fortnight after the operation, possibly arising from the separation of the ligature, but the patient ultimately recovered completely, and was well at the present time. Mr. Mansell Moullin pointed out that, although hæmatemesis was said to prove fatal in only 4 or at the most 5 per cent. of the cases in which ulcer of the stomach was diagnosed, it not infrequently placed life in serious danger, and still more often created such a feeling of apprehension as to destroy all pleasure in life; and it was not unreasonable to think that, if this operation could be shown to be unattended by any great amount of risk, there were many people who would prefer the chance of an immediate and perfect cure to months, and even years, of comparative starvation, with the possibility of sudden death always before them, and at the best a doubtful hope that recovery would ever be perfect. The mortality of the operation had been stated to be 64 per cent., but these figures admitted of an obvious explanation. As a matter of fact, the stomach, owing to the thickness of its coats, stood sutures better than any other portion of the digestive tract; and if only cases were operated upon at a sufficiently early period and not when they were *in extremis*, or when the wall of the stomach had become extensively adherent, there was no valid reason why the mortality should be greater than that of internal operations in cases of inflammation of the appendix. Mr. Mansell Moullin did not suggest operation in cases in which the amount of blood lost was not serious, or in which there had only been a single attack of hæmatemesis. But when the bleeding returned more than once, and was either so profuse as to place life in immediate danger or so continuous as to threaten a serious degree of anæmia, operation, with the view of stopping the bleeding once for all, getting rid of the ulcer, and doing away with the risk of perforation, certainly offered a far better prospect than persistence in a form of treatment which had been tried and, so far, had not succeeded. After giving an account of the technique of the operation, Mr. Mansell Moullin discussed the two chief difficulties—that of finding the bleeding spot, and that of dealing with it when found. With regard to the first, Mr. Mansell Moullin described a case in which fatal hæmatemesis without any discoverable lesion had occurred in a young man after a simple abdominal exploration, and expressed his intention, if such a case occurred again, of trying to find out whence the bleeding came, even if this did involve opening the abdomen a second time, and incising the wall of the stomach. In Mr. Mansell Moullin's second case the erosion was so slight in character that, in all probability, its existence would have been overlooked if the examination for it had been made *post mortem* and not during life while the bleeding was still going on.

On the motion of Dr. F. J. SMITH the discussion was adjourned.

BRITISH GYNÆCOLOGICAL SOCIETY.

W. J. SMYLY, M.D., President, in the Chair.

Thursday, October 11th, 1900.

"TREATMENT" IN GYNÆCOLOGICAL CASES.

DR. HEYWOOD SMITH illustrated the meaning which he attached to the word "treatment," by quoting the remark frequently heard, "I did not have an operation, but only treatment." With asepsis, some major operations in skilled hands might be less risky than some minor operations conducted, it might be, with less scrupulous care. Further, it was often a matter of importance to patients to run a little extra risk to have the prospect of cure in a few weeks by some operation rather than to lie up for months while undergoing some prolonged treatment. Dr. Smith then went through briefly the various maladies in which patience and "treatment" might often bring about a desirable result without operation, such as misplacements of the uterus in their earlier stages, chronic inflammations whether of the endometrium or the cervix, fibrous tumours of the uterus at their commencement, ovaritis and salpingitis where not gonorrhœal or so chronic as to tend to chronic invalidism. Granular inflammation of the lips of the uterus should not be called "ulceration." In all these cases he gave an outline of what the

treatment should be before they severally developed into the stage that necessitated surgical interference. He thought some method of treating cancer might be found which would arrest the disease in its earlier stages. Every woman complaining of intermenstrual bleeding ought to be examined, since to make light of such symptoms might lead to fatal delay. He contended that morbid conditions of the mamma were often secondary to affections of the uterus, and when these latter were cured the mammary trouble subsided.

Mr. SKENE KEITH remarked that the Society rather tended to ignore the medical side of gynæcology, and the paper which they had heard was a welcome change. And yet it was noticeable that in the paper there was evidence of a continual hankering after surgical interference, except in the direction where surgery really required to be resorted to early—namely, in dealing with malignant disease. In the case of cancer, whether of the breast or of the uterus, no "treatment" of any kind was permissible in the early stages except removal. Dr. Heywood Smith had mentioned a case in which sarcoma of the ovary was followed by a tumour in the breast; but there was no evidence in the history of the case to show that the breast tumour was sarcomatous. It was a noteworthy point that after operations for sarcoma the patient often got quite well in nine months, and yet succumbed with a return of the disease within thirteen months.

Dr. C. H. F. ROUTH related three cases to illustrate the close sympathy which existed between the uterus and the breasts.

Mr. BOWREMAN JESSETT observed that experience at the Cancer Hospital was that cancer of the breast was more common in the married than in the single. He had found no treatment of any use for cystic breasts; and his practice was to send the patient away to the seaside for some months, and if then there was no improvement he advised the removal of the breast, because these cysts were often the precursors of cancer. He had tried oöphorectomy with the administration of thyroid in four or five cases of inoperable mammary cancer, but in none was there any improvement.

Dr. INGLIS PARSONS said that endometritis was often due to prolapse of the uterus, and the erosion and discharge frequently cleared up if the uterus could be kept in position with a pessary. For local application in these cases he had tried pure carbolic, iodized phenol, and linimentum iodi, and had found the last to give the best results. For menorrhagia sometimes no organic cause could be found, and curetting showed no thickening of the endometrium. Some operators under these circumstances had resorted to hysterectomy, but he had obtained very good results from the constant current.

Dr. HERBERT SNOW protested against any "treatment" for tumours in the breast in women after middle age, even in the case of cysts; for in his experience such cysts always developed into cancer sooner or later. He agreed with Mr. Jessett that cancer of the breast occurred more often in the married than in the single.

Dr. HENRY JELLETT (Dublin) referred to the statement that tuberculosis of the Fallopian tubes was very rare; yet the French school, who attributed the majority of suppurative affections of the adnexa to the gonococcus, admitted that 1 out every 4 cases of pyosalpinx was due to tubercle; the experience at the Rotunda Hospital confirmed the view of the frequency of tuberculous salpingitis.

Dr. MACNAUGHTON-JONES thought that gynæcology was advancing in proportion as it was based on an accurate pathology; for methods of treatment that were not so based were being discarded, whilst those that had a pathological basis were increasingly successful. True conservatism in gynæcology consisted not in tampering with disease, but in proceeding at once with radical measures in every case in which there was no definite prospect of cure by milder means.

After some remarks by Dr. FRED. EDGE (Wolverhampton), Dr. HEYWOOD SMITH briefly replied.

SPECIMENS.

Mr. F. BOWREMAN JESSETT showed the following: (1) Specimen from a case of hysterectomy for large fibromyoma of the broad ligament: (2) fibrocystic tumour of the uterus: hysterectomy; (3) large hydronephrosis mistaken for an ovarian or hydatid cyst.—Dr. HERBERT SNOW showed a fibromyoma of the uterus removed by hysterectomy.—Dr. FRED. EDGE showed a fibromyoma of the broad ligament removed by enucleation, the uterus being left behind.—In the discussion on these specimens, the PRESIDENT, and Drs. F. A. PURCELL and SEPTIMUS SUNDERLAND took part.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

J. RUTHERFORD MORISON, M.B., F.R.C.S., in the Chair.

Thursday, October 11th, 1900.

ANNUAL MEETING.

THE following officers for the ensuing session were elected:—*President:* J. Rutherford Morison, M.B., F.R.C.S. *Vice Presidents:* Wm. Robinson, M.D., F.R.C.S.; J. L. Crisp, M.R.C.S.; J. W. Smith, M.D.; G. W. Ridley, M.B., F.R.C.S. *Honorary Secretaries:* Thomas Beattie, M.D., M.R.C.P.; Albert M. Martin, M.B. *Committee:* R. S. Peart, M.D; J. Adamson, M.D.; W. Gowans, M.D.; J. Murphy, M.D.; G. H. Hume, M.D.; D. Drummond, M.D.; Jas. Drummond, M.D.; Jas. Limont, M.B., M.R.C.P.; R. A. Bolam, M.D.

ORDINARY MEETING.

Operation for Diffuse Suppurating Peritonitis due to Appendicitis.

Mr. W. G. RICHARDSON showed two patients who, a few hours after an ordinary attack of appendicitis, had been seized with sudden abdominal pain and collapse, although operated upon thirty hours later when in an apparently hopeless condition; both had recovered. Pus in each instance was diffuse in the peritoneal cavity, and treatment had consisted in a free incision, sufficient to permit of complete evacuation of pus and adequate drainage; the avoidance of lavage and in its place careful sponging; drainage being effected by strips of gauze placed in various directions, pelvis, hepatic pouch, etc.

The exhibition of these cases resulted in a general discussion on appendicitis, and especially upon the indications for operation, in which Drs. GOWANS, DAVIS, A. A. MARTIN, G. R. MURRAY, BEATTIE, ROBINSON, GRAY, BUTTERCASE, and Mr. A. M. MARTIN took part.

The PRESIDENT, after reviewing the discussion, stated in in answer to questions, that in his opinion the most important points indicating operation were: (1) A second attack, (2) a lump, (3) a sudden acute onset.

Operation for Cerebellar Abscess.

Mr. W. G. RICHARDSON showed a child, aged 7 years, who had been operated upon one month previously for cerebellar abscess following suppurative otitis media. Recovery from such a condition was much more rare than its occurrence.

Phthisis treated in the Durham County Sanatorium.

Dr. JOHN GRAY showed a man, aged 22 years, who had suffered from hæmoptysis, cough, and consolidation at the right apex. Tubercle bacilli had been plentifully demonstrated in the sputum. After ten days' treatment cough and expectoration had disappeared. Four months later he was discharged, able to walk 15 miles in the day, and had gained a little over 2 stones in weight; but there were still slight physical signs. Dr. Gray then read a detailed table of 14 cases of various stages of phthisis, showing results of sanatorium treatment.

Dr. WM. ROBINSON also brought forward a case treated in the same sanatorium who had gained over 2 stones in weight, and was able to walk 20 miles a day; he was apparently in rude health, and without detectable physical signs. He remarked that cases of consolidation offered a better chance of ultimate recovery than those of excavation.

The following also took part in the discussion: Drs. OLIVER, MURRAY, BEATTIE, MODLIN, and ETHEL WILLIAMS.

Double Intestinal Resection and Anastomosis for Malignant Growth.

Dr. HUME showed a man, aged 48, who, after slight symptoms of six months' duration, had presented a firm nodular mass in the epigastric and left hypochondriac regions, the size of a closed fist. On laparotomy, there was no evidence of glandular enlargement, and no secondary nodules. The mass involved primarily the transverse colon, and was adherent to and infiltrated the mesentery of a coil of small intestine, necessitating the resection of about 12 inches of colon and a similar length of small intestine. The cut ends of the colon were joined by direct suture, the small intestine being anastomosed laterally by a Murphy's button. The Murphy's button had been removed from the rectum three

weeks after the operation. The specimen was also shown, and seen to be a sloughing carcinoma of the transverse colon, remarkable for the scant symptoms it had given rise to.

Congenital Deformities of Hands and Foot.

Mr. ALBERT M. MARTIN exhibited a child, aged 15 months, born after a normal labour, and exhibiting the following condition of the hands and right foot: The three middle fingers of both hands were partially arrested in growth and webbed; the webs showed deficiencies at the bases. The index finger of the right hand had at the terminal interphalangeal joint a deep transverse furrow, and at the first interphalangeal joint an attempt at formation of supernumerary finger. In the right foot the second and third digits were completely webbed, the fourth and fifth partially, and there was a supernumerary toe at the end of the big toe.

Splenic Enlargement.

Dr. OLIVER showed two cases of splenic enlargement: (1) A man, aged 34, who had been under observation for two years; he gave a history of enteric fever, and of gonorrhœa followed by stricture; he complained of pain, weight, and increasing abdominal swelling; the spleen was enormously enlarged, extending down to the pelvis and to the right of the middle line; no hæmorrhage had occurred; the blood was characteristic, presenting evidences not only of anæmia, but also of leucocytosis and myelocytosis; (2) a man, aged 36, who had been in the army abroad, and had suffered from malaria and syphilis; he had also a marked alcoholic history; he presented an enlargement of the spleen, of which he did not complain; examination of the blood revealed no leucocytosis.

Specimens.

The following specimens were exhibited: Mr. RUTHERFORD MORISON and Mr. G. G. TURNER: A series of thirty specimens illustrating the pathology of appendicitis.—Dr. G. R. MURRAY: Pork with cysticerci cellulosæ, with microscopic slide of same.—Dr. HUME: A large hydronephrotic kidney.—Dr. BEATTIE: Aneurysm of pulmonary artery in phthisical cavity from which fatal hæmoptysis had occurred.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The first meeting of the nineteenth session of this Society was held on Friday evening, October 5th, at the West London Hospital. Dr. F. F. SCHACHT, President, occupied the chair. After the minutes of the last meeting had been read and confirmed several new members were balloted for. Dr. MANSELL MOULLIN exhibited a fibroid tumour, which, with the pregnant uterus, he had removed by subperitoneal hysterectomy.

The patient, aged 25, had been married 4 months. She stated that she was 3 months pregnant, but nevertheless presented a swelling in the abdomen, resembling a 7 months pregnancy. She complained of severe pain in the left ilio-hypogastric region, which commenced suddenly; there was considerable tenderness and distension, with a feeble pulse, and collapse. As she grew worse, Dr. Moullin determined to explore the abdomen, and opened it in the middle line by a long incision extending above the umbilicus. The tumour was at once seen, and on its summit was found a soft spongy mass of dark appearance, with the peritoneal coat ruptured over it to the extent of 4 inches. The operation was completed by removing the whole mass, together with the uterus containing a 4-months fœtus and placenta. The patient made a very good recovery. The tumour was found to be an immense fibroid growing from the back and upper edge of the uterus. It was subperitoneal, and of such a size that it reached well above the umbilicus. The uterus could be made out about 8 inches below, by means of the Fallopian tubes. The top of the tumour had sloughed and broken through the peritoneal covering.

Dr. Mansell Moullin thought that this case illustrated well one of the many dangers that women with fibroids were exposed to, and was unable to understand the mental attitude of a certain school, which inculcated a "do nothing" policy. Without an operation the patient must have died, and she was now spared the tremendous risk she incurred by becoming pregnant.—Dr. SCHACHT, the newly-appointed President, then delivered his address on the Early Treatment of Abdominal Symptoms, in which he urged that all cases with doubtful abdominal symptoms should be treated in one uniform manner, that is, avoidance of all aperients, absolute rest in bed, restricted fluid diet, and small doses of opium, preferably hypodermically given. A vote of thanks to the President for his address was proposed by Dr. TRAVERS and seconded by Mr. SWINFORD EDWARDS.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this Association was held on Friday, October 5th, at 4 P.M., in the University College, Dundee, Dr. YOUNG, Vice-President, in the chair.—The CHAIRMAN referred to the loss the Association had sustained in the death of their President, Dr. Aymer of Bervie—a man struck down in the prime of life who had endeared himself to all his patients and would be mourned by all the countryside. On the motion of the Chairman, seconded by Dr. BUIST, the following resolution was adopted:

That this meeting of the Forfarshire Medical Association desires to record its deep sense of the loss which the Association has sustained in the death of Dr. Aymer of Bervie, the President of the Association, and its appreciation of the interest he had taken in the work of the Association.

—Dr. DON showed specimens of epithelioma of the penis and of sarcoma of the tibia, the latter removed by amputation through the lower third of the femur from a patient aged 30 years. A section of the tumour was shown under the microscope.—Dr. GRAY showed a cast of hydrocephalus in a boy aged 6½, and also a specimen of malignant stricture of the sigmoid which he had removed by operation. A microscopic section of the tumour was shown, being that of a columnar-celled epithelioma. A cast of the lumen of the bowel from another case of malignant stricture of the sigmoid was also shown.—Dr. PIRIE then exhibited and explained a bedrest, invented by a lady, to keep the patient warm while sitting up. This was effected by means of hot pans passed into the framework.—Dr. BUIST gave notes of four cases of abdominal tumours on which he had operated. In all of these more than one lesion existed. In one case he removed a multilocular ovarian cyst and a second tumour, sausage-shaped, which proved to be a dilated encysted appendix. The patient did well. From a second case he removed gall stones from a distended gall bladder, a cystic ovary, and also sutured the canal through which bowel protruded. In a third case he removed the uterus for retroversion, and a mobile tumour the size of a child's head, but this case was still under treatment.—Professor KYNOCH read notes of a case of Henoch's purpura in a girl aged 8, in whom there was first a stage of lethargy, followed in twelve or twenty-four hours by severe abdominal pain and purpuric spots which then subsided, and patient remained well till another attack. She had six attacks in two months. Dr. MCVICAR said he had attended two similar cases, in one of which the heart was affected. He thought the condition of the heart might explain the symptoms.

PATHOLOGICAL SOCIETY OF MANCHESTER.—The annual meeting of this Society was held at the Owens College on Wednesday, October 10th, Mr. W. THORBURN, President, in the chair. The reports of the Treasurer and Committee having been adopted, officers for the ensuing session were elected as follows: *President:* A. J. Wilkinson, M.D. *Vice-Presidents:* A. Brown, M.D., and J. Collier, F.R.C.S. *Treasurer:* T. A. Helme, M.D. *Secretary:* T. N. Kelynack, M.D. *Committee:* G. O. Campion, L.D.S.; J. G. Clegg, M.D.; F. J. H. Coutts, M.D.; A. Donald, M.D.; W. E. Fothergill, M.D.; F. C. Moore, M.D.; J. E. Platt, M.S.; and J. H. Ray, M.Ch. *Auditors:* A. Hopkinson, M.B., and M. P. Ledward, M.D. The meeting was mainly devoted to the exhibition of specimens. Professor SHERIDAN DELÉPINE gave a demonstration on the bacteriological diagnosis of plague.—Dr. FOTHERGILL exhibited microscopical preparations illustrating various forms of epithelial new formation.—Dr. C. MELLAND showed preparations of blood presenting malarial parasites.—Dr. F. C. MOORE showed preparations showing various lesions of the liver.—A lantern demonstration on some features in the pathology and morbid histology of general paralysis of the insane, by Dr. David Orr and Dr. Cowen, was postponed till the next meeting of the Society.

FOLKESTONE MEDICAL SOCIETY.—A meeting was held on October 5th at the house of Mr. Chambers, when Dr. PERCY LEWIS read a paper on Local Hospitals, with Special Reference to Our Own. The advantages of local hospitals were that cases of sudden acute disease could be treated at once, and that a certain number of medical men in the locality could be kept trained in operative surgery ready to deal with such emergencies. They also served as a valuable means of increasing the knowledge of the local profession, who should be encouraged to attend operations and see interesting cases. Opportunities should also be afforded to local practitioners who wished to conduct any special investigations. He advocated making

temporary appointments on the staff if any local medical man happened to be specially qualified in any subject—for example, ophthalmic surgery. The staff should be elected by merit and not by favouritism, and the members should be helped in every way by the local profession by sending in interesting cases with the history fully detailed. Financial loss generally resulted in being on the staff owing to the time spent in unremunerative work. To be on the staff of a hospital it was advisable that a man should work harmoniously with his colleagues, should not be injudicious in his conduct, lazy, or apt to use the appointment solely as a means of advertisement. Dr. Lewis considered a local hospital should always have a nursing institute attached, as it would ensure only well-known reliable nurses being engaged. A most interesting discussion took place, in which the following took part: Dr. Eastes, Dr. Tyson, Dr. Dodd, Mr. Chambers, Dr. Latter, Mr. Thornton Gilbert, Dr. Perry, Mr. Barrett, Mr. Powell, Mr. Randall Davis, Mr. Gore, Dr. Hackney, and Dr. Larking.

Reading Pathological Society.—The Reading Pathological Society held its fifty-ninth annual meeting at the Royal Berkshire Hospital on October 11th.—Mr. J. Bland-Sutton gave an address on Some Points in the Diagnosis and Treatment of Uterine Fibroids. He pointed out that uterine fibroids were never recognised clinically till after the age of 25 years, though they did occur between 20 and 25 years. Uterine fibroids had to be diagnosed from almost every tumour occurring in the abdomen. Mistakes became more important and dangerous when the diagnosis was made in mistake for other tumours, because in these cases operations were not always done, and patients went about in great misery suffering from sarcoma, dermoid cysts, hydatid cysts, and other tumours which, if diagnosed correctly, would have been at once operated on. The presence of a hum on auscultation and metrorrhagia afforded strong evidence of fibroids. Wandering spleen had a remarkable tendency to get into the pelvis and cause difficulty in diagnosis. Tumours more or less incorporated with the uterus, and accompanied by menorrhagia and metrorrhagia were particularly difficult to diagnose, such as enlarged tubes, retroversion of the gravid uterus, etc.—A hearty vote of thanks was accorded to Mr. Bland-Sutton, and the members and visitors, to the number of forty, afterwards dined together at the Great Western Hotel.

West Kent Medico-Chirurgical Society.—The first meeting of the forty-fifth session was held on Friday, October 5th, at the Royal Kent Dispensary, Greenwich. The chair was at first occupied by the out-going President, Mr. C. J. Parke, and afterwards by the newly-elected President, Dr. Septimus Sunderland. The Treasurer's accounts and the Council's annual report having been adopted, and three ordinary members and one honorary member having been elected, a ballot was taken for the election of officers and Council for the session 1900-1. The following were elected:—*President:* Septimus Sunderland, M.D., M.R.C.S., L.R.C.P. *Vice-Presidents:* George Herschell, M.D., M.R.C.S.; Thomas C. Meggison, M.D., C.M. *Council:* Chas. J. Heath, F.R.C.S.; Arthur E. Joscelyne, M.R.C.S., L.R.C.P.; John Matheson, M.A., M.B.; William Henry Payne, M.R.C.S., L.R.C.P.; Robert E. Scholefield, M.A., M.B., B.Ch.; G. Chisholm Williams, F.R.C.S.E.; H. Bowen Williams, M.D., M.R.C.S., L.R.C.P. *Treasurer:* John P. Purvis, M.R.C.S., L.S.A. *Secretary:* John P. Henry, B.A., M.D., B.Ch. *Librarian:* F. S. Toogood, M.D., M.R.C.S., D.P.H.—Dr. Scholefield showed cases of tabes dorsalis, disseminated sclerosis, and 2 cases of lupus, one of which had been cured and the other much benefited by treatment by the Roentgen rays.—Dr. Toogood showed a case of excision of the knee-joint and a case of cirrhosis of the liver with extreme ascites, which had been very much improved by Morison's operation.—Mr. Chisholm Williams showed cases of hallux valgus, with casts, skiagraphs, and specimens. A discussion followed, and the meeting adjourned.

A University College has recently been formed at Wellington in New Zealand, and four professors have been appointed, of whom two were educated at St. Andrews University.

REVIEWS.

Diseases of the Tongue. By Henry T. Butlin, F.R.C.S. and D.C.L. (Surgeon to St. Bartholomew's Hospital) and Walter G. Spencer, M.S.Lond., F.R.C.S. (Surgeon to the Westminster Hospital). London: Cassell and Co. 1900. (Demy 8vo, pp. 475, 8 chromolithographs, and 36 engravings. 21s.).

The first edition of this work was published in 1885. Since that time considerable advances have been made in many directions in our knowledge of the pathology, diagnosis, and treatment of the various diseases which affect the tongue. To embody these acquisitions has involved a transition from the modest "clinical manual" to the larger systematic treatise; in the accomplishment of this task Mr. Butlin's labours have been shared by Mr. W. G. Spencer.

The work opens with a new chapter upon the anatomy and embryology of the tongue, in which there is an accurate and notable description of the lymphatic vessels and glands. The account agrees closely with that given by Küttner, but the single illustration is not sufficiently detailed to give an indication of the course of the lymphatic vessels. The inflammatory affections and the infective and parasitic diseases are fully and most clearly described. The description of the various forms of syphilitic, and especially of tuberculous, diseases would, however, have been more convincing if adequately illustrated.

The chapter on tumours and cysts of the mucous and salivary glands is exceedingly good. Due emphasis is rightly given to the observations of Rudolf Volkmann on the endothelial nature of salivary gland tumours. The point of clinical importance which is brought out by a tabulated comparison of 45 cases under the new and the old nomenclature is the benign character of the majority of the tumours. The subject of ranula, upon which there is much misconception, is cleared of all that is involved and misleading. With Merkel, the existence of Fleischmann's sublingual bursa is disputed.

The subject of sarcoma of the tongue has attracted no small degree of attention during the last decade; many cases so diagnosed have been recorded, and Marion has collected the notes of twenty-four examples. The paper in the *Revue de Chirurgie* was interesting as exhibiting in an acute form the blind and reckless partisanship of the enthusiast. Cases were accepted which should have been refused, and one or two ignored which were worthy of acceptance. There can be little doubt that many cases labelled sarcoma are, in fact, inflammatory in nature. Of the limitations and capacities of inflammatory material in the tongue we have much to learn. Marion's paper is subjected by the authors to a temperate and discriminating criticism.

The most interesting chapters in this volume are those dealing with carcinoma. There is a minute and complete description of the incidence, course, and termination of the disease in its varied clinical aspects. The surgeon, consulting the book for enlightenment in the treatment of cases, will, we anticipate, suffer some small measure of disappointment. The routine method advocated by the authors for a case of cancer limited to the tongue would seem to be an intra-buccal operation (Whitehead's), followed later by an operation for the removal of all the glands in the anterior triangle of the neck. The removal of the growth is not held to involve the complete excision of the tongue, but the incisions are to be made around the ulcer at a distance of at least three-quarters of an inch. The submaxillary method, especially if combined with a wide removal of glands, a preliminary laryngotomy, and ligature of the external carotid, is considered by many surgeons to be preferable. It may or may not be true that, as Heidenhain has said, in squamous epithelioma the lymphatic vessels do not become plugged and infiltrated with cancer cells, and therefore can without risk be left; but, until our knowledge is more precise, an operation, planned after the model of Halsted's on the mamma, has at the least potential advantages. The final chapter of the book deals concisely with the nervous affections of the tongue.

This volume is one which affords the reader pleasure and profit in the perusal. Its accuracy and wide information are alike remarkable. The teaching given and the opinions

expressed are, with one possible exception, of the highest and final authority. The illustrations are insufficient. The same coloured drawings as were used in the former edition are reproduced here. Some of these are excellent, others are indifferent. The engravings are in general clear and accurate, but at least three times as many are necessary to afford adequate illustration.

ULCER OF THE STOMACH AND DUODENUM AND ITS CONSEQUENCES. By SAMUEL FENWICK, M.D., F.R.C.P., Consulting Physician to the London Hospital, and W. SOLTAU FENWICK, M.D., M.R.C.P., Senior Physician to the London Temperance Hospital, Physician to the Evelina Hospital for Sick Children. London: J. A. Churchill. 1900. (Royal 8vo, pp. 392, 55 illustrations. 10s. 6d.)

A WORK dealing authoritatively with simple ulcer of the stomach and duodenum has long been wanted. Cruveilhier in a masterly manner established the disease as a separate entity in 1838, and to-day much that he wrote is still our standard teaching. In 1857 appeared the work, recognised universally as a classic, of Brinton, but since that date no treatise of the first order has appeared in England, and the rapid and varied increase in our knowledge of gastric ulcer and its consequences has left us without a recent standard work.

This volume, dealing fully with its subject, is divided into four parts. Part I treats of the pathology and etiology, Part II deals with acute ulcer of the stomach and duodenum, Part III with chronic ulcer, and Part IV discusses the sequelæ of chronic ulceration.

There are many important features in the work deserving of recognition, but few are so vital as the clear and definite division of the cases of ulcer into acute and chronic. The necessity for this is obvious to any one acquainted with the clinical aspects of the disease. The consideration of gastric ulcers as of one form only has led to many misconceptions and frequent errors, the most profound and amazing of which is the acceptance—the striking avidity of the acceptance—of the "maladie de Reichmann" as a separate morbid entity.

Part I is an exceedingly able, patient, and complete exposition of the pathology and etiology of gastric ulcer. The authors advise us very properly "to accustom ourselves to the conception of a large, acutely-inflamed patch in the stomach, the tissues of which are sometimes so swollen and œdematous as to give a sense of brawny induration to the touch." The conical shape of the ulcer is considered to be probably due to the contractile properties of the tissues subjacent to the mucous membrane. In discussing the "hour-glass stomach" the statement is made "that the deformity is a rare result of ulceration." In the light of recent surgical experience this opinion must be modified. In connection with the etiology the following remark, one of immense though unappreciated importance, is made: "While hyperacidity is an important cause of the chronicity of an ulcer, the disease itself is usually the cause and not the consequence of the hypersecretion." The association in 17 per cent. of tubercle of the lung is worthy of note.

Part II treats of the symptomatology, diagnosis, and treatment of an acute ulcer. Of the earlier portion of this section we can speak enthusiastically, but the chapter relating to treatment is unexpectedly disappointing. The opening sentence, "The first point to be determined is whether the perforation is likely to be followed by local or general peritonitis" is unfortunate. Unfortunately the gift of prophecy is denied to mere mortals. It is, with any prospect of certainty, impossible to recognise two classes of cases in the time when, if life is to be saved, operation must be urged. The presence or absence of liver dulness is considered important as a sign, though we had supposed the view that it is worthless to be now generally accepted.

In Part III chronic ulcer is fully and admirably discussed. Certain well-defined varieties (gastralgic, catarrhal or vomiting, dyspeptic or latent, hæmorrhagic, cachectic) are recognised. This classification is exceedingly practical and desirable. The chapter on diagnosis is very clear; the relative emphasis is quite admirable.

Part IV deals with the remoter sequelæ of ulcer such as perigastric adhesions, tetany, cancer, and so forth.

The illustrations are unusually good, and of the work as a whole we must speak in terms of high praise. An immensity of care and patient labour has obviously been bestowed upon it, and the method throughout is scholarly, but the teaching now and then seems to lag behind that derived from the most recent experience. A careful revision of certain sections by a surgeon of ripe experience in the operative treatment of this disease and its complications would have resulted in the discovery and consequent correction of some errors.

SOME RECENT WORKS ON NATURAL HISTORY.

DR. SHARP'S second volume[1] concludes his great handbook on the *Insects*, which we may say at once is one of the most complete and satisfactory extant. It treats of the wasps, bees, and ants; so that it gives an account of some of the most interesting members of the whole animal kingdom. The notice of the honey-bee is rather short, but this is excusable on account of the extensive literature already devoted to this insect. A full account is given of the researches of Fabre on the habits of *Sphex*, a solitary wasp, which provisions its nest with the bodies of crickets which it stings in the nervous system in such manner as not to kill, but only to paralyse them, so that they may remain fit for the food of the larva. This remarkable instinct seems to be more highly developed in *Sphex* than in other species, for Mr. and Mrs. Peckham have recently shown that in certain American forms the victim is as often killed as not. However, in these cases the larva does not seem to be over-fastidious in its diet, and will take whatever food is provided for it. Turning to the ants, we note accounts of the leaf-eating and slave making ants, as also of the curious honey-pot ants, some of which devour honey in such quantities that the abdomen becomes a huge globe filled with nourishment. These individuals "move but little and remain suspended to the roof of a special chamber" or larder, whither their hungry comrades resort to be fed. Still more curious, perhaps, is the case of *Sima rufonigra*, which lives on the trunks of trees in company with a spider and wasp that greatly resemble it in form and colour. These three creatures seem to be such good friends that they indulge in wrestling matches without doing each other any serious harm. Concerted music, too, would seem to be among the accomplishments of the *Hymenoptera*, for a number of large brown ants distributed over a space of some two yards, were observed to keep up a kind of tapping, which

> was set up at the same moment, continued exactly the same space of time, and stopped at the same instant; after the lapse of a few seconds all recommenced at the same instant. The interval was always of about the same duration, though I did not time it: each ant did not, however, beat synchronously with every other in the congeries nearest to me: there were independent tappings, so that a sort of tune was played, each congeries dotting out its own music, yet the beginning and endings of the musical parties were strictly synchronous.

The *Coleoptera*, on which Dr. Sharp is a specialist of world-wide reputation, are very thoroughly treated, and it says much for his self-control and sense of proportion that the account of this numerous and important order of insects has been kept within a limit of about 100 pages. The classification adopted, though advanced, must be regarded as tentative, for we have a great series of *Coleoptera polymorpha*, characterised only by the fact that its members do not belong to any of the other series. This is due to the lamentable want of anatomical knowledge of many forms, which is likely to continue so long as collectors accumulate large numbers of specimens without taking any interest in their structure. Turning to the *Lepidoptera*, we cannot but regret that the fascinating subject of mimicry is dismissed with scanty and rather unsympathetic criticism. Whilst admitting that the subject has been almost ridden to death, and that resemblances have been recorded as protective which one would think could not deceive the most careless and unobservant of birds, we are still confronted with instances of resemblance which seem to us inexplicable, except on the theory of protective mimicry; Dr. Sharp at all events does not help us

[1] *The Cambridge Natural History: Insects. Part II. Hymenoptera (continued), etc.* By David Sharp, F.R.S. London: Macmillan and Co. 1899. (Roy. 8vo, pp. 626, 293 figures. 17s. *Birds.* By A. H. Evans, M.A. (Same publisher and price, pp. 652, 144 figs.)

to any other solution. The remaining groups of insects must be dealt with in a few words. In the *Diptera* or two winged flies, the old division into *Nemocera* and *Brachycera*, according to the structure of the antennæ, is abandoned, and no fewer than six subdivisions are recognised, the *Aphaniptera* (fleas) being regarded as one of these, and not as an independent class. The *Hemiptera* (bugs) are still divided into the two great divisions *Homoptera* and *Heteroptera*; of the former, we are acquainted with 600 species and about 430 of the latter. In this chapter an interesting account is given of the *Aphides* (plant lice or blight), but the description of phylloxera is too condensed; considering the damage done to vines by this scourge upon the Continent, a little fuller treatment might have been given to it. In conclusion, we can only add that this volume fully bears out the good opinion we expressed on the appearance of its predecessor, and is in every way worthy of the series to which it belongs. In seeking to dismiss the *Birds* in a single volume Mr. Evans has attempted an almost impossible task, but within the limitations which he was compelled to impose on himself he has worked wonders. He has sought to give a short description of the majority of the forms in many of the families, and of the most typical and important of the innumerable species of the Passerine order. To each group he has prefixed a summary account of their structure and habits, and in the case of most of the more familiar or interesting species he has given further particulars under the same heads. To the systematic part of the work Mr. Evans has wisely prefixed a short introduction on the structure (external mainly) of birds and on the terminology of his subject, and in a preliminary note he gives a table of the classification which he has followed. Most of the illustrations are original, being supplied by Mr. G. E. Lodge, and they are as a rule distinctly good and helpful to the observer. Unfortunately Mr. Evans has felt compelled to omit any discussion of some of the points of most general interest, such as variation and hybrids and the line of flight of migratory birds. His book, however, within its range will be found very excellent, and will be useful not only to the bird lover in these isles, but also the traveller.

In this *Book of Whales*,[2] Mr. Beddard has attempted to combine an accurate exposition of technical facts with as much as possible of anecdotes as to the habits and the pursuit of cetaceans, and he may be congratulated upon having succeeded in this somewhat difficult task. The book is eminently readable, while at the same time he has verified a large number of the facts, and has added details not hitherto on record. No convenient summary of knowledge of the cetacea existed, and the book will therefore prove very useful. It will surprise many to learn that even in comparatively recent years great cetaceans were sufficiently common in our own latitudes to lead to the existence of whale fisheries in which only stranded whales, or whales which had got into difficulties in shallow water, were pursued; and in New Zealand in 1843 as many as 500 men were thus employed. Nowadays, the Dundee whalers catch little more than a tenth of the number they used to secure, so that it is evident that the animals have been seriously reduced by the fisheries. We have little but praise to accord to Mr. Beddard's book, which is substantially good and interesting. In places it reads somewhat disjointedly, as though sentences had been incorporated bodily from a notebook without being brought into smooth connection with the context, and we cannot congratulate the author upon the index, in the preparation of which we suspect he had little hand. If one seeks information upon any special point it is generally to be found somewhere in the book, but the index does not always help much in the search. For example, if information is sought as to the structure of the fore limb, amply treated of in the text, there is not a word about it in the index, while such entries as "Fabyan's Chronicle" or "Stowe's London" are not helpful except to a person who has already read the book. But these are only minor blemishes in a generally excellent work.

In the absence of any similarly comprehensive textbook on *Palæontology*[3] in the English language, Dr. Eastman's translation of Professor von Zittel's work will be almost indispensable. The first volume is, indeed, something more than a translation. The German edition was published in 1895, while the English version is brought up to date, and by the collaboration of a number of specialists new material and certain changes in classification to which the author gives his assent are introduced. The volume deals with the invertebrates only, and the appearance of the second, which will comprise the vertebrates, will be anxiously looked for. The rich mass of material accumulated in the American museums will render the section dealing with the mammalia of especial interest, as so far information respecting the extraordinary forms discovered in the New World has to be sought in scattered memoirs. Whilst it is essentially what its title implies, a palæontology, each group is prefaced by an account of the structure of the recent animals just sufficiently full to enable the points preserved in the fossils to be intelligible. An introduction of 15 pages sets forth the geological classification employed, as well as certain general considerations as to life periods and extinction of species. This is admirably done, and, in a few instances in which we have endeavoured to test it, the text of the classificatory portion of the work is most complete and exact. The labour of compiling and even of editing and revising such a work must have been enormous, and we congratulate the author and the American naturalists who have brought out this English edition on the manner in which they have brought their work to a conclusion. The number of woodcuts enumerated does not represent the full extent of the illustrations, for oftentimes four or five, sometimes even more, figures are included under a single number, and the quality of the woodcuts and the printing of the book are all that could be desired.

Rather more than two years ago we had occasion to notice *A Textbook of Zoology*, by Professors Parker and Haswell, a book with many excellent qualities, but too large for anyone except an honours man to attempt to master. In order to meet the requirements of the average university student and, as the authors modestly put it, of the "higher classes of schools," they decided to publish a *Manual*[4] of much smaller dimensions. Professor Parker's untimely death, when but little of the actual work had been done, left his colleague to finish the task alone, but his name appears on the title page as a memorial of their joint labours. The condensation has been accomplished, first, by leaving out certain groups of rare occurrence and uncertain relationship; secondly, by dealing only briefly with embryology; and, thirdly, by omitting all reference to extinct animals. This last procedure, we feel, is a grave error; the study of the extinct forms is so important for a proper understanding of the relationship of the living, that we do not think any general textbook of zoology, however brief, which ignores them should be published. This fault apart, we have much pleasure in stating that the book is a distinct success. Several errors which disfigured the larger work have been corrected, and the illustrations, being a selection of the best from the first edition, are remarkably clear and satisfactory.

NOTES ON BOOKS.

Nordrach at Home, or Hygienic Treatment of Consumption adapted to English Home Life, by Jos. J. S. Lucas, B.A., M.R.C.S. (Bristol: J. W. Arrowsmith. Fcap. 8vo, pp. 60. 1s.), is founded largely on the author's experience whilst in residence at the North London Consumption Hospital, deals concisely with the essential factors in the hygienic treatment of consumption, with special reference to the carrying out of this treatment at home. The situation and arrangement of the house, open air and clothing, food, rest, and exercise, are considered in their relation to the management of the consumptive. Medicinal treatment, disinfection, the treatment

[2] *A Book of Whales*. By F. E. Beddard, M.A., F.R.S., the Progressive Science Series. London: John Murray. 1900. (Demy 8vo, pp. 336. Twenty-one plates, 40 woodcuts. 6s.)

[3] *Textbook of Palæontology*. By Karl A. von Zittel. Translated and edited by Charles R. Eastman, Ph.D. Vol. I. London and New York: Macmillan and Co. (Roy. 8vo, pp. 710, 1,476 woodcuts. 25s.)

[4] *A Manual of Zoology*. By the late T. Jeffery Parker, D.Sc., F.R.S., and W. A. Haswell, M.A., D.Sc., F.R.S. London: Macmillan and Co. 1899. (Crown 8vo, pp. 576, 300 illustrations. 10s. 6d.)

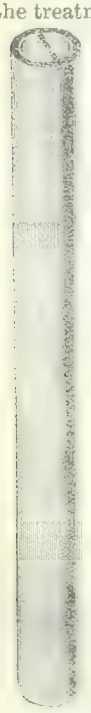
of febrile patients, and finally, prognosis and signs of improvement are also reviewed. Though perhaps most suitable for medical practitioners and nurses who have cases under their care, the book may also be useful as a guide to the intelligent patient.

In *La Peste et son Microbe* (Paris: Georges Carré et C. Naud. 1900. Crown 8vo, pp. 124. Fr. 4), Professor NETTER gives an excellent summary of the recent discoveries on plague, commencing with the places which have been invaded with plague since 1874, and the discovery of the East African and Trans-Balkalian endemic centres. He then passes on to a description of the plague bacillus, treating of its morphological and cultural characters, action on animals, and its behaviour outside the body in the corpse, soil, dust, and water. The section on the symptoms, course, and diagnosis of plague is as important as is that on the etiology and prophylaxis of the disease. The last chapter is devoted to the subjects of serumtherapy and vaccination. The volume is concisely put together, and will form a very useful guide to the practitioner.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

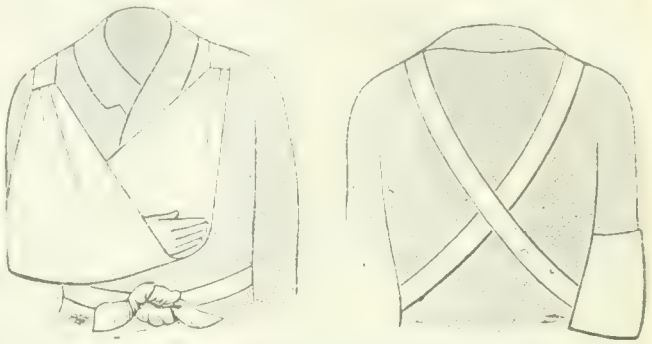
Double Channelled Drainage Tube.—Dr. FRANK STEELE of Clifton, has designed a double channelled drainage tube which he believes will be found advantageous in the treatment of many cases. It can, he says, be passed as easily and in the same way as the ordinary tubing, and in draining superficial cavities and wounds it has the advantage of being less readily blocked by discharges, clots, etc., as there are two paths of exit. The cases, however, in which it has been particularly useful, and for which it was devised some months ago, are those where deep-seated cavities, abscesses, cysts, empyemas, etc., are not only to be drained but also irrigated. The fluid employed is injected into one channel, passes into and flushes the abscess or other cavity and returns by the second (exit) path, and as it not forced into a *cul de-sac*, as is the case when the ordinary or no tubing is employed, delicate adhesions are not likely to be broken down.



The nozzle of the syringe or irrigator should not be bulbous, but tapering, so as to fit any size of tubing. Care should be taken that when inserting the nozzle the exit path is not occluded. Should there be any difficulty about this a fenestra may be cut in the exit channel near its mouth. It is advisable also to fenestrate the distal end of the tubing if the cavity to be drained or flushed is some distance from the surface. If the tubing does not fit fairly tightly the fluid tends to escape alongside, and in consequence the flushing is not so thorough as it might be; this may be prevented by gently compressing the parts around the proximal end of the tube or by lightly packing with gauze.

The tubing may be obtained in various sizes from the makers, Messrs. Arnold and Sons of West Smithfield, London.

Adjustable Arm Sling.—We have received from the Sanitary Wood Wool Company, Limited, a sample of an arm sling, which in many respects is a much improved form of this frequently needed appliance. It can be readily applied, it affords a comfortable and equable support to the weak limb, and by reason of its moderate cost can be brought within the reach of all classes of patients. The advantages claimed for this invention, the method of using which is shown in the illustration, are: the even distribution of the strain over the shoulders and back; the movements of the neck being left quite free; and the disagreeable and often painful pressure of a knot in the back of the neck being avoided. This form of sling can be easily adjusted, and the affected arm placed in any position. It seems capable of small modifications to meet the needs of



the most fastidious patient, and if supplied in accordance with careful measurement of the upper limb and chest is likely to prove useful in cases of fracture above as well as below the elbow.

A Domestic Milk Steriliser.—Messrs. Browne and Sayer 104, Upper Thames Street, have sent us a specimen of a simple milk steriliser made by them. It consists of a tin stand with space for six 3-ounce bottles. It is, therefore, a modification of the original apparatus of Soxhlet. It is simple and cheap, and the bottles being of ordinary shape can easily be renewed. The stand fits into an ordinary saucepan, and the directions for use appear to be adequate and correct.

NOTES ON HEALTH RESORTS.

LLANDRINDOD WELLS.

By Professor ROBERT SAUNDBY, M.D., LL.D., F.R.C.P.

THE reputation, indeed the renown, of Llandrindod Wells is so great that the place stands in no need of recommendation either to the public or to the medical profession, but it may be useful to discuss the nature of the therapeutic means afforded by it and the pathological conditions for which these means are specially suited.

SITUATION.

Situated upon a breezy plateau at an elevation of 700 feet, sheltered on the north and east by the Radnor forest range of mountains, remote from any great centre of population, Llandrindod, like so many other famous health resorts, owes probably more to its altitude and climate than to the waters which appeal so powerful to the popular imagination. Such a bracing spot is eminently suitable for all cases dependent upon nervous exhaustion, for atonic forms of dyspepsia and gout, for rheumatoid arthritis, for rheumatic sciatica and other forms of neuralgia, and for neurasthenic glycosuria and early cases of diabetes. These cases are, as a rule, benefited by residence at a considerable elevation above the level of the sea and do not do so well at even the most bracing seaside place. This condition is not peculiar to Llandrindod, being shared by Buxton and Harrogate, but the class of patients is so large that there is plenty of room for the prosperity of all three, especially as year by year the benefit to be derived from them is better appreciated and it is beginning to be understood that great as are the virtues of sea air it is not suitable to all diseases.

THE WATERS.

The Llandrindod waters are abundant and varied. At the Pump House there is a weak saline spring containing about 6 parts per 1,000 of mineral matter, chiefly sodium chloride and a weak sulphur spring, containing 1 volume per 1,000 of sulphuretted hydrogen and about 3.5 parts per 1,000 of mineral constituents, also chiefly sodium chloride. These waters are too weak to have any very decided therapeutic effect, except when taken in considerable quantities and over a prolonged period. It is undesirable that neurotic patients who, as already explained, are especially likely to be benefited by a residence at Llandrindod, should take strong saline or sulphur

waters; but so long as such patients confine themselves to the Pump House waters they are perfectly safe.

The waters are served to visitors in a spacious pump room, with a good terrazzo floor; but it seems a pity that the model adopted has been that of a "bar," with beer machines by which the water is drawn, and a "barman" in his shirt sleeves to serve out the water, instead of the much more elegant marble-edged fountain with the neatly-dressed girl attendants usually seen abroad. Some beginning had been made to provide a rail with hooks for private glasses, but when visited the hooks were not numbered. There is great want of covered promenade accommodation outside this Pump Room, so that on wet days the patients are uncomfortably crowded inside, and have no facilities for the gentle exercise which should follow the drinking of each glass of water. The sulphur waters are used not only internally, but for the baths, which occupy a recently-erected bath house, where there are excellent arrangements for hot and cold, shower, douche, and steam baths, and an installation for Dowsing's electric light baths. The dressing rooms are comfortable and are lighted by electricity, but it seems a pity that in a one-storeyed building the architect was not able to provide the apartments with natural illumination, as rooms which are deprived of sunlight can never be pleasant.

The Pump House waters are suitable for internal use in cases of gastric and intestinal catarrh, chronic enlargement of the liver with or without jaundice, oxaluria, pyelitis, renal calculus, and catarrh of the bladder. The quantity of water taken need not exceed one pint and a-half in the morning and one pint and a-half in the afternoon, but it is important to allow sufficient time during and after drinking the water so that patients should not take a meal within an hour after their dose. The baths, if given at a suitable temperature, have a general tonic and bracing effect, but it should not be forgotten that this effect is in inverse ratio to the heat of the bath. Where this is desired, the temperature should not exceed 95°, and this may be gradually cooled as the patient advances in the course. It is also important that at first the duration of the bath should be short, and prolonged only as the patient requires strength. The douche and spray baths are specially to be recommended for neurotic patients. The hotter baths are useful for chronic gouty and obese patients, for whom, however, the Russian vapour or steam baths are generally prescribed.

At the Park Spa there are three springs: (1) The strong sulphur spring, containing about 3 volumes per 1,000 of sulphuretted hydrogen and a definite quantity of calcium sulphide, but very weak in other mineral constituents; (2) the Roman spring, a saline spring comparable with the saline spring at the Pump House; and (3) the magnesium spring, which does not, however, differ essentially from the Roman. These waters are supplied in a rather primitive pump room, provided with a small bar and a set of beer machines, but improvements are on foot, and an excellent new set of baths is being built in an adjoining bath-house.

What has been said about the Pump House water applies, to some extent, to those at the Park Spa, but while neurotic patients had better avoid the strong sulphur spring, this water is particularly suited for chronic gouty affections of the skin, lungs, and liver.

Existing Amenities and Desirable Improvements.

The Park Spa is situated in an undulating piece of ground, which even to a greater extent than the Pump House might be better laid out for the accommodation of drinkers by the provision of properly-covered walks, etc. The Pump House, which is the property of the company which owns the Pump House Hotel, is situated beside the hotel; a band plays in front of it twice a day, and visitors to the hotel have provided for their amusement tennis and croquet lawns, a small golf links, and a lake where boating and fishing can be enjoyed. The neighbourhood of Llandrindod is pretty and very suitable for walking, bicycling, and driving, the roads being good. There are many places and objects of interest in the vicinity, and very comfortable carriages can be hired, but there is a want of greater provision for evening amusement. The town is well built, lighted by electricity, and contains besides many handsome shops, a large number of hotels, boarding-houses, and private lodgings which have sprung up rapidly during the last twenty years, and afford evidence of considerable prosperity, although the season is short, for while nominally commencing at Easter and lasting to the end of October, it is only at its height during July, August, and September.

Some may regret that cases of consumption are encouraged to go to Llandrindod, as it is to be feared that many patients are by no means in those early stages for which alone the place can be recommended, nor are they in other respects desirable visitors in the hotels and boarding houses, or fitted to be in company where healthy amusement should take a considerable place in the pursuits of the visitors.

Nature has done so much for Llandrindod that it seems a pity that capital does not do more than it has done. The railway service might be improved. There are no Sunday trains, and though it is possible to leave London at 11 o'clock and get to Llandrindod at 4.15 P.M., it is not possible, however early you start in the morning, to get to London until 3.45 P.M., Manchester at 2, Liverpool at 2, and Birmingham, from which city and district large numbers of the Llandrindod visitors come, is not reached until 2.38.

The want of covered walks for rainy days has already been mentioned. The Pump House Hotel is comfortable, but it contains no lift, and although extensive building operations are going on, this defect does not seem about to be remedied. It is scarcely credible that in a place where many visitors are suffering from lameness due to gout or rheumatism it has been possible to do without one, and there can be no doubt that such an appliance would prove a great convenience, as partially disabled patients must at present secure rooms upon the ground floor or stay away.

TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

[From our Special Correspondent in Paris.]

(Continued from page 760.)

The Bacteriological Examination of Water for the Typhoid Bacillus.

The discussion on this subject was opened by M. Fodor (Buda-Pesth), who expressed the opinion that the search for the typhoid bacillus in drinking water should not be abandoned. In a certain number of cases it was possible to discover the specific germ, for by the simple method of plate cultures a large number of colonies could be isolated. Great patience, however, was required to study each of these; for example, in one case he had transplanted 1,600 colonies, 5 of which proved to be colonies of the specific bacillus. The use of the agglutination method greatly simplified the identification of the true typhoid bacillus. M. Fodor used the following technique: He simultaneously inoculated two rabbits, the first with a culture of typhoid bacillus, the second with the suspected bacillus; he thus obtained two serums, which were both tested with a specimen of the true typhoid bacillus and with the suspected bacillus.

M. Loeffler stated that from experiments carried out by himself and his pupils he found that the persistence of the typhoid bacillus in drinking water varied with the amount of nutrient matter present in the water—for example, in a very pure water at a low temperature the bacilli only lived for twenty-four to forty-eight hours, while in a contaminated water receiving sewage the bacilli lived much longer and were even found to multiply.

M. Widal said that he and Professor Chantemesse had long ago shown that the typhoid bacillus could be isolated from suspected water, but that with the actual means of investigation at disposal its isolation was a very difficult matter, requiring great patience and care. Bacilli which had been isolated long ago from water by M. Widal and M. Chantemesse, and kept in the labaratory, were authentic specimens, as proved by the lactose and agglutination tests. The virulence of bacilli isolated from water could not furnish any useful information. All observers who had experimented with the typhoid bacillus knew that its virulence varied from one subject to another, and even when comparing different specimens isolated from the typhoid fever patient. In the opinion of M. Widal there was no relationship between the virulence and the agglutinating power of any particular specimen. The best method of identification of typhoid bacilli isolated from

water was by the agglutination test. By using the mensuration method, it was only necessary to test the degree of agglutinability with a serum of known and strong agglutinating power. The inoculation of animals with suspected cultures, with the subsequent collecting of the serum, and then testing its agglutinating power, was useless. It was beginning to be understood why it was so difficult to isolate the typhoid bacillus in a suspected water. In one category of cases the bacillus still existed in the water under examination, but it was impossible to isolate it, because in this water it was struggling for existence with numbers of other germs, such as the bacillus coli communis, whose presence formed an almost insurmountable obstacle in the search for the typhoid bacillus, as had been shown by the experiments of Chantemesse, Grimbert, and Nicolle. The bacillus of Eberth was sometimes also found in water which was relatively pure. In the water which gave rise to the celebrated outbreak at Pierrefonds, the study of which was the first in this particular line of research, the colonies of typhoid bacillus isolated by Widal and Chantemesse were present in great numbers in comparison with the other germs. In a second category of cases the bacteriologist was called upon to examine a suspected water, but arrived too late, the bacillus of typhoid, which was present at the beginning of the epidemic, having disappeared for some weeks. An incubation period of about three weeks was necessary before the occurrence of the first cases due to the contaminated water. Perhaps improvement in technique would make it possible to find the typhoid bacillus in drinking water more frequently than at present, but it could already be foretold that the results would be negative in a number of cases because the examination would be made too late. The part played by water in the genesis of typhoid fever had been clearly established, and after the distributions in towns of water of bad quality, man had ever been the sensitive test reagent, but the scientific and irrefutable proof had been the demonstration of the presence in the water of the bacillus of Eberth.

M. Vaillard also protested against the idea that it was almost impossible to discover the typhoid bacillus in water. The research certainly was a difficult one, but with time and patience the results were often positfve. He had often obtained positive results at the Val-de-Grâce Hospital by using the medium of Elsner. He agreed with M. Loeffler that the quality of the water was of great importance from the point of view of the longer or shorter persistence of the bacillus in the water, but he could not admit that laboratory experiments gave an absolute indication of what occurred in Nature. Thus he had seen the typhoid bacillus present for a long period in very pure water. At Dijon, by repeated weekly examinations, he was still—three months after the end of the epidemic—able to obtain cultures of the typhoid bacillus from the water, which was of excellent quality from a chemical point of view. The same fact was demonstrated at Chateaudun. In suspected water bacilli were sometimes found which had many of the characters of typhoid bacillus, but differed especially in the fact that they did not react in the presence of a typhoid serum. Was it not possible that these might be typhoid bacilli which, like certain races of cholera vibrio, had acquired characteristics somewhat different from the normal, owing to changes in their environment?

M. Loeffler replied that in his opinion the typhoid bacillus did not live for more than 15 days in natural water. If M. Vaillard was able to show its presence during two or three months, then the bacillus had been continuously poured in. The search for the typhoid bacillus was easy in water which was relatively pure and contained few coliform species. It was extremely difficult if many coliform species were present. The best medium for isolation was that of M. Holz, who used potato juice with gelatine.

M. Widal, speaking a second time, said that he had often had occasion to study ciliated bacilli, which did not cause fermentation of lactose, and which at first sight, by their morphological and biological characters, showed great analogy with the true typhoid bacillus. Such bacilli came from water, from the intestine, from the buccal mucus, etc. The agglutinating reaction showed at once the great barrier which separated these microbes from the typhoid bacillus. A serum possessing enormous agglutinating power with different specimens of typhoid bacilli had no more action on these foreign microbes than that exercised by normal serum. Different specimens of typhoid bacilli reacted almost equally to the agglutination test, in which respect they differed from the various specimens of bacillus coli communis, and even of cholera vibrio.

M. Max Gruber (Vienna) agreed with M. Widal and M. Vaillard on the utility of examining water for the typhoid bacillus. The agglutination test was of the greatest service in the identification of the typhoid bacillus, and he expressed the opinion that a bacillus not possessing this characteristic should not be considered as of typhoid origin. Agglutinability was one of the most certain characters of this microbe. Agglutination had nothing whatever to do with virulence, bacilli which were not at all virulent being still very susceptible to the test. He had always been of opinion that it was necessary to take into consideration the degree of agglutination obtained on placing the bacilli in presence of a tested serum. The quantitative element was very important in studying the agglutinating power. He had not obtained good results by Elsner's method.

M. Dunbar said that during an epidemic at Cuxhaven, near Hamburg, he had in vain looked for the typhoid bacillus in the water of a certain well round which cases of typhoid fever had broken out. On the other hand, he had found typhoid bacilli in the water of a well surrounded by a population which appeared to be free from the disease. A week after this discovery 20 cases of typhoid fever were notified among the people using this well water. The bacillus was shown to be present in the water before the outbreak of the cases among the consumers. He found ordinary gelatine the most serviceable medium for the isolation of the typhoid bacillus in water.

The Mortality of Diphtheria: Prophylactic Inoculation.

Dr. Louis Martin stated that by simply comparing the mean diphtheria mortality of the last five years with the years immediately preceding the introduction of the serum treatment, the number of lives that had been saved was shown in a very graphic manner. Thus from 1890 to 1894 in Paris the annual mean diphtheria mortality was 1,432 deaths. In 1894, in which year the treatment though introduced was not universally applied, the number of deaths fell to 1,008.

In 1895	there were	427	deaths.	
,, 1896	,,	,,	454	,,
,, 1897	,,	,,	300	,,
,, 1898	,,	,,	255	,,
,, 1899	,,	,,	333	,,

These figures gave an annual mean mortality of only 354 deaths.

Preventive treatment by injection with serum could render immense service in certain cases; it should be employed in places which were far from all medical aid or of difficult access, and in large families when effective isolation was impossible. M. Martin described how in a single village he had injected sixty children, all of whom remained in good health for three weeks, with the exception of one child who about the sixteenth day developed a mild form of the disease and recovered. During the two months following the preventive injections there was no other case among the inoculated, while 6 cases were notified among non inoculated children. According to the observations of physicians of experience it would appear that the serum exercised a prophylactic action for three weeks, after which period it was advisable to make a fresh injection if owing to continuation of the epidemic any danger of infection still existed.

THE TREATMENT OF INEBRIETY IN INSTITUTIONS.

The idea appears to be gradually gaining ground that inebriety is not a series of acts but a state; that in many instances confirmed drunkenness is more a misfortune than a fault, and not so much a vice as a disease.

The Inebriate Acts.

It will be remembered that those provisions of the Inebriate Acts of 1879 to 1899 which affect the patients, are based on the definition of a "habitual drunkard" as a person who, by reason of habitual intemperate drinking of intoxicating alcoholic or other liquor, is at times dangerous to himself or to

others, or incapable of managing himself or herself, and his or her affairs. The Acts then assume that a habitual drunkard is eventually desirous of recovering from his morbid state, and therefore authorises certain approved persons to establish houses of "retreat." They then provide that a habitual drunkard desiring to to be admitted into such a retreat shall apply in writing to one of these licensed persons, stating a specific time, not exceeding two years, during which he undertakes to remain in the licensee's charge. The application must be accompanied with documentary evidence that the applicant is a habitual drunkard, and that he understands the effect of his application. The applicant may then be detained during the specified time. If he fails to conform to the rules of the retreat he may be fined £5 or imprisoned for seven days, and if he escapes he may be apprehended on a warrant.

Principles of the Institution Treatment.

Putting aside the question of criminal inebriates the remainder are "voluntary," but these must be separated into two groups—some are voluntary in fact, while others are voluntary by courtesy only. To have a man's *Ego*, however feeble it may be, on the side of improvement, is at once an index of the comparative slightness of the case and a promise of ultimate recovery. But for both institution treatment ensures the reasonable probability of being unable to obtain alcoholic liquor because there is none at hand, no one is to bring or sell any to the inmates under penalty, they are not allowed to have any pocket money, and to make doubly sure, they are under constant supervision. They are thus given at the same time an artificial freedom from temptation and the consolidating influence of a routine life. As a result in the more favourable cases the quasi-voluntary patient becomes voluntary in fact.

The Duration of the Treatment.

An important matter in all cases, the time factor, is of vital importance in some. The ordinary minimum of three months is probably absurdly short. When it is remembered that profound changes in the nerve cells are produced by chronic alcoholism, and that physiological processes are slow and easily checked, twelve months seems all too short for restitution of function, and the maximum of two years not too long.

Present Provision for Inebriates.

Reflections of a somewhat scathing character, if not altogether merited, have recently been made, as we understand from the magisterial bench, in regard to existing homes for inebriates. They were to the effect that the homes at present provided are conducted on the lines of fashionable West End clubs, and are similarly select if not exclusive.

Inebriate Reformatories.

A Parliamentary return dealing with the working of the Inebriates Act, 1898, recently published shows that at the date of the report six reformatories for inebriates were receiving patients; most of these were in receipt of financial contributions from local authorities. Two more are in course of construction. By these accommodation is, or will be, provided for 302 criminal inebriates. At Brentry in Gloucestershire there are now two reformatories, one for 30 males and the other for 75 females; at Ashford in Middlesex the St. Joseph's Inebriate Reformatory has accommodation for 75 females; one for 30 females instituted by the London County Council was opened at Horley in Surrey in August last as described in the British Medical Journal; and the other two are at Duxhurst near Reigate and at Horfield in Gloucestershire, which provide for 22 and 25 female patients respectively. The two not yet available are at Holmwood in Surrey for 20 males, and at Edgbaston, Birmingham, for 25 females. During 1899, 2 males and 90 females were convicted under the Act, and of these 88 were actually received into reformatories, 2 were discharged because no institution was available, and 2 were to be admitted after undergoing a preliminary prison sentence.

Finance of Reformatories.

Twenty-three counties and boroughs have contributed £1,000 for 7 beds in the Brentry Reformatories, and two have contributed an additional £1,000 for an extra 8 beds. In addition to this original contribution, each authority has agreed to pay the sum of 3s. 6d. a head a week as maintenance charge for all cases committed from its district. Five other county councils have the question of contribution under consideration, and, although they have not yet finally decided to contribute, yet in each case their special committees have recommended such action. Six other local authorities are contracting with the Ashford and Duxhurst Reformatories for reception of cases on payments averaging about 7s. a head a week, to include both establishment and maintenance charges, while several other counties and boroughs have deferred contribution to existing reformatories pending a decision to build for their own use.

Certified Retreats.

The "homes" or "retreats" have hitherto been adapted in the main to the requirements of the habitual drunkards of higher social position. There are at present 17 certified retreats licensed for 305 patients, 131 males and 174 females, and 4 other institutions, hitherto conducted as private homes, are contemplating applying for licence under the Acts. Some of these already licensed receive patients of the working classes at a rate of from 5s. to 10s. a week; examples of this group are at Fallowfield, near Manchester, licensed for 25 females, and at Cradley, in Staffordshire, licensed for 20 females. A second group, intended for patients accustomed to more refined surroundings but who are themselves poor, provide good accommodation for as little as 25s or 30s. a week; an example of this group is the retreat at Buntingford, in Hertfordshire, which is described below. A third group, to which the learned metropolitan magistrate doubtless referred, are luxuriously appointed and are obviously only intended for those who can afford to pay from 2 to 5 guineas a week; examples of this group are at Rickmansworth and at Sutton Coldfield. There has not as yet been any official notification of the decision of any council to contribute either to the establishment or maintenance of retreats, or both, but some authorities have now the matter under consideration.

The Buntingford Retreat.

The Retreat at Buntingford, in Hertfordshire, is under the charge of Dr. Norman Davis. This institution is an attempt to provide treatment for the impoverished inebriates of the middle class, giving the conveniences and refinement to which persons of this class are accustomed at a price within their reach. The attainment of these ends depends on the utilisation of the labour of the patients. The Retreat is licensed for the reception of thirty-five male inebriate patients. It comprises an estate of 9 acres of cultivated and grass land. It stands some 600 feet above the sea level in a well-wooded and pleasantly undulating country. The house is very substantially built and well ventilated and lighted, having a good dining hall, a recreation room, a reading-room and a billiard room. The rooms are warmed by a system of hot water radiators. The dormitories are lofty and have bath-rooms and lavatories attached. There are a few private bedrooms and movable cubicles are placed as required in the dormitories. The grounds contain a cricket ground, tennis courts, a recreation ground, workshops, gardens and orchards. There is, in fact, everything required to make the life of the inmates not only tolerable but pleasant. The dry-earth system is in use, and the water supply is excellent. There is a detached building which can be used as an isolation hospital. The dietary is ample and plain but varied. The special feature of the place, however, is the work done in its grounds and in its workshops. Almost everything required in the way of furniture and fittings is made on the premises, and all the horticultural work is done by the inmates. One of the conditions of admission—which, being recognised by the Home Office, have all the effect of law—is that each inmate shall do six hours' energetic work daily. This makes it possible to accept the sum of twenty-five shillings a week as inclusive terms; but, if a private bedroom or cubicle is required, there is an additional charge. Leave of absence either for hours or days is allowed under restrictions, as at similar institutions. The difficulty of providing sufficient manual labour in the winter for the patients will be met, we understand, by establishing a trade such as bookbinding. But the great boon the patients enjoy is undoubtedly the obligatory manual labour in the open air.

We were informed that the patients who come to the Retreat usually looking ill and in very bad condition, and suffering greatly from sleeplessness, after graduated exertion in the open air lose their insomnia, become mentally calm, develop an appetite, assume a clear complexion, become cheerful under restraint, and put on weight, while in many of the cases the craving is brought under subjection, and the possibility of living a useful life is developed. When the patients leave it is explained to them and their friends that the entire avoidance of alcohol is for them the only absolutely safe course to pursue. The routine laborious life spent in the open air is in a high degree a hopeful therapeutic measure.

THE PURSER MEDAL IN THE UNIVERSITY OF DUBLIN.

It will be a gratification to many members of the British Medical Association to learn of the success which attended the movement to establish a medal in commemoration of the work of Professor Purser in the School of Physic of the University of Dublin. We reproduce an extract bearing on the matter from the Regulations of the School of Physic, as also a representation of the medal itself which is the work of Wyon of London.



Obverse.

It will furthermore be a source of interest to state that Professor Purser could not see his way to accede to the wishes of the majority of the Fellows of the Royal College of Physicians of Ireland, and allow himself to be nominated for the position of President of the College for the ensuing year.

The John Mallet Purser Medal.

The past pupils of Dr. John Mallet Purser, King's Professor of the Institutes of Medicine in the School of Physic, Trinity College, wishing to permanently record their appreciation of him as a teacher, their respect for him as a scientist, and their regard for him as a friend, at the completion of the twenty-fifth year of his professorship, collected a sum of money for the purpose of founding a medal in the School of Physic to be called the "John Mallet Purser Medal." The dies, which cost £73 10s., and the sum of £42 were handed over to the Board to present annually a bronze medal in Physiology and Histology at the Half M.B. Examination. The Board accepted the gift, and agreed to the following conditions:



Reverse.

1. That the medal be called "The John Mallet Purser Medal."

2. That the medal be awarded annually to the student who, at the ordinary June Half M.B. Examination, shall obtain the highest marks in physiology and histology, provided that at the same time he be successful in passing the Half M.B. Examination.

3. That no student may compete for the medal who, at the time of the examination, shall have spent more than three years since entering for his first classes in the medical school.

The Purser Medallist for 1900 is Mr. Henry Stokes.

INSANITY IN IRELAND.

Increase of Lunatics under Care.

The Report of the Inspectors of Lunatics on the District, Criminal, and Private Asylums in Ireland for the year ending December 21st, 1899, has recently been published, and contains facts and figures of the highest importance. It is, on the whole, melancholy reading, for it would appear that insanity is gradually on the increase in Ireland. The total number of lunatics recorded on January 1st, 1899, was 20,304, and on the corresponding date of the present year 20,863, an increase of 559 during the past year. These totals, though they do not include patients residing in private houses or those wandering at large, show the proportion of lunatics to the estimated general population to be 447 and 460 respectively per 100,000. In 1880 the total number under care was 12,982, showing a proportion of 250 per 100,000 of the entire population. Further, it is noted that the increase of 559 during the year 1899 was entirely due to the additional numbers contained in the district asylums, while in the private asylums, the workhouses, and the criminal asylum a small decrease had severally taken place.

District Asylums.

Dealing with the district asylums, the report shows that of the total deaths, amounting to 1,132, which occurred in these institutions during 1899, no fewer than 321 were due to consumption; and it further appears that during the past ten years the large number of 2,874 inmates died of this disease in these institutions. Dysentery attacked 28 cases, with 5 deaths, in the Downpatrick Asylum, in spite of all the precautions that were taken to prevent it. The sanitary condition of the Ballinasloe Asylum is said to continue unsatisfactory, and in the Sligo institution enteric and "continued" fever were still prevalent. Fifteen cases of the former and 5 of the latter were reported, with 4 and 2 deaths respectively. In the Richmond Asylum the general death-rate is reported to continue low; 54 inmates died from consumption, 2 from beri-beri, and 1 each from diarrhœa, dysentery, and enteric.

The cost of maintenance in the district asylums for the average number of 15,785 lunatics was £386,306. Expenditure was met in the following way: The local rates contributed £211,902 10s.; £153,467 were received from the Government Capitation Grant, and £7,342 were contributed by patients or their friends.

The average cost per head calculated on the gross expenditure amounted to £24 9s. 6d., while the figures show that a maximum rate of £30 8s. 1d. in the Belfast Asylum against a minimum of £19 14s. 4d. in the Sligo institution. The report states that the new asylum in Londonderry is urgently needed, there being at present nearly 70 patients over the recognised accommodation in the old buildings. Regret is also expressed "that as yet no steps have been taken to obtain contracts for the building of the new asylum at Belfast; the position of the old asylum situated in the centre of a populous city renders it ill-suited as a hospital for the insane."

Criminal Lunatic Asylum.

The State Criminal Lunatic Asylum at Dundrum is reported to have been maintained in good order; 162 inmates were under control at the end of the year, and only 2 deaths had occurred during the preceding twelve months.

Lunatics in Workhouses.

In the Irish workhouses there remained at the close of the year 3,989 insane inmates, which shows a decrease of 50 from the preceding year. The inspectors are unable to report any general improvement in the condition of these unfortunate creatures. "As a general rule the wards set apart for them are overcrowded, deficient in furniture, and in all the surroundings considered necessary for insane persons." "Their condition as regards tidiness and cleanliness is generally unsatisfactory, which may be largely accounted for by the fact that the attendants in charge have had no training, and in many cases are or have been merely pauper inmates selected for this duty."

Licensed Houses and Lunatic Hospitals.

The report concludes with a reference to the 13 licensed houses and four lunatic hospitals. The number of inmates

was 699 on January 1st, and of these 202 were admitted during the year.

Conclusions.

Taken altogether the report is concise and instructive. The facts on the whole are, as has been already said, melancholy reading, but in particular the condition of the insane portion of the workhouse inmates calls for immediate reform, and for any substantial improvement in this direction a concerted and continuous agitation on the part of the medical profession will be found to be the most effectual method.

The sanitary condition of some of the district asylums is also a matter requiring attention. When a number of cases of "continued fever" occur in an institution it would be advisable that the cause of the fever should be investigated, yet it would appear from the report that in several of these institutions no necropsies are held by the medical officers in charge.

SANATORIA FOR THE TREATMENT OF CONSUMPTIVE PAUPERS.

In a letter sent in July last to the various Boards of Guardians in the metropolis suggesting a conference, Mr. Foskett, clerk to the managers of the Poplar and Stepney Sick Asylum, stated that after having for some considerable time had under consideration the subject of the open-air treatment of consumption with the idea of establishing a sanatorium for paupers, the managers had sent a deputation to the Local Government Board. Whilst sympathising with the managers the Board considered that provision of this character, if made at all, should be for the metropolis as a whole, and be under the management of a metropolitan authority. The Local Government Board also suggested a conference of representatives of each Poor-law authority in the metropolis should be invited to discuss the matter.

In response to this letter some seventy delegates, representing twenty-six out of the thirty-two metropolitan Boards of Guardians, attended at St. Martin's Town Hall on October 15th.

The National Association for the Prevention of Consumption and other Forms of Tuberculosis had been invited to send delegates, and was represented by Sir William Broadbent, Dr. Edward Squire, Dr. Burton-Fanning, and Dr. Heron.

Dr. Nathan Raw represented the West Derby Union, to give the Conference the result of the experience of Liverpool, the first town to establish a sanatorium for consumptive paupers.

The chair was taken by Mr. J. L. Cahill, Chairman of the Managers of the Poplar and Stepney Sick Asylum.

Dr. Squire, on behalf of the National Association for the Prevention of Consumption, gave facts concerning consumption, which showed the necessity for action by the metropolitan guardians. Taking the returns of a series of years, he showed that the mean annual death-rate from consumption in London is half as much again as that for the rest of England and Wales, and pointed out that the incidence of the disease was heaviest upon the poor, who were predisposed by environment, habits, and occupation. The consumptive of the poorer class is also, from his habits as well as from ignorance, especially dangerous to others. Thus, for the sake of the many consumptives, and to prevent the spread of the disease, sanatoria are desirable, for sanatorium treatment is preventive as well as curative.

Dr. Burton-Fanning gave his experience of fresh-air treatment amongst the poorer cases under his care in Norfolk. Out of some 150 cases during the past six years, about one-half had been enabled to return to their work as labourers, postmen, and even soldiers. He suggested that some of the almost empty rural workhouses in the country might be utilised as sanatoria. They were not built for the purpose, but in sanatorium treatment the building was a place to keep out of.

Dr. Downes (Local Government Board) who attended unofficially, gave some interesting statistics which he had collected, tending to show that the accommodation which would be needed would be about 1,000 beds.

Sir William Broadbent expressed his complete sympathy with the object which the conference had met to discuss. He believed that notification of consumption was necessary as well as the establishment of sanatoria, and hoped that a system of voluntary notification might be initiated in the metropolis. This might lead to the tracing of the cases of consumption to their source in the unhygienic homes of the poor.

Several guardians from various parts of London from Kensington to Bethnal Green spoke in favour of the following resolution, which was proposed by Mr. Lyon, Chairman of the Hampstead Board of Guardians:

That this conference of Poor-law authorities, having discussed the question of the open-air treatment of consumption, are of opinion that the time has come when provision should be made for the treatment by this method of the sick poor of the metropolis suffering from phthisis; and it recommends the matter for the consideration of the Local Government Board with a view to the necessary steps being taken by that Board for the carrying out of the proposal.

The resolution was carried unanimously, the argument on the main question before the conference being practically complete. On the question of the body to which the management of the institutions, when established, should be entrusted there was some difference of opinion.

A deputation was nominated to present the resolution to the President of the Local Government Board.

A vote of thanks to the Chairman brought to an end a conference the importance of which it would be difficult to exaggerate and the results of which may be far-reaching and valuable.

A PRACTICAL NOTE ON THE APPLICATION OF THE TUBERCULIN TEST IN CATTLE.

By Sheridan Delépine,
Professor of Pathology, The Owens College, Manchester.

[Professor Delépine has been good enough to write the following valuable practical note in reply to a question submitted by a correspondent who asked whether the tuberculin test could be applied to milch cows by an inspector or cow-keeper, no veterinary surgeon being available:]

The application of the tuberculin test by persons not acquainted with the care necessary to prevent even the slightest operation to become complicated with septic infection is not to be recommended. Only, therefore, when it is absolutely impossible to obtain the services of a competent and careful veterinary surgeon should the application of the test be entrusted to a sanitary inspector. In such a case the inspector should have had the opportunity of seeing the test used by a competent man. I have known a cow-keeper who, after seeing tuberculin used several times, had become quite proficient in the application of the test, but he was an exceptionally careful and intelligent man, who has since obtained a good appointment as bailiff to a corporation. I do not believe that it would be proper for any but a public officer or a certified veterinary surgeon to apply the test to certify that a cow is free from tuberculosis.

Tuberculin.

Good tuberculin should be obtained from a reliable firm such as Willows, Francis, Butler, and Thompson, 40, Aldersgate Street, London, E.C., or, if possible, from the Royal Veterinary College, London. The usual dose for a cow or heifer above 2 years varies from 35 to 45 m., according to the size of the animal. For calves it is usual to employ smaller doses. It is, however, necessary to ascertain from the maker the exact degree of concentration of the preparation before the dose is fixed.

Syringe.

This should be strongly made and easily disinfected.

Preparation of the Skin.

The hair should be clipped close to the skin, the skin carefully washed and well rubbed with a piece of lint or other material soaked in a solution of corrosive sublimate 1 in 500 at the place where the injection is to be made, for example, behind the shoulder.

Preparation of the Animal.

The animal should not have been recently driven; it should have rested for two or three days. If a cow, it should not have calved just before the application of the test. The temperature of the animal should be normal, and not liable to

sudden daily variations such as are produced by a number of trifling disorders, gestation, heat, etc. The rectal temperature of an undisturbed cow varies usually between 100.5° F. and 102.5° F.[1] To avoid errors it is therefore necessary to take the rectal temperature morning and evening for about three days before applying the test, and not to inject tuberculin unless the temperature does not vary much and is about normal.

Taking the Temperature.

This is done by inserting a clinical thermometer well into the rectum; this occasionally causes defæcation, so that it is prudent to tie a string to the thermometer; the free end of the string may then be loosely tied to the tail of the animal.

Tuberculous Reaction.

This is observed by taking the rectal temperature nine, twelve, fifteen, eighteen, and if possible twenty-two hours after the injection. In tuberculous animals a rise of temperature is generally observed between the twelfth and fifteenth hour; the rise may, however, begin as early as the ninth hour, or be delayed till after the eighteenth hour; such a delay is however exceptional. To be characteristic the rise must exceed 2.5° F.; it may amount to as much as 5° and 6° F. The temperature remains above the normal for several hours. A slight temporary rise of 1° or 1.5° F. should not be be accepted as evidence of reaction, but a distinct rise of more than 1.5° F. should excite suspicion; it indicates the desirability of retesting after an interval of three or four weeks.

Recovery after the Test.

Whenever the animal does not entirely recover after the fever produced by the injection of tuberculin is over, this should be taken to indicate that some intermittent complication has arisen, as the injection of good tuberculin with a clean syringe does not produce any permanent trouble.

[1] This statement refers to temperature as taken in the usual way, and is based on a considerable number of observations.

THE PATHOLOGICAL INSTITUTE AT KWALA LUMPOR.

Dr. Hamilton Wright writes from the Pathological Institute, Federated Malay States, under date August 14th, 1900: Coincident with my appointment as Director of the above Institute, H.M. Colonial Office through the Royal Society, the British Medical Journal, and other medical journals, offered to pay the expenses of any gentlemen holding scholarship who desired to assist me at work on beri-beri and malaria in this part of the world.

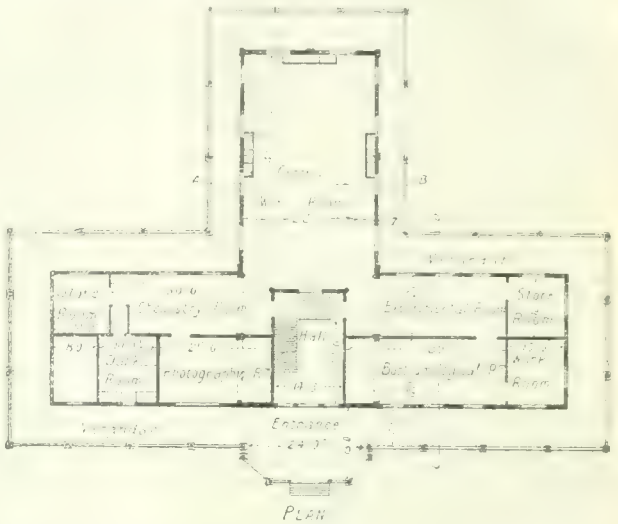
I feel sure that so generous an offer needs only to be better known to attract volunteers. Already several gentlemen have under consideration the advisability of coming to the Malay Peninsula under the offer of the Colonial Office. For their benefit and those who are yet in darkness concerning the opportunity for work that offers, I would say a word about the Pathological Institute now nearing completion, the situation and surroundings the institute, the questions crying for investigation, and the great advantage there is in working at beri-beri, malaria, dysentery, and other tropical diseases on the spot.

Sir Frank Swettenham, the Resident-General, in whose active, enlightened mind originated the idea of a research institute for the Federated Malay States, has done all that is possible to aid me in making the laboratory roomy, adequate, and attractive to those who, with myself, will work in it. The ground plan shows a general working room 45 by 22 feet. This room is well lighted, and is furnished with working tables mounted on casters, so that full advantage can be taken of light in any part of the room.

A bacteriological room, 30 by 12, with a small private workroom, 12 by 10, opening off it is provided. Also a chemical room of the same dimensions with a small room for special work.

A commodious photographic, dark, and ophthalmoscopic room, and a large room for physiological experiment are features of the building. The walls of the entrance vestibule and general workroom are carried up to sufficient height to contain in front an office; the remainder, 45 by 22, is a reading room whose walls will serve as a museum.

Altogether the institute is a place that it will be a pleasure to work in. Near it will be a first-class mortuary equipped with a refrigerator room; also a house for animals which are to be used for experiment.



Plan

The institute is on the grounds of the District Hospital, in which are always to be found from 300 to 400 cases of beri-beri, dysentery, and malaria. Besides the material to be had in the District Hospital, the Gaol and General Hospital a mile away are available. These together contain about 200 patients.

The institute is in Kwala Lumpor, the Federal capital. The capital is about twenty miles from the coast, and connected with it by a first-class railroad. Situated as it is on a series of hills, from 100 to 400 feet high, it is to my mind one of the cleanest, best kept, and most charming towns that English genius has created in the East. In the hinterground is a triple range of mountains rising to 3,000 and 4,000 feet. Over these come the clouds that every afternoon water and cool the town. It is cool here till 9 A.M., not too hot to work indoors till 3 P.M., and from this time till 9 A.M. cool and refreshing. Its health state is all that can be desired. Not more than 5 per cent. of the hospital patients are admitted from Kwala Lumpor. The remainder come from the various mining camps and smaller towns throughout the State.

The chronic complaint in England of younger workers is that there is comparatively no opportunity for scientific work, and an almost entire absence of State aid. Here, certainly, is a chance for those who do not consider England to be no more than the name of half an island.

I sincerely hope that gentlemen will take advantage of the offer of Her Majesty's Colonial Office, and assist in the solving of the various medical problems of this part of the British East.

Sir F. A. Swettenham, K.C.M.G., the Resident-General of the Malay Protectorate, in his last annual report, issued recently, writes:

> The Malay States have supported the scheme of the Secretary of State for the Colonies to establish a hospital in London for the treatment of tropical diseases, and we have also contributed to the Commission on Malaria, but I hope for even better results from the work of the pathologist, Dr. Hamilton Wright, who has lately arrived. He will have a very completely equipped laboratory, and an unrivalled field for research, and I believe that the institution over which he will preside is likely to attract workers from distant quarters. Their united efforts, assisted by the independent inquiries of the officers of the Government medical staff, may fairly be expected to achieve results valuable to humanity, and especially valuable in the treatment of tropical diseases. These States have prospered exceedingly, and I cannot imagine any better use to which some of our means may be devoted than a scientific and sustained research into the causes, and, if possible, the means of preventing and curing such scourges as beri-beri and all forms of malarial fever.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, OCTOBER 20TH, 1900.

LONDON AND PRECAUTIONS AGAINST PLAGUE.

We give elsewhere particulars of the case of the man in East London who was suspected to be suffering from plague. The fact that he was not affected with this disease, as was shown by Dr. Klein's bacteriological examination, will have been a source of general satisfaction. It cannot be expected, however, that in the vast population of London cases of plague will not eventually occur. In such event the whole question will be, Is London prepared? If prepared, such occurrences will not be of large importance; if unprepared there can be no such assurance. The arrangements which are being made in London, as shown by published statements of Dr. G. J. Cooper, the Chairman of the Public Health Committee of the London County Council, appear to be well designed and the Local Government Board, upon whom the responsibility will rest of making epidemic regulations in the event of plague becoming prevalent, is evidently combining the several authorities in London into a complete machine for dealing with the disease. The only weak point in the chain appears to be the nature of the arrangements made by the Metropolitan Asylums Board. We called attention to the questions connected with the provision of beds and of nurses which must arise should cases of plague occur within the metropolitan area, and we should be glad to have assurances that the steps there indicated as necessary were being taken.

The occurrence of this case of illness in Limehouse gives an insight into these arrangements. Cases of plague will, it may be presumed, be in the first instance notified by medical practitioners to the medical officers of health of the districts in which the cases occur, and medical men will have at their disposal for clinical diagnosis the services of Mr. Cantlie, who has been engaged by the London County Council. The patient, if found definitely to be suffering from plague, will be removed to one of the hospitals of the Metropolitan Asylums Board; if suspected to be suffering from plague, but, not assuredly suffering from this disease, he will be removed to a reception house provided by the London County Council, where he will remain until the results of the bacteriological examination by Dr. Klein are known. The London County Council has, moreover, undertaken to provide refuges for all persons who may have been in contact with plague, and in these refuges they will remain until it is known they are not incubating the disease.

In the meantime the house previously occupied by the patient will be under the charge of the district sanitary authority, who will take all necessary steps in connection with disinfection and inquiries into the health of persons in neighbouring houses.

Although the rumour that a case of plague had occurred in London may possibly have occasioned anxiety for the moment to persons who are not familiar with the methods adopted for dealing with epidemic disease in this country, the history of this case should suffice to satisfy them that the occurrence of cases of plague is of no great importance to the community or to other towns having dealings with London for no great extension of the malady may be expected under the conditions which will be brought into existence.

THE NEW WORKHOUSE DIETARY ORDER.

The long-expected Workhouse Dietary Order has at last been issued. As will be remembered by many medical officers, a long correspondence took place a few years ago between the Local Government Board and the Chorlton guardians on the question of issuing the same quantity of bread to each individual pauper. The latter authority had found that certainly not less than four hundredweight of waste bread was going to the pigs every week, a waste against which the Chorlton guardians rightly protested, both in the interests of the ratepayers, whose money was being wasted, and in the interests of the aged paupers who, by certain alterations, might have had a more varied diet without any appreciable burden being entailed upon the ratepayers.

After several interviews had taken place between the Local Government Board and the Chorlton guardians, it became evident that the whole question of workhouse dietaries required thorough revision; and for that purpose a Departmental Committee was appointed, of which Mr. T. W. Russell, M.P., Secretary of the Local Government Board, was Chairman. Though the evidence taken before that Committee has not been, as far as we know, published, it is evident from the result that the Committee was of opinion that the new dietary tables must be prepared more in harmony with the humanitarian spirit of the age.

The preparation of these tables was placed in the hands of Drs. Downes and Fuller, Medical Inspectors of the Local Government Board. Knowing something of the enormous amount of work which is involved in such a task, we are very glad to congratulate those gentlemen on the very satisfactory result of their labours. The Order, it may be well to mention, may be voluntarily brought into action on Christmas Day, but does not become compulsory until March 25th, 1901. Instead of the medical officer preparing the dietary table this duty is now thrown upon the guardians in consultation with the medical officer. This latter officer has, however, to make a report upon the proposed dietary; this report must be entered on the minutes of the guardians. A copy of the dietary table when decided upon must be forwarded to the central authority, but the formal approval of the Local Government Board is no longer required, and if the guardians see fit to again alter or improve their dietary table, they are at liberty to do so by simply following out the procedure as

described above. This alteration appears to be excellent, and it is to be expected that a considerable number of the progressive Boards will take advantage of it, as it enables them, at the cost of a very small amount of trouble, to vary that terrible monotony which has been so marked a feature in the workhouse dietaries of the past.

In some of the classes there is a very large variety of food provided; for infirm men and women upwards of sixty different dinners are scheduled, and in many of these the food is to be "roasted." We hope all the Boards will cheerfully carry out any alterations that may be required in their kitchen arrangements to carry this improvement into effect. Probably many people would be surprised to hear that there are many workhouses where the inmates, except upon Christmas Day, never taste roast meat from year's end to year's end. Another alteration decidedly for the better is the provision of summer and winter dietaries. This change is one certainly in the interests of the inmates, and probably of the ratepayers also.

The provision of a compulsory fourth meal in addition the three usual ones for the aged and infirm is one which will be cordially approved. This alteration has long been required, and in fact we believe that it would not be difficult to find several Unions where four meals have been given to a certain class for a good many years past.

The "Ingredient Table" which is given will be very useful, especially as we believe that every one of the dishes has been practically tested before being adopted. Several of the new dishes prescribed are admirably adapted for the aged, who now constitute such a large portion of our workhouse population.

The new Orders are to be welcomed as, it is to be hoped, the beginning of better things. No doubt there are Boards which will object that they ought to have full power to make and alter the dietary in any way they see fit. We are glad to think that there are to-day many Boards really acting as guardians of the poor, but it is unfortunately impossible to shut one's eyes to the fact that there are Boards which, forgetting the enormous change that has taken place in the people who now comprise our indoor poor, still appear to desire to carry out the law as if they were dealing with the demoralised democracy of the early years of the century. Poor Law, like all law, is made to prevent ill deeds, and remembering that we are thankful for the issue of the new Order.

We have not dealt with the Order as it concerns the audit department, but we would suggest that a department that could direct a Board of Guardians to continue a dietary that was entailing an enormous amount of waste is not one whose opinion can have much influence in deciding what should be done as to the weighing and measuring of any small amount of food that remains over.

THE TREATMENT OF CRIME.

PUBLIC attention has been directed so freely of late to our defective methods of dealing with crime that the working of the most recent legislation on this subject presents some features of interest. The annual report of the Commissioners of Prisons and Directors of Convict Prisons for the year ending March 31st, 1900, points out the far-reaching changes introduced into our prison system by the Prisons Act of 1898, and although this Act has been only a year in operation, some gratifying practical results have already been attained.

The limitation of the list of offences for which corporal punishment can now be inflicted, and other restrictions placed on this method of enforcing discipline, have had the immediate effect of reducing the number of floggings in local prisons, and the Commissioners significantly remark that at the same time the number of prison offences has not increased, so that discipline has in no way suffered by this humane relaxation of the law.

Similarly the improvement in the dietary scales for short-sentence prisoners has not, so far, apparently led to any recrudescence of crime, or to any increase in the number of criminals who might be expected to be attracted by better fare.

The actual number committed to prison during the year was 169,367 compared with 173,999 in the previous year, while the daily average number has also declined from 14,957, at which it stood in 1898, to 14,494, the present figure.

More remarkable still are some statistics which are given bearing on the general decrease of crime and the comparative proportions of crime in the three kingdoms. From these it is shown that since the year 1880 the number of prisoners committed on indictment, that is to say, for the more serious class of offences, has decreased 22 per cent. absolutely, and 33 per cent. relatively to population, while the number of those committed summarily for minor offences has decreased 1.9 absolutely and 16.9 per cent. relatively to population.

The number of prisoners received during the year per 100,000 of the population were—in England, 581; in Ireland, 839; and in Scotland, 1,386. Spirit drinking will probably account to a large extent for these variations.

The Act of 1898 confers new powers on courts of law, with a view to better classification, by enabling them to place prisoners not sentenced to hard labour, "having regard to the nature of the offences and the antecedents of the offenders," in certain divisions, so that a differential prison treatment can be prescribed by the court for offences from which the element of criminality may be said to be absent. Of this power the courts seem to have availed themselves freely, but the machinery for the purpose is not yet working smoothly, as several cases are given in the report in which magistrates have shown an imperfect apprehension of the intention of the Act. These difficulties will, however, soon disappear when the provisions of the Act are better understood, and there can be little doubt that the reform will be attended with salutary results.

The vexed question as to the comparative merits of "cellular" and "associated labour" in local prisons is dealt with by a kind of compromise. A new rule under the Act sanctions associated labour in prisons where adequate means exist for the strict and close supervision which are necessary to prevent contamination. As the Commissioners point out, the evils hitherto have been due to an "unregulated" association. They are endeavouring, therefore, to provide a form of "regulated" association, with close supervision, and already their efforts in this

direction would appear to be productive of good results, if we may judge by the recorded increase of 30 per cent. in the value of prisoners' labour in manufactures.

Other reforms under the new Act, such as the power conferred on ordinary prisoners of earning a remission of a portion of their sentences by industry and good conduct, the employment of debtors in industrial work, increased opportunities offered for instruction, increased privileges in the matter of letters and visits, a more liberal distribution of books, and the privilege of talking as a reward for good conduct—all seem to be working satisfactorily without detriment to the good order and discipline of prisons. The power of earning remission is most favourably reported on as an incentive to industry, and it is likely to be extended to sentences of less than six months. It is somewhat interesting to note that many prisoners who, by their conduct, have become entitled to the privilege of "conversation," do not care to exercise it, although this was one of the privileges most strongly urged in Parliament.

Special efforts are being made to "get hold of" young prisoners between 16 and 21 by bringing both moral and physical influences to bear on them, so as to prevent their relapsing into crime. School instruction, gymnastics, music, lectures, "straight-talking," etc., are being tried at Bedford Prison with very encouraging results.

The medical inspector calls attention to the fact that out of a total of 118 deaths from natural causes in the local prisons during the year, no fewer than 27, or nearly one-fourth, died within the first week of imprisonment, and in all but 3 of these cases the disease which proved fatal existed on reception. "It is," as he says, "easier to say where they should *not* be sent" than to point out a refuge for such cases, but it would certainly appear, from reading the details of them, that the exercise of a little more care and judgment on the part of those who accuse and try them should at least reduce the numbers of these unfortunates.

The cases of insanity for the year number 116, being 21 fewer than in 1899, 34 fewer than in 1898, and 48 fewer than in 1897. This steady decline in numbers at a time when insanity is increasing in the country generally is highly satisfactory. Of the 116 cases certified, 78 were mentally unsound on reception; of the others, 17 showed symptoms within one month, 13 within three months, 5 within six months, and only 3 after six months. It would certainly seem from these figures, when they are placed beside a daily average population of 14,500 prisoners, that an "insanity produced by our prison system," of which we heard so much a few years ago, is a rare disease.

Whatever may be the faults inherent in this system, we must admit that the results of it, if they are reflected even partially in the undoubted decrease in crime which is steadily going on, are much more satisfactory than those which most other countries can boast.

DEATH OF SIR HENRY ACLAND.

Sir Henry Acland, Regius Professor of Medicine in the University of Oxford from 1857 to 1894, died in Oxford on the evening of October 16th. He had been in feeble health for some time, but his fatal illness lasted for less than a week. He was born in 1815, and had been identified with the life of Oxford for sixty years. By his death the profession loses a striking personality which for more than two generations had had a great influence on the course of medical education in this country, and on the part which medical opinion has played in the counsels of the nation. We hope to publish a biographical notice in our next issue.

LONDON UNIVERSITY.

The new Senate of the reconstituted University has now been completed by the election of the representatives of the Faculties. In Arts, Professor M. J. Hill, Professor Paton Ker, Professor Warr, and Miss Emily Penrose, have been elected. In Medicine, Dr. Rose Bradford, Physician to University College Hospital and Professor Superintendent of the Brown Institution; Dr. Kingston Fowler, Physician to and Lecturer on Medicine at Middlesex Hospital; and Dr. E. C. Perry, Superintendent of and Physician to Guy's Hospital, have been elected. In the Science Faculty, Sir Michael Foster, K.C.B., F.R.S., the representative of the University in Parliament; Professor Halliburton, F.R.S., of King's College; Professor Ramsay, F.R.S., of University College; and Professor Rücker, who was a member of the late Senate. In the new Faculties of Engineering and Economics, Professor Unwin, F.R.S., and Professor Hewins, respectively have been elected; while Sir Hubert Parry returns to the Senate as the representative of the Musical Faculty; as already announced, Lord Davey, Chairman of the late University Commission, has been nominated by the Crown in Law, in default of the constitution of a Law Faculty. At the first meeting of the new Senate, which is to take place on Wednesday next, the question of the Vice-Chancellorship will doubtless arise. It is not clear, as appears to be assumed in the *Times* of Monday last, that under the statutes the present Vice-Chancellor, Sir Henry Roscoe, continues in office after the completion of the new Senate. Under Statute 24 the Senate is empowered to elect one of its own members to be Vice-Chancellor, although under the transitory provision of Statute 135 the existing Vice-Chancellor retains office until his successor is appointed under the foregoing provision. It will doubtless be necessary to appoint some committee of reorganisation to overhaul the existing order of things under the new constitution, and it is to be hoped that all the various interests now collected together for the first time will address themselves speedily and harmoniously to the difficult and delicate duties entrusted to them, and with a sincere desire to give to London a University worthy of its position as the capital of the Empire.

THE MAGISTRATES AND THE INEBRIATES.

At the meeting of the London County Council last Tuesday the Inebriates Acts Committee reported that the Farmfield Reformatory for Female Inebriates was opened without ceremony for the reception of patients on August 22nd, the work to the buildings being then sufficiently advanced. The first patient was received on August 28th, and 17 have since been received. Four more are expected, so that it is evident that the whole of the accommodation at present available, which is for 30 patients, will soon be utilised. In addition to the patients admitted, applications have been received for the admission of three patients, who, owing to non-compliance with the prescribed conditions, could not be received. The Committee state that no case has been refused on any mere point of official etiquette, but only when some condition which was felt to be essential to the welfare of the institution was not complied with. The conduct of the patients, having regard to the conditions under which they came, has been satisfactory. The lady superintendent, Mrs. Mathias, who has shown considerable energy and capacity in initiating the work of the institution, testifies to the willingness and obedience of her staff and the capable

manner in which they are seconding her efforts. The reformatory is the first established by a county council in England under the Inebriates Act, 1898, although other county and borough councils have exercised their powers under the Act by making arrangements for the reception of their patients at institutions already established. In reply to questions Dr. Collins, Chairman of the Committee, stated that his attention had been called to statements reported to have been made by Mr. Curtis Bennett, Mr. Plowden, and other magistrates, alleging that the homes were likely to be useless and to cause disappointment because of needless restrictions as to age, moral character, etc. One magistrate had even alleged that the homes were run more along the lines of West End clubs than as asylums for inebriates of all classes. Dr. Collins regretted that the magistrates had not done the Committee the courtesy to read the regulations—made by the Home Office, not by the Council—which had been duly sent to them with a covering letter acquainting them of the opening of the home. He said no case had been refused on the ground of immoral character, and the only cases refused had been ineligible under the Home Office rules with which the magistrates had been duly supplied.

THE ENTRIES AT THE MEDICAL SCHOOLS.

FROM the returns hitherto received of the entries at the medical schools and colleges in England, for which we are indebted to the deans, wardens, and other officers we learn that there is a distinct falling off in the numbers. That this would be the case was anticipated as likely to follow, among other causes, from possible candidates being diverted into the army as a profession. At St. Bartholomew's Hospital 28 fewer than last year have entered for the full curriculum; at St. Thomas's 12, at St. George's 10, at the London 9, at Charing Cross 8, at St. Mary's 7, at Middlesex 2, and at University College 1. In the provinces there is a decrease of 29 at Owens College, of 18 at Liverpool, 10 at Bristol, and 7 at the University of Durham. On the other had, there has been an increase of 5 at the London School of Medicine for Women, 4 at King's College, and 1 at Guy's, while the largest increase so far has been at Leeds where it amounts to 12. At Sheffield there is an increase of 3, in the London School of Tropical Medicine an increase of 4, and of 10 at the London School of Dental Surgery. Up to the present there has been a net decrease of 102 entries as compared with last year.

THE USES OF THEORY.

AT the inaugural meeting of the Liverpool Medical Institution for the Session 1900-01, on October 11th, the President, Mr. Edgar Browne, delivered an address of a philosophical character, marked by rich humour and rising at times to eloquence. It was listened to with rapt attention by a large gathering of members and visitors. Mr. Browne took as his thesis the somewhat paradoxical position that the advances in medicine and science were due to the men who propounded theories rather than to those who collected facts. In support of this position he adduced the names of Young, Pasteur, Lister, and Darwin, but dwelt more especially on the work of Young which formed the foundation of scientific ophthalmology. He showed how the facts with which Young dealt were no new facts; they were a ray of sunlight and the waves of the sea, facts which were as familiar to paleolithic man as to the modern investigator. But Young saw a theoretical connection between these facts, and though he never lived to see the fruit of his labours his speculations were confirmed and enlarged in the generation which followed. His ideas were held up to derision by Lord Brougham in the pages of the *Quarterly Review*, so that they were neglected and forgotten in his own country, but they were revived by Helmholtz and Donders, and so became the basis of modern optics and ophthalmology. As an instance of the hopeless ignorance that shrouded the whole subject before the scientific work of these inquirers, he mentioned that until that time no estimation of the acuteness of vision had even been proposed. Theories suggested the lines which practical investigation should follow, and led to the discovery of many facts which would otherwise remain unknown. A mass of bare facts resembled an army without a head: it was an assemblage of inco-ordinated units, incapable of anything useful; then the theory came, like a capable general, established the mutual relations of the units, brought them into harmony, and so made advance possible. A cordial vote of thanks to the President was moved by Dr. Caton, seconded by Dr. Macfie Campbell, and carried with acclamation. The members were afterwards entertained at supper by Mr. Edgar Browne.

THE THOMPSON-YATES LABORATORIES.

TWO years ago we had the pleasure of recording the opening by Lord Lister of the Thompson-Yates Laboratories of University College, Liverpool. We have now before us in two handsome volumes and in the first fasciculus of the third volume a record of the work, or of some of the work, which has already been done in these laboratortes. The reports, which are edited by Professor Rubert Boyce and Professor C. S. Sherrington, who occupy the Chairs of Pathology and Physiology respectively, recall somewhat the well-known reports of the Johns Hopkins Hospital, but are yet more generous in the matters of type, margin, and illustrations. The first volume contains an illustrated description of the laboratories, together with an address delivered to the medical students of the College by the founder, the Rev. Samuel Ashton Thompson-Yates. The bulk of both volumes and of the first part of the third volume is made up of papers written by teachers or workers in the laboratories, some of which have been published elsewhere, either in the BRITISH MEDICAL JOURNAL, in the *Transactions* of various learned societies, or as reports to public bodies. In addition, there are a series of reports from the various departments of physiology, pathology, bacteriology, tropical medicine, and hygiene. We shall hope to refer to some of these papers and reports not already mentioned in the columns of the BRITISH MEDICAL JOURNAL on some future occasion.

HISTORY OF OWENS COLLEGE, MANCHESTER.

A QUITE sumptuous monograph on the Owens College, Manchester, containing a brief history of the College and a description of its various departments has been edited for the authorities of the College by Mr. P. J. Hartog, B.Sc., Assistant Lecturer and Demonstrator in Chemistry of the Victoria University. It owes its origin in part to a request of the Committee of the Education Exhibition held in London last January, for an account of the College both for that Exhibition and for the Paris Exhibition; and in part to the desire of the College authorities to have such a record for the celebration of its jubilee. After giving a history of the College, in which it is shown that the annual number of its students has increased from 33 to 1,002, the volume treats successively of its government and administration, its finance, its buildings, and the relation of the College to the Victoria University. Then the different departments of arts, science, law, and medicine are described in turn, followed by articles on the library, the Manchester Museum, the College Societies, athletic and other, its halls of residence, the Fellowships, scholarships, and prizes available the portraits and other works of art in the possession of the College, its associates, and, not the least interesting as a top-stone, a record of the original publications by members of the various departments during the last fifty years. As frontispiece, there is an excellent reproduction of a medallion portrait of John Owens by Mr.

T. Woolner, R.A. There are in addition some twenty-eight full-page illustrations, principally of the buildings and the rooms of the various departments.

YORK MEDICAL SOCIETY.

Professor Alexander Macalister delivered the inaugural address of the winter session before the York Medical Society, on October 10th, taking as his subject the Limits of Physiological Discovery. Dr. Bedford Pierce presided, and among others present were Archbishop Maclagan and the Lord Mayor of York. Professor Macalister said that progress in the past had followed essentially on the discovery of methods whereby the powers of Nature could be utilised for the service of humanity, and on the construction of apparatus of precision by which observations could be more accurately made and more definitely recorded. In all departments of biological science the limit of sense perception was the limit of knowledge. Evolution was only a process, not a cause, and natural selection was no more than a condition of the process, at the back of both being the facts of growth and variation, the causation of which lay out of the range of any hypothesis of evolution. The barrier to perfect knowledge in this direction was not so much the inadequacy of our sense organs as a deficiency of material. The genealogy of man could not be completed because the documents had perished, and the course of variation could not be mapped because most of the past forms had left no trace behind. Hence evolution could never be more than a hypothesis. The Archbishop of York, in proposing a vote of thanks, alluded to the saying, "It is a part of human wisdom to be willingly ignorant of some things with a quiet mind," and thought that the lecturer was wise in teaching that the origin of life was an insoluble mystery. Among others present at the annual banquet, which was held in the evening under the presidency of Dr. Bedford Pierce, were the Lord Mayor and Sheriff of the City, the Dean of York, Mr. G. D. Faber, one of the newly re-elected members for the City, Colonel Green, R.E., Dr. Campbell and Dr. Crowley of Bradford, Mr. W. H. Jalland, Dr. Ramsay, Dr. Turner, Dr. Raimes, and Dr. Edmund Smith of York. The Dean of York, in replying to a toast, alluded to the criticism which had been poured out in regard to the treatment of the sick and wounded in South Africa. He did not say that everything had been perfect, but he had spoken to some who had been patients in South Africa, and had heard from them uniform approval. Colonel Green, R.E., expressed his sorrow on seeing the accusations brought against the hospitals at the Cape, but he thought the gentleman who brought these accusations was little acquainted with the military necessities of the case. Nothing, he considered, could exceed the bravery and devotion of the medical officers in South Africa and China in attending to the wounded while under fire. It required far greater courage to do that than to lead men in an assault.

ARMY MEDICAL ORGANISATION IN WAR.

Brigade-Surgeon-Lieutenant-Colonel W. Hill-Climo, M.D., contributes to the *United Service Magazine* for October a short article on the above subject, in which he advocates his already-known views. He holds that it is the present system of organisation which is responsible for the real or alleged mismanagement of military hospitals in South Africa. We are more inclined to endorse his further proposition that any breakdown has arisen, as in previous wars, from "the strain put on the department having been more than it could bear." In other words, the undermanned establishments have far more to do with deficiencies than unified organisation. He very properly contends that to keep the soldier in health is of far more importance than to cure him of preventable disease. No one will gainsay such an evident and sensible proposition. To do this, he contends, there must be at least partial reversion to the regimental system in peace, wherein "every regiment has its own medical officer, an integral portion of itself." But to make a medical officer an integral portion of a regiment would surely destroy the autonomy of the Royal Army Medical Corps; there could not be two sets of medical officers in the army; one belonging to an autonomous Royal Corps, another an isolated item in another corps. Nor can we see how preventive medicine is to be advanced by reversion in whole or part to a regimental medical system. The great part of the army is now congregated in camps, and sanitary preventive medicine must be enforced in regard to a brigade or divisional, not merely in a regimental unit. We are very doubtful if army reform begins with the "decentralisation" of the kind which he advocates. We quite agree that no stationary or general hospital should be larger than the medical officer in supreme charge can efficiently supervise, but we think the limit of 200 beds which he draws is too small; hospitals of twice that size have been efficiently supervised in South Africa. He declares "the recent evolution of the medical service on military lines, is not involved in this discussion," but in fact his dual or hybrid system would most effectually prevent or stultify autonomous evolution on military lines. We trust in any future and near reorganisation of the Army Medical Service all retrogade dual schemes will be set aside, and attention concentrated on perfecting and strengthening the existing organisation on wholly autonomous lines.

CHINA AND THE OPIUM TRADE.

The Representative Board of the Anti-opium Organisations, in view of the general election, and also in view of the present troubles in China, has addressed a circular on the opium trade between India and China to the electors of the United Kingdom. It contains nothing new as to the facts of the opium trade; the oft-told tale is again repeated, and the iniquity of the traffic is pointed out in strong terms: "Our Indian Government has ministered to a degrading vice, and has brought millions of the people of China to misery and poverty." It is pointed out also that the Indian opium trade is a Government monopoly, and that England (why not the rest of the United Kingdom?) is injured morally, commercially, and politically by it. The letter is commended by a number of ecclesiastical authorities, from the Archbishop of Canterbury downwards, and every elector is requested to ask the candidate they intend to support at the general election: "Will you, if elected to Parliament, do what you can to bring to an end our country's connection with the opium trade?" We wish the men who so earnestly plead the cause of the opium sot abundant success. Were they in any way to mitigate the evil in China, no doubt a certain number of Chinese households would be happier. Temperance people in this country would be also doing a great good were they to compel or induce the farmer to stop the growth of barley so that whisky and malt liquors should be expelled from the land. The vineyards of Europe, were they abolished, would remove the temptation of wine from our midst. Tobacco, were its use prohibited, would remove a cardiac depressant which is more or less of the nature of a poison. The withdrawal of all these would result in a gain of health to many persons. The day may come when all of them, including opium, shall be expelled, but the time is not yet. Why the Indian Government should be held up to scorn for allowing opium to be grown, and our home Government escape condemnation whilst they encourage the distilling of whisky and fatten on the Customs revenues derived from imported wines and tobaccos is a subject that is difficult to understand. The Chinaman is better able to protect himself than are our European poor. Astute, clever, and intelligent, he is not patient of advice from without to tell him how to regulate his habits and life; by a stroke of the "vermilion pencil"

opium or any other "curse" could be expelled from his country with a thoroughness and completeness by which Western nations might take example. We wish all success to the Anti-opium Organisation, but the way in which the organisation attacks the problem leaves much to be desired. It is not a method likely to gain the general support of the people of this country.

PROPOSED MUNICIPAL PATHOLOGICAL LABORATORY AT BRADFORD.

The Trades Council of Bradford has taken the initiative in petitioning the municipal authorities to provide a public pathological and bacteriological laboratory in that city. This action of the workpeople springs from the recent regulations of the Home Office in regard to the examination of material from cases of anthrax in the worsted and woollen trades. The arrangement at present in existence is for the suspected material to be sent to Leeds for examination after permission to do so has been obtained from the Chief Inspector of Factories. The petitioners urge that the delay involved in this procedure is unsatisfactory, and that facilities for establishing the diagnosis should be afforded nearer home. In support of their petition they emphasise the vital importance of the early recognition of contagious diseases, not only in the interest of the individual but in the public welfare. They also suggest that the services of a local pathological and bacteriological expert are greatly needed in regard to the serious questions which often arise in the coroner's court. Several towns in England have arrangements with private pathological laboratories, whereby necessary pathological investigations can be conducted and reports made; but Cardiff is, we believe, the only town in Great Britain which has established its own health laboratory, although many towns in Germany and America have their own pathological institution.

THE COMPLICATIONS OF DIPHTHERIA.

In the medical supplement to the fourteenth annual report of the Metropolitan Asylums Board recently published, some interesting statistics are given showing the incidence of complications occurring amongst 8,310 cases of diphtheria which were treated in the twelve fever hospitals during 1899. Albuminuria was discovered in 37 per cent. of the cases; post-diphtherial paralysis occurred in 20.5 per cent.; there was a relapse of the disease in 2 per cent. of the cases; broncho-pneumonia supervened in 1.2 per cent.; otitis media in close upon 6 per cent.; lobar pneumonia in 0.2 per cent., and nephritis in 0.6 per cent. The disease was complicated with scarlet fever in 4.3 per cent. of the cases, with chicken-pox in 1 per cent., and in less than 1 per cent. of the cases with measles, whooping-cough, German measles, tuberculosis, enteric fever, erysipelas, and parotitis.

"SWALLOWING" A DIAMOND.

We are indebted to Surgeon-General Bidie, C.I.E. (I.M.S. retired) for sending us a local report of a curious case recently tried in Calcutta. A young man having provided himself with a new suit of clothes walked into a jeweller's shop and asked to look at a parcel of diamonds. He went to the window for better light, and presently it was discovered that the largest diamond, valued at Rs. 10,000, had disappeared. An assistant noticed that the youth had carried his hand to his mouth suspiciously and the aid of the police was sought and the culprit sent to gaol, where he was placed under medical observation and "treatment." The gem did not appear, and it was suspected that it lay concealed in the man's throat. A skiagram was taken and revealed a foreign body in the throat which could not be dislodged. At the trial an old criminal swore that the concealment of stolen articles in the throat was a well-known habit of Indian thieves. It has been stated in Gould and Pyle's *Anomalies and Curiosities of Medicine* that some training and preparation are necessary for the success of this expedient. An artificial dilatation of the pharynx is produced by the means of a round leaden bullet, which is "swallowed" and brought up several times a day until a pouch is made which fulfils for stolen articles—coins and jewels—the same function as the crop in birds and rumen in ruminants.[1] Concealment of stolen articles in the vagina and rectum and swallowing as a last resort are not unknown experiences in criminal practice in all countries, but the deliberate manufacture of a pharyngeal or œsophageal pouch for temporarily storing gems and coins is, as far as we know, peculiar to Hindustan.

THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

It is thought probable that Mr. Arthur Chance, Surgeon to the Mater Misericordiæ Hospital, will be selected for the Vice-Presidency of the College for the years 1902-3. The place on the Council of the College rendered vacant by the death of Sir William Stokes will be filled on Monday, October 22nd. It is believed that Mr. J. S. McArdle will probably be elected. Sir Philip C. Smyly, who had been the representative on the General Medical Council of the Royal College of Surgeons in Ireland for seven years past, has resigned, as he finds that the attendance at the meetings in London is too great a tax upon his time. The date has not as yet been fixed for discussing the question of filling the Surgical Chair in the College School which Sir William Stokes's death also rendered vacant. Some members of the Council are in favour of suppressing the second Chair, although even prior to the amalgamation with the Carmichael College and the Ledwick Schools of Medicine the Chair was a dual one. By the amalgamation scheme the Lecturer in Surgery from each of the last-named schools became professors, thus creating four Professors of Surgery. The understanding was that any vacancies occurring among the surgical professors should not be filled up until the number of occupants of the Chair was again reduced to two. The deaths of Mr. Corley and Mr. Edward Hamilton left Sir William Stokes and Mr. William Stoker in possession of the Chair, so that, one of these positions being now vacant, it should be filled again in accordance with the amalgamation scheme. Mr. Heuston, Mr. Lentaigne, Mr. Conway Dwyer, and Mr. William Taylor are the candidates named if an appointment be decided upon.

VAGRANTS AND IRRESPONSIBLE DELINQUENTS.

Alfred Petit has published (*Thèse de Paris*, 1900) a very interesting study on a class of irresponsible delinquents intermediate between the insane and the criminal, and characterised among other traits by habits of vagabondage. Some of these are members of the class described by Pritchard under the heading of Moral Insanity. Brierre de Boismert (1846) characterised them as possessed of evil passions and instincts towards appropriating the things of others, but what struck him most was the incorrigible tendency to vagrancy. Morel (1860), after alluding to a class of persons characterised by mental instability, irregularity, and incapacity for moral education, but not suffering from delusions, says: "Their existence is all automatic, they experience no other desire than to have unrestricted liberty, there is a complete absence of all moral sentiments, they desolate their family without the slightest regard, and love of vagabondage seems to dominate the acts of many of this class." Magnan classifies them under hereditary degenerates, and places them in a central group, around the boundaries of which lie other abnormal tendencies such as (1) those towards delusion (*folie raisonnante*); (2) those towards obsessions and allied

[1] Gould and Pyle quote from the *Medical Press and Circular* ii, 1889, p. 189, which however gives no reference.

emotions; and (3) those towards predominant moral and sexual perversions. Charpentier has especially called attention to their vicious and malingering habits. Some authors have considered them as vicious, others as insane and some as both, but nearly all agree that their place is neither the asylum nor the prison. The Elmira Reformatory (U.S.A.) seems to be a typical institution for a selected and limited number of such cases, but the majority are not thus suited for institutional life. Petit points out that in addition to this defective moral development (*anathia* of Fovel), feebleness, and instability of will, there is a total inability for steady toil and application. Benedikt had said of such persons: "There are individuals, as there are races, amongst whom vagabondage is congenital. Their first component element is neurasthenia—physical, moral, and intellectual. Amongst the vagabonds, moral neurasthenia, and chiefly feebleness of will, are dominant. Thus they may work under moral compulsion, but are incapable of working in freedom."[1] Petit also, in studying the clinical histories of 17 cases at St. Anne's Asylum, found that they had a peculiar facility for slipping into drunkenness, and for committing delinquencies which repeatedly brought them within the reach of the police. He concludes that special institutions should be provided for such cases which at present were about at large, and continue to swell the lists of petty criminals, thieves and delinquents, tramps and vagrants, while they are fairly prolific, and leave behind a progeny with tendencies towards criminality, prostitution, and pauperism.

THE LUNACY PROBLEM IN ITALY.

The growth of insanity in Italy is assuming serious proportions as shown in a recent article by Professor Tamburini and Dr. Diverce in the *Rivista Sperimentale di Freniatria* (July). The authors point to the progressive increase in the number of lunatics and the crowding of existing institutions, a question now seriously engaging the minds of the administration. The census of 1871 showed that 44,102 lunatics were under cognisance in the whole of Italy. Vergen in 1874 showed that the numbers of the insane in Italy were then increasing out of proportion to the increase of population, while he also pointed out that only a small proportion—less than one third—of patients had even a fair chance of recovery. In 1874 there were 46 institutions for the admission and treatment of lunatics in Italy, in 1880 there were 62 institutions, in 1883 there were 72, in 1888 there were 82, in 1896 there were 92, and in 1898 there were 131 institutions—public and private. The number of private asylums has since then fallen off by 4, while the number of public asylums has increased by 2. Among the various main groups of lunatics it is noted that while, in the decade past, there has been a considerable increase of idiots, imbeciles, epileptics, and cases of pellagrous insanity, the number of cases of alcoholic insanity remain at a high but not fast-rising level. Regarding the serious question of expenditure in providing asylums and in maintaining them it is shown that whereas the sum of 4,774,000 lira was spent in 1871 (for the provinces of Turin, Rome, Palermo, part of Reggia and a few others), the expenditure in 1897 amounted to 13,048,000 lira, that is, the expenditure had nearly trebled itself in 26 years. In a separate publication by the same authors (*Giornale degli Economisti*, Part II, 1900) the financial and economic aspects of the question are discussed fully. The importance of classification is urged in regard to the different classes of the insane and the kinds of institutions best adapted, both medically and economically, for each class. Thus there should be, first, institutions for the treatment of recent cases of mental disease of an acute and curable nature, with every appliance for treatment and a medical staff after the manner of a hospital; secondly, separate institutions should be devoted to the care of idiots and imbeciles devoid of dangerous impulses and tendencies, chronic and incurable lunatics of quiet and harmless nature, senile patients of debilitated and infirm nature, pellagrous patients who have lapsed into quiet dementia, chronic alcoholics who, having passed through several previous attacks, exhibit no longer any grave or acute psychical disturbances, and chronic epileptics. The ideal condition for patients of this large class is to house them separately according as they are idiots, alcoholics, or epileptics. Institutions for pellagrous patients should be local and special. The article raises important questions regarding the future, and shows the directions in which lines of advance must take in the immediate future in order that the serious question of lunacy may be properly dealt with.

[1] *Annales d'Hygiène*, 1890.

COLLECTIVE INVESTIGATION OF CANCER.

As was announced some little time ago, a Committee of German Physicians has been formed to undertake a collective investigation into the prevalence of cancer in Germany. It appears that the Society of Thuringian Practitioners is about to make a special investigation, and all practitioners in that district are to be asked to fill up a form showing the number of cases of carcinoma which they have had under treatment during the last three years. The Society appears to have been moved to take this step by an examination of the statistics of the Gotha Insurance Society. It appears that in 1875 there were 42,522 persons insured, of whom 61, or 1.43 per 1,000, died, whereas in the year 1899, when there were 92,732 persons insured, 219, or 2.36 per 1,000, died, an increase of nearly 1 per 1,000. The following statistics, giving the rates at various ages among persons insured, are interesting:

Ages.	Annual Average Rate per 1,000 for the 10 Years.	
	1880-89.	1890-99.
46—50	0.94	1.23
51—55	2.04	2.17
56—60	3.16	3.71
61—65	4.47	5.34
66—70	5.82	7.68

THE GUILD OF ST. LUKE.

The annual medical service of the Guild took place in St. Paul's Cathedral on October 17th, being the eve of St. Luke's Day. The arrangements of other years were again carried out. The nave of the church was occupied by a vast and attentive congregation, whilst the members of the London Gregorian Choral Association, who rendered the musical portion of the service, under the direction of Dr. W. Jordan, Honorary Organist to the Association, quite filled the choir. The members of the medical profession who wore academic costume were fewer than 200. They assembled at the western door, and at 7.30 went in procession up the church to the central part of the nave beneath the dome whilst a processional hymn was being sung. Amongst those present were Sir W. Broadbent, Sir W. Gairdner, Sir Dyce Duckworth, Dr. L. Sedgwick, Dr. T. Stevenson, Lieutenant-Colonel E. F. Drake-Brockman, Mrs. Garrett Anderson, Mr. d'Arcy Power, Mr. Eastes, Dr. Sansom, Dr. Symes Thompson. The sermon was preached by the Bishop of Rochester, who chose for his text Acts x, v. 38, "Jesus of Nazareth, Who went about doing good and healing." He said that those present were there under the inspiration of a twofold faith: first, as

members of a noble profession with knowledge as its frame and charity in its heart; and secondly, with faith in the Eternal Being, Who assigned to all their tasks and watched their execution. But this twofold faith was intrinsically one, since whatever was good in craftsmanship was of God. They were there to lay their task again before God, and to ask His help that they might anew do it as it should be done. God was with them in their work; nevertheless, confidence was apt at times to flag, and needed to be refreshed. Christ was spiritual and had wonderful sympathy with suffering. As Canon Liddon had said in 1881, on an occasion much resembling that, the life of Christ on earth strongly resembled that of a physician attending his patients; He went about doing good and healing all manner of sicknesses. In a divine body the divine presence had tabernacled, and He alone had taught men how to mortify the flesh with its affections and lusts, whilst reverencing the body as the shrine of its Redeemer. The doctor's occupation associated his daily work with that of the Master, Who thought such work worth His while when He was here. As friend and patient of the late Sir H. W. Acland, he (the preacher) desired to speak his word of honour and respect for that great man just deceased. Finally, they should all follow as closely as might be the Good Physician, the Friend and Healer of Mankind. A collection was then made on behalf of medical mission work.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

ON October 18th the *Times* published a letter from Mr. Burford Rawlings, Secretary and Director of the National Hospital for the Paralysed and Epileptic, Queen Square. The letter, which was dated October 17th, stated that "The Board of Management had under their consideration yesterday the present position of the controversy raised by the claim of the medical staff for direct representation upon the Board." The Board has, he states, adopted the following resolution: "That in view of allegations in the public press injurious to the interests of the hospital, it is desirable that an inquiry should be forthwith held into the charges formulated by the medical staff against the domestic condition and management of the hospital, and that the Board should request some independent legal authority to conduct such inquiry." Setting aside the point that it is at least unusual for a tribunal which is to inquire into a controversy to be nominated by one side to that controversy, it may be observed that the resolution does not touch the main point at issue. That point is quite clearly set forth in the first sentence of Mr. Burford Rawlings's letter. It is this—that the medical staff claim in the interests of the hospital and of its good administration that they should be directly represented upon the Board of Management. This claim appears to be still entirely ignored by the Board of Management, and it is impossible, therefore, to suppose that the proposed inquiry can be in any sense final.

THE CULTIVATION OF THE BACILLUS OF LEPROSY.

FROM time to time since 1882 the successful cultivation of the bacillus lepræ has been announced by various observers. Many of these pseudo-discoveries, too frequently trumpeted forth in a hurried manner, have been tested by time, which tries all things, and have been found wanting. Scholtz and Klingmüller, of Breslau, after patient investigation extending over some two years, have published their results.[1] in the course of the research they employed a great variety of media, including human skin and leprous blood, and obviously took the greatest pains, but with complete want of success. Nor have they been able to confirm Babes's statement with regard to so-called "leprin," which he obtained from bacilli lepræ, a substance said to be analogous to tuberculin. The German observers point out that Babes does not give sufficient details as to how he proceeded. The difficulties in the way of cultivating the bacillus lepræ outside the human body are very great. It is fortunate that this is the case, for were it otherwise the spread of leprosy would be favoured. Another fortunate fact in this connection is that up to the present inoculation of animals has not reproduced the disease in them. Compare the foregoing with what obtains in the case of the bacillus tuberculosis, which plays such a part in the morbidity and mortality figures all the world over. The bacillus lepræ apparently requires for its proliferation the living human tissues, thriving nowhere else, at any rate as far as has been at present ascertained. The inference is that leprosy is spread by human intercourse, which is in accordance with the contagious view now practically accepted by all observers who have studied and fairly considered the facts.

[1] *Lepra.*, vol. i, fasc. 3, p. 93.

A GENERAL meeting of the British Balneological and Climatological Society will be held at the house of the Royal Medical and Chirurgical Society on October 31st, at 8.30 P.M., when the Treasurer's report and balance-sheet will be presented, and the new officers will commence their duties. Subsequently the incoming President, Dr. Frederick Bagshawe, of St. Leonards, will deliver an address, entitled Points in the Development of Seaside Towns.

DR. ROBERT FLEMING, Senior Pathologist to the Edinburgh Royal Infirmary, and Lecturer in Medicine in the Extra-Academical School, has been appointed Assistant-Physician to the Edinburgh Royal Infirmary.

THE Bradshaw Lecture before the Royal College of Physicians of London will be delivered by Dr. A. E. Garrod on Tuesday, November 6th, at 5 P.M. The subject selected is the Urinary Pigments in their Pathological Aspects.

MR. S. C. MAHALANOBIS, B.Sc., F.R.S.E., late Assistant Lecturer and Demonstrator of Physiology in the University College of South Wales and Monmouthshire, has been appointed Professor of Physiology in the Presidency College, Calcutta.

WE learn that since our last issue Dr. Clarke, of Leicester, has made uninterrupted progress towards recovery. The bullet appears to cause no trouble, and he is now considered out of danger. His assailant was again brought before the magistrates on October 16th, and remanded.

MR. WILLIAM THORBURN, F.R.C.S.Eng., Senior Honorary Assistant Surgeon to the Royal Infirmary, Manchester, has been unanimously appointed Honorary Surgeon in succession to Mr. Walter Whitehead, who has resigned. Mr. Whitehead has been appointed Honorary Consulting Surgeon.

WITH reference to the paragraph on "Death Certificates and Unregistered Practitioners," published in the BRITISH MEDICAL JOURNAL of October 13th, page 1126, we are informed that the warrant against "Dr." Haworth therein referred to has been executed, and that he immediately paid the amount of the penalty due.

A CASE of rodent ulcer cured by daily exposures to the Roentgen rays is reported by Stenbeck, of Stockholm (*Mittheilungen aus d. Grenzgebiete d. Med. u. Chir.*, Bd. vi, No. 3). Each *séance* lasted from 10 to 15 minutes, and they were continued for several weeks. The greatest difficulty was experienced with the hard, wall-like edge.

THE PLAGUE.

LONDON.

SUSPECTED CASE OF PLAGUE IN LIMEHOUSE: PROVED NOT TO BE PLAGUE.

History of the Case.

On October 11th Dr. Thomas, Medical Officer of Health for the Limehouse District, was informed by a medical man who practises in Limehouse that at York Buildings, Maroon Street, a man was suffering from symptoms which closely resembled plague. Dr. Thomas visited the man, found that he was suffering from enlarged glands in both groins, and had fever, etc. He communicated the fact to the Local Government Board and the London County Council, who immediately made an investigation. The patient was visited on October 11th by the medical expert for plague attached for duty with the London County Council, and by representatives of the Local Government Board.

Physical Signs and Symptoms.—The patient, a carman, aged 21, was suffering from an increase of temperature; his tongue was slightly coated, the spleen was somewhat increased in size, and a trace of albumen existed in the urine. In the groins a bubo existed on either side. The swelling on the left side was below the groin, and about the size of a pigeon's egg; above the bubo there was a slight œdema of the abdominal wall, and below the bubo the chain of glands down the thigh were somewhat swollen, the tissues over them puffy and the part exquisitely tender. On the right side the bubo was of more recent formation, and the glands in the thigh below the seat of origin were distinctly enlarged. There was no local cause of the enlarged glands to be discovered, either in the skin of the feet or elsewhere.

Removal to London County Council Reception House.—The man had applied at the out-patient department of the London Hospital, some six days previously, for an attendance card, but he felt too ill to again visit the hospital, and called in a practitioner in the neighbourhood. The signs and symptoms in the case so closely resembled plague that it was deemed advisable to regard the patient as a "suspect" until the bacteriological results were ascertained. The patient was accordingly removed to a "reception" house close by, which the London County Council had prepared some time previously. A nurse was placed in charge of the patient, and his comfort attended to. The rooms in the house in York Buildings, Maroon Street, where the patient lived, were disinfected, and the remaining inmates of the dwelling placed under daily medical inspection.

Negative Result of Bacteriological Examination.—Neither in the fluid from the gland nor in the blood were the plague bacilli found microscopically; and the bacteriological investigations, conducted by Dr. Klein, so far, have given a negative result. It may be definitely concluded that the case in question is not one of plague.

Wisdom of Notification.—It is satisfactory to know that medical practitioners are alive to the possible presence of plague in their practice, and it is highly creditable to the medical practitioner in Limehouse, under whose observation this patient first came, that he should not only have thought of plague as a cause, but also that he should have had the courage of his opinions and reported the case.

Reception Houses.

It is also satisfactory to find that the London County Council scheme for providing a "reception" home for suspected cases is already in working order. It is unfair to other people that a patient possibly suffering from plague should be left in his house, where he may infect others, and at the same time it is unfair to the patient who is merely suspected of having plague to be moved at once to a plague hospital, where, if he has not already contracted it, he may acquire it. "Reception" houses, as well as "refuges" for persons who have been in contact with a case of plague or suspected plague—for suspected cases of plague are absolute necessities. It may be that we have had a false alarm; but this suspected case has tested the machinery for dealing with plague in London, and we congratulate the authorities on the way in which their preparations have stood the first test.

Precautions by Sanitary Authorities.

There is good evidence that local health authorities are alive to their duty in guarding against an outbreak of plague. Medical officers of health are endeavouring by the issue of printed circulars, to acquaint medical men generally with the salient features of the disease, and with the steps to be taken should a case of plague occur in their practice. One of the most recent of these circulars which has reached us is a "Circular Letter to Medical Practitioners," issued by Dr. J. J. F. Sykes, M.O.H. for St. Pancras. The circular contains the recent Order of the Local Government Board; directions to be followed where an inmate of any house is suffering from an infectious disease resembling plague; the several "Resolutions of the Sanitary Authority;" a short account of the symptoms of plague and directions for obtaining and forwarding for bacterioscopic examination material from a suspected case of plague. The circular is a model of conciseness, and should prove of great value at the present moment. A memorandum on "The Signs and Symptoms of Plague" is being issued to medical practitioners in London by the Public Health Committee of the London County Council.

The Diagnosis of Plague.

We are indebted to Dr. A. K. Chalmers, Medical Officer of Health for Glasgow, for the following very interesting notes of cases which have recently been brought under suspicion of plague in Glasgow. They are illustrations of cases which at one part of their course at least present symptoms suggestive of plague, and require careful scrutiny before exclusion.

Case I. *Septic Adenitis.*—J. McC. sickened on September 27th with shivering and headache, which were followed on the 28th by pain in the right axilla. On examination on October 2nd and 3rd there was a general thickening in this situation, which was tender on pressure, although definite glandular enlargement in the axilla could not be discovered. In the left axilla, however, several glands were enlarged, but were not tender on pressure. He was removed to hospital for observation, and in the course of the following day an abscess of a distinctly septic character appeared in the right axilla.

Case II. *Inguinal Adenitis.*—M. McF., aged 13, was admitted to hospital on October 6th with the following history: About twelve days previously a swelling appeared in the right groin, which, on examination, was not painful to pressure, and had not given rise to constitutional disturbance. Further examination of this gland has quite definitely excluded plague.

Case III. *Fever and Death due to Septic Poisoning.*—On October 6th, a boy, McE., was notified as suffering from "fever, probably typhus," and, on the house being visited, it was learned that he had died on the previous evening. A history of illness beginning suddenly in the midst of apparently perfect health, and accompanied by vomiting and high fever, with rapidly increasing prostration and death within twenty-four hours, aroused suspicion, which was strengthened by an external examination of the body, and the discovery of a chain of enlarged cervical glands on both sides of the neck and in the left axilla. The body was in consequence removed to the mortuary at Belvidere, and a *post-mortem* examination was there made. This revealed a tonsillar abscess, with a widely distributed glandular enlargement, all pointing to an extreme degree of susceptibility towards septic poisoning, to which the death can be attributed. Evidence of plague was entirely absent.

Prevalence of the Disease.

Glasgow.

The number of plague patients in hospital in Glasgow is 20. There has been no death from plague during the week. The patients in every instance are reported to be proceeding favourably. All contacts have now been set free, and the reception houses are now empty. There are, moreover, no suspected cases under observation. It would appear, therefore, that the outbreak of plague in Glasgow will soon be a thing of the past, and that the port, which has suffered considerably commercially by being declared infected, will be able to claim a clean bill of health to all out-going Glasgow ships.

India.

For all India the mortality from plague amounted to 1,442 during the week ending September 23rd, an increase of over [illegible] the previous week. In the Bombay Presidency [illegible] curred. In the city of Bombay the recorded mor[illegible] from 102 during the previous week to 95 for the [illegible] tember 23rd. This, although an insignificant lesse[illegible] raise hopes that the annual recrudescence, which [illegible] time of the year in Bombay, may subside. Up to the present report the number had doubled during successive weeks, but the stay in the recrudescence, it is hoped, may mean a diminished virulence during the approaching cold weather. Poona and [illegible] bay Presidency in which plague is mo[illegible] daily death-rate from plague during the [illegible] and in Belgaum between 30 and 40 deaths from plague occurred daily. Two British soldiers in the fort at Belgaum were amongst the number of those attacked by plague.

In Bengal, exclusive of the capital, 32 deaths from plague were reported during the week ending September 23rd, and in the city of Calcutta 47 during the same period.

The Mysore Province suffered severely from plague [illegible] week of September, as many as 501 deaths occurring [illegible] disease is most virulent in the city of Mysore, but in [illegible] the Mysore district the disease is widespread

HONG KONG.

Four cases of plague and 4 deaths from the disease occurred in Hong Kong during the week ending October 13th.

MAURITIUS.

For the week ending October 11th, 33 fresh cases of plague are reported from Mauritius, and 32 deaths from the disease.

MADAGASCAR.

At Tamatave plague is reported to have again broken out. The authorities are taking every precaution to prevent the disease extending to other towns in the island.

PLAGUE ON BOARD A BRITISH STEAMER.

A Lloyds telegram from Monte Video states that five of the crew, including the captain and first officer, of the British steamer *Highland Prince*, died of plague during the voyage from Antwerp and London. The vessel arrived at Monte Video on October 12th. We have no further confirmation of this statement, but if it is true it is calculated to justify considerable apprehension. Neither London nor Antwerp are known to be infected by plague, and until further information concerning the occurrence is available, it is impossible to discuss the matter, or to hazard a suggestion as to how the ship's crew became infected.

THE PREVENTION OF TUBERCULOSIS.

INSTRUCTION IN THE PREVENTION OF CONSUMPTION.

A SPECIAL report on the prevention of consumption and other tuberculous diseases in the parish of Clerkenwell, written by the medical officer of health, Dr. George Newman, at the request of the Public Health Committee, has recently been published. After a general introduction dealing with the characters and the nature of tuberculosis, the peculiarities of the health conditions of Clerkenwell in regard to consumption are discussed. The latter part of the report treats of the preventive measures: first, of those which are in the hands of the public; and, secondly, of those in the hands of the sanitary authorities. The former section has been so arranged as to be suitable for reprinting separately for distribution. It is partly derived from the instructions issued by the National Association for the Prevention of Consumption and by the public health department of the Government of New South Wales. The subsections of this chapter set forth in a plain manner the infectiousness of consumption, the factors in the predisposition to consumption, its preventability by destruction of phlegm, by the thorough cooking of milk and meat, by light, ventilation, and cleanliness in houses, and by the separation of consumptive persons. Directions for the families of consumptive persons are given, in particular how to protect themselves by the cleansing of rooms and linen, and the disinfection of evacuations. The second section, meant for sanitary authorities, deals with the questions of voluntary notification, the education of the public, the protection of the food supply, sanatoria for consumptives, the bacteriological examination of suspected cases, and the measures of disinfection after death from phthisis.

With regard to notification, Dr. Newman expresses the opinion that a system of voluntary notification would probably meet the necessities of the case, without the disadvantages by which compulsory notification might be accompanied. He considers that notification need only really include those persons who may be expected to propagate the disease, namely, (1) phthisical patients with muco-purulent discharge, infective sputum, etc., from the lungs; (2) cases of consumption of the bowels and tuberculosis with diarrhœa; (3) cases of tuberculous bones, with discharge; (4) cases of discharging tuberculous glands or ulcers.

COUNTY SANATORIA FOR CONSUMPTIVES.

The report on tuberculosis of the county medical officer for the West Riding of Yorks (Dr. J. R. Kaye) has just been presented to the West Riding County Council. This report has special reference to the treatment of consumptives in sanatoria, and is the outcome of a suggestion by the medical officer that the time has come for the sanitary authorities of the Riding to discuss seriously the practicability of combined action in providing a model sanatorium for the cure of consumption.

Dr. Kaye points out that tuberculosis depends upon environments, occupation, and habits rather than upon inheritance, and is a preventable as well as a curable disease. There would appear to be about 6,000 consumptives in the West Riding, a sufficient number to justify some combined attempt by the various local authorities to deal with the disease. Sanatorium treatment embraces several ideas—recovery, isolation, and education—and in each of these directions serves eminently useful purposes. The scheme which he suggests is that the county council should provide a suitable institution, and that a small fixed charge for maintenance should be made against each local authority sending a patient. He gives tables showing the cost of erection and maintenance for several sanatoria, from which he concludes that the cost of erection need not exceed £200 a bed, and that the cost of maintenance of each patient would be from 5s. to 6s. 6d. a day.

The project of establishing a sanatorium seems to have aroused considerable interest in the West Riding, and to be well received.

NOVA ET VETERA.

THE SCALE OF FAHRENHEIT'S THERMOMETER.

MY best endeavours made for many years have altogether failed in obtaining an authentic account or reason as to the principle on which Fahrenheit constructed his well-known scale, which is now universally used in England. No mention of its meaning is to be found in any work of natural philosophy or chemistry with which I am acquainted, and I have not yet met with a professor (and I have interrogated some of the most distinguished) who could give me any information about it. Most of them admitted that they were quite ignorant of its origin, and two surmised that the number 180, marking the degree between freezing and boiling, had something to do with the half circle. My friend Mr. Stromeyer, an engineer, told me some time ago that he believed the scale was made from the temperature of the blood, and probably this information was gained from the *Encyclopædia Britannica*, to which I shall presently refer.

SIR ISAAC NEWTON'S SCALE.

I should have taken no further trouble in the matter had not my interest in it been again revived by reading a paper in the *Philosophical Transactions* for the year 1701, in which it is proposed to make a thermometer founded on the temperature of the human body. The paper is anonymous, but I believe it is the opinion of Lord Kelvin that it was written by no less a man than Sir Isaac Newton.

The paper in the *Philosophical Transactions* supposed to be written by Newton is to be found in vol. xxii, p. 824, April, 1701. It is written in Latin, and entitled *Scala Graduum Caloris*. The following are the portions which I quote.

In hujus tabulæ columna prima habentur gradus caloris in proportione arithmetica computum inchoando a calore quo aqua incipit gelu rigescere tanquam ab infimo caloris gradu seu commune termino caloris et frigoris, et ponendo calorem externum corporis humani esse partium duodecim.

Patet autem per hanc tabulam quod calor aquæ bullentis sit fere triplo major quam calor corporis humani.

Ex his inventis ponendo calores olei ipsius rarefactione proportionales et pro calore corporis humani scribendo partes 12 prodiit calor aquæ ubi incipit bullire partium 33.

Before this time thermometers had been made by Hooke and others, but found to be of little value. Newton (if he be the author) used linseed oil in a glass tube, and in his paper he gives a table showing the height on this instrument at which different liquids boiled, saying, "In the first column we have that degree in which water begins to freeze as the lowest degree, and making the external heat of a human body 12 degrees. Now it appears that the heat of boiling water is almost three times greater than the heat of the human body, being 34 degrees." I might remark that the duodecimal system was then in universal use, and therefore Newton, wishing to make the temperature of the body in accordance with this, he marks it 12, leaving room for the higher temperatures, zero being freezing point.

FAHRENHEIT'S SCALE FOUNDED ON THE BODY TEMPERATURE.

A few years after the publication of this paper Fahrenheit made his thermometer, and followed Newton by making the temperature of the body his first resting place, counting upwards and downwards from this fixed point. Whether he knew of Newton's essay I am not aware, but in all probability he did. He found he could get a greater cold than that of freezing water by mixing together ice and salt. This point, therefore, he made his zero. He thought also that it would be better if he enlarged the scale by doubling the numbers, and making that of the body 24 instead of 12, starting of course from his own zero. This made the freezing point 8 and the boiling point 53, which, as his predecessor had said, was about three times that of the human body. His scale then stood

thus: Zero that of ice and salt mixed, 8° for freezing, 24° for the human body, and 53° for boiling. He then further extended the scale by dividing each degree into four parts, so if it is multiplied by four we have the scale now in use, 32° for freezing, 96° for the body, and 212° for boiling. In this way the thermometer seems to have been evolved. Subsequently these degrees were still found to be too large for accurate measurement, and so were divided into ten parts each. This is a modern innovation, for the decimal system did not come into vogue for many years after Fahrenheit's time.

This information is gained from the *Encyclopædia Britannica*, and I apprehend that the writer of the article must have obtained it from authentic sources—from the writings of Fahrenheit himself or from some of his contemporaries. His thermometer, which I always regarded as an abomination, is now looked upon by me with a great and two-fold interest. Its scale being founded on the temperature of the body, and this naturally under the duodecimal system receiving the round number 12, became the point from which every other number proceeded. The paper does not state how the temperature of the body was ascertained; possibly in various ways, which accounts for the figures being not quite accurate and not in accordance with the fixed figure on our modern instrument; Newton, however, is careful to say the "external" heat of the body.

Another Theory of Fahrenheit's Scale.

Some amount of doubt must still remain as to the explanation of the scale which I have given, seeing that no mention of its origin is to be found in scientific books, and the account given in Brande's *Dictionary of Chemistry* is of a totally different kind, although the author of the article hesitates in attributing it to Fahrenheit. It is said therein "that the 180° between freezing and boiling was chosen by Fahrenheit—or probably Réaumur—for some of his experiments on the expansion of mercury. When he plunged his thermometer into melting snow, the 11.156 parts of mercury which it contained expanded when placed in boiling water to 11.336, being an increase of 180 parts." This is said to be the origin of Fahrenheit's scale, the constructor carrying it still lower when he found he could obtain a greater degree of cold. In this account it is not stated why he used this amount of mercury, and therefore it can only be inferred that it was the quantity contained in the bulb. It is difficult to understand how a scientific man could have adopted so arbitrary a method, and therefore probably the description is incomplete. It may be remarked that Newton experimented in the same way, and his results are mentioned in the paper referred to; he there showed the increased space which 1,000 parts of oil occupied when raised to the temperature of the human body or that of boiling water.

Conclusion.

I should like to say that I am inclined to put full credence in the account I have taken from the *Encyclopædia Britannica* as to the origin of Fahrenheit's thermometer, and although I know that sentiment should have no place in a scientific investigation, I cannot but hope that it is correct, for I must admit that to a certain extent "my wish is father to the thought." For the future, whenever I see a thermometer in use to mark the temperature of the body, I shall be reminded that it was first used for this purpose in order to mark the starting point of the scale from which all other temperatures were to be reckoned. At the same time there will be the pleasing remembrance that it was our great Newton who, in all probability, suggested the temperature of the body as the starting or determinate point in the thermometer, and marking it by the round number 12.

Samuel Wilks.

HOSPITAL REFORM.

The Medical Guild, Manchester, has issued the following report on the subject of hospital reform to the Board of every hospital and dispensary in Manchester:

The Medical Guild is impressed with the difficulties surrounding this question, but is convinced that reform lies along the lines indicated by the recommendations appended.

The difficulties lie chiefly in the fitness or otherwise of the various applicants who present themselves at our hospitals. The fitness must be viewed from the standpoint of professional or medical exigencies, as well as from the point of view of charity.

The Guild considers that the present methods of investigation through the agency of the District Provident Society, and by means of such hospital officials as are employed, are unsatisfactory because the investigation is not thorough, and is limited to a small area, and also because the "poverty scale" is not the same for all the hospitals.

The Guild is further of opinion that by far the greater number of those attending the out-patient department do not require any special treatment, and only waste the time and energy of the hospital staff.

The Guild considers that the charges exacted from patients are wrong in principle and bad in effect.

The Guild is of opinion that the treatment of home patients does not come within the sphere of the legitimate work of the hospitals, and could be better carried out by other means.

The Guild regrets that a large amount of hospital abuse is due to medical practitioners who, particularly in country districts, send patients to hospitals who could afford to do without medical charity.

The Medical Guild recommends:

1. That the investigation of the financial suitability of the applicants seeking relief at all medical charities should be the work of a Central Board, and that, in every case in which investigation is decided upon, it should be done thoroughly.
2. That all trivial cases should be dismissed after the first attendance, and that they, and all accidents (which should receive first aid), should, if not detained as in-patients, and if not fit objects of charity, receive no further treatment, but be referred to other sources.
3. That all recommends should be discontinued, each application being dealt with on its own merits.
4. That the exaction of any payment whatsoever from patients should be entirely abolished.
5. That the home visiting of patients should be discontinued, and more suitable arrangements made.

G. A. Wright, Chairman.
William Graham, Convener.
Arnold W. W. Lea, Secretary.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

(Continued from page 1121.)

UNIVERSITY COLLEGE, LONDON.

The Medical Society.

Bias in Clinical Medicine.

The annual public night of the University College Medical Society was held on October 17th, when an address was given by Dr. Judson S. Bury on Bias in Clinical Medicine, who said that many errors in medicine were due to bias. The word bias appeared to come from an old French word, *biais*, meaning oblique or slanting. As a rule it was used to denote a one-sided tendency of the mind. It was to be observed that the term usually implied error, as when it was said that the judgment was biassed. When a judgment or opinion was correct it was said that it was good or sound, very rarely that it was biassed in the right direction. In extreme cases a man was said to look at things in such a biassed manner that the afflicted person might be deemed to possess what Oliver Wendell Holmes called a squinting brain. The causes that fixed the mind in one direction often unconsciously closing it to the consideration of more than one or two aspects were in part congenital and in part acquired. In cases of congenital bias the sufferer appeared to be devoid of any power of observation. He could see things, but could not observe, and was unable to analyse and form a judgment on the various impressions received by his senses. Acquired bias might affect a mind of good average development; imperfect education was one of the chief causes. Scientific subjects were better taught now than formerly, but in Dr. Bury's opinion there was still a good deal lacking in the methods adopted for the training of men for medical work. Passing next to the bias of authority the speaker said that he included in that phrase all the statements with regard to disease and its nomenclature to be found in the best medical books. Medical knowledge already in their possession, while certainly tending to the advancement of medical science, acted in some degree also as a retarding agent, and a new discovery in medicine might divert the mind too much in one direction, and might thus impair the comprehensive view so necessary for real advance. Dr. Bury illustrated this point by describing in detail the history of peripheral neuritis, and declared that the remedy was to strive to acquire a scientific habit of mind. Students of medicine would best secure this by passing some time in original research, not with the expectation of making a discovery, but for the building up of a scientific habit of thought. Dr. Bury then proceeded to discuss the question of the correctness of the terms curable and incurable disease. After quoting some remarkable cases, he

pointed out that an attack of illness, however slight, might leave behind it some weak spot which after months or even years might be attacked by a toxin or other irritating agent, and become the starting-point of some chronic progressive disease. On the other hand severe organic disease was not always fatal, for occasionally the morbid process was arrested, and in exceptional cases even completely cured. The bias of inclination was well exemplified in a certain writer who had collected a number of cases of the disease which he was investigating, and found that the greater proportion of the features presented by those cases supported a definite view to which the writer himself was much inclined. The inclination was to make deductions not simply from the facts observed, but from the facts suiting his own expectations and wishes. Commenting on the bias of specialism he considered that the throat, ear, eye, and brain specialist should remember the relation of any particular organ to the other parts of the body. The bias of physical signs came last in the list, and it was not to be pretended that a complete examination of any patient had been made till they had studied the chief influences to which his organism had been exposed in the past, and had fully considered its present condition, together with its capacity for existence and health in the future. The impaired vitality and declining strength of a mother who has lost her only child were not revealed by physical signs and chemical tests, and could not be adequately treated by drugs; but the doctor who had studied humanity as well as the pathology of tissues would recognise that the mother's mind was affecting her body, and would know that kindness with sunlight and change were the remedies to help to keep life going till time had healed the wound. Sympathy for suffering was sometimes as necessary for a correct diagnosis as for successful treatment. In conclusion, Dr. Bury said that the preventive treatment of bias consisted of three things—namely, care, doubt, and truth. The doubt he referred to was the true scientific doubt, involving the intention to arrive at a certainty.

MEATH HOSPITAL, DUBLIN.

TUBERCULOSIS IN IRELAND.

DR. JAMES CRAIG, Physician to the hospital, who delivered the introductory address, chose as his subject Pulmonary Consumption in Ireland.

[Dr. Craig opened his address by referring to the loss which the hospital had suffered by the deaths of Sir William Stokes and Mr. Glasgow Patteson, surgeons to the hospital, and of Dr. Arthur Wynne Foot, who had been for twenty-one years physician to the hospital previous to his retirement in 1892. Turning to the main topic of his address, he said:]

PREVALENCE OF PULMONARY CONSUMPTION IN IRELAND.

Nearly 10,000 people in Ireland die every year from pulmonary consumption, and these numbers do not include 3,000 more who succumb to other forms of tuberculosis. Dublin itself, with a population of 350 000, is responsible for some 1,300 deaths per annum, and Belfast, with practically the same population, is a good second with over 1,100 fatal cases in the year. On an average, therefore, 24 inhabitants of this city die every week from a disease which is now regarded as preventable. Several facts in connection with this astounding mortality are worthy of notice.

1. In England the death-rate from consumption has been showing a steady decrease for the last twenty years, whereas in Ireland the reduction has been scarcely appreciable.
2. The death-rate in London from phthisis is less than one-half of that which obtains in Dublin.
3. The fatalities in our city from a combination of the principal zymotic or infectious diseases are fewer than those caused by consumption.
4. The victims of consumption are chiefly the men and women between 25 and 35 years of age, who are the most active workers and breadwinners in the community.

Dr. Craig then referred to the mode in which the disease is acquired and spread, and to the necessity for the disinfection of rooms which had been occupied by persons suffering from pulmonary consumption. He then passed on to consider the methods which should be adopted to prevent the spread of the disease.

The teachers, he said, in the primary schools, who themselves will instruct the young, must be taught the importance of sunshine, fresh air, free ventilation, and cleanliness in the prevention of consumption. The Jubilee nurses afford one of the readiest means of directly carryin into the homes of the poor the information as to the dangerous character of tuberculous expectoration, the necessity for ventilation, fresh air, and whatever isolation may be possible. The employers of labour, in whose places of business numbers of workpeople are congregated together, must see to the proper heating and ventilation of the rooms, to the banishment of dust, and to the destruction of expectoration.

Every movement for improving the homes of the poor, and every organisation to lessen the waste of money in the consumption of drink, should be encouraged.

The sanitary authorities should undertake a room-to-room and house-to-house dissemination of circulars containing practicable advice to be followed by persons infected. The excellent principle adopted by our Medical Superintendent Officer of Health to encourage a voluntary notification of the disease, and the disinfection of the clothing and homes of those who suffer from or have succumbed to its ravages, should be rendered compulsory throughout the entire country. Finally, more stringent measures are required than at present exist to prevent the sale of tuberculous meat and milk, or their contamination by attendants who are themselves consumptive.

CLASSIFICATION OF THE CONSUMPTIVE POOR.

I propose to divide the consumptive poor, whose circumstances I desire to discuss, into three groups:

1. Those who, in an early stage of the disease, offer a fair expectation of cure, and are willing to subject themselves to isolation and treatment.
2. The consumptives who are the breadwinners of a family, and are, therefore, compelled to remain in their homes and engage in their daily work while any strength remains to them.
3. Those who in the latest stages of the disease are no longer fit to work, and for whom a hope of cure is practically impossible.

In regard to the first class, there is positively no accommodation provided in connection with this city to which pauper consumptives can look for treatment and a hope of cure. I fully recognise the good work which is already being done by the Consumptive Hospital at Newcastle, but it is not available to pauper inmates, and it contains only thirty-two beds.

The second class is a large one. The individual probably occupies a room in a tenement house, where there is no attempt at reasonable isolation, especially by night, and so the other members of the family are almost certain to become infected.

The case of the third class is the most pitiable of all, and represents the final stages of the others. The sufferers are no longer able to work, are absolutely without means, are in the most infective stage of the disease, the general hospital is no place for their reception, and the convalescent homes in connection with the city have one and all decided to close their doors against them. What, therefore, are the prospects to which they may look forward for the remainder of their lives? To remain half-starved in their miserable homes, spreading the infection to any members of the household who have still escaped it; in a few instances to gain admission to the hospice for the dying, or finally to become unwilling inmates of the union hospital, where the conditions, however excellent, are by no means the most suitable for the amelioration of the symptoms of advanced consumption. I do not in the foregoing category include the Incurable Hospital, for, although a most excellent organisation prevails there, still it is intended for a better class of patients than I am referring to, and a considerable amount of interest is required before admission can be obtained.

The problem, then, which confronts us—and it is one which the public health authorities in the city must conscientiously endeavour to solve—is by what methods the circumstances of each of the three classes whose position I have attempted to define can be most effectively improved.

SANATORIA.

Sanatoria, however rude, should be provided where fresh air and shelter may be available in the treatment of adults and children for whom a cure would be reasonably expected.

France, in addition to several sanatoria for adults, has provided by private subscription two splendid institutions, with 350 beds, available for consumptive boys; and over twenty seaside sanatoria, very much like our own convalescent homes, exist, where from two to three thousand children with a consumptive tendency are capable of being accommodated and restored to health.

Germany, in 1895, had only two sanatoria and two small

houses where the poorer classes could be received for hygienic treatment; but in the three years which followed nearly thirty of these institutions were established, and that, too, indirectly by the poor themselves; for, on account of the law which enforces compulsory insurance against sickness and old age on all whose annual income is less than £150 per annum, the insurance companies were quick to realise that the readiest way to save themselves from the disbursement of sick pay was to expend a large share of the premiums they received in the provision of sanatoria for the treatment of consumption. The result is that, "At the present time, every large town and every district in Germany has its local sanatoria society, and often already its own sanatorium."

Russia was aroused to a sense of its duty in 1895 by a report from the medical practitioners of Petersburg as to the need of sanatoria for the treatment of the consumptive poor, and an appeal was made to the public for funds. This was followed by the formation of a Society under distinguished patronage, to which the Emperor Nicholas II contributed a sum of nearly £50,000 for the erection and maintenance of a sanatorium in memory of the Empress Maria Alexandrovna, who was herself a victim of consumption, and, in addition to this, he handed over to the Society a large property of his own, on which a famous sanatorium has since been placed. Many more of these institutions have been also provided which are supported by individual and public generosity, by local rates, and by church collections.

In *Norway* the popular present to the King in commemoration of the twenty-fifth anniversary of his accession to the throne, amounting to upwards of £100,000, was chiefly devoted by him to the establishment of sanatoria for the consumptive poor. In that country, too, I may say in passing, compulsory notification of the disease has become law, and many useful reforms have been enacted to prevent the spread of the disease.

Switzerland, *Austria-Hungary*, *America*, *the Colonies*, and, in fact, every civilised country on the globe, is making provision for the proper hygienic treatment of consumption.

In *Ireland* what has been done, although deserving of the highest praise, is microscopic in comparison to the needs of the community. Dublin, with nearly 1,300 deaths in the year from consumption (more than half of which are among the strictly poor), can boast of the hospital in County Wicklow with its 32 beds, which have been provided and are maintained by public and individual generosity, aided by the minimum charge of 5s per week which the inmates are called upon to pay; and Belfast, with a mortality of 1,100 per annum, has 40 beds at its command in the hospital which was erected through the munificent contribution of £13,000 by the late Mr. Forster Green. There the provision for the poor in Ireland, who might hope to be cured, ends. I have no desire to propound visionary or impossible suggestions; on the contrary, I am prepared to admit that we must content ourselves with small but gradual improvements. The hospital at Newcastle is capable of great extension; let it be supported by every legitimate means known to the charitable public, let the ratepayers of the city and county at large be taxed with a small additional sum for this deserving purpose, and soon we shall find ourselves in a position to maintain not only 100 beds at Newcastle, but several further hundreds in ruder shelters, where consumptives among the very poor may not be denied the curative influences of fresh air and wholesome food.

Housing of the Poor.

I am beset with apparently insurmountable difficulties when I approach the task of attempting to suggest any certain methods by which members of a family who inhabit a single room can be prevented from acquiring the disease when one of their number who has become infected is compelled to continue to work. The real difficulty lies in the necessity for isolation at night. The evil would be minimised if due regard were observed in the matter of ventilation, the frequent boiling of clothes, and the destruction of expectoration by fire; but as these precautions are almost unattainable, it is a question whether it would not be possible for the public health authority either to provide a separate room in the same tenement house in which the infected person might sleep, or to set apart special houses which, under their own immediate supervision, might be utilised by victims of the disease who fear to spread the infection to their relatives.

This matter, I understand, is being considered by the Medical Superintendent Officer of Health and a few members of the Public Health Committee of the city, but practical suggestions on the subject from other sources would, I am certain, be gladly welcomed by them.

The pitiable condition of those who, in the latest stages of the disease, are past work, are probably infecting others, and have no prospect before them but the hospice for the dying or the union hospital, is that which most directly appeals to myself in my daily work at hospital. Homes akin to the hospice are an absolute necessity, and the plain duty of the Public Health Committee is to draw the attention of the Corporation to the state of affairs which exists in the city—namely, that numbers of respectable half-starved consumptives, who are a menace to public health, require a spot in which to end their days, and for which the union hospital may be considered sufficiently adequate, but where they certainly are unwilling to die.

Backward State of Sanitation in Ireland.

Let me quote the hopeful words of Dr. F. R. Walters, to whose work on *Sanatoria for Consumptives* I am much indebted. He says, in reference to Great Britain: "Our country's sanitary past has been great and fruitful, and there is every reason to hope that with growing consciousness of the possibility of destroying this dread scourge of humanity, by the abolition of town smoke, the improvement of our dwellings, the better ventilation of rooms and streets, the admission of sunshine into our midst, the inculcation of more rational habits of life, the destruction of sputa, the erection of sanatoria, and in many other ways, she will gradually prepare for herself a still more great and glorious future."

This bright picture, I am sorry to say, does not extend to Ireland, for the neglect of sanitation is undoubtedly the cause of our great mortality from consumption; nor are the prospects for the future so encouraging as they might be. The condition of the city of Kilkenny, as given to the public a few days ago, does not tend to diminish the stream of emigration from our shores, or engender much hope for improved sanitation in the future—no proper water supply, no system of sewerage, 300 cases of diphtheria in the past year, typhus and enteric fever always prevalent, and the Urban Council ignoring for years the reports of their medical officers of health and of the inspectors of the Local Government Board as to the sanitary needs of the town.

I have no hesitation in saying that the action of the Government in the administration which is again about to take office is responsible for the neglected condition of sanitary reform throughout Ireland. The promoters of the Local Government Act of 1898 obstinately refused to put this country on an equal footing with England or Scotland. They refused to accede to the representations of the Irish College of Physicians to render it even permissive for county councils to appoint medical superintendent officers of health over a county or a group of counties, who, as experts and independent of private practice, would have, in conjunction with the existing medical officers of health, done more in one year to establish efficient sanitation throughout the country than can ever be effected by the present organisation.

[Dr. Craig then referred to the fact that the two clinical medals offered by the medical staff of the hospital had been won by lady students, and to the prospects of ladies now entering the profession.]

QUEEN'S COLLEGE, BELFAST.

Address by Dr. McKisack.

The winter session of the medical school of the College and various teaching hospitals has opened. It is too early to be able to judge the probable number of entries. The medical professors delivered their opening lectures on October 16th, and the classes were well attended; on the same morning the formal opening of the session of the medical school was made at the Royal Victoria Hospital, when Dr. McKisack delivered the address, and welcomed the students on behalf of the staff. His opening sentences struck a note of sorrow, when he feelingly referred to the loss the school had so recently sustained in the death of Dr. Strafford Smith; he then expressed the

regret they must all feel at the retirement of Dr. Henry O'Neill. Turning to the future, Dr. McKisack gave a succinct account of the new hospital, whose foundation stone is so shortly to be laid by the Prince of Wales; but he warned the students that while a thoroughly equipped modern hospital was of enormous advantage to them, yet earnest endeavour on the part of both teacher and student was the essential factor of success; many a discovery had been made and much real knowledge gained with simple and very imperfect apparatus. Scientific methods of diagnosis supplemented but did not supplant the education of the senses. The student was urged to abide closely by the curriculum marked out for him, which was the product of many years' experience in the various arrangements for teaching, to enter earnestly into the somewhat dull routine of methodical case-taking, to follow up their cases, and lose no opportunity of repeated examination; the necessity of regularity and punctuality was enforced, and the great wisdom of economy of time. The inestimable advantage of residence in a hospital was pointed out, and all students advised to compete for such a position before entering into practice. The serious advice was given in a light and happy style most suitable to the occasion, and put the audience in the best of humour. Besides the staff and College medical professors, several practitioners came to witness the commencement of another winter's campaign.

UNIVERSITY OF EDINBURGH.

Address by Professor Wyllie.

Professor Wyllie delivered his inaugural address in the McEwan Hall. Sir William Muir presided, and was accompanied on the rostrum by several members of the Senatus Academicus. He devoted his address to a history of the Chair of Medicine in the University of Edinburgh. The great feature of the Edinburgh School was that its various teachers and professors had been from time to time men of the greatest eminence and influence—men whose work had advanced the science of medicine, and whose teaching had established the reputation of the University as a great medical school. One of these—William Cullen—was in his own day the leading physician and the most eminent teacher of medicine in Europe; he was one of the great outstanding figures in the history of medicine. Professor Wyllie then paid a warm tribute to his immediate predecessor, Sir Thomas Grainger Stewart, who had left to the profession works which would be a monument to him and a name and a memory which would be worthy to be ranked with those of his distinguished predecessors in the chair. Of these, seven in number, Professor Wyllie in turn spoke. No fewer than seventeen professors sprang from the remarkable family of Gregory.

Professor Chiene on Hospitals in South Africa.

Professor John Chiene gave the introductory address to the class of Surgery in the McEwan Hall. There was a large audience, composed of leading members of the Senatus Academicus, the Lord Provost of Edinburgh, members of the medical profession and Town Council, former pupils, and present students.

Edinburgh Men in South Africa.

When he arrived in South Africa Professor Chiene found himself among old students of the Edinburgh school. He then understood, as never so fully before, the power of that school, its imperial character, and the strong bond of union that existed between its members. Even in St. Helena he came across an Edinburgh man (Dr. Roe) doing good work in charge of the Boer sick. Everywhere he went he found old pupils—some who had gone out since the war began, some who had settled in the country. All were glad to see him, and those who had been in charge of the Boer ambulances were specially glad. On his arrival at Capetown he was appointed Consultant in the Capetown District, and his principal work lay at Wynberg, Nos. 1 and 2 General Hospitals, and at Rondesbosch No. 3 General Hospital. In all these hospitals he saw both British and Boer wounded, and it was scarcely necessary to say that no difference was made in their treatment by medical officers, nurses, and orderlies. Some of the most serious cases were Boers. He always found them most grateful for all that was done for them. Claremont, Woodstock, Greenpoint, Simonstown, and Stellensbosch were also visited.

Bullet Wounds.

He was struck by the number of cases of arterio-venous aneurysm, by the cases of hæmothorax rarely ending in empyema, by the numerous cases of hernia demanding operation for radical cure, and by the fact that the great majority of bullet wounds healed by first intention, and that bullets passed through the cavities of the body without any apparent damage. One case made a great impression on him. A soldier lying on his face was struck by a Mauser bullet. The bullet entered above the left clavicle, and passed through the thorax and abdomen, and was removed from Scarpa's triangle on the right side. No bad results followed—truly an anatomical problem worthy of Sir William Turner's attention. The bullet wounds at close range were more severe than those at a distance. Possibly the bullet might oscillate for 400 yards, and then steady down to pass right through the tissues, soft and bony, making a wound in the skin like a leech bite, and with little distinction between the apertures of entrance and exit. Shrapnel cases were the worst. Shrapnel and lyddite, as the Boers told him, were their two fears; they had no fear of the bullets. Patients in the wards were divided into two classes—those who wished to get back and fight, and those who wished to be sent home. The first class were aseptic surgical cases, the second class those who suffered from surgical sepsis and from medical maladies, especially dysentery.

Emergency and Temporary Hospitals.

Regarding his visit to Kimberley in May, he said that everything seemed to him to be done to make the patients in the extemporised hospitals comfortable. But here it was that he was first brought face to face with the municipal problem—to what extent was it advisable to crowd a town with enteric patients? During Mr. Chiene's subsequent visit to Pretoria, Mr. Esselen, formerly Attorney-General to the South African Republic, and an old dresser of his who took to the law, complained to him of the contamination of that town. When could these buildings be again used for their original purposes? What form of fumigation and cleansing would be required to disinfect and purify them? "Hospitals," said Sir James Simpson, "should be built of wood, and should be burned every ten years." He had often thought that schools and halls connected with churches should be burned from time to time. The future of South Africa depended on two things—irrigation of the land and destruction of the dejecta. In passing, a word of commendation was given to No. 11 General Hospital outside Kimberley, in the erection of which the De Beers Company had given valuable assistance. Mr. Chiene then referred to the kindness he had received at the hands of Major-General Sir Archibald Hunter, of his somewhat risky journey to Mafeking after its relief in the company of his old Edinburgh friend Dr. W. H. Steele, who was taking up the *x*-ray apparatus. They were warmly welcomed as the medical relief column from the south, and were able to give much help. Dr. Cameron Dunlop, who had charge of a Boer ambulance at Lichtenberg, told him that they had few enteric cases there. Why was this? Were the Boers when children or young adults attacked with the disease, and then rendered partly immune? The Yeomanry Hospital at Deelfontein was doing excellent work when he saw it.

Edinburgh and East of Scotland Hospital.

Norval's Pont, an important military station guarding the bridge over the Orange River, had been used as a camping ground from October, 1899, first by the Boers when they invaded the Colony, and again on their retreat they made a stand at this place. The ground had been used by many thousands of our troops on their way north to battle, and all the sick had passed South through that station. The camping ground round Norval's Pont was covered with dried enteric and dysenteric dejecta. Dust storms drove the poison into every nook and cranny of tents and huts. It was no wonder that they passed through suffering, but they stuck manfully to their duty, and he never felt prouder of Edinburgh and the Edinburgh School than when he found everyone at his or her post striving to mitigate and combat the mischief. Precautions had been taken from the first. Sir James Clark and Mr. David Wal-

lace refused to take the site that had been allotted to the hospital, and chose a healthy position on the slope, half a mile from the station. When he arrived, Dr. Francis D. Boyd, the assistant surgeons, nurses, dressers and orderlies had their hands full, and he could not speak in sufficiently high terms of their fortitude and endurance. Not a drop of unboiled water was used, and the source of the milk supply was very closely looked into. But it was not a question of either water or milk. It was dust and flies. The dust was inhaled and swallowed, the flies carried the poison from the latrines to the food, and thus infection was carried to the two great absorption areas—the lungs and the intestinal canal. On October 16th the hospital was handed over to the Government, and the return of the staff might be expected in the middle of November. They had served their Queen and their country nobly, and they had ever had before them that they were citizens of no mean city, that they were there to uphold the credit of their Alma Mater and the Royal Infirmary as centres of light and leading. The patients had been treated exactly as they would have been in the Royal Infirmary and City Hospital. Thanks to the ready assistance of the citizens of Edinburgh and east of Scotland given to the Lord Provost and his Committee every comfort was available, and everything that science and kindness could do was done. In their initial difficulties the military staff officers at Norval's Pont and elsewhere gave every assistance. Professor Chiene concluded this part of his address by a kindly and feeling reference to Nurse Boyd (a sister of Dr. Francis D. Boyd) and William Dick, a second-class orderly, who had both died at their posts.

Bloemfontein and Kroonstadt.

In Bloemfontein, when he saw it in July, everything was very different from what existed when enteric was rife, and the difficulties of transport were so great. The same difficulties might have arisen in any large town in this country had such a large number of patients been suddenly thrust upon them. Mr. Chiene next spoke of the excellent order in which he found part of No. 3 General Hospital at Kroonstadt under Colonel Oswald Wood; the Scottish Red Cross Hospital, under Dr. Clark, Senior Surgeon of the Glasgow Royal Infirmary; the hospitals at Johannesberg and Pretoria. In the last-named, the Irish Hospital, under Sir William Thomson, was doing invaluable work. Altogether, the share the civil surgeons has taken in the late crisis had been a very important one, and the help they had given to the Army Medical Department could not but be looked on with pride by the Empire.

The Railway Service.

The comfort of the hospital trains, three of which were under the charge of old Edinburgh men, was referred to, the admirable hospital arrangements in Natal, and the level-headedness of the central medical authority there. The task in Cape Colony was simpler, since the country was loyal, the railway service uninterrupted, and the distance only 200 to 300 miles, and only 50,000 men had to be fed and clothed in place of 150,000.

The Boer Wounded.

He had seen the Boer wounded at every large centre, and his last official duty was to visit those who were for the time being kept in St. Helena. The medical profession knew no nationality. Everyone, on whatever side he might be, who was ill received their help, and he felt fully justified in saying that the same consideration which was given by the medical men on the British side to the Boer wounded was fully reciprocated by the medical men in charge of the Boer ambulances. Putting aside foreign ambulances, more than 50 per cent. of those who served as medical men on the Boer side were taught in the Edinburgh School.

Hospital Administration.

The whole question of hospital administration in the war was still *sub judice*. Everyone who had the medical instinct, sympathy for the suffering, would be willing confidently to wait the verdict. Let them be thankful that the individual members of the profession had done their duty, and let them wait with equanimity, knowing that only good could come from a thorough investigation into those charges which had stirred the sympathy of the nation. Three things had made a deep impression on him: First, the gratitude, bravery, and patience of the soldiers in hospital; secondly, that he had never been privileged in the space of six months to give so much happiness to his fellow men; and thirdly, that at the best war was a miserable business. We had all lost friends. We had all suffered. By our suffering the Empire had been welded together and strengthened.

UNIVERSITY COLLEGE, LIVERPOOL.

Distribution of Prizes by the Bishop.

The formal opening of the Medical Faculty of University College took place on Saturday, October 13th, when the Bishop of Liverpool (Dr. Chavasse) distributed the medals and prizes gained during the last session, and delivered the introductory address. In the course of it he remarked that he was glad to show early in his residence in Liverpool his deep interest as a university man in the fortunes of the young and vigorous University College of Liverpool, which he believed helped to supply a very real want in that great northern city and its neighbourhood, and he was persuaded had before it a great and fruitful future. As the descendant of four successive generations of medical men, he felt it a peculiar privilege to be allowed to meet those who were training for a profession which he had venerated from a child as one of the noblest on earth. He took as the subject of his address the life and work of the three great British doctors—William Harvey, John Hunter, and Thomas Sydenham—and dealt with their careers and characters in a masterly and most interesting manner. In summing up the lessons to be drawn from the examples of these men, he said that their discoveries and writings had blessed and enriched the world, and he was not sure whether they did not achieve more by their character and example. They helped to mould the high character of British doctors, which was the glory of the profession and of the country. The keen discoverer, the patient investigator, men of self-sacrifice and devotion to duty, the generous helper of the poor, bore witness that God cared for the bodies as well as the souls of men. Such men had lived in the past, and, thank God, they were living still. His best wish for the students was that they might unite the culture of William Harvey with the industry of John Hunter, and crown both with the love of truth of God, and of man which was the glory of Thomas Sydenham.

Biennial Dinner.

In the evening the biennial dinner of the Medical Faculty took place in the Exchange Station Hotel. Covers were laid for 160. Sir William Banks, President of the Faculty, was in the chair, and the guests included the Lord Bishop of the Diocese (Dr. Chavasse), the Lord Mayor of Liverpool, Principal Oliver Lodge (Birmingham), Mr. Warr, M.P., and Mr. E. K. Muspratt. It was one of the largest and most successful dinners that has ever been held in Liverpool.

UNIVERSITY OF ST. ANDREWS.

Owing to the death of the Marquis of Bute, the address which Principal Donaldson was to have given at the opening of the University Session was not actually delivered, but it has been printed and circulated among the students. After alluding to the provision made and contemplated for the women students of the University, he discussed the question of medical education at St. Andrews. For many years the only subjects of the medical curriculum taught at St. Andrews were botany and zoology, and the rest were taught in connection with the Infirmary at Dundee. But comparatively recently, mainly owing to the influence of the medical graduates of the University who are scattered throughout England and Ireland, and form a majority of its general council, arrangements have been made for providing teaching of the subjects usually taken during the first two years of medical study, and these have been in force during the last four years. The late Marquis of Bute, as Lord Rector of the University, not only made generous contributions to the building funds of the University in respect of its medical faculty, but he also made the munificent offer of £20,000 to found a chair of anatomy provided the arrangements for two complete years of medical study were made permanent. This, as has been recorded in the British Medical Journal, has become an accomplished

fact, although in the opinion of some it was unwise to have a second year's medical course where provision for hospital teaching was not available. The plan of teaching anatomy and physiology with other ancillary sciences in a university with the understanding that the clinical training of the medical student should be obtained elsewhere, has been followed with not other than good results in the case of the older English universities, and the University of St. Andrews has doubtless done wisely in accepting the late Lord Bute's offer.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE, CARDIFF.

ON Wednesday afternoon, October 10th, Sir John Williams, Bart., M.D., delivered the inaugural address at the opening of the medical session. There was a large attendance. The chair was occupied Dr. William Thomas Edwards, M.D., Vice-President of the College. The address, which was published in the BRITISH MEDICAL JOURNAL of October 13th, was listened to with much interest. A vote of thanks was proposed by Professor Dixon, Dean of the Faculty of Medicine, and seconded by Dr. Thomas Wallace, President of the Local Branch of the British Medical Association.

The Principal of the College, Professor J. Viriamu Jones, F.R.S., has now quite recovered from his long and serious illness, and has taken up his work again at the College.

The Council of the College has appointed Mr. Evelyn John Evatt, M.B., B.S.Durham, Demonstrator and Assistant Lecturer in Anatomy.

The Samuel Brothers (of Cardiff) Scholarship has been awarded to Mr. James Jenkins Paterson.

ENTRANCE SCHOLARSHIPS.

THE following scholarships have been awarded for 1900:

St. George's Hospital Medical School.—An Entrance Scholarship in Arts, of the value of £150, to Mr. Valentine Henry Blake. An Entrance Scholarship in Arts, of the value of £50, to Mr. James Aubrey Torrens, of St. Paul's School. An Entrance Scholarship in Science, of the value of £85, to Mr. Basil Nelson Tebbs, M.A., of Queen's College, Cambridge. An Entrance Scholarship in Science, of the value of £42 10s., to Mr. John Douglas Hope Freshwater, B.A., of Trinity College, Cambridge. An Entrance Scholarship in Science, of the value of £42 10s., to Mr. Harry Bertram McCaskie, B.A., of Caius College, Cambridge.

King's College, London.—In the Medical Faculty: Warneford Scholarships, £75 each, Mr. R. Taylor and Mr. A. M. Pollard. Medical Entrance Scholarship, 60 guineas, to Mr. E. J. Miller. Sambrooke Medical Scholarships of £60 to Mr. R. H. C. Gompertz, and £40 to Mr. A. D. Griffith. Open to all Faculties: Clothworkers' Science Scholarships, £30 for two years, to Mr. W. J. Marlow, and £20 for two years to Mr. O. C. Thompson.

LITERARY NOTES.

ONE of the signs of the times is the increasing attention everywhere given to tropical medicine. There is nothing surprising, therefore, in the appearance of a journal devoted to the subject at Havana. The title of the new periodical, which is to be published monthly, is *Revista de Medicina Tropical.* The editor-in-chief is Professor Juan Guiteras, whose name is well known as an authority on tropical diseases, and among the members of the staff are Dr. Charlor Finlay, Dr. Raimundo Menocal, and Dr. Emilio Martinez. The first number (July) contains papers on the introduction and dissemination of bubonic plague, preventive inoculation against typhoid fever, and the pathogeny of icterus gravis. Among the contents of the second number (August) is a preliminary note by Professor Guiteras on "Anopheles in Cuba."

In the July number of *Science Gossip* there will be found an interesting article by Major B. M. Skinner, R.A.M.C., Medical Officer in charge of the Staff of the Sixth Division of the South Africa Field Force. It is upon the geology of the region traversed by the army in the march from Enslin to Bloemfontein. Major Skinner, who is a skilled geologist, describes the extraordinary appearance and formation of that inhospitable country. The article is illustrated by diagrams of sections.

Mr. Jonathan Hutchinson in a recent issue of his *Archives of Surgery* states that in the Harleian Manuscript 383, there is a copy of a letter from a Mr. William Neve to Sir Thomas Hollande, concerning the embalmment and bringing to town of the body of King James. The writer says:

> The King's body was about the 20th of March disembowelled, and his heart was found to be great but soft, his liver freshe as a young man's, one of his kidneys very good, but the other shrunke soe little as they could hardly find it, wherein there was two stones. His Lites and Gall blacke: judged to proceed of melancholy. The semyture of his head so stronge as they could hardly breake it open with a chesill and a sawe; and soe full of braynes as they could not upon the openinge keepe them from spilling: a great marke of his infynite judgement.

Dr. Max von Niessen (Wiesbaden) has issued the first number of a periodical to be devoted to the study of syphilis. It is printed in French and German in parallel columns. The German title is *Beiträge zur Syphilis-Forschung*; the French title *Articles pour l'Investigation de la Syphilis.* The first number contains two papers by Dr. von Neissen, the one on a method of cultivating a bacillus, which he believes to be a specific, from the blood of syphilitic patients; the other upon the method of cultivating gonococci. Both articles are illustrated by reproductions of microphotographs. Contributions are invited from persons interested in the study of syphilis, and articles in English will be published with translations into French and German. The periodical, which is published by the editor at Wiesbaden, will appear at irregular intervals. The cost, we understand from a notice appended to the first number, is defrayed by a generous friend of Dr. Neissen.

ASSOCIATION INTELLIGENCE.

COUNCIL.

ALTERATION OF DATE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association at 429, Strand (corner of Agar Street), London, on **Wednesday the 24th day of October next,** at 2 o'clock in the afternoon.

The following Committees will also meet:

Tuesday, October 23rd, 1900.—2.0 P.M., Premises and Library Committee.—2.30 P.M., Constitution Committee.—4.30 P.M., Arrangement Committee. *Wednesday, October 24th, 1900.*—10.0 A.M., Journal and Finance Committee.—5.0 P.M., Parliamentary Bills Committee.

FRANCIS FOWKE, *General Secretary.*

October 17th, 1900.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

PERTHSHIRE BRANCH.—The annual meeting of this Branch will be held in the Station Hotel, Perth, on Friday, November 2nd. Candidates for election will please communicate with A. R. URQUHART, James Murray's Royal Asylum, Perth, Honorary Secretary.

SHROPSHIRE AND MID-WALES BRANCH.—The annual general meeting of this Branch will be held at the Salop Infirmary on Tuesday, October 23rd, at 3 P.M.—HAROLD H. B. MACLEOD, College Hill, Shrewsbury, Honorary Secretary.

STAFFORDSHIRE BRANCH.—The twenty-seventh annual general meeting of this Branch will be held at the Victoria Hotel, Wolverhampton, on Thursday, October 25th, at 5 P.M., when an address will be delivered by Dr. Alfred H. Carter, President-Elect. Business: Election of new members. Reports of Council and Ethical Committee. To decide place of holding next annual meeting. Election of officers and Council for the ensuing year.—F. MILNES BLUMER, Stafford, Honorary General Secretary.

YORKSHIRE BRANCH.—The next ordinary meeting of this Branch will be held at the Hotel Majestic, Harrogate, on Wednesday, October 24th, at 3.30 P.M. Members intending to read papers, to propose new members of the Branch or of the Association, or to make any communication, are requested to write to the Secretary at once. The members will dine together at 6.30 P.M.—ADOLPH BRONNER, M.D., 33, Manor Row, Bradford, Honorary Secretary.

OXFORD AND DISTRICT BRANCH.—The next meeting of this Branch will be held at the Radcliffe Infirmary on Friday, October 26th, at 3 P.M. Members willing to read papers or show cases or specimens are requested to communicate with the Honorary Secretary as early as possible.—WM. COLLIER, St. Mary's Entry, Oxford, Honorary Secretary.

WEST SOMERSET BRANCH.—The autumnal meeting of this Branch will be held at the Taunton and Somerset Hospital on Tuesday, October 30th, at 4 P.M. Business: The Question of Coroners' Fees, introduced by the President, Mr. G. F. Sydenham. Mr. W. J. Walsham, of St. Bartholomew's Hospital, London, will read a paper on the Treatment of Appendicitis. Members wishing to contribute cases or papers should inform the Honorary Secretary as soon as possible. The annual dinner will be held at the London Hotel in the evening.—R. LIDDON MEADE-KING, Taunton, Honorary Secretary.

STIRLING, KINROSS, AND CLACKMANNAN BRANCH.—The autumn meeting of this Branch will be held on Tuesday, October 30th, at 4.15 P.M., in the Crown Hotel, Falkirk. Professor Stockman will read a paper on the Action and Value of some commonly used Drugs. The annual dinner will take place after the meeting. All members of the Association resident in the Branch District are cordially invited. Members desiring to show cases or specimens, and candidates for election, will please communicate with J. E. MOORHOUSE, 1, Glebe Avenue, Stirling, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: EAST LONDON AND SOUTH ESSEX DISTRICT.—A meeting of this District will be held at the London Hospital on Thursday, October 25th, at 4 P.M. The chair will be taken by Dr. Eastes, President of the Branch. A demonstration of cases will be given by Dr. F. J. Smith, Vice-President of the District, and other members of the staff. Visitors are invited.—C. J. MORTON, 56, Orford Road, Walthamstow, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WEST LONDON DISTRICT.—A meeting of the District Committee will be held at 20, Colville Square, W., on Tuesday, October 30th, at 5 P.M., to arrange the business for the ensuing session. Members wishing to read papers or intending to receive the District at any West End hospitals are requested to communicate with the Secretary.—THOMAS DUTTON, M.D., 76, Clarendon Road, W., Honorary Secretary.

SOUTH-EASTERN BRANCH: WEST SURREY DISTRICT.—A meeting of the above District will be held at the Royal Surrey County Hospital, Guildford, on Thursday, October 25th, at 4.15 P.M. Dr. Walters, of Reigate (President of the Branch), will preside. Agenda.—Minutes of Guildford meeting; to decide where the next meeting shall be held, and to nominate a member of the Branch to take the chair thereat. Papers.—Dr. Robert Boxall (London): Midwifery as practised by Natives in the Far East, illustrated by lantern slides. Mr. Lang (London): The Recognition and Treatment of Glaucoma, illustrated by lantern slides. Dinner at the White Lion Hotel at 6.30 P.M.; charge 6s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend and introduce professional friends. Members desirous of exhibiting specimens or reading notes of cases are invited to communicate with the Honorary Secretary at once. N.B.—The Honorary Secretary would be much obliged if members would kindly inform him whether they intend to remain to dinner. By so doing they will materially facilitate arrangements, and promote the success of the dinner.—ALEX. HOPE WALKER, The Common, Cranleigh, Honorary Secretary.

SOUTHERN BRANCH: SOUTH-EAST HANTS DISTRICT.—The autumn meeting of this District will be held at 5, Pembroke Road, Portsmouth, on Thursday, November 1st, at 3.30 P.M. Members who wish to bring forward any business, to read papers, etc., show cases or specimens, or to propose any new members are requested to communicate at once with the Honorary Secretary, J. G. BLACKMAN, Poplar House, Kingston Crescent, Portsmouth.

SOUTH-EASTERN BRANCH: WEST SUSSEX DISTRICT.—The next meeting of this District will be held at the West Sussex County Asylum, Chichester, on November 6th, at 3.15 P.M. Dr. Ernest Buckell will preside. The following papers have been promised: Mr. H. Stansfield Collier: Appendicitis. Dr. Hinds: Two cases of Abortion. Mr. Rawlinson: The Notes of Two Cases of Hernia. Dr. H. A. Kidd will show cases illustrating a short paper on various forms of Insanity. A dinner will be held at the Dolphin Hotel, at 5.30. Tickets 6s., exclusive of wines. All members of the Branch are entitled to attend and introduce a professional friend.—H. C. L. MORRIS, 10, The Steyne, Bognor, Honorary Secretary.

THE Swedish Medical Association in Stockholm has founded a gold Pasteur Medal, to be given every tenth year to the investigator who has done most to advance bacteriology or hygiene. On one side the medal has a portrait of Pasteur, and on the other the inscription, "A Louis Pasteur la Société Médicale Suédoise, 27 Decembre, 1892." The first award of the medal has been made to Professor Max v. Pettenkofer, of Munich.

SPECIAL CORRESPONDENCE.

PARIS.

The Académie de Médecine: Operation for Complete Prolapse of Rectum.—Return of Dr. Yersin.—The Continental Anglo-American Medical Society.—Statistics of Typhoid Fever and Small-pox.

AT the first meeting of the Académie de Médecine after the long vacation, M. Delorme showed a patient who had suffered for fifteen years from complete prolapse of the rectum, which condition had been cured by circular excision of the entire invaginating cylinder of mucous membrane, and of a portion of the invaginated cylinder. All trace of the prolapse, even during straining, has disappeared, the radiating folds have reappeared, the sphincter dilates without pain, and the patient has now complete control, not only of solid but also of liquid stools and of gas.

M. Yersin, who simultaneously with Kitasato, discovered the plague bacillus, landed at Marseilles on Friday, October 12th. He returns after finishing his work at Hong Kong and Bombay, and will in due course present to the Académie de Médecine a report on the results obtained with the antiplague serum.

The annual meeting of the Continental Anglo-American Medical Society was held on October 9th at the residence of Dr. George J. Bull, the Honorary Secretary. The Hon. Alan Herbert, M.D., took the chair. The Honorary Secretary read the minutes of the last annual meeting, which were adopted. By the laws of the Society three members of the Executive Committee retire annually in rotation; the following were elected to fill the vacancies: Dr. J. Faure-Miller, Dr. C. K. Austin and Dr. Leonard Robinson. There were eight candidates for membership, and on the voting papers being examined the following were elected: Chas. J. Koenig, M.D. San Francisco, M.D. Paris, R. H. Turner, M.D. Paris, and M. A. C. Tucker, M.D. Paris, practising in Paris; Ralph Browne, M.D. Durh., M.R.C.S., etc., practising at Cannes; H. M. W. Bridgman, M.R.C.S., L.R.C.P., and E. G. Boon, M.R.C.S., L.R.C.P., practising at Massio, Italy; R. J. Mills, M.B., C.M. Aberd., M.R.C.S., practising at Langenschwalbach, Germany; and John Dalebrook, M.R.C.S., L.R.C.P., practising at Seville, Spain. In the evening the annual dinner was held at the Grand Hôtel, when twenty four members and guests assembled under the presidency of Mr. C. K. Gowdy, the United States Consul-General. The Chairman proposed the loyal toasts of "The Queen," and of "The Presidents of the United States and of the French Republic." A humorous speech was made by Dr. Bull, who dwelt on the flourishing state of the Society, which numbers 131 members. Dr. Koenig replied for the new members. Dr. Robinson proposed the toast of "Our Guests." Dr. Landolt replied. The Honourable Alan Herbert M.D., proposed the health of "The Chairman." Other speakers were Dr. Faure-Miller, Mr. Drewett, and Mr. Theodore Stanton. The Chairman in a witty speech proposed "The Health and Prosperity of the Society," thus bringing to a close a very enjoyable evening.

The following table shows the number of cases and deaths from typhoid fever and small-pox respectively during the last ten weeks in Paris:

Week.	Typhoid Fever.		Small-pox.	
	Cases.	Deaths.	Cases.	Deaths.
31st ...	1[illegible]	[illegible]	[illegible]	[illegible]
32nd ...	187	[illegible]	[illegible]	[illegible]
33rd ...	158	[illegible]	[illegible]	[illegible]
34th ...	168	[illegible]	[illegible]	[illegible]
35th ...	114	[illegible]	[illegible]	[illegible]
36th ...	140	[illegible]	[illegible]	[illegible]
37th ...	132	[illegible]	[illegible]	[illegible]
38th ...	102	[illegible]	[illegible]	[illegible]
39th ...	104	[illegible]	[illegible]	[illegible]
40th ...	99	[illegible]	[illegible]	[illegible]

The totals in Paris for the first forty weeks of 1900 were: Typhoid fever, 4,192 cases, 720 deaths; small-pox, 608 cases, 75 deaths.

BELFAST.

Belfast Board of Guardians: Revision of Dietaries of the Workhouse: Pilfering of Food: Energy of the Board. —Abolition of Glanders.—Scarcity of Junior Medical Men.

AN important Committee of the Board of Guardians has lately handed in their report after six months' labour; the subject was the revision of the dietaries. Dealing with the feeding of over 3,000 inmates and nearly 200 officers, including nurses, the Committee have had no light work, and the time spent was in no way excessive. The Chairman of the Committee was Dr. McDonnell, who has so frequently shown a thorough grasp of affairs and intrepidity in advancing reasonable and practical reforms. Dr. McDonnell and the Committeee were congratulated by the Chairman of the Board upon their excellent and accurate report, which must have entailed considerable anxiety and calculation, and was passed unanimously. It would require much space to give even an outline of the changes recommended; greater differentiation is to be observed, separate and practically new scales are suggested for the maternity, lunatic, and fever departments respectively; a purely milk diet is suggested in the infirmary now for the first time. The visiting medical officers have given their sanction and approval to the suggested alterations, and an estimate is submitted that the adoption of the scheme will save the ratepayer at least £1,000 a year.

At a subsequent meeting the Subvisiting Commitee made a report regarding the distribution of food; pilfering had undoubtedly been prevalent, especially in the children's department. The Committee were of opinion that it was due to the employment of pauper help, and recommended that in any subsequent complaints the officer in charge be held responsible.

Other subjects, professional and non-professional, occasionally give rise to fierce and acrimonious discussion, but it is highly satisfactory to see that the Board are not afraid to attack palpable evils, and publicly to condemn, both by emphatic words and far-reaching changes, past systems, they gain credit by not cloaking evils.

In the spring some cases of glanders occurred among the horses in town. The public watering troughs were closed, with the very satisfactory result that no case of glanders has been reported since May 26th. It is now recommended that these troughs be permanently closed—a suggestion which the principal carrying firms and large horse owners approve. Standpipes are to replace the troughs, and owners will provide their own buckets.

The phenomena, lately not uncommon, of good medical vacancies going a-begging, has brought into prominence the scarcity of younger medical men. The Royal Victoria Hospital has been one short in the qualified resident officers since midsummer. At the Down District Asylum, Dr. Nolan, the resident medical superintendent, reported that the vacant assistant medical officership had been extensively advertised, but that there was not a single application. Numerous medical men have had the greatest difficulty in obtaining holidays from lack of substitutes; the war no doubt is responsible for the immediate dearth.

CORRESPONDENCE.

THE PLACE OF THE LECTURE IN MEDICAL TEACHING.

SIR,—At the risk of being considered a fogey, I venture to contend, in the teeth of your article, and of the approving letters of your correspondents, that the lecture still has a proper and a very important place in medical and other education, and ought no more to be abolished because the student has textbooks at his service, than textbooks should be abolished because lectures are open to him. Both have their places in education; both are important; and neither can be profitably omitted or substituted for the other. But, then, the lecture must be a lecture, and not an extract from a textbook, and the textbook must be a textbook and not a written lecture. The information given in the textbook is, or ought to be, more complete and detailed, and more systematically set forth, than is possible in lectures, and to the textbook the student can refer again and again at his convenience. But what the writer of the textbook cannot do is to watch the faces of his readers and see if he is making himself understood; to emphasise his utterances according to their relative importance; to play round a leading principle, to recur to it again and again, presenting it in different words, in different lights, from different points of view, adapting his expression to his auditors, until he satisfies himself from their demeanour that they have got a firm grip of his meaning; neither can the textbook diffuse around it the charm of personal magnetism, or communicate the glow of enthusiasm to its readers. Dr. Wightman, who found all lectures a waste of time, must have been singularly unfortunate in his lectures. That it is a waste of time to attend some lectures is as true as that it is a waste of time to read some textbooks; but Sir W. Gowers has placed it on record that it was by attendance on the lectures of Sir W. Jenner that he gained the knowledge that won him the gold medal at the University of London; and he must be a peculiarly constituted man who, having ever heard a lecture by the late Dr. H. G. Sutton does not still carry in his memory some precious truth, expressed in massive diction, and glowing with the sincerity and force of the lecturer.

One of the uses of the lecture is clearly and well indicated by Dr. Adams: "A good lecture, delivered by an impressive speaker, instinctively sends a man to his book to read the subject up." Surely that is a very important function of the lecture. It excites; it stimulates interest in the subject; it induces the student to work at it *con amore*; and, if this were all it did the oral mode of teaching would still, for this purpose, be "justified rather than the other." But this is not all it does. The best of textbooks must omit much which it is the function of the lecture to supply. The most recent of textbooks begins to be out of date as soon as the proofs are corrected. There are large areas of our science and art in which knowledge is fluctuating and opinion is doubtful, in which, it may be, huge strides are being made from month to month, and even from week to week—*teste* just now the subject of malaria—and in these regions the only possible guide for the student is the lecture.

But for lectures to be valuable the lecturer must be competent—competent in knowledge, competent in expression, competent in character and personality—and the number of competent lecturers is limited. If the outcome of the new University of London is to give to every student the opportunity of attending a competent lecturer in each subject of study it will indeed be justified by its work.—I am, etc.,

Catford, S.E., Oct. 13th. CHAS. MERCIER.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

SIR,—For years I have always refused to examine for less than a guinea except in one office only of the industrial class. In the case of one American office the amount of work required was so great—much greater than I had ever experienced before—that I stated that I could not give up so much of my time for less than two guineas. Need I add that I have had no further experience of this office as far as the office in New York is concerned? If all medical men followed such a rule, the offices would soon have to raise their standard, and we should then have nothing unjust, but "a fair day's wage for a fair day's work."—I am, etc.,

October 11th. M.

SIR,—I have no faith at all in the solidarity of the medical profession, but I feel strongly that the attempt of the New York Life Company to cut down medical fees ought to be resisted. Short of throwing up my appointment I am prepared to resist it; but I know very well that if I refused to work for 10s. 6d., others would be found ready to do it, and really I am not prepared to say they would not do the work as well, or at least well enough for the company. I am an examiner of many years' standing, but require all the fees I can earn to keep things going.

It ought to be "infamous in a professional respect" to cut down fees, far more so than keeping an unqualified assistant under proper supervision, but it is not at present thought to be so. Hence my attitude. I enclose my card, and am, yours, etc.,

October 13th. AN EXAMINER.

Sir,—I have received a similar notice of reduction of fees from the New York Life Assurance Society, and as the medical report is unusually long I have declined to accept the new terms, and have notified to the medical men in this town my decision.

It is worthy of note that a second letter to me from the Company, urging a favourable reply, was signed by Dr. A. Ogier Ward (their medical referee).—I am, etc.,

Liskeard, Oct. 15th. William Hammond.

Our correspondent "G." writes with reference to Mr. D. C. Haldeman's letter in the British Medical Journal of last week, page 1139, that he had fallen into an error in speaking of the Mutual Life Insurance Company of New York. The circular to which he refers was issued by the New York Life Insurance Company. He expresses great regret that he should have made this mistake.

MEDICAL OFFICERS OF THE HIGHLANDS AND ISLANDS.

Sir,—I consider that the suggestion of "Despairing" in the British Medical Journal of October 6th, "that a committee of medical men and parish councillors be formed to decide any grievances against a medical officer," is objectionable, and, in the case of medical officers of remote districts, would prove impracticable.

Dr. Taylor (*ibid.*) clearly points out some of the objectionable features which characterise many parish councils in the remote highlands and islands, and I can fully confirm his remarks from letters I received from many medical officers of remote parishes when I was engaged in organising the "holiday memorial" which was recently presented to the Local Government Board of Scotland.

I trust that Dr. W. L. Muir, the Secretary to the Scottish Poor-law Medical Officers' Association, will, through the medium of the Journal, publicly and fully explain what the Association is doing at present as regards the Fixity of Tenure Bill; and also—what, too, is almost of as pressing importance to the medical officers of the remote highlands and islands—what the Association is prepared to promise to do as regards annual free holiday, free official residences, adequate salaries, superannuation, etc., all of which are urgent matters, affecting more especially the medical officers of the more remote parishes of the highlands and islands.

We cannot wait much longer for the passing into law of a Bill to amend the Local Government (Scotland) Act, 1894. We must do something now—at once. Since the average fee of a *locum tenens* has of late risen considerably, the holiday question has become all the more urgent. I have recently heard of the case of a medical officer of a remote parish, who, having contracted serious illness in the performance of his professional duties, was compelled—through no fault of his own—to borrow money to pay his *locum tenens*!

Now, this is surely a disgraceful state of matters. Not only should the parish council be required by law (as in Ireland) to grant a free annual holiday, but in cases of illness, such as the above, a free *locum tenens* should be immediately supplied at the parish expense, or, alternatively, the parish council should—at the public expense—insure the medical officer against sickness and accident.

Hitherto the resistance of medical officers to the petty tyranny of certain parish councils has been of a passive nature only. Should our proposed direct appeal to Parliament be without a favourable result, a more active propaganda must be initiated in order to draw public attention to our undeniable grievances, and it will be a pity if a union of medical officers of the highlands and islands should be forced to resort to the expedient of systematically and vigorously "boycotting" medical vacancies in the remote highlands and islands; and to counter-advertising in the newspapers to warn intending candidates against the methods.—I am, etc.,

J. F. D. Macara, M.B., C.M.

Durness, Sutherlandshire, Oct. 11th.

THE LICENTIATES OF THE SOCIETY OF APOTHECARIES OF LONDON.

Sir,—I venture to submit the following considerations to those who are interested in the alteration of the letters L.S.A., which are inadequate because they imply nothing about medicine, surgery, or midwifery; and misleading because they suggest the chemist and druggist rather than the physician and surgeon.

1. A Licentiate, as all Europe knows, is a graduate in a University Faculty, higher than a Bachelor and lower than a Doctor. The licentiateship is a degree.

2. The Society of Apothecaries, having the right to confer the degrees of Licentiate in Medicine, Surgery, and Midwifery, is a University Faculty, amongst other things.

3. As other University Faculties confer the degrees of M.B., Ch.B. (and B.A.O. if they like), so the University Faculty of Apothecaries' Hall should have its degrees since 1886 represented by the corresponding letters, M.L., Ch.L. (and, if it likes, L.A.O.).

These degrees are already given to the graduates of Apothecaries' Hall, of the London Royal College of Physicians, and of several other places; so that all that is necessary is a resolution passed by the several societies, and forwarded to the General Medical Council, with a view to the correction of next year's *Register*, as regards affixed letters.—I am, etc.,

Charles Gaskell Higginson, M.R.C.S., etc.

Birmingham Infirmary, Oct. 13th.

Sir,—I quite agree with the efforts being made by the Association of Licentiates of the Society of Apothecaries to elevate their status, and certainly think that the L.S.A. by itself does not convey to the ordinary lay mind that it is a qualification in medicine, surgery, and midwifery.

The most serviceable qualification in my opinion would be L.M.S., L.M., L.S.A.Lond. (Licentiate in Medicine and Surgery, Licentiate in Midwifery, and Licentiate of the Society of Apothecaries). Here the honourable and ancient title of L.S.A. is retained, which is as it should be, considering the Society of Apothecaries of London has done more to safeguard the interests of the profession than any other body.—I am, etc.,

G. Henry Brand, M.D.Brux., L.R.C.P.,

Northampton, Oct. 15th. L.M.Irel., L.S.A.Lond.

Sir,—The fact that the Society of Apothecaries of London is the only licensing body in the United Kingdom which grants a single title to a double qualification is a very real grievance, more particularly when its Licentiates are competing for a public appointment. L.S.A. is a totally misleading and inadequate title, having no direct connection with medicine or surgery; but I have reason to believe the Society intends dividing the examination into two diplomas as the London colleges do, designated by the letters Lic. Med. Soc. Apoth. and Lic. Surg. Soc. Apoth. Lond. This is certainly a step in the right direction, and will fairly, although not entirely, meet the wants of its diplomates.—I am, etc.,

October 13th. L.M.S.A., L.S.S.A.Lond.

ABDOMINAL OPERATIONS: THE CASE OF DR. IMLACH.

Sir,—I read with much interest your editorial note in the British Medical Journal of September 20th on the recent movement in Liverpool with regard to the Imlach case, and also the letters on the same subject that have since appeared. I have no desire, nor do I think it would answer any good purpose, to revive the old controversy. Times have changed, even since 1886, and modes of practice then looked at with disfavour are now recognised as legitimate by the great majority of the profession, and have become incorporated into the routine teaching of the ordinary textbooks. Those who are in advance of the medical opinion of their time, and introduce new and startling operations without waiting to be assured of the sanction of their brethren, always have been, and probably always will be, liable to be misjudged. Pioneer work, as Professor John W. Taylor has pointed out, is absolutely necessary for all advance in our art. Yet those who undertake it do so at great personal hazard, not of life and limb, but of what to all true men is dearer than either—reputation, both in and out of their profession. The pioneer work of Dr. Imlach, by which both the profession and the public are now profiting day by day, cost him his reputation and ruined his career. Is it too late to make him some reparation?

The attempt to induce the Liverpool Medical Institution to withdraw or rescind its resolution on the subject has failed. Professor Taylor, in his admirable letter in the JOURNAL of October 6th, has suggested an alternative course, by which without any loss of dignity or forfeiture of principle the institution may yet retire from a position it would now-a-days be difficult to defend. I am sure the signatories of the report of 1886 will not take it amiss or think I am wishing to dictate to them if I join my friend Professor Taylor in appealing to them to take the initiative in this matter. It would be a more than graceful, it would be a noble, act for them to ask the Liverpool Medical Institution to allow their report to be deleted from its archives.—I am, etc.,

Manchester Square, W., Oct. 15th. CHAS. J. CULLINGWORTH.

SIR,—As a provincial gynæcologist who was not in any way mixed up with this case, I sincerely trust that the medical profession in Liverpool will, even at this eleventh hour, do justice to the man they wronged so many years ago.

The resolution which the Liverpool Institution passed in 1886 condemning Dr. Imlach was not only unjust to him, but, till it be rescinded, remains a discredit to the profession in Liverpool and a slur on British gynæcology.—I am, etc.,

Birmingham, Oct. 10th. CHRISTOPHER MARTIN, F.R.C.S.

SIR,—"Deletion of the report" would be a blunder of the first magnitude, for it would be an attempt to obliterate a portion of medical history. Far rather let the report stand as a *mémoire pour servir*.—I am, etc.,

Worcester, Oct. 17th. T. BATES.

A LONG SEA VOYAGE.

SIR,—Last winter I recommended a patient to take a long sea voyage. He was a gentleman, aged about 35, suffering from obstinate long-standing chlorosis, which—*pace* Professor Osler—was little influenced by iron, or by the much more important items of treatment, hygiene and food. I do not propose to discuss the treatment, and only write to lay before your readers my patient's unfortunate experience. Every care was taken in the selection of a suitable ship, and the voyage decided on was to New Zealand. If you will allow space I will give his own story.

I fear the voyage was a complete mistake. I would very strongly recommend all invalids to avoid the southern ocean. It is cold to freezing, or dull to rain and fog, always one or other, and therefore monotonous and trying even to the strong. New Zealand, however, was good and grand enough to make up for such a voyage, only I got gastritis and catarrhal diarrhœa. Whatever it was I was "bad" and down for a week on milk or milk and soda. Coming home I had another "dose" caused by bad food or worse water. These largely discounted my gains, but the long rest from work has undoubtedly done good.

—I am, etc.,

Saddleworth, Oct. 11th. COLIN CAMPBELL.

ISOLATION HOSPITALS.

SIR,—While acknowledging the general fairness of your comments on Dr Bulstrode's report on the sanitary condition of Windsor, I must ask you of your courtesy to give me an opportunity of demurring to one of the statements in your article.

I cannot admit that the want of a fever hospital in Windsor is "largely due to the action of the medical officer of health." For although I have found myself forced by the evidence of statistics to modify the opinions which I once held—and which are still the orthodox teaching—concerning the efficacy of such institutions, I have nevertheless always recommended the provision of such a hospital in Windsor as expedient, and have sanctioned and done my best to further more than one scheme for that purpose.

And I do not think that any more energetic advocacy would have been effectual so long as my arguments were answered by my own statistics, and it was evident that Windsor has during a long succession of years occupied a far better position with respect to the infectious fevers than most of those towns which have been the proud possessors of model isolation hospitals.—I am, etc.,

EDW. CASEY,
October 15th. Medical Officer of Health, Windsor.

LECTURES TO MIDWIVES AND MONTHLY NURSES.

SIR,—I have the honour to forward you the following resolution which was passed at the last meeting of the Medical Guild, on Thursday, October 11th, as follows:

That in the opinion of the Council of the Medical Guild all lectures on midwifery, as distinct from midwifery nursing, to midwives as distinguished from monthly nurses, ought to be discountenanced by the profession.

—I am, etc.,

October 16th. ARNOLD W. W. LEA,
Honorary Secretary, the Medical Guild, Manchester.

OBITUARY.

RICHARD HAMILTON COWAN, M.R.C.S.ENG.,

Surgeon to the Wigan Infirmary.

WE regret to announce the death of R. H. Cowan, M.R.C.S., L.S.A., of Wigan, which took place on October 6th, after only four days' illness, from an attack of double pneumonia contracted in the course of his professional duties. Mr. Cowan, who was only in his 43rd year, was a son of R. H. Cowan, R.N., of Southsea. He received his early education under Mr. Vickery, of Southsea, and, adopting medicine as a career, became a student at the London Hospital in 1877, and was a dresser for Mr. Treves. He was exceedingly popular during his student days, both with teachers and fellow students, and many have remained lifelong friends.

After qualifying in 1881, he was appointed Assistant Medical Officer to the Birmingham Workhouse Infirmary, and in 1883 came to Wigan as assistant to Dr. C. D. Shepherd, to whose practice he shortly after succeeded. This practice embraced large colliery and other appointments, and the extensive surgical work well qualified him for the position of Surgeon to the Wigan Infirmary, to which he was elected in 1892. He was also District Surgeon to the London and North-Western Railway, and one of the Ambulance Lecturers to the Wigan Technical School, besides also frequently acting as adjudicator in ambulance drill contests in the district. This year he was fulfilling the office of President of the Wigan Medical Society, to which position he had been unanimously elected.

An ardent devotee of chess, he introduced on several occasions the veteran Blackburn to Wigan players. Mr. Cowan's genial social qualities, combined with a most generous disposition, endeared him to patients and friends alike, and many have to mourn the loss of a friend whom they regarded with the highest esteem, affection, and gratitude. His loss has excited universal sorrow, and his colleagues feel that they have lost a dear friend, and that a gap has been created in the profession in the district which will be difficult to fill.

He was interred at Standish on October 10th, the funeral being attended by upwards of fifty medical men. He leaves a widow and three children, with whom the deepest sympathy is felt.

JOHN FREDERICK FRANCE, F.R.C.S.ENG., J.P.

MR. FRANCE had for so many years retired from the active duties of his profession that he was not personally known to many of its junior members. But to a former generation his good and extensive work in ophthalmic surgery rendered his opinion on all subjects connected with that speciality very valuable. He has passed away full of years and deeply respected. At the time of his death, which occurred on October 6th at St. Leonard's-on-Sea, he had attained the age of 82 years.

He was born in 1818, the son of Mr. W. B. France, D.L., of Cadogan Place. He received his medical education at Guy's Hospital, which he entered as a medical student in 1835. He at once distinguished himself, and in 1838 received the prize in Surgery of the Physical Society. Next year he gained the silver medal for ophthalmic surgery, and became M.R.C.S.Eng., 1840. Soon afterwards he was appointed Assistant Ophthalmic Surgeon to the School. In 1847 he succeeded the late Mr. John Morgan as Lecturer on Ophthamic Surgery in the School and Ophthalmic Surgeon to the Hospital. He retired from active service at Guy's in 1861, and was appointed Consulting Ophthalmic Surgeon. In 1855 he was elected a Fellow of the

Royal College of Surgeons; he was also a Fellow of the Society of Antiquaries and J.P. for Middlesex, London, and Westminster.

Mr. France edited, with notes, the second edition of Mr. Morgan's work on *Lectures on Diseases of the Eye* (1848), and was a voluminous writer himself on ophthalmic subjects. To the *Guy's Hospital Reports* he contributed 17 papers between 1842 and 1861, and numerous other papers appeared in various periodical publications. After his retirement from active professional work he compiled and edited *Preces Veterum, cum Hymnis Coævis*, second edition (1887).

Mr. France was one of the earliest supporters of Epsom College, and was an active member of its Council until ill-health prevented his attendance. He was a Vice-President of the school. He was also warmly interested in the Royal Asylum of St. Anne's Schools, and was constant in his attendance at the Council meetings. Within the past four years he had purchased ten life presentations for girls to St. Anne's, and had presented them to the governing body of Epsom College for the female orphans of medical men. The cost of these amounted to the large sum of £12,000. He was also a Vice-President of the British Medical Benevolent Fund, and a generous donor to it.

Mr. Henry Veasey, F.R.C.S., writes that Mr. France having been "senior pupil dresser to Morgan, ophthalmic surgery became an absorbing pursuit with him, and when he succeeded his honoured master as ophthalmic surgeon to Guy's, divers articles in the *Guy's Hospital Reports* attested both skill and diligence—the frequent association of diabetes with cataract; the use of forceps to steady the eye in extraction—besides various pathological contributions, engaged his pen. A neat and successful operator, eminence was less sought than service. Easy circumstances, combining with domestic trials, induced an early exchange of professional claims for comparative retirement in discharge of magisterial duty, together with valuable service rendered on committees.....The close of a bright career, remarkable for beneficent philanthropy but partially known here, was tranquil. The noblest Christian life, shining more and more to perfect day, doubtless now in full fruition, leaving its bright track, footsteps upon the sand of time, pointing upwards, onwards, as his own motto, 'May God me Guide.'"

The funeral took place at Chichester Cathedral on October 12th. The Royal Medical Benevolent College was represented by Dr. Holman, Treasurer, and Mr. J. Bernard Lamb, Secretary; and the Royal Asylum of St. Anne's Society, by Captain R. H. Evans, Secretary.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

MEDICAL EXAMINATIONS.—The Examinations for Medical and Surgical Degrees will be held this year as follows:

	Names sent in.	Fees and Certificates sent in.	Examination Begins.
First M.B.:			
Chemistry, etc	Nov. 27th	Dec. 5th	Dec. 10th
Biology	Nov. 27th	Dec. 7th	Dec. 13th
Second M.B.:			
Pharmacy	Nov. 27th	Dec. 7th	Dec. 13th
Anatomy	Nov. 27th	Dec. 5th	Dec. 10th
Third M.B.:			
Surgery and Medicine, etc..	Nov. 28th	Dec. 6th	Dec. 11th
M.C.	Dec. 1st	Dec. 13th	Dec. 18th

DEGREES.—At the Congregation on October 11th, Mr. R. D. Parker, B.A., of Gonville and Caius, was admitted to the degree of Doctor of Medicine. The Honorary degree of Sc.D. was conferred on Mr. S. P. Langley, Director of the Smithsonian Institution, Washington.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on October 11th, Sir William MacCormac, Bart., K.C.V.O., President, in the chair.

HONORARY FELLOW.

Dr. Alexander MacCormick was admitted an Honorary Fellow, as, though he had failed to attend the Centenary Festival, his absence had been due to a capture of the mails by the Boers, and to his not, in consequence, having received the invitation of the Council.

THE LATE DUKE OF SAXE-COBURG AND GOTHA.

A letter was read from the Secretary of State reporting the submission of an address of condolence, and stating that Her Majesty was pleased to receive the same very graciously.

PHYSIOLOGICAL CATALOGUE.

It was decided (as recommended by the Museum Committee) that Vol. I. of this be offered for sale at 12s. a copy.

REPORT OF THE FINANCE COMMITTEE.

Amongst other statements, the Committee reported that the gross income of the College for the past year is £25,211, being £500 greater than the gross income of the previous year. The expenditure of the College for the past year amounted to £23,565. There was thus a balance of £1,645 on the year. The extraordinary expenditure amounted to £999, and is £453 greater than in the previous year. It included the costs of the Crown in the appeal respecting the taxation of the College, the payment of Corporation Duty for five back years, and the fees for the New Charter.

BOARD OF EXAMINERS IN DENTAL SURGERY.

Mr. Arthur S. Underwood was elected a member of this Board.

JENKS SCHOLAR.

Mr. Alfred George Sworn, recently of Epsom College, now of University College, was elected the eighth Jenks Scholar.

CARTWRIGHT MEDAL.

The arrangements respecting this were completed.

ILLEGAL PRACTICE.

It was moved that the attention of the General Medical Council be called to the advertisements of a dental practitioner and his illegal assumption of the description "R.D.S. (R.C.S.Eng.)," and that they be requested to consider the matter with a view to action being taken under Section XIII of the Dentists Act, 1878.

THE PREVALENCE OF VENEREAL DISEASE.

The President reported, on behalf of himself and the Vice-Presidents, that in pursuance of the resolution of the Council of July 25th, 1900, they had addressed a letter to the Marquess of Salisbury again urging his lordship to appoint a Departmental Committee to inquire into the prevalence and treatment of venereal disease among the civil population of this country. A letter of August 3rd was read from the Marquess of Salisbury, stating that the subject will receive the consideration of Her Majesty's Government.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE UNDERMANNING OF THE ARMY MEDICAL SERVICE.

THE following is the distribution of the active list of the Army Medical Service and Royal Army Medical Corps for October, 1900, according to the monthly Army List:

Distribution in the October Army List, 1900.

Ranks.	Home.	South Africa.	Other Foreign Stations.	Not Posted.	Total.	Remarks: Seconded.
Surgeon-Generals ..	5	1	4	—	10	—
Colonels	7	9	11	—	27	2
Lieutenant-Colonels...	21	41	63	—	125	3
Majors	26	185	157	1	369	3
Captains	13	72	105	2	192	6
Lieutenants	43	116	26	2	187	3
Total	115	424	366	5	910	17

The distribution remains almost entirely unaltered from September. The total strength is one fewer, apparently through the death of Major Hilliard from wounds received at Ingogo. There are 7 officers of the Militia Medical Staff Corps in South Africa. The retired officers employed number 116, and there are also 16 retired quartermasters doing duty.

ROYAL NAVY MEDICAL SERVICE.

FLEET-SURGEON EDWARD H. WILLIAMS has been placed on the retired list, at his own request, October 2nd. He was appointed Surgeon, September 30th, 1878; Staff Surgeon, September 30th, 1890; and Fleet-Surgeon, May 4th, 1895.

Staff Surgeons JOHN J. DINNIS, M.D., and GEORGE F. WALES, who entered the service October 2nd, 1880, are promoted to be Fleet-Surgeons, October 2nd. Fleet-Surgeon Dinnis, whilst Surgeon of Malta Hospital, received the expression of the satisfaction of the Lords of the Admiralty at receiving the report of his able performance of his duties during the war in Egypt in 1882; he was Surgeon of the *Turquoise* during the operations in the Eastern Soudan in 1884-5, receiving a medal and the Khedive's bronze star. As Surgeon of the *Turquoise* also, he landed with the Naval brigade during the Burmese campaign in 1885-7, and was present at the

capture of Mandalay and in the expedition to Bhamo (Indian Frontier medal with clasp). Fleet Surgeon Wales has no war record.

The following appointments have been made at the Admiralty: HENRY C. WOODS, M.D., M.V.O., Inspector-General of Hospitals, to the *Victoria and Albert*, reappointed on promotion, August 1st; ROBERT L. DICKINSON, Surgeon, to the *Hussar*, October 23rd; W. P. WALKER, Surgeon, to the *Majestic*, October 23rd.

ARMY MEDICAL SCHOOL.

MAJOR ROBERT H. FIRTH, F.R.C.S.Eng., Royal Army Medical Corps, is appointed Professor of Military Hygiene, *vice* Colonel J. L. Notter, M.D., who has resigned that appointment, September 29th. Major Firth joined the service August 4th, 1883, and became Surgeon-Major twelve years later. He was in the campaign on the North West Frontier of India in 1897-98 with the Tirah Expeditionary Force with No. 11 British Field Hospital, and has the medal with two clasps for that war. He holds the Alexander Gold Medal for 1888 and 1891, and the Parkes Gold Medal for 1889 and 1892.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned officers are returning from South Africa: Civil Surgeons COLLIER, TYRNE, THOMAS, MILLS, ROBERTS, Professor HUGHES, Major MACMUNN.

Temporary Captain J. B. BUTLER, M.D., has resigned his commission, October 13th.

Captain A. A. WATSON is granted the temporary rank of Captain while employed in South Africa, June 6th.

Lieutenant L. E. L. PARKER was slightly wounded in the hand on September 28th.

The following have been discharged from hospital in South Africa to duty: Captain F. J. WADE-BROWN, Civil Surgeon C. R. MARTIN.

INDIAN MEDICAL SERVICE.

SURGEON-CAPTAIN P. P. KILKELLY, Bombay Establishment, has received permission to accept the 4th class of the order of the Brilliant Star of Zanzibar conferred upon him by the Sultan of Zanzibar.

It has been decided to separate the Aden district from Bombay for the purposes of medical administration, the former becoming an administrative district, the charge of which will be held by a colonel of the Indian Medical Service. The Nagpur district, on the other hand, will cease to be a separate administrative district, and will be amalgamated with Bombay into one district of medical superintendence.

MILITIA MEDICAL STAFF CORPS.

HONORARY SURGEON-MAJOR J. CORBET, 3rd Battalion Seaforth Highlanders (Ross-shire Buffs, the Duke of Albany's), retires, retaining his rank and uniform, October 17th.

THE VOLUNTEERS.

SURGEON-CAPTAIN E. T. CROUCH, 3rd (the Duke of Connaught's Own) Volunteer Battalion the Hampshire Regiment, is promoted to be Surgeon-Major October 17th.

Surgeon-Captain J. K. BUTTER, 2nd Volunteer Battalion the South Staffordshire Regiment, resigns his commission October 17th.

Mr. HORACE L. LOWIS, M.B., is appointed Surgeon-Lieutenant in the 1st (Pembrokeshire) Volunteer Battalion the Welsh Regiment October 17th.

Surgeon-Lieutenant H. H. B. WILKINSON, 2nd Volunteer Battalion the York and Lancaster Regiment, retires October 17th. He is granted the rank of Surgeon-Captain and permitted to retain his uniform.

CHANGES OF STATION

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From	To
Lieutenant-Colonel R. W. Mapleton	South Africa	York.
Major J. Hickman	,,	Woolwich.
,, G. T. H. Thomas	,,	Aldershot.
,, G. H. Barefoot	Bengal	Devonport.
Captain A. C. Fox	Aldershot	Bengal.
,, A. M. Milner	Dover	Shorncliffe.
,, H. E. Staddon	South Africa	Bombay.
Lieutenant C. R. Evans	,,	Devonport.
,, R. T. Brown, M.B.	Aldershot	Salisbury Plain
,, G. Carroll	,,	,,
,, J. H. Stevenson, M.B.	,,	,,
,, A. F. Weston	,,	,,
,, J. Dorgan, M.B.	,,	,,
,, J. H. Robinson	,,	,,
,, F. G. Fitzgerald	,,	Punjab.
Quartermaster H. G. Hasell	,,	Ceylon.
,, R. R. Cowan	,,	Malta.
,, A. J. Pilgrim	—	South Africa

Lieutenant F. E. BARROW, retired pay, has relinquished the medical charge of troops in South Africa.

THE OPERATIONS IN CHINA.

DESPATCHES are published in the *London Gazette* from Sir Edward Seymour, Commanding-in-Chief on the China station, and from Rear-Admiral Bruce, Second in Command, relative to the attempted relief of the Legations at Pekin, the capture of the Taku Forts, and the operations at Tientsin. Details of these several undertakings are given, showing the difficulties met with and the results achieved. Reports from subordinate officers charged with specific duties are included. In his despatch Sir Edward Seymour says:—"Fleet-Surgeon Thomas M. Sibbald, H.M.S. *Centurion*, has had charge of the hospital arrangements throughout, and has also been much under fire. His activity, attention, and constant cheerfulness have gone far to mitigate the sufferings of the wounded, and have met with my entire approval." Unfortunately Fleet-Surgeon Sibbald soon afterwards died, broken down by his great exertions (BRITISH MEDICAL JOURNAL, September 8th). Surgeon Edward B. Pickthorn is also mentioned by Sir Edward as among those who accompanied the expedition.

In his dispatch on the affairs at Tientsin between June 16th and 26th, the Commander-in-Chief speaks of "Surgeon J. Falconer Hall, of H.M.S. *Barfleur*, whose devoted care and attention to his patients (as well as his professional skill) during a most trying time have been the admiration of all." The other medical officers who are cited as having taken part in these operations are: Surgeon Edward F. Power, H.M.S. *Aurora*; Lieutenant Surgeon (? Staff-Surgeon) Alexander G. Andrews, H.M.S. *Terrible*; and Surgeon Robley H. J. Browne, H.M.S. *Alacrity*. Of the last-named officers, Commander Cradock, who commanded the allied forces at the attack on the Taku Forts, writes: "Surgeon Robley Browne, H.M.S. *Alacrity*, was quick in his aid and assiduous in his attention to the wounded."

The dispatches are supplemented by a letter from the Lords Commissioners of the Admiralty expressing their high appreciation of the conduct of the officers and men engaged in the operations, and their deep regret at the casualties which had occurred.

MEDICO-LEGAL AND MEDICO-ETHICAL.

MEDICAL ATTENDANCE ON DOMESTIC SERVANTS.

SEVERAL correspondents have written to call attention to a report which appeared in the *Standard* of October 15th of some proceedings which took place at the North London Police Court. It appears that a young German servant maid asked the advice of Mr. Fordham with respect to a sum of 10s. which her mistress had stopped out of her wages.

The applicant stated that she was ill and her mistress had sent her to the doctor, whose bill was 10s.

Mr. Fordham is reported to have remarked that "The law says the employer shall be responsible for medical attendance on domestic servants in his or her employ. Your mistress sent you for medical advice and she must pay; if she refuses put her in the county court."

We are advised that the report is probably not quite accurate, and may give rise to misapprehension. It has for many years been deemed to be settled law that a master is not under any legal liability for medical attendance on his domestic servant, unless the master has by his conduct impliedly rendered himself liable, as, for instance, by sending for a medical man to attend his servant, while under his roof, or by calling in his own usual medical attendant, or by recognising the employment of the medical man called in by the servant. In the particular case in question the mistress's conduct in sending the servant to a medical man (possibly the mistress's family doctor) may, in the magistrate's opinion, have rendered the mistress liable to pay the account. It is possible the mistress had paid the account, and if so she certainly could not legally deduct the amount from the servant's wages in the absence of any special agreement.

The liability, however, which may be implied from the conduct of the mistress in this case does not affect the general rule of law, that a master is not bound to provide medical attendance or medicine for his domestic servant.

"MEDICAL ADVERTISING."

S. W. W. writes: Your remarks in the BRITISH MEDICAL JOURNAL of October 13th under the above heading call for some explanation from the doctors implicated. Seeing that I am one to whom these objectionable "charts" have been sent, I wish to state emphatically that I have by no means played any part whatever towards trade advertising for the proprietors of "Mellin's Food." How I became possessed of a few of these objectionable leaflets would seem to be simply thus:—A child of mine has been using the "food" for the last three years, and, consequently, I have been ordering small supplies periodically direct from the factory. Never once have I expressed even a hint to the proprietors as to my opinion upon the utility or otherwise of their preparation However, some time since I was asked by them if I would accept a few temperature charts bearing my name, and not, at the moment, deeming the matter of any particular importance whether they chose to send them or not I did not trouble to object, having no idea, of course, of using the leaflets in the manner evidently intended. I have never since written to Mellin's Food Company on the matter, and it now dawns upon me that possibly some of those charts unfortunately bearing my name are being circulated as samples to other medical men. To my mind this is monstrous, yet I cannot but think that many of the other practitioners (excepting, perhaps, the one who is said to have suggested the idea originally) to whom these "favours" have been sent have estimated them at their real value, and consigned them, as I have done, to the daily increasing heap of rubbish delivered per post.

Another point which you have not mentioned in your reference is the fact that the packet of "temperature charts" contains also a number of slips said to be intended for professional (!) prescriptions (no less), the back of each displaying the inevitable trade advertisement. Now, however brilliant this idea of cheap advertising may be from a purely trade point of view, I think that when a medical man stoops to become honorary "bill poster" or "sandwich man" to the proprietors of ordinary trade articles—even to the extent of hauling around on his person for a year the price list of some druggist firm adorned in the shape of a "presentation" visiting list, such a man has unquestionably mistaken his vocation, and the sooner he ceases the practice of medicine the better for that profession in general. It is truly appalling to see the number of "testimonials" signed by practitioners nowadays for this or that proprietary article, which are circulated by several firms *à la* the "lithographed letter." They may or may not be as "amusing" as the one we have doubtless all received last week, but upon each of such testimonials one can recognise the evident desire or notoriety.

*** Another correspondent sends us a block of charts sent to him by Mellin's Food Company, with his name, address, and hours of consultation

printed above the chart, and an advertisement of Mellin's Food upon the back. We understand from him that this was done without his consent, and that he has no intention of using them. He asks how such conduct is to be prevented? We think a letter of protest addressed to Mellin's Food Company would do something to check a practice which can only be followed because it is assumed to be favoured by medical practitioners.

CORONERS AND CERTIFICATION OF DEATH.

EDINBORO draws our attention to two cases of death, and to the method in which they were dealt with by the coroner. In the first case, our correspondent was called to see a young girl who was burnt to death. This he reported to the coroner, who held an inquest, but called no medical evidence. The second case was that of an infant who was found dead in bed with the grandmother, the child having been previously in good health. The circumstances were reported to the coroner, who made inquiries from the police constable, and then decided not to hold an inquest, and sent a certificate to that effect to the registrar, who registered the death as uncertified, and gave a burial order to the relatives. Our correspondent asks what should he do in similar cases in the future, and naturally inquires if it is any use reporting them to the coroner.

*** We do not know of any statute law that compels medical men to report to the coroner at all; but it is usual, when unable to give a certificate of the cause of death, for the medical attendant to report the facts of the case to the coroner or his officer; and it remains then for the coroner to decide in cases, in which he can exercise a discretion, whether he will hold an inquest or not. He is not bound by law to call medical evidence unless the jury request it, and are not satisfied that death has been due to natural causes. If he declines to hold an inquest, the responsibility rests with himself, and if no medical certificate of the cause of death is forthcoming, such deaths only swell the list of "uncertified deaths," upon which lately much comment has arisen. We learn that the coroner in question is a solicitor, and this may account for his failing to appreciate medical evidence, and the importance of recording with accuracy and certainty the true cause of death. If a coroner neglects to hold inquests when it is clearly his duty to do so, he not only shows a laxity with regard to the protection of life, but he opens the door to crime, and can be reported to the Lord Chancellor for dereliction of duty.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,578 births and 3,799 deaths were registered during the week ending Saturday last, October 13th. The annual rate of mortality in these towns, which had been 18.5 and 17.8 per 1,000 in the two preceding weeks, further declined to 17.1 last week. The rates in the several towns ranged from 10.5 in Cardiff, 11.9 in Croydon, 12.6 in Leicester and in West Ham, and 13.0 in Bolton to 23.1 in Liverpool, 23.8 in Gateshead, and 24.8 in Manchester and in Salford. In the thirty-two provincial towns the mean death-rate was 18.5 per 1,000, and exceeded by 3.7 the rate recorded in London, which was 14.8 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2.5 per 1,000; in London this death-rate was equal to 1.9 per 1,000, while it averaged 2.9 in the thirty-two provincial towns, among which the highest zymotic death-rates were 4.1 in Wolverhampton, 4.3 in Leicester, 5.0 in Salford, and 6.2 Gateshead. Measles caused a death-rate of 1.0 in Swansea; whooping-cough of 1.0 in Derby and 1.4 in Gateshead: "fever" of 1.0 in Plymouth, 1.1 in Sunderland, and 1.2 in Wolverhampton; and diarrhœa of 2.5 in Manchester, 2.7 in Burnley, 2.9 in Wolverhampton, and 3.8 in Gateshead. The mortality from scarlet fever showed no marked excess in any of the large towns. The 85 deaths from diphtheria in the thirty-three towns included 26 in London, 11 in Leicester, 7 in Leeds, and 7 in West Ham. No fatal case of small-pox was registered last week, either in London or in any of the thirty-two provincial towns; and only one small-pox patient remained under treatment in the Metropolitan Asylum Hospitals on Saturday last, October 13th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 1,738 to 2,071 at the end of the six preceding weeks, had further risen to 2,187 on Saturday last; 322 new cases were admitted during the week, against 269, 318, and 313 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, October 13th, 959 births and 556 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 18.9 and 19.3 per 1,000 in the two preceding weeks, declined again to 18.0 last week, but exceeded by 0.2 per 1,000 the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 14.5 in Edinburgh and 14.6 in Leith to 19.7 in Aberdeen and 21.1 in Dundee. The zymotic death-rate in these towns averaged 2.4 per 1,000, the highest rates being recorded in Glasgow and Paisley. The 272 deaths registered in Glasgow included 2 from small-pox, 5 from scarlet fever, 4 from diphtheria, 10 from whooping-cough, 5 from "fever" (including 1 from bubonic plague), and 17 from diarrhœa. Seven fatal cases of diarrhœa and 2 of diphtheria were recorded in Dundee; 4 of diarrhœa in Paisley; 3 of diarrhœa in Leith; and 2 of whooping-cough in Greenock.

TYPHOID FEVER IN SOUTHWARK.

ON October 16th Dr. F. J. Waldo, M.O.H. St. George the-Martyr Southwark, reported to the Vestry—at the request of the Local Government Board—on an outbreak of enteric or typhoid fever within the parish. One hundred and two cases of fever had occurred between September 14th and October 3th, of which number two had already died. Of the cases, 97 came from an area in the north-east portion of Ward I., the poorest part of the parish. Many of those attacked lived in Queen's Buildings, housing upwards of 3,000 persons on three acres, and in the Grotto Place unhealthy area officially represented in 1899, but not yet dealt with by the County Council. A large proportion of those attacked were children of school age. There was no evidence of specific pollution of the drinking water, which, drawn from two companies, supplied the infected houses in about equal proportions. The milk supply came from various sources, and was free from the specific poison of typhoid. Many of the house drains were defective, and the sewers were either imperfectly ventilated or not ventilated at all.

The sewers in at least three streets had been condemned by the surveyor. Dr. Waldo said he had visited every house where fever was present, and that he was still investigating the origin of the outbreak. The chief preventive measures taken were: 1. Isolation of 89 of the cases in hospital. 2. Disinfection and cleansing of premises and of infected goods. 3. Accommodation of 25 "contacts" or persons from infected tenements in the Parish Reception House. 4. Flushing of the street gulleys in the infected area. 5. Bacteriological and chemical examination of water, milk, ice cream, water ice, and shell fish. 6. Distribution of leaflets advising householders to refrain from drinking unboiled water or milk, and from eating uncooked shell fish.

MEDICAL NEWS.

THE District Board of Works for Poplar is considering the advisability on the suggestion of its medical officer of health, Mr. F. W. Alexander, of supplying sterilised milk to mothers for their infants. Dr. F. D. Harris, of St. Helens, described in the BRITISH MEDICAL JOURNAL of August 18th, p. 427, the working of the method already in use at St Helens, Lancashire, where the municipality charge twopence for the daily supply for each child.

AT Bedlington, near Morpeth, on October 13th, a monument to the late Dr. James Trotter was unveiled by Mr. T. Burt, M.P. Dr. Trotter had practised in the town for thirty years, and, as was said at the ceremony, the monument was an appreciation of his noble character and splendid services. The monument is in the form of a fountain, 21 feet in height, consisting of red sandstone, and bearing a marble medallion bust of the late Dr. Trotter.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of the Society was held on October 10th, the President, Mr. Christopher Heath, in the chair. One new member was elected and the deaths of 2 members reported. There were no fresh applications for grants. The death of a widow was announced. Applications for grants were read from the 47 widows, 12 orphans, and 6 recipients from the Copeland Fund, now on the funds of the Society, and it was resolved that £1,187 10s. be given at the next court. It was also resolved that a Christmas present be given this year amounting to £531, £10 to each widow, £3 to each orphan, and £5 to the 5 persons receiving extra grants from the Copeland Fund. The expenses of the quarter were £61 5s.

MEDICAL VACANCIES.

The following vacancies are announced:

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—Resident Surgeon, unmarried. Salary, £80 for the first year, increasing to £100, with board and furnished apartments. Applications to the Secretary by October 22nd.

BATH: EASTERN DISPENSARY.—Resident Medical Practitioner. Salary, £130 per annum, with furnished apartments. Applications to the Honorary Secretary, 10, Darlington Place, Bath, before October 27th.

BETHNAL GREEN: PARISH OF ST MATTHEW.—Clinical Assistant at the Infirmary; unmarried. Salary at the rate of £40 for the six months, with board, lodging, and washing. Applications on forms provided to be sent to the Medical Superintendent at the Infirmary, Cambridge Road, by October 20th.

BODMIN: CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £100, rising to £120 per annum, with board, furnished apartments, etc. Applications to the Medical Superintendent.

BRISTOL: HAM GREEN FEVER HOSPITAL.—Resident Medical Officer. Salary, £140 per annum, with board, lodging, and washing. Applications to Dr. D. S. Davies, Medical Superintendent of the Hospitals, 40, Princess Street, Bristol, by November 1st.

BUXTON DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with furnished apartments, board, and washing. Applications, endorsed "Assistant House-Surgeon," to the Secretary.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—House-Surgeon. Salary, £50 per annum, with board and residence. Applications to the Secretary.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—Assistant Anæsthetist. Applications to the Secretary.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £80 per annum, with board and apartments. Applications to the Honorary Secretary by October 25th.

CHESTER COUNTY ASYLUM.—Junior Assistant Medical Officer: unmarried, and not more than 30 years of age. Salary, £60 per annum, with board, lodging, and washing. Applications to Dr. Lawrence at the Asylum by November 3rd.

CITY OF LONDON ASYLUM (near Dartford).—Second Assistant Medical Officer and Pathologist; unmarried, and under 30 years of age. Salary, £150 per annum, with board, furnished apartments etc. Applications to the Clerk to the Visiting Committee, Guildhall, E.C., by October 25th.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon for six months. Salary at the rate of £40 per annum, with board, lodging, and washing. Applications to the Chairman of Medical Committee by October 25th.

DOWN DISTRICT ASYLUM, Downpatrick.—Assistant Medical Officer. Not more than 33 years of age, and unmarried. Salary, £150, increasing to £200, with furnished apartments, board washing, and attendance. Applications to the Resident Medical Superintendent by November 7th.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £40 per annum, with residence, board, and washing. Applications to the Secretary by November 8th.

DUBLIN: ROYAL HOSPITAL FOR INCURABLES, Donnybrook.—Resident Medical Officer. Salary, £80 per annum, with board and furnished apartments. Applications to the Registrar by November 5th.

FRENCH HOSPITAL AND DISPENSARY, London.—Resident Medical Officer. Salary, £80 per annum, with full board. Applications to the Secretary, 172, Shaftesbury Avenue, W.C.

HEREFORDSHIRE RURAL DISTRICT COUNCILS.—Medical Officer of Health. Not less than 30 or more than 50 years of age. Salary, £530 per annum. Applications to the Clerk, Hereford, by November 9th.

JENNER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea Gardens, S.W.—Assistant in the Department of Pathological Chemistry. Salary, £360. Applications to Dr. Allan Macfadyen by November 15th.

KILBURN PROVIDENT MEDICAL INSTITUTE.—Vacancy on the Medical Staff. Applications to the Secretary, 7, Cavendish Road, Bronesbury, by October 27th.

LEICESTER INFIRMARY.—House-Surgeon. Salary, £120, rising £10 per annum until the third year, with board, apartments, and washing. Applications to the Secretary, 24, Friar Lane, Leicester, by October 29th.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Resident Medical Officer. Salary, £200 per annum with board, lodging, and washing. Applications to the Secretary by November 10th.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for the In-patient Department at Bowdon. Salary, £60 per annum, with board, apartments, and washing. Applications to the Secretary before October 25th.

MANCHESTER: ST. MARY'S HOSPITAL, Quay Street.—Two Resident Medical Officers. Appointments for six months, but eligible for re-election. Salaries, £70 and £65 per annum respectively, with board and residence. Applications to the Secretary by October 31st.

MARGATE: ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon. Salary, £100 per annum, with board and residence. Applications to the Secretary, at the offices, 30, Charing Cross, London, S.W. by October 25th.

OXFORD: WARNEFORD ASYLUM.—Assistant Medical Officer. Applications to the Medical Superintendent.

PADDINGTON GREEN CHILDREN'S HOSPITAL W.—Surgeon to Out-patients; must be F.R.C.S. Applications to the secretary by November 3rd.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Assistant Resident Medical Officer. Appointment for four months. Salary at the rate of £50 per annum, with board, residence, and washing. Applications to the Secretary by October 22nd.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Two House-Physicians. (2) One House-surgeon. (3) One Casualty House Surgeon. Appointments for six months. No salary, but board, etc., provided. Applications to the Secretary by October 29th.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—House-Physician. Appointment for six months but eligible for re-election. Salary at the rate of £40 per annum, with furnished apartments, board, and washing. Applications to the Secretary by October 23rd.

ST. PANCRAS AND NORTHERN DISPENSARY, Euston Road, N.W.—Two Honorary Physicians. Applications to the Honorary Secretary, 23, Gordon Street, W.C., by November 3rd.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Assistant House-Surgeon. Appointment for six months but eligible for re-election. Salary at the rate of £75 per annum, with residence, board, and washing. Applications to the Honorary Secretary by October 29th.

SHEFFIELD: ROYAL INFIRMARY.—House-Physician. Salary, £100 per annum, with board, lodging, and washing. Applications to be addressed to the Medical Staff, care of the Secretary, by November 12th.

SHOREDITCH: PARISH OF ST. LEONARD.—Second Assistant Medical Officer for the Infirmary, Hoxton Street. Appointment for six months. Salary, £100 per annum, with furnished apartments, rations, and washing. Applications, on forms provided, to the Clerk to the Guardians, 213, Kingsland Road, by October 29th.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with rooms, board, and washing. Applications to the Secretary before November 1st.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Appointment for six months, but renewable. Honorarium at the rate of £60 per annum, with residence, board, and washing. Applications to the Secretary by November 3rd.

STAUNTON-ON-WYE: JARVIS CHARITY.—Medical Officer. Salary, £150 per annum, with house, etc. Applications to the Correspondent, Jarvis Charity, Staunton-on-Wye, Hereford, before November 5th.

TAUNTON: TAUNTON AND SOMERSET HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £30 per annum, with board, lodging, and laundry. Applications to the Honorary Secretary.

TIVERTON INFIRMARY AND DISPENSARY.—House-Surgeon, unmarried. Salary, £80 and board, lodging and washing. Applications to the Honorary Secretary by October 31st.

UNIVERSITY COLLEGE, LONDON.—Pathologist. Applications to the Secretary by November 1st.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging. Applications to the Secretary at the London Office, 34, Craven Street, Charing Cross, W.C.

WANSFORD DISTRICT ASYLUM.—Assistant Medical Officer, unmarried, and not exceeding 30 years of age. Salary, £100 per annum with furnished apartments, board, washing, and attendance. Applications to the Resident Medical Superintendent by November 9th.

WORCESTER GENERAL INFIRMARY.—House-Surgeon. Salary, £100 per annum, with board and residence. Applications to the Secretary by October 27th.

YORK DISPENSARY.—Resident Medical Officer: unmarried. Salary, £110 per annum, with board lodging, and attendance. Applications to Mr. W. Draper, De Grey House, York, by October 31st.

MEDICAL APPOINTMENTS.

ADYE, W. J., M.R.C.S. Eng., appointed Certifying Factory Surgeon for the Urban District of Bradford on-Avon and the Civil Parishes of Monkton Farleigh, South Wroxall, Holt, Bradford Without, and Westwood in the Bradford Rural District.

ALLARDICE, William C., M.D. Glasg., appointed Certifying Factory Surgeon for Newcastle-under-Lyme.

BLAKER, Percy S., M.R.C.S., L.R.C.P., appointed Resident Medical Officer to the East London Hospital for Children, Shadwell, *vice* J. Shardlow, M.B. Lond., resigned.

BROWNE, George, M.D., M.Ch., R.U.I., appointed Certifying Factory Surgeon for the Ballynahinch District of county Down.

BYFORD, W. F., M.R.C.S., L.R.C.P. Lond., appointed Certifying Factory Surgeon for the Ruthin District of the county of Denbigh.

COOK, James, M.B., appointed Medical Officer at Barcaldine, Queensland.

DICKINSON, George F., M.R.C.S. Lond., L.R.C.P. Lond., appointed Honorary Surgeon to the Warneford Hospital, Leamington.

FORSYTH, W. A., M.B., appointed Health Officer for the Shire of Mansfield, Victoria.

GERVIS, Charles B., M.D. Brux., M.R.C.S., L.R.C.P., appointed Public Vaccinator to the Seaford District of the Eastbourne Union, *vice* W. P. Morgan, M.B., resigned.

HARDY, F. A., M.B., M.S., appointed a Clinical Assistant to the Chelsea Hospital or Women.

HILL, E. A. L., M.R.C.S., L.R.C.P., appointed Surgeon to the Wimbledon Division of the Metropolitan Police, *vice* W. O. Berry, M.R.C.S., resigned.

HOLLINGS, Guy, M.D., B.Ch., appointed a Clinical Assistant to the Chelsea Hospital for Women.

JUDSON, J. E., M.R.C.S., L.R.C.P., appointed Junior Assistant Resident Medical Officer of the Manchester Workhouse, Crumpsall, *vice* J. O. Muir, M.B., M.R.C.S., etc.

KINGSFORD, Leslie, M.R.C.S., L.R.C.P., appointed Medical Officer to the Casualty Department of the East London Hospital for Children, *vice* Percy S. Blaker, M.R.C.S., L.R.C.P., resigned.

LITTLEJOHN, James B., M.A., M.D., appointed Professor of Pathology and Bacteriology, Dunham Medical College, Chicago, Illinois, U.S.A.

PERIGAL, Arthur F., M.B., Ch.B. Edin., appointed Resident House-Physician at the Brompton Hospital for Consumption and Diseases of the Chest.

SCOTT, J. D. K., M.B., appointed Health Officer for the Borough of Queenscliff, Victoria.

STURDY, H. Carlile, M.B. Durh., M.R.C.S., L.R.C.P., appointed House-Surgeon to the East London Hospital for Children, Shadwell, *vice* S. Vere Pearson, resigned.

WALKER, Philip C., M.D., D.P.H., appointed Assistant to the Medical Officer of Health of Paisley and Resident Medical Officer at the Borough Hospital for Infectious Diseases.

DIARY FOR NEXT WEEK.

MONDAY.

Odontological Society of Great Britain, 20, Hanover Square, W., 8 P.M.—The President will deliver his Inaugural Address. Casual communications will be given by Mr. Walter Harrison, Mr. Sim Wallace, Mr. W. A. Rhodes, and Mr. A. E. Baker.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. T. Colcott Fox: Consultation. (Skin.)

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Robinson: Vulval and Vaginal Discharges.

Medical Society of London, 8.30 P.M.—Mr. Sheild: Some Remarkable Cases of Sarcoma. Dr. Poynton: The Occurrence of Arthritis in Association with Appendicitis.

TUESDAY.

Royal Medical and Chirurgical Society, 8.30 P.M.—Dr. William Gordon (Exeter): Wind Exposure and Phthisis. After the paper Dr. Thomas Bradshaw (Liverpool) will demonstrate an undescribed crystalline urinary deposit.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Harry Campbell: Consultation. (Medical.)

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 5 P.M.—Mr. Johnson Smith: Clinical Lecture. 5-7 P.M.—Dr. W. Jobson Horne. Class: Practical Rhinology and Laryngology.

THURSDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M. Mr. S. Edwards: Stricture of the Urethra.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

Central London Throat, Nose, and Ear Hospital, 5 P.M.—Dr. Wyatt Wingrave: Morbid Anatomy and Pathology of the Larynx.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Mr. Pitts: Abdominal Surgery in Children.

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Dundas Grant: Consultation. (Throat.) 5.15 P.M.—Mr. Hayward Pinch: The Clinical Examination of the Blood.

Clinical Society of London, 20, Hanover Square, W., 8 P.M.—Exhibition of Clinical Cases, followed by discussion.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

CLARKE.—On September 15th, at Teluk, Anson, Lower Perak, the wife of J. Tertino Clarke, M.R.C.S., L.R.C.P., of a son.

NICHOLSON.—On October 11th, at 20, Manor Place, Edinburgh, the wife of H. Oliphant Nicholson, M.B., of a son.

TAIT.—At the Grange, Sharnbrook, Beds, on the 14th inst., Mrs. John Tait, of a daughter.

MARRIAGES.

BURD-CHATTOCK.—On October 17th, at the Parish Church, Shirley, Warwickshire, by the Rev. E. A. Chattock, M.A., brother of the bride, assisted by the Rev. E. C. Burd, M.A., brother of the bridegroom, and the Rev. E. Law-Hawkness, M.A., Reginald Shirley Burd, M.R.C.S. Eng., L.R.C.P. Lond., second son of the late Rev. Charles Burd, M.A., to Bertha, youngest daughter of the late T. P. Chattock, Esq., of Warren House, Solihull Lodge, Warwickshire.

HALL-VICKERS.—On October 4th, 1900, at All Saints' Church, Ecclesall, Sheffield, by the Rev. William Gale, Vicar of Pontefract, assisted by the Rev. G. W. Hall, Vicar of Norton, and the Rev. T. Houghton, Vicar of Ecclesall, Arthur John Hall, M.A., M.B., M.R.C.P., of Sheffield to Hilda Mary, elder daughter of Mr. Charles E. Vickers, of the Manor House, Ecclesall.

HAWTHORNE-LORIMER.—At Marylebone Presbyterian Church, London, W., on the 10th inst., by the Rev. George Hanson, M.A., D.D. Charles Oliver Hawthorne, M.D., M.R.C.P., to Janie Lorimer, M.B., Ch.B., daughter of William Lorimer, Esq., Glasgow.

DEATHS.

ANDERTON.—On October 4th, suddenly, at the Mansion House, Ormskirk, Lancashire aged 58 years, Emma, wife of William Anderton, F.R.C.S., M.R.C.P. Ed.

LANGDON-DOWN.—On Friday, October 5th, 1900, at Normansfield, of pneumonia, Mary, wife of the late J. L. H. Langdon-Down, M.D., F.R.C.P., J.P., of Normansfield, Hampton Wick, and No 81, Harley Street, W., in her 72nd year.

LOWSLEY.—On October 4th, at his residence, Eldon Square, Reading, Oded Lowsley M.R.C.S., L.S.A., aged 62 years.

YOUNG.—On October 11th, at Melville Lodge, Ventnor, I.W., David Young, M.D., late of Rome, aged 6 years. Italian papers, please copy.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

Cancer, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

Central London Ophthalmic. *Attendances.*—Daily, 1. *Operations.*—Daily.

Central London Throat, Nose, and Ear. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.

Charing Cross. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 9.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Rontgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.

Chelsea Hospital for Women. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

City Orthopædic. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations,*—M., 4.

East London Hospital for Children. *Operations.*—M. Tu. Th. F., 2.

Great Northern Central. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

Guy's. *Attendances.*—Medical, 1.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

Hospital for Women, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Tu., 2; Th. S., 9.30.

King's College. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

London. *Attendances.*—Medical, daily, 1.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

London Temperance. *Attendances.*—Medical, 1.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, 1.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

London Throat, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.

Metropolitan. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

Middlesex. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

National Orthopædic. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

New Hospital for Women. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.

North-West London. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

Royal Ear, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.

Royal Eye, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

Royal Free. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

Royal London Ophthalmic. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

Royal Orthopædic. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; i.-p., Tu. Th., 2.30.

Royal Westminster Ophthalmic. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

St. Bartholomew's. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.

St. George's. *Attendances.*—Medical and Surgical, daily; 1.p., 1; o.p., 12; Obstetric, 1.p., Tu. F. 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.

St. Mark's. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females. W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

St. Mary's. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

St. Peter's. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

St. Thomas's. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30. (Ear), Th., 9.30.

Samaritan Free for Women and Children. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

Throat, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily exc. M., 10.

University College. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

West London. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 3.30; F., 10.

Westminster. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Alitology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

EDINBURGH desires to hear of a quiet, sunny, dry place in the south of England, not over-expensive, and not overcrowded with invalids, for a case of chronic bronchitis.

J. M. asks whether sycosis of the beard is a parasitic or a non-parasitic disease; where it is most likely to be contracted; and what work is the best on the subject.

P. J. B. desires to hear of a home where a chronic phthisical case could be received. He is entirely dependent upon his friends, who are not in a position to pay more than 15s. or 20s. per week.

HOMER would feel obliged for particulars of special courses on the eye (in English) in Germany, Austria, or France. Also of good boarding-houses (not frequented by English-speaking people) in Berlin, Vienna, and Paris.

LUX writes: Could any member kindly inform me where I could get information as to the life and death of Charles Heron, who practised at Bath and subsequently at Nag's Head Court, Gracechurch Street, E.C., about 1805 to 1815?

AMBULATORY TYPHOID.

DUBITANS (Wigan) would be glad to have references to a case or cases of ambulatory typhoid in which the patient was able to eat, sleep, and do laborious work, and in fact in apparently good health up to sixty hours before death. He has references to cases of perforation reported in *Lancet*, ii, 1873; ii, 1870; ii, 1881; and i, 1873.

SOUTH AFRICAN HEALTH RESORT FOR PHTHISIS.

L. E. H. asks for information as to a suitable health resort in South Africa to which a patient with very early tuberculosis of the lung might be sent at the present time without inconvenience.

*** Dr. Alfred Hillier informs us that he fears there is no such place at the present moment.

HYPODERMIC INJECTION OF STROPHANTHUS.

DR. J. W. JOHNSTON (Fordingbridge) writes: I am at present treating a case of mitral regurgitation with failure of compensation in an old lady of 83. On several occasions I have administered hypodermic injections of ether and strychnine to avert a threatened run-down, with benefit and without any local irritation beyond the pain of insertion of the needle. On two occasions, however, I have added 3 minims of tincture of strophanthus to the injection, and on each occasion there was immediately great pain, with subsequent redness and swelling, almost erysipelatous in character, lasting for nearly a week, and showing some rather firm swelling for some time subsequently. I should be glad to know if others have had the same experience, and if there is any preparation of strophanthus more suitable for hypodermic medication than the *B. P.* mixture.

ANSWERS.

ANTITYPHOID INOCULATION

A. N.—If our correspondent will communicate with Professor A. E. Wright, Pathological Laboratory, Army Medical School, Netley, we believe that he will obtain the assistance he desires.

FEMALE FRIENDLY SOCIETIES.

G.—So far as we can ascertain, there are no recognised rates for female friendly societies. Such lodges usually pay a little less than the corresponding male lodges, and many practitioners refuse to have anything to do with them. They should never be accepted except at considerably higher rates.

APERIENTS IN CONVALESCENCE FROM TYPHOID FEVER.

DR. W. GOSSE (Sittingbourne) writes, in reply to "Kingstonian": As the Peyer's patches in uncomplicated cases cicatrise about the end of the third week, when the bowels have not been relieved for four days, a simple soap injection should be used to unload the rectum. I then give a tablespoonful of olive oil, daily if necessary, without any ill-effects.

CIDER AND GOUT.

DR. RICHARD WOOD (Bromsgrove) writes: In answer to "Lancastrian," in the BRITISH MEDICAL JOURNAL of October 13th, allow me to say that a patient of mine of the age of 80, a great martyr to gout, is very fond of cider and perry. But the moment he takes cider he is laid up with gout, and yet he can take perry every day without feeling any ill-effects. He never suffers from rheumatism, but real gout, chiefly in his feet.

TREATMENT OF RECURRING GONORRHŒA.

MR. GERALD DALTON, M.S. A Lond., etc. (Strand, W.C.) writes: "D.S.C." may find that irrigation will have a benefic al effect in the recurrent case of gonorrhœa described. The urethral irrigation being passed into the prostatic urethra, and a quart of warm solution: zinc. sulph. gr. j, alum gr. j, ac. carbolici gr. ½, aq. 2 pints, flushed through the urethra once daily, combined with ordinary urethral injection of protargol gr. iv., ad. ʒj twice daily, treatment to be continued six weeks to two months; internal administration of drugs probably of little use. Recent works on venereal diseases: White and Martin, *Venereal Diseases*, 16s.; Valentine, *Irrigation Treatment, etc.*, 9s.; Dalton, *Chronic Diseases, Urethra and Prostate*, 1s.

THE M.D. DURHAM FOR PRACTITIONERS.

ROSIN writes: In "M.D. Durham's" answer to "Anglican" he unconsciously voiced the sentiments of a good many licentiates. I hasten to tell him that there is no need to prove that a medical degree is of value

to general practitioners; this fact is generally discovered by a "college" or "hall" diplomate after he has been in practice a few years and then, after looking up the rules and regulations of all the degree-giving bodies of the kingdom and finding their doors shut, nay, barred in his face unless he throws up his practice to put in "residence," he turns his eyes towards Continental universities. How many men are there this day who have passed matriculation and professional examinations that are equal in every respect to those set by universities? How many men have been stopped by that barrier "residence"? "M.D. Durham's" letter could not have been inserted at a more opportune time, for a few pages back in the self-same issue of the BRITISH MEDICAL JOURNAL, under the title, "The Place of the Lecture in Medical Teaching," the abolition of lectures are, *mirabile dictu*, advocated; these lectures, or in other words, residence, may be taken as the crux of the whole situation. Why Durham University deems that a man must be 15 years on the *Register* before he can attain to the dignity of M.D. is one of those things that I cannot understand. The University of Birmingham allows dental licentiates of one years' standing to proceed for a degree. There is no mention of a similar privilege for the medical licentiate; this is another riddle. In conclusion, I wanted a British degree. I could not wait until the end of the fifteenth year of my registration, hence I went to a Canadian University and am proud to wear its title.

How to Become a Coroner.

M.B., M.R.C.S.—The best stepping-stone to a coronership is a deputy coronership; not that a coroner must necessarily have passed through that stage, but because the experience so acquired is the most valuable qualification a candidate for the responsibility and independent position of coroner can have. Every county coroner is obliged by law to have a deputy, who is appointed by the coroner with the approval of the Chairman of the County Council. Deputy coroners do not often resign, and are very seldom dismissed, although the coroner can dismiss his deputy at any time. Consequently vacant deputy coronerships in any given district are few and far between. Moreover, the relations between coroner and deputy being intimate and more or less confidential, a coroner will generally prefer to appoint someone of whom he has previous personal knowledge, and the whole thing will most likely be quietly arranged before the resignation or dismissal is made known.

We recommend our correspondent to cultivate the acquaintance of the coroners within reach, especially the coroner of his own district, and let it be known that he wishes to be a deputy coroner, so that if a vacancy occurs he may not be overlooked. Meantime, to fit himself for the duties—which are much the same for a deputy as for a full coroner—a would-be coroner should make a thorough study of the law relating to coroners, which is admirably set forth in *Jervis on Coroners* (get the latest edition). He should also study the principles of the law of evidence, on which there are many textbooks, none of them very satisfactory perhaps for a coroner's purpose. And finally, he must get clear ideas on the subject of manslaughter and murder. There is indeed much more in the common and statute law of the kingdom which he will require to study from time to time if he becomes a coroner.

In addition to these studies, he should make a point of attending as many inquests as possible, and if he has a personal acquaintance with the coroner he might be permitted to act as the coroner's clerk in taking down the depositions of witnesses at the inquest, and filling in the numerous papers which have to be filled in both before and after every inquest. In London or the large towns this could probably be arranged. In the country it may not be practicable. A testimonial from a coroner with whom he has worked in this way would be very valuable. Should a coronership become vacant (the local newspapers will be sure to announce the fact), no time should be lost in applying for it, and sending in testimonials in accordance with the conditions laid down by the electing body, which in counties is the County Council.

NOTES, LETTERS, Etc.

Medical Officerships in the Highlands and Islands.

Our attention has been called to the fact that an advertisement has been inserted in the *Inverness Courier*, and possibly in other papers, for a medical officer and public vaccinator for the parish of Sleat, Broadford Skye. This is an outlying poor parish, and we would recommend members of the profession who may be disposed to become candidates for the appointment to demand satisfactory assurances from the parish council with regard to fixity of tenure, annual holiday, and a fair salary.

London Diplomates and Hospital Appointments.

Dr. H. Alston (Milborne Port, Sherborne) writes: I fail to be convinced by the argument of Dr. Frederick Collingwood, that "a man has every right to be satisfied with the double qualification of the London Colleges," because he is aware that he has passed some stiff examinations, when in the same note he admits that such diplomates are asked to wait fifteen years before being eligible for the M.D. of Durham and are debarred from holding certain hospital posts. From the above premisses I, on the contrary, gather that he has every right to be dissatisfied with his qualifications as registered; he himself may know well that he has worked side by side with some M.B.'s of London, that he has laboured as long and as diligently, that he has gone through the same courses, and attended the very same lectures by the same teachers, and in his inmost heart he may flatter himself that he is the better man, but too late he finds that he cannot offer himself for the M.B. examination because he made an incorrect start, and failed to realise the importance of matriculation at the London University at the outset of his career. Now, having gone through the burden and heat of the day, having devoted some six or seven years to his medical education, having gone through house-surgeonships, house-physicianships, etc., and won the esteem of the senior staff, he finds himself turned out to private practice as a Licentiate of something or other, and is carefully warned, after all his trouble, "now remember that you are not a Doctor," and not only is he not one, but in effect they say and we will take very good care you never shall be one—witness the fifteen years' wait for the M.D. of Durham. No; if a divine discontent does not move the heart of that man he is past praying for. In my opinion it is the most iniquitous result of a severe medical education to be met with on the face of the globe.

Treatment of Hypertrichosis by X Rays.

Roentgen Ray is very thankful to Dr. Schiff for his answer to his inquiry, but the difficulty experienced was due to the fact that Dr. Schiff particularly emphasises the fact that a small current (about $\frac{1}{2}$ ampère), and thus a focus tube of low penetrative power, should always be used, whereas Dr. Scholefield in the same number of the BRITISH MEDICAL JOURNAL states that Mr. Webster in his case used a Jackson focus tube of very high penetrative power, and of course of great amperage; and although this was a case of lupus, one fails to account for such diverse opinions as to the strength of current and quality of tube that should be used in comparatively similar conditions. This is the point that "Roentgen Ray" wishes cleared up. Is it necessary to use a highly penetrative tube and great amperage of current to get the best result, or will a small current and low penetrative tube answer equally well or better? Information on this point would be welcome.

LETTERS, COMMUNICATIONS, Etc., have been received from

A A. N.; Another M.D.; Mr. T. H. Aquino, Sukkur; Dr. H. Alston, Sherborne Asterisk; Appetitus Rationi Parcat. **B** Mr. H. J. F. Badcock, New Brompton; Mr. W. M. Borcherds, Cathcart, C.C.; Mr. W. H. Bennett, London; Dr. E. R. Bowen, Barry Dock; Mr. H. B. Bates, St. Helen's Junction; Mr J. B. Blackett, London; Mr. G. H. Braud, Northampton; Mr. A. Bence, London; Mr. G. V. Burd, Okehampton. **C** Dr. C. W. Chapman, London; Dr. W. Collier, Oxford; Mr. C. Campbell, Saddleworth; Dr. J. Craig, Dublin; Mr. A. Cutfield, Ross; Dr. C. J. Cullingworth, London; Dr. E. Casey, Windsor; Candidate. **D** Dr. A. Duke, Cheltenham; A. F. Dixon, M.B., Cardiff; Mr. G. Dalton, London; J. S. Dick, M.B., Manchester; Dubitans; Mr. H. R. Davies London. **E** Mr. J. T. Eltringham, Woolston; Eyemes; Examiner; Edinboro'; Etiquette. **F** Dr. W. E. Fothergill, Manchester; A. M. Fraser, M.B., Southsea; C. Frier, M.B., Grantham; Dr. J. Farrar, Gainsborough; Mr. T. Fisher, Garstang; Dr. G. B. Ferguson, Cheltenham; F. F. P. S. G. **G** E. H. Gibbon, M.B., South Shields; Dr. A. E. Giles, London; Mr. W. Gosse, Sittingbourne; Mr. C. E. Graham, Wigan. **H** G. Halley, M.B., Dundee; Dr. W. Hartigan, Hong Kong; Mr. T. G. Horder, Cardiff; Mr. C. G. Higginson, Birmingham; Homer; Dr. J. P. Henry, London; Mr. A. Hope, London; Mr. W. Hammond, Liskeard; E. H. Houlton, M.B., Shirebrook; Dr Herz, Prague. **I** Ignoramus. **J** J. H. W.; Justice; Dr. J. W. Johnston, Fordingbridge; Mr. J. Jackson, London; Dr. J. H. Joy, Tamworth. **K** Dr J. Kerr, Bradford; Dr. T. N. Kelynack, Manchester. **L** Dr. A. W. W. Lea, Manchester; L.M.S., L.S.S.A.Lond.; Lux; Lecturer; Dr. A. E. Larking, Folkestone; Mr. J. B. Lamb, London; Lunacy. **M** Mr. F. E. Mayhew, Ipswich; Mr. W. R. Murphy, London; C. Martin, M.B., Birmingham; M.; Mr. J. H. Mummery, London; Mr. H. May, Birmingham; Dr. C. Mercier, Catford; Dr. R. L. Meade-King, Taunton; Dr. A. A. Martin, London; Dr. J. McAvoy, Newry; T. C. Mackenzie, M.B., Edinburgh; Medical Officer; Dr. J. E. Moorhouse, Stirling; Dr. C. J. Morton, London; G. F. Murrell, M.B., Reading; M.D.; A. M. Martin, M.B., Newcastle-on-Tyne; Mr. J. McElroy, Uddingston; Dr J. F. D. Macara, Durness; Mr A. Macdonald, Kirkoswald. **N** Mr. N. E. Norway, Newquay. **O** Oculus. **P** Dr. C. B. Plowright, King's Lynn; Mr. C. Peddie, Whittle-le-Woods; P. J. B. **R** Dr. A. Ruffer, London; Mr. R. H. F. Routh, Bridgwater; Dr. T. H. Redwood, Rhymney; Dr. S. Russell-Wells, London; Dr. J. M. Rhodes, Manchester. **S** Messrs. W. B. Saunders and Co., London; Mr. J. H. Stowers, London; H. Stanley, M.B., Brabourne; Sanitary Wood Wool Co., Manager of, London; Mr. F. H. Spencer, Exeter; Mr. H. E. Skyrme, Cardiff; Sewage; S.M.V.; Dr. W. G. Savage, Cardiff; Mr. W. L. Saunder, Manchester; Dr. J. F. J. Sykes, London; Senex; S. W. W. **T** Mr. D. L. Thomas, London; Mr. W. Tiplady, Newcastle-on-Tyne; Dr. A. J. Turner, Townsville; Mr. W. H. Thompson, Bradford. **U** Unsettled. **V** Mr. H. Vease, Apsley Guise; Dr. F. G. Vicars, London. **W** Messrs. Wilcox, Jozeau, and Co., London; H. C. Woodhouse, M.B., Manchester; Sir S. Wilks, Bart., London; Mr. A. H. Ward, London; Dr. R. Wood, Bromsgrove; Mr. F. F. White, Coventry; Dr. F. J. Waldo, London; Dr. W. C. Wilson, Plymouth. **Y** Ystrad.

BOOKS, Etc., RECEIVED

Lectures on Medical Jurisprudence and Toxicology. By F. J. Smith, M.A., M.D., F.R.C.P., F.R.C.S. London: J. and A. Churchill. 1900. 7s. 6d.

Practical Uranalysis and Urinary Diagnosis. By C. W. Purdy, LL.D., M.D. Fifth Edition. Philadelphia: F. A. Davis Co. 1900. 32mols.

Textbook of Physiology. Edited by E. A. Schäfer, LL.D., F.R.S. Vol. II. Edinburgh and London: Young J. Pentland. 1900.

The Hospital Nurse's Case Book. London: Scientific Press. 6d.

The Pocket Case Book for District and Private Nurses. London: Scientific Press. 6d.

The Temples and Ritual of Asklepios at Epidauros and Athens. By Richard Caton, M.D., F.R.C.P. Second Edition. London: C. J. Clay and Sons. 1900.

The Prevention of Valvular Disease of the Heart. By Richard Caton, M.D., F.R.C.P. London: C. J. Clay and Sons. 1900

Masters of Medicine: Thomas Sydenham. By J. F. Payne, M.D. London: T. Fisher Unwin. 1900. 3s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

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A Series of Original Articles
ON
THE PLAGUE.

THE SIGNS AND SYMPTOMS OF BUBONIC, PNEUMONIC, AND SEPTICÆMIC PLAGUE.

By JAMES CANTLIE, M.B., F.R.C.S.,
Lecturer, London School of Tropical Medicine.

Until quite recently plague was termed "bubonic" in the belief that buboes were an essential factor in the characterisation of the disease. It is, however, now known that the disease may run its course without either buboes or even enlarged glands appearing; and that in non-bubonic cases other signs and symptoms present themselves to which a nomenclature in accordance with the most salient feature of the illness has been applied.

There are three main types of plague, the Bubonic, the Pneumonic, and the Septicæmic; and under some one of these all cases of plague can be grouped. Such terms as *fulminant, toxic, siderans, puerperal intestinal, gastric, typhoid type, convulsive* or *nervous type, typhus type*, applied to plague cases, refer either to the severity of the illness or to the more prominent symptoms which obtain.

I.—Bubonic Plague.

In every epidemic, since plague appeared in 1894 in Hong Kong and became pandemic, the bubonic variety of plague has never formed less than 70 per cent. of the cases met with. In many outbreaks almost every case develops buboes, but in others one in every three cases is non-bubonic in character.

The history of a case of plague is best considered under the headings of exposure, incubation, invasion, eruption of buboes, defervescence, and convalescence.

Exposure and Spread.—The most potent agent in the spread of plague is undoubtedly contact with persons suffering from the disease. Plague spreads from one member of a household to another, and from one house to another, in a neighbourhood in which it prevails, with a tenacity and persistency which indicates a "house infection." In an uncontaminated district, however, individual cases occur which may prove purely sporadic, and infection seems to depend rather upon a prolonged and intimate contact. Environment also would seem to play a prominent part; for in hospitals, doctors, nurses, and attendants escape infection in so marked a manner that the plague hospital has in many cities come to be looked upon as the locality in which infection is least likely to occur. This is, however, true of almost all infectious disorders, for in our fever hospitals, whatever the nature of the illness, the same feature would appear to hold good; cleanliness, ventilation, and observance of ordinary sanitary principles being seemingly efficacious in preventing infection. The *skin* is at the present time considered by the majority of observers to be the channel by which the plague bacillus finds entrance. The unbroken skin is believed to be uninoculable by plague, but wounds, cracks, fissures, the bites of insects, the scratching which body parasites induce, or any solution of continuity of the skin are considered as possible paths by which the plague virus may enter. In support of this contention there are several clinical and experimental proofs which seem to justify the belief that abrasions or wounds of the skin are transmission channels for the plague bacillus. In the first place, the groin glands are the usual seat of buboes in plague, and, as the majority of plague patients in Asiatic communities go barefooted, the circumstances would seem to stand to each other as cause and effect. Again, when a local wound or injury is found in the extremities of persons suffering from plague, it is usually the gland nearest the seat of possible infection that is primarily inflamed. When the cervical glands are the seat of buboes, the virus is presumed to enter by way of the tonsil, and, in confirmation of the local infective methods of entrance, it is in such cases that the tonsils are found to be inflamed. Against the argument of infection by way of the skin is the fact that, although the hands of Europeans engaged on "plague duty" are more exposed than the lower limbs, still it is the lower, much more frequently than the upper, limb glands which become inflamed. Experiments on animals also throw doubt on the likelihood of a bubo being an expression of local inoculation.

Infection by way of the *alimentary canal* would seem feasible and probable judging by the swarms of plague bacilli met with in the fæces, and from the fact that animals such as rats and mice fed on the viscera of animals dead of plague readily contract plague. Still there is no direct proof that either food or water serve to convey plague to human beings. Infection *by the breath* is unlikely, although the bacilli in the sputum of pneumonic cases exist in almost a pure culture. The breath can only contaminate by the medium of the air, but the bacillus pestis has never been isolated from the air. The impact *of the sputum* of patients suffering from pneumonic plague on the conjunctiva is, however, believed to have caused infection in more than one instance.

The rat, in common with some other animals, is subject to plague, and in most epidemics the plague bacillus has been found in the bodies of the rats, and the mortality amongst them has been high. As yet it is unascertained whether the rat is attacked prior to, concomitantly with, or subsequent to the appearance of the disease in man; but in certain limited outbreaks, such as that recently experienced in Glasgow, the rat has not been proved to be infected at all.

Not a few observers claim that it is *the vermin* inhabiting the coat of the rat that convey the infection to man. These have been shown to harbour the plague bacillus, and to leave the rat's body soon after the animal dies. And it is maintained that persons handling recently dead rats are liable to be inoculated by the vermin. Against this contention, however, it is asserted that the vermin of the rat's coat do not bite man. *The body parasites* of man such as lice, fleas, and bugs, in common with flies, ants, etc., also absorb the plague bacillus, and it is possible that by the bites of parasites, or by the excoriations caused by the scratching they induce, the plague bacillus may find entrance into man.

It will be seen from the above statements that the exact method by which human beings become exposed to plague is not definitely known.

Incubation—The average period of incubation is from three to five days; and, although it is believed that the disease may have a shorter period of incubation, lasting only thirty-six hours, or for a longer period, extending to ten or even fourteen days, the maximum and minimum periods of incubation are undetermined. No specific train of symptoms is peculiar to the period of incubation. General *malaise* and some discomfort are occasionally experienced during the incubation of plague, but they are not characteristic, and are often altogether absent.

Invasion.—The onset of plague is generally sudden. The patient complains of a splitting headache, of great weakness and prostration, of pains in the limbs and back, and it may be of pain in some one of the larger groups of lymphatic glands. Rigors or a feeling of chill almost invariably herald the period of invasion in severe cases, and vomiting and nausea may usher in the disease and may continue for a day or two. Diarrhœa is not uncommon as an initial symptom. The pulse is usually fairly full at first, and increased in frequency; the breathing rate is augmented, and the temperature may gradually rise during the first three days, until a temperature of 104°, 105° F., or higher is reached, or the thermometer may register 105° soon after the onset. Mental aberration appears early, and the patient may wear a fatuous, listless, or unconcerned expression; or a pain-drawn, haggard expression may obtain from the commencement of the illness. Delirium or convulsions in children occasionally usher in the disease. Beyond the marked prostration and the early appearance of cerebral disturbance, however, there is nothing indicative of a specific ailment until the tenderness in the glands, or a bubo, appears. It is, as a rule, the third day before the bubo appears, but when it does and when it is taken in conjunction with the constitutional symptoms, the nature of the disease, as far as clinical evidence can determine, is established.

The Cutaneous System.—Abrasions of the skin should be sought for, more especially in the lower extremities, when the groin glands are enlarged. The hands, wrists, and forearms

should be similarly examined when the axillary glands are swollen; and the lips for cracks, or the tonsils for inflammatory evidence, when the cervical glands are enlarged and tender. Boils and so-called carbuncles are rarely met with. A rash is uncommon, but when it is present it will usually be seen on or around the bubo, and only a day or two before death. Petechiæ are sometimes in evidence in diverse parts of the limbs or trunk, and discoloration due to extensive subcutaneous hæmorrhage for a considerable distance around a bubo is a fairly frequent occurrence. A few cases in every extensive epidemic of plague exhibit a rash almost identical with that in malignant typhus.

Lymphatic System.—Adenitis occurs in all varieties of plague except in the pneumonic and fulminant, and the absence of glandular swelling in them may be accounted for by the prostration which prevents a reaction and by the rapidly fatal issue. In bubonic plague unilateral swelling of a group of glands is the rule (See Special Plate, Fig. 2), and one gland of the group proceeds to bubo. Bilateral enlargement is, however, not infrequently met with, or the glands in one axilla and the glands of the opposite groin may develop synchronously. Tenderness to pressure in the region of the affected group of glands usually precedes apparent enlargement; and pain, at times of an excruciating character, with hyperæsthesia, appears early. It is usually during the third day of the illness that the bubo develops; but it may accompany or even anticipate constitutional symptoms, or it may delay its appearance for five or six or more days. A lymphatic gland *in the femoral region*, when fairly well advanced, may attain the shape and size of of a pigeon's egg, but the periglandular effusion which almost invariably accompanies it renders the outline obscure, when it resembles a bath bun in dimensions and outline. The skin, at first of a normal colour, soon becomes congested, the colour deepening to a purplish tinge, or petechiæ may appear upon it. The tumour feels elastic and resilient, and the surrounding tissues early become œdematous, the œdema extending over the lower part of the abdomen, Scarpa's triangle, and the gluteal region. Subcutaneous hæmorrhage in this region is of frequent occurrence, the effused blood extending many inches in all directions, or it may follow one direction only, reaching well down the thigh or backwards over the gluteal region.

The pain and swelling set up by the bubo cause the patient to take up a position by which the fascia in its neighbourhood is relaxed; thus, when the groin is the seat of the swelling the thigh is flexed, or the patient may prefer to sit up on the bed to procure the maximum of flexion of the limb. When *the axillary glands* are swollen the arm is placed well away from the side, and the body is inclined towards the affected side, the swelling in this region at times reaching across the chest, down to the ilium, and backwards over the scapula. When *the cervical glands* are enlarged those in the neighbourhood of the angle of the jaw are usually the first to be enlarged, and the subsequent periglandular œdema may extend downwards, backwards, and upwards over the side of the neck (see Special Plate, Fig. 1), and may be so pronounced as to cause pressure on the larynx and trachea, and some dyspnœa.

Suppuration takes place early in the gland and periglandular tissue, but it is usually not until the eighth or tenth day that the skin over it sloughs, when a large ulcerated surface is left, with undermined and rather ragged edges. The remains of the necrosed gland may be seen at the bottom of the wound, or all definite traces of it may have disappeared, or they may escape with the slough and initial exit of pus.

When the fluid from a gland or periglandular swelling is drawn off early in the attack by a hypodermic syringe, it will usually be found to be of a sero-sanguinolent character, but later it becomes sero-purulent, and finally pus. In this fluid the plague bacillus will be found to be present in numbers; but in the pus flowing from the ulcerated surface of a bubo of some days' standing no trace of the bacillus may be found.

Alimentary Canal.—The lips early in the disease become dry and cracked, the teeth covered with sordes. The tongue is at first covered with a thick dorsal white fur; the whole organ appears swollen, and the edges marked by the teeth. Soon the white fur assumes a mahogany tinge, or becomes almost black on the centre and back of the tongue. Later in the illness the tongue appears contracted, cracked, and dry. The throat and tonsils look red and congested, or the tonsils may be actually inflamed. Nausea and vomiting frequently usher in the disease, and may continue for a day or two, or may persist to the end. The vomited matters are at first of a bilious character, but afterwards may be very profuse and watery, or the ingesta may be ejected almost unchanged. A coffee-ground looking material is occasionally vomited, but hæmatemesis is not a feature of the disease. Constipation is the rule during the first day or two of the illness, followed frequently by diarrhœa. Diarrhœa on the other hand may usher in the disease, but it is seldom the intestinal flux is frequent or profuse. Blood is not uncommonly present in the fæcal evacuations. *The liver* may be tender, and somewhat enlarged; *the spleen* is invariable swollen, and even in quite an early stage of the disease may attain three or four or more times its normal proportions. *The urine* as a rule is slightly albuminous; scanty from the first, it usually continues to be so. Suppression of urine with lumbar pains is not uncommon; it may obtain from the onset, but is more frequently observed towards the end in fatal cases; the urine is frequently retained. Granular casts and blood corpuscles are met with microscopically, or the blood may be in large quantity. Urea, uric acid, and the chlorides are deficient.

The Circulatory System.—Frequency in the rate of the pulse prevails at the onset and throughout the illness. At first it is fairly full, but after a day or two it becomes soft, compressible, and dicrotic, and towards the end irregular and running. The apex beat of the heart is diffuse, and occasionally a precordial thrill is present. Dilatation of the right side, a weak second sound, a shortened first sound, with occasionally a systolic murmur sum up the cardiac abnormalities met with in plague.

The Respiratory System.—In bubonic plague the lungs seldom show any departure from the normal, and it is only in the last few hours of life in fatal cases that any bronchial *râles* are heard. The breathing is hastened in all cases, and should the cervical glands be the seat of swelling and œdema, dyspnœa may be present owing to pressure on the respiratory tract in the neck. In pneumonic plague the lungs are early attacked.

The Nervous System.—The cerebral functions betray early aberration in plague. The pain in the glands may cause the features to appear pain-drawn, or the intensity of the prostration may induce a woeful or haggard expression. When the pain has abated or before it becomes severe, the expression is usually placid or quite fatuous, the patient appearing quite apathetic or unconcerned as to his condition. When the patient is questioned as to his state he may return a seemingly intelligent answer; but on more careful inquiry it is usually found that the answers are quite haphazard and wholly untrue. Delirium may usher in the disease, especially in the pneumonic or fulminant varieties; but in moderately severe types of bubonic plague the delirium may not appear until after several days, when it is more apt to be a busy, rather than a furious, delirium. In severe cases the patient would seem as though possessed of suicidal tendencies, rushing to the window, out into the street, and otherwise behaving as if quite maniacal. Plague patients may be found walking in the street as if in a dream, or may take passage by boat or railway not knowing what they are doing. As a rule gentle remonstrance turns the patient from his purpose; but on the other hand, as in pneumonic plague, true mania appears, the patient struggling with his attendants, and attempting to do them bodily harm. When walking, the patient appears to stagger and reel as if intoxicated, and the loss of co-ordination may be so marked that he is quite unable, even in the early stages of the disease, to unbutton his clothing or raise food or drink to his mouth. Tremors, muscular twitchings, convulsions, picking at the bedclothes, etc., are ordinary features of the disease, and towards the end the patient sinks into a comatose condition. Early in the illness the patient may become deaf; and thickness of speech, due evidently to lingual paresis, is almost a diagnostic feature.

Sleeplessness is one of the most distressing symptoms in plague. Its continuance is indicative of a serious condition, and to procure sleep always becomes one of the chief aims of treatment.

The temperature in a typical case of bubonic plague of moderate virulence follows a fairly constant course. During the first two days the temperature rises gradually until per-

haps it attains a maximum of 104° or 105°. During the third and fourth days it usually remains high, but towards the end of the fourth day it falls, and may approach or even fall below the normal. Towards the end of the fifth day or on the sixth day of the illness an increase in temperature is again to be expected, but the fever gradually subsides after the bubo has burst and discharged. It is, however, by no means rare to find that the thermometer registers 104° F. or higher during the first few hours of the illness, and hyperpyrexia not infrequently obtains on the second and third days. When after the second rise and fall in temperature fever recurs, it generally signifies a septic infection, and is usually followed by a fatal result. Apyrexia is not common in true bubonic plague, but in such opposite conditions as pestis ambulans and fulminant plague apyrexia is the rule.

II.—Pneumonic Plague.

During the epidemic of plague in Bombay, Childe observed that concomitantly with the increase of mortality from bubonic plague deaths from pneumonia multiply *pari passu*. Investigations led to the discovery that in the sputum of these pneumonic cases the plague bacilli existed in swarms, and that the so-called septic pneumonia was indeed due to plague. Pneumonic plague is usually ushered in by a rigor, dyspnœa, cough, a high temperature, and marked prostration. The sputum is profuse, of a watery character at first; it may be tinged with blood from the onset, but more usually blood does not appear until after twenty-four hours' duration of the illness. Pneumonic patches—lobular pneumonia—occur in either lung, and at any portion of the lungs, but are more usually met with in the lower lobe and towards the posterior aspect; moist sounds, especially at the base, and bronchial *râles* are to be heard, but all the signs and symptoms are peculiarly evanescent; and a patch of pneumonic tissue, dull to-day, clears up to-morrow, and another part of the lung becomes affected. The pulse is soft and compressible from the first, and cardiac distress is considerable. Delirium, frequently of a violent type, prevails, but before death coma supervenes, preceded, it may be, by a muttering delirium. The pneumonic variety of plague is a most rapidly fatal form of the disease, the patient usually dying on the third or fourth day.

III.—Septicæmic Plague.

With this type of plague are associated such terms as *toxic*, *ulminant*, and *siderans*, all indicative of the virulence of the attack and the fatal nature of the disease. The severity of the onset is such that the patient seems struck down as if by an active poison, and the prostration from the first is so extreme that the strength of the patient seems unable to resist the depressing influences at work. The glands may be felt to be enlarged, but there may be no bubo. So slight is the swelling of the glands that it is usually only during *post-mortem* examination that their enlargement is to be made out; but so generally are the glands involved that every gland in every group in the body may be swollen. Hæmorrhages from the nose, bowel, or kidney are more frequently present in the septic variety of plague than in any other type of the disease. Apyrexia is a not uncommon feature of the ailment, the depressing influences of the illness being apparently so pronounced that reaction would seem to be impossible. Delirium of a busy or typhoid type, muscular twitchings, tremors, or picking at the bedclothes, prevail, followed by coma, which usually ends in death on the second or third day of the illness.

Pathological Anatomy.

Bubonic Plague.

On the skin of a person dead of plague may be found petechiæ here and there; and over the bubo itself and on the limb on which the bubo develops, dusky patches, sometimes punctate but more often irregular in outline are met with, causing the skin to appear mottled. A rash resembling the eruption in typhus is very occasionally met with. The skin, more especially of the hands and feet, should be carefully examined for wounds, and the skin generally for evidence of bites, scratchings, abrasions, etc. Boils and so-called carbuncles are very occasionally found. The bubo, when cut into, shows a periglandular effusion with œdema, usually widely spread around the group of glands. The effusion may be sero-sanguinolent, sero-purulent, or may consist of coagulated blood for the most part. The tissues are matted together so as to be indistinguishable from one another, and it is only when the glands are reached that a definite structure can be made out. All the glands of the group in which the bubo exists will be found swollen and congested to about the size of a hazel nut, but one of the number may be as big as a walnut or pigeon's egg. It is this gland, around which the periglandular effusion exists, which causes the bun-shaped mass designated a bubo.

As a rule, every gland in the body, whether in the limbs, abdomen, or thorax, is found *post mortem* to be somewhat enlarged; and the name "polyadenitis" well describes the condition. In consistence the less swollen glands are firm, and in colour pink on section; but the large glands are soft or even diffluent to touch, and appear of a darker colour when cut into. In many bodies, when the inguinal group of glands is the seat of a bubo, a chain of inflamed and enlarged glands can be traced upon in the iliac region, and even to the lumbar region. The mesenteric or the post-peritoneal glands may be the only apparent seats of enlargement and of extravasation of blood.

On proceeding to open the body the viscera will be found generally to be congested, and the serous and mucous membranes to be the seat of petechiæ or hæmorrhages.

The lungs, although they may be œdematous, are not markedly affected in bubonic plague; a careful search may reveal the presence of minute hæmorrhages or localised congestions. The pleural fluid exceeds the normal in amount, and is frequently blood-stained. Parietal and visceral subpleural hæmorrhages or petechiæ are of common occurrence. The bronchial mucus will be found frothy, and a tinge of blood may colour it.

The Heart and Pericardium.—The pericardial fluid amounts to some two or three or more ounces, and is occasionally blood-stained; petechiæ on the parietal and visceral layers of the pericardium are frequently seen. The right side of the heart appears dilated, and the heart muscle generally appears cloudy as if from fatty degeneration. In the cavæ and the large veins at the root of the neck subendothelial hæmorrhages may be expected to be found.

The Peritoneum and Abdominal Viscera.—The subperitoneal tissues of the abdominal wall and of the several viscera may be studded with petechiæ, or extensive hæmorrhages may occur into the omentum, mesentery, in the retroperitoneal regions, more especially in the neighbourhood of the kidney. The iliac, lumbar, and mesenteric glands will be found swollen and congested, and in some instances markedly so, with a great amount of periglandular effusion. The walls of the stomach and intestines are congested, and in the submucous tissues hæmorrhages are frequent. The solitary glands and Peyer's patches are always prominent, and in cases in which life has been prolonged for a week or more they may be ulcerated. The fæcal contents of the intestine may be blood-stained or clots of blood may intermingle with the fæces. The liver is congested, a little enlarged perhaps, and somewhat softened in consistence. The gall bladder is, as a rule, full of bile and its coats may be involved in a subhepatic hæmorrhage. The spleen is swollen to three or more times its natural bulk; hæmorrhages beneath the capsule may extend for some distance into the splenic tissue.

The kidneys are congested, enlarged, and the peri-renal fat may be occupied by extravasated blood which occasionally extends in all directions, but mostly downwards along the track of the ureter. The stellate veins of the kidney are prominent, the capsule peels off readily, and small hæmorrhages may be found between the capsule and the renal cortex. When cut into the cortical tissue seems swollen, the pyramids congested, and the whole organ the seat of cloudy swelling. Blood may fill the renal pelvis and extend down into the ureter and bladder. The bladder may be full or empty, the urine normal or blood-stained, and petechiæ may or may not be present in the inner wall.

The Nervous System.—Meningeal congestion, œdema of the substance of the brain, and prominent vascular puncta seen on section sum up the changes in the nervous system met with in plague. The pia mater is occasionally the seat of ecchymosis.

Pneumonic Plague.

The lungs, after death due to pneumonic plague, appear œdematous, engorged with venous blood, and are the seat of

basal congestion and of patchy pneumonic consolidation; the consolidated areas are usually localised, varying from an area corresponding in size to a marble to that of an orange. Around the airless patches a margin of crepitant and deeply-coloured lung tissue is to be found. The pleural surfaces are usually dotted with petechiæ, and occasionally with fair-sized subpleural hæmorrhages. The linings throughout the respiratory tract are reddened, injected, and show here and there hæmorrhages in the submucous tissue; a frothy blood-tinged mucus is commonly found occupying the passages.

The changes in the other viscera of the body are similar to those met with in bubonic plague; but there are no buboes, nor are enlarged glands, as a rule, met with anywhere in the body.

Septicæmic Plague.

The glands, in septicæmic plague, over the whole body are congested and swollen, in most instances to only a small extent, but in one group and frequently in one gland of the group adenitis has advanced considerably. There are no buboes, but a gland may be seen as big as a hazel nut here and there. When cut into the glands are pink in colour and of a firm rather tough consistence, but, in some of the larger sized, localised areas of softening occur. The visceral engorgement and congestion with petechiæ and subendothelial and submucous hæmorrhages are features in septicæmic plague in common with all other varieties of the disease.

NOTES ON THE INTRODUCTION OF A CASE OF PLAGUE INTO THE NEIGHBOURHOOD OF CARDIFF.

By E. WALFORD, M.D., D.P.H.,
Medical Officer of Health for the Borough and Port of Cardiff.

THE danger of this country becoming infected by plague occurring on board vessels during a comparatively long voyage is one which cannot be ignored in view of the recent importation into the neighbourhood of Cardiff of an undoubted and tolerably well-defined example of the bubonic variety of the disease. The main facts connected with this particular case have been recorded, so that it will be unnecessary to add to any extent to the information already given. That the cases of illness which occurred amongst the firemen during the voyage of the *South Garth* from Rosario to King's Lynn were cases of plague is an assumption based almost entirely upon the light of subsequent events. If cases of pestis minor can be easily overlooked by medical practitioners, it is tolerably certain that they will not receive much attention at the hands of the ordinary master of a vessel, who does not as a rule exercise a very close medical supervision over his crew. The *South Garth* left Rosario about August 20th, and calling at Buenos Aires shipped in place of an old hand, who deserted, a new one—an Austrian—who acted as third engineer. When the steamer arrived at King's Lynn in September this man, who was seriously ill, was sent ashore to a hospital, but the nature of his illness, although a matter of great interest, has not yet transpired. The other members of the crew taken ill during the voyage were firemen shipped at Barry or Cardiff on the outward voyage to South America. The point of interest in the etiology is the determination of the method by which the disease was conveyed from Rosario and the infected ports in the River Plate to South Shields during a voyage of about thirty-three days. Apart from personal infection in connection with these doubtful or suspicious cases, there is the possibility of the cargo having become in some way infected, of some infected articles having been taken on board, and of the disease having been conveyed by means of rats. With respect to the cargo, it is to be remarked that this was discharged at King's Lynn between September 12th and 21st.

The man attacked with plague (W. G., the donkeyman) was found on his arrival at his house in Llandaff on Sept. 26th to be very ill, and had presumably been ill for some days. On admission to the Borough Hospital of Cardiff on October 2nd he had the appearance of a man in the second or third week of a severe attack of typhoid fever. The incubation would thus probably date from some time within the period of discharging the cargo of maize, and the origin may have been due to the disturbance of this cargo. Rats were plentiful on board, and at various times several dead ones were noticed; possibly some of these rodents may have introduced the infection into the maize, and others may have become infected from it. There is no evidence that the patient was bitten or had touched any rat, and the method of infection in this, as in many other cases, remains obscure.

The chief precautionary measures devolved of course upon the rural sanitary authority in whose district the case occurred, and these consisted in the immediate isolation of the patient in the hospital of the adjoining urban sanitary district of Cardiff, in the medical examination of all persons who were in contact with the plague case, and the keeping under observation of "suspects" during the necessary period, and in disinfection or destruction of articles likely to be infected.

As regards the urban and port districts of Cardiff special precautionary measures have been adopted since the first introduction of the disease into Europe. Assistant medical officers and additional inspectors have been appointed to enable the authority to maintain an inspection of vessels from infected and suspected ports. Careful medical inspection of sailors' lodging houses is being carried out; inspection and cleansing of courts and dirty houses; circulars to medical practitioners relating to the notification of the disease. An infectious disease hospital has been provided with nearly 200 beds, and with separate buildings for the isolation of any such special cases, and furnished with a separate administrative department and staff. The destruction of rats on board vessels and in the neighbourhood of the docks has been carried out extensively during the past two months; about 2,000 of these animals have been caught and burned. The Port Sanitary Authority has, besides a hospital on the Flat Holm Island (about three miles from the shore), a very complete crematorium with mortuary and *post-mortem* room attached. The remains of the deceased, who died two days after admission into hospital, were on this occasion cremated in this apparatus, which was constructed by Messrs. Goddard and Massey, and, on the first occasion of its use, worked admirably, the entire remains being reduced to ashes in less than two hours.

The Port Sanitary Authority has compulsory powers under a local Act of Parliament for the cremation of persons dying from cholera, yellow fever and plague, but in this instance the full consent of the relatives was obtained.

As these remarks are only intended as an introduction to the clinical and bacteriological notes which are of chief interest in this case, I have only to add that on this, as on many other occasions, the bacteriological laboratory, maintained jointly by the Glamorgan County Council and the Cardiff Corporation, was of extreme value, and the positive evidence of the presence of Kitasato's bacillus, given by Dr. Savage, our bacteriologist, at the earliest possible date, was completely confirmed by him by cultural and inoculation experiments, and by the subsequent investigation of Dr. Klein.

A CASE OF PLAGUE FROM A CLINICAL AND PATHOLOGICAL POINT OF VIEW.

BY
WILLIAM G. SAVAGE, B.Sc., M.D.Lond., D.P.H., Bacteriologist to the Cardiff and County Public Health Laboratory; Lecturer on Bacteriology, University College, Cardiff.
and
D. A. FITZGERALD, F.R.C.S., Acting Superintendent, Cardiff Fever Hospital.

THE rarity of plague in this country, and the completeness with which we were enabled to investigate the following case, is our excuse for giving the notes of it somewhat in detail. The vast majority of cases recorded and the bulk of work done in connection with this disease has been carried out abroad, and few cases are available for comparison between the disease as met with in tropical and in more temperate climates. This case agrees in the main with the classical descriptions derived from cases studied in the tropics.

CLINICAL REPORT.

History.

W. G., aged 38, donkeyman on board ss. *South Garth*, left

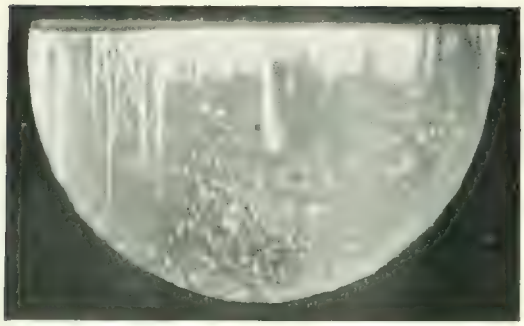


Fig. 3.—Haffkine's vaccine, showing stalactites.



Fig. 1.—Cervical bubo.

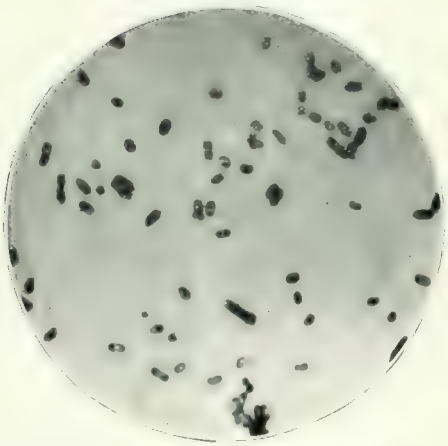


Fig. 4.—B. pestis showing polar staining.

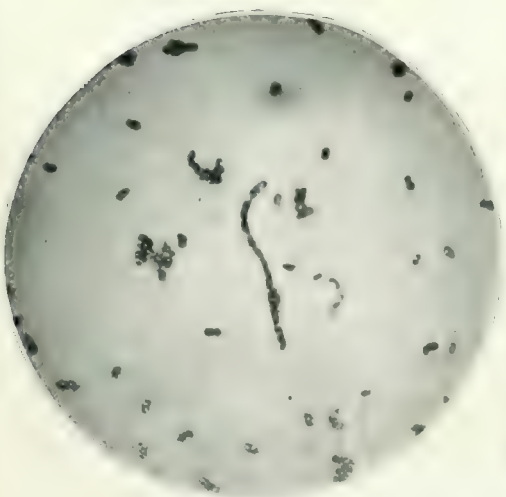


Fig. 5.—B. pestis showing chain and polar staining.



Fig. 2.—Inguinal buboes.

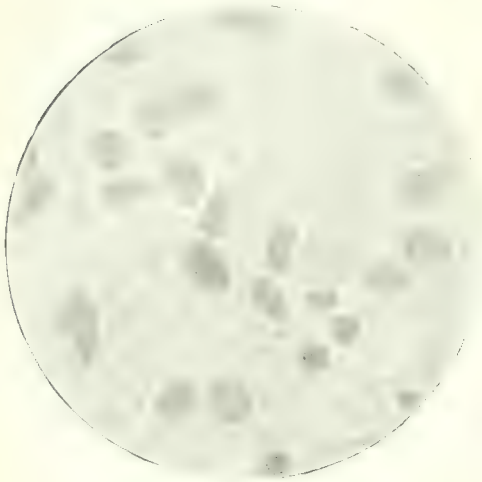


Fig. 6.—B. pestis from primary bubo.



Fig. 8. Cultivation.

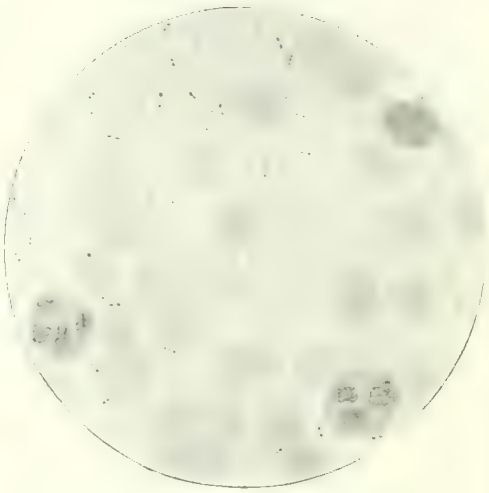


Fig. 7.—B. pestis in blood.



Fig. 9.—Involution forms. × 1200.

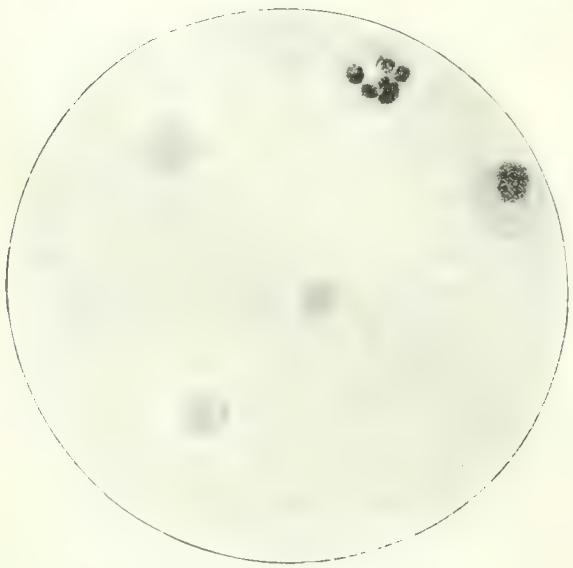


Fig. 10.—B. pestis in sputum.

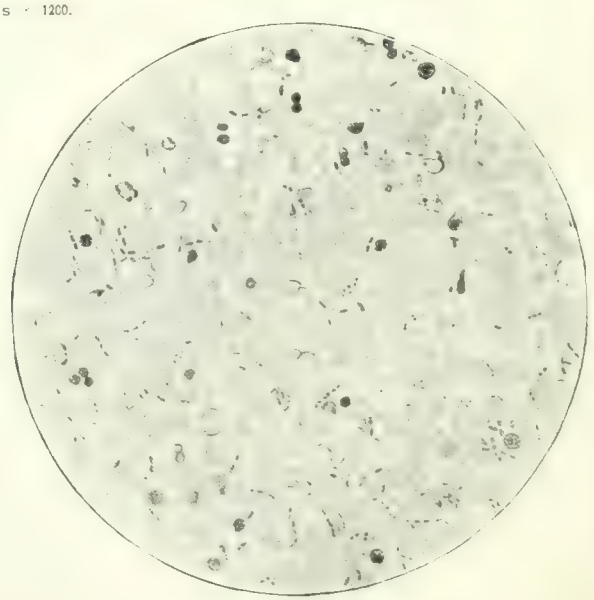


Fig. 11.—Spleen showing B. pestis.



CLINICAL SIGNS AND BACTERIOLOGY OF PLAGUE.

Description of Special Plate.

Fig. 1.—Photograph of case of plague, showing left cervical bubo and comatose condition with half closed eyes. (From the *Report to the Bengal Government on the Plague in Bombay in 1897*, by Major Dyson, I.M.S., Sanitary Commissioner, Bengal, and Captain Calvert, I.M.S.)

Fig. 2.—Photograph showing inguinal bubo in a male patient (Hindu) suffering from plague; taken on the ninth day of illness. The patient died on the following day. (After the lithograph in the Report of the Commission sent to Bombay by the Imperial Academy of Sciences in Vienna, *Uber die Beulenpest in Bombay im Jahre, 1897.*)

Fig. 3.—A culture of bacillus pestis in a flask (Soyka's) of broth: the surface of the fluid in the flask is shown, but the upper part of the flask has been shaded from view by a black screen. Several "stalactites" are seen growing near the side where they come into focus (natural size). From a photograph by Dr. Balfour Stewart (*The Thompson-Yates Laboratories Reports*, vol. iii, Part 1).

Figs. 4 and 5. Cover-slip preparations made by Professor Sheridan Delépine from cultures on agar-agar. Some bacilli show "polar staining." These cultures were made from the spleen pulp of a guinea-pig inoculated with a culture of the plague bacillus made by Dr. Calmette from a case of plague in Oporto. This culture, and the subcultures made from it by Professor Delépine during the last six months, have retained their virulence almost unimpaired. They have been kept at the ordinary temperature of the laboratory (about 18° C. to 20° C., except during the hottest days of summer, when the thermometer was above 22° C.). From photomicrographs by Dr. Sidebotham.

Fig. 6.—Cover-slip preparation from the juice of a primary bubo, showing the enormous number of plague bacilli in a primary bubo, and their polymorphism (Hom. Imm. 1/12 Zeiss, Comp. Ocul. 6), after a lithograph in the Report to the Academy of Sciences in Vienna.

Fig. 7.—Cover-slip preparation from the blood showing the great number of plague bacilli shortly before death. (Same magnification as Fig. 6.) After a lithograph in the same report.

Fig. 8.—Photograph of growth of the plague bacillus on agar-agar made by Dr. W. G. Savage from the case at Cardiff (natural size).

Fig. 9.—Involution forms of the plague bacillus from a 4-days old culture on agar-agar (× 1200). From the *Bombay Plague, being a History of the Progress of the Plague in the Bombay Presidency from September, 1896, to June, 1899*, compiled by Captain J. K. Condon.

Fig. 10.—Cover-slip preparation from the sputum of a case of primary plague pneumonia, showing polar staining of bacilli and chains. (Same magnification as Fig. 6.) After a lithograph in the report of the Academy of Sciences in Vienna.

Fig. 11.—Section of the spleen, showing numerous plague bacilli in the tissues. (Same magnification as Fig. 6.) After a lithograph in the same report.

GEOGRAPHICAL DISTRIBUTION OF PLAGUE AT THE PRESENT TIME.

Explanation of Map.

Plague is apparently endemic in Upper India (Kumaon), Southern China (Yunnan and Pakhoi), Manchuria (North China), probably in Mesopotamia, Persia, and Turkestan. Plague has occurred on many occasions in the Levant since the pandemic of 1665, so that it may perhaps be considered endemic there. Dr. Clemow considers it more or less endemic in the neighbourhood of Samarkand. Koch reported it as endemic in an area east of Victoria Nyanza. The accompanying map of the world shows the places where plague has occurred since January, 1894. The names of areas where plague is endemic are twice underlined; the ports where plague has been limited to cases occurring on ships from infected places are marked by a single underline, and include London, Plymouth, Capetown, Trieste, Hamburg, St. Petersburg, and New York. Arrows are placed to show the probable diffusion of infection from various centres. China probably infected India in the first place, though Mohammedan pilgrims to Nadjef on the Euphrates, where plague has appeared as lately as 1878, may have brought it back with them, or possibly it may have spread from Kumaon in the Himalayas, where it is endemic. With endemic areas in Manchuria, Russo-Mongolia, the Himalayas, and the Euphrates, it is quite possible for plague to be diffused by inland routes of pilgrimage or trade as well as by seaports. China has traffic with Australia, Oceania, Japan, and San Francisco, where Chinese quarters exist. India is connected by trade with Natal, Delagoa Bay, Madagascar, and the Mauritius, many Indian coolies migrating in these directions. India is probably responsible also for the outbreaks in the Red Sea and the Mediterranean, at the ports of London and Plymouth. It is not clear how South America was infected, but in its turn it has spread the disease from Rosario to both Capetown and Cardiff, though in neither case has a local outbreak followed. Possibly South America may be responsible for the outbreak at Oporto. The very limited outbreak at Vienna entered in the map was due to laboratory infection.

Rosario (La Plate) about August 20th. After a voyage o thirty-three days another member of the crew was landed at King's Lynn suffering from "enteric fever." Two days subsequently (September 23rd) W. G. left the boat at South Shields in consequence of not feeling well. He travelled from there to his home in Cardiff, reaching his destination on September 27th. He was medically attended from September 28th to October 2nd, when, suspicious symptoms developing, he was on that date transferred to the Cardiff Isolation Hospital as a possible case of plague.

According to his wife's statement his illness began on September 21st (on the very day the other member of the crew was landed at King's Lynn) with pains all over the body, lassitude, weakness, and severe headache. Six days subsequently (the day he reached home) he took to his bed with pains in the groins and back, faintness, constipation, and fever.

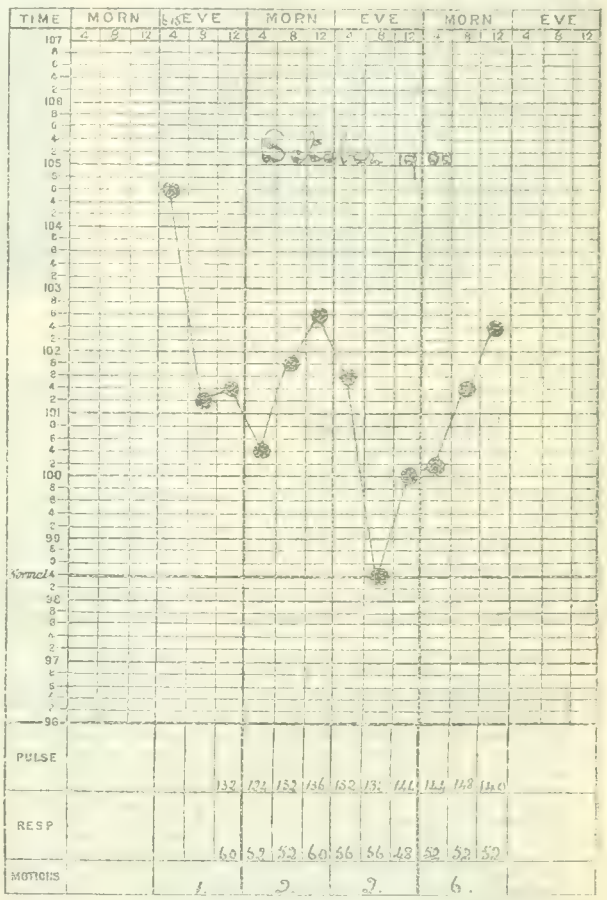
Symptoms and Physical Signs.

On the fifth day afterwards he was seen by one of us at his home. He was then obviously very ill, with high temperature, rapid pulse and respirations. In the right inguinal region was an enlarged gland about the size of a small walnut. This showed no signs of inflammation or tenderness; it was not hard, but showed no signs of breaking down.

At 6.15 on the same evening he was admitted to hospital in a state of collapse, his face cyanosed and terribly drawn, the lower jaw dropped, the tongue covered to the edge with a slimy grey deposit one-eighth of an inch thick. A similar but slighter deposit covered the pharynx and the soft and hard palate. His injected eyes stared with a fixed frightened look. The pupils were dilated, but reacted well to light. He was quite conscious, heard everything that was said, answered questions, but only monosyllabically from sheer weakness, and swallowed with great difficulty. The surface of his body was clean, but much pigmented from exposure. His trunk and extremities were covered with a dusky red macular rash disappearing on pressure, with spots varying in size from a hemp seed to a wheat grain, best marked over the abdomen and thighs. No information as to when it first appeared could be elicited. The appearance of this rash was somewhat suggestive of typhus. Slight movement or manipulation of the body caused intense pain. Three right inguinal and two right femoral and one left femoral gland were enlarged and very slightly tender. The central right inguinal gland was about the size of a small walnut, and not very hard; the others were smaller and harder. There was no inflammation of the skin over them, and they were freely movable; in fact the right chain of glands was suggestive of a syphilitic cause, but the history, absence of an abrasion or scar of any kind on the genitalia, negatived the idea. The abdomen was moderately distended, the spleen considerably enlarged, and the liver just to be felt below the ribs. The skin was hot and dry, the pulse small and hard, the heart sounds pure but faint. The chest was hyper-resonant all over; vocal fremitus diminished; the air entered well, but moist, medium-sized *râles* were present, especially at the back, in both lungs. The pulse and respirations were very rapid, and the temperature 104.6° F. (see chart).

October 3rd, 9 A.M. The patient had slept little, being restless and at times unconscious during the night. He had a slight harassing cough but no expectoration; he seemed too weak to get it up. The rash was purple, and a few spots were petechial. A bright-red, slightly-raised patch, the size of a crown (3.8 cm.) had developed on the centre of the right shin. The bowels and bladder acted unconsciously. The patient still maintained the dorsal decubitus, making no effort to move. His eyes were open, with an apprehensive stare. He looked weaker, and respiration was more laboured. At 2 P.M. his condition was much the same; the patch on the right shin had become vesicular, and some semi-purulent fluid was taken from it. At 11 P.M. the patch on the shin was more inflamed and angry-looking, and a smaller one had appeared on the corresponding part of the left shin, but more towards its outer aspect. There was diarrhœa of a yellow offensive character; the urine was copious and passed involuntarily; specific gravity 1018, acid; no albumen.

October 4th, 9 A.M. He had passed a very restless night in great agony, and was delirious at times. The skin over the right shin had given way, discharging a necrotic mass and a little purulent fluid, leaving exposed an irregular unhealthy surface, discharging sanious pus. That on the left leg had still further developed, and a small one had appeared on the left buttock. The rash had faded. There was very slight crepitus at the base of the lungs. The pulse was weak, and the patient was unable to answer questions. At 2 P.M. he was much weaker. The mouth was quite open, the tongue and the floor of the mouth rose and fell with respiration. The terrified look still persisted. The edges of the ulcer on the leg were thin and undermined; its surface dry and red. His extremities were very cold. He perspired a good deal, and the surface of the body was cold and clammy. His respirations and pulse gradually became weaker and intermittent, and he sank and died at 3.15 P.M.



CLINICAL DIAGNOSIS.

In such a well-marked case diagnosis, at any rate in the later stages, was not difficult. Perhaps the two diseases which were most nearly simulated were typhoid and typhus fevers. The differential diagnosis in this case was readily made by considering the expression of his face, the characters of the tongue, the enlargement in the groins, the rash and its time of appearance, and the necrotic areas on the shins (so-called carbuncles). On the other hand, the absence of abdominal symptoms such as tympanites, tenderness, and gurgling in the iliac fossa, and of typhoid spots, was against typhoid fever. Besides the positive symptoms of plague, the absence of the well-marked symptoms of typhus such as sudden onset, early drowsiness, stupor, and delirium, negatived the idea of typhus fever.

PATHOLOGICAL REPORT.

Bacteriological Diagnosis.

At 4 P.M. on October 2nd the patient was first seen by one of us. He then presented a well-marked glandular swelling in the right groin. The skin over the bubo was sterilised by

1 in 500 corrosive sublimate, and all traces of antiseptic were removed by prolonged washing in alcohol. The needle of a hypodermic syringe (the whole, of course, previously sterilised) was inserted into the bubo, but only one or two drops of fluid could be withdrawn into the barrel of the syringe, though the needle was turned in several directions. These few drops were injected into an agar slope tube. A little blood exuded from the wound; this was inoculated by a sterilised platinum loop into a broth tube.

The finger was sterilised in the same way, pricked, and from the blood a blood serum and a broth tube were inoculated. Cover-glass preparations were also made from the blood, and some of the blood was collected into sterile pipettes.

The cultures were taken back to the laboratory, and incubated at 37° C. By 10 30 A.M. the next morning it was possible to give a diagnosis pointing strongly to the case being one of plague. This was founded upon examination of the films from the blood and from the cultures. Both coverslip preparations made from the blood showed bacilli in considerable numbers, quite indistinguishable from B. pestis (Fig. A). Of the cultures, the only one which showed any growth was the agar slope made from the bubo fluid. This showed minute translucent colonies, which when examined microscopically showed short, rather stout, bacilli, with rounded ends, very many of which were in pairs end to end. Stained by carbol fuchsin, and partially decolorised by very weak acid, they showed fairly well-marked polar staining. They were not stained by Gram's method, and examined in hanging drop they showed marked oscillatory movement, but no true motility. The agar culture was a quite pure one.

To complete the bacteriological diagnosis the growth on the agar slope, after twenty-four hours, was scraped off with a sterile platinum loop, made into an emulsion with sterile broth, and 2 c.cm. of this was injected subcutaneously into the neighbourhood of the left knee-joint of a young guinea-pig. The inoculation was made on October 3rd at 5 P.M.

October 3rd, 4 fresh cover-slip preparations were made from the blood; they all showed B. pestis. Cultivations were also made on agar slope.

All the cultivations made from the blood remained quite sterile. The broth culture from the bubo, however, after two days, showed the broth quite clear, but a considerable amount of powdery growth at the bottom of the tube. Films from this broth culture showed the bacilli in short chains (no chains longer than 11 bacilli were seen), the individual elements showing well-marked polar staining.



Fig. A.—Cover-slip preparation from the blood of the patient who died at Cardiff showing plague bacilli collected and examined October 3rd.

The symptoms of the case were originally very similar to those of typhoid fever, so with blood obtained on October 3rd it was thought advisable to perform Widal's test. No signs of any reaction were obtained in two hours with dilutions 1 in 30 and 1 per cent. The inoculated guinea-pig showed no symptoms until the evening of October 5th, when it became very quiet. On October 6th it was still very quiet, remaining in one place. It died at 1 P.M. that day—that is, nearly three days after the inoculation. Great swelling and hæmorrhagic exudation were found in the left groin. The individual glands could not be separated. Films from this exudation, stained by carbol fuchsin, showed numerous bacilli. The glands on the left side of the body, noticeably the gland near where the iliac artery divides, and the one in the neighbourhood of the kidney, were markedly enlarged, and films from them showed on staining enormous numbers of bacilli, particularly in the latter gland. Bacilli just as numerous were found in the enlarged spleen (Fig. B). B. pestis in pure culture was obtained from the spleen, left lymphatic glands, liver, kidneys, and heart blood. No bacilli were found in the peritoneal fluid, and the glands on the right side of the body were not enlarged. The provisional bacteriological diagnosis was in this way completely confirmed.



Fig. B.—Cover-slip preparation direct from the spleen of an inoculated guinea-pig. It shows the enormous number of the bacilli in the spleen, and is almost like a preparation from a pure culture.

Necropsy.

The *post-mortem* examination of the patient W. G. was made at the mortuary attached to the crematorium on the Flat Holm Island of the Port Sanitary Authority of Cardiff twenty-four hours after death. Owing to unavoidable conditions a more complete examination could not be made. Thus the brain and cord were not examined, nor were the different viscera weighed.

External Appearances.—The body was that of a well-nourished, powerfully-built man. Rigor mortis had passed off. Hypostatic congestion was well marked. All traces of rash had disappeared. There was diffuse ecchymosis over the face, neck, and shoulders down to the level of the third rib. A sanious froth oozed freely from the mouth. The glands in the right groin were visibly enlarged; these were removed *en masse*, and subsequently it was a matter of great difficulty to separate the individual glands owing to the great infiltration around them; in some places this was hæmorrhagic. The larger glands when cut across were of a pinkish-red colour. The glands in the left groin, though not visible, could be easily felt. These were similarly removed and dissected out. There was no enlargement of the cervical or axillary sets. A superficial undermined ulcer was present on the right shin, and a small one on the left shin.

Thorax.—No fluid in the pericardium: heart collapsed, flabby, and empty; heart muscle pale and very much softened. No excess of fluid in pleural cavity, but several old-standing pleuritic adhesions. Both lungs were greatly congested, emphysematous in patches, and on section were nearly black and dripped blood. No consolidation patches were found. The bronchial glands were not specially examined.

Abdomen.—There was no distension of or fluid in the abdominal cavity, and no signs of peritonitis. The stomach and intestines were moderately distended with gas. The spleen was of a dull purple colour, and very considerably enlarged, its under surface hyperæmic and bloodstained, its veins engorged and substance softened. The liver, though smooth on both surfaces, was deeply stained in places, apparently a *post-mortem* occurrence. It was apparently somewhat but not markedly enlarged. The entire surface was studded with a number of whitish, irregularly-shaped bodies, varying in size from a pea to a bean, which on section showed a soft, friable, caseous pinkish-white material. They were present throughout the whole organ. These areas were sharply marked off from the surrounding liver substance, and no signs of inflammation visible to the naked eye were seen around them. The liver substance was apparently normal, but softer than usual. The kidneys were slightly congested, the glomeruli stood out prominently, and the capsule stripped easily: no macroscopic hæmorrhages were seen either in the liver, spleen, kidneys, or other organ; nor were the peculiar areas described in the

liver found in any other organ. The lower 6 feet of ileum and cæcum were removed, cut open, and washed; great congestion was detected in three places in the small intestine, the most marked being at the junction of the small intestine with the cæcum; each patch was irregularly-shaped, about 2 inches in width, and embraced the entire circumference of the bowel. There was no inflammation of Peyer's patches or ulceration of the small intestine; no enlargement of the mesenteric glands.

Gland.—Sections of one of the enlarged right inguinal glands stained by eosin and hæmatoxylin showed great vascular engorgement with numerous blood extravasation, both in the gland and especially in the periglandular tissues. Throughout the gland, but especially in patches, there was well-marked infiltration of the tissue proper with small cells, apparently leucocytes, with deeply-staining nuclei. Sections of the enlarged left glands showed only some congestion and slight engorgement of vessels.

Heart.—Sections of the heart wall showed degenerative changes in the muscle fibres.

Liver.—The well-defined whitish areas found throughout the liver were further examined in sections. They showed microscopically a varying amount of degenerated liver substance, present for the most part as isolated strands of a few cells, while between were very numerous small cells, apparently leucocytes and pus cells. While sharply cut off to the naked eye, these areas microscopically, though fairly well defined, were seen not to be abruptly distinct from the liver substance, but numbers of the small cells extended between the liver cells for a considerable distance. Also in these areas were a number of small, more deeply staining masses, which examined with a high magnification, could be seen to consist almost entirely of B. pestis. But few bacilli could be found in the liver except in those areas and in those more especially in the small patches described. The rest of the liver showed cloudy swelling. To demonstrate the changes described some sections were stained by hæmatoxylin and eosin, and others by methylene blue, aniline oil being used as the decolorising and dehydrating agent.

Distribution of the Plague Bacilli in the Cadaver.

The distribution of the plague bacilli in the patient at the time of the necropsy is of some interest.

In the enlarged glands of the right groin coverslip preparations showed a few bacilli but they were by no means numerous. A few of the glands showed more marked signs of breaking down, and films from them showed many more bacilli. Cultures from one of the largest glands showed a mixed growth of B. pestis and other organisms. Cultures and cover-slip prepreparations from the left inguinal and femoral glands showed no bacilli.

Cultures from the spleen and kidneys showed a mixed growth of B. pestis and other bacilli; from the liver a pure culture of B. pestis (Fig. C), and from the heart blood and



Fig. C.—Cover-slip preparation from a two days' old broth culture made direct from the liver of the same patient. It shows the shortened bacilli in chains; the so-called strepto-bacilli.

lungs a well-marked growth of foreign organisms but no plague bacilli. Cover-slip preparations from the liver, kidneys, and spleen showed scarcely any plague bacilli, but numerous large bacilli in threads with square ends, very similar to B. anthracis, were found. They were apparently a *post-mortem* invasion, and from the fact that attempts to cultivate this organism on ordinary media failed, it is not improbable that it was an anaërobic organism. They were also present in the enlarged glands of the right groin.

REMARKS.

Some of the chief points of interest in the above case are:

1. *The Enlarged Glands.*—The absence of any pain, tenderness, or signs of inflammation in or around the enlarged glands, during the whole time he was under observation.

2. *Bacilli in the Blood.*—The bacilli were present in the blood in sufficient numbers to be readily detected by simple microscopic examination. They agreed morphologically with B. pestis, and almost certainly were that organism, but cultures from the blood (four in all) remained sterile. Possibly this may be ascribed to a small amount of the antiseptics used clinging about the fingers. Every effort was made to prevent it, and cultivations were made from the blood on two distinct occasions.

3. *Necrosis in the Liver.*—The presence of whitish areas scattered through the liver. They were only found in the liver, and appear to be, as Professor Childe reports, commencing necrotic areas caused by the plague bacillus (and its toxins). They are mentioned by Professor Childe[1] in his report to the Plague Research Committee as occurring in a case of plague septicæmia, and are also apparently described by Dr. Arnott[2] in a case in Bombay.

4. *The "Carbuncles."*—The red and subsequently necrotic patches on the shins, the so-called carbuncles, appear to be one of the characteristic features of plague, but their frequency seems to be a matter of dispute. According to the article on Plague in *Allbutt's System of Medicine* they have sometimes been attributed to direct introduction of the virus of plague into the skin. Here we were able to watch their development, as none were present when the patient was first examined. By far the best marked was the area on the right shin (that is, on the same side as the bubo). On October 3rd the skin was distinctly raised from the surface by sero-purulent fluid. Two cover-slip preparations were made from this on that day. They show numerous bacilli morphologically identical with B. pestis. Many show polar staining. Unfortunately cultures were not made, so that it is impossible to say definitely if they were B. pestis or not. Microscopically they were identical, and associated as they were with the absence of pus cocci and most other organisms (the skin had not ruptured when preparations were made) it is not improbable that they were the true B. pestis. If this be so, the gangrenous breaking down must be ascribed to local action of the bacilli and their toxins. If this be the case we have a very obvious source of infection of his surroundings by the patient.

REFERENCES.

1 Abstract in the BRITISH MEDICAL JOURNAL, September 24th, 1898.
2 *Scottish Medico-Chirurgical Journal*, February, 1898. Quoted in the above number of the BRITISH MEDICAL JOURNAL. We have not read the original paper.

THE BACTERIOLOGY OF PLAGUE.

(With Illustrations on Special Plate.)

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HISTORY.

VIRCHOW, in 1879, reasoning from analogy, predicted that as plague never arises spontaneously in a locality where it has not previously existed the disease would prove to be one of microbic origin. In the same year Hirsch and Sommerbrodt observed in the blood of patients suffering from plague elongated refractile granules, usually arranged in pairs. These bodies may or may not have been plague bacilli; at any rate, these observers failed to attach any importance to them from the etiological standpoint. With the outbreak of plague in Hong-Kong in 1894 independent Commissions were sent by the Japanese and French Governments respectively to investigate the disease. The former was under the direction of Kitasato and Aoyama, and the latter under the direction of Yersin. Kitasato almost at once succeeded in determining the constant presence of a characteristic bacillus in the buboes, blood, and organs of patients suffering from the disease. His colleague confirmed the discovery. Subsequently Yersin, working independently, found the organism, and although the cultural characters and staining affinities which he described for his bacillus did not agree with those published by Kitasato, there is no doubt that they were both

healing with the same bacillus. There have been since 1896, unfortunately, only too many opportunities in India and elsewhere for confirming Kitasato's discovery.

General Characters of the Bacillus.

The micro-organism resembles somewhat closely the bacillus of chicken cholera. (See Special Plate, Fig. 6.) It is a small bacillus, measuring from 1 μ to 2 μ in length, and from 0·3 μ to 0·5 μ in width. Larger forms are often met with which may measure as much as 4 μ or 5 μ. It possesses rounded ends, giving it an oval appearance. It is usually regarded as being non-motile. Kitasato, however, states that if it be examined in media kept at a temperature of 37° C., it can then be observed to be actively motile. Gordon has also described the presence of one to two terminal spiral flagella. In cover-glass preparations made from blood and sputum it is frequently seen to be arranged in pairs (see Special Plate, Figs. 7 and 10). In fresh broth cultures it tends to form streptococcus-like chains made up of from five to six short bacilli. These chains are sometimes observed in the sputum (see Special Plate, Fig. 10). Involutions forms are frequently met with; these occur generally when the bacilli are existing under unfavourable conditions—for example, when they are present as a mixed infection in buboes, or in old broth or agar-agar cultures (see Special Plate, Fig. 9). They may be thickened, pear-shaped, or spindle-shaped. Hankin found that these forms appeared in an agar-agar culture to which 2·5 per cent. to 3·5 per cent. of salt had been added, and he regards this as a point of some diagnostic value. The plague bacillus does not form spores, and it has no true capsule, although in some stained specimens an appearance suggesting encapsulation is present. It is a facultative anaërobe.

Staining Affinities.

It stains readily with the ordinary aniline dyes, but is decolorised by Gram's method. In cover-glass preparations made from buboes, blood, or organs, the bacillus stains more intensely at the ends, giving rise to a bipolar appearance. Laboratory cultures may exhibit this feature, but they do not always do so. Good routine stains are weak carbol fuchsin (1 in 4), Loeffler's blue, and weak gentian violet. The bipolar appearance can be generally best brought out by overstaining with strong carbol fuchsin for four or five minutes, and then carefully decolorising in absolute alcohol. The plague bacillus shows a great affinity for the thionin group of stains, such as carbol thionin and toluidin blue, and these are excellent for staining blood and sections of organs and glands.

Cultural Characters.

The micro-organism grows well on the ordinary media, including blood serum, gelatine, agar agar, glycerine agar, and broth. Agar-agar and broth are those usually employed, especially in the tropics, where gelatine is unmanageable. It grows well at 37° C., but also equally well at 25° C. to 30° C., so that in a hot climate an incubator may often be dispensed with. On blood serum it grows rapidly, and in from twenty-four to forty-eight hours a slightly elevated, moist, cream-coloured growth appears. In gelatine it forms an opaque white growth with irregular margins. The growth tends to be limited to the needle track; it causes no liquefaction of gelatine. On agar-agar, or better on glycerine agar, it grows readily, forming an abundant, moist, shining, cream coloured growth, presenting a markedly crenated appearance. If touched with a platinum needle it is found to be smooth and sticky, and freely movable on the subjacent culture medium. If carefully dried slanting agar cultures be inseminated, by spreading the culture material evenly over the surface, a somewhat characteristic growth appears. The surface becomes closely covered with minute translucent colonies, and if viewed from behind the whole presents the appearance of ground glass. (See Special Plate, Fig. 8.) The agar-agar tubes may be dried in a desiccator, but preferably in an incubator for one or two weeks, until all the water of condensation has disappeared.

In ordinary bouillon it gives rise at first to a general turbidity. This rapidly clears, with the formation of a fine flocculent deposit on the bottom and sides of the tubes.

Haffkine's Stalactite Growths.

Haffkine has discovered a highly characteristic appearance in bouillon cultures under certain conditions which, so far as is known at present, is peculiar to the plague bacillus. He found that if broth cultures, preferably those to which a small amount of fat has been added, be kept absolutely still and free from any vibrations, a growth appears on the surface of the broth which spreads down into the media in the form of long stalactites.* Haffkine uses an ordinary narrow-mouthed flask half filled with neutral or faintly alkaline peptone broth, to which a little cocoa-nut or olive oil or ghi (clarified butter) has been added. After sterilising, it is infected and placed in an incubator reserved for the purpose. In India the ordinary room temperature suffices. In twelve hours' time a diffuse cloudiness appears, and this is gradually replaced by the formation of the stalactite growth which hangs from the surface, and may reach to the bottom of the flask. If it be shaken, the stalactites fall to the bottom, giving rise to the so-called "snowflake" appearance. If the flask be incubated again, the stalactites re-form. The characteristic growth can be best observed by placing it in the dark and holding a light behind it.

The micro-organism grows on potato, but not characteristically. It forms a small amount of acid in sugar-agar, and causes coagulation of milk in about two weeks (Klein).

Animal Experiments.

Apes and rodents, including rats, mice, guinea-pigs, marmots, and bandicoots, are all highly susceptible to inoculation of the plague bacillus, and most of these animals have been observed to suffer from the disease under natural conditions.[7] Sheep, goats, cows, and horses are susceptible to a slight degree; dogs and cats react very slightly; birds, and also swine, are refractory to repeated inoculations. A rat or guinea-pig which has been inoculated with plague material shows, within one to three days—usually on the first day—evidence of toxic poisoning; it refuses food, its coat loses its gloss, respirations become hurried, and the animal in many cases staggers or shows weakness in the hind quarters, and finally rolls on its side and eventually dies, either with or without the occurrence of convulsions. On *post-mortem* examination, inflammatory œdema is usually found at the site of inoculation; there is marked congestion of the spleen, liver, and lungs, and these organs frequently show scattered hæmorrhagic patches. The spleen and liver are enlarged. The glands also are enlarged, but not as a rule to a striking degree. The bacilli are present in large numbers in the spleen, liver, and blood.

Evidence that the Bacillus Causes the Disease.

That the micro organism which has been described is the causative agent of plague is at the present time undisputed. Proof rests on the following facts. The bacillus is constantly present in the body of an individual suffering from the disease. If from this individual material be taken which is found to contain the characteristic bacillus, and be inoculated into a susceptible animal, the animal sickens and dies, and the micro organism can be obtained from its spleen and other organs. The bacilli thus obtained will in their turn prove to be fatal to other susceptible animals. Several striking examples have been quoted by Clemow,[7] from India, tending to show that man and rat infect one another under natural conditions. As, however, his observations were made in districts where plague was raging at the time, they cannot be accepted unreservedly.

Accounts of successful direct inoculation experiments from man to man are also on record. Thus, in 1802, Dr. Whyte infected himself with plague material, and died of the disease; in 1835, in Cairo, two condemned criminals were inoculated with blood obtained from an individual suffering from the plague; they both contracted the disease, but recovered. The same objections, however, apply to these experiments as have been already raised against Clemow's observations. The outbreak in the laboratory in Vienna (1898) is, however, more conclusive. The attendant who had charge of animals inoculated with plague contracted the pneumonic form of the disease and died, the bacilli being present in his sputum. The two nurses who attended this man contracted the disease as well as Dr. Müller; the latter died.

* See photograph illustrating Dr. Balfour Stewart's paper (Special Plate, Fig. 3.)

THE EFFECTS OF HEAT, DRYING, DISINFECTANTS, ETC., ON THE BACILLUS.

The plague bacillus does not, speaking generally, possess high powers of resistance outside its vertebrate hosts. Thus, it is readily killed by direct sunlight, by disinfectants, and by rapid drying at a high temperature. To slow drying, at a low temperature, it is more resistant. The micro-organism is, therefore, more readily killed in a hot, dry climate than in a damp, temperate one. Pure cultures which are protected from light and drying may retain their vitality for months. It is extremely resistant to cold, and cultures which have been exposed to a temperature below freezing point have been found to be alive after four months. Laboratory cultures soon lose their virulence, but by passing them through susceptible animals it can generally be restored.

The German Commission gives the following results of experiments relating to the vitality of the bacillus outside the body. Their figures do not agree in every instance with those in the reports of other Commissions, but it is probable that varying conditions of climate and technique may account for some of the differences.

A thin layer of culture material spread on a cover glass and exposed to direct sunlight is killed	in 1 hour
Cultures heated to 70° C.	in 10 minutes
,, ,, 80° C.	in 5 ,,
,, treated with corrosive sublimate (1 in 1,000) ...	at once
,, ,, ,, carbolic acid (1 per cent.)	in 10 minutes
,, ,, ,, ,, ,, (2½ to 5 per cent.) ...	in 1 minute
,, ,, ,, lysol (1 per cent.)	in 5 minutes
,, ,, ,, chloride of lime (1 per cent.) ...	in 15 ,,
,, ,, ,, quick lime (1 per cent.)	in 30 ,,
,, ,, ,, sulphuric acid (1 in 2,000)	in 5 ,,
,, ,, ,, hydrochloric acid (1 in 1,000) ...	in 30 ,,
Pieces of organs, dirt, dressings, etc., infected with plague bacilli (in India)	in 8 days
Ditto (in Germany)	in 14 ,,
The bacilli in urine and fæces	in 5 ,,
,, sputum	in 10 to 16 dys.
,, tap water	in 5 days.
,, sterilised water	in 10 ,,

MODE OF COMMUNICATION.

Inasmuch as the micro organism does not produce spores, and possesses such low powers of resistance outside the body, it is improbable that infection takes place to any great extent directly through the air; it must under ordinary circumstances take place by close contact. The micro-organism may gain entrance to the body by any or all of the following ways:

1. By the skin or mucous membrane.
2. By the respiratory tract.
3. By the gastro-intestinal canal.

1. *By the Skin.*

This is the commonest way, and probably the only one in bubonic cases. Infection may take place through wounds, scratches, or insect bites. The Austrian Commission states that it succeeded in infecting a rat by rubbing a virulent culture into the intact skin. The following insects are possible agents in carrying the disease: flies, fleas, bugs, ants, and mosquitos. Yersin noticed that flies died in his laboratory in Hong Kong, and he succeeded in inoculating a guinea-pig from a culture obtained from an infected fly. Nuttall subsequently fully confirmed this observation. Similar experiments have been performed on ants and bugs by Hankin and Nuttall respectively. Simond has done a considerable amount of experimental work with the fleas of rats, which points to the possibility that these insects are frequently carriers of the disease to man.

2. *By the Respiratory Tract.*

It has been already stated that under ordinary conditions the plague bacillus does not exist in the air, but it is possible that in densely crowded, close dwellings the disease may be contracted by aërial infection. More frequently, however, the bacillus gains entrance to the respiratory tract by inhalation from contact with infected dressings, discharges, etc., as, for example, from an infected person sneezing or coughing in the face of a healthy individual. Experiments have proved that rats may become infected by rubbing virulent cultures on the nasal mucous membrane.

3. *By the Gastro-intestinal Canal.*

Some observers believe the disease may be contracted from infected food or water, and they regard the buboes as secondary manifestations. In favour of this theory is the fact that the bacilli are frequently to be found in large numbers in the intestines of animals fed on plague organs or on infected grain. The plague bacillus has also been isolated from water obtained from a well near a plague-infected dwelling. On the whole, however, it is unlikely that this is the way in which infection usually takes place. The Austrian Commission is inclined to believe that infection takes place sometimes through the tonsils. This may be so in those cases in which the cervical glands are those first affected.

BACTERIOLOGICAL DIAGNOSIS.

In the bacteriological examination of a suspected case of plague the method of investigation differs according to whether it be one of the bubonic, pneumonic, or septicæmic type. In the bubonic form the bacillus must be looked for in the buboes, in the pneumonic form in the sputum, and in the septicæmic form in the blood.

Method of Obtaining Material.

When dealing with sporadic cases or at the onset of an epidemic the bacteriological examination requires to be undertaken with care, and systematically. During an epidemic, however, a provisional diagnosis can often be made by simple examination of cover-glass preparations made from the gland, sputum, or blood, as the case may be. In bubonic cases of ordinary severity the inflammation is very acute, usually of a hæmorrhagic character, with marked exudation and infiltration into and around the affected gland. In these cases a sterilised antitoxin syringe should be plunged into the gland when a sufficient quantity of fluid can be readily obtained. In mild cases where the inflammation is more chronic and softening of the affected gland often absent, it is preferable to make a small incision (with aseptic precautions) and remove a small piece of the gland, which is placed in a sterilised tube for subsequent examination.

In pneumonic cases the sputum should be collected in the ordinary way, and not mixed with any antiseptic material.

In septicæmic cases it is best, in order to exclude the possibility of skin contamination, to remove a sufficient quantity of blood directly from a vein by means of an aseptic hypodermic syringe. It is good practice to examine the blood in all cases of plague.

Microscopical Examination of Material.

The infective material obtained from one of the above-mentioned sources should be dealt with in the following way. Two cover-glass preparations should be made, and one stained with an ordinary aniline dye, such as weak carbol fuchsin, and the other by Gram's method. The presence of short bacilli, exhibiting bipolar staining and tending to arrange themselves in pairs, or short chains, and which are decolorised by Gram's method, is highly suggestive. Negative evidence, however, is of less value, and should never be relied upon in suspicious cases. In buboes which have suppurated the bacilli may be absent or scanty. In cases of pestis minor the affected glands may contain very few bacilli. I have observed a case of this description recently in England. It must not be forgotten that the plague bacillus frequently occurs as a mixed infection, generally being associated with staphylococci and streptococci. These, however, stain by Gram's method. In sputum it may be mistaken for the diplococcus pneumoniæ, but this also stains by Gram's method, and appropriate staining reveals the presence of a distinct capsule.

In blood examination I find it best to make the preparations on slides. The bacilli are usually present in very small numbers in the peripheral blood, and a larger amount of blood can be reviewed more rapidly than if a cover-glass preparation be employed.

Cultivation.

In mixed infections endeavours should be made to isolate the bacillus from plate colonies or by employing Haffkine's salt medium.

Ordinary broth and agar-agar cultures should be made, and their characters studied both macroscopically and microscopically. Haffkine's stalactite growth should also be tried. Guinea-pigs should be infected, and if they die the *post-mortem* appearances of their organs, etc., noted, and the micro-organisms should be isolated from their spleens.

It will sometimes be necessary to make sections of organs

and glands in suspected cases. It will generally be found preferable to embed the latter in celloidin.

Blood Serum Reaction.

The diluted blood serum obtained from a case of plague is said to cause clumping with plague bacilli. Hitherto this has not proved of practical value. The reaction can usually only be obtained late in the disease, and even then it is not always present.

The Bacillus is Non-pyogenic.

The plague bacillus may, I think, be best regarded as belonging to the septicæmic group of pathogenic micro-organisms, that is, one which is present in the blood, and may cause toxæmia or death without local manifestations. It is parallel in some respects with the anthrax bacillus. In plague, however, if local signs are present they occur in the lymphatic glands, whereas in anthrax infections local signs manifest themselves chiefly at the actual site of inoculation. The plague bacillus does not produce pus but it can cause necrosis of tissue. Buboes which contain the bacillus as a pure infection may resolve or slough. If they suppurate it is generally due to staphylococcic and streptococcic infection.

References.

[1] Report of the Austrian Commission, 1897. [2] Report of the German Commission, 1899. [3] Bombay Government Plague Reports, London, 1900. [4] *Die Krankheiten der warmen Lander*, von Dr. B. Scheube, 1900. [5] *Twentieth Century Practice of Medicine*, vol. xv, Plague by Kitasato. [6] Hewlett's *Manual of Bacteriology and Practitioner*, October, 1900. [7] Clemow, British Medical Journal, 1900, vol. i, pp. 1141, 1216. [8] Nuttall, *ibid.*, 1899, vol. ii, p. 642. [9] Manson's *Tropical Diseases*, second edition. [10] Rees, *Practitioner*, October, 1900.

SOME PRACTICAL NOTES ON THE BACTERIOLOGICAL DIAGNOSIS OF HUMAN PLAGUE (PESTIS HOMINIS).

(With Illustrations on Special Plate.)

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(Extracts from an Address delivered on the occasion of a demonstration given to the Pathological Society of Manchester on October 10th, 1900.)

The following remarks are based on experiments carried out in my laboratory with a culture of bacillus pestis kindly given to me by Dr. Calmette in April last. This culture was used chiefly for the purpose of repeating experiments of previous observers, Yersin and Kitasato more specially. The culture had been obtained by Dr. Calmette from a case of plague in Oporto (1899), and was so virulent in April last that it was sufficient to prick the skin of a guinea-pig with a needle loaded with bacilli to produce an attack of the disease fatal in about five days. Dr. Calmette also gave me very valuable information in a most generous manner, and I take this opportunity of thanking him cordially.

Through the courtesy of Dr. Brownlee and Dr. M'Clure I was able to examine 29 of the cases of plague under treatment in the Glasgow Fever Hospital. Medical men have much reason to be grateful to these gentlemen for the very unselfish way in which they sacrificed for the benefit of their colleagues much of the time they could so ill afford to spare.

I have also to acknowledge the kindness of Dr. Buchanan, who supplied me with *post-mortem* material from three of the fatal cases which had then occurred in Glasgow.

The Discovery of the Bacillus.

It is unnecessary in a communication of this kind to give a systematic account of the bacteriology of plague,[1] as numerous summaries of the subject have appeared of late. Suffice it to say that in 1894 Kitasato and Yersin, working independently in Hong Kong, each isolated a bacillus from the buboes and blood of patients affected with bubonic plague, from the organs of rats and mice which had died of plague, from the dust (Kitasato) and from the soil (Yersin) of houses where patients had died of plague (see Special Plate, Figs. 4 and 5). In addition they had shown that the bacillus could be easily cultivated outside the body, that the disease could be produced experimentally in the lower animals by inoculation, and by feeding on cultures of the bacillus or on organs containing the plague bacillus. Yersin had also shown that flies might be infected, and become a source of spread of the disease.

The descriptions given by Yersin and Kitasato were very similar, but they disagreed with regard to certain points as to the distribution of the bacillus. Thus Kitasato recognised the bacillus more constantly in the blood than did Yersin, who found it specially in severe cases. Kitasato is also of opinion that the plague microbe may be stained by Gram's method, and causes the coagulation of milk, which is not in agreement with the results obtained by other observers. It is, however, impossible to believe that Kitasato could have examined a number of typical cases of plague without seeing the same organism as that seen by Yersin, for when an unsoftened bubo is examined the bacillus is usually found in great abundance and in a state of purity. From a diagnostic point of view the most important addition which has been made to the discoveries already maintained is due to Childe, who in 1896 established the existence of plague pneumonia by the bacteriological examination of sputa.

Another advance useful in diagnosis was made by the discovery that plague could be produced experimentally by painting the conjunctival mucous membrane with products containing the plague bacillus, as recommended by the Bombay German Commission, or by painting the nostrils of guinea-pigs, rabbits, or monkeys, according to the method introduced by Roux in 1898.

Finally, I should also mention the attempts which have been made to utilise the serum reaction for diagnostic purposes (Wyssokowicz and Zabolotny, and others).

Types or Varieties of Plague.

It is important, from a diagnostic point of view, to be familiar with the various forms which the disease may assume. Like some other observers, I have been able to reproduce these types experimentally in the guinea-pig with the virulent culture I had at my disposal (obtained by Dr. Calmette from one of the cases in Oporto). These varieties depend (1) on the channel of entrance, (2) the virulence, (3) the quantity of the bacilli.

I.—The Bubonic Type.

The bubonic type is produced in the guinea-pig by infecting slight cutaneous wounds with a virulent culture of the bacillus (or by injecting subcutaneously various quantities of an attenuated culture). After slightly scarifying the skin on the inner side of one of the hind legs of a guinea pig, I rubbed the part with a loopful of a moderately virulent agar culture of bacillus pestis. Signs of disease became evident at the end of twenty-four hours, and the animal died about five and a half days (138 hours) after inoculation. After death considerable œdema was found near the seat of inoculation, in the corresponding groin, and to a lesser extent over the posterior half of the abdomen. The popliteal and superficial inguinal glands were much enlarged and suppurating, the corresponding lumbar glands were also enlarged and deeply congested. The spleen was enlarged and full of very minute tuberculous-looking lesions (these contained a very large number of plague bacilli). The liver was large and unequally congested. The lungs were intensely congested and contained eight or ten large tuberculous-looking masses, situated chiefly under the pleura. These pseudo-tubercles were surrounded by a wide zone of deeply-congested, partly hæmorrhagic tissue (secondary plague pneumonia). All these lesions resembled those produced in the guinea-pig by the bacillus mallei. The right side of the heart was much distended with dark blood. Most of the lymphatic ganglia other than those already mentioned were swollen and more or less congested. Typical plague bacilli were demonstrated by microscopical examination in a suppurating inguinal glands and the œdematous tissues round them, the spleen, liver, lungs, and blood of the heart. They were most abundant on the spleen and glands. Cultures revealed, in addition to the plague bacillus, the presence of the staphylococcus pyogenes aureus in the inguinal glands but not in the other organs. There were only two colonies of staphylococci amongst a very large number of colonies of the plague bacillus. In one of the agar cultures they were also present in the bouillon cultures. Animals inoculated with these impure cultures all died of plague but in all their organs the plague

bacillus and the staphylococcus were found together, the staphylococcus having apparently multiplied more rapidly than the plague bacillus. Judging by the relative number of colonies obtained, the spread of the staphylococcus had been favoured by the presence of the plague bacillus, but the disease produced by the mixed infection had all the characters of plague.

II.—Septicæmic Plague.

This was produced by injecting the bacillus under the skin. One-sixth of an agar culture of a slightly attenuated type, which had been kept in the laboratory for about six months, injected deeply into the thigh, produced the death of a guinea-pig in 66 hours. With an agar culture isolated seven days previously from a rapidly fatal case, $\frac{1}{30}$th of the culture was fatal in less than 48 hours. One mouse was killed in less than 24 hours by $\frac{1}{10}$th, and another in 45 hours by $\frac{1}{20}$th part of the same culture. All these cases differed from the first case described in that the enlargement of the glands near the seat of inoculation, though distinct, was less marked; these glands were of a deep red colour, and firm. Nearly all the other lymphatic glands were deeply congested. The spleen was large in all cases, but showed no tuberculous-looking lesions, the lungs were either congested or pale, but generally œdematous. The local œdema was variable, very extensive and hæmorrhagic in one case, but comparatively slight in the others. In all these cases the bacillus was found abundantly in the blood of the heart, spleen, liver, and lymphatic glands.

III.—Pulmonary Plague.

This was produced according to Roux's method by applying the bacilli with a small, soft camel-hair brush to the nostrils of guinea-pigs. In one case I used an agar culture which had been kept for nearly five months in a cupboard at the temperature of the laboratory. For another case I selected an agar culture I had isolated nine days previously from a fatal case. In both cases there was evidence of general discomfort before the end of the third day, and both animals died between the fifth and sixth day after the painting of the nostrils.

There was considerable swelling of the integuments round the nostrils and of the upper lip; the trachea contained muco-purulent exudation, slightly tinged with blood in one case. In both cases the lungs were large, œdematous, generally pale, their surface was slightly uneven owing to collapse of small portions of parenchyma immediately under the pleura; there were also small ecchymoses under the pleura, and in one case several larger hæmorrhagic foci. There was, in fact, well-marked disseminated broncho-pneumonia, and the bronchial and cervical lymphatic ganglia were intensely congested.

Some of the cervical glands contained hæmorrhagic foci; these were almost black; the most affected glands were surrounded by œdematous blood-stained connective tissue. The other organs presented the same appearances as in septicæmic cases. Plague bacilli were easily demonstrated in the tracheal mucus, the lungs, the blood of the heart, the cervical glands, and the spleen. The most interesting feature of plague pneumonia is that it can be produced with bacilli the virulence of which is so attenuated that they do not produce the disease by subcutaneous inoculation.[2]

IV.—Gastro-Intestinal Form.

This was introduced in some mice, of which I placed two in a cage which had been occupied by two guinea-pigs that had died of plague, and two others in a clean cage, their food being mixed with some of the excreta of a guinea-pig also dead of plague. The first two mice died in about ninety-six hours; the last two died in about seventy-two hours. They all seemed to have succumbed to some mixed form of infection; I could recover the bacillus in one case only.

The experiments of Yersin and Kitasato showed from the first that infection could be produced by ingestion of infectious products. Kitasato was even able to find the plague bacillus in the contents of the intestine.

It is sometimes argued that animals fed on material containing plague bacillus are not infected through the alimentary tract but through the nose and air passages. Batzaroff has, however, produced the disease by depositing in the mouths of guinea-pigs portions of infected organs, care being taken that the nostrils were not contaminated or the buccal mucous membrane wounded.

A gastro-intestinal form of plague is not usually recognised as a clinical form of human plague.

V.—Cutaneous Form.

I have not been able yet to produce localised cutaneous lesions not followed by lymphatic extension, giving rise to the bubonic type of the disease. It is said that in the human subject pustules may occasionally occur, without formation of buboes. The contents of such pustules are said to be rich in bacilli. Usually, however, infection through the skin is followed by the production of buboes, and in such cases it is not always possible to recognise any cutaneous lesion at the primary seat of infection.

From the preceding short summary it will be seen that the three chief types of human plague—that is, the bubonic, the pulmonary, and the septicæmic—correspond to three types of infection, the first two being determined by the channel of infection, the last being capable of arising whenever the resistance of the tissues is considerably reduced, or the virulence or quantity of the bacilli very great. It will be noticed that in all cases the lymphatic glands are liable to be affected, but that typical inguinal and axillary buboes are produced chiefly in connection with cutaneous infection of the extremities, whilst cervical buboes may be produced as a result of infection of the skin of the head and neck, or of the nasal or buccal mucous membranes. In the case of infection through the air passages the most characteristic bacteriological feature is the presence of plague bacilli in the bronchial and nasal discharges. Finally, in the rapidly fatal forms without any marked localisation of lesions, the blood contains a large number of bacilli. In the experiments recorded above the blood was invariably found to contain bacilli easily demonstrable by direct microscopical examination and cultivation, whatever mode of infection had been adopted. In the cases of mixed infection which I produced artificially the plague bacillus could be easily separated from the associated cocci.

Diagnosis of Plague by Experimental Infection.

Two methods of infection may be used for diagnostic purposes:

1. *Subcutaneous inoculation*, for which mice and guinea-pigs are especially suitable.

2. *Infection through the air passages*, obtained by painting the nostrils with the products under investigation. This method is specially suitable when products of low virulence are under investigation—as, for instance, the pus of suppurating buboes. (In suppurating buboes the plague bacilli, when found, are usually in a state of degeneration and frequently of low virulence.) For this method of experimental infection the guinea-pig is specially suitable.

Microscopical Examination.

I have described the experimental methods in order to make clear the distribution of the bacillus. In practice, however, the first steps to be taken would be to make a microscopical examination:

1. Of material obtained from a bubo or from the œdematous tissue surrounding it.

2. Of blood obtained from the tip of a finger or from the lobe of the ear.

3. Of the expectoration in suspicious cases of pneumonia.

In ordinary cases such an examination presents no difficulty, and can be carried out very rapidly. Almost any of the aniline dyes in common use can be used for the purpose of staining cover-glass preparations of material obtained with the hypodermic syringe from buboes or their neighbourhood. Freshly-prepared aqueous solutions of methyl violet, aqueous solutions of methylene blue, or Loeffler's blue may be used. Carbol-thionin blue or diluted carbol fuchsin have given me the best results. Carbol fuchsin has, however, a tendency to stain too deeply the degenerated cells and products among which the bacilli are found; and, to obtain good preparations showing well the bipolar stain of the bacillus, I treat the film for about five seconds with 15 per cent. solution of sulphuric acid, which is washed off rapidly; carbol fuchsin is then dropped on the film; after a contact not exceeding two or three seconds, the stain is thoroughly washed off. The

bacilli do not stain by Gram's method, but a little of the material surrounding them remains slightly stained.

Cultivation of the Bacillus.

This presents usually no difficulty except in the case of sputa. Ordinary alkaline peptone bouillon agar seems to me the best medium to use in ordinary cases, at any rate I have not found that with the blood or tissues of animals affected with plague it was possible to obtain typical cultures more rapidly on any other medium. On agar at the temperature of the body minute colonies are already visible eight or ten hours after inoculation of the medium. Neither blood serum, glycerine agar, or gelatine agar present any advantage. (In separating the plague bacillus from other microbes in sputum, advantage may be taken of the fact that the plague bacillus grows quicker at a low temperature than other pathogenic bacteria; this method of cultivation has been recommended to me by Dr. Calmette.) Growth is also rapid in ordinary alkaline peptone bouillon, if care be taken not to disturb the bouillon the growth in that medium is characteristic, the bacillus grows near the surface, and adheres to the sides of the tube near the surface of the fluid, forming a whitish flocculent ring. The fluid remains clear so long as the fluid is not disturbed, but the slightest motion causes flakes of bacilli to fall, and for a time the fluid seems cloudy; this probably accounts for the turbidity noticed by Kitasato. The production of involution forms by cultivation on salted agar, as recommended by Hankin and Leumann, is not always sufficiently rapid to be very helpful when rapid diagnosis is wanted. The same objection may be offered to Haffkine's method of cultivation on buttered bouillon; the appearances of a stalactite culture are, however, very striking. I have not found that milk was coagulated by this bacillus.

Precautions against Laboratory Plague.

I cannot conclude these very cursory remarks on the bacteriological diagnosis of plague without pointing out the dangers of the slightest carelessness in such work.

Animals under observation should be kept in a separate room, in glass jars covered with fine gauze weighted lids. For additional security the jars should be placed in a larger case, constructed very much like a meat safe, but entirely made of metal and glass (iron frame, sides entirely closed by fine wire gauze, glass doors, with well-fitting frame). This outer case should entirely prevent rats, mice, or even insects, from having access to the animals or their food.

As a further precaution this case should be placed above a large metal tray easily disinfected, and supported above the floor by a metallic stand. These precautions are necessary to prevent accidental infection of rats and mice, and of various parasites which usually find their way wherever animals are kept.

The skin of animals which have to be dissected should be well soaked with an acid solution of perchloride of mercury (1 in 500) before the animal is opened, and the dissection should be made over a tray containing some of the same solution. The body and organs which are not preserved in suitable preservative fluids should at once be destroyed by fire. Laboratory attendants should not be allowed to touch any infected animal or products before these have been thoroughly disinfected. The bacteriologist may take the risks of his own work, and being well acquainted with them is in a position to avoid them, at any rate it is his duty to face them; the case is not the same with regard to his assistants, and more especially to those that are young and untrained. The comparatively great number of deaths attributable to plague infection in the laboratory or the *post-mortem* room, which have occurred during the last three or four years, clearly indicates that an exceptional amount of care is needed in work of this kind.

In these short notes I have not attempted to give a complete account of methods; I have simply tried to give such information as is not already easily accessible to all through the many excellent summaries of the subject which have appeared of late.

References.

[1] An excellent review of the subject will be found in Netter's short but masterly treatise on *La Peste et son Microbe*, Paris, 1900. [2] Batzaroff, *Annales de l'Institut Pasteur*, 1899, p. 385.

ON THE METHODS OF MAKING ANTITOXIC AND PREVENTIVE FLUIDS,

WITH SPECIAL REFERENCE TO THOSE OF PLAGUE.

(With Illustration on Special Plate.)

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It is unnecessary here to enter upon a discussion of the nature of immunity or of the action which takes place between toxin and antitoxin, a subject which we know very little about, but we may with advantage consider the means by which the human or animal body may be rendered immune to an infectious disease. It has long been known that immunity is in general obtained to the virulent disease by passing through a modified form.

Immunity Produced by the Attenuated Virus (Living Microbes).

The first experiments in this direction with artificial cultures were made in 1880 by Pasteur, who showed that immunity may be induced by inoculation with the attenuated virus—that is, with cultures of attenuated, but living, microbes. The outcome of these experiments was the protection of animals from anthrax and protective inoculation against rabies, although in this disease the specific microorganism has not yet been found. In 1884 Ferran first protected guinea-pigs against cholera by the same means; and later Haffkine, in 1893-94, started protective inoculations against cholera in man on a large scale in India.

Immunity Produced by Microbes Killed by Heat.

The method of inoculating with living microbes has its obvious disadvantages when carried out with the cause of a disease which may take a septicæmic form; and this fact led Haffkine, when he came to experiment with plague, to try to immunise animals by inoculating them with microbes killed by heat. Haffkine had observed with respect to cholera,[1] and others before with respect to several other diseases, that it was possible to confer immunity by inoculating animals with the dead bodies of the microbes of certain diseases. An animal inoculated with either the attenuated living or with the dead microbe undergoes a reaction lasting several days.

The tissue cells of the animals, stimulated by the specific substance contained in the body of the microbe, are induced to elaborate an antitoxin or immunising substance; and the animal acquires an active immunity. An animal that has been at the trouble of manufacturing its own antitoxin has a more lasting and efficient protection than one that has been injected with an antitoxic serum obtained second hand, as it were, from an immunised animal. The antitoxic serum confers immunity almost directly, but its effects are fleeting, a fact which one would expect, considering the serum is a foreign body and is soon got rid of.

The Active Bodies in Haffkine's Prophylactic Fluid.

With respect to plague prophylactics, it is the intracellular poisons of the dead microbes that are mostly concerned in conferring protection, but Haffkine injects the broth in which they have grown as well. He was led to adopt this measure from previous observation on cholera. The object is to counteract an attack of plague in an inoculated person—supposing he became infected—by previously accustoming the tissues to the poison given out by the microbe in the cultivation medium.

This theory assumes that the intracellular poisons induce a bactericidal power in the tissues, and that the extracellular poisons induce antitoxic properties which would come into play supposing the bactericidal power were insufficient to prevent infection, that is to say, if the person did contract plague.

I showed by experiments on rabbits that the broth in which the microbes had grown apart from the bodies of the microbes was of use as a means of causing protection.[2]

I have touched upon these points because it has often been asked why the broth is used at all, and not the dead microbes alone, which would make the technique of manufacture simpler.

Since a dead culture only is used the prophylactic is in no sense a serum. The false use of the word serum for what is really a vaccine is to be deprecated, for it gives a wrong notion of what the fluid really is. The word serum is constantly used in describing the prophylactic, even in Government reports. The very misleading, not to say alarming, statement that inoculation with the prophylactic causes a mild attack of plague is not what one would expect from a scientific physician.[3] A small definite quantity of plague poison is injected which is easily dealt with by the body and it cannot increase. There is the same distinction as would be between a case of mild septic intoxication and a case of septicæmia.

PREPARATION OF HAFFKINE'S PROPHYLACTIC FLUID OR VACCINE.

The vaccine is a sterilised culture of the plague microbe in broth. The microbe should be obtained fresh from a case of plague, or from a culture in which the virulence has been kept up.

In India, where the religious prejudices of Hindu and Mohammedan have to be allowed for, the broth is made with goat's flesh in a way that is unnecessary to describe here. Ordinary broth as usually made in the laboratory is really better.

In order to ensure sufficient aëration of the microbe which it would not obtain at the bottom of a flask of broth, Haffkine first placed a few drops of oil or butter on the surface of the broth. The microbes attach themselves to the butter, and grow down into the broth in long threads like stalactites, forming a very characteristic and beautiful appearance (see Fig. 3 of special plate). If the flask is moved the "stalactites" break and fall to the bottom, to be succeeded by a fresh crop in a few days.

The stalactite formation not only serves its primary purpose, but is also a very important test in the bacteriological diagnosis of plague.[4] The oil on the surface acts as a convenient substance for the microbes to attach themselves to. The microbe has a great affinity for any substance it can grow on, it prefers to grow up the side of a flask by continuity than to grow in the depths of the broth. Having attached themselves to the under surface of the particles of butter they grow down into the broth. The microbe does not require a large supply of oxygen. I have grown it anaërobically and found it to be quite as virulent as a corresponding culture grown aërobically.

The flasks of broth are incubated at 70° to 80° F. At this temperature the microbe will have finished growing in about four to six weeks. This may be known by the fact that no fresh "stalactite" growth is obtained after shaking the flask and allowing it to remain stationary for a few days.

After the culture has done growing, its purity from contamination is tested by taking a small quantity out of the flask and inoculating an agar tube. If the agar is dry and the culture spread evenly over the surface, the growth after one to two days' inoculation is seen as a thin, translucent, colourless film with a ground-glass appearance when the underneath surface is viewed through the substance of the agar. Any stray colonies of a foreign microbe are easily seen. The broth culture which has been tested and found pure is then sterilised by heating it to 65° C. for one hour, and a small quantity (0.5 per cent.) of carbolic acid is added. The fluid is then drawn off into small bottles by means of a siphon.

ANTITOXIC SERUMS.

The antitoxic serum of Yersin is used as a curative agent for plague. It also acts as a prophylactic agent, but the immunity conferred is very short—only about fifteen days.[5] The principle of this serum is the same as that of antidiphtherial serum and others of like nature. An animal—preferably a horse—is immunised by inoculation at intervals with dead or living cultures of the specific microbe; after the first or second inoculation the quantities are increased and the intervals between shortened. The animal, which takes the place of the human being who has been inoculated with a vaccine, acquires an active immunity; and, if the serum of such an immunised horse be inoculated in considerable quantities into a human being suffering from the specific disease, the disease is ameliorated or cured.

BACTERICIDAL AND ANTITOXIC ACTION OF SERUMS.

A serum may act in either of two ways: it may be bactericidal—that is to say, it can prevent the growth of the microbe in the body; or it may be antitoxic, in which case it exerts no bactericidal action, but neutralises the poisonous products given out by the microbe in growing, or it may be both bactericidal and antitoxic. The serum having bactericidal properties alone will suffice to prevent a disease if inoculated before infection; but, if the serum be used as a curative agent, it must have antitoxic properties to counteract the poison already formed by the microbe, as well as bactericidal properties to arrest the growth.

With respect to antiplague serum, Roux asserts that the serums, however they are made, are always antitoxic, but the antitoxic property is more marked in some serums than in others; those made by injecting living cultures are more antitoxic than those made by injecting dead cultures.[6] This fact, according to Metchnikoff, explains the difference in results obtained with Yersin's serum.

PREPARATION OF YERSIN'S SERUM.

Having shown the possibility of preparing a curative serum in smaller animals, Yersin, Calmette, and Borrel started to immunise a horse in 1895 at the Institut Pasteur. Living cultures of the plague bacillus obtained from Hong Kong were used. Since injection of these cultures under the skin was found to cause long-standing induration, the method of intravenous injection was adopted, as much as a whole culture on an agar tube being used. The feverish reaction lasted for a week. After waiting twenty days a second inoculation was made; the reaction in this case was intense, but of shorter duration. From this time larger quantities were injected at shorter intervals. The serum was found to be preventive and curative for laboratory animals after six weeks' treatment.[7] It was from this horse after a year's treatment that the best results were obtained in Canton, and Amoy in the summer of 1896.[8]

Yersin afterwards started making serum in his laboratory at Nha-Trang, using living cultures. Roux started a stable of twenty-five horses at Garches, near Paris, but he considered it inadvisable to use living cultures for so many horses, which could not be kept under observation in the laboratory. He therefore used cultures killed by heat, and toxins formed in the cultivation media. The serums made both at Garches and at Nha-Trang were used by Yersin in Bombay and Cutch Mandvi in 1897. The results were distinctly inferior to those obtained the year before at Canton. The results with the serum made at Garches with killed cultures gave the least good results.[9]

On account of the inferior results of the Garches serum, and considering the progressive encroachment of plague, the Pasteur Institute decided to prepare several horses vaccinated first with cultures killed by heat and afterwards with living cultures, as was done in the first instance. This serum was used at Oporto in 1899, and gave somewhat better results.[10]

VACCINE AND SERUM OF LUSTIG.

Lustig's method of preparing vaccine is based on the observation that a nucleo proteid which he succeeded in separating from the bodies of plague microbes is a substance which induces immunising properties when injected; neither the metabolic products of growth nor toxins are used. The plague microbe is cultivated on agar plates and the growth is scraped off and dissolved in 1 per cent. sterilised solution of caustic potash. This solution is then rendered slightly acid with hydrochloric or acetic acid, and the resulting precipitate collected on filter paper; after washing it is dried *in vacuo*. This substance, which gives the chemical tests of a nucleoproteid, is easily soluble in a weak solution of carbonate of soda.[11]

Lustig proposes to use this solution as a prophylactic.[12] He also immunises horses with it by repeated inoculations during a period of three or four months. The serum has been prepared in Bombay and tried at the Arthur Road Hospital.

So far, there has been no report of the use of the nucleoproteid used as a prophylactic if it has been tried. The results of the curative serum were not at first very satisfactory, but lately better results seem to have been obtained. Dr. Polverini, in a report to the Bombay Municipal Committee,

states that in 475 cases treated a recovery percentage of 39 was obtained. From the comparatively small number of trials of serum inoculations hitherto reported, neither serum seems to come up to what might be expected from a specific treatment. Lustig's serum does not appear to be so efficacious as that of Yersin. This is possibly accounted for in a way similar to Metchnikoff's explanation of the difference in Yersin's serums referred to above. A horse treated with a nucleoproteid extracted from the dead microbes would be immunised with even less efficiency than one treated with the killed microbes together with their metabolic products, and a horse immunised in this way was shown to give a less powerful serum than one immunised with the living microbes. Compared in this way with Haffkine's prophylactic, the latter is the greater success as a scientific preparation.

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A NOTE ON THE METHOD OF USING HAFFKINE'S PROPHYLACTIC.

By MARGARET M. T. CHRISTIE, M.D., B.S., D.P.H.,
Late Plague Medical Officer, Calcutta.

A short description of the method of inoculating with Haffkine's prophylactic, and of the immediate clinical effect, may be of use at the present time. While I was in Calcutta in 1898 Dr. Nield Cook (the Medical Officer of Health) and I inoculated some 2,490 cases between April and July, none of whom died of plague during that year's epidemic. A stock of Haffkine's prophylactic was obtained from the Bombay Research Laboratory in January, 1898, and when the first fatal case of plague occurred at the European General Hospital, 10 members of the staff were inoculated at the request of Colonel Ranking, the Senior Medical Officer.

Roux's syringes, with a capacity of 10 c.cm., were employed. At different times the fluid varied in strength; some bottles were marked "double strength," in which case only half the dose was given. The dose has varied from 5 c.cm. to 20 c.cm. The ordinary dose for an adult male of the fluid then provided was 5 c.cm.; I used to give a woman 4 c.cm., girls aged from 10 to 14 years 3 c.cm., and children from 2 to 10 years from 1½ to 3 c.cm. according to age. To save time the whole of the syringe was filled, and used to inoculate several people, the graduations on the cylinder making it possible to gauge the dose accurately for each person; the needle was well rubbed with a cotton wool sponge dipped in 1 in 20 carbolic in the interval between two inoculations. Strict aseptic precautions were observed throughout. Carbolic was used, as it has been proved to have no action on the prophylactic. The neck of the sealed bottle of prophylactic was sterilised in the flame of a spirit lamp. The cork was then extracted with sterilised dissecting forceps. The bottle was covered with a pad of absorbent cotton just squeezed out of carbolic lotion until the syringe was quite ready, and in filling the syringe the bottle was held on the slant. The syringe was carefully taken to pieces each day after it had been used, washed with boiling water, then with carbolic 1 in 20, and carefully dried. Just before using the needle it was boiled in a test tube and inserted into the syringe with sterilised forceps.

I invariably selected the back and outer side of the arm midway between shoulder and elbow as the site of inoculation: in men I believe the flank was sometimes used. The skin was well rubbed with a sponge dipped in 1 in 20 carbolic; if any dirty patient presented herself I made her wash the arm herself first with water and, when procurable, soap; but the numbers were so large that as a rule the rubbing with carbolic was the only measure employed, and I never had an abscess or other untoward result. The needle was run into the superficial fascia for quite half or three-quarters of an inch, and the fluid slowly injected; the needle was quickly withdrawn, the skin being pinched up as it emerged. If the needle be run in towards the elbow it quite prevents any of the fluid emerging with it. The pain was of course trifling. I let the patient press a small sponge squeezed out of carbolic over the spot to stop any bleeding. I only remember one case where more than one or two drops of blood flowed, and usually there was none at all. In view of the subsequent inflammation and itching, I avoided the application of collodion or strapping. It is not necessary to apply any dressing at all.

The reaction in many cases began at once with pricking at the site of inoculation and the gradual formation of a hard tender red swelling for a few inches round. The temperature rose, in the cases in which I was able to take it, within six hours of the inoculation: it was highest on the night of inoculation. The height of the fever varied a great deal. In a few cases it only reached 99·6° or 100° F. In most it rose to 102° or or 103°. It was rarely possible to reinoculate immediately any who manifested no reaction, though I believe Mr. Haffkine considers it more satisfactory to reinoculate in all cases which do not present a rise of temperature to 103°. The fever rarely lasted more than two days, though the arm remained more or less painful and tender for a week or ten days, and a small hard nodule often remained for a few weeks.

I was not able to make a practice of seeing all inoculated persons the next day. Those I did see presented a red, hot, hard swelling of the skin and subcutaneous tissue of the arm rarely spreading above the shoulder, but often extending to the elbow or even to the wrist. The margin was as defined in many cases as in erysipelas; the pseudo-erysipelatous condition was not, I am told, noticed when the flank was chosen. There seemed to be no relation between the degree of fever and the amount of local reaction. The axillary and cervical glands were sometimes swollen and tender, and this occurred at times when the arm itself was only slightly inflamed. Many patients complained of shooting "rheumatic" pains in the shoulder and elbow-joints. One said she felt as if the arm were so heavy that it was dragging itself out of the socket. The general symptoms varied with the individual. Some people vomited or had diarrhœa, others suffered from nausea, syncope, or shivering. Two cases had only slight fever and local reaction but were intensely sleepy, for twenty-four hours in one case and thirty-six hours in another. I never saw a case of delirium but have heard of one or two. Some patients felt slightly out of health for a week or two after inoculation.

Neither Dr. Cook nor myself had any untoward results. There should be no suppuration if cocci are excluded by aseptic proceedings. We used to advise the patients to keep quiet for a few days, to drink chiefly milk, to take a simple aperient the next morning, and to apply cold water or lead lotion to the arm and keep it in a sling. It was our practice to refuse to inoculate any who were already ill (especially if they had any increase of temperature), aged and feeble persons, nursing mothers, pregnant women, and children under two years. I never saw any ill-effects in those cases in which old women urged me to inoculate them, or mothers insisted on my inoculating babies under two: I never injected any under a year. We had to take special care to refuse any cases that were at all likely to be ill from causes apart from inoculation, as any serious or fatal illness would have been at once attributed to the inoculation.

During the first two months, reports were constantly spread that inoculated persons had died within a few hours or days; one newspaper was only induced to withdraw such statements by a letter from the health officer's solicitors threatening legal action. As it was, a young Austrian, who from the fact that he carried a handbag, was supposed to be an inoculator, was beaten to death; and an attack, intended for Dr. Nield Cook and myself as inoculators, was made on Dr. Laing in a quarter where we really had been inoculating the day before, but where he was only inspecting a house suitable for a hospital.

Certificates were granted to every inoculated person, and particulars inserted in the register; these certificates were highly valued in Calcutta, as segregation of contacts was not enforced where the whole household had been inoculated.

A NOTE ON THE ORGANISATION AND CONDUCT OF PLAGUE LABORATORIES.

BY WALTER C. C. PAKES, D.P.H.CAMB,
Bacteriologist to Guy's Hospital.

THE pathologist and bacteriologist, in the course of their ordinary work, run certain dangers, which are also shared by the surgeon. Considering the number of those who are engaged in the investigation of infectious diseases, it is perhaps astonishing that so few have become infected. This fact may be explained in several ways. In the first place the bacteriologist always handles cultures of pathogenic bacteria with care; secondly, knowing something of the methods of infection by the different bacteria, he takes appropriate precautions in dealing with infected animals; lastly, the cultivation of pathogenic bacteria results in a loss of virulence, and it is possible that he may become infected from time to time with attenuated cultures and acquire a partial immunity.

Most of the infectious diseases are now sufficiently well understood to ensure that with proper care the danger of infection may be reduced to a minimum. If, therefore, a bacteriologist inoculates himself with some pathogenic germ, he does not become a source of great danger to his fellows. With plague, however, the case is very different; comparatively little is known as to the methods of infection; more than this, the disease is extremely infectious, or, in other words, man is extremely susceptible to the disease. The mere handling of a rat dead of plague has been sufficient to cause death, and flies and fleas are quite capable of conveying sufficient virus to cause the disease.

As this is so no precautions can be too elaborate, and the minutest details in the construction and furnishing of the laboratories, and in the technique of the *post-mortem* examinations upon man and animals, must be attended to.

A laboratory for the investigation of plague should consist of three rooms: an anteroom for the preparation of media, cleaning of used vessels (after sterilisation), and for the many other duties which devolve upon a laboratory assistant; the laboratory proper; and a room wherein to keep all infected animals. It is preferable to have a special building for the purpose, but if that is impossible, and the laboratory forms, or is to form, part of a larger building, it should be isolated, as regards communication, from the rest of the building, and so arranged that the only ingress to the laboratory is through the anteroom, and to the animal room through the laboratory. Each of the rooms should be sufficiently large to allow the work to be done with ease. The walls and ceilings should be made of non-porous material, and should have a glazed surface without break; the floor should be of cement or of grooved tiles well set in cement. The windows must be large, and so arranged that the lighting is uniform, the window sashes of iron, and not projecting into the room. All corners must, of course, be rounded off. The ventilation of each room should be separate, the outgoing air being made to pass a gas flame. The source of heat should be, whenever possible, a gas stove, the source of artificial light gas or electricity.

Every endeavour must be made to prevent the formation and collection of dust, and to this end it is advisable to have the floor moistened with a solution of corrosive sublimate containing a little glycerine.

The amount of furniture necessary is not great, and consists of a porcelain sink, a slate or glass bench for microscopic and cultural work, a similar bench for performing necropsies on animals, a muffle for burning the dead bodies, an autoclave, small shelves for keeping the disinfectant solution, a small metal cupboard for keeping syringes, instruments, and a small stock of media, and an incubator.

The infected animal room might with advantage have a slate or glass shelf about 2 feet wide and 3 feet from the ground running round the room, upon which to place the cages containing the animals.

In the anteroom would be the ordinary sterilisers, sink, etc., and a similar shelf to that in the infected room along one side upon which to keep the stock animals. No shelf, bench, cupboard, or other article of furniture in any of the rooms should have sharp corners or edges; everything should be carefully rounded off in order to eliminate the chance of scratching the skin. All the instruments should be in the best possible order: the syringes (with asbestos plungers) should work easily and the needles should be sharp; the knives and scissors should all be very sharp and the forceps strong and certain. If the last named do not grip securely they may slip, and small particles of infected material or drops of infective fluid may be projected upon the clothes or skin of the operator; the same may happen if the knives or scissors are blunt.

In the conduct of the laboratory the bacteriologist himself should alone handle the infected material, cultures, and animals, even to the extent of feeding the animals. Both the principal and assistant should wear mackintosh overalls, which must be frequently washed with strong disinfectant solution.

The media should be all prepared in the anteroom; the assistant should go into the laboratory as seldom as possible, and never in the absence of the principal; for this reason there should be only one key, and that in the possession of the bacteriologist.

When an animal is to be inoculated it should be prepared in the anteroom, only the actual inoculation being performed in the laboratory. During the inoculation both principal and assistant should wear indiarubber gloves, which can be easily disinfected. Unless the hands are covered they would have to be thoroughly disinfected after every inoculation; in dealing with plague bacilli this should be done as seldom as possible in order to prevent the peeling and cracking of the skin, which is the usual sequel to the constant use of disinfectants.

After the inoculation the syringe must be at once placed in boiling water or a strong disinfectant, and the animal—rat or mouse—placed in a cage. Special cages are necessary, and those used by Professor Paltauf[1] are convenient.

A cylindrical glass jar is provided with a hole in the centre of the bottom, and rests upon a stand in a jar of disinfectant solution. A disc of wire gauze or perforated zinc is supported upon legs about an inch above the bottom of the jar. The lid is also a disc of wire gauze weighted in the rim. Any excreta voided by the animal will fall through into the disinfectant, thus preventing any danger from its drying or falling on the shelf.

Upon the death of the animal it is removed with forceps and fastened on a suitable block of wood, carrying small wooden plugs at the side, by means of string or wire. The cage should be at once placed in the autoclave and sterilised.

In making the necropsy gloves should be worn. The instruments having been boiled should be ready for use, and the small steriliser on the bench should be kept boiling while the necropsy is being made, so that any instrument which is finished with, either permanently or temporarily, may be at once placed in the boiling water.

Upon the completion of the necropsy the principal should sterilise all the instruments, calcine the animal in the muffle (the wood block should be placed in the muffle, no attempt being made to free the animal from it), and thoroughly disinfect the bench with disinfectant solution.

All discarded cultures must be at once placed in the muffle and incinerated, or sterilised in the autoclave before leaving the laboratory.

Lastly, the laboratory should be used only for the investigation of plague, no other work of any description should be undertaken.

It follows from what has been said above that the same scrupulous care must be taken in making a necropsy upon the human subject.

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PLAGUE AND INFLUENZA: MIXED INFECTION IN HOUSES.

BY WILLIAM C. HOSSACK, M.D.,
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(With a Bacteriological Report by Dr. J. NIELD COOK, Health Officer, Calcutta.)

DURING the months of March and April, 1900, I was making systematic efforts to obtain confirmation by cultures of the existence of an obscure form of plague pneumonia described as existing in Calcutta in the cold weather epidemic of 1899.[1] For various reasons, afterwards to be gone into, the confirma-

tion sought was not found, but bacteriological investigations, though not absolutely conclusive, make it appear probable that two, at least, of the patients in two groups of plague cases were suffering not from plague—as was thought—but from influenza. As there was no bacteriological confirmation of the diagnosis of those plague cases it will be necessary to give the history of the two houses in some detail.

History of 10-3 S. K. M. Lane.

The house is a large three-storey masonry house, in a small bye-lane composed of very good class recently-built houses in the best part of the native business quarter. It contains twelve rooms, and at the time of the outbreak had about 20 inhabitants.

1. On February 22nd, 1900, D. M., Khettri, M., 60, died, the cause of death being registered as "colic pain." Investigation revealed that the man died after two days' fever with buboes. Information as to the site of the buboes was not obtainable. He lived on the second floor. Two days later information was given that rats were dying in the house, and had been found dead in the lane. The first rat was noticed dead on February 21st, on which day ten were thrown from the house. On February 22nd and 23rd two rats were seen dead, and on the 24th three rats.

2. On February 28th, K. C., Khettri, M., 21, died, the cause of death being returned as fever of six days' duration. Beyond the fact that he had six days' high fever, and that during the last three days he was semi-conscious, no particulars could be obtained. The presence of buboes was denied; but the denial was worth nothing. It was ultimately admitted by the relatives that he died of plague. On March 2nd and 3rd a group of 4 cases were found in one room; these were probably influenza: we will leave them for a moment and pass on to the remaining plague cases in the house.

3. On March 1st R. M., 55, M., Khettri, father of K. C., became ill. On March 2nd he was removed to a suburb of Calcutta, but his friends refused to take him, and he had to return to the house. On March 5th Dr. Sen, my assistant, saw him, and reported as follows: "Got high fever since three days last. He has become unconscious since two days last; complains of pain in neck. Cannot swallow anything. No cough. Tongue typical; temperature 104° F. No glands." When seen later in the day by myself the condition was noted as follows: "Temperature 104°, pulse 118; jaw seems fixed and corners of mouth are drawn, suggesting paralysis. Seems to be unconscious. Cannot speak; cannot be got to put out tongue. Dulness at base of right lung, and no breath sounds can be heard. A small femoral gland, deep, is to be made out after some search on the right side. It is exquisitely tender." He died next day, March 6th.

4. On March 5th M., 18, M., Khettri, the remaining son of R. M., became ill. He was seen by Dr. Sen on March 6th, and his condition is described as follows: Temperature 104°, pulse quick and intermittent. Semi-conscious. Vomited four times this morning. No gland seems to be enlarged, no cough." I saw him on the afternoon of March 7th, when his condition was noted: "Pulse 128, respirations 40, temperature 104°, eyes not congested. Tongue shows brownish strip down the centre with red dry edges. Is groaning. Small tender glands can be felt in left groin. Patches of dulness and bronchial breathing in both lungs. Fine *râles* can be heard in the mid-axillary line on the left side, just below horizontal nipple line." In March he was seen by Major H. E. Deane, R.A.M.C., the Special Health Officer, and myself. There was then a large typical bubo in the left groin. His condition was bad. He died on March 10th.

5. and 6. S., M., 40, Bhairee, and N., 25, F., Bhairee, husband and wife, on March 7th, "were found in a pitiable condition in a pitch-dark hole under the stair. She was semi-conscious, cold, and collapsed, with what little clothing she was wearing soaked in water, the result, apparently, of trying to get a drink from a lota. Her face was covered with blood from a gash on the right cheek-bone. There were also contusions on the body the result of a fall in the courtyard at the door of the den. Speech characteristic. Medical examination impossible under the circumstances. The husband could be reached only by stepping over the woman, so narrow was the space. He was conscious in a dazed sort of way. Speech affected, but could give the particulars of himself and wife. Very dirty. Bedsore on right hip. Skin hot and dry. A gharry (hired conveyance) was procured, and Dr. Sen and I carried the patients to it, some 40 yards, and sent them to Mayo Hospital. There were many servants and neighbours about, but not one would give a hand." They died in hospital: the diagnosis of plague was confirmed there, but whether buboes were present or not I cannot say. They had not lived in the house until (3) R. M. fell ill, when they came to assist as friends and to nurse him.

The history of these cases, along with the rat mortality, proves conclusively the presence of plague in the house. The first patient lived on the top floor, No. 3, R. M., the landlord and father of No. 2 and No. 4, is said to have lived on the first floor. However, they were all found ill on the ground floor. The group of influenza cases lived in two rooms on the first floor. They were not relatives of the landlord, but simlpy tenants. It is highly improbable, nevertheless, that they succeed, in the unlikely event of their trying to do so, in avoiding contact with the previous plague cases.

Influenza Group of Cases.

On March 2nd, that is, nine days after the first dead rat was noticed, and eight days after the death of the first plague patient I was taken to see three women lying ill in one bed in a room on the first floor. The notes of the cases run as follows:

1. Sewrani (aunt of Ram Nath's wife), 22, F., Brahmin. Is heavy and stupid, but puts out tongue and attends to directions. Has been ill six days. High fever came on with a rigor. Cough is present, but little expectoration. Has lost her voice and been unable to speak for the last two days. The temperature early in the morning was 102° F. It is now 104°; pulse 120, soft and compressible. Had pain in the head to begin with, but none now. Respiration very little hurried. Careful examination revealed nothing abnormal in the chest. Dr. Sen also failed to find anything abnormal. Tongue coated with yellowish-white fur; bowels loose, two or three loose motions a day. There are said to be no glands. The groins, however, were not examined. Condition on March 3rd: Is tossing and moaning; hands are thrown about. I refused to give medicine as she was dying. No congestion of the eyes. Lungs again examined, but nothing found. Died the same day.

2. Ram Nath's wife, F., 14, Brahmin. Lies on one side. Very restless, moaning, and apparently in pain. Coughs frequently, but no expectoration. Tongue coated. Temperature 103°; pulse 110, fairly strong. Respiration hurried. Says she has no pain. Nothing abnormal found in the chest. Bowels constipated. No gland about neck or axilla. Has been ten days ill. Ordered jacket poultice. Condition on March 3rd: She is sitting up, is much better, and was relieved by poultice and slept; pulse 90, temperature normal.

3. Phoolbasia, 40, F., Brahmin (mother-in-law of Ram Nath's wife). Sits up and talks quite well. Temperature 102°. Cough is very troublesome, but she cannot get up much expectoration. She has been eight days ill. The tongue is stained with betel nut. Had pain all over, in the joints, head, and back to begin with. Now only the cough troubles her. It causes no localised pain. Sputum was seen in pellet the size of a pea, white, mucoid, non-aërated. It is dotted with white flocculi. No enlarged glands. I thought I detected on percussion slight deficiency of resonance just inside right scapula behind. Dr. Sen failed to make it out, and the stethoscope showed nothing abnormal. General condition pretty fair. Loose stools two or three times a day. Voice not altered. Condition on March 3rd: Seems to have practically recovered, though still coughing.

4. Sew Gobin, 18, M., Brahmin. A cousin of Ram Nath; he was seen on March 2nd, apparently in good health. On the night of the same day he became ill with a rigor. On March 3rd he was found lying on the same bedding as the three women in the following condition: Temperature 104°, pulse 110, eyes not congested. Tongue typical—that is, white fur all over except the tip and edges, which are red and dry. No glands. Nothing found on examination of the chest. Is coughing very little, with almost no expectoration. Speech and intelligence are unaffected. He is cousin to Ram Nath. He died on March 4th.

Cultures were made by me on agar tubes on March 3rd from Ram Nath's wife, from saliva, expectoration not being obtainable, from Phoolbasia from sputum, and from Sen Gobin from saliva, no expectoration being obtainable. In the report which follows from Dr. Nield Cook, Health Officer, Calcutta, to whom my sincere thanks are due for his courteous assistance in this investigation, it will be seen that, while the others were negative, Sen Gobin's culture showed what appeared to be the influenza bacillus. None showed any indication of the plague bacillus.

On visiting the house on March 4th I found the rooms vacated. I heard that Raghoo Mull, the landlord, had left ill, and also that another woman was ill on the ground floor, but the people denied it, and I failed to find her. Probably this was plague patient No. 6. Eventually I got the information that after Sewrani's death on March 3rd, and Sew Gobin's death on March 4th, the two other women left on March 4th for up-country practically cured, and subsequently did well.

Clinical Remarks on the Group.

Though the history of the house with its previous plague cases and accompanying rat mortality inevitably suggested the diagnosis of plague in the group of three women, the symptoms and history of the group awakened a doubt in my mind that would never have arisen in connection with the cases individually. While failure to find definite physical lung symptoms or a bubo in a single case of plague would have had little significance, it seemed curious to find it in 3 cases simultaneously, and again the comparatively long duration of illness in cases like these with indications of pneumonia or respiratory mischief, though one might expect to find it occasionally in an individual case, was quite contrary to experience in a group of cases. Strongest of all was the fact that Phoolbasia was recovering, for though there are cases on record of recovery from plague pneumonia, they are very rare and in Calcutta almost unknown. Personally I have only known two, and one of those was due to an immediate antecedent preventive inoculation cutting the disease short. The speech paralysis seen in Sewrani's case is highly characteristic of plague, but on the other hand it is not rare in severe influenza.[2] Altogether I was so doubtful of the diagnosis—influenza being in my mind—that I hesitated till next day before returning them as plague, Sewrani's death and the subsequent death of Sew Gobin after 24 hours' illness seemed to indicate that I had done rightly, but the result of the bacteriological examination upset this.

History of 79 Lr. Chitpore Road.

The hut is one of a group of four or five, two storeyed, kutcha

(that is, mud and wattle) built, consisting of seven rooms and a cowshed. No rats have been reported in connection with the hut. It is the centre of a badly infected area however, plague cases having occurred all round. First of all two not suspicious deaths occurred in the hut, but it is very doubtful whether any reliance is to be placed on the histories given in these deaths.

1. Chooni Bewa, F., Hindu, 80, died on March 10th. It is noted: "Had an attack of high fever since fifteen days ago. Had unconsciousness. Denies glandular swelling." (2) Bhola Nath, 70, M., Hindu, died March 18th. "Suffering from chronic bronchitis for the last three years; he was very old. Passed loose stools before death. No fever and no swelling." Three days later, on March 21st, a girl, Monoria, F., Hindu, died, and the history in her case was distinctly that of plague. "Had fever for the last four days, was unconscious, had swelling at the left axilla, had no cough."

Influenza Case.

While investigating this last death Dr. Sunyal discovered a woman ill; she was a lodger, and no relative of those who had previously died. The particulars are as follows:

Goneshi Bibi, 50, F., Hindu, "has been suffering from fever for fifteen days; temperature 103°; nothing abnormal in chest; no swelling; is unconscious and is in moribund condition March 22nd, 1900." I failed to see her next day, but on March 24th, 1900, I found her in the following condition: "Pulse 114, feeble; respiration is laboured; occasional *râles*; broncni and bronchial breathing over the whole of the right lung in front; fine liquid *râles* at the base of the same lung; dulness on percussion marked at the apex of the right lung and elsewhere in patches; temperature is 104°; tongue is coated." Next day I found her improved, restless, and coughing a good deal; she had still some fever. A culture was made from the sputum. She slowly improved, and on April 4th, 1900, there is an entry: "Seen to-day; weak but perfectly recovered."

In this case there was well-marked nervous excited restlessness. This is very characteristic of influenza, but in plague a heavy stuporose condition is the rule. Accordingly I was prepared in this case for the result of the culture, which was identical with that obtained from Sew Gobind.

It may be taken, I think, as fairly well established by the cases given that it is possible for plague and influenza to coexist in the same house; but, before passing on to the considerations raised by this possibility, it is necessary to say just a word in explanation of the presence of influenza in Calcutta, and of the form in which it manifests itself there.

Influenza in Calcutta.

In 1890 the disease was pandemic over all Europe and Asia and about the month of March it reached Calcutta from Bombay, and broke out in Burra Bazaar. Thence in April it spread all over the city, laying up whole houses at once, to such an extent that business was seriously interfered with. It was looked on as a new disease, and was known as the "Bombay fever," but it showed exactly the same set of symptoms as recorded in the various outbreaks of Europe. Dr. Koilas Chunder Bose has put on record a very good clinical account of the outbreak. The first epidemic was of a mild type, the fatal cases were few, and the general mortality showed only a slight rise, though bronchitis and pneumonia were not uncommon complications. "Fevers," under which the great majority of influenza mortalities would be registered, showed an increase of only 82 per mille over the previous year. The increase in pneumonia deaths was, however, marked, being 186 against an average for the previous ten years of 106, 129 in 1884 being the highest previously recorded. In 1891 it recurred earlier in the year in the cold weather, and this year the disease was of a severer type, and fatal cases were more numerous. In 1892 it is again described as epidemic, but not of a virulent type. Subsequent to this I can find no mention of it, unless for a few cases recorded in the mortality returns, which are as follows:

1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.
13	1	66	2	5	1	5	0	8	2

It must be noted that these returns, owing to defective registration, give absolutely no indication either of the total amount of influenza or the number of fatal cases. However, from those figures, and from statements of Calcutta practitioners, it is clear that from 1892 onwards it has continued to exist in more or less sporadic form. Very possibly it may account to some extent for the great increase in fever and pneumonia deaths prevailing from that time. In 1899, in parts of the city at least, it tended to be epidemic. Thus Dr. Das informs me that from October to December he saw some 40 cases in Ward IX; whole houses were laid up at once; bronchitis was very frequent, and this occasionally passed into broncho-pneumonia, but no case proved fatal. Now, in 1900, this tendency is still present. In my own staff I have seen four cases, and have heard of many others in the course of investigations. Many Europeans have been attacked in the last three months. That the disease, though generally mild, may assume in India the same exceptional virulence that it has sometimes shown in Europe is exemplified by the case of Surgeon C. Quarry, reported to have died at Cannanore after an attack of only twenty-four hours' duration.[3] This would dispose of the objection that Sew Gobin's death in twenty-four hours must have been due, if not to plague alone, at least to plague in association with influenza, a combination known to occur.

Bearing on Plague Registration.

In Calcutta the registration of plague depends in great part on investigation of all deaths made subsequent to death by responsible European medical officers. Up to the present this system has worked so admirably, as tested by the close approximation of plague deaths to the unaccounted-for excess mortality, that it is specially recommended by the Plague Commission; but if along with plague we have influenza contemporaneously epidemic, with a knowledge that both may coexist in the same house, the task of these officers in deciding from the history whether a given death is due to plague or influenza becomes an almost impossible one; for even with every opportunity for full medical examination and observation of the patient, no diagnosis can be more difficult than that of virulent influenza from non-bubonic plague. The subject is too large to take up here, but it may be pointed out that the leading characteristics of both are identical—suddenness, intensity, cardiac weakness, and a great tendency to nervous developments, meningitis and various paralyses. In both pneumonia is one of the manifestations of the disease rather than a complication, and in both it tends to be accompanied by indefinite physical signs. Of course it will be easy to distinguish in a group of cases, though even there you have the difficulty of mixed infection coming in, but in the individual case it may be almost impossible to decide. In this connection mention may be made of cerebro-spinal meningitis. This too, I know by experience, may be extremely difficult to diagnose from plague, particularly as enlarged glands are not uncommon. In a case of my own there was marked enlargement of the cervical glands, and in a case seen by a colleague of the inguinal glands. This latter case was diagnosed by my colleague as plague, but other medical men held that it was cerebro-spinal meningitis. As similar cases followed in connection with it, the latter diagnosis was probably correct. Again, in its milder form, the disease may very closely approximate influenza. Altogether, with the three diseases all at present sporadic[4] in Calcutta, the task of the district medical officer is not an easy one, particularly as owing to the prevalence of false information he cannot place much reliance on the alleged absence of buboes. Fortunately the cerebro-spinal meningitis is practically confined to one locality, and the proportion of influenza to plague, so far as known, is insignificant, but if the two former diseases increase the problem of how to register plague will be a difficult one to solve.

Bearing on Ill-defined Plague Pneumonia.

It may well be asked if influenza is not the real explanation of the cases I previously recorded as an "Undescribed Form of Plague Pneumonia," cases observed in 1899, and characterised by great indefiniteness of physical signs and a general absence of acute symptoms, particularly as the article was written in ignorance of the presence of the first-named disease. In favour of this suggestion it will be cited that in 1900 I failed to obtain plague cultures, and instead unexpectedly obtained influenza cultures. But there are reasons for this failure. The main one is that there was a change in the characters of the plague epidemic of 1900 from those shown in 1899. In the earlier epidemic, mild and abnormal cases were not uncommon, whereas in the later one the cases were nearly all of the virulent classical type, with a total duration of illness of only two or three days. Thus it several times happened that when I went to obtain sputum cultures, I would find the patient dead; again it frequently happened that the patient's condition would be so bad that it was impossible to obtain sputum; again, it was often found that a case which at first had seemed of the abnormal type we were looking for, by the time the tubes arrived had turned into a

typical ordinary case with buboes, in which there was no need of a culture to complete the diagnosis. This mild type, then, was hardly to be found in this last epidemic, and that from the two cases which were cultured no plague was isolated, is not surprising considering the extreme difficulty of isolating it from such an impure culture as sputum gives. The strongest argument against those pneumonia cases having been due to influenza is that they all proved fatal, for even in a severe epidemic of influenza the proportion of fatal cases is extremely small.

NOTES AND REFERENCES.

[1] *Journal of Tropical Medicine*, February 15th, 1900. An Undescribed Form of Plague Pneumonia, with 5 cases, by William C. Hossack, M.D.; also BRITISH MEDICAL JOURNAL, i, 1900, p. 313. [2] BRITISH MEDICAL JOURNAL, 1899, p. 702. [3] *Indian Medical Gazette*, 1899, p. 158. [4] Strictly speaking plague is epidemic with 40 to 60 cases a week, but the cases are all scattered and comparatively it is only sporadic.

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BACTERIOLOGICAL REPORT BY DR. J. NIELD COOK, D.P.H., HEALTH OFFICER, CALCUTTA.

On March 3rd I received some agar slopes from Dr. Hossack for examination for the plague bacillus. In one of these I noticed a few minute translucent colonies amongst a number of other growths. As these were the only colonies that bore any resemblance to plague, I made subcultures from them on agar and in broth, and incubated them, at 37° C. Streak cultures showed a single line of translucent droplets, barely visit to the naked eye. Even after some days they showed no tendency to increase in size or to spread, the line resembling a scratch on glass. When spread by a rod over the whole surface of the agar the same characteristic appearance of tiny dewdrops was maintained, and there was no tendency to spread or coalesce. In both cultures the broth remained clear, but contained a whitish fluffy mass at the bottom of the tube, which separated into flocculi when shaken up, but soon subsided again. Stained microscopic specimens from agar and broth examined under ⅟₁₂-inch oil immersion showed chains of a small bacillus, not unlike a streptococcus but squarer, and each bacillus distinctly showed bipolar staining. I inoculated flasks of peptone bouillon with oil floating on the surface, but obtained no stalactite growth, such as would have occurred with a plague culture, but only got a fluffy deposit on the bottom of the flasks, similar to that in the broth tubes. From a culture made by Dr. Hossack from another of his cases, I separated a bacillus in all respects identical with the above. From the cultural and microscopical appearances I believe them to have been the bacillus of influenza described by Pfeiffer, Kitasato, and Klein. The bacillus I separated was certainly not that of plague, and the clinical history of the cases favours the view that it was the bacillus of influenza.

NOTE.—August 8th. Since this was written I have examined a culture obtained by Dr. Hossack from a typical case of influenza with bronchitis. From it I isolated an organism identical with that above described.—J. NIELD COOK.

PLAGUE IN NEW SOUTH WALES.—The Governor of New South Wales notified on September 14th that clean bills of health, without endorsement, began to be reissued on September 8th. The three persons still remaining at the Quarantine Station have recovered from the plague, and are now only suffering from remote consequences of the disease. The first case of plague occurred in Sydney on January 25th, 1900.

PANDEMIC PLAGUE.

NOTES ON THE HISTORY OF PLAGUE.

IT is, we believe, now generally accepted that the pestilence which overran the Roman Empire in the sixth century, the Black Death, which caused so awful a mortality in the fourteenth century, and the plague of the seventeenth century, were identical with the plague (*pestis*) which has in recent years caused so many deaths in India, and is now threatening Western Europe and both North and South America.

EARLY EPIDEMICS.

Hirsch[1] appears to be inclined to accept the conclusion that a disease characterised by "pestilent buboes very fatal and acute" which is recorded to have occurred in Libya, Egypt, and Syria at the end of the third century or the beginning of the second century B.C. was really epidemic plague. Rufus of Ephesus gives an account of the observations made by Dioscorides and Poseidonios of Alexandria of a disease which they had seen in Libya at about the date of the commencement of the Christian era. As Hirsch says, the description leaves no doubt as to what it was. The symptoms were:

Acute fever, pain, perturbation of the whole body, and delirium with the appearance of buboes great and hard, which did not go on to suppuration, not only in the ordinary places, but also in the popliteal spaces and at the elbows.

After this date there are no certain references to plague in Europe until the sixth century, and it is safe to assume that there was at least no great epidemic during the interval.

THE PANDEMIC OF THE SIXTH CENTURY.

This is the great outburst of the disease which as it affected Constantinople has been described by Gibbon in his inimitable manner. He concludes the forty-third chapter of the *Decline and Fall* "with the comets, the earthquakes, and the plague, which astonished or afflicted the age of Justinian." The plague appears to have been heard of first in A.D. 542 in Egypt. "Æthiopia," writes Gibbon, "and Egypt have been stigmatised in every age as the original source and seminary of the plague." The infection reached Constantinople in 544, and eventually "from Persia to France the nations were mingled and infected by wars and emigrations." Gibbon, who relies upon Procopius, thus describes the symptoms of the disease, which in the bubonic form agree very nearly with those seen at the present day, while the opening words of the passage may perhaps refer to the septicæmic form:

The infection was sometimes announced by the visions of a distempered fancy, and the victim despaired as soon as he had heard the menace and felt the stroke of an invisible spectre. But the greater number—in their beds, in the streets, in their usual occupation—were surprised by a slight fever; so slight, indeed, that neither the pulse nor the colour of the patient gave any signs of the approaching danger. The same, the next, or the succeeding day, it was declared by the swelling of the glands, particularly those of the groin, of the armpits, and under the ear..... If they came to a just swelling and suppuration, the patient was saved by this kind and natural discharge of the morbid humour. But if they continued hard and dry, a mortification quickly ensued, and the fifth day was commonly the term of his life. The fever was often accompanied with lethargy or delirium; the bodies of the sick were covered with black pustules or carbuncles, the symptoms of immediate death; and in the constitutions too feeble to produce an eruption, the vomiting of blood was followed by a mortification of the bowels.

Every rank and profession was attacked, though it was noticed that women suffered less than men. The greatest consternation prevailed, and when the Emperor himself fell ill of the disease, though he eventually recovered, something like social disorganisation set in.

The order of funerals and the rights of sepulchre were confounded; those who were left without friends or servants lay unburied in the streets or in their desolate houses; and a magistrate was authorised to collect the promiscuous heaps of dead bodies, to transport them by land or water, and to inter them in deep pits beyond the precincts of the city.

Procopius observed that it always spread from the sea coast to the inland country, and that the most sequestered islands and mountains were successively visited. It was indeed "not till the end of fifty-two years" that the disease finally disappeared. As to the mortality which this pandemic produced Gibbon professes himself unable to hazard any conjecture

I only find that during three months 5,000, and at length 10,000, persons died each day at Constantinople; that many cities of the East were left

[1] *Handbook of Geographical and Histological Pathology*. Second edition. Translated by Charles Creighton, M.D. New Sydenham Society, 1883, p. 495, *et seq.*

vacant, and that in several districts of Italy the harvest and the vintage withered on the ground.

The same stories of an enormous mortality, and of consequent social disorganisation, have come down from the next great pandemic.

THE PANDEMIC OF THE FOURTEENTH CENTURY.

The greatest outbreak of plague of which any historical account remains, the greatest epidemic, indeed, of any disease known in history, was the Black Death which swept slowly over Europe in the fourteenth century. It was an appalling catastrophe, which left an indelible mark for generations on the nations of Europe, and exercised a great effect on the progress of civilisation. It arrested, as Hirsch has said, the attention of chroniclers, poets, and physicians owing to its diffusion over the whole of the then known world, to the fact that its victims were numbered by millions, and to the shock which it gave to the framework of society:

> This disastrous pestilence, known everywhere under the name of the Black Death, as one of the great events of the world's history, has fixed the attention of writers to a high degree, and has been thought worthy to be painted in minutest details, and in the most vivid colours.

The influence which the epidemic exercised upon the course of civilisation was due to two causes—the effect upon the imagination of mankind of the enormous mortality, and the actual diminution of population which in many countries undoubtedly not only dislocated trade, but threw tracts of country out of cultivation.

It is certain that the mortality in Europe due to this epidemic was enormous, although many of the estimates are probably exaggerated. Hecker, whose essay may still be read with advantage,[2] and who seems to have been fully alive to the fallacies which attend such estimates, believed that it might be assumed without exaggeration that Europe lost during the Black Death 25,000,000 of inhabitants. Italy and France appear to have suffered more severely than Germany. Italy is said to have lost half its inhabitants; Villani, who himself died of it, has left an account, in which he asserts that in Sardinia and Corsica scarcely a third part of the population remained alive. The same is said of Padua, and in Florence the publication of the number of the dead was prohibited and the bells were not allowed to be tolled at funerals in order that the living might not abandon themselves to despair. At any rate, it is certain that Florence suffered very severely, and the classical description of the plague is that which Boccaccio has given in the Introduction to the First Day of his *Decameron:*

> When the evil had become universal (speaking of Florence) the hearts of all the inhabitants were closed to feelings of humanity. They fled from the sick and all that belonged to them, hoping by these means to save themselves. Others shut themselves up in their houses, with their wives, their children and households, living on the most costly food, but carefully avoiding all excess. None were allowed access to them; no intelligence of death or sickness was permitted to reach their ear; and they spent their time in singing and music, and other pastimes. Others, on the contrary, considered eating and drinking to excess, amusements of all descriptions, the indulgence of every gratification, and an indifference to what was passing around them, as the best medicine, and acted accordingly. They wandered day and night from one tavern to another, and feasted without moderation or bounds. In this way they endeavoured to avoid all contact with the sick, and abandoned their houses and property to chance, like men whose death-knell had already tolled.
>
> Amid this general lamentation and woe, the influence and authority of every law, human and divine, vanished. Most of those who were in office had been carried off by the plague or lay sick, or had lost so many members of their families that they were unable to attend to their duties, so that thenceforth every one acted as he thought proper.....Thus it was that one citizen fled from another, a neighbour from his neighbours, a relation from his relations, and in the end, so completely had terror extinguished every kindlier feeling, that the brother forsook the brother, the sister the sister, the wife her husband, and at last even the parent his own offspring, and abandoned them, unvisited and unsoothed, to their fate. Those, therefore, that stood in need of assistance fell a prey to greedy attendants, who for an exorbitant recompense merely handed the sick their food and medicine, remained with them in their last moments, and then, not infrequently, became themselves victims to their avarice, and lived not to enjoy their extorted gain.

Among the less wealthy classes, and among the poor, the misery and neglect was still greater, and Boccaccio tells how

> the stench of putrefying corpses was often the first indication to their neighbours that more deaths had occurred. The survivors, to preserve themselves from infection, generally had the bodies taken out of the houses and laid before the doors where the early morn found them in heaps, exposed to the affrighted gaze of the passing stranger. It was no longer possible to have a bier for every corpse, three or four were generally laid together—husband and wife, father and mother, with two or three children, were frequently borne to the grave on the same bier; and it often happened that two priests would accompany a coffin bearing the cross before it, and be joined on the way by several other funerals, so that instead of one there were five or six bodies for interment.

The plague reached Avignon, where Pope Clement VI then was, in January, 1348, and two physicians, Guy de Chauliac and Chalin de Venario, who were employed about the Papal Court, have left accounts of it. De Chauliac's is to be found in his *Chirurgia Magna*.[3]

In the midst of a chapter, *De apostematibus pectoris*, he launches out into an account of his experiences of

> that enormous and unheard-of mortality which began with us in Avignon in A.D. 1348, in the sixth year of the pontificate of Clement VI, in whose service I, although unworthy, was by his grace at that time ....But this mortality or plague began among us in the month of January, and lasted for seven months, and presented two types. The first lasted for two months with continued fever and spitting of blood, and these died within three days. The second lasted for the rest of the time, also with continued fever, and apostems and carbuncles on the external parts, especially in the axillæ, armpits, and groins; and they died within five days. And it was so contagious, especially when it was attended by spitting of blood, that not merely by living with the patient, but even by looking at him, one person caught it from another: and thus men died without attendants, and were buried without priests: the father did not visit the son, nor the son the father: charity was dead, hope extinguished. And I call it enormous, because it affected nearly the whole world. For it began in the East, and then, sending its arrows through the world, it passed by us to the West; and it was so great that it spared scarcely a fourth part of the people; and unheard-of, because we read of that in the city of Cranon and in Palestine, and concerning others in the book of epidemics in the time of Hippocrates, and of that which attacked the nations subject to the Romans..... and of that which was in the City of Rome in the time of Gregory; and none was such as this. For these did not affect more than one region, this the whole world; those were curable in some cases, this in none. Then, too, it was of no profit to physicians, and a matter of dread to them; because they dared not visit the sick for fear of contagion; and when they did visit them they were of little avail, and got nothing for their pains, for all who sickened died.

Guy de Chauliac stuck to his duties all through the epidemic at Avignon, until at last he caught the disease himself, and was so ill that all those about him believed that he would die; but the inguinal bubo which he had, suppurated, and he recovered. Avignon suffered a second epidemic in 1360, the infection being brought, as Guy de Chauliac thinks, from Germany, and he notes that whereas in the first epidemic it was chiefly the poor who suffered, in the second many rich and noble persons, a multitude of boys, and a few women were attacked.

The epidemic reached England in August, 1348, and the deliberate pace at which it spread through the country is remarkable. Thus it was in Dorsetshire in August, 1348, it is heard of in London in November, but in East Anglia not until March or April, 1349. It undoubtedly produced a very great mortality all over the southern and eastern part of England. Exact figures are not available, but Dr. Jessop[4] has made some interesting deductions from a study of the Diocesan Institution Books of the diocese of Norwich, and the Manor Court Rolls of East Anglia.

Parliament, which had been summoned to meet on January 1st, 1349, was prorogued to April 27th on account of the sudden deadly pestilence which had broken out at Westminster; on March 10th it was prorogued *sine die* because the pestilence was increasing in London also. There is evidence that plague had just begun to affect East Anglia. Both in the city of Norwich and in the country districts it worked great havoc. Dr. Jessop states that in one village (Little Cornard) in the south of Suffolk, where the tenants of the manor cannot, he thinks, have exceeded 50, 60 tenants of the manor died, of whom 21 left no heirs, during the seven months ending with October, 1349, which shows that not only had some tenancies changed hands in the interval several times, but that 21 families had been completely killed out. Very similar evidence is gained from the court rolls of almost every manor examined. Confirmatory evidence as to the greatness of the mortality is drawn from the Institution Book of the diocese. The average number of institutions for the five years ending March 25th, 1349, was 77. Within the next year 800 parishes lost their parsons, 83 of them twice and 10 of them three times in a few months. Commenting on these and other facts, Dr. Jessop says:

> I see no other conclusion to arrive at but one, namely, that during the year ending March, 1350, more than half the population of East Anglia was

[2] *The Epidemics of the Middle Ages.* Vol. I.—The Black Death in the Fourteenth Century. From the German of L. F. C. Hecker, M.D. Translated by B. G. Babington, M.D. Second edition. London. 1834.

[3] *Chirurgia Magna Guidonis de Cauliaco.* Tract. II. Doct. II. Cap. V. Lugduni. 1585.

[4] *The Coming of the Friars.* By the Rev. Augustus Jessop, D.D. London, 1889.

swept away by the Black Death. If anyone should suggest that many more than half died, I should not be disposed to quarrel with him.

Plague recurred frequently in all parts of Europe in the fifteenth century: 40,000 died in one year at Paris, and so severe was the plague in London that Henry VII retired to Calais in 1499.

In the sixteenth century a terrible pestilence is said to have nearly depopulated China, and prevailed over Europe, visiting Edinburgh in 1529.

Typhus, which prevailed extensively in this century was probably often confused with plague. During an outbreak of plague in London in 1564, 1,000 persons are said to have died weekly.

In the year of the accession of James I an epidemic of plague killed 38,000 in London and subsequently lasted for eight years, and there was an epidemic in Holland, but on the whole the first half of the seventeenth century shows a decrease of plague.

THE GREAT PLAGUE OF THE SEVENTEENTH CENTURY.

The great plague which devastated London in 1665 occurred nine years after a violent epidemic in Italy. It was said that 300,000 died at Naples in five months. The disease spread to Germany, and reached Holland in 1664. The first cases appeared in Westminster in 1665. It spread very slowly from west to east, but is estimated to have caused the death of 68,596 out of a population of 460,000. The contagion was traced by most observers to Holland, either through Dutch prisoners-of-war or to merchandise from the Levant, shipped in the first instance to Hamburg.

On July 25th, 1664, Pepys notes: "No news, only the plague is very hot still, and encreases among the Dutch;" and on September 23rd:

We were told to-day of a Dutch ship of 300 or 400 tons, where all the men were dead of the plague and the ship cast ashore at Gottenburg.

Similar stories were told in the fourteenth century, and Scandinavia was believed to have been infected in this way at that time. The picture of a ship with its dead crew driving about the North Sea, and finally on to the rock-bound shore of Norway or Sweden, is certainly one which siezes upon the imagination. The first note Pepys makes of the plague in London itself is on May 24th, 1665:

To the Coffee-house, where all the news is of the Dutch being gone out and of the plague growing upon us in this town; and of remedies against it: some saying one thing and some another.

His next reference to the disease is on June 7th:

The hottest day that ever I felt in my life. This day, much against my will, I did in Drury Lane see two or three houses marked with a red cross upon the doors, and "Lord have mercy upon us" writ there: which was a sad sight to me, being the first of the kind that to my remembrance I ever saw.

Thereafter the *Diary* contains many references to the plague, which increased with great rapidity in spite of any regulations which the authorities could devise. On September 3rd, 1665, Pepys attended the vestry of his parish at the desire of the Justices of the Peace, along with My Lord Brouncker and Sir J. Minnes, "in order to the doing something to keep the plague from growing." A few days before Pepys himself "went forth and walked towards Moorefields to see (God forgive my presumption!) whether I could see any dead corpse going to the grave; but, as God would have it, did not." But before the vestry he is greatly exercised that other people should give way to a like curiosity.

Lord! (he notes) to consider the madness of people of the town, who will (because they are forbid) come in crowds along with the dead corpses to see them buried.

The vestry "agreed on some orders for the prevention thereof," and had before it some difficult questions; Pepys heard there some stories, one of which illustrates very well the extreme measures of seclusion which were enforced;

Among other stories, one was very passionate, methought, of a complaint brought against a man in the town for taking a child from London from an infected house. Alderman Hooker told us it was the child of a very able citizen in Gracious Street, a saddler, who had buried all the rest of his children of the plague, and himself and wife now being shut up and in despair of escaping, did desire only to save the life of this little child; and so prevailed to have it received stark-naked into the arms of a friend, who brought it (having put it into new fresh clothes) to Greenwich; where upon hearing the story, we did agree it should be permitted to be received and kept in the town.

The belief that the infection was readily carried through the air was generally entertained in the sixteenth century. Thus Pepys tells us that he was told that "In spite, too, ill people would breathe in the faces (out of the windows) of well people going by." Moreover, he was himself, during the earlier part of the epidemic of 1665 in London mightily afraid of meeting a corpse being taken to burial. Thus among certain occurrences on September 14th in which he found matter for melancholy he enumerates:

My meeting dead corpses of the plague carried to be buried close to me at noonday through the City in Fanchurch Street. To see a person sick of the sores, carried close to me by Gracechurch in a hackney-coach. My finding the Angel Tavern, at the lower end of Tower Hill, shut up, and more than that, the alehouse at the Tower Stairs, and more than that, that the person was then dying of the plague when I was last there, a little while ago, at night.

The better-grounded belief that the infection could be carried by fomites is illustrated by the following somewhat ludicrous entry in the *Diary:*

Sept. 3 (Lord's day). Up; and put on my coloured silk suit very fine, and my new periwigg, bought a good while since, but durst not wear, because the plague was in Westminster when I bought it; and it is a wonder what will be the fashion after the plague is done, as to periwiggs, for nobody will dare to buy any haire, for fear of the infection, that it had been cut off the heads of people dead of the plague.

The College of Physicians by royal command put forth advice and prescriptions. Some doctors fled, but of those who stuck to their posts only eight or nine died; some even had the courage to make necropsies. From London the disease spread over England. No cases appeared in London after the fire of 1666, and none in England after 1703.

In the eighteenth century plague was mostly confined to Eastern Europe, with the exception of Marseilles, which suffered severely in 1720. The epidemics of the present century have been in the Levant and the East, until the present pandemic commenced in 1894.

Plague in the Levant.

In a memorandum appended to the Report of the Medical Officer of the Local Government Board for 1875, Mr. Netten Radcliffe traces the history of plague in the Levant from the Great Plague of 1665 onwards. While the disease died out in Western Europe it continued in parts of Central, South, and East Europe, and became very active early in the eighteenth century. The area of prevalence decreased as the century advanced. In 1812 plague became widely diffused in the Levant, and in 1834 it was again epidemic in European and Asiatic Turkey and Egypt, and a few towns in Wallachia and Greece. In 1840 it occurred in Egypt and Syria. No case occurred in the Levant between 1844 and 1875.

In 1853 an outbreak occurred in the highlands of Western Arabia, and also in the Assyr district. Tripoli was affected in 1858. Persian Kurdestan was visited by a fatal bubonic disease in 1863. Four years later, plague occurred among the Arabs inhabiting the marshes on the Lower Euphrates, a district which is a centre of pilgrimage for Shiah Mohammedans, containing, as it does, at Nedjef the tomb of Ali the fourth Caliph and his two sons, Hussein and Abbas. Many thousands of pilgrims resort there annually from Persia, Caucasia, and India, carrying with them numbers of corpses for burial in the sacred soil. The route to Nedjef from Caucasia and Northern Persia is by Bagdad, while Indian pilgrims sail up the Persian Gulf and ascend the Euphrates past Bussorah, which is one of the towns affected during the present epidemic.

In 1871 plague appeared in late autumn in Persian Kurdestan. In 1874 it broke out in three widely separated localities—near Nedjef, in Tripoli, and at Assyr, all scenes of previous outbreaks. Assyr is four days' march south of Mecca; and here, as in Tripoli and Kurdestan, it was a highland population that was attacked. The outbreak was sporadic from March to July and then became epidemic. In 1875 and 1876 cases appeared on the Lower Euphrates Valley and in Bagdad, and from the clinical description in Surgeon-Major Colvill's report on this outbreak the symptoms much resembled those of the present epidemic.

THE PRESENT PANDEMIC.

South China and Hong Kong.

The present pandemic reached Hong Kong from Canton in May, 1894. It probably reached Canton from the north and was present there in March, 1894. It had, however, probably existed in 1884 at Pakhoi, a town on the coast of the China Sea, near Tonking. A European officer of the Chinese Customs reported the existence of plague in Yunnan and Szu-chuan in 1884, or possibly earlier. The report of Dr.

Ayres and Dr. Lowson to the Buda-Pesth International Congress of Hygiene and Demography in 1894, shows that the insanitary conditions under which Chinese lived in Hong Kong had caused great prevalence of enteric fever, cholera and other intestinal diseases due to bacteria. Prompt measures were taken at Hong Kong. Plague patients were placed on the epidemic hulk *Hygeia*, house to house visitation was practised, and houses in which cases were found were cleaned, disinfected and whitewashed. All houses with more than three cases were evacuated. In one very bad district the houses were closed and the streets walled up and guarded by police. These houses were subsequently burnt down, the roof and flooring being burnt on the basement so as to disinfect the soil. Quick-lime was put in the coffins of all who died of plague. The disease practically ceased that year in two months. Corpse inspection at the mortuaries was practised, and those dead from plague were buried under the direction of a police constable. The Chinese practice of exhumation seven years after burial raises a possibility of trouble in the future. Chinese officials, doctors, and populace manifested the usual Oriental preference for the disease rather than its cure or prevention by modern methods. Fæces were treated with quick-lime and removed to sea, as burning was not possible for lack of hands.

Six months later, in April, 1895, the plague broke out again, but only 44 cases occurred. In addition to the former measures, latrines were disinfected with chlorinated lime, regulations against overcrowding were enforced and general sanitation improved. Canton, Amoy, Fuchow, and Macao were then known to be infected, and in this year a few cases were imported into Japan. In 1896 a serious outbreak occurred in Hong Kong and neighbouring places; the mortality among those attacked was 89.5 per cent. Formosa was infected in this year. In 1897 plague broke out in a convent at Macao, and 13 sisters died and over 200 other persons. Tonking became infected, a great mortality among rats preceding the outbreak. Dr. Wilms reported in 1896 that he considered cargo uninfected except when it consisted of soiled clothing. Hospital excreta and secretions were disinfected with carbolic; but subsequent experiments at Bombay have proved the relative inefficiency of carbolic. Corpses were wrapped in sheets of 1 in 1,000 sublimate and taken to a special mortuary; lime, peat, or sawdust was placed in the coffins. In 1898 Annam was infected, though not from Yersin's laboratory as was at first stated. The epidemic was checked by burning infected and adjoining houses.

There were 1,315 cases in Hong Kong this year. Dr. Clark, the Medical Officer of Health, gives details as to the measures employed. Contacts were only detained while their clothing was disinfected, and the houses were reoccupied immediately after disinfection. Night soil was burnt by mingling it with sawdust, sprinkling it with paraffin, and placing it on top of a wood pyre erected on an improvised incinerator in the hospital compound. The incinerator consisted of two parallel walls 2½ feet high and 6 feet long, with a grating of iron bars across the top and a concrete floor. The system of fumigation by sulphur was abolished, and also the application of coal tar preparations to the floor. The houses were sprayed with 1 in 1,000 perchloride. He holds that in some cases removal of all unsound woodwork in an infected house is the only means of eradicating the disease.

INDIA.

Plague is endemic in India on the Thibetan frontier at Kumaon, where outbreaks occurred between 1884 and 1897. There was an epidemic in Rajputana in 1836, believed to be true bubonic plague. The present epidemic began in India in the hot weather of 1896; the city of Bombay was officially declared infected on September 23rd, 1896, when Dr. Viegas, a private practitioner, stated publicly that plague was present in the city, and made an official report to the Commissioner. How many cases had occurred before this date cannot be ascertained, but from the statistics available it appears that in the seven weeks ending September 29th the mortality showed an average excess of 120 a week over that for the same period during the previous five years. Captain Condon[5] divides the prevalence of plague in Bombay Presidency from September, 1896, to June, 1899, into three periods. During the first period, which terminated on June 4th, 1897, the extension from Bombay was gradual, and mainly towards the north. The total number of cases and deaths officially recorded throughout the Presidency during this period were 35,434 cases with 28,737 deaths, but the actual numbers were certainly larger, as concealment, flight, and the late detection of the disease combined to prevent discovery of the real figures. In Bombay city there were 10,562 deaths, representing a percentage mortality on population of 1.29. In Karachi, which the epidemic reached in December, 1896, the percentage mortality on population was 3.45, but this was much exceeded in other places, and at Damaun it reached 28.58. During the second period, which embraces the year ending June 3rd, 1898, the plague at first steadily declined, but the area of infection became wider, and eventually individual epidemics of great severity occurred, and the number of deaths was double that of the first period. The number of cases reported was 75,813, the number of deaths 61,220; the percentage of mortality to population also increased in Bombay to 2.01 per cent. Some of the local outbreaks were extremely severe; thus at Karve with 851 inhabitants, 437 cases occurred with 352 deaths, a percentage of mortality on population amounting to 41.36 per cent.

The stories told in the majestic periods of Gibbon and the graphic picture drawn by Boccaccio, and even the gossip of Pepys, find their echo in Government reports from India and China. Colonel Hutchinson, the Sanitary Commissioner of the North West Provinces, says of Kumaon:

> So dreaded is the disease that family ties in its presence are suddenly broken: father and mother flee from their children and abandon each other, seeking the lone mountain-side in despair for a time of all human association.

Dr. Richardson tells the following story:

> The first victims were a little girl, aged 8, and her father, Kusalli, aged 30. They were attacked about 1,000 feet above the village and near the edge of the oak forest, and died in five days. The bodies were thrown into the stream below, and the persons who performed this office were seized the same day and sent into the jungle to die there. They were buried in shallow graves and their bones were afterwards found scattered about.

In one infected village in Kumaon

> the people evacuated their houses till forced to reoccupy them by a great fall of snow. Four deaths occurred during the next five days, and the people fled to the hillside, leaving the sick behind to die unattended.

One most pathetic story we may quote:

> A man died in his house attended by his wife, who buried his body just outside the house door. Seven days later she died herself and her body was left in the house unburied. The children, four boys and a girl of 9, called Danuli, fled to a neighbouring hut where the eldest, a boy of 14, acted as head of the family. Feeling ill, he returned to the house and died, and Danuli was left in charge of the little boys. One of them, aged 7, wishing to take honey from a hive in the house, entered it with burning straw to drive the bees away. Probably from fright at seeing the dead bodies of his mother and brother he set the house on fire, and died himself of plague three days after, being closely followed by the baby. Colonel Hutchinson found the village desolate. Danuli just outside it dressed in an old petticoat and the little urchin in a piece of old blanket. The girl explained how all the rest had died; how the people all ran away; how the body of the little brother who had set fire to the house had been carried away by jackals in the night; how she herself had buried the year-old baby, taking the body in a basket and digging a trench for it with a pick; and how for several days she had cooked rice for herself and the boy, and slept with him in her arms. Eventually they found a home with their grandfather in a distant village.

In the Bombay Presidency there was again at the beginning of the third period, which embraces the year ending June 2nd, 1899, a considerable decrease, but fresh epidemics occurred in places already attacked, and districts which had previously escaped were now affected, and in this period the total number of cases recorded in the Presidency was 147,748, and of deaths 115,084. In the next four months 60,046 cases were reported, and 46,637 deaths, bringing the total number for the three years from September 23rd, 1896, to September 29th, 1899, up to 319,040 cases, and 250,677 deaths.

The mortality among the cases attacked was very high; setting aside the estimate of 95 to 99 per cent., which is stated to have been the rate during the first two months of the epidemic in Bombay, it would appear that the average mortality in various hospitals in Bombay City was during the three years about 67 per cent., and did not fall far short of this at Poona and other centres; while it attained 81.68 per cent. in 1897-98 at the Nasik Town Plague Hospital.

In Calcutta cases occurred in 1898, but no serious epidemic; during 1899 it spread slowly; and it has been present again this year, but the latest reports are of a diminution in the number of cases.

[5] *The Bombay Plague*, &c. Compiled under the orders of Government. Bombay, 1900.

In 1897 plague extended to native States in Central and Southern India, to Jullundur in the Punjab, and a few imported cases occurred at Madras.

In 1898 Bengal and Madras were definitely infected, and during 1899 and 1900 plague has prevailed with more or less virulence throughout India. The mortality is greatest in the Bombay Presidency, Mysore not being far behind.

Preventive Measures.

In India the climate, the religious observances, and the social prejudices of the people present so many points of difference, that Indian experience cannot be directly applied to European administrative questions.

"*Evacuation.*"

In India, for instance, the measure which has been found most effective for checking plague has been "evacuation,"[6] that is to say, desertion of an infected locality by its inhabitants and their transference to another place. The infection of plague appears to be an infection of locality. A marked instance occurred at Sholapur in 1897 of the uselessness of all measures without evacuation, and of the instant success attending the introduction of evacuation.

Complete evacuation checks a crescent epidemic, lessens plague mortality, shortens the duration of the epidemic, and tends to arrest the disease completely in villages if carried out at once. It sometimes fails partially if the people themselves will not co-operate, as the following instances show:

Major Cates, political agent in Cutch, states: "The village of Luni was evacuated in December, 1897, and in the end of January, 1898, 7 persons visited it without permission. All 7 got plague and 4 died."

Mr. Silkcock, of Nasik, writes: "Some temple servants returned to the granary of the temple of an evacuated village, removed some grain to their camp. Only the men who entered the granary suffered, showing apparently that it was the building and not the grain which was infected."

Partial evacuation is not of as much avail as complete evacuation. The effect on trade of complete evacuation is naturally much less in the case of an agricultural population who simply camp out in their fields. It is found impossible in large towns because of injury to trade. The cost in India is small.

Reoccupation is generally allowed in seven to ten days. In some places there is house-to-house inspection for ten days after reoccupation. After reoccupation a census is taken, and those not in it are detained outside for ten days; some authorities insist on a much longer interval.

In Satara, Bombay Presidency, for example, there were several instances of plague occurring on reoccupation after disinfection. Mr. C. G. Dodgson, the collector, has recently permitted reoccupation three to four months only after evacuation.

The house is first thoroughly cleaned; one person is then allowed to sleep in each house, but only a person who has slept in a health camp for ten days previously. If after ten days none of these are ill, entire reoccupation is permitted. Infection has not broken out again in a single instance. As far as my experience goes it makes no difference whether the houses have been disinfected with chemical disinfectants or not, as in no house has plague broken out again, provided that the house had been empty for at least three months. Where houses were chemically disinfected, and reoccupied after a lapse of, say, a fortnight, plague has broken out on more than one occasion.

The houses were all partially or completely unroofed to allow of thorough ventilation, but Mr. Dodgson says that in many cases the lower storeys have not been capable of ventilation, and still reoccupation after three months has not been followed by an outbreak. In Ratnagiri good results were obtained by disinfecting with carbolic acid and limewash and reoccupation after one month. In Cutch the period was at first a month, but was later on reduced to twenty days, and then to ten, with only 3 instances of cases after reoccupation.

Destruction by Fire.

In the Sholapur district houses are disinfected by removing the roofs and burning them when of thatch. The surrounding houses are sprayed with perchloride and reoccupied when dry. Two rows of houses where cases had persistently occurred were burned. At Hubli evacuation was an impossibility during the rains, and in February, 1898, the Collector had recourse to the drastic measure of burning down some 250 houses. In Hong Kong and Annam it was sometimes found possible and always efficacious to destroy infected quarters or villages by fire.

Disinfection.

Hankin's experiments at Bombay in 1897 were followed up by Watkins-Pitchford in 1898. They were confined to the action of aqueous solutions of various germicides on watery emulsions of the bacillus. The germicide was left in contact with the bacillus for varying periods of time, then transferred to nutrient gelatine and kept for a week in the dark at a temperature of 80° F. The following table gives the efficient strength of substances which, in a solution of 1 part in 400 or more of water, destroyed the bacillus in five minutes:

Corrosive sublimate, Permanganate of potash	1 in 5,000
Chloride of lime, Lysol	1 in 2,000
Hydrochloric acid	1 in 1,428
Quick lime, Sulphate of copper, Izal	1 in 1,000
Nitric acid, Sulphuric acid	1 in 500
Phenyl	1 in 400
Carbolic acid	1 in 50

Naphthalene, "naphtho-sublimate," ammonia water, caustic potash, borax, sodium chloride, and ferrous sulphate had very slight action or none.

Bromine water was found of some use in Bombay. Heating to a temperature of 127° F. destroyed the vitality of the bacillus, and boiling water is suggested by Dr. Watkins-Pitchford as probably an efficient method of disinfecting earthen floors. Of the disinfectants in the above table, corrosive sublimate in acid solution is that most extensively used in India; it is frequently distributed by means of wooden Chinese pumps. Its poisonous nature has made its use by skilled hands alone a necessity. Chloride of lime is extensively used in disinfecting houses. Copper sulphate is found to be uncertain, and potassium permanganate is so frequently rendered useless by the presence of oxidisable organic matter that it is only used to disinfect tanks suspected of contamination. Phenyl is much used, and lysol would be much more used but for its cost.

Hankin doubts the utility of sulphur fumigations and whitewashing; and considers the only substance capable of disinfecting an earthern floor to be an acid solution of corrosive sublimate, the neutral solution being without action. As an after-treatment he recommends sulphuric acid solution (1 in 250) as effective and cheap. The hospital floors at Poona were disinfected with this daily. At Poona clothes were boiled, burnt, or dipped in 1 in 1,000 perchloride. At Dharwar they were kept in this solution two hours and hung out for twenty-four hours; and the floors, walls, and ceilings of each plague ward were re-whitewashed once a week, the floors disinfected twice a day with 1 in 1,000 sublimate, and Jeyes' purifier sprinkled in the acute wards to remove the "plague smell." This plague smell is of a peculiar heavy quality, and according to Dr. Hornabrook can be detected in all acute cases, sometimes leading to the diagnosis of a plague-infected house.

In Hyderabad the earthen floors were limewashed to lay the dust, then dug up to a depth of 1½ inch and the earth laid in a kiln formed of alternate layers of native fuel (cow dung) and earth, and burnt for 48 hours. New earth was laid on the floors and beaten down, and the new surface and the walls well drenched with perchloride of mercury 1 in 1,000. In Bombay Hankin examined numerous specimens of the earth of infected houses, and only found the microbe of plague in one case, and that a doubtful one; although he used, among other methods, that by which Yersin found it in soil in Hong Kong.

House-to-House Visitation.

During a period of immunity in 1898-99, strict precautions were taken at Poona with a view to preventing the reintroduction of the disease. The cantonment was divided into wards, each under a supervisor. A census was taken in each ward, and in his daily rounds the supervisor noted new arrivals and ordered them to attend for surveillance at a hospital. But this has been given up, as personation was frequent. To prevent reintroduction from the city into the cantonments, persons were prohibited from changing their residence from one house to another, or from occupying an empty house without a pass. A daily list of sick was made out by ward supervisors, the sick (from any cause) being visited by a

[6] *History of the Progress of Plague in the Bombay Presidency*, September, 1896, to June, 1899, compiled under Government orders by Captain J. K. Condon, Indian Staff Corps, p. 11.

plague medical officer. Major Reade, the chief plague authority, Poona city, reports that surveillance of new arrivals for ten days has been done away with, and the onus of reporting illness has been thrown on the householder. Major Reade advocates the notification by the householder of all arrivals and departures, a plan common on the Continent of Europe. Search parties have been generally given up in India, their utility being considered incommensurate with their drawback.

Corpse Inspection.

This measure was introduced at Bombay, but was so unpopular as to cause the riot of March 17th, 1898. At Poona, unlike other large centres in India, the rule has been vigorously enforced of the production of a certificate of cause of death before burial. The violence of the epidemics there even with this rule appears to show its uselessness. To corpse inspection, as carried out by a staff of skilled medical officers, Major Reade, R.A.M.C., attributes the fact that for ten months in 1898 plague cases had been immediately detected and limited in their spread.

Village Inspections.

Villages were visited by flying columns commanded by inspecting plague officers. Such inspections often revealed the fact that indigenous plague had existed for some months and had been successfully concealed. To the immediate evacuation of infected villages in Sholapur are attributed the mild figures of the epidemic there.

Railway Inspection.

The plan at first tried was to have inspection stations at various junctions to which detention camps were attached. All natives from infected areas were detained and observed for ten days; this demanded a large staff. The camps were frequently evaded, as travellers alighted at the preceding station and walked on past the camp station, or booked from infected to non-infected stations, got out there and rebooked before they got to the inspection station. Add to this that the poorer natives usually travel by road, and that inspection without detention failed to stop cases in the stage of incubation.

All railway detention camps were abolished in November, 1898. They had undoubtedly delayed the dissemination of plague not only by detecting cases, but by discouraging traffic, and had thus hampered commerce. A new system, known as the surveillance system, was put in force in November, 1898. All travellers are inspected medically; suspicious articles (mostly clothes) are disinfected by boiling or by steam. Tickets are specially marked with a plague mark at infected stations. On arrival travellers are bound to give name and address. Only suspicious cases or such as could not be depended on to give a correct address were detained. The system thus nearly resembles that adopted with passengers arriving by sea in this country. Statistics seem to show that the new system is equally efficacious in preventing dissemination, while it is less expensive to the Indian Government and much less annoying to passengers and traders.

Camps.

Besides the railway detention camps there are segregation camps for "contacts," health camps, and observation camps. The observation camps are practically detention camps for newcomers, and are now under the same surveillance system as railway camps. One such at the Malir, a neck of the hills in Sind, is considered by the Acting Commissioner to have protected the whole province. Health camps are voluntary camps to which the inhabitants of an evacuated quarter or town betake themselves pending disinfection and reoccupation. In some cases persons who refuse to camp out voluntarily are detained in an observation camp. "Contact" camps are for the inhabitants of plague houses, the period of detention being ten days; should a case occur in an observation or a health camp the inhabitants of the hut in which it has occurred are transferred to the "contact" camp.

Hospitals.

Some effort is usually made to separate the acute from the convalescent cases, and observation wards are kept for suspicious cases. At Dharwar, Dr. Hornabrook kept pneumonic cases in separate wards. He notes that in one instance in which a pneumonic case was left in the same ward with two bubonic cases apparently doing well, these latter both developed pneumonia in 48 hours and died.

Discretional Relief.

It was found that if Government wished for prompt notification of cases of plague, and the success of plague measures, it was necessary to render them attractive to the poorer population by mitigation of the necessary inconveniences. A grant was made under the name of "Discretional Relief Fund" to various plague officers; and they were authorised to apply it at their discretion in any of the following ways:

(*a*) Hospital relief such as the provision of extra rations or clothing or money before discharge, the payment of funeral expenses, the support of a family during illness of the breadwinner, and assistance to convalescents in returning to their homes.

(*b*) Prompt compensation for destruction of, or damage to clothing, and the grant of a trifling sum to cover the expenses incidental to the vacation of an infected house.

(*c*) Compensation for interruption of work or loss of wages, expense of transit to contact camps, and provision of comforts in such camps.

The extreme poverty of the poor in India, their ignorance and distrust, and the prevalence of bribery of subordinate officials created great difficulties. Captain Condon considers that to this relief is due the fact that hatred of plague hospitals is a thing of the past.

EGYPT.

A limited outbreak began in Alexandria in May, 1899; it ended in September, though an isolated case was reported in November. There was a recrudescence in May, 1900, in Alexandria, and Port Said was affected also, but there was no true epidemic. The success which attended the measures adopted in Egypt for dealing with the disease lends a special interest to the outbreak, for Sir John Rogers, then Director of the Sanitary Department, pointed out to his Government in 1897 that the general sanitary conditions which prevailed in Egypt, not excluding Cairo, were much worse than those of Bombay, so that, if plague once became established, a greater mortality might be expected. The Egyptian Government sent a commission to Bombay in 1897 to study the epidemic on the spot, with the view of arranging measures for the protection of Egypt. Sir John Rogers, in the report which he presented as the result of this visit, pointed out that the individual and not the locality was in the first place infected, and that the infection was propagated along the lines of human intercourse. The measures he recommended were the immediate isolation of the sick, the placing under observation for five or six days of those in direct contact, and the efficient disinfection of the house, effects, and clothing of the sick person. He refers to the gradual spread of the disease in the Bombay Presidency in the years 1896-97 as evidence that the disease is essentially slow in its progress and slow in taking root in any town, thus differing entirely from cholera. This should, he pointed out, give ample time for the application of sanitary measures; he expressed the opinion that the first essential in stamping out any form of infectious disease was an efficient system of registration of deaths, to enable the authorities to determine the cause of death, and when necessary to deal with the infected locality. House-to-house visitation with a view to detection of concealed cases was recommended and practised when plague reached Alexandria in 1899. He thought that the only articles of commerce likely to convey infection were such as might have been infected by a sick person—clothing, carpets, soiled linen, and rags.

In certain ways conditions have been easier in Egypt than in India. The Mohammedan has not the same dread of the pollution of his food as the Hindu, nor has he a "god-room," such as required special regulations in Poona to prevent its inspection by plague officials of Christian or Mussulman creed. The populace, too, are not so organised as in India, nor is there the same element of educated or would-be educated natives ready in many instances to criticise and complain; nor is there in Egypt that recollection of 1857 to warn authorities against carrying out sanitary or other measures with too high a hand in face of religious objections. On the other hand, the greater seclusion of the Mohammedan women compared with the Hindu women must have caused greater difficulties in Egypt than in the parts of India mostly inhabited by Hindus, as in Poona. The mixed nationalities to be found in Egypt must have been more difficult to organise than the British staff for India.

Lord Cromer, in his report on Egypt for 1899, congratulated

the Sanitary Department on the stamping out of the disease, and on the way in which plague operations were carried on without causing serious complaint on the part of any class of society. The measures adopted were practically those recommended in 1897 by Sir John Rogers, who on resignation of the post of Director-General of the Medical and Sanitary Department was succeeded by Mr. H. H. Pinching. The first case seems to have occurred at the Greek Hospital in April, but was regarded as an ordinary glandular enlargement. On May 4th a suspicious case was brought to the same hospital, and on May 20th an undoubted case. The Sanitary Department immediately took over the whole responsibility of plague measures from the Municipality. The staff of doctors was greatly increased, and included three who had had plague experience in India, Dr. Laing, Dr. Mackenzie, and Miss Marion Hunter, D P.H.

The measures adopted may be summarised as follows :

1. A plague case was immediately isolated in the infectious wards of the Government or the Greek hospitals.
2. "Contacts" were removed to the quarantine station, kept under observation for seven days, fed at Government expense, and all males over 16 received compensation for loss of wages. On arrival they were obliged to remove all clothing, take a bath, and dress in clothes provided by Government until their own clothes had been disinfected by superheated steam. Only one case of plague occurred among contacts.
3. All clothing, bedding, furniture, carpets, curtains, etc., were removed in special carts from the infected houses, and disinfected at the hospital with superheated steam. Only two such disinfectors existed at first, but others were at once obtained from Germany.
4. Carts removed the rubbish from the infected houses, and took it outside the city to be burnt. The old mats and cushions were replaced at Government expense.
5. Any house where plague had occurred was disinfected by a trained gang with perchloride of mercury 1 in 1,000. The house was then limewashed with freshly-slaked lime by a special gang, the mud floors were strewn with quicklime, and the houses closed till the proprietors returned. No second case of plague occurred in any disinfected house.
6. Wherever a succession of cases was reported from any quarter a systematic cleaning of the whole quarter took place; all the houses were cleaned and limewashed.
7. If a plague case died outside hospital the body was removed to the mortuary, "all precautions being taken against dissemination of the infection," and the contacts sent to quarantine for seven days.

In all, from May 20th to November 2nd there were 93 cases, of whom 45 died; 65 of the cases were natives, the rest Europeans. The number of persons isolated was 672; that of supplementary agents employed was 732.

No attempt was made to inoculate with Haffkine's prophylactic, although large quantities were prepared in the laboratories at Cairo and Alexandria. Mr. Pinching considered that the preventive inoculation of the whole population of a town was a practical impossibility. "Fifty medical men employed solely on this duty would take some months if the operation were performed with every technical precaution."

After cessation of plague the precautionary measures did not cease. The town is still inspected, limewashing and cleaning of dirty quarters continues, also strict inspection of corpses.

Only one other town in Egypt (Damanhour, forty miles to the south of Alexandria) was infected in 1899. Two cases occurred; one traceable to goods imported from a plague house in Alexandria, and the other in a railway porter who transferred goods from trucks to various stores. Strict watch was kept in all towns in the country with a view to detecting early cases. Many suspicious cases were notified, but bacteriological examination invariably proved them not to be plague.

Notes in the British Medical Journal from correspondents add to the measures above described those of offering a reward for notification of cases of plague, and doubling in each quarter the number of sheiks whose duty it is to notify. Native hotels and *cafés*, Government and private latrines were closely inspected; workpeople absent from work were visited to ascertain the cause.

Vienna.

No cases have occurred in Vienna since those in October, 1898, which were due to laboratory infection. It will be remembered that Dr. Albrecht and Dr. Ghow visited India early in 1897, and on their return proceeded to the bacteriological examination of plague in their laboratory at the Vienna General Hospital. The attendant, Barisch, sickened on October 14th of pneumonia, and died on October 18th. Dr. Müller, who had attended him, died on October 23rd, after three days' illness, the nurse on October 29th, after nine days' illness, both of pneumonia. Two other nurses had a feverish attack, not proved to be due to plague.

Oporto.

Plague appeared at Oporto in the early part of August, 1899, and was attributed to the arrival of packages from Bombay in the preceding month. Most of the cases were pneumonic; the cases amounted to 282; so far as is known 104 were fatal. The sanitation of Oporto is primitive, and the disease obtained most hold on the poorer part of the population. Cases occurred at Lisbon and Braga, imported from Oporto.

Algeria.

A few cases occurred at Algiers in 1899, but only one was definite plague. Immediately on their occurrence the sewers were hermetically sealed and chemicals burnt with a view to destroying rats.

South America.

The first port infected was Santos in the beginning of October, 1899. Since then cases have occurred at several other ports in Brazil, and infection has been carried thence to Europe (Cardiff), Africa (Capetown), and the United States, though in all three cases the infection stopped at the docks. The case at Hamburg in August last was that of the steward of the steamship *Rosario*, a name which suggests the South American port which infected Capetown and Cardiff. Assuncion, an inland town in Paraguay, was infected in April, 1899, by four sailors who came up the river from Rio la Plata.

North America.

There can now be no doubt that Chinatown, San Francisco, has been infected since the early part of this year at least, although the number of cases known to have occurred is small. The Chinese community in San Francisco is large, and seems to form a kind of *imperium in imperio* if Mr. Bryan will excuse the expression. How many Chinamen have died of plague, how many corpses of such persons are now waiting shipment to China for burial probably no white man knows or ever will know.

Australia.

Most of the important seaports in Australia have been infected since January, 1900, when cases occurred first at Adelaide. It is probable, owing to the numbers of Chinese, that the infection has usually arrived from China. On September 30th last a case occurred at Charters Towers, a great mining centre, the first inland Australian town to be visited by the disease.

Great Britain.

The following cases have occurred in the British Isles during the present pandemic :

1896.—1. One fatal case occurred on a steamship from Bombay in October; a Goanese steward: bubo.
2. A second case on the same steamer had died on board during the voyage of acute pneumonia, with some suspicion of buboes.
3. A third case of suspected plague (pneumonia with enlarged inguinal glands) on a vessel from Calcutta which reached London in September. Calcutta was not then infected, but lascars had been shipped from Bombay on a recent voyage.
4. An English girl died of plague on the *Dilwara* eight days out from Bombay.

1897.—5 and 6. Two lascars developed plague on the *Carthage* four and twelve days respectively after leaving Bombay.

1898.—7 and 8. Two suspicious cases on the steamship *Caledonia* from Bombay were landed at Suez. One member of the crew was detained at Bombay on account of a high temperature, and developed plague in hospital. Apparently the cases landed at Suez were not considered to be plague. No cases occurred on arrival in England.
9. The steamship *Golconda* from Calcutta and Madras arrived at Plymouth on December 24th with a case of plague on board—a saloon passenger; the type was bubonic, and the patient recovered. No other cases followed.
10. Another case was brought to Plymouth on October 14th, 1899, by the steamship *Peninsular* from Bombay. It was recognised on October 9th, that is, seventeen days out from Bombay, but it is thought that the patient (a lascar) concealed his illness. He was put on the *Pique* hospital ship at Plymouth and recovered; no other cases occurred.

These 10 cases are, as far as we can ascertain, the only ones which have occurred in the British Isles till those at Glasgow in September, at Cardiff this month, and the suspected case last week at Limehouse, in which bacteriological investigation decided against plague.

The recent cases at Glasgow are fresh in everyone's mind. They amounted in all to 27 definitely recognisable between the end of August and September 26th. Only 8 cases were severe and of these 5 died. The source of infection was not clear, but the tendency is to connect it with shipping.

The single case at Cardiff is fully reported by Drs. Walford, Savage, and Fitzgerald at p. 1232.

INFECTION, SUSCEPTIBILITY, AND IMMUNITY.

Stories which have come down to us from the older writers as to the extremely infectious nature of plague are evidently founded upon imperfect observation, and are grossly exaggerated. In the fourteenth century it was believed that even the look of a patient would carry infection; and even in the seventeenth century the assertion that it was commonly carried great distances by the air was equally readily accepted. Experience in the present epidemic does not support this latter assertion, but rather tends to show that the infection of plague is not so easily carried as that, for instance, of small-pox or scarlet fever. The history of the man who died at Cardiff is a case in point. In the first place, he is known to have spent two or three nights in Tyne ports; he then travelled in carriages with other passengers from the north of England to the south of Wales; he then stayed several days and nights with his family, yet a sufficient time has now elapsed to make it practically certain that none of the people with whom he came into intimate contact while in this country have contracted the disease. The infection of plague is believed to attach itself to the houses, and possibly to the soil, and it would seem that when proper precautions are taken to keep the houses clean and properly scavenged the risk of infection is much less than used to be believed. Public latrines are looked on with suspicion in the East, and old clothes, bedding, and rags as likely to have been soiled by evacuations are regarded at all ports as suspected goods, as is also water from infected ports. Dr. Clark, of Hong Kong, considers that houses once infected are apt again and again to have cases. The outbreaks in the Levant have been constantly associated with famine and the eating of inferior grain; and many cases of lathyriasis have occurred in India since the famine of 1895. Hankin's experiments at Bombay led him to conclude that infection in grain died out in four days, especially if the grain were rotten, and therefore of acid reaction.

It must be recollected, however, that fleas can in all probability carry and inoculate the virus, and that flies may be able to carry it and inoculate a scratch or wound. Further, the expectoration in pneumonic plague is infectious. It is apparently a fact that most of the cases which occurred among the European hospital staff in India took the form of pneumonia or of cervical buboes, pointing to a probable infection through the mouth. The three fatal cases at Vienna were all pneumonic. The infection of the attendant was attributed to his handling his cigarette while working in the laboratory; that of Dr. Muller to inhalation of sputa while auscultating his patient's chest.

The arduous and dangerous work of cleaning in the filthy Chinese quarter in Hong Hong was carried out in 1894 by the officers and men of the Shropshire Regiment; there were some cases of plague among them, Captain Vesey being the first. None occurred after the adoption of the measures prescribed by Dr. Lowson, namely, the lighting of fires while at work, the burning of rubbish with kerosene on the spot, the wearing of handkerchiefs over the mouth dipped in eucalyptus or carbolic solution, and the frequent use of a mouthwash of the formula ℞ ac. carbol. liq. ♏160; eau de cologne ♏140; sp. camph. ♏180; aq. ad Oiv. A large bottle of this wash accompanied every squad of men.

Infection of Medical and Nursing Staff.

Considering the numbers employed on plague duty in India, whether in hospital or on inspection or disinfection duty, the cases of infection have been remarkably few. The first such death was that of Dr. Manser, in Bombay, within three months of his appointment on the Plague Research Committee. His illness was of the pneumonic type, and lasted four days. His nurse, Miss Joyce, sickened the day after his death, and died in three days, also of pneumonia. The next death was that of Miss Florence Morgan at Poona, also of pneumonia, in forty hours. In 1898 another English nurse died in Bombay, and in 1899 Miss Murphy in the Bombay Presidency. Some fatal cases occurred among Eurasians on plague duty. Miss Phillips, the house-surgeon at the Kama Hospital, Bombay, contracted the disease through attendance on a plague patient, who was brought in in labour and required removal of fragments of placenta. A few cases of enlarged glands with fever occurred among the plague staff. It is probable that the immunity enjoyed by them was partly due to the fact that a great many had been inoculated with Haffkine's prophylactic.

Last year at Lisbon Professor Camara Pestana contracted the disease, possibly from laboratory infection, and died. The precautions usual in any hospital for infectious diseases must be rigidly enforced in the case of attendants on plague cases. Anyone complaining of slight illness should be relieved from duty. Small wounds must be aseptically treated, and the face, hands, and teeth cleansed before eating. The general health should be maintained by good food and exercise in the open air; and the sleeping apartments should be well removed from the wards.

NATURAL IMMUNITY AND SUSCEPTIBILITY.

1. *Occupation.*

In India marked immunity was noticed in Cutch among the sweepers and the whitewashing coolies; these were all, however, accommodated outside the town in huts, and the Waghris, who also lived in thatched huts in the open, always seemed immune. In Surat it was clear that fishermen were specially susceptible. The well-to-do classes were always more or less free. The poor and ill-fed were specially liable, and the incidence of plague is no doubt heavier on classes weakened by unhygienic surroundings.

2. *Race.*

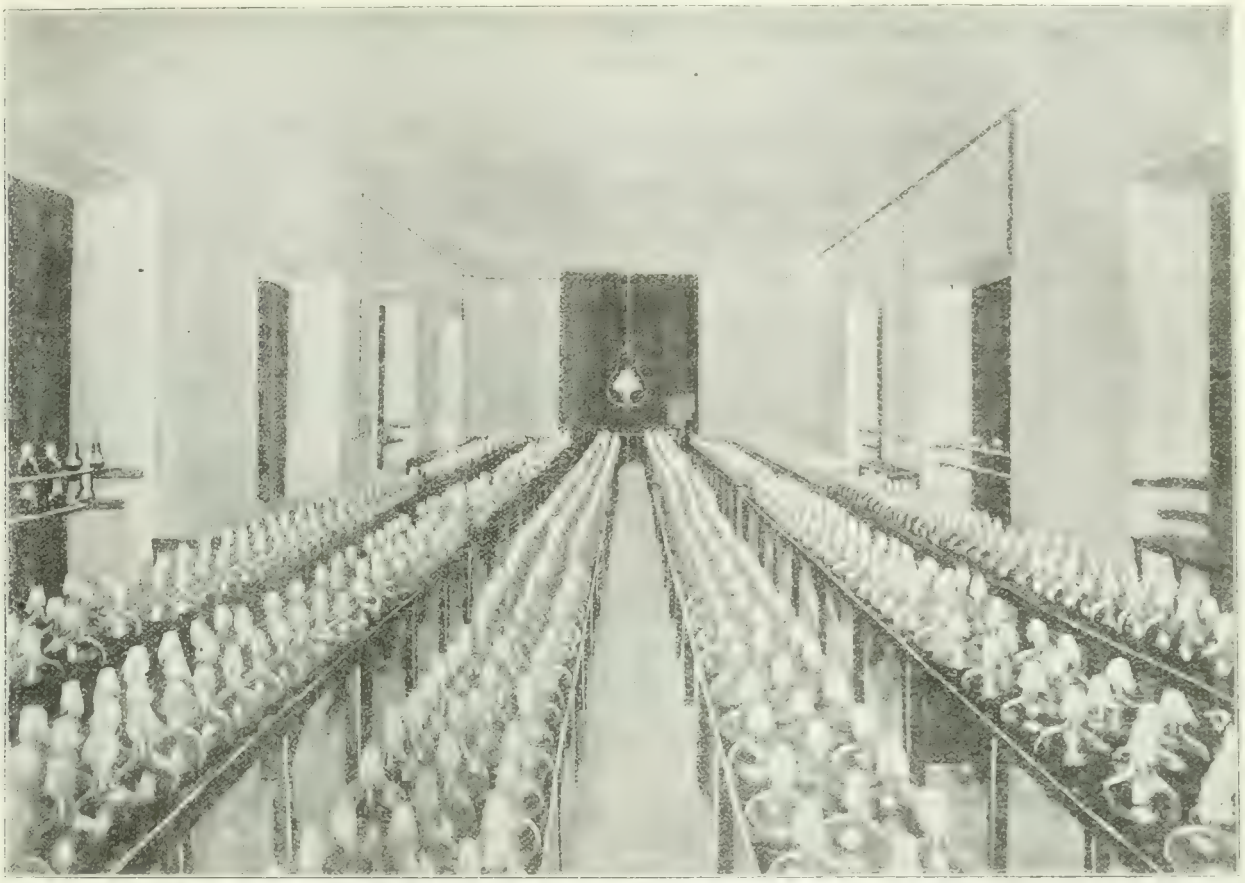
Europeans have been comparatively immune in India, but as their hygienic conditions are much superior to those of the natives, and, although in some cases affected by climatic conditions, the English at least (as distinct from the Eurasians) are mostly picked men to start with, it is impossible to draw conclusions as to England from Indian experience. At St. George's (European) Hospital, Bombay, the percentage of deaths to attacks was in Europeans 32, in Eurasians 42, while at the Arthur Road (Native) Hospital it was between 65 and 70.

3. *Age and Sex.*

The greatest mortality in hospital is usually among young adult males. As these travel about more they are naturally more exposed to infection. In judging of sex immunity, however, it must be remembered that Indian women are specially attached to their homes, and so avoid hospitals, and that great objection is made even to medical inspection of a woman's corpse, so that many cases must have occurred unrecognised among women. In many instances, too, the female population has migrated in panic from a plague-infected town, and very frequently in India the soldiers and servants and others come to the towns to work, returning to their families in the country from time to time. Statistics under this heading are therefore vitiated. Young children are not immune, but do not suffer as much as adults; infants suckled in plague hospitals by infected mothers do not contract plague. Here again statistics are unreliable, as children migrated with their mothers, so lowering the number, and the birth-rate fell owing to this migration, and to the almost invariable death of pregnant women when attacked by plague. Children also frequently die so quickly of plague that it is not easily recognised. In some instances the only death in a family was in the case of an infant left uninoculated for such reasons as sometimes defer vaccination. In Hong Kong the infantile mortality from plague in 1898 was considerable; that among women was at first lower than in men, owing, no doubt, to the first cases being among those who moved about most.

RESULTS OF INOCULATION WITH HAFFKINE'S PROPHYLACTIC.

The report of the Indian Plague Commission was to the effect that inoculation sensibly diminished the incidence of plague, and also the mortality. It considered that the protection lasted several weeks or even months, but was not great during the first few days after inoculation. Dr. Hornabrook's report of the Dharwar Plague Hospital shows that of the cases once inoculated 71.08 per cent. recovered, and of the twice inoculated 81.25 per cent recovered. He states that inoculation has apparently no effect in lessening the mortality among pneumonic cases. The percentage at Dharwar of recovery of non-inoculated cases was 38.13, a very clear case in



Dark fermentation room for Haffkine's prophylactic.

favour of inoculation. He gives a few graphic instances: A clerk named Shelke had a family of 12; 8 non-inoculated all died of plague, 4 inoculated were not attacked; in another family of 4 persons, the infant was the only one not inoculated and the only one that died.

Plague Research Laboratory at Bombay.

Mr. Haffkine's first laboratory consisted of one room and a corridor in the Petit Laboratory at the Grant Medical College. The Plague Research Committee, consisting of Manser, Childe, Haffkine, Hankin, and Surveyor, was formed in October, 1896. In 1897 a house at Malabar Hill was used, and later on Khushru Lodge was offered by Aga Khan, the head of the Khoja community. The increasing epidemic, however, required Government aid, and since March, 1899, all charges in connection with the laboratory have been borne by the Government of India. The old Government House at Parel (previously a Jesuit seminary) had been used for some time as a plague hospital, and the new Government laboratory was opened there in August, 1899, with Major Bannerman, I.M.S., in charge. Photographs in Captain Condon's report (1900) on the Bombay plague show the media preparation room, furnished with autoclaves for digesting goat's flesh, mincing machines, and arrangements for neutralising the bouillon, other rooms for sterilising the fluid and decanting it into small sterilised bottles, and a dark room where the large fermentation flasks growing the stalactite formation are placed for six weeks before sterilisation. The accompanying photograph of the dark room shows the large scale on which the operations are carried on.

THE PROPHYLAXIS OF PLAGUE BY PREVENTIVE INOCULATION.

Dr. Calmette, the Director of the Pasteur Institute at Lille, presented to the International Congress of Hygiene and Demography, held in Paris last month, a report on the part which prophylactic inoculations might play in preventing the spread of plague.

He said that the efficacy of preventive inoculations had been fully proved by the work of Roux, Yersin, Calmette, Borrel, Salimbeni, and Haffkine. Either antiplague serum or cultures of plague bacilli, killed by heating for an hour at a temperature of 70° C., was effective.

Antiplague Serum.

The antiplague serum conferred very strong immunity, which commenced almost immediately after the injection. Unfortunately this immunity lasted for a very short period, rarely exceeding twelve to fourteen days. Consequently when the antiplague serum was used during epidemics as a preventive measure, it was necessary every fortnight to inject a dose of 10 c.cm. of the serum to give an efficient protection to exposed subjects. This method had its advantages and its drawbacks.

Advantages.

1. The immunity conferred was immediate and almost absolute.
2. The injection of serum being painless it was readily accepted by everyone, even by children.
3. It was never harmful.
4. When the serum was prepared aseptically the activity of the preparation remained the same for a long period—in fact, almost indefinitely.

Drawbacks.

1. The resulting immunity was of too short duration.
2. The high price of the serum, and the difficulty in obtaining it in large enough quantities to permit of the population of a whole town being vaccinated every fortnight.
3. The difficulty in making compulsory or general a vaccination which had to be repeated so often.

These drawbacks must naturally limit the preventive use of

antiplague serum. Its use, however, was indicated in the following circumstances:

A. On infected vessels, during the voyage, to prevent the disease spreading among the passengers and crew.

B. In lazarettos temporarily to protect the employees who had to discharge and disinfect the cargo brought by a suspected vessel, or on board of which cases of plague had occurred during the voyage.

C. In docks, custom houses or warehouses (exceptionally) when suspected goods were manipulated.

D. In times of epidemic, for the immediate vaccination of any persons who had been in momentary contact with the patients, or were possibly already infected.

"VACCINATION" WITH DEAD CULTURES (HAFFKINE'S METHOD).

The method of vaccination with cultures of bacillus pestis killed by heating to 70° C., which had been applied during the last three years on a huge scale in India by Haffkine, possessed the incontestable advantage of conferring a longer immunity than that produced by the antiplague serum.

Duration of Immunity.

The exact duration, however, of this immunity was very variable. It depended on the quantity of microbes in the culture, on the age of the culture or its toxicity, and on the method of its preparation. It was impossible to fix the duration in man; it might last only a few days or several months. Calmette had found that in animals, such as the ape, which were very sensitive to the plague, the immunity conferred by a single injection of 2 to 3 c.cm. of the vaccine of Haffkine did not exceed three weeks to one month. The injection must be repeated twice or even three times, with eight days' interval between each, to obtain in these animals an immunity lasting for three or four months, rarely more.

M. Haffkine had not made an experimental study of the effects of his vaccination. To form an idea of its value, Dr. Calmette had undertaken a research, vaccinating by Haffkine's method several series of monkeys, guinea-pigs, and rats, in order to determine not only the duration of the immunity after one, two, or three injections of heated vaccinal cultures, repeated at weekly intervals, but more especially to determine at what time after the vaccination immunity began. Dr. Calmette had arrived at the conclusion that after a single injection of 3 c.cm. of a bouillon culture one month old, heated during one hour at 70° C., immunity was established on the seventh day. This immunity lasted on an average three weeks in the guinea-pig and one month in the monkey. The resistance was tested in all the animals with the same dose of the same series ($\frac{1}{100}$ of a gelatine culture of forty-eight hours). In the rat the immunity was of longer duration after a single injection of 2 c.cm of heated culture. In Dr. Calmette's experiments it lasted for three months.

It was, no doubt, impossible to draw from these facts any conclusion as to what happened in man. Since Haffkine's vaccination was more efficient in the rat (an animal most sensitive to the plague) than in the guinea-pig (a less sensitive animal), it might be accepted that, as M. Haffkine believed, a single inoculation was capable of conferring a more lasting immunity in man than in animals. It was, however, impossible to affirm anything in this question.

Practical Value of Haffkine's Method.

On the other hand, it might be asserted that Haffkine's vaccination was most useful in infected countries, and for the following reasons:

1. It was possible to prepare in a few weeks, without any difficulty and at very small cost, large quantities of cultures of the plague bacillus and consequently of the vaccine, since it was only necessary to heat those cultures, one month old, for an hour at 70° C.

2. Persons endured the inoculation of these heated cultures fairly easily; it only caused a little swelling and lymphangitis round the seat of inoculation, which lasted five or six days.

3. It was possible with those heated cultures to vaccinate the population of an entire city or district, and thus suppress the receptivity, and consequently all chances of the spread of the disease.

Objections to Haffkine's Method.

The method was, however, open to serious objections, of a nature to prevent public authorities making its application obligatory in infected countries. These objections Dr. Calmette stated as follows:

1. With M. Salimbeni he had shown, during the recent epidemic in Oporto, that animals during the period of immunisation with heated cultures were extremely sensitive to very small doses of the virus, doses which were rarely mortal to non-vaccinated animals. It followed that a person in the period of incubation for a slight attack of plague, would find the disease considerably aggravated if he submitted during this period to a preventive inoculation of Haffkine's vaccine. The case would almost certainly end fatally. This fact explained the rapidly fatal cases of plague, after inoculation, observed in India, in Bombay, and in Damaun.

2. The injection of heated cultures caused a more or less sharp rise of temperature, usually of short duration, but in some cases sufficiently high to make the patients stop work.

3. The heated cultures could be kept for a much shorter period—it did not exceed six months—than the serum. The combined action of air and light quickly attenuated the toxicity of these cultures. The cultures therefore must be frequently renewed; old vaccine must not be used.

CONCLUSIONS.

Dr. Calmette expressed the opinion, however, that in spite of these objections it must be recognised that the method of vaccination with heated cultures was capable of rendering immense service in times of epidemic, since it rendered it possible to limit almost immediately extension from a focus.

He thought, however, that the use of antiplague serum, which did not present the dangers of Haffkine's vaccination, was more to be recommended for vessels, lazarettos, hospitals, and observation centres, not only because it was an excellent preventive measure, but because, while it was a vaccine, it was at the same time the only efficient remedy that could be employed in the treatment of declared plague.

RESOLUTIONS.

The following summary given by Dr. Calmette at the end of his paper was subsequently adopted by the Congress in a series of resolutions:

At the present moment plague is a permanent menace to all the ports of Europe and America which have commercial relations with infected countries. It would be advisable that steamship companies, ship owners, and vessels of war should make the necessary provisions to ensure that their ships should have, on leaving port, a sufficient supply of anti-plague serum.

Every medical officer and every captain should be supplied with special instructions as to the mode of using the serum for the preventive vaccination of every person on board if a suspected case arises.

The same instructions should give directions as to the measures to be taken for the destruction of rats and various parasites (fleas, mosquitos) which are capable of propagating the disease, and for the suitable disinfection of merchandise during the voyage should a case of plague occur on board.

Lazarettos, the sanitary service, and the civil and seamens' hospitals of all ports, whether military or commercial, ought to possess, and to renew at fixed dates, a provision of anti-plague serum. In such ports as possess bacteriological laboratories it would be useful to instruct the director of the laboratory to keep the serum in stock, to distribute it to the naval sanitary medical officers, to shipowners, or to the captains, at the same time furnishing to them the necessary instruction, and themselves to superintend the use of the serum when it is possible to obtain their services.

M. YERSIN ON THE PROPHYLAXIS OF PLAGUE.

[FROM OUR SPECIAL CORRESPONDENT IN PARIS.]

Paris, October 19th, 1900.

DR. YERSIN, who with Kitasato at Hong Kong in 1894 first isolated the specific bacillus of plague, recently returned from the Far East, and I was able to find out from him his views as to the preventive measures to be adopted in a threatened epidemic and the best means of preventing the spread of the disease.

I.—In Villages.

Evacuation.

In a village or restricted community, from Dr. Yersin's experience in Indo-China, the only effective means of preventing the spread of the disease is to evacuate the infected village. All the inhabitants should at once be removed to a distance. When this measure is carried out extensive serum inoculation is not so essential, as only those inhabitants who are already in the period of incubation will develop the disease. The disease is thus very rapidly stamped out. Dr. Yersin cited the case of one village in which there were 7 cases of plague when the village was evacuated. On the first day after this measure 2 new cases developed, on the second day no case, on the third day 1 case, on the fourth day no case, on the fifth day 1 case, after which no fresh cases occurred in the population. Several dead rats had been noticed before the order was given to evacuate the village, but on Dr. Yersin returning to visit the village some days later dead rats were found in great numbers, and all the dogs remaining behind were also dead of the plague, having eaten infected rats.

Disinfection and Burning of Houses Ineffectual.

The disinfection of a house, even when carried out under scientific supervision, affords no guarantee that fresh cases will not occur on the house being again inhabited. Over and over again Dr. Yersin has proved the truth of this in Indo-China; a house has been literally deluged with cresol, and on the inhabitants returning after an interval of eight days a case of plague has developed; the process has been repeated, and again after eight days a fresh case of plague infection has occurred, and so on indefinitely.

Even burning an infected house does not prevent the spread of the disease. Dr. Yersin cited many cases where an infected house was burnt down; after a week cases of plague occurred in adjoining houses; these were burnt down, and a week later cases arose close to this extended radius. Even when the case-free houses surrounding an infected house were immediately destroyed along with it, cases of plague occurred in neighbouring houses.

Duration of Evacuation.

Thus, for a small community, Dr. Yersin, after making many experiments, is of opinion that the village or small district must be evacuated, and the disease will be stamped out in a week. Not only this, but the inhabitants must not be permitted to return to an infected district for at least six months. The ideal plan would be for the inhabitants to have two villages, one for the cold weather, which should be vacated for the mountains as soon as spring returns or the disease shows signs of recrudescence. In Yunnan where the disease is endemic the inhabitants spontaneously every year leave the village for six months and go to live in the mountains, only returning with the cold weather, when they know by experience that there is no further danger of plague infection.

II.—In Large Towns and in Europe.

Anti plague Serum.

In a large city or town in Europe, such drastic measures are impracticable; few people would consent to leave their houses for six months or a year. In these conditions, in addition to isolation of the sick, the only means of limiting the disease is the inoculation with anti-plague serum of all persons who have been exposed to infection; such of these as may be in the incubation period will have a mild attack or they may die. Disinfection must be carried out as demanded by the sanitary authorities, but its protective powers are not absolute. The serum confers immunity for fifteen days only, but if there is further fear of infection, or fresh exposure, the injection of serum should be repeated. This is a painless operation, and causes no inconvenience.

Haffkine's Method.

With Haffkine's method of vaccination with dead bacilli or bacilli that have been heated for one hour at 70° C., it is impossible to say for how long a period immunity is obtained in man. Dr. Yersin by this method has never been able to obtain immunity in animals. His experiments were carried out on the rat, the most susceptible animal, and on the monkey. The injection is intensely painful in its effects, causing marked rise of temperature, much local induration round the seat of injection, and the animal is ill for several days after an injection of dead bacilli. A single injection of dead bacilli, even of a very virulent type, produces absolutely no immunising effect. After the subsidence of all inflammatory symptoms and constitutional disturbance, a fresh injection must be given. Several months would be necessary, Dr. Yersin thinks, before any immunity could be acquired by this means in the rat. In man Dr. Yersin has seen this method of vaccination give rise to great suffering and constitutional disturbance.

Inoculation with Attenuated Virus.

With regard to the more theoretical question of the possible value in the future of inoculating man with attenuated bacilli of plague, and so producing an immunity of longer duration than is at present possible with anti-plague serum, Dr. Yersin observed that the method of inoculation with attenuated cultures of bacilli is used at the present time for the inoculation of sheep against anthrax. The study and application of the principle in this instance was in reality the starting point of the study of the question of immunity. When anthrax cultures are kept at a temperature above 40°C., scarcely any spores are formed. At 42° to 43° C. no spores are formed, and the bacillus grows very slowly. By taking some of these anthrax bacilli every two days from their culture tube, transferring them to fresh, slightly alkaline bouillon, and growing them at 30° to 33° C. (their favourite temperature), many distinct races of bacilli with different degrees of acquired attenuation are obtained. This attenuation is hereditary, as spores form in these attenuated races, and these spores preserve the attenuated degree of virulence. Dr. Yersin possesses different races of plague bacilli from the most attenuated, producing absolutely no effect when inoculated in the rat, not even a rise of temperature or local induration. By very careful and repeated inoculations, Dr. Yersin has been able to render rats and monkeys absolutely immune to large doses of very virulent plague cultures. Dr. Yersin has inoculated his own arm by scratching in with a lancet a little of such an attenuated culture; this was followed by no rise of temperature or glandular swelling, the only sign being a slight local redness. However convincing results may be when obtained in rats and monkeys, still it is impossible to say what would be the result in man were such an experiment possible as the testing with a culture of virulent plague bacilli.

Inoculation with Attenuated Virus mixed with Antitoxic Serum.

M. Yersin suggests that the desired result may possibly be some day obtained by making a mixture of anti-plague serum with a small portion of an attenuated culture of plague bacilli and inoculating man with this mixture. The serum has no effect on the living bacilli in such a mixture, but its addition would have the effect of attracting a number of phagocytes to the spot. By phagocytosis some of the living bacilli would be taken up, and, as a result, a certain degree of immunity would be acquired. By a careful repetition of this process, with more and more virulent bacilli mixed with anti-plague serum, it might eventually be possible to obtain an absolute and lasting immunity.

Mild Type of the Disease in Europe.

Dr. Yersin is of opinion that no conclusions can be drawn from the exceedingly mild type of the disease in the recent epidemic of plague in Oporto and in the outbreak in Glasgow as to the severity of possible future outbreaks in the British Isles or elsewhere in Europe. In the Far East it has often happened that one town has a mild form of plague while a town not far distant presents a very grave type of the disease. With the plague we must be prepared for any type of the disease. It is quite possible, when in the course of the next few years the bacilli have become acclimatised in their new surroundings, that their virulence will increase, and that we shall see the same severe form of plague as visited Europe in the Middle Ages. Nowadays, however, we possess the anti-plague serum, so that even if the plague bacillus becomes eventually most virulent for the European, yet never again shall we see the same terrible mortality as devastated Europe in those times.

PLAGUE CHECKED BY DESTRUCTION OF RATS.

KITASATO ON THE LIMITATION OF OUTBREAKS AT KOBÉ AND OSAKA.

AT a recent meeting of the Académie de Médecine of Paris M. Vallin made a report on The Epidemics of Plague at Kobé and Osaka, being a summary of the official report by Professor Kitasato of Tokio, assisted by Drs. Takaki, Shiga, and Moriya. In the town of Kobé (230,000 inhabitants) there were, from November 3rd to December 21st, 1899, 23 cases of plague, 19 being fatal; while in Osaka, the second city of Japan (750,000 inhabitants) there were, from November 18th, 1899, to January 11th, 1900, 39 cases, with 37 deaths. Rats, it would seem, played an important part in the development of these two local epidemics. The municipality of each of these two towns paid 10 centimes for every rat dead or alive, and from the middle of November till the end of January 20,000 rats were taken at Kobé and 15,000 at Osaka. Many people also, in order to avoid the disinfection of their houses, either burnt or threw into the canal or river all the dead rats they found. The investigators, on careful examination of the dead rats, found that at Kobé one rat in five, and at Osaka one rat in ten, were infected by plague bacilli.

At Kobé the first case of plague in a man occurred on October 5th, whereas the first rat dead of plague was found on October 20th. Long before this date, however, the people had seen dead rats without paying any attention to them. At Kobé dead infected rats were found in sixteen instances, either in the house in which the infected person dwelt or in its immediate neighbourhood. Plague-infected rats were found on November 21st in the chief Custom-house at Kobé, and twelve days later a schoolboy, living 450 yards away, developed the disease; an inquiry showed that many of the intervening houses harboured infected rats. As the Customs-house was on the seashore, it was thought probably that the disease spread from thence to the rats in the town. It is believed that the epidemic would have attained much larger proportions had not so many rats been destroyed, since, as they are incessantly in contact, the disease spreads much more rapidly among them than among men. In several quarters of these towns where no cases of plague occurred in man, plague-infected rats were taken and killed.

The report of Professor Kitasato contains as an appendix the text of the Japanese law of March 30th, 1897, on prophylactic measures against epidemic diseases. In Japan eight diseases are notifiable—cholera, dysentery, typhoid fever, small-pox, typhus fever, scarlet fever, diphtheria, and plague.

Notification.—By Articles 1 to 4 notification of such of these eight diseases is compulsory, both by the medical men, and also by the head or director of each private house or public establishment (schools, convents, manufactories, hotels, theatres, booths, etc.).

Disinfection.—By Article 5 every medical man in attendance on a case of one of these diseases must instruct the family as to the disinfection and cleaning prescribed by the police regulations. The proprietor of the house in which the case occurs is responsible for these being properly carried out.

Isolation and Segregation.—By Article 7 the officials of the administration have the power to convey the sick to a special hospital or to an isolation hut, when this is judged indispensable for the prevention of the spread of the disease. In such cases they have also the right to isolate exposed persons who are still in good health.

Isolation of Houses.—By Article 8, if the administrative authority judges it necessary, each house in which a case of epidemic disease has occurred, and even the adjoining houses, must be isolated for several days.

Disposal of the Dead.—By Article 12 the body of every person dying of an infectious disease must be burnt. Interment can only take place after police authorisation; exhumation is not allowed till three years have elapsed.

M. Vallin thought that all these measures, most assuredly right and desirable in themselves, would in the majority of European countries, be considered as so many attacks on the liberty of the individual.

AN Anticonsumption League has recently been formed by the Canadian Medical Association. Its objects are to establish and maintain a rural sanatorium in connection with each municipality or group of municipalities for the reception of favourable cases, and another, or some suitable isolated building, for more advanced cases.

AT the seventy-seventh annual meeting of the governors and subscribers of the Stratford-on-Avon General Hospital, held on October 8th, the resignation of the surgeoncy by Mr. John J. Nason, after forty years of continuous service, was accepted with very great regret.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

F. W. PAVY, M.D., F.R.C.P., F.R.S., President, in the Chair.

Tuesday, October 23rd, 1900.

WIND EXPOSURE AND PHTHISIS.

DR. WILLIAM GORDON (Exeter) read a paper on this subject, with particular reference to its bearing on the choice of localities for the erection of phthisis sanatoria. He said that the differences of the average annual death-rates from phthisis in the rural sanitary districts of Devon (7 years' records) could not be explained by differences in general sanitation, rainfall, or soil, but were probably mainly due to differences in exposure to west and south-west winds. The differences of the average annual death-rate from phthisis in the parishes of St. Thomas rural district (2⅓ years' records), of Newton Abbot rural district (15 years' records), of Okehampton rural district (10 years' records), and of Barnstaple rural district (10 years' records), could not be explained by rainfall or soil, but could be explained by differences in exposure to west and south-west winds. Soil appeared, however, to exercise a subordinate influence on phthisis death-rate in Devonshire. These points were illustrated by maps.

Dr. WILLIAM CAYLEY thought that Dr. Gordon had certainly proved two points: that phthisis was more prevalent in some districts of Devon than in others, and that in these districts westerly and south-westerly winds prevailed, but he did not think the two had been distinctly shown to have the relation of cause and effect. He referred to the conditions which obtained in the Scilly Islands, in which exposure to the prevalent winds caused the people to shut themselves in their small, ill-ventilated houses, and this he thought might be a factor in Devon.

Surgeon-Major BLACK would have liked to have had information as to the duration of the cases of phthisis in the different districts—whether certain winds were associated with a rapid course of the disease or the reverse.

Dr. G. B. LONGSTAFF also thought the conditions of the dwelling and occupation of the patients in any district should be taken into account, particularly the conditions of their sleeping rooms. The character of the houses themselves was likewise of importance and this varied in different parts of Devon. The dampness or dryness of the soil immediately surrounding the houses was of more significance than the general impermeability of the soil or otherwise. Distribution of rainfall should certainly be taken into account as also should the question of race in regard to special proclivity and the question of intermarriage. The fallibility of diagnosis was also an element to be borne in mind. The observations recorded in the paper dealt with but a small number of years, and differences in Poor-law administration, whether moribund cases were or were not removed into the infirmaries, should likewise be taken into account.

Sir DOUGLAS POWELL considered that the author of the paper had established the fact that prevalence of strong winds corresponded with high phthisis mortality. Dr. Haviland had showed the same thing, and that no particular wind was concerned. The reason was probably, as Dr. Cayley had suggested, the shutting up of windows and doors, especially at night. The paper was of great value, and similar observations in regard to other parts of the country would be very useful.

Sir HERMANN WEBER said the question of windiness in relation to the occurrence of phthisis was of importance, both from the climatological and the therapeutic standpoint, as, for example, in relation with sanatoria. For a long time it had been recognised that windiness had an injurious effect on phthisical patients. Exposure to strong winds had, moreover, a very deleterious influence on some healthy persons, even from early childhood. Strong wind of any kind and from any quarter seemed to increase the mortality of consumptive persons. Variations, as in the Isle of Man, in the phthisis mortality in the different parts of the same district seemed to correspond with the sheltered condition of the less affected portions. Local factors in small districts must be taken into account. The paper was most careful work, which should be continued.

Dr. J. C. R. Braine-Hartnell thought that wind exposure was the most important external factor in regard to phthisis, far more important, indeed, than rainfall. In connection with nearly every well-arranged sanatorium there were woods into which the patients could go in windy weather. He thought that the wind acted as a depressant of vitality. He would like to know whether exposure to north-west winds had a similar bad effect in any district.

Dr. Pye-Smith considered that the difficulty in the use of statistics in this relation was from taking too small quantities and too small areas. Another fallacy was the confusion of the cause of the occurrence of phthisis, the lodgment of the bacillus, and the cause of its mortality.

Dr. Herringham said three plans of investigation were needed; using the large numbers, the individual cases, and that followed by the author of the paper—the careful examination of a small area by one to whom it was well known.

Sir William Broadbent believed that in a disease the cause of which was so complex there were always sources of fallacy in accounting for its causation on one hypothesis. The connecting link between the prevalence of south-west winds and the mortality of phthisis seemed to be wanting. The conclusion they must come to was probably that of Dr. Haviland that windiness and not any particular wind was the injurious agent, and this in two ways, by causing persons to shut themselves up in their houses, and by hastening the changes leading to death from tuberculosis.

Dr. Gordon, in his reply, said the south-west winds in Devonshire were the prevalent winds, they were the strong winds, and they were the wet winds.

MEDICAL SOCIETY OF LONDON.

John H. Morgan, F.R.C.S., President, in the Chair.

Monday, October 22nd, 1900.

Some Remarkable Cases of Sarcoma.

Mr. Marmaduke Sheild, who read this paper, described a case of suppuration occurring in relation with sarcoma in the lower third of the left thigh after a crush. All the signs of sarcoma were present, but the skin was red, and there was fluctuation. On incising the swelling a large cavity full of pus was discovered, but no trace of growth could be felt. There was no evidence of necrosis of the femur. After the abscess had healed there was again an increase of the swelling. There was still fluctuation, and there was pyrexia at night. The discharge was examined for actinomycosis. On incising the swelling a second time pedunculated masses of growth were discovered. Dr. Rolleston, on examining the tumour, found sarcomatous tissue. The tumour was a cystic sarcoma with secondary septic infection. A second case was that of ulceration of the toe followed by swelling of the inguinal glands. The swellings in the groin were fluctuating, and suggested abscess. They increased in size, and when excised there was found to be melanosis of the glands. A third case was one of sarcoma of the tibia simulating abscess under the periosteum. When the swelling was punctured a jet of blood shot out. Amputation in the lower third of the thigh was performed. The growth was medullary in character. A fourth case was that of a man who had shooting pains down the back of the thigh, which were at first attributed to rheumatism. But evidence of abdominal growth was shortly obtained, and later a growth in the testicle appeared. There was a nocturnal rise of temperature of 102° to 103°. The diagnosis of retroperitoneal sarcoma was made, but no necropsy was obtained.

Mr. G. R. Turner described a case of sarcoma of the thyroid gland necessitating tracheotomy, after which the tumour subsided. After six months it recurred and again almost disappeared. At the necropsy there was found only a small amount of sarcomatous tissue in the thyroid gland. He alluded to a case of melanotic sarcoma of the back of the neck which did not recur for three years after operation, and described a case of alveolar sarcoma connected with the spine closely simulating abscess.

Surgeon-Major Black mentioned a case of tumour of the breast removed for sarcoma, and Dr. Rolleston alluded to the capricious character of melanotic growths.

Dr. Campbell Pope mentioned a case apparently of phthisis in which there was dulness in the back and difficulty of breathing which turned out to be soft sarcoma.

Mr. Waterhouse described a case of fracture of the humerus in a girl of 19 in which no union was obtained although there was apparently much callus. It proved to be a case of sarcoma and amputation was performed. Eight years later she died of sarcoma of the opposite lung.

The President said that suppuration was very rare in association with sarcoma. He described the case of a little boy who after an accident had redness and swelling in the region of the os calcis, believed to be tuberculous. On opening the swelling sarcomatous tissue was found. He mentioned also a case of ulceration of the toe believed to be sarcomatous but without any evidence of melanosis, the inguinal glands subsequently proving to be melanotic. He deprecated the routine administration of potassium iodide in indefinite growths.

Mr. Sheild replied.

Arthritis in Association with Appendicitis.

Dr. Poynton detailed the evidence which had been advanced to show that appendicitis might be rheumatic. Reference was made to cases recorded by Dr. G. A. Sutherland of perityphlitis occurring in acute rheumatism. Cases were also described that had occurred in the Great Ormond Street Hospital. Cases on record with arthritis and perityphlitis which reacted to salicylates were mentioned. It was probable that this reaction was not in itself sufficient evidence of rheumatism. In many cases of perityphlitis which he had seen in St. Mary's Hospital there was no certain evidence of the rheumatic state. In two of these arthritis shortly followed the appendicitis. He referred to the fact of the bacillus coli in appendicitis being found in swollen joints and in the metastatic visceral abscesses. Effusion might also occur into the tendon sheaths. A case he had seen of arthritis associated with a gangrenous appendix was much relieved by salicylates. The arthritis was probably a pyæmic metastatic phenomenon. Monarticular rheumatism of the hip sometimes closely simulated perityphlitis.

Dr. Rolleston thought that as in the tonsil so in the appendix the initial stage might be rheumatic, followed by a secondary mixed infection, colon bacilli following in the track of the rheumatic diplococcus. He had once or twice seen slight joint pain in appendicitis, and he had seen endocarditis occurring in the course of appendicitis.

Mr. F. C. Wallis referred to cases he had described of ulceration of the lower bowel with multiple arthritis, which disappeared when the diseased focus was removed. He thought the arthritis in Dr. Poynton's cases might have been infected from some ulcer in the appendix. He questioned whether appendicitis could ever be purely rheumatic.

Dr. T. D. Savill described a case believed to be one of blenorrhagic arthritis in which death occurred from perforation of the appendix.

Dr. H. A. Caley suggested that the rarity of the coincidence was an argument against there being any close connection between rheumatic arthritis and appendicitis. He thought Dr. Poynton's view that the arthritis was pyæmic had much to support it. He alluded to cases of catarrhal colitis in which arthritis developed, and he extended the observation to a possible catarrhal appendicitis.

Dr. Poynton replied.

HARVEIAN SOCIETY OF LONDON.

W. H. Lamb, M.B., President, in the Chair.

Thursday, October 18th, 1900.

Early Operation in Appendicitis.

Mr. Mansell Moullin read a paper on the advisability of early operation in cases of acute inflammation of the appendix. After giving a brief account of the pathology of appendicitis, showing that it always originated in invasion of the mucous membrane by septic organisms from the interior of the bowel, he divided the cases, so far as surgical treatment was concerned, into three main groups. The first, far the largest, included mild attacks which subsided of themselves, or under the simplest treatment. A second group in which the absorption of the exudation was incomplete, in some becoming organised, in others breaking down

into pus, and in others a concretion was left behind. In all these, perfect recovery was impossible without operation. A third group, by far the smallest, in which acute septic peritonitis broke out, and the only chance of recovery was immediate operation. In all acute attacks it was absolutely essential to group the cases in these three divisions within thirty-six hours of the onset of the symptoms, or it might be too late. It was known that the interior of the appendix was full of septic organisms, and that if the conditions were favourable they could penetrate through the wall and infect everything. The danger was not in performing a simple exploratory operation, but in delaying to do so. All that was necessary was an incision an inch and a-half in length, and the introduction of the finger in order to ascertain exactly what was the condition of the appendix and of the peritoneum around it. The symptoms by which the cases, which would recover of themselves, might be distinguished from those in which operation would be required were then discussed. The pulse was the most valuable guide. If its rate at the end of 36 hours, while the patient was lying in bed, was over 100 in the minute, or if in the course of the last few hours it had increased much in frequency, there was no doubt that the attack was a severe one and that operation would be required. The temperature was no certain guide unless it continued to rise. The intensity of the pain was of great significance, and so were also, but perhaps in less degree, local tenderness, muscular resistance, and a sense of fulness in the right iliac fossa. Vomiting, constipation, and the other symptoms usually present could not be relied upon in the same measure. Great stress was laid upon the absence of any individual symptom being of no account and that operation should be performed in any case in which the pulse was very rapid, even if the other symptoms did not point to any great degree of intensity. If morphine had been given this rule should be even more stringent. The limit of 36 hours was a perfectly arbitrary one. All could not wait so long. Some might wait longer without undue risk. This was merely an average. It was preferable that a simple and practically safe operation should be performed at once in all cases, rather than that the disease should be allowed to run its course, and that those in which diffuse septic peritonitis occurred should be allowed to die in order to save the others from an operation which would have to be undergone later. It was merely adopting the general principle that when there was a grave possible danger ahead, and there were no means of finding out the condition of things, or of controlling the issue, it was wise to see how matters stood, provided it could be done without undue risk. But such preventive operation must be distinguished from what were commonly called early operations—those performed upon the fourth or fifth day—which were nearly always too late.

Mr. RAYMOND JOHNSON was glad that Mr. Moullin had insisted upon the importance of a rapid pulse as an indication that an attack of appendicitis was a severe one. He entirely agreed with this view, and had often noticed the serious importance of increasing rapidity of the pulse-rate in many acute abdominal conditions, even when the other symptoms seemed to be favourable. He advocated early operation in the sense in which the term had been used by Mr. Moullin. He did not believe that in a case of acute appendicitis, in which the inflammation was from the first localised by adhesions, the risk of a subsequent general peritoneal infection was considerable. If performed early the operation would undoubtedly be done in a considerable number of cases in which a satisfactory result would have followed without it; but here and there it would save a life which would otherwise have been lost. The practice could only be justified if in itself the operation involved no serious risk to life. It was strongly felt that the danger of the operation was very small indeed, and that the risk of subsequent trouble from bulging of the scar was largely preventable if division of the muscular layers of the abdominal wall was avoided. He would hardly have anticipated that altogether reliable evidence as to the condition of the appendix could have been obtained by the introduction of the finger through the very small opening used by Mr. Moullin, and would have feared the risk of disturbing the adhesions around a small collection of pus. For these reasons he thought that a more free incision was advisable.

Drs. ROCHE LYNCH, F. W. COCK, and E. CAUTLEY also took part in the discussion; and Mr. MOUILLIN replied.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

G. ANDERSON CRITCHETT, M.A., F.R.C.S.E., President, in the Chair.

Thursday, October 18th, 1900.

BLINDNESS FROM BULLET WOUND OF THE ORBIT.

MR. NETTLESHIP gave details of six cases in which the sight of one or sometimes of both eyes was lost or impaired by the passage of a bullet through the orbit without wounding the eyeball. These had been written of as "indirect gunshot injuries of the eye," in which the passage of a bullet through some part of the orbit was followed immediately by free bleeding into the vitreous, and, as this cleared up, by various and mixed appearances of choroidal rupture, choroido-retinal exudation, and changes at the disc without shrinking of the eyeball or any sign that the globe had been ruptured. The question as to how these injuries were produced was answered by the description of a case in which the eye was excised by Cohn and examined by Waldeyer in 1871. Cohn concluded that a contusion which directly affected only the outer surface of the sclerotic might set up severe and extensive plastic inflammation in the subjacent retina and vitreous. Mr. Nettleship mentioned other cases by Cohn, as well as one shown before the Society last year by Mr. F. Menteith Ogilvie. He then described his cases in detail. The feature of interest in them was the extensive damage of the choroid and retina without wound of the eyeball. These indirect injuries were to be explained by the force of the projectile being changed into radiating vibrations of the tissue particles, which as Professor Stevenson of Netley said, "act as secondary missiles." These, passing through the dense sclerotic without damaging it, seriously injured the less resisting choroid and retina whilst dragging on the muscular insertions by the bullet, might also contribute towards the injury. Mr. Nettleship mentioned some interesting experiments by Cohn and Stevenson, which had also been verified by himself, in which they had fired bullets at cylindrical metal vessels, some containing air only, and others water, in both cases with no lid on the top. He showed photographs and the actual cylinders from his own experiments. In the former cases the bullet went through without producing much effect on the surrounding parts, but in the latter, in which the cylinder contained water, the vibrations set up in the fluid had produced very marked changes around the holes made by the bullets. In this way the spinal cord might be injured by vibrations passing through the bone without fracturing the latter. He then compared the results of bullet wounds with those of optico-ciliary neurotomy, and also with the experimental evidence produced by Poncet, who in healthy rabbits cut the optic nerves and the posterior ciliary nerves. This latter caused from the eighth day onwards degeneration of the nerve elements of the retina, with increase of its fibrous structures, marked papillitis, and some inflammation on the outer surface of the vitreous; later on the choroid, near the disc, became atrophied, and finally the degenerated retina became pigmented. In all these cases there was a great tendency for the retina and choroid to become united by inflammation, and this explained the slight tendency there was to detachment. In most of the gunshot cases other cranial nerves were involved, and the commonest paralytic sign was ptosis.

Other cases were mentioned by Messrs. DONALD GUNN, HARTRIDGE, GRUBER, TREACHER COLLINS (who had had two) and the PRESIDENT.

ORTHOPTIC TREATMENT OF CONVERGENT SQUINT IN YOUNG CHILDREN.

MR. C. WORTH said that the treatment adopted by most surgeons was as follows: The refraction was corrected and glasses were worn constantly. In nearly 30 per cent. of constant monolateral squint this treatment sufficed to render the eyes "straight," and in some of them binocular vision was obtained and the case was cured. In the 70 per cent. which were not cured by glasses operative treatment was postponed until the age of 7 to 8 years, but only a small proportion of these obtained binocular

vision, the time having gone by when this might have been developed. There were three chief difficulties to be overcome in carrying out orthoptic treatment in young children. (1) The child would only submit to treatment so long as he found it interesting; (2) the suppression of the vision of the squinting eye; (3) the angle of the squint was usually so great that an ordinary stereoscope could not be used even if there were no suppression. This latter difficulty was overcome by an instrument invented by the author which could be adapted to suit a squint of any angle or direction and so stereoscopic vision was possible. The instrument was shown and carefully described. He found that those who saw binocularly naturally arranged themselves into three distinct classes according to the degree in which they possess this faculty, thus—first grade, simultaneous macular perception; second grade, true fusion with some amplitude; third grade, sense of perspective. Mr. Worth then described the treatment; before commencing it the visual acuity of the child's squinting eye was obtained in the manner which he described. The instrument was then adapted to suit the angle and direction of the squint and a cage, for instance, was shown before the fixing eye and a bird before the squinting eye. The child then saw only the cage with the fixing eye. The illumination of this was gradually diminished while that of the bird was increased until the bird was seen. Should the cage then have disappeared, the illumination was modified until the bird was seen in the cage. Many other devices were used until the patient learned to blend the two images, and so reached Grade I. After a time the angle of the instrument might be altered slightly without destroying the picture; the eyes followed the object and maintained fusion, and so Grade II was reached. Exercises were then continued until the third grade of binocular vision was obtained. Next, the illumination of the object slides was gradually equalised, and then an attempt was made to separate the mirrors more and more while the visual axes followed the deviation of the objects. The author had carried out treatment in some hundreds of cases and in a large proportion it had caused a disappearance of the squint and the acquisition of the highest grade of binocular vision. In other cases, though patients had Grade III while looking into the instrument, the squint did not disappear. An occasional visit with exercises was sufficient to preserve the fusion faculty until the child had arrived at an appropriate age for operation. The desire for fusion then overcame any slight defect which might remain and a perfect cure resulted. The special points of this instrument were: (1) Its adaptability to any form or degree of squint, including those cases in which the globe was rotated about an antero-posterior axis; (2) suppression of vision of squinting eyes was gradually overcome by unequal illumination; (3) the variety of devices shown in the instrument interested and amused the child, so that he would readily give all the help he could at a most important point.

Cysticercus of the Eye.

A case of cysticercus in the eye, which had come under the care of Dr. David Wood, of Capetown, was, in his absence, related by Mr. Nettleship. The patient was a French cook, who was first seen by Dr. Wood on April 6th, 1900, after spending some time on the Modder River. On dilating the pupil he saw some choroidal changes, and on the outer side a large round greyish body. On May 2nd he saw the living cysticercus moving its suckers, and the hooklets were also visible; the vision was failing. In June the vision was worse, and by July 15 it amounted to P. L. only, and this was due to the fact that the retina was becoming detached. The cyst was then loose in the eyeball, but no details of the head were visible. On arrival in England in August Mr. Nettleship saw the patient. There was then a large cyst seen at the upper part of the vitreous covered with fine white calcareous bodies. A dense white patch was seen in one part, which frequently gave a heaving movement. On September 7th movements were still visible. The eye being blind the question of operation was not entertained. The patient had now gone back to South Africa, and this was the last note up to the present time. The man had first noticed some affection of the eye in November last.

Mr. Lang expressed surprise that in the early stage, when it was (he thought) subretinal, no operation was undertaken.

Mr. Nettleship, however, stated that he gathered from Dr. Wood's notes that it was in the vitreous when he first saw it.

Dr. Little (Manchester) said he had seen five or six cases of cysticercus in the vitreous, and in appearance they resembled that described by Dr. Wood. If left to themselves the eye became blind by slow but progressive choroido-retinitis. In two he had tried to extract the cyst, but this was not successful, and in both the eyes became worse and had to be excised a few months later. Some had been successfully removed, but his own experience led him to look upon the prognosis as extremely bad, whether an operation were attempted or not.

Card Specimens, etc.

Mr. H. Work Dodd: Voluntary bilateral nystagmus. Mr. E. K. Campbell: Double cataract after typhoid fever. Mr. Grimsdale: Double congenital lachrymal fistula. Mr. W. Lang: Rupture of nerve fibres at the optic papilla. Dr. Edridge-Green: A case of trichromic colour blindness. Mr. John Griffith: Symmetrical exostoses in the neighbourhood of the lachrymal sac. Mr. Treacher Collins and Dr. J. S. Hinnell: Diminished tension and the appearance of optic neuritis persisting for nine months after a wound of the orbit by a shot from an air gun. Mr. J. Herbert Fisher: Tubercle of conjunctiva.

REVIEWS.

SOME RECENT WORKS ON HYGIENE.

Founded on the original treatise of Edmund Parkes, Professor Lane Notter's *Theory and Practice of Hygiene*,[1] of which a second edition has just been published, may fairly claim to be a new book. There is certainly enough new matter in it to justify the claim. The first edition of the new work retained the historical portions of the original work of Parkes, supplemented by what was needed to bring them up to date, with very full accounts of the methods, appliances, and legislative enactments that were new. The late Dr. Parkes, in the fourth edition of his manual, published in 1873, placed the strictly military part of a work, intended at first for army officers, in the second part of the volume, to make the book more convenient for "civil medical officers of health," and at their request. This second part still occupied 574 out of 665 pages. In the seventh edition, Professor De Chaumont gave to the "service of the soldier" 247 pages out of 766. In the present work of 1085 pages, military hygiene occupies 67 and marine hygiene 32. Much of the remainder of the book is, of course, as important, some of it more important, to the officers of the service, but a good deal—especially, perhaps, the long chapter on sanitary law—is evidently intended for the civil officer. The first chapter deals, as did the first chapter of Professor Parkes's work in 1873, with water, and there is not unnaturally a good deal of the original work left. Amongst what is new is the treatise (40 pages) on the quantitative and qualitative bacteriological examination of water. For such as have already had a good deal of practical work at bacteriology, but who have not kept quite in touch with the times, this treatise will doubtless prove of the greatest value. Major Horrocks, who has made a speciality of the subject, is responsible for this part of the chapter. It is freely illustrated, and, so far as an extremely condensed account of such a subject can be, it is lucid. The chemical examination of water is also well up to date. On page 17 we notice an instance of textbook copying. Pointing out that spring water often differs from that of the river flowing by, an instance is given according to which the water of the Ouse at York contains only 13 parts per 100,000 of the salts of calcium, magnesium, sodium, and a little iron. It is then stated that "the wells in the neighbourhood pass down into the soft red sandstone (Yoredale series) which lie below the millstone grit," and that the water from these contains as much as 92.8, and in one case 137 parts per 100,000 of total solids. Now, neither does the soft red sandstone near York belong to the Yoredale series nor does it lie below the millstone. Dr. Parkes in 1873 used very nearly the same words. He even spelt the name of one of the tributaries of the Ouse in the same unusual way. He said "the wells in the neighbourhood pass down into the soft *new* red sandstone which lies below the millstone grit." Now under the drift a "new red" does lie at York, though

[1] *The Theory and Practice of Hygiene* (Notter and Firth). By J. Lane Notter, M.A., M.D., and W. H. Horrocks, M.B., B.Sc. Second edition. London: J. and A. Churchill. 1900. (Roy. 8vo, pp. 1104, 15 plates, 124 other illustrations. 25s.)

not *below* the millstone grit. In De Chaumont's edition of *Parkes* in 1887 the misprint of the word below is repeated, but the anomaly of a new red sandstone lying *below* the grit is got rid of by leaving out the word *new* and inserting the explanatory word *Yoredale* in brackets, thus making two mistakes out of one. The present authors are not, perhaps, to be blamed for carrying a new geological formation to York or for placing the new red sandstone under the millstone grit. Their argument is not invalidated by their sinking their wells a few thousand feet too deep. It is an interesting illustration, however, of the manufacture of textbooks. The chapter on air is followed by one on ventilation and heating. The chapter on foods runs to 122 pages, and that on beverages to 45. In the former the composition and analysis of milk is very fully discussed, though not in more detail than the importance of the subject demands. The bacteriological examination here also is not passed over. A valuable table, on page 383, gives the percentage composition of some preserved and prepared foods. The sections on scurvy and on the dietetic value of alcohol, the authors point out, are given in almost the very words of Parkes. Neither have the chapters on clothing and exercise been much altered. That on soil contains, of course, much new matter. The chapter on habitations, in which are inserted copies of the Local Government Board's plans for small infectious hospitals, leads on to the disposal of sewage and refuse, and another on parasites to the important subject of the infective diseases. Sections on their nature and origin, on immunity and protection, are followed by details as to the diseases themselves. These include, as might be expected, discussions of pneumonia, tetanus, and tuberculosis. On the subject of plague, specially interesting to most of us at the present time, we are told that "inoculation does not appear to convey any marked degree of immunity within the first few days after the inoculation has been performed. The duration of protection, also, is not yet known; it certainly lasts for a considerable number of weeks." On the whole, the book, as it grows, takes on more and more of an encyclopædic character. The authors have made every effort to bring the subject-matter well up to date, and they have been wonderfully successful. The position we should be inclined to assign to the work is one midway between the condensed, terse, but eminently practical, textbook of Whitelegge, and the more bulky health dictionary of Stephenson and Murphy. It is one that should be absent from the shelves of no one working at public health.

DR. NEWSHOLME has published in a small volume the able and painstaking address on *Epidemic Diarrhœa*[2] which he delivered on his election to the presidency of the Incorporated Society of Medical Officers of Health, in his opening remarks he apologises for the fact that he has chosen a subject which many will consider to be worn threadbare, and concerning which he had no startling novelty to reveal. No diffidence, however, need have been entertained in selecting the subject of a disease which, in 1897, caused 4.8 per cent. of the total deaths from all causes in England and Wales, as compared with 7.6 per cent. for the six other chief zymotic diseases; and most certainly the manner in which the difficult subject has been attacked calls for nothing in the nature of an apology. True it is that Dr. Newsholme has nothing startling to tell us; but he adduces valuable corroborative testimony to the correctness of the conclusions drawn by Dr. Ballard, and published in his report on the subject in 1888, and he throws some important sidelights on the etiology of the disease. He shows from a careful consideration of diarrhœa mortality in the "great towns," that the complaint is least prevalent among populations living on impervious and rocky soils, and that probably the reason is that polluting fæcal and other organic impurities do not cling to or soak into such soils. He finds that diarrhœa is most prevalent where the systems of removal of sewage and house refuse are the least satisfactory, and from this circumstance the conclusion is reached that the general adoption of the water-carriage system of sewage removal in lieu of pail closets, and the increased efficiency of municipal scavenging, would reduce the diarrhœal death-rate. On this head reference is made to the interesting experiment which was carried out at Leeds in 1892 by Dr. Spottiswoode Cameron, which has scarcely received the attention that its importance merits. One district, comprising nearly one-tenth of the whole town, was specially scavenged on the approach of summer, and this was the only district in Leeds in which there was a decrease in summer diarrhœa mortality. The extra scavenging comprised more frequent sweeping of streets and yards and more efficient flushing of drains and gullies. In addition to high temperature, deficiency of rainfall, particularly in the third quarter of the year, determines the incidence of diarrhœa, but Dr. Newsholme fails to find any quantitative proportion between the above meteorological factors and the amount of diarrhœa in the different "great towns." When, however, the natural scavenger-rainfall fails, there is incontrovertible testimony to the fact that efforts to supplement it by the swilling of streets and yards will tend to reduce the prevalence of a disease which is so general and fatal during the summer months. It will, moreover, add greatly to personal comfort; and these two considerations should suffice to impel local authorities to an increased use of such means of cleansing.

[2] *A Contribution to the Study of Epidemic Diarrhœa.* By Arthur Newsholme, M.D., F.R.C.P. London: Rebman, Limited. 1900. (Demy 8vo. p. 73. 2s. 6d.).

Written mainly for employers of labour, foremen, and intelligent workmen, Dr. PARRY'S book on the *Risks and Dangers of Various Occupations*[3] deals with most of the important industries of our country. As an illustration of the character of the atmosphere in which ultramarine makers work, mention is made of the fact that for two weeks after leaving his employment a worker keeps bringing up blue-stained expectoration. The dust in factories may be of mineral, vegetable, or animal origin, may be fine or coarse, poisonous or non-poisonous. Sharp angular particles are more injurious to the lung when inhaled than those that are soft and rounded. Much of the mortality from lung disease in dusty occupations can be diminished by lessening the dust and preventing it getting into the lungs by better ventilation and by moistening the floors. It is difficult to get workpeople to wear respirators. They are rather heating, and besides they cost money, which is always a consideration with some people. Dr. Parry alludes to the high death-rate of Cornish miners compared with those who work in coal, and properly explains the circumstances by the sharp irregular particles of tin dust possessing greater penetrating power than the blunter carbon particles. If anything were required to show how mortality from occupational disease can be diminished it is only necessary to revert to coal mines, and observe how the health and longevity of the collier have improved with the excellent system of ventilation now in practice. It is unnecessary to deal with the various trades included in the book. Mother-of-pearl cutters are said to suffer from bone affections of a doubtfully rheumatic nature. We are not aware that this has been observed in Sheffield, where this industry is largely carried on. To the remarks on the grinding trades of Sheffield we can add little or nothing. As regards the earthenware trade, it is shown that the mean age of potters at death is 46½ years, while that of other males in the same district is 54 years. They are carried off by pulmonary, heart, and nervous diseases. Most of the trades in the country are alluded to, and upon those that are dangerous the necessary attention is bestowed, and means are recommended whereby danger may be prevented or lessened. The author has evidently studied his subject with care, and has made full use of the experience of others who have had a larger insight into the industries of the country. It is no very serious drawback to the book that it lacks originality. Read by those for whom it was written, it will, if its instructions are acted upon, help to diminish the unnecessary suffering and ill-health that are still too prevalent among the working classes of this country.

[3] *The Risks and Dangers of Various Occupations and their Prevention.* By Leonard A. Parry, M.D., B.S., F.R.C.S. London: Scott, Greenwood and Co. 1900. (Demy 8vo, pp. 202. 7s. 6d.)

AT the recent Congress of Hygiene held in Paris, it was proposed that an additional tax should be placed on alcohol for the benefit of the tuberculous.

THE New York Board of Health has, at the suggestion of its President, decided to erect a bacteriological laboratory near one of its hospitals solely for the purposes of studying plague.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st, 1900. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-office orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, OCTOBER 27TH, 1900.

PLAGUE.

The recent occurrences of plague in Glasgow, and the occurrence of a case of plague in Cardiff, serve to remind us that we cannot rely upon the continued freedom of our country from this disease, and that it is necessary to design measures for limiting its spread from any cases which may escape the vigilance of port sanitary authorities.

The most urgent need at the present time is that medical practitioners should be as fully informed as possible of the nature of this disease, of its appearances, of its natural history, and of the prophylactic and curative measures that may be adopted, for upon the accuracy of this knowledge, and upon the action taken on it may largely depend the extent to which our death-returns are increased.

For this reason we present to our readers in the current number a series of papers in which plague in its several relations is fully discussed by competent writers.

The Local Government Board has issued an Order requiring the notification by medical practitioners of all cases of plague, and the first question which presents itself to the profession is, By what symptoms will the disease be recognised? The reader of Mr. Cantlie's paper will perceive that plague in its early stage much resembles other acute specific diseases, but the presence of a bubo, which is found in three-quarters of the cases of plague, and usually appears as early as the third day, will in the majority of cases strongly suggest the nature of the malady. Adenitis, Mr. Cantlie tells us, occurs in all varieties of plague except in the pneumonic and fulminant. In these varieties there is obviously greater difficulty in diagnosis, and indeed the description of the last does not differ materially from that of other infectious maladies in which, in rapidly-fatal cases, the patient simply presents symptoms of virulent poisoning. The interesting account given by Dr. Savage and Mr. Fitzgerald of the sailor in Cardiff leads to the conclusion that this was a fairly typical case of plague, and we note here the reference to the facial expression of the patient which so often assists in diagnosis.

The mild cases of pestis ambulans are evidently a source of great difficulty, especially when there is absence of severer cases of plague in association with them which could throw light upon their nature. Reliance must be placed largely upon bacteriology, at any rate in the earlier cases, to determine beyond doubt whether a particular patient is suffering from plague. From the time when Yersin and Kitasato described the bacillus pestis, it has been carefully studied, and the mere staining and microscopic examination of fluid from a gland will in a large majority of cases enable a definite opinion to be at once expressed. In more doubtful cases cultivation of the bacilli and subsequently inoculation of a susceptible animal, such as the guinea-pig, will be needed before there can be final decision. Dr. Savage and Mr. Fitzgerald state that fluid from the glands in the Cardiff case was used to inoculate an agar slope tube at 4 P.M. on October 2nd, and that "by 10.30 A.M. the next morning it was possible to give a diagnosis pointing strongly to the case being one of plague." On the completion of the first twenty-four hours a guinea-pig was inoculated with the cultivation, and on October 6th at 1 P.M. the animal died, the body yielding enormous numbers of bacilli.

It would appear that the bacillus may enter the body by the skin, but that the surface must be broken for this purpose. The frequency with which the inguinal glands are affected has been attributed to the fact that natives who have suffered usually go about with bare feet, and that inoculation of the feet is thus brought about. It is, indeed, stated that women in India suffer more from affection of the axillary glands than men, and this is attributed to their employment in domestic duties which are not performed by men. The theory is no doubt attractive; but, as pointed out by Mr. Cantlie, Europeans, whose feet are covered and whose hands are exposed, suffer from enlargement of the inguinal glands. The affection of the cervical glands is generally held to imply that the virus has entered by the tonsils.

The part played by parasites is not definitely known, but there is no denying the possibility that it may be a large one, and that it may explain the enlargement of the inguinal glands in Europeans whose feet are protected against other opportunities of inoculation. How far the rat is concerned in the infection of man is a matter concerning which different opinions are held. That this animal is readily infected and that rats die in numbers when plague is prevalent are well-established facts. This is easily understood when it is recollected that the fæces of human beings suffering from plague contain the bacillus, and that rats in sewers and elsewhere must have abundant opportunity of coming into contact with plague dejecta. Rats may of course infect grain and in turn become infected themselves from grain, and in this connection we note that the infection of the Cardiff patient might, so far as time is concerned, have been associated with the discharge of maize from the *South Garth*. Several rats on this ship were found dead during the voyage from Rosario, an event which corresponds with what has been elsewhere observed, rats sometimes being found to be dying before a single human being is known to have suffered from plague. These questions are no doubt interesting and important, but the great fact remains that plague infection is conveyed from one human being to another, and this is no doubt the usual way in which the disease is spread. It is matter for congratulation that water and food would only convey infection exceptionally, and that they are not likely to act in this way at all.

There is a general consensus of opinion that Haffkine's prophylactic is of very definite value in protecting against

attacks of plague. The inoculation of this prophylactic causes only temporary illness, and there appears to be substantial reason why those whose duties bring them in contact with cases of plague should be safeguarded by its use. Dr. Calmette's caution as to the use of this fluid at a time of actual attack of plague suggests the need for watchfulness, and Miss Christie's explanation of the manner in which the fluid is used will be found of real practical value. More doubt has been expressed of the value of Yersin's serum, but the variable results obtained may, as suggested, be due to difference in the method of its preparation, the serum obtained by injection of the horse with dead bacilli being inferior to that obtained by the injection of living bacilli. It is much to be hoped that this question will be speedily solved. The process of preparing a horse occupies considerable time, and it is certainly important that sufficient antitoxic serum should be always available if it is found to have the value which is needed. The importance of adopting special precautions in the laboratory when working with plague bacilli was manifested in Vienna a year or two ago. The warning of Professor Delépine and the paper by Mr. Pakes, therefore, have a fitting place in this issue.

We need only in conclusion refer briefly to the public measures which may be adopted for the limitation of the extension of plague if cases should appear in the midst of our populations. Foremost among these is the immediate isolation of the sick. If the case be definitely one of plague, the patient will of course be removed direct to the hospital provided for persons so suffering. But it may be impossible at once to determine the nature of the malady, and every person, therefore, who is "suspect," should be at once isolated in a suitable building unless, of course, his home surroundings should themselves give all the opportunity necessary for this purpose. The employment of medical men familiar with plague will in great measure enable the course which should be adopted to be taken at once. At the present time material from every "suspect" should be examined by bacteriological methods, for it is of the greatest importance that any doubt as to the nature of such a case should be removed.

While steps are thus taken to prevent the sick from infecting others, those who have been exposed to them should, as in Glasgow, be at once placed under medical observation in a building belonging to the health authority and be detained there until time has definitely shown that they are not incubating the disease. If at any moment any of these persons should show signs of indisposition they should be at once separated from their companions until it is known whether or not they are suffering from plague. Beyond this there should be daily inquiry as to the health of persons in the immediate neighbourhood of the residence of persons who have been attacked so as to ensure the early detection of any cases which may occur, and so as to secure that any unreported case may not remain unknown. If actual plague occurs the clothes and bedding of the patient should be destroyed by fire and complete disinfection of the premises carried out. A strong solution of perchloride of mercury is very destructive of the plague bacillus, and the washing of wall and floor surfaces with this solution appears to promise better results than the use of other disinfectants. Sanitary authorities are no doubt already taking steps to see that they are provided with the means of isolation in case it may be needed. They would do well to have brought to their knowledge any conspicuous mortality among rats, and if such should occur the matter should be investigated by their officers, and bacteriological examination made of the bodies of the animals. It would obviously be well that steps should be taken to secure the destruction of these pests before plague makes its appearance.

We may well contrast the state of our knowledge of plague at the present time with that of the year 1665, when this disease proved so destructive of life. If plague should now come, it would not only find that the condition of the population was very different from that of two centuries ago, but there would be available all the knowledge which has been obtained since, which would be successfully utilised to prevent any serious epidemic. In this matter the safety of the public is in the hands of the medical profession.

THE LOCAL GOVERNMENT OF LONDON.

Next Thursday, November 1st, will witness a considerable revolution in the machinery of local government in London. Vestrydom, with all its picturesque associations, is then to suffer painless extinction—at any rate, its name. It rests with the electors, on a franchise of the broadest kind, to determine what shall take the place of that hoary parochialism on which critics, from Charles Dickens downwards, have lavished ridicule. Twenty-eight brand new "metropolitan boroughs" are, under the magic influence of the London Government Act, 1899, to arise phœnix-like from the ashes of the congeries of vestries, district boards, Adoptive Act Commissioners, *et hoc genus omne*, which have for the last half century, and longer, amazed and irritated the misgoverned and long-suffering Londoner. The fear, at one time not unnaturally entertained (in view of the Prime Minister's utterances) that the great central functions of municipal government which for the last dozen years have, on the whole, been well discharged by the County Council might be distributed among the new borough councils, has been dispelled by the course of events. The "old city," as the Royal Commission on "unification" presumed to call that sacred square mile over which the Lord Mayor reigns, likewise remains practically untouched by the new Act, and continues to be at once the only unreformed municipal corporation in the kingdom and the emblem of civic hospitality at home and abroad.

The new borough councils, which on November 9th will choose mayors and aldermen, the latter to the number of one-sixth of the elected councillors, have in some respects more convenient and natural geographical units under their management than was the case with the old vestries. Moreover, a real advance has been made in reducing the number of members of these local governing bodies to not more than seventy, including the aldermen. It is to be hoped that experience may prove that the elected shall be fitter as well as fewer. The insignia of mayoralty and the appanages of aldermanic rank may perhaps have their attractions for some, though the glory may be in

some measure diluted by the very prodigality with which these offices are thus multiplied. The new "borough" of Westminster, composed of eight areas previously enjoying autonomy in matters of local government, is already aspiring to be a "city," and in its vaulting ambition covets a lord mayor for itself.

It is of vastly greater importance to the average Londoner, and to those who have regard to questions relating to the public health, that the electors should show real interest in local government, in the first place by going to the poll, and so redeeming local elections from the scandal of lack of interest, as shown by the mere fraction of the electorate who have generally thought fit to exercise the franchise; and, in the second place, by seeing that the men for whom they vote are qualified by experience, by knowledge, and above all by freedom from ulterior motives—pecuniary, personal, or political—for the discharge of the duties which will devolve upon them.

Medical officers of health have, in the past, too often been bullied and browbeaten by insolence of office on the part of the house-knacker, the slum-owner, and the jerry builder. As local health authorities these new borough councils should be vigilant in abating nuisances, in checking adulteration of food and drugs, in the registration and inspection of trade premises required by law to be registered and inspected, in checking the spread of infectious diseases, in stopping overcrowding by the adequate provision of healthy dwellings, and the rooting out of rookeries without fear or favour, affection or ill-will. Baths and wash-houses are still lacking in many districts of the metropolis, dust removal is in many parishes most inadequately carried out, relatively few bakehouses in London are above ground, and the sanitary condition of these subterranean premises is often disgraceful in the extreme. Only by registration and frequent inspection of houses let in lodgings can some landlords be reminded that they have duties as well as rights. Lesser officials will be very much what the councils choose to make them; reasonable security in tenure of office; absolute purity and freedom from illicit commissions; adequate remuneration and generous and courteous treatment must be resolutely insisted upon. If otherwise, our new borough councils will be but "an old friend with a new face," and the evils of Bumbledom will again strangle the growth of civic life and civic responsibility in London. We wish the new departure to start well, and in the name of healthy living and zealous administration we wish the new councils "God-speed."

CHILD POPULATION.

In the statement which Lord Reay, Chairman to the London School Board, issued recently to the members, dealing with the work of the Board during the past three years, he draws attention to the significant but by no means surprising fact that during the last triennial period of the Board's existence the number of children between 3 and 13 years of age requiring public elementary school accommodation in the London district had decreased. During the three years preceding 1882 there was an average annual increase of 20,000, but the rate of increase has gradually become less, and at the close of the present triennial period there were 10,500 fewer children of school age than at the beginning. Lord Reay draws the very safe conclusion from these facts that there will not be any serious increase in the future in the number of children requiring accommodation in the London School Board district.

This result has long been anticipated by those who have noted the extent to which the fertility of married life has declined in this country during the last twenty-five years, causing a fall in the birth-rate from 36·3 to 29·3. Owing to this alteration in the relation of births to population, there were 16 children under 10 fewer to each 1,000 of the general population at the last census than at the preceding, and with the same cause continuing in operation the diminution will be found to be considerably greater at the forthcoming census. Hence the list of scholars for the public elementary schools is stationary and even declining, although the population is still increasing.

It is curious, considering its important practical effect upon the work of School Boards, that this natural result should not have been more generally foreseen by them. Even when the result is demonstrated by their schedules and educational censuses, the true cause is not recognised and acknowledged, but the whole decline is assigned to minor factors.

The Chairman of the Birmingham School Board in his last annual address had to tell a story very similar to that told by the Chairman of the London Board—a decrease in the number of children on the registers along with an increase in the population. Both, however, ignored the rational explanation that it is due to the general falling off in the child population. Lord Reay was inclined to attribute the change to the gradual depletion of London proper through an overflow of that part of the general population which most requires school accommodation into the surrounding School Board districts such as West Ham and Croydon.

The remarkable alteration which the fall in the birth-rate has produced in the age constitution of the population and its effect in reducing the relative proportion of children of school age is well shown in the case of the United Aston School Board District, the ninth triennial educational census of which has recently been issued. The district consists of a homogeneous industrial suburban population of 80,000, a rapidly-growing parish of 16,000 which receives part of the overflow from the city of Birmingham, and two rural parishes. At the enumeration in 1887 the average number of children of school age to each occupied house throughout the district was 1·25, in 1899 it was 0·96.

The decline has occurred in each part of the district, though not equally; strange to say, it has been most marked in the rapidly-growing parish to which migration has recently been very active. There the number of children of school age has fallen from 1·20 to each occupied house in 1887, to 0·88 in 1899, or, to put it in another way, the occupied houses in the Erdington parish increased by 536, or 23½ per cent. in the last triennial period, and the number of children of school age increased 312, or 14 per cent. The country parish of Water Orton, with 104 occupied houses in 1887, furnished 100 school children; but in 1899, 130 occupied houses furnished only 86 school children.

In the report from which these statements are quoted the

Clerk to the Board, who has conducted the triennial educational censuses throughout the 25 years of the Board's existence, points out that this social change has been accentuated through the very high birth-rates which prevailed in that locality prior to 1881, but have now been succeeded by a reversion to the low birth-rates prevailing generally throughout the country.

THE RECONSTITUTION OF THE UNIVERSITY OF LONDON.

THE first meeting of the newly-elected Senate of the University of London took place on October 24th at the University Buildings, South Kensington. There was a very large attendance, and many of the Senators met one another for the first time, while several members of the old Senate had disappeared. We learn that Lord Kimberley, the Chancellor, presided and welcomed the arrival of the Senators. It was understood that the question of election of a Vice-Chancellor in the place of Sir Henry Roscoe would not arise until June next year, when, according to the old standing orders, his tenure of office terminated. A committee of reorganisation was appointed, composed of members representing the various interests on the new Senate; this Committee, we understand, will set to work at once and report to the Senate as to the completion of the standing committees, the changes required in the staff, the revision of standing orders and by-laws, and generally on the procedure necessitated by the statutes which are now in force. Some dissatisfaction has been expressed as to the postponement of the election of deans of the various Faculties; but this appears to be due to the statutes requiring the new Senate to prescribe the mode in which such election is to be carried out. There is also some ground of complaint in reference to the place of meeting of the Senate and its committees, the new offices being far less central and less convenient to many professional men than were the old offices at Burlington Gardens. A communication, we understand, is to be addressed to the Government on this question.

EXPERIMENTAL PROOF OF THE MOSQUITO-MALARIA THEORY.

DR. MANSON, in the BRITISH MEDICAL JOURNAL of September 29th, gave some particulars of the experiment which has been carried out in the Roman Campagna by Drs. Sambon and Low. It will be remembered that Drs. Sambon and Low, and Signor Terzi and two Italian servants, early last July went to reside in a hut specially constructed to exclude mosquitos, situated in a most malarial district of the Roman Campagna. Dr. Manson stated that down to September 21st the experimenters had remained quite free from malarial fever. The experiment has now come to an end, and on October 19th the experimenters left Ostia for Rome. The experiment has been completely successful, and the hut has now been taken over by the municipality. A week before the termination of the experiment, Professor Celli, Dr. Gualdi (the Medical Officer of Health for Rome), Dr. Fenwick, Dr. Brock, several ladies, and our correspondent in Rome paid a visit to the experimental hut, which has withstood the effects of the severe summer heat and the occasional thunderstorms excellently well. It is erected on sandy soil in a district not only water-logged but some 3 feet below the level of the sea, which is about two miles away. Castel Fusano, the hunting lodge of the King of Italy, which is surrounded by a splendid pine forest, lies between the sea and the hut, which is surrounded by some of the canals that drain the marsh of Ostia. These canals consist of two systems. The lower system drains the land situated below the sea level, and at the end of the principal canal the water is pumped into the large terminal canal of the high system, which discharges into an ancient *emissarium* that conveys all the water to the sea. Both the principal and secondary canals of the two systems, owing to their rich vegetation and almost stagnant condition, are excellent hatching places for the malarial and non-malarial mosquitos. The visitors found both experimenters in robust health, a condition which they, as well as the two other inmates of the hut (both of them Romans, who have never had malaria), have enjoyed all through the experiment, with the exception that Dr. Sambon suffered for some days from an attack of gastro-enteric catarrh. He quickly recovered without taking quinine. During this brief illness Dr. Low carefully examined his colleague's blood every day, but with negative result, so that it has been proved that the indisposition had no connection with malaria. By day the experimenters went freely about the surrounding country, but were always careful to avoid being bitten by the stray mosquitos which are to be seen, especially in shady places. In marked contrast to the healthy and ruddy appearance of the experimenters was that of two women members of a family of seven persons who live in a non-protected house about 200 yards distant from the experimental hut. All the family have suffered severely from malaria, and these poor women bore distinct traces of the sufferings they have lately undergone. It was truly an affecting sight, our correspondent writes, to contrast the picture of robust health which the experimenters presented with that of malarial cachexia engraved on the faces and indicated by the languid movements of these unfortunate women. They were but a sample, and that not an extreme one, of the hundreds of thousands of such cases which are to be met with every year in Italy alone. Nevertheless, the picture had its bright side, inasmuch as it was a direct object lesson of the great value of the protecting method adopted by the experimenters and by others, such as Grassi and Celli, on a larger scale in various parts of Italy, and at little expense and personal inconvenience to the inhabitants of the protected houses. Dr. Sambon and Dr. Lowe stated that directly the sun sets the mosquitos made their appearance round the huts in swarms, and remained there until sunrise, when they suddenly disappeared. The *Anopheles* round the hut make a humming sound, but it is less acute than that produced by *Culex*. During the day a rare mosquito is seen, especially in shady places (under trees, etc.), and they may bite at this time. The number of the larvæ of *Anopheles* which are met with in the pools and canals varies very much from time to time, but on one occasion Dr. Sambon counted as many as 20 in a cubic centimetre of water from a pool.

THE IMPERIAL YEOMANRY HOSPITAL.

WE understand that the Imperial Yeomanry Hospital will probably soon come to an end as a voluntary organisation, and that the camp and hospital buildings at Deelfontein will shortly be taken over by the military authorities. The greater part of the surgical and nursing staffs have returned home, or are about to do so; about half the nurses sailing on board the *Spartan* and *Britannic*. The hospital has in fact fulfilled with remarkable success the object with which it was organised. The guerilla warfare which is now going on affects for the most part districts at a great distance from Deelfontein, which is now little more than a convalescent camp. It is understood that the military authorities intend in future to devote it to this purpose, for which both its site and arrangements seem excellently suited. Recent cablegrams announce that Prince Christian Victor of Schleswig-Holstein (who has been through the entire campaign since the arrival of Sir Redvers Buller in Natal last December) is now a patient in the Pretoria Branch of the Imperial Yeomanry Hospital

suffering from symptoms which leave room for doubt whether they are due to enteric fever or to malaria. We sincerely hope it will not be long before we receive news to allay the anxiety which the country at present shares with the Royal Family.

HEALTH OF KIMBERLEY DURING THE SIEGE.

The annual report of the Medical Officer of Health for Kimberley, dealing with the year 1899, which has recently been received, is an interesting document. The report says that the chief feature which influenced the health of the division of Kimberley during the year was the state of war which existed during the last two and a-half months of that year. The siege lasted until the middle of February in the present year. For the Borough of Kimberley and the Municipality of Beaconsfield the medical officer is able to give statistics, but for the other portions of the division of Kimberley, which were in the hands of the enemy during the time of the siege, naturally no statistics are forthcoming. He states that he has been informed that amongst the enemy encamped at Magersfontein and at various stations and trenches round Kimberley there is abundant evidence that enteric fever was very prevalent. During the few weeks preceding the siege there was a considerable influx to the township of refugees from Johannesburg and elsewhere, causing an increase of population and crowding of dwellings. There was a marked increase in the death-rate owing to the exigencies of warfare and the restrictions under which the besieged were placed. During the first nine months of the year the health of the townships was good, and compares favourably with other years and with other large towns in the colony. The report estimates that the populations of Kimberley and Beaconsfield comprise 16,300 Europeans and 28,200 coloured persons. The tables given show that the death-rate amongst Europeans for the year was unusually high; when, however, the last three months are omitted, that death-rate was only 17 per 1,000, which is the same as that for England and Wales, and lower than that for every other large town in the Colony. At the same time, such is the impartiality of the medical officer, that he points out that the number of deaths during the last three months of the year, even in ordinary times, is slightly above the monthly average. The death-rate, however, for the entire year was 42.6 per 1,000, and from that we shall see the tremendous increase in the death-rate during the siege. It was among the infants and young children, who are most easily affected by circumstance which influence adversely the general health of a community, and who therefore afford a delicate index of that public health, that the death-rate was phenomenally high. The number of infants under one year of age dying during 1899 was in the coloured infants 348 per 1,000 births registered in the year ending June 30th, and for European infants the death-rate was 304 per 1,000 born. The figure is an alarming one, but was only rendered so by the heavy mortality of the siege period. Amongst the coloured infants the rate was terribly high, almost half of those in the first year of life dying, when the whole year is taken into consideration, though the figure is decidedly reduced when the last three months are omitted. This plain, unvarnished record tells its own piteous story; no comment from us is needed. Dr. W. W. Stoney may be congratulated on having produced a laborious and interesting report, dealing with a period unique in the history of Kimberley, and never to be forgotten in the history of the British Empire.

DOES THE SOLDIER PAY FOR MEDICAL ATTENDANCE?

This question is somewhat sensationally asked and discussed in the columns of an evening contemporary, in connection with the case of a soldier who declares he was mulct in hospital stoppages, although wounded in the war. The soldier does not pay for medical attendance in any sense—the stoppages are for rations consumed in hospital. These stoppages, which in equity may be right or wrong, are made under conditions clearly laid down in Paragraph 65 of the Allowance Regulations, July, 1900, which states, in a subsection, that hospital rations are "free" to soldiers admitted into a military hospital "from wounds received in action, or from illness contracted on service with an army in the field." If hospital stoppages have been made under such circumstances then they are illegal and inadmissible, and were probably charged under a mistake. The soldier has his remedy in an appeal. The whole question of soldiers' stoppages, whether in or out of hospital, is one of some little difficulty, and cannot be discussed with advantage unless it has been carefully studied. There are two sides to the question: the soldier should be protected against the exactions of the State, and the latter against wilful damage and malignering or misrepresentation by the former.

THE *JOURNAL OF HYGIENE*.

We learn that arrangements have been completed for the issue by the Cambridge University Press of the first number of a new periodical, to be called the *Journal of Hygiene*, on January 1st, 1901. The journal, which will be edited by Dr. G. H. F. Nuttall, Lecturer in Bacteriology and Preventive Medicine in the University of Cambridge, Dr. John Haldane, F.R.S., Lecturer in Physiology in the University of Oxford, and Dr. Arthur Newsholme, M.O H. Brighton, will appear quarterly, and its scope will be similar to that of the *Archiv für Hygiene* and the *Zeitschrift für Hygiene*. It is intended to be devoted to original work on hygiene, and the editors have already received promises of such contributions not only from Great Britain and Ireland, but also from the United States, Canada, India, and Australia. We understand that the first number will contain a paper written by Dr. Nuttall in collaboration with Dr. L. Cobbett and Mr. Strangeways Pigg on the distribution of the mosquitos of the genus *Anopheles* in England. The genus is found all through the Fen district, and in fact all over England in low-lying parts. It is found also in many parts of England where there has been no malaria, that is at an elevation of 200 to 600 feet; the claim of Grassi that the geographical distribution of *Anopheles* coincides with the geographical distribution of malaria is therefore disproved, at any rate for England. Dr. Nuttall believes that it is simply a question of numbers, there being more *Anopheles* in low-lying countries, because there are more pools and ditches which form a suitable habitat for the larvæ.

FRIENDLY SOCIETIES AND THE MEDICAL PROFESSION.

We would call attention to the letter published at page 1273 from the officers of the County of Durham Medical Union. It appears that in Sunderland the fee paid by friendly societies to their medical officers is at present 3s. a year for each member. This is, it will be recognised, an extremely low payment. It is less than is paid by the majority of societies in other parts of the country, and is certainly utterly inadequate remuneration for the services which medical officers are expected to render. The members of the County of Durham Medical Union have represented this to the friendly societies, and have asked for the very moderate addition of 1s. to the annual payment, which would raise it to 4s. a year. This demand—which errs, if it errs at all, on the side of moderation—has been rejected, and at a meeting of the delegates representing various friendly societies in Sunderland, held on October 10th, it was resolved to establish a medical association in connection with the societies, and to bring it into working order on

January 1st next. We regret to read in a report from a local paper, to which our correspondents refer, that there were a large number of applications for the post of medical officer to this friendly societies' medical association. We venture to point out to medical men who have made such application that they would do well to consider whether, in seeking such a post, they are acting either for their own advantage or for that of the profession at large. It seems to us quite plain that they are not. The medical profession has always been ready, perhaps even too ready, to give freely its services to those who are not in a position to pay for them, but this is not the position in which the members of friendly societies stand. They would resent the idea of being pensioners on the charity of the medical profession, but they ought clearly to understand that a payment of 3s. a year is not remuneration. One of two things must happen—either they do not receive the best treatment, or they are, as we believe to be the case, receiving charity from the medical profession. This is very bad political economy, contrary to what the working classes claim for themselves, and injurious to the medical profession. We would, therefore, recommend any medical men who may have made an application, or may think of making an application to this proposed medical aid association in Sunderland, to seek information either from Dr. Hubbersty, or from Messrs. Graham and Shepherd Secretaries of the County of Durham Medical Union.

MEDICAL OFFICERS IN THE HIGHLANDS AND ISLANDS OF SCOTLAND.

WE are glad to learn that during the recent general election steps were taken to acquaint the candidates for parliamentary divisions of Scotland, especially in the Highlands and Islands, with the unfortunate position in which so many medical officers of those districts find themselves. Owing to the fact that the general election came suddenly, the effort was not so completely organised as it might otherwise have been, but we learn that several medical officers, who had supported the memorial to the Scottish Local Government Board in favour of the institution of arrangements for granting annual holidays, communicated with candidates and in every instance received satisfactory replies. Dr. W. L. Muir, Secretary of the Scottish Poor-law Medical Officers' Association, sent a circular to each parish medical officer suggesting to him that he should invite each candidate for the district to give his support, should he be elected, to the Bill which that Association has promoted—a Bill to Amend the Local Government (Scotland) Act, 1894. This Bill provides that medical officers shall be removable from office only by or with the consent of the Local Government (Scotland) Board. Assurances have been received from members elected for Highland constituencies, who will sit on both sides of the House, to the effect that they will support this Bill. As efforts to induce the Government to take the matter up have so far failed, we hope that each one of the Members who has expressed his sympathy with the Bill will be asked to put it down for the ballot at the beginning of the next session, as in this way it will stand a better chance of getting a good place. We are sure that any help which the profession in England can give to the Bill will be readily given.

"THE CUP O' KINDNESS."

IN more senses than one is it true that a man's worst foes are sometimes they of his own household, and it would be well if this possibility were kept in mind during the next few days by those who will welcome home from South Africa the first detachment of the defenders of the Empire. Both Lord Roberts and, more recently, Lord Wolseley have appealed to the admirers of these brave men that they should find some other way of manifesting their cordiality and gratitude than by soliciting them to indulgence in intoxicating drinks. In the natural excitement of welcoming relatives and friends and of praising our victorious army, it will be wisdom to recollect that the cup of kindness should be filled with discretion. As Field Marshal Lord Wolseley has pointed out in a letter dated October 3rd, our soldiers come from all walks of life; many of them must shortly return to the posts which their employers have patriotically kept open for them, and others will need to seek new situations. He suggests that they should be helped in their endeavour to preserve a good name for steadiness and sobriety before entering on their civil work. It would, indeed, be deplorable if by way of congratulating the men on being good soldiers of the State they should be induced, through the thoughtlessness of their acquaintances, to become bad citizens. As the Commander-in-Chief well says, he who encourages them in excessive drinking, far from being their friend is really their worst enemy.

MIXED MEDICAL CLASSES.

THE new regulations whereby women are admitted as ordinary students to the universities and colleges in Austria have already been the cause of some disturbance of academic calm. Professor Hermann Nothnagel, who holds the Chair of Special Pathology, Therapeutics, and Clinical Medicine in the University of Vienna, when he found a row of young ladies on the front bench of his class-room, refused to proceed with his lecture on the ground that it had not been prepared for students of the feminine persuasion. The girl undergraduates were then requested to depart, which they declined to do, and, as the chronicler relates, they had to be led out of the University, but whether from its rooms merely or from its precincts he does not state. At Graz, too, the lady medical students were ungallantly received by their fraternal colleagues on making their first appearance in the medical class-room. On this occasion the veracious historian records that the girl undergraduates took up a less firm attitude than their Vienna sisters, and left the room with sobs. If science knows neither frontier nor sex, apparently the aspirants to medical practice know both. It is stated that the Senate of the Austrian Universities is considering means to prevent further disturbances between students of the two sexes.

DISEASES OF OCCUPATIONS.

DURING the month of September there were reported to the Home Office the following number of cases of lead and arsenic poisoning and of anthrax in factories and workshops. Seventy-four cases of lead poisoning: 24 of these (22 males and 2 females) occurred in white-lead works, being 12 fewer than in the corresponding month of last year. There were 13 cases of arsenic poisoning due to the inhalation of arsensuretted hydrogen gas, 2 of which proved fatal and 1 of the non-fatal cases occurred in the eary part of the year. There were 8 deaths from occupation diseases during September, namely, 4 from lead poisoning, 3 from arsenic, and 1 from anthrax. Under the head of coachmaking, etc., 14 cases of lead poisoning are reported. While during September 74 cases of plumbism were reported there were 112 for the corresponding month in 1899. Although lead poisoning in house painters and plumbers is not compulsorily notifiable there were yet reported 27 persons as suffering from plumbism in these trades.

THE SOCIETY OF MEDICAL OFFICERS OF HEALTH.

THE annual dinner of the Incorporated Society of Medical Officers of Health was held at the Holborn Restaurant on October 10th. The chair was taken by the retiring President, Dr. Newsholme, and much regret was expressed that Dr. McVail, Medical Officer of Health for the Counties of

Stirling and Dumbarton, the newly-elected President, was unable to be present owing to illness. A telegram was sent to him expressing the gratification with which the Society learned that he was convalescing, and a hope for his speedy recovery. The toast of "The Society" was given by Dr. Tatham, Superintendent of Statistics, General Registrar's Office, who, in the course of his remarks, gave some interesting figures showing the improvement in the classification of deaths from "diarrhœal disease" which has taken place in London during the recent autumn, as compared with previous years. Taking the period of ten weeks in each year which most nearly corresponds with the autumnal excess in these diseases, it was found that in 1897, and also in 1898, nearly one-fourth of the deaths from diseases of this kind were referred to "gastro-enteritis." In 1899 the proportion thus returned increased to one-third. In 1900, however, after the introduction of the new terms "epidemic" and "zymotic" enteritis, the deaths indefinitely referred to gastro-enteritis fell from 33 per cent. to 20 per cent. The terms "intestinal catarrh" and "diarrhœa" have also in large measure been superseded, in the certificates, by the more scientific term "epidemic diarrhœa," the term which had found most favour with medical men during the last season. In London 500 deaths were referred to it, as compared with only 165 referred to epidemic enteritis and zymotic enteritis together. Dr. Porter, Dr. Herbert Jones, and Dr. Wilfred Harris, who spoke to various toasts, as well as Dr. Newsholme, took occasion to express their thanks to the British Medical Association for the support it had given to the movement which the Society had originated for obtaining fixity of tenure and superannuation allowances for medical officers of health.

PORNOGRAPHIC LITERATURE.

A SECOND-HAND bookseller has recently received a six months' sentence for selling indecent literature, which is so far satisfactory that it shows the police authorities are waking up to some appreciation of what is being carried on under their noses. Everyone who receives many catalogues from second-hand booksellers must notice among a lot of indifferent rubbish the large-type announcements of certain highly-priced works which it is not too cynical to suspect are the main purpose for which the whole catalogue has been compiled and circulated. Several medical correspondents have written to complain that they have received at their private residences a circular emanating from Paris offering a book stated to be written by Dr. Jacobus X***, at the price of two guineas, upon the subject of *Genital Laws, their Observance and Violation*. The author claims to be working upon strictly scientific lines, and states that he has the support of men of the highest standing in the English-speaking world, but it is remarkable that on the order form the publisher prints, "*N.B.*—We never publish the names of our subscribers." Another remarkable fact about this circular is that although it emanates from Paris the publisher has an English name, so that it suggests that he is attempting to do from France that which the laws of England would not permit. Among other books published by the same publisher there are some at least which, while professing to be of a scientific character, appear really to be designed to pander to the most depraved tastes.

THE CENTURY THERMAL BATH CABINET COMPANY AND SECRET COMMISSIONS.

THIS time last year several correspondents complained to us of the circulars they had received from the Century Thermal Bath Cabinet Company, dated from Regent House, Regent Street, London, W., which contained offers of a commission payable upon the sale of these articles. These complaints do not appear to have exercised any deterrent effect, for we have recently received quite a sheaf of letters protesting against these circulars, of which a new batch has apparently just been issued, as insulting to the medical profession. This company is of American origin, and no doubt wishes to commend itself to the medical profession in this country, but the means it takes to do so are, it may rest assured, revolting to every self-respecting medical practitioner in the British Islands.

ANTI-PLAGUE VACCINE AND SERUM.

IN view of the possibility that cases of plague may occur in this country, we may remind our readers that Professor Rubert Boyce keeps at the Thompson-Yates Laboratories in University College, Liverpool, a large stock of Haffkine's vaccine which will always be ready for use, and we understand that he will forward a supply on direct application. We learn that the Jenner Institute of Preventive Medicine has not yet undertaken the preparation of this vaccine, and that it does not at present intend to do so. The authorities of the Institute, however, have under consideration the desirability of making anti-plague serum, and we understand that certain officers of the Institute are about to visit Paris in order to gather information. An account of the method of preparation both of Haffkine's vaccine and also the preparation and uses of antiplague serum, is given by Dr. Balfour Stewart, who formerly worked in Mr. Haffkine's laboratory in Bombay, at page 1241, and at page 1243 will be found a short practical note on the method of injecting the vaccine by Dr. Margaret Christie, who, while acting as plague medical officer in Bengal, made a number of inoculations with Dr. Nield Cook, Medical Officer of Health for Calcutta.

CULICIFUGES AND CULICICIDES.

PROFESSOR C. FERMI and Dr. C. Lumbao of the University of Sassari, Sardinia, have been experimenting, not with very much success, with a number of substances or mixtures of substances which have a reputation for driving away mosquitos from the human body, or might be supposed to deserve such a reputation. Some of the mixtures were a little odd; for instance, equal parts of lanolin and extract of fishes, reptiles, or amphibians, with 1 per cent. of carbolic acid. It is rather comforting to learn that this mess was not effective, otherwise a new terror would have been added to life in the tropics or on the Riviera. Altogether several hundred oils, essences, and extracts were tried alone and in combination, but only a few were found capable of warding off the attacks of the mosquito for from one to two hours indoors and for from half an hour to an hour in the open air. Among these were tobacco water with eucalyptus (2.5 per cent), tobacco water with eucalyptus, oil of carraway, and cherry laurel, of each 1 per cent.; bay oil and tar water, equal parts; cod-liver oil and tar water, equal parts; tobacco water, tar water, eucalyptus, and oil of carraway, 10 per cent.; essence of eucalyptus, cajuput, and bitter almond oils, equal parts; castor oil, vaseline, allyl sulphide (0.1 per cent.), benzene aldehyde (2.5 per cent.). A number of experiments were made also with the hope of finding something which, when diffused through the air, might kill the mosquito or at least diminish its mischievous activity. Chloroform was effective, and so were chlorine gas and ammonia, but, as the experimenters admit, these vapours could only be used in an empty room. For inhabited places, they have nothing better to suggest than the familiar "smudge," or tobacco smoke, too often both tried and found wanting. In the fight with the mosquito, therefore, prevention is found better than cure. It is easier to kill the larva in the water-butt or the pool than to exterminate the adult insect in the air. Here Professor Fermi and his colleague are more hopeful and helpful. They consider that petroleum is the best substance to use, and direct that it should be sprayed

on to the surface of the water in the proportion of 5 c.cm. to a square metre of water surface. It remains effective for about six days, but, having regard to the time which the larvæ take to develop, they consider that it need only be renewed once a fortnight in summer, while in cold weather once in twenty days would be sufficient; they calculate that to treat pools with the chrysanthemum powder recommended by Celli would cost about seven times as much as petroleum.

INFLUENCE OF THE TEMPERATURE OF LIQUID HYDROGEN ON BACTERIA.

A COMMUNICATION on the influence of the temperature of liquid hydrogen on bacteria was recently presented to the Royal Society by Dr. Allan Macfadyen and Mr. Sydney Rowland. In a previous communication these gentlemen had shown that the temperature of liquid air has no appreciable effect upon the vitality of micro-organisms, even when they are exposed to this temperature for one week (about—190° C.) They now report that they have been able to execute preliminary experiments as to the effect of a temperature as low as that of liquid hydrogen on bacterial life. As the approximate temperature of the air may be taken as 300° absolute, and liquid air as 80° absolute, hydrogen as 21° absolute, the ratio of these temperatures roughly is respectively as 15 : 4 : 1. In other words the temperature of liquid hydrogen is about one-quarter that of liquid air, just as that of liquid air is about one-quarter of that of the average mean temperature. In subjecting bacteria, therefore, to the temperature of liquid hydrogen, the experimenters place them under conditions which, in severity of temperature, are as far removed from those of liquid air as are those of liquid air from that of the average summer temperature. By the kindness of Professor Dewar the specimens of bacteria were cooled in liquid hydrogen at the Royal Institution, the following organisms being employed: B. acidi lactici, B. typhosus, B. diphtheriæ, proteus vulgaris, B. anthracis, B. coli communis, staphylococcus pyogenes aureus, spirillum choleræ, B. phosphorescens, B. pyocyaneus, a sarcina, and a yeast. These organisms in broth culture were sealed in thin glass tubes and introduced directly into liquid hydrogen contained in a vacuum-jacketed vessel immersed in liquid air. Under these conditions they were exposed to a temperature of about—252° C. (21° absolute) for ten hours. At the end of the experiment the tubes were opened, and the contents examined microscopically and by culture. The results were entirely negative as regards any alteration in appearance or in vigour of growth of the micro-organisms. It would appear, therefore, that an exposure for ten hours to a temperature of about—252°C. has no appreciable effect on the vitality of micro-organisms. Dr. Macfadyen and Mr. Rowland hope in a future communication to extend their observations upon the influence of the temperature of liquid hydrogen on vital phenomena, and to discuss their bearing upon problems of vitality.

YELLOW FEVER AND MOSQUITOS.

WE have received from Dr. Gould, the editor of the *Philadelphia Medical Journal*, a cable message stating that an article is published in the current number of that periodical relating to certain fairly conclusive experiments made by army surgeons in Cuba demonstrating that yellow fever can be conveyed by the mosquito (*Culex fasciatus*, Fabr.). It is added that the experiment has produced the disease in three of the surgeons, and that one death has occurred. This announcement will be read with interest, as there is much about the etiology of yellow fever which is still very obscure. We must await the receipt of the full report before discussing the significance of the experiments. It may be observed that *Culex* is the name which has been applied to a mosquito which has its habitat in the island of Cuba; it is stated to be very troublesome in the rainy season, and to be named mosquito by the natives; it has also been recorded as occurring in North America. Giles, the author of the most recent work on the subject of mosquitos, seeks to distinguish it from a mosquito found in the island of Porto Rico, but there seems to be some confusion as the names of this species, and it is probable that the experiments made in Cuba were made with the mosquito which is known to occur there in large numbers.

THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

MR. C. B. BALL, Regius Professor of Surgery in the University of Dublin, was on October 18th elected a representative of the Royal College of Surgeons in Ireland on the General Medical Council, in the room of Sir P. C. Smyly, resigned. The vacancy on the Council of the College caused by the death of Sir William Stokes has been filled by the election of Mr. J. S. McArdle. The Council of the College has forwarded to the General Medical Council a resolution informing them that in view of the action of the English Colleges of Physicians and Surgeons in reference to the registration of medical students and to the first year of medical study, the Irish College will not be bound by any resolution of the General Medical Council which other licensing bodies are permitted to disregard. The Council of the College has under consideration a proposal to erect additional laboratory accommodation for some of the Professors, the greatest need being felt for more room in connection with pathological and bacteriological work.

HOSPITAL ACCOMMODATION FOR PLAGUE IN LONDON.

WE are informed that the Metropolitan Asylums Board is fortunate enough to possess a complete hospital adapted for the reception of patients suffering from plague. The hospital is isolated, capable of indefinite extension, and not at present in use; further, after being used for plague it can be burnt. We are also informed that it is not the intention of the Metropolitan Asylums Board to receive plague patients into its ordinary hospitals. We are glad to be able to publish this information.

AT a meeting of the Public Health Committee of the Edinburgh Town Council held on Tuesday, October 23rd, Dr. James O. Affleck was introduced on his appointment as Consulting Physician to the City Hospital for Infectious Diseases, *vice* Professor John Wyllie, resigned.

THE ordinary general meeting of the Roentgen Society will be held at the house of the Royal Medical and Chirurgical Society on Thursday, November 1st, at 8 P.M., when the President, Dr. J. B. Macintyre, will deliver an address.

HER MAJESTY THE QUEEN has graciously granted her permission to Sir William Mac Cormac to accept and wear the "Kaiser Wilhelm Commemoration Medal," bestowed upon him by the German Emperor in recognition of services rendered during the war of 1870-71. The medal was instituted in memory of His late Majesty the Emperor and King Wilhelm I. "Der Grosse Kaiser."

SIR RICHARD DOUGLAS POWELL will give the opening lecture of the winter session at the Hospital for Consumption and Diseases of the Chest, Brompton, on Wednesday next at 4 P.M. The title of the lecture is On Some Varieties of Pulmonary Tuberculosis. Subsequent lectures will be given on Wednesdays at the same hour up to and including December 19th. The lectures are free to qualified medical practitioners, and to students attending the practice of the hospital.

THE HARVEIAN ORATION
ON
PHYSIOLOGICAL DARKNESS BEFORE HARVEY.

Delivered before the Royal College of Physicians on October 18th.

By T. CLIFFORD ALLBUTT, M.D., F.R.C.P.Lond., F.R.S.,
Regius Professor of Physic in the University of Cambridge.

[Abstract.]

Mr. President and Gentlemen,—The discovery of the circulation of the blood by William Harvey is commonly regarded among scientific discoveries as eminent if not unique, and this in the judgment not of Englishmen only. My purpose to-day is to show that at any rate it was made against enormous difficulties.

To put this discovery in right perspective we must have some vision of the history of philosophy, science, and medicine. Medicine, herein in contrast with theology and law, had its sources almost wholly in the Greeks; from them for good or evil it took its first scheme of thought; and in the schools of Hippocrates and of Alexandria it was based, more soundly, on natural history and anatomy. The noble figure of Galen, the first physiologist and the last of the great Greek physicians, pourtrayed for us by Dr. J. F. Payne in the Harveian Oration of 1896, stood eminent upon the brink of the abyss when, as if by some convulsion of Nature, medicine was overwhelmed for fifteen centuries. Galen practised the method of verification by experiment, first introduced, perhaps, by Archimedes, but after him it was lost till the time of Gilbert, Galileo, and Harvey.

In the growth of societies small civilisations have been sacrificed to the formation of larger aggregates, whereby stable equilibrium may be attained for the highest ends. Perhaps because of her very freedom of thought Greece never became a nation. Even the Roman peace, bought as it was at the cost of learning and the arts, was but a mechanical peace. In the wilder regions of the empire the bodies but not the wills of men were in subjugation, and even in Rome itself the sanction of patriotism was failing. Under the Frankish invasion the very traditions of learning and obedience seemed to be broken up. Then Europe was saved by the inspiration of the Christian religion, which, entering as a new element into the ancient fabric of Roman empire, was now to hold men's service in heart and soul as well as in body: but to this end no mere mystic or personal religion could suffice; clothing itself with the political and ritual pride and even with the mythology of the pagan empire, it inspired a new adoration, but it imposed upon men also a universal and elaborated creed. In the third century philosophy was born again in neo-platonism, the offspring of the coition of east and west in Alexandria, where all religions and all philosophies met. The world and the flesh were crucified, that by the spirit man might enter into God. Pure in its ethical mood, Neo platonism, says Harnack, led surely to intellectual bankruptcy; the irruption of the barbarians was not altogether the cause of the eclipse of natural knowledge. Yet even then, as again and again, the genius of Aristotle came to save the human mind. Proclus, ascetic as he was, was also versed in Aristotle, and he compelled the Eastern mysteries into peripatetic categories and bequeathed a formal philosophy to the Faith. Thus the first scholastic period was fashioned and the objects and methods of inquiry were determined for thirty generations. Rationalised dogma lived upon dialectic and conflicted with mysticism, but logic, dogma, and mysticism alike disdained experience. The Faith then was the first adversary of Copernicus, Galileo, and Harvey.

It was the fortune of the Faith that of all the treatises of Plato, the *Timæus*, the most fantastic and least scientific, should have survived to instruct the mediæval world, while those works of Aristotle which might have made for natural knowledge fell out of men's hands; moreover, the categories and the "interpretation" made for more than Aristotelian nominalism and turned men's minds rather to rhetoric and dialectic than to natural science. Thus it was that Plato's chimæra of the human microcosm, a reflection of his theory of the macrocosm, stood beside the Faith as the second great adversary of physiology. The influence of authority whereby Europe was to be welded together penetrated into all human ideas. As in theology was the authority of the Faith so was that of Plato and, in the second period of the Middle Ages, of the Arabian versions of Aristotle and Galen. It is not easy for us to realise a time when intellectual progress, which involves the successive abandonment of provisional syntheses, was unconceived, when truths were regarded as absolute, when reasons were not tested but counted, when even Averroists found final answers either in Aristotle or in Galen. Thus, in the irony of things was Harvey withstood by the dogma of that Galen who, in his own day, had earnestly appealed from dogma to nature.

In the Isagoge of Porphyry is distinctly set forth a problem which during the Middle Ages rent Western Europe asunder, a problem, says John of Salisbury, which engaged more of the time and passions of men than for the house of Cæsar to conquer and govern the world; a problem, indeed, which in our own day is not wholly resolved. This was the controversy of the Realists and the Nominalists, first brought to a clear issue by William of Champeaux and Roscellinus. Now Plato held ideas not as mere abstractions but as creative forces, and we shall see how potent was this function in mediæval thought. Every particular, everything was regarded by the Realist as the product of universal matter and individual form. Now form might be regarded, and variously was regarded, as a shaping, determinative force or principle, pattern or mould, having a real existence apart from stuff; or, on the other hand, as a principle or pattern having no existence but as a conception of the mind of the observer. And for the Realist not individuals only but genera and species also have their forms, either pre-existent (*universalia ante rem*) or continuously evolved in the several acts of creation (*universalia in re*). For instance, the Church exists for the Realist as a thing apart from the wills of successive generations of individual men; man has fallen not only in many or all individual cases, but also as a kind—a kind having an independent existence; in the Sacraments, again, there may be a change of hypostasis without change in sensible matter. Now if forms pre-exist (*ante rem*) the Will of God must be predetermined; or if form be an immanent function acting *in re* we are landed in Pantheism. Thus Erigena, the brilliant prophet and Protestant of the first period of the scholastic philosophy, was virtually a Pantheist, as Spinoza was the last great Realist. Aquinas, who determined the philosophy now ruling in Rome, brought about a compromise which covers up rather than solves the difficulty. The problem, it is evident, was no hair-splitting; it dealt with the very nature and origin of being, and it agitated the minds of earnest men at a time of fervid and widespread enthusiasm for knowledge.

Now closely allied to the argument concerning universals was that concerning "matter and form." Whether the terms used were "form and matter," "force, energy, or pneuma and matter," "soul, archus, or life and body," "determinative essence and determinate subsistence," "male principle and female element," "the potter and the clay of the potter;" or whether, again, they were "effect and cause," "nature and law," "being and becoming," the riddle lay in the contrast of the static and dynamic aspects of things; in the incessant formation of variable individuals in the eternal ocean of existence. Even Francis Bacon never got out of the tangle of form, of cause and law. It has been the temptation of philosophers of all times, and even of Harvey himself, than whom none had put better the conditions of scientific method, to suppose that by means of abstraction kinds may be apprehended: that thus they may get nearer to the inmost core of things; that by purging away the characters of individuals they may detect the essence and the cause of individuation, not perceiving that the content of notions is, indeed, in inverse proportion to their universality. We see this error continually to-day: for instance, we may discuss the causes of typhoid fever and bewilder ourselves by forgetting that there is no such thing as typhoid fever, and that the only causes of a general notion are the psychological causes of its generation in the mind of the thinker at the time; that which is due to objective causes is, of course, not the general notion, but the particular case—a very different matter.

Before motionless stuff—before the problem of the "primum mobile"—even Harvey himself stood helpless when he had come to the end of his admirable experiments and began to indulge in contemplation. In his need for a motor for his

machine he was not able to divest himself of the language or even of the philosophy of his day. In his day he could not help regarding rest and motion as different things and motion as a superadded quality. The motion he attributes not to a property of the heart but of the blood—to its "innate heat," which is as far as he could possibly have got. But by way of explanation he adds that the innate heat of the blood is not fire, nor derived from fire; nor is the blood occupied by a spirit, but is a spirit; it is also "celestial in nature, the soul, that which answers to the essence of the stars..... is something analogous to heaven, the instrument of heaven." In denying that a spirit descends and stows itself in the blood or elsewhere, as an "extraneous inmate," he bravely says: "I cannot discover this spirit with my senses, nor any seat of it." And yet in the treatise *De Generatione* he propounds a theory of the impregnation of the female not by any material from the male but by the influence upon her of a "general immaterial idea," which even for his own time was very substantial realism. The riddle which oppressed the great thinkers from the Greeks to Lavoisier was then the nature of the *Bildungstrieb*"—of the "*impetum faciens*." What makes the ball to roll? Does heart move blood or blood move heart, and in either case what bestows and perpetuates the motion? Telesius, the first of the brilliant band of natural philosophers in Italy of the sixteenth and seventeenth centuries, still sought this principle of Nature in the "form" of the Peripatetics. Gilbert regarded his magnetic force as "of the nature of soul, surpassing the soul of man." Galileo, although willing to conceive circular motion as perpetual and even self-existent, was unable thus to conceive rectilineal motion. All these Naturalists, including Harvey and even Descartes, followed the mediæval world and Aristotle in deriving the source of motion directly from that of the spheres—from the quintessence.[1] Till Copernicus transfigured the Kosmos, and Galileo and Newton carried terrestrial physics into the celestial worlds, the heavenly bodies were regarded as animated beings, themselves active, and by propagation from sphere to sphere animating all "sublunary" matter, wheels within wheels, even to its innermost particles.

Of the origin of energy we have not solved the riddle—we have given it up; but instead of finding its sources without we find them within. Harvey's contemporary, Francis Bacon, sagaciously guessed that heat is an expansive motion of particles, but he regarded heat and cold as two contrary principles. Almost in the same generation the brilliant John Mayow perceived a substance in the air "allied to saltpetre," which passed in and out of the blood by the way of the lungs or placenta. So innate heat gave way to phlogiston, and soon afterwards oxygen and the conservation of energy turned out to be "form," "spirit," "essence," "primum mobile," "causa efficiens," "potentiality," and the rest of them, and by Lavoisier a vast pile of metaphysics was blown into the air. But to kill a strong theory outright takes many a generation. Realism shaken by Abelard and scotched by Hales and Ockham, not only survived to mislead Harvey, but it stretches its withered hand over us still, in the nursery, in the schoolroom, in the university, and in the great arguments of life. As strong as Realism was a third adversity—the pride of the human mind. The asceticism derived from the East, disdainful of carnal things, brought the dualism of matter and spirit into monstrous eminence; and in respect of medicine, in a few generations it turned the cleanest people in the world into the most filthy.[2] Almost to this day the mechanical arts, presumably concerned with lower categories, have been regarded as base, and the crafts, even of the laboratory, as unworthy of great souls. Anatomy had to labour also against both ecclesiastical and popular antipathy; chemistry and mechanics were gross pursuits unless endowed with the perilous distinction of alchemy and sorcery. Unfortunately, this charge upon the dignity of man was made heavier rather than lighter by Petrarch and the humanists of the Renascence; and in Oxford of the seventeenth century we find that Boyle was bantered by his friends as one "given up to base and mechanical pursuits."

In a certain important respect medicine suffered greatly from this prejudice. It is obvious that, speaking generally, medicine would find its most positive and direct control in those diseases and in those therapeutical experiments which take place on the outside of the body. Yet surgery fell under the proscription of a handicraft, and, as such, was eliminated from the College of Physicians both in London and Paris; and thus the genuine work of such men as Paré and Gale were without influence upon medicine. Thus it came about that Francis Bacon says of the physicians of Harvey's day that they saw things from afar off as if from a high tower. From Erosistratus to Celsus physicians practised medicine as one art. Galen taught not the simplicity but the unity of medicine; and Littré points out that this unity is consistent in the Hippocratic writings. Surgery, by virtue of its imperative methods, was kept clear of philosophy on the one hand and of humanism on the other. Fortunately for Harvey his master Fabricius was as great a surgeon as anatomist; and such was Fallopius before him. Thus it was that medicine at the end of the Middle Ages had not recovered the standard of Alexandria. And against this adversity also had the founder of physiology to contend. Happily, the Arabian scholastic philosophy took its root in Alexandria when Neoplatonism had veered towards Aristotle, and was, therefore, more uniformly peripatetic than the Christian scholasticism.

It is one of the signs of the greatness of Aristotle that thus garbled and glossed his power made itself felt in the thirteenth century, chiefly by the great Franciscans Alexander Hales, Roger Bacon, and William Ockham—Roger Bacon whom we may call the first of the natural philosophers of the West. This former renascence determined the second period of the Middle Ages, the period distinguished by the Arabian version of Aristotle by a check to the chimæras of Realism, by some liberty of secular knowledge—for even bishops came out of the school of Toledo—and again by the coming of the friars, whose influence upon the thought of the Middle Ages was a curious proof that, as all ways are said to lead to Rome, so all systems of thought, in spite of the thinkers, led to natural science. The logic and rhetoric of the Dominicans, by their rationalism, defined, and in defining restricted, the dominion of the Faith. Men got used to reason and made a language for thought. And in the history of the unlearned Friars Minors we find, as elsewhere in history, that mysticism is more favourable to natural knowledge than the passionate dogmatism of Clairvaux or the dogmatic rationalism of St. Thomas. The Victorians, as Gerson after them, despised reason rather than feared it; mysticism makes for individual religion, as in Glisson and Newton, rather than for the Church. Hence it may have been that independent thinkers, like Hales and Bacon and Ockham, entered the Franciscan Order. The former renascence brought also a more tolerant spirit. Albert of Cologne owed as much to Avicenna as St. Thomas to Averroes—sages technically damnable, yet "mighty spirits" worthy of reverence. Dante put in hell, but on green meadows in an open place, lofty and luminous, not only Aristotle, Plato, and Socrates, but also Euclid, Ptolemy, Hippocrates, Avicenna, Galen, and "Averroes who made the great commentary." Universities were founded in France, England, and Italy. But the natural science which made the second Renascence irresistible was absent from the former and at the end of the century a reaction set in. During the two following centuries in Spain freedom of thought was crushed out by the Church; but in the conflagration of books of philosophy, medical works, such as the *Colliget* and the *Commentary on Galen* of Averroes, were largely spared; yet in the fourteenth and fifteenth centuries the very name of Averroes, "the mad dog that barked against the Christ," not only became ecclesiastically accursed, but also began to signify loose life as well as free thought, a resentment of which there was no trace in Albert or Aquinas.

Averroism, however, held its ground at Padua, which had become celebrated for medicine as Bologna for law, and although Averroism, like any other philosophy taught as a separate study, decayed, yet, effete as it was, it kept the ground open at a time when the tide was turning against free thought, when the commercial supremacy of Venice was declining, when the Spanish Inquisition was established in Rome, and when even the influence of the Florentine humanist was rather against natural knowledge than for it. No doubt the coarse and disingenuous scepticism of the physicians of North Italy and their pretentious manners

alienated the Humanists not only from themselves, but also from natural philosophers, such as Telesius and Galileo, and Averroists and Humanists alike stood by at the burning of Bruno. When Harvey entered Padua at a fortunate time he found Galileo engaged in teaching and also in methodical research, for Galileo was not only a great discoverer, but he was the first to formulate fully and clearly that method which we know under the name of the "inductive method." The discovery of Greek texts had destroyed the conventional Aristotle and the conventional Galen; Gregory by the reform of the calendar had put the axe to the root of astrology; Newton was soon to carry terrestrial physics into celestial spheres; and Boyle was soon to create chemistry, while anatomy was fully awake already. In England, moreover, with the accession of Elizabeth more spacious times were assured, and Charles protected Harvey. Physiology, however, awaited Harvey. Servetus had buried his conception of the lesser circulation under a pile of theology; Columbo and Fabricius, however, had prepared the way, not so much by the value of their discoveries as by their practice of the experimental method in this science, for the anatomists, Galenists to a man, had done next to nothing for physiology. Clinical teaching also had been established at Padua by Fracastorius and Montanus, to be pursued in Heidelberg, Leyden, and Vienna.

The genius and courage required to make discoveries like that of the circulation of the blood cannot be measured directly; there is no method of determining the specific gravity of such adventures; I have tried, however, to shadow forth the weight of the social systems, opinions, prejudices, and habits against which Harvey's gigantic effort was made. Almost in the year of the publication of the *De Motu Cordis* (A.D. 1628) the Parliament of Paris issued an edict that no teacher shall promulgate anything contrary to the accepted doctrines of the ancients. Under such conventions Harvey's discovery burst like an earthquake—under corrupt Galenism, venerable sophistries, current abstractions bequeathed by realism, and long-winded dialectics on critical days, coctions, derivatives, or revulsives, and dogmas based on uncritical subservience to texts. His work stood out even more ascendant against a lurid background of folk superstitions—of vampires, witch-burning, magic, cabbalism, astrology, alchemy, chiromancy, and water-casting. In terrestrial and celestial physics Galileo, persecuted as he was, had some strong current with him. Copernicus was before him, Kepler was beside him, but in physiology upon the path of Galen the waters had closed as upon the track of a great ship; and among Harvey's contemporaries and immediate forerunners there was none to claim a share with him in the discovery of the central fact of physiology or in his application of the method which opened the way to Pecquet, Glisson, Steno, Wharton, Willis, Haller, and Bernard.

Reference and Note.

[1] *Vide* Arist., *De Cœlo*; and *Met.* xii. [2] Those curious in such things will notice that the mediævialising clergy of our own day have discarded in their persons that fair linen which was the emblem and example of their fathers.

CONTRACT MEDICAL PRACTICE.

Rates and Conditions.

Sir,—I was very much interested in a letter by "Tent Surgeon" in the British Medical Journal of October 6th *re* friendly societies in Glasgow, and I quite believe he is only one of many labouring under similar difficulties. The question arises, Who is to blame for this state of affairs? And I am afraid the only answer is—The medical profession. No doubt "Tent Surgeon" was asked his rate of fees when he took over the Society, and fearing some of his professional brethren might step in and secure it, he agreed to accept the figure he mentions; and even if this were fifteen years ago, I maintain it was as inadequate then as now.

In my opinion the only remedy for the present state of affairs is to throw all friendly and other kindred societies open to all practitioners, not to have one doctor to whom all must go, but to let each man choose what doctor he wishes, and to have the option of changing to another doctor at, say, the year's end. I do not consider it right that perhaps a small majority should compel what may be a large minority to have the services of a practitioner in whom they may lack confidence. I quite agree that this cannot be done under the present rate of payment, but let a certain reasonable standard of five or six shillings a head be fixed, and then I think matters will work out satisfactorily.

Let us look at the advantages. Suppose half of "Tent Surgeon's" Rechabites leave him, choosing another doctor, and considering that he still remains the surgeon, it is not likely the number will be so large, he will still receive the same sum per annum for half the amount of work, he will know that he is only attending those who choose him of their own free will and who have confidence in him, and will know he is getting a fair remuneration for the work he does. Another important advantage will be that he will know he is not underselling his professional brethren, and it will be a great encouragement for them to stand by him in his endeavours to raise his rate of fees; and if only he can persuade them to bring about a similar state of things in their own clubs, he, like they, are sure to be gainers. I think every practitioner should stand on his own merits, and that freedom of choice of doctor should be left to every member of the general public.

No doubt practitioners who have bought practices to which clubs are attached and have succeeded to those will regard my remarks as iniquitous. But I would ask them, When you buy a practice do you purchase the confidence of each patient attached to that practice? I think they will say "No," and I would again ask is it any pleasure, I may add any real profit, to attend a patient who has no confidence or trust in you, but who, if he is not well after the first dose of medicine, will send for another doctor in whom he has such trust? I wish my remarks to refer not only to friendly societies, but to all medical clubs, collieries, workshops, etc.—I am, etc.,

E. H. Houfton M.D.Lond,

Shirebrook, near Mansfield, Oct. 15th.

Sunderland Friendly Societies.

Sir,—We send you a cutting from a local paper of October 20th, from which it appears that the representatives of the friendly societies in this town have decided to appoint (out of a large number of applicants, it is stated) a medical man to do the work of the societies.

We desire to draw the attention of the medical profession to the circumstances which have led to the above action of the friendly societies, and they are these:

The County of Durham Medical Union has, during the past year, had the question of the fees paid by friendly societies (which at present are 3s. per annum per member) under consideration, and in Sunderland the members of the Union are unanimous in deciding that the above sum is too small to adequately pay any man for his services, and after intimating their desire for an increase to 4s., have held a conference with the representatives of the friendly societies. The outcome, so far, is that some of the societies have now agreed to pay the increase, while the others object, and desire a medical man of their own. There can be no doubt that the profession is not of opinion that 3s. is a sufficient payment, and perhaps not 4s., while many would name 5s. as a minimum payment, and many more consider that all such contract work is undesirable.

At all events, it is the opinion of the local members of the Union that the payment of 4s. is a step in the right direction. We therefore earnestly desire to draw the attention of your readers to the facts of the case, and to express the hope that no medical man will be forthcoming to knowingly assist in an act of underselling, and in frustrating the efforts of the Union. —We are, yours, etc.,

R. S. Hubbersty, M.D.,
Honorary Secretary, Sunderland Local Committee
Grange Crescent, Sunderland.

Graham and Shepherd,
Secretaries, County of Durham Medical Union.

Sunderland, Oct. 23rd.

Presentation.—On October 16th, Mr. John Miller, after seven years' practice in Iver, was presented by a deputation from an influential presentation committee with a gold half-hunter stop-watch and a cheque for £25. The regret of the subscribers, as representing the district, was expressed that Mr. Miller should be leaving the neighbourhood, and hearty wishes were given for his success in his new sphere of labour.

MEDICAL NOTES FROM THE WARS.

THE WAR IN CHINA.

THE MARCH FROM TIENTSIN TO PEKIN.

We are indebted to Mr. James Cantlie for the opportunity of publishing the following interesting letter, dated Pekin, September 3rd, from Dr. J. Francis Molyneux, of Cheefoo, describing the medical events on the march of the allied forces from Tientsin to Pekin.

THE FLEET.

Having secured a reliable *locum tenens* for my Cheefoo practice, I left that port on July 20th for Tientsin and at the Taku Bar found a magnificent allied fleet, thirty-four vessels in all, some of them carrying "Q F" guns of great power, and all of them 11 miles from the Forts, and about as useful as if they had been at anchor in Spithead. Of course detachments had landed, our own Naval Brigade making up a strong body of about 600 men, including Marines; our ships consequence had more or less skeleton crews. Why they were all stuck in a heap at Taku when the outposts were beseeching the moral support of the presence of men-of-war, and when their mere presence would have done much to insure the safety of the coast and river at a time when such security was resting upon the action of Yuan-Tsi-Qui (Governor of Shautung) is one of the occult mysteries which belong to high official environments.

THE RAILWAY.

The railway at Tongku and onwards is in the hands, "lock, stock, and barrel," of our Russian friends; the trains are driven by soldiers, and the line is being repaired by the Cossacks, who closely guard it in its entirety. Trains are now running onward as far as Yang T'sun on the Pekin line, some twenty miles nearer the capital than Tientsin itself. It is said that in three months' time it will be a Russian "going concern" all the way up.

THE BRITISH FIELD HOSPITAL.

I saw Generals Gazelee and Barrow at Tientsin and offered my services as a volunteer surgeon with the British column during its advance to Pekin. I was attached to British Field Hospital "No. 22 B." This unit had for its *personnel* Colonel Rainsford, R.A.M.C. (acting principal medical officer at the front), Major Manifold, I.M.S. (just returned from Thibet *viâ* Chungking), another volunteer and myself. In addition there were two apothecaries, or, as they are termed, assistant-surgeons I.M.S. There are also Indian native ward orderlies, two "bheesties" (water carriers), and six cahars to each dhoolie. We were supposed, I understand, to accommodate twenty-five sick and wounded, and we had more than the usual medical strength owing to the principal medical officer and senior major being with the British section. There were four other similar sections, each in charge of a captain or lieutenant of the I.M.S., and their special duty was the care of the Indian sick and wounded. In addition to this, each regiment at the front had its separate surgeon—with the exception of the Artillery, who fell to us—also the Naval Brigade had its separate establishment—one staff-surgeon and one surgeon. You will see from this that with a force of about 2,600 men we had about 17 surgeons (I exclude the principal medical officer proper at Tientsin and his staff there), an ample allowance as things turned out.

THE MARCH TO PEIT-ZANG.

After vexatious delays we started on August 4th, behind the column with the exception of the transport mules (a weary long train of patient sufferers), who are, on the march, immediately in front of the rear guard. After five miles we camped in a patch of very wet and very unripe melons, with orders to be up and ready at 2.30 A.M. No camp fires were allowed. Tea was an impossibility; the ground was wet, sloppy, and smelt malarial; but a dhoolie is a noble shelter on a wet night campaigning, and its green waterproof top and sides make one thankful that there is more than a waterproof sheet and a blanket between you, the earth, and the elements. On this march no tents were allowed although it should have been the rainy season; most fortunately for us we had practically only showers until we reached Tungchow, fourteen miles from our goal. Next morning, in wet and silence, we stumbled through six feet of dripping maize to our position with the column. From 2.30 A.M., in Cimmerian darkness, we waited, and swore, and shivered, until at about 4 A.M. a less murky line in the east proclaimed the morning of Peit-Zang.

THE WOUNDED.

The Japanese were soon under fire, our men in support and the Americans supporting us. A shell fell close to our first collecting station. It killed a mule driver, two mules, and a charger, and wounded an artilleryman—my first case on the field. A small splinter of shell had given him a slight contused wound in the front of the thigh; his "first aid," a small package from the seam of his tunic, was already in requisition when I picked him up, and it looked a sodden and sorry dumpling.

The Indians (Rajpoots) were soon in action, and we shortly sent 17 to the boats for carriage to the hospital, seven miles in our rear at Tientsin.

The wounds were mainly from small arms (Mausers). One man was shot through both lungs laterally, and had also a wound in the neck. Only five showed any sign of severe hæmorrhage or collapse. Within two hours of being hit they were in a comfortable boat with a surgeon in charge *en route* for the hospital at Tientsin. These hospitals—one for Indians (late Tientsin British Club), the other for British whites (late Gordon Memorial Hall)—are well supplied with surgeons, orderlies, and medical stores. The Principal Medical Officer to the whole expedition, Colonel Bookey, I.M.S., remained in Tientsin until after Pekin was occupied by the Allies, and only then left for the front, where his prompt energy in organisation soon made itself felt.

The day of Peit-Zang was for me a wild excitement, tempered with a sense of hunger and alternate wet and dry, heat and cold, according as the sun or rain prevailed. My horse (price £25 the day before) stampeded in the morning early, leaving me disconsolate, and to add to my woe my Colonel hailed me two hours afterwards with "Molyneux, look out, here comes your horse." I was bandaging a wounded and bleeding Rajpoot at the moment; humanity and duty kept me in my place until too late. At about eight in the morning the Japanese had driven the enemy back from their strong position, but they continued to shell us in their retreat, and when the order for a general advance was given we, with the field hospitals, had, in order to keep up with the column, to cross a wide area in which shells were continually falling until we were able to gain cover.

THE JAPANESE MEDICAL SERVICE.

It is difficult to give an exact list of Japanese casualties. It is said that they had 60 killed and 200 wounded, and as their advanced dressing station was next my own, I should think that estimate not excessive. Their medical arrangements in the field are perfect—grand order and quietude prevail, there are plenty of stretcher parties and lots of surgeons and dressers (I fancy senior students are employed as well as surgeons, a method which you may remember was adopted during the Hong Kong plague of 1894). Ample dressings, instruments excellently packed for immediate use, and a general air of competency and confidence under severe strain, were points which impressed me greatly. There is no doubt that their medical department is admirably administered and well worked in practical detail. Many Japanese were killed I think by shell fire, for there was no cover for them in their advance, and when a shell does "come off" (which is very seldom) it leaves its mark in no uncertain characters. The majority of the wounded were the victims of rifle bullets no doubt.

Receiving instructions to proceed to the boats at Sekoo and report their departure with wounded, I crossed the field, overtaking many Japanese stretcher bearers with dead and wounded. I had a 3-mile gallop on a borrowed horse back to our camp of the night before. I found our men comfortably lying in mat sheds erected on the decks of the ordinary Chinese river cargo boats. It struck me that slightly-wounded Indians made the most of their condition, and were very sorry for themselves.

The Action at Yang Tsun.

Next day we marched to Yang Tsun, where an important battle took place. The Americans and the British were practically the only troops in the thick of it. I had a busy day in charge of No. 1 Collecting Station. A Sikh officer was brought in with a bullet-hole right through the patella and the centre of the popliteal space; the popliteal artery got out of the way somehow, but there was considerable hæmorrhage. There did not appear even to be a star fracture, and the field diagnosis was, I understand, subsequently upheld upon more deliberate examination at the base hospital. Perhaps the ball ran round the joint.

The day (August 6th) was hot as the desert, and several cases of heat apoplexy and exhaustion came in. Two men were brought to me dead, without a wound; three were in twitching convulsions, and gave me much trouble and anxiety. The "water bheestie" is a strong tower at this juncture (of course ice is not obtainable), but the excellent Indian lets a fine jet of cold well water trickle on to the back of the neck of the sufferer, and in each of my cases, living when brought in, recovery occurred.

Six Americans were brought in dead to my station, two from shell fire, the rest from bullets. Later in the day an Indian came in with a compound comminuted complicated fracture of the humerus, and with a compound dislocation of the elbow-joint on the same side. On the arrival of the colonel we amputated on the spot. This injury was caused by a fragment of shell.

Later we extracted a large segment of jagged shell from the front of the thigh of one of the Welsh Fusiliers. The sartorius was cleanly divided by the fragment, which had lodged outwardly beneath the fascia lata, and felt from the wound just like a roughened edge of broken bone. This case underwent subsequent hip-joint amputation at Tientsin, and I believe ended fatally. It was a great day of hard work and exhaustion for us all, and when we reached camp there was plenty yet to do and by no means much to eat or drink.

The Forced Marches to Pekin.

The four or five days following Yang Tsun were tropically hot, and we executed three long forced marches, mostly with the sun overhead. I suppose it was necessary, but it took all the backbone out of our men. The heat and dust were dreadful, the high maize (12 or 14 feet) on either side of the road shut out the often distant river breeze. The men belted and with rifles and kit were sometimes halted in the sun—Marines, Welsh Fusiliers, and Indians all alike fell out in heaps. No experienced man there had ever seen anything like it. They said, "In India we never march in the sun." We left "Ho-hsi-wu" at 4 o'clock one afternoon, and before we had proceeded two miles more than eighty men had to be returned to the last "post," whilst we had yet thirteen miles to cover in cooler hours. We marched in the sun from Tungchow to Pekin (14 miles), and then commenced fighting at about 11.30 A.M. Our men were done and dispirited and not too well fed (the last fact due to our haste); Indians were as bad as Europeans. Only one officer fell out suffering from heat apoplexy with convulsions; he happily recovered completely in a few days. Our excellent American colleagues and friends throughout suffered more than we did. The Japanese also fell out in considerable numbers. The Americans have too generous and varied a scale of rations, and are not in training in consequence. Our men wanted more food, more time to eat it, and less belts and kit. The Russians marched by night when possible. None of our Artillery came under my observation down with the sun or exhaustion, but behind the column stretched an increasing line of groups more or less completely unable to proceed.

The Pekin Legation Guards.

The marches were so trying that on arriving at the Legation in Pekin only 50 of the Royal Welsh Fusiliers followed their gallant Colonel past the longed-for goal. The Legation Guards and other volunteer defenders had a sorry time, about 58 killed and 120 wounded approximately the "tally." I returned to Pekin after conveying the wounded (mainly Legation Guards) to Tientsin. There were some few fatalities from shell fire, but all my men were wounded by bullets; clean wounds, suggesting "Mauser" bullets. One man, wounded whilst himself firing, has traumatic Bell's paralysis excellently marked, and a superficial wound on the shoulder from the same bullet, which entered his left cheek, passed through his right parotid gland, and chipped his right shoulder; another has a fractured thigh; a third a wound of the foot with the wound of entrance on the dorsum, and that of exit on the plantar surface. The only lady wounded was hit by a spent snipe bullet during the rejoicings at the Legation over our advent. Dr. Morrison, the correspondent of the *Times*, was wounded twice whilst trying to help poor Captain Strouts, R.M.L.I., who received a fatal wound after most gallantly leading the Legation Guards. Most of the rescued appear to have been wounded at some period or other of the eight weeks' siege. The International Hospital in the Legation was a highly creditable institution in every way, the British Legation doctor and his assistants doing magnificent work under desperate circumstances. The lady nurses under the matron worked kindly, intelligently, and unceasingly. I can answer for the excellent order of the place and the way the work was done by the surgeons. As regards the nursing, I am going only by the grateful tributes my late charge of brave fellows paid on their way down, not once, but often. Thank God we got there in time!

The General Health of the Troops.

Notwithstanding the fact that they were tentless—fireless—that the water was "Chinese" well water, and that for two days it was unfiltered "Peiho" with dead mule, dead horse, and dead Chinaman in solution and that the troops had no time for ordinary campaigning comforts and were at high pressure all the time, still there was no evidence of any prevailing sickness. Diarrhœa, or at least looseness of the bowels, was a concomitant to sun, damp bed, and risky water, and there were one or two cases of dysentery (chronic) among the Indians. Our men looked jaded and fagged, and it struck me that the Rudyard Kipling *élan* was a little wanting from a practical observer's standpoint.

In conclusion, with one exception the Staff Officer responsible for camp allotment gave the field hospitals the most unsuitable, uncomforable, and in every way most undesirable sites to rest upon. At Ho-hsi-wu by some oversight the hospital had a comfortable position. The Temple of Heaven is literally a magnificent place to house the sick—we occupied that park the first night and were turned out to accommodate "Rajpoots" the following day.

THE WAR IN SOUTH AFRICA.

THE WELSH HOSPITAL.

We are indebted to Mr. R. H. Mills-Roberts, F.R.C.S.Edin., one of the surgeons to the Welsh Hospital, for the following account of its work down to September 18th.

My last letter dealt with affairs at the Welsh Hospital up to June 30th. Professor Hughes, our secretary, whom we were all delighted to see, joined us at Springfontein on July 4th. The month of July was a busy one. The hospital had been increased from 100 to 150 beds. There were a great number of enterics, but also many extremely interesting surgical cases, the latter demonstrating that almost any part of the body could be perforated by the Mauser bullet with impunity. Very few cases were followed by serious results, indeed the great majority, namely, perforation of viscera, joints, bones, etc., healed almost immediately.

Injuries with Mauser Bullets.

The following are two interesting examples of "superficial injuries":—

1. A man, while aiming lying down, was hit by a Mauser bullet over the sixth costal cartilage on the [illegible] abdominal wall, its course [illegible] cutaneous cord in a downward [illegible] right external abdominal [illegible] the penis, and, entering [illegible] man made a rapid rec[illegible]

2. In another man the [illegible] external condyle, t[illegible] skin, which it [illegible] outer aspect of [illegible] appearing on the [illegible] skin on the right of the spine, finally emerging behind the left scapula

apparently piercing the bone from before backwards. This man was shot while running, the right arm being raised at the time. He made a rapid recovery.

REMOVAL TO PRETORIA.

On July 30th we received orders to proceed to Pretoria. Having transferred our sick and wounded to No. 3 General Hospital, we immediately began to pack up, and succeeded in removing all our belongings—tents, stores, equipment, etc.—to the railway station on the following day. We were ready to leave Springfontein on the same evening, but, owing to a scarcity of engines, the railway authorities were not able to send us on until the next morning. Our nursing sisters had left for Bloemfontein on the previous day to join us at Pretoria when the hospital was ready for the reception of patients. Our train consisted of one bogey carriage and eleven trucks. The journey to Bloemfontein was uneventful. There, however, owing to railway difficulties, we were detained for three days and four nights. During that time we slept in the train, so as to be ready to move on as soon as ordered. On the night of August 4th we were informed that at last our train was about to start. We were no longer a "hospital train." Several vans and trucks laken with stores and war material were added; any vacant spaces being rapidly occupied by officers and men. In tarpaulins covering our trucks were crowded with troops. Among the passengers was Sir John Furleigh (of the St. John Ambulance Association), who in spite of his advanced age had most resignedly taken up his quarters in a crowded van. We greatly admired his devotion and self-sacrifice, and were glad to be able to give him a shake-down in our carriage, which was at least more comfortable than the van. The night was cold and wet, and we all felt sorry for those who were spending the night on the tarpaulins, and wondered if many would roll off. Needless to say the Red Crosses with which we had adorned our train were removed.

We left Bloemfontein at 3 o'clock A.M. August 5th, and reached Kroonstadt the same evening. It was not considered safe to travel at night, so we stayed there, leaving early the following morning, accompanied by an armoured train. We reached Viljoen's Drift the same night, and resumed our journey early next morning, reaching Pretoria about mid-day without mishap.

During the journey from Bloemfontein to Pretoria, wrecked trains, stations, and bridges, with miles of upturned and twisted rails bore abundant evidence of the enormous damage done by the Boers. Some of the trains were still burning, and scarcely a bridge or culvert had been left intact. We now began to understand the difficulty of transport, and greatly did we admire the masterly way in which the Engineers had overcome their difficulties.

IN PRETORIA.

Our camping ground had been selected on Howitzer Hill and was situated between No. 2 General and the Langman Hospitals, about 2½ miles east of Pretoria, and overlooking the town. The site adjoins the Delagoa Bay Railway, and is, therefore, admirably suited for the reception of patients who come by train from the front with their field dressings on. Owing to scarcity of engines, there was only one at the station to do all the work, we were not able to proceed to our destination until the day after our arrival in Pretoria. Having once reached our camping ground we quickly disembarked, and pitched our camp, after first burning the veld grass, on similar lines to those we had at Springfontein. We were ready to receive patients within 48 hours of our arrival, and soon had occasion to increase our number of beds from 150 to 200.

CASES IN ONE HOSPITAL MARQUEE.

Since our stay at Pretoria the cases have been most interesting and instructive. I hope to be able to publish an epitome of the notes later on. For the present I will just mention the contents of one marquee containing 7 beds. The cases are not picked, but are merely cited as examples of those admitted in a large convoy from Belfast in the middle of August. Three compound comminuted fractured femurs all due to gunshot; 1 gunshot wound through the femurs—though the bone was not "fractured"—2 gunshot wounds through the shoulder joint; and 1 gunshot wound of the back. They all made a rapid recovery except the last who died 5 days after admission. He was admitted with an entrance wound about 1 inch to the right of the eleventh dorsal vertebra. There was no exit wound. Both lower limbs and sphincters were completely paralysed. On *post-mortem* examination the lamina of the eleventh dorsal vertebra was found to be broken on the right side and the pedicle on the left side. The bullet had then entered the left pleural cavity. The spinal canal was full of blood, but the dura mater and spinal cord were untouched. There have been several similar cases with complete paralysis where the cord and membranes have been untouched, and the spinal canal has been full of blood.

TWO USEFUL INSTRUMENTS.

There are two instruments which we have found very useful, and to which I should like to draw attention: the telephone probe and Mr. Lynn Thomas's tourniquet forceps. The advantage of the telephone probe can be best shown by describing a case (among many others) in which it was used;

A man was admitted with a discharging sinus (gunshot wound) in the back, about 1 inch to the right of the third lumbar vertebral spine. He complained of "pins and needles" in the right lower extremity. There was no paralysis. His temperature was 104°. The injury occurred three days before admission. There was no exit wound. A probe was passed down the sinus to a depth of 4 inches. Either a bone or bullet was felt, but it was not possible to say which. The telephone probe was guided to the same spot. At first it gave a negative result, but after moving it about and gently pushing it in various directions, the characteristic "whr" produced by metallic contact was heard. An incision was then made, and it was found that the right transverse process of the third lumbar vertebra had been fractured, and the fragments lay with a Mauser bullet on the anterior aspect of the second vertebra. The patient made a quick recovery. It was quite impossible to differentiate by feel between bone and bullet, or, indeed, to tell if the bullet was in the immediate neighbourhood. The instrument is armed with blunt and sharp-pointed probes for exploratory purposes.

Mr. Lynn Thomas's tourniquet forceps, with blades about 5 inches long, is most useful in amputations, especially when the operator is short of help. With it there need be no hæmorrhage, not even in an amputation at the hip-joint. It is manipulated in the following way. A small skin incision is made at a suitable spot from the site of operation; into this incision one blade of the forceps is introduced and pushed underneath the vessels supplying the part operated upon. The forceps are then closed, the vessels being compressed between the blades—one of which is on the outer surface of the skin, and the other behind the vessels. There are a series of catches on the forceps, so that compression can be graduated. There is absolutely no bleeding, and no damage is done to the tissues. The addition of those two instruments to an army regulation operating case would be highly advantageous.

PREPARATIONS FOR LEAVING SOUTH AFRICA.

The service time (six months) of the Welsh Hospital is drawing to a close, and as the amount of work is rapidly diminishing we are preparing to depart for home, although we are quite prepared to prolong our stay should there be any necessity for it. Our dressers have already left, so as to be in time for the winter session. The surgical staff hope to leave Durban by the royal mail steamer *Saxon* on September 23rd. Before you receive this letter "The Welsh Hospital" will have been converted into "The Welsh Convalescent Hospital," our Matron (Miss Lloyd) with the nursing sisters remaining in charge. Our kind friend Lieutenant-Colonel Keogh, who is now in command of No. 2 General Hospital, will continue to act as administrator.

I regret to say that our popular and energetic Secretary, Professor Hughes of King's College, has developed typhoid. He has been ill a fortnight. I am glad to say the disease is running a satisfactory course.

[The staff of the Hospital, including Professor Hughes, have now returned.]

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

WE referred last week briefly to the letter of the Secretary and Director of this hospital, stating that the Board of Management had resolved that an inquiry should be forthwith held into the charges formulated by the medical staff against the domestic condition and management of the hospital, and that the Board should request some independent legal authority to conduct such inquiry. We pointed out that the proposed inquiry did not appear to meet the requirements of the case, and we print below a letter which the medical staff has published in the *Times*:

Sir,—On July 28th you were good enough to publish a letter from us in which we challenged the Board of Management to reproduce word for word, as they had supplied them to the governors, their reasons for refusing to the medical staff representation on the Board. At the same time we expressed an urgent desire for a "full and searching inquiry into the constitution and management of the hospital, to be carried out by an independent and at the same time competent body." The reply of the Board to these two demands has been as follows:

In the first place, they did not absolutely refuse to comply with our challenge to state in your columns their reasons for refusing us representation, but fenced in their assent with conditions with which they rightly presumed it would be impossible for you to comply in view of the pressure upon your space. Further they called, at a most unsuitable season of the year, and in spite of our protest, a meeting of governors under conditions which have been sufficiently characterised in the letters which you have published from Sir James Crichton Browne. The meeting was attended by 16 governors, five of whom were members of the Board, and this meeting decided by a majority of 14 to 2, namely, by the vote of nine unofficial governors, "that it is inexpedient to grant the demand of the medical and surgical staff for direct representation upon the Board;" whilst no "governor was found to suggest that any further inquiry into the present condition of the hospital should be held."

We refuse to believe that a decision arrived at in this manner really represents the views of the governors of the charity. Were it so, holding the opinions that we do, we should have no option but to resign immediately. But considering these facts, and especially that public opinion, as expressed by the correspondence in your columns and by your leading articles, has declared itself so clearly in favour of our views, we are convinced that the justice of our claim will be ultimately recognised.

Meanwhile, the Board of Management has suddenly come to the decision stated in the letter of the Secretary-Director, dated October 17th:

"That, in view of allegations in the public press injurious to the interests of the hospital, it is desirable that an inquiry should be forthwith held into the charges formulated by the medical staff against the domestic condition and management of the hospital, and that the Board should request some independent legal authority to conduct such inquiry."

We wish to point out that the expression "domestic condition and management" is ambiguous. Does it mean that the Board consent to the demand formulated in our own letter for an inquiry into the "constitution and management of the hospital" or is the inquiry to be limited to "domestic" matters only? A sentence occurring in the Secretary-Director's letter suggests that the latter only is intended. He says that "in order that public opinion may be authoritatively informed of the condition of the hospital *with respect to the care, comfort, and treatment of the patients* the Board have now determined to bring about at the earliest moment a full inquiry into these (*sic*) matters by an independent legal authority." (The italics are our own.) If the Board's intention should be to limit the inquiry to the "domestic" matters of the hospital, we decline to be a party to it. Our charges concerning the domestic condition of the hospital in the early part of this year formed only a part of the report we made to the governors. To consent to the investigation of one portion of our charges, whilst the greater part are ignored on the supposition that they have been settled by the decision of the meeting of governors held on August 11th, would be to give up the position which we have taken from the beginning of the controversy. This we shall not do. We are perfectly willing to have all the charges which we laid before the governors thoroughly sifted and investigated, but not a part of them as selected by the Board.

Further, when we hear that the Board are going to "request some independent legal authority to conduct such inquiry," we must urge that the Board, being in the position of one party to a dispute, are scarcely entitled to nominate their own tribunal.

Meanwhile, there is one point which must not be lost sight of. Our demand for representation was based, not merely on the principle that the honorary medical staff of a hospital ought to be represented on the Board of Management, but upon the very real facts (1) that the constitution of the National Hospital is so faulty in its conception that the medical staff, whilst giving their services gratuitously, are, according to the present rules, absolutely disfranchised; (2) that a paid official, whose position in similar institutions is a subordinate one, has been allowed gradually to assume a perfectly anomalous position; and (3) that by his interposition as middleman between the Board and the medical staff a harmonious and useful co-operation between these two bodies has become absolutely impossible. We therefore seek direct representation on the Board as the only means of arriving at a better understanding with them, and we seek it in the interests of the hospital.

Now, in spite of the lengthy controversy which has taken place in your columns between the Secretary-Director and those who have combated his views, the public have never had the opportunity of learning the reasons why our demand for a moderate amount of representation, namely, two members upon a Board of twelve, is so obstinately refused by the Board. We think that the time has come when the public ought to know these reasons. They are contained in the rejoinder to our charges, issued by the Board to the Governors on July 21st, 1900, upon page 8, where they occupy a separate paragraph, perfectly intelligible by itself. We now quote them in full, and leave it to your readers to decide whether they do not disclose a fixed determination to exclude the honorary medical staff from participation in the management of the hospital, because of the inconvenience to the Board and the impairment of the supremacy of the Secretary and General Director, which they fear might be occasioned by the presence on the Board of persons professionally acquainted with the work and necessities of a medical institution, and able to supply essential information and counsel. We abstain from further comment except to repel the scandalous insinuation that we are likely to "overlook the claims of suffering" for any other object whatsoever.—We are, Sir, your most obedient servants,

The Medical Staff of the National Hospital for the
October 19th. Paralysed and Epileptic.

Reasons assigned by the Board for refusing to admit the medical staff to the Board.

Quotation from the Board's communication to the governors, dated July 21st, 1900, page 8:

"These objections are summed up in the proposition that members of the medical and surgical staff, being officers and servants of the hospital, should not be included in the governing body.

"The Board have already reminded the governors (see opening statement) that the members of the medical staff are charged with the performance of definite duties, and that questions relating to their discharge of these duties may arise at any time.

"In the company of members of the medical staff, the independence of the Board during discussion would disappear; and while the Medical Committee would continue to meet alone, the Board's deliberations would be always shared by the medical staff.

"Presence upon the Board would involve presence upon the House Committee, where complaints by patients, sometimes in reference to actual or assumed neglect by medical officers, are heard. The interference by the medical staff would show itself in every detail of management and finance, and, instead of being maintained for the benefit of the poor and suffering the hospital would be in danger of having the philanthropic aspect of its work subordinated to that which is merely scientific and investigatory. The claims of mere suffering would be likely to be overlooked and the disposition, generally present, to give preference to 'cases' introduced by fellow practitioners, while patients sent by subscribers are kept waiting, would be aggravated. Already the nominations for admission to the hospital are very largely monopolised by the medical staff, their friends, and their clients.

"It is urged that the medical members would only number two, and would easily be outvoted by the lay members. This argument overlooks altogether the fact that the two members would be delegates, and that they would always come to the meetings with the force of the whole Medical Committee behind them. The matter under discussion would usually have been dealt with already in their own Committee, and they would thus be in a position to enforce their views by threatening hostilities on the part of the Medical Committee if the lay members opposed them.

"Again, although arithmetically the medical members would number only a sixth of the whole Board, anyone with experience of committees will know what it means to have two members, representative of a larger body behind, firmly holding to their views, and unyielding in the conviction that they are better informed than their colleagues. In time these two members would dominate the whole proceedings.

"The undue exaltation of medical authority would mean that the matron, sisters, and nurses would learn to look to the Medical Committee, from which they are now, and with great advantage, wholly separated. At present the Secretary and Director is the officer and servant of the Board, and his independence of the Medical Committee is absolute—a fact to which the Board attach the greatest importance. To include members of the medical staff in the Board would alter his relation to the medical staff, and render some of his most useful functions impossible of performance."

OPENING OF THE MEDICAL SCHOOLS, GLASGOW.

The winter session of the different medical schools in Glasgow began on October 18th, and the classes are now in full swing. In this University it is not customary to have any introductory addresses, but there have been recent changes in the Senate and the new professors, two of whom are medical, have delivered more or less formal introductory addresses.

Introductory Lectures at the University.

Professor McCall Anderson, now Professor of the Practice of Medicine, lectured to a large assembly on the "Treatment of Disease." At the outset he paid a high tribute to the character and work of his predecessor, Sir William Gairdner, and expressed the hope that he might long enjoy the repose he had so richly earned. In his lecture he pointed out the advantages enjoyed by the students of medicine at the present day, especially in the opportunities afforded for practical work. He dwelt on the remarkable advances made in the field of medicine in recent years, especially in the light thrown on disease by pathological and bacteriological research, and on the importance of these in relation to the cure and prevention of disease, illustrating his remarks by reference to various striking examples.

Professor Samson Gemmell gave an opening address in connection with his class at the Infirmary on Clinical Medicine and its Study.

New Classes and New Buildings.

The appointments of Professors McCall Anderson and Samson Gemmell have led to further changes in the arrangements for clinical teaching in the Western Infirmary, and now Professor Stockman conducts a class in clinical medicine, while increased facilities have been given to the gynæcological surgeons, two small wards being set apart for this purpose. Another important change on the medical side of the University is the opening of splendid new anatomical buildings. This was referred to by Professor Cleland in his open-

ing remarks to the classes on anatomy, and though the buildings are not yet completed, the laboratory and the cloak room are ready for the use of the students. When the museum and the rest of the building are finished, the University will have one of the finest anatomical departments in the kingdom.

ST. MUNGO'S COLLEGE.

At the opening of the winter session of St. Mungo's College Sir Hector Cameron, Professor of Clinical Surgery at the University, delivered an address. He spoke of the advantage to an Infirmary like the Royal of being in co-operation with a teaching medical school, and then dwelt on the important work in regard to the treatment of wounds that had been done in the Royal Infirmary by Lord Lister, and the immense progress surgery had made as a result of Lister's discoveries.

ANDERSON'S COLLEGE MEDICAL COLLEGE.

In Anderson's College Medical School the various classes began work without any formality. The transference of Professor Samson Gemmell to the University has made a change in the *personnel* of this College, but the vacancy has been filled by the appointment of Dr. Robert S. Thomson, who has already had large experience in the teaching of Practice of Medicine, and will no doubt have a successful and popular class.

ENTRIES AT THE MEDICAL SCHOOLS AND COLLEGES IN ENGLAND.

WE are enabled by the courtesy of the Deans, Wardens, or other officers of the various schools mentioned below to publish the following particulars, supplementing those published last week, with regard to the number of students who have entered in England this session for the whole curriculum, and of those who have joined for the various special courses.

The number of students who have joined for the full curriculum is shown in the first column (A).

	A.	B.	C.	D.
St. Bartholomew's Hospital	87	43	—	12
Charing Cross Hospital	18	30	33	4
St. George's Hospital	17	2	—	1
Guy's Hospital	80	28	64	17
King's College	25	150*	—	8
London Hospital	74	40	—	12
St. Mary's Hospital	43	34	—	8
Middlesex Hospital	22	37	12	—
St. Thomas's Hospital	47	7	—	11
University College	34	55	—	45
Westminster Hospital	18	27	1	5
London School of Medicine for Women	22	1	—	14
Cambridge University	115	—	—	—
Oxford University	22	—	—	—
University of Durham College of Medicine	25	26	5	60
Bristol University College	13	2	3	6
Owens College, Manchester	47	46	31	48
University College, Liverpool	40	6	11	15
Yorkshire College, Leeds	38	12	5	31
Birmingham University	26	30	9	8
University College, Sheffield	8	2	1	—
University College of South Wales, Cardiff	19	4	3	16
London School of Dental Surgery	50	—	50	—
National Dental Hospital	—	—	10	—
School of Tropical Medicine	17	—	—	—

A. Number of students who have joined for the full curriculum.
B. Number of students who have joined for special courses.
C. Number of dental students.
D. Number of students who have joined classes for preliminary instruction.
* Including students in Bacteriology and Public Health Departments.

The total number of students who have entered for the full curriculum at medical schools in the metropolis (excluding the London School of Medicine for Women) is thus 817; or on excluding, for the purposes of comparison, returns from Oxford, Birmingham, Cardiff, the Dental Schools, and the School of Tropical Medicine, 773, as contrasted with 914 in 1899, and 898 in 1898. There is a marked decrease this year in the number of students who have entered for special courses, and a slight increase in the number of dental students.

INDUSTRIAL building societies have been formed in Paris, Marseilles, and Bordeaux which have erected groups of cottages surrounded by gardens for working men.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

THE correspondence and comments which have appeared in our columns during the last few weeks with regard to the action of certain insurance companies in seeking to reduce the fees paid for examining applicants for life insurance will be fresh in the memories of readers. In September the General Manager in England of the New York Life Insurance Company issued a circular letter stating that the Board of Management had decided that from (on and after) November 1st, 1900, "the fees payable to their medical examiners shall be 10s. 6d. where the amount insured is £250 or less, and £1 1s. for sums in excess of £250." For this the Company expected medical examiners to visit applicants at their own houses, but agreed that if the applicant lived at a distance of two miles or more from the medical examiner's residence the fee should be £1 1s. in all cases. Many of the medical men who have been accustomed to examine for this Company strongly resented the proposed reduction of fees, pointing out that the examination which the Company expected to be made was the same in all cases, and involved a visit, an examination, inquiry into the history of the patient, and an expression of opinion upon the value of the life. A correspondent now sends us the following circular letter which he has received; this it will be observed is signed by Dr. A. Ogier Ward, the Medical Referee for the United Kingdom:

DEAR SIR,—On September 10th we sent you a copy of a circular setting forth a new schedule of fees payable to medical examiners for this Company. We are without a reply from you up to the time of writing. May we ask you to be good enough to send in your reply promptly, as, of course, it is essential that we should know to whom we are to send our cases, and we should be sorry to send them elsewhere in default of a favourable reply from you.—Yours truly,

A. OGIER WARD,
Medical Referee for the United Kingdom.

The correspondent who sends us this letter informs us that in declining to agree to the new schedule he expressed his surprise that such a proposition should be made to his colleagues by the Medical Referee, a surprise which many others will share. The medical examination for life assurance is either a farce or calls for the exercise of some of the highest qualities of a medical man. It is absurd to contend that a Company which, we observe, boasts of accumulated funds amounting to over £48,000,000 is not in a position to pay a reasonable fee for the services which it asks its medical examiners to render.

ASSOCIATION INTELLIGENCE.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

WEST SOMERSET BRANCH.—The autumnal meeting of this Branch will be held at the Taunton and Somerset Hospital on Tuesday, October 30th, at 4 P.M. Business: The Question of Coroners' Fees, introduced by the President, Mr. G. F. Sydenham. Mr. W. J. Walsham, of St. Bartholomew's Hospital, London, will read a paper on the Treatment of Appendicitis. Members wishing to contribute cases or papers should inform the Honorary Secretary as soon as possible. The annual dinner will be held at the London Hotel in the evening.—R. LIDDON MEADE-KING, Taunton, Honorary Secretary.

STIRLING, KINROSS, AND CLACKMANNAN BRANCH.—The autumn meeting of this Branch will be held on Tuesday, October 30th, at 4.15 P.M., in the Crown Hotel, Falkirk. Professor Stockman will read a paper on the Action and Value of some commonly used Drugs. The annual dinner will take place after the meeting. All members of the Association resident in the Branch District are cordially invited. Members desiring to show cases or specimens, and candidates for election, will please communicate with J. E. MOORHOUSE, 1, Glebe Avenue, Stirling, Honorary Secretary.

SOUTHERN BRANCH: SOUTH-EAST HANTS DISTRICT.—The autumn meeting of this District will be held at 5, Pembroke Road, Portsmouth, on Thursday, November 1st, at 3.30 P.M. Members who wish to bring forward

any business, to read papers, etc., show cases or specimens, or to propose any new members are requested to communicate at once with the Honorary Secretary, J. G. Blackman, Poplar House, Kingston Crescent, Portsmouth.

South-Eastern Branch: West Sussex District.—The next meeting of this District will be held at the West Sussex County Asylum, Chichester, on November 6th, at 3.15 P.M. Dr. Ernest Buckell will preside. The following papers have been promised; Mr. H. Stansfield Collier: Appendicitis. Dr. Hinds: Two cases of Abortion. Mr. Rawlinson: The Notes of Two Cases of Hernia. Dr. H. A. Kidd will show cases illustrating a short paper on various forms of insanity. A dinner will be held at the Dolphin Hotel, at 5.30. Tickets 6s., exclusive of wines. All members of the Branch are entitled to attend and introduce a professional friend.—H. C. L. Morris, 10, The Steyne, Bognor, Honorary Secretary.

Perthshire Branch.—The twenty-first anniversary meeting of this Branch will be held in the Station Hotel, Perth, on Friday, November 2nd, at 3.45 P.M. Business: Read Minutes. Election of members—Dr. Soutar (Pitcairngreen) Branch; Dr. James (Perth), Association and Branch. Election of Office-bearers. Report of Council. Report of Treasurer. Report of Representative Member. President's Address on the Management of Infectious Diseases in Schools. Dr. Urquhart will give a summary of the History of the Perthshire Branch. Dr. Parker Stewart on the Plague. Consider Report of Decay of Teeth Committee. Appeal on behalf of Epsom College. Arrange next meeting. Any other business. It is important that there should be a very full attendance on the coming-of age of the Perthshire Branch. Dinner (3s. 6d.) as usual after the meeting in the hotel, to permit of country members returning home by the evening trains. —A. R. Urquhart, James Murray's Royal Asylum, Perth, Honorary Secretary.

North of England Branch.—The autumn meeting of this Branch will be held at Bishop Auckland, co. Durham, on Wednesday, November 7th, at 4 P.M. Member intending to read papers, to propose new members, to make any communication, or to bring forward cases or specimens, are requested to write to the Secretary at once.—Thomas Beattie, 3, Ellison Place, Newcastle-upon-Tyne, Honorary Secretary.

Metropolitan Counties Branch: West London District.—In consequence of there being a meeting of the Council of the Branch on Tuesday, October 30th, at 5 P.M., the meeting of the District Committee (arranged for October 30th, at 5 P.M.) is postponed to Tuesday, November 6th, at the same time.—Thomas Dutton, M.D., 76, Clarendon Road, W., Honorary Secretary.

Bath and Bristol Branch.—The first ordinary meeting of the session will be held at the Medical Library, University College, Bristol, on Wednesday, October 31st, at 7.30 P.M.; Mr. A. W. Prichard, President. The following communications are expected:—Dr. B. M. H. Rogers: Case of Sporadic Cretinism; patient to be shown at 7.30. Mr. F. H. Rose: A modified Clover's Apparatus for the administration of Gas and Ether. Dr. G. Parker: Case of Hydrochloric Acid Poisoning; specimen to be shown. Dr. J. Lacy Firth: Remarks on a Case of Lateral Sinus Thrombosis successfully treated without Ligature of the Internal Jugular Vein. Dr. J. Michell Clarke and Mr. C. A. Morton: Abscess of Left Lateral Lobe of Cerebellum: Evacuation: Recovery. Dr. T. Carwardine: Cases illustrating the value of the Cystoscope and Ureteral Catheter in Diagnosis (Lantern Slides). —J. Michell Clarke (Clifton), W. M. Beaumont (Bath), Honorary Secretaries.

DORSET AND WEST HANTS BRANCH.

The autumn meeting was held at the Hotel Mont Dore, Bournemouth, on October 17th, under the presidency of Mr. Decimus Curme. Fifty other members and visitors were present.

Vote of Condolence.—It was resolved that the members of the Dorset and West Hants Branch of the British Medical Association express their sincere sorrow at the death of their members, Dr. Henry Geary Dyer and Dr. Dennis Cawood Embleton, and desire to convey their sympathy to Mrs. Dyer, Mrs. Embleton, and the other members of their families in their sad bereavement.

New Members.—The following gentlemen were elected: Mr. Thomas William Widges Bovey, of Abbotsbury; Dr. Ernest Edmund Maddox, of Bournemouth; and Dr. Frank Schofield, of Weymouth.

Election of Office-Bearers.—Mr. William Ernest Good, of Dorchester, was elected President; and Dr. Henry Grabham Lys, of Bournemouth, and Dr. John Moorhead, of Weymouth, Vice Presidents. Dr. William Vawdrey Lush, of Weymouth, and Mr. Charles Henry Watts Parkinson, of Wimborne, were re-elected Joint Honorary Secretaries and Treasurers.

Spring Meeting.—It was resolved that the May meeting should be held at Dorchester.

Donation.—A donation of £10 10s. was granted to the British Medical Benevolent Fund.

Presidential Address.—An address was given by the President, embodying an account of his experience of the duties of a militia surgeon at Shorncliffe and Kinsale.

Discussion.—A discussion on Pneumonia in the Aged was opened by Dr. Whittingdale, one of the Vice-Presidents, and taken part in by Dr. Moorhead, Dr. Ransome, Mr. Mahomed, Dr. Snow, Dr. Lush, and Dr. Blake.

Communications.—The following communications were presented:—Dr. Spooner: The Bite of an Adder. Dr. Alderson: Two Cases of Hepatic Cirrhosis.

Dinner.—The members, who had been hospitably entertained to luncheon by the local members, dined together at the Hotel.

BORDER COUNTIES BRANCH: SECTION FOR THE COUNTIES OF ROXBURGH, BERWICK, SELKIRK, AND PEEBLES.

The annual dinner was held in the Abbey Hotel, Melrose, on the evening of Thursday, October 18th. Dr. Blair (Jedburgh) presided, and Dr. Young (Earlston) was croupier. The other members present were: Dr. Haddon (Denholm), Drs. Henderson and Tyrrell (Galashiels), Dr. Sturrock (Jedburgh), Dr. Cullen (St. Boswells), Dr. Elliot Little (Gordon), Dr. Fleming (Kelso), Drs. Carlyle Johnston, Wade, and Calvert (Melrose). Drs. Muir (Selkirk) and Marr (Greenlaw) sent apologies at the last moment, both being detained by the exigencies of practice. The following toasts were proposed: (1) "Queen and Royal Family," proposed by the Chairman. (2) "Navy, Army, and Reserve Forces," proposed by the Chairman, and acknowledged by Surgeon Captain Young. (3) "The British Medical Association," proposed by Dr. Haddon, acknowledged by Dr. Tyrrell. (4) "The Borderland," given by Dr. Carlyle Johnstone. (5) "The Section," given by Dr. Henderson, and acknowledged by Dr. Blair. (6) "The Fair Town of Melrose," proposed by Dr. Fleming, and replied to by Dr. Wade. (7) "The Croupier," given by Dr. Cullen. (8) "The Chairman," given by Dr. Little. Song and story were interspersed. The evening was much enjoyed, and all agreed that everything should be done to make the annual dinner a popular and lasting function.

NORTH OF IRELAND BRANCH.

The autumn meeting of this Branch was held in the Museum, College Square North, Belfast, on October 18th, Professor Byers, M.D., the President of the Branch, being in the chair, and 47 members present.

Reports and Financial Statement.—The Honorary Secretary (Dr. William Calwell) read the minutes of the spring meeting and of the special meeting held in May, both of which were confirmed; he also read the report of Council, stating that accounts to the amount of £12 3s. 6d. were ordered to be paid, and that Dr. Chas. C. Deane (Loughgall, co. Armagh), Dr. A. Ernest Wales (University Road, Belfast), and Dr. D. S. Browne (10, Carlisle Terrace, Belfast) were elected members. The report was adopted. He also read the report from the Special Nursing Committee, stating that the Committee had met twice, and had drawn up a draft scheme which it recommended should be printed and sent to each member of the Branch for discussion at a subsequent meeting. The report was adopted.

Presidential Address.—The President of the Branch delivered his opening address on the Present Position and Future Work of the British Medical Association. The paper was received with the most evident signs of approval, and evidently voiced the opinions of the audience.—Dr. Henry O'Neill proposed a vote of thanks to Professor Byers for his paper, which was seconded by Dr. Stuart (Ballymena), and passed with applause.

Papers Read.—Dr. John MacCormac read a short paper on Neurasthenic Dyspepsia, and Dr. A. G. McKenna read short notes on the Treatment of Gonorrhœa.

ABERDEEN, BANFF, AND KINCARDINE BRANCH.

The annual general meeting of this Branch was held in the Palace Hotel, Aberdeen, on October 20th. Dr. Farquharson, M.P., President, was in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and approved.

New Members.—The following were nominated for ballot at the next meeting: Norman Davidson, M.B., Ch.B., Aberdeen; Alex. McPherson Fiddes, M.B., C.M., Aberdeen; Frederick Philip, M.B., Ch.B., Aberdeen; Alex. Cruickshank,

M.B., C.M., Hatton; William Cockburn, M.B., C.M., Old Meldrum; Duncan Davidson Mackintosh, M.B., C.M., Aboyne; J. Muir Corbett, M.B., Ch.B., Balmoral; and A. Mercer Watson, L.R.C.P. and S.Edin., L.F.P. and S.Glasg., Aberdeen.

Report and Balance Sheet.—The Council's report for the session 1899-1900, was read and approved. The Treasurer's balance sheet was submitted and approved.

Office-Bearers.—The office bearers for 1900 1 were elected according to the list recommended by the Council.

Thanks to Branch Secretary.—Professor OGSTON, the newly-elected President, then took the chair, and proposed that the great appreciation of the Branch of Dr. Riddell's services as Secretary for the past six years be recorded, and a letter expressing this be sent to Dr. Riddell. This was seconded by Dr. FARQUHARSON.

Luncheon.—After the business meeting thirty members of the Branch sat down to lunch, Professor OGSTON presiding. A most enjoyable afternoon was spent.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT. A MEETING of this District was held at the Grand Hotel, Eastbourne, on October 10th, the chair being taken by Mr. C. O'BRIEN HARDING.

Communications.—Mr. HALLIDIE showed a toe affected with ainhum, removed from a Kaffir at Johannesburg.—Dr. RYDING MARSH read a paper on Cancer of the Stomach, illustrated by notes of six cases recently under his care. These included a pyloric case for relief of which he performed gastro-jejunostomy in January, 1899, the patient surviving until August, 1900, and a case of cancer of the cardiac orifice for which gastrostomy was performed in May last; the patient was still living.—Dr. GABBETT read a paper on the Diagnosis of Diphtheria, and indicated the difficulty often experienced in bacteriological diagnosis.—The HON. SECRETARY read (for Mr. TIGEHURST) notes of a case of Gastric Ulcer in which abdominal section was performed 32 hours after perforation. The perforation was closed by suture, and the patient was sufficiently well to eat soft solids on the eleventh day. She died 5 weeks afterwards from suppurative pylephlebitis following a small subphrenic abscess. The ulcer had healed.

SOUTH-EASTERN BRANCH: EAST SURREY DISTRICT. THE autumn meeting of this District was held at Reigate on October 11th, Dr. WALTERS, of Reigate, President of the South-Eastern Branch, in the chair.

Confirmation of Minutes.—The minutes of the Croydon meeting were read and confirmed.

Next Meeting.—It was resolved that the next meeting should be held at Upper Norwood on the second Thursday in March.

Papers.—Dr. HADLEY read a paper on Chronic Bronchitis in Children; Mr. C. MANSELL MOULLIN one on The Diagnosis of Acute Inflammation of the Appendix. The CHAIRMAN, Drs. J. H. GALTON, R. M. MILLER, MACILWAINE, MAUDE, and FISHER, and the HONORARY SECRETARY joined in the discussion which followed these papers. The adjourned discussion on Mr. J. W. MACILWAINE'S paper, The Future of the Profession and of the Association (a paper read at the last Croydon meeting and published in the BRITISH MEDICAL JOURNAL of July 21st, 1900) then took place, when the following resolution was proposed by the CHAIRMAN (Dr. Walters), and seconded by the HONORARY SECRETARY (Mr. Prangley), and after being discussed by Drs. GALTON, MAUDE, HART, HOLMAN, and MACILWAINE, was carried *nem. con.*:

That it is desirable that the British Medical Association should authorise and encourage the formation of local societies amongst its members.

Dinner.—After the meeting 16 members and visitors dined together.

THE British Medical Temperance Association are proposing to hold their annual breakfast meeting for medical students at the Cannon Street Hotel on Friday, November 9th, at 8.30 A.M. Professor Sims Woodhead will preside, and the meeting will be addressed by Mr. A. Pearce Gould and Mrs. Scharlieb. Any medical student can obtain a ticket by applying to the honorary secretary, Dr. Ridge, Enfield.

SPECIAL CORRESPONDENCE.

BERLIN.

Plague Regulations for Railways.—Trachoma in School Children.—School Dust.—Kitchens for the Sick.—The Teaching of Massage in Berlin University.—Professor Koch's Return.

A SCHEDULE of precautionary measures against the spread of plague, drawn up by the German Imperial Board of Health, contains some sensible innovations, inasmuch as the vexatious and generally ineffectual fumigation of letters, quarantine of railway travellers, etc., are done away with. Should plague break out, there is to be no general and regular examination either of railway passengers or of their luggage, but the railway officials, guards, conductors, etc. are to be kept informed of the stations at which doctors and plague hospitals are available. Careful and detailed instructions are given as to the mode of conveying any passenger who may be found ill in the train, as to the disinfection of fellow-passengers and railway officials who may have been in contact with such a case, and of course of his luggage, the railway carriage, etc. Letters and parcels are not to be subjected to disinfection or fumigation.

In spite of the attention given during the last few years to the prevalence of trachoma among school children in the eastern provinces of Prussia, it appears that the disease has not been efficiently combated, and that it is on the increase. Professor Hirschberg, the eminent oculist, has just published his observations made during a journey undertaken at the request of the Prussian Ministry. He declares himself "disappointed and depressed by the terrible state of things." Overcrowded and insanitary schoolhouses—in one place, Kumiliko, 125 children were found crowded into two rooms!—with a considerable percentage of trachoma cases; maximum, 52 per cent., with 8 per cent. of serious cases. Professor Hirschberg recommends that the State should immediately take measures, such as the erection of temporary shed hospitals, systematic medical supervision and treatment, and pressure on the municipalities to bring about the immediate disinfection and gradual improvement of the schoolhouses, etc. That heroic measures are necessary no one who reads Professor Hirschberg's pamphlet can doubt. The expense will be considerable, but, on the other hand, nothing can be gained by temporising or by half-measures, which would be simply waste of money and energy.

Curious dust statistics were brought to light at the last meeting of the Berlin Society for the Promotion of School Hygiene. Herr Sueck, himself a teacher at one of the large municipal schools, has found that in 1,110 grams of dust swept from under the boards of screwed-down school benches there were more than two milliards of germs, and that the dust contained 33 per cent. organic matter. That these germs are not all innocuous, that many of them may be pathogenic and favour the spread of diseases, has been amply proved. washable wall paint or wall papers, linoleum-covered floors, and school benches which can be turned up on pivots so as to expose the whole of the floor space for daily scrubbing, are improvements strongly advocated by the society.

The Berlin Society for "kitchens for the sick" has opened its first establishment, and hopes to supply a widely-spread want by sending out invalids' food to patients' own houses. The arrangements are extremely practical and well-thought-out in every detail, thanks to a committee of philanthropic and experienced ladies, and above all the energetic lady president, Frau vom Rath. Packed in modern "thermophore" apparatus the prepared food will reach the invalids' houses without losing heat. The scale of prices is extremely moderate.

Massage as a separate and independent study is the latest novelty at the Berlin University. Two courses of massage—one of six months' duration for students and one of one month's for doctors—will be held under Professor Zabludowski's direction at the new University Institute for massage and Swedish gymnastics.

After eighteen months' of travel devoted to the study of malaria and other tropical diseases, Professor Robert Koch has returned to Berlin. His assistants and pupils had planned an ovation on his arrival, but Koch managed to outmanœuvre them by keeping the day a secret.

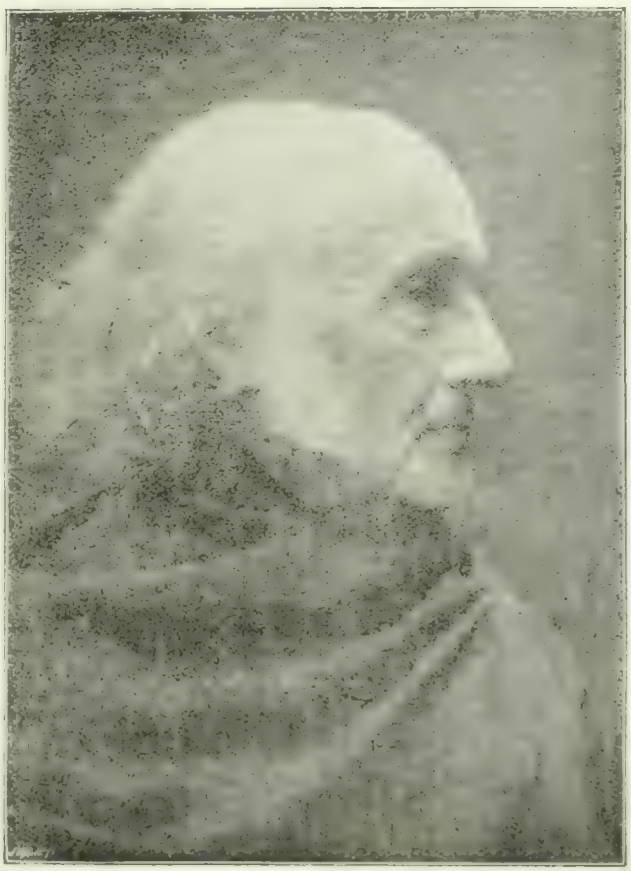
OBITUARY.

Sir HENRY ACLAND, Bart., K.C.B., M.D., F.R.S.,

Formerly Regius Professor of Medicine in the University of Oxford.

A Personal Sketch.

By the death of Sir Henry Acland, at the advanced age of 85, a notable figure has been removed from the University of Oxford. For although failing health had for some years prevented him from taking any active share in university affairs, it is only as recently as January last that the remaining link was severed that bound him to his official life in Oxford, which he had carried on without a break for more than fifty years. There are few now alive who can fully realise the changes which have occurred in Oxford during this past half-century, or who can form any adequate idea of the part which he played in changing the old order of things and in introducing a new era, with wider views, more accurate knowledge of the great forces which control the world, and vastly increased facilities for the study of those sciences which underlie all the diverse branches of biological knowledge. Fifty years ago the ground now covered by the buildings of the University Museum was a ploughed field on the outskirts of the town; now it is the centre of an active, intellectual and scientific life, with every kind of laboratory and convenience for research, as well as for teaching, and with a great scientific library which has few rivals in the United Kingdom. No fact could better illustrate the difference between the Oxford of to-day and the Oxford as it was when young Acland first took his residence there as a teacher in 1845.



Henry Wentworth Acland was born on August 23rd, 1815. He was the fourth son of Sir Thomas Dyke Acland of Killerton, Exeter, a country gentleman of the old school, a good Tory, somewhat imperious, even despotic, but with splendid qualities, which endeared him to his neighbours and impelled them to erect a statue to his memory whilst he was still alive, a rare honour and one still more rarely justified. In such a home he was brought up in the ordinary life of a young country gentleman of good birth, with every advantage of cultivated associations and with the high example of his father and his elder brother before him. His father was an artist of no mean power, and his brother, the late Sir Thomas, was not only an artist, but was also a student of philosophy and mathematics of more than ordinary ability, so much so that later he gained a double first in mathematics and Literæ Humaniores in the final school at Oxford. Another brother was the late Arthur Troyte, a man of deep religious feeling, as many will know from his devotional works and hymns which have been widely circulated; an accomplished musician and of considerable mechanical skill, which he showed in many ways, such as by assisting to rig his father's yacht, and by acting as architect and clerk of the works to the chapel in his father's park. It is little to be wondered at that amidst such surroundings Henry Acland's mind should from the first have been directed towards artistic and intellectual pursuits, and these early teachings bore ample fruit in his later years. It was his father who first suggested that he should become a doctor. He had a high opinion of the life of a good physician, although he had a grim joke about the doctor in a suburban village where he lived for a time, whose sign he said was "Mangling done here." Sir Thomas was well acquainted with the late Sir Benjamin Brodie, then in the zenith of his fame as a surgeon; and it was at Sir Benjamin's advice that young Acland, after he had finished his school days at Harrow, was sent to complete the general part of his education at Oxford. When Sir Benjamin was asked how best to make the youth into a physician, he replied, "Send him to Oxford, and when he has taken his degree bring him back to me and I will tell him what to do next." Much happened before this next interview, for although he entered Christ Church, Oxford, in 1835, he did not take his degree until 1840. He had never at any time been very robust, and it may well be that the journeys from Devonshire to London, frozen on the outside of the coach, did not help him much. He has often told how in winter, too cold and stiff to move, he used to be lifted down and set to thaw in the more genial atmosphere of the wayside inns. Being in delicate health in 1838 he was advised to leave Oxford for a time; and, taking advantage of the fact that a former captain of his father's yacht was captain of H.M.S. *Pembroke* in the Mediterranean, he made his home on board for many months, and did not return to Oxford until 1839. The results of these travels are known to many of his friends, for he published a drawing and description of the plains of Troy, and made drawings of the localities at which were situated those seven churches of Asia mentioned by St. Paul.

The long period spent on H.M.S. *Pembroke* fostered the love of the sea which he had learned on his father's yacht, a love which embraced the sea and all that is in it. The method and precision of the whole life on board ship appealed to him as the type and ideal of what well-ordered life should be. On his return to Oxford he brought honey from Mount Hymettus to the table of the then Dean, Gaisford, and ventured to withstand an examiner who insisted that he should translate *δίος τυρός* "goat's cheese" by saying that it was "sheep's cheese," and that not many weeks before he had been eating it in Greece. When in Greece, whilst making a sketch in the mountains, he was captured by a brigand. Finding that the man was covering him with his gun and that there was no escape, he continued his drawing, and the brigand came up to parley. He told the tale of his outlawed life, a life thrown away not from choice but of necessity, and prayed his captive's good offices should he give himself up or be caught. They parted friends, and the captor at no distant date took with him to his prison a Bible given him by the captured artist, who did all that lay in his power to mitigate the hardship of the brigand's fate.

On his return to Oxford young Acland completed his university career without having any official stamp of dis-

tinguished success in the shape of high place in class lists or by gaining any of the university prizes. His brother's valet said to him whilst packing up, "We got a double-first; a third is good enough for you!" Whilst an undergraduate he made two special friendships, the one with Henry Liddell, his tutor, who subsequently became Head Master of Westminster School and Dean of Christ Church, the other with John Ruskin. These two ties, broken only by death, had a profound effect upon his whole career, which was now about to begin in real earnest. In 1840 he took his B.A. degree, and was elected a Fellow of All Souls.

On the day on which he took his degree he went to London and sought out Sir Benjamin Brodie again, to ask his counsel as to how best to become a doctor. "Go," said the great man, "to St. George's Hospital, enter your name as a perpetual pupil, and if ever you want anything come to me." Sir Benjamin Brodie was as good as his word—in sickness, in health, in joy and in sorrow he befriended young Acland and helped him with good counsel at all turns of his career.

At this period clinical teaching was very different from what it is now. When Acland began his studies the stethoscope was not only not used, but was even derided by some of the seniors, and he was accused of wasting his time, because in conjunction with his brother Arthur he studied Laennec's writings, and mastered the art of mediate auscultation to such effect that they were able to diagnose and locate a cavity, the presence of which the physician of the case would not admit until convinced as to the accuracy of the observation by the stern facts of the necropsy. The use of the microscope was almost as rare; but, determined to learn it, Acland with two other "seekers after truth," made a class with Mr. Quekett, for which they paid the curious fee of *two* looking-glasses, since the sum which they considered that they ought to devote to the purpose was more than sufficient to purchase *one*. In 1843 he went to Edinburgh to supplement the teaching which he was able to obtain at St. George's, and whilst there he lived in the house of Professor Alison, with whom to the end he maintained an affectionate and devoted friendship. To Professor Alison, Dr. John Goodsir and Professor Owen he owed more than to any other of his teachers the inspiration which guided him a few years later to commence those unceasing efforts to found at Oxford a school of science, and to give it a worthy home such as now has been established on a permanent basis in the University Museum. Before he took his medical degree he came to the parting of the ways. He had to make the eventful decision as to what his future life should be, whether that of a practitioner of medicine in London or as a teacher first and a doctor next in his old University. The decision was influenced mainly by two circumstances. In the first place he was offered the vacant post of Lees Reader in Anatomy at Christ Church, Oxford, and in the second, his health not being then robust, he was advised to leave London, with all its trying life, in the hope that a not less successful career might await him at a distance from the metropolis. Those from whom he sought advice strongly urged him to leave London, though Mr. Cæsar Hawkins, then Surgeon to St. George's, warned him that of necessity if he left London his opportunities would be less than if he could remain. So far as strictly clinical work was concerned this warning may have been true, but the issue has shown that even if the opportunities of advancing medical research were less at Oxford there was still an abundant field of work awaiting him, the successful cultivation of which has had a lasting effect on the profession of medicine in England.

The die was cast. He accepted the hazard, and became whilst yet a student of medicine a teacher at Oxford and a Lecturer in Anatomy. To him teaching anatomy did not imply, as it was then held at Christ Church to mean, merely the delivery of a course of lectures on human anatomy. He set himself to work to collect, dissect, and demonstrate types of the various forms of organic life, from the lowest to the most complex, showing their developments, their mutual relations, and their adaptability to the endless variety of conditions under which they lived. How little this was at the time understood may be gathered from the fact that his quarter's salary was actually stopped because he gave practical demonstrations on the work on hand, instead of merely delivering lectures as defined by the regulations under which he was appointed. Nothing daunted, he continued with unceasing labour, adding to the specimens of comparative anatomy, which formed the nucleus of the Hunterian series which he designed to form under the inspiration of Professor Owen, on the model of the museum at the Royal College of Surgeons. His life at this period was very laborious, as, soon after he took his degree, with the prestige of his position he began to obtain a considerable amount of practice and his medical and scientific work together taxed his powers to the utmost and gave him little time for rest. Oxford in those days looked askance at the study of natural science, and many curious stories could be told of his difficulties in making specimens for the new collection; one must suffice:

The Lees Reader had a much-prized giraffe whose skeleton he wished to preserve for the growing collection; but there was no place available for the due macerating of the bones except the kindly offered shelter of the unused stables belonging to one of the Canons. After a few days notice was given to the investigators to quit, and the specimens had to be removed—but not before the tail bones had been stolen by the Canon's dogs; they were never recovered, and their place is taken by the plaster cast taken from the specimen in the Royal College of Surgeons Museum. Perhaps some hypercritical zoologist will one day invent a hypothesis as to why it is that this particular giraffe had lost his tail.

Such was the pursuit of comparative anatomy at the end of the first half of the nineteenth century in Oxford. During the time that he was Lees Reader he was assisted by Lionel Beale, Victor Carus, now professor of zoology at Leipzig, Dr. Melville and Charles Robertson, who all gave valued service

in collecting specimens, setting up preparations, and preparing for lectures. The time was getting ripe for a further development in the teaching of science within the University. A petition to the University was drawn up and finally sent in July 20th, 1847.

"Oxford, July 12th, 1847.

"...Believing that the future welfare of the University is intimately connected with the progress of all her institutions, we are desirous of furthering such steps as may tend to the erection of an edifice within the precincts of the University for the better display of materials illustrative of the facts and laws of the natural world....We earnestly commend this to the consideration of those who are interested in the future welfare of Oxford, and we shall be grateful for their opinion and advice as to future proceedings on this subject.

(Signed) Charles Daubeny,
Professor of Chemistry and Botany.
P. B. Duncan,
Keeper of the Ashmole Museum.
Robert Walker,
Reader in Experimental Philosophy.
Henry Wentworth Acland,
Lees Reader in Anatomy."

This was to have been signed by the teachers of scientific subjects in Oxford. It was signed by four of them and a space was left for the signature of the great geologist, Buckland, at that time Reader in Geology at Oxford and Dean of Westminster, and by repute one of the most distinguished men of science of his day. It seems almost incredible, but he refused to sign—and the blank left for his signature still gives significant testimony to the almost insuperable difficulties which had to be encountered by young Acland in overcoming the prejudices and apathy of even the most enlightened members of the University, and to induce them to take even an intelligent interest in assisting to open that great word of God, the Book of Nature. Buckland's reply to Acland's request for his signature was as follows:

"Deanery, Dec 27th, 1847.

"My dear Acland,—.....Some years ago I was sanguine, as you are now, as to the possibility of natural history making some progress in Oxford, but I have long come to the conclusion that it is utterly hopeless.....I therefore return the paper which I think it would be useless mockery to put my name to, and am, very sincerely yours,

"(Signed) "W. Buckland."

There were, however, some who took a different view and gave the weight of their great influence to support what was then considered almost a revolutionary proposal, that the University should seriously undertake the teaching of natural science. Amongst these were Liddell, afterwards Dean (who was Henry Acland's tutor whilst he was an undergraduate); Dr. Pusey, the renowned theologian, who afterwards preached a widely-known sermon on "Unscience not Science adverse to Faith," dedicated in truest affection to Henry Wentworth Acland.....who devoted the prime of life to the revival of the study of the book of God's works in Oxford. Jacobson, afterwards Bishop of Chester, and Charles Conybeare—a band of notable men, and all of them clergymen. Many difficulties were successfully in turn removed, and at last on June 20th, 1855, the foundation stone of the new museum was laid, and with it was laid the foundation of a new era in Oxford, which was to effect a revolution in the old University, and to give hitherto undreamed-of advantages for scientific training to succeeding generations of Oxford men.

But vexatious difficulties were by no means at an end, as may be well illustrated by the following anecdotes: There was employed in the museum as stone carver an eccentric genius named O'Shea, whose carving of the plants on some of the capitals, representing the natural orders, excite the admiration of all who see them. He was one day carving the arch of one of the Gothic windows, the cost of whose decoration had been undertaken by Mr. Ruskin, when he was hailed by one of the delegates. "What are you carving there, Shea?" "Monkeys, your honour; I'm carving the Darwinian theory." "That can't be allowed," retorts the angry delegate; "we can't have monkeys climbing up the museum windows; you must have them out." Next day he came along to see that his order had been obeyed, and seeing Shea at work, called out, "Why, Shea, you have not done as I told you; what are you carving now?" "Cats, your honour." There was no reply. The catamonkeys, strange attenuated beasts, may be seen at the present day, crawling round the second window of the first floor on the right of the central arch, presenting forms unknown to natural history, and attesting equally to the skill of the carver and the disfavour in which at the time the Darwinian theory was held by one of the leaders of thought in Oxford at the time. At a later period, when the available funds had been exhausted, and a parsimonious or indigent University had decided to spend not a penny more on "those useless decorations," Shea was dismissed. He was angry with a righteous and Celtic anger, and was found next day working (as he had seldom worked before for pay) at the great central archway, which was still unfinished. Here he was found by Dr. Acland with the chips flying fast and furiously round him, moulding out a row of heads along the lower margin of the arch. "Hullo, Shea," says Acland, "I thought you had been dismissed." "So I have, your honour," he replies, redoubling the energy of his work. "Well, but you know you won't get any pay for this." "I know, your honour; it's all right." "But what are you carving?—Owls and parrots?" "Owls and parrots, your honour—heads of houses and members of Convocation."

And there they are to this day, roughly moulded and defaced in obedience to peremptory orders, but none the less an eloquent testimony to the vexatious delays and obstructive tactics which were sufficient to exasperate even the workman to such a pitch as to goad him to work for nothing. Who shall say that he did not have his revenge? Such episodes, trivial as they are in themselves, tell eloquently of the struggle which was carried on to establish the new teaching; a struggle which, however protracted, was at last to end in victory. The idea which Acland had in his mind in endeavouring to get the new museum built was to found an institution round which should be centred the various departments which should investigate and teach the great truths of Nature. All that concerned man and his dwelling-place was to have a home there, all that showed the relation of this earth to the infinite universe around was to be studied—all that affected man in health or in disease; each subject was to be represented and have its appropriate laboratories, class rooms, and museums, and the central point was to be a great library in which might be stored the best of all that the greatest minds had contributed to the knowledge of our material world. Around, in the neighbouring grounds, he hoped to see located observatories, an institute of comparative pathology and the botanical gardens, so that the whole orderly creation, the Kosmos, should be represented in such a way as to make it intelligible for the student and give opportunities for study in whatever direction he might wish to direct his inquiries. The edifice as it was first conceived has not yet been completed. In some directions it has made great progress such as in the departments of physics, physiology, human anatomy and anthropology. One department which he considered essential was until quite recently lacking, namely, that for comparative pathology. Private munificence with some aid from the University has removed the defect and a department for the study of pathology is in course of erection. Lack of endowment has hampered the extension of the work in many directions, first in the building and afterwards in the organisation and equipment of the departments. Acland persuaded the University to purchase the Van der Kolk collection of pathological specimens, and for many years at his own cost maintained a sanitary laboratory in the museum in which Poe and Donkin and many others have worked and in which the earliest teaching in physiological and pathological chemistry and bacteriology were given almost entirely at Dr. Acland's cost. He saw the importance of having such things taught, and there being no other means of doing this he provided for them himself.

On the keystone of the arch at the entrance to the museum there is carved in low relief the figure of an angel; in his right hand he bears an open book, in his left three living cells. This figure is an emblem of the intentions of those who founded the Museum, which was to enable future generations to study the book of Nature, and to search into the mysteries of life, guided by a higher power who alone could give them understanding to read aright the pages of the book which was laid open before them.

Much criticism has been levelled at the architecture of the museum, and much has been said about the unsuitability of Gothic for the purposes to which it was intended that the museum should be put; no great work is free from imperfections. It must be borne in mind that by far the greater part of the ornamentation was paid for by private generosity. The building itself was erected with the strictest economy, and much loving care was bestowed by Mr. Woodward, the architect, on the details of ornament. It is not as if some wealthy corporation had determined to erect the building regardless of the cost; one of the first objects was to expend the money to the greatest possible advantage, and leave all that was not essential to be completed at some later period. The building as first erected was only regarded as a nucleus, which might later on be indefinitely extended, and much has already been done.

It was rightly or wrongly held that a certain measure of artistic effect should, if possible, be impressed on the building if it did not impair its efficiency, and as an instance of the minute care which Acland gave to details it may be mentioned that he had the library carpets made after the pattern of the library carpets at Windsor, to show that he did not consider that because the readers were students of science they should be any less well treated on that account than those who were above them in the world's esteem.

There has been a good deal of controversy about the library; it was once suggested that sums which might be available for books had been devoted to other purposes. The fact is that the sum devoted to the binding of books every year now is almost as great as was that expended on their purchase before the Radcliffe Library was brought to its new home in the museum in 1861.

Whatever faults there may have been found in the new institution, or however far it falls below the ideal of a perfect institution of the kind, it is interesting to know that the number of teachers of scientific subjects in Oxford in 1840 was about 9, whilst in 1900 it was 54. The number of graduates who took the M.B. from 1840 to 1854 was 14, whilst in a similar period (1894 to 1899) no fewer than 72 took the same degrees. It is difficult to estimate the total number of students working at the museum at these periods respectively, since each department keeps its own record, and therefore any given name might appear in several departments; but approximately the numbers were in 1862 36, in 1900 180.

A few words may here be added by way of explanation and not of controversy to show the place which, according to Dr. Acland, Oxford should take in relation to medical education. He was convinced that at Oxford those who intended to study medicine should not specialise too early, that they should first of all get a good general education, and that having done this they should devote themselves in Oxford to the study of those scientific subjects which form the basis of medicine—chemistry, physiology, physics, etc.—but that the purely clinical work could be far better done in London. This view has evoked much discussion, into which this is not the place to enter. It is an intelligible view, and one for which he strove hard. By every means in his power he sought to place within the reach of the future students of medicine facilities for the study of those scientific subjects which it would be so much harder for them to master in the rush of professional training in London.

The museum was formally opened in 1861, since then its beneficent work has continued uninterruptedly. And though the time is short, associations with the now no longer new museum begin to cluster thickly round it. The mind recalls the names of Rolleston, Henry Smith, Phillips, Prestwich, Westwood, Pritchard, Brodie and Donkin, men who have laboured in placing the new department of University teaching upon a secure basis, and the effect of whose work remains as the best memorial of their lives.

There are many others fortunately still amongst us; some no longer in harness. The veteran, C. Robertson, the sole survivor of the little band who worked at Christ Church under the direction of the newly-appointed Lees Reader; Clifton and Odling, Burdon Sanderson and Gotch, Arthur Thompson, Tylor and Poulton still carrying on the work so well begun. The building is still receiving additions, the most recent being the pathological department already mentioned and the new library which is being erected at the expense of the Drapers' Company.

The struggle to establish and extend the study of Nature was the most important work of Acland's early life, but by no means the only one. In 1854 the cholera epidemic broke out and found Oxford ill prepared to meet it. Dr. Acland, with the help of two devoted ladies (one Miss Skene, now dead; the other, Miss Hughes, still alive, and head of the Convent of the Holy Trinity at Oxford) made such arrangements to provide accommodation for the sick and lessen the ravages of the disease as were then possible. The experiences of this epidemic are related in a memoir published in 1856.

He was appointed Radcliffe Librarian in 1851 and Regius Professor of Medicine in 1857—the latter post he resigned in 1894, the former he relinquished only this year when his increasing infirmities compelled him to retire from any kind of work. Subsequent to 1857 he continued uninterruptedly at work for more than forty years, serving on two Royal Commissions—the Cubic Space Commission in 1867 and the Sanitary Commission in 1869. In 1868 he was President of the British Medical Association, the year of its meeting in Oxford, and contributed a valuable paper to the volume of addresses, published later under the title of "Medicine in Modern Times."

Professional Life.

There is probably no institution for the care of the aged or the relief of the sick in Oxford with which at some time or other he was not connected, and none of them but benefited by his wisdom and experience, and the high ideal which he maintained as to what was necessary for them. Much might be told, did space permit, of his work at the Radcliffe Infirmary, at the provident dispensary (Cutler Boulter's), Ewelme, Marsh Gibbon. It was inevitable that at times there should be conflict: much had to be altered, and improvements made in every department of the old institutions. That they have reached the condition of efficiency in which they now are is largely due to the initiative of Sir Henry Acland, and this is said without any disregard of the support which he received from many staunch and loyal friends.

It is not too much to say that those who became Dr. Acland's patients became his friends. He hated humbug, and especially pretentious humbug, and had little belief in the bulk of much advertised pharmacological preparations; at the same time he believed in the experimental side of pharmacology, and did all in his power to promote the study of those branches of therapeutics which have been the splendid result of bacterial research, and he devoted much of his time to forwarding schemes of preventive medicine, especially in the way of providing pure water and good drainage for various classes of the community.

For well-nigh fifty years his life was one of unceasing activity, profoundly interested in all that concerned the welfare of the human race, whether physically or morally. He was constantly engaged in speaking and writing on subjects connected with sanitation, national health, nursing, medical missions, the teaching of physiology, the extension of the scientific and medical education, more especially in Oxford. His views on such subjects are embodied in a series of pamphlets, and embrace a great variety of subjects, from a synopsis of the physiological series in the Christ Church Museum, published in 1855, down to a paper on medical missions in their relation to Oxford, published in 1898. With the exception of the memoir on the cholera at Oxford, he did not make any large contributions to strictly practical medicine or pathology, but the effect of what he did write was probably of the more value as he was a pioneer in much that is now recognised as essential both in medical education and in the treatment of the sick. Considering the amount of time which he devoted to public work, it is not a little surprising that he had so extensive a practice as at one time he enjoyed. He was fond of relating his early experiences, when, with no knowledge of the art of "making it pay," he began his work as a young consultant in Oxford. On one of the first occasions after he had seen the patient and ordered some simple and necessary treatment, the doctor in attendance held up the paper before him and said severely: "When, sir, we send for a physician from Oxford, we expect the prescription to come to at least a guinea. This comes to eighteen-pence." Dr. Acland was never called into consultation with that doctor again, but it gave him valuable experience on a subsequent

occasion. Having seen the sick man with his ordinary attendant, he said to him: "Mr. W. and I have talked over your case, and have ordered you some medicine, which I strongly advise you not to take." "Then," says the sick man, "what in the name of goodness is the use of ordering it?" "Well," said Acland, "I find that you pay Mr. W. in proportion to the amount of medicine he can persuade you to take, and don't give him anything for driving over here six miles and giving you advice." "Good heavens!" exclaimed the patient; "you don't tell me I have been such a fool! Now mind, W., I'll give you a guinea every time you come over, only no more of your physic." The three remained friends as long as they lived.

In 1860 Dr. Acland went to America in the suite of the Prince of Wales, and in the same year was elected an honorary student of Christ Church, an honour shared by Gladstone and Ruskin. In 1869 he was appointed member of the Royal Sanitary Commission, and in 1874 was elected President of the General Medical Council; this honourable post he held uninterruptedly until 1887. In 1883 he was made a C.B., K.C.B. in 1884, and Baronet in 1890. In 1894 he retired from the Regius Professorship of Medicine, and failing health compelled him largely to withdraw from work.

Personal Character.

It is difficult to give any brief description of a man like Sir Henry Acland; he was so many-sided and he took such a deep interest in so many and such varied things, and was so much of an enthusiast that, as is often the case with such characters, the particular subject to hand seemed the most important of them all. He was a man of a deeply devotional mind, and considered that it was every man's religious duty to do the work he had to do as well as he could, and with all this he had a keen sense of humour and loved a good story, perhaps the more if it was against himself, and was a good if somewhat diffuse speaker. It may be truly said that he took interest in everyone he came across, no matter how lowly in degree, provided that he was honestly endeavouring to do well the work which was under his hand. So he had friends in every class of life and every rank of society from the highest to the humblest. In all his work during his married life he was helped by his much loved wife, one of whose first philanthropic undertakings in Oxford was to teach some sweeps to read—each lesson having its compensation in a substantial tea.

His home in Broad Street was a reflex of himself; it was a museum full of treasures, artistic, curious, and varied, from Millais portrait of Ruskin to a mummied cat; from a rough drawing of a boat of the time of St. Paul scratched on one of the steps of the quay at Utica (near Carthage) to a small boat made of a piece of Nordenskiold's vessel, the *Vega*. Nearly all these things, and their name was legion, were given to him by friends and came from every part of the world, and amongst them were many things of value from their association with those who had given them, such as a shepherd's staff from Jerusalem brought by Dean Stanley, and busts of Ruskin, Gladstone, Pusey, Bunsen, and many others. Many will know the kindly hospitality of the house, and successive generations of undergraduates have grateful memories of the kindness which they received on Sunday evenings, when a welcome was extended to all who cared to come, and with it all there was an absence of all show and all pretence. Sir Henry's life was of the simplest, so much so as to bring down the severe comment of "It seems to me, Sir Henry, you do not dine, you feed" from a high authority on diet.

No account of the home in Broad Street would be complete without mention of Mrs. Acland who, for more than thirty years was the gracious dispenser of hospitality to guests of the most varied kind. No matter their birth or degree they received the same simple, kindly welcome, and such was the affectionate regard in which she was held, that at her death in 1878 a large sum was subscribed to found as a memorial of her the Sarah Acland Home for Nurses, which is now actively carrying on the work of supplying nurses both for district and private cases. On Sir Henry's retirement from the Regius Professorship of Medicine in 1894 the usefulness of the Home was increased, since the sum of £3,000, subscribed as a testimonial to him, was devoted to the enlargement of the institution which had been founded in memory of his wife.

Sir Henry was very fond of music, though not a trained musician, and took interest in every kind of manual skill, but drawing was that in which he most excelled, and it was his hobby and delight at all times, whether on his holidays or during his professional travels—and his sketchbooks are full of records of America, Norway, Switzerland, the Mediterranean, Egypt—bearing evidence not only to his artistic skill, but to the extent of his wanderings. He was not what is called a sportsman, though as a boy he was a good shot. After he was qualified to practise, he almost entirely gave up shooting, as he did not consider it seemly that he should inflict suffering and death for his own amusement. The recreation in which he delighted most was yachting. For many years his summer holiday was spent at sea, and he took the deepest interest in the management of the boat and all that concerned the floating population which earns its livelihood at sea. One day a Clyde bargee lazily smoking his pipe as he leaned on his tiller, hailed him and said: "I say, governor, I want to give you some good advice. Don't you make a toil of your pleasures." This was said with reference to the charts, books and papers which littered the deck and made the vessel look more like a library of nautical reference than a pleasure boat.

As a physician he was accurate, painstaking, and methodical, with a deep respect for "authority," and if anything he erred on the side of extreme caution in diagnosis, as he was unwilling to act on the greater probability in cases in which, as so often happens in medicine, the data for forming a definite opinion were not conclusive. His practice extended over a very wide area, and considering the enormous amount of public work which he did, it was large. Probably no part of his duties gave him greater pleasure than his dealings with the sick, and especially with those who were both poor and sick. His benevolence was unbounded, and for his means his generosity was great.

It would be impossible in a short space to give any adequate account of the many friendships of Sir Henry Acland's life, but all mention of them cannot be omitted. Amongst his closest friends could be counted men of such diverse powers and different paths in life as Pusey, Liddon, Church, Jacobson, Liddell, Rolleston, Stanley (Dean of Westminster), George Richmond, Parkes, Donkin, Charles Courtenay, Sir H. Verney, Miss Nightingale, Gladstone, Bartle Frere, Paget, Gull, Henry Smith, William Stokes, T. K. Chambers, Pridgin Teale, Sir William Turner, Lord Peel, Douglas Galton, Mr. Ruskin and many others. To many of these he owed a debt of deep and affectionate gratitude for unwavering support in times at first of struggle, then of misrepresentation, and last of all of ingratitude, since after the difficulties of the struggle were over the defects or deficiencies in details were from the very completeness of the whole thrown into undue relief and did not escape criticism.

The closest friendships of all were perhaps with Henry Liddell and John Ruskin. Under all circumstances in good report and evil Liddell encouraged, supported and advised Acland from first to last, and the tie between them was only broken by death. The Dean was a strong, powerful nature, made to overcome difficulties, and with that self-reliance which enables a man to be a successful pioneer even when the path is rough. There can be no doubt that his influence on Acland's life and work was a large factor in the successful evolution of the scientific departments at Oxford. Almost the same might be said of a very different man Dr. Pusey—by whose influence, to his honour be it said, the vote for the first grant to commence the buildings of the University Museum was carried against the vehement opposition of those who looked with suspicion on what they considered the revolutionary proposals of the scientific teachers, headed by the then young Lees Reader in anatomy.

Of Mr. Ruskin it is more difficult to speak; ties of the closest affection bound him to his old college friend, in whom he believed, and whom he recognised as a man who could lead him to a wider grasp of the beauty and order of the world around us, and who in the early days at Christ Church stood almost alone in declaring that the study of the book of Nature was not less worthy of the intellectual mind than the study of the book of God. At the last meeting of the two old friends Mr. Ruskin sent, through Acland, this farewell message to Oxford: "Say to my friends in the Oxford Museum from me—May God bless the reverent and earnest study of Nature and

of man, to his glory, to the better teaching of the future, to the benefit of our country, and to the good of all mankind."

In 1888, Sir Henry lost the sight of his left eye, which was removed by Mr. Henry Power in consequence of the acute pain caused by a hæmorrhage into the vitreous, and since that date his life has been one of much distress, and sometimes of suffering, with, of late, only occasional relief. For some few months it has been evident that the end could not be very far off. He passed away on Tuesday, October 16th, and was laid to rest by the side of his wife in the Holywell Cemetery at Oxford.

We are indebted to Dr. Sharkey for the following appreciation:

Science and medicine have lost in Sir Henry Acland a warm and loyal friend. His enthusiasm for them commenced early in life, and never faltered; as long as his mental powers lasted he was ever eager to assimilate the facts of rapidly advancing knowledge, and nothing pleased him better than to talk over its progress and prospects with sympathetic friends. As Regius Professor of Medicine he felt, of course, more directly responsible for the arrangement of medical studies in Oxford, and his views in this matter were the result of earnest thought and long experience. He did not look upon the university as one place among many for rearing ordinary medical students. He aspired to make the Oxford medical degree represent the best medical training to be got in this country. He did not consider that the studies necessary for obtaining it should be substituted for those to which the undergraduates in other schools devoted themselves. He looked upon the latter as a necessary part of a gentleman's education, and he aimed at making the Oxford medical graduate first of all a well-educated gentleman and then a scientific and well-trained medical man. Consequently he regarded with jealous suspicion the gradual introduction of subjects required for the medical degree into the course for the Bachelor of Arts degree. He considered that the study of medicine should be grafted on a sound general education, and that by this means, rather than by an early substitution of science for other subjects, the best final results would be obtained. So keenly anxious was he that that the Oxford medical graduate should be trained in the best possible way that he always opposed the idea of having a complete medical school in Oxford. The opportunities offered by the Radcliffe Infirmary for clinical and pathological study he considered wholly inadequate, and he contended that it was only by going to a much larger centre, such as London, that a knowledge and experience worthy of an Oxford degree could be acquired. In this view he was supported by many of the Oxford graduates in medicine. Sir Henry was undoubtedly a hero-worshipper, and his interests in life were so numerous that he had many heroes. He had a great belief in the personal influence of great men upon those they came in contact with, and he took a lively interest in associating with such as distinguished themselves in any department of life, and many of them became his friends. He was fortunate in his younger days in having many great and good men for his teachers, and he always spoke gratefully of the influence they had exerted upon him.

Everyone who knew Sir Henry Acland well must have been deeply impressed by the high ideals of life's duty and work that he habitually kept before himself and held up to others. After a visit to his house one came away refreshed and invigorated by an atmosphere from which all pettiness was banished, and which revealed a vista of high aims and accomplishments. He managed to keep singularly abreast with recent knowledge in all kinds of subjects, and his wonder and admiration for the advances which were constantly being made in science and in medicine were unbounded. His mind was well balanced, and his extensive knowledge and experience of men and things made him weigh carefully and fairly the different views which were held upon important questions before he came to a conclusion with regard to them himself. He often appeared, therefore, to be lacking in decision. But once convinced in his own mind that a certain course was right none could surpass him in the courage and determination with which he pursued his end.

Devoted as Sir Henry was to science in all its branches and to medical science in particular, there can be no doubt that he was attracted most of all to the practical side of his profession. He enjoyed nothing so much as attending to the sick. In accompanying him on his rounds at the infirmary, what struck me most was the tenderness and sympathy with which he treated his patients. He was interested in their diseases, but he was still more interested in them; and the poorer and more suffering they were, the greater was the gentleness he exhibited towards them. He felt and expressed the utmost scorn for those who practised medicine in any but the most humane manner, or who made any other object than the good of the patient their first concern.

Sir Henry Acland had hosts of friends, and his hospitality was unbounded. It was in his life at home that he was seen at his best. He was always genial, and ever eager to turn the conversation to topics which were specially interesting to his guests and to himself. Everyone was at his ease in his house, and was at liberty to do what he liked, but Sir Henry always showed himself ready and anxious to find pleasant occupations and amusements for those who stayed with him. He loved his home, and took a pride in making it artistic and beautiful. It was filled with all manner of interesting things, most of them connected with episodes in his own life or in that of his friends. There was no vulgar showiness about it, but an artistic simplicity and comfort reigned everywhere.

Although a most energetic man, Sir Henry Acland never appeared to feel the necessity of exercise for its own sake, nor was he a sportsman. But he was a very keen yachtsman, and for many years he owned a fine yacht, in which he spent his summer holiday with his family and friends. He loved the sea, and took the greatest pride in having everything connected with his yacht as perfect as it could well be. It was a great delight to him to visit out-of-the-way places—say, on the French coast, and mingle with the natives, conversing in a genial, good-humoured way and making friends with them. During these excursions his pencil and brush were in constant use, for he was an enthusiastic artist.

The guiding star of Sir Henry's life was religion. He was a simple, earnest, liberal-minded Christian, whose piety was evident in his daily life, without being obtrusive; while it pervaded with its softening influence the whole inner man. The heaviest trial he had to bear was the loss of his wife, who was his guide, philosopher, and loving friend, to whom he was tenderly attached. Though dead, she retained a powerful influence over him to the end of his life.

To Dr. Clifford Allbutt, Regius Professor of Physic in the University of Cambridge, we are indebted for the following charming tribute to the memory of the late Regius Professor in the sister University:

You have asked me for some recollections of Acland—I say of "Acland," for he has raised his name above our conventional distinctions. In my answer I am apt to forget that he must have far abler chroniclers than myself, and indeed that the warmth of all our memories came from him, and our words must now be cold.

By the means of two dear friends, the late George Rolleston and Mr. Teale, of Leeds, I met Acland first in my early life, and he made a generous return to a younger man's attachment. So it was that for thirty years or more I saw him not often but intimately. More than once certain affairs concerning both of us brought me into close intimacy with him, both personally and by letters. But Acland's charm was no secret; as one of his friends said to me at his funeral, as it wound its way through long hushed lines of spectators, "there was not a child in Oxford but knew him."

As stately as Liddell, his face had more heart in it, and more vision; it was a face ὡς θεάτης τοῦ ἀληθοῦς; and yet with some wistfulness, as of perplexity in human sorrows. Hence grew his enthusiasm for sanitary reform: for Acland, though an idealist, was no dreamer. To science and work he gave a poetical mind, but action was the note of his life. Whether he gathered stores of pathology, or fought the cholera: whether he conceived the great museum of his university, or laboured to repair the cottages of the poor; whether he strove for natural science in Oxford, or for medical missions in Bombay, he thought but in order to do.

Yet his idealism—which had its source not only in wide interests, many-sided reason and various sympathy, but also

in a certain aloofness from the lower regions of turmoil, from the pressure and entanglements of common things—was some danger to him in practical life. Thus he was sometimes blind to the narrower but not less essential condition of daily work and organisation. On the other hand, this elevation, together with a strength of will characteristic of his family, gave him a serene persistence of purpose which won his way, and raised him above detraction. Thus for some years he was exposed to merciless attacks concerning the position of the medical school in Oxford—a difference into which this is not the time to enter; I have only to say that these attacks left him not only unperturbed, but, I believe, almost unaffected, as if unaware of them. This detachment had sometimes a curious effect of keeping him out of the immediate current of things; he would meet an old friend, beam upon him, murmur perhaps something of what he had at heart, and straightway become reabsorbed, and for the moment alone again.

Herein lay a strange contrast between Acland and Rolleston, especially seen in the sanitary work which they both loved. Acland courtly, serene, patient in assurance; Rolleston fiery, vehement, loaded to the muzzle with pamphlets and records, fretful of delay; Acland possessed by his subject, Rolleston consumed by it. Maliciously at such times we would ask Rolleston of Acland's health, well knowing that if Acland were in sublime mood Rolleston would answer in a torrent of picturesque invective, or, if they were working side by side, of no less ardent affection.

Acland was one of the two or three men I have met whose minds were set so high that they moved easily and naturally in lofty thoughts and aspirations, not as consciously despising carnal and transitory things, but as if they were not. After a long separation from a friend Acland would begin conversation at once on some such theme, either continuing some previous argument with him, or one on which his own mind was then engaged. The last time I had the privilege of meeting him was in Oxford, some months before his death, when he was bent under bodily affliction; yet rising quickly from his couch he paced the room, rapidly pouring out his hopes and desires concerning the Bombay mission, on which his heart was fixed, as if he were a boy again and the years before him, and not so far stricken as to long for his rest.

Such is a little, but a little, of Acland as he appeared to me, but how much more were the things which he has carried away to us as if they had never been!

The late Mr. R. H Cowan of Wigan.—We published in the British Medical Journal of October 20th an obituary notice of this gentleman, in the course of which it was observed that his colleagues at Wigan feel that they have lost a dear friend and that a gap had been created in the profession of the district which it would be difficult to fill. We may now add, as a proof of Mr. Cowan's popularity, that the members of the Wigan Medical Guild, in order to enhance the value of practice for the benefit of the widow and children, have decided not to compete for any of the valuable colliery and other appointments connected with the practice. This is, perhaps, a somewhat unique procedure; it not only evidences the value of combination but displays the kindness which medical men have the opportunity of paying one another when they are prepared to sink petty feelings of jealousy, not to take undue advantage of each other and, in fact, to endeavour "to do to others as they would be done by."

CORRESPONDENCE.

PROFESSOR OLIVER AND THE ROYAL BOTANICAL SOCIETY.

Sir,—Having only now returned to town I have not had an opportunity till this moment of asking you to grant me space to comment upon the attitude towards the Royal Botanical Society adopted by Professor Oliver in a recent address.

Professor Oliver animadverted in an uncomplimentary vein upon this Society, and pretended to believe that there was in it no love of science and no efforts to further the study of botany. Now, as a matter of fact, the Society was, I believe, the first teacher of botany in the metropolis; and ever since its foundation in 1843 it has never spent less than £300 a year in the furtherance of this science. For this expenditure it received practically no pecuniary acknowledgment. Its specimens (some 30,000 a year) are distributed gratuitously, and all students, from whatever source, are given free admissions for the purposes of study.

More than this, three years ago a meeting was held in the Council room at the invitation of the Society, and was attended by nearly all the teachers of botany in and around London, including Dr. Oliver himself. A scheme was submitted for founding a botanical institute, and the Society offered a free grant of a site in its gardens, and promised to keep up the premises and maintain the existing Botanical Gardens and hot-houses for its special use.

Dr. Oliver followed with an essay on the organisation of its *personnel*, the salient points being the necessity for the expenditure of some £12,000 and an endowment of £600 a year. A second meeting was held in the Museum under the presidency of H.H. the late Duke of Teck. Here, however, the matter ended, and in spite of the support of the teachers of botany and the generous offer made by a somewhat needy Society no money was forthcoming.

The Society now felt that it had no responsibility in the matter. While it was prepared to continue its grant of £300 a year and a large slice of its gardens for purely scientific purposes it could not afford to do more.

The fact is, Sir, that the bearing of the teachers at the meetings referred to suggested that very many of them would be only too pleased if there were one less among the competitors in London for students' fees; and it certainly was not to be expected that persons in that frame of mind would be zealous supporters.

Still, however, the Society clung to the desire of being useful in furthering botanical knowledge, and when the London County Council decided to make a grant for botanical purposes, the Secretary and myself went down to Spring Gardens, and at an interview with several members offered the hearty co-operation of the Society. But since the main idea of the London County Council was to be the dissemination of botanical gardens throughout London the assistance of the Society was not of great value.

All therefore having been done that could be done the Society turned its attention to horticultural work, and has now a flourishing school of thirty-five pupils (men and women) studying practical gardening.

At the same time, like good business men, they turned their attention to the rehabilitation of their finances, with the result that for the last two years besides paying off back debts and some £1,000 of capital, their accounts show a considerable balance of income over expenditure.

It now only remains to the Society to employ its surplus in founding a free school of vegetable physiology and histology, since it is useless to expect monetary support. This no doubt will meet with the approval of Professor Oliver.—I am, etc.,

October 20th. One of the Council.

POOR-LAW MEDICAL OFFICERS IN SCOTLAND.

Sir,—In reply to the Secretary of the Poor Law Medical Officers' Association (British Medical Journal, October 13th, page 1139), I would say that the Committee I suggested might consist of six medical men and six parish councillors. That number of councillors could be easily got to act on the Committee. When the Poor-law medical officer found he was badly treated he would write to the Secretary of the Poor-law Medical Officers' Association, who would communicate with the Committee, and the conduct of the parish council would be inquired into. If the dismissal was unjust they would tell the parish council that they could not get a successor, for no one would apply. That arrangement could be improved upon others may suggest a better plan. The knowledge of the presence of any Committee would deter many parish councils from treating the doctor badly. We must attack those in authority in some way, for they have refused to give us equal justice with our neighbours. It may take a lifetime to get Parliament to pass the "Amoral." In one parish I was given me a house as part of my salary, but for doing my duty [illegible] angry with me, and told me I would have to get out of the

house, and as he was the landed proprietor no one would care to lodge me, and I had to walk away for want of a residence.

In another parish a large farmer, backed by a clergyman, thought he could tyrannise over me; when I resisted I got notice of dismissal in two weeks. If I were to ask my present parish council to give me a holiday, I fear they would tell me to walk away. Personally, I am much obliged to Dr. Muir, our Secretary, for his earnestness in our cause.—I am, etc.,

October 17th. DESPAIRING.

THE LICENTIATES OF THE SOCIETY OF APOTHECARIES OF LONDON.

SIR,—With regard to the alteration of the letters L.S.A., I consider the suggestion of Mr. C. G. Higginson in the BRITISH MEDICAL JOURNAL of October 20th a very good one, namely, that Licentiates of the Society of Apothecaries of London holding their diplomas since 1886 should be entitled to use the letters M.L., Ch.L., Lond., after their names, in the place of L.S.A. At the same time I should strongly be in favour of the title, "Society of Apothecaries," as an examining body, being retained by the Hall, as being both an ancient and historical one.—I am, etc.,

R. LE GEYT WORSLEY, M.R.C.S., L.R.C.P., L.S.A.

Newcastle-on-Tyne, Oct. 22nd.

COVENTRY PROVIDENT DISPENSARY.

SIR,—Will you allow me space in the BRITISH MEDICAL JOURNAL to reply to your correspondents of September 22nd, on the subject of the above institution?

First, with regard to the number of members. Our statement is quite correct. It is true that some years ago the Chairman at an annual meeting stated that the membership was approximately 25,000 or 26,000, but this was merely guesswork—no attempt was made to ascertain the correct number from the books, and at that time no estimate of any kind was made by the collectors.

Dr. Phillips's demand that "these dispensary doctors must either insist upon the reforms asked for or resign their appointments," has no weight whatever with us. Such an offensive dictatorial spirit only calls for one line of treatment. He speaks of the profession of Coventry, backed by the majority of the members of the British Medical Association and the profession generally, being on his side. No doubt the members of the British Medical Association, and the profession generally, like ourselves, are desirous of seeing institutions of this class reformed and conducted on lines such as are approved of by our profession, but we do not believe that they consider the best way of effecting these reforms is to single out a particular institution for the purpose, and at the same time make personal and abusive attacks on the members of its staff such as we have been subjected to.

Dr. Phillips accuses us of putting into his mouth the words "bring the staff on their knees and smash the Institution." The words were addressed by him to two members of the staff.

Mr. White still prefers to believe that anyone can join the Dispensary, and speaks of the inspection of the admission book by two of the staff. He has evidently not read, or has read very carelessly, our letter of September 11th, wherein we stated that this book was placed before the staff at their monthly meeting. Whatever we may think of the likelihood of an objection being supported by a lay Committee, or of our knowing anything of the majority of the names entered, the statement on this subject in our letter is quite correct. The name, occupation, and address of each applicant are submitted to the staff, and objections when raised by the latter are carefully considered, investigated, and as a rule sustained by the Committee.

We are glad to be able to afford Mr. Jackson the gratification of knowing that the rule that "the pecuniary circumstances of an applicant should be no bar to membership" was rescinded several years ago at our request. Mr. Jackson states that he did not say "that canvassing is actively carried on." We refer him to page 1167 of the BRITISH MEDICAL JOURNAL, May 12th, 1900 which says that Mr. G. Jackson read a paper in which he said that "canvassing is actively carried on and there is no wage limit." He refers to an old rule which says that any person can join when ill if he can procure two healthy persons to join with him and imagines that this entails canvassing. There have not been 10 admissions under this rule in the last dozen years. Mr. Jackson expresses his regret that he was unable to attend the meeting at Ipswich in order to have moved the expulsion of the members of the staff from the British Medical Association. We cannot understand such bitter animosity as he exhibits towards us; it cannot help to promote reforms either in our institution or in similar ones, of which there are many in existence in this country.—We are, etc,

D. MCVEAGH, M.K.Q.C.P.,
CHARLES DAVIDSON, M.D.,
W. J. PICKUP, M.D.,
T. A. HIRD,
JOHN A. LONDON, M.B., C.M.Edin.,
WILLIAM FLETCHER, M.B.,

October 13th. The Staff of the Coventry Dispensary.

THE EASTBOURNE PROVIDENT MEDICAL ASSOCIATION.

SIR,—The fifth annual meeting of the Eastbourne Provident Medical Association was recently held, and the report read showed that the Association was in a healthy and well-established condition.

There are ten medical men on our acting staff, and we have a membership of nearly 4,000 persons. The gross income for the year ending August 31st, 1900, was £1,071 9s. 9d. Our working expenses have been reduced to 15 per cent., and the remainder goes directly to the members of the acting staff. During the year we have adopted the plan of employing only one collector instead of two, and this has proved successful, as the work is now done not only more cheaply, but also more efficiently.—I am, etc.,

A. HARPER, M.D.,
Honorary Secretary Eastbourne Provident Medical Association.

Eastbourne, Oct. 23rd.

FAHRENHEIT'S THERMOMETER.

SIR,—In reference to the account which I gave in the BRITISH MEDICAL JOURNAL of Fahrenheit's thermometer, I should now like to express my regret that I had entirely forgotten the paper by Dr. Stevenson in the *Guy's Hospital Reports* for 1880. He there states that Fahrenheit made his fixed point the temperature of the human body. This is confirmatory of my statement, and I shall now look upon the fact as established—I am, etc.,

Grosvenor Street, W., Oct. 22nd. SAMUEL WILKS.

THE PLACE OF THE LECTURE IN MEDICAL TEACHING.

SIR,—Instead of attempting to abolish the lecture altogether from our medical schools, whereby much valuable teaching would undoubtedly be lost, would it not be better if attendance on lectures were no longer made compulsory before the student is allowed to go up for examination?

The average medical student may, I think, be given credit for sufficient intelligence to decide for himself whether or not a given course of lectures is of value to him. If it is, he will attend them; if not, he will stay away. At present, I believe, he not infrequently slips out as soon as he has been "marked," agreeing, apparently, with the writer of your article that he will be better employed elsewhere.

If the plan I suggest were adopted the lecturer who failed to secure an average attendance would probably very soon see the wisdom of resigning. The quality of the lectures would not suffer, and there would be no more talk of time wasted in attending them.—I am, etc.,

Norton Folgate, E.C., Oct. 20th. C. B. DALE.

OPEN OPERATION FOR TALIPES EQUINO-VARUS.

SIR,—In your report of the discussion on Dr Phelps's paper on this subject, published in the BRITISH MEDICAL JOURNAL for October 20th, Dr. Phelps is stated to have said, "Mr. Smith has a fear of non-union of tendons. Unless infection takes place, the fear is entirely unfounded."

There is an error here which I trust you will allow me to point out, as it is, I think, a matter of some importance. I have no recollection of making any statement which could be understood to express such a fear, and I am quite certain that

I did not intend to convey such an impression. Upon the contrary, I have for many years past been a strong advocate for immediate reduction of the deformity after operation, a procedure which separates the cut ends as far as possible, in place of the older plan of adjusting the foot in the deformed position, and gradually stretching out the uniting material. Moreover, if we have any doubt, we can always split the tendon and unite its attenuated ends, so as to ensure perfect union. I believe it is the immediate reduction plan which chiefly helps us to cure cases of severe varus without the operation so ingeniously devised and so pertinaciously advocated by Dr. Phelps. Holding these opinions, it is not likely that I can fear non-union.—I am, etc.,

City Orthopædic Hospital, London, Oct. 20th. NOBLE SMITH.

UNIVERSITIES AND COLLEGES.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At the stated annual meeting of the President and Fellows of the Royal College of Physicians of Ireland, held on October 18th, the elections for the ensuing year were made. Sir Christopher J. Nixon, M.D., was elected President; Dr. Joseph Redmond, Vice-President; and Drs. Joseph Redmond, J. O'Carroll, E. H. Tweedy, and A. N. Montgomery, Censors.

The following appointments were also made:

Additional Examiners (to take the place of an absent Censor).—Medicine: H. C. Tweedy, M.D. Medical Jurisprudence and Hygiene: F. C. Martley, M.D. Midwifery: H. Jellett, M.D.

Examiners for the Licence to Practise Midwifery.—J. H. R. Glenn, M.D., and T. H. Wilson.

Additional Examiners under the Conjoin Examination Scheme.—Biology: E. MacDowel Cosgrave, M.D. Chemistry and Physics: H. T. Bewley, M.D., and E. Lapper. Materia Medica and Pharmacy; F. J. B. Quinlan, M.B., and M. Falkiner, M.B. Physiology; J. M. Purser, M.D. Pathology: A. C. O'Sullivan, M.B. Medicine: J. B. Coleman, M.D., and G. J. Peacocke, M.D. Hygiene and Forensic Medicine: W. Langiord Symes.

College Examiners for the Conjoint Diploma in Public Health.—Hygiene: F. J. B. Quinlan, M.D. Chemistry: E. Lapper. Meteorology: N. Falkiner, M.B.

Examiners in Preliminary Education under the Conjoint Scheme.—Science: W. E. Thrift, F.T.C.D. Languages: William Kennedy, F.T.C.D.

Representative on the General Medical Council.—L. Atthill, M.D.

Representatives on the Conjoint Committee of Management.—J. M. Finny, M.D.; Sir John Moore, M.D.; J. Craig, M.D.

Treasurer.—L. Atthill, M.D.

Registrar.—James Craig, M.D.

Fellowship.—Dr. Martin Dempsey was elected to the Fellowship.

Vote of Thanks to Retiring President.—A cordial vote of thanks to the outgoing President (Sir J. W. Moore, M.D.) was passed and responded to.

Sir Henry Acland.—A resolution of condolence with the family of the late Sir Henry W. Acland, Bart., an Honorary Fellow of the College, was adopted.

Annual Banquet.—In the evening the annual St. Luke's Day banquet was held in the College Hall. The newly-elected President, Sir C. J. Nixon, M.D., occupied the chair, and he was supported by a large assemblage of Fellows and guests. The speakers included the Lord Chancellor of Ireland, Lord Morris and Killanin, the President of the Royal College of Surgeons of Ireland, the Rev. Dr. Mahaffy, S.F.T.C.D., the Most Rev. Dr. Delany, S.J., Mr. Horace Plunkett, and Mr. M'Cann, M.P. Telegrams of greeting were received from and sent to the sister Colleges in London and Edinburgh.

UNIVERSITY OF CAMBRIDGE.

APPOINTMENTS.—The following are announced: Demonstrators of Anatomy, Mr. F. C. Kempson, M.B., and Dr. G. F. Rogers; Demonstrators of Physics, Mr. C. T. R. Wilson and Mr. J. S. E. Townsend; Examiner in Elementary Physics, Mr. T. C. Fitzpatrick; in Elementary Chemistry, Mr. R. H. Adie and Mr. W. J. Sell, F.R.S.; in Elementary Biology, Mr. F. F. Blackman and Mr. W. Bateson, F.R.S.; in Pharmaceutical Chemistry, Mr. A. Ivatt and Mr. J. E. Purvis; in Anatomy (Medical Degrees), Dr. Barclay-Smith and Professor Wardrop Griffith; in Physiology (Medical Degrees), Mr. L. L. Tuckett and Professor Starling, F.R.S.; in Anatomy (Tripos), Mr. W. L. H. Duckworth and Mr. F. G. Parsons; in Physiology (Tripos), Dr. Anderson and Professor Gotch, F.R.S.

GEDGE PRIZE.—This prize, for the encouragement of research in Physiology, is divided between Mr. J. Barcroft (King's) and Mr. H. H. Dale (Trinity).

EXAMINATION IN SANITARY SCIENCE.—The following having satisfied the Examiners in both parts of the examination, are entitled to the Diploma in Public Health: J. E. Adam, J. Allan, W. S. Badger, W. R. Bhat, W. A. Densham, W. H. de Wytt, J. R. Garrood, H. W. G. Macleod, S. Mallannah, W. F. Moore, T. Telford Smith, G. A. Troup, J. J. Weaver, J. H. G. Whiteford, R. S. Williams, and R. P. Wilson.

MATRICULATION.—On October 22nd 341 freshmen were matriculated. The number on the corresponding day last year was 338. The number entered for Medicine is about 115.

UNIVERSITY OF EDINBURGH.

GRADUATION CEREMONIAL.

A SPECIAL graduation ceremonial was held on Saturday, October 20th, in the McEwan Hall, Principal and Vice-Chancellor Sir William Muir presiding. A considerable number of the members of the Senatus Academicus accompanied the Principal, and there was a large gathering of the public. The following degrees were conferred:

Degrees of M.B. and C.M.—T. G. Elsworth, S. E. Johnston, and A. H. Reid.

Degrees of M.B. and Ch.B.—C. H. Allen, M. C. Beatty, A. D. S. Cooke, W. P. Cormack, T. A. Davies, A. W. Fuller, N. Glegg, J. L. Green, P. S. Haldane, C. E. P. Husband, T. G. S. Leary, W. E. M'Farlane, J. G. M'Kenna, K. D. Melville, M. C. Morgan, D. J. Roberts, F. E. Robinson, Elizabeth T. Selkirk, J. F. Selkirk, J. A. Smith, and A. W. Wilson.

Degree of B.Sc. in the Department of Public Health.—Surgeon-Captain H. Bennet, M.D.Edin., I.M.S.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

REPORT OF COUNCIL.

THE report of the Council recording the work done by the College between July 13th, 1899, and August 1st, 1900, which is to be laid before the meeting of Fellows and Members on Thursday, November 15th, 1900, has been issued.

It contains the official report of the last annual meeting of Fellows and Members; and details the offences committed by two Members whose names have been erased from the College List.

The Midwives Bill.—The recent Bill for the registration of midwives being found no contain no provision that the licensed midwife should "apply for qualified medical assistance in every case attended by a midwife which presents symptoms of difficulty, abnormality, danger, or disease on the part of the mother or the newborn child," the Council supported the General Medical Council in again representing to the Privy Council the necessity of such a provision.

Venereal Diseases.—The resolutions passed at the International Conference (held at Brussels in September, 1899) on the prophylaxis of syphilis and venereal diseases are duly set out.

Examinations.—The alterations in the by-laws relating to the mode of admission by examination to the Fellowship, and the recommendations of the Committee of Management of the two Colleges in reference to the regulations for diplomas in public health are set out.

The General Medical Council.—The recommendation of the General Medical Council that the two Royal Colleges and the Apothecaries' Society of London shall combine for the purpose of holding qualifying examinations conjointly brought forth no responsive action upon the part of either of the Colleges beyond the formal acknowledgment of the receipt of the letter containing the resolutions in question. The position adopted by the two Colleges in opposition to the resolution of the General Medical Council, that scientific institutions where medical study is commenced should be approved by that Council is fully described.

Prizes.—The awards of the Jacksonian Prize and the John Tomes Prize are mentioned, and the subject for the former for the year 1901 is "The Diagnosis and Treatment of Bullet Wounds of the Chest and Abdomen."

Assessment of the College.—The decision of the Court of Appeal respecting the assessment of the College to Corporation Duty is accepted by the Council as final, and the taxed costs of the Crown in the appeal, amounting to £138, and the duty for the six years 1894 to 1900, amounting to £916, have both been paid.

Income and Expenditure.—The gross income of the College for the past year is £25,211, being £500 greater than the gross income of the previous year. The increase is chiefly due to the fact that the fee for the Diploma in Dental Surgery has been increased from 10 to 20 guineas, and that owing partly to this circumstance the fees under this head have been increased by £1,654. On the other hand, the fees for the examination of the Conjoint Examining Board diminished during the past year to the extent of £1,004, as compared with the previous year; also the receipts from the Fellowship Examinations were £225 less; and there was a loss of £300 in rent from the bankruptcy of a tenant of the College. On the other hand, the expenditure of the year was £23,565, being almost identical with the amount of the previous year's expenditure, and showing a balance of £1,645 on the year.

The Laboratories.—A considerable quantity of new apparatus has been provided, and the laboratories are now well equipped for the carrying out of any research work. The preparation of diphtheria antitoxin serum has been very successful, over 36,000 doses having been issued during the year.

The Centenary.—A full description is given of the proceedings connected with the election of Honorary Fellows in June and July last, and of the celebration of the centenary of the College on July [illegible]. The speeches delivered at the centenary meeting in Burlington Gardens, and at the subsequent dinner in the Hall of Lincoln's Inn, are given in extenso.

Museum and Library.—The chief additions to the museum and to the library are mentioned. Finally, tables of the results [illegible] held during the year; the accounts of the College for [illegible] under notice.

Deceased Fellows.—A list of the Fellows deceased during that same period of time appropriately brings this interesting report to a close.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, October, 1900.—The following candidates passed in

Surgery.—F. G. Aldrich (Section II), Charing Cross Hospital; A. C. Clarke (Sections I and II), Manchester; C. J. E. Edmonds (Section II), St. Thomas's Hospital; H. Jessop (Section [illegible]ham; J. R. Pooler (Sections I and II), Birmingham; G. M. Smith, St. Thomas's Hospital; A. H. Wade, St. Bartholomew's Hospital; J. Waters (Sections I and II), Middlesex Hospital; H. F. Willington, Manchester; T. R. Wilshaw (Section II), Birmingham.

Medicine.—A. G. H. Anthonisz (Section II), University College Hospital; J. Black, Manchester; A. C. Clarke (Sections I and II), Manchester; J. R. Clemens, St. Thomas's and London Hospitals; F. A. Hort,

Middlesex Hospital; C. Johnson (Section II), London Hospital and Durham; R. A. Pitter, Middlesex Hospital; J. R. Pooler (Section II), Birmingham; F. P. Rose, London Hospital; H. V. Swindale (Sections I and II), Middlesex Hospital; A. J. Watson (Section II), St. Mary's Hospital; T. R. Wilshaw (Section II), Birmingham.

Forensic Medicine.—J. Black, Manchester; A. C. Clarke, Manchester; J. R. Clemens, St. Thomas's and London Hospitals; C. J. Marsh, University College Hospital; R. A. Pitter, Middlesex Hospital; H. V. Swindale, Middlesex Hospital; T. R. Wilshaw, Birmingham.

Midwifery.—J. Black, Manchester; G. B. Dixon, Charing Cross Hospital; S. R. Dudley, St. Bartholomew's Hospital; A. W. H. Grant, Charing Cross Hospital; C. E. A. Huddart, London Hospital; C. Johnson, London Hospital and Durham; F. Robinson, Royal Free Hospital; P. G. Sheppard, Cambridge and Liverpool; J. E. Skey, Westminster Hospital; F. I. Trimmer, London Hospital.

The Diploma of the Society was granted to F. G. Aldrich, J. Black, J. R. Clemens, C. Johnson, J. R. Pooler, F. Robinson, G. M. Smith, H. V. Swindale, A. H. Wade, J. Waters, H. F. Willington, and T. R. Wilshaw.

CONJOINT BOARD IN IRELAND.

SECOND PROFESSIONAL EXAMINATION.—The following candidates have completed this Examination:

C. H. Browne, J. J. Gibney, R. T. Gordon, D. Jones, P. J. Irwin, J. J. McInway.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET-SURGEON WILLIAM G. JACK is placed on the retired list, October 16th. He was appointed Surgeon, March 31st, 1879; Staff-Surgeon, March 31st, 1891; and Fleet-Surgeon, December 9th, 1899.

The following appointments have been made at the Admiralty: RICHARD A. ROSS, Surgeon, to the *Monarch*, for Ascension Hospital, October 18th; CHARLES H. J. ROBINSON, Surgeon, to the *Excellent*, October 18th; JOHN G. CORRY, Surgeon, to the *Condor*, November 1st; EDWARD T. BURTON, Surgeon, to the *Sandpiper*, un tated; LLEWELYN A. BAISS, Surgeon, to the *Woodcock*, additional, October 20th; CHARLES E. GEOGHEGAN, Fleet-Surgeon, to the *Glory*, November 1st; HENRY HARRIES, Staff-Surgeon, to the *Nile*, November 1st; HAROLD HUSKINSON and J. G. WALLIS, Surgeon, to the *Glory*, November 1st.

ROYAL ARMY MEDICAL CORPS.

AMONG the officers returning from South Africa invalided are the following: Lieutenant-Colonel IRVINE, Major DRURY.

The following are on passage home doing duty on the voyage: Civil Surgeon S. W. RICHARDSON, J. H. HARVEY, A. H. EDWARDS, W. L. BROWN, M. BROWN.

The undermentioned are also returning: Major READE, Civil Surgeons LAMING, EVANS, DAY, CRALEY, WOOD.

The following have been discharged from hospital in South Africa to duty: Civil Surgeon W. J. MOIR.

Quartermaster H. W. GLOVER was accidentally severely injured at Harrismith, Orange River Colony, on October 16th.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL H. D. COOK, M.B., Madras Establishment, retires from the service from August 20th. He was appointed Assistant Surgeon, April 1st, 1870, and became Surgeon-Lieutenant Colonel, April 1st, 1890.

Colonel G. McB. DAVIS, M.D., C.B., D.S.O., Bengal Establishment, resumes his appointment of Principal Medical Officer Punjab Frontier Force. Lieutenant-Colonel J. DUKE, who has been acting for Colonel Davis, reverts to Residency Surgeon, Cashmere.

Lieutenant-Colonel P. F. O'CONNOR, Bengal Establishment, Principal Medical Officer Malakand Force, has been ordered to Shanghai as Principal Medical Officer of the brigade there.

Colonel J. T. B. BOOKEY, Principal Medical Officer China Field Force, is returning to India on account of ill-health. Colonel G. McB. Davis is named as his probable successor.

The promotion of Colonel G. W. R. HAY, M.D., Bombay Establishment, to the rank of Surgeon General is antedated to April 1st.

Lieutenants J. G. P. MURRAY, M.B., S. ANDERSON, M.B., F. H. G. HUTCHINSON, M.B., J. L. MARJORIBANKS, M.B., A. FENTON, M.B., J. A. DREDGE, and R. W. KNOX, M.B., having completed three years' full-pay service, are promoted to be Captains July 28th.

Lieutenant-Colonel E. G. RUSSELL, M.B., Bengal Establishment, has retired from the service August 27th. His commission as Assistant Surgeon bears date March 30th, 1872; that of Brigade-Surgeon-Lieutenant-Colonel December 21st, 1896.

HYSTERICAL WAR CORRESPONDENCE.

A CORRESPONDENT writes: All fair and sober-minded men must regret that a journal of the standing of the *Daily News* saw fit, in the thick of the elections, to give publicity to a letter of a war correspondent—Mr. A. G. Hales—which for unblushing abuse of the British officer certainly "takes the cake." The letter was dated August simply, from the Orange River Colony, but did not appear until October 3rd. From a merely literary, descriptive, and harrowing point of view, the letter was certainly effective, and would so prove in certain quarters, where its hysterical assertions and deductions could not be properly discounted. Otherwise it was and is simply a gross and libellous caricature of the British, and especially the army medical, officer.

He paints the sufferings of the troops in the deepest colours, and roundly asserts that the deaths of many a brave man took place from "wanton carelessness upon the part of men sent out by the British War Office." While this horrible sickness and mortality was going on, he asserts: "The so-called Medical Staff looked on, and puffed their cigarettes, and talked under their eyeglasses. The fools, the idle, empty-headed noodles; and whilst they smoked and talked twaddle, the grim, gaunt shadow of death chuckled in the watches of the night, thinking of the harvest that was to follow."

He goes on to say, had latrines been dug, garbage burnt, etc., "four-fifths of those who now fill fever graves in South Africa would be with us hale and hearty men to-day."

Who is this tremendous strategist, sanitarian, and general censor? His wild assertions and still more aërial deductions can only be characterised as war correspondence gone mad. What makes this man so cocksure how enteric fever is disseminated? How dare he libel a whole body of brave and honourable men who tried to do, and by the testimony of witnesses who have no political or other ends to serve, did their duty nobly, often sealing their devotion with their lives? I for one, and I most certainly represent the opinion of many just and honourable men, protest against and resent such hysterical nonsense. It is useless to say such wild journalism defeats itself in the minds of all thoughtful and intelligent men; unfortunately it is believed in quarters where mere sensationalism is taken as fact.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,416 births and 3,815 deaths were registered during the week ending Saturday last, October 20th. The annual rate of mortality in these towns, which had been 18.4, 17.8, and 17.1 per 1,000 in the three preceding weeks, was again 17.1 last week. The rates in the several towns ranged from 10.4 in Halifax, 10.7 in Cardiff, 11.3 in Norwich, and 11.9 in Croydon, to 22.3 in Manchester, 22.7 in Sheffield, 23.6 in Salford, and 28.6 in Gateshead. In the thirty-two provincial towns the mean death-rate was 18.0 per 1,000, and exceeded by 2.2 the rate recorded in London, which was 15.8 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2.1 per 1,000; in London this death-rate was equal to 1.7 per 1,000, while it averaged 2.4 in the thirty-two provincial towns, among which the highest zymotic death-rates were 4.0 in Leicester, 4.2 in Blackburn, 4.4 in Swansea, and 4.5 in Salford. Measles caused a death-rate of 2.5 in Swansea; scarlet fever of 1.1 in Sunderland; whooping-cough of 1.0 in Gateshead; "fever" of 1.2 in Wolverhampton, 1.3 in Portsmouth and in Preston, and 1.7 in Nottingham; and diarrhœa of 1.8 in Norwich, 1.9 in Cardiff, 2.4 in Gateshead, and 3.0 in Blackburn. The 85 deaths from diphtheria in the thirty-three towns included 36 in London, 9 in Leicester, 8 in Leeds, and 8 in Sheffield. No fatal case of small-pox was registered last week either in London or in any of the thirty-two large provincial towns; and only one small-pox patient was under treatment in the Metropolitan Asylum Hospitals on Saturday last, October 20th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 1,703 to 2,187 at the end of the seven preceding weeks, had further risen to 2,342 on Saturday last; 328 new cases were admitted during the week, against 318, 313, and 322 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, October 20th, 991 births and 542 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 19.3 and 18.0 per 1,000 in the two preceding weeks, further declined to 17.5 last week, but was 0.4 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 11.9 in Leith and 12.0 in Greenock, to 18.9 in Glasgow and 23.0 in Aberdeen. The zymotic death-rate in these towns averaged 2.2 per 1,000, the highest rates being recorded in Dundee, Aberdeen, and Greenock. The 270 deaths registered in Glasgow included 2 from small-pox, 3 from scarlet fever, 5 from diphtheria, 7 from whooping-cough, 4 from "fever," and 12 from diarrhœa. Two fatal cases of diphtheria and 5 of diarrhœa were recorded in Edinburgh; 8 deaths from diarrhœa occurred in Dundee and 4 in Aberdeen; and 4 from whooping-cough in Greenock.

VITAL STATISTICS OF LONDON SANITARY DISTRICTS DURING THE THIRD QUARTER OF 1900.

IN the accompanying table will be found summarised the vital statistics of the forty-three sanitary-areas of the metropolis based upon the Registrar-General's returns for the third, or summer, quarter of the current year. The mortality figures in the table relate to the deaths of persons actually belonging to the various sanitary areas, and are the result of a complete system of distribution of deaths occurring in the public institutions of London among the various sanitary areas in which the patients had previously resided.

The 32,754 births registered in London during the three months ending September last were equal to an annual rate of 28.6 per 1,000 of the population, estimated at 4,589,129 persons in the middle of the year; this rate was equal to that recorded in the corresponding period of last year, and was 1.4 per 1,000 below the average rate in the third quarters of the ten preceding years, 1890-1899. The birth-rates in the various sanitary areas showed, as usual, wide variations, owing principally to the differences in the age and sex distribution of the populations. In Kensington, St. George Hanover Square, St. James Westminster, St.

Analysis of the Vital and Mortal Statistics of the Sanitary Districts of the Metropolis, after Distribution of Deaths occurring in Public Institutions during the Third Quarter of 1900.

Sanitary Areas.	Estimated Population middle of 1900.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Zymotic Diseases.	Deaths from Principal Zymotic Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Typhus.	Enteric Fever.	Simple and Undefined Fever.	Diarrhœa.	Phthisis.	Deaths of Children under 1 year of age to 1,000 Births.
LONDON	4,589,129	32,764	19,847	28.6	17.3	3.70	4,240	—	329	70	296	543	1	146	5	2,850	1,761	219
West Districts.																		
Paddington	130,104	755	460	23.3	14.2	3.30	107	—	9	—	5	7	1	1	1	83	31	226
Kensington	173,603	887	614	20.5	14.2	2.29	99	—	7	1	2	6	—	5	—	78	41	254
Hammersmith	110,203	757	451	27.6	16.4	3.32	91	—	5	1	1	2	—	1	—	76	49	230
Fulham	136,383	1,142	560	33.6	16.5	4.80	163	—	5	4	19	20	—	2	—	113	53	260
Chelsea	96,715	569	377	23.6	15.6	3.10	75	—	1	3	6	3	—	7	—	55	27	199
St. George Hanover Sq.	81,133	325	175	16.1	8.7	0.60	12	—	—	1	—	2	—	2	—	7	15	74
Westminster	51,657	275	230	21.4	17.9	2.10	27	—	3	—	2	3	—	2	—	17	28	244
St. James Westminster	21,457	109	78	20.4	14.6	1.31	7	—	—	1	—	2	—	—	—	4	8	202
North Districts.																		
Marylebone	139,777	981	582	28.2	16.7	3.30	115	—	12	—	13	19	—	3	—	68	57	155
Hampstead	81,766	437	191	21.4	9.4	1.92	39	—	7	1	11	4	—	—	—	16	12	110
St. Pancras	245,651	1,609	1,115	26.3	18.2	3.88	237	—	13	1	20	29	—	14	1	159	111	233
Islington	351,541	2,387	1,221	27.2	13.9	2.63	231	—	15	3	19	46	—	11	1	136	112	175
Stoke Newington ...	35,718	198	95	22.2	10.7	2.13	19	—	1	1	1	4	—	1	—	11	6	146
Hackney	225,519	1,590	906	28.3	16.1	4.25	240	—	12	4	7	17	—	8	—	192	54	251
Central Districts.																		
St. Giles	36,870	237	156	25.8	17.0	2.62	24	—	1	—	2	6	—	3	—	12	25	181
St. Martin-in-the-Fields	11,865	35	31	11.8	10.5	1.02	3	—	—	—	1	—	—	—	—	2	7	114
Strand	22,748	100	80	17.6	14.1	1.07	6	—	—	—	1	1	—	1	—	3	10	140
Holborn	29,188	179	161	24.6	22.1	3.84	28	—	6	2	1	2	—	—	—	17	20	231
Clerkenwell	66,007	466	352	28.3	21.4	4.50	74	—	11	2	7	7	—	2	—	45	42	242
St. Luke	40,655	465	239	45.9	23.0	4.65	47	—	3	1	3	1	—	2	—	37	27	161
London City	26,922	91	119	13.6	17.7	0.90	6	—	1	—	—	1	—	1	—	3	10	220
East Districts.																		
Shoreditch	120,641	972	588	32.3	19.5	5.23	157	—	11	2	9	6	—	1	—	128	45	264
Bethnal Green	128,831	1,182	706	36.8	22.0	4.11	132	—	18	6	13	16	—	2	—	77	70	214
Whitechapel	82,220	695	372	33.9	18.1	3.22	66	—	13	2	6	7	—	2	—	36	48	150
St. George-in-the-East	48,875	504	349	41.4	28.6	6.24	76	—	11	4	4	12	—	3	—	42	39	272
Limehouse	58,944	433	388	29.5	26.4	6.46	95	—	25	4	3	10	—	1	—	52	26	335
Mile End Old Town ...	113,791	1,033	633	38.5	22.3	4.80	136	—	17	2	5	16	—	5	—	91	51	238
Poplar	170,998	1,430	1,009	33.5	23.7	6.24	266	—	21	—	27	15	—	10	—	187	77	285
South Districts.																		
St. Saviour Southwark	23,854	169	141	28.4	23.7	4.88	29	—	1	—	2	6	—	—	—	20	27	272
St. George Southwark	60,597	517	394	34.2	26.1	6.16	93	—	10	1	2	12	—	—	—	68	58	284
Newington	125,138	1,084	673	34.7	21.6	4.70	147	—	10	2	12	25	—	4	—	94	72	222
St. Olave Southwark ...	10,909	100	44	36.8	16.2	1.48	4	—	—	1	1	—	—	—	—	2	7	150
Bermondsey	85,920	675	443	31.5	20.7	4.43	95	—	1	3	8	15	—	8	—	60	30	244
Rotherhithe	41,246	297	209	28.9	20.3	4.76	49	—	4	1	6	6	—	3	—	29	9	270
Lambeth	342,152	2,347	1,306	30.2	16.8	2.72	212	—	12	3	22	23	—	10	1	141	122	184
Battersea	178,100	1,261	722	28.4	16.3	4.35	193	—	7	2	9	35	—	5	—	135	61	235
Wandsworth	217,004	1,496	740	27.7	13.7	2.87	155	—	7	2	4	18	—	3	1	120	53	201
Camberwell	268,457	1,786	1,032	20.7	16.2	3.99	261	—	1	2	17	69	—	7	—	165	83	220
Greenwich	184,532	1,380	832	30.0	18.1	3.88	178	—	12	2	9	32	—	4	—	119	61	238
Lee	40,722	253	139	24.9	13.7	2.37	24	—	3	—	2	5	—	—	—	14	13	209
Lewisham	93,548	749	354	31.3	15.2	3.47	81	—	2	3	1	15	—	4	—	56	18	195
Woolwich	41,600	266	259	25.7	25.0	6.46	67	—	13	—	1	3	—	—	—	50	24	293
Plumstead	65,558	501	271	30.7	16.6	4.53	74	—	18	2	7	18	—	2	—	30	24	184

Martin-in-the-Fields, Strand, and City of London the birth-rates were considerably below the average; while they showed the largest excess in St. Luke, Bethnal Green, St. George-in-the-East, Mile End Old Town, St. George Southwark, Newington, and St. Olave Southwark.

The 19,847 deaths of persons belonging to London registered during the three months ending September last were equal to an annual rate of 17.3 per 1,000, against 18.9 and 20.1 per 1,000 in the third quarters of the two preceding years; the death-rate in London in the corresponding periods of the ten preceding years averaged 17.9 per 1,000. The lowest death-rates in the various sanitary areas were 8.7 in St. George Hanover Square, 9.4 in Hampstead, 10.5 in St. Martin-in-the-Fields, 10.7 in Stoke Newington, and 13.7 in Wandsworth and in Lee; the highest rates were 23.6 in St. Luke, 23.7 in Poplar and in St. Saviour Southwark, 25.0 in Woolwich, 26.1 in St. George Southwark, 26.4 in Limehouse, and 28.6 in St. George-in-the East. During the quarter under notice 4,240 deaths resulted from the principal zymotic diseases in London; of these, 329 were referred to measles, 70 to scarlet fever, 296 to diphtheria, 543 to whooping cough, 1 to typhus, 146 to enteric fever, 5 to simple continued fever, 2,850 to diarrhœa, and not one to small-pox. These 4,240 deaths were equal to an annual rate of 3.70 per 1,000, against an average rate of 3.92 per 1,000 in the corresponding periods of the ten preceding years, 1890-1899. In the third quarters of the three preceding years the zymotic death-rates were 4.49, 4.29, and 4.55 per 1,000 respectively. The lowest zymotic death-rates last quarter were 0.60 in St. George Hanover Square, 0.90 in City of London, 1.02 in St. Martin-in-the-Fields, 1.07 in Strand, 1.31 in St. James Westminster, and 1.48 in St. Olave Southwark; the highest rates were 5.23 in Shoreditch, 6.16 in St. George Southwark, 6.24 in St. George-in-the-East and in Poplar, and 6.46 in Limehouse and in Woolwich.

Measles showed the highest proportional fatality in Holborn, Clerkenwell, St. George-in-the-East, Limehouse, St. George Southwark, Woolwich, and Plumstead; scarlet fever in St. James Westminster, Holborn, Bethnal Green, St. George-in-the-East, Limehouse, and St. Olave Southwark; diphtheria in Fulham, Hampstead, Clerkenwell, Poplar, Rotherhithe, and Plumstead; whooping-cough in St. George-in-the-East, St. Saviour Southwark, St. George Southwark, Newington, Battersea, Camberwell, and Plumstead; "fever" in Chelsea, St. Giles, Whitechapel, Bermondsey, and Rotherhithe; and diarrhœa in St. Luke, Shoreditch, Limehouse, Poplar, St. George Southwark, and Woolwich.

During the third quarter of this year 1,761 deaths from phthisis were registered in London, equal to an annual rate of 1.54 per 1,000, against 1.60, 1.51, and 1.58 in the corresponding periods of the three preceding years. Among the various sanitary areas the lowest rates in the last quarter were recorded in [illegible] Hampstead, Stoke Newington, Rotherhithe, and Lewisham; and the highest rates in St. Giles, Holborn, St. Luke, St. George in the East, St. Saviour Southwark, and St. George Southwark.

Infant mortality, measured by the proportion of deaths under 1 year of age to registered births, was equal to [illegible] 259, and 277 in the corresponding [illegible] Among the various sanitary [illegible] lowest in St. George Hanover S[illegible] Martin-in-the-Fields, Strand, and St. Olave Southwark; while they showed the largest excess in Holborn, Limehouse, [illegible] St. George Southwark, Rotherhithe, and Woolwich.

SANITAT[illegible]

Scotland writes: (1) The faulty [illegible] main village is a constant menace to the [illegible] special drainage [illegible] and was so badly [illegible] tically require to be [illegible] rendered necessary by the [illegible] Board, would it be [illegible] village is situated, or of the county? I understand that parish councils

have no say in drainage matters, the district committees being responsible for the drainage of special drainage districts.

(2) A house is described as insanitary by the authorities. The factor for the property, being advised to that effect, promises to give the matter his attention. Years pass, tenants come and go, the factor is periodically reminded of his negligence, but nothing is done. The house is damp, rain trickles through the roof into the very beds, and the son of the last tenant, a young man, healthy when he came to the house, develops phthisis and dies. The parents, hard working, decent people, already exceptionally handicapped in the struggle for existence, are thus put to much expense, and lose a wage-earner through, in all probability, the culpable negligence of a factor or his subordinate. Are they not entitled under the circumstances to raise an action for damages against the proprietor or his factor?

*** (1) Any expense incurred in improving works already formed in a special drainage district would have to be borne by the special district already formed. Section CXXXIII of the Public Health Act (Scotland), 1897, states that sums necessary for payment of any money borrowed either before or after the passing of the Act should be paid out of a special sewer assessment, which the local authority shall raise or levy on the special district.

2). The authorities should have insisted on the house being put in a sanitary condition within a reasonable time, and, if this were not done, legal proceedings should have been taken. As this apparently has not been done, the sanitary authorities are to blame as well as the proprietor. At the same time, the fact that the factor was again and again informed of the state of the house, and still permitted it to be let with the disastrous consequences described, should weigh with a court, and, always taking into consideration the great uncertainty of law, the tenant appears to have a good claim for damages against the proprietor, who is responsible for the action of his factor.

Poor-law Cases in Hospitals.

Medical Officer writes as follows: I am medical officer to a union district and also honorary surgeon to the local hospital where it is an understood thing that we may send in our own private cases for operation if we so desire. I received a parish order to attend a man in a common lodging-house. I found he was suffering from strangulated hernia, had him removed to the hospital, and operated successfully. Should I be justified in charging the guardians with the fee (£5) which I could legally claim had I performed the operation among the septic surroundings of the lodging-house?

*** If the hospital to which the patient was removed was in our correspondent's medical district, and the weekly return of the case was made to the guardians on the usual form, we consider our correspondent could claim the extra fee allowed for operation in a pauper case.

Antiseptic Vaccination.

Dr. Henry Renney, whose letter on this subject was published in the British Medical Journal of October 6th, asks us to state, in reply to many inquiries which he has received, that "pro-vac," which he recommended as an application after vaccination, can be obtained of Messrs. Allen and Hanburys, Plough Court, E.C., and that the vaccinators were made for him by Messrs. Brady and Martin, Northumberland Road, Newcastle-on Tyne.

Asepsis writes to ask why Dr. Renney prefers sp. vini rect. to methylated spirit. "Asepsis" has used the latter for the past three years, and has found it to be quite as satisfactory, and much less expensive than, as, rectified spirit.

MEDICO-LEGAL AND MEDICO-ETHICAL.

Medical Advertising.

Our attention has recently been directed to a great number of cases in which professional ethics have been defied by advertising both direct and indirect. It has seemed that the best way to check this practice is by sending on the documents in each case to the licensing body whose diploma is held by the person in question. We have found the authorities very willing to take action. We propose, therefore, in future to deal in this way with complaints of the kind mentioned, as this course may turn out to be preferable to mere expressions of censure in these columns.

Fees of a Poor-law *Locum Tenens* in Ireland.

At the Banbridge Quarter Sessions, before Judge Orr, Dr. Hamilton of Ballynahinch sued the Board of Guardians of the Banbridge Union for £4 4s. due to him for acting as *locum tenens* for the medical officer of the Congran Dispensary district. It appears from the report in the *Northern Whig* that Dr. Hamilton had on previous occasions acted in a similar capacity for £2 10s. a week, but on this occasion he wrote to the relieving officer that he would require £3 3s. When this intimation reached the Board he had already entered on his duties. The Board instructed the relieving officer to obtain the services of some other medical man at the end of the week, and for a fee of £2 10s if possible. As he was unable to do so Dr. Hamilton was retained for a day beyond the week, and for this he charged a guinea. The guardians tendered payment to Dr. Hamilton of £3 3s. for the first week, and a seventh of that sum, namely 9s., for the extra day, but this he refused to accept, and sued for the full amount. The Judge held that the charge was reasonable, and gave a decree for the full amount. He said that professional men were "entitled to a fair wage," and that they should arrange a scale of fees and "stick to it."

Responsibility for Fees.

We learn from a report in the *North Star* of October 18th, that at the Darlington County Court, Dr. Hern, of Stanhope Road, Darlington, sued Mr. Fred Elders to recover £6 12s. for attendance on a Miss Telford, who had died in his house. It appears that Dr. Hern was called to attend this lady, presumably by herself, but that Mr. Elders had authorised the employment of a nurse in the case, and had asked Dr. Hern to continue his attendance, and had said, as Dr. Hern understood, that if the patient recovered she would pay him, but if not, the defendant would do so. It was stated in court that there was no estate. On behalf of the defendant it was pointed out that he had not called in Dr. Hern to attend Miss Telford and denied responsibility.

The Judge said he did not see how the plaintiff could recover the fees. In cases where medical men were called in to attend a patient and were to be paid by another person, they must have it in writing. The defendant might have said "it was all right, and that he did not mind being responsible, but it was necessary that it should be in writing.

Judgment was given for the defendant, with costs.

*** It is a well-established rule of law that a promise to answer for the debt or default of another, for which that other remains liable, must be in writing and signed by the person promising, or his agent In the case in question, it is clear that Miss Telford remained liable, and therefore the promise to pay, alleged to have been made by Mr. Elders, amounted to a collateral promise or guarantee, which, not being in writing and signed, was invalid. If the defendant himself (either alone or jointly with others) had been primarily liable for the demand forming the subject of the promise—for example, if he had originally requested the attendance of Dr. Hern on the patient and credit had been given to him—then, although the services were rendered to another person, the verbal promise would probably have been sufficient. It is but fair to observe that the defendant, through his solicitor, repudiated the verbal promise; and, of course, it may be that if Mr. Elders had been examined he would have been able to show that Dr. Hern was mistaken in his view of what had passed between them. It was, however, not necessary to examine him, the plaintiff's evidence disclosing what he understood the nature of the promise to be; and the Court deciding that such a promise not being in writing was insufficient to support the action. It is very unfortunate, but it would be impracticable, if not impossible, for medical practitioners in cases of this kind to require a written guarantee. Certainly it is seldom or never done, and we think that the medical profession is to be congratulated on the fact that the difficulties in consequence are comparatively few and far between.

"Medical Advertising."

Mr. Ernest P. Bliss (Director Mellin's Food, Limited) writes: Our attention has been directed to statements which have appeared in the British Medical Journal for the past two weeks which we consider cast a serious reflection upon the method adopted by Mellin's Food Company of supplying blocks of charts to members of the medical profession. You state that you understand from your correspondent that "these blocks with his name and address and hours of consultation" have been printed "*without his consent.*" We must ask you to give equal publicity to our statement that not only have we never printed our clinical temperature chart blocks without the "consent," but what is more to the point, we have only printed and supplied the same at the written request of the medical practitioner whose name has appeared upon them. We trust, therefore, that it will prove that the misunderstanding lies between you and your correspondent, and that in view of your criticism you will at least set us right with your readers.

The Labelling of Medicines Containing Poisons by Registered Medical Practitioners.

E. M. G. sends us specimens of surgeons' labels for medicine bottles which are being circulated by a printer with a request for orders, and asks: "What is the difference between these labels and advertising in the papers?"

*** Of course there is the very obvious difference that the bottles are sent presumably only to the patients of the practitioners in question, and make no public appeal. It is the usual custom for practitioners who dispense their own medicines to affix a plain label containing only the directions for taking the medicine and the patient's name, but if the medicines contain poisons there seems to be good reason on public grounds for requiring whoever dispenses them to place his name and address upon the bottle. The legal interpretation of Section III of the Pharmacy Act Amendment Act, 1869, is, we are informed, that this Section relieves qualified medical practitioners when supplying their patients with medicines containing poisons from the penalties of Section XVII of the 1868 Act, provided that such medicines are labelled with the name and address of the medical man. This means apparently that there is an obligation upon medical men dispensing such medicines to label them with their names and addresses. This matter is of importance, because this opinion expresses a view which is contrary to the practice of a very large and respectable body of general practitioners, who would regard it as *infra dignitate* to use any but plain label.

MEDICAL ATTENDANCE ON WORKMEN.

STATHERN writes that he was sent for by a firm to see one of their workmen who had met with an accident while following his occupation. The man was removed to his own house, where the writer continued to attend him. Our correspondent inquires if the firm is responsible for his attendance throughout, or only for the visit to the man while lying on their premises; and, in the latter case, what would be a reasonable fee to charge?

*** In the absence of any express or implied authority by the employers to continue the attendance, we are advised that their responsibility would probably be held to be limited to the charge for the visit to the man while on their premises. The amount of the fee would materially depend upon the nature of the accident, and the time, care, and skill required in doing what was necessary. We fear that without this information we can hardly express an opinion as to what could be a proper fee. Perhaps the best test would be the amount our correspondent would have charged for attending a like accident in the case of a well-to-do patient of his own.

CLUB PATIENTS AND COMPENSATION FOR INJURY.

A CORRESPONDENT asks our opinion on the following circumstances. He is surgeon to a club, and recently one of his members met with an accident. As he was taking steps to recover damages from those liable for his injuries, he asked the doctor to make out a bill for his attendance, and later he recovered £20 damages and £5 for expenses. On our correspondent asking for the amount of his bill, the member declined on the ground that the doctor was bound to attend to him as club surgeon. Our correspondent wishes to know whether he can legally claim.

*** A club surgeon cannot legally claim payment under these circumstances, but if a club member in an action for injuries employed the doctor's bill in the manner described, it would be something very like obtaining money under false pretences. If the member declines to pay our correspondent he might report the circumstances to the solicitors of the other side.

FEE FOR INJECTION OF ANTITOXIN.

"H. B." wishes to know what would be a reasonable charge to make to a well-to-do builder, who usually pays him 3s. 6d. a visit, for injecting antitoxin in a case of diphtheria.

*** Under the circumstances stated half-a-guinea would be a reasonable fee.

A HOUSE SURGEON'S DIFFICULTIES.

PONTOON.—We have read this correspondence carefully, but note that it only represents one side, and therefore we do not possess the necessary data for expressing an opinion upon the merits of the dispute. It is, however, certainly to be regretted that our correspondent was not allowed to attend before the committees to speak in his own defence and to offer his explanations of the charges against him.

RIVAL CLAIMS TO A PATIENT.

R.—On the principle that the practitioner first in attendance is in possession, we should assign the case to B., but this is governed by another rule—namely, that "he who pays the piper has the right to call the tune," so that ultimately the patient or whoever employs the doctor has the right to decide which practitioner he would prefer to take charge of the case.

LIFE INSURANCE AGENCY.

IGNORAMUS.—There can be no objection to a medical man becoming an agent for a respectable life insurance company, but it is hardly necessary to add that he will not be able to act as examiner upon cases introduced by himself, and he may at times find an incompatibility between his duty to the company and his position as medical adviser acquainted with the constitutional weaknesses of the person wishing to become insured.

DOMESTIC ANNOUNCEMENTS.

H. W. asks our opinion as to the taste displayed by members of the medical profession who insert all their qualifications in the announcements of domestic occurrences such as births, marriages, etc., in the public newspapers. We do not care to comment upon matters of taste, but we have no doubt that a gentleman who has the misfortune to possess such a formula as D.P.H.R.C.P.S., to put after his name, would be very glad to exchange it for something less cumbersome.

CHEMISTS' RECOMMENDATIONS.

JUSTICE.—A chemist usually finds it in his interest to be on good terms with all the medical practitioners in his neigbourhood, but if he chooses to recommend a particular doctor to his friends and customers we do not see what remedy our correspondent can have; we are glad to know that he suffered no damage.

APPETITUS RATIONI PAREAT.—We should like more information respecting the Society before we give a reply to our correspondent's question.

INERTIA wishes to know what would be a reasonable charge to make to a patient who comes into his house to be confined when he has to supply the nurse, and the husband would be in and out during the whole of the time.

*** One guinea a day would be a reasonable charge, exclusive of fee for actual attendance in labour, and any expense the husband might incur.

MEDICAL NEWS.

IT is stated that as a sequel of the Galveston tragedy, the popular prejudice against cremation has notably diminished.

THE eighth course of public lectures in connection with the Childhood Society, which was established for the scientific study of the mental and physical conditions of children, will be given in the Library of the Sanitary Institute, 72, Margaret Street, W., at 8 P.M., on November 1st, 15th, and 29th, and December 13th. The subjects of the lectures are the treatment of feeble-minded children in asylums, the training of teachers, physiology for teachers, and the causes of failure in the health of school girls.

ROYAL SOCIETY OF EDINBURGH.—The annual general statutory meeting of the Edinburgh Royal Society was held on Tuesday, October 23rd, when the following members of Council were elected for the ensuing session: *President:* Lord Kelvin. *Vice-Presidents:* Professor Chrystal, Sir Arthur Mitchell, Sir William Turner, Professor Copeland, the Rev. Professor Duns, and Professor James Geikie. *General Secretary:* Professor Tait. *Secretaries to Ordinary Meetings:* Professor Crum Brown and Dr. Ramsay H. Traquair. *Treasurer:* Mr. Philip R. D. Maclagan. *Curator of Librarian and Museum:* Dr. Alexander Buchan. *Councillors:* Lord M'Laren, Mr. C. G. Knott, D.Sc., Dr. Alexander Bruce, Mr. James A. Wenley, the Rev. Professor Flint, Dr. James Burgess, C.I.E., Dr. R. M. Ferguson, Mr. Robert Irvine, Professor M'Kendrick, Professor Schäfer, Dr. Robert Monro, and Dr. J. S. Mackay.

MEDICAL VACANCIES.

The following vacancies are announced:

BETHNAL GREEN: PARISH OF ST. MATTHEW.—Clinical Assistant at the Infirmary; unmarried. Salary at the rate of £40 for the six months, with board, lodging, and washing. Applications, on forms provided to be sent to the Medical Superintendent at the Infirmary, Cambridge Road, by October 30th.

BIRKENHEAD AND WIRRALL CHILDREN'S HOSPITAL.—House Surgeon. Salary, £100 per annum, with board, residence, and laundry. Applications to Mr. E. H. Tilby, Hon. Secretary, 52, Gosvenor Road, Birkenhead, by November 19th.

BODMIN: CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £120, rising to £150 per annum, with board, furnished apartments, etc. Applications to the Medical Superintendent.

BRISTOL: HAM GREEN FEVER HOSPITAL.—Resident Medical Officer. Salary, £100 per annum, with board, lodging, and washing. Applications to Dr. D. S. Davies, Medical Superintendent City Hospitals, 40, Princes Street, Bristol, by November 1st.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—Assistant Anæsthetist. Applications to the Secretary by November 3rd.

CHESTER COUNTY ASYLUM.—Junior Assistant Medical Officer; unmarried, and not more than 30 years of age. Salary, £100 per annum, with board lodging, and washing. Applications to Dr. Lawrence at the Asylum by November 3rd.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House Surgeon. Appointment for six months. Salary at the rate of £40 per annum. Applications to the "Chairman of Medical Committee" by November 8th.

DOWN DISTRICT ASYLUM, Downpatrick.—Assistant Medical Officer. Not more than 32 years of age, and unmarried. Salary, £150, increasing to £200, with furnished apartments, board, washing, and attendance. Applications to the Resident Medical Superintendent by November 7th.

DUBLIN: ROYAL HOSPITAL FOR INCURABLES, Donnybrook.—Resident Medical Officer. Salary, £80 per annum, with board and furnished apartments. Applications to the Registrar by November 5th.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £40 per annum, with residence, board, and washing. Applications to the Secretary by November 8th.

DUNDEE ROYAL LUNATIC ASYLUM.—Medical Assistant. Applications to the Secretary, 5, Whitehall Street, Dundee.

EDINBURGH: ROYAL COLLEGE OF SURGEONS.—Conservator of the Museum. Salary, £105 per annum. Applications to Mr. J. Robertson, Clerk to the College, 54, George Square, Edinburgh, by December 1st.

FRENCH HOSPITAL AND DISPENSARY, London.—Resident Medical Officer, unmarried, and must speak French. Salary, £80 per annum, with full board. Applications to the Secretary.

HEREFORDSHIRE RURAL DISTRICT COUNCILS.—Medical Officer of Health. Not less than 30 or more than 50 years of age. Salary, £330 per annum. Applications to the Clerk, Hereford, by November 9th.

HOSPITAL FOR DISEASES OF THE THROAT, Golden Square, W.—Four vacancies in the Office of Senior Clinical Assistant. Applications to the Secretary by November 7th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Ophthalmic Surgeon, must be F.R.C.S. Eng. Applications to the Secretary by November 20th.

JENNER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea Gardens, S.W.—Assistant in the Department of Pathological Chemistry. Salary, £300. Applications to Dr. Allan Macfadyen by November 15th.

KENT COUNTY ASYLUM, Chartham, near Canterbury.—(1) Second Assistant Medical Officer, unmarried, and under 31 years of age. Salary [illegible]. (2) Third Assistant Medical Officer. Salary, £125 per annum. Board quarters, washing and attendance provided in each case. Applications to Dr. [illegible], Medical Superintendent.

LAMBETH WORKHOUSE.—Assistant Medical Officer. Salary, £100 per annum, rising to £125, with board, apartments, and washing. Applications to the Clerk to the Guardians, Brook Street, Kennington Road, S.E., by October 29th.

LEEDS: GENERAL INFIRMARY.—(1) Two House-Physicians. (2) Resident Obstetric Officer. Board, lodging, and washing provided. Application to the Secretary to the Faculty at the Infirmary by October 30th.

LEICESTER INFIRMARY.—House-Surgeon. Salary, £120, rising £10 per annum until the third year, with board, apartments, and washing. Applications to the Secretary, 34, Friar Lane, Leicester, by October 29th.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Resident Medical Officer. Salary, £200 per annum, with board, lodging, and washing. Applications to the Secretary by November 10th.

MANCHESTER: ST. MARY'S HOSPITAL, Quay Street.—Two Resident Medical Officers. Appointments for six months, but eligible for re-election. Salaries, £70 and £65 per annum respectively, with board and residence. Applications to the Secretary by October 31st.

MARGATE: ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon. Salary, £100 per annum, with board and residence. Applications to the Secretary, at the offices, 30, Charing Cross, London, S.W., by November 1st.

MORPETH: NORTHUMBERLAND COUNTY ASYLUM.—Assistant Medical Officer, unmarried, and not more than 30 years of age. Salary, £125 per annum, rising to £155, with board, lodging, and washing. Applications to the Medical Superintendent by November 14th.

NEWCASTLE CITY ASYLUM.—Locum Tenens for two months. Salary, £3 3s. a week. Applications to the Medical Superintendent, City Asylum, Gosforth, Newcastle-on-Tyne.

NORTH LONDON CONSUMPTION HOSPITAL, Hampstead, N.W.—(1) Senior Medical Officer. Honorarium, £100 per annum. (2) Junior Medical Officer. Honorarium £60 per annum. Applications to the Secretary by November 3rd.

NORTH STAFFORDSHIRE INFIRMARY, Hartshill, Stoke-upon-Trent.—Assistant House-Surgeon. Board, apartments, and washing provided, and honorarium of at least £10 at the end of six months. Applications to the Secretary by October 29th.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—Surgeon to Out-patients; must be F.R.C.S. Applications to the Secretary by November 3rd.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant House-Surgeon. Appointment for six months, but renewable. Salary at the rate of £50 per annum, with board and residence. Applications to the Hon. Secretary by November 8th.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Two House-Physicians. (2) One House-Surgeon. (3) One Casualty House-Surgeon. Appointment for six months. No salary, but board, etc., provided. Applications to the Secretary by October 29th.

ST. PANCRAS AND NORTHERN DISPENSARY, Euston Road, N.W.—Two Honorary Physicians. Applications to the Honorary Secretary, 23, Gordon Street, W.C., by November 3rd.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Assistant House-Surgeon. Appointment for six months but eligible for re-election. Salary at the rate of £75 per annum, with residence, board, and washing. Applications to the Honorary Secretary by October 29th.

SHEFFIELD: ROYAL INFIRMARY.—House-Physician. Salary, £100 per annum, with board, lodging, and washing. Applications to be addressed to the Medical Staff, care of the Secretary, by November 12th.

SHOREDITCH: PARISH OF ST. LEONARD.—Second Assistant Medical Officer for the Infirmary, Hoxton Street. Appointment for six months. Salary, £100 per annum, with furnished apartments, rations, and washing. Applications, on forms provided, to the Clerk to the Guardians, 313, Kingsland Road, by October 29th.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with rooms, board, and washing. Applications to the Secretary before November 1st.

SOUTHPORT CONVALESCENT HOSPITAL AND SEA-BATHING INFIRMARY.—Resident Medical Officer, unmarried and between 25 and 30 years of age. Salary, £150 per annum. Applications to the Chairman by November 12th.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Appointment for six months, but renewable. Honorarium at the rate of £60 per annum, with residence, board, and washing. Applications to the Secretary by November 3rd.

STAUNTON-ON-WYE: JARVIS CHARITY.—Medical Officer. Salary, £150 per annum, with house, etc. Applications to the Correspondent, Jarvis Charity, Staunton-on-Wye, Hereford, before November 5th.

TAUNTON: TAUNTON AND SOMERSET HOSPITAL.—Assistant House Surgeon. Appointment for six months. Salary at the rate of £30 per annum, with board, lodging, and laundry. Applications to the Honorary Secretary.

TIVERTON INFIRMARY AND DISPENSARY.—House-Surgeon, unmarried. Salary, £80 and board, lodging and washing. Applications to the Honorary Secretary by October 31st.

UNIVERSITY COLLEGE HOSPITAL, LONDON.—Pathologist. Applications to the Secretary by November 1st.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging. Applications to the Secretary at the London Office, 34, Craven Street, Charing Cross, by October 31th.

WATERFORD DISTRICT ASYLUM.—Assistant Medical Officer, unmarried, and not exceeding 30 years of age. Salary, £100 per annum, with furnished apartments, board, washing, and attendance. Applications to the Resident Medical Superintendent by November 9th.

WOLVERHAMPTON EYE INFIRMARY.—House-Surgeon. Salary, £70 per annum, with rooms, board, and washing. Applications to the Secretary by November 17th.

YORK DISPENSARY.—Resident Medical Officer: unmarried. Salary, £110 per annum, with board, lodging, and attendance. Applications to Mr. W. Draper, De Grey House, York, by October 31st.

MEDICAL APPOINTMENTS.

AINSLIE, Wm., M.B., Ch.B.Aberd., appointed Medical Officer for the Kington District (Isa) and the Workhouse of the Kington Union, *vice* R. A. Bilhald, M.R.C.S.Eng., L.R.C.P. Lond., resigned.

BERGIN, Wm. M., M.B.Lond., M.R.C.S., appointed House-Surgeon to the Royal Eye Hospital, Southwark.

BIRCHALL, E. H., L.R.C.P., L.R.C.S.Edin., appointed Assistant Medical Officer to the Walton Workhouse of the West Derby Union, *vice* E. J. Weightman, M.B., C.M.Edin., resigned.

BYTHELL, W. J. S., B.A., M.B., Ch.B., appointed Anæsthetist to the Manchester Children's Hospital, Pendlebury.

CHESSON, H., L.R.C.P.Lond., M.R.C.S.Eng., appointed Assistant Medical Superintendent to the Hospital for Insane, Toowoomba, Queensland.

COSENS, F. R. S., M.R.C.S., L.R.C.P.Lond., appointed District Medical Officer to the Honiton Union, *vice* W. V. Sinclair, L.R.C.P., L.R.C.S.Edin.

FROST, William E., M.A., Ch.B., appointed House-Surgeon to the Edinburgh Royal Maternity and Simpson Memorial Hospital.

GRANT, Dundas, M.A., M.D., F.R.C.S.Eng., appointed Surgeon to the Royal Academy of Music.

HIGHMOOR, R. N., M.B., C.M.Edin., appointed Medical Officer for the Fransham District of the Mitford and Launditch Union, *vice* R. E. Newton, M.B., C.M., Glasg., resigned.

HILL, William H., M.B., C.M., appointed Clinical Assistant in Dr. Smart's Wards in the Edinburgh Royal Infirmary.

KATER, Norman, W., M.B., Ch.M.Syd., appointed Demonstrator of Anatomy at the University of Sydney.

MARSH, J. H., M.R.C.S., L.R.C.P., appointed Medical Officer for the Marton District of Rugby Union, *vice* F. W. Barlow, M.R.C.S., L.R.C.P., resigned.

MELLERSH, W. Francis, L.D.S., R.C.S.Eng., appointed Honorary Dental Surgeon to the Royal Cambridge Asylum for Soldiers' Widows.

MONTGOMERY, W. P., M.A.Oxon., B.Sc., M.B.Lond., F.R.C.S.Eng., appointed Honorary Assistant Surgeon to the Manchester Royal Infirmary.

NAISMITH, J. H., M.B.Glas., appointed Medical Officer of Health for the Tow Law Urban District, *vice* W. Tiplady, L.R.C.P., L.R.C.S.Edin.

O'SHAUGHNESSY, T. H., M.D.R.U.I., appointed Assistant Medical Officer to the Nottingham Union Infirmary *vice* F. A. H. Clarke, F.R.C.S., L.R.C.P., resigned.

PRICE, T. A., M.B., appointed Assistant Medical Officer at the Hospital for Insane, Goodna, Queensland.

RIDDELL, Robert, M.B., C.M.Edin., appointed Medical Officer of Health for the Sandbach Urban District, *vice* H. J. Rice, L.R.C.P., L.R.C.S.Edin.

RUSSELL, Miss M. H. G., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., appointed Assistant Medical Officer to the Camberwell Infirmary, *vice* Miss L. G. Anderson, M.B.Lond., resigned.

SIMMONS, S. S., M.R.C.S.Eng., L.R.C.P.Lond., appointed Medical Officer for the Ninth District of the Croydon Union, *vice* T. R. B. Parker, M.D.St.And., resigned.

SIMPSON, Frederick B., M.B., Ch.B., appointed House-Surgeon to the Edinburgh Royal Maternity and Simpson Memorial Hospital.

THOMAS, J., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer of Health for the Newcastle Emlyn Urban District, *vice* David Lloyd, M.R.C.S.Eng.

THOMSON, Robert Stevenson, M.D., B.Sc., appointed to the Chair of Practice of Medicine in Anderson's College Medical School, Glasgow, *vice* Professor Samson Gemmell.

WETWAN, Wm. A., M.R.C.S.Eng., reappointed Medical Officer of Health for Bridlington.

WOOD, A. Murray, M.B., Ch.B., appointed a Clinical Assistant in Professor Greenfield's Wards in the Edinburgh Royal Infirmary.

GLASGOW ROYAL INFIRMARY.—The following appointments have been made for six months from October 15th:

House Physicians.—Dr. Edward W. Roberts to Dr. Steven; Dr. John C. Douglas, to Dr. McVail; Dr. Norman M. Leys, to Dr. Monro; Dr. Leonard Findlay to Dr. Middleton; Dr. A. W. Barrhead, to Dr. Dougall.

House-Surgeons.—Dr. T. B. Adam, to Dr. Clark. Dr. G. M. Crawford, to Dr. McLennan; Dr. A. L. Watson, to Dr. Newman; Dr. J. W. Leitch, to Dr. Knox; Dr. P. H. Baldbird, to Dr. Barlow; Dr. H. C. Fergusson, to Dr. Adams; Dr. H. Oswald Smith, to Mr. Pringle; Dr. Garrow, to Dr. Ramsey (Ophthalmic); Dr. Ellen S. McDonald, to Dr. Kelly (Gynæcologist).

DIARY FOR NEXT WEEK.

MONDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Saunders: Headache; its Causes and Treatment.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. J. F. Payne: Consultation. (Skin.)

TUESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Sir W. H. Broadbent: Consultation. (Medical.) 6 P.M.—Mr. A. Carless (Class): Applied Anatomy.

Hospital for Diseases of the Skin, 53, Stamford Street, Blackfriars, S.E., 5 P.M.—Dr. Phineas S. Abraham: Acne and Rosacea.

WEDNESDAY.

British Balneological and Climatological Society, 20, Hanover Square, W., 8.30 P.M.—Address by the incoming President, Dr. Frederic Bazshawe (St. Leonards-on-Sea), entitled Points in the Development of Seaside Towns.

London Throat Hospital, 204, Great Portland Street, W., 5 P.M.—Mr. Claud Woakes: Examination of the Nose.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W., 4 P.M.—Sir R. Douglas Powell, Bart.: On some Varieties of Pulmonary Tuberculosis.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Reginald Harrison: Consultation. (Surgical.)

THURSDAY.

Central London Throat, Nose, and Ear Hospital, 5 P.M.—Dr. Dundas Grant: Diagnosis of Diseases causing Pain in the Throat or Difficulty in Swallowing.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M. Mr. H. P. Dunn: Antiseptics in Ocular Surgery.

Harveian Society of London, Stafford Rooms, Tichborne Street, Edgware Road, W., 8.30 P.M.—Dr. Robert Maguire: The Prognosis and Treatment of Tuberculous Disease of the Lungs. Harveian Lecture I.

Roentgen Society, 20, Hanover Square, 8 P.M.—Presidential Address by Dr. J. S. Macintyre.

Charing Cross Hospital, Post-Graduate Course, 4 P.M.—Mr. Waterhouse: Surgical Cases.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Garrod: Demonstration of Selected Cases.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

FRIDAY.

West London Medico-Chirurgical Society, West London Hospital, Hammersmith Road, W., 8.30 P.M.—Mr. G. L. Cheadle: Some Personal Experiences of the late Boer War. Mr. Jackson Clarke: Some Surgical Phases of Rheumatoid Arthritis and Gout. Card Specimen—Mr. T. R. Atkinson: Tubal Pregnancy.

Society of Anæsthetists 20, Hanover Square, W., 8.30 P.M.—Clinical Evening.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Holmes Spicer: Consultation. (Eye.) 5.15 P.M.—Mr. P. J. Freyer: Some Practical Points in the Surgery of the Urinary Organs.

West Kent Medico-Chirurgical Society, Royal Kent Dispensary, Greenwich Road, 8.45 P.M.—Dr. James Donelan: On Tracheal Hæmorrhage in Influenza, and Demonstration on the Advantages and Disadvantages of Certain Positions for Adenoid Operations.

Laryngological Society of London, 20, Hanover Square, W., 5 P.M.—Cases will be shown by Mr. Stewart, Mr. Spencer, Dr. Scanes Spicer, Dr. Dundas Grant, Dr. Barclay Baron, Dr. Watson Williams, Mr. Waggett, Mr. Roughton, Dr. Tilley, Mr. Wyatt Wingrave, Mr. Charters Symonds, Dr. St. Clair Thomson, and Mr. Lake.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BLUMER.—October 19th, at St. Mary's Grove, Stafford, the wife of F. Milnes Blumer, M.S., of a son.

BROCK.—On October 14th, at Via Vento, B., Rome, Italy, the wife of G. Sandison Brock, M.D., of a daughter.

FARQUHARSON.—At Garlands, Carlisle, on October 18th, the wife of William F. Farquharson, M.D., of a son.

MACKNESS.—On October 21st, at Fort Street House, Broughty Ferry, N.B., the wife of G. Bowen C. Mackness, M.D., of a daughter.

NEWNHAM.—On October 21st, the wife of W. H. C. Newnham, M.A., M.B.Cantab., Chandos Villa, Queen's Road, Clifton, Bristol, of a daughter.

PATERSON.—On October 24th, at 7A, Manchester Square, the wife of Wm. Bromfield Paterson, F.R.C.S., L.D.S., of a son.

WATSON.—On October 17th, at Hendre, Overton Park, Cheltenham, the wife of Deputy Surgeon-General George Alder Watson, Bengal Army (retired), of a daughter.

WITHERS.—On Wednesday, October 17th, at Ashford, Hale, Cheshire, the wife of Percy Withers, M.B., B.S., of a daughter.

DEATHS.

BROWN.—On October 17th, at Holly Lodge, Brockley Road, S.E., Alexander Stewart Brown, F.R.C.S., aged 45 years.

ECCLES.—On the 22nd Oct., suddenly, at 23, Hertford Street, Mayfair, W., Arthur Symons Eccles, M.B., C.M., in his 46th year.

TANNER.—On October 13th, Ettie Lilian, elder daughter of John Tanner, M.D., of 19, Queen Anne Street, Cavendish Square, W., aged 31 years.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Röntgen, W., 9.45; Orthopædic, Th., 1. *Operations*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations,*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, 1.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, 1.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, 1.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2, Diseases of Women, Tu. S. 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; 1.-p., Tu. Th., 2.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; 1.p., 1; o.p., 12; Obstetric, 1.p., Tu. F. 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th. 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9 *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30 Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M. 1.30, Skin, F., 1.30; Throat, Tu., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.3. *Operations.* Daily, 2, (Ophthalmic), Th., 2; Gynæcological, Th. 2; Throat, M., 9.30 (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2., W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 3; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429 Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

G. R. J. F. asks if any readers can give him reliable modern statistics on the comparative mortality after craniotomy and Cæsarean section.

O. S. asks where he can find the best information as to neurasthenia, its causes, effects, and treatment.

EGYPT asks to be informed if there is a good prospect of work at Cairo for a qualified trained nurse (certificated), and if there is any institution there to which she could become attached. Failing the latter he would be glad to be recommended to anyone to whom she could apply with the object of procuring suitable quarters.

NORTH BRITISH writes: A clergyman of gouty habit, aged about 60, suffering from slight incontinence of urine, but whose urine is free from sugar or albumen, was ordered to use a suppository of morphia mur. gr. ½ before service as he was nervous that he might have to retire to the vestry during service. On Sunday last he used the suppository as above at 9.15 A.M., at about 11 A.M., whilst conducting service, he "got into a cold perspiration," "felt giddy," and had to give up the service. I saw him about 1 P.M., he complained of flatulent pain; the pupils were not contracted, he still felt giddy but had his natural pulse. He had purged himself rather freely the day and evening before. Could the morphine suppository have caused the attack in church? He has administered chlorodyne on several occasions to himself without any bad effect. I have reason to know that the strength of the suppository was correct.

M.D., ROYAL UNIVERSITY OF IRELAND, BACCALAUREUS writes: Would some member who has obtained this degree mention the best books to read for the examination in medicine, pathology, and clinical diagnosis? Are bacteriology and mental diseases necessary?

TREATMENT OF RHEUMATOID ARTHRITIS BY HOT AIR.

A. D. asks for the recent experiences of practitioners who have treated cases of rheumatoid arthritis by hot air.

SALIVATION IN OLD AGE.

G.W.S. asks for advice in the treatment of an old man suffering from excessive salivation during the daytime. Except for atheroma of the blood vessels and chronic rheumatism he has good health, the salivation is very troublesome as he is constantly spitting clear fluid and cannot go at all into society as a consequence.

LUNACY FEES.

LUNACY asks what is a fair fee for examining a patient and signing a certificate for removal to an asylum, where the usual visiting fee is 3s. 6d. per visit.

*** This appears to be a private case of small means, and a charge of one and a-half or two guineas seems fair.

TREATMENT OF INCONTINENCE OF URINE.

ITALY asks for advice in the treatment of the following case: A boy, 3 years old, passes water unconsciously whenever he goes to sleep, either by day or night, even should he sleep for only half an hour, having previously emptied his bladder. In addition, if the child is for a short time very quiet sitting on a chair, he will empty his bladder without apparently noticing it. When he is moving about, walking or playing he will go for many hours without wanting to pass water, and when wish comes he invariably says so.

ANSWERS.

C. J. T.—A second edition of Maclagan's *Rheumatism* was published in by Messrs. A. and C. Black.

OCULUS.—Perrin's artificial eye is made by Messrs. Giroux Frères, 9, Rue de l'Odéon, Paris. Possibly they may supply instructions as to its use. We know of nothing else published.

H. J. (Bexhill-on-Sea) writes: In answer to "Edinburgh" I should think that Bexhill would probably answer his requirements. It is sunny, dry, on the South Coast near Hastings, not expensive, quiet, and not overcrowded. Mean temperature, 50.8° F. Total sunlight, 2,185.3 hours (50 per cent.). Rainfall, 20 to 25 inches.

TREATMENT OF TAPEWORM.

MR. G. D. MACINTOSH (Kennington) writes: I saw the following plan some time ago in the *Scottish Medical Journal* and have never known it to fail: Shake mj-ij ol. croton in 5j chloroform, and give it in half a tumblerful of milk in the early morning, fasting.

TREATMENT OF THREADWORMS.

MR. JOHN M'ELROY, L.R.C.P. & S. Edin. (Uddingston), writes: In reply to "Navalis," I have in 4 cases used injections of santonin combined with turpentine. Three patients were children, the fourth being an adult in which the condition had persisted for several years. In the 3 cases already mentioned the injections were entirely successful, while in the fourth I used the injection one week, then gave a pill composed of santonin and aloes for a week, and then again used the injection for another week, at the end of which time a cure seemed to be affected. This was six weeks ago, and up to the present no recurrence has taken place. I would suggest for the child 8 years old the following line of treatment: R ol. terebinthin. 3iij, santonin. gr. ij, mucilag. amyli 3vj. M. ft. enema. Sig.: Inject at bed time every third night till three injections are given. If no cure, then order a pill as follows: R santonin. gr. j, pill. aloes et ferri

gr. iss, mitte tales vj. M. ft. pil. Sig.: One each night for six nights. The pills to be silvered. The injection can be reverted to if necessary and the effects can be watched.

NOTES, LETTERS, Etc.

FILARIA AND MOSQUITOS: A CORRECTION.

DR. C. P. KENNARD (British Guiana) writes:—I notice in my letter regarding filaria and mosquitos published in the BRITISH MEDICAL JOURNAL of September 15th, that it is printed "but that it could *infect* a larger animal is much more so," and also "but that they are *infected* does not necessarily follow." It should be *inject* and *injected* instead of infect and infected. The point is that it is only the inner components of the proboscis (the blood tube) which is inserted into the skin, the filaria has not been found in them but only in the outer parts and it is therefore difficult to see how the filaria can be injected from them, it being at this stage also larger than in the embryo stage when it is sucked up going with the the stream. The duct of the hypopharynx which enters the skin and through which the malarial parasite is injected being too small to take the filaria is out of the question. I have thought it best to write pointing out this misprint, which is probably due to my writing.

"SWALLOWING" A DIAMOND.

MR. F. HARRISON LOW, M.B. (Honorary Secretary, Roentgen Society) writes: In the BRITISH MEDICAL JOURNAL of October 20th you print an account of the "swallowing of a diamond" by a thief in Calcutta and its discovery in the man's throat by an *x* ray examination. This story was sent to me by an Indian correspondent some time since, and I had kept it back for the delectation of our society at its coming meeting; but you now publish it, and an evening journal of this date copies it. No one will doubt the good faith of the gallant officer who sends the account, but the story, like the diamond, takes some swallowing. The real diamond, a special form of carbon, is practically transparent to *x* rays and casts no shadow—paste and glass do in varying proportion. Had the thief swallowed a real diamond it would not have been seen in a skiagraph. If the skiagraph was correctly interpreted, and showed a shadow of expected size and shape, then Rs 10,000 was a big price for the stone, even at the present low value of the rupee.

MR. C. THURSTAN HOLLAND (Liverpool) writes: I am much interested in your short note in the BRITISH MEDICAL JOURNAL of October 20th on "swallowing" a diamond. I should very much like to have further details of the case, especially from the *x*-ray point of view. In my experience diamonds are exceedingly transparent to *x*-rays, indeed it is one test of a diamond that it is transparent, whilst paste is very opaque. I have taken several *x*-rays of diamonds, and the shadow they cast on the plate is almost invisible; and therefore I cannot understand if a shadow was obtained in a skiagraph that this could have been from a diamond in the throat. It, in my opinion, points to the fact that it was either of some other opaque body; or, if an attempt at stealing, etc., had taken place, that the so-called diamond was in reality paste. Another curious test of diamonds against paste is that in a perfectly dark room, with the light from an *x*-ray tube also shut off (as by covering the tube with a black cloth), a diamond slightly fluoresces when a stream of *x*-rays plays on it, all the paste I have tested does not fluoresce. I do not know whether other *x*-ray workers have noted this fact.

PRIVATE SANATORIUM FOR CONSUMPTIVES.

J. M. B. writes: May I ask superintendents and proprietors of sanatoria for consumptives if the time be not ripe for some mutual combination for the better arrangement of such questions as: (1) Uniformity in scale of patients' fees; (2) protection of tenants' privileges from "ground landlords" and civic bogeys; (3) appointment of a literary "organ," and the fifty other relative matters which daily crop up? At this moment there are some twenty-five private sanatoria throughout the country, and much might be done by "a pull altogether."

SOUTH AFRICAN HEALTH RESORTS FOR PHTHISIS.

WITH reference to the answer returned to "L. E. H." in the BRITISH MEDICAL JOURNAL of October 20th, p. 1227, Dr. Alfred Sheen, of Cardiff, has written to state that Miss Blennerhassett and Miss Sleeman in June, 1895, opened a small home for phthisical patients at Middleburg, Cape Colony. Middleburg was then a picturesque village, well planted out with gardens, 4,000 feet above the sea level, and on the direct railway line to Port Elizabeth (eighteen hours by train) and to East London. Under the existing circumstances of South Africa it will probably be well for any intending patient, or his medical adviser, to communicate with Miss Blennerhassett before going to Middleburg.

OSSIFIED STYLO-HYOID LIGAMENT SIMULATING A FOREIGN BODY.

DR. ALEX. W. STIRLING, D.P.H. (Atlanta, Georgia) writes: I have read with interest the reports of the two cases of ossified stylo-hyoid ligament appearing in the pharynx, which were reported in the BRITISH MEDICAL JOURNAL of June 9th and 30th. In the *Journal of the American Medical Association* of October 3rd, 1896, may be found a description of three cases of styloid process in the tonsils, which I read before the Laryngological Section. These, so far as I am aware, were the first reported in English or American journals, and I knew of only two others at that time, one "described from the anatomic point of view by W. Gruber," and another from a clinical aspect by Lücke. Weinlechner was also said to have broken away a piece of bone which caused inconvenience in swallowing. Numbers of cases have since then been found in America, and the condition is probably not uncommon.

COAL GAS.

FIAT LUX writes: Is it not time that the medical profession should as a body discourage on all possible opportunities the use of coal gas as an illuminant? It is a costly, extravagant, noxious, insanitary, dangerous, and dirty illuminant, and particularly as supplied to-day with its still more poisonous admixtures. Every medical man must be continually meeting with casualties, often of a very serious and sometimes fatal nature, caused directly or indirectly by the use of gas. It would be an interesting investigation to tabulate the annual mortality traceable to this cause, whether due to explosions or from asphyxia, accidental or suicidal. Moreover, I am convinced from close observation that innumerable cases of persistent anæmia, headache, sight troubles, and neurasthenic conditions may be ascribed to the constant inhalations of air poisoned with burnt gas, particularly in the case of young women employed in shops, factories, etc., lighted with rows of flaring gas jets. In my humble opinion the public health Acts should prohibit the use of gas in all public halls and assembly rooms, and should require them to be lighted with the electric light in localities where this is available at a fixed and reasonable rate. Gas has served its purpose as an illuminant. It should be relegated now, with its hideous works and gasometers, to the limbo of the past.

LETTERS, COMMUNICATIONS, Etc., have been received from

A Mr. S. Armitage, London; Atlanta; Mr. E. W. Adams, Sheffield; A. H. J. **B** Messrs. Burroughs, Wellcome and Co., London; J. W. Batterham, M.B., St. Leonards; Mr. T. Bates, Worcester; Dr. N. Benoly, London; Mr. A. A. Bence, London; Mr. B. McC. Barbour, Edinburgh; Mr. J. Busfield, London; Mr. E. C. Barnes, London; Mr. D. Bradley, Weston-super-Mare; Dr. A. Bronner, Bradford; J. M. Barbour, M.B., Swanage; Dr. J. W. Byers, Belfast; Dr. T. Beattie, Newcastle-on-Tyne; Mr. B. P. Bartlett, Bourton; Baccalaureus; Mr. G. H. Broadbent, Manchester; Mr. L. A. Bidwell, London; Miss M. A. Boyd, Bedford; Mr. C. K. Bond, London; J. H. Bailey, M.B., Manchester. **C** Mr. R. G. Coombe, Southminster; C. H. G.; Mr. G. Cecil, London; Causeway; C. J. T.; Dr. W. H. Calvert, Melrose; Messrs J. and A. Churchill, London; Mr. A. H. Creswell, Cinderford; Mr. E. J. Cross, St. Neots; J. F. Christie, M.B., Aberdeen; Dr. S. H. Carr, London. **D** Dr. T. Dutton, London; Despairing; R. Daniel, M.B., London; Mr. C. B. Dale, London; Mr. J. N. d'Esterre, Eastbourne; Mr. J. Dewar, London. **E** E. H. **F** W. Fletcher, M.B., Coventry; Former Football Player. **G** Dr. K. Grossmann, Liverpool; A. R. Galloway, M.B., Aberdeen; Dr. J. Griffiths, Cambridge; Mr. S. Gresswell, London; G. W. S.; Mr. J. Gay, London; Mr. C. R. Graham, Wigan; Dr. T. W. Griffith, Leeds; G. R. J. F. **H** Dr. T. A. Helme, Manchester; Mr. J. W. Haigh, Leeds; Mr. T. G. M. Herbert, London; Mr. W. A. Hayes Mafeking; Dr. J. P. Henry, London; Mr. C. T. W. Hirsch, Woolwich; Mr. C. T. Holland, Liverpool; E. R. Holmes, M.B., Shifnal; Dr. S. H. Habershon, London; Dr. R. S. Hubbersty, Sunderland; Dr. A. Harper, Eastbourne; Mr. G. A. Hutton Leamington; S. H. House, M.B., Liverpool. **I** Inmate; Italy; Inquest. **J** Dr. J. Johnston, Bolton; C. R. Jones, M.B., Bunbury; J. M. B.; Dr. G. P. Johnson, Stoke-on-Trent. **K** Dr. D. F. Keegan, London. **L** Dr. A. W. W. Lea, Manchester; Mr. A. Loebel, London; Dr. W. G. V. Lush, Weymouth; F. H. Low, M.B., London; Mr P. G. Lodge, Bradford; H. Low, M.B., London; Dr. J. M. Lawrie, Weymouth; J. D. Leigh, M.B., Scarborough; Mr. W. Latham, Ashton-in-Makerfield. **M** Mr H. May, Birmingham Medico; Mr. G. D. Mackintosh, London; Mr. N. Macvicar, Edinburgh; Mr. E. D. Marriott, Nottingham; Mr. R. H. Mills-Roberts, London; W. Mitchell, M.B., Bradford; M.D.; Mr. V. Matthews, London; T. C. Mackenzie, M.B., Edinburgh; Mr. T. Morrat Clydebank; R. S. Marsden, M.B., Birkenhead; Dr. C. J. Morton, Walthamstow; J. T. J. Morrison, M.B., Birmingham; M.D.Oxon., L.S.A.Lond; M.L., Ch.L., L.S.A.; Mellins Food Co., Director of, London; Dr. H. W. G. Macleod, London; Mr. S. W. Macilwaine, Redhill. **N** North British. **O** One of the Council; Old Subscribing Member **P** Plodder; Dr. E. F. Potter, London; Mr. W. T. Prout, Aberdeen; Mr. H. C. Phillips, London; Patient; Mr H. J. Prangley, London. **R** Dr. H. Renney, Sunderland; R.A.M.C.; Mr. R. Robinson, Leek; S. J. Ross, M.B., Bedford; Dr. J. J. Ridge London. **S** Mr. L. E. K. Shuttleworth, San Remo; Dr. S. Sunderland, London; E. Solly, M.B., Harrogate; Dr. C. Steele, Clifton; Surgeon-Captain; Mr. N. Smith, London; Dr. W. A. Sinclair, Ipswich; G. P. Shuter, M.B., London; Dr. J. W. Springthorpe, Melbourne; Dr. F. H. Spencer, Exeter; Mr. A. F. Studdert, Ardagh; Dr W. M. Stevens, Cardiff. **T** Mr. W. J. Tidy, Clifton; Mr. W. H. Thompson, Bradford; Mr. J. W. Taylor, Bristol; Mr. J. B. D. Thomas, London; Dr. F. E. Townsend, Normanby; Mr. B. Thomson, Northampton; Dr. A. J. Turner, Townsville. **V** Mr. S. Vines, London. **W** Mr. W. B. Wedgwood, King's Lynn; Dr. H. Willson, Weybridge; H. C. Woodhouse, M.B., Manchester; Mr. G. D. Wilson, London; Mr. S. W. Wolfe, St. John's Chapel; Dr. R. T. Williamson, Manchester; Dr. F. Willcocks, London; J. G. Wallace-James, M.B., Haddington; Mr. R. Le G. Worsley, Newcastle-on-Tyne; A. Wauchope, M.B., Glasgow; Dr. T. J. Wood, Bradford; Sir S. Wilks, Bart., London; Mr. W. R. Williams, Clifton; E. B. Waggett, M.B., London; Mr. W. W. Wilson, Birmingham; Dr. J. A. H. White, Birmingham; Dr. R. C. A. Windle, Birmingham; Dr. B. Walker, Kirkby Stephen. **Y** Dr. M. Young, Stockport.

BOOKS, ETC., RECEIVED.

General Medical History of Rajputana. By Colonel T. H. Hendley, C.I.E., I.M.S. Calcutta: Government Printing Office. 1900.

A Medico-Topographical Account of Ajmere, Rajputana. By Lieutenant-Colonel P. D. Pask, I.M.S. Calcutta: Government Printing Office. 1900.

Mikrophotographischer Atlas zum Studium der pathologischen Mykologie des Menschen. Von Dr. F. Fraenkel. Lief. 4. Hamburg. L. Gräfe and Sillem. 1900. M.6.

Life in an Open-air Sanatorium. By Dr. Charles Reinhardt. London: John Bale Sons and Danielsson. 1900. 1s.

Bacteria. By G. Newman, M.D., F.R.S.E., D.P.H. Second Edition. London: John Murray. 1900. 6s.

The Science of Hygiene. By W. C. C. Pakes, D.P.H., F.C.S. London: Methuen and Co. 1900. 15s.

Chirurgie des Voies Biliaires. Par Dr. V. Pauchet. Paris: J. B. Baillière et Fils. 1900. Fr.1.50.

*** In forwarding books the publishers are requested to state the selling price

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N.B.—It is against the rules of the Post Office to receive letters at *Poste Restantes* addressed either in initials or numbers.

AN ADDRESS
ON
SOME ASPECTS OF MODERN MEDICAL THEORY AND PRACTICE.

Delivered before the Staffordshire Branch of the British Medical Association on October 25th, 1900,

By ALFRED H. CARTER, M.D., F.R.C.P.Lond.,

Senior Physician of the Queen's Hospital, and Professor of Medicine in the University of Birmingham; President of the Branch.

[After expressing his thanks for the honour done him by election as President, Dr. Carter said:]

Everything in motion obeys the law of rhythm. In the rhythmic progress of our Branch-work the present occasion marks the beginning of another systolic impulse of activity, for which preparation has been made (as we may hope and believe) by power and energy stored up during a diastole extending over a comparatively restful summer. Standing, then, as we do upon the brink of a fresh departure, it seems to me to be a specially favourable opportunity for glancing at some of the general principles which underlie our work, and for allowing our thoughts to travel for a little while into some of those larger and broader questions, which are bound to arise from time to time in the course of our daily experience as practitioners of medicine. In an address which it was my privilege to recently deliver as President of the Birmingham and Midland Counties Branch, I was at some pains to emphasise the importance of cultivating an intellectual interest in our work, as supplying one of the most effective means of escaping the demoralising influence of monotonous routine; and I further pointed out that it is only when such interest is created our work really progresses and prospers.

It is in the hope of contributing something that may in a humble way tend to stimulate and keep alive such an intellectual interest that I ask your attention for a few reflections—fragmentary though they be—on some of those features of medical doctrine and practice which are more especially characteristic of our own time, and tend to throw light upon the attitude in which we stand to-day with regard to the art that we profess. My training and experience do not qualify me to deal with surgical questions, although the remarkable progress of surgery in these latter days by the aid of anæsthetics and strict conformity to the laws of cleanliness is obvious enough to be grasped even by the uninitiated. But the progress of medicine, if not so triumphant as that of surgery, has been equally great relatively to the position that it occupied at the beginning of the century. Whatever difference there may be between the two necessarily follows from the much greater difficulty of the subject matter with which medicine has to deal, the more complex inferential methods which are necessary for diagnosis, and the more obscure and subtle operation of the therapeutic agents which it employs. But it is waste of time to labour any comparison between them. Each has its work to do, though that work is conducted upon different lines, and appeals to different aptitudes. Each supplements the other, and both combine in an honourable combat of absorbing interest with the physical ills which beset our frail humanity.

My reference to medicine as an art justifies a passing allusion to the oft-discussed question as to how far it may be regarded as a science. Primarily and essentially it is without doubt an art—an art which has for its object the cure or prevention of disease an art which demands both experience and skill—an art which deals directly with individual sufferers, and not with speculative problems. I entirely agree with Dr. Pye-Smith, who, in a recent excellent address to the Association, said, "We must never allow theories, or even what appears to be logical deduction, or explanations however ingenious, or statistics however apparently conclusive, or authority however venerable to take the place of the only safe rule of practical medicine—observation and experience." This is unquestionably sound teaching, but it does not deny, nor is it incompatible with a sphere of usefulness to each of these matters in their proper place. Indeed were we to exclude them from all consideration we should rob our art of its interest and vitality, and reduce it to a dead level of unqualified empiricism. On the other hand, there is unlimited scope for the employment of scientific knowledge and for the exercise of scientific method; and in proportion as we avail ourselves of either, we may rightly claim to be scientific practitioners. A fruitful source of confusion arises from a promiscuous use of the word "medicine" to denote medical pathology as well as the art of healing. Pathology is a pure science, studied with a view of evolving definite laws of disease, without any immediate consideration of their application for practical purposes. Indeed a very considerable amount of pathological knowledge is not at present available as a guide to practice in the sick room; and it is undoubtedly true that a pathologist, however able, who was nothing more, would cut but a sorry figure as a practitioner. It is, however, the bounden duty of each one of us to carry as much pathological learning into the sick room as will serve to illuminate, guide, and help forward our art; and the same may be said with regard to other sciences, such as physics and chemistry. But it is not only by the application of scientific knowledge to actual practice that modern medicine claims to be scientific, but also by the exercise of the scientific method in practice, by which I mean the orderly classification of facts observed, with a view to establishing their mutual relations, and to educing some general truth, principle, or law.

In spite of all, a large—perhaps the larger—portion of our art still remains on a purely empirical basis. But the fact need not dishearten us. All science takes its origin in empiricism, and the latter is not of necessity opposed either to reason or common sense. It may be employed with intelligence, and has in the past been productive of fertile additions to our stock of organised knowledge. It is only when allied with ignorance or indolence that empiricism degenerates into scepticism or quackery.

Among the characteristic features of the thought of the latter part of the nineteenth century we find a spirit of realism exerting a profound influence alike in art, literature, and science—a spirit which manifests itself by a strong disposition to regard the actualities of Nature as alone worthy of consideration, and to exploit everywhere the real at the expense of the ideal. In the sciences it especially manifests itself by a disproportionate or exclusive cultivation of inductive methods of inquiry. We hear on every side congratulation on our emancipation from the speculative systems of the last century and the beginning of the present, from which no doubt the realistic spirit to which I refer is partly a healthy and natural reaction. Without for one moment depreciating the splendid results of inductive inquiry and the rich harvest of material which it has yielded, yet it seems to me that its very success has in some quarters brought about a tendency to regard the intellect as "a sort of independent faculty, acting on its own account, and able to verify anything and everything by some fixed and certain standard of its own," to the exclusion of co-operation on the part of any other attribute of the mind. By the exercise of reason pure and simple we can question, analyse, and classify the phenomena of Nature; but such a method, when exclusively employed, merely resolves itself into weary and endless investigations, resulting in the accumulation of an enormous unwieldy mass of material, which, taken by itself, is void of meaning, points to nothing, and is of little practical value. What is needed is the vivifying, formative, and simplifying power of imagination. Only by the skilful and intelligent exercise of imagination can we give unity to the products of inductive research, evolve a law from a mere sequence of phenomena, convert a stream of tendencies into a definite purpose, or raise a mere procession of changes into a living process of evolution.

Here is a passage culled from an address of the late Professor Tyndall on the scientific use of the imagination which is much to the point I am urging:

"Philosophers may be right in affirming that we cannot transcend experience; but we can at all events carry it far from its origin. We can also magnify, diminish, qualify, and combine experiences, so as to render them fit for purposes entirely new. Urged to the attempt by sensible phenomena, we find ourselves gifted with the power of forming mental images of the ultra-sensible; and by this power, when duly chastened and controlled, we can lighten the darkness which surrounds the world of the senses. There are Tories even in

science, who regard imagination as a faculty to be feared and avoided rather than employed. They have observed its action in weak vessels, and are unduly impressed by its disasters. But they might with equal justice point to exploded boilers as an argument against the use of steam .....In fact, without this power our knowledge of Nature would be a mere tabulation of coexistences and sequences."

It would be easy to provide innumerable illustrations of the magnificent service rendered in the past to science by the discreet use of the imagination, and to trace out what it has done for medicine would by itself provide interesting subject matter for a whole address; but my present purpose is only to emphasise its essential value in the progress of all knowledge. Imagination has always more or less occupied its proper place in art, and it is beginning to find a more general acceptance in literature, but with science it has been, so to speak, under a cloud. We have been taught to discourage and repress imagination as untrustworthy and disturbing, and no doubt in so far as we make our facts fit our thought instead of strictly confining our thought to the interpretation of our facts, we are pretty certain to go astray. This was the dominant fault of many of the theorists of the past, who attempted to build up where there was no solid foundation, or at most a very inadequate one. Such attempts not only lead to error, but they tend to crystallise and fix it in such a way that it interferes with and chokes off further inquiry. But as Professor Tyndall says, the abuse of imagination is no sound argument for setting it aside and dethroning it.

What we need and wait for to day in medicine is something corrresponding to those splendid flashes of imagination which yielded the heliocentric theory of the planetary system, the theory of gravitation, the undulatory theory of light, the theory of evolution, and the germ theory of infective disease—some fundamental and far-reaching generalisations in pathology and physiology which would vivify and vitalise some part at least of the mass of dead material facts which have been accumulated.

Genius, you will say, is necessary for such masterly strokes of creation as those I have quoted, and such genius is a rare gift of the gods. It cannot be commanded, and the hard intellectual atmosphere of our time is not favourable for its appearance. But constructive imagination would probably yield much richer results than we at present enjoy—though possibly on a lower plane of generalisation—were it not for unfavourable circumstances which almost necessarily attach to the conditions of modern investigation. The range of work is now so wide and the technical qualifications required for its successful pursuit are so exacting that extreme specialisation has become inevitable. Each worker, therefore, becomes so absorbed in the particular subject with which he is immediately concerned, that it is impossible for him to keep adequately in touch with the general progress of knowledge, and to bring his own contributions into proper relation with it. The chemists cannot be at the same time physiologists, the physiologists know little of pathology, laboratory workers are out of touch with the practical aspects of disease as encountered at the bedside, and we practitioners more often lack the scientific training and aptitude to make anything like complete and full use of the material which is daily passing in a sort of dioramic procession under our eyes. These facts, to a large extent unavoidable, in association with the pressure at which all work is nowadays conducted, are almost incompatible with that breadth of culture, catholicity of interest, serenity of mind, and leisure for reflection which are so much needed—aye, so essential—for the fertile exercise of the faculty of imagination in its best sense.

In a humbler way, however, there is room in plenty both for pleasure and profit by habituating ourselves in our daily work to the exercise of our imagination in picturing to our minds as intelligently and yet as graphically as we can what we conceive to be the morbid conditions of parts hidden from our view in the patients who come before us; to endeavour to form for ourselves as plausible impressions as our knowledge permits of the morbid processes which are taking place—hypothetical though they may be; to fix such pictures in our minds and to compare them with previous pictures of other cases which appear to us to have points in common, in the hope of educing rules to guide our practice; to work out in our minds the probabilities of causation and their mode of action; and lastly, to acquire by the same power a sympathetic appreciation of the subjective difficulties and anxieties of the patient and his friends in the presence of trouble. You may rely upon it that a ready, quick-witted, and well-stored imagination will help us out of many tight corners of practice, besides yielding an intellectual pleasure which will redeem even the gloomiest situation from despair or cynical indifference.

Among the medical doctrines which are characteristic of our time, that which embodies our present conceptions of the nature of disease is of the first importance. Though capable of further development as our knowledge advances, its essential features may be regarded as definitely fixed. We have learned that disease is a term devoid of absolute signification, and has no meaning except in relation to that normal balance existing between the living human organism and its environment, to which we give the name of health. What we call life is but the capacity or property belonging to organic matter by which it is enabled actively to respond to its environment, and which implies the existence of forces within and forces outside the body. Health represents that balance of relations between the external and internal forces, in regard to the individual component parts of the body, which best subserves the welfare and functional efficiency of the body as a whole. Anything which is capable of disturbing these relations is a potential cause of disease, and the disturbance itself is that to which we apply the term "disease." It will thus be seen that disease is essentially a dynamic condition. In this recognition of disease as a dynamic process we have, as it seems to me, one of the most characteristic and notable of modern medical doctrines, and, being persuaded that it is not so widely grasped as it ought to be, I may be permitted to make a short digression with the object of emphasising its importance. There is still a disposition, I think, to take too substantive a view of disease. We have definitely overthrown the old view of disease as a personal entity, yet some have set up a sort of pathological entity in its place, and this I believe largely results from giving undue importance to morbid anatomy at the expense of morbid physiology. Take such a disease, for instance, as Bright's disease, associated with granular kidney; we are apt to allow our minds to centre upon the renal lesion and its immediate effects, rather than upon the long course of nutritional trouble associated with it, and on which it depends.

What we see in the *post-mortem* room is not the disease, but the results of disease, and more often only the pronounced, ultimate, and incurable results of disease. The value of an acquaintance with morbid structural changes lies, as I take it, in their providing us with suggestions of the morbid processes which have brought them about, indications of the way in which they tend to destroy life, and explanations of disturbed function which have been observed during life. By dwelling too exclusively upon the final structural results of different diseases, there is also, amid their striking contrasts and diversities, the danger of losing sight of affinities and common factors that might be revealed by a closer study and a wider knowledge of the morbid processes which led up to them.

But, to take up again the thread of what I was saying before, it follows that disease must always depend either upon some inherent defect of the organs or tissues of the body itself, or upon some qualitative or quantitative alteration in the environment, or upon a combination of both; and the practical importance of this generalisation is evident, for it provides us not only with indications of the scope of treatment, but also with a measure of its efficacy. Treatment includes everything that makes directly or indirectly for the removal or betterment of defects within and disturbance without the body; and the efficacy of treatment is obviously proportionate to our capacity for selecting and using means to this end. It would be difficult to overestimate the advantage to the art of healing that would arise, both in relation to practitioner and patient, if all our action was uniformly regulated by a loyal and abiding conformity to this guiding principle, by which I mean on the one hand a painstaking and exhaustive inquiry into the circumstances which have led to disease; and, on the other hand, an honest inquiry as to the way in which we expect any selected therapeutic measure to affect and deal with such circumstances.

We also employ the term disease in a particular and limited sense, indicative of certain groups of symptoms and signs, which represent more or less distinctly recognisable types of morbid disturbance. The distinction of types rests much less upon the nature of any special symptoms or signs than upon the manner in which they are grouped together and their mode of evolution. With closer observation, aided by greatly improved instruments and methods of research, we are constantly adding to the list of established symptom groups or disease types. But we must ever remember that this grouping by type is eminently artificial and provisional, and is adopted merely for the sake of convenience until our knowledge has advanced sufficiently to replace it by actual definition. For instance with regard to phthisis pulmonalis, so long as we knew it only as an aggregate of signs and symptoms, the difficulty of disentangling it clinically from wasting diseases, pathologically from structural changes of lung met with under other conditions, and etiologically from pulmonary diseases occurring under widely-varying circumstances, gave rise to endless controversy, and greatly hindered the establishment of sound principles of management. But with the discovery by Koch of the tubercle bacillus, it at once became possible to assign to the disease a precise nosological position, under an etiological definition, as an affection of the lung, induced by the growth and development within it of the tubercle bacillus.

Starting from this relatively well-defined basis, our knowledge of the natural history of the disease advanced apace; its morbid relationships became more intelligible; and for the first time the primary conditions of the problem with which we had to deal began to be grasped—the whole representing progress which has already borne fruit of remarkable practical value. Still we must not for a moment suppose that the establishment of such a definition, and assignment of something like a true nosological rank, by any means exhausts the situation. Far from it; for instance, with regard to the example I have taken, we become familiar at the bedside with several varieties of the disease, differing in their behaviour, course, and local manifestations, which clearly show that the operation of the *causa causans* is conditioned by a multitude of subordinate factors, with regard to which we have only learned a little of what there is to be known, and yet of vital importance to the proper management and treatment of the disease.

And yet again we are confronted by the remarkable fact that the presence of the bacillus in question is not invariably competent to set up the disease; but as to the secrets which lie buried in the mystery of immunity we know at present only very little.

The establishment of definitions analogous to that which I have just quoted will nevertheless, in spite of their inadequacy to cover all the facts established by actual observation, enable us to take a long step towards the attainment of a good classification. The aim of classification, be it remembered, is not only to separate, but also to bring together; not only to distinguish one disease from another, but also to show their affinities; not only to create genera, but also to construct classes. For instance, the modern definition of tuberculosis not only enables us to distinguish the morbid processes to which the tubercle bacillus gives rise, but, at the same time, it brings it into close relation with a large number of other infective diseases dependent upon specific microorganisms, and to the laws of which it conforms. Unfortunately the present state of knowledge compels us to put up with a nomenclature and classification which is glaringly imperfect and inadequate, and founded upon a variety of circumstances which are profoundly artificial. Whatever opportunities our current nosology affords for labelling any particular disease, it suggests (apart from specific diseases) little to our minds of much practical worth; and, still worse, it encourages the idea that with having given it a name, there is an end of the matter, and nothing more is required. While recognising the undesirability and dangers of reckless changes on the basis of immature hypotheses or imperfectly established facts, it behoves us to be always striving to bring about a more satisfactory state of things. And difficult though the task may be, it is work in which many of us might take some part, and in this way. Since an exact vocabulary must of necessity precede the construction of an exact classification, no better preparation could be made than by efforts directed to the readjustment of our nomenclature of disease. The fact is, we have outgrown our current nomenclature to a very large extent. What fully satisfied our ancestors with the scanty knowledge in their possession, entirely fails to meet modern requirements with our enormously increased information. Take, for instance, such diseases as rheumatism, epilepsy, diabetes, Bright's disease. It is quite certain that these names are made to cover in each case several different maladies; and, if so, the mere persistence of these names is a bar to progress. Surely something might be done by patient work along right lines to remedy this. Supposing, with regard to diabetes—to take an example—careful records were to be made of a series of cases having glycosuria as a common feature, with special reference to the circumstances under which they occurred (habits, sex, age, occupation, physical surroundings, previous disease, and so on), and also to the manner of their evolution, and that these records were afterwards sorted into groups on an exclusive basis of causal and evolutionary contrasts or resemblances, we should be in a fair way to recognise several different types worthy of being distinguished by separate names, and which might not unlikely come ultimately to be grouped in widely different categories. And even while awaiting final settlement, such grouping could scarcely fail to suggest different modes of treatment. It does not come within the power of all of us to make such contributions to the progress of rational medicine; but for those who have the capacity and the leisure there is here a great opportunity for good and fruitful work.

Passing from the question as to what disease is, we follow on naturally with the How and the Why; in other words, we come to the question of causation about which something must be said. It is only in these latter days that the overwhelming practical significance of causation is beginning to be realised. Preventive medicine owes its origin entirely to the study of the causes of disease, while under the same influence the aims and methods of treatment are taking altogether a new direction.

The doctrine of causation, as I understand it, has for its foundation a firm and abiding faith in the capacity of the normal human being to be healthy and to maintain health in the presence of a normal environment. And if it be asked, What is the normal environment? one can only reply that any surroundings to which you, I, or our neighbours have respectively become comfortably adjusted constitutes for us a natural environment, whatever differences in detail they may exhibit.

Any abnormality either of body or surroundings which is incompatible with such adjustment ranks *de facto* as a potential cause of disease: and thus we arrive at a primary division of causes into external and internal, according as they pertain to the environment of the body or to the structure or functions of the body itself. In the large majority of cases external and internal causes co-operate in the production of disease; or, to put the same fact in other words, the influence of external causes cannot, as a rule, be estimated apart from the condition of the body at the time of exposure to them. But as to the exact share which is taken by external and internal factors respectively, we meet with every degree of variation. At one end of the scale we meet with examples of virulent infection from without, in which the external cause counts for practically everything, and the bodily condition for little or nothing; while, at the other end, we meet with examples of serious structural bodily defects, in which exactly the opposite obtains.

From a practical point of view external causes are the more important because, though vast in number and often difficult to isolate, they are relatively simple in character; their action is easier to grasp, inasmuch as it conforms to physical laws with which we are more or less acquainted; and, lastly, because they are more readily regulated and controlled. On the other hand, internal causes are infinitely more complex in nature and subtle in their operation for the most part, and also far more difficult to identify and control. Again, while in many respects their mode of action lies within the range of physical law, yet they often include factors, involving perversions of thought, will, and feeling which cannot be expressed in physical terms. Apart from grave congenital or acquired defects which cannot be adjusted to any attainable

form of environment, internal causation corresponds with what we are accustomed to call "predisposition," which implies a special vulnerability, or increased susceptibility to disturbance from outside influence. It will be noted that in contrast to the external efficient causes of disease, that the operation of predisposition in making for disease is passive rather than active; and, in general terms, only represents the absence or deficiency of something which the body naturally possesses, and which, had it been present, disease would not have occurred.

In connection with predisposition, heredity plays a dominant part; but there is a good deal of misconception abroad concerning the relation of inheritance to disease which is worth looking into a little. Although we are not as yet in possession of any satisfactory theory of heredity, the laws of its operation are being slowly worked out and are beginning to be understood. It is extremely doubtful whether we are justified in saying that disease is ever inherited *ab ovo*—at least, so far as I am aware, there is no trustworthy evidence of its occurrence. Congenital specific disease, of which congenital syphilis may be taken as a type—cannot be regarded as truly inherited, for the poison on which it depends is as clearly introduced from without—so far as the fœtus is concerned—as when contracted in after-life.

Again, it is not strictly accurate to speak of disease associated with congenital malformations as inherited disease. What is inherited is a more or less strong potential cause of disease; and as to whether disease follows upon such a congenital defect depends entirely on the extent to which it permits adaptation to postnatal environment. Thus, on the one hand, a hare-lip is quite compatible with ordinary surrounding circumstances, and is consequently not attended with disease; while, on the other hand, a serious malformation of the circulatory mechanism, which cannot be adjusted with any attainable environment, is altogether incompatible with life. Between these two extremes we meet with every grade of morbid potentiality.

But apart from the lack of all positive evidence of real transmission of disease, there are strong *a priori* difficulties in accepting the probability of its occurrence. The structural and functional traits of the body are the outcome of an evolutionary power, which represents a vast integration of forces and organised energies, reaching far back into the past, and thus acquiring an individuality which makes their transmission possible. The phenomena of disease, however, are mainly—if not exclusively—products of a process of dissolution and disorganisation which have no independent existence as such, and cannot be dissociated from the conditions which give rise to them. It is easy to conceive of the transmission of something which has been built up, but it is difficult to understand in what sense a process of unbuilding can be transmitted. Then, again, a disease like cancer, which is credited with a special liability to inheritance, occurs at a time of life, for the most part, when all sexual activity has ceased. It comes, then, to this, that there is probably no such thing as a true inheritance of disease; and that what passes for such is in reality an inheritance of susceptibility, which is something altogether different. The susceptibility may be so strong that disease will almost certainly follow, but this does not justify or excuse a confusion of thought which fails to recognise any difference between susceptibility as a potential factor in the causation of disease and disease itself.

As to its nature, we can only think of inherited susceptibility as a quality—sometimes of one kind and sometimes of another—attaching to a type of constitution or structure which falls short of the normal standard; and which, in so far as the defect reappears in successive generations of a family or a race, always reacts in the same way to similar external causes. This, as I take it, is the central idea which lies behind the recurrence of any particular disease in members of the same family or race; and this, if I have made myself clear, is something very different from the current notion of inherited disease or inherited predisposition to disease.

Though I cannot admit the direct transmission of disease by inheritance, I am quite prepared to concede the possibility, or even the probability, that disease, under certain conditions, may take some share in the creation of an inheritable susceptibility, or in the strengthening of a susceptibility already in existence, by some indirect action upon the vitality or nutrition of the sperm or germ cells of the affected person. But I very much doubt whether any effect so produced is specific in its nature. There is no disease, however largely factors of inherited susceptibility enter into its usual causation, such, for instance, as insanity and tuberculosis, with regard to which we do not occasionally meet with cases where no element of heredity can be traced even after most careful and extended inquiry. In these cases it seems necessary to assume that susceptibility of a specific nature has taken no part in causation. So far as I am aware inherited susceptibility carries with it no signification, apart from our conceptions of normal standard development, and the property of resistance attaching it, and amounts simply to a failure or deficiency in the normal evolution of the embryo occurring under the immediate or remote influence of external factors which are unequal to or incompatible with full and complete development, and therefore lacking to that extent the resistance which belongs to normal organs and tissues.

The quality of resistance to which I have just alluded bears such important relations to the principles of causation and treatment of disease that it deserves to be examined at close quarters, in order to see what it really means and what it teaches us. That the body possesses some power of resisting and recovering from the disturbing forces of disease has long been recognised, and represents what is often described as the *vis medicatrix Naturæ*. But with regard to its real nature and operation there has been much difference of opinion, and it is only within recent times that it has been possible to put the matter upon a rational basis. It certainly represents no independent force of any kind; but, as Mr. Herbert Spencer tells us, it is the working out in the body of a law which obtains throughout all Nature—the law of equilibration or balance of forces. The living body is a moving equilibrium of a variety of antagonistic forces, which on the one side is constantly dissipating its energy in the functional activities of its individual parts, and on the other side is being as constantly reinforced by taking in fresh motive power. It is an equilibrium which moving onwards in a rhythmical progress, preserves a constant mean, and tends to re-establish that mean whenever accidental causes have disturbed it. The mean balance of forces in movement which characterises what we call healthy life, unstable as it is, yet as the result of adaptations extending indefinitely back into the past has become sufficiently stable to offer very considerable resistance to disturbance; and if disturbed, short of being altogether upset, it tends to become re-established sooner or later. The limits of recovery from such disturbance, or what may conveniently be termed the index of resistance, varies somewhat for each individual. When the index is high we speak of such a man as strong or robust; when, on the other hand, it is low, as weak or delicate.

The special susceptibilities to disease connected with age, sex, pregnancy, lactation, climacteric period, and the like, correspond to physiological fluctuations of the resistance index; and these again merge by imperceptible degrees into what are called "acquired susceptibilities" which represent pathological forms of diminished resistance due to such factors as inanition, fatigue, exposure to cold, and previous disease. If I am not much mistaken, something of what passes in our medical vernacular as acquired susceptibilities is not to be distinguished from disease. If, for instance, a healthy man attacked by influenza tells us he has "never been the same since," it is probable that in a strict sense he is still the subject of some morbid process left over from the original disease. At the same time there are many cases in which, after serious disturbance never completely recovered from, a fresh balance is established by virtue of the law of equilibration, though upon a permanently lower plane than before, and which henceforth becomes for that person a normal state. Though in some aspects the *vis medicatrix Naturæ* works on passive lines, in other aspects its operation is more active, as by the destruction of noxious agents entering the body, by natural processes of expulsion and elimination, by compensatory overgrowths, and by a slow process of adaptation to new conditions.

But for the natural tendencies of the body towards health when disturbed by disease, the art of healing could not exist; for no treatment can be of the least service which is not con-

cerned either with the removal or reduction of the causes of disease, or with the assistance of the body in making use of its powers of recovery. This is a rule which admits of no exception; and not even the haphazard remedies of the purest empiricism can accomplish anything except in so far as they happen to conform to it. But for the law of equilibration, a morbid disturbance once set up would continue to the point of annihilation; and treatment addressed to the living body is absolutely meaningless except as an appeal to such powers of resistance as a patient possesses. When these powers are practically at zero, as in the closing scenes of any fatal illness, it is idle to expect anything from treatment, as of course we all know.

There is nothing, however, in these facts which justifies an attitude of "expectancy" or non-interference. The provisions for resistance and recovery, necessary as they are, and bounteously as they respond to intelligent control, yet cannot be trusted without it, and for various reasons. In common with all other natural forces, they are inexorable, and represent no deliberate purposive adaptation of means to ends. In any case they are limited in their range of operation. Sometimes they are too feeble to be effective, and at other times they may become a source of danger from their very intensity. The time required for their manifestation and complete development is often far too protracted to be of service, while accompaniments, such as pain, for instance, are apt to seriously discount or to altogether annul their influence for good. Lastly, secondary disturbances may be set up, which, by their unfavourable reaction upon the primary trouble, may lead to the establishment of "vicious circles" from which safe emergence is difficult or impossible. So far then from the *vis medicatrix Naturæ* rendering a sufferer independent of our art, the need for guidance and control is very great, and often exceeds our power of adequately meeting it.

My object thus far has been something more than an academic exercise. I have tried to enforce the cardinal and fundamental importance to practical medicine, not only in regard to prevention, but also to the cure of disease, of a knowledge of the bodily condition and its surroundings from which disease takes its origin, knowledge not either of the one or of the other alone, but of both in their active relation to each other. I have wished to make it clear that diagnosis does not merely consist in labelling a disease and in assigning its seat, but in tracing out its evolution as a dynamic process. I have also tried to show that our efforts in this direction, in order to be successful, must not fail to include a very careful consideration of the self-restorative provisions with which the body is equipped. The textbook which is most needed to-day, in my opinion, is one which, while differentiating between the elements of dissolution and disintegration on the one hand, and the reactive integrating efforts of the economy on the other, would give us as clear and detailed a description of the natural history and evolution of the chief morbid conditions as our present knowledge permitted. In such a work broad types of morbid disturbance should take the place of conventional nomenclature and classification; for the first thing that a man learns on leaving the schools is that disease as he encounters it in actual practice refuses to conform to the hard and sharply facetted categories of the ordinary textbook. No reasonable employment of hypothesis in the construction of such a work would be inimical to its success provided it did not conflict with known facts, and also fairly reflected the best teaching of the day. When I call to mind the deficiencies of modern medical training in presenting knowledge of this kind to students, it is easy to understand how hard it must be for the busy practitioner to attain it afterwards in the scanty leisure of his calling.

But to proceed. The principles which have thus far occupied our attention need to be brought into working relation with actual practice by a knowledge of the effects and mode of action of the remedial measures at our disposal. This amounts to something much more than mere pharmacology. It includes also a knowledge of the physiological action of those powerful agents which, for the sake of convenience, we may call "natural remedies"—namely, diet, heat, cold, rest, exercise, massage, baths, electricity, and climate.

The nineteenth century which is now closing has been marked by notable changes in our therapeutic armamentarium, occasioned by dropping some things, by adding others, and by readjustment of the whole, with the general result that at no time in the history of our art have our methods been more efficient and yet at the same time simpler than they are to-day.

In the first place, we have come to see that, rightly and intelligently used, the natural remedies which I have already enumerated are entitled to a place in the front rank of therapeutic agents. For example, we now realise that fresh air and good food afford the best means of dealing with the scourge of tuberculosis; that baths and selected exercises may work wonders in refractory cases of heart disease, dyspepsia, and many pelvic disorders of women; that obstinate neurasthenia often yields to Weir-Mitchell methods; that wild nervous excitement may be subdued by judicious use of water applications, and no doubt the list is capable of great extension. This is only what we might expect when we reflect that agents of this class represent the influences under which the body has grown to be what it is, and under which its activities are habitually maintained.

In a general sense the importance of such remedial agents is widely recognised, and in some degree every practitioner nowadays makes use of them. But the great advances which have taken place in our knowledge of their modes of action, the immense improvements which have been made in the methods of their employment, and the extraordinary potency of their influence upon the nutritive processes of the body are still, in my opinion, far from being adequately realised. Nor is this to be wondered at. In none of our hospitals is the necessary equipment for this kind of treatment adequately provided for, and therefore neither teachers nor students have reasonable opportunity for familiarising themselves with the subject. Added to which there are serious practical difficulties in securing such treatment when it is required and asked for. In a few favoured health resorts, it is true, there are limited facilities for one or more branches of general treatment; but besides being only available to the few, it too often suffers from the disadvantages of undiscriminating specialism. It is in connection with the treatment of chronic disease that the want of such provision is especially felt.

There is only one way, I believe, in which the difficulty can be overcome, and that is by the establishment of sanatoria in various parts of the country, provided with all the aids that scientific medicine can devise for the thorough investigation and treatment of chronic disease. In America the experiment has been tried on a commercial basis, and is already at work in various centres on a large scale, with astonishing results. They are more than self-supporting, and the surplus earnings are expended on the treatment of those who cannot afford to pay the ordinary fees. The principle has already been accepted and acted upon in this country in connection with the treatment of tuberculosis, and there is no reason why it should not be extended to other diseases. It, of course, does not follow that all cases of chronic disease should be treated in a sanatorium. On the contrary, all minor cases could be perfectly well treated at home when once the principles of sanatorium methods came to be thoroughly grasped and appreciated by the profession at large. The great value of natural treatment lies in the fact that while it invariably strengthens the powers of resistance and recovery in the most effective way known to us, it in many cases deals directly with the external factors of disease at the same time.

The age has also made its mark upon the treatment of disease by drugs. We possess now a much better knowledge of their action, and have a much clearer recognition of the limits of their application. It is of great use to the sailor, as an old writer says, to know the length of his line, even though he cannot reach with it all the depths of the ocean. We have learned that they take but a very small part in the direct cure of disease. We no longer waste our time in a vain search for specifics, but accept the conclusion that, with very few exceptions, drugs deal with the effects rather than with the causes of disease, and are concerned almost entirely with what is called symptomatic treatment.

Though obviously of secondary importance as compared with that addressed to the primary cause of disease, yet symptomatic treatment has a very real and definite value. For instance, when we are ignorant of the causes of a disease, or are unable for any reason to remove them, it is the only form

of treatment that is available. Moreover, in a variety of ways it may minister indirectly to recovery; namely, by the relief of pain and sleeplessness; by the stimulation of depressed activity; by soothing over-excitement; by supplying materials of which the body is in need, such as lime, iron, or fat; by promoting elimination through the skin, bowels, or kidneys; and by efforts to obviate the tendency to death. Surely this bare enumeration is sufficient to redeem the sphere of medicinal remedies from contemptuous disregard, subordinate and adjuvant though their position may be.

Again, we use far fewer drugs than in former days. On the last revision of the *Pharmacopœia* no fewer than 188 items were omitted, and the Pharmaceutical Society urged the further omission of 82 others, which have been retained. Then, of those that remain, only a very small proportion are habitually employed by any individual practitioner, who finds it far better to know a few drugs well than a large number imperfectly. As a matter of fact, all the most important indications for effective medicinal treatment may be met by a comparatively small number of drugs; and the art which distinguishes the wise practitioner is mainly that of discovering the indication for some familiar drug, and using it at the best time and in the best way. When a great variety of medicines are used for any disease you may be quite sure that very little is known about it, or that very little can be done for it.

Again, our prescriptions are shorter and simpler in their construction than formerly, and there is a growing preference for single drugs in the place of complex galenical preparations. This is all a matter for congratulation, since it makes for greater clearness of purpose in prescribing, greater accuracy in the observation of results, and above all it implies the recognition of the fact that, while drugs have much power to do good, they have also much power to do harm; and that the risk of injury is increased by indiscriminate combinations, especially when the action of the component parts is only imperfectly understood.

At this point I cannot refrain from uttering a protest against the flood of synthetic compounds, vegetable extracts, and proprietary preparations with which we are deluged, in consequence of the ruthless enterprise of manufacturing chemists, backed up by a pseudo-scientific literature, tricked out with all the blandishments of vulgar advertisement. It is a monstrous system, which encourages empiricism of the worst sort, and strikes at the root of intelligent and rational prescription. Here and there no doubt a valuable drug or preparation may be introduced; but such a result is insignificant as compared with the vast amount of rubbish which is offered. It is easier to state the evil than to find a remedy. One can but appeal to the professional self-respect of individual practitioners to do as little as possible to encourage such a lamentable system. I have often thought it might be possible to create some authoritative organisation for the systematic investigation of current new remedies, with access to laboratories and hospitals for the purpose, and affiliated with independent workers over the country, whose business it should be to shift the wheat from the chaff to some extent, and to publish reports of their work at stated intervals, or to draw up and issue from time to time something of the nature of an authorised Extra-Pharmacopœia. Such an organisation might also with advantage deal with chemical analysis in relation to the composition of advertised foods, malt extracts, and proprietary articles for the information of practitioners. The idea may be only a vain dream, but the principle underlying it appears to be sound; and perhaps one day the British Medical Association may, in the intervals of its polemic activity, be able to give more attention to the matter.

Any review of modern therapeutic methods would be incomplete without at least a bare reference to the valuable remedies of organic origin which have of late been introduced to us. By extended acquaintance with bacterial products, with their varying behaviour according to the character of their environment, and with the manner in which the organism reacts to them chemically, physically, and vitally, we are gradually acquiring possession of additional powerful means of limiting or arresting their action within the body; and a new era in the treatment of microbic disease, bright with the promise of wonderful possibilities in the not distant future, is being steadily unfolded. Also, as the outcome of a better and more intimate knowledge of normal physiological action, we have caught glimpses of the important influence exerted upon nutritional processes by internal secretions, which are being turned to striking therapeutic account, and of which Dr. Murray's treatment of myxœdema may be regarded as the first-fruits.

But the passage of time warns me that I must bring these *obiter dicta* to a close. Important and essential as are the principles to which I have referred for the establishment of our art upon rational and progressive lines, yet it must not be forgotten that the real advance of practical medicine depends no less upon the ethical principles by which our art is inspired. Our mission has a far wider range than the mastery of pathology or even the cure of disease. Standing as we do in a more intimate personal relation with the mysteries of life than those of any other calling, honoured by a more unreserved personal confidence than is extended to any other profession, constantly in touch as we are with some of the deepest experiences of existence, we are appealed to again and again as interpreters of problems which press upon those who suffer—problems the solution of which is not to be found in treatises of pathology or therapeutics, but only to be attained by a patient study of ourselves and others in the light of an all-embracing sympathy. Believe me when I say that many of the professional grievances and disabilities under which we now labour would disappear with higher ideals of our calling and its possibilities.

I make no apology for having dealt rather freely with speculative considerations, because I believe that good practice cannot be divorced from intelligent speculation without disadvantage. In this connection I may conclude by recalling a passage in one of Emerson's essays: "The Hindoos write in their sacred books—children only, and not the learned, speak of the speculative and the practical faculties as two. They are but one, for both attain the self-same end, and the place which is gained by the followers of the one is gained by the followers of the others. That man seeth who seeth that the speculative and the practical doctrines are one."

AMBIDEXTERITY.

BY SIR JAMES SAWYER, M.D.LOND., F.R.C.P., F.R.S.E.,
Consulting Physician to the Queen's Hospital, Birmingham.

I DESIRE to join in recommending the general culture and adoption of ambidexterity. I have given some attention to the subject for many years. Each of our hands is capable of all those refinements, and all that precision of movement, which are usually only developed in and exercised by the right hand. Perhaps there is no occupation in which it is not an advantage to have the full use of the hands, none in which it is not an advantage to be able to use either hand with a power equal to that of its fellow.

It is very likely that Sir John Struthers's reason, as quoted by Mr. Noble Smith, for the general use of righthandedness may have some validity, namely, that the thoracic and abdominal contents on the right side of the vertical middle plane in the human body are heavier than the contents on the left side, so that "the greater weight on the right side leads to resting most on the right leg, and from the pillar of support we naturally use the right upper limb preferentially." I venture, however, to suggest that the normal position of the heart is the efficient cause, or, at least, a chief cause, of the prevalent righthandedness. In the earlier days of the human race, when "those may take who have the power, and those may keep who can," we were a fighting people, a people fighting hand to hand. In such fighting a weapon such as a stick or a sword was used. It is an advantage in so fighting to fight with a stick or with a sword which can be used by one arm and hand only; the other arm and hand being used for balance, for defensive covering, or for offensive seizing. The right hand is preferred for the wielding of the stick or sword, so that the heart may be kept away, as far as possible, from the assault of an adversary. So arising, righthandedness would thence be transmitted by imitation, and by the hereditary transmission of an acquired peculiarity. It will be found in practice that an excellent way for the acquirement of ambidexterity is in the learning of sinistral handwriting with pen and ink. When a "righthanded" man can write comfortably

with his left hand most other sinistral accomplishments will be added unto him. In our own manifold profession ambidexterity is a great equipment. In laryngoscopy, in ophthalmoscopy, in palpation, in percussion, and in examinations *per vias naturales* it is useful. Ambidexterity would prevent many occupation pareses. It would tend to a more equal use, and to an alternative and reciprocally resting use, of the two sides of the brain. It might prevent, or help in the cure of, some cases of hemicrania. Perhaps it might prevent some cases of hemiplegia.

THE DIAGNOSIS OF DIPHTHERIA.

By H. B. DONKIN, M.D., F.R.C.P.,
One of the Commissioners of Prisons; Consulting Physician to the Westminster Hospital and to the East London Hospital for Children, Shadwell.

The question of the respective *rôles* of the physician and pathologist in the diagnosis of diphtheria, which is so ably discussed in Dr. Andrewes's paper reported in the British Medical Journal of September 29th, is one of the highest practical importance, as well as of great scientific interest. In these days many educated and thoughtful laymen, whether privately interested in this and kindred matters, or, as public men, charged with the ordering of schools and other institutions, are quite as well acquainted as the average medical man with the discoveries of modern bacteriology. It is imperatively necessary, then, in the cause of rightful practice, that the real bearings of the bacteriological factor on diagnosis be clearly understood by the medical profession at large, and plainly and frankly stated, when stated at all, to the intelligent public.

To this end, as regards diphtheria at least, the well-argued paper by Dr. Andrewes above referred to appears to be of a value which cannot be overrated, and is worthy of widespread and serious notice. After giving in detail and step by step the clearest reasons for not placing absolute reliance on any of the bacteriological tests in the diagnosis of diphtheria, including even those of inoculation and control experiments with antitoxin upon animals, Dr. Andrewes practically sums up with the following dictum which was endorsed by subsequent expert speakers at the discussion: "In every case the ultimate responsibility of diagnosis must rest with the physician and not with the bacteriologist."

Now it is not to be denied that ever since the time when, partly as the result of the theories of the identity of "croup" and "diphtheria," and of the universally "diphtherial" nature of "membranous deposits," which increasingly pervaded the schools, men were led to seek more diligently, and at last to find what is believed to be the specific and causal bacillus of diphtheria, the growing and almost unopposed tendency has been for the physician to throw the ultimate responsibility of diagnosis in this disease upon the bacteriologist. This practice has now, indeed, spread so widely that it is not too much to say that the average doctor regards the exclusively bacteriological diagnosis of diphtheria as part of his scientific creed, abolishing the multiform and confessed difficulties met with along the thorny path of clinical observation, and substituting therefor a royal and simple road to a definite result. Nor is it perhaps only to a laudable desire of welcoming the new fruits of scientific research that this recent belief and practice are attributable, but also, it would seem, to that love of finality in inquiry, and that tendency to avoid difficulties and responsibility which mark the minds of many, if not most, men of all sorts.

In my experience I have come across several instances, similar to that striking one adduced by Dr. Andrewes, of more or less disastrous results arising from the custom of doctors to cast all their cares on the bacteriologists and to place implicit trust in their pronouncements. It is doubtless true, as Dr. Andrewes says, that the physician may often supply imperfect information to the bacteriologist, and misinterpret and misapply the report he receives; and, on the other hand, it is to be remembered that not every bacteriologist is so philosophic and explicit as Dr. Andrewes. Wherever the fault mainly lies, the errors arising from this misplaced faith are not to be ignored; and the conclusion that a case is not diphtheria which afterwards is proved to be so, with all its disastrous consequences, is only more deplorable than the opposite mistake of causing vain panic and sometimes money losses of the gravest kind by giving a false alarm of diphtheria. It would be of great interest to know, for example, the extent of the injury done to the proprietor of that school, where, as Dr. Andrewes tells us, several healthy boys with healthy throats and noses were stated by several bacteriologists to be the hosts of diphtheria bacilli, or of bacilli "morphologically indistinguishable" therefrom. A school might well be ruined by such a mishap as this, which is plainly and only attributable to an ill-informed and overweening faith on the part of either schoolmaster or doctor, or both, in what to them is one of the new things in science.

Every word of Dr. Andrewes's invaluable paper might be usefully studied and weighed, not only by doctors but also by all intelligent people, especially those connected with public institutions of all kinds where human beings congregate. The remarks, also, of Dr. Klein and of Dr. T. D. Lister are worthy of close attention. I well remember the series of careful observations made by Dr. Lister not many years ago, in the wards and laboratory of the East London Hospital for Children—some of the latter ones at my request—and I can add to his remarks that he found what both he and other skilled observers pronounced to be the Klebs-Loeffler organism, and not another, in the noses of several children neither suspected of diphtheria nor subsequently its victims—noses, moreover, of which some "ran" or "snuffled" more or less, some not at all.

It is not, of course, to be doubted that from time to time and in certain cases the bacteriological factor is important in the diagnosis of diphtheria, and, among other lessons, this method of research has taught us that we have very good cause to adhere, as some of us have always adhered, to the belief that not all membranous cases of laryngitis or sore throat are diphtherial. But on carefully studying all Dr. Andrewes's remarks, and bearing in mind all the pitfalls which beset the bacteriologist in this matter, and the safeguards which are essential to his procedure, one may doubt a little whether a strictly logical criticism altogether justifies even that amount of actually practical weight which the writer of the paper seems inclined to attribute to the bacteriological factor in the diagnosis of diphtheria.

The practical teaching which the present state of knowledge on this difficult question seems to admit is apparently somewhat as follows:

1. Diagnosticians should at once regard and treat, without waiting for a bacteriological report, all cases as diphtheria, in which the clinical signs and symptoms are such as would have raised but little or no doubt in their minds as to their nature in the days before the coming of the bacillus.

2. They should also regard and treat as diphtheria all cases which, although lacking the usual clinical "stigmata," are shown by bacteriological examination to be associated with bacilli whose products kill animals and cause the characteristic lesions; albeit even here they may be in error, though on the better side.

3. The mere presence of bacilli (in the nose or elsewhere) "morphologically indistinguishable" from the pure "diphtheria bacillus," the host being healthy and inoculation results negative, may probably be ignored in practice, and so also may all negative bacteriological reports in cases where there are any clinically recognised symptoms or signs of the concrete disease. In fine, does not the diagnosis of diphtheria still rest mainly for its surest foundation on the old ground of careful clinical observation, tempered and aided in some cases, it may be, by a judicial study of the report of the bacteriologist?

The San Remo Home for Ladies has received ten invalid ladies during the past year. The object of the institution is to provide a temporary residence with medical care for ladies of limited means who are likely to be benefited by wintering in a dry warm climate. The inclusive charge made is 25s. a week. Applications for admission, accompanied with a certificate as to social position and means, and a medical certificate, may be sent to either of the secretaries, Mrs. Daniel, Villa Emily, San Remo; or Miss Kay Shuttleworth, 55, Aughton Street, Southport, from whom the blank forms may be obtained.

MYELOPATHIC ALBUMOSURIA.*

By T. R. BRADSHAW, B.A., M.D., M.R.C.P.,
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If we may judge by the paucity of recorded cases, and by the silence of the textbooks on the subject, the disease which I have proposed to call myelopathic albumosuria must be one of the rarest with which we are acquainted. The textbooks, as I have said, are silent upon it, and the cases recorded in various publications throughout Europe and America hardly amount to a dozen. It is, however, probable—nay, almost certain—that the condition is less uncommon than these figures would lead us to infer, and that cases are met with from time to time, though their true nature is not understood. As you will see by the table, the case which came under my observation was the first which had been recorded in Great Britain for half a century, and yet at the present time I know of two cases in the practice of members of the profession with whom I am acquainted. I feel therefore almost certain that if the condition were better known it would be more frequently recognised; and it is in the hope that such knowledge may lead to the discovery of further cases that I propose to bring the subject to your notice.

Definition.

Myelopathic albumosuria may be defined as a disease characterised by an invasion of the cancellous tissue of the bones of the trunk by a cellular growth, by a disappearance of the osseous tissue, and by the presence in the urine of large quantities of a peculiar albuminous substance belonging to the class of bodies known as albumoses.

Morbid Anatomy.

The morbid anatomy of the disease consists in a remarkable change in some of the bones, chiefly the ribs, sternum, and the bodies of the vertebræ. The hard substance is reduced often to a mere shell, which breaks on the slightest pressure with the fingers; the cancellous tissue has almost entirely disappeared; and spontaneous fractures of the ribs are common. The interior of the bone is occupied by a reddish gelatinous greasy mass, somewhat like splenic pulp, which can be readily squeezed out by pressure on the thin and brittle bone. Microscopically it consists of a vascular mass of cells, round or spindle-shaped, and in some cases islets of cartilage have been found. The whole structure resembles sarcoma, and the condition is generally known as "multiple myeloma."

This term we owe to Von Rustizky, who in 1873 described four cases of multiple tumours in bone.[1] Whether these cases were of the same nature as those we are now considering remains doubtful, as there is no record of the condition of the urine. The organs as a rule are healthy. There is nothing characteristic in the kidneys: sometimes they appear to be healthy, sometimes they show blocking of the tubules and degenerative changes in greater or less degree.

Symptoms.

The disease is one occurring in the second half of life, and is apparently more frequent in men than in women. The symptoms may be classified under two heads—those connected with the affection of the bones, and those connected with the condition of the urine. In my case[2] it was the condition of the urine which first suggested that anything was wrong; in the majority of cases the earliest symptoms were those connected with the bones. The first complaint is generally of pain in the lumbar region suggesting lumbago; it is generally aggravated by movement; the patient probably looks anæmic, the pains do not yield to treatment; but there is nothing to suggest the serious nature of the case unless the condition of the urine, which I will presently describe, is recognised.

The pains vary much in severity from day to day, but on the whole become progressively worse, and the patient becomes disinclined for exertion. The pains become more general, being referred to the loins, the ribs, and the sternum, and tender spots arise in the course of the bones, which lose their normal rigidity to a remarkable extent. The chest wall seems to yield to the pressure of the hand or the stethoscope, and actual fractures of the ribs take place either spontaneously or from the exertion of an amount of force which would cause no discomfort or injury to a healthy person. A remarkable curvature of the spine appears and the mobility of the vertebral column is lost. In spite of the pain, weakness, and deformity, the patient is able to leave his bed and walk about until near the end of the case—a circumstance which is evidently due to the fact that the disease does not attack the bones of the extremities. In this respect it differs in a striking manner from another disease with which it has been sometimes confounded—namely, osteomalacia, in which the long bones are early affected, and the power of standing is lost almost from the first.

The Condition of the Urine.

The characteristic feature of the urine is the presence therein of a proteid which bears a superficial resemblance to albumin, but which can be easily shown to differ from albumin in several of its reactions. The characteristic reactions of the body are the following:

1. It coagulates at a comparatively low temperature (60° C. = 140° F.)
2. The coagulum is redissolved on boiling.
3. It is readily precipitated by hydrochloric acid, as well as by nitric acid, and the precipitates are dissolved on boiling.

I consider that the precipitation with hydrochloric acid, carefully carried out, is the most satisfactory test for bedside use. It requires no special apparatus, and if the urine is diluted well with water the reaction is quite distinctive. I have found it give a positive result when as much as 29 volumes of water had been added to the urine. It should be applied by the contact method.

The degree in which the coagula, which have been produced either by heat or acids, are soluble on boiling, varies somewhat in different specimens, and as a rule is less complete when the body is present in large amounts. A remarkable circumstance is that the albumose has a tendency to separate out spontaneously on standing. In my case this separation sometimes took place in the bladder or kidneys, so that the urine when voided looked like milk. It was this condition of the urine that first made the patient think there was anything the matter with him. I do not find this remarkable appearance recorded as having been observed in any other of the published cases, but a few of my medical friends have told me that they believed they had seen something like it.

Diagnosis.

The diagnosis of myelopathic albumosuria presents no difficulty to anyone who is acquainted with its symptoms, as the condition of the urine appears to be pathognomonic of the disease. In my case the condition of the urine was observed before any local signs of bone disease appeared, and in most if not all of the cases it is present when the patient seeks advice. In the early stage the disease may be mistaken for muscular rheumatism; when deformities appear it may be mistaken for osteomalacia or for tuberculous disease of the spine. On the other hand, the condition of the urine might lead to the diagnosis of large white kidney being made, or, if the albumose is spontaneously coagulated, to that of chyluria.

Prognosis.

The disease seems to be always fatal, but sometimes its course is remarkably prolonged. In one instance the illness began eight years before death, and the albumose was known to be present for six years. As a rule cases seldom go on for a year after the symptoms become so severe as to lead them to seek advice. Remarkable intermissions are frequently noticed in the progress of the cases which often give rise to false hopes of improvement. Death takes place from exhaustion or from some intercurrent disease, of which pneumonia appears to be the most frequent.

Treatment.

No treatment which has been tried hitherto has appeared to have the slightest effect on the progress of the disease. Anodynes are frequently called for, and great care must be used in handling and examining the patient, owing to the readiness with which fractures are produced.

Pathology.

The association of albumosuria with new growth in the bones is a remarkable fact which has no close analogy in any other disease. One is tempted to assume that the albumose

* A paper read at the autumn meeting of the North Wales Branch of the British Medical Association at Pwllheli.

is formed in the gelatinous masses in the bone and excreted in the urine, but no proof of this view has been offered, and against it we have the fact that similar new growths occur in other parts of the body without the appearance of anything unusual in the urine. Whatever their true connection may be, it cannot be denied that the formation of albumose in the body and its excretion in the urine is no less an essential part of the disease than is the existence of multiple myelomata. I think, therefore, that the term "myelopathic albumosuria" is a convenient one to apply to it, as it expresses the leading features of the condition without binding us to any theories as to the way in which they are associated.

Tabulated List of Published Cases in which "Bence Jones Albumose" has been recognised in the Urine—"Myelopathic Albumosuria."

Number.	Date of Publication.	Observer.	Diagnosis during Life.	Condition found at Necropsy.
1	1847	Macintyre and Bence Jones (London)	?	Mollities ossium rubra: description corresponds to multiple myeloma.[3]
2	1883	Kühne	Osteomalacia	No necropsy made.[4]
3	1889	Kahler (Prague)	Osteomalacia	Multiple myeloma.[5]
4	1891	Stokvis (Amsterdam)	?	Bones brittle; marrow replaced by a red gelatinous mass.[6]
5	1895	Stintzing (Jena)	Osteomalacia or multiple myeloma	Multiple myeloma.[7]
6	1897	Senator (Berlin)	Nephritis with albumosuria	"Myelogenous round-celled sarcoma, so-called myeloma."[8]
7	1897	Bozzolo (Turin)	"Kahler's disease"	No record.[9]
8	1898	Naunyn (Strassburg)	Multiple myeloma	No record.[10]
9	1898	Bradshaw (Liverpool)	Multiple myeloma	Multiple myeloma.[11]
10	1899	Ellinger (Königsberg)	None made	Multiple myeloma.[12]
11	1900	Fitz (Boston, U.S.A.)	Multiple myeloma	Multiple myeloma.[13]

NOTE.—Since this paper has been set up in type my attention has been drawn to a case published in 1899 by Buchstab and Schaposchnikow, of Odessa, in which the discovery of albumosuria led to a correct diagnosis of the bone affection being made during life.[14]

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CONTRIBUTION TO THE TECHNIQUE OF BACTERIOLOGY.

BY

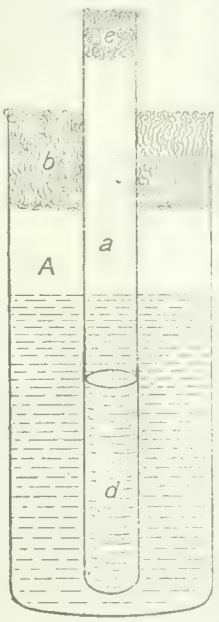
MARC ARMAND RUFFER, M.D., President of the Sanitary, Maritime, and Quarantine Board of Egypt.

& MILTON CRENDIROPOULO, M.D., Director of the Quarantine Station at Moses' Wells, Egypt.

IN the course of some investigations we found it necessary to invent a method by which the diffusible products of the life of micro-organisms could be obtained without subjecting the micro-organisms themselves, or the culture media, to the action of heat, filtration, or chemical reagents.

It is known that if certain microbes be introduced in a bag of filter paper or a sack of collodion and this bag placed under the skin of an animal, the toxins produced by the microbe pass through the walls into the surrounding tissues and give rise to toxic symptoms in that animal. We endeavoured to discover a technique by which these diffusible poisons or other diffusible products could be obtained in an ordinary culture tube.

The diagram shows how the problem was solved. The apparatus consists of an ordinary test tube A filled to any required level with bouillon or some other fluid cultivating medium, and plugged with cotton wool at *b*. Through this plug (*b*) another smaller glass tube (*a*) is introduced to the lower extremity of which is attached a collodion sack *d*. This inner tube is filled to any required level with some cultivating fluid and is plugged at the upper extremity (*e*) with cotton wool.



We may now give some hints as to the preparation of these collodion bags, and their fixation, as we have not found in the literature at our disposal a good account as to the best method of making them. A small test tube is rapidly dipped bottom downwards into a small tumbler filled with collodion, until 2 or 3 inches of the tube are covered with collodion. It is then withdrawn and allowed to dry bottom upwards. After drying, the same process is repeated two or three times. The collodion is then found to stick tightly to the glass tube.

In order to separate the collodion from the glass tube, the whole is dipped alternately for a few seconds in strong spirit and then into water. The water and spirit diffusing through the collodion gradually loosen it from the glass. After a few minutes the collodion bag can easily be peeled off from the glass tube. A small glass tube of such a size that it can just enter the bag is then introduced into the open extremity of the collodion bag, and the whole is then placed in the incubator at 37° C. The collodion bag now shrinks and tightly fits on the glass tube. All other methods of fastening the collodion bag have proved faulty in our hands, as the fastenings invariably allowed microbes to get through.

In order to sterilise the collodion glass tube (now called inner tube), it is fixed in an empty test tube in the manner shown in the diagram, and the whole is sterilised at 150° C. by dry heat on one or several occasions.

When this has been done the inner tube (*a*) together with the plug *b* are transferred aseptically to a tube of sterilised bouillon or gelatine of equal size, the plug *b* now serving to close the tube of bouillon into which the inner tube is dipped. The bouillon in tube *a* is now inoculated with the micro-organism to be studied, and the whole placed in the incubator. The inner tube may also be filled to the required extent, introduced into the bouillon tube, and the whole sterilised in the autoclave. Experience, however, has shown us that the first method is preferable. After a time the inner tube (*a*) is withdrawn, and the outer tube then contains the diffusible products which have been elaborated in the inner tube, and which have diffused through.

It is clear that this method can be used for a variety of purposes, as, for instance, the study of those products of the life of micro-organisms, which dialyse through a collodion membrane. By filling the outer tube with therapeutic serum, for example, antidiphtherial serum, and the inner tube with a diphtheria culture, the action of serum on the dialysable products of the diphtheria bacillus may be studied, and inversely the action of dialysable constituents of therapeutic serum on the bacillus diphtheriæ and on its toxins.

By inoculating the liquid contained in the outer tube with one kind of micro-organism, and that of the inner tube with another, the antagonism between two microbes may also be studied.

Some of these problems are now being studied by us, with interesting results.

We had already been using this method for some time in the laboratory, when our attention was drawn to a paper by Paul Carnot and Louis Fournier,[1] who, independently and unknown to ourselves, have described a similar method for obtaining the toxin produced by the pneumococcus in cultivating media.

We are greatly indebted to Dr. Pinching Bey and Dr. Schiess Bey for allowing us to begin this work in the bacteriological laboratory of the Government hospital, Alexandria. To the latter gentleman we are especially indebted for much valuable assistance.

REFERENCE.

1 Recherches sur le Pneumococque et ses Toxines, *Arch. de Méd. Expér.*, May, 1900.

THE PROPAGATION OF THE FILARIÆ OF THE BLOOD[1] EXCLUSIVELY BY MEANS OF THE PUNCTURE OF PECULIAR MOSQUITOS.

BY B. GRASSI AND G. NOÈ,[2]
Rome.

PRELIMINARY NOTE.

LAST winter an English Commission, including Dr. Patrick Manson, came to Rome, as is well known, to examine the results obtained by the Italians in their study of malaria. The illustrious English pathologist, when visiting on this occasion the Laboratory of Comparative Anatomy, showed one of us (Grassi) some of his specimens bearing on the development of filaria nocturna in *Culex ciliaris*, syn. *Culex pipiens*. One of those specimens was of special interest, as it contained a larva of filaria, at its maximum stage of development, in the head of the insect, thus suggesting a probability of its being inoculated into man by means of puncture, as are the parasites of malaria. Grassi pointed to the analogy which he had observed in certain larval filariæ harboured by *Anopheles claviger* in the neighbourhood of Rome. Manson mentioned that Bancroft not long before had likewise advanced the same idea. The question was very attractive, and promised brilliant results. Manson and Grassi, on parting, understood all its importance.

Grassi put off to a favourable season the experiments which he proposed to carry out with the other writer of this paper (Noè) experiments which might resolve the problem in an exhaustive manner; meanwhile in his lectures on comparative anatomy he explained to his pupils the probability that the filariæ of the blood were propagated by means of insect punctures. However, regarding as superfluous a special publication on this point which would not positively and indisputably advance the question, and so as not to cast on the scientific field seeds of uncertain destiny, he abstained from so doing. On May 14th he received a letter from Dr. Manson which announced that having had sectioned some material sent to him by Bancroft, he had obtained the demonstration of the above-mentioned hypothesis. Grassi was pleased to hear of the confirmation of an idea which he held very probable, but at the same time it seemed to him that sufficient light had not been shed on this point, which had always seemed obscure to him. We had also seen the larvæ of filariæ in the general body cavity of *Anopheles* and also in the head, but we could not understand how the larvæ, devoid of any physical or chemical means for perforation, could pass through the walls of the body and especially through the chitinous carapace. It is exactly on account of this difficulty that we regarded as only probable the above-mentioned hypothesis, and that in the memoir, *Studies of a Zoologist on Malaria*, published on June 4th Grassi wrote:

> The filaria which develops in *Anopheles* in Rome belongs to a domestic mammal into which it is inoculated to all appearances by the same *Anopheles* by means of its punctures. The experiments necessary to confirm this hypothesis, based on the position taken by the filaria arrived at its maximum development in the body of *Anopheles*, are now being conducted [p. 30].

Manson had informed us that it had been found in sections free in the proboscis, but we doubted that this might be due to the imperfect preservation of the material obtained from Australia. It was also possible that the nematodes seen by Manson in the proboscis were not filariæ nocturnæ, especially as larvæ of nematodes somewhat similar to those are found in the proboscis of ordinary flies which do not puncture. This demonstrates that the above-mentioned localisation of filariæ is not sufficient to furnish the proof of the transmission by the puncture made by the intermediary host. Lastly, it was possible that the larvæ might have been found casually in the prolongation of the body cavity within the labium, just as sometimes are found within the labium of *Anopheles claviger* encysted larvæ of nematodes, which may be also found encysted in other parts of the body. Meanwhile, on June 16th, appeared a note by Low, a pupil of Manson's, in which the author declares probable the transmission of filaria nocturna by means of punctures, because, as he says:

> The larvæ of filariæ arrived at their maximum development, open for themselves an independent passage through the base of the labium, proceeding forward along the proboscis between the labium and the hypopharynx amidst the stylets.

But consulting the illustrations of his work, and making a due concession to the imperfections of lithography, it results, if we are not in error, that the filariæ are not already free, as Low describes, but are instead still enclosed in the prolongation of the general body cavity within the labium, exactly as we said before.

Fully recognising the importance of Low's work, we still consider the question of inoculation as only probable. It remains yet unexplained how the larvæ of filaria, which have no organ capable of perforating, came out through the carapace, and the obscurity on this point was, as may be easily understood, a serious omission, because it might have bred many other hypotheses. Only direct experiment might have thrown light on the question, and in this the English school failed; nor could it have been otherwise, because it was not possible to make any experiment on man without risking giving him a terrible disease which, so far, is incurable.

Contemporaneously our experiments progressed on the larvæ of filaria harboured by *Anopheles claviger*. We had already previously determined, by subjecting dogs to punctures, that the larva is derived from filaria immitis (Leidy).[4]

Thus was admirably explained the fact that one of us (Grassi) had noticed several years previously that F. immitis has a geographical distribution corresponding to that of malaria, and naturally, as we know to-day, to that of *Anopheles*.[5]

The embryos of filaria immitis, sucked up with the blood by *Anopheles*, migrate into the Malpighian tubes, where they continue their development, behaving more or less like the other blood filariæ already known. The larvæ, arrived at the maximum development possible in the body of *Anopheles*, abandon the Malpighian tube to enter the general cavity of the body, leaving behind the old cuticle,[6] then they progress towards the head, and collect themselves there rapidly (as our transverse sections show very clearly) in the prolongation of the general cavity of the body within the labium, called also inferior labium,[7] (exceptionally also in the palpæ).

By proper experiments[8] we have demonstrated that when *Anopheles* bites these larvæ come out of the labium, and are thus inoculated in the bitten animal. The mechanism of exit represents one of the most singular and admirable phenomena that one can imagine for the diffusion of parasites.

As is known, the *Culicidæ* introduce only six of the nine appendages which constitute their mouth apparatus. Of these two form two canals, a wide canal constituted by the superposition of the labium to the hypopharynx, the other narrow, grooved along the hypopharynx itself.[9] The wider canal serves very likely at the beginning of the puncture to emit some gases enclosed in the three sacs annexed to the anterior intestine (which, as we know now, have certainly a sucking function); later it serves for the passage of the blood; the narrow canal serves for the emission of saliva; the four stylets (mandibles and maxillæ) cut with a saw movement. Of the remaining three pieces which constitute the mouth apparatus, the two palps during the puncture remain raised. When the mosquito proceeds to penetrate the skin the labium, as Reamnur admirably described, buckles up at first towards the base, forming an obtuse angle. As the style

gradually penetrate this angle is advanced towards the middle of the labium, becoming extremely acute, so much so that when complete penetration is effected the labium appears doubled up on itself, forming a narrow kind of loop, and thus forms, through the conformation of the parts which close together, a new canal. The two halves of the olive and the little tongue, resting against the skin of the animal which is punctured, embrace the six pieces penetrating the skin. It is certainly through the bending of the labium stuffed with filariæ that is brought about the rupture of the integuments of the labium; along the dorsal groove and through the rupture thus produced come out the filariæ to penetrate the body of their definitive host. It is difficult, as everyone will understand, to enter into further particulars. In some cases we believe that we positively found the rupture in the middle of the length of the labium in correspondence with the loop. It seemed to us also that the two halves of the olive and the little tongue, being in the above-mentioned position, had an importance in directing the movements of the filariæ towards the wound made by the stylets. Perhaps also the gases emitted in the first moment of the bite help the entry of the filariæ into the body of the definitive host. However, it is certain that up to now all the *Anopheles* that have punctured seemed free of the filariæ they had previously carried in their proboscis.[10]

If the punctured animal is a dog, the filariæ continue their development, as is seen by the following experiment:

On July 19th we injected under the skin of a non-infected dog some larvæ of filariæ which we had collected in a drop of normal saline solution by pulling apart the labium of two infected *Anopheles claviger*. On August 4th, on making a *post mortem* examination of the dog, we found in the subcutaneous connective tissue near the genitals a very small female filaria, which must be judged as F. immitis, still immature. We were able to preserve only its anterior half—sufficient, however, for the diagnosis. Anyone who knows the difficulty of finding filariæ, especially when young, will not be surprised that we found only one.

Another dog which contemporaneously had swallowed larvæ of filariæ did not present any of these parasites in process of development, which induces us to exclude infection through the alimentary canal, as one could foresee after the facts above mentioned.

Naturally we want to obtain all the intermediate stages; therefore we have extended our experiments on many more dogs, experiments of which we shall report in due time. The facts here referred to show without doubt that the blood filariæ, as the parasite of malaria, are inoculated by the puncture of special mosquitos, although in a different way. The exit of the larvæ does not take place, as Bancroft had supposed, through the œsophagus and pharynx, nor in the way that Manson and Low had believed they had seen; the mechanism discovered by us is far more perfect and rational.

NOTES AND REFERENCES.

[1] We mean by "blood filariæ" those filariæ whose embryos circulate in the blood. [2] The details of the observations on which this note is based will be published shortly by Noè. [3] BRITISH MEDICAL JOURNAL, i, 1900, p. 1456. [4] What Grassi and Calandruccio had long ago sustained against Sonsino is thus indirectly confirmed, that filaria immitis has nothing in common with the larvæ of filariæ which are found in the dog flea. Nuttall in his exact critical historical study has reproduced a letter of Sonsino which contains several errors referring to one of us (Grassi). I limit myself to pointing out that in the above mentioned letter Sonsino confesses to having confused *Hæmatopinus* with *Trichodectes*, "Mais je reconnus mon erreur bien avant la publication de mes études"; whilst in the paper of 1888 Sonsino has written: "I must point out that the species of louse I examined, and in which I found the larvæ phases of the hæmatozoon of the dog as in the flea is not *Trichodectes latus*, as I believed at first and as I said in a preliminary note published in the BRITISH MEDICAL JOURNAL of July 15th, 1888, but is instead *Hæmatopinus pilifer*, which here seems more common in dogs than the parasite above mentioned." We must notice also what Calandruccio in 1892 found in a mosquito, the larvæ of a filaria that he supposed might be in relation with filaria immitis. However, he abandoned this subject, and his observations remained doubtful because, as far as we know, F. immitis has not been found in Sicily. [5] It should be noted that for the development of filaria temperature has the same great importance as for the development of malarial parasites. [6] Of the many embryos which reach the Malpighian tubes only few (3, 4, 2) reach that stage of development which in *Anopheles* can be called complete. [7] The complete development within Malpighian tubes in summer requires about ten days, the passage into the labium takes place very rapidly (one or two days). We keep *Anopheles* for a long time alive nourishing them with fruit, especially with melons. They not only continue to live, but also deposit their eggs. We may add that the nourishment is likewise sufficient for the regular development of the malarial parasites. [8] Of a large quantity of *A. claviger* which had punctured a filariated dog about August 10th and 11th, 22 were introduced into a small room with a healthy dog on August 23rd. On the morning of August 24th all were full of blood; on examination, none were found to contain filariæ; many of them, however, show the sure traces of their recent presence. On the same morning of August 24th we examined 15 *A. claviger* taken from the same vessel from which had been taken the preceding, and which had not yet bitten; 5 of these showed the labium invaded by filaria; we took 20 more out of the same vessel and introduced them on the evening of August 24th into the small room with above-mentioned dog. On the morning of August 25th all except one were full of blood, this one not having bitten. The first 20 were all without filaria, showing, however, evident traces of their recent presence. The last which had not punctured had the labium full of filariæ. The experiment was repeated on August 26th with 25 more *Anopheles*; of 9 sectioned without having bitten, 3 were infected; 16 introduced into the usual room after puncture were found non-infected. [9] In many copies of the memoir, *Studies of a Zoologist on Malaria*, the picture 12 in Plate IV representing the section of the proboscis shows this canal opened through a lithographic deficiency. We have included the possibility of the filariæ escaping through these blind ends that in the above-mentioned work we supposed were receptacles of saliva, a supposition which we now believe to be unfounded. [10] We have reason to believe that the exit of the filariæ from the labium, and therefore from the proboscis takes place also when the *Anopheles* puncture fruit. This we deduce from the fact that a great quantity of *Anopheles* certainly infected within the labium on August 5th submitted to a fruit diet presented the labium on August 10th completely empty.

SUPRARENAL GLAND EXTRACT AS A HÆMOSTATIC.

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Somewhat more than eighteen months ago I suggested[1] the administration of suprarenal gland in cases of hæmorrhage from the walls of the alimentary canal, a condition which makes itself evident as hæmatemesis or melæna.

Physiological Action.

The *rationale* of the treatment was based on Schäfer's observation that suprarenal extract caused contraction of the plain muscle fibres of blood vessels when applied locally and acted as an efficient hæmostatic in epistaxis, together with the result of a series of experiments which led me to the conclusion that administration of the gland by the mouth did not cause a rise of blood pressure in normal individuals.

Mode of Administration.

At that time I did not enter into detail as to the method of administration, nor the pathological conditions in which the exhibition of the preparation would probably be followed by satisfactory results.

Since many of the liquid extracts are robbed of their efficiency by time, one or two crushed 5-grain tablets given by the mouth is the most satisfactory method of administration in hæmatemesis.

Therapeutic Uses.

The advantage of suprarenal extract over the more popular hæmostatics lies in the fact that it acts in very dilute solution, and does not tend to combine with albumen and become inert, in a similar way to ferric chloride: it must, however, be borne in mind that it does not cause coagulation of the blood, and therefore does not seal the bleeding points with clot.

In hæmatemesis the most rational method of using iron is by administering one large dose, since some of it will combine with the blood already shed into the stomach, and an excess is required to cause coagulation of the blood oozing from the vessels and thus seal them. The correct administration of suprarenal extract in the same pathological condition offers considerable contrast; for small doses may be given, since the drug acts in very dilute solution, but it must be repeated at short intervals, for only while the vessel wall is under the action of the extract will it remain contracted; coagulation of blood is not accelerated.

Practice substantiates theory, for in cases where suprarenal extract has been administered temporary cessation of bleeding has occurred, but often recurrence of hæmorrhage has ensued after several hours when no repetition of the dose has been ordered.

Hæmorrhage from a small artery is more likely to be efficiently controlled than capillary oozing from a hyperæmic mucous membrane. It is no easy matter to foretell whether its exhibition in typhoid ulceration and hæmorrhage would be followed by satisfactory results, since it is questionable whether the extract would reach the site of the ulcer in a potent form. I have not had opportunity of making practical observations.

Two or three tablets crushed and mixed with a few ounces of water and injected into the rectum is the most satisfactory

method of applying the remedy in hæmorrhage from that viscus. A sterile extract is not irritating, and may be used to wash out the bladder when bleeding occurs from that organ; it may also with advantage be added to the water used as a uterine douche in cases of *post-partum* hæmorrhage.

If we accept the theory that congenital hypoplasia of the vessel walls is associated with hæmophilia, we should not expect that in that pathological condition suprarenal extract would be followed by satisfactory results. In no single instance in which this condition has been treated with this drug have I been able to satisfy myself that benefit has accrued.

REFERENCE.
1 *Journal of Physiology*, 1899.

MODE AND RAPIDITY OF REDUCTION OF TEMPERATURE BY QUININE.

BY WILLIAM SYKES, M.D., F.S.A.,
Torquay.

THE following three sets of observations on the mode and rapidity of action of quinine as an antipyretic when administered in cases of high temperature in a single large dose, as recommended by Liebermeister, were made by the writer some time ago, and were intended to form part of a series of observations on the action of antipyretics in cases of pyrexia. Circumstances, however, prevented their completion. As, however, they add a little to our knowledge of the clinical action of this class of drugs, I venture to publish them here.

The first case was that of a young man, aged 26, suffering from an attack of enteric fever. The observation was taken on the twelfth day of the disease (approximately). His temperature at 9 P.M. was 103.6°, pulse 100, respirations 24. At that hour I administered 30 grains of quinine sulphate in milk. I then fixed an old-fashioned sensitive clinical thermometer, without index, in the left axilla, and, sitting in the room, made frequent observations of the temperature of the patient, as recorded in the following table, in which Column I indicates the exact moment at which the observation was made; Column II the length of time elapsing between each observation; Column III the actual temperature recorded; and Column IV the reduction of temperature between each observation in tenths of a degree Fahrenheit.

CASE I.

I.	II.	III.	IV.	Remarks.
P.M.	Minutes.	Fahr.		
9.0	—	103.6°	—	Quininæ sulph. gr.xxx.
9.17	17	103.6°	0.0	
9.49	32	103.4°	0.2	
10.1	12	103.3°	0.1	
10.4	3	103.2°	0.1	
10.14	10	103.1°	0.1	
10.18½	4½	103.0°	0.1	
10.25	6½	102.9°	0.1	From 10.25 to 10.40—that is, 15 minutes—the temperature was stationary, and then commenced to descend again.
10.35	10	102.9°	0.0	
10.40	5	102.9°	0.0	
10.44	4	102.8°	0.1	
10.53	9	102.7°	0.1	
11.0	7	102.6°	0.1	
11.3	3	102.4°	0.2	
11.4½	1½	102.3°	0.1	
11.7	3½	102.2°	0.1	
11.17	10	102.1°	0.1	
11.18½	1½	102.0°	0.2	

This series of observations, then, extended over 2 hours 18½ minutes, during which time the temperature fell 1.6° F. Deducting the first 17 minutes during which the temperature remained unaltered, the average rate of fall was 0.1° during every 7.59 minutes. The rate of fall, however, was not regular, but varied greatly, sometimes requiring as long as 10 minutes (once 12 minutes) to accomplish a drop of 1°, sometimes performing it in 1½ minutes, and once remaining quite stationary for 15 minutes. The fall of temperature was accompanied by profuse diaphoresis. At the conclusion of the observations the temperature was 102°; the respirations 26, and the pulse 92, and markedly dicrotic. The temperature, as stated, having thus fallen 1.6°, the respirations quickened 2 in each minute, and the pulse slowed 8 beats per minute.

The second series of observations were made two evenings later on the same patient. At 7.50 P.M. I administered 40 grains of quinine sulphate in milk. The temperature was then 104.4° F., the pulse 96, the respirations 34. The resulting decrease of temperature is recorded in the following table, in which the reference numbers are as before:

CASE I.—*Second Series of Observations.*

I.	II.	III.	IV.	Remarks.
P.M.	Minutes.	Fahr.		
7.50	—	104.4°	——	Quininæ sulph., gr. xl.
8.10	20	104.3°	0.1	
8.30	20	104.3⅝°	+0.05	Rise of temperature.
8.35	5	104.4°	+0.05	" "
8.42	7	104.3⅜°	0.025	
8.50	8	104.2¼°	0.15	
8.57	7	104.2°	0.025	
9.5	8	104.1⅛°	0.075	
9.15	10	104.1°	0.025	
9.20	5	104.0°	0.1	
9.30	10	103.7°	0.3	
9.35	5	103.6°	0.1	The temperature remained stationary from 9.35 to 9.55 (that is, for 20 minutes).
9.45	10	103.6°	0.0	
9.55	10	103.6°	0.0	
10.0	5	103.5°	0.1	
10.8	8	103.2°	0.3	From 10.8 to 10.18 the temperature was stationary; (that is, for 10 minutes), and again from 10.25 to 10.35 (a second period of 10 minutes).
10.18	10	103.2°	0.0	
10.25	7	102.9°	0.3	
10.35	10	102.9°	0.0	
10.40	5	102.7°	0.2	
10 50	10	102.4°	0.3	

The period occupied by this second series of observations was three hours, during which the temperature was reduced 2° F. As the temperature fell 0.1° during the first 20 minutes' observations, it is not safe to deduct anything, as in the previous instance, for this initial period, in calculating the rate of fall, which was in this series 0.1° for every 9 minutes. At the conclusion of these observations the temperature, as stated, was reduced to 102.4° F. The respirations (which in the middle of the period under consideration took on a marked Cheyne-Stokes character) to 32, and the pulse to 94 per minute, the temperature having thus decreased 2° F., the number of the respirations and of the pulse beats two each to the minute.

In this instance the rate of fall of temperature was, as in the last, markedly uneven, and there were no less than three periods of respectively 20 minutes, 10 minutes, and 10 minutes each, during which the fall of temperature was entirely suspended.

The third and last series of observations were made in the case of a child of 6 years of age, also suffering from enteric fever. At 8.10 P.M. of the fourteenth day of the disease the temperature was 104.1°, and 20 grains of quinine sulphate were administered, as before, suspended in milk.

I.	II.	III.	IV.	Remarks.
P.M.	Minutes.	Fahr.		
8.10	—	104.1°	—	Quininæ sulph. gr. xx.
8.25	15	104.2°	+0.1	Rise of 0.1°.
8.32	7	104.0°	0.2	
8.50	18	104.1°	+0.1	Rise of 0.1°.
8 55	5	104.3°	+0.2	Rise of 0.2°.
9.0	5	104.3°	0.0	During a period of 5 minutes the temperature was stationary.
9.17	17	103.9°	0.4	
9.22	5	103.8°	0.1	
9.25	3	103.7°	0.1	
9.30	5	104.0°	+0.3	Rise of 0.3°.
9.33	3	103.6°	0.4	
9.37	4	103.5°	0.1	
9.40	3	103.4°	0.1	
9.43	3	103.3°	0.1	
9 45	2	103.1°	0.2	
9.50	5	103.0°	0.1	
9.55	5	102.9°	0.1	
10.0	5	102.8°	0.1	
10.15	15	102.5°	0.3	

The period over which this last series of observations extended was 2 hours 15 minutes, during which the total reduc-

tion of temperature was 1.7° F. Deducting the first 15 minutes of the period of observation (during which the temperature was not only unreduced, but even continued to rise) the rate of fall was at the rate of 0.1° for every 7.05 minutes occupied.

Here the rate of fall was even more irregular than in the preceding two series; during two periods of respectively 10 minutes and 5 minutes the temperature actually increased (although the subsequent fall was almost to the point which would have been attained had the intercurrent rise not occurred), and there was a stationary period of 5 minutes. During the last half-hour of the observation the rate of fall was very regular indeed, being at the rate of 0.1° during every 5 minutes.

We note:

1. The rapidity of absorption of the quinine, although only given as a powder suspended in milk. In the first series of observations, the temperature began to fall within 49 minutes, probably in a shorter time; in the second series within 20 minutes, and in the third series within 22 minutes. So that Liebermeister's statement[1] that "the decline of temperature usually begins a few hours after taking the medicine" is decidedly an overstatement of the time occupied in producing a commencement of fall of temperature.

2. The size of dose, within certain limits, does not seem to affect the rapidity of the defervescence. In the preceding cases, we have respectively doses of 20 grains, of 40 grains, and of 20 grains administered with average result in the respective instances of 0.1° decrease for every 7.59 minutes, for every 9 minutes, and for every 7.05 minutes. The mean of the three series giving a result of 0.1° decrease of temperature for every 7.88 minutes occupied by the experiment.

3. There are four methods in which the antipyretic effects of the quinine might be thought to act: (*a*) By a destruction of pathogenic bacteria; (*b*) by a neutralisation of their resulting toxins; (*c*) by an interference with the heat-regulating centres; and (*d*) by producing diaphoresis. The destruction of pathogenic bacteria is negatived by the fact of the merely temporary nature of the defervescence which follows the administration of quinine. A destruction of bacteria would produce a permanent curative defervescence, not a merely temporary one. Moreover, we have no experimental proofs that a diluted solution of quinine of the strength of 20 or 30 grains of the drug dissolved in a bulk of fluid equal in volume to the whole of the blood of an individual, would exercise a particularly lethal effect on Eberth's bacillus. It is highly improbable that quinine in whatever strength would neutralise the chemical products of the typhoid bacillus, since they appear to bear no chemical relation to each other. There remain, therefore, only the two probable methods of action—on the heat centres and on the sweat centres. It seems improbable, if the heat-centre theory be true, and if my observations are, as I believe them to be, accurate, that the proportional rate of decrease of temperature after exhibition of the drug should be so irregular as it is, and that its speed should not be affected by the amount of dosage. A drug acting directly on a nerve centre might be expected to produce an immediately great and regular effect on its function which would be expected to agree in rapidity of action with the size of the dose administered.

If, however, we accept the last or diaphoretic theory of defervescence when produced by antipyretic remedies, it would explain many of the difficulties of the question. Since defervescence by diaphoresis depends upon the sweating itself and not upon its causation, it is obvious that the size of the dose of the drug administered, so long as it was sufficient to produce perspiration at all, would have no effect on the speed of the resulting defervescence. Since slight movements in bed by which the surface became chilled would temporarily stop the diaphoresis, the stationary and even regressive intervals during the period of falling temperature would be quite explicable on such grounds. Moreover, most, if not all, of the antipyretic group possess one quality in common, when administered for reduction of temperature in efficient doses: they produce violent diaphoresis, which also occurs in the night sweats produced by the toxins of the tubercle bacilli, which are in like manner succeeded by a normal or subnormal temperature.

REFERENCE.

1 H. von Ziemssen, *Cyclop. of Med.*, I, 214.

THE BROMIDE SLEEP IN A CASE OF MANIA.

By PHILIP M. RAGG, M.B., C.M.,
Kingston, Jamaica.

I LATELY attended, in private practice a case of mania in which resort to the bromide treatment, as advocated by Dr. Neil Macleod,[1] gave excellent results.

The patient, a young Englishman, had been for eight hours in a state of alternating exaltation and depression when I was first summoned, the exciting cause being domestic and pecuniary worries of no great magnitude. He had taken at one dose forty 2-gr. quinine pills, with the avowed intention of committing suicide. Profuse sweating, headache, nausea, and prostration, with a temporary mitral systolic murmur resulted; and, though in a state of great mental excitation, his physical discomfort rendered him at first very amenable to treatment. For the first four days 20 grs. of sulphonal with 30 grs. of ammonium bromide were administered every twelve hours. After each dose he slept for some hours (as much as eight on the second night), but with incessant movements of the limbs and changes of position. He ate heartily, but in the intervals the mental exaltation increased, and he suffered from restlessness and delusions that made him difficult to manage. Thus on the third day, after a four and a-half hours' sleep, during the absence of the one available trained nurse, he gave his watchers the slip, and I arrived just in time to intercept him in the street, 100 yards from home, in a state of great excitement, staggering like a drunken man, singing at the top of his voice, and accosting passers-by.

On the fourth evening he attacked me furiously under the delusion that I was robbing him of his wife, to whom he is much devoted, when I sent her exhausted to rest in an adjoining room. On the fifth day, being anxious to keep him, if possible, out of the asylum, and after consultation with the medical superintendent of the institution, I determined to try the effect of the bromide treatment. In order to allow the effects of the sulphonal (last administered at 1 A.M.) to pass off, the new treatment was not commenced till 4 P.M., when he was again in a state of great exaltation, talking incessantly, with bursts of maniacal laughter. Potassium bromide in 2-drachm doses was then given at 4, 6, and 8 P.M., followed in each case by a tumbler of milk. At 9.15 P.M. he was apparently in a deep sleep, but as preparations were being quietly made for his wife's return to the next room for the night, he got up in bed, and with many invectives threatened to "do for me." He fought furiously for about thirty seconds, and then fell back exhausted. On assurances being given that she should remain in the room he became tractable, but a quarter of an hour later tried to follow me downstairs to "square me in the open." At 10 P.M. 3 drachms of potassium bromide were given, and after an hour's incessant talking, in which he was profane and witty by turns, and extravagantly lauded his wife's personal charms, he got eight hours' sleep.

On the sixth day the potassium bromide was given, in 2-drachm doses, at 8 and 10 A.M. and 12, 2, and 4 P.M., followed in each case by a tumbler of milk, giving a total of 15 drachms of bromide in the twenty-four hours. The early administration was due to his refusing to remain in bed and being intractable in the morning. From 10 A.M. onwards he slept soundly, and required some rousing for the two-hourly draughts. There was slight difficulty in swallowing, but he drank from a tumbler and assisted in holding it. He got up without suggestion during the day to obey the calls of Nature. At 6 and 8 P.M., after being roused to take milk, he became restless and loquacious.

On the seventh day, having had fairly deep sleep through the night, at 5.30 A.M. he got out of bed to pass water, then fell into deeper sleep, which continued throughout the day with little muscular movement. He lay with eyes half open and glazed, mouth wide open, breathing somewhat stertorously. He was roused every two hours to take milk; he recognised those who gave it, always looked across to his wife, smiled, spoke affectionately in a thick voice, and went off at once to sleep. His tongue was covered with a thick white fur, and his temperature was normal throughout the progress of the case. At 4 P.M., when his wife was speaking to me at the door, though apparently in profound sleep, he roused himself—suspicious, as always when she moved—swore violently at me for my "intention of removing her," struggled hard for a few moments, and, quickly exhausted, went off to sleep again.

During the whole of the eighth day he slept profoundly, even more so than on the seventh. His face was pallid and somewhat leaden in hue; he took milk as before, but with more difficulty in swallowing, so that on three occasions he was fed with a spoon. He got out of bed once to follow his wife when she left the room; however deep his sleep, he seemed to wake instinctively if she left him.

On the ninth day he had deep but more natural sleep.

On the tenth day, having slept well all night, he was easily roused, and took a light breakfast with relish, but he had difficulty in swallowing. He slept the greater part of the day and was always drowsy. There was no extravagant behaviour whatever except insisting on kissing the nurse, and he allowed his wife to leave the room at intervals without suspicion or demur.

On the eleventh day, after a good night, he was rational and very amenable to treatment. He was extremely weak, but walked with assistance round the room, when he was content to go back to bed for the rest of the day, feeling "tired." He slept most of the day.

On the twelfth day he left the bedroom for the first time, and shaved himself well. His tongue was still very foul. His mental state had returned practically to his normal, which is that of a restless, excitable and rather self-willed individual. From this time onwards there has been a steady return of physical strength, and he has been rational in his behaviour, but easily affected to tears for the first few days by a sense of his inability to work, by acts of kindness, and occasionally when not allowed to act on his own judgment.

In the treatment of this case the drug was not pushed to the extent advocated by Dr. Neil Macleod, as after a twenty-

four hours' cessation I judged further administration unnecessary. Still it seems remarkable in view of his reports that the patient, after the heroic doses given, responded throughout without suggestion to the calls of Nature, and was able so obviously to keep jealous watch, waking or sleeping, over the movements of his wife. The statement that "the full effect of the drug is not manifest for at least twenty-four hours after the last dose" is well borne out. With regard to this method being "a new departure in the treatment of acute mania," I would refer to Clouston,[2] when he says: "I have used the bromide alone in acute mania extensively and experimentally. In small doses it seems to have no effect. In very large and continuous doses, say a drachm every three hours, continued for many days, it will cause bromism and quiet the patient; but when its influence is over he becomes as bad as ever. I have never seen any medicine where the maniacal excitement and the physiological brain torpor of the drug seemed so visibly to fight for the mastery." It would appear from this that the same quantity of the drug per diem is more potent when given in larger doses at shorter intervals.

REFERENCES.
[1] BRITISH MEDICAL JOURNAL, January 20th, 1900. [2] *Mental Diseases*, third edition, 1892, p. 171.

THE TREATMENT OF THE PAROXYSMAL STAGE OF WHOOPING-COUGH.

BY JOHN EDWARD GODSON, M.R.C.S., L.R.C.P.LOND.
Manchester.

THE following drugs have been mentioned as of service in the treatment of this disease: Alum, antipyrin, acetanalide, belladonna, bromides, cannabis indica, carbolic acid, chloral hydrate, creosote, lobelia, opium and its derivatives, phenacetin, quinine, etc. This list, on account of its prodigality, is confusing to the novice, and appears to show that there is a considerable difference of opinion with regard to the correct treatment of pertussis. In the early months of the year I sent round a circular to a number of general practitioners in the hope of obtaining an answer to the following questions: Are all these drugs in actual use? Which drugs are considered to yield the best results? Which drugs are most frequently employed? An examination of the answers to this circular furnished the following conclusions: The list of drugs is considerably diminished. Those commonly employed and chiefly depended upon are antipyrin, belladonna, bromides, carbolic acid, creosote, and opium. While as accessory and occasionally useful drugs are mentioned chloral hydrate, quinine, butyl-chloral-hydrate, etc. The antispasmodics are always combined with expectorants, of which the alkalies are the greatest favourites. Inhalants appear to be in general use, the ones referred to being carbolic acid, creosote, bromoform, and chloroform. None of the other drugs in the first list have been employed by my correspondents. The relative popularity of the various drugs is as follows: Belladonna, 32 per cent.; carbolic acid, 28 per cent.; bromides, 20 per cent.; creosote, 12 per cent.; antipyrin, 6 per cent.; opium, as paregoric, 2 per cent. These results, while not pretending to be authoritative or exhaustive, are interesting as coming from a good representative group of general practitioners.

None of the answers I received were enthusiastic except from those who had used creosote. This remedy was strongly praised. It appears to have little effect when given internally, and must be used as a vapour. The results obtained are far more satisfactory when the inhalation is continuous than when it is intermittent. The simplest and best method is to sprinkle the drug on a cloth, and hang the cloth in the nursery or sick room to dry. In this way a highly-impregnated air can be constantly supplied to the patient. Many other methods can be employed, but none are so satisfactory as this. The inhalation appears to be free from danger except where the chest is full of moist sounds, in which case its effect should be carefully watched.

The method of treatment I have found most satisfactory is the following: Commence at once with the continuous inhalation of creosote. Clear the lungs of bronchitis as much as possible before using any special internal antispasmodic remedies. In broncho-pneumonia, however, belladonna appears at once to do good. In all cases, if or when the chest is fairly clear, and the circulation good, antipyrin may be given in suitable doses. Expectorants should be combined with the antipyrin. Good air, warm clothing, light, and wholesome food are necessary in all cases. I have followed these rules for the last six years, and am quite satisfied with the results. The average length of time required for cure in a variety of cases last year was 19.8 days, but these figures in no way represent the benefit derived from the creosote treatment. In every case the diminution in the numbers of paroxysms was so immediate that the patients willingly put up with the inconvenience of the smell of the drug for the sake of its manifest advantage. This in itself is a sufficient testimonial to the remedy to warrant its more extensive employment.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

ABDOMINAL WOUND INFLICTED BY A RHINOCEROS.

ON March 11th I received a telegram asking me to see a man who had been severely wounded by a rhinoceros about eighteen miles away. I was unable to get to the spot until about 11 P.M., the accident having occurred about twelve hours previously. The patient was a Soudanese orderly belonging to the Uganda Rifles. He was a man of about 40 years of age. After the injury had been inflicted, he had to walk about 2½ miles to get into camp. Everything in the way of examination and treatment had to be done in a bush tent, by the aid of the light from a couple of hurricane lamps, and without any experienced assistant. The abdominal wound was in the left inguinal region, occupying the anterior abdominal wall for a length of about 6 inches, about 2 inches above, and almost parallel to Poupart's ligament. Protruding beyond the wound, and resting on the adjacent parietes, were several knuckles of gut, all bloodstained, and looking very ragged. The visceral peritoneum was hanging in shreds but there was no perforation of the intestine visible.

I enlarged the original wound, so as to allow an examination of the gut above and below the protruded portion, and also to give a freer access to the abdominal cavity. The intestine thus brought into view appeared quite normal. Doubtless the injected appearance of the external knuckles was largely due to the severe constriction they were subjected to by the edges of the wound interfering with the venous return. I thoroughly cleansed the protruding gut, as well as the adjacent portions. The abdominal cavity, as far as I was able to make out, did not show signs of extravasation into it. I next carefully loosened the parietal peritoneum from the subjacent transversalis fascia, the delicate layer of extraperitoneal fat rendering this comparatively easy.

The protruded knuckles were now carefully returned, and the parietal peritoneum of either side was brought together by sutures, the muscles were brought together by another set of sutures, and the skin and superficial fascia of either side were drawn together by a third line of sutures. The wound was dressed antiseptically, and I placed a firm pad over it, to resist as far as possible the pressure of the internal viscera on this weakened spot. On the buttock of the same side there was a deep wound, evidently inflicted by the second horn of the infuriated beast. This was dressed and a dose of opium administered. Unless any alarming symptoms should supervene, I asked his commanding officer to have him carried to the station in forty-eight hours, and by train to Makindu Hospital, where I could have him directly under my care.

In two days the patient came to hospital appearing to be in very good spirits. There was no pyrexia. The abdominal wound was healing perfectly; the action of the bowels was regular, and there was no pain over the wounded region. Progress from this time onwards was very rapid, the patient being discharged on March 21st, eleven days after the accident.

I would have kept him longer, but he appeared at the door of my hut on the morning of March 21st whilst I was at breakfast, and expressed a wish to return to his duties. Before leaving I got a rough truss made with a large pad to rest on

the line of the original wound, and told him most emphatically to wear it daily for a long time, which precaution I hope will prevent the formation of a ventral hernia.

E. Wynstone Waters,
Assistant Medical Officer to the Uganda Railway.
Mombasa, British East Africa.

A CASE OF SCARLATINA PEMPHIGOIDES.

Some months ago I was called to see a female child, aged 6, who was suffering from an attack of scarlatina of an apparently mild form. At the end of six days the fever had abated, and the patient was apparently convalescent. On the seventh day from the appearance of the typical rash the skin became covered with vesicles and the temperature rose again to 103° to 104° F.; this rise of temperature was accompanied by symptoms of arthritis in the knee-joints, elbow-joints, and wrist-joints. After three or four days the vesicles became merged together and pustular.

Under treatment by salicylate of soda the arthritis subsided, but the temperature remained high, ranging from 101° to 102°, and continued above normal for a period of ten days, during which time there was a free discharge of pus from the coalesced pustules. Although antiseptic dressings were carefully applied it was four weeks from the appearance of the vesicular rash before suppuration had ceased and the patient was able to leave her bed.

From this time the child made an uneventful recovery. The pustules had extended all over the trunk, limbs, face, and scalp, and so large was the crop that it suggested a complication of small-pox. However, there was no umbilication, nor was there any pitting after recovery, with the exception of two or three places on the face which had been scratched by the child. There was no albumen present in the urine, nor were any of the serous membranes affected. The mother and brother of the child had just recovered from scarlatina when she was attacked.

Sir Samuel Wilks in his lectures writes: "Last year I saw two cases where so large a crop of vesicles came out on the forearms that it suggested to the medical men a complication of small-pox." I do not, however, find any mention of a case where the vesicles were distributed all over the body and went on to the pustular stage with such profuse suppuration as in the case recorded. It appears to me that this might have been a case of varicella in some way exaggerated by the scarlatina virus, and thus took on such a severe type. I have seen isolated varicella vesicles go on to the pustular stage owing to some interference with their normal course. As the period of incubation of varicella is at times extended to 16 or even 18 days the child may have been exposed to infection before the onset of scarlatina.

Selby. Arthur Somers, M.B., B Ch., B.A.O.Univ. Dub.

A CASE OF PERFORATING GASTRIC ULCER.

On June 3rd, about 1.30 P.M., I received an urgent message to visit Mrs. O., aged 48, who had been taken seriously ill. I found that she had been suffering from chronic dyspepsia for some years, but had received no medical advice, although during the last week the symptoms of pain and discomfort after food had been much increased. About 12.30 P.M. she was suddenly seized with agonising pain in the stomach, with retching, but no vomiting, as she had taken no food since the previous evening. I found her in a state of extreme collapse, covered with a cold clammy sweat, and almost pulseless. Her face was drawn, and she was suffering intense pain. She had been given a little brandy, which increased the pain. On examination, I found great tenderness to the left of the epigastrium, in the left iliac region, and across the hypogastrium. There was no clavicular pain. The hepatic dulness was not diminished. Her breathing was almost entirely thoracic. The abdomen was slightly tympanitic.

From the history of the case, the sudden onset of the acute symptoms, and the extreme collapse, a diagnosis of perforating gastric ulcer was fairly evident. The surroundings of the patient precluded operative measures, and as she was too ill to bear removal to hospital, I ordered hot applications to the abdomen, and gave her ½ gr. of morphine hypodermically. When I saw her again in the evening she had somewhat rallied, and the pain was not nearly so severe. The pulse was a little stronger, and the body surface had recovered its warmth.

Early on Monday morning I was again called, and found the patient dying with all the symptoms of acute peritonitis. She was in a collapsed condition, though her temperature was 101° F., and the end came at 7 A.M., eighteen hours and a half after she was first taken ill.

Tiverton, Devon. G. Michelmore, M.R.C.S., L.S.A.

FOREIGN BODY TWENTY-FIVE YEARS IN THE EXTERNAL AUDITORY MEATUS.

J. M., aged 35, was sent to me by Dr. Reid. He stated that 25 years ago he had put a piece of slate pencil into his right ear, and that it had since remained in. I admitted him to the Royal City of Dublin Hospital. He was very deaf, and both ears were packed with dense masses of cerumen. After syringing for some time the mass of cerumen in the right ear was softened, and a hard substance was felt embedded in it. I could seize it with a forceps, but it would not come, so it was moved about as much as possible inside the ear, and the cerumen further softened with oil, and next day, when the ear was being syringed, a piece of slate pencil, three-quarters of an inch long, came out; it was sharply pointed at one end, and had got jammed sideways in the meatus, where it lay for 25 years, causing no pain, but considerable deafness from the accumulation of cerumen. The membrana tympani was thickened and rough on the surface, but not unduly vascular, and after inflation by Politzer's method the hearing in the right ear was improved to whisper at 2 metres and C. V. at > 5 metres.

The above is a good instance of how long a foreign body may remain in the external auditory meatus without producing any serious inflammatory reaction.

Arthur H. Benson, F.R.C.S.,
Ophthalmic and Aural Surgeon to the Royal City of Dublin Hospital; Surgeon to St. Mark's Ophthalmic Hospital.

WASP STING OF THE TONGUE.

On the evening of September 7th a boy, aged 13, was brought to me who had been stung by a wasp on the under surface of the tip of the tongue twenty-five minutes previously. He was in great pain and salivating profusely. I found the tongue greatly swollen, hard, tender, and rounded in shape. The frænum was tightly stretched, and the tongue protruded nearly an inch beyond the teeth. A quarter of an hour later the organ had become still more swollen and quite immobile. Any attempt at movement produced pain in the floor of the mouth and in the neck. In the meantime the saliva ran away in astonishing quantities. The submaxillary glands were swollen and tender, and the widely-distended lingual ducts could be seen pouring out their secretion.

Thinking operative interference by no means a remote possibility, I kept the boy under observation for an hour and a half, by which time some movement had returned and the organ had become less tense. The salivation continued throughout the night, but the swelling rapidly subsided.

There is little doubt that had the insect flown far enough into the mouth to sting the soft palate the boy's life would have been in danger in a very few moments. The enormous activity of the salivary glands was the chief feature of the case. As pain seemed the severest symptom requiring treatment the tongue and mucous membrane of the mouth were brushed with a strong solution of carbolic acid, with the greatest relief to the sufferer. I saw no remote toxic symptoms; the pallor and faintness I attributed to fright.

Little Sutton, Chester. Herbert W. Nott.

POISONING BY STRYCHNINE: RECOVERY.

A recruit of the R.A.M.C. at Netley, disappointed that he had not been sent to South Africa, took one ounce of the liquor strych. hydrochlor. *B.P.* This solution was kept in the operating theatre to be used should there be untoward symptoms during chloroform anæsthesia, and the man was employed in the theatre. He had eaten a hearty dinner rather more than half an hour previously. An hour after swallowing the solution, symptoms came on. He called for assistance, and was at once given an emetic of mustard and

water. The spasms shortly became very severe, and chloroform was administered. During the administration vomiting set in with spasm of the glottis. He became asphyxiated, and as breathing stopped, and he was apparently dying, tracheotomy was performed. His condition at once improved, and the chloroform anæsthesia was continued. His stomach was then emptied by the stomach pump, and washed out with a solution of permanganate of potash (1 in 1,000). On recovery from the anæsthesia violent convulsions supervened; these were treated by the administration of chloroform, off and on, by relays of the young surgeons undergoing instruction here, for a period of fifteen hours. About eight ounces of chloroform were used altogether. During the next two days he was in a state of continual unrest owing to choreiform movements of his hands and feet. The tracheotomy tube was removed in twenty-four hours, and the wound closed, healing taking place by first intention. The subsequent progress of the case towards recovery was uneventful.

The following notes have been collected for me by Major Birt, R.A.M.C.:

The patient's weight was 118 lbs. or 43.5 kilogrammes, and the amount of the salt he swallowed was 4⅜ gr. or 284 milligrammes, which equals 5.29 milligrammes per kilogramme of body weight. Wynter Blyth considers that man is probably as susceptible to the action of the poison as cats or dogs. The lethal dose for the former is 0.75 milligramme per kilogramme of body weight injected subcutaneously. He adduces an instance in man where a dose of 0.24 milligramme per kilogramme taken by the mouth proved fatal. On the other hand death has been averted after 7 to 9 grs. have been swallowed, and Dixon Mann, in his *Forensic Medicine*, refers to 3 cases which survived after swallowing 20 grs. He also instances a case in which death had been caused by ½ gr. in twenty minutes.

WILLIAM DICK, Major R.A.M.C.,
Assistant Professor of Military Surgery.
Royal Victoria Hospital, Netley.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

GREENWICH UNION INFIRMARY.

CASE OF ULCERATIVE ENDOCARDITIS TERMINATING FATALLY BY RUPTURE OF THE HEART.

(Reported by W. DENISON WIGGINS, M.R.C.S., L.R.C.P., Senior Assistant Medical Officer to the Infirmary.)

A MAN, aged 56, was admitted to the Infirmary on November 2nd, 1899, suffering from pneumonia. He had always had good health till five days before admission, when he had "cold shivers," and was obliged to remain in bed. He suffered from thirst, dyspnœa, and cough with blood-stained expectoration, but no pain. On admission his pulse was small, but regular in force and frequency. His tongue was dry and brown. Examination of his chest showed all the signs of acute lobar pneumonia, limited to the right lower lobe. There were redux crepitations, and the sputum was rusty. The temperature, which was 101° F. on admission, fell during the night to normal; it seemed, therefore, that the crisis had occurred. The superficial cardiac dulness was increased both to the right and the left, while the apex beat was diffuse and feeble, being most marked in the vertical nipple line; the normal heart sounds were feeble, and no abnormal *bruit* was detected, from which it was concluded that the pneumonia was complicated by dilatation of the heart. A specimen of urine examined at the time of the crisis had a specific gravity of 1008; was acid, and contained a trace of albumen. On the second night after admission the temperature rose to 102° F., and fell again to normal in the morning; it maintained this suppurative type till the end. On November 8th he was delirious, and his condition generally worse. The physical signs remained much the same; the consolidation in the lung did not appear to be clearing up; the bronchial breathing and moist sounds were still present. On November 19th he became worse rather suddenly. The breathing became more embarrassed, and he was unconscious. The pulse could not be detected, and the heart sounds also seemed to have disappeared; while there was an increase in the superficial cardiac dulness. He lived in this state for three days, the temperature before death rising above 105° F.

Post-mortem examination showed that the right lower lobe of the lung was consolidated, and was reddish in colour. On opening the pericardium the sac was found to be full of blood clot and serum of recent origin. The pericardium, both of the sac and the heart, was much roughened and thickened by a recent deposit of lymph. The heart was large and flabby, both ventricles being dilated. The site of the hæmorrhage was just at the base of the aorta to the left of the pulmonary artery. The rupture communicated with the interior of the heart at the base of the left aortic semilunar valve. Two of these valves were found to be covered with a considerable deposit of fibrin, the deeper parts of which were beginning to break down. The deposit was limited to the ventricular aspect of the valves, and appeared to occlude the aortic orifice. The aorta was covered with numerous patches of atheroma, and at one spot there was an ulcer. No infarcts were found. The liver, spleen, and kidneys were all slightly cirrhotic.

REMARKS.—This case appears remarkable for two reasons, that ulcerative endocarditis should perforate the heart, and that life should have continued for three days subsequent to the perforation. The sudden change in the patient's condition and the appearance of the pericardium bear out the latter statement. It would appear that the atheromatous valves became ulcerated after pneumonia, and that the ulceration perforated the heart, causing an effusion of blood into the pericardium. (The specimen of the heart can be seen in the Museum of the Royal College of Surgeons.)

LIVERPOOL ROYAL INFIRMARY.

CASE OF CARCINOMA OF THE UPPER JAW TREATED BY INJECTIONS (1) OF YEAST CULTURE, (2) COLEY'S FLUID.

(Under the care of Mr. F. T. PAUL, Surgeon to the Infirmary.)

[Reported by J. H. WATSON, M.R.C.S., L.R.C.P., late House-Surgeon.]

THE patient, a male, J.M., was admitted on June, 1898, under the care of Mr. Paul (who has kindly permitted me to publish the case). At this time he complained of intense pain in his right eye, around which there was some fulness, the eyeball also being protruded.

An operation was undertaken by Mr. Paul. The orbit was found to be full of new growth which was cleaned out entirely, the eyeball being removed at the same time; unfortunately it was observed that this was only a process of a more extensive growth in the upper jaw which had to be left at this operation as circumstances did not permit its removal. The patient soon recovered from the effects of the operation and went home. Microscopic examination of the growth showed it to be a glandular carcinoma. In October he returned, the growth now bulging on the right half of his face. Removal being out of the question, injections of a culture of yeast, kindly supplied by Mr. Manders, were made into the subcutaneous tissues of the intrascapular region on the following dates:—

	Quantity.	Temperature of patient.	Result.
November 11th ...	10 c.cm.	102	Febrile symptoms.
,, 18th ...	,,	104	Rigor.
,, 27th ...	,,	100	Febrile symptoms.
December 6th ...	,,	103	,, ,,

The injections were followed by a rise of temperature, coming on in about three hours; the temperature reached its highest point at the sixth hour and regained the normal in about twelve hours. During this period (November 11th to December 8th) the patient had been taking ½ ounce of brewer's yeast daily in stout, but it was very evident that the tumour was increasing, so this treatment was abandoned.

On December 9th inoculations of Coley's fluid were commenced and continued as follows:

	Dose.	Remarks.
	Minims.	
December 9th... ...		In no case did the patient's temperature rise to more than 100.5°, nor was there any marked discomfort.
,, 10th... ...	1	
,, 13th... ...	2	
,, 16th... ...	3	
,, 18th... ...	4	
,, 21st... ...	5	
,, 24th... ...	5	

The injections were made directly into the growth. The tumour had now attained a very considerable size, and further treatment with the Coley's fluid was deemed useless. During this time the patient was gradually losing ground. He died on February 26th.

Remarks.—This case is recorded simply as an instance in which the yeast treatment advocated recently by Manders and de Backern was given a trial in a case presumably suitable. The results, as stated above, were very discouraging, the patient enduring a considerable amount of discomfort with absolutely no benefit. As regards the Coley's fluid, its effect in this case was almost *nil*, thus differing from a case of lympho-sarcoma which was treated similarly in Mr. Paul's wards, in which, as the dose increased, the reaction was very marked, as is usual in such cases, but no permanent benefit was derived in either case. The latter case was recorded in the British Medical Journal, September 10th, 1898.

CORK STREET HOSPITAL, DUBLIN.

CASE OF MALIGNANT SCARLATINA.

(By John Marshall Day, M.D., Resident Medical Officer.)

A.B., female, aged 7, was taken ill on Friday at 3 A.M. with severe headache and vomiting; towards morning both ceased, and she was comparatively well till night, when she again complained of headache and became delirious.

On admission to hospital on Saturday afternoon she was complaining of feeling very weak, her throat was red and swollen, there were red patches on the lower part of the abdomen and upper parts of the thighs; the pulse was 116 and weak, the temperature 102 4°; the child appeared very ill and was very restless. In the morning she was worse, the pulse was 132, the external temperature 101.8°, the internal 104.8°, collapsed, restless, and sighing; body covered with a rash-like petechial typhus, throat dark red, slough on the left tonsil. After a hot pack and enema of boracic saline solution at a temperature of 102°, the rash became brighter like scarlatina, but patchy on trunk and limbs. She slept well during the day and took nourishment freely. In the evening the internal temperature was 104.6°, she was weaker, restless, turning from side to side, and the extremities were inclined to get cold. During the night she slept fairly well, the temperature fell to 101.4°, but she died quietly next morning at 9.30 on the fifth day of her illness.

Remarks.—The chief points of interest are: (1) The comparatively long duration of the case before its fatal termination; (2) the apparently decided improvement on the first and fourth days; (3) that no complaint was made of throat symptoms, and that they were not severe; (4) that the rash was extremely like typhus. These two last points should be kept in mind. I have seen several cases in which the absence or slightness of throat symptoms led to the true nature of the disease being overlooked, whilst on several other occasions I have seen the peculiar rash causing a faulty diagnosis, the cases being sent to hospital as typhus.

Gifts to Leeds Medical Charities.—The late Mr. Robert Arthington, who recently died at Teignmouth, made an order shortly before his death transferring the sum of £20,000 to the names of the treasurer of the Leeds General Infirmary and of a member of the Committee of the Leeds Hospital for Women and Children. Of this sum £12,000 is to provide a semi-convalescent hospital for women in connection with the Leeds Infirmary, and the remaining £8,000 is to go to the fund for rebuilding the Hospital for Women and Children.

REPORTS OF SOCIETIES.

CLINICAL SOCIETY OF LONDON.

Sir R. Douglas Powell, Bart., M.D., F.R.C.P., President, in the Chair.

Friday, October 26th, 1900.

Clinical Evening.

Plastic Operation for Rectal Incontinence.

Mr. Jackson Clarke showed a man, aged 57, on whom he had performed a plastic operation for rectal incontinence, remaining after a modified Kraske's excision of the rectum for cancer, which left a gap extending from the anus upwards for 2 inches. The patient had regained, since July 12th, complete control over the sphincter.

Myositis Ossificans Progressiva.

Dr. J. Walter Carr showed a boy, aged 7, with extensive ossification of the muscles of the back, the pectorals, the latissimus dorsi, the biceps, and the left rectus abdominis, with exostoses of several bones of the head and limbs. The great toes were shortened and turned outwards.

Radical Cure of Frontal Sinus Empyema.

Dr. Herbert Tilley showed a woman, aged 50, who had had a purulent discharge from the nostrils for five years. Numerous nasal polypi were removed, pus was drained from the maxillary antrum by the alveolar method, and the external operation for frontal sinus was performed. The patient left the hospital cured twenty-one days after the operation.

Growth in Left Tonsillar Region.

Dr. StClair Thomson exhibited a man, aged 40, who had a new growth in the left anterior pillar of the fauces. There were no enlarged glands and there was no evidence of specific infection. The growth was not increasing and sections showed it to be papillomatous in structure.

Mr. Symonds thought the growth was an epithelioma, and that it would be very difficult to remove except by excision of the lower jaw.

Mr. Jackson Clarke said he would remove the growth without hesitation, as it appeared to be epitheliomatous.

Intractable Ulceration of the Palate and Lips.

Mr. G. R. Turner showed a man, aged 58, who eighteen months before had had ulceration of the gums and for six months had had ulceration of the lips: he had had a chancre eighteen years earlier. He had been treated with potassium iodide, mercury, and arsenic, but without result. Microscopic examination of scrapings showed a small-cell infiltration, but no evidence of tubercle or syphilis.

Mr. Campbell Williams considered the disease resembled acute miliary tuberculosis.

Dr. Rolleston thought it was a toxic inflammation.

Mr. Turner personally looked upon it as tuberculous. Lately the ulcer had shown a tendency to heal.

Hæmophilia with Disease of the Knee-joint.

Dr. Percy Kidd showed a boy, aged 6, a bleeder, with great bony swelling of the right knee-joint. For a fortnight there had been irregular pyrexia. The swelling subsided under rest. It came on after a fall: he had had similar attacks previously.

Dr. Sansom described a case in which complete recovery occurred in adult life.

Mr. Symonds suggested that as displacement of the bones was occurring the disease might be tuberculous.

Dr. Kidd said the boy had a brother who was a bleeder, and that as he himself was a bleeder he did not think it right to invite surgical treatment.

Cutaneous Carcinomatosis.

Dr. Rolleston showed a single woman, aged 34, whose breast had been excised for early carcinoma on September 29th, 1897. During the last 15 months some 105 subcutaneous nodules had appeared over the neck, head, and trunk. An excised nodule proved to be a spheroidal-celled carcinoma.

Congenital Cystic Kidneys.

Dr. Norman Dalton exhibited a woman, aged 35, whose abdomen had been enlarged for a year. There was a lobulated elastic swelling on each side of the abdomen in the region of the kidney. The urine sometimes contained albumen, and the daily quantity of urea was reduced by about a half. The cardio-vascular changes of Bright's disease were present.

Dr. Percy Kidd asked why these changes should be present only in some cases of cystic disease of the kidneys.

Mr. Symonds remarked that the enlargement of the kidneys was sometimes very unequal.

Dr. Sansom said that a large amount of cardio-capillary sclerosis might follow very little fibrosis of the kidney.

Dr. Dalton said that arterial sclerosis would depend upon the amount of functional renal tissue left.

Transfacial Bullet Wounds.

Dr. H. Batty Shaw showed a man, aged 31, who, when on service in South Africa, was struck by a Mauser bullet which passed from the front of the right ear to the left upper eyelid. He was unconscious for eight or nine days; then there was found to be paralysis of several of the cranial nerves.

Hæmorrhage into the Spinal Cord.

Dr. Marris (for Dr. Beevor) exhibited a man, aged 57, who was suddenly seized with tingling in the arms, weakness of the hands, pain between the shoulders, and weakness of the legs. The condition had not made any progress after the first half-hour. There was wasting of the hands and of the right forearm with spasticity of the left leg. There was analgesia and thermal anæsthesia in the right leg and right side of the trunk, but no tactile anæsthesia.

Central Sarcoma of the Lower Jaw after Enucleation.

Mr. Charters Symonds showed a girl, aged 16, in whom a central sarcoma of the left half of the lower jaw had been excised three and a-half years before. The lower jaw was in a serviceable condition, and a denture had been successfully adapted. Wrinkling of the skin was the only deformity present.

LIVERPOOL MEDICAL INSTITUTION.

Edgar Browne, F.R.C.S.Edin., President, in the Chair.

Thursday, October 25th, 1900.

Resection of Bowel in Strangulated Hernia.

Mr. Newbolt read notes of two cases of strangulated femoral hernia in which he had resected the bowel, using Murphy's button to approximate the ends. One occurred in a woman, aged 70; the other in a man, aged 41. Both recovered; the button passing in the first case after 18 days; in the second after 24 days.

Mr. Paul said, notwithstanding the success which had attended the use of Murphy's button in Mr. Newbolt's cases, these appliances were daily losing favour. They had served an excellent purpose in teaching surgeons the importance of accurate and watertight approximations, and they had shortened the time occupied by the operation, but bowel and stomach wounds could now be both accurately and quickly united with simple suture, and by so doing the risk of the presence of a foreign body was avoided. Recently he had only used the button when the difficulties attending sutures were unusually marked.

Mr. R. W. Murray remarked upon the difficulty there was in knowing how best to deal with the injured gut, whether to return it or to excise it, and suggested that in all cases of doubt it would be better to excise it. He related a case of strangulated inguinal hernia in which he had successfully removed a gangrenous portion of small intestine and uniting the cut edges by simple suture, a method he much preferred to the use of Murphy's button.

Trephining for Meningeal Hæmorrhage.

Mr. George Hamilton related a case of successful trephining for meningeal hæmorrhage. A boy, aged 8, while running, fell on the pavement. Though feeling a little sick, and vomiting once, he played about till bedtime. Next morning he appeared to be well, but became drowsy and unconscious the following day. The main features in the case were the considerable period elapsing between the accident and the symptoms, and the marked dilatation and fixation of the left pupil. These led to the almost certain diagnosis of hæmorrhage. The boy made an excellent recovery, and never had a rise of temperature.

Mr. Thelwall Thomas drew attention to the importance of dilatation of the pupil in extradural hæmorrhage as an indication of cerebral pressure in the middle fossa of the same side; if, on trephining and removal of the extradural clot oozing of blood still proceeded from deeper in, and light gauze packing failed to arrest it, the external carotid artery should be tied.

Treatment of Chronic Pneumonia by Puncture.

Dr. MacAlister directed attention to cases of pneumonic consolidation which, when running a very chronic course, resolved immediately after exploratory puncture with an aspirator needle. This sequence of events had occurred so frequently in his experience that he had come to regard it as something more than coincidence. He related cases in which recovery had quickly followed the puncture, and he also referred to a case of consolidated lung associated with fever of several weeks' duration in which improvement leading to hope of recovery ensued, but afterwards proved to be the result of some malignant trouble connected with the liver, from which the patient ultimately died.

Dr. Blair Bell mentioned a recent case in which unresolved lung existed fourteen days after croupous pneumonia. Puncture with a trocar brought about rapid resolution. He thought the cure was explicable if the comparison were made between the lung in a state of inflammation, and inflammation of any other part of the body where the knife or needle gave rapid relief, probably by causing a flow of blood from the inflamed part, thereby relieving the condition of stasis. It was advisable to use a large puncturing instrument such as a trocar to ensure bleeding, and to adopt this method of treatment as soon as ordinary natural resolution seemed improbable.

Dr. T. R. Bradshaw wished to draw attention to the manner of operation. It was never desirable to use an exploring syringe with a small needle, because, if fluid were found, the aspirator would have to be employed, and so the patient put to the pain of two punctures instead of one; or the fluid might be too thick to run through the small needle; hence a fairly large needle connected with an aspirator should be used.

Other Communications.

Dr. James Barr read a note on the so-called pulsus paradoxus; also one on a case of myelopathic albumosuria.—Dr. Bradshaw said that Dr. Barr's was the twelfth undoubted case of myelopathic albumosuria which had been thoroughly investigated, and now that the condition was more generally understood cases were becoming more frequent. The records showed that it was a disease of the second half of life, and all but one of the recorded cases were in males. The first symptoms were generally associated with bone lesions, but there was reason to believe that the presence of albumose could be detected at an early period if it were sought for. It was highly important to distinguish this form of albumosuria from that which was often found in pneumonia and other inflammatory conditions, which the late Sir William Roberts called peptonuria. The form under consideration was always associated with a cellular infiltration of bones, known as multiple myeloma, but the manner in which they were related was at present merely a matter of conjecture. The term myelopathic albumosuria was a convenient one to express the association.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

Milner Moore, M.D., President, in the Chair.

Thursday, October 11th, 1900.

At the first ordinary meeting of the session, held in the Medical Institute, fifty-four members and three visitors were present.

The Secretary read a communication from the General Secretary enclosing a copy of the report of the Committee on the Early Decay of Teeth in Britain.

New Members.

The following gentlemen were elected members of the Branch—namely, Sidney Barwise, M.D., Derby; G. W. Brown, M.B., C.M., Oakengates; C. G. Higginson, L.R.C.P., M.R.C.S., Birmingham; and J. McGlashan, M.B., C.M., Bedworth.

Vermiform Appendix.

Mr. Jordan Lloyd showed a vermiform appendix containing a fishbone and the skin of a small seed. The patient, a lady, aged 29, had had during the previous ten weeks three attacks of abdominal pain and constipation, and for seven days before operation obstruction had been complete; it was for this condition that surgical interference was called for. The obstruction was found to be due to adhesions of the transverse colon and its attached omentum to the cæcum and mesocæcum. The appendix lay quite free behind and below the cæcal head, and was successfully removed in the usual way; its terminal half inch only was thickened and inflamed.

Renal Calculus.

Mr. Morrison showed a renal calculus which he had removed, together with the greater part of the right kidney, on September 12th, 1900, from a gentleman, aged 53, whom he had attended with Dr. Huxley. The calculus was virtually a cast of the kidney pelvis; it was 4 inches long, weighed just less than an ounce, and presented tuberous processes corresponding to the calyces. The patient had suffered from pain in the right loin as long as he could remember, and when 18 had passed a stone *per urethram*. Otherwise his health had been uniformly good until some four months before, when an increase of the lumbar pain was followed by an abscess, which burst in the right buttock, leaving an unhealed sinus. Exploration under anæsthesia traced the sinus to the stone embedded in foul disorganised kidney substance, which was removed. The nephrectomy was difficult owing to the matting of adjacent structures consequent on the chronic inflammation, and a portion of the kidney was left behind in the pedicles. The ascending colon was disturbed in separating adhesions, and two days after operation there was a slight leakage of liquid fæces, which continued for several days. The patient is now convalescent.

Non-Tuberculous Meningitis.

Dr. Saundby read a paper on non-tuberculous meningitis with especial reference to its etiology. The object of the paper was to draw attention to a group of cases which had occurred in the practice of the General Hospital during the present year, and presented the type described by Lees and Barlow as posterior basal meningitis. In all these cases the diplococcus of Still had been found. Dr. Saundby exhibited charts showing the incidence of meningitis in England, in Birmingham, and in the practice of the General Hospital during the past twenty years, and showed as to the last that in the present year, although only eight months had elapsed, the average of 6 cases per annum had been much exceeded, there having been 11 cases admitted up to date, of which 6 were of the posterior basal type, and so far as his own practice was concerned no cases of this type had been admitted previously during the last fifteen years. The notes of the cases were read, and photographs of the patients and a good photomicrograph of the meningococcus and a microscopic specimen of it were exhibited. The clinical and pathological relationships of posterior basal meningitis to epidemic cerebro-spinal meningitis were pointed out, and Dr. Saundby expressed the opinion that these cases were a sporadic form of cerebro-spinal meningitis, and that the recent increase in their number suggested the danger of an epidemic outbreak such as had occurred in Dublin at the beginning of the present year. The matter was brought forward on account of its importance to the public health, and members were asked to say whether there had been any increase in the cases of meningitis that had come under their care during the present year, whether they had observed the occurrence of this particular type of disease, and what opinion they entertained of the connection, if any, between so-called posterior basal meningitis and epidemic cerebro-spinal fever.

Dr. Hugh Thursfield, Medical Registrar and Pathologist to the Hospital for Sick Children, Great Ormond Street, London, attended by invitation and took part in the discussion. He thought that the question of the identity of the sporadic and epidemic forms of cerebro-spinal meningitis must be regarded as all but settled. The distinctions between them were bacteriological and clinical. On the side of bacteriology, Dr. Still had, in 1898, described an organism in eight cases of posterior basic meningitis, which in most respects was identical with that described by Weichselbaum in cases of the epidemic disease. The two chief differences were the different degrees of vitality of the organisms isolated, and their behaviour in broth media. As regards the first of these, some allowance must be made for the variation in the media, and in individual methods, and the second point appeared by no means certain. Dr. Thursfield described the organism he had found in the cases examined, and showed pure growths on various culture media. The best method of obtaining a pure growth he believed to be the puncture of the spinal canal after death with the strictest precautions. Cultures made from the exudation after the skull had been opened were very apt to be contaminated with other organisms. On the clinical side, the chief difference between the sporadic and epidemic forms was the age of the patients attacked, the sporadic form appearing principally in infants under 2. The diagnosis of the disease was discussed, and some of the more striking symptoms. In regard to the treatment, Dr. Thursfield quoted the opinions of several physicians, given at the recent International Medical Congress at Paris, in favour of lumbar puncture as a therapeutic agent, remarking that, though it seemed on pathological grounds to be an irrational practice, yet that there was a very considerable body of Continental and American opinion in favour of its adoption. In the course of his address Dr. Thursfield showed several illustrative lantern slides.

Professor R. F. C. Leith, after referring to the value of Dr. Thursfield's investigations into the clinical signs met with in meningitis, discussed the relation of the pneumococcus to primarily-occurring meningitis. It might cause a meningitis indistinguishable from that described by Dr. Saundby or by Drs. Lees and Barlow, or from the epidemic cerebro-spinal form. The diplococcus of Still was found in Saundby's cases and in those of Lees and Barlow; hence they might safely be regarded as the same. In many forms of epidemic cerebro-spinal meningitis the causal organism was the diplococcus intracellularis meningitidis of Weichselbaum, and it was necessary therefore to consider whether the pneumococcal, the Weichselbaum, and the Still forms of meningitis were the same or different diseases. The first was separated from the other two by distinctions of such importance relating to the morphological, biological, and pathogenic characters of the pneumococcus that it was probably different from the others. The latter two forms apparently differed chiefly in their severity and in the rapidity of their course; and though differences existed in their causal organisms, yet they were probably merely modifications of the same germ. Still's diplococcus was probably an attenuated form of Weichselbaum's; and if that were so, then posterior basal meningitis was truly a chronic or sporadic form of epidemic cerebro-spinal meningitis.

Dr. Walter Jordan said he had no desire to oppose Dr. Saundby's proposition that post-basal meningitis and epidemic cerebro-spinal meningitis were one disease. He thought they might adopt that conclusion, unless bacteriology afforded a means of separating them. With regard to the proposition that there was an increase in the number of these cases foreshadowing an epidemic of the disease, he had certainly not noticed any increase in his own practice at the Children's Hospital, nor heard of any observed by his colleagues. The records of the hospital showed that they were practically never without such cases, and that there was no substantial increase either this year or last.

Dr. Codd said that at the Wolverhampton General Hospital they had a somewhat similar experience to that of Dr. Saundby. Simple meningitis was distinctly rare, but in the early part of July there had been three cases, one under Dr.

Malet, and two under the care of the speaker, being typical cases of posterior basic meningitis, while Dr. Malet saw a similar case in private about the same time. Dr. Codd made special inquiries at the time as to whether the cases could have come in contact with one another, but found that they had lived in districts wide apart, which they had not left till they were admitted. A few notes of the cases were then given, showing that while all presented head retraction and rigidity of the neck and spine, one had a well-marked Stellwag's sign, rapidly recovering under iodide. The second was comatose, had Kernig's sign, and double optic neuritis. *Post mortem* there was great distension of the ventricles of the brain, with lymph on the base and down the spinal cord. The lymph contained diplococci. The third case had consolidation at the right base, but was without pulmonary symptoms, had many bedsores on admission, and developed a hard tumour over the right occipital bone, and recovered slowly under iodide.

Dr. KAUFFMANN had not noticed any evident increase in the number of cases of meningitis in Birmingham. Neither in the out-patient room, nor in the infirmary had any cases come to him this year. He suggested that the numerous instances of the disease observed by Dr. Saundby might be due to a circumscribed local epidemic in a slum where close contact and defective hygienic arrangements tended to keep the disease alive. He saw no reason why posterior basal meningitis should not, under favourable circumstances, become epidemic, like most other bacterial diseases, whether the diplococcus described by Still was identical with Weichselbaum's described in epidemic cerebro-spinal meningitis, or whether it was essentially a different micro-organism. He had had under his care this year a solitary case of posterior basal meningitis occurring in a child of 5 months, and ending fatally on the eighth day of illness. In conformity with the rapid course, the convexity of the brain was found largely affected by the inflammation; but, as was usual in the "vertical" cases, no visceral disease could be found. Regarding therapeutic measures, Dr. Kauffmann thought that vigorous mercurial treatment might lead to good results, as it had already apparently done in the hands of Lees and Barlow; for as a rule the disease ran a sufficiently protracted course to allow the mercury time to act.

Dr. STACEY WILSON also discussed the paper, and described cases of the disease which had come under his observation in the General Hospital.

Dr. SAUNDBY replied to the various speakers, and moved

That Dr. Alfred Hill be requested to restore the heading meningitis to the list of causes of death published by him in his annual reports upon the health of this city.

The motion was seconded and adopted unanimously.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

FREDERICK FARROW, M.R.C.S., President, in the Chair.

Saturday, October 6th, 1900.

PRESIDENT'S ADDRESS.

THE PRESIDENT delivered his inaugural address, entitled Some Suggestions on the Work of a Medical Society. He urged that a greater number of members should contribute papers and show specimens, not necessarily waiting until they had a rare case or specimen to show; that members engaged in various branches of scientific research should bring before the Society not only their finished results, but should demonstrate and give accounts of their methods; that each member should induce his friends to join the Society. The greater the roll of members the larger was the fund of experience on which the Society could draw. A large membership was desirable in that it developed the social aspect of the Society, which was quite as important as the scientific, and was of great value in causing the medical men of a district to have mutual knowledge of, and confidence in, each other, thus promoting a spirit of friendliness and *esprit de corps*.

A CASE OF URÆMIA.

Dr. WILLIAM CRAIG showed the kidneys from and read notes of a case of uræmia with extreme atrophy of the kidney substance from cirrhosis. The total weight of the two kidneys was 736 grs. The patient was a single woman, aged 42, a weaver. She fell in the street, after walking up a steep hill, while stooping to pick up a handkerchief, and struck her head on the ground. When seen a few minutes later she was lying in a dazed state, and, although able to give her name and address, could tell nothing more. She had worked regularly up to the time of her seizure, but occasionally had to leave work on account of headaches. There was no history of gout, rheumatism, alcohol, syphilis, lead poisoning, or scarlatina. The specific gravity of the urine was 1012; there was albumen present in abundance, and hyaline casts were found. As she lay in bed in a dazed condition there was frequent jerking of the limbs, but no paralysis was detected. The diagnosis of uræmia could only be made after the necropsy, as before death cerebral compression from hæmorrhage or injury could not be excluded. The absence of cardiac hypertrophy and of vascular changes was surprising, and it was difficult to see what was the exciting cause of the attack.

Drs. GOYDER, MITCHELL, CAMPBELL, and KERR discussed the case; and Dr. CRAIG replied.

SPECIMENS.

Dr. JAMES KERR showed a number of sketches of the fundus oculi from recent cases, including glaucoma, pigmentation of the macula, and blocking of the retinal vessels.—Mr. BASIL HALL showed the following specimens: A sloughing ovarian cyst, due to stretching of the pedicle; a "Baker's cyst" of the elbow from a case of osteo-arthritis; the bones from a case of amputation of both feet for gangrene.—Mr. C. F. M. ALTHORP showed a sarcoma of the breast from a woman aged 62, and a vermiform appendix from a case of recurrent appendicitis; the appendix contained a large concretion, and was adherent to the ovary and Fallopian tube.—Dr. MCGEE showed an oxalate of lime calculus removed from the urethra of a child aged 5.—Dr. ANGUS showed a gall stone about seven-eighths of an inch in diameter, which had caused acute intestinal obstruction, and had been passed by the rectum after the administration of enemata.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

E. H. BENNETT, M.D., President, in the Chair.

Friday, October 26th, 1900.

AT this, the annual meeting, the following resolutions were unanimously adopted:

(1) That the Royal Academy of Medicine approves the project of establishing a central laboratory in connection with the Irish lunatic asylums, and directs the General Council to take such steps as may be deemed expedient to further the proposal.

(2) That Professor Adam Politzer, of Vienna, be elected an Honorary Fellow of the Academy.

The result of the ballot for officers and Council was declared as follows:

President: Dr. Lombe Atthill. *General Secretary:* Mr. John B. Story. *Secretary for Foreign Correspondence:* Sir J. W. Moore. *Medical Section:* Dr. H. T. Bewley, Dr. J. Craig, Dr. H. C. Drury, Sir George Duffey, Dr. R. A. Hayes, Dr. A. N. Montgomery, Dr. C. Norman, Dr. J. O'Carroll, Dr. R. T. Smith, Dr. H. C. Tweedy. *Surgical Section:* Mr. Chance, Mr. Croly, Mr. Dwyer, Mr. T. E. Gordon, Mr. Heuston, Mr. G. J. Johnston, Mr. Lentaigne, Mr. Swanzy, Mr. E. H. Taylor, Mr. R. H. Woods. *Obstetrical Section:* Drs. Cole-Baker, Fleming, Flynn, Glenn, Horne, Jellett, Lane, A. J. Smith, E. H. Tweedy, Wilson. *Pathological Section:* Drs. A. H. Benson, H. T. Bewley, J. B. Coleman, F. C. Crawley, W. R. Dawson, H. C. Drury, H. C. Earl, E. J. McWeeney, A. R. Parsons, J. A. Scott. *Section of Anatomy and Physiology:* Drs. A. Birmingham, D. J. Coffey, D. J. Cunningham, A. Fraser, Charles Patten, W. Taylor. *Section of State Medicine:* Drs. E. MacD. Cosgrave, W. R. Dawson, N. Falkiner, E. J. McWeeney, F. C. Martley, J. M. Redmond.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

J. B. HELLIER, M.D., President, in the Chair.

Friday, October 19th, 1900.

CASES OF TUBAL GESTATION.

DR. H. BRIGGS (Liverpool) related a case of tubal pregnancy, with formation of a tubal mole which had been retained in the unruptured Fallopian tube for four months, no hæmatocele being present. This was removed by posterior vaginal section. The distended Fallopian tube was unruptured. The absence of hæmatocele was a feature of interest, and it was suggested that the tension in the tube had been kept by leakage of blood from the uterine end of the tube into the cavity of the uterus. On section the tube contained a mole with some fluid blood.

Dr. DONALD related a case of tubal pregnancy in which a five-months' fœtus with placenta was removed by abdominal section.

The patient, aged 40, had had one child sixteen years before. She complained of recurrent attacks of abdominal pain with amenorrhœa for nine

months. The pain was of only six weeks' duration. The abdomen presented a diffuse fluctuating swelling, reaching from the pelvis to the level of the umbilicus. The uterus was considerably enlarged, and could be felt lying in front and to the right of the swelling. Abdominal section was performed. A sac containing a living fœtus, of five-months development, was discovered; the fœtus was removed, amniotic fluid escaping. The placenta occupied the floor of the pelvis, and was removed without difficulty from the broad ligament. Hæmorrhage was readily controlled by silk ligatures at the uterine and pelvic border of the broad ligament. The placenta probably occupied the Fallopian tube, inasmuch as there had been no history of rupture. A few hours after the operation a very large decidual cast was expelled from the uterus. The patient made a rapid recovery.

Dr. ARNOLD LEA showed a ruptured Fallopian tube from a case of extrauterine gestation with hæmatocele. The tube was removed *per vaginam* after evacuation of a quart of clotted blood from the peritoneal cavity.

Remarks were made by Drs. LLOYD ROBERTS, BISHOP, FAVELL, and others.

CASES AND SPECIMENS.

Dr. GEMMELL (Liverpool) showed a fibro-cystic pedunculated tumour of the uterus removed by abdominal section from a patient aged 32 years. The tumour had grown outwards between the layers of the broad ligament, but was removed without difficulty, the uterus remaining intact. The patient made an uninterrupted recovery.—The PRESIDENT showed (1) a uterus pregnant 5½ months with multiple myomata. The patient, aged 33, had a tumour filling up Douglas's pouch, which would have obstructed labour. Abdominal section was performed, and the uterus with the tumours removed by supravaginal abdominal hysterectomy. The patient rapidly recovered; (2) bilateral suppurating ovarian cysts removed by abdominal section from a patient who had suffered from septic puerperal infection after delivery fourteen months previously.—Dr. E. T. DAVIES (Liverpool) read notes of 3 cases of complicated ovarian cystic tumours. (1) Patient, aged 58, with recurring attacks of pelvic pain for several months. At the operation the pedicle of the tumour had undergone torsion, and numerous adhesions to bowel and omentum were present. (2) Patient, aged 43, having had ovariotomy thirteen years previously, was suddenly seized with acute abdominal pain and peritonitic symptoms. A cystic tumour was felt in the pelvis. Abdominal section revealed an ovarian cyst with acute torsion of the pedicle and hæmorrhage into the tumour. Both cases recovered (3) Patient, aged 53, with a solid tumour of the ovary, accompanied by ascites and the symptoms of acute peritonitis. At the operation no twisting of the pedicle was found, but the peritoneum showed evidence of acute inflammation. This patient, though extremely ill with a temperature of 104° and pulse of 140 at the time of operation, made a good recovery.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

JOHN GORDON BLACK, M.D., President, in the Chair.

Friday, October 19th, 1900.

PRESIDENTIAL ADDRESS.

THE PRESIDENT gave an inaugural address on Some of the Duties of Members of the Medical Profession to each other.

ANEURYSM OF THE CORONARY ARTERIES.

Dr. WARDROP GRIFFITH read a paper on aneurysm of the coronary arteries, and showed specimens in illustration.

INTESTINAL SUTURE.

Mr. LITTLEWOOD advocated a method of intestinal suture for gastro-enterostomy and enterectomy by excising a portion of the mucous membrane and then uniting the cut edges of the stomach and intestine by means of a continuous catgut suture, interrupting the suture by knotting it at two equidistant points. The parts were to be clamped and held in apposition with Doyen's clamp forceps. An incision was made down to the mucosa, an elliptical portion of mucous membrane excised, and the coat separated a short distance from the mucosa; this prevented the troublesome closing sometimes occurring after gastro-enterostomy. Both this operation and enterectomy allowed a broad surface consisting of all the coats to be easily united by the continuous suture. It was not found necessary to bring the two serous surfaces in contact along the whole line of suture. A patient, a woman aged 51, was shown, on whom he had operated three months before, removing the cæcum for malignant disease and uniting the ileum to the ascending colon by the method described. Reference was also made to 5 cases of gastro-enterostomy successfully performed by this method.

OTHER COMMUNICATIONS.

Cases and specimens were shown by Mr. A. E. LITTLE, Dr. CHADWICK, Dr. ALLCOCK (Goole), Mr. BASIL HALL (Bradford), Mr. A. L. WHITEHEAD, Mr. H. LITTLEWOOD, Dr. BARRS, Mr. B. G. A. MOYNIHAN, Dr. WARDROP GRIFFITH, Mr. LAWFORD KNAGGS, Mr. CONSTABLE HAYES, and Dr. E. F. TREVELYAN.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this Society was held at Lavender Hill, S.W., on October 10th. Dr. DUKE occupied the chair in place of the President (Dr. Biggs), who was absent through illness.—Mr. NOBLE SMITH, Surgeon to the City Orthopædic Hospital, gave a demonstration on the use of apparatus in orthopædic surgery generally, and for spinal curvatures in particular. He showed how advantageously the medical man could apply his surgical knowledge in the efficient construction and application of such apparatus so as to fix diseased joints very thoroughly. He considered that if such a course were generally adopted there would be far fewer severe operations required, operations which left the patient minus a joint or a limb. If tuberculous disease of the spine could be almost always cured by fixation and general treatment—as it could be—then there could be no reason why the same disease in other than spinal joints should not be treated with equally good results. It was chiefly a question of efficient fixation. Mr. Noble Smith then demonstrated the application of a spinal splint made of malleable iron, which could be adjusted and fitted by the surgeon himself with great accuracy. By use of this apparatus in angular curvature gradual and considerable straightening of the curvature and expansion of the thorax and freedom of respiratory movements were obtainable. It was in every respect more effective than the ordinary "jacket." In treating lateral curvature where an apparatus was necessary, the use of the muscles was encouraged and not interfered with. Mr. Noble Smith showed photographs and plaster casts portraying the stages of treatment of severe varus as carried out at the City Orthopædic Hospital. The ultimate result was very satisfactory, producing a natural foot freely movable, without that rigidity which almost invariably followed severe operations on the bones.—Several members of the Society who took part in the subsequent discussion expressed themselves as having been very favourable impressed by the results of this treatment of spinal deformities in cases which had come under their own observation.

GLASGOW SOUTHERN MEDICAL SOCIETY.—The annual dinner of the Glasgow Southern Medical Society was held on October 18th in the St. Enoch Station Hotel, Glasgow. A large and representative gathering assembled under the chairmanship of Dr. WILLIAM WATSON, President of the Society. Dr. John Stewart and Dr. William MacMillan acted as croupiers. Sir Hector C. Cameron, Honorary President, was the guest of the evening, and among others present were Principal Story and Professors John Glaister and Ralph Stockman. The CHAIRMAN proposed "The Queen and Royal Family" in felicitous terms. To Dr. JOHN STEWART was assigned the toast of "The Navy, Army, and Reserve Forces," and Surgeon-Lieutenant-Colonel NAPIER replied. Dr. R. H. PARRY then gave the toast of "Our Honorary President," and in doing so made reference to the honours which had recently fallen to Sir Hector Cameron. From Her Majesty the Queen he had received the honour of knighthood, and by the University he had been selected for the Chair of Clinical Surgery. It seemed appropriate that about the same time he should be elected to the position of the Honorary President of the Glasgow Southern Medical Society. Sir HECTOR CAMERON, in responding, thanked those present for the cordial manner in which they had received the toast. While he valued the honours of which lately he had been the recipient, he could not but feel gratified by the knowledge that he was also receiving honour at the hands of his own professional friends. He could assure them that it would be a source of pleasure to him to be of service at any future date to the Southern Medical Society. Dr. EBEN. DUNCAN proposed the toast of "The University," and emphasised the lamentable position of laboratory accommodation in the Medical Faculty. Principal STORY, in acknowledging, said that the present wants of the University resolved themselves into one—money. He was glad to be able to inform them already this want had in some degree been supplied. For some time laboratory extensions had been in progress, and he hoped that ere long further extensions would be inaugurated. To this end money was required, and he felt convinced that as soon as the wealthy men of Glasgow realised the present needs, the necessary funds would be forthcoming. The other toasts which followed included "Our Society," proposed from

the Chair; "Kindred Societies," proposed by Dr. Macgilvray, and replied to by Professor Glaister and Dr. S. Sloan; "Our Guests," by Dr. J. W. Allan, acknowledged by the Rev. D. McCorquodale; and "The Chairman," given by Dr. C. E. Robertson.

Bristol Medico-Chirurgical Society.—The annual meeting was held in the Medical Library of University College, Bristol, on October 10th. Dr. D. S. Davies gave the presidential address. After introductory remarks, pointing out the inter-relation of public health with medicine and surgery, the problems of disease causation were viewed from the ancient standpoint, a superstitious dread of mysterious inexplicable disease and from the modern view, a careful study of the life-history of causal parasitic organisms and of conditions causing or assisting their distribution. Epidemics, increasing along definite lines which were to be carefully traced back to initial cases, or, better still, to be checked by making the conditions of life unfavourable to the parasitic habit, and secondly, individual first cases were to be dealt with. The evolution of parasitic species was then discussed on the lines of Leuckart's, and Payne's views, that these diseases originated from free living species which had adapted the parasitic habit under favourable environment, and were subject to the three parasitic laws of entrance, migration, and exit. Finally the interacting causes—political, social, and medical—which were at work during the eighteenth century and led up to the modern conditions of life and labour: new social conditions under which the struggle with cholera had to be waged, unsuccessfully at first, but in time resulting in the beginnings of modern public health work which meant far more than the mere care about communicable disease, and had for its wider aims care of every class of the community; objects not yet fully realised but improving from day to day and full of promise for the future.—Mr. Paul Bush (Honorary Secretary), Mr. James Taylor (Editorial Secretary), and Mr. L. M. Griffiths (Honorary Librarian), read their respective annual reports, the latter mentioning that there were at the present time nearly 20,000 volumes and 226 current periodicals in the Bristol Medical Library.—Dr. Barclay Baron was elected President-elect; Mr. Paul Bush was re-elected Honorary Secretary. Dr. Michell Clarke, Mr. J. Dacre, Dr. B. Rogers, Mr. Munro Smith, Mr. James Taylor, and Dr. H. Waldo were elected to serve on the Committee. Messrs. J. Taylor, Munro Smith, and L. M. Griffiths were nominated to serve on the Library Committee.—Dr. Cyril H. Walker showed a patient with congenital dislocation of the lens, and Dr. A. Ogilvy made some remarks on the case.

Association of Certifying Factory Surgeons.—The annual meeting of this Association took place at the Midland Hotel, Bradford, on Friday, October 26th. There was a large attendance of members, and every arrangement was made for their suitable reception by the local factory surgeons under the able direction of Dr. W. Gilchrist Burnie. Owing to the unavoidable absence of the retiring President, Professor Wright (Leeds) took the chair.—The Honorary Secretary's report on the work done by the Association during the past year dealt especially with the action taken in respect to the two Factory Bills brought before the House of Commons during the last session of Parliament, and the attempts made to secure a revision of the fees paid for investigations and reports upon accidents and cases of industrial poisoning. Concerning the latter the report stated that the Home Secretary had decided to do nothing in the matter until the Government Factory Bill, which was apparently still to be introduced, should become law. Several minor points, which had been brought to the notice of the Department, were stated to have been more satisfactorily dealt with. Statistics compiled from the annual reports of members were set forth at length, and proved most instructive. Suitable reference was made to the loss sustained by the whole body of certifying surgeons in the death of Dr. Arlidge, and to the particular loss felt by the Association through the death of Dr. Livy, of Bolton. The Association was shown to be in a very flourishing condition, both bank balance and the roll of members exhibiting a steady upward tendency. Dr. Chas. W. Thorp (Todmorden) was elected President for the coming year. In his address he dealt particularly with the increased importance of the duties performed by certifying surgeons, though regretting that in certain instances increased responsibility did not carry with it an increase in remuneration. Though deprecating anything like trade unionism, the advantages of co-operation in obtaining a better recognition for valuable services were suitably illustrated. In alluding to the half-time system, the President expressed the opinion that children spending half a day in the mill were much better physically and mentally than if they attended school for the full day. He accounted for this to a great extent on the ground of the bad sanitary condition of most schools, and the comparatively healthy surroundings found in connection with modern mills.—Dr. W. B. Barclay was re-elected Honorary Treasurer, while Dr. W. F. Dearden was again placed in office as Honorary Secretary. Dr. J. W. Millar (Dundee) and Dr. H. C. Purdon (Belfast) were again invited to act as Corresponding Secretaries for Scotland and Ireland respectively. The annual dinner subsequently took place, the guests of the evening being Mr. Seal and Mr. Peacock, Her Majesty's Inspectors for the Bradford District of Yorkshire.

Society of Anæsthetists.—The annual dinner of the Society took place on October 19th at the Café Monico, London. The President, Dr. J. F. W. Silk, who occupied the chair, having given the toast of "The Queen," Mr. Morton Smale proposed "The Society of Anæsthetists." He said that the Dental Hospital of London, with which he was connected, now had a staff of eleven anæsthetists. Formerly there were but two, but although their numbers had increased it had been whispered that the eleven were not enough to cope with the large amount of work. The dental profession was honourably connected with anæsthetics, as the names of Wells and Morton in America, and of Robinson in this country, testified. All anæsthetists were true altruists; they enabled the surgeon to glorify himself by the performance of the great operations of to-day, whilst they (the anæsthetists) simply effaced themselves. As to the choice of the three chief anæsthetics, he had had personal trial of all three, and could say that where chloroform was good ether was better, and nitrous oxide best. He believed the anæsthetic of the future would be nitrous oxide or one of its combinations.—The President, in replying to the toast, said the Society was now in its eighth session. Its work during the seven past sessions had been good, as the papers in the Society's two volumes of *Transactions* fully testified. Its numbers had nearly doubled during the seven years, and it was beginning to receive applications for membership from the colonies. Anyone who could show that he was interested in anæsthetics might (under a recent relaxation of the original rules) be elected a member.—Dr. Dudley Buxton, in a humorous speech, proposed "Our Guests," remarking that the members of that Society were a highly sociable people, and always glad to meet the surgeons, even longing for their society when they (the anæsthetists) had but little to do.—Professor Rose, in response, remembered the time when the surgeon was still glad to hurry through the operation, as in the pre-anæsthetic days. It added immensely to the surgeon's pleasure to work with a skilled anæsthetist; it enabled him to do his work with undivided attention.—Mr. Bowlby also considered that the surgeons owed much to the anæsthetists, who were now teaching the students everywhere to become skilled administrators. In the war in South Africa, from which he had just returned, it would have been better if there had been many more anæsthetists.—The musical arrangements of the evening were under the direction of Mr. Schartau; Mr. John Warren gave a ventriloquial interlude, and Mr. P. Kirwin some recitations, and all were much applauded.

Ipswich Clinical Society.—A meeting was held on October 20th; Mr. C. K. Moseley in the chair.—Mr. J. R Staddon showed a case of congenital dislocation outwards of the left patella. The patient suffered no inconvenience, being able to walk, bicycle, etc., like a normal individual.—Mr. W. F. Fryer showed an oldish man with a large papillomatous growth rising from the skin of the back just above the left buttock.—Dr. H. H. Brown showed a specimen of a ruptured tubal pregnancy. When first seen the patient was in a state of collapse, almost pulseless, and with a distended abdomen. After the injection of 50 ounces of saline solution abdominal

section showed the abdomen to be full of blood. The rupture in the tube was found, and a double ligature was applied. After rallying slightly the patient died on the following day. The specimen showed that the ligatures remained firm and effectual. Dr. Brown also showed a uterus removed successfully for carcinoma of the cervix.—Mr. R. W. Brogden read a paper on extrauterine pregnancy, with notes of two cases:

Case I.—A multipara, aged 36. No distinct menstruation for four months; abdominal swelling noticed one month. The swelling was central, rising almost to the umbilicus; dull on percussion, with resonance on both sides. Swelling slightly tender. Cervix was fixed forwards behind the pubes. The uterus could not be well defined, being surrounded by what was taken to be inflammatory thickening. Sound passed in to the normal extent, and showed uterus to be strongly anteverted. Slight losses of blood *per vaginam* occurred, and the temperature after a time began to rise. An incision through the posterior vaginal wall, where pus was thought to be, gave exit to a small quantity of foul grumous material. Temperature fell, but the general condition of patient became worse. Laparotomy revealed a large cyst behind the uterus containing foul grumous matter and a macerated fœtus. The cyst was thoroughly douched and drained, but the patient died the following night. Case II.—Multipara, aged 27. History of two months' pregnancy, and three weeks previously what was supposed to be a miscarriage. Only one slight hæmorrhage *per vaginam* occurred eighteen days after admission to hospital. Complained of pain in the upper part of the abdomen. A rounded swelling could be felt on the right side, reaching to within an inch or two of the umbilicus, and separate from the uterus. The uterus was fixed, with the cervix jammed down into the vagina. Attacks of acute pain in the swelling led to operation. This revealed a large thin-walled vascular cyst close to the right side of the uterus. It contained blood, placental tissue, and a dead fœtus. Hæmorrhage was very profuse, and saline injections had to be given during the operation. The patient was extremely collapsed after the operation, but made an uneventful recovery.

Messrs. Hossack, Reigate, Staddon, Fowler, Ward, Fryer, and the President joined in the discussion which followed.—Mr. Wynne Davies showed (for Dr. Casley): (1) A case of amputation at the hip-joint by the anterior racket method for a large sarcoma of the femur; the patient was a girl, aged 21; the growth was very rapid, involving the upper half of the femur and the vertical chain of glands in Scarpa's triangle; she made a good recovery, and there was no sign of recurrence six weeks after operation; (2) a girl, aged 15, with an intractable intestinal fistula, the result of a typhlitic abscess two years ago; three operations had been done with only temporary success; a fourth operation in which the bowel was thoroughly freed from all adhesions to the surrounding tissues and the sinus cut out, and a double row of Lembert sutures inserted, had resulted in a permanent cure.

Windsor and District Medical Society.—The first meeting of the session of this Society was held on October 24th, the President (Mr. W. B. Holderness, J.P.) being in the chair.—Three radiographs were shown by the President: (1) One of the shoulder-joint some months after the reduction of a dislocation, showing the humerus split and broken; (2) one of a broken patella; (3) one of a case of achondroplasia.—Dr. E. B. Hulbert showed several drawings and photographs of epidemic eczema in Savill's disease. He also exhibited, by kind permission of Mr. J. R. Lunn, of St. Marylebone Infirmary, various drawings and photographs of rare skin and other diseases, including melanotic sarcoma, Raynaud's disease, nævus of face, rodent ulcer, and a rare eruption in a case of renal disease.—Mr. Clinton T. Dent, F.R.C.S., Surgeon to St. George's Hospital, delivered an address on the surgical lessons of the war. After pointing out that the great interest evinced a few months back in the surgical results of the war was already waning, and that there was a risk of much valuable experience gained being lost to posterity; he said that experiments with small-bore bullets carried out before the war did not conform closely with the results arrived at by practical experience. He considered that, well as the members of the Royal Army Medical Corps had worked, the system was capable of improvement, more particularly in the direction of the formation of an Army Medical Reserve composed of men of active medical and surgical experience and standing. The mild character of the wounds had been greatly exaggerated, but there still remained a great improvement on the results of former wars. The conditions favouring these satisfactory results were (1) the small-bore bullet, (2) the use of antiseptics, (3) the climate, and (4) the condition of the men and their surroundings. After comparing the Lee-Metford and Mauser bullets and their velocities, Mr. Dent described the eccentric rotation of bullets which led to their retention in soft tissues even when no bone had been struck. Clean perforations of bones which abounded in cancellous tissue were common, but when the shaft of a long bone was struck the bone was broken up and expanded as well as fissured. Union usually took place in consequence with much callus. Mr. Dent pointed out that the wounds of great joints (the ankle excepted) did well, as also did head injuries, in which trephining was frequently practised and in every case demonstrated the necessity of relieving the pressure on the brain from the splintered inner table and thus embodying the teaching of Ambroise Paré 350 years ago. He concluded a most lucid and suggestive paper by insisting on the great difficulty of the surgical problems and on the need for long and minute study of them before a class of specialists in military surgery could be treated.—Mr. S. Osborn, F.R.C.S., of the St. John Ambulance Brigade, who had been serving with the Van Alen Field Hospital attached to Lord Methuen's column, spoke in corroboration of the remarks made by Mr. Dent, that the surgical lessons obtained from the present war were of the greatest value as showing how much less serious were the injuries in this war as compared with those in previous wars. This satisfactory condition he attributed largely to the pointed character of the Mauser bullets taken in connection with the excellent antiseptic precautions adopted almost immediately on receipt of the injury. Having been present at the Turco-Greek war he was able to compare the injuries with those in the Boer war, and showed by comparing the Martini bullets with their blunt extremities which he had removed in the former war with the conical ends of the Mauser bullets of the present war, what a much more formidable projectile the former was. Mr. Osborn raised the question whether, by the attachment of a skilled sanitarian to every army corps and the formation of *Corps Sanataire* similar to what is already in use in the Continental armies, the sanitary condition of the army in the field might not be improved, and the terrible mortality on the medical side in future wars be considerably lessened.

Sheffield Medico-Chirurgical Society.—The opening meeting of this Society was held on Thursday, October 11th, when the President (Dr. E. Wearne Clarke) delivered his introductory address on Medicine in Fiction. Commencing by a brief reference to medicine as seen in pictorial art, ancient and modern, the address proceeded to notice medicine and its practitioners as depicted in drama, particularly in the plays of Molière and Goethe's *Faust*, as represented in Mephistopheles's advice to the student. Turning to the novelists, the address next dealt with some of the doctors and medical incidents portrayed in the works of Balzac, by Tolstoi in his *Anna Karénina*, and by Conan Doyle in *The Curse of Eve* and other works. The "Dr. Lydgate" of George Eliot's *Middlemarch* was next described at some length; and the address closed with some references to Samuel Warren's *Diary of a late Physician*, to Marion Crawford's *The Ralstons* (as an example of Transatlantic medicine), and finally to Ian Maclaren's well-known "Dr. Maclure" in his book *Beside the Bonnie Briar Bush*.

"Living out of Town."—Reference was recently made in these columns to Dr. Vivian Poore's observations on the influence of locality on expectation of life, and particularly on the ill-effect of living near the centre of large towns rather than on their outskirts. It has been estimated that the sacrifice of 10 per cent. of a man's working day spent in travelling to and from the heart of a great city means an eventual increase of 25 per cent. of his working years. It is stated that the New Zealand Government proposes, as owner of the railways, to issue weekly tickets to the poorer classes with the view of relieving the congestion in the cities. In 1889 Hungary established what is known as the "zone system" on a similar base, which has resulted in a vast increase of traffic, and has consequently been attended by financial success.

National Registration of Plumbers.—A conference on the National Registration of Plumbers was held in Birmingham, on October 24th. Resolutions were passed calling for parliamentary recognition of the main idea, the framing of a scheme for a Registration Bill, and the establishment of two grades of registration, one for operative plumbers, dealing with workmanship, and the other for both master plumbers and inspectors, requiring a higher standard of technical knowledge.

REVIEWS.

THE LIFE OF HUXLEY.

LIFE AND LETTERS OF THOMAS HENRY HUXLEY. By his son, LEONARD HUXLEY. (London: Macmillan and Co. 1900. Two vols. with portraits and illustrations. 30s. net.)

FIVE years ago, at the age of 70, Professor Huxley passed away from amongst us; now, in these volumes, his vigorous individuality, with its personal charm, its abundant flow of playful humour, and above all its intense devotion to truth and abhorrence of shams, lives again, depicted by his own hand in letters extending over the whole of his adult life. It is fortunate that so many of these letters have been preserved, though we can hardly imagine the recipients having done otherwise than cherish them, and that they have been placed at the disposal of his son, who with excellent judgment has left them, as far as possible, to tell their own tale. The book may be read from cover to cover without the personality of the biographer once intruding itself between the reader and his subject, and in all respects nothing but praise is to be accorded to the manner in which the task has been carried through.

The story of Huxley's life has been told before, by himself in an autobiography in 1890, and in various notices which appeared after his death, and it will be more profitable to cull from these pages a picture of the man himself than, save incidentally, to tell again his personal history, which was indeed told in these pages at the time of his death.

The son of a schoolmaster he received but little regular school education, and that of no very advantageous kind, but an eager thirst for knowledge, and a fortunate association with some who were able to help and to stimulate him, led him to educate himself, though upon unusual lines. A journal which he commenced to keep at the age of 15 shows him teaching himself German, dipping into metaphysics, and laying down a scheme of work to be done, which he subsequently annotated to show the extent to which he had fulfilled it.

When 16 he commenced the study of medicine by going to assist first one brother-in-law who was practising in Rotherhithe, and, subsequently, his other brother-in-law, who practised in the north of London. Having obtained a free scholarship at Charing Cross Hospital, he embarked upon regular studies, and whilst a second year's student discovered "Huxley's layer" in the hair follicle. The lad, about this time dabbling in perpetual motion, interviewed Faraday, and came away dissatisfied, but he writes: "Some future day, perhaps, I may be able to call Faraday's attention more decidedly." Then, after winning many prizes and a gold medal for anatomy and physiology at the First M.B. Examination of the University of London, he obtained a commission in the Royal Naval Medical Service, and, after a sojourn at Haslar Hospital, was appointed Assistant Surgeon to the *Rattlesnake*, a ship about to start upon a four years' surveying cruise. The letters of this period do not fully display the humour of those of a later date, that spirit of fun which never deserted him to the end of his life; they are in bitter earnest, the reflections of a young man without means and without influential friends, save such of his teachers as had become impressed with his talent.

It is singular that despite his successes as a student, which were impossible had he not thrown himself heart and soul into his work, the practice of his profession never appears to have greatly attracted him. Indeed, it is seldom alluded to, except as a means to the end of obtaining a livelihood, and then in no enthusiastic terms. Thus he writes:

> A man of science may earn great distinction, but not bread. He will get invitations to all sorts of dinners and *conversaziones*, but not enough income to pay his cab fares. Again, if we turn to practice, it is still the old story—wait; and only after working like a galley slave and intriguing like a courtier, there is any chance of getting a decent livelihood.

It would seem that, although he had passed the First M.B. Examination, he did not become possessed of any medical qualification beyond the entrance examination into the Royal Naval Medical Service until some years later, when he obtained the Membership of the College of Surgeons, and there is reason to believe that the Membership was obtained rather as a qualification for the Hunterian Professorship than with any intention to practise. Nor do any contribution to medical science, nor even allusions to his medical work o board ship appear, and on the return of the *Rattlesnake* fro her cruise, during which he had become engaged a Sydney to Miss Heathorn, his future wife, he sough and obtained a sinecure appointment to enable him t work out the enormous mass of material which h had accumulated. Difficulties occurred after a time as t the renewal of this appointment, and he left the service thus finally severing his connection with the active pursui of medicine, although at one time he appears to have ente tained some idea of practising in Sydney.

The work done during and immediately after the cruise c the *Rattlesnake* placed him at once in the first rank as a ma of science, and he was elected a Fellow of the Royal Society i 1851, though the parsimoniousness of the Admiralty place obstacles in the way of the full publication of his results, an he was unsuccessful in obtaining several appointments whic he sought. But in 1853 he writes to Miss Heathorn:

> My course in life is taken. I will *not* leave London. I *will* make mysel a name and a position, as well as an income by some kind of pursuit co nected with science, which is the thing for which Nature has fitted me she has ever fitted anyone for anything.

In his discouragement he had entertained the idea of takin up applied chemistry for practical purposes, but finding tha his pen was affording him some means of support, whils there was some prospect of a permanent appointmen being offered to him, he comes to the conclusion, "I would be absurd to go hunting for a chemical bird i the bush when I have such in hand." Thenceforwar he supported himself by writing, by lecturing, and by variou professorships, examinerships, and other appointments getting through a prodigious amount of work and ofte dangerously near to a breakdown, which came at last in mid career. He managed, however, to realise a comfortabl income, though this was never at any period of his life at a commensurate with his transcendent abilities.

Nevertheless, like many who have gone through the fire o the struggle to live, he was generous to others who had bee less fortunate, and we find him striving to obtain assistanc for the family of a shipmate who had fallen upon evil times and even selling his gold Royal medal, worth some £50, i order to assist his brother's family. Doubtless there are othe instances of liberality which are unrecorded, and one exampl of generous kindness known to the present writer is perhap known to no one else now living.

Equally generous was his help to younger workers in th field of science. After his return from the cruise in th *Rattlesnake* he wrote:

> I am very grateful to them (that is, the bigwigs of science), and if it eve happens that I am able to help a young man on (when I am a bigw myself!) I shall remember it.

The pledge he then gave he acted upon all his life.

On the night of December 31st, 1860, waiting for the birt of his first son, whom he was to lose, he writes in his journal:

> 1856-7-8 must still be "*Lehrjahre*" to complete training in principles histology, morphology, physiology, zoology, and geology, monograph work in each department. 1860 will then see me well grounded and read for any special pursuits in either of these branches.
>
> It is impossible to map out beforehand how this must be done. I mu seize opportunities as they come, at the risk of the reputation of desultor ness.
>
> In 1860 I may fairly look forward to 15 or 20 years "*Meisterjahre*," a with the comprehensive views my training will have given me, I think will be possible in that time to give a new and healthier direction to a biological science.
>
> To smite all humbugs, however big; to give a nobler tone to science; set an example of abstinence from petty personal controversies, and toleration for everything but lying; to be indifferent as to whether th work is recognised as mine or not, so long as it is done. Are these n aims? 1860 will show.
>
> "Waiting for my child. I seem to fancy it the pledge that all the things shall be."

Such was his chosen programme, adhered to in the mai although the pressure of circumstances hurried him into th arena of public discussion before the expiry of the period. I 1859 *The Origin of Species* was published, and Huxley's generou nature was stirred to the core by the storm of denunciatio and ridicule which it brought forth. He writes to Darwin:

> And as to the curs which will bark and yelp, you must recollect th some of your friends, at any rate, are endowed with an amount of co bativeness which (though you have often and justly rebuked it) may sta you in good stead. I am sharpening up my beak and claws in readiness

Elsewhere he expresses his view, that it is "a good thir for a man, once at any rate in his life, to perform a publ war dance against all sorts of imposture." Again, he tel

Darwin that he should be "like one of the blessed gods of Elysium and let the inferior deities do battle with the infernal powers."

Of the tremendous influence exercised by Huxley in driving home to the mind of the public the great principles of evolution it is not needful to speak here. Darwin's bulldog, as he styled himself, was for years the intermediary to whom the thinking public who were not skilled naturalists owed their clearest appreciation of the problems involved.

But it was an uphill fight. As he expresses it to Sir Joseph Hooker, "we have a devil of a lot to do in smiting the Amalekites."

The story of the famous Oxford meeting of the British Association, at which he administered a stinging and well-merited rebuke to the then Bishop of Oxford, who had carried ridicule beyond the bounds of good taste, is told in these pages, but unfortunately no one can recall the exact words used. In playful reference to this incident he later described himself as being "episcopophagous."

To the many examples of playful humour which these pages contain may be added the following:—Lord Kelvin was exhibiting, at a meeting of the Royal Society, a wooden model of a novel form of calculating machine, which, by the rolling of a sphere or a cylinder upon a cone was capable of making calculations otherwise involving higher mathematics. Discussion had fallen somewhat flat, the considerations involved being too complex to be grasped on the spur of the moment, when Huxley rose in his place and observed that if anything could increase the contempt which the biologist must feel for the mathematician, it would be that this thing of wood was able to perform the operations for which they usually employed their heads.

In 1862 he published his first book, *Man's Place in Nature*. He had submitted the proofs to a friend, at whose identity we can but guess, and was strenuously advised not to publish them lest he should bring a storm about his head. But

> There was just a little—a mere *soupçon*—in my composition of the tenacity of purpose which has another name; and I felt sure that all the evil things prophesied would not be so painful to me as the giving up that which I had resolved to do, upon grounds which I conceived to be right.

And of the book itself he writes:

> It has had the honour of being freely utilised without acknowledgment by writers of repute; and finally it achieved the fate, which is the euthanasia of a scientific work, of being enclosed among the rubble of the foundations of later knowledge and being forgotten.



Huxley in 1881, from a photograph taken by H. Huxley. (By permission of Messrs. Macmillan and Co.)

At a later period in his career an attack was made upon him on the subject of vivisection. It so happened that Huxley personally disliked experiment upon animals, and never followed any line of investigation in which such experiments are required. Nevertheless, he felt that they were a necessity, and that those who did work, in itself disagreeable, for the good of humanity were not to be branded. His advocacy of a reasonable attitude towards the question went far to convince all but fanatics, and to secure moderation in the restrictions imposed. He was appointed upon a Royal Commission to inquire into the question, and used to relate with great gusto an incident, which does not find a place in this memoir, how a lady wrote to him, and pronounced that she was a freethinker, and therefore did not believe in hell; this she regretted, as she would have liked to feel sure that he would go there.

Of his prodigious industry, some idea may be gathered from the fact that in addition to editorial work, which he at one time undertook, he published no fewer than 89 essays, over 20 books, and 175 scientific memoirs. Of these many were of the first importance, and all were characterised by studious care.

Indeed the mastery of expression which distinguishes all that he wrote was not attained without trouble, and such was his literary fastidiousness that anything which was to be published was subjected to repeated revision. The rule which he propounded to himself was:

> Be clear, though you be convicted of error. If you are clearly wrong, you will run up against a fact some time and get set right. If you shuffle with a subject and study chiefly to use language which will give you a loophole of escape either way, there is no hope for you.

The excellence of style to which he attained renders his writings a storehouse of aphorisms. What can be more true than that:

> History warns us that it is the customary fate of new truths to begin as heresies and to end as superstitions;

or than that:

> Science is nothing but trained and organised common sense.

As an example of his scientific conscientiousness may be mentioned his free admission of error as to the nature of Bathybius, the supposed protoplasmic material from the bottom of the sea, which he designates as "an ally of his youth, who has not quite verified the promises of that youth." Some years before he had written to Dohrn, whom he sometimes addresses as My dear Whirlwind:

> You have read your Shakespeare and know what is meant by "eating the leek." Well, every honest man has to do that now and then, and I assure you that if eaten fairly and without grimaces, the devouring of that particular herb has a very wholesome, cooling effect upon the blood, particularly in people of sanguine temperament.

To honours he was not wholly indifferent; while sounding a note of warning against seeking them as an object, he avows his gratification at their receipt, sometimes in very characteristic language, such as:

> I shall be glorious in a red gown at Cambridge to-morrow, and thereafter look to be treated as a PERSON OF RESPECTABILITY. I have done my best to avoid that misfortune, but it is of no use.

He enjoyed to the full his intellectual activity. As long as health permitted him to do so, he gloried in feeling his vigour, and his mental attitude towards life is thus well sketched in a note to Darwin:

> I do not know what you think of anniversaries. I like them, being always minded to drink my cup of life to the bottom, and take my chance of the sweets and bitters.

The temptation to go on quoting is almost irresistible, and one cannot refrain from giving at least one entire specimen of his epistolatory style:

> January, 1870.
>
> MY DEAR SKELTON,—Being the most procrastinating letter writer in existence, I thought or pretended to think, when I received your *Essays in Romance*, that it would not be decent to thank you until I had read the book. And when I had done myself that pleasure, I further pretended to think that it would be much better to wait till I could send you my Hume book, which, as it contains a biography, is the nearest approach to a work of fiction of which I have yet been guilty.
>
> The Hume was sent, and I hope reached you a week ago, and as my conscience just now enquired in a very sneering and unpleasant way whether I had any further pretence for not writing on hand, I thought I might as well stop her mouth at once.
>
> You will see, oddly enough, that I have answered your question about dreams on page 96.
>
> You will get nothing but praise for your book and I shall be vilipended for mine. Is that fact, or is it not an evidence of special Providence and Divine Government?
>
> Pray remember me very kindly to Mrs. Skelton. I hope your interrupted visit will yet become a fact. We have a clean bill of health now.—Ever yours very faithfully, T. H. HUXLEY.

Every sympathetic reader will find a rare treat in the perusal of these volumes, and surely no more forcible "Lay Sermon" has ever been preached than this unconscious revelation of high-mindedness and singleness of purpose.

Those who knew Huxley only as a hard hitting but always scrupulously fair controversialist, and make their first acquaintance with him as a man from these letters, will under-

stand the devotion of his friends, a devotion which took a very practical form at the period of his breakdown in 1872; those who knew him personally will find the mask of a slight and proper reserve removed, and a beauty of character revealed which, in his lifetime, could only be fully displayed to his most intimate friends.

"A man of letters and an artist, he has not merged the *man* in the man of science—he has sympathies for all, and an earnest, truth-seeking, thoroughly genial disposition which win for him your affection as well as your respect." So Huxley wrote of another, embodying in him his own ideals, and no more fitting words can be found in which to sum his own character.

C. S. T.

[The volume contains several portraits, among others that which by the kindness of Messrs. Macmillan we are enabled to reproduce on the previous page. It is from a photograph taken by one of his children in or about 1881. A portrait was published in the BRITISH MEDICAL JOURNAL of July 6th, 1895, to illustrate the obituary notice which appeared in that number, but this more unconventional portrait will be valued by many who knew Huxley in his habit as he lived.]

THE BOER WAR.

THE GREAT BOER WAR. By A. CONAN DOYLE. London: Smith, Elder and Co. 1900. (Demy 8vo, pp. 560, with five maps. 7s. 6d.)

WHEN Mr. Langman resolved to send to South Africa and maintain there at his own expense a hospital for 100 beds Dr. CONAN DOYLE was appointed one of the medical officers. He sailed with the hospital at the beginning of March and went with it to Bloemfontein, where it was inspected by Lord Roberts early in April, who expressed his pleasure at the efficient state in which he found it. Dr. Conan Doyle worked in the hospital all through the terrible time when every hospital at Bloemfontein had to extemporise beds for the cases of typhoid fever which came pouring in daily, and later on he was able to visit other parts of the theatre of war, and witnessed some of the fighting. Before leaving England he had begun to write this history of the war, but "the greater part," he tells us in his preface, "was written in a hospital tent in the intervals of duty during the epidemic at Bloemfontein. Often the only documents which I had to consult were the convalescent officers and men who were under my care. Under these circumstances some errors may have crept in; but, on the other hand, I have had the inestimable advantage of visiting the scene of this great drama, of meeting many of the chief actors in it, and of seeing with my own eyes something of the actual operations."

The book opens with a brief sketch of the history of the Boer Nations, and this is followed by chapters on the cause of quarrel, and on the negotiations. Next comes a chapter entitled The Eve of War, and then the story begins with the battle of Talana Hill. The narrative occupies about four-fifths of the book, and of this space about one-fourth is given to that first part of the war which brought us to the black week of December 10th to 17th, during which, to quote Dr. Doyle, "we had in the short space of seven days lost, beyond all extenuation or excuse, three separate actions." These actions were Magersfontein, Stormberg, and Colenso. In a few lines he gives a description of the way in which the British people met the reverse. "Misfortune had solidified us where success might have caused a sentimental opposition." But all these defeats had been suffered some seven thousand miles away, and the historian has to tell how in the intervals of waiting Ladysmith was assaulted, and for one weary day we hardened our hearts to the belief that it would fall.

Of the way in which Lord Roberts's operations for the relief of Kimberley were planned and carried out, Dr. Conan Doyle speaks with enthusiasm, but when he comes to the long halt at Bloemfontein the tone necessarily changes. The epidemic which then broke out is the greatest blot on Lord Roberts's campaign, for it is impossible not to feel that all was not done which might have been done to prevent the outbreak, and that the Commander-in-Chief, and the commanders of divisions, brigades, and battalions cannot stand altogether excused. "It is heartrending," writes Dr. Doyle, "for the medical man who has emerged from a hospital full o waterborne pestilence, to see a regimental water-cart being filled, without protest, at some polluted wayside pool." Dr Doyle thinks that the only thing to do is to arrange for al water to be boiled.

All through the campaign, while the machinery for curing disease was excellent, that for preventing it was elementary or absent. If bad wate can cost us more than all the bullets of the enemy, then surely it is worth our while to make the drinking of unboiled water a stringent military offence, and to attach to every company and squadron the most rapid and efficient means for boiling it—for filtering alone is useless. An incessant trouble it would be, but it would have saved a division for the army.

The last chapter, entitled Some Military Lessons of the War, is that to which many readers will turn first. It is not very pleasant reading. To the bravery and endurance shown by the men, Dr. Doyle pays a high tribute, but they had been trained in antiquated methods, and had not learnt to shoot straight. He confirms the impression gathered from many other sources that the average regimental officer is careful of the comfort but reckless of the lives of his men, that he loves luxury but endures hardship without a murmur, and that in spite of some surrenders which appeared to require explanation, he habitually shows fine personal gallantry, not always governed by cool judgment, but that in the higher intellectual qualities of a leader he is deficient. No doubt this is due to the cause suggested by the Warden of Merton in the *Nineteenth Century* last month—imperfect education and training. With regard to the medical service, Dr. Doyle has some observations to make, which, as they are certain to attract a great deal of attention and deserve to be very carefully considered by the medical profession we shall take the liberty of quoting in full:

There remains that medical department upon which so fierce a light has beaten. It has had less than justice done to it, because the desperate nature of the crisis which it had to meet was not realised by the public. For reasons of policy the grave state of the army in Bloemfontein was never made known, and at the moment when the public was reading optimistic reports the town was a centre of pestilence and the hospitals were crammed to their utmost capacity. The true statistics of the outbreak will probably never never come out, as the army returns permit the use of such terms as "simple continued fever"—a diagnosis frequently made, but vague and slovenly in its nature. If these cases were added to those which were returned as enteric (and they were undoubtedly all of the same nature), it would probably double the numbers and give a true idea of the terrible nature of the epidemic. Speaking roughly, there could not have been fewer than from six to seven thousand in Bloemfontein alone, of which thirteen hundred died.

At the time of this terrible outbreak the army depended for its supplies upon a single precarious line of rails, which was choked with the food and the remounts absolutely necessary for the continuance of the campaign. The doctors had the utmost difficulty in getting the tents, medicines, and other essentials for their work. They were overwhelmed with cases at the very moment when their means for treating them were at the lowest, and unhappily enteric is of all diseases the one which needs careful nursing, special nourishment, and constant attention. The result was in many cases deplorable. There were hospitals where the most necessary utensils were wanting. In supplying these wants locally there was, as it seemed to me, a want of initiative and of energy, but it sprang largely from an exaggerated desire on the part of the authorities to conciliate the Free Staters and reconcile them to our rule. It was thought too high-handed to occupy empty houses without permission, or to tear down corrugated iron fencing in order to make huts to keep the rain from the sick soldiers. This policy, which sacrificed the British soldier to an excessive respect for the feelings of his enemies, became modified after a time, but it appeared to me to increase the difficulties of the doctors.

Where the department seemed to be open to criticism was in not having more men upon the spot. Capetown was swarming with civil surgeons, and there was no difficulty in conveying them to Bloemfontein, Kroonstadt, or wherever else they were needed. But the situation was a most difficult one, and the men upon the spot, from General Wilson to the humblest orderly, were worked to their extreme capacity. It is easy now to criticise what they did not do, but it is just also to remember what they did.

The fact is that the true blame in the matter rests not with the Medical Department but with the composition of the South African army. The Medical Department is arranged to meet the wants of such a body of regular troops as Great Britain could put in the field, but not to provide for a great army of irregulars and colonials very much larger than could ever have been foreseen. It is unjust to blame the Medical Department for not being prepared for that which was a new thing, totally unforeseen by anyone even after the outbreak of hostilities.

We are rather disappointed that Dr, Conan Doyle does not discuss the question of ambulance and hospital transport. Our information is that the want of such transport under the direct control and constantly at the disposal of the medical service was at the root of many of the difficulties which pressed so hard upon the corps. We do not find any reference to the Australian Ambulance Corps[1] which had its own

[1] We have not noticed any reference in reading the book, and there is no entry in the index. But the index is imperfect, and as the book is likely to be used for reference, we venture to suggest that it should be improved.

transport, and for this reason was able in many emergencies to render assistance which was simply invaluable.

As to the future, Dr. Doyle is not ready with any cut-and-dried scheme, but he has some observations which we shall again venture to quote in full.

> One consoling fact we find amid much that is sad, and that is that we can at any moment draw upon the very best both of the senior and of the junior surgeons in our civil hospitals, and so supplement our army organisation. A medical reserve could be formed at very small cost which would ensure to the soldier the very best skill which the country can produce. At the same time, it cannot be denied that there is room for improvement in the *personnel* of the department, and in the spirit in which they approach their work. There are many conspicuous exceptions, but it appears to the civilian that there is too much that is military and too little that is medical in the relations between the department and those whom they serve. Better pay and a higher standard of examination (periodical if possible) are the only methods by which any lasting improvement can be effected.

With this quotation we shall take leave of a book which we would counsel everyone to read. Though published before the war is really over, it relates all its chief features: though it deals with a mass of details, it is never dull or confused; and though it has been written quickly, it shows no signs of haste, but possesses all the well-known charm of Dr. Doyle's graphic style.

LUNACY IN SCOTLAND.

The Forty-second Annual Report of the Commissioners in Lunacy for Scotland opens with a reference to the retirement of Sir John Sibbald and an appreciation of his services since 1870, and records that Dr. John Macpherson has been appointed in his place.

Statistics of Admissions.

The Commissioners state that of the 15,663 insane persons in Scotland, of whom they had official cognisance on January 1st, 1900, 2,374 were maintained from private sources, 13,237 by parochial rates, and 52 at the expense of the State.

The year 1899 showed a total increase of 250 registered lunatics, of whom 15 were private patients and 235 were pauper patients. Of these 250 only 3 were in private dwellings, and of the remaining 247 only 13 were private patients. The average increase (1895-99) of private patients in establishments was 37, and of pauper patients 303, so that the return for the year 1900 shows a considerable diminution in both classes.

The excess of admissions to the register over removals from it was 250 in 1899, being 98 below the last quinquennial average, and 237 below the excess for the year 1898, but the Commissioners show that the proportion of lunatics, never previously registered as lunatics, per 100,000 of population is steadily rising. This increase is not amongst the insane of the private class, but amongst the paupers, the proportion for the former class being 10.8 in 1899 as compared with 9.7 in 1874, for the latter class 51.3 in 1899 as compared with 34.5 in 1874.

Recoveries and Deaths.

The recoveries among private patients in the year 1899 were 19 fewer than in the previous year, but 17 above the last quinquennial average, while among pauper patients the numbers were 4 fewer than the previous year, but 80 above the last quinquennial average.

The number of private patients who died in establishments during 1899 was 165—that is, 6 more than in 1898, and 20 more than the last quinquennial average. The numbers for pauper patients were 934, or 118 more than in 1898, and 115 above the same average.

Attendants.

The Commissioners have ascertained that the great bulk of the changes among attendants and servants occur among those who have been for only a short time in asylum service. No less than 76 per cent. of the changes of last year resulted from voluntary resignations. The Commissioners, therefore, recommend that there should be careful inquiry into the causes operative, and removal of such as may be prejudical. At no time previously has so much been done to ameliorate the position of those in asylum service as within the last few years, and yet there is no real resulting improvement in the duration of service. We must conclude, however, that this continual changing of attendants and servants is largely owing to the changing of social conditions, and that much of the evil is inevitable. While that is so we quite agree with the suggestions of the Commissioners in regard to cottages for married attendants, assured pensions, etc. As the standard of comfort rises in the country generally, it is necessary to keep pace with that rise in asylums.

Escapes and Accidents.

We need not refer in detail to the escapes and accidents recorded by the Commissioners, except to note that the number of escapes was the lowest for the last ten years.

Patients in Private Dwellings.

The number of pauper patients provided for with the sanction of the Board of Lunacy in private dwellings on January 1st, 1900, was 2,703, showing an increase of 1 over the preceding year. The Deputy Commissioners as usual report at length upon the condition of those persons.

Night Nursing and Single Rooms.

A special feature of the report for this year is the information given as to night nursing in Scottish asylums, and the use of single rooms. This is a severely technical subject, which we need not enter upon here further than to commend the efforts now being made to increase the efficiency of the staff in the direction indicated. It is evident that nursing cannot be considered satisfactory unless it is continuous for those cases which require it.

Quinquennial Retrospect: Conclusion.

The report is supplemented by the quinquennial retrospect (1895-99) which is of definite value from a statistical point of view.

As heretofore, the Board has issued a report full of well-arranged information, which is not only useful in showing the present position of lunacy in Scotland, but which will be of great value for purposes of comparison in the future. We can only hope that the unusually favourable returns for the past year will be maintained.

THE PREVENTION OF TUBERCULOSIS.

The Ochil Hills Sanatorium.

Our Glasgow Correspondent writes: The "open-air system" of treatment for tuberculosis grows in favour, and it is claimed that the system can be carried out as successfully in Scotland as in many parts of England and the Continent. A company has been promoted to erect a new sanatorium for paying patients. The site chosen, on the southern slopes of the Ochil Hills, about four miles distant from Kinross, is excellent. The sanatorium is being erected on a gravelly plateau, about 800 feet above the sea level, with well wooded and picturesque surroundings. There will be accommodation for 60 patients, each having a separate bedroom, and all the bedrooms will have a southern exposure. In the numerous walks within the grounds of the institution it is intended that open-air shelters shall be erected. The neighbourhood of this sanatorium is one of the healthiest in Scotland. Indeed, the mortality from tuberculosis in Kinross-shire is lower than that in any other part of the United Kingdom. Moreover, the situation is one within easy access of most of the large towns of Scotland, so that there is every prospect of success attending this new venture—success both for the patients and the shareholders.

On October 27th a numerous company, mostly from Glasgow and the west, journeyed to Kinross to witness the ceremony of laying the foundation stone of the sanatorium by Sir Thomas Glen Coats. After the function the party was entertained to luncheon, at which the principal toast was "Success to the Ochil Hills Sanatorium," proposed by Professor McCall Anderson, and acknowledged by Dr. Ebenezer Duncan, of Glasgow, one of the directors of the company.

The Pasteur Institute at Kasauli, India. — The Pasteur Institute has now been opened at Kasauli, and 2 officers and 11 British soldiers, as well as some native patients, have already presented themselves for treatment, so that there is no doubt that it will fill a gap which has too long been left open, and will have an increasing sphere of usefulness.

OPENING OF THE NEW SCIENCE LABORATORIES, KING'S COLLEGE, LONDON.

THE new laboratories at King's College, which have been in preparation during the past year, are now in working order, and their inauguration on Tuesday last (October 30th) by Lord Lister will mark an important event in the history of the College.

The objects on account of which the Council of the College has taken a step which has involved the expenditure of £20,000 were partly to afford accommodation for the increasing number of students who attend classes there, partly to give ample space for research work, and partly to keep abreast of the times and the progress of science. The old laboratories, it is true, turned out good work, but they were old-fashioned and inadequate. Now that King's College is an integral part of the new University of London, the Council determined that the resources of the College should be such as would enable it to compete successfully with its many rivals.

The proceedings were opened by the Principal (Rev. A. Robertson), who in a few brief sentences introduced Lord Lister to the large and representative assembly of scientific men who had assembled to listen to his address and show their sympathy with the College in its new undertaking.

ADDRESS BY LORD LISTER.

Lord LISTER said: It may perhaps seem somewhat strange that so large a gathering of distinguished men should have come to witness the opening of certain laboratories, and yet I am inclined to think that the occasion is one not unworthy of such celebration, for it marks an event of very great importance in the higher education in the metropolis. It has been now for many years more and more felt that mere lectures, however well illustrated, are not sufficient for introducing the student into branches of science, that practical instruction is imperatively necessary. In some branches of science King's College has long since been well equipped with this object. The Wheatstone Museum I believe is as fine a collection of physical apparatus as exists, and the physical laboratory is amply provided. In chemistry nothing can be better than the arrangements for practical teaching. The same may be said of other departments, but it could not till lately be said by any means of them all. Thus, the dissecting room, although many men who have attained high distinction in the medical profession have learnt their practical anatomy there, was by no means adequate. The accommodation for the practical teaching of physiology which has assumed of late years constantly increasing importance, was simply miserable. And there have been, though in less degrees, deficiencies in other departments. The Council of the College have long been aware of these serious defects and have at length determined at whatever cost to remedy them. Partly by readjustment of existing arrangements and largely also by additional buildings, they have provided new laboratories of the character of which you will be able to judge for yourselves. I think you will admit them to be highly satisfactory.

The laboratories for the practical teaching of physiology in all departments are now, I believe, second to none in the country. Although not hitherto formally opened, they have been in operation for some time, and under the able direction of Professor Halliburton they have attracted students not only of King's College proper, but also men from various other sources, and I believe that of late a large proportion of those who are preparing for the Fellowship of the Royal College of Surgeons have obtained their practical instruction in physiology in King's College.

The removal of the physiological laboratory from the basement to the upper storey has afforded opportunity for the much-needed expansion of the anatomical department. The dissecting room has been increased to almost double its original size, and it is now an airy, well-lighted apartment well adapted for its object. At the same time there has been provided, though it is not yet equipped, a fine anatomical museum in the immediate vicinity of the dissecting room. We have all learnt with the greatest regret that Professor Hughes, who gave his services patriotically and with self-denial to the Welsh Hospital in South Africa, has returned home invalided by that insidious disease enteric fever. His condition has till quite lately been the cause of very grave anxiety. I am glad to think that this is less the case now than it has been, and we all fervently desire that he may be soon and completely restored, so as to have the satisfaction of seeing the full development of the department in which he has taken so deep an interest, and of which he has been so distinguished an ornament.

The bacteriological laboratory has had a very important addition made to it. It owed its inception to the enthusiasm and the generosity of Professor Crookshank. It has for a considerable time past attracted advanced students from various parts, not only of this country, but I may say of the world. But with the exception of a very small room for the Professor, the laboratory consisted of one single apartment, which, though well enough fitted for teaching the general class, was not at all adapted for research. A commodious room adjoining has now been added, in which several men can engage together in quiet research, while it also contains an admirable bacteriological laboratory. At the same time there has been constructed a large classroom which will be common to professors of bacteriology and of physiology, and will greatly further the practical instruction in bacteriology.

We have all watched with the deepest interest the endeavours that have been made to check the outbreak of plague in Glasgow. We have admired the skill, the science, and the energy with which those measures have been carried out, and we have rejoiced at what would appear to be the success which has crowned them. There must have been a deep sense of relief throughout the metropolis when it was announced that a suspected case of plague turned out under scientific examination to be not plague at all. The means of checking the plague in Glasgow and of removing the scare of it from London have been entirely due to the kind of researches which are carried on in a bacteriological laboratory.

I need not weary you with entering upon a description of other improvements in other science departments bearing upon medical education; but it is by no means only the medical faculty which benefits by the new arrangements. Thus the teaching of geology has been hitherto most inadequately provided for. Professor Seeley's large classes will now have accommodation fairly proportionate to the importance of the subject and the eminence of the Professor. The architectural department, again, which is an art and not a science department, will now have abundant provision for many men to work together in drawing and designing. And there are various other departments which benefit by the new laboratories. In short, it may now be said that King's College is abreast of the age as regards her opportunities for practical teaching in all departments.

It is perhaps a happy coincidence that this great addition to the teaching power of King's College should have occurred at a time when she is just entering upon a new career as one of the Colleges of the reconstituted University of London. For my own part I should have greatly preferred that the old University of London should have been left to discharge its very important duties as an Imperial examining institution, and that a separate teaching university should have been established, untrammelled by any other consideration than that which would most promote its interests in that respect. Other views, however, have prevailed, and a compromise has been effected under which the purely examining system and the teaching system will exist side by side in the same University. I cordially wish all possible success to this compromise, and would venture to express the earnest hope that now that the matter is decided, all will work harmoniously towards the common good; that those to whom the teaching element is dearer will nevertheless make it a duty to maintain for the external students the high standard of examinations which has given to the University its reputation and its glory; and at the same time I would trust that those who feel chief interest in the external student will loyally agree to give its due weight to collegiate training. I do not know, Mr. Principal, my Lord Mayor and gentlemen, that I need detain you with further remarks. One of the arrangements for this afternoon is that you should yourselves see the new laboratory. Doing so will occupy a considerable time, and I have therefore only to thank you for the kindness with which you have listened to me.

Vote of Thanks.

A vote of thanks was proposed by the Lord Mayor, seconded by the Hon. W. F. D. Smith, M.P., Treasurer of the College, and carried by acclamation. Mr. Smith, in his speech, made an appeal for funds to enable the College to meet the debt they have incurred in the new buildings. The Lord Mayor formally put the vote of thanks to the meeting and after it had been passed with acclamation Lord Lister thanked those present and formally declared the new scientific laboratories opened.

The New Laboratories.

The company then proceeded to inspect the new laboratories in the following order: architecture, geology, botany and natural history, physiology, bacteriology, George III Museum and Physical Laboratory, anatomical department and dissecting rooms. All the other departments of the College were also open to visitors, but the mere enumeration of the new departments will show how far-reaching the scheme of improvement has been. The laboratories of bacteriology, physiology, and anatomy will, however, be those which will most interest medical readers, and we propose to add a brief description of these.

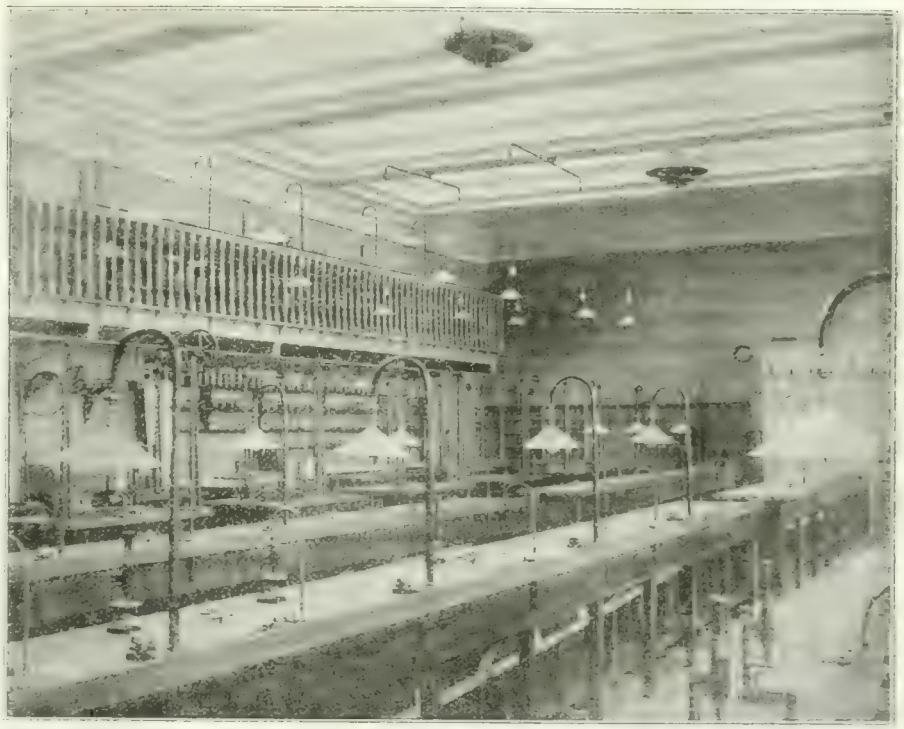


Fig. 1.—The Physiological Laboratory: Central Class Room.

Bacteriology.

King's College was the pioneer in England in providing laboratories devoted to this special branch of medical and scientific education, and the department, with the recent additions to it, now consists of a central practical class-room, a technical laboratory, a new research room and library, and a lecture theatre. The central class-room is a spacious apartment devoted to the technical education of post-graduate and other students from all parts of the world. Every student with his own hands goes through the whole practical course, and is further assisted by lectures and practical demonstrations. About 1,500 students have passed through a course of instruction in this laboratory, mostly qualified medical practitioners, and many holding important and responsible positions in the Colonial, Naval, Indian, and Army Medical Services. The list of registered names includes those of practitioners, medical officers, and scientific men from Egypt, West Coast of Africa, Uganda, the Cape, British Guiana, Jamaica, Trinidad, Straits Settlements, India, Ceylon, China, Japan, Fiji, Queensland, New South Wales, Canada, Chili, Buenos Ayres, and a great many from the United States of America. Several have been especially trained with a view to combating plague, cholera, yellow fever, madura, and other tropical diseases, as well as diseases attacking farm stock prevalent in our Colonies and in foreign countries.



Fig. 2.—The Physiological Laboratory: Research Room for Chemical Physiology.

The Colonial Secretary of State has recognised the public services of the College by intimating to the Council that in selecting candidates for the Colonial Medical Services preference will be given—other things being equal—to quali-

fied medical men who have received such bacteriological or similar special training as King's College provides.

In the technical laboratory, research work has been undertaken for the Board of Agriculture and for Colonial Governments, while a number of workers have published researches on various bacteriological subjects. In this room also analytical researches are undertaken for local governing bodies and county councils, but private analytical work is not permitted.

The new research room and library is used by advanced students, and is also available in the summer session for the senior technical class when the central laboratory is used for a large class of students from the Medical School. Any overlapping of classes or overcrowding of students is now prevented, and senior students can work undisturbed. This room is also used by the Professor, and a feature of the new additions to this department is the library of about 1,000 volumes and pamphlets, which has been lent by the Professor for the use of the senior students. The library is unique, and is of the greatest value in providing works of reference, as well as all the standard textbooks ready at hand for those studying the subject or undertaking original research. Fig. 3 shows this new room.

A new lecture theatre has been provided fully equipped and fitted with electric lantern and screen. The theatre is jointly for the use of the bacteriological and physiological departments, and will accommodate about 200 students.



Fig. 3.—The new Research Room and Library in the Bacteriological Department.

Physiology.

The new physiological laboratory is situated on the second floor, adjacent to the bacteriological department. A splendid light is thus obtained, which is as a rule so difficult to get in crowded parts of London. The main room of the department is airy, well lighted, and will accommodate over 100 students. It is peculiarly well adapted for microscope work. Other tables are available for practical work in chemical physiology, and others, provided with shafting and the necessary machinery for electrical and experimental physiology, will be used for this branch of the subject, which is every year becoming more and more important. A general view of this room is shown in Fig. 1.

The other rooms in the new laboratory are equally handsome, well fitted, and suitable for research and advanced work. They include an experimental room, an animal room, a room for research in chemical physiology (see Fig. 2), a dark room for photographic and galvanometer work, a private workroom for the professor, storerooms, and a room for the laboratory attendants. Gas, water, and electric light are provided throughout. The lecture theatre, which is shared between the Professors of Physiology and Bacteriology, has already been mentioned.

Anatomy.

The provision of a new physiological laboratory has also benefited the College in another way, for the old laboratory is now available for increased accommodation in anatomy. The dissecting room and the accessory rooms necessary in a well-equipped anatomical department have now been enlarged; the departments of the College museum which relate to anatomy and pathology will also be housed in part of the old physiological rooms on the basement, which have been rearranged and in part rebuilt.

INDIA IN 1898.

THE REPORT OF THE IMPERIAL SANITARY COMMISSIONER.

A SUMMARY of the sanitary history and incidents of the year 1897, founded on the Sanitary Commissioner's Report for that year, was presented in the BRITISH MEDICAL JOURNAL of January 13th, 1900, p. 89. We are now enabled to prepare a similar retrospect for 1898 drawn from the report which embodies all the available sanitary information relating to the general population of India, and to European and native troops and prisoners. This report, which has reached us on an earlier date than its predecessor, has been composed on the same plan, and gives evidence of great industry and ability.

THE GENERAL CHARACTER OF THE YEAR.

Following two years of drought, famine, and pestilence, of abounding misery and suffering, and excessive mortality, the sanitary picture displayed by 1898 reveals conditions indicative of rapid recuperation of restored prosperity and health, and greatly reduced loss of life. The meteorology of the year was favourable, and the rainfall generous and well distributed. Cultivation was resumed with energy and success, and food was abundant. Cholera, small-pox, fevers, and bowel complaints exhibited an almost unprecedented mildness, and the year will take its place in the sanitary history of India as one of the healthiest on record. There was only one blot on the page, namely, the increased prevalence and mortality of plague, which continued to prevail in its old haunts, and made its appearance in new centres.

BIRTHS AND DEATHS.

The number of births registered during the year was in most provinces below the average. "In every province, except the North Western Provinces and Oudh, the Central Provinces and Lower Burma, the birth-rates recorded in 1898 were lower than those recorded in the preceding year, and in only three provinces, Bengal, the North Western Provinces, and Oudh and Lower Burma were the rates higher than the averages of the provinces for five years. In only two provinces (Assam and Coorg) were the recorded births less numerous than the recorded deaths." The Punjab returned the highest rate, 41.0 per mille, and Coorg the lowest, 16.15. The remarkable diminution of births in a year of health and plenty is attributed mostly to the influences, prejudicial to fecundity, which prevailed in the two preceding years. On the other hand, the results of death registrations were eminently satisfactory. The rate for all India was 27.13 per 1,000, against 35.63 in 1897. They varied from 36.15 in Assam to 21.0 in Madras. "The year in most parts of the country was extraordinarily healthy, and in every province, except the Punjab and Lower Burma, the death-rates were lower generally, very much lower, than in the preceding year, while in every province save Madras, the Punjab, and Lower Burma the rates were below the quinquennial averages." Under each head of the rough classification under which death causes are registered in India there was a marked diminution. Fevers, mainly malarial, which ordinarily constitute about four-fifths of the recorded mortality, caused 17.73 deaths per mille, against 23.12 in 1897 and 20.77 in 1893-7. Deaths from cholera were fewer than in any year since 1880, the rate being 0.70, against 2.55 and 1.58. There was also a great reduction in the prevalence and fatality of dysentery and diarrhœa, the combined death-rate being 0.99, against 1.86 and 1.24. Small-pox was also in relative abeyance, the rates being 0.29, 0.77, and 0.43. There was some diminution in fatal injuries and a decrease of suicides in famine districts, and the deaths registered

under "All Other Causes" were 6.31 per mille, against 6.79 in 1897.

The Plague.

The number of deaths attributed to plague was 98,613 against 58,816 in 1897. The disease continued to prevail in Bombay and Hyderabad, and to a more limited extent in parts of the Punjab and North-Western Provinces, and broke out indigenously in Bengal, Rajputana, the Central Provinces, Mysore, and Madras. The mortality caused by the disease is understated on account of the inveterate concealment of deaths and their registration under other heads. In addition 17,672 deaths by plague were registered in native States. Excluding these the ascertained plague mortality bore a proportion of 3 to 5 to the cholera mortality of the year. The subject is discussed at great length in this report. The events of each province are detailed fully, together with the efforts made to combat the epidemic. Recent researches regarding pathology and etiology are instructively summarised; but no new fact of importance has been discovered since the report for 1897 was written. Preventive measures are also fully dwelt on and their apparent success or failure. The tendency has been to mitigate their stringency. Inspection of travellers by rail and sea has been sedulously resorted to, and detention or observation of suspects carried out as far as practicable. Evacuation, camping, segregation, and disinfection have been found the best resources, but concealment of cases and opposition, passive and active, have been encountered everywhere. Inoculation by Haffkine's method has been largely resorted to in some places, but data affecting its value have not been supplied. The spread of the disease by human agency is emphasised, but it is also made clear that other circumstances, climatic and sanitary, are largely concerned in its epidemiology.

Indian Prisons.

The number of prisoners confined in Indian gaols fell from 118,107 to 111,344, indicating a decrease of what may be called famine crime. The prison population shared in the improved health conditions of the year. The sickness-rates showed a decided abatement, and the death-rate for all India was 25.87 per 1,000, against 38.75 in 1897 and 32.20 in the decennium, 1886-95. In all provinces except the Punjab there was a decrease of the death-rate as compared with the preceding year, and in all except the North-west Provinces and Oudh there was a fall as compared with the decennium. The Assam mortality, 36.62, was the highest, and that of Berar and Secunderabad, 14.89, the lowest. There was an improvement as respects almost all the usual causes of sickness and mortality. Ague accounts for 35 and bowel complaints 15 per cent. of the sickness, and dysentery for 22, pneumonia for 15, and phthisis pulmonalis for 13 per cent. of the mortality. There was a rise in admissions from influenza, pneumonia, tubercle of the lungs, and other respiratory diseases, and an increased mortality from tubercle of the lungs. The death-rate from this cause among prisoners was 3.26 per 1,000, against 0.63 in the native army and 0.58 among European troops. The corresponding rates due to respiratory diseases were 4.89, 4.13, and 0.77. Comparison with the general Indian population is not possible. The problem of prevention of fatal lung disease, tuberculous and other, in Indian prisons, is one of prime importance. The subject is discussed in this report, but without any definite result. Influenza, cold, dust and crowding, are evidently potent factors in causation. More striking is the disparity between the figures relating to bowel complaints in the three communities. The rates are 7.20, 0.69, and 0.82. "The prevention of bowel complaints is the beginning and end of gaol hygiene as it certainly is the most difficult of the problems the gaol medical officer has to face." There is a conviction at present that our knowledge of the causation of dysentery is very defective, and a keen sense of the need of research; the words which we have quoted from this report indicate that Indian prisons would offer a very fitting field and strong motive for such an investigation. Cholera appeared in only 13 gaols, and 4 cases at Akyab was the greatest number in any one gaol. Plague broke out in 4 gaols, causing 30 cases and 16 deaths. The prophylactic use of cinchona alkaloid was extensively employed during the year, and the reports are mostly in its favour; but more detailed and discriminating evidence on this subject is desirable. Interesting information is given regarding cerebro-spinal fever, scurvy, beri-beri, ankylostomiasis, kala-azar, and dracunculus.

European Troops.

The health of the army was affected to some extent by the frontier service of the preceding year and of that under report. An average of 2,445 men, or 3.5 per cent. of the whole strength of the European army, were on field service, and contributed 2.3 per cent. of admissions and 6.3 of deaths. The corresponding figures for the native army were 4,537, 3.6, 3.1, and 6.1. With this exception the army participated in the favourable conditions of the year. The sickness rates were considerably below those of 1897. The death rate was 20.05 per mille, against 22.93 in 1897, and 15.16 in the decennium 1886-95. Ague caused 27 per cent. and venereal diseases 25 per cent. of admissions, and enteric fever 51 per cent., hepatic abscess 8 per cent., heatstroke 6 per cent., and dysentery 4 per cent of the total mortality. Cholera caused 17 admissions and 14 deaths, small-pox 2 cases and no death, and plague 9 admissions and 2 deaths. These occurred at Colaba, Poona, Bungalore, and Nasirabad. There was an increase of both morbidity and mortality from enteric fever. The admission-rate was 36.9 per 1,000, against 32.4 in 1897, and the death-rate 10.17 against 9.01. The subject is treated at great length. All efforts to improve the water supply have been unavailing, and the trend of opinion is towards the recognition of other vehicles and modes of infection as contributing to the spread of the disease. Of 86 deaths which occurred on field service 35 were due to enteric fever. Chest diseases gave higher rates, and dysentery and diarrhœa considerably lower than in the preceding year. The death-rates from hepatitis and liver abscess were higher. The admission-rate for venereal diseases fell from 485.7 to 362.9 per mille. Field service, the new cantonment rules, outdoor treatment, and isolation on account of plague are credited with the reduction. Invaliding was higher than usual. The death-rates of officers serving with British and Indian forces were 16.26 and 10.18, both much lower than in 1897. Enteric fever is more common among the former. The death-rate of women (16.04) rose, and of children (41.13) fell.

Native Troops.

The health of the native army was better than in the preceding year. The sickness rates were below the average, and the death-rate 13.33, against 14.90 in 1897, and 16.72 in 1886-95. Ague caused 41 per cent. of admissions, pneumonia 34 per cent., and remittent fever 10 per cent. of deaths. Influenza, remittent fever, respiratory diseases, and tubercle of the lungs showed increased admissions; and remittent fever, pneumonia, and enteric fever more deaths. Cholera caused 48 admissions and 42 deaths, small-pox 26 admissions and 1 death, and plague 94 admissions and 58 deaths. "The native soldier suffered less from enteric fever, ague, remittent fever, simple continued fever, diarrhœa, hepatitis, and venereal disease: equally from influenza and cholera; and more from tubercle of the lungs, respiratory diseases (especially pneumonia), dysentery, and small-pox, than his European comrade. He also suffered more from scurvy." Comparing European troops with native troops and prisoners, the report furnishes the following interesting conclusions: "Taking the death-rate of European troops as unit, the death-rate of native troops will be represented by 0.6, and the death-rate of prisoners by 1.3; taking the mortality of native troops from fevers as 1, that of prisoners is 1.3, and of the European troops as 6.0: taking the mortality of native troops from bowel complaints as 1, that of European troops is 1.2, and of prisoners 10.4; taking the mortality of European troops from respiratory diseases as 1, that of native troops is 5.4, and of prisoners 6.4."

Vaccination.

Famine and plague interfered with vaccination by unsettling the people, reducing the number of births, creating suspicions that plague inoculation was to take the place of vaccine inoculations and causing vaccinators to be employed on other duties. The number of operations reported from all India therefore fell from 7,829,983 to 7,497,597. The decrease occurred in both primary and revaccination. The ratio of success remained about the same. The proportion of successful cases to population fell from 31.53 to 30.30 per mille. Estimating births at 40 per 1,000 the number of infants successfully vaccinated was 31.37 per cent. The cost of vaccination was slightly

higher. Bovine lymph was largely used in all provinces, and good results were obtained with glycerinated and lanolinated lymph in some provinces; the methods of preparing and storing appear to be better in those in which the higher percentages were obtained. The mortality caused by small-pox was below the average; but it is impossible to say whether and how far vaccination may be credited with this reduction.

Sanitary Works.

Two sections of the report are devoted to a detail of military and civil sanitary works executed during the year. The record is a creditable one, and indicates that a large amount of energy and money is being expended on the more fundamental sanitary requirements of the country, especially on water supply, drainage, conservance and removal of refuse. In many places the presence or proximity of plague stimulated sanitary effort.

Pilgrims, Sewage Disposal, and Leprosy.

These subjects are discussed in the closing chapter of the report. Pilgrimage to Mecca was restricted and conducted under special precautions. No epidemic disease of consequence broke out among pilgrims proceeding or returning. The different methods of disposing of sewage are discussed in the light of the peculiar conditions of India and its population. The views advanced by Professor Sticker of Giessen regarding the reception of leprosy infection through the nose are reproduced for guidance and verification.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

List of Presentations of Books, etc.

Presented by the Authors:
- Eccles (W. McAdams). British Sanatoria. 1900.
- Gadd (H. W.). Synopsis of the British Pharmacopœia. 1898.
- Roche (A.). Sanitary Condition of our National Schools. 1900.
- Simpson (J. C.). Cerebral and Mental Symptoms. 1898.
- Walsham (H.). Stereoscopic Skiagraphy. 1899.
- West (Samuel). Granular Kidney and Physiological Albuminuria. 1900.

Presented by the Association for the Advancement of Medicine by Research:
- Paget (S.). Experiments on Animals, with an Introduction by Lord Lister. 1900.

Presented by Ballière, Tindall, and Cox, London:
- Stewart (Clark). A Biography by S.E.S.C. 1898.

Presented by the Leigh Browne Trust:
- Richardson (Sir B. W.). Biological Experimentation. 1896.

Presented by the Medical Officer to Local Government Board:
- Report of L. W. D. Mair on the Sanitary Circumstances of Bilston and Coseley. 1900.

Presented by Donald MacAlister, Esq., M.A., M.D., Cambridge:
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Transactions, Reports, and Calendars have been received from the following bodies:
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- American Medico-Psychological Association. Transactions. Vol. 5. 1899.
- American Ophthalmological Society, Thirty-fifth Annual Meeting. 1899.
- American Orthopedic Association. Transactions. Vol. 12. 1899.
- American Surgical Association. Transactions. Vol. 17. 1899.
- Bombay University. Calendar. 1900.
- British Laryngological, Rhinological, and Otological Association Transactions. 1899.
- Dublin University. Calendar. 1900.
- General Medical Council. Minutes. Vol. 36. 1900.
- London County Council. Report of Medical Officer for Year 1898.
- Ophthalmological Society of the United Kingdom. Transactions. Vol. 19. 1899.
- Pathological Society. Transactions. Vol. 50. 1899.
- Pharmaceutical Society. Calendar. 1900.
- Royal University of Ireland. Calendar. 1900.
- St. Bartholomew's Hospital Reports. Vol. 35. 1899.
- St. Thomas's Hospital Reports. Vol. 27. 1899.
- University College of South Wales and Monmouth. Calendar. 1900.
- University of London. Statutes. 1900.

Books Needed to Complete Series:

The Librarian will be glad to receive any of the following volumes which are needed to complete series in the Library:

- American Climatological Transactions. Vols. 1, 4, 5, 6.
- American Dermatological Association Transactions. Vols. 5, 7, 8, and 11.
- American Journal of the Medical Sciences. New series, vols. 4, 5, 1842-43; vols. 14, 15, 1847-48; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-65; vol. 59; or any parts of these vols.
- American Journal of Ophthalmology. Vols. 1-9.
- American Laryngological Association. Transactions. Vols. 1-6, 8, 9.
- American Otological Society. Transactions. Vol. 3, part 2, 1883.
- American Public Health Association. Transactions. Any vols.
- Annals of Surgery. Vols. 1-11; 13-16; and 26-27.
- Archives Générales de Médecine. 1831-39 inclusive; 1846-1855 inclusive; 1857-64 inclusive; 1871.
- Archives of Ophthalmology. Vols. 1-3, 6, 7, 14-21.
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- Caledonian Medical Journal. Vol. 1 prior to 1894.
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- Congrès Francais de Chirurgie. Transactions 1, 2, 3, 6, and 10.
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- Edinburgh Obstetrical Society. Transactions. Vol. 5.
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- Glasgow Medical Journal. 1833-1853. Nos. 2, 5, 9, 10, 12, 13. 1856-1858. And No. 4, vol. 2, 1870.
- ——— Pathological Society. Transactions. Vols. 1 and 2.
- Hare. Therapeutics. Vols. 3-4.
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- Provincial Medical and Surgical Journal. 1840. Being the first 52 numbers before October 2nd, 1841.
- Recueil d'Ophtalmologie. 1891, Jan.-June; 1892, Dec.
- Registrar-General's Annual Summary of Weekly Returns. 1866-73, 1876, 1880, 1887.
- Revue Générale d'Ophtalmologie. Prior to 1888, and 1891-92.
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- South African Medical Journal. February, April, 1895. And Titles for vols. 3 and 4.
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- Virchow's Archiv. Any vols. prior to 151.
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- Willcock. Laws of the Medical Profession. 1836.

Applications for duplicates from medical societies forming libraries may be addressed to the Librarian, 429, Strand.

It has been resolved to hold an annual congress of Russian surgeons and the first meeting will take place at Moscow on December 28th, 29th, and 30th of this year. The following officers have been elected: Professor Diakonow as President, Professor Bobrow as Vice-President, Dr. Rein and Dr. Derewjinsky as secretaries, Dr. Bereskin as treasurer, and Professor Sinitzin, Dr. Soloview, and Dr. Nartinow as members of the committee.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, NOVEMBER 3RD, 1900.

THE PUFFING OF NEW REMEDIES BY MEDICAL TESTIMONIALS.

Our Special Correspondent, in his report of the German Scientific and Medical Congress which held its annual meeting this year at Aix-la-Chapelle, drew attention to a discussion which took place before a meeting of the joint medical sections upon a report presented by Professor His (Leipzig) dealing with the evil of the publication of medical testimonials in favour of new drugs. The subject has formed material for a leading article in the last number of our contemporary, the *Pharmaceutical Journal*, from which we glean certain additional facts respecting the discussion, and especially that in the end a Committee was appointed to consider and report to a future meeting of the Congress upon certain suggestions made by Professor His. As our readers know too well, this is an evil which is by no means confined to Germany, but prevails extensively among the English-speaking population on both sides of the Atlantic. The most common form of puff is a letter, or an extract from a letter, which is published together with an advertisement of the drug either in a newspaper, medical or lay, or in a pamphlet; the other and more subtle form is that in which, under the guise of a serious article dealing with the treatment of some disease, the use of a new remedy is strenuously advocated.

The former method in its crudity lies obviously open to the censure of professional opinion, and medical authorities in this country have not hesitated to impress upon their diplomates the impropriety and want of dignity shown by giving such letters for advertising purposes. For example, on July 27th, 1882, the Royal College of Physicians, London, passed the following resolution:

> That the system of extensively advertising medical works, and the custom of giving, whether for publication or not, laudatory certificates of medicinal and other preparations, or of medical or surgical appliances, is misleading to the public, derogatory to the dignity of the profession, and contrary to the traditions and resolutions of the Royal College of Physicians.

We have reason to know that the other Royal Colleges concur in and act up to the spirit of this resolution.

The second form, as has been said, is more subtle and therefore more dangerous. It would be unfair, and even monstrous, to suggest that every article in which a new remedy is recommended or dietetic preparation mentioned with approval has been written with a corrupt motive, or is in any way undignified, improper, or unworthy. Some new remedies are of great value, and deserve all that can be said in their favour, just as many dietetic preparations are of the utmost service, and their makers entitled to due reward for the skill and care shown in their manufacture. When a remedy has been recently introduced it is often of the greatest importance to obtain it from the first maker, because, until its mode of preparation is thoroughly understood, it is quite probable that imitations do not possess all the qualities of the original. In dietetic preparations there may be the greatest difference among a group of articles nominally identical, individual specimens varying in all degrees, from the most useful and nutritious, to the worthless and even injurious. Nevertheless, it is notorious that these laudatory articles are sometimes written to order and are paid for, but it is not easy to see how to put a stop to such a very undesirable practice.

The suggestions of Professor His are as follow: (1) Professional opinions should only be confidential; (2) in the first place, new drugs should never be medically recommended in the lay press; (3) where publication results it should only be in the medical press, and the wording of these testimonials should be most guarded; (4) references to drugs in the medical journals should be secured against abuse for purposes of advertisement; (5) no remuneration should be asked for or accepted; (6) physicians giving testimonials should be held responsible for the text. Professor Kobert, who strongly supported these proposals, was of opinion that before the introduction of any new preparation for medicinal use there should be preliminary investigations of it, which should be restricted to officials in authority in pharmacological, physiological, and bacteriological institutions, and to the medical officers of large hospitals, preferably to those not connected with medical schools. We do not suppose that such a restriction would commend itself for a moment to liberty-loving Anglo-Saxons, and we do not hesitate to regard it as impracticable. Undoubtedly it is most undesirable that a medical practitioner should be paid for an insincere puff, but it is necessary that new remedies should have careful trial, and where this may involve experiments upon animals and other careful pharmacological investigations or a considerable amount of laborious clinical observation, it is not easy to say that payment for such services is altogether wrong. But the whole transaction should be above board, and the payment, if any, should, we think, be made to the laboratory, and not to the individual. It rests very much with the directors of laboratories and the medical staffs of hospitals to see that the resources of their institutions are not made use of for unworthy purposes. It is desirable also that the officers of learned societies and associations should exercise discrimination in this matter, for papers of a questionable kind sometimes find their way into the proceedings of such bodies, or are sent for publication in the medical journals with the *imprimatur* of the society or association. Finally, we quite recognise that the editors of medical journals can assist by preventing the publication of articles of this kind, though any editor who attempts conscientiously to act on this principle will probably meet with some disagreeable surprises.[1]

[1] With regard to the British Medical Journal, we may say that, in consequence of circumstances which had come to notice, steps were taken, some time ago, to copyright each issue of the Journal, with a view to prevent abuses arising in connection with the reprinting from its pages of articles which could be twisted to the purposes of advertisement.

If this check is evaded by publication in trade journals, we think the licensing bodies would have good ground for interfering should such articles be afterwards made use of and circulated for advertising purposes.

It is much to be desired that a Committee should be formed, strong enough and disposing of sufficient funds to enable it to investigate and report upon new remedies, but it does not seem easy to suggest how such a Committee should be established or who could be asked to act upon it. When the Therapeutic Committee of the British Medical Association was appointed, now a good many years ago, some hope was entertained that it would be able to undertake work of this kind, and to a limited extent it has done so, but workers in this department not unnaturally prefer to give their time to subjects in which they have been led to take an interest rather than to labours which would for the most part result in merely destructive criticism. Such work would have to be very carefully done, as the conclusions when published might quite possibly be overhauled in a court of law. Some years ago an American Professor who ventured to denounce from his Chair the worthlessless of certain much advertised dietetic specialties found himself the defendant in an action for damages, which gave him a considerable amount of trouble. In order, therefore, to obtain reports of real value they would have to be paid for, and published by some organisation rich enough to withstand the attempt which would doubtless be made to crush such criticism by the dread of legal expenses. There is probably no other body in the country except the British Medical Association capable of undertaking such duties, but we do not know whether at the present time it would regard such an extension of its duties with favour.

MEDICAL ARRANGEMENTS IN SOUTH AFRICA.

The new number of the *Edinburgh Review* contains an able article on the sick and wounded in South Africa which is worthy of more than passing attention. The writer, who draws his facts largely from those which have been published in these pages, divides, the medical history of the war into three stages, and the relation of the facts of these stages is of particular value because is made to serve as a groundwork for a scheme for reorganisation. In the first stage one fact, which had again and again been demonstrated in our columns, was made plain to the man-in-the-street—that the medical service was deficient in officers, in nurses, and in orderlies.

The Royal Army Medical Corps had been allowed to sink so low in strength, apart from another question of quality, that "a corps organised to meet the needs of 50,000 men had to meet the needs of 150,000." This deficiency had to be met by sudden and wholesale recruiting from civil sources, of men and women capable individually, but untrained and unused to army life. There were brought together upwards of 400 civilian medical men (the so-called reserve not included). Some 500 female nurses were engaged, and nearly 3,000 orderlies, more or less trained, were supplied, chiefly by the Red Cross Society. In addition, the army in South Africa had presently the services of a number of admirably-equipped civil private hospitals, organised by private effort and supported by public subscription or individual munificence.

In the second stages of the medical history of the war it appeared that notwithstanding the heteregeneous elements of which this scratch service was composed, the administrative and executive efficiency of the regular medical service was sufficient to make everything work smoothly, so that the medical arrangements were praised as the one bright spot in an otherwise dark picture. The writer very properly and forcibly points out that this favourable condition of affairs was due to the fact that the great strain on the medical service did not come during the earlier phases of the war; the ratios of general sickness continued low, epidemic diseases had not yet developed to any serious extent, and the military operations had been practically limited to the lines of railway by which sick and wounded could be promptly transported from front to rear. Abundant supplies also were at hand, and "stores piled up to an almost embarrassing degree." Down to this point in history, then, the reviewer finds himself landed in the "somewhat startling administrative paradox" that an undermanned and deteriorated medical service moved efficiently like clockwork.

But the third stage brought a startling transformation—from praise and congratulation to pictures of medical breakdown and bewildering hospital horrors. The change came about in March; before that time the medical arrangements at the front had not been really tested by pressure, for "the hour of stress had not come." The moment the lines of rail were left, and the army struck into the open veld, the hour of trial came; hospital transport, supplies, and *personnel* were found to be insufficient, if not to some extent inefficient, through causes for which we believe impartial investigation will show that the medical service was not in fact responsible. The onus was at once shifted by the Under-Secretary of State for War when he said in the debate in the House of Commons on June 29th, in view of what had been allowed to happen at Paardeberg, the medical service had foretold the outbreak of typhoid fever, which entailed so much suffering and so great a loss of valuable lives in the hospitals at Bloemfontein. We must leave aside the larger question why the medical service was unable to prevent what it foresaw, and must go on to admit that much of this suffering would have been saved, and many of these deaths would not have occurred, had the medical equipment in men and material taken into Bloemfontein been on a more adequate scale. Then newspaper correspondents and others, who have come home burning with indignation have said many foolish and unjust things. The army had been allowed to contract typhoid fever wholesale. When struck down by the disease they had been allowed to lie on the ground crowded together without adequate nursing or medical attendance. Somebody ought to be hanged. The doctors ought to look after the sick—therefore hang the doctors. But the medical service was overwhelmed by the magnitude of the disaster. The age of miracles is past; the Royal Army Medical Corps cannot call down stores or equipment from heaven; it cannot create transport when deprived of it by supreme military authority; it cannot make one officer or orderly do the work of half a dozen.

These three phases of the war must be fully and frankly considered, as affording data for army medical reorganisa-

tion. First as to *personnel*; the reviewer assumes that it may be recognised that we cannot maintain in the field for any length of time more than 200,000 men; and therefore concludes that "our medical arrangements must be framed to meet such an emergency." This implies a large addition to the numbers of the officers and men of the regular medical service, and real and efficient reserves. In this connection we would again point out that any addition to the Royal Army Medical Corps must be considered in relation to the wants of India; the requirements of our world-wide empire are now such that the Royal and Indian Medical Services are becoming more and more interdependent, as has been exemplified in the present China expedition, which has its base in India.

Secondly, as to reserves of hospital equipment; these must be maintained so as to meet the maximum army of men which can be put into the field. We know, on the authority of Sir Henry Brackenbury, that on the outbreak of this war these reserves were "totally inadequate."

Thirdly, hospital transport must be a fixed and independent quantity, not liable to be withdrawn on every passing military contingency.

Lastly, medical administration in the field must be established on a rational basis, and not left to the caprice of some narrow-minded General in command, who has not yet shown his incompetency as a leader. The chief medical officer must always be at the right hand, and have the ear of the chief military officer. As a corollary, all acting principal medical officers must have steps in rank sufficient for their position, a principle applied in all other branches of the service.

These are among the chief lessons as to the medical service which the war has brought home.

THE FIRST YEAR AND THE ENGLISH COLLEGES.

The action taken by the Conjoint Board of the English Colleges of Physicians and Surgeons with regard to the place of study and the nature of the instruction which should be recognised as constituting the first year of professional education has borne fruit in a way which might have been anticipated. As we reported last week the Royal College of Surgeons in Ireland has formally announced that it will not be bound by decisions of the General Medical Council which other Colleges are permitted to disregard. Professor Ball will thus have to make his first appearance upon the General Medical Council in charge of a controversy of a somewhat heated nature. It will be remembered that the former representative of the Irish College, Sir Philip Smyly, who has now resigned, called attention, in a manner absolutely temperate and courteous, to the action of the English Board, which by allowing Chemistry and Biology taken at ordinary schools to count as a first year of professional study had, in the opinion of certain other qualifying authorities, practically nullified the regulation requiring a fifth year of medical study and had virtually reduced the curriculum to the old four years. The difficulty might have been met had the English Conjoint Board been content to leave to the General Medical Council the revision of the list of institutions which should be recognised for the purpose, but this it was unwilling to do. The representatives of the two English Colleges strenuously contended that the Colleges were the sole judges of the way in which the curriculum should be arranged, that is to say, of all the details. They declined absolutely to give up into the hands of any other body rights and duties which they considered to be their own prerogative. As we pointed out at the time, this course was to be regretted, for, to say nothing of the full official title of the General Medical Council, which runs, "The General Council of Medical Education and Registration of the United Kingdom," it is the only body with which all the licensing bodies are in relation, the only place where they have a common meeting ground, and in a matter of this kind concession to the views of the general body upon which they are represented would have been gracious as well as expedient.

The General Medical Council during its last session approved a recommendation of its Education Committee maintaining the opinion, which that Committee had repeatedly expressed, that ordinary school education should be completed before the five years' medical curriculum is entered upon, and expressing the belief that the regulation in question is the simplest practical method of ensuring this. The regulation defined, as the condition precedent to a student's registration, that he shall have "commenced medical study at a university or school of medicine, or at a scientific institution recognised by one of the licensing bodies and approved by the Council." It is to these words "approved by the Council" that the English Conjoint Board object, and they decline to recognise the jurisdiction claimed therein by the Council.

Meanwhile the registration of students who come within the category is suspended, and they have to be dealt with as special cases by the Students' Registration Committee, instead of being registered in the ordinary routine of the office. Certain legal questions arising out of this state of things have been referred to the Council's legal advisers, but apparently one result of the action of the Council and of the Colleges would be that a student who, in respect of his curriculum, sails under the flag of the English Conjoint Board will be restricted in his choice of an examination qualifying him for registration to the examination held by that Board. He would not be admissible to the examinations of those bodies which adhere loyally to the requirements of the Council. As students can hardly be expected to know the ins and outs of this vexed question, cases of hardship may easily arise in the future.

The representatives of the English Colleges have promised to furnish further information to the Council at its forthcoming session, when the report of the Council's legal advisers will also be received. Hence, as the issue is not finally settled, and more light may be expected to be thrown upon it very shortly, the action of the Irish College, though logically defensible, appears to be somewhat premature, and is at least not calculated to throw oil upon the troubled waters.

We are asked to call attention to the advertisement of Messrs. J. and A. Churchill stating that the *Medical Directory* for 1901 is now passing through the press. It is therefore essential that communications containing corrections for the directory which have hitherto been delayed should be at once forwarded to Messrs. Churchill.

MEDICAL WITNESSES.

UNDER the title "Law and Medicine" the *Liverpool Courier* draws attention to a subject which during the recent election has received considerable attention in the provinces, owing to the action of the Joint Committee of our Association and the Police Surgeons' Association.

Reprints of articles which had appeared in the BRITISH MEDICAL JOURNAL on the subject of medical witnesses' fees were provided for the use of candidates for Parliamentary honours, with a prefatory note asking attention to the statements made in them, and to the refusal of the Home Secretary to receive a deputation on the subject either from the British Medical Association or the Police Surgeons' Association.

The article in which our contemporary discusses the subject in an able contribution. It is pointed out that though all doctors may not be specially versed in medical jurisprudence, any doctor may be called upon to give the law the benefit of his professional opinion in regard to matters brought under magisterial or judicial attention. But the law does not recognise what this demand on his time and knowledge may involve to the medical witness.

No doubt costs are allowed, but the scale is so low that some doctors prefer to accept none rather than to take what assesses so lightly the value of their services; others take means to prevent the possibility of their ever appearing in a court of law; and we know of one northern town where none of the resident medical practitioners, with the exception of the police-surgeon, can be got to attend to any medico-legal case.

Our contemporary gives details of the interview between Mr. Asquith, the then Home Secretary, and a deputation of the Police Surgeons' Association six years ago, and points out that while the right hon. gentleman admitted that the subject was of considerable importance to the public as well as the profession, he made no attempt to right the wrong which he could not deny, but took refuge in the curious argument, if it can be so called, that the injustice was time-honoured. The scale on which medical witnesses are paid was fixed in 1858, and he, like his timid predecessors in office, was afraid of burning his fingers by touching it. The profession were not of course content with Mr. Asquith's peculiar method of answering a complaint of which he could not deny the reasonableness. But the Conservative Home Secretary has proved no more amenable to reason than his Liberal predecessor, and in 1896 and 1898 Sir Matthew White Ridley declined even to receive a deputation on the subject.

More recently Dr. Harthill, of Willenhall, has tried to force the matter forward in another way. After a certain criminal case, in which he was interested, had been tried at Stafford, he and his qualified assistant were offered the sum of £2 19s. 6d. for their professional services after giving up three whole working days to the service of the Court. This was refused, and the *Liverpool Courier* pertinently asks "How would the luminaries of the law like to be paid at the same rate?"

We endorse everything that the *Courier* says on this subject as to the injustice done by the present arrangements, and we hope with our contemporary that members of the new Parliament will bring pressure to bear upon Sir Matthew White Ridley to compel him to do justice in this important matter.

THE PRESIDENCY OF THE ROYAL SOCIETY.

THE list of names proposed for the Council of the Royal Society will be watched with unusual interest this year, for we understand that Lord Lister's tenure of office has come to an end. An unwritten law of the Society limits the term of the presidency to five years, and we understand that steps are already being taken to secure a worthy successor to Lord Lister. The names of several distinguished representatives of science have been mentioned as probable new presidents, but at the present time it is not possible to allude to these by name. It will, however, not be easy to find anyone who will fill Lord Lister's place. His assiduity in the arduous duties of President, and his unfailing courtesy and kindness in that position have been such that his occupancy of the chair will be long remembered. Lord Lister's accession to the peerage has taken place during his tenure of office, and in the Society itself there has been unexampled activity. His presidential addresses have always been valuable as reviews of the year's scientific work; he has, however, always dwelt most fully in such addresses on those subjects which dear upon the healing art. We may specially note, during the last five years, the increasing prominence and importance which bacteriology has assumed; this science, of which Lister is one of the founders, has come specially before the public in connection with the subject of tropical diseases. The Roentgen rays form another important landmark in the history of science, and this discovery also has come within the period in question. Perhaps the most important public work that the Royal Society has ever undertaken has been the initiation of the *International Catalogue of Scientific Literature*. Arrangements are now so far advanced that the necessary funds and the other machinery are forthcoming, so that cataloguing will be commenced with the new century. It must be a matter of pride to Englishmen that their Royal Society has throughout taken the lead in this matter, and it must be especially gratifying to Lord Lister to know that the complicated international questions involved in the preliminary negotiations have all been successfully grappled with during the time he has occupied the President's chair. We trust that now he is retiring he will for many years to come continue to watch the fruits of his labours.

THE CONSTITUTION COMMITTEE.

A MEETING of the Constitution Committee of the British Medical Association was held on October 23rd. It will be remembered that this Committee was appointed by the annual meeting at Ipswich "to consider and report upon the best means of reorganising the constitution of the British Medical Association," and was instructed to furnish a provisional report to the Branches by February 1st, 1901. It was further resolved: "That the Committee be invited to consider and report upon the question of delegation in their deliberations, but that they be not instructed that they must evolve such a principle." The Committee consists of 12 members nominated by the Council, 12 members nominated by the general meeting of the Association, and the President and President-elect of the Association, who are by the by-laws *ex-officio* members of all Committees of the Association or of the Council. Mr. Edmund Owen was elected Chairman. The Committee, after a prolonged sitting, during which considerable progress was made in establishing certain principles upon which the new constitution should be based, adjourned till Tuesday, November 13th.

THE BIRMINGHAM MEDICAL AND SURGICAL CONSULTATIVE INSTITUTION.

THIS institution, the foundation of which by Mr. Arthur Chamberlain, with the assistance of the Birmingham Hospital Saturday Fund, was announced and commented upon at the time in our columns, held its first annual meeting on Monday last. A report was presented, from which we gather that since the opening of the consulting-rooms in May last 222 patients have consulted Dr. Ward Irvine, the "consulting physician." This number comprised 148 men and 74 women. The Committee consider this result "very satisfactory," and say that by "the successful manner in which the scheme was working they are satisfied that the lines on which it was established have proved themselves to be sound and wise." The statement of income and expenditure shows a deficiency of £343 13s. 6d. on the working of the institution to date, but the Committee believe that before long it will become self supporting. Mr. Arthur Chamberlain, who occupied the chair, claimed that the institution offered a halfway house between the hospitals and the high fees of the ordinary consultant. He expressed astonishment at the storm which the formation of the institution has aroused among so many of the medical profession. They might be sure that if the institution was not good it would not last, and that if it were good nothing would stop it. In the course of the discussion which followed, a good deal of strong language was used about the opposition which the institution had encountered from the medical profession, a Mr. Cowley saying that some who called themselves gentlemen had stooped to things of which anyone ought to be ashamed: they had attempted in every way to defeat the objects of the institution and send it into bankruptcy. Alderman Cook also said that he felt ashamed when he knew of the persecution to which Dr. Irvine has been subjected, and Dr. Irvine himself complained of the injustice with which he had been treated by his medical brethren. Of course it is not for us to carp at results which the promoters of the institution find so satisfactory, but a total of 222 members at half a guinea a head out of a population of half a million would not strike most people as a very high degree of success, especially when we remember that this institution has been advertised in every workshop where the Hospital Saturday Fund has influence, while its cards are displayed in many public-houses, restaurants, hairdresser's shops, and similar places of public resort. We regret to see the charges of persecution of Dr. Irvine made against the medical profession. Frankly, we do not believe that any persecution has taken place, and we think the speakers should be challenged to state what they mean. Dr. Irvine could hardly expect to receive a friendly welcome from his professional brethren after joining an institution which had been declared to be contrary to the interests of the medical profession, and all medical men had been warned against becoming candidates for the proposed appointment, but that he has been the subject of anything like active persecution is highly improbable.

EXPERIMENTS ON ANIMALS.

A CORRESPONDENT sends us two letters that he has received from a patient. The first, after its proper business, says:

> Would you at the same time mind telling me if you approve of vivisection or not? I am myself greatly interested in the question.

The second, after its proper business, says:

> I regret very much that you approve of vivisection, as I have now pledged myself not to go to a doctor or dentist in favour of it. I know that neither dentists nor general practitioners go in for it. But having given this pledge I must keep it. I cannot argue scientifically on the subject of course; but the medical profession is divided on the question, there being quite as clever men against as for it. And as quite, if not more than, half the vivisectors hold the special certificate dispensing with anæsthetics, great cruelty is practised, and I myself would rather not profit by knowledge gained at such a price.

We would suggest the following answer to this letter. First, that experiments on animals are indeed matters of science; and if the patient cannot argue scientifically about them, she should begin to study the subject. Next, that the clever men in the profession who are "against vivisection" may be counted on the fingers of one hand. Next, that the certificate dispensing with anæsthetics is granted "only for inoculations, feeding, and similar procedures involving no cutting." As to "not profiting by knowledge gained at such a price," the Victoria Street Society has lately withdrawn a pamphlet by Miss Cobbe, because it denied that Harvey had been helped by his experiments to discover the circulation of the blood. What illness, then, is there where the patient does not "profit by knowledge gained at such a price?" We would take occasion to remind our readers that the Association for the Advancement of Medicine by Research will answer inquiries, and send out literature, relating to experiments on animals. Application should be made to the Secretary, Dr. Beevor, 33, Harley Street, W. Probably, with patients who are not ashamed to write this sort of letter, the best course would be to refuse to consider matters of science with people who "cannot argue scientifically;" and to refer them to the Association and to the Government reports.

THE NEW BOROUGH COUNCILS IN LONDON.

LORD ROSEBERY'S speech at the meeting of the Christian Social Union served to emphasise the points to which we drew attention last week in connection with the election of the new borough councils in London. Zeal and purity of administration, especially in regard to health and housing questions, were the keynotes of his remarks. "Are you a builder—what do you build?" he pertinently inquired of intending candidates; and justification for the question is found in the fact that 140 builders or contractors, or those who have retired from such occupations, are, according to the *Local Government Journal*, seeking the honour of election. We are glad to observe that seventy-four medical men have entered the lists, and trust this will secure upon most of the 28 councils a substantial representation of medical and sanitary knowledge and experience. We agree with a correspondent, whose letter is published in another column, that such representation should, *inter alia*, address itself to giving such status and remuneration to medical officers of health of London boroughs as to render them independent of general practice. The new councils will proceed to elect their mayors and aldermen on November 9th, and will then address themselves to such reorganisation of staff and duties as will be necessitated by the requirements of the Act of 1899, and the orders of the Local Government Board. The interest which has been evoked by the election of our new councillors must not be permitted to evaporate, and it is to be hoped that they will rise to the expected level. Dr. Collins, at the close of Lord Rosebery's address to the Christian Social Union, capped the question he had put to the meeting by adding another, "Are you a parson: what do you preach?" It is good to know that the Church and other religious denominations have done their utmost to inspire a broad and lofty spirit of civic responsibility into the administration of the local government of London.

THE DEATH OF PRINCE CHRISTIAN VICTOR.

SINCERE sympathy will be felt with Princess Christian and with our sorely-tried Queen on the death of Prince Christian Victor at Pretoria. The Prince, who was the eldest child and elder son of Prince and Princess Christian of Schleswig-Holstein, was born in 1867, entered the army in 1888, and was promoted Captain with the brevet rank of Major in 1896. Before going out to South Africa he had

seen service in three expeditions on the frontier of India in the Ashanti expedition, and in the Soudan expedition of 1898. He went through all the trying early part of the South African campaign with General Buller, and was in Ladysmith after the relief when that town was a hot-bed of enteric fever; he had thus seen a good deal of hard service; but for six weeks previous to being taken ill he had been holding a post on Lord Roberts's staff. He was admitted into the Imperial Yeomanry Branch Hospital in Pretoria, and his symptoms were at first thought to be malarial, for he had been subject to malarial attacks for several years, having contracted the disease during one of his previous periods of foreign service. It was not until late last week that the news reached England that a definite diagnosis of enteric fever had been made. It is probable that in his case, as in many others which have been observed in South Africa, the malaria from which the Prince had previously suffered impressed its type upon the symptoms of the earlier stage of the enteric attack. As he was 34 years old, and had therefore passed the age which has proved most dangerous in the epidemic in South Africa, and as he was a robust man, the greatest hopes were entertained that he would withstand the attack, although the undoubted proclivity of the Royal Family to suffer severely from typhoid fever had to be taken into account. The change for the worse set in very rapidly, and it is believed that death was due to abdominal complications. The Prince was inoculated against typhoid on the way out, but that was over a year ago.

INEBRIETY AMONGST WOMEN.

LAST Monday afternoon, when opportunity, all too frequent, was available for studying inebriety in the streets of London, the Council of the Charity Organisation Society assembled a conference at Whitehall to discuss the question, which has rapidly come to the front in recent years, of inebriety among women. Mr. Loch suggested for debate first, whether in fact there was, as had been alleged, an increase of female inebriety; secondly, what was being done to cope with it, especially in London, under the Act of 1898; and lastly, whether it was possible that in early stages of the malady and in existing or special institutions, more might not be done than was at present attempted. Dr. W. J. Collins, who presided, expressed his concurrence in the general impression that there was an increase of inebriety among women, although no very precise answer couched in the language of figures appeared at the present time to be forthcoming. The London County Council through its Inebriates Acts Committee, of which he was chairman, had proceeded cautiously and by experiment. Their home at Farmfield, near Horley, was now nearly full, but they had land enough for indefinite expansion. Dr. Collins welcomed suggestions as to their future action, either by multiplying the kind of accommodation already provided for females, by building a home for males, or by starting a "retreat" at low charges under municipal management. He also desired that there should be more co-ordination between the committing authority and the receiving authority, as he believed that not every case that pestered our police courts was fit for reformatory treatment. Mr. Holmes, the police-court missionary, expressed the opinion that drink was often not the cause but the consequence of the degradation of many of the women who appeared so frequently before the magistrates, and that the tender-hearted treatment by local authorities in reformatories was not calculated to effect much benefit in such cases. Dr. Heywood Smith strongly animadverted upon the grocers' licences, and expressed the opinion that medical men were sometimes responsible for the initiation of alcoholic habits. Dr. Branthwaite of the Home Office considered that statistics demonstrated a real and undoubted increase of inebriety amongst women, and expressed the hope that a State reformatory might be established, to which cases unsuitable for treatment in certified reformatories under county councils might be transferred by the Secretary of State. There is doubtless much yet to learn and to be done in regard to the best possible treatment of cases for which the asylum, the prison, the hospital, and the reformatory each and all appear to provide something of what is required. The closer study of the effect of alcohol on the nervous system by the pathologist, judicious discrimination by magistrates based upon the "natural history" of individual cases, and the moral and reforming agencies of the philanthropist can all co-operate with advantage alike to the "case" and the community.

THE VIABILITY OF THE PLAGUE BACILLUS.

IN a preliminary note issued in the Public Health Reports of the United States Marine Hospital Service Dr. Rosenau places on record the results of some experiments upon the length of time for which the plague bacillus retains its vitality. The method employed consisted in keeping various materials infected with this bacillus under varying conditions of light, temperature, and moisture. The organism was obtained from five different sources—one from Jeddah, one from Oporto, one from Rio de Janeiro, one from Bombay, and the fifth from the New York quarantine case. The bacillus retained its vitality and virulence (for mice) for seventy-five days on small balls of absorbent cotton soaked in a few drops of a gelatine culture mixed with egg albumen, when these balls were kept in a dark room or cool incubator at about 20° C., and not exposed to the influence of other contaminating organisms, though desiccation was not materially retarded. On other material exposed to higher temperature (27° C. or over), vitality was lost in a period not exceeding a fortnight. The other materials infected were small squares of fabric, chips of pine wood, and pieces of paper. No experiments in which mixed infection played a part are recorded, so that natural conditions were apparently not reproduced. Appended to the account of these investigations is a summary of the results of other experimenters who have worked on the same lines, and it is evident from this that the plague bacillus cannot withstand desiccation at temperatures approaching 30° C. Dr. Rosenau has been more successful than any other investigator in keeping that organism alive for seventy-five days, but the conditions of the experiment were such that complete desiccation was not obtained. The practical bearing of experiments in which pure cultures are used, and in which mixed infection plays no part, is small, and bacteriologists and hygienists in general are still waiting for an exhaustive series of investigations into the viability of this bacillus under circumstances which shall more faithfully reproduce the environment and conditions of plague-infected material as met with in its endemic home.

AN OUTBREAK OF CHOLERA AND A MORAL.

BY the end of last June cholera had declared itself throughout a large portion of the Punjab, there having been 12,834 cases with 6,871 deaths. Kohat is an important town on the North-West Frontier, as it marks the junction of several much-used trade routes; it is also a military station of some importance. Cholera was suspected to be prevalent in the native town during the latter part of June, but no cases occurred in the garrison before July 3rd. Within three days, however, the number of cases rose to 20, and was maintained at an average of about 30 cases a day for the eight succeeding days. The maximum was on July 9th, when 73 cases occurred. By the end of another fortnight the epidemic in the barracks had been stamped out. In all, 314 cases of cholera occurred with 151 deaths. The incidence of the disease was severest in the 19th Punjab Infantry, with a total of

126 cases. Major Firth, R.A.M.C., held an inquiry into the causes of the outbreak, and it is to his report that we are indebted for the foregoing and following facts. The city and cantonments of Kohat are adequately supplied with a pipe-delivered drinking water of good quality. There are also two irrigation streams derived from other sources. The irrigating water, at its source, is of good quality, but as one stream runs through the city it rapidly becomes fouled, and the other stream is used, at one spot, as a public bathing place. The former stream runs, after leaving the city, close to the left infantry lines; the latter stream, after passing through the bathing place, passes between the infantry and the artillery lines. The incidence of the cases was entirely upon the native troops, the resident European population being untouched. The cause was obvious. The natives used the irrigation water for various domestic purposes, including drinking, whilst the Europeans studiously avoided that water. The corps located nearest the irrigation streams suffered most severely, those most remote least. On July 6th, the 19th Punjab Infantry marched into Kohat from Khushalgarh. They were free from cholera on arrival, but being encamped near the irrigation stream the men, tired and thirsty, drank deeply of that water in preference to the pipe delivery 600 yards off. By July 9th 89 of them were ill. The precautions taken to stamp out the epidemic included the removal of the corps to a spot far removed from the irrigation streams, and the endeavour to disinfect utensils, etc., and the upper reaches of the irrigation channels and the city wells with sulphuric acid and potassium permanganate. Major Firth recommends drastic changes in the location of cantonments and the sanitation of Kohat; but the concluding words of his report we shall quote in full because they have an application a good deal beyond Kohat, and, indeed, a good deal beyond India and Indian sepoys:

> There is one more suggestion which seems to me worth considering. Cannot the British officers of native corps make greater personal efforts to disseminate better ideas of personal hygiene among their men? I know that certain officers already do much in this respect; still there are many others who appear content to regard the sowar or sepoy as a native hopelessly incapable of elevation to a higher standard of personal hygiene or even of personal comfort. It is a big task I know, but one cannot help thinking, when one reviews the facts connected with this recent violent explosion of cholera in the native garrison of Kohat, that had greater personal efforts been made by Europeans to make the rank and file fully appreciate the need of avoiding the irrigation water many lives might have been saved to the State. The influence of native officers may be great over the men, but the influence of British officers by personal visits and simple addresses to the men on the point would have been greater.

THE CHINA FIELD FORCE.

At the end of September it seemed likely that the civil surgeons newly arrived in China would not be required at the front. They had to content themselves with occasional work in the Hong Kong Station Hospital. The terms offered were £1 a day, with 3s. 6d. a day field allowance, servant, horse, and rations. The authorities have refused to make these allowances till the civil surgeons are actually sent on active service to the front. The surgeons now delayed at Hong Kong have to spend practically £1 a day on their hotel and other expenses, whereas on active service their expenses would have been practically *nil*. Recent events have proved that whenever the country has called for fighting men, medical men have been ready to volunteer on a service not less dangerous; but the scanty reply to the late call of the Colonial Office for medical men for Ashanti, the speedy return of men from a merely temporary plague service in India, and the grievances now felt by the civil surgeons of the China Force, should make it clear to Government officials that it is not only a petty but a false economy to seek to take advantage of the patriotic feelings of the individual to save the Exchequer a few shillings a day.

THE M.D. DEGREE AT THE VICTORIA UNIVERSITY.

On October 24th last it was moved in the meeting of Convocation of the Victoria University that its statutes should be altered so that a candidate for the M.D. degree might elect either to write a thesis as hitherto, or, as an alternative, to pass an examination. The motion was based on the ground that an examination was the test of general knowledge, while a thesis was the test of special knowledge, and for the general practitioner "it was the general knowledge that was valuable." On the other side it was urged that the higher degree should be conferred for the knowledge which came from special research. To many the mover's argument will appear fallacious. His remarks, if they are reported correctly, seem to imply that general knowledge is alone valuable to a general practitioner, which is surely a great mistake. On the other hand, the argument of those who opposed his motion will to many seem inadequate. For it is surely not so much the special knowledge that is acquired in writing an original thesis which is so valuable—and it is valuable—as the training in scientific method which is thereby gained. And this must seem to not a few of quite priceless value, whether to the general practitioner or to the specialist. The general practitioner may know something of everything—medical, surgical, and obstetrical—and the specialist everything of something, but both are the better for training in scientific methods, which are best learnt by doing some original work. It may be desirable to give candidates the alternative of choosing between a general examination and a thesis with examination thereon. That is a question which is, we understand, to be threshed out by a Committee. We are only urging that the arguments used on either side during the debate in Convocation do not appear to be altogether sound.

THE LATE MR. WILLIAM ANDERSON, F.R.C.S.

We have to record, with very sincere regret, the death of Mr. William Anderson, Surgeon to St. Thomas's Hospital, which occurred on Saturday last, October 27th. Mr. Anderson was not only Surgeon to St. Thomas's Hospital, but Professor of Anatomy in the Royal Academy of Arts, and one of the chief authorities on the arts of Japan, in which country he had resided as Principal of the Naval Medical College, Tokio, from 1873 to 1880. Mr. Anderson was a man of gentle and somewhat retiring disposition, but his friendship was deeply valued by those who had the advantage of enjoying it. We are indebted to Sir William MacCormac, who, in response to our request, has sent us the following lines "in affectionate memory of my old colleague, whose friendship I have enjoyed for the last thirty years":

I, in common with all who knew him, deeply regret the premature death of William Anderson. I first met him in the old days at St. Thomas's, before he went to Japan. He was then a most brilliant and seductive teacher of anatomy, and no one had a larger place in the heart and mind of the pupils of the school. When he went to Japan in 1873 he carried many regrets with him—regrets at his being lost to St. Thomas's and regrets at what appeared the sacrifice of a brilliant career at home. However, he elected to go, and in the Far East did much good work, gained lasting friendships, and, beyond this, applied his own great knowledge of art to the cultivation and acquisition of some of the artistic wealth and records of that marvellous kingdom, modern and also ancient Japan. The valuable and historic collection he made there of its art treasures was acquired by the nation, and is now in the British Museum. Presently he received an intimation from his former colleagues that his presence at his old school once more would be very welcome, and he returned there in 1880 to resume his anatomical teaching, and to take part in the surgical work of the hospital. He was, I take it, a retiring, perhaps even a shy man; his artistic temperament revolted against the rough contacts of life, and justice was not suffi-

ciently meted out to his many-sided abilities. Yet he possessed a strong individuality; he was strong of purpose, and his convictions, once arrived at, were steadfastly held. He was a loyal friend and colleague, and an upright honourable gentleman. The place he occupied amongst us will be very to fill.

LIVERPOOL UNIVERSITY COLLEGE OLD STUDENTS' ASSOCIATION.

DURING the last few months an Association of Old Students of the Liverpool University College has been formed, the first President being Dr. J. Hill Abram, Assistant Physician to the Royal Infirmary and Assistant Lecturer on Pathology in the school, to whose initiative the formation of the Association is in great measure due. The objects of the Association are to foster a permanent interest in the College on the part of former students, and to form an Appointments Committee, such as exists in connection with some of the older universities. This committee is to consist of the Principal, a representative from each faculty of the College, and such other persons of influence as the Committee shall select. The Association already includes 300 members of both sexes. An endeavour will be made to form a register of all past students, including short biographical sketches. The Association held its first annual dinner at the Adelphi Hotel on October 27th. The President, Dr. J. H. Abram, was in the chair, and covers were laid for ninety ladies and gentlemen. The visitors included Principal Dale, who, in proposing the toast of "The Association," said that he cordially welcomed it as a means of maintaining the active interest of old students in the welfare and development of University College. Dr. Abram, in reply, said that the progress already made in the organisation of the affairs of the Association and the number of members enrolled were most encouraging. He drew special attention to the appointments department of the Association's work, which he hoped would, with the co-operation of members of the staff and others, prove of the greatest value to those seeking employment, alike in professional and commercial life. He further emphasised the necessity for a students' union and club house, to which old students might resort when visiting the College. In conclusion the Chairman, amid applause, expressed the hope that at no distant period Liverpool would have a university of her own, thus identifying her students with the city. The dinner was followed by a reception, which was largely attended. A programme of music was ably rendered by the Cathedral Glee Singers assisted by the principal solo chorister of the Cathedral.

TYPHOID FEVER AND MANGLES.

DR. JOSEPH PRIESTLEY, M.O.H., has just presented to the Lambeth Vestry a report on the recent small epidemic of typhoid fever to which reference was made in a former issue. There were 41 cases, and the outbreak was confined practically to three streets. The houses of these streets are all in fair condition, in contradistinction to those in certain neighbouring streets, 58 of which have been condemned as unfit for human habitation, and are being renovated slowly. In this latter condemned area no cases occurred. The causes of the epidemic were made the subject of careful investigation, including a complete house-to-house visitation, which revealed the existence of some unsuspected or unnotified cases. An inquiry into the milk, water, defective drains, oyster and other shellfish consumption, ice creams, etc., did not appear to Dr. Priestley to prove that these ordinary channels of infection had any causal relation to the epidemic, although in one case there was reason to suspect an excessive indulgence in ice creams. Dr. Priestley finally traced the spread of the disease to mangles. It is the custom of the inhabitants of the streets in which the epidemic occurred to "do their own washing" and then to take the clothes to a neighbour who possesses a mangle. There are four such mangles in the affected area, and 26 cases arose among the customers of the "manglers." Now, however inclined one may be, at first, to be sceptical of the correctness of such a view, there are several facts in its favour. Clothes soiled with dejecta are extremely difficult to disinfect. Unless placed for a considerable period in boiling water, which is allowed to come freely in contact with all parts of the clothes, particularly where there may be any fæcal contamination, the bacili are not really subjected to to any severe heat. Such clothes are passed through a mangle after being cooled by transit to the house of the "mangler." Dishcloths, handkerchiefs, table linen, sheets, etc., all pass through the same mangle wet, and therefore in the most suitable condition to retain particles of infected material. The dishcloths are used to wipe out the various utensils in which the articles of diet are placed, and other articles have to be washed again in a few days, so that such a source of infection is not so impossible as may at first appear. Lastly, Dr. Priestley describes the precautions that have been taken to stamp out the epidemic; the house-to-house visitation was maintained till no more secondary cases occurred; all rooms, bedding, etc., were disinfected, all cases removed to hospital, and the mangles specially treated with a strong formaldehyde solution. In these measures he had the co-operation of the medical men in attendance, and of the owners of the houses who are carrying out his suggestions as to disinfection, etc. A somewhat remarkable feature of the epidemic was the proportion of children attacked. Of the 41 cases 21 were under 12 years of age. Four of the total number of cases terminated fatally. Another feature of the epidemic was the evident difficulty presented by diagnosis, for many of the cases were considered to be influenzal in origin, and numerous cases were not recognised as enteric till late in the course of the disease. This fact is, however, not surprising, as so many children were infected, for the diagnosis of the disease in the very young is notoriously difficult. Bacteriological methods of diagnosis, facilities for which the Vestry of Lambeth provides, free of cost, to the medical practitioners practising within its area, are, Dr. Priestley states, being more and more used, but in this particular outbreak the early doubtful cases were not examined bacteriologically. Although the final word has not yet been said on the Widal reaction, yet a positive result, when obtained, is of great diagnostic value, and more especially so in the case of enteric fever in infants, for the possibility of previous infection is almost necessarily excluded by the circumstance of age. The fact seems to be that we are coming to the position that the assistance of bacteriology should be invoked in all cases of continued fever, particularly at the outbreak of a series of cases. The earliest cases are often the mildest in type, the virulence of the disease increasing as the specific micro-organism passes through a series of human cultivations.

"HOSPITAL SCANDAL AT CHESTER."

UNDER this title the *Manchester Guardian* for October 23rd publishes a report of an inquest held at Chester Workhouse by the local coroner upon the death of an old man named John Williams. It appears that he fell down in the street on October 1st, and fractured his left thigh. He was removed on the same day from his home to Chester Infirmary, where he remained until October 12th, when he was transferred to Chester Workhouse, where he died. At the inquest it was stated that he had been removed to the workhouse because he was noisy and disturbed other patients, but the removal was effected in a cab, and the medical officer to the workhouse said that on admission the patient was in a delirious state, his pulse was weak, and his body filthy. The witness did not think he was in

a fit state to be removed from the infirmary, and that it was "an extremely dangerous" and "a most inhuman" thing to do. This rather strong language was endorsed by the coroner, who said that it was in his opinion "simply due to the fact that the patient was a poor man and unable to pay for his board and lodgings at the infirmary that he was sent to the workhouse." The jury returned a verdict of accidental death, and added that they were of opinion that Williams was not in a fit condition to be removed from the infirmary, and that proper appliances should be provided by the infirmary authorities for the removal of patients. The report suggests a state of things which calls for the attention of the Committee of Management of the Chester Infirmary and for some alterations in the practice of that institution. It is certainly a matter for surprise that in a city like Chester there should not be an ambulance available for the removal of patients, and we do not quite understand under what regulations a person who was so ill as the deceased could have been sent from the infirmary to the workhouse. If Chester Infirmary does not possess suitable isolation wards for patients who are noisy and disturb others the sooner the Committee of Management remedy this defect the better. We do not understand the remark of the coroner that the deceased was a poor man and unable to pay for his board and lodgings at the infirmary, as we can hardly conceive that it is customary for patients in the Chester Infirmary to pay for their board and lodgings. It is always painful to find one member of the medical profession publicly censuring the conduct of another, and we regret that Dr. Archer should have used such strong language, but if the report is to be trusted there certainly was grave cause for the dissatisfaction expressed by the verdict of the coroner's jury.

THE OUTH AFRICAN HOSPITALS COMMISSION.

Lord Justice Romer, Sir David Richmond, Dr. W. S. Church, and Professor Cunningham, members of the South African Hospitals Commission, reached England on Saturday last in the *Kinfauns Castle*. The Commission travelled all over the theatre of war in South Africa, and held forty-one sittings. Owing to the frequent raiding of the Boers their journeys were not always without a certain element of risk. Their special train could, as a rule, only travel by day, and was twice delayed to allow bridges to be repaired. Once a station where they had stopped for the night was threatened with an attack. It is announced that the Commission will meet to take further evidence on Monday next at Burlington House, when Mrs. Richard Chamberlain will be the first witness examined.

GULLEY TRAPS AND SEWER GAS.

It is not easy to overestimate the importance of plumbers' work from a public health standpoint, and this fact is receiving more general recognition year by year. In a lecture delivered by Dr. Mansel-Howe at Maidstone, which has recently been reprinted from the *Sanitary Journal*, and issued in pamphlet form, the generally approved principles of sanitation, so far as they relate to plumbers' work, are clearly and well stated; and it is only to one novel suggestion by the lecturer that we propose to call attention. All will admit that gulley traps down which waste waters flow are liable to be offensive—sometimes, on that account, dangerous to the children who are so generally found playing in their immediate vicinity; and also that during a period of prolonged drought there is a danger of sewer gases escaping from those gulleys exclusively provided for rain water. From these reasons, Dr. Mansel-Howe objects to the principle that they should be placed well in sight, where they may be seen and attended to, but advises that such traps should be placed in an inspection and ventilating chamber underground. He proposes to divide the inspection chamber into two compartments, placed one above the other, and separated by a doubly sealed cover. The lower and smaller chamber is the drain chamber, and the upper and larger is the gulley chamber, and in this latter the gulleys receive the waste pipes, and then discharge, on the other side of the trapping water, into the drain channel in the lower chamber. Each chamber is separately ventilated to the roof level, and, inasmuch as the gulley traps are placed beneath the ground, in a chamber the atmosphere of which would be uniformly moist, it is hardly conceivable that the water seal of these gulley traps would fail during even the longest drought. We see no disadvantage to set against the advantages claimed, save the one of extra cost.

PROFESSOR A. W. HUGHES.

We regret to learn that the condition of Professor Hughes, of King's College, who recently returned from South Africa with enteric fever, has during the past week caused considerable anxiety. His colleague, Dr. Tirard, found that he was very prostrate, and that there was some engorgement at the base of the right lung. These conditions speedily improved, but were followed by phlebitis, and by great weakness of the circulation. At the moment of going to press we are informed that the immediate urgency of the symptoms has passed, but that Professor Hughes is still extremely weak.

THE LATE PROFESSOR RUTHERFORD.

On Sunday, October 14th, at the close of the service in Ancrum Parish Church, a beautiful stained-glass window was dedicated to the memory of Professor Rutherford. The design in two lights illustrated the parable of the Sower and the Reaper, and bears at the foot this inscription: "In memory of William Rutherford, Professor of Physiology, for five years in King's College, London, and for twenty-five years in the University of Edinburgh. A native of this parish. Born April 20th, 1839. Died February 21st, 1899. Dedicated by his sister, Catherine Wilkie Rutherford, of Ancrum Craig."

COMPU SORY NOTIFICATION OF PHTHISIS IN DUBLIN.

The Public Health Committee, acting on the recommendation of the Medical Superintendent Officer of Health, has sent a report to the Corporation of Dublin, recommending that, as a tentative measure, tuberculosis of the lungs should be made for one year a compulsorily notifiable disease. The lecture on consumption, delivered by Dr. Craig at the opening of the session in the Meath Hospital, an abstract of which appeared in the British Medical Journal on October 20th, 1900, page 1214, aroused the interest of the public to the great prevalence of the disease in the city, and seeing that the number of deaths from phthisis which occurred in Dublin during the third quarter of the present year was considerably greater than the average for the same quarter during the past ten years, it is a happy omen that the Public Health Committee is showing signs of active interest in the prevention of tuberculosis.

Sir Michael Foster, K.C.B., will distribute the prizes to students at St. George's Hospital Medical School on Tuesday, November 6th, at 3 P.M.

A special meeting of the Incorporated Society of Medical Officers of Health will be held at the Examination Hall, Thames Embankment, at 2.30 P.M. on Saturday, November 10th, when addresses will be given by Mr. Cantlie on the etiology and clinical aspects of plague, and by Dr. Klein on its bacteriological aspects. Dr. Chalmers will describe preventive measures with special reference to the line followed at Glasgow. Any member of the profession desiring to attend can obtain a ticket of admission on application to the Honorary Secretaries, 197, High Holborn, W.C.

EDINBURGH ROYAL INFIRMARY.

THE new pavilion of the Edinburgh Royal Infirmary was formally opened on October 26th by Princess Henry of Battenberg.

THE DIAMOND JUBILEE FUND.

At the time of the Diamond Jubilee a fund was started with the object of collecting from the citizens of Edinburgh and others a sum sufficient to cover the cost of such a pavilion, to be specially set apart for the treatment of diseases of women, and also to provide some additional endowment for the Jubilee Institute of Nurses. One-tenth of the fund was to be given to the latter, and nine-tenths to the Infirmary. The amount handed over to the Treasurer of the Infirmary was £19,178 7s. 11d., but the building, furnishing, and equipment of the pavilion will cost something like £40,000.

THE NEW PAVILION.

The new pavilion faces the meadows and is immediately west of the previously existing buildings, with which it is connected by a covered corridor on the ground floor, and by a small open gallery on the first floor. The ground it occupies was the site of the old Sick Children's Hospital. The new building is not of the same size, nor of precisely the same type of architecture, nor the same colour of stone as the other pavilions. It is larger, is of red stone, and is in a modified Scottish baronial style of architecture. Its length is 220 feet and its width 65 feet. It is in five storeys. The basement contains, what the infirmary never before had, a bathing establishment for the whole house. There is a Turkish bath with three hot rooms, a douche room, needle, vapour, electric, sulphur, and other medicated baths, and a large cooling-room. Lavatories, dressing-rooms, attendants' rooms fill up the rest of the basement, which is lined and floored with tiles. Separating the basement from the first floor is a strong double-concrete fireproof floor, with intermediate ventilated air space, so as to avoid overheating or steaming the ward above. At the south or meadow end of the pavilion there are at the corners octagonal turrets for baths and lavatories for the wards, while between these turrets are open balconies. At the north-east corner is a square tower rising 100 feet in height. This, in its lower part, contains the main staircase, giving entrance to the various storeys, but cut off from the wards by a ventilated corridor with glass doors, while the upper part contains electric fans for ventilating the whole building.

ARRANGEMENTS OF THE WARDS.

The ward on the ground floor, 102 feet long by 28 feet in breadth, is meant to be used as an ordinary spare medical ward, and is arranged for 22 beds. At the north end, split into two halves by a corridor 10 feet broad, are a lecture room, three wards with 2 beds each, a convalescent room, nurses' room, ward kitchen, linen stores, ward baths, lavatories, etc. The first and second floors are set apart for the treatment of diseases peculiar to women. The main ward is of the same size as that on the ground floor. The arrangements at the north end of the ward are, however, different. There is the same central corridor, which has on the one side nurses' parlour, nurses' bedroom, isolation ward, lavatory, bathroom, and kitchen, and on the other the physician's room, followed by demonstration room, waiting room, two special wards, and the operating room. One of the special wards will be used as an anæsthetising room. The operating rooms are tiled throughout. In the wards the plaster has been put on a brick lining, separated from the outer wall by an air space. The floors are all of iron and concrete, and the floor boards are nailed on a layer of asphalte laid on concrete. The corners are all rounded. There are no cornices.

NURSING AND DOMESTIC ARRANGEMENTS.

The top floor has 14 single rooms for nurses, 7 rooms for servants, with lavatories, bath-rooms, box-rooms, etc. There are lifts throughout, one large enough to contain a patient in bed. Electric light is provided. As to the rest of the infirmary, a memorial granite on the south end sets forth that the building is dedicated to the glory of God for the healing of human suffering as the thank offering of many for the great benefits bestowed on the realm during the Queen's reign.

It is historically interesting to note that the foundation stone of the present Royal Infirmary was laid by the Prince of Wales on October 13th, 1870; that her Majesty visited the institution on August 24th, 1881, when she named the "Victoria" Ward in the Surgical House, and the "Albert" Ward in the Medical House; and that the Prince and Princess of Wales visited the hospital on August 22nd, 1884, and named two wards, the "Albert Edward" and the "Alexandra." Somewhere about half a million sterling has now been expended on the land, buildings, and equipment of the Edinburgh Royal Infirmary.

Between the new pavilion and the laundry, which lies to the north, two smaller buildings are being erected for the treatment of diseases of the eye, and for diseases of the ear, nose, and throat.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

PORT OF LONDON.

THE following statement was issued by the Local Government Board on October 30th: On the arrival of the steamer *Ben Lomond* in the Port of London from the Philippine Islands last Friday, a member of the crew was found, by the Medical Officer of the London Port Sanitary Authority, to be recovering from suspected chronic plague. The ship was detained at Denton for the removal of the man to hospital, and for the necessary disinfection. The malady from which he suffered has since been pronounced by Dr. Klein to have been of the nature of plague. The man is being detained for a while at the Port Hospital, near the mouth of the Thames, and the steamer and the effects in it have been disinfected and other precautionary measures taken.

GLASGOW.

During the past two weeks the inmates of the plague hospital in Glasgow have been gradually reduced, until at the present moment there are only 8 convalescents in the hospital. No suspected cases have occurred during the month of October; and the reception houses are free of plague contacts.

Glasgow is to be congratulated upon the limitation of the outbreak, which is to be attributed to the enlightened way in which Dr. Chalmers and his colleagues have dealt with the threatened epidemic.

INDIA.

During the last week of September and the first week of October the number of deaths from plague in India were 2,136 and 2,123 respectively; there was thus a slight decline. This is a hopeful sign, as during every autumn since 1896 the number of deaths from plague have increased progressively week by week until the present year. It is unwise to build upon so slight a decrease, and to prophesy a cessation, but in the northern parts, at all events, the lessening of the severity of the famine may have something to do with the relative falling off of plague cases.

In Bombay the numbers of plague deaths were 87 and 86 respectively for the last week of September and the first week of October. These returns show that the mortality from plague this year is but half of that recorded during corresponding dates of the past four years. Mandvie, the district of Bombay where plague first appeared and where during every recrudescence it has been most virulent, accounts for 21 out of the total of 87 deaths recorded in Bombay. In every other district an improvement is evident, and it is surely time that the sanitary authorities in Bombay seriously tackled this insanitary district, completely evacuating the whole of it if need be. This may appear an expensive and a high-handed measure, but if it would rid Bombay of plague it would be repaid a hundredfold in the near future.

In the Bombay Presidency during the week ending October 7th there were 1,142 deaths from plague, the majority of the deaths occurred in the cities of Poona and Belgaum. In Poona the numbers vary from day to day, but between 70 and 104 deaths were recorded daily during the week. Many of the shops in Poona are closed and the well-to-do residents are once more leaving the city. The authorities are closely watching the effects of inoculation in the community. Fifty-two persons inoculated more than a year ago have had the disease, but only in a mild form. In the Poona cantonment no case of plague had occurred amongst those inoculated last year. Among 7,688 persons inoculated this year no cases have occurred up to the present.

In Belgaum the disease continues unabated, some 20 to 30 deaths from plague occurring daily. Three Europeans (two soldiers and one civilian) attacked by plague are all recovering.

In Mysore City the alarming increase previously reported continues. Abandoned corpses, dead of plague, are being found in several districts of the city, proving how severe is the epidemic. During the three weeks previous to October 7th the plague deaths in the City of Mysore numbered 480, 609, and 543 respectively.

In Bangalore the mortality from plague, during the three weeks previous to October 7th, was 65, 95, and 91 respectively. Where places have been found newly infected, dead rats have been met with in numbers.

A great outbreak of plague is reported from the Kolar Gold Fields.

In Calcutta the plague deaths during the two weeks previous to October 7th were 47 and 88 respectively.

MAURITIUS.

During the week ending October 18th, 54 fresh cases of plague and 35 deaths from the disease were recorded. During the week ending October 25th, 64 fresh cases and 30 deaths from plague occurred.

HONG KONG.

The fresh plague cases during the weeks ending October 20th and 27th were 5 and 1 respectively, and the number of deaths from the disease for the two weeks were respectively 5 and 1. The autumn is the period during which plague has usually subsided in Hong Kong, and this year the same rule would appear to hold good.

ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF COUNCIL.

At a meeting of the Council, held at the office of the Association, 429, Strand, W.C., Wednesday, October 24th, 1900.

Present:

Dr. John Roberts Thomson, President of Council, in the Chair.
Dr. William Alfred Elliston, President.
Dr. G. B. Ferguson, President-elect.
Mr. Andrew Clark, Treasurer.

Dr. Edgar G. Barnes, Eye.
Dr. James Barr, Liverpool.
Dr. Rayner W. Batten, Gloucester.
Dr. T. Beattie, Newcastle-on-Tyne.
Dr. Michael Beverley, Norwich.
Dr. Thomas Bridgwater, LL.D., Harrow-on-the-Hill.
Mr. Langley Browne, West Bromwich.
Professor W. J. Byers, Belfast.
Mr. Colin Campbell, Saddleworth.
Dr. Alfred H. Carter, Birmingham.
Dr. Edward J. Cave, Bath.
Mr. Thomas H. Cheatle, Burford.
Dr. John Ward Cousins, Portsmouth.
Dr. H. Radcliffe Crocker, London.
Dr. George W. Crowe, Worcester.
Dr. T. M. Dolan, Halifax.
Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, London (South Indian and Madras Branch)
Dr. William Dyson, Sheffield.
Mr. George Eastes, M.B., London.
Professor David W. Finlay, Aberdeen.
Dr. John H. Galton, Upper Norwood.
Dr. Alfred Godson, Cheadle.
Dr. Bruce Goff, Bothwell.
Dr. Joseph Groves, Carisbrooke.
Surgeon-General J. B. Hamilton, London.
Dr. Henry Handford, Nottingham.
Dr. W. M. Harman, Winchester.
Mr. John D. Harries, Shrewsbury.
Dr. T. Arthur Helme, Manchester.
Dr. C. Holman, London.
Mr. Victor Horsley, F.R.S., London.
Mr. T. Vincent Jackson, Wolverhampton.
Mr. T. R. Jessop, Leeds.
Mr. Evan Jones, Aberdare.
Mr. R. H. Kinsey, Bedford.
Mr. Jordan Lloyd, Birmingham.
Dr. W. A. Mackintosh, Stirling.
Dr. C. H. Milburn, Hull.
Dr. J. W. Miller, Dundee.
Sir John William Moore, M.D., Dublin.
Brigade-Surgeon T. B. Moriarty, Cork.
Dr. C. G. Drummond Morier, London (Adelaide and South Australia Branch).
Dr. James Murphy, Sunderland.
Dr. James Murray, Inverness.
Dr. Thomas Niven, Newburgh.
Surgeon-General T. F. O'Dwyer, Aldershot.
Mr. D. A. O'Sullivan, Southport.
Mr. C. H. Watts Parkinson, Wimborne Minster.
Dr. Charles Parsons, Dover.
Dr. H. H. Phillips-Conn, Reading.
Dr. Frank M. Pope, Leicester.
Dr. A. Brown Ritchie, Hulme.
Mr. H. Betham Robinson, M.S. London.
Dr. John Rolston, Devonport.
Dr. L. W. Sedgwick, London.
Dr. Alfred Sheen, Cardiff.
Dr. G. E. Shuttleworth, Richmond.
Dr. E. Markham Skerritt, Clifton.
Mr. Henry Stear, Saffron Walden.
Mr. C. S. Tomes, F.R.S., London.
Dr. W. J. Tyson, Folkestone.
Mr. T. Jenner Verrall, Brighton.
Dr. Norman Walker, Edinburgh.
Dr. S. Woodcock, Old Trafford.

The President of Council having reported that the minutes had been printed and sent to each member of the Council asked the General Secretary if there had been any objection taken to them. The General Secretary reported that Dr. Barr had given notice of a correction, namely, that the name of Professor Byers had been recorded as a member of the Scientific Grants Committee instead of that of Dr. Barr.

Resolved: That the minutes be corrected accordingly.

Read letters of apology for non-attendance from Sir George Hare Philipson, Dr. Henry Barnes, Dr. R. Saundby, Dr. P. Maury Deas, Dr. Freeland Fergus, Dr. C. G. Gooding, Dr. R. Maclaren, Mr. Jones Morris, and Dr. R. W. Philip.

Dr. Miller introduced Dr. Norman Walker, representative of the Edinburgh Branch, and Dr. Niven, of the Perthshire Branch; Dr. Barr introduced Mr. Colin Campbell, of the Lancashire and Cheshire Branch; Mr. D. A. O'Sullivan introduced Brigade-Surgeon Moriarty, of the Cork and South of Ireland Branch; Dr. Pope introduced Dr. James Murray, of the Northern Counties of Scotland Branch.

Resolved: That the Council of the British Medical Association desire to record their deep sense of the loss sustained by the profession and by the Association through the death of Sir Henry Acland, Bart., K.C.B., M.D., F.R.S., Vice-President of the Association. The Council recall the distinguished services he rendered to the Association during his presidency in 1868. They remember the warm and active interest he at all times took in every question affecting the welfare and honour of the profession, and the great influence he exercised by so long a connection with the University of Oxford. The Council desire also to convey to his sorrowing relatives their deep sympathy with them in their bereavement.

The President of the Council reported the reply from Sir Arthur Bigge to the resolution of sympathy passed by the General Meeting of members at Ipswich upon the death of the Duke of Edinburgh and Saxe-Coburg-Gotha, also the reply of the Home Secretary:—

Osborne,
August 2nd, 1900.

President of the British Medical Association, Ipswich.

The Queen desires me to convey to you and Association her thanks for kind message of sympathy.

A. Bigge.

B32475 A/11 Whitehall,
August 14th, 1900.

Sir,—I have had the honour to lay before the Queen the resolution of the British Medical Association, conveying a message of sympathy in the bereavement sustained by Her Majesty by the death of His Royal Highness the Duke of Saxe-Coburg and Gotha, Duke of Edinburgh, which resolution Her Majesty was pleased to receive very graciously.

I have the honour to be, Sir,
Your obedient servant,

The Town Clerk of Ipswich. M. W. Ridley.

Read reply of Lord Salisbury to the communication from the Contagious Diseases Committee respecting the prevalence of venereal disease:

Foreign Office, July 30th, 1900.

Dear Sir,—I am desired by Lord Salisbury to acknowledge the receipt of your letter of the 23rd July drawing attention to certain resolutions which were passed at the Brussels Conference, held in September, 1899, and expressing the hope that a Departmental Committee may now be appointed to inquire into the subject of the prevalence of venereal disease.

In reply, his Lordship desires me to say that the matter will receive the consideration of Her Majesty's Government.

I am, Sir,
Your obedient servant,
Clive Cuthbertson.

J. R. Thomson, Esq., M.D., F.R.C.P.

Read reply from Mrs. Leech to the letter of sympathy forwarded by the President of Council on the death of Professor D. J. Leech:

Elm House, Whalley Range, Manchester,
September 29th, 1900.

Dear Sir,—Will you kindly convey to the members of the Council my sincere thanks for their kind resolution forwarded to me by you, and for their very kind expressions of sympathy with me?

I appreciate both very much indeed.

Believe me,
To the President of Council, British Medical Association. Yours very sincerely,
Louisa M. Leech.

Resolved: That the same be received and entered on the minutes.

The President of Council presented the minutes of the Journal and Finance Committee.

Resolved: That the minutes of the Journal and Finance Committee be received.

Resolved: That the accounts for the quarter ending September 30th last, amounting to £9,367 3s. 8d., be approved, and it be recommended that the Treasurer be empowered to pay those remaining unpaid, amounting to £2,573 17s. 5d.

Resolved: That the quarterly report of auditors be approved.

Resolved: That a grant of £20 to the Therapeutic Committee be approved.

Resolved: That the minute respecting the presentation of the certificate of Honorary Membership to H.R.H. the Prince of Wales be approved and adopted.

Resolved: That the President of the Association, President-elect, President of Council, the Treasurer, the past President of the Association and the General Secretary be appointed a deputation to wait on the Prince of Wales to present the certificate of Honorary Membership.

The President of Council presented the minutes of the Premises and Library Committee of the 23rd inst., and reported that the present heating boiler had broken down and was incapable of being repaired, and that the Committee recommended two new boilers at a cost of £159.

Resolved: That the minutes of the Premises and Library Committee be received.

Resolved: That the estimate of Messrs. Dent and Hellyer for two new boilers at a cost of £159 be accepted.

The President of Council then presented the minutes of the Constitution Committee of the 23rd inst.

Resolved: That the minutes of the Constitution Committee be received.

Resolved: That copies of the report of the National Union of Teachers, 1900, be obtained and sent to each member of the Constitution Committee.

The President of Council presented the minutes of the Arrangement Committee, and called upon the President-

elect, who moved each minute item by item. The proposals for officers of Sections were agreed to.

Resolved: That the President of Council and the President-elect be empowered to fill up any vacancies in the Sections which may occur.

It was moved and seconded: That the Addresses in Medicine and Surgery be delivered on the evenings of Wednesday and Thursday, in order that the afternoons of those days should be reserved for the general business of the Association.

The motion having been put from the Chair the same was declared to be lost.

Whereupon a further amendment was moved: That the Address in Medicine be given on the Wednesday evening of July 31st.

The amendment having been put from the Chair the same was declared to be carried.

It was moved and seconded: That the dinner of the Association be discontinued this year.

The amendment having been put from the Chair the same was declared to be lost.

Read correspondence with reference to the O'Hara case.

Resolved: That this Council recognise that the very serious allegation made against Mr. O'Hara should have been considered by them in the interests both of the accused and of all the members of the Association; but since Mr. O'Hara has thought fit to leave the Association the question has now passed out of the jurisdiction of this Council.

Resolved: That in reply to the questions of jurisdiction raised in the communication of July 3rd, 1900, from the Council of the Victorian Branch, the Council of the British Medical Association wish to point out that this Council has power to investigate the conduct of any member, and that it alone has the power to expel a member from the Association, such power being subject to confirmation at the next annual meeting of the Association. When a member is expelled from the Association, he *ipso facto* ceases to be a member of any Branch. The Branches have only power to deal with their own membership apart from membership of the Association.

Resolved: That a copy of these resolutions be sent to each of the bodies who have communicated to the Council.

The reappointment of the Medical Charities Committee in accordance with resolution of Council 4985 was then considered:

4985 Resolved: That the appointment of the Medical Charities Committee be postponed until the October meeting of Council.

Resolved: That the following be the Medical Charities Committee for the ensuing twelve months, namely:

The President, the President-elect, the President of Council, the Treasurer, Dr. T. Bridgwater, Mr. Langley Browne, Mr. Geo. Brown, Dr. D. Goyder, Dr. Major Greenwood, Dr. H. Handford, Mr. H. Nelson Hardy, Dr. A. J. Harrison, Mr. Geo. Jackson, Mr. J. Brindley James, Mr. Evan Jones, Mr. H. W. Kiallmark, Dr. J. W. J. Oswald, Dr. Isambard Owen, Dr. A. Brown Ritchie, Dr. A. Sheen, and Dr. Hugh Woods.

Resolved: That the Treasurer, Dr. Barr, and Dr. Dolan be appointed a Committee to confer with the United Kingdom Police Surgeons' Association on the question of Fees to Medical Witnesses in Courts of Law.

Read communication from the Committee on Medical Organisation:

Trafalgar Square,
Ashton-under Lyne,
August 3rd, 1900.

Dear Sir,—At the conclusion of the interview between the Council of the British Medical Association and the deputation from the above Committee at Ipswich on the 1st instant, the President of Council requested me to forward you an official copy of the resolutions which we had just laid before them. I have much pleasure in enclosing a copy in accordance with that request.

Believe me, yours sincerely,
SAML. CRAWSHAW, Hon. Sec.

Francis Fowke, Esq.

Copy of resolutions passed at the Manchester Conference, and laid before the Council of the British Medical Association on August 1st, 1900, at Ipswich:

1. That in the opinion of this Conference no scheme of medical organisation can be considered satisfactory unless it provides the following machinery:
   (*a*) Local or district associations formed wholly or partly for the discussion of medico-ethical or medico-political topics, to which all registered practitioners in the locality who agree to conform to the rules of the Association shall have the right to belong. Such associations to be formed where not already existing.
   (*b*) An annual conference of delegates from these associations, a which Conference only medico-ethical and medico-politica topics shall be discussed.
   (*c*) A central executive committee which shall be nominated and elected by the local associations for a period of three years, one-third to retire annually and to be ineligible for re-election for one year.

2. That this Conference is of opinion (*a*) that the pressing need in medical organisation is concentration; (*b*) that the multiplication of associations other than those purely local is to be deprecated; (*c*) that the size, position, and wealth of the British Medical Association make it the most suitable medical organisation; and (*d*) that the efforts of all medico-ethical and similar associations and of this Conference should be directed to the conversion of the British Medical Association into an energetic body really representative of the profession.

Resolved: That the same be received and referred to the Constitution Committee.

The President of Council reported that Dr. Miller and Dr. Corns were unable to serve on the Friendly Societies Committee.

Resolved: That Dr. Bruce Goff and Dr. Alfred Cox be asked to join this Committee in the place of those unable to serve.

Read letter from Sir George Hare Philipson forwarding a framed photograph of himself.

Resolved: That the thanks of this Council be given to Sir George Hare Philipson for his portrait for the Council Room.

Read communications from Dr. Heaton, complaining that he was not allowed to see a copy of the report of the Subcommittee on the National Deposit Friendly Society.

Resolved: That a copy of the report of the Subcommittee be sent to any member of the Association applying for it.

Resolved: That a letter be sent to Dr. Heaton, saying that the Council had never approved of the fees of the National Deposit Friendly Society.

Resolved: That the National Deposit Friendly Society be informed that their scale of fees has not been approved by the Council of the British Medical Association, and that they be warned not to make such a statement in future.

Read resolution passed by the Medical Guild, Manchester, respecting lectures on midwifery:

Manchester, October 16th, 1900.

To the Secretary of Council, British Medical Asssociation.

Dear Sir,—I have the honour to forward you the following resolution, which was passed at the last meeting of the Medical Guild on Thursday, October 11th, as follows:

"That in the opinion of the Council of the Medical Guild all lectures on midwifery as distinct from midwifery nursing, to midwives as distinguished from monthly nurses, ought to be discountenanced by the profession."—Yours faithfully,

ARNOLD W. W. LEA.

Resolved: That the resolution be received and entered on the minutes.

The President of Council called on the Treasurer to speak to the report which had been submitted on the case of Dr. Kaye.

Resolved: That the substance of the report be sent to Dr. Kaye.

Resolved: That a Committee be appointed to investigate the unsatisfactory nature of the conditions of the medical service in the West African and Crown Colonies and Protectorates, and the names of the four gentlemen be Surgeon-Lieutenant-Colonel J. J. Lamprey, R.A.M.C., Dr. T. R. Bradshaw, Mr. James Cantlie, and Dr. R. Saundby.

Read resolution passed at the annual general meeting held at Ipswich.

Opinion of Branches on the Question of "Wage Limit."—That this meeting resolves that the Council be requested to issue circulars to all Branches of this Association inviting them to express an opinion and submit proposals on the question of the "wage limit" as applied to clubs, provident dispensaries, and societies, etc., with a view to suggesting a reasonable and fair working basis. Furthermore, that it be an instruction to the Council to report and advise this Association thereon at its next annual meeting.

Resolved: That the matter be referred to the Parliamentary Bills Committee.

Read the following resolution passed at the annual general meeting held at Ipswich.

Indian (Military) Medical Service.—The present system of filling professorial chairs in the medical colleges in India by virtue of grade rank in the Indian (Military) Medical Service is apparently prejudicial to the interest of medical education and the advancement of original research in India. This meeting hereby appoints a subcommittee to consider the matter and report to the Council.

Resolved: That the matter be referred to the Parliamentary Bills Committee.

Read resolution passed in the Section Navy, Army and Ambulance at the annual meeting held at Ipswich.

NAVY, ARMY, AND AMBULANCE SECTION.

That the Navy, Army and Ambulance Section requests the Council of the British Medical Association to appoint a Committee to draw up a scheme to be forwarded to Government, for the reorganisation of the medical services of the auxiliary forces, on the basis of the system in the Royal Army Medical Corps, and for the purpose of bringing the medical services of the regular and auxiliary forces into unison.

Resolved: That the matter be referred to the Parliamentary Bills Committee.

Read resolution passed in the Obstetric Section at the annual meeting held at Ipswich.

OBSTETRIC SECTION.

Notification of Puerperal Fever.—That it be a recommendation to the Council that in the opinion of this meeting it is desirable that notification of puerperal fever (septicæmia) should be adopted generally.

Resolved: That inasmuch as puerperal fever is now notifiable under the present Act, the resolution do lie on the table.

Read resolutions passed in the State Medicine Section at the annual meeting at Ipswich.

STATE MEDICINE SECTION.

Amendment of the Working Classes Acts.—That the Council of the British Medical Association be recommended to petition the Government to amend the Housing of the Working Classes Acts, with a view to simplifying the working of the same, and also that the time for repayment should be extended to a period not exceeding sixty years, and that the land be considered a perpetual asset.

Food Preservation.—That in the opinion of the State Medicine Section of the British Medical Association the addition of preservatives to milk, butter, and similar products, beer and wine, should be prohibited, and their addition to other foods regulated by statute.

Resolved: That the resolutions be referred to the Parliamentary Bills Committee.

Read resolution passed in the Section of Psychology at the annual meeting held at Ipswich.

PSYCHOLOGY SECTION.

Alteration in Name of Section. That this Section of the annual meeting held at Ipswich, 1900, begs to draw the attention of the Council to the fact that the present title of the Section is a misnomer, and recommends that in future the Section should be called "Section of Psychiatry."

Resolved: That the resolution do lie on the table.

The election of candidates was then considered.

The General Secretary reported that he had received one objection.

Resolved: That the 72 candidates whose names appear on the circular convening the meeting, together with 18 of the 19 provisionally elected at the annual meeting, be and they are hereby elected members of the British Medical Association.

Resolved: That Messrs. Price, Waterhouse, and Co. be reappointed Public Auditors for the ensuing year, in accordance with By-law 26.

PARLIAMENTARY BILLS COMMITTEE.

At a meeting of the Parliamentary Bills Committee, held at the office of the Association, 429, Strand, W.C., on Wednesday, October 24th, 1900. Present:

Dr. S. WOODCOCK in the Chair.
Dr. G. B FERGUSON, President-elect.
Dr. J. ROBERTS THOMSON, President of Council
Mr. ANDREW CLARK, Treasurer.

Dr. S. H. AGAR, Henley in Arden.
Dr. J. BARR, Liverpool.
Dr. A. G. BATEMAN, London.
Dr. R. W. BATTEN, Gloucester.
Dr. R. L. BOWLES, London.
Mr. GEORGE BROWN, London.
Mr. COLIN CAMPBELL, Saddleworth.
Dr. W. A. CARLINE, Lincoln.
Mr. T. H. CHEATLE, Burford.
Dr. J. WARD COUSINS, Southsea.
Dr. ALFRED COX, Gateshead-on-Tyne.
Dr. F. M. DOLAN, Halifax.
Dr. W. DOUGLAS, London.
Brigade-Surgeon Lieutenant-Colonel E. F. DRAKE-BROCKMAN, London.
Mr. GEORGE EASTES, London.
Dr. BRUCE GOFF, Rothwell.
Dr. J. GROVES, Carisbrooke.
Surgeon-General J. B. HAMILTON, London.
Mr J. D. HARRIES, Shrewsbury.
Mr. VICTOR HORSLEY, F.R.S., London.
Mr. EVAN JONES, Aberdare.
Dr. C. W. MARRIOTT, Reading.
Dr. C. H. MILBURN, Hull.
Dr. J. W. MILLER, Ingleton.
Sir JOHN WILLIAM MOORE, [illegible]
Brigade-Surgeon T. B. MORIARTY, Cork.
Dr. J. MURPHY, Sunderland.
Dr. J. MURRAY, Inverness.
Surgeon-General T. F. O'[illegible], Aldershot.
Mr. C. H. W. PARKINSON, Wimborne Minster.
Dr. A. BROWN RITCHIE, Hulme.
Dr. JOHN ROLSTON, Exeter.
Dr. G. E. SHUTTLEWORTH, Richmond.
Mr. C. R. STEATON WILLOX.
Dr. N. WALKER, Edinburgh.
Dr. MARTINDALE WARD, Twickenham.
Dr. DAWSON WILLIAMS, London.

ELECTION OF CHAIRMAN.

The PRESIDENT OF COUNCIL read a letter from Dr. Farquharson, M.P., stating that while recognising the honour which the Committee had done him by electing him Chairman on previous occasions, he did not desire to be re-elected.

He therefore moved;

That Dr. S. Woodcock be appointed Chairman of the Committee for the ensuing year.

The resolution was seconded by Dr. MURPHY and carried unanimously.

The minutes of the last meeting having been printed and circulated were taken as read and adopted. Letters of apology for non-attendance were read from Dr. McVail, Dr. Dixey, Dr. Saundby, Inspector-General Turnbull, Dr. Harrison, Dr. W. Newman, Dr. Gooding, Mr. Spanton, Mr. Balding, and Dr. Thresh.

RESTRICTION OF THE SALE OF DIACHYLON.

A communication from the Nottingham Medico-Chirurgical Society, suggesting that restrictions should be placed on the sale of diachylon, which had been referred by the Council to the Committee, was considered.

After some discussion, it was proposed by Dr. DOLAN, seconded by Dr. BRUCE GOFF, and resolved

That the Committee defer the consideration of the matter till it has further information.

THE EXAMINATIONS OF THE INSTITUTE OF CHEMISTRY.

A communication from Dr. J. C. McWalter (Dublin), forwarded by the Council to the Committee, as to the Institute of Chemistry which examined candidates in therapeutics, and asking whether it was an infringement on the rights of members of the Association, was considered.

Dr. DAWSON WILLIAMS said that he had read some of the papers in therapeutics set in this examination, and quoted several of the questions asked. The examination was an examination for analytical chemists who were likely to hold positions as public analysts, and had reference chiefly to poisons and adulterants.

It was resolved:

That the letter be allowed to lie on the table.

SUPERANNUATION OF IRISH POOR LAW MEDICAL OFFICERS.

The following resolution referred from the Council was considered:

That the members of the British Medical Association be asked to use all their influence to secure the passing of the Irish Poor-law Officers Superannuation Bill.

Sir JOHN WILLIAM MOORE said the Committee had done all that was possible in favour of the Bill. It was a standing disgrace to the Government of the country that there was no superannuation fixed by Parliament for dispensary medical officers in Ireland. The Committee might express their determination to use their Parliamentary influence to secure proper superannuation for those officers. There were instances throughout the country in which men 84 and 85 years of age still kept office because they were not sure whether when they resigned they would receive any superannuation.

The CHAIRMAN suggested that a small deputation should wait upon the Chief Secretary for Ireland.

It was resolved:

That the matter be deferred till the next meeting of the Committee when the Bill to be introduced into the new Parliament would be available.

Dr. DAWSON WILLIAMS suggested that the Committee should at the same time look into the matter of the Poor-law medical officers of the Highlands and Islands of Scotland who had no fixity of tenure of office or superannuation.

This was agreed to.

AGED DESERVING POOR.

A communication from the Local Government Board respecting Poor-law administration with regard to the aged deserving poor was submitted, and directed to be entered on the minutes.

REAPPOINTMENT OF SUBCOMMITTEES.

The subcommittees were reappointed as follows:

1. *Subcommittees to consider the Medical Acts Amendment and Midwifery Nurses Bills.*

Dr. A. G. Bateman, Mr. George Brown, Dr. Major Greenwood, Mr. Victor Horsley, F.R.S., Dr. C. H. Milburn, Dr. A. Brown Ritchie, and Dr. S. Woodcock

2. *Subcommittee on Incipient Insanity to watch lunacy legislation, and empowered to co-operate with the Medico-Psychological Association.*

Dr. P. Maury Deas, Dr. W. Douglas, Mr. George Eastes, Dr. W. J. Mickle, Dr. G. E. Shuttleworth, and Dr. A. R. Urquhart.

3. *Vaccination Subcommittee.*

Dr. R. W. Batten Mr. George Brown, Mr. Colin Campbell, Dr. A. E. Cope, Dr. Groves, Dr. McVail, Mr. Jones Morris, and Dr. Thresh.

4. *Public Health Subcommittee.*

Dr. J. S. Cameron, Dr. J. Groves, Dr. J. C. McVail, Dr. James Murray, Mr. C. H. W. Parkinson, and Dr. J. C. Thresh.

On the proposal that the R.A.M.C. Watching Subcommittee, consisting of Brigade-Surgeon-Lieutenant-Colonel Drake-Brockman, Mr. George Eastes, Dr. Farquharson, Dr. Groves, and Dr. Milburn be reappointed, Mr. ANDREW CLARK said that at the meeting of the Council that day, the following resolution passed in the Navy, Army, and Ambulance Section at the last annual meeting had been referred by the Council to the Parliamentary Bills Committee:

That the Navy, Army, and Ambulance Section requests the Council of the British Medical Association to appoint a Committee to draw up a scheme to be forwarded to Government for the reorganisation of the medical services of the auxiliary forces, on the basis of the system in the Royal Army Medical Corps, and for the purpose of bringing the medical services of the regular and auxiliary forces into unison.

He would suggest that the following gentlemen be appointed a Subcommittee to deal with the matter: Brigade-Surgeon-Lieutenant-Colonel Drake-Brockman, Brigade-Surgeon-Lieutenant-Colonel G. S. Elliston, Surgeon-General Hamilton, Dr. W. Gordon, Surgeon-Major T. F. S. Caverhill, Dr. J. E. Squire, Mr. James Cantlie, Deputy-Surgeon-General Don, Surgeon-Lieutenant-Colonel R. H. Coombs, and Mr. Frederick Treves.

On the motion of Dr. ROBERTS THOMSON the name of Brigade-Surgeon-Lieutenant-Colonel Andrew Clark was added.

The resolution was seconded by Dr. BROWN RITCHIE.

Surgeon-General HAMILTON suggested that it should be an instruction to the Committee to investigate and report on the present condition of the R.A.M.C., especially with regard to the paucity of candidates for commissions in the corps and to communicate with the various colleges and schools to ascertain the reason of the present unpopularity of the medical services. That was at the bottom of everything, and if they would accept the motion and allow the same Subcommittee to investigate the matter they might be able to give most valuable information to the authorities.

Dr. BARK said he had much pleasure in seconding the motion, which was adopted.

After a good deal of further discussion it was agreed that the members of the Watching R.A.M.C. Subcommittee should be added to the proposed Committee, with the exception of Inspector-General Turnbull, R.N. (resigned). The resolution was carried.

FEES AT CORONERS' INQUESTS.

Dr. MARTINDALE WARD said that if the Subcommittee, consisting of Dr. Bateman, Dr. Milburn, and Mr. Hemming, appointed at the meeting of July 5th, 1898, to draft a short Bill to amend the Coroners Act in respect to the payment of medical witnesses, had not reported, he would propose its reappointment. The motion was seconded by Mr. STRATON and carried. Dr. Martindale Ward agreed to serve on the Committee in the place of Mr. Hemming, deceased.

RESOLUTIONS FROM ANNUAL MEETING.

The GENERAL SECRETATY reported that the following resolutions passed at the annual meeting at Ipswich had been referred by the Council to the Committee:

Opinion of Branches on the Question of "Wage Limit."—That this meeting resolves that the Council be requested to issue circulars to all Branches of this Association inviting them to express an opinion and submit proposals on the question of the "wage limit" as applied to clubs, provident dispensaries, and societies, etc., with a view to suggesting a reasonable and fair working basis. Furthermore, that it be an instruction to the Council to report and advise this Association thereon at its next annual meeting.

It was decided to leave the preparation of the circular to be sent to the Branches in the hands of the officers of the Association and the Chairman of the Parliamentary Bills Committee.

Indian (Military) Medical Service.—The present system of filling professorial chairs in the medical colleges in India by virtue of grade rank in the Indian (Military) Medical Service is apparently prejudicial to the interest of medical education and the advancement of original research in India. This meeting hereby appoints a Subcommittee to consider the matter and report to the Council.

This matter was referred to a Subcommittee, consisting of the President of Council, the Chairman of the Committee, Dr. Barr, Mr. Andrew Clark, and Mr. George Eastes.

The following resolutions passed in the Section of State Medicine at the annual meeting had also been referred by the Council to the Committee.

Amendment of the Working Classes Act.—That the Council of the British Medical Association be recommended to petition the Government to amend the Housing of the Working Classes Acts, with a view to simplifying the working of the same, and also that the time for repayment should be extended to a period not exceeding sixty years, and that the land be considered as a perpetual asset.

This resolution was not considered a matter of urgency.

Food Preservatives.—That in the opinion of the State Medicine Section of the British Medical Association the addition of preservatives to milk, butter, and similar products, beer and wine, should be prohibited, and their addition to other foods regulated by statute.

On the motion of Mr. GEORGE BROWN the consideration of this resolution was postponed till the next meeting.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

SOUTH-EASTERN BRANCH: WEST SUSSEX DISTRICT.—The next meeting of this District will be held at the West Sussex County Asylum, Chichester, on November 6th, at 3.15 P.M. Dr. Ernest Buckell will preside. The following papers have been promised: Mr. H. Stansfield Collier: Appendicitis. Dr. Hinds: Two cases of Abortion. Mr. Rawlinson: The Notes of Two Cases of Hernia. Dr. H. A. Kidd will show cases illustrating a short paper on various forms of insanity. A dinner will be held at the Dolphin Hotel, at 5.30. Tickets 6s., exclusive of wines. All members of the Branch are entitled to attend and introduce a professional friend.—H. C. L. MORRIS, 10, The Steyne, Bognor, Honorary Secretary.

NORTH OF ENGLAND BRANCH.—The autumn meeting of this Branch will be held at Bishop Auckland, co. Durham, on Wednesday, November 7th, at 4 P.M. Member intending to read papers, to propose new members, to make any communication, or to bring forward cases or specimens, are requested to write to the Secretary at once.—THOMAS BEATTIE, 3, Ellison Place, Newcastle-upon-Tyne, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WEST LONDON DISTRICT.—In consequence of there being a meeting of the Council of the Branch on Tuesday, October 30th, at 5 P.M., the meeting of the District Committee (arranged for October 30th, at 5 P.M.) is postponed to Tuesday, November 6th, at the same time.—THOMAS DUTTON, M.D., 76, Clarendon Road, W., Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: NORTH LONDON DISTRICT.—The first meeting of this District for the session 1900-01 will be held at the Tottenham Hospital, on Wednesday, November 14th, at 4.30 P.M. Dr. Hooper May will preside. Mr. H. Stansfield Collier, F.R.C.S., will read a paper on Some Experiences and Mistakes in the Surgery of the Vermiform Appendix. Cases of interest will be shown in the wards of the hospital. The District Committee will meet at 4.15 P.M.—J. DYSART MCCAW, M.D., East Finchley, N., Honorary Secretary.

STAFFORDSHIRE BRANCH.

THE twenty-seventh annual general meeting of the Branch was held at Wolverhampton on October 25th. Twenty-six members were present.

Confirmation of Minutes.—The minutes of the last annual general meeting were read, approved, and signed.

Introduction of New President.—Dr. J. B. SPENCE vacated the chair, and introduced his successor, Dr. ALFRED H. CARTER of Birmingham, who delivered the address which is published at p. 1297.

Vote of Thanks to Retiring President.—On the motion of the PRESIDENT, seconded by Dr. DEANESLY, a hearty vote of thanks was accorded to Dr. Spence for his services as President during the past year.

New Members.—The following were elected members of the Branch: C. H. Mott, M.R.C.S., L.R.C.P. (Burslem); A. C. Parsons, M.R.C.S., L.R.C.P. (Wolverhampton); F. Shufflebotham, M.A., M.B., B.C. (Newcastle-under-Lyme).

Reports and Financial Statement.—The report of the Council and Ethical Committee were adopted; as was also the financial statement, which showed a balance in hand of £30 9s. 1d.

Next Annual Meeting.—It was decided to hold the next annual meeting at Hanley.

Election of Officers.—The following were elected officers for the ensuing year:—*President-Elect:* Mr. W. H. Folker, Hanley. *Vice-Presidents:* Dr. McAldowie, Dr. Spence. *General Secretary:* Mr. F. M. Blumer, Stafford. *Financial Secretary:* Mr. Clare, Hanley. *Auditor:* Mr. W. H. Folker. *Council:* Dr. S. King Alcock, Burslem; Dr. T. Ridley Bailey, Bilston; Dr. E. Deanesly, Wolverhampton; Mr. Hartley, Stone; Dr. Hatton, Newcastle; Dr. Hind, Stoke; Dr. W. G. Lowe, Burton; Dr. Mallet, Wolverhampton; Mr. G. A. Phillips, Walsall; Dr. G. Reid, Stafford; Mr. J. M. Taylor, Burslem; Dr. C. Reid, Stafford. *Representative on the Council of the Association:* Mr. T. Vincent Jackson, Wolverhampton. *Representative on the Parliamentary Bills Committee:* Mr. W. D. Spanton, Hanley.

Presidential Address.—Dr. Carter delivered his address on Some Aspects of Modern Medical Theory and Practice, for which, on the motion of Dr. Malet, seconded by Dr G. Reid, he was given a cordial vote of thanks. Dr. Carter's address is published in this number of the British Medical Journal.

Dinner.—The members afterwards dined together in the hotel. Dr. Carter presided, and the Mayor and Town Clerk of Wolverhampton were present as guests.

WEST SOMERSET BRANCH.

The autumn meeting was held at the Taunton and Somerset Hospital on October 30th, Mr. G. F. Sydenham, M.R.C.S. (Dulverton), President, in the chair. Twenty members were present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

New Member of Council.—Mr. Marsh (Yeovil) was elected a member of the Branch Council, in place of Mr. Rygate (Weston Zoyland), who has resigned.

Resolutions.—The following resolutions proposed by the President, and seconded by Dr. Macdonald (Taunton), were carried after some discussion:

1. The West Somerset Branch of the British Medical Association considers that the medical profession is deprived of a professional fee by giving information to the coroner and police as to the cause of death in many cases. That by giving such information an inquest with its attendant expenses is saved the county. They therefore respectfully urge the County Council to allow a fee in such cases.

2. That the neighbouring Branches be asked to join us in the matter.

3. That a copy of these resolutions be sent to the Chairman of the County Council and to the coroners of the district.

Treatment of Appendicitis.—Mr. W. J. Walsham, of St. Bartholomew's Hospital, read a paper on the Treatment of Appendicitis. Mr. Walsham having replied to questions arising from his paper, a vote of thanks to him was carried by acclamation, and he was requested to publish his paper in one of the medical journals.

Dinner.—The annual West Somerset medical dinner took place at the London Hotel, Taunton, in the evening, at which thirty-eight members and visitors were present.

SPECIAL CORRESPONDENCE.

BELFAST.

The Belfast Workhouse: Half-yearly Report of Local Government Board Inspector.—Dr. O'Neill's Report on the Milk Question to the Health Committee.—Royal Victoria Hospital.

The Local Government Board in Ireland has sent a note to the Board of Guardians embodying the report of their inspector, Mr. Robert Agnew. On October 18th an inquiry was held by the Local Government Board "relative to an application by the Guardians for the sanction of a loan of £13,500 for the erection of a new Board room and clerks' offices." In view of the inadequate accommodation afforded to certain classes of inmates, it was generally felt that the new Board room might stand over for a few years and that the defects pointed out in the housing of the patients should be remedied at once. Mr. Agnew states:—

No steps have been taken to relieve the congestion in the male healthy and infirm wards.

The accommodation in these wards for the feeble and infirm is very far indeed from what it ought to be according to any humane standard.

Without fireplaces, or other heating arrangements, the ventilation defective, no bathing facilities.

No distinction or classification between those who had been industrious and respectable on the one hand, and the idle—and in some cases criminal—on the other.

Some of the wards are locked up during the night, and no bell communication exists between such wards and the apartments of the responsible officers.

He points out, also, that there is overcrowding; for example, wards Nos. 1 and 2, which have accommodation for 28 persons, contain 57. A certain day room, which should only accommodate 24, is used as a sleeping and living room, and contains 74 inmates by day, as it has a fire. The same overcrowding, perhaps not to such a degree, is reported in the female healthy and infirm wards, in the children's hospital, where scabies and skin diseases are treated in the same ward with other diseases. Mr. Agnew adds:

A most objectionable feature is that the "Female Lock Ward" is adjacent to and in communication with the Children's Hospital; both wards have the one night nurse.

The inspector draws attention to the absence of bathing facilities for about 1,400 inmates, to deficient classification, to insufficient clothing, to the low quality of the beef, which is tough and very coarse in fibre, to a suspiciously low standard of cream for pure milk, to defective ventilation in many wards, to the continuance of pauper help, to the dilapidated and insanitary condition of the main laundry, and to many other points. Although Mr. Agnew is thus unsparing in his condemnation where matters are not as they should be, he refers all through his report to numerous improvements that have been made, and gives the medical and lay officers and the nursing staff credit for the condition of affairs in many parts of the house, that as regards cleanliness and general arrangement do not leave much to be desired. Few tasks are so near the limits of human possibility as the satisfactory management of the flotsam and jetsam of the population of a large manufacturing town.

Dr. O'Neill recently presented his report on the inspection and sterilisation of milk to the Public Health Committee. It is a pamphlet of 37 pages with 11 illustrations, and includes an appendix on milk sterilisers. The report is largely composed of extracts from some of the best and most advanced practical work on this question. Dr. O'Neill's own recommendations modestly occupy one page at the end. Much of the report deals with the sterilisation of milk and the feeding of infants. There is a large and avoidable mortality in the first year of life from bad milk, any effort to lessen this sacrifice deserves the highest commendation. It is something to know that the Paris Commission unanimously approved of the scheme of the establishment of a central municipal station to sterilise milk destined for the use of hospitals, etc., and that in Manchester qualified inspectors have been appointed to watch over the milk supply. These and other examples which Dr. O'Neill has adduced in profusion should impel the Health Committee to take action. The pamphlet would have been more useful for reference and more easily followed if its writer had classified the risks of milk contamination in chronological order, thus:

(1) Its production from diseased and unhealthy animals and unhealthy byres. (2) In the process of milking, dirty hands, dust, dirty utensils, etc. (3) During carriage, dust contamination, removal of cream, adulteration, etc. (4) In the consumer's house, deficient cooking, dirty vessels, badly-ventilated pantries.

The Town Clerk pointed out that the Corporation could not legally spend money on this object; but £300 had been given by an anonymous donor to enable the scheme to be tried for one year.

The visiting physicianship to the Royal Victoria Hospital, Belfast, left vacant by the death of Dr. Strafford Smith, has been filled by the appointment of Dr. H. L. M'Kisack, the assistant physician; the visiting surgeonship, left vacant by the retirement of Dr. O'Neill, has been filled by the appointment of Mr. A. B. Mitchell, the assistant surgeon; the assistant physicianship has been filled by the appointment of Dr. W. B. M'Quitty, and the assistant surgeonship has been filled by the appointment of Mr. Robert Campbell, F.R.C.S.; the house surgeonship, left vacant by the appointment of Dr. West to the Royal Army Medical Corps, has been filled by the appointment of Dr. J. C. Rankin. The appointment of Dr. M'Kisack and of Mr. Mitchell to the full staff has been well earned by these gentlemen, who have worked long and arduously in the junior posts. Dr. M'Quitty and Mr. Campbell bring with them the highest collegiate and university

honours, and as they have already gained a reputation in teaching, they will prove a valuable addition to the staff. All four appointments will be thoroughly approved of by the profession in the North of Ireland.

INDIA.

Enteric Fever in the British Army.—The Famine.—The Plague.

SURGEON-GENERAL HARVEY'S annual report for 1898 contains much interesting information with regard to the prevalence and etiology of enteric fever among the British troops serving in India. A summary of recent research work on the subject is first given, in which the importance of the work of Martin and others on the length of time that the bacillus of Eberth can live in the soil is pointed out, together with the frequency of the direct infection of sick attendants. The returns show a further increase in the prevalence of the disease in spite of the great attention to sanitation, especially in improving and boiling of the water supply. Thus the admissions rose from 32 to 36.9 and the deaths from 9.01 to 10.17 per 1,000, a small part of which increase may be attributed to the larger proportion of young and susceptible soldiers during the year under review. The total number of admissions and deaths were 2,498 and 616 respectively. Some interesting figures are given illustrating the incidence of the disease at different ages and periods of residence in India. Thus the ratio per 1,000 was greatest at the age period of from 20 to 25, when 61 out of every 100 deaths from all causes were due to enteric, while during the first year's residence in this country 70 out of every 100 deaths were due to this disease. Further, out of the total deaths at all periods from enteric fever, 41 per cent. occurred during the first year of residence, when 20.43 per 1,000 died of the disease, against 9.63 in the second year, decreasing to 3.72 per 1,000 after the fifth year. If, then, soldiers can be protected over the first two years in India by inoculation, the losses produced by this cause would be reduced by more than one-half. The monthly incidence of the disease is of great importance in connection with the consideration of the causes of its widespread and increasing prevalence. It appears that, although the disease appears in considerable numbers in every month of the year, yet it is more prevalent during the six months from April to September, with one maximum in the hot dry month of May, and another in the very wet and vapour-bath-like month of August, the former being the higher of the two. This double maximum under such utterly different meteorological conditions is alone sufficient to throw doubt on any one theory as to its causation, such as by infection through dust, etc., on the one hand, or through water on the other, being an all-sufficient explanation of the prevalence of the disease, so that it is not altogether surprising that such divergent views are held on this subject. The opinions of the senior medical officers of the various stations in which British troops are located, abstracts of which are given in this report, are worthy of study in this connection. For the sake of clearness it will be well to consider first the evidence for and against the water being the principle vehicle of contagion, for the strenuous efforts to safeguard the drinking water supply during recent years affords much material for studying the results of the measures adopted, which it must be at once confessed have not always met with the amount of success which might have been expected. In the middle of the year a new water supply from springs which are not liable to contamination was introduced into the hill station of Sabathu, with the result that during the rest of the year the number of cases of enteric was lower than for a long period previously. At Mhow, on the other hand, the number of enteric cases which averaged 7 before the introduction of a water supply from a distant lake was introduced, has since its introduction risen to an average of 49 during the last eight years, but in this case the water is unfiltered and has recently been condemned after chemical analysis. The hill station of Dagshai was closed for over a year on account of its unhealthiness, but at the same time the military prison in the same place and with the same water, milk, and food supplies as the condemned cantonment has always remained very healthy, and that, too, in spite of the enteric organism having been reported to have been found in the water supply. Again, in the case of Chakrata most unexpected results have been recorded. Thus, in 1896 the bacteriologist of the North-West Provinces found the enteric bacillus in the water at its source, in the filters, pakals, mussacks, and tanks, yet only 4 cases of the disease originated in the station in that year. Since then the water has been reported to be free from bacteria, and it is well protected, yet enteric has increased by "leaps and bounds," 72 cases having occurred in 1898. In Lucknow, again, enteric fever has much increased since the water supply of filtered river water was introduced. The medical officer in charge suggests that this is due to a choking of the subsoil circulation since the wells were discontinued, the *modus operandi* of which—if, indeed, it be a fact—is not quite evident at first sight. In Meerut an outbreak occurred among men in camp, which ceased when the camp was moved, Mr. Hankin having found a bacillus in the well water resembling the enteric organism. In Agra the municipal water supply was cut off from the cantonments for drinking purposes in December, 1897, and also for washing purposes in May, 1898, on account of the bacillus of Eberth having frequently been found in the pipe water. A supply from covered wells from which the water was pumped, and afterwards boiled, was substituted, but nevertheless 88 cases of enteric occurred during the year, 23 of which were in April. The enteric bacillus was found three times in the municipal water, and once in one of the wells, which were also treated twice a week with hydrochloric acid and permanganate of potash. It is suggested that the disease may have been acquired in the bazaars, which are supplied with municipal water, but, on the other hand, no cases occurred during the year in the civil lines, which have the same water supply, so that it cannot be said that the careful and elaborate precautions taken in Agra have thrown much light on the origin of the disease, or lessened its prevalence appreciably. The above facts only serve to emphasise the difficulty of tracing the origin of enteric fever to the water supply in India, and, it must also be confessed, tend to throw doubt on the practical value of the difficult and prolonged investigation of water for the presence of the enteric organism. The consideration of other possible factors must be left over for my next letter.

The lateness of the rains and their failure up to late in July in Northern Bombay has had the disastrous effect of greatly intensifying and prolonging the famine, so that instead of a very marked decrease in the numbers on the relief works, they still continue to mount in several provinces to an alarming degree. This is especially the case in the Central Provinces, where during the last week in July there was an increase of no fewer than 125,000, while the very large numbers of children still on the hands of the Government points to the pauperisation of the people by the repeated years of scarcity, and is a most disquieting feature. The famine expenditure will be greatly increased by these events, and there is still crying need for charitable funds. So serious is the situation at Gujerat, more particularly, that the Viceroy is taking the very unusual step of leaving Simla at this time of the year to see the situation for himself, although fortunately during the last few days a fresh onset of the monsoon has carried good rain in the nick of time to this and other parts of India, so that a silver line to the clouds is now beginning to appear, and the unparalleled event of another successive complete failure of the rains may be averted.

Plague, on the other hand, has now reached its annual minimum, only 200 deaths having been reported in the whole of India in the last return, and a slow but sure increase may be surely anticipated.

Leave in the medical service has been stopped once more, on account of the China expedition, and 27 officers of the Indian Medical service have been called from civil to military duty.

DR. RAYNER, of Preston, in a lecture on bacteria given recently before the Preston Scientific Society, stated that arrangements for the sterilisation of cow's milk to be supplied to the mothers of infants are already in working order at the County Council Farm at Howick, near Preston, Lancashire.

IT is announced that the Spanish Government has made substantial contributions for the enlargement of Dr. Ramon y Cajal's laboratory at Madrid, also for its yearly maintenance, and has, in addition, bestowed a not insignificant pension on the distinguished scientist.

CORRESPONDENCE.

MEDICAL OFFICERS OF HEALTH TO LONDON BOROUGHS.

Sir,—The election this week of Borough Councils will help the creation of local interest in the administration of local affairs. In no case will this be more important than in the department of public health. Not only the well-being of the district but the health of London depends on the work of the medical officer of health and his staff. The creation of local interest may mean in some instances that a medical man of influence practising in the district will aspire to the post of medical officer of health. Is it desirable that such medical men should be appointed when the claims of general practice are remembered?

The appointment of men who seriously take up public health is most to be desired. They are independent of other interests when not practising in the district, there is less if any cause of friction with the medical men of the neighbourhood, and special knowledge is brought to bear on the work. The districts which are able to pay a small salary only, especially near London, should be able to command the services of a diplomate of public health, as the position of medical officer of health to a small district is often the stepping-stone to a much larger and more responsible sphere of work.—I am, etc.,

October 29th. M.S.I.S.C.

THE RESTING POSITION OF *ANOPHELES*.

Sir,—I have often alluded to a peculiar attitude generally adopted by such *Anopheles* as I have had an opportunity of observing when the insects are seated on a wall or other surface. In the British Medical Journal of October 20th Drs. Low and Sambon, referring to this attitude, accuse Mr. Austen and myself of "extending to the whole genus (that is, of *Anopheles*) a character which is peculiar to a few species, and which they (that is, Austen and myself) had observed only in *Anopheles costalis*."

This statement contains several inaccuracies, as will be seen on turning to page 15 of the Sierra Leone Report, on which we record this attitude of *Anopheles*. In the first place, we are evidently referring to *Anopheles funestus* as well as to *Anopheles costalis:* in the second place we evidently imply that the same attitude was observed by one of us in Indian *Anopheles:* in the third place, we are careful to remark in a footnote on the same page, "It should be clearly understood that our remarks apply only to our own observations. We cannot answer for facts in other localities." On what grounds, then, are we accused of extending our observations to the whole genus? We were writing of the *Anopheles* which we had studied; not of *Anopheles* in Italy, Peru, or Kamchatka.

Again, Drs. Sambon and Low state, "Professor Grassi in his admirable memoir on malaria published on June 4th, 1900, reproached Ross with inaccuracy, and described very differently the position assumed by *Anopheles*." As a large part of this memoir (which has been dedicated to Dr. Manson, and is being translated, I understand, by my friend Dr. Sambon) consists of an attack upon me, this fact is not to be wondered at. The question is whether Grassi, who studies in Italy, is in a position to reproach me with justice for observations made in India and West Africa, and confirmed by Daniels, Strachan, James, Christy, Austen, Annett, and others.

Drs. Low and Sambon seem to imply that their experiences in Italy as regards the attitude of *Anopheles* do not agree with mine in other parts of the world. That may well be. We can easily conceive that different species of *Anopheles* adopt different attitudes. Thus with some English *Anopheles claviger* seen by me the angle of the axis of the body with the the surface was not nearly so large as with the Indian and African insects: but on reading the papers by Dr. Sambon and Low I confess to some difficulty in understanding what they really do mean to imply. Thus they say that with *Anopheles claviger* the angle of the body axis with the surface may form "a maximum angle of about 45 degrees"; that "one might almost be justified in saying that" *Anopehles pseudopictus* "holds its body perpendicular to the wall;" and that "*Anopheles superpictus* is like *Anopheles claviger*." These statements seem rather to confirm my observations than to refute them. Lastly, when we turn to Professor Grassi's drawings on pages 64-66 of his book, we are somewhat astonished to find, after his expressions of dissent and reproach, that they agree with my drawing except that the angle of the inclination is smaller! The abdomen of *Anopheles* still projects from the wall; that of *Culex* still inclines towards it.

On the whole, then, I cannot agree with the authors when they say that "the resting attitude of mosquitos loses all the importance attributed to it as a diagnostic character between the *Culex* and *Anopheles* genera." It may not be (though I do not know that it is not) an absolutely strict criterion; but it will always be a useful, and therefore an important, one.—I am, etc.,

Liverpool, Oct. 22nd. Ronald Ross, D.P.H., M.R.C.S.

Sir,—The resting position of the mosquito varies with its species and age. It also depends upon the amount of blood it has taken up. The young mosquito in India usually rests with the head low, and the body at a more or less acute angle with the surface on which he stands. The last pair of legs is stretched out free. I do not remember seeing the vertical position assumed, or rather one in which the mosquito's body is at right angles to the surface.

In an older specimen the angle is smaller, and this is well marked after a heavy meal. He then puts all his legs down, and dislikes to be disturbed. His flight and movements are slow. The various attitudes assumed can be easily seen by allowing him to settle on the back of the wrist with the hand flexed. On alighting, the head is kept low and the posterior extremity is raised. Both hind legs are elevated well above the body, and are moved up and down alternately with a "pump-handle stroke" until blood is drawn. The movements then become slower, and finally the hind legs are planted down. By quickly extending the hand the mosquito can be caught in the wrinkled skin as he cannot remove his proboscis in time to escape. His attitude can then be easily observed.

In all probability there is no resting position characteristic of a genus. It may change under different conditions.—I am, etc.,

Herbert W. G. Macleod, M.D., C.M.Edin., D.P.H.,
London, Oct. 23rd. late H.M.'s I.M.S.

REPRODUCTION IN *ANOPHELES*.

Sir,—On p. 771 of the British Medical Journal for September 15th, Major Ronald Ross is reported to have said that he has never known mosquitos to lay eggs without taking a meal of blood first. I have several times bred *Anopheles Rossii* from the larva and transferred both males and females to a special cage, where they have laid eggs in the vessel of water provided, which subsequently hatched out and developed in the normal way. These particular insects had not had a chance of feeding on blood.—I am, etc.,

J. W. Cornwall, M.A., M.D.,
Madras, Oct. 3rd. Captain I.M.S.

LECTURES TO MIDWIVES AND MONTHLY NURSES.

Sir,—Would you kindly publish in your next issue the enclosed letter to Dr. Lea, and, in justice to me, give it the same publicity that you gave to Dr. Lea's letter of October 16th?—I am, etc.,

Manchester, Oct. 20th. John Scott.

"Sir,—I see by the British Medical Journal of October 20th that the Council of the Medical Guild of Manchester has passed a resolution discountenancing all lectures to midwives. I am a member of the Medical Guild, and I have also in my connection with the Maternity Hospital been engaged for several years in teaching midwives.

"The Medical Guild is, as I take it, a voluntary association, the principal object of which is to maintain a high standard of honour in the profession. The Council did not think it necessary to inform me that they were likely to pass a resolution inflicting a stigma upon my conduct, nor did they have the courtesy to ask me to be present, or to give them any information with regard to the position of the Maternity Hospital in the teaching of midwives. Possibly they did no'

feel that they would be benefited by any information on the subject. You do not state in your letter whether the resolution was passed unanimously, or whether there there was any discussion, or how the matter came to occupy the attention of the Council at all.

"I do not intend in this letter to enter into the weary dispute on the matter of the midwives. My views on the subject will appear before the public in due time. The lectures at the hospital, imperfect as they are, were established by one of my colleagues for the benefit of those women who used the services of the hospital midwives. To give them up, in my opinion, would be a crime against the poor. I shall not give them up. Were there practical unanimity of opinion in the medical profession on this vexed point, were there even congruity of opinion between the majority of the profession and the general public, we should not be in the mess we are now in after over twelve years of controversy. The logical conclusion of the resolution passed by the Council of the Medical Guild is to impress the power of the medical profession by a bitter object lesson to the poor. Ignorant midwives are to be allowed to play with their lives in order that ultimate good may come out of it and a better order of things reign for the future. One thing is patent and beyond the range of contradiction, and that is that there are thousands of midwives in England practising at this moment. Whether these women are capable of improvement, whether they ought to be improved, whether they ought to be registered, whether they ought to be swept off the face of the earth, whether their places ought to be taken by medical men, whether their functions could be fulfilled by medical men—all these are matters of controversy on which I could collect as many opinions as there are men to give them. But of one thing I am certain: that for any section of the medical profession to attempt to ostracise any other section on account of opinions conscientiously held, and to brand it with the mark of "infamous conduct," is a policy which is unjust in itself, and has materially hampered our legitimate influence with the public in settling this question.

"If the Council of the Medical Guild had taken the trouble to inquire into facts concerning the Maternity Hospital, they would have found that the medical staff, when appealed to, has done its best to remedy in the interests of the profession any legitimate grievance, and has utterly discountenanced the attempts of illiterate women to qualify as midwives.

"When legislation comes, as I hope it may ultimately, the anomalies and imperfections of the present chaos will, I trust, disappear. Until then, believing as I do that to abandon the poor to the care of any woman who chooses to put a midwife's plate on her door would be wrong. I shall continue, in spite of the Medical Guild, to teach midwives. I trust I have as high a sense of professional honour as the medical men who have *d'un cœur léger* passed this resolution, and as no counting of heads can alter my opinion that the Medical Guild in this matter is subordinating the public weal to the actual or fancied interests of a section of the profession, I beg to resign my membership of the Guild, and ask you to hand this letter to the Council. As the Guild has thought it necessary specially to publish their decision, I ask the editor of the BRITISH MEDICAL JOURNAL for equal publicity.

"I know that I have no right now to ask them any questions, but I should just like to know what action the Council of the Guild intends to take against the distinguished men in this country, not to speak of France and Germany, who have published handbooks of midwifery for the use of midwives. Surely their offence is much worse than mine. Do I not in the eyes of the Council of the Medical Guild play the part of Saul to their David?—I am, faithfully yours,

Arnold W. W. Lea, Esq. JOHN SCOTT, M.A., M.D."

SIR,—In the BRITISH MEDICAL JOURNAL of October 20th appears a letter from me, as Secretary of the Medical Guild of Manchester, forwarding a resolution on this subject, passed at the last meeting of the Council.

It has come to my knowledge that this has been understood as indicating my concurrence with the substance of the resolution.

As this is not the case, I feel it my duty to state that, whilst in agreement with many of the objects of the Guild, in this matter I am entirely out of sympathy with it, and have, therefore, handed in my resignation as Honorary Secretary.—I am, etc.,

Manchester, Oct 25th. ARNOLD W. W. LEA.

COVENTRY PROVIDENT DISPENSARY.

SIR,—Relative to the letter of the Coventry Dispensary medical staff in the BRITISH MEDICAL JOURNAL of October 27th, I must crave your indulgence in permitting me space for a few words in reply, for I feel that were I not to repudiate some of the remarks applied to me, perhaps some of your readers would look upon my action as unjust and of the nature of persecution.

It will be noticed that the medical staff of this condemned institution prefer rather to call attention to the attitude of the correspondents, than confine themselves to the main issue—namely, their association with a condemned line of practice, and with an institution which has been condemned in the strongest terms by an impartial tribunal, which fact alone should make them more anxious to insist upon the reforms asked for, than to justify their conduct in retaining their position.

What course is open to such men? A humble petition presented to their lay committee in 1897 asking for reforms, is met with the reply that if they are not satisfied other men can be found to take their places. Thus all means of reform are exhausted with their Committee, in whose hands they are humble servants. The chairman of this Committee at an annual meeting gives the number of members as 25,000 or 26,000. The doctors say this was mere guesswork; but a leading article in the *Coventry Times*, May 3rd, 1893, resulted from such guesswork, commencing as follows: "Well may the affairs of the Coventry Provident Dispensary create deep and widespread interest. As an institution it is one of the first magnitude of its kind. A membership of 26,000 is half the population of the city, therefore every other person to be met with has something at stake in its management." This, then, is the opinion of the local press.

Surely reform should begin with "an institution of the first magnitude," though there may be others equally bad, but at the present time it would be difficult to instance one possessing the glaring abuses of the Coventry Dispensary.

A complaint is raised that Mr. George Jackson and others exhibit bitter animosity towards the doctors of this institution; but does it not occur to them that their line of action in setting their profession at defiance by continuing to hold a condemned appointment would call for the condemnation of their conduct, not only by Mr. Jackson and others, but by the medical press; and have they forgotten that for the past five years the latter has declined the advertisements of their institution? Could they expect anything but animosity from the thinking community of the medical profession?

There is only one course open to them—failing to obtain reform—resignation, which would compel their Committee to take steps to comply with their memorial. "It is the duty of the dispensary staff to stand by the terms of their memorial, and they should accept nothing less."[1]—I am, etc.,

Coventry, Oct. 30th. EDWARD PHILLIPS.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

SIR,—As one of the medical referees who immediately declined to accept the 10s. 6d. fee offered by the New York Company, I willingly send you my name, as suggested by "Zeta" in the BRITISH MEDICAL JOURNAL of October 13th, p. 1139, and I hope others will do likewise. This "sweating" of the profession should at once be vigorously opposed, and every honourable endeavour be made to put it down. Good honest work deserves honest and satisfactory recognition; and the Company which ungrudgingly pays the profession for such work is undoubtedly the most likely to prosper, and it is certainly the most deserving of our support.—I am, etc.,

Gainsborough, Oct. 13th. J. FARRAR, M.D.

MEDICAL "FRIENDS" OF INSURANCE APPLICANTS.

SIR,—At a time when the question of the adequate remuneration of medical men by insurance companies is under discussion, may I give the facts of how one insurance company has endeavoured to get a medical opinion for nothing?

[1] BRITISH MEDICAL JOURNAL, September 18th, 1897.

A short time ago I had a printed form from a company saying that Mr. So-and-so (a patient of mine) had given my name as "a friend," and requesting me to answer a number of questions as to his health, habits, etc., and all by return of post. Thinking that possibly he had given my name, and being anxious not to prejudice his chance of a policy by my refusal to answer, I did send a reply of a sort. A few days after I saw Mr. So-and-so, and asked him about the reference, and was disgusted to find that he had not given me as "a friend," but said I was his medical man, and that he had given two other names as friends.

I have written to the company, and as I find they have the assurance to say that they make it a custom to send "a friend's reference letter" to the private medical man, I think it well to warn other medical practitioners as to the methods of some insurance companies.—I am, etc.,

October 29th. ADAM.

HOLIDAYS FOR POOR-LAW MEDICAL OFFICERS.

SIR,—At a meeting of the Council of the Poor-law Medical Officers' Association, held on October 30th, the subject of payment by the guardians of the substitute of the medical officer during his annual holiday came under discussion, and it was unanimously resolved:

1. That it is desirable that all Poor-law medical officers should be entitled to an annual holiday, and that the expense of a substitute during that period should be defrayed by the Board of Guardians.

2. That the Honorary Secretary be instructed to inquire of the Local Government Board whether, if such expense were allowed by a Board of Guardians in England or Wales, it would be sanctioned by the Local Government Board.

—I am, etc.,

MAJOR GREENWOOD, M.D., Hon. Sec.,
Poor-law Medical Officers' Association.

Princes' Chambers, 9, Copthall Avenue,
London Wall, E.C., Oct. 31st.

MEDICAL OFFICERS IN THE HIGHLANDS AND ISLANDS.

SIR,—At a meeting of our Committee held to-day, I was instructed to answer Dr. Macara's letter in the BRITISH MEDICAL JOURNAL of October 20th as follows:

1. Our Association was formed for the object of obtaining a more secure tenure of office for Poor-law medical officers in Scotland. This is a matter which affects every Poor-law medical officer, and until such is obtained we believe it will be impossible for us to approach our parish councils for any other reforms.

2. In regard to the special grievances of the medical officers in the Highlands and Islands—such as official residences, *locum tenens*, superannuation, etc.—we sympathise completely with them, but do not think those come within the range of practical politics until a better tenure of office is obtained.

3. In regard to parish council advertisements, in proper cases we are willing to pay for a counter-advertisement.

4. In answer to "Despairing," we regret we cannot agree with him as to his Conciliation Board.

5. Your advice in your leaderette, that each medical officer ask his Member of Parliament to support our Bill, and, if possible, assist Mr. Cross, M.P., in the ballot, we most heartily endorse, and feel certain this will be a powerful influence for good.—I am, etc.,

W. L. MUIR,
Secretary Scottish Poor-law Medical Officers' Association.

Glasgow, Oct. 29th.

THE PULSE IN APPENDICITIS.

SIR,—I was pleased to see that during the discussion at the Harveian Society on the early operative treatment of appendicitis great stress was laid by two speakers on the importance of the pulse rate. This, of course, is common to all acute inflammatory conditions affecting the peritoneum. I should like, however, to put in a word of caution. Although a quick pulse is an indication for early interference, a slow one is not necessarily a signal for delay. I recently lost a case from paying too much attention to this. There was hardly any tenderness, the temperature had fallen from 102° F. to 100°, and the pulse from 110 to 94. Two days afterwards I was telegraphed for, and on opening the abdomen evacuated the contents of a large abscess burrowing upwards from the appendix behind the colon almost as far as its hepatic flexure. The patient died five hours afterwards.—I am, etc.,

Lancaster, Oct. 28th. A. STANLEY BARLING.

THE LICENTIATES OF THE SOCIETY OF APOTHECARIES, LONDON.

SIR,—Medical students years ago forestalled Mr. C. G. Higginson in his discovery that the Society of Apothecaries of London is a University Faculty, for the L.S.A. has long been known by them as the "M.D.Blackfriars"—a suggestion I commend to those gentlemen who are not satisfied with the good old title.—I am, etc.,

October 22nd. M.D.OXON., L.S.A.LONDON.

SIR,—If the Society of Apothecaries possess the power which Mr. Higginson in his letter maintains it does, I agree that his method is good, but would be improved by adding the familiar letters L.S.A. A complete change would cause so much confusion that until the public mind has become educated to it (whenever that might be) it would do more harm than good. This would be prevented by the above plan. Being a Licentiate myself, and therefore speaking feelingly, I would welcome any change from that which at present conveys, to those who ought to know better, a partial qualification, and to the totally uninitiated, the savour of a quack.—I am, etc.,

October 23rd. M.L., CH.L., L.S.A.

THE MORTALITY OF SUPRAPUBIC LITHOTOMY.

SIR,—May I encroach on your valuable space to make some remarks on Dr. J. P. zum Busch's letter which appeared in the BRITISH MEDICAL JOURNAL of October 6th. Fabricant,[1] in the course of a very elaborate paper on the sectio alta as a method of treating impermeable stricture of the urethra, incidentally remarks that 42 successful suprapubic lithotomies were performed in Professor W. Grube's clinic in Charkow during the five years ending 1894. I give the literal translation of the complete sentence in which this statement is made, Dr. zum Busch having contented himself with quoting from the latter half of the sentence:

"Between 1884 and 1894 there were 66 suprapubic lithotomies performed here with a fatal result in 7 cases, which would only amount to 10.6 per cent., whilst in the last five years out of 42 patients who submitted themselves to this operation not one died."

Fabricant penned this sentence with the object of proving that with increased practice of suprapubic lithotomy the death-rate following it would diminish. Analysing the statement, we find that the first 24 operations were followed by a mortality of 29.16 per cent. Fabricant does not give the ages of these 66 patients, nor the average weight of the calculi removed, and I therefore fail to see how a bold statement of Dr. zum Busch in proving that suprapubic lithotomy is not more dangerous than litholapaxy. Turning to Golischewsky's[2] paper on primary suture of the bladder, we are on more solid ground, for he supplies us with complete histories of the 41 suprapubic lithotomies performed by Rasumowsky. I find that 20 of these patients were under 15 years of age; 13 were between 17 and 30 years old, and the remaining 8 were between 40 and 65 years of age. There were 3 deaths in 41 operations. The average number of days spent in hospital by the 39 patients who recovered was 10. In only 2 cases were the calculi removed very large, one 1,650 grs., the other 1,575 grs., both consisting of oxalate of lime. Both patients made excellent recoveries, one in fifteen days, and the other in twenty-eight days: their ages 26 and 35 years respectively. Among the 20 boys there were a few cases in which the stones were of considerable size, and these cases would have taxed the skill of an expert litholapaxist to remove the calculi successfully by a crushing operation; but, taking the cases as a whole, they might have been dealt with by litholapaxy, and the stay in hospital reduced proportionally. The contra-indications to employing primary suture of the bladder in the course of a suprapubic lithotomy are many, and its scope is limited, for it is not safe to employ it in cases where the urine is foul and where there is chronic cystitis. Assendelft's[3] record of 460 suprapubic lithotomies with only

[1] vol. lv, p. 721.
[2] vol. lx, p. 643.
[3] vols. xxxvi and lx.

15 deaths is a most brilliant one. He has written three papers, and they are well worth the careful perusal of every surgeon interested in the surgery of stone in the bladder. I find that 383 patients out of the total 460 were boys below 15 years of age. He has never adopted primary suture of the bladder. The mortality among the 383 boys was extremely small, being 2.08 per cent., and some of the calculi removed in young boys between the ages of 2 and 5 years were of considerable size, as they varied in weight from 5 grs. to as many as 345 grs.

In 7 cases where the age varied from 40 to 45 years there were 3 deaths, a mortality of 42.8 per cent., and in 2 cases, ages between 45 and 50 years, there was 1 death, a mortality of 50 per cent. Assendelft has proved without a doubt that suprapubic lithotomy, when skilfully performed, is a very successful operation in cases of large calculi occurring in very young boys. Admitting this to the full, I cannot follow Dr. zum Busch when he writes: "A careful perusal of Assendelft's paper, with its large number of bad cases which could hardly have been treated by a non-cutting operation, will, I have no doubt, convince every reader that the mortality of the suprapubic operation can be kept just as low as that of litholapaxy." For, if we discard litholapaxy for suprapubic lithotomy when dealing with stones of moderate size in patients between 45 and 70 years of age, we shall soon find out our mistake.

Having read Assendelft's three papers most carefully, I have no hesitation in stating that the great majority of his calculous cases, I do not say all, might have been treated by litholapaxy. A long experience in the treatment of stone cases in India convinces me that the number of Assendelft's bad cases was no larger than what falls to the lot of most surgeons in India, and that his hospital in the village of Wetoschkino, where he labours with such brilliant and gratifying success, would compare favourably in general equipment and nursing with many small hospitals scattered all over India, where a large amount of surgical work is done every year. I would remind Dr. zum Busch that the discussion at Ipswich hinged on the best method of dealing with very large or very hard calculi not amenable to litholapaxy. Incidentally, I stated that out of 147 suprapubic lithotomies performed in India during five years ending 1895 there were 61 deaths, a mortality of 42.17 per cent. The majority of these operations were performed on adult males and for very large stones. In fact, most of these cases were desperate ones, and it is not to be wondered at that the mortality was so high. If suprapubic lithotomy were a popular operation among surgeons in India, and were performed as frequently as lateral lithotomy is in comparatively simple cases, then, no doubt, its rate of mortality would fall considerably. Litholapaxy is now so firmly established on solid ground, that it is simply futile to dream of displanting it by suprapubic lithotomy except in rare cases. Such a movement could only be considered as retrograde. If Dr. zum Busch will carefully peruse the special Stone Number of the *Indian Medical Gazette* for August he will, I feel sure, be convinced that litholapaxy is the operation of election in the great majority of stone cases in patients of all ages and of both sexes.—I am, etc.,

East India United Service Club, Oct. 21st. D. F. KEEGAN.

POST-SCARLATINAL DIPHTHERIA IN THE HOSPITALS OF THE METROPOLITAN ASYLUMS BOARD.

SIR,—Your recent notice of report issued by above public body makes special reference to the subject of post-scarlatinal diphtheria as dealt with in the report. I venture to assert that this matter is one which demands from the profession a greater measure of scrutiny than it has yet obtained.

In the years since 1888, the date in which diphtheria was first admitted to these hospitals, more than 4,000 cases, nearly 600 of which were fatal, of this disease have arisen among the scarlet fever convalescent patients in these institutions. In mere number of occurrence, therefore, this condition of things is one calling for consideration. When, in addition, such amount of disease occurrence is brought about by preventable conditions a case for inquiry is undeniably present.

Opinions may conflict as to the exact conditions which have contributed to bring about this deplorable circumstance, but they must, I maintain, unite themselves in condemnation of its perpetuation.

The aggregation of these two diseases, scarlet fever and diphtheria, upon the same site under existing methods, has surely incurred the severest censure of administration in the amount of consequent disease and death-rate. The hospitals should no longer be permitted to become, as it were, factories, in which a new and dangerous disease can be manufactured to the public hurt.

Reform from the present authority can scarcely be looked for, but the changes in the civic life of London now impending may, one can confidently hope, lead to the extinction of this most incongruous and irresponsible of public bodies. The task of dealing with this urgent matter must be urged upon its successor.—I am, etc.,

King Street, W., Oct. 23rd. C. KNOX BOND.

THE ROYAL NAVY MEDICAL SERVICE.

SIR,—Now that a discussion has arisen relative to some very real defects in the Naval Medical Service, I would like to point out to newly-qualified men that under existing conditions the Royal Army Medical Corps is much more alluring than the Naval Medical Service, and I think that many intending candidates would hesitate to join the navy if they only knew its disadvantages and the unfairness with which its medical officers are treated.

The question of voluntary retirement, and senior officers being obliged to share duties with very junior officers[1] is a very real grievance. With reference to voluntary retirement after twenty years' service, the refusal to permit officers to retire at this period is a distinct breach of faith. In the Royal Army Medical Corps, an officer who wishes to retire at the expiration of his service for pension, states when he has done between eighteen and nineteen years' service that he wishes to retire after twenty years' service, and requests that he may not be sent abroad; and this, I believe, in all cases is accepted; if at home, he is kept on home service, and is permitted to retire at the expiration of his twenty years; whereas in the navy an officer of that service is sent abroad just before the expiration of the twenty years to prevent his retirement, or in many cases on sending in his papers he is told that they cannot be accepted.

The question of the relative ages and rank of officers[2] is another real grievance; it is of common occurrence for a newly-joined surgeon to be in the same ship with a midshipman, and meet him a few years hence to find him his senior in rank, and yet there is a difference of from five to eight years between their ages. The reforms in the Royal Army Medical Corps have made its service much more attractive than formerly, and I think that were it possible for naval medical men to effect an exchange, holding the same seniority, that the navy would lose at least half its medical men.

The Royal Army Medical Corps is now a service of its own, better paid than the naval medical, inasmuch as extra allowances are made for lodgings, servants, and forage; there is no sea service, no half-pay, and bachelors and married men are always provided with excellent quarters or lodging allowance when quarters are not available, wherever they may be stationed. As to the question of social status, this depends solely on a man's individuality, and if he is a gentleman his position is as good in the army as the navy.

Cannot a few small reforms be made in the Naval Medical Service to make it at least as attractive as any other service? They would in the majority of cases prevent officers from seeking retirement after twenty years' service, and would prove an attraction to the best qualified gentlemen, whom one would wish to see in both the services. As it stands at present the only ambition of a naval medical officer is to complete his period for retirement.—I am, etc.,

October 13th. ANOTHER N.O.

THE SCALE OF FAHRENHEIT'S THERMOMETER.

SIR,—I have read with much interest the article in the BRITISH MEDICAL JOURNAL of October 20th from Sir Samuel Wilks on the above subject, especially as about a year ago Sir Samuel, having presumably despaired of obtaining information through the most likely channels, interrogated me upon the matter.

[1] BRITISH MEDICAL JOURNAL, September 29th.
[2] BRITISH MEDICAL JOURNAL, September 22nd, 1900.

I have since considered the question, and have come to the conclusion that there is a very much simpler explanation than the one favoured by Sir Samuel Wilks. It is based on the fact that the expansion of mercury is one ten-thousandth part of its volume for each degree Fahrenheit. This, it seems to me, is very unlikely to be a mere coincidence. On the contrary, I think it probably forms the basis of the scale. Consider how the problem would have presented itself to Fahrenheit. He had, let us imagine, made a thermometer, and had to make a scale, the divisions of which should be of convenient size for showing all ordinary temperatures. He knew of four, apparently fixed temperatures—boiling point, blood heat, freezing point of water or rather melting point of ice, and that of a mixture of ice or snow and salt. These temperatures he found were so distributed along the scale that if he took any two of them, and divided that part of the scale lying between them into any convenient number of parts the figures representing the other two fixed temperatures on the same scale were not "round" numbers, and therefore there was no advantage in dividing the scale into any particular number of parts between any two of these fixed points. He therefore sought for some other basis, and very naturally turned his attention to the expansion of mercury, mercury being no doubt the liquid which he used in his thermometer. Here, however, I am prepared to concede a point to the medical view, in that Fahrenheit may have kept the temperature of the heat of the human body foremost in his mind as a desirable temperature to work from. He found that between the lowest temperature he could produce and that of blood heat mercury expanded approximately by one-hundredth part of its volume. He then saw that by dividing this difference of temperature into one hundred parts —or, in other words, by taking as his unit or degree a difference in temperature such as would cause mercury to expand by one ten-thousandth part of its volume he would obtain a convenient size of degree or unit. I submit therefore that Fahrenheit took for his unit or degree that difference in temperature for which mercury expands by one ten-thousandth part of its volume. He then had to decide upon a starting point or zero, and very naturally took the temperature of the snow and salt mixture, believing this to be the lowest degree of heat obtainable. Starting, therefore, from this point as zero, and taking his units or degrees from this point as above described, the rest of the scale came out just as we know it—that is, freezing point at 32°, blood heat about 98°, and boiling point at 212°. He would in all probability have wished to make blood heat exactly 100°, but gave the preference to the more rational idea of basing the scale of the mercury thermometer on the expansion of mercury itself, hence the temperature of blood heat is not exactly 100° F. This appears to me to be a so far simpler explanation than that suggested by Sir Samuel Wilks that I venture to put it forward. Had not Sir Samuel made such a thorough search for authentic information and failed to obtain any, I should have expected the above explanation to be the obvious one.

Of course, it is now well known that mercury or any other liquid does not expand absolutely uniformly throughout a wide range, the temperature at which mercury expands exactly by one ten-thousandth part of its volume being only at about 68° F. The accurate experiments of different observers by which the exact law of these expansions were determined were made very much later and in no way affect my suggested explanation of the Fahrenheit scale.—I am, etc.,

GILBERT S. RAM,
Coventry, Oct. 29th. Electrical Engineer.

THE SPAS OF CENTRAL WALES.

SIR,—After spending a very pleasant holiday at Llandrindod Wells I would, with your permission, make a suggestion to the Balneological Society that they should imitate their French *confrères* and organise autumnal tours to the various inland watering places. Although I am fairly well acquainted with most of the inland watering places, I must honestly confess that for beauty of scenery and for exhilarating air the district I have mentioned stands very high on the list. I say nothing about the waters, because I am not competent to do so.—I am, etc.,

Cardiff, Oct. 13th. T. GARRETT HORDER.

OBITUARY.

THE LATE SIR HENRY ACLAND.

WE are indebted to Mr. T. PRIDGIN TEALE, F.R.C.S., F.R.S., for the following notes, which have reference especially to Sir Henry Acland's work on the General Medical Council:

A close association with Sir Henry Acland during the greater part of his presidency over the General Medical Council, has given me the opportunity of knowing intimately the views and principles which influenced him, and of observing the manner in which he carried out those principles in guiding the deliberations of the Council.

He entertained a very exalted view of the importance to the nation and to the profession of the work of the Medical Council which focussed into one centre, co-ordinated and brought to the bar of one tribunal, all the medical, and licensing bodies of the three kingdoms, bodies which previous to the Medical Act of 1858 were absolutely unregulated and irresponsible to any authority outside themselves. Speaking on this point in his first address as President when opening the session of June 17th, 1875, he said:

"Only a third of the members of the Council who formed it in 1858 remain. Not half, therefore, know how great is the change which has come over the opinion of the medical profession since 18 representatives of 19 universities and corporations, all distinct, some in admitted rivalry, met 6 nominees of the Crown as representatives of the public at large, and proceeded to construct a sound and uniform system of medical education, general, scientific, and professional. It is well known in the Council, how rapidly, though silently, the promotion of the general good superseded solicitude for particular interests, and how soon the arduous task of harmonising diversities in national sentiment, of seeking the good in every existing system, of purging the evil from every usage, however time-honoured, became the aim of every member of the Council.

"It would ill become me to dwell on this topic, or even to have touched on it, but for the purpose of our strengthening each other's hands in the discharge of our complex duties.

* * *

"I am far from wishing to be understood as implying that our work is nearly done. That is not my opinion. On the contrary, it would seem we have only lately made our tools and sharpened them for their work. A glance at the subjects to which the attention of the Executive Committee has been drawn during the recess, and at the programme of business, will show this."

The great aim of his life was to lift to the highest possible standard, both educational and scientific, the profession to which he had devoted his life, whether in Oxford as Regius Professor dealing with university graduates, or in the Council engaged in regulating the training of all those entering the profession. As one great means of attaining these objects he looked to the action of the General Medical Council, and to this end he devoted time and thought unsparingly.

Among the chief characteristics of his work as President I would select the following points: He was always most loyal to the Council and to every individual member. Absolutely fair to everyone, and forbearing even to a fault, he maintained that every member possessed equal rights, that everyone had a right to propose any motion that could colourably be brought within the standing orders, and to speak even at considerable length. And when he was at times sorely tried by "exuberant verbosity," he nevertheless deemed it better policy to allow such debating to spend itself, than, by checking, to give it a new lease of activity.

In directing the deliberations of the Council he took as his model, to a great extent, the procedure of the House of Commons, and studied very carefully the rules under which those debates are carried on. He was able thereby in a very conspicuous degree to guide the deliberations of the Council, to keep a clear view himself, and to keep clearly before the Council the state of business when, owing to multiple suggestions of amendments, there was a danger of drifting into confusion. Not infrequently he appeared to be the one person who saw clearly through the entanglements of a debate, and who could recall it to order again.

As an illustration of his care, judgment, and wise selection of words, one may be pardoned for calling attention to the

exquisite sentences in which, in his opening addresses, he spoke of those who had ceased to be members of the Council, whether by death or retirement. I know that such notices cost him much thought. The words had to be few, to fully express what we felt, and to be neither fulsome nor exaggerated. As a sample I may quote from his Presidential Address of March 24th, 1876, the day on which I joined the Council. After speaking appropriate words of regret at the departure from the Council of Dr. Risdon Bennett and Dr. Sharpey, he thus refers to the removal by death of Dr. Begbie and Dr. Parkes:

> Of Begbie and Parkes I can scarcely speak. Any formal obituary notice would be out of place here. Yet may it be said that Dr. Begbie was already endeared to us all, having won at once by his gracious presence that esteem which all Scotland had long bestowed. The Council would probably hold any words from the President concerning Dr. Parkes to be inadequate. His purity of heart, his self-sacrifice, his courage, his grasp of detail, were beyond praise. Whenever his powers were brought to bear on our work (and when were they not?) we felt them to be the powers of a strong man, whose strength was surpassed by his generosity, his gentleness, and his goodness.

I have no doubt that from his presence in the Council from its commencement and from his presidency of twelve years, the whole covering a period of twenty-nine years, the Council, and indirectly the profession, have benefited to a very great extent. His social powers and opportunities were devoted to bringing the Council into touch with our leading statesmen; and his high views of the status which the profession was destined to take in furthering the well-being of the body politic secured for him a hearing with those whose position in the State enabled them to give a helping hand.

Two things which he had greatly at heart he failed to attain. He worked for, and almost brought about, the combination of the Universities of Oxford, Cambridge, and London in conferring a diploma in Public Health. This would have been the one diploma for the empire, and of a standard that could not have been questioned. Now each of eighteen licensing bodies has established or is liable to establish a diploma of its own. The second—by no means so simple a matter to accomplish, but one which, if accomplished, would have set an enviable example to other universities, and have given a prestige and a freedom in study and examination unparalleled elsewhere—the second, I say, was the proposal that Oxford should cease to be a licensing body by requiring the candidates for its medical degree to have previously passed the Conjoint Examination of the Colleges of Physicians and Surgeons of England. The University could then have dispensed with any examinations needed to satisfy the requirements of the General Medical Council, and could have freely laid down its own rules as to subjects of study and examinations which would have justified the acquirement of the M.B. degree by graduates who were already legally qualified practitioners.

This would have at once raised the Oxford medical degree above the level of all qualifying examinations. To some of us the advantage of such a course seemed self-evident; but I believe that the failure to carry the statute arose from the fact that Acland, in his intense and vivid perception of the possible future, failed to see the necessity of bringing others, with less foresight than his own, into line with his own advanced views.

After an intimacy and attachment of over forty years, I, like many others, have lost one of the greatest and most valued friends I ever possessed.

BENJAMIN JONES MASSIAH, M.D.EDIN., M.R.C.S.,

Formerly Physician to Children's Hospital, Pendlebury, Manchester.

THE death of Dr. Massiah, of West Didsbury, at Bournemouth (from peritonitis following an operation) leaves a much-regretted blank in the medical circles of Manchester. The son of a West Indian merchant, and himself resident in early life in Barbadoes, he received his medical education first at the Bristol School, and subsequently at the University of Edinburgh, in which he graduated M.B. in 1877, subsequently proceeding to the degree of M.D. His first introduction to the north of England was through a temporary appointment at the Royal Albert Asylum, Lancaster, which led to his obtaining the post of Resident Medical Officer at the Barnes Convalescent Hospital at Cheadle, in connection with the Manchester Royal Infirmary. Subsequently he was appointed Physician to the Children's Hospital at Pendlebury, a post which he held until an increasing suburban practice compelled him to resign it. As a private practitioner his sympathetic manner and his thorough devotion to his work endeared him to his patients, who benefited not only from his attentions when ill but from his interest in cycling and golf clubs, which he induced many to join as a means of preserving their health. By most of his patients, indeed, he was regarded as "guide, philosopher, and friend," and he will be sorely missed by them. His nature was unselfish, and he was always ready to give a helping hand to any movement for the betterment of his fellows. For some years he held the position of District Medical Officer to the Chorlton Union, and his memory is cherished by poor and rich alike. The esteem in which he was held was testified by the large attendance of his medical colleagues and of friends and patients at his funeral service, which took place at the Manchester Crematorium on October 4th.

Dr. Massiah was an active member of the Lancashire and Cheshire Branch of the British Medical Association, and for some time served on the Council of that Branch. The cares of a large practice—which he shared latterly with Dr. Goodfellow—left him but little time for literary work, but while at Cheadle he published a book on the *Relation of Convalescent Institutions to Hospitals*, in which he collected a large amount of useful information.

Dr. Massiah was only in his 54th year at the time of his death, and leaves a widow and a little son to lament his loss.

DAVID YOUNG, M.D.,

Formerly of Florence and Rome.

MANY visitors of recent years to the two principal winter cities of Italy will hear with regret of the death of Dr. David Young, whose name has been identified with either Florence or Rome for nearly thirty years. He was born in 1839, and studied medicine in Aberdeen and Edinburgh, taking his M.B. and C.M. at the former University in 1865, and the diplomas of L.R.C.S.Edin., and L.R.C.P.Edin. in the same year. In 1869 he proceeded to the M.D.Aberdeen. Soon after qualifying Dr. Young went to India, where he was appointed Professor of Botany in the Grant Medical College, Bombay, and Examiner of Gynæcology in the University of Bombay. The climate of India proved unsuited to his health, and in 1872 he settled in Florence, where he rapidly acquired a large practice amongst the English and Americans of the foreign colony. An unfortunate outbreak of diphtheria brought an opportunity which he made use of for testing the value of lactic acid as a local application.

During the holidays he explored the summer resorts of the Appenines, then but little known, and when after ten years' practice he moved to Rome his observations were embodied in an interesting volume entitled *Rome in Winter and the Tuscan Hills in Summer* (1886). This contained some papers on summering in Italy which had previously appeared in *The Practitioner*. There can be little doubt that Abetone, San Marcello, and other villages in the mountains near Prato, on the line from Bologna to Florence, owe much of the popularity they now enjoy to the writings of Dr. Young. The success he had gained in practice in the Tuscan capital followed him to Rome, where he established himself first in the Piazza di Spagna and afterwards in the Via Venti Settembre, where he entertained many of the visitors to the International Congress of 1895. He always threw himself so thoroughly into his duties that it was impossible for him to curtail his work, and the sudden exigencies of practice entailed by residence in a foreign capital, as well as the necessity of often climbing to a high third-floor flat, decided Dr. Young to retire altogether. This he did about two years ago, but unfortunately his well-earned rest came too late, and he died suddenly at Melville Lodge, Ventnor, on October 11th, at the age of 61.

RICHARD HENRY MILSON, M.D.DURH., M.R.C.S., L.S.A.

WITH much regret we record the death on October 9th of Dr. Milson at his residence in Finchley Road, South Hampstead. He was born in 1837, and was the only son of the late Richard O. Milson, surgeon, of Swineshead, Lincolnshire.

He pursued his medical studies at St. Mary's Hospital, where he took several prizes; he matriculated at the University of London in 1859, and qualified as M.R.C.S. and L.S.A. in 1860. He entered into partnership with Dr. Rowe, and commenced

practice at Margate in the same year. He remained there until 1865, when he took advantage of an opportunity of joining Mr. Musgrave, who was then practising in St. John's Wood. The post of Surgeon to the St. John's Wood and Portland Town Provident Dispensary was held by him for about seven years. He took an active interest in the affairs of the University of Durham. He obtained the degree of M.D. in 1878, and was for many years Honorary Secretary (for the south) of the Durham University Medical Graduates' Association.

In 1892 Mr. Charles Clayton joined the firm, the three partners working together until 1897, when Mr. Musgrave retired, leaving the practice to be carried on by Dr. Milson and Mr. Clayton. Notwithstanding a busy professional life he found time to attend society meetings, and in 1897 was elected President of the Harveian Society. He was also Medical Officer to the Society for Teaching the Blind to Read, and Churchwarden of St. Paul's, Avenue Road. He was a member of the Metropolitan Counties Branch of the British Medical Association, and for a time Honorary Treasurer to the North-West London Clinical Society.

Dr. Milson was a highly respected and accomplished practitioner. With his patients' interests always as his first consideration, he never spared himself, and worked to the utmost limit of his powers for their good. A gentleman in every sense, and a thoroughly good man, his advice was sought by a large number of patients, who found him not only a conscientious, painstaking, and judicious medical adviser, but a sympathetic and reliable friend. His health had failed somewhat during the last six months or more, but he went about as usual doing his full work until about a month before his death. He was then seized by what at first appeared to be nothing worse than a simple gastric catarrh, but more alarming symptoms arose, and in spite of the attention given him by Drs. Cheadle and Hale White, and his partner, Mr. Clayton, and at the last by Messrs. Treves and Pepper, he died of hæmorrhage and shock from the perforation of a duodenal ulcer.

ARTHUR SYMONS ECCLES, M.B., C.M.Aberd., M.R.C.S.Eng.

With great regret we have to record the sudden death of Dr. A. Symons Eccles, which took place on October 22nd at his residence, 23, Hertford Street, Mayfair.

Mr. A. Symons Eccles was only in the 46th year of his age. He was the fourth son of Mr. J. H. Eccles, M.R.C.S., of Plymouth (who survives him), and many of his family are also well known in the medical profession. His early education was obtained at Mannamead School, Plymouth. After leaving this, he entered at St. Bartholomew's Hospital, took the diploma of M.R.C.S. in 1876, and graduated at Aberdeen as M.B. and C.M. in 1879.

When the Russo-Turkish war broke out, Dr. Eccles accepted an appointment on the staff of the Stafford House Ambulances, of which he became chief surgeon, and while in Turkey he joined the Imperial Ottoman Medical Service as surgeon. In recognition of his distinguished services he received the decoration of the Medjidieh, 4th class.

On returning to England, he engaged for some time in general practice in Bayswater, and, on the advice of a member of the staff of his old hospital, he particularly interested himself in the study of the science and art of massage. He soon became a leading British medical expert and authority on the application of this method of treatment to various diseases. He wrote a work, *Massage: its Physiological Effects and Therapeutic Uses*, which has passed through two editions since 1895, and is generally recognised as one of the best and most scientific as well as practical treatises on the subject. Among his other publications mention may be made of *Difficult Digestion due to Displacements* (1900), and pamphlets on *Sciatica*, *Floating Kidney*, and the *Diagnosis of Gastroptosis*. Dr. Symons Eccles was a Fellow of the Royal Medical and Chirurgical Society and of the Medical Society of London, and a member of the Neurological and the West London Medico-Chirurgical Societies. In the last-named Society he had taken exceptional interest, having served as Secretary, member of Council, Vice-President, and ultimately as its President. During his year of office the *West London Medical Journal*, which has been so successful as the organ of that Society, was started.

His loss will be deeply felt by a large circle of sincere friends, to whom he had endeared himself by his straightforward conduct, great kindliness, and extreme generosity.

He was twice married, and has left a widow and an infant son to mourn his decease.

Dr. William Dyson Wood, who died on October 16th, was the son of a medical man who held the post of prison surgeon at Wakefield. He received his medical education at Edinburgh, where he was a pupil of Syme. The teaching and personality of the great Edinburgh surgeon made an indelible impression on young Wood. After obtaining the diplomas of L.R.C.S. and L.R.C.P. he was appointed Assistant Surgeon to the West Riding prison at Wakefield under his father. Subsequently he became Medical Officer of Health to the Doncaster Rural Sanitary districts, and finally he was appointed Medical Officer to the Oxfordshire Sanitary districts, and discharged the important duties of that office almost till his death. That event, the immediate result of diabetic gangrene, came as a painful surprise to his friends who were not aware that he suffered from glycosuria, and that his constitution had been fatally undermined. He was possessed of certain remarkable gifts. He had the oratorical faculty in a high degree, and could make an extempore speech with great fluency and excellent effect. Had he studied for the Bar he would have risen in that profession. He had a fine and true literary instinct. He was an accomplished Shakespearean scholar, and had published essays on some of Shakespeare's characters. He took a keen interest in politics, and was a staunch Conservative of the old school. His nature was of a most genial and sociable kind, and he was greatly loved by an attached circle of friends, among whom his death leaves a sad blank. He was unmarried.

Mr. Samuel Henry Swayne, whose death took place on October 12th at his residence, 129, Pembroke Road, Clifton, was born on August 3rd, 1821. He was a son of Mr. J. Champney Swayne, a surgeon of some renown in his time in Bristol, and Martha Christiana, daughter of Thomas Griffiths, M.D., and grandson of the Rev. George Swayne, Vicar of Pucklechurch, Gloucestershire. He was educated at the Bristol College, and proceeded to the Bristol Medical School and Royal Infirmary for his professional training, at the same time being a pupil of Mr. Richard Lowe. Subsequently he attended lectures at St. Bartholomew's Hospital, London, and took the diploma of the Royal College of Surgeons in 1843, and the L.S.A. in 1844. On his return to Bristol, Mr. Swayne acted as partner with his father, who then resided at 11, Berkeley Square, Bristol, and also undertook the duties of Demonstrator of Anatomy at the Medical School, which, however, he had to relinquish owing to ill-health. Mr. Swayne was a member of the British Medical Association, the Bristol and Gloucester Archæological Society, the Clifton Antiquarian Society, the Clifton Microscopical Society, and was a Past President of the Bristol Medico-Chirurgical Society and the Bristol Naturalists Society. For many years he also acted as Honorary Secretary to the Bristol Museum and Library. Mr. Swayne had been in [illegible] for some weeks, and his decease, though not unexpected, came very suddenly from syncope arising in the course of an attack of cardiac weakness. Though he seldom took [illegible] part in the proceedings of the medical [illegible] few more regular attendants at the meetings than Mr. Henry Swayne. He was a courteous and [illegible] presence will be much missed in the numerous societies of which he was a member. Mr. Swayne was Churchwarden of All Saints Church, Clifton, in the [illegible] leading part, while he never ceased to interest himself in the welfare of the church. He married Caroline Sarah, daughter of the Rev. Charles Garnsey. She d[illegible]

We regret to have to record the death of Mr. C. B. Wilson, of Liverpool, one of the oldest and most esteemed members of the profession in that city. Mr. Wilson was born in Liverpool seventy four years ago, and entered the Liverpool School of Medicine soon after its foundation. He qualified M.R.C.S.Eng.

in 1847, and took the L.M. of Dublin in the same year. He enjoyed a large and lucrative practice for many years, and acquired a high reputation as an obstetrician. He took an active part in the affairs of the Lying-in Hospital, and was at one time Surgeon to the St. Anne's Dispensary. He married young, and had a large family, most of whom survive him; but his second son, who was one of the most distinguished students of the Liverpool School and one of the surgeons to the Northern Hospital, died about two years ago. At the last Council meeting of the Medical Institution the President, in moving a vote of condolence with the widow and family of Mr. C. B. Wilson, spoke of him as a model of the highest type of general practitioner. The funeral took place on October 12th at Smithdown Road Cemetery, and was attended by a large gathering of members of the medical profession. The officiating clergyman was Rev. Stephen Gladstone, Rector of Hawarden, son-in-law of the deceased.

INDIA AND THE COLONIES.

NEW SOUTH WALES.

VITAL STATISTICS.

THE Government statistician's report on the Vital Statistics of New South Wales for the year 1899 has just been published.

DECLINE OF THE BIRTH-RATE.

The population of the Colony at the end of the year was 1,356,650, an increase of 22,810 on the preceding year. The marriage rate was 6.89 per 1,000 of the population, this being the highest rate since the year 1891, but lower than that of previous year between 1880 and 1891. The average number of children born in a family has dropped from 5.26 to 4.04. The birth-rate was only 27.10 per 1,000 of population, the lowest recorded. This serious decline in the birth-rate has led to a special investigation into the phenomena of childbirth in New South Wales, and three serious conditions of affairs are found to be prevailing; first, that for all women the proportion of fertile marriages is declining; second, that among fertile women the birth-rate is much reduced as compared with what it was 20 years ago; and third, that Australian women are less fertile than the European women who have emigrated to this Colony. The mean annual increase in the population by excess of births over deaths was 2.30 per cent. in 1880-84, and only 1.67 per cent. in 1894-99. The number of illegitimate births was 2,609, equal to 7.16 per cent. of the total births. The rate of illegitimate births has been steadily increasing from 4.09 per cent. to 6.84 per cent. in 1896-99.

DEATH-RATE.

The death-rate during the year was 11.82 per 1,000, which is 0.61 below the mean rate of the last 10 years. The number of children under 1 year who died in the metropolitan area was 1,473, or 120.4 per 1,000 births, and in the country 2,856, or 117.6 per 1,000 births. The death-rate of illegitimate children was three times as large as that of the legitimate.

Tuberculosis and Typhoid Fever.—The year 1889 marked the commencement of the decline in the death-rate of Sydney. In that year the present system of sewerage was inauguarated, and the Dairies' Supervision Act came into force. The death-rate of Sydney and suburbs, which was 20.2 per 1,000 in 1885-89, fell to 13.5 in 1895-99, and the beneficial effect of legislation in the direction of proper supervision of dairies is seen in the decrease of the death-rate from typhoid fever and tuberculosis. In 1889 the deaths from typhoid in the metropolis were at the rate of 6 per 10,000, and in 1899 they had dropped to 2 per 10,000. The death-rate from phthisis likewise fell from 14 per 10,000 in 1889 to 11 per 10,000 in 1899. Among the chief causes of death, pulmonary phthisis still heads the list with 1,069, equivalent to 7.91 per 10,000 living.

Cancer.—The number of deaths due to cancer has been increasing, and at a much greater rate than might have been expected from the actual increase in the population. For the years 1860-64 the rates were 1.84 and 2.17 per 10,000 respectively for males and females; in 1895-99 the rates were 5.18 for males and 5.08 for females. In males the organs most frequently affected were the stomach and liver, and in females the uterus and breast.

Hydatids.—Hydatid disease was responsible for 58 deaths, males and females being equally affected.

Other Diseases.—Diseases of the nervous system, including apoplexy, caused a death-rate of 11.94 per 10,000; diseases of the circulatory system, 8.51 per 10,000; respiratory diseases, 14.58 per 10,000; and urinary diseases, 4 45 per 10,000. Among deaths from violence, suicide shows a steady increase. In 1871-75 the proportion of suicides was 0.78 per 10,000 living; in 1896-99 the rate was 1.39 per 10,000 living.

Certificates of Deaths.—In no fewer than 670 cases the certificates of death were so imperfect in the statement of the cause of death as to be practically useless for the purpose of classification, and the statistician again appeals to medical men to be more exact in their certificates, and to conform to the classification of disease approved of by the Royal College of Physicians of London, and in use in this colony.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: HENRY W. FINLAYSON, M.B., Surgeon, to the *President*, for three months' course of hospital study, November 1st; ERNEST J. FINCH, Surgeon, to the *Vivid*, for Keyham Yard, November 1st; T. H. VICKERS, Surgeon, to the *Vivid*, to be lent to the *Defiance*, November 1st; LEONARD H. KELLETT, M.A., M.B., Fleet-Surgeon, ROBERT HILL and GEORGE E. DUNCAN, Surgeons, to the *Renown*, undated; HOWARD J. MCC. TODD, Fleet-Surgeon, and CHARLES G. MATTHEW, Surgeon, to the *Blake*, undated; EDGAR F. MORTIMER, Surgeon, to the *Canopus*, October 26th; HAROLD J. CHATER, Surgeon, to the *Sparrow*, November 13th; H. R. H. DENNY, Surgeon, to the *Magnificent*, November 15th; GEORGE A. S. BELL, Surgeon, to the *Blanche*, November 20th; HUGH P. TURNBULL, Surgeon, to the *Duke of Wellington*, November 20th; THOMAS S. HARTLEY, Surgeon, to the *Condor*, November 1st; JEREMIAH SUGRUE, M.D., Staff-Surgeon, to the *Vernon*, October 27th.

ROYAL ARMY MEDICAL CORPS.

THE following officers have been discharged from hospital in South Africa to duty: Lieutenant H. SIMSON, Captain A. J. CHAMBERS, Civil Surgeon J. T. LEON, Captains W. E. HARDY and F. MCDOWELL, and G. H. FROST, the last-named being of the Indian Medical Service.

The undermentioned are returning from South Africa: Civil Surgeons ROBERTS, SHEEN, ROOKE, ASHDOWN, STIRLING, KINMONT, MCINTYRE, GRAVES, J. DUNN, G. R. THOMSON, F. B. CAYLEY, W. T. ROWE, D. N. GREIG, E. D. HANCOCK, H. A. J. FAIRBANK, FRIEL, F. D. BOYD, A. H. WATT, G. L. CHIENE, J. MILLER, J. MCFARLANE, G. S. STOKER, COLEMAN, J. C. POUNDER, ENRYS, and ROBERTS; Surgeon-Captain STEELE (Militia Medical Staff), Civil Surgeons S. W. RICHARDSON, J. H. HARVEY, and A. H. EDWARDS (the three last mentioned for duty on the voyage).

Lieutenant-Colonel R. BLOOD, M.D., who has been in India since October, 1895, and is now serving in the Punjab, is appointed to officiate on the Administrative Medical Staff of the Indian Army, with the temporary rank of Colonel, from September 24th.

ARMY MEDICAL RESERVE.

SURGEON-CAPTAIN JAMES MACKAY is promoted to be Surgeon-Major, October 27th.

INDIAN MEDICAL SERVICE.

THE undermentioned Majors, having completed twenty years' full-pay service, are promoted to be Lieutenant-Colonels from October 2nd: *Bengal:* G. M. J. GILES, M.B., A. R. W. SEDGEFIELD, M.B., E. F. H. DOBSON, M.B., J. S. SHEARER, M.B., D.S.O., F. S. PECK; *Madras:* J. L. VAN GEYZEL, M.B., H. N. V. HARINGTON, G. M. E. M'KEE, J. A. BURTON, F. J. DOYLE; *Bombay:* G. E. FOOKS, J. W. T. ANDERSON.

The following Captains, after twelve years' full-pay service, are promoted to be Majors, dated September 29th: *Bengal:* H. E. DRAKE-BROCKMAN, W. B. LANE, P. J. LUMSDEN, M.B.; *Bombay:* S. E. PRALL, M.B.

The Secretary of State has decided that a lieutenant-colonel of the Indian Medical Service in civil employ who, after selection for promotion to the administrative grade, is attached to the office of a principal medical officer for two months for the purpose of acquiring a knowledge of military medical administration, shall continue to receive the full emoluments of his civil appointment, the same being a charge on the Military Department.

ARMY MEDICAL SERVICE.

DEPUTY-INSPECTOR-GENERAL GEORGE THOMAS GALBRAITH, M.D., died on October 24th at Stirling in his 83rd year. He took the M.D. degree at Edinburgh, and was admitted a Licentiate of the Royal College of Surgeons there in 1839, entering the medical service of the army in 1841, and serving with the 99th Regiment in the New Zealand war, for which he had the medal. Dr. Galbraith was present at Ohaeawai and Ruapekapeka, and was the senior medical officer present during the greater part of the operations in the southern district of New Zealand: was present at several skirmishes in the Valley of the Hutt, and also at the Horokiwi on August 6th, 1846. He also served with the expeditionary force in the north of China in 1860, for which he had a second medal. He retired in June, 1868, with the honorary rank of Deputy-Inspector-General of Hospitals.

Surgeon-General JONES LAMPREY died at Southsea on October 29th, aged 77 years. Appointed Assistant-Surgeon, October 8th, 1850, he became Surgeon, November 3rd, 1857; Surgeon-Major, June 7th, 1870; Deputy-Surgeon-General, March 4th, 1877; and Surgeon-General, June 14th, 1883. He quitted the service on retired pay, October 16th, 1884. He was with the

67th Regiment throughout the campaign of 1860 in North China, including the action of Sinho, taking of Tangku, storm and capture of the inner Taku Fort, and surrender of Pekin (medal with two clasps); he also served in the operations against the Taeping rebels in 1862, including the recapture of Kading.

VOLUNTEER MEDICAL ASSOCIATION.

THE next course of lectures for the Proficiency class will be held (by the kind permission of the commanding officer) at the headquarters of the Volunteer Medical Staff Corps, 51, Calthorpe Street, Gray's Inn Road, commencing on Tuesday, November 20th, at 5.30 P.M., continuing on the corresponding day and hour in the following weeks. The Correspondence class will commence at the same time. All information may be obtained from the Honorary Secretary, Surgeon-Captain J. Harper, 25, Rosary Gardens, South Kensington, S.W.

MEDICAL ARRANGEMENTS FOR THE C.I.V. PROCESSION.

THE medical arrangements on the line of route were made by Brigade-Surgeon-Lieutenant Colonel C. E. Harrison, the Acting P.M.O. of the Home District. The route was divided into four sections, under Surgeon-Lieutenant-Colonel J. E. Squire and Surgeon-Major V. Matthews, of the Volunteer Medical Staff Corps, and Captains L. Way and P. H. Whiston, of the Royal Army Medical Corps. The dressing stations, with a medical officer at each, were posted at sixteen points of the route, and stretcher squads were extended at intervals of about seventy-five yards all along. The medical officers were furnished by the Volunteer Medical Staff Corps, brigade bearer companies and regimental medical officers, supplemented by medical officers of corps out of the Home District who had volunteered their services. The bearers and orderlies were provided by five London companies and the Maidstone Company of the Volunteer Medical Staff Corps, the brigade bearer companies of the five metropolitan brigades, of the Surrey Brigade, and of the Essex Brigade, as well as regimental stretcher bearers.

Ambulance waggons were stationed at five points on the route, three of them being provided by the Army Service Corps, and one each by the Surrey Brigade and the East London Brigade. Two ambulance waggons, one provided by the Guards Brigade and the other by the London Companies of the Volunteer Medical Staff Corps, followed the column and carried invalids; while other invalids were carried in brakes.

The medical arrangements for the troops were fully sufficient, and although there was great difficulty in getting through the crowd nearly all the medical officers and bearers managed to struggle to the points allotted to them.

Both medical officers and bearers, although told off primarily for duty with the troops, worked hard in rendering assistance to civilians, and co-operated with the civilian medical officers and bearers. Fortunately, in spite of the crowd, probably the densest ever seen in London, the number of serious cases was not so large as the complete breakdown of the police arrangements seemed to render probable at the time. The slighter cases of faintness, amounting to several hundred, were too numerous to record, but required no further treatment than removal out of the crowd. The serious cases, after receiving first-aid on the spot, were sent to the nearest hospital. At Ludgate Circus, where the crush was most severe, six serious cases were treated, and then sent to St. Bartholomew's Hospital. They were: Concussion of brain, 1; kick in abdomen by horse, 1; scalp wounds and concussion, 3.

VOLUNTEER MEDICAL OFFICERS.

SURGEON-CAPTAIN writes: I have waited for an expression of opinion from medical officers as to the behaviour of the War Office towards them as to their attendance this year at camps of instruction, but neither in the columns of the BRITISH MEDICAL JOURNAL nor at the British Medical Association meeting has a word been said. The idea of only recognising one medical officer to a corps, and ignoring many officers who have been attached from fifteen to twenty years seems to me unexplainable. The absurdity, too, in making this officer *pro tem.* a colonel with colonel's pay and allowances, although he may have been a captain or a junior subaltern of a year's service, requires some explanation. True, one hears of instances where both medical officers went into camp and shared the duties and divided the spoil, but this ought not to have been necessary. When you consider that many of us have gone into camp year after year at great cost and loss of practice, having always to have a *locum* in our absence, which adds very much to the expenditure compared to volunteer combatant officers, and during the past few years—and especially this, the examination of recruits both for own corps and for the army has taken up much of our valuable time, and necessitated both medical officers being present, and all this work done gratuitously. It is to be hoped, as we are to have again next year camps of instruction, that something more satisfactory will be the outcome of this new army reform, otherwise the second medical officer in a volunteer corps will be neither useful, ornamental, nor necessary. I often wonder how many of the young civil medical officers that were taken on in preference to officers of the Army Medical Reserve or volunteers ever treated a case of typhoid or pneumonia before they left "for the front."

THE SCARCITY OF CANDIDATES FOR THE ROYAL ARMY MEDICAL CORPS.

AUDAX writes: To rehabilitate the R.A.M.C. in popularity, an increase in pay and pension must be the first inducement. The following suggested increase is very moderate, as a glance at the Pay Warrant of 1900 will show: The pay of a candidate, exclusive of allowances, should be 10s. a day; all candidates to have been for six months a house-surgeon or physician in a recognised hospital; on receiving a commission as a lieutenant pay to be £300 a year, exclusive of allowances; after ten years' service, subject to approval of the individual by the Secretary of State for War, and a minimum of three years' service abroad, pay to be £365 a year *plus* allowances; promotion by examination to major after twelve years, but if the officer fails to satisfy, then he should be granted a gratuity of £1,000, carrying with it the rank in which he was serving; the same gratuity to be given should he retire by Medical Board, through illness, or elect to retire after ten years' service. A major on promotion should receive £1 2s. 6d. a day exclusive of allowances, and similarly, after fifteen years, £1 5s. a day. A Lieutenant-Colonel on promotion at twenty years £1 7s. 6d. with allowances, and a service of at least five years abroad; after twenty-five years, similarly £1 10s., and after thirty £1 15s. a day. Colonels on promotion £2 5s.; if of eight years' service abroad, with allowances. Surgeon (major) generals on promotion £3, with allowances, and not fewer than ten years' service abroad. Retirement of all ranks should be optional after twenty, twenty-five, twenty-seven, and thirty years' or more service at following rates:

	£	s.	d.
Surgeon (major) generals	2	5	0
Colonels	2	0	0
Lieutenant-colonels (20 years)	1	5	0
,, ,, (25 ,,)	1	7	6
,, ,, (30 ,,)	1	10	0
,, ,, (35 ,,)	1	15	0

These rates cannot be called excessive, and meet the increased requirements and scale of living of the present day. Roughly speaking, the increased pay after ten years is about 2s. 6d. a day or £45 per annum, and the increased pension a similarly advanced increment on the existing scale.

*** Increased pay and pension is, no doubt a vital element in the rehabilitation of the Army Medical Service. This is necessary at once to meet the increased scale of living which medical men, like others, cannot avoid; and also to meet the increased emoluments given to assistants in civil life. Whether the scale suggested by our correspondent is sufficient we will not say, further than that he is a good and reasonable judge.

LIEUTENANT-COLONEL R.A.M.C. writes: A chief cause of the unpopularity of the R.A.M.C. is the disproportionate amount of foreign service; but it can be overcome in two ways—by making such service more popular by diminishing it. To increase popularity pay abroad must be increased; to shorten foreign service an increased establishment is needed. Such an establishment turns on additional pay. I suggest 100 medical officers should be entered by examination yearly to create a sufficient reserve, as follows: Such officers to serve at home for three years at £300 a year, with liability for foreign service in war time; they should be trained at Netley. On completion of three years, they should further engage for a yearly month's training at £100 a year in a reserve, which might be profitably spent in a militia camp. For a further four years they would be liable to recall on national emergency on £500 a year. After ten years such liability to serve would cease. The above scheme would soon form a reserve of 1,000 officers, still young and with a fair knowledge of military affairs, forming a very valuable reserve. Specialists seem to be desired in war time: why not specially examine candidates and officers for promotion in such subjects as bacteriology, public health, eye diseases, etc.? A body of specialists and experts within the corps could thus soon be formed.

THE CREST AND MOTTO R.A.M.C.

OBSERVER writes: The crest and motto (*In arduis fidelis*) of the R.A.M.C was approved on the formation of the corps. It is considered passing strange that no such crest and motto has as yet been officially recognised in the *Army List*. The omission is accentuated in the now dress regulations, for, although the crest is designated, the motto is omitted. Are the R.A.M.C. using a motto that has not as yet had any published official sanction? The reason for such an obvious omission is apparently old military jealousy, now, we hope, on its last legs.

*** The omission is certainly strange, but we hope, passing," under a new and better *régime*.

MEDICO-LEGAL AND MEDICO-ETHICAL.

MEDICAL ADVERTISING.

A COMPLAINT reaches us from Harrogate that a circular containing the advertisement of a work upon the waters of the bath by a local practitioner is circulated broadcast by the local newsagents, being inserted among the newspapers and periodicals which they distribute among their customers. This would certainly be reprehensible, and we should advise that complaint should be made to the Council of the Yorkshire Branch, which should be in a position to ascertain the facts, and if satisfied of their accuracy to remonstrate with the offender.

FEE FOR EMERGENCY POLICE CALL.

ASYLUM MEDICAL OFFICER requires to know his legal position under the following circumstances. He was sent for by the police to attend a suicidal cut-throat in the police cell, a distance of nearly two miles from his house. The case was severe and troublesome, requiring about an hour's attendance, and the inspector of police said he would apply for a special fee. A week or two afterwards a certificate was received from the Commissioners of Police for 3s. 6d., but our correspondent asks if he is compelled to accept this absurdly inadequate fee for work he did not seek, and would not have undertaken, had he known what remuneration it was intended to offer.

*** We concur with our correspondent in characterising the fee in such a case as absurdly inadequate, and we cannot help thinking that if a statement of the facts is laid before the Commissioners of Police a proper fee will be paid. If not, we see no reason why a more remunerative fee should not be recovered, if necessary, by legal proceedings, but before resorting to this course our correspondent should consult a

solicitor. Under an order of the Secretary of State for the Home Department, applicable primarily to the metropolis, but now generally acted upon throughout England, it was prescribed that a medical man, called upon by the police to visit a sick person in any station-house, might claim from the police authorities the sum of 3s. 6d. for every such visit paid in the daytime, and the sum of 7s. 6d. for every such visit paid between the hours of 11 P.M. and 6 A.M. This would seem to apply to an ordinary visit, and could not, we think, be deemed applicable in a case like that indicated by our correspondent; and we shall be glad to hear that a representation of the facts to the authorities has been effective in securing some more fitting remuneration.

THE VALUE OF INQUESTS.

G. P. writes to complain of the method by which causes of death are arrived at in Gloucester, and to the evidence upon which the verdict of the coroner's jury is frequently arrived at. After detailing some cases in which persons found dead without any previous medical attendance, or without any certificate of the cause of death, in which no inquest was held, our correspondent draws attention to an inquest the report of which appears in one of the local papers. It is there stated that a young child was found dead in bed with its parents. It had previously suffered from diarrhœa and sickness, for which it had had no medical attendance. At the inquest no medical man was summoned, but a female neighbour who had been called in by the parents after the death, gave evidence and said that she "had had considerable experience in nursing children," and that in her opinion the child died from "convulsions, brought on from weakness and wind." And the jury returned a verdict accordingly. Our correspondent concludes his letter to us as follows: "Well, Sir, vaccination being nearly a dead letter, midwives being introduced on a register, and clubs playing havoc with private practice, not to mention ambulance men attending minor accidents, we are now having a woman's evidence substituted for a doctor's. Comment is needless."

*** We agree with our correspondent, and regret that a coroner and jury should be satisfied to carry out a public duty in such a way that the result can be of no value, and the real cause of death left undiscovered.

DOMESTIC ANNOUNCEMENTS.

DISGUSTED.—We agree with our correspondent that the specimen sent is an example to be carefully avoided, but we hardly think it calls for a remonstrance from the licensing body. Let us hope that the bridegroom was not personally responsible for the paragraph in question.

MEDICAL FEES AT INQUESTS.

ENQUIRER asks whether, as a civil surgeon doing duty with troops at a military hospital, he is entitled to receive fees at the coroners' court in cases of inquest held on bodies dying in the hospital.

*** The following is a copy of the Statute Law on the question: Section XXII, Clause 2 of the Coroners Act 1887: "Where an inquest is held on the body of a person who has died in a county or other lunatic asylum, or in a public hospital, infirmary, or other medical institution, or in a building or place belonging thereto, or used for the reception of the patients thereof, whether the same be supported by endowments or by voluntary subscriptions, the medical officer whose duty it may have been to attend the deceased person as a medical officer of such institution as aforesaid, shall not be entitled to such fee or remuneration." Therefore, although our correspondent does not reside in the hospital, he is not entitled to a fee if the patient he attended and upon whom an inquest is held died in the hospital or any other public medical institution. The military hospitals, like county asylums, are supported out of public funds, and therefore they become in the eyes of the law "public" institutions.

MEDICAL ATTENDANCE GRATIS.

SENEX.—Our correspondent sends us another letter in which he asks our opinion as to the "axiom" that "no medical man should allow his services to be used for any society or institution which makes a charge to the patients and which is not a charity pure and simple," and he sends us a circular issued by a particular institution which sought to enlist his aid. However desirable such a rule may be in the interests of the medical profession, it is quite impossible for us to shut our eyes to existing facts. For example, the medical officership to sanatoria throughout the country is an honorary office, and yet these institutions charge a sum, either in the form of a ticket or by payments sufficient to cover the board of the patients. The same is true of many of the special hospitals, such as the Royal National Hospital for Consumption, which has an honorary staff. At a very great number of hospitals it is now the custom to charge a registration fee for out-patients. It is also quite usual for the patients in cottage hospitals to pay a sum towards their board, while the attendance of the medical and surgical staff is free. We are not defending these practices, but we were asked for an opinion on a specific case; and though it is desirable to diminish the unpaid work of the profession, we cannot consistently condemn the conduct of A. and B. in the case referred to, because they have only done that which is a tolerably common practice throughout the length and breadth of the land.

ASSOCIATION WITH HOMŒOPATHS.

A CORRESPONDENT writes to complain that he is a leasehold tenant of a set of chambers having a common entrance with another, which have been let by his landlord to a homœopathic practitioner, whose name will appear upon the door side by side with his own. He has unavailingly protested, and finds himself without legal remedy. We sympathise with our correspondent in his dislike of the position in which he finds himself. The moral of the situation is that all medical tenants taking chambers having a common entrance should insert a clause in the agreement affording the desired protection.

MEDICAL ADVERTISING.

"FIAT JUSTITIA."—A correspondent sends us a page from a local directory containing the advertisement of a surgeon. It appears to be an advertisement pure and simple, such as is used by tradesmen, and should not be allowed. The matter might be referred to the Secretary of the local Branch of which the advertiser is a member.

EMPLOYMENT OF UNQUALIFIED ASSISTANTS BY DENTISTS.

T. M. asks whether a registered dentist is committing a breach of the Medical or Dental Acts by employing an unqualified assistant to manage a distant branch and undertake the usual routine of a dental practice?

*** The employment of an unqualified assistant does not constitute a specified offence under either the Medical or the Dentists Acts, but these Acts confer upon the General Medical Council a power to remove the name of a person from the *Register* for "infamous or disgraceful professional conduct." The covering of unqualified practice has been held to constitute such conduct, and complaints have been lodged on this ground both against medical men and dentists and have been heard in public. The extent to which the work of the assistant has been carried out under the *bonâ-fide* personal supervision of the qualified practitioner, or has been independent of him, has appeared to guide the decision of the Council as to the gravity of the offence, and many such cases are to be found in the reports of the meetings of the General Medical Council, published in our columns.

FEES RECEIVED BY *LOCUM TENENS*.

INQUEST writes that he has recently been acting as a *locum tenens*, and during that time received one guinea as a medical witness at an inquest. He asks whether he is entitled to keep the fee, or whether it ought to go to the doctor for whom he is acting?

*** The fee should be given to the principal. A *locum* has no right to retain any fees received while acting in that capacity.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

ENGLISH URBAN MORTALITY IN THE THIRD QUARTER OF 1900.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE vital statistics of the thirty-three large English towns dealt with by the Registrar-General in his weekly returns are summarised in the accompanying table. During the three months ending September last, 85,719 births were registered in the thirty-three towns, equal to an annual rate of 29.6 per 1,000 of their aggregate population, estimated at 11,610,290 persons in the middle of the year. In the corresponding periods of the three preceding years the birth-rates in these towns had been 31.1, 30.4, and 29.8 per 1,000 respectively. In London the birth-rate last quarter was 28.6 per 1,000, while it averaged 30.2 in the thirty-two provincial towns, among which the rates ranged from 23.4 in Brighton, 23.5 in Huddersfield, 23.9 in Bradford, and 24.2 in Portsmouth to 33.5 in Sheffield, 33.7 in Hull, 36.2 in Liverpool, 37.7 in Sunderland, and 38.5 in Gateshead.

During the quarter under notice 53,881 deaths were registered in the thirty-three towns, corresponding to an annual rate of 18.6 per 1,000, against 21.2, 20.3, and 21.9 in the third quarters of the three preceding years. In London the rate of mortality was 17.8 per 1,000, while it averaged 19.1 in the thirty-two provincial towns, among which the death-rates ranged from 12.6 in Bradford and in Cardiff, 13.2 in Halifax, and 13.3 in Croydon to 22.3 in Manchester, 23.3 in Preston, 23.9 in Salford, 24.5 in Liverpool, and 24.7 in Sheffield. The 53,881 deaths registered in the thirty-three towns last quarter included 12,102 which were referred to the principal zymotic diseases, equal to an annual rate of 4.18 per 1,000, against 5.73, 4.94, and 5.61 in the corresponding periods of the three preceding years. In London the zymotic death-rate last quarter was equal to 3.74 per 1,000, while it averaged 4.48 in the thirty-two provincial towns, among which it ranged from 1.08 in Halifax, 1.32 in Bradford, 2.10 in Huddersfield, and 2.23 in Newcastle to 6.54 in Preston, 6.65 in Hull, 6.70 in Leicester, and 7.63 in Sheffield. The 12,102 deaths referred to the principal zymotic diseases in the thirty-three towns during the quarter under notice included 8,367 which resulted from diarrhœa, 1,227 from whooping-cough, 829 from measles, 824 from diphtheria, 541 from "fever" (principally enteric), 304 from scarlet fever, and 10 from small-pox. The fatal cases of measles, which had been 1,336, 1,622, and 1,908 in the three preceding quarters, declined again to 829 during the three months ending September last, and were equal to an annual rate of 0.29 per 1,000; in London the death-rate from this disease was also 0.29 per 1,000, and corresponded with the mean rate in the thirty-two provincial towns, among which measles was proportionally most fatal in West Ham, Brighton, Swansea, Derby, Oldham, and Sunderland. The deaths from scarlet fever, which had been 458, 413, and 406 in the two preceding quarters, further declined to 304 during the three months under notice, and were equal to an annual rate of 0.11 per 1,000; in London the scarlet fever death-rate was only 0.06

Analysis of the Vital and Mortal Statistics of Thirty-three of the Largest English Towns during the Third Quarter of 1900.

Towns.	Estimated Population middle of 1900.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Zymotic Diseases.	Deaths from Principal Zymotic Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.	Diarrhœa.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
33 Towns	11,610,296	85,719	53,881	29.6	18.6	4.18	12,102	10	829	304	824	1,227	541	8,367	231	1.1
32 Provincial Towns	7,021,167	52,955	33,458	30.2	19.1	4.48	7,834	10	500	234	525	682	379	5,500	237	1.5
London	4,589,129	32,764	20,423	28.6	17.8	3.74	4,272	—	329	70	299	545	162	2,867	221	0.5
West Ham	314,472	2,261	1,397	28.8	17.8	6.29	492	—	39	3	35	61	13	341	292	1.4
Croydon	131,186	870	434	26.6	13.3	2.68	88	—	7	—	4	18	1	58	162	—
Brighton	124,148	725	585	23.4	18.9	4.66	144	—	33	—	15	16	3	77	265	0.7
Portsmouth	194,955	1,177	840	24.2	17.3	4.31	210	—	—	2	19	8	52	129	249	2.0
Plymouth	102,161	698	514	27.4	20.2	3.62	92	—	4	—	3	1	3	81	284	0.6
Bristol	324,973	2,232	1,148	27.5	14.2	2.26	183	—	17	11	23	17	5	110	146	0.4
Cardiff	194,247	1,302	611	26.9	12.6	2.21	112	—	9	1	21	12	7	62	163	0.8
Swansea	105,472	739	454	28.1	17.3	3.34	88	—	16	4	19	5	4	40	195	0.9
Wolverhampton	89,598	740	393	33.1	17.6	4.52	101	—	2	2	3	6	4	84	218	1.0
Birmingham	519,619	4,218	2,672	32.6	20.6	4.77	617	—	21	24	15	44	31	482	266	1.7
Norwich	114,855	790	487	27.6	17.0	4.49	129	—	1	—	4	7	3	114	256	1.6
Leicester	219,169	1,590	995	29.1	18.2	6.70	366	—	2	5	100	11	4	244	274	1.3
Nottingham	242,676	1,762	1,085	29.1	17.9	4.45	269	—	11	4	8	37	18	191	259	0.5
Derby	107,991	707	403	26.3	15.0	3.46	93	—	31	4	1	22	1	34	204	—
Birkenhead	117,170	899	499	30.8	17.1	2.88	84	—	—	1	2	11	4	66	218	0.8
Liverpool	634,780	5,730	3,875	36.2	24.5	5.67	896	7	25	16	28	94	33	693	251	3.3
Bolton	164,240	1,207	734	29.5	17.9	4.12	169	—	9	3	3	11	9	134	205	—
Manchester	548,768	4,518	3,048	33.0	22.3	4.99	682	—	53	23	17	64	12	513	246	1.0
Salford	220,816	1,768	1,317	32.1	23.9	5.83	321	—	9	21	32	12	24	223	268	1.1
Oldham	153,297	944	659	24.7	17.2	2.61	100	1	26	12	2	16	4	39	180	0.2
Burnley	116,730	774	434	26.6	14.9	3.03	106	—	1	7	3	12	3	80	253	0.2
Blackburn	137,107	864	582	25.3	17.0	3.08	105	2	6	19	12	15	3	50	223	2.4
Preston	118,902	839	692	28.3	23.3	6.54	194	—	—	8	9	17	11	149	361	1.6
Huddersfield	104,484	612	385	23.5	14.8	2.10	55	—	11	5	—	4	6	29	152	2.3
Halifax	100,710	623	332	24.8	13.2	1.08	27	—	7	2	1	3	5	9	83	5.1
Bradford	291,535	1,737	916	23.9	12.6	1.32	96	—	14	5	3	—	14	60	123	0.8
Leeds	431,287	3,359	2,080	31.2	19.3	5.08	547	—	53	11	54	20	28	381	240	1.0
Sheffield	365,922	3,060	2,252	33.5	24.7	7.63	697	—	21	13	81	65	35	472	320	1.9
Hull	238,736	2,006	1,225	33.7	20.6	6.65	396	—	15	11	1	13	15	341	269	2.1
Sunderland	147,398	1,386	781	37.7	21.3	4.09	151	—	20	13	3	9	18	88	180	1.8
Gateshead	109,403	1,051	507	38.5	18.6	3.30	90	—	8	1	—	21	1	54	178	4.5
Newcastle-on-Tyne	234,369	1,767	1,122	30.2	19.2	2.23	130	—	29	3	4	17	5	72	234	1.2

per 1,000, while it averaged 0.13 in the thirty-two provincial towns, among which this disease showed the highest proportional fatality in Salford, Oldham, Burnley, Blackburn, Preston, and Sunderland. The fatal cases of diphtheria, which had been 1,521 1,229, and 811 in the three preceding quarters, further declined to 824 during the three months ending September last, and were equal to an annual rate of 0.28 per 1,000: in London the death-rate from this disease was 0.26 per 1,000, while it averaged 0.30 in the thirty-two large provincial towns, among which diphtheria was proportionally most fatal in Brighton, Swansea, Leicester, Salford, Leeds, and Sheffield. The deaths from whooping-cough, which had been 1,591 and 1,568 in the two preceding quarters, further declined to 1,227 during the three months under notice, and were equal to an annual rate of 0.42 per 1,000: in London the death-rate from whooping-cough was 0.48 per 1,000, while it averaged 0.39 in the thirty-two provincial towns, among which this disease showed the highest proportional fatality in West Ham, Derby, Liverpool, Preston, Sheffield, and Sunderland. The 541 deaths referred to different forms of "fever" (including typhus, enteric, and simple and ill-defined forms of fever), which had been 1,017, 514, and 378 in the three preceding quarters, rose again to 541 during the three months ending September last, and were equal to an annual rate of 0.19 per 1,000; in London the "fever" death-rate was 0.14 per 1,000, while it averaged 0.22 in the thirty-two provincial towns, among which the mortality from these diseases was highest in Portsmouth, Nottingham, Salford, Preston, Sheffield, and Sunderland. The 8,367 fatal cases of diarrhœa were equal to an annual rate of 2.89 per 1,000; in London the death-rate from this disease was 2.52 per 1,000, while it averaged 3.14 in the thirty-two provincial towns, among which diarrhœa showed the highest proportional fatality in West Ham, Leicester, Liverpool, Preston, Sheffield, and Hull. Of the 10 deaths from small-pox in the thirty-three towns last quarter, 7 occurred in Liverpool, 2 in Blackburn, and 1 in Oldham.

Infant mortality in the thirty-three towns, measured by the proportion of deaths under one year of age to registered births, was equal to 231 per 1,000 during the three months ending September last, against 278, 275, and 303 in the corresponding quarters of the three preceding years. In London the rate of infant mortality was equal to 221 per 1,000, while it averaged 237 in the thirty-two provincial towns, among which it ranged from 83 in Halifax, 123 in Bradford, 146 in Bristol, and 152 in Huddersfield, to 284 in Plymouth, 292 in West Ham, 320 in Sheffield, and 361 in Preston.

The causes of 615, or 1.1 per cent., of the deaths in the thirty-three towns during the three months ending September last were not certified, either by a registered medical practitioner or by a coroner. The proportion of uncertified deaths in London did not exceed 0.5 per cent., while it averaged 1.5 per cent. in the thirty-two provincial towns. The causes of all the deaths during the quarter were duly certified in Croydon, in Derby, and in Bolton, and only one death was uncertified in Oldham, and in Burnley; while the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, Huddersfield, Halifax, and Gateshead.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,139 births and 3,860 deaths were registered during the week ending Saturday last, October 27th. The annual rate of mortality in these towns, which had been 17.1 per 1,000 in each of the two preceding weeks, rose last week to 17.3. The rates in the several towns ranged from 11.8 in Cardiff, 12.2 in Plymouth, 12.9 in Bradford, and 13.2 in Norwich to 20.8 in Swansea, 21.9 in Liverpool, 23.7 in Manchester, and 29.0 in Salford. In the thirty-two provincial towns the mean death-rate was 19.2 per 1,000, and exceeded by 3.3 the rate recorded in London, which was 15.9 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2.2 per 1,000; in London this death-rate was equal to 1.7 per 1,000, while it averaged 2.5 in the thirty-two provincial towns, among which the highest zymotic death-rates were 4.4 in Swansea, 5.2 in Wolverhampton and in Salford, and 5.7 in Blackburn. Measles caused a death-rate of 2.0 in Swansea; scarlet fever of 1.1 in Blackburn and 1.3 in Burnley; "fever" of 1.0 in Gateshead, 1.5 in Hull, and 1.7 in Wolverhampton; and diarrhœa of 1.9 in Nottingham, in Bolton, and in Salford, 2.1 in Sunderland, 2.3 in Blackburn, and 3.1 in Preston. The mortality from whooping-cough showed no marked excess in any of the large towns. The 97 deaths from diphtheria in the thirty-three towns included 39 in London, 8 in West Ham, 6 in Leicester, 5 in Portsmouth, 5 in Bristol, and 8 in Blackburn. No fatal case of small-pox was registered last week either in London or in any of the thirty-two large provincial towns; and only one small-pox patient was under treatment on Saturday, October 27th, in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 1,703 to 2,342 at the end of the eight preceding weeks, had further risen to 2,489 on Saturday last; 320 new cases were admitted during the week, against 313, 322, and 328 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 27th, 919 births and 607 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had declined from 10.3 to 17.5 per 1,000 in the three preceding weeks, rose again to 19.6 last week, and was 2.3 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 14.6 in Leith and 15.5 in Greenock to 21.0 in Paisley and 23.0 in Dundee. The zymotic death-rate in these towns averaged 2.2 per 1,000, the highest rates being recorded in Glasgow and Paisley. The 296 deaths registered in Glasgow included 2 from small-pox, 6 from scarlet fever, 12 from whooping-cough, 3 from "fever," and 14 from diarrhœa. Two fatal cases of measles and 2 of diphtheria were recorded in Edinburgh. Three deaths from whooping-cough and 4 from diarrhœa occurred in Dundee; 5 from diarrhœa in Aberdeen; 2 from diphtheria in Paisley, and 2 from whooping-cough in Greenock.

THE SANITARY INSPECTORS' EXAMINATION BOARD.

THE next examination for certificates of qualification for appointment of sanitary inspector or inspector of nuisances, under Section 17 VIII (2) (*ii*) of the Public Health (London) Act, 1891, will be held in London on Tuesday, January 15th, 1901, and the four following days. Particulars will be forwarded on application to the Honorary Secretary, William R. E. Coles, 1, Adelaide Buildings, London Bridge, E.C.

DIPHTHERIA AND THE COLCHESTER SCHOOL BOARD.

THE School Board of Colchester has unanimously passed a resolution requesting the Town Council to call into consultation an expert from the Local Government Board to inquire into the sanitary condition of Old Heath, to assist in discovering the cause of repeated outbreaks of diphtheria that have occurred in that village, and to help in stopping the present epidemic of the disease. It is alleged that there is some reluctance on the part of the local sanitary authorities to use the diphtheria antitoxin in the Borough Hospital for Infectious Disease. It is understood that an inspection is to be arranged.

TYPHOID FEVER AT PONTLOTTYN.

THE *South Wales Daily News* has entered on a crusade against what it styles the "indifference" of the Gelligaer and Rhigos District Council. Enterica has broken out within the area under its supervision, and by giving publicity to the prevalent insanitary conditions, and the insufficient hygienic precautions adopted in that area, it is to be hoped that that Council will be brought to recognise its responsibilities. Pontlottyn is a hamlet supplied with water by the Rhymney Iron Company. According to the report of Dr. Williams, the County Medical Officer, this water, which is used for all domestic purposes, runs serious risk of pollution, and it seems probable that such pollution has occurred. Some 55 cases of typhoid fever had been notified in Pontlottyn down to October 22nd, and the epidemic showed no signs of abating. The sanitary conditions of the hamlets of Pontlottyn, Penygraig, and elsewhere in the neighbourhood, are, according to our contemporary, wretched and defective in the extreme—no provision for drainage in many cases, houses worn out and unfit for habitation, filthy closets, and the like, and with it all insufficient and unsuitable hospital accommodation, and no means of disinfection. The Rhymney Iron Company gave notice that after October 10th the water would be unfiltered, and "should be boiled before using." The inhabitants are poor and badly educated, with no knowledge of hygiene, either personal or public, and the District Council having control over the public health of such a community incurs, therefore, a weighty responsibility. Certain steps have been taken by the Council, which include the provision of an ambulance and the insertion of an advertisement for an assistant sanitary inspector for twelve months at a salary of 35s. a week. But many of the other recommendations of the medical officer have been ignored. If this policy of drift is pursued for much longer, the epidemic will spread and serious loss of life will be incurred

PRECAUTIONS AGAINST PLAGUE IN IRELAND.

THE members of the Public Health Committee of the Urban District Council of Newry were recently summoned to meet Dr. Clibborn, the Medical Inspector of the Local Government Board, relative to the question of bubonic plague. Dr. Clibborn pointed out that the port of Newry extended from St. John Point to Cooley Point, and that it had seven sanitary authorities. He considered that the town of Newry was far more interested in preventing the ingress of plague into the port than any of the other six sanitary authorities, and that the Council should apply to the Local Government Board to constitute them the port sanitary authority. They should then make provisions against the plague, one of the most important of which was the establishment of an intercepting hospital in which patients could be kept and suspects prevented from coming into the town, or indeed so far as the quay. Recommendations in regard to both particulars were adopted.

HEALTH OF IRISH TOWNS.

THE summary of the weekly returns of births and deaths in Dublin and in twenty-two of principal urban districts in Ireland for the quarter ending September 29th, 1900, shows the total number of births in the Dublin registration area to have been 2,677, which is equal to an annual rate of 30.6 per 1,000. In the city proper the birth-rate was 34.2 per 1,000, while in the suburban districts it was only 22.3 per 1,000. For the same period in London the annual birth-rate was 28.6 per 1,000, in Glasgow 32.5, in Edinburgh 26.5, and in Belfast 30.7.

The annual death-rate for the quarter was, in the Dublin registration area, 23.4 per 1,000, including 66 persons admitted from outside the area. This is slightly below the average (23.7) for the corresponding quarter of the previous ten years. In London the rate was 17.8 per 1,000, Glasgow 18.9, Edinburgh 16.9, Belfast 18.0, Londonderry 20.1, Galway 28.1, Sligo 14.0, Newtownards 13.0, and Carrickfergus, 12.6.

The zymotic death-rate in Dublin was 3.4, Belfast 2.9, Ballymena 4.8, and Queenstown 6.6, and for the twenty-three districts 2.7. Phthisis caused 783 registered deaths in the twenty-three districts, Dublin having 315, Belfast 240, Cork 52, and Londonderry 31. The deaths from phthisis in Dublin were 35 above the average for the corresponding quarter of the previous ten years, and were distributed in the following way: Professional and independent class 3, middle class 44, artisan and petty shopkeepers 80, general service class 111, inmates of workhouses 77.

HOSPITAL AND DISPENSARY MANAGEMENT.

THE ROYAL ASYLUM, PERTH.

THE seventy-third annual report of this institution shows that 48 patients were admitted. Of these, 37 were admitted for the first time, 8 were returned to the asylum as relapsed cases after having been discharged recovered, and 3 were sent back as unsuitable for private care; 4 were transferred from other asylums. The average age of the patients admitted was 41.2 years. In 23 of 45 cases the cause of insanity was found to be hereditary predisposition, while 8 belonged to families of "neurotic tendencies," and in 4 the male parents were alcoholics; 6 patients had suffered from severe attacks of influenza a short time previous to admission; 11 were suffering from the effects of alcoholism: and 5 of them were "voluntary boarders." The recovery-rate for the year is low, standing at only 27.08, which is considerably below the average for this asylum. It was due to the unfavourable nature of the cases admitted during the last two years. The death-rate stands at 8.63, calculated upon the average number resident, which was 127.72. Dr. Urquhart reports the general health of the asylum to have been good excepting for an epidemic of influenza in the spring. In concluding his report he emphasises his opinion that the remedy for the large number of lunatics under care throughout the country lies in prevention rather than cure. Hereditary defect, he states, is the first cause of the great mass of insanity, and faulty environment, wrong methods of education, and the wear and tear of modern conditions of life complete the ruin.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

Benefaction.—Mr. W. W. Astor has contributed to the University Benefaction Fund, for the erection and maintenance of the new buildings which are so urgently required, the munificent sum of £10,000.

Appointments.—Mr. J. J. Lister, F.R.S., of St. John's College, has been reappointed Demonstrator of Comparative Anatomy; and Dr. Haddon, F.R.S., has been appointed University Lecturer in Ethnology. A Lectureship in Experimental Physics in connection with the Cavendish Laboratory, with a stipend of £50 a year, has become vacant by the resignation of Mr. Wilberforce, lately appointed Professor of University College, Liverpool. Candidates are invited to send applications and testimonials to the Vice-Chancellor by Saturday, November 3rd.

Degrees.—At the Congregation on October 25th the following medical and surgical degrees were conferred:—M.D.: Anstruther Carden Rendle, B.A., of Christ's College. M.B. and B.C.: Eustace Talbot, M.A., of Trinity College; George Henry Hunt, M.A., of Clare College.

Deprivation of Degrees.—The power to deprive of their degrees persons who have been convicted of crimes for which sentence of imprisonment has been passed is one recently conferred on the University by statute, and it has already been exercised in the case of graduates formerly on the *Medical Register*. The power is, however, not limited to the case of medical graduates, and on October 25th it was used to deprive a convicted person of his degrees in Arts and Law.

VICTORIA UNIVERSITY.

AT Owens College on October 25th a meeting of Convocation at Victoria University was held under the presidency of Professor Lamb.

Representatives on the Court.—Dr. J. Gray Clegg, Mr. Worthington, and Mr. A. Ernest Steinthal were elected representatives of Convocation in place of Mr. A. J. King, Mr. A. H. Worthington (whose term of office had expired), and the late Professor D. J. Leech.

Exercises for the Degree of M.D.—Dr. J. Gray Clegg moved that it was desirable that the statutes relating to the degree of doctor of medicine should be amended in such a manner that it would be optional for a candidate to present a thesis or pass an examination. He said that while an examination was a test of a man's general knowledge and was therefore most valuable to the general practitioner, a thesis, which was the test of a specialist, entailed much trouble and unreasonable expense. The proposal was opposed on the ground that the M.D. degree was conferred for special research. After considerable discussion the following amendment was accepted: "That in view of the fact that so few of the bachelors of medicine proceed to the degree of M.D., the Committee be asked to consider whether any alteration is desirable in the regulations and statutes relating to the degree of M.D., and to report to Convocation."

ROYAL COLLEGE OF PHYSICIANS.

AN ordinary comitia was held on Thursday, October 25th, Dr. F. W. Pavy, F.R.S., Pro-President, in the chair.

Prizes.

The Pro-President announced that the Jenks Memorial Scholarship (1900) had been awarded to Mr. Alfred George Sworne; and that Staff-Surgeon Jas. M. Rogers, R.N., F.R.C.S., and Surgeon Oswald Rees, R.N., M.D., had been appointed Blane Medallists for the year. The following has been selected as the subject of the Weber-Parkes prize essay for 1903: The Channels of Infection in Tuberculosis, together with the Conditions, Original or Acquired, which render the Different Tissues Vulnerable.

Admission of Members.

The following gentlemen, having passed the required examination, were admitted Members of the College: Henry Russell Andrews, M.D. Lond., L.R.C.P.; Wm. Francis Victor Bonney, M.D.Lond., L.R.C.P.; Frederick William Collinson, M.D.Edin.; Karl Joseph Fürth, M.D. Freiburg, L.R.C.P.; Shapurji Hormasji Modi, L.R.C.P.; John Lloyd Roberts, B.A., M.D.Lond., L.R.C.P.

Licences.

Licences to practise Physic were granted to 112 gentlemen. Of these 17 were under regulations dated October 1st, 1884, and 1 under old regulations before October, 1884.

Communications Received.

The following communications were received and ordered to be entered upon the minutes:

1. The Secretary of State for War, thanking the College for their advice with regard to the investigation of the cause of dysentery among armies in the field, and announcing the appointment as Commissioners of Mr. William J. Simpson, M.D., F.R.C.P., Colonel J. Lane Notter, M.D., lately

Professor of Military Hygiene, Army Medical School, Netley, and Major David Bruce, M.D., R.A.M.C.

2. The President of the College of Surgeons, thanking the President and Fellows for their address of congratulation on the occasion of the Centenary Commemoration at his College.

3. The Secretary of the College of Surgeons, reporting certain proceedings of their Council on July 25th and October 11th.

International Congresses.

Reports were received from the Pro-President upon the International Congress on Medicine, and from Dr. Corfield upon the International Congress on Hygiene and Demography, held at Paris in August last, and the thanks of the College were accorded to Dr. Pavy and to Dr. Corfield for the manner in which they had represented the College on these occasions.

Conjoint Committees.

Dr. Norman Moore was re-elected as a member of the Committee of Management. Dr. Sidney Martin was re-elected a member of the Laboratories Committee. A report from the Committee of Management dated October 8th, was received and adopted. The Committee recommend that the following institution, which has been visited by a member of the Committee and reported on favourably, be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry, physics, and practical chemistry: Intermediate County School, Towyn, Merionethshire.

A Report from the Laboratories Committee dated October 4th was also received and adopted. *Goldsmiths' Company Research Grant.*—The Committee have awarded the further sum of £50 to Mr. W. Popplewell Bloxam from the Goldsmiths' Research Grant as a recognition of his chemical investigations into the methods of the separation of diphtherial antitoxins.

Work of the Bacteriological Department.—(1) The Superintendent of the Bacteriological Department reports that during the last four months 9,125 doses of diphtheria antitoxin, each containing 3,000 units, have been supplied to the hospitals of the Metropolitan Asylums Board, making a total of 27,375,000 units. (2) Under the grant from the Goldsmiths' Company 200 doses of antitoxin containing 3,000 units, and 420 doses of 2,000 units have been supplied to the General and Children's Hospitals in or near London since June 8th last. (3) During the quarter further batches of antitoxin supplied by Messrs. Parke, Davis, and Co. have been tested in the laboratory, and a certificate granted showing its strength, sterility, and freedom from excess of antiseptic.

Library.—A list of the books presented to the library during the past quarter was presented by the Librarian, and the thanks of the College accorded to the donors.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The concession granted by the Council for the Primary Fellowship for Licentiates of the College in recognition of the Royal visit to Ireland has been extended to July 31st, 1901, in the case of Licentiates of the College engaged in the present war or resident abroad.

MEDICAL NEWS.

It is reported that dysentery is rife among the British troops at Tientsin.

Cholera is reported to prevail at the present time in Japan and in Afghanistan, at Cabul and other places.

It is stated that a laboratory of clinical medicine is to be established in Philadelphia in memory of the late Dr. J. M. Da Costa.

A Hebrew infant, aged 15 days, is reported to have recently died at Philadelphia from hæmorrhage caused by the rite of circumcision.

Yellow Fever.—One hundred and thirteen new cases of yellow fever occurred in Havana during the first twelve days of October. The death-rate is said to be 25.68 per cent. The disease is reported to be epidemic at Vera Cruz and other ports on the coast of Mexico.

Syphilis in Alaska.—According to a paper read before the Californian Academy of Medicine by Mr. W. Gilbert Hay (*Occidental Medical Times*, September, 1900), many Alaskan Indians suffer from syphilis. The form is in many cases severe owing probably to want of effective treatment. He suggests that some of the statements which have been made as to the prevalence of tuberculosis among these Indians may have been due to an error of diagnosis, although the domestic habits of these people are such as would conduce to the dissemination of tuberculosis if the infection were present. Civilisation, he says, has taught them to build the semblance of an American house. It has one room in which five or more people squat until it is imperative to go out fishing; all the windows are nailed down, a fire is going nearly all the time, mostly in a small American stove, and the atmosphere is, of course, stifling.

Boscombe Hospital New Buildings.—On Tuesday, November 6th, the new buildings of this hospital, which is in future to be known as the Royal Boscombe and West Hants Hospital, are to be formally opened by Lady Wills. The Queen having graciously consented to allow one of the new wards to be named after her, it will be called the Empress Victoria Ward.

Port Sanitary Authority for Dublin.—The newly-constituted Port Sanitary Authority for Dublin, which is composed of representatives of Dublin City, the North Dublin Union, and Kingstown, Clontarf, and Pembroke Urban District Councils met on October 30th, and resolved to appoint a medical officer of health at a salary of £50 a year, but to postpone the appointment of the other officers who may be appointed (clerk, assistant medical officers, and sanitary subofficers) until the medical officer shall have had experience of the work to be done. It is expected that the Medical Superintendent Officer of Health for the city will be elected.

The Immunities and Proclivities of the Arab Races.—At a recent meeting of the Société de Biologie in Paris M. Remlinger called attention to the immunity of the Arab to typhoid fever and other diseases of the digestive tract, and his susceptibility in regard to pneumonia, phthisis, and other affections of the respiratory organs. He attributed these peculiarities to the fact that the Arabs were accustomed from infancy to drink contaminated water, and that they had thereby undergone a kind of immunisation relative to enteric fever and kindred diseases. On the other hand, from always breathing the pure air of the deserts their lungs were particularly liable to suffer from atmospheric impurities.

Electrocution.—A description of the great Sing Sing Convict Prison of New York by Mr. E. Francis Jones, M.R.C.S., L.R.C.P., which has recently appeared in the *Northampton Herald*, contains a somewhat gruesome account of the arrangements for the electrocution of criminals. The floor and walls of the well-lighted electric chamber are of pitch pine. The only furniture it contains are three small stools and the criminal's chair, which is said to be very comfortable. There are stocks and straps for fastening the murderer to the chair. His head rests on a padded block at the back of the chair between which and the back of the head a metal plate forming the negative pole is interposed. Another metal plate forming the positive pole is attached to the calf of the right leg. An electrical machine is contained in a small wooden chamber behind the chair. When the switch is turned on the criminal instantly dies. A necropsy compartment is attached to the electrocution chamber.

The Metropolitan Asylums Board.—During the fortnight ending on Thursday, October 18th, 1,141 persons suffering from fever were admitted to the hospitals of the Metropolitan Asylums Board, and on that date the total number remaining under treatment was 4,058, an [illegible]. In addition, 30 enteric fever patients had been admitted to general hospitals on the Board's application during the night. The General Purposes Committee has informed the Poplar and Stepney Sick Asylum District Board that the Board is of opinion that the question as to [illegible] dation for the open-air treatment of consumption should or should not be provided is [illegible] the several metropolitan Boards of Guardians. A discussion upon the question as to whether adult patients at Darenth Asylum should be removed from the schools to t[illegible] with a view of admitting into the schools some of the many imbecile children awaiting admission, has been adjourned until the next meeting of the Board.

MEDICAL VACANCIES.

[illegible] AND UN[illegible] of the Med[illegible]

BRIGHTON: SUSSEX COUNTY HOSPITAL.—(1) Resident Pathologist. Salary, £70 per annum. (2) Assistant House-Surgeon. Salary, £60 per annum. Board and residence provided in each case. Applications to the Secretary.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—Assistant House-Surgeon, unmarried. Salary, £60 a year, with board and lodging. Applications to the Secretary by November 24th.

CARDIFF INFIRMARY.—Assistant House-Surgeon. Appointment for six months, but renewable. Salary, at the rate of £75 per annum, with board, washing, and apartments. Applications, endorsed "Assistant House-Surgeon," to the Secretary by November 28th.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £40 per annum. Applications to the "Chairman of Medical Committee" by November 8th.

DOWN DISTRICT ASYLUM, Downpatrick.—Assistant Medical Officer. Not more than 32 years of age, and unmarried. Salary, £150, increasing to £300, with furnished apartments, board, washing, and attendance. Applications to the Resident Medical Superintendent by November 7th.

DUBLIN: ROYAL HOSPITAL FOR INCURABLES, Donnybrook.—Resident Medical Officer. Salary, £80 per annum, with board and furnished apartments. Applications to the Registrar by November 5th.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £40 per annum, with residence, board, and washing. Applications to the Secretary by November 8th.

DUNDEE ROYAL LUNATIC ASYLUM.—Medical Assistant. Applications to the Secretary, Mr. R. C. Walker, 5, Whitehall Street, Dundee.

EDINBURGH: ROYAL COLLEGE OF SURGEONS.—Conservator of the Museum. Salary, £105 per annum. Applications to Mr. J. Robertson, Clerk to the College, 54, George Square, Edinburgh, by December 1st.

FRENCH HOSPITAL, London.—Resident Medical Officer, unmarried, and must speak French. Salary, £80 per annum, with full board. Applications to the Secretary.

HEREFORDSHIRE RURAL DISTRICT COUNCILS.—Medical Officer of Health. Not less than 30 or more than 50 years of age. Salary, £630 per annum. Applications to the Clerk, Hereford, by November 9th

HOSPITAL FOR DISEASES OF THE THROAT, Golden Square, W.—Four vacancies in the Office of Senior Clinical Assistant. Applications to the Secretary by November 7th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Ophthalmic Surgeon, must be F.R.C.S.Eng. Applications to the Secretary by November 20th.

JENNER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea Gardens, S.W.—Assistant in the Department of Pathological Chemistry. Salary, £300. Applications to Dr. Allan Macfadyen by November 15th.

KENT COUNTY ASYLUM, Chartham, near Canterbury.—(1) Second Assistant Medical Officer, unmarried, and under 30 years of age. Salary commencing at £175 per annum. (2) Third Assistant Medical Officer. Salary, £125 per annum. Board, quarters, washing and attendance provided in each case. Applications to Dr. Fitzgerald, Medical Superintendent.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Resident Medical Officer. Salary, £200 per annum, with board, lodging, and washing. Applications to the Secretary by November 10th.

MORPETH: NORTHUMBERLAND COUNTY ASYLUM.—Assistant Medical Officer, unmarried, and not more than 30 years of age. Salary, £125 per annum, rising to £155 with board, lodging, and washing. Applications to the Medical Superintendent by November 14th.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary, £160 for first year, and £180 afterwards. Applications, on forms provided, to be sent to the Hon. Sec., Mr. R. W. Sisson, 13, Grey Street, Newcastle-on-Tyne, by November 17th.

OPORTO, PORTUGAL: BRITISH HOSPITAL.—Medical Officer. Salary, £150 per annum. Applications to Mr. R. Coverley, Treasurer, 55, Rua da Reboleira, Oporto.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant House-Surgeon. Appointment for six months, but renewable. Salary at the rate of £50 per annum, with board and residence. Applications to the Hon. Secretary by November 8th

SALFORD UNION.—Assistant Resident Medical Officer at the Union Infirmary, Hope, near Eccles. Salary, £130 per annum, with furnished apartments and attendance. Applications, endorsed "Assistant Medical Officer," to the Clerk to the Guardians, Union Offices, Eccles New Road, Salford, by November 6th.

SALISBURY INFIRMARY.—House-Physician, unmarried, and not exceeding 30 years of age. Salary, £75 per annum, with board, lodging, and washing. Applications to the Secretary by November 15th.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone Road, N.W.—Surgeon to the Out-Patient Department. Applications to the Secretary by December 5th.

SHEFFIELD: ROYAL INFIRMARY.—House-Physician. Salary, £100 per annum, with board, lodging, and washing. Applications to be addressed to the Medical Staff, care of the Secretary, by November 12th.

SOUTHPORT CONVALESCENT HOSPITAL AND SEA-BATHING INFIRMARY.—Resident Medical Officer, unmarried, and between 25 and 30 years of age. Salary, £150 per annum. Applications to the Chairman by November 12th.

STAUNTON-ON-WYE: JARVIS CHARITY.—Medical Officer. Salary, £150 per annum, with house, etc. Applications to the Correspondent, Jarvis Charity, Staunton-on-Wye, Hereford, before November 5th.

VICTORIA HOSPITAL FOR CHILDREN, Queen's Road, Chelsea.—House-Physician. Appointment for six months. Honorarium £25, with board and lodging. Applications to the Secretary by November 17th.

VIRGINIA WATER: HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE.—Junior Assistant Medical Officer. Salary, £150 per annum, rising to £200, with board, lodging, and washing. Applications to the Medical Superintendent by November 17th.

WATERFORD DISTRICT ASYLUM.—Assistant Medical Officer, unmarried, and not exceeding 30 years of age. Salary, £100 per annum, with furnished apartments, board, washing, and attendance. Applications to the Resident Medical Superintendent by November 9th.

WOLVERHAMPTON EYE INFIRMARY.—House-Surgeon. Salary, £70 per annum, with rooms, board, and washing. Applications to the Secretary by November 17th.

MEDICAL APPOINTMENTS.

AYMER, Charles, M.B.Aberd., C.M., appointed Surgeon and Agent, Calterline, Bervie and Johnshaven, *vice* James Aymer, M.B., C.M. Aberd., deceased.

BATHE, Allan Arthur, M.A., M.B.Oxon., appointed an Honorary Medical Referee to the Royal National Hospital for Consumption.

BROWN, H. C., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Tipton West District of the Dudley Union, *vice* James Brown, M.R.C.S.Eng.

CAMPBELL, John, L.R.C.S., L.R.C.P.Irel., appointed Medical Officer to the Estates of the New London Borneo Tobacco Company, Kudat.

GRANNUM, W. B., L.R.C.P., L.R.C.S.Edin. appointed Medical Officer for the East District of the Luton Union, *vice* D. R. McArthur, M.D.Edin., resigned.

GUNSON, Charles Herbert, M.B., Ch.B. Glasg., appointed Resident Surgeon to the North Cambridgshire Hospital, Wisbech.

HAWORTH, James, M.B., Ch.B., appointed House-Surgeon to the Sunderland Infirmary

HOBBS, G. C., M.R.C.S., L.R.C.P., appointed Resident Medical Officer to the Hampstead Hospital.

JAQUES, Arthur S., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the East District of the Gateshead Union, *vice* A. Green, M.B.Durh., resigned.

MCKEE, F. C., B.A., M.B., B.Ch., B.A.O.R.U.I., appointed House-Physician in the Sunderland Infirmary.

MAPLETON, H. B., M.A.Oxon., M.D.Edin., appointed Medical Officer of Health for the Newton Abbott Rural District, *vice* W. Harvey, F.R.C.S.Eng.

MERRYWEATHER, S. H., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Tattershall District of the Horncastle Union, *vice* W. P. Simpson, M.B., C.M.Edin., resigned.

MOORHEAD, John, M.A., M.D., appointed Consulting Physician to the Royal Hospital, Weymouth.

NAISMITH, J. H., M.B.Glas., appointed District Medical Officer to the Weardale Union, *vice* W. Tiplady, L.R.C.P., L.R.C.S.Edin.

PLATT, J. E., M.S.Lond., F.R.C.S., appointed Assistant to the Professor of Surgery in the Owens College, Manchester.

STEVENSON, Roland A., L.R.C.P.Lond., M.R.C.S.Eng., appointed House-Physician at the Hospital for Consumption, Brompton, S.W.

THACKWELL, J. B., M.B.Edin., appointed District Medical Officer to the Wandsworth and Clapham Union, *vice* E. M. Wilkes, L.S.A., D.P.H.

THOROWGOOD, John C., M.D.Lond., appointed Consulting Physician to the Royal National Hospital for Consumption at Ventnor.

WILD, Robert B., M.Sc.Vict., M.D.Lond., M.R.C.P., appointed Honorary Physician to the Cancer Pavilion and Home, Manchester, *vice* Dr. D. J. Leech.

WILLSON, Rivers, Ph.D., L.S.A.Lond., appointed Surgeon to the Oxford Medical Dispensary and Lying-in Charity, *vice* Charles Ballard, M.R.C.S., L.S.A., resigned.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. J. Pringle: Consultation. (Skin.)

TUESDAY.

Hospital for Diseases of the Skin, 53, Stamford Street, Blackfriars, S.E., 5 P.M.—Dr. Phineas S. Abraham: On Eczema.

Royal College of Physicians of London, 5 P.M.—Dr. A. E. Garrod: The Bradshaw Lecture on the Urinary Pigments in their Pathological Aspects.

Pathological Society of London. Laboratories of the Royal Colleges of Physicians and Surgeons, 8 P.M.—Laboratory Meeting.—Dr. F. W. Pavy, R. L. Siau, and T. G. Brodie: Phloridzin Glycosuria. Drs. A. E. Russell and T. G. Brodie: On Cardiac Reflexes. Mr. Walter Edmunds: On the Results of Removal of the Thyroid in Dogs. Drs. W. D. Halliburton and F. W. Mott: The Chemistry of Nerve Degeneration. Drs. W. E. Dixon and T. G. Brodie: Further Experiments upon the Pulmonary Muscular Mechanisms. Mr. A. C. Crouch: The Action of Chloroform upon the Heart.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. R. L. Bowles: Consultation. (Medical.)

WEDNESDAY.

Royal Institute of Public Health, Examination Hall, Victoria Embankment, W.C., 5 P.M.—Professor Calmette on Bubonic Plague, Harben Lecture I.

London Throat Hospital, 204, Great Portland Street, W., 5 P.M.—Dr. Cathcart: Impaired Movements of Vocal Cords.

Obstetrical Society of London, 8 P.M.—Specimens will be shown by Dr. Giles, Mr. Nodes, and Dr. Hinds (introduced by Dr. Spencer), Mr. Bland-Sutton, and others. Papers: Dr. Croft: An Anomalous Case of Ectopic Pregnancy; probably Ovarian. Dr. Lewers: A Case of Repeated Ectopic Gestation in the same patient; Laparotomy on each occasion.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 5 P.M.—Dr. Christopher Childs: Clinical Lecture.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W., 4 P.M.—Dr. Hector Mackenzie: On Hæmoptysis.

THURSDAY.

Central London Throat, Nose, and Ear Hospital, 5 P.M.—Dr. Dundas Grant: Diagnosis of Diseases causing Hoarseness or other Disturbance of Voice.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Mr. Kellock: Demonstration of Selected Cases.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

Ophthalmological Society of the United Kingdom.—Patients and Card Specimens at 8 P.M. Chair at 8.30 P.M. Papers: Dr. W. E. Thompson: The Determination of the Influence of the Eyeball on the Growth of the Orbit by Experimental Enucleation of One Eye in Young Animals. Mr. Norman G. Bennett: Etiology of Lamellar Cataract. Dr. F. W. Edridge-Green: Evolution of the Colour Sense.

British Gynæcological Society, 20, Hanover Square, W., 8 P.M.—Specimens will be shown by Dr. R. T. Smith, Dr. Macnaughton-Jones, and Mr. Charles Ryall. Paper: Mr. Rutherford Morison: Some New Methods in Pelvic Operations in the Female.

Charing Cross Hospital, Post-Graduate Course, 4 P.M.—Dr. Green: Cases in the Wards.

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Herbert Tilley: Consultation. (Nose and Throat.) 5.15 P.M.—Mr. P. J. Freyer: Some Practical Points in the Surgery of the Urinary Organs.

Clinical Society of London, 20, Hanover Square, W., 8.30 P.M.—Dr. Norman Dalton: The Sequel to a Case of Hydatid of the Liver, showing also the Result of Abdominal Section on Ascites. Dr. Stacey Wilson: On the Diastolic Cardiac Sound which causes Spurious Reduplication of the Second Sound at the Apex. Dr. Sidney Phillips: A Case of Thrombosis of the Inferior Vena Cava and of the Iliac and Femoral Veins of Acute Onset and Fatal Termination, with Symptoms resembling those of Perforated Gastric Ulcer.

British Laryngological, Rhinological, and Otological Association, 11, Chandos Street, Cavendish Square, 4 P.M.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

MARTIN-ROW.—On October 24th, at "The Pleydells," Warbleton, Sussex, the wife of C. Martin-Row, M.R.C.S., L.R.C.P., of a daughter.

RAW.—On October 21st, the wife of Nathan Raw, M.D., Liverpool, of a daughter.

MARRIAGES.

LYONS—NELSON.—October 27th, at St. Andrew's Church, Bombay, by the Rev. J. Henderson, M.A., Major R. W. S. Lyons, Indian Medical Service, to Miriam Isabel, younger daughter of the late W. R. Nelson, Fernville, Stranditown, co. Down.

SCOTT—JEFFREY.—At St. Enoch's Station Hotel Glasgow, on October 29th, by the Rev. Robert Pollok, M.A., B.Sc., West U. P. Church, Irvine, Joseph Scott, M.B., C.M., Assistant Medical Superintendent, Government Indo-European Telegraph Department, Shiraz, Persia, to Sarah McKinnon, second daughter of Matthew Jeffrey, Irvine.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.
CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.
CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—I.p., Tu., 2.30; o.p., F., 2.
CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Roentgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.
CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.
CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.
EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.
GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.
GUY'S. *Attendances.*—Medical, 1.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.
HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.
KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.
LONDON. *Attendances.*—Medical, daily, 1.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.
LONDON TEMPERANCE. *Attendances.*—Medical, 1.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p. M. Tu. W. F., 1; Surgical, 1.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.
LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.
METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.
MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.
NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.
NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.
NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.
ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.
ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.
ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.
ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.
ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 3; 1.-p., Tu. Th., 2.30.
ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2
ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.
ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; 1.p., 1; o.p., 12; Obstetric, 1.p., Tu. F. 1.45; o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.
ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.
ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 2; Skin, M. Th. 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9 *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.
ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children 2; S., 4. *Operations.*—W. F., 2.
ST. THOMAS'S. *Attendances.*—I.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynecological), Th., 2; (Throat), M., 9.30 (Ear), Th., 9.30.
SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynecological, M., 2; W., 2.30.
THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily exc. M., 10.
UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu F., 9.30. *Operations.*—Tu. W. Th., 2.
WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations*—Daily about 2.30; F., 10.
WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F. 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, [illegible], W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is [illegible]. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

GENTIAN asks "Rosin" to kindly give particulars as to how and where the Canadian M.D. may be obtained by a M.R.C.S., L.R.C.P.

PHILOCTETES asks for the titles of the best book or paper on "referred pain" (in English). He is acquainted with Hilton's *Lectures.*

S. J. R. desires a comfortable home for an old nurse who requires the usual attention of an aged person. Fifteen shillings per week would be paid.

R. S. wishes to hear of books or pamphlets on the "light treatment" and the chemistry of the various rays.

*** Articles on various aspects of this subject have been published in the BRITISH MEDICAL JOURNAL of September 30th, 1899, p. 825; May 5th, 1900, pp. 1082 and 1083; June 30th, 1900, p. 1595; July 7th, 1900, p. 33.

S. T. R. asks for the names of a few institutions, preferably on the south coast, where a joiner, aged 32, suffering from phthisis could be admitted either free or on payment of a reasonable fee, say, within £5. He has been an excellent workman, and the firm for whom he works is willing to help him and anxious about his recovery.

G. R. J. F. asks whether Harvey's *Anatomical Exercitations concerning the Generation of Living Creatures,* London, 1653, is of any value.

*** This is the English translation, in 8vo, of Harvey's treatise on *Development.* The first edition was published by Pulleyn in London in 4to, and by L. Elzevir at Amsterdam in 24mo, in the year 1651. The English translation is interesting, but has no great money value.

DR. HERBERT HART, 101, Queen Victoria Street, E.C., is anxious to know of a comfortable home or institution for a girl, aged 15 years, who when young suffered from hydrocephalus. She has always been a dull child, and although not exactly an imbecile requires to be under careful management. Her father is willing to contribute 7s. 6d. per week towards her maintenance.

*** Imbecile children are admitted from any part of the British dominions (as elected cases or on small payment) to the Earlswood Asylum. Further particulars can be obtained from the Secretary, Mr. Howard, 36, King William Street, London Bridge, E.C. Miss Dandy, Honorary Secretary to the Lancashire and Cheshire Association for the Permanent Care of the Feeble Minded, might be able to advise. Her address is 13, Clarence Road, Withington, Manchester. Homes are about to be established by this Association.

THE EXAMINATIONS OF THE UNIVERSITY OF LONDON.

PLODDER asks for the advice of others who have had experience under the following circumstances: He is a country practitioner; he has passed the Preliminary Scientific Examination at the University of London; he has not been at a medical school for ten years. He asks what chance he would have, after six months' reading and a month in a medical school before the examination, of passing the Intermediate Examination in Medicine.

TREATMENT OF FLATULENT DYSPEPSIA.

T. B. H. asks for advice in the treatment of an inveterate case of flatulent dyspepsia in a man aged 64, who is fairly healthy, but suffers from great distension after each meal. For four hours he is restless, and cannot lie down or even sit quietly. During this time constant eructations of flatus occur, but no regurgitation of food. There is no vomiting or actual pain, but he complains of soreness all over the abdomen. The bowels move once or twice daily with much flatus. Many remedies have been tried.

ISOLATION AFTER DIPHTHERIA.

C. H. G. writes: What length of time should be allowed before a patient having had diphtheria can mix with other people, or a boy return to a public school?

*** Dr. E. W. Goodall, Medical Superintendent of the Eastern Fever Hospital, has been good enough, at our request, to send the following answer to the above question: In answer to "C. H. G.'s" inquiry I have to say that I allow adults to mix with other people in from four to five weeks from the commencement of the attack of diphtheria, but children (that is, patients under 16 years of age) I keep in isolation for six weeks. I should not, therefore, allow a boy to go back to school in less than that period. Of course all complications or sequelæ must have cleared up.

If our correspondent is medical officer to a school we should strongly recommend him to get a copy of *A Code of Rules for the Prevention of Infectious and Contagious Diseases in Schools,* issued by the Medical Officers of Schools Association. London: J. and A. Churchill. 1s.

INCOME TAX AND SERVICE IN SOUTH AFRICA.

CHRISTIAN asks the following questions: (1) Whether a medical man who has been in South Africa from February to September, 1900, serving his country, but being senior civil surgeon in a private hospital, that is, one presented to the country, is obliged to pay income tax on such sum, as well as rations and quarters. His pay was made direct out there, and the money spent there; in fact, more money spent there than value of salary received. (2) If income tax in England ought to be paid on this sum; whether he can make deductions for kit and uniform, horse hire, etc., from such sum.

*** The Income Tax Repayment Agency, of 6, Chichester Road, Paddington, to whom we have submitted the questions, replies as follows:

"The fact that the pay was made abroad and wholly spent abroad enables us to state unhesitatingly that it is not assessable. In no case could tax be charged on quarters or rations; it can only be charged on pecuniary profits, never on the advantages of board and lodging. Were the profits assessable, it would be permissible to deduct all expenses wholly, necessarily, and exclusively incurred in exercise of the profession; but the question does not arise; another, however, does. Many surgeons who went out to South Africa sacrificed thereby a large portion of the profits they would have made in England. They should, therefore, make their returns of their English profits for income-tax purposes upon the average profits for the past three years. We shall be happy to assist them in thus obtaining a reduced and correct assessment."

ANSWERS.

RHEUM might consult the following works: *Treatise on Rheumatism and Rheumatoid Arthritis*, by A. B. Garrod (London: Charles Griffin and Co. 1890. 21s.) *Rheumatism*, by T. J. Maclagan. Second edition. (London: A. and C. Black. 1896. 10s. 6d.); and the *Prevention of Valvular Disease of the Heart*, by R. Caton (London: C. J. Clay and Sons. 1900).

TREATMENT OF INCONTINENCE OF URINE.

MR. W. BELL (London, S.W.) writes that if "Italy" has tried the old bromide and belladonna treatment unsuccessfully, let him give ½-minim doses of carbolic acid or creosote before bedtime.

LUMINOUS PAINT FOR NIGHT BELLS.

MR. ARTHUR WALKER, M.R.C.S. (Glossop) writes in reply to "Far Away" (BRITISH MEDICAL JOURNAL, 1900, ii, p. 875) to recommend the use of luminous paste on glass, applied in a thickness of one-sixteenth of an inch. He finds it useful for affixing to the tap of the gas brackets in bedrooms. He suggests that a piece cut from the luminous slab of a matchbox is both convenient and effective.

NOTES, LETTERS, Etc.

AN OLD TRICK UP TO DATE.

A SWINDLER has been victimising some London tradesmen by a variant of an old trick. He either obtained, in some way not discovered, some sheets of Sir William Mac Cormac's notepaper, or had paper printed in exact imitation of it. He then had a letter typewritten on this paper to some tradesman asking him to send something in which he dealt by bearer to Sir William Mac Cormac, who was in urgent need of the thing but did not know the price. A cheque would be sent at once. One tradesman, more wary than others, observing that Sir William Mac Cormac did not spell his name with a final "k," and thinking it strange that Sir William should present his "complements" instead of his compliments, asked the messenger to call again, and communicated with Sir William. "The bearer" did not call again, but he may try the plan elsewhere.

HOTEL CHARGES DURING THE ANNUAL MEETING.

DR. G. H. BROADBENT, of Ardwick Green, Manchester, appeared in the Ipswich County Court on October 17th to defend an action to recover £3 11s. 6d. for board and lodging during the annual meeting of the British Medical Association, brought against him by the proprietor of the Crown and Anchor Hotel. The circumstances were briefly as follows:

Dr. Broadbent, when he arrived at the Crown and Anchor Hotel with two friends, was informed that there were no bedrooms in the house, but the landlord found Dr. Broadbent rooms at a lodging-house. The landlord charged at the rate of 10s. 6d. a day for this accommodation. Dr. Broadbent arranged with the lodging-house keeper to have a room for the rest of the week, paying her directly. The landlord of the hotel stated, in reply to a question, that he paid the lodging-house keeper 3s. 6d. a night. The Judge found for the plaintiff on this part of the claim, but for the defendant as to a claim for 5s. for dinner.

We have received a letter from Dr. Broadbent, who desires to express his cordial thanks to all those members of the British Medical Association who replied so promptly and fully to his appeal for information with regard to the hotel charges at Ipswich. Dr. Broadbent wishes it to be known that when he made the special arrangement with the lodging-house keeper he was unaware that the landlord of the hotel had engaged the room for the week, and that he stated this in court.

On the general subject of hotel charges at the annual meeting he writes: Much inconvenience would be avoided at the annual meetings if the reception room were kept open till 10 o'clock each night, and if accurate information could be gained there of the rooms which had not been taken, with the charges for each. There might be a system whereby rooms could be checked off as soon as taken, even during the day, so that members would be spared the trouble of visiting a number of rooms and finding them occupied.

We understand that special care will be taken by the Committee charged with making the arrangements at the next annual meeting at Cheltenham to see that a tariff is obtained from the hotels.

THE MEDICAL PROFESSION IN THE UNITED STATES.

The following, according to the *Medical Examiner and Practitioner* of New York, are the numbers of inhabitants to each registered medical practitioner in the different States of the Republic:—California, 420; Iowa, 422; Indiana, 466; Vermont, 480; Ohio, 492; Illinois, 517; Arizona, 524; Missouri, 527; Colorado, 535; Tennessee, 538; Massachusetts, 539; New Hampshire, 553; Maryland, 559; New York, 565; Texas, 570; Arkansas 580; Maine, 594; Kentucky, 607; Nevada, 614; Michigan, 625; Connecticut, 659; Rhode Island, 659; Oregon, 669; West Virginia, 670; Pennsylvania, 670; Oklahoma, 692; Florida, 696; Delaware, 705; Montana, 717; Idaho, 727; Kansas, 737; Virginia, 810; Georgia, 811; New Jersey, 827; Alabama, 843; Washington, 887; Wisconsin, 881; Louisiana, 908; Mississippi, 914; Utah, 978; Minnesota, 1,043; Wyoming, 1,065; Nebraska, 1,085; South Carolina, 1,148; North Carolina, 1,173; North Dakota, 1,285; South Dakota, 1,296; New Mexico, 1,391. Our contemporary expresses a hope that foreign readers will not jump to the conclusion that because there are so many inhabitants to each practitioner in some of the States towards the bottom of the list, therefore any one of them will be "an elegant place for them to locate." These States, it is explained, are sparsely inhabited, and there may be many miles between patients. It it hard work, therefore, to earn an income, and harder work to collect it. Whereas formerly 1,000 people were considered sufficient for the support of one practitioner, now there are so many doctors that a very considerable portion of the whole number of medical men is in the position of "waiting for support." The old family doctor, ready for any emergency, from pulling a tooth to the performance of a capital operation, is said to be passing away, while every speciality is full to overflowing.

LETTERS, COMMUNICATIONS, ETC., have been received from

A A. A.; Adam; Appetitus Rationi Pareat; Messrs. Arnold and Sons, London. **B** Baccalaureus; Brum; Messrs. G. E. Bridge and Co., London; Dr. E. B. Bowen, Barry Dock; F. M. Blumer, M.B., Stafford; J. W. Batterham, M.B., St. Leonards; G. A. Bruce, M.B., London; Dr. C. L. Birmingham, Westport; Mr. A. S. Barling, Lancaster; Mr. W. Bell, London; A. A. Bathe, M.B., London. **C** Mr. W. McE. Clendinnen, Coseley; Carl; J. Cameron, M.B., Fortrose; Dr. W. T. Cocking, Sheffield; Mr. W. B. Cannon, Boston, Mass.; Dr. E. Cureton, Shrewsbury; Mr. T. S. Chapman, London; Mr. W. R. E. Coles, London. **D** Dr. T. Dutton, London; Disgusted; Diplomaticus; Mr. H. H. du Boulay, Weymouth; Dr. W. Donovan, Birmingham; Mr. W. F. Dearden, Manchester. **E** Eyemes; Enquirer; Enquirer and Constant Reader; Mrs. Eaton, Nuneaton; Dr. C. B. Elgood, Windsor. **F** W. S. Frith, M.B., Rickmansworth; Former Football Player; E. R. Fothergill, M.B., Roche. **G** G. S. H.; Mr. C. R. Graham, Wigan; Gentian; Mr. A. Greenwood, London; Dr. T. W. Griffith, Leeds; J. E. Gemmell, M.B., Liverpool. **H** Messrs. A. Heywood and Son, Manchester; Mr. F. Hobday, London; Mr. A. Howatson, Paris; Dr. A. H. Hart, London; Mr. W. A. Hayes, Mafeking; Dr. H. C. Highet, London; Mr. W. J. H. Haslett, Sunbury-on-Thames; Dr. J. Harper, London. **I** Dr. F. Isdell, London. **J** Mr. W. D. James, Sheffield; Dr. H. Jellett, Dublin; Dr. J. Jamieson, Edinburgh; Dr. J. Johnston, Bolton; Dr. J. H. Joy, Tamworth. **K** Dr. C. P. Kennard, George Town; Dr. A. Kinsey-Morgan, Bournemouth. **L** H. E. Littledale, M.B., Dublin; G. R. Leighton, M.B., Poutrilas; Mr. C. S. Loch, London; L.S.A.; Dr. J. K. Love, Glasgow; Dr. H. L. G. Leask, Glasgow; Dr. A. W. W. Lea, Manchester; L.R.C.S., L.R.C.P. **M** Dr. A. Macphail, Montreal; R. S. Marsden, M.B., Birkenhead; Manchester Subscriber; M. S. I. S. C.; Motor; Dr. J. Moorhead, Weymouth; Mr. W. L. Muir, Glasgow. **N** North of England Obstetrical Society, Secretary of, Manchester. **O** Dr. H. O'Neill, Belfast. **P** Dr. D. R. Paterson, Cardiff; Mr. G. H. Pearce, Barnsley; P. V.; Philocletes; Dr. W. H. Packer, Cressage; Mr. T. G. Parrott, Aylesbury; Dr. C. Y. Pearson, Cork; Dr. J. Priestley, London; Dr. E. Phillips, Coventry; Dr. J. E. Platt, Manchester. **R** Mr. G. A. Richardson, London; Dr. J. J. Redfern, Croydon; R. S.; Rheum; Rustic; Dr. J. Reid, Redhill; M. Richards, M.B., Walthamstow; Mr W. H. Rowthorn, Rotherham; Mr. G. S. Ram, Coventry; Mr. C. Ryall, London. **S** J. Scott, M.B., Bromley, Kent; Mr. W. Smith, London; J. Stevenson, M.B., Redditch; S. T. R.; Dr. J. Service, Mossend; Dr. A. J. B. Squire, London; Sir J. Sawyer, Birmingham; Messrs. Scott, Greenwood, and Co., London; Mr. C. D. E. Stuart, Dewsbury; Mr R. A. Stevenson, London; Mr. P. Selby, Teynham; Dr. J. Scott, Manchester. **T** H. P. Taylor, M.B., Mid Yell; T. C.; T. B. H.; Mr. M. R. Taylor, South Petherton; Dr. D. C. Trott, Hamilton, W.I.; Dr. A. J. Turner, Brisbane; Dr. E. F. Trevelyan, Leeds; Mr. N. Taylor, London; Tennis Lawn. **W** Dr. F. H. Worswick, Manchester; Mr. T. G. Wakeling, Southend-on-Sea; Dr. B. C. A. Windle, Birmingham; Dr. G. B. White, Dublin; O. R. M. Wood, M.B., Woolpit; Dr F. Willcocks, London; Mr. J. C. Walker, St. Austell; Mr. A. M. Watts, Newcastle-on-Tyne; Dr. T. J. Walker, Peterborough; Dr. R. Willson, Oxford; A. L. Whitehead, M.B., Leeds; Mr. A. Walker, Glossop; G. J. Williams, M.B., Fishguard Dr. O. Withers, Sale.

BOOKS, ETC., RECEIVED.

Die Behandlung idiotischer und imbeciller Kinder in ärztlicher und pädagogischer Beziehung. Von Dr. W. Weygandt. Wurzburg: C. Kabitzch. 1900. M.2.50.

Therapeutisches Vademecum der Haut-und Geschlechtskrankheiten. Von Dr. R. Ledermann. Berlin: O. Coblentz. 1901. M.4.50.

The Child: A Study in the Evolution of Man. By A. F. Chamberlain, M.A., Ph.D. London: Walter Scott. 1900. 6s.

Anleitung zur mikroskopischen Untersuchung des Auges. Von Dr R. Greeff. Zweite Auflage. Berlin: A. Hirschwald. 1900. M.3.20.

L'Année Chirurgicale. Publiée sous la Direction du Dr. A. Depage. Deuxième année, 1899. Troisième et Quatrième Fascicules. Brussels: H. Lamertin. 1900.

Hygiene der Prostitution und venerischen Krankheiten. Bearbeitet von Dr. A. Blaschko. Jena: Gustav Fischer. 1900. M.3.

Hand Atlas of Human Anatomy. By W. Spalteholtz. Translated from the Third German Edition by F. L. Barker. Vol. I. Liepzig: S. Hirzel; and London: Williams and Norgate. 1900. 14s. 6d.

*** In forwarding books the publishers are requested to state the selling price

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

CLINICAL LECTURE
ON
PROGRESSIVE PERNICIOUS ANÆMIA WITH SPINAL SYMPTOMS.

Delivered in St. Bartholomew's Hospital.

By Sir DYCE DUCKWORTH, M.D., LL.D.,
Physician and Lecturer on Medicine at the Hospital; Honorary Physician to H.R.H. the Prince of Wales.

Gentlemen,—The case furnishing the text for this lecture is one of so called pernicious anæmia which has afforded us much thought recently. It supplies us with many of the typical features of such cases which we have to consider in detail. The whole subject of pernicious anæmia is a large and still a vexed one. Its recognition as a distinct malady is due to Dr. Addison of Guy's Hospital, who first described its peculiar nature some half-century ago, when he also, as he stated, "stumbled upon" the peculiar disease of the adrenal bodies which now bears his name. He termed this disease "idiopathic anæmia," and this is still a synonym of the disorder. Since the period referred to much work has been bestowed on the subject, and much has come to light by means of modern methods of research which were unknown in Addison's days. But, even now, I meet, in the best textbook we possess, with the following statement from a former distinguished pupil of this school, Dr. Rolleston, which may sufficiently indicate to you the difficulties which still invest the study of this disease: "Our ideas," he declares, "of pernicious anæmia are but a mass of shifting hypotheses."

A similar statement might, indeed, have often been made respecting the knowledge of the time concerning various diseases about whose nature we feel certain to-day. It would have rejoiced the heart of Addison to know all that is now ascertained about pernicious anæmia, and who can doubt that ere the next half century is completed its pathogeny and treatment will be fully understood?

Our patient was twice under care in Matthew Ward. His first sojourn lasted two months. The following notes relate to the earlier history:

E. P., aged 36, an engine driver, admitted to Matthew Ward, December 10th, 1898.

History.—He had been ailing from December, 1897, when he began to have attacks of vomiting coming on immediately after food. Later, the attacks of vomiting were accompanied by diarrhœa, lasting about three days. These attacks occurred about once a fortnight. He continued at his work up to December 3rd, 1898, when he had an attack of sickness and diarrhœa worse than usual, followed by a fainting fit. He stated that he had been losing flesh lately and getting paler, and complained of tired and languid feelings. He had had rheumatism ten years earlier, but no other illness. His father was living, aged 84; his mother was dead. He had three healthy brothers and sisters.

Condition on Admission.—He was a thin, sallow-looking man, and very anæmic. The skin had a peculiar yellowish, almost bronzed colour. His manner was languid. The tongue was clean. There was no pigmentation of the buccal mucous membranes, which were rather pale. The pupils were equal and dilated. The temperature was normal. There were no physical signs in the chest. The pulse was 120, and there was a *bruit de diable* in the neck. The abdomen was natural. Pulsation was visible in the middle line; no viscera were felt. There was slight œdema of the shins. The urine, of specific gravity 1020, contained neither albumen nor sugar. Ophthalmoscopic examination revealed nothing abnormal.

December 16th. Blood count:
Red corpuscles, 31·8 per cent., 1,534,000.
White, 4,000.
Hæmoglobin, 36 per cent.

There was a relative eosinophilic and coarsely granular leucocytosis. Poikilocytes were present, but there were no nucleated red corpuscles.

December 20th. Some improvement in general condition. Hæmoglobin, 27 per cent.

January 10th. Blood count:
Red corpuscles, 4,100,000.
Hæmoglobin, 42 to 45 per cent.
No poikilocytes.

Improvement maintained, gaining weight.

January 17th. Blood count:
Red corpuscles, 3,400,000.
Hæmoglobin, 55 per cent.

January 31st. Red corpuscles, 4,600,000.

February 8th. Red corpuscles, 4,655,000; hæmoglobin, 53 per cent.

On admission the patient's weight was 9st. 11lbs.; on discharge it was 10st. 6lbs.

The improvement was most marked, and clearly ensued as the result of treatment by rest, good diet, with wine, red bone marrow, and the action of arsenic. The patient resumed his duty after a while, and came to report himself to us at intervals. He never recovered his original health, having been a vigorous and robust-looking man, and he continued to take the above remedies more or less for about eighteen months. We come now to his second admission to the ward on August 8th, 1900, when Dr. Ormerod took charge of him in my absence. He had followed his occupation till thirteen weeks previously. One day after being wet through he became ill, and had pains in his limbs and loins. He did his duty with much difficulty, feeling very poorly, and finding his knees very weak and painful. He grew pale again. He began to vomit once or twice daily a week before admission, and had occasional shiverings. There was constant sleepiness, and he frequently felt faint. Dyspnœa ensued on any exertion. No hæmorrhage occurred. He walked feebly and said he had done so for some weeks. He had lost his appetite and had pain after food. His condition plainly indicated a relapse of the anæmia and, in addition, the onset of some grave disorder of the spinal cord, as the following notes will show, taken by my house-physician, Dr. Rowland:

He is very anæmic, of a "faded leaf," earthy tint. There is plenty of subcutaneous fat. The conjunctivæ are icteric; the pulse is 108, soft and small: the respirations 20; the temperature 99 6° F. The heart's apex beat was in the third space, half an inch inside the nipple line. The area of cardiac dulness was small, and there was a soft hæmic murmur at the apex. The second sound was not accentuated. The percussion note over the lungs was good, with vesicular breathing; no adventitious sounds. The abdomen was natural; some gaseous distension. No viscera felt. There was no œdema of legs.

August 25th. Blood count:
Red cells, 1,600,000
White cells, 5,000
Hæmoglobin, 27 per cent.

The patient sweated profusely, and was very exhausted and languid. On August 29th the blood count was the same; he got up each evening. There had been steady, uninterrupted improvement in appearance, in strength, and in feelings. There was slight pyrexia for a few days after admission. The temperature only occasionally rose above 99° now.

September 7th. The improvement had not continued. The patient was quite unable to stand, and complained more of his legs, which were increasingly numb. Knee-jerks active, some anæsthesia.

September 14th. Icteric tinge of conjunctivæ has been increasing lately: appetite is better than it was a week ago. The following notes were taken:

Nervous Symptoms.

Subjective.—Feeling of swelling and numbness in both legs (especially left) reaching from feet to groins and over lowest part of spine. Legs feel weak. There is numbness in hands also, most marked in little and ring fingers.

Movement.—There is weakness in all muscles of both legs, no definite paresis. No wasting. Left leg weaker than right; calf circumference equal.

Sensation.—There is complete loss of sense of position, legs can even be crossed without patient's knowledge.

Touch.—There is nearly complete anæsthesia below a line encircling knees below patella, but dipping down popliteal space in loop over calf, in "small sciatic area." Above this sensation is apparently normal, not by any means brisk.

Pain, Heat, and Cold.—No alteration can be found in these sensations.

Reflexes.—Knee-jerks equal, exaggerated, obtained by smiting above patella. No ankle clonus. Plantar reflexes very brisk of extensor type. All skin reflexes in leg seem brisk. Bladder and rectal control is complete. No trophic changes. Arms, some degree of anæsthesia (not worked out), loss of sense of position partial.

September 17th. "All muscles of both upper and lower extremities react normally."

September 22nd. Salol. gr. x given three times daily.

September 27th. Blood count:
Red cells, 1,520,000.
White cells, 4,000.
Hæmoglobin, 26 per cent.

September 19th. Loss of rectal control yesterday for first time.

September 20th. Patient was given gas and four molars extracted.

October 2nd. There has been difficulty in micturition for the last three or six days. A catheter was passed on October 1st and about ʒxl drawn off. Only ʒiij were passed in the following twenty four hours, and catheter was again passed to-night to relieve the painful sense of fulness. Many small motions have been passed unconsciously during the three previous days.

The patient was very miserable. The sense of swelling of the legs to twice their normal size continued. The anæsthesia had advanced and was almost complete up to a line half way up the thighs. There was no definite anæsthesia in the arms or hands, but there was a feeling of numbness up to the wrists. He had wandered at night for three or four nights, and had talked a good deal.

October 5th. Blood count:
Red corpuscles, 1,500000.
Hæmoglobin, 22 per cent.

October 7th. Since catheter had been passed twice daily the patient had felt much more comfortable and had slept well through the night. He was increasingly weak, but not very restless. This day he complained of pain in the lower part of the spine.

October 9th.—The patient complained of severe headache (frontal). He seemed weaker and at times slightly delirious.

October 10th.—He was very much weaker. At 6 A.M. the temperature rose suddenly to 104° F. The respirations were 34 and the pulse 120, at times very small. During the day he very gradually sank and died at

10 P.M. About an hour before death the temperature rose to 105°. The pulse was 136 and of very small volume. One hour after death the temperature was 106.2°.

Necropsy.

Pernicious anæmia. Iron reaction well marked of liver and kidneys. Fatty kidneys. Softening of lumbar portion of spinal cord. Gall stones. Emphysema of lungs (slight).

The *post-mortem* examination was made on October 11th, fourteen hours after death.

External Appearance.—Well-nourished anæmic body, abundance of cutaneous fat of a rich yellow colour, muscle red.

Head.—Cranial bones natural; no pus in either antrum or in ethmoid cells. Decayed teeth had been removed.

Dura mater and sinuses, arachnoid and pia mater natural.

Arteries natural.

Brain, 48 ounces. *Spinal cord*, softening of about 2 inches of the upper lumbar cord with deliquescence.

Eyes and Ears.—Eyes not examined. No suppuration in either ear.

Chest.—Œsophagus, glands of neck, larynx, and trachea natural.

Lungs.—Right, 20 ounces slightly emphysematous. Left, 19 ounces.

Heart.—Thirteen ounces. Pericardium natural; no obvious fatty degeneration of heart muscle. Valves natural. Aorta and vessels natural.

Abdomen.—*Peritoneum* natural. *Stomach* natural; no pyloric thickening.

Intestines.—Solitary follicles conspicuous. No other obvious change in large or small intestines.

Liver.—Sixty-four ounces, pale, perhaps slightly fatty, gives a brilliant blue iron reaction, staining being highly selective and in the outer zone of the lobules. In the gall bladder forty deeply pigmented blackberry-like gall stones.

Spleen.—Seventeen ounces, large, red, and flabby. No iron reaction.

Pancreas, abdominal lymphatics, suprarenals all natural.

Kidneys.—Fourteen ounces. Pale and somewhat fatty. Iron reaction brilliant and highly selective, limited to cortex.

Ureters and bladder and organs of generation natural. *Joints* not examined.

Right Tibia.—On section uniformly pallid condition of the marrow.

The temperature was not remarkable throughout this relapse. A few days after admission it reached 100.8°, but remained between 98° and 99° for the remainder of life. Two days before death 100 2° was reached, and on the last day it rose to 105°, and continued to rise after death, being 106.2 one hour subsequently.

This case then presented a complete picture of the malady we are considering. The degree of recovery was apparently very satisfactory after the first course of treatment, but, as not infrequently happens, a relapse occurred. Hence, doubts are not unnaturally felt as to the ultimate and complete recovery in any case of this nature. The disease is regarded by some as one whose nature is to amend and relapse, the degree of recovery, or apparent recovery, depending upon the degree of recuperative hæmogenic power in any given case. There thus appears to be a balancing, as has been said, of hæmolytic and hæmogenic processes, the latter usually prevailing in the long run.

We looked in vain during life for any evidence of toxic source, and, although the mouth was not foul, in deference to Dr. Hunter's views, paid attention to the state of the teeth. Several of these being carious were removed, and the mouth was washed out regularly with antiseptics. We also gave salol for a time with the hope of combating toxic influences in the alimentary canal. Quinine, iron, and arsenic were given, and red ox marrow in the diet.

The spinal symptoms were the final manifestations of the disease, and many cases have been recorded which illustrate the varied effects of its toxæmia upon the cord.

In our patient these were gravely indicated by the motor and sensory changes observed in the limbs. The electrical reactions were normal. The cord was found to be much softened in the lumbar region. It has been reserved for further minute examination, which is not yet completed.

The hæmolytic *débris* was extremely well shown by the iron reaction in the liver and kidneys which you see in these specimens which I hand round, immersed in formalin, and this condition you may regard as pathognomonic of the malady we are considering. The kidneys are apt to become blackened *post mortem* in these cases, as Dr. Garrod pointed out, owing to the decomposition of the iron into sulphide.

The condition of the marrow in one of the tibiæ was examined, and it was found, as you see, to be uniformly pale and of a yellow tinge. Dr. Andrewes, our pathologist, tells me that there is as yet insufficient knowledge to justify any decided opinion as to the prevailing condition of the bone marrow in cases of pernicious anæmia. The appearances and intimate elements of it appear to vary much in different cases. They commonly consist of nucleated red corpuscles and gigantoblasts.

The condition of the blood was characteristic during life in respect of poikilocytosis. No nucleated red globules were found. The hæmoglobin was deficient, and there was eosinophilous leucocytosis at first. These conditions improved markedly under treatment but returned with the relapse. No retinal hæmorrhages occurred.

The present conception of this distressing malady regards it as the result of a special form of blood destruction, so-called hæmolysis, occurring in the course of the portal circulation, induced by the action of some toxic matter produced in and absorbed from the alimentary tract. The disease is therefore a chronic infective form of toxæmia, which induces profound anæmia, and it is surmised that this toxin is of bacterial origin.

It cannot, then, be rightly regarded as a primary anæmia, for there may possibly be more than one source for the toxins which induce it. At this point our knowledge is as yet imperfect. There may be other than toxic causes for this malady; atrophy of the stomach, for instance, may sometimes induce it. The evidence for the toxic theory is very strong, and we owe much of the elucidation on the subject to the work of Dr. William Hunter. He has shown that the products of this portal hæmolysis, whereby hæmoglobin is discharged from the red corpuscles, are deposited in the liver, spleen, and kidneys, in the form of pigments composed of iron granules, which are readily detectible by appropriate reagents, or as other varieties eliminated by the kidneys, and known as urobilin and hæmatoporphyrin. Together with this destructive process we find indications in some cases of this malady of efforts to repair the loss by a process of blood renewal or hæmogenesis. These are to be met with especially in the bone marrow, which appears to revert sometimes to its fœtal condition. I show you here some bones which have been bisected to show the state of the marrow in different cases of this disease. You see that they vary much in character, some showing very pale or mottled conditions, and others a dark purple aspect. No uniform condition has as yet been observed in respect of these myelitic changes, but they demand careful study in each case. They possibly represent varying degrees of effort on the part of Nature to induce a reparatory hæmogenesis.

In this case we failed to find any overt cause for the malady; but we must take note of the gastro-enteric symptoms, which in this, as in most examples of the disorder, are commonly met with. We can hardly suppose that the carious teeth were to blame for its existence. The disease should surely be a very common one if this condition suffices to originate it, for there are plenty of foul mouths in the world; but in all cases of pernicious anæmia the state of the mouth and the alimentary canal calls for attention in respect of septic infection and appropriate treatment.[1] We must remember that some persons are especially liable to septic infection.

The diagnosis of pernicious anæmia is not difficult. The disease should be suspected in any case of profound anæmia, which comes on in this country insidiously. The possibility of some condition on which the anæmia depends must be considered. I think the disease which most resembles it is cancer of the stomach, certainly in respect of the pallor of the patient, but the extreme wasting and gastric symptoms in the latter are generally prominent. The fat is usually retained in all forms of anæmia, apart from cancer and tuberculosis.

Chlorosis may simulate pernicious anæmia. The age and sex help you here. The condition of the blood is also different, since there is much greater deficiency of hæmoglobin and less diminution of red globules in chlorosis. Poikilocytosis is also rare in the latter. In splenic anæmia the enlarged spleen is a marked feature. There is a form of grave endemic anæmia secondary to the parasitic attacks in the intestines of the ankylostoma or the bothriocephalus. If there is any suspicion of their presence, the fæces must be examined for ova, and these cases may yield to appropriate treatment for the respective parasites.

I have already mentioned the methods of treatment that are to be employed. My experience confirms the benefits already recognised from the use of arsenic and red ox marrow, together with good diet and wine. Dr. Hunter suggests the employment of an antistreptococcus serum, inasmuch as pyogenic organisms appear to be constantly taking part in

the general infection, but we have no experience as yet to indicate whether this may prove beneficial or not. The malady is a terrible one, and demands our best efforts both to learn its exact nature and to find remedies for it. When a measure of improvement is secured by any method, it is proper to continue the treatment for long periods, and not to rest satisfied that the disorder is overcome.

NOTE.

[1] Dr. Hunter, however, makes out a very strong case for his views in regard to infection from the mouth. *Vide Lancet* January 27th, February 3rd and 10th, 1900, for admirable accounts of the disease.

PRESIDENTIAL ADDRESS

ON

THE PRESENT POSITION AND FUTURE WORK OF THE BRITISH MEDICAL ASSOCIATION.

Delivered at the Opening of the Session of the North of Ireland Branch, October 18th, 1900.

BY JOHN W. BYERS, M.A., M.D., M.A.O. (HON. CAUSÂ) R.U.I.,
Professor of Midwifery and of Diseases of Women and Children, Queen's College, Belfast; Physician for Diseases of Women to the Royal Victoria Hospital, Belfast; Consulting Physician to the Belfast Hospital for Sick Children; President of the Branch.

GENTLEMEN,—My first and most agreeable duty is to return my warmest thanks for the compliment you have paid me. To be President of the largest Branch of the British Medical Association in Ireland is indeed a high honour; and it is in no small degree enhanced by the fact that this is a Society of one's fellow-practitioners in Ulster, some of whom are old college friends, others teaching colleagues, a large number former pupils, whose success in life is particularly gratifying to me; and some, alas! now very few in number, like Dr. Redfern, my most respected teachers. Speaking of Dr. Redfern, may I say it was he who, in years gone by, revolutionised the teaching of anatomy in Ireland; and it was to his unceasing efforts, and dignified and attractive personality, and the great reputation of his two brilliant colleagues, the late Dr. Andrews and Dr. Gordon, that the initial success of the School of Medicine in Belfast was largely due.

THE PROGRESS OF SCIENTIFIC MEDICINE.

In thinking over a suitable subject for a presidential address it is only natural that, at the close of a century, the characteristic note of which has been, as stated by Mr. Balfour in his masterly address to the summer meeting of the Cambridge University Extension students, its fertility "in the products of scientific research to which no other period offers a precedent or a parallel," one should feel the present occasion would be an admirable opportunity to look backwards and try to answer the question, How has the science and art of medicine in its various departments been influenced by all those wonderful discoveries of this century, which dazzle us not merely by their ingenuity and by the rapidity with which they have followed one another, but still more by their practical application, in this most utilitarian age, to the diagnosis, prevention, and treatment of disease? "No century," according to Mr. Balfour, "has seen so great a change in our intellectual appreciation of the world in which we live," and we, from a purely medical point of view, join with him in saying now, "We not only see more but we see differently." Even within the experience of many present to-day, has not the science of bacteriology completely revolutionised our ideas in almost every branch of medicine? And within the last few years a new and most promising field for original investigation has been opened up by the combined clinical and laboratory investigation of the blood; and so, at the end of this century, another medical science arises—hæmo-pathology. Among all the advances of science in this most wonderful period, none to my mind is so extraordinary as that we are now able—thanks to improved methods of investigation and to the invention of instruments of precision—to estimate the total amount of blood in the human body in health or during disease, and its colouring matter, to find out its specific gravity, its reaction, its coagulability, the presence in it of parasites and bacteria, and to count the number of the red and white corpuscles, and so to make out their numerical relationship to one another; all this being accomplished by the examination of a drop of blood obtained by a slight puncture of the finger or lobe of the ear.

This new method of medical examination is still in its infancy. Queen's College and our Medical School in Belfast are helping in its evolution, and it promises to be of enormous assistance to doctors, no matter in what department their special line of practice may be, in the diagnosis, prognosis, and treatment of disease. Let me cite a few examples showing the practical value of this method of clinical investigation of the blood in disease.

(*a*) You have all, I am sure, had at times cases of young patients under your care where you were in doubt whether the disease from which they were suffering was typhoid fever or tuberculous meningitis; but now, by the aid of this science of hæmo-pathology, we can, by an examination of a drop of the blood of the patient, arrive much nearer to a certain diagnosis; for in typhoid we have at least as early as the end of the first week Widal's reaction, a condition not met with in tuberculous meningitis, while in the latter most serious malady there is a marked increase in the numbers of the white corpuscles, leucocytosis as it is now termed, a condition not present in typhoid, where the white corpuscles are normal in number, or even below the normal. Sometimes we meet with obscure cases of fever following childbirth, where, although we may be suspicious that the patients are suffering from septicæmia, still they present clinically a typhoid appearance. To make the diagnosis certain, an examination of the blood will show, if typhoid is the cause, Widal's reaction and no increase of the leucocytes; if, on the other hand, sepsis is giving rise to the morbid condition, there will be an absence of Widal's sign but marked leucocytosis.

(*b*) You may again be in doubt whether an obscure swelling in some part of the body consists of pus, or whether suppuration is occurring in a previously existing tumour. Now, leucocytosis is an important sign of abscess formation. The surgeon, in a case of appendicitis, is able to say that the disease has advanced from the catarrhal to the suppurative stage by the fact that there is a distinct increase in the number of the leucocytes, increasing often from normal (6,000 to 10,000 in a c.mm. of blood) to 15,000 to 40,000.

(*c*) Further, suppose there is a case of disease of the middle ear. It is of the utmost importance to know early if pus has formed. Now, in simple catarrh of the middle ear, leucocytosis—that is, an increase of white cells beyond 10,000 in a c.mm. of blood—rarely is found, while in suppurative otitis there may be an increase of leucocytes up to 20,000 to 30,000. In suppurative disease the patient's condition, from a prognostic point of view, is more favourable if leucocytosis diminishes, less so if the number of white cells increases.

(*d*) Not only can leukæmia be diagnosed from such maladies as carcinoma and tuberculosis, but the various forms of anæmia, simple and secondary, chlorosis, and pernicious anæmia, can be distinguished by this clinical investigation of the blood.

(*e*) In malarial fever—a disease found in so many parts of the British Empire—if a drop of the blood is examined a few hours after the initial shiver, parasites are discovered in the interior of the red corpuscles peculiar to each type of the disease, these being introduced by the bite of particular species of mosquitos, as proved by the experiments conducted in the most pestilential part of the Roman Campagna, near Ostia, at the mouth of the Tiber, and at home by the London School of Tropical Medicine, as well as by the members of the Liverpool Expedition sent to West Africa—a piece of scientific research so creditable to British medicine.

It is curious that in phthisis the coagulability of the blood is diminished, hence calcium chloride is so useful in the treatment of hæmoptysis; in scurvy there is a marked reduction in the alkalinity of the blood (scurvy, according to Professor Wright of Netley being "a condition of acid intoxication"), and so curable by the administration of alkalies, such as acetate, tartrate, citrate, or lactate of soda. By the estimation of the specific gravity of the blood great and rapid changes in the amount of that fluid can be detected, and in this way it has been shown that the thirst so common after abdominal operations is really due to a rapid reduction in the volume of the blood, especially the plasma.

Every doctor who has resided in India is aware how unsatisfactory is our knowledge of the fevers of that country, and the *Lancet* has recently urged (September 12th, 1900) the authorities to provide the necessary apparatus, so that in the principal hospitals, by an examination of the blood, scientific accuracy may be obtained as to the diagnosis of the protean types of fever met with in India. Surely this is a matter of pressing necessity when it is recollected that nearly half of the deaths and invaliding of the British troops in India, and nearly one-third of their total sickness is due to some form of fever. An examination of the blood will settle the diagnosis of malaria and typhoid, and it may afford further information as to the other varieties of fever in India. It is based largely on such examinations of the blood that the question of vaccination against typhoid (enteric fever) rests. This problem—of

surpassing interest—is still in the experimental stage, but the outlook is most encouraging, as the following statistics, kindly supplied me by Professor Wright of Netley—the recognised authority on this subject—show: In Ladysmith there was seven times less enteric in the inoculated 1,700 than in the rest of the garrison. In India last year there was two and a-half times less enteric in 4 000 inoculated.

These examples I have given indicate the inestimable aid this new method of examination of the blood is likely to be to the medical man. Let me add one other case showing also its surpassing importance to the nation. When on August 25th of this year three persons were admitted into the Belvidere Hospital, Glasgow, the medical staff of that institution came to the conclusion they were cases of plague, although they were inhabitants of that city, and there was no notified case of the disease in Great Britain and no recognised source of infection, but something more was needed in such serious circumstances than a mere opinion. It was essential that the diagnosis should be both certain and immediate. This was done by examining blood films obtained by hypodermic puncture of the buboes of the patients which showed the typical forms of the bacilli of plague. Immediately all those elaborate precautions were put in force by the very able public health officials which succeeded in stamping out the disease which might have proved, had it spread, such a terrible calamity, not merely to Glasgow, but to the English nation. There could be no greater triumph of this new method of the clinical examination of the blood, nor of its practical value in a serious emergency in public health.

Such a method of scientific investigation demands the most careful training, which can only be acquired in places like our laboratories in Queen's College. We trust that the Government and the public of Belfast, recognising the very great importance of this specialised examination in the investigation of disease, will see that our laboratories are adequately endowed. Laboratories are to the medical man what technical schools are to those engaged in commerce. Every department of medicine needs now to have associated with it (as is being so well done in France, Germany, and America) younger men working in laboatories, who can bring to bear, in the elucidation of obscure medical problems, that expert scientific opinion which can only be obtained in these institutions, and which is of enormous assistance to those engaged in the practice of the medical profession. Every advance which helps in the diagnosis and treatment of disease is also of the utmost value to the citizen and to the State.

The progress on those special departments of medical science in which I am more particularly interested has been probably more rapid (and a great deal of the advance has occurred in the last twenty-five years) in this century than in all those that preceded. Who can estimate the importance that the discovery of chloroform and the application of the antiseptic system have had in obstetrics, both in the relief of suffering and in the preservation of life? It was during the latter half of the century that the diseases of women became a speciality, and that a new and really scientific interest began to be taken in the study of the maladies of children.

The British Medical Association.

But, gentlemen, however interesting such a retrospect might be, the recent annual meeting of the British Medical Association at Ipswich, with the three remarkable general addresses delivered there in Medicine, Surgery, and Obstetrics, and of the International Medical Congresses in Paris, with their voluminous papers, have anticipated and rendered unnecessary any efforts of mine to sketch the salient features which mark the progress of our common science in this remarkable century; and so I purpose to ask your consideration to an entirely different subject, and to say a few words on the present position and future work of the British Medical Association.

The British Medical Association, which was founded by Sir Charles Hastings at Worcester in 1832 as the Provincial Medical and Surgical Association, adopted its present title in the following year; and it is worth recollecting, when we see as some think too great a tendency in the Association in recent times to centralisation in London, that originally it was entirely a provincial society; and I have been told by older members that at its origin it was established as a protest against a tendency, even then thought to be apparent, to locate medical organisations too much in the metropolis. Its growth at first was slow as it spread over England and Scotland; it was established in Ulster in 1878, when the North of Ireland Branch was recognised; but in later years its numbers have increased enormously; so that now, with a membership of over 18 000 residing not alone in the United Kingdom but throughout the whole British Empire—in India and the Archipelago, Australia and New Zealand, South Africa, West Indies and Canada—the British Medical Association has become the largest medical scientific body in the world.

As you are aware all duly qualified members of our profession, in any part of the British empire, are eligible for election to the Association; and, in addition, from time to time honorary members may be elected by the Association such as members of the medical profession of scientific eminence residing in the United Kingdom, in the Colonies, or in foreign countries; gentlemen not belonging to our profession, but distinguished in sanitary or physical science, and those who have rendered distinguished service to the Association.

For the wider diffusion of the benefits of the Association and for local convenience groups of members have been formed into separate bodies styled Branches (there are now sixty-eight), and the members so united are called attached, while those who remain isolated, living in the area of but not members of the Branch, are termed unattached. All members pay a yearly subscription of one guinea, but those attached to Branches pay an additional half-crown, which is devoted to expenses connected with the local organisation. While every Branch has its own officers elected each year the Association, as a whole, has a President, President-elect, Vice-Presidents, President of Council, Treasurer, Secretary, and an Editor of its JOURNAL, as well as a very important central body—the Council—of which all the foregoing, except the Editor and Secretary, are members. This central Council has a remarkable constitution; it consists (1) of the elected representatives of all the Branches, each Branch having the right to send one representative member, and every Branch consisting of more than 200 members is entitled to elect an additional representative member for every complete 200 members of which it shall consist. These are all elected for one year, but are, of course, eligible for re-election. But on the Council there is a second group of members who are non-representative and who sit for life. These are the Vice-Presidents of the Association—that is, those who have been Presidents—and the former Presidents of the Council, and Treasurers, who are, as a rule, elected Vice-Presidents on the expiration of their term of office. The existing President of Council (elected by that body) and the existing Treasurer (appointed at the annual meetings of the Association) are both peculiar in this respect—that they are appointed not for one but for a term of three years. I mention particularly the peculiar constitution of the Council, as I know of no central Committee or Board of Directors of any registered Association, over a portion of whom the general body of the shareholders or members have really no control owing to their being permanent life members. I think a better plan would be for the Vice-Presidents to hold office for a limited period—say three to five years. This would be regarded as a recognition of the work they had done for the Association, and it would ensure that there would always be on the Council a certain number conversant with the working arrangements of the Association. Fully-qualified doctors can be elected members of the Association either by this Central Council or by the Councils of any of the Branches, but in either case the candidates must have three-fourths of the votes of those present. Those elected by the Councils of the Branches are called "attached," and those by the Central Council of the Association "unattached" members. This is really a most important fact, seeing that this latter large body—more than one-half of the total members of the Association—have no representation at all on the Central Council.

Having said so much as to the constitution of the Association and the mode of election of its members, I come to the very interesting question, What are the objects for which this great body exists? These objects are defined as "the promotion of medical and the allied sciences, and the maintenance of the honour and interests of the medical profession." In other words, the Association has a twofold function: first,

the promotion of medical and the allied sciences; and secondly, the maintenance of the honour and interests of the medical profession.

Now, I think, there can be no question that the Association has discharged the first of its dual functions, by its annual and Branch meetings, where matters of scientific and local interest as bearing on our profession are constantly being brought forward and discussed; by its admirable Journal, the issue of which is now 21,000 copies weekly; and by the grant of sums of money out of its funds for the promotion of the medical and allied sciences. I must, however, emphasise the fact that the money spent on original research is ridiculously small and inadequate, especially when we recollect what miserable ideas all British Governments have as to their duty in this respect, as contrasted with those of other great nations. The money paid by the Association for original work is only £1,000 per annum (£650 as Research Scholarships and £350 as Scientific Grants), a paltry sum for the largest scientific society in the world to spend each year on original research (often of the greatest practical value to its members), when it has an accumulated balance of £75,794.

At the late annual meeting I called attention to the fact that, small, in all truth, as these grants are, there is a tendency to lessen their value to the Association as a whole by centralising them in certain places, and that the various parts of the country were not properly represented in the Scientific Grants Committee. The facts I brought forward were so admittedly obvious that the whole constitution of this Committee has been altered, and I hope in the near future the grants will be more widely diffused; for I hold that it is the duty of this Committee to see that, provided there are suitable men and properly-constructed laboratories (as those we now possess in Queen's College, Belfast), grants should be given to such places, no matter where located. Scientific grants like these are of enormous value to provincial schools. They not only stimulate our younger men to do original work, but they tend indirectly to raise the whole status of the profession.

The second object for which the British Medical Association was founded is the maintenance of the honour and the interests of the medical profession. Now, while I cannot agree with those who affirm that our Association has done nothing in this direction, it is quite apparent that many of the profession think it has not interested itself at all sufficiently in such matters. The best proof that the rank and file of the medical profession are not satisfied with the manner the British Medical Association has looked after their interests is to be found in the existence of all sorts of societies, organisations, and defence associations, whose aim is to protect the interests of the profession. In England the number of these societies is legion. There is the London and Counties Medical Protection Society and the Medical Defence Union (founded to protect and safeguard the interests of the profession, and to advise and defend them when attacked); the Incorporated Medical Practitioners' Association, the Hospital Reform Association, the Medical Parliamentary League, the Manchester Medical Guild, the County of Durham Medical Union, the Coventry Public Medical Service (which has been making an heroic fight against a dispensary there which is so large that it embraces 18 000 or 19,000 out of a population of 73 000), the Portsmouth Medical Union, and numerous others. In our own country Ireland—we have the Royal Medical Benevolent Fund Society of Ireland (the object of the Fund being the relief of medical men under severe and urgent distress, occasioned by sickness, accident, or any other calamity, and also under circumstances of peculiar emergency to extend relief to the widows and orphans of doctors resident in Ireland), the Irish Medical Association (established to protect and promote the interests of the medical profession in Ireland, and which takes a special interest in dispensary medical officers); the Fermanagh Medico-Ethical Association (one of the objects of which is the promotion of mutual protection and co-operation), the Cork Medical Profession (established in 1893 to fight the clubs), while the Irish Medical Schools' and Graduates' Association, centred in England, is really to look after the interests of our fellow countrymen residing in that part of the United Kingdom. I may say that of eight medical societies of which I am a member, four are more immediately concerned with the personal interests of the profession. Now, gentlemen, surely the multiplication of these societies is a mistake. Not only is there an altogether useless waste of money spent in working the machinery of these associations, but there is also a constant drain on the pockets of the members, and I am coming more and more to believe that the solution of the whole question is to be found in the concentration and co-operation of these societies, and in the establishment of one great national medical association. I think you will agree that the following resolution carried at the Conference on Medical Organisation held in May at Manchester is a step in the right direction.

That this Conference is of opinion that the pressing need of organisation is concentration; that the multiplication of associations other than those purely local is to be deprecated; that the size, position, and wealth of the British Medical Association make it the most suitable national medical organisation; and that the efforts of all medico-ethical associations and of the Conference should be directed to the conversion of the British Medical Association into an energetic body really representative of the profession.

I put it to you, do you not think when the members of this Branch met this summer (and never before was there such a large number of the medical profession at any gathering in Belfast) to support the Poor-law dispensary medical officers in their fight with the guardians to establish their just rights on the holiday question, how much more influential and weighty our unanimous resolutions would have been in their effect on the Local Government Board had they been backed up by an Association of over 18,000 members residing in every part of the British Empire?

Gentlemen, that it is manifest the time is rapidly approaching when this great Association must consider more than it has done in the past those matters which pertain to the honour and interests of the profession is clear from the fact that at the Ipswich annual meeting this year a resolution was carried appointing a Committee to consider and report upon the best means of reorganising the constitution of the British Medical Association, such Committee to furnish a provisional report to the Branches by February 1st, 1901. It was arranged that this important Committee should consist of twenty-four members, one half being elected by the Council, the others by the general body of the Association. Two representatives were appropriated to Scotland, two to Ireland (Sir John W. Moore of Dublin and myself), five to the Colonies, and the remainder to England. We meet this month, and when the provisional report of this Committee is sent down to the Branches you will all have an opportunity of discussing matters which are of vital importance to the well-being of the profession. It is not for me to predict what lines this most important report will finally take, but I think you will probably be asked to discuss such questions as the constitution of the Council, the best means of obtaining a thorough representation of all the members of the Association, medical defence, a plan to create some form of machinery to watch legislation as affecting the medical profession, the question of increased scientific grants, the formation of a central bureau to which any member in his professional work could always turn for information, and the establishment of a benevolent fund to meet cases of distress among our profession, as well as a fund for the relief of widows and orphans of medical men. How better can the funds of the Association be spent than in the carrying out of such schemes?

Now, gentlemen, an opportunity will be put before everyone who takes a real interest in our profession to do his duty. We need to be united, we need to be organised. The North of Ireland Branch has now 283 attached and 98 unattached members. The Londonderry and North-West of Ireland Branch has 42 attached and 37 unattached members. We must all make an effort not only to get the unattached members to connect themselves with the Branches, but to induce all medical men who are not already members of the Association to become so at once. There are at present in Ulster about 700 doctors, of these 460 belong to the Association; let us make an effort to get the remaining 240 to join us and to attach themselves to the Branch, in order that we may have more representatives on the Council. Considering the direction in which things are tending in our Association not only is it the duty, but it will really be the interest of every medical man to join us.

I appeal especially to the Poor-law medical officers to become members of the British Medical Association: many

have already done so; but as there is no body of the profession in Ireland whose interests at the present time need such safeguarding, it is essential that they should all be members of an Association which, from its numbers and great influence, will be able to exercise an immense power on their behalf. Anyone who reads the Irish daily papers must have noticed the constant tendency by Boards of Guardians to grind down the payment of their medical officers in every possible way. Indeed, matters have come to such a pass that in April of this year the Irish Medical Association sent a circular to the hospitals, medical schools, and professors, in which the disadvantages of the Irish Poor-Law Medical Service are clearly stated, and young practitioners are entreated to abstain from offering themselves as candidates for posts insufficiently remunerated. That the Poor-law doctor of Ireland is about the worst paid and the most thoroughly "sweated" public servant in existence is apparent from some recent statistics, which show (I quote from the British Medical Journal of September 22nd, 1900) that for medical attendance his remuneration is something under 6d. per head of his dispensary patients, and apparently anyone can get a ticket obtaining his professional services. Indeed, were it not for the control of the Local Government Board Poor-law medical appointments would be untenable at present in Ireland. Is it not true that many dispensary doctors, after a prolonged and expensive education, may work all their days, when located in districts where there is little private practice, paid little better often than a skilled mechanic, and when death comes at last they are fortunate if they have the satisfaction of knowing that their widows and children are not saddled with the debt necessarily incurred in their support and education?

I have no sympathy with those doctors who, owing to their own prosperity, overlook or do not admit the difficulties with which many have to contend, and therefore decry professional organisation. Successful consultants and men in well-paid practices may not feel the necessity for organisation; but do such questions as hospital abuse, club practice, medical defence, medical sickness and assurance societies, and Irish Poor-law medical mismanagement, not demand that we should be united and organised? It was said by the immortal Bacon, in the preface to *Maxims of the Law:* "I hold every man a debtor to his profession; from the which, as men of course do seek to receive countenance and profit, so ought they of duty to endeavour themselves by way of amends to be a help and ornament thereunto." It is surely the bounden duty of every one of us to try to live up to such an ideal, and to do his best to elevate that profession, to remove the grievances that press hard on any members of it, and above all things to bring contentment and happiness to all those who practise it.

It may be thought I have dwelt too much on the dark or disappointing side of our work, but I have done so simply in the hope that by union and combination such unpleasant features may be removed. No profession demands such constant and exacting attention on the part of its members as the one to which we belong. If we engage in any social pleasures, if we undertake any extra-professional duties, or if we plan a holiday we must always be prepared to submit without a grumble to their constant interruption; and yet, with all its drawbacks, who that is really interested in it would change it for any other? "Medicine," my old and revered teacher, Sir Andrew Clark has said, "is a most relentless mistress, but if we who are her devotees are faithful, she is always true." No profession is, after all, more unselfish or more useful than ours. We are entrusted by our patients in absolute confidence with every detail in reference to themselves and their families, as without such knowledge our advice would often be of no avail, knowing, as they do, that with us sealed lips are the time-honoured tradition of our profession. Of no body of men can it be said to a greater extent that they are both the friends and advisers of their patients.

While our work is to prolong life and to relieve suffering, our profession affords us constant opportunities of observing what is the most interesting of all studies—human nature; and the saying is a true one that the clergy see human nature at its best, the lawyers at its worst, but it is presented to us just *as it is*, without any attempt at deceit or pretence.

Whatever may have been the scientific advances in the century now almost over, and no matter what fresh discoveries await us in the future—

> Our ancient lesson will be ever new:
> That priceless lesson will be ever true:
> Time did not teach it, time will change it not.
> This, this shall last though all our lore's forgot.
> To give what none can measure, none can weigh,
> Simply to go where duty points the way;
> To face unquestioning the fever's breath,
> The hundred shadows of the vale of death:
> To bear Christ's message through the battle's rage,
> The yellow plague, the leper's island cage,
> And with our noblest "well to understand
> The poor man's call as only God's command."
> Ay, under every century's changing sky
> Shall the Greek Master's triple signal fly—
> Faith, honour, duty—duty calmly done,
> That shouts no self-praise o'er a victory won;
> One bugle note our only battle call,
> One single watchword, Duty! that is all.

AN ADDRESS

ON

THE VULGAR ERRORS AND SUPERSTITIONS OF WEST SOMERSET IN THEIR RELATION TO MEDICINE.

Delivered before the West Somerset Branch of the British Medical Association.

By GEORGE F. SYDENHAM, M.R.C.S.Eng.,
President of the Branch.

The life of a general practitioner holding 90,000 acres under the Poor Law, riding to see patients in twenty-one parishes, is not conducive to the treating of scientific subjects. I fear my subject may be considered trivial and yet it is full of interest to us all. Superstition is widespread among us, and is by no means confined to the lower classes of society. That there is a power of "working evil" has been believed in all times and in all countries; the origin of the belief has been lost in the obscurity of prehistoric ages. The belief in the evil eye was sanctioned by the Fathers of the Church and by mediæval physicians. Can you wonder that it exists to-day among us? Most of the vulgar errors are errors following the dictum of some supposed authority, local or not, just as our own profession has oftentimes blindly followed its leaders. The superstitions, although in a sense errors, rest on a much more solid basis than the dicta of men. I shall not endeavour to separate errors from superstitions. Sir Thomas Browne, writing in the sixteenth century, sets forth numerous reasons for the belief in superstition and error:

1. The common infirmity of human nature.
2. The erroneous disposition of the people.
3. False deduction.
4. Credulity and supinity.
5. Obstinate adherence unto antiquity.
6. Adherence unto authority.

He recites a long list of promoters of popular errors from Satan downwards, but his reasons by no means account for all the errors and superstitions of Somerset; they do account for many. I shall treat only of those errors and superstitions which have come under my notice.

I am sure these beliefs have a great bearing on our practice. Speaking from the experience of a life lived among the people I know they have to be taken into account in our diagnosis and prognosis. The modern scientific pharisee is sceptical, and yet there are more things in heaven and earth than are dreamt of in his philosophy. The herbalist and white witch live to-day among us, to say nothing of the "doctor" the seventh son. These three carry on their practice oftentimes along side of ours without our knowledge, be it said, not infrequently to-day, to the exclusion of our efforts.

Conception taking place on a Friday is said to be unlucky. If a woman linger long in labour the child will be lazy. A pepper pot is held to the nose to facilitate labour. Burnt rag is invariably used to wrap the umbilical cord in; I know no reason for this. The placenta is burnt, as also the separated cord. The burning of the placenta seems universal. I shall try and show that there are deeper reasons for this than mere sanitation. If the placenta crackles in burning, as the number of crackles so will there be children born. If the umbilical cord be not burnt the child will be troubled with nocturnal enuresis.

The cure for congenital hernia is particularly interesting. The child so suffering is passed naked through a cleft maiden ash on a Sunday morning at sunrise, in a direction from west to east towards the rising sun. As the cleft in the ash unites so does the hernia get cured. The ash has always been held to be a sacred tree, the Tree of Life of our early progenitors. The sun typifies the life-giving power of the Sun of Righteousness. The direction, east to west, is a good example of orientation. The whole process typifies a new birth to complete that which was imperfect. There are various formalities to be gone through, for which I refer anyone interested to a paper by one of our late members, Doctor Mead, in vol. xxxviii of the *Transactions of the Somersetshire Society*.

Whooping-cough is cured by laying the child on the ground of a sheepfold.

Epilepsy is cured by procuring silver coins from friends—a coin for a year. The coins are worn as a necklace or bracelet. So are fits cured.

There are many ways of curing warts:

1. Steal a piece of meat and bury it; as the meat decays, so does the wart.

2. The sufferer places as many stones in a bag as there are warts, the bag is then thrown away, the finder contracts the warts; to find a wart bag is no uncommon thing.

3. By rubbing with bean-pods or celandine, accompanied with prayer. My own were so treated.

A seventh son, especially if he be the seventh son of a seventh son, is much sought after, and is familiarly known as "*The* doctor." His cures of King's Evil are almost miraculous, his patients are attended to on a Sunday morning; both operator and patient should have fasted from the previous night. The cure is by touch and prayer. I knew a man well who declared to me that when growing up he seldom tasted food on a Sunday, his parents keeping a watch over him and deriving a rich harvest from his efforts.

Thorns are removed and inflammation subdued by prayer. I know a man who does a large practice in such cures; his patients often feel my lancet. The same man cures hæmorrhage by repeating the following:

Christ was born in Bethlehem,
Baptised in Jordan,
The waters wild and rude,
The child mild and good,
Put its foot into the flood,
Bid it stand and turn.

A verse from Ezekiel is also effective:

And when I passed by thee, and saw thee polluted in thy own blood, I said unto thee, when thou wast in thy blood, live.

The treatment by prayer is far less objectionable than by the application of cobweb or tobacco; cobweb is likely to be septic. The following prayer is efficacious for burns:

Three angels came from north, east, west,
One brought fire, one ice,
The third the Holy Ghost,
So out fire in frost.
Gloria Patri.

Goitre is cured by the touch of a corpse.

The treatment of sciatica or "bone shave" is radical. The sufferer lies by the side of a running stream, while someone chants the following verse:

Bone shave right,
Bone shave strite,
As the water runs by the stave,
So follow bone shave.

So the affliction is removed and carried away to the sea. John Roden lost his life in this way many years since.

It is scarcely a superstition, it is certainly an error to attempt to cure an irreducible hernia by a descent downstairs head first. I knew an old man who was persuaded to try and who came near to losing his life in the attempt.

It must be an error that a man can conceive or that a woman have a litter at a birth, yet recently I was asked to sign the following certificate:

This is to certify that John Cockran was confined in bed on February 28th.

I referred to the Rector of the parish.

I was called up recently by a farm boy who brought me a message that "I was to come at once; missus was having children, she had had one when he came away."

The belief in the Evil Eye, vulgarly "over-looking" or "whist" is widespread and deep-rooted, and well it may be since it is older than history; no class in society is free from it, no nation but accepts it. The magpie brings bad luck; the ticking of the death watch is unlucky; the howling of a dog presages death. The savage sacrifices to propitiate an angry deity of whom he knows nothing. We fly to the white witch to remove the spell. There is a fast diminishing number of these white, wit, or wise gentlemen. The law is justly dealing out justice to them; they are frauds as great as the "witch finder" of the last century. Epilepsy, phthisis, and a whole host of ailments are attributed to the evil eye. "Her's a whist poor thing; her have a been over-looked," is a common expression, and off goes the patient and the friends to the "white witch" to find out who has worked the spell.

The power of the Evil Eye was believed in by the Egyptians. The Greeks appropriated it, the Romans followed suit. Amulets or charms against this power were as common among the Egyptians as among the Neapolitans to-day.

The ill-effects of the Evil Eye is produced in three principal ways:

1. By directly looking on the person or object to be influenced.
2. By touch.
3. Through the property of the person ill-wished.

What is the Evil Eye? Is there such a force? If such a power exists, I suggest that it is allied to hypnotism or to animal magnetism. Strip hypnotism from the charlatanism which surrounds it and yet there remains something which is not explained. Of the three ways of working evil that which is accomplished through the property of the person ill-wished is the most curious; it is for this reason I have no doubt that nothing is ever found in a vacated gipsy encampment, that the umbilical cord and placenta are burnt, and that many of our patients carry away their teeth from our surgeries. What class of beings possess the power of the Evil Eye?

1. Those maliciously disposed—the witches of our forefathers.
2. A class of beings who, against their will, work evil on their friends and enemies—a class we may term Jonahs.
3. People with a squint—vulgarly a north eye: "Always spit when you meet a man with a north eye."

It is curious that there are so few charms against fascination to be found among us. Egypt, Athens, and Rome abounded in such trinkets, so does Italy to-day. We read that Rachel stole charms from Laban, which Laban evidently valued, from the trouble he took to recover them.

The Jewish phylacteries were charms. All charms which did not consist of Scriptural texts were of two kinds: (1) Bright-looking ornaments to catch the Evil Eye, symbolical of some god or goddess, whose aid was thereby invoked; (2) they were of such a nature as to show contempt for the fascinator. This is in the main still so. The Thirteen Club shows its contempt by its name. We lift our hat in mock derision to a magpie. For the same purpose obscene charms were worn. The amulets of West Somerset are few:

1. The horse shoe.
2. The heart of some animal stuck with pins.
3. Some of the ornaments on the cart horses.
4. The gargoyles on our churches.

The horseshoe as a charm is interesting; originally horseshoes were crescent-shaped. The crescent is symbolical of Diana, whose attributes were "envy, hatred, malice, and all uncharitableness."

I suggest that the horseshoe was first used to show contempt for Diana and her attributes. Iron has a strong power over the Evil Eye, so that the horseshoe is the type of a double charm, and therefore more powerful.

I have come across a heart stuck all over with pins in a chimney corner, "to keep away they there witches." The heart no doubt was originally used to work harm to some person whom it was desired to injure; it had lost its original meaning and came to be used as an amulet.

I believe some of the ornaments used by carters on their horses' heads had a belief in fascination as their earlier meaning. The hideous gargoyles on our churches were no doubt placed against the Evil Eye; this as well as the fact that church bells had for their origin the scaring away of witches, seems to show how the earlier Christians adopted and utilised Pagan practices. A belief in pixies is common: these little gentlemen have all sorts of pranks foisted on them: they ride our horses all night; they lure the man late home from market to take the wrong road on the moor, and compel him to dance all night with them in their fairy rings, to the sore distress of his affectionate wife wearily waiting at home.

ENTERIC FEVER IN THE ARMY IN SOUTH AFRICA, WITH REMARKS ON INOCULATION.

By HOWARD H. TOOTH, M.D., F.R.C.P.,
Physician to the Portland Hospital; Assistant Physician to St. Bartholomew's Hospital.

The origin and spread of enteric fever among our troops is a subject of general and absorbing interest. There can be no doubt that if this disease could be eliminated from the list of those to which the army is subject, the mortality in the present campaign would be very different from what it is. Unfortunately, the more one sees of the conditions of life on the march and in camp, the more difficult, and in fact hopeless, does it seem to combat the disease by the recognised hygienic precautions.

Water, Dust, and Flies.

Water at the Modder River.

Assuming that water is the chief medium concerned in spreading the disease, it would appear possible to the arm-chair hygienist to deal with the question satisfactorily, or at any rate to minimise infection. Practically this is not so. The ignorance and apathy of the soldier about such questions are apparently invincible. Thirst is one of the most imperious of appetites. Boiling and filtering processes take time, and a raging thirst will not wait, but will be satisfied regardless of consequences. So intense on some occasions has the thirst been, that medical officers have told me that even among themselves all considerations other than immediate gratification of the desire have gone to the winds.

Even in the comparatively easy circumstances of camp life the water difficulty is ever present. In February before the advance, there were encamped at Modder River some 40,000 to 45,000 troops of all arms, and enteric fever was becoming a serious question. Various methods of purifying the water from the river were used by different regiments. One, for instance, boiled the water and precipitated the suspended matter by the addition of a small quantity of alum. This is an excellent method, but the temperature was such at that time that the water took a long time to cool, and boiled water is not very palatable at any time. Another regiment used Berkefeld filters, seven of which were working all day long. The filtrate was satisfactory, but the cylinders became blocked with mud in about ten minutes, so well does the Modder deserve its name. The officers of the Guards' field hospital, with whom I was staying, used Pasteur filters, which also gave an excellent filtrate. All this is good and in the right direction, but one only had to walk to the drift over the Modder to see what the soldier thought of such precautions. All day long men were filling their bottles from the Modder direct, men from the very regiments which took the precautions above alluded to; they evidently did not mind the mud, and one must presume that the water was palatable; it certainly was after simple filtration. There was said to be enteric fever among the Boers encamped near the river above, but of this nothing was known certainly. There were cases at Jacobsdal, but this is on the Riet, which is joined by the Modder at a point below that from which the water was usually taken. On the whole it is, in my opinion, a question whether the Modder River was much to blame, if at all, for the spread of the disease.

Whirlwinds and Dust.

There are two most important factors in the dissemination of enteric fever which are entirely beyond human control. The first is the wind, which on these great plateaux takes the form of whirlwinds called "devils," of small diameter, but moving with some rapidity over the plain, and possessed of considerable lifting power, by means of which dust, pieces of paper, and other light objects are carried to an astonishing height into the air. The passage of such a force along a line of latrines may produce effects which need no comment. Not infrequently, also, the whole plain may be swept by a local gale of wind which brings with it a dense cloud of dust from one end of the camp to the other. At the time I was there the food was rarely free from grit, and in the circumstances it would be almost impossible to avoid contamination of food in a well-built house, much less then in tents; moreover, the cooking was practically performed in the open air.

Flies.

We must give proper significance to another pest—flies, attracted in vast numbers by refuse, dead horses, etc., in the first instance, and no doubt in such favourable circumstances multiplied locally. These flies are indistinguishable from the ordinary house fly, and they seem to have a special attraction for enteric cases, so that it was striking to see how in a tentful of sick the flies preferred the enteric fever cases to the exclusion of others, dysentery or sunstroke, equally, if not more, ill.

At Bloemfontein, where the epidemic assumed alarming proportions, these factors were still in operation, but sandstorms and "devils" were less frequent and severe, owing, on the one hand, to the time of year, when such disturbances are rarer, and, on the other, to the hard, clay-like nature of the surrounding veld. But the fly pest was, if anything, greater, for the quiet atmospheric conditions would no doubt favour their multiplication, added to the presence of large numbers of horses sick and dying in the close vicinity. The flies therefore were in vast numbers and ubiquitous. The enteric tents and the patients were covered with them. The disappearance of enteric fever and flies with the first appearance of the frost at night may be more than a coincidence.

Water Supply of Bloemfontein.

The water supply of Bloemfontein, as at Modder River, was far from being above suspicion, but it is quite possible that it may occupy too prominent a position as a supposed factor in the epidemic. At the time of the occupation by our troops the supply from the waterworks failed owing to the retention of the latter by the enemy. Bloemfontein spring—the old water supply of the town—became again the chief source of supply to town and camp. There were certain wells also, two of which, of the tube variety, and piercing the underlying rock to a depth of over 100 feet, were situated about three-quarters of a mile to the west of the town, and yielded a fair supply of excellent water. The engineers sank another not far from these, and these wells proved of the greatest value. Bloemfontein spring is situated to the south west of, and close to, the town. It consists of a brick-lined reservoir of about 10 feet square, covered in by a small red brick building. The whole is enclosed by a paling. The veld on this side of the town drains into two or more dongas which meet, not far from the spring, to form a large donga which runs through the town, passing the spring at about 30 yards distance. In ordinary circumstances this is dry, but it becomes a rushing torrent in the rains, carrying away from the various camps on the veld all sorts of contamination. There was no evidence or suspicion that there was any communication between the spring and this donga, but I made a chemical examination of the water, and reported that it contained a rather large percentage of absorbed oxygen and a trace of nitrites.

Previous to this examination a Board met on which I had the honour to serve, and recommended that the open-trench latrines of the camps generally should be replaced by buckets, and this was done. A field hospital which contained many enteric patients was removed from the vicinity of one of the dongas above mentioned. The work of well-sinking was pushed on, and it is difficult to see what more could have been done at that time. A great deal of unfavourable comment has been made upon the fact that the waterworks were not taken in the first instance, and it is undoubtedly a regrettable circumstance, but one which I do not feel called upon to criticise. It is a cheap and easy form of wisdom that exists only after the event.

On the reopening of the supply I was asked to report upon the chemical state of the water. The first sample was very unsatisfactory—worse, in fact, than that of the spring. I suggested that the mains might be contaminated by the stagnant water of several months, and so a second examination was made after a time. This still proving unsatisfactory, a sample was examined from the reservoir, and even this contained a serious percentage of absorbed oxygen, which, however, of course, may have been due to harmless vegetable matter. These water analyses are open to the objection that they are chemical only, and therefore too much importance must not be attached to them. A bacterial examination was impossible at the time, and it is doubtful whether such could

ever be satisfactory in such circumstances. A careful examination of the source of supply and the course of transmission seem to me of far greater value than any analysis. When the water came into the main the worst of the epidemic was over. I am inclined myself to look upon the Bloemfontein epidemic as the necessary sequel of that of Modder River, and to think that in the latter, as in the former, the water was less to blame than is generally thought. Once get a few cases among a body of soldiers, dust storms and flies will be responsible largely for spreading the disease.

Remarks on Inoculation with Enteric Toxin.

Whether these opinions are correct or not, enough has been said to show the extreme difficulty that must attend all efforts to prevent the spread of the disease by sanitation only. It is therefore with the greatest interest that we turn to the subject of the establishment of an artificial immunity in the individual soldier. Large numbers of officers and men have been inoculated for this war, and it is to be hoped that some conclusion may be arrived at as to the value of this procedure. Meanwhile, the experience of my colleague at the Portland Hospital (Dr. Calverley) and myself may be of interest, though we fear that the numbers are too few for safe generalisation.

Personnel of the Portland Hospital.

To take first the relation of disease and inoculation among the *personnel* of the hospital. Twenty-four non-commissioned officers, orderlies, and servants of the Portland Hospital, and 4 of the medical staff were inoculated on the voyage out. All of these showed the local symptoms at the time, that is pain, stiffness, and local erythema; 17 also presented well-marked constitutional symptoms—general feeling of illness, fever, and headache. Of the orderlies 9 had enteric fever subsequently. Two had refused inoculation, and both of these had the disease very severely, in fact one died. Of the inoculated cases 5 had the disease lightly, and 2 fairly severely. One of the sisters had the disease rather severely, and she had not been inoculated.

Officers and Men Admitted to the Portland Hospital.

We had under treatment at the Portland Hospital 231 cases of enteric fever, most of which came under our care at Bloemfontein. We have not included in these figures a number of patients who came in convalescent for a short time only, and on their way to the base, and who would therefore appear in the admission and discharge book of the hospital. If we did so of course our percentages would be lower. Of these 231 patients, 53 had been inoculated at home or on the voyage out, and of them 3 died, making a percentage of deaths among the inoculated of 5 6 per cent.; 178 had not been inoculated, of whom 25 died—that is, a mortality among the non-inoculated of 14.0 per cent. The general mortality in enteric fever with us was 28 deaths out of 231 cases—that is, 12.1 per cent., which seems to compare favourably with the experience of the London hospitals.

The above figures comprise officers and men. It is interesting to record our experience among the officers taken separately; 33 officers were admitted with enteric fever; 21 had been inoculated—that is, 63.6 per cent., a much larger percentage than among the men. Only one of these officers died, and he had not been inoculated.

These figures are small, but such as they are they are significant, and they dispose us to look with favour upon inoculation. So also does our clinical experience with our patients, for among the inoculated the disease seemed to run a milder course.

The Value of Inoculation as a Preventive.

Inoculation as a preventive is still on its trial, and even if the larger and more comprehensive figures of the whole army, yet to be published, are not so favourable as our smaller ones, it must not be judged hardly. There are few questions more obscure than that of immunity. An army consists of persons of whom, say 90 per cent., are at the time of life when the disease is most likely to attack them, and in its most virulent form. Among these we must assume there exists every degree of natural immunity—from the man who takes the disease at the first infection, and in whom an attack of it confers but a short-lived protection, to the soldier who goes through campaign after campaign with safety. For it is impossible not to believe that, in the circumstances discussed in the first part of this article, most of the soldiers had, at one time or another, taken the germ into their alimentary canal. Many an officer has told me that he has been through more than one outbreak in India or elsewhere, and considers himself saturated with the disease; it would be more correct to say that he is probably naturally immune, so that possibly a pure culture of the bacilli would prove harmless to him. On the other hand, second or even more attacks are not by any means rare.

It is not unlikely that the reaction of the individual to the injection of the toxin may afford valuable information on this point. In nearly every case we found local symptoms—pain, lymphangitis, and erythema. But the constitutional reaction was very variable, some showed, temporarily, symptoms of considerable general illness, with fever, rigors, and severe headache; others were apparently well except for the pain at the site of the puncture. May not this be some measure of the degree of the immunity possessed by the individual? As a rule I think the more severe cases among the inoculated were in men who had suffered more or less severely at the time of inoculation, while the slight and even abortive cases were among those who showed slight constitutional reaction. These are points upon which we require a large number of records; not only do we want to know how many in the army were inoculated, how many subsequently took the disease, and the mortality, but also the relation between the severity of the reaction and the severity of the subsequent attack.

Inoculation has not had a fair trial. Professor Wright insists on the importance of second inoculations. Very few have had the operation performed again, and I think it will be in the experience of most that those officers who have presented themselves for a second inoculation were generally those in whom the reaction had been slight, whereas if the above reflections are correct, it is the individual who presented a severe constitutional reaction who requires a second or an even larger number of subsequent inoculations. But unfortunately when the reaction has been severe, the sufferer so dreads a repetition that he prefers to take his chance, and if that is the case among educated officers, how much more will it be among ignorant privates. This will continue to be the case until the medical profession, better informed than it is at present, can throw the weight of its influence in favour of the procedure.

ENTERIC FEVER IN SOUTH AFRICA: EFFECTIVE STERILISATION OF EXCRETA.

By Major H. A. CUMMINS, R.A.M.C.,
In Charge No. 1 Model School Military Hospital.

Experience of the desperate epidemic of enteric fever at Bloemfontein, where I had charge of the Dames' Institute, and the difficulty in disposing satisfactorily of infected excreta led me to introduce the method which has now been adopted at No. 1 Model School, Military Hospital, Pretoria.

This hospital was opened for the reception of sick on June 8th, and by June 11th 153 cases, chiefly enteric fever, were under treatment. There is no satisfactory system of sewerage in Pretoria, and any waterclosets in use drain into cemented tanks, which are periodically pumped out. This was the type of closet we had at our disposal. It was obviously a menace to the health of the troops, and consequently its use was discontinued.

The idea of boiling the stools often occurred, but I was diffident in putting this into practice, anticipating a nuisance from stench of the fumes. I, however, determined to experiment, and obtained a large 30-gallon iron "jackpot" from the sanitary contractor, and, placing it in an isolated part of the compound, commenced the process. Into the pot about 2 gallons of 1 in 20 carbolic solution were poured, and subsequently the excreta. The pot was kept boiling day and night. According to requirements, the contents of the pot were emptied, but always a sufficient heated residue left to affect the next stool emptied. Carbolic solution was poured in if necessary to make up for loss by evaporation. The contents were thus kept fluid, and no charring could occur. In this

manner the practically instantaneous sterilisation of each stool the moment it left the bedpan was secured day or night. As far as nuisance from the fumes was concerned, there was practically no smell. The vapour had a heavy odour redolent of carbolic acid when the lid of the pot was removed. At one or two yards' distance it was scarcely perceptible. There was no difficulty in persuading the attendants to keep the fire lighted, as they seemed to think this very little trouble.

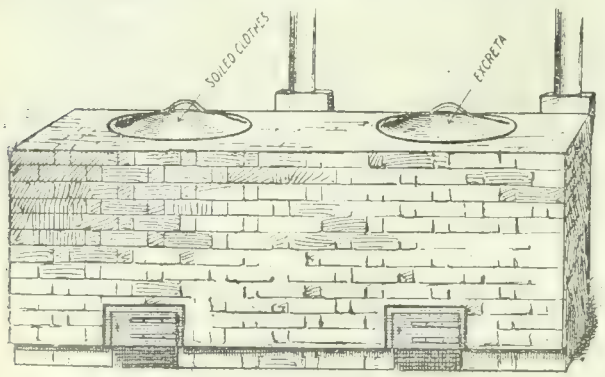
The bedpans were invariably emptied into the boiling cauldron, whose wide mouth was extremely well adapted for the purpose.

In addition to the stools from enteric cases, all stools and urine from patients confined to bed were emptied into it, and also sweepings from the wards. The apparatus has been in use for nearly two months, and over 200 cases of enteric fever have been under treatment.

No case of enteric fever has occurred among the orderlies employed in nursing and for pioneer work. The average strength has been about 35.

Dr. Turner, Medical Officer of Health in South Africa, expressed himself very favourably on the process, and arranged for the perfecting of detail. At present we have two large iron boilers arranged side by side, with furnaces underneath; one is used for excreta, etc., and the other for infected bedclothes or other articles requiring disinfection.

The simplicity and cleanliness of the process render it one which might be adopted with benefit in any hospital, and the cost of maintenance is very small. The fact that after having undergone the process the sterilised excreta can be passed into drains without risk of spreading infection is most important, as they can be disposed of by whatever system is in use for healthy dejections.



Brick furnaces.

By the courtesy of Dr. Turner, Civil Surgeon A. M. Dodd, formerly House Surgeon of the Royal Southern Hospital, Liverpool, and now attached to this hospital for duty, has been enabled to make a bacteriological examination of the contents of the cauldron as follows:

A control experiment was made by inoculating one nutrient agar tube from the contents of a bedpan which the attendant was about to empty into the cauldron. The stool was poured into the cauldron and ten minutes after five nutrient agar tubes were inoculated from the contents of the pot. All the tubes were incubated at blood heat for twenty-four hours. The tube used as a control showed about a hundred well-marked colonies, while the five infected by the contents of the pot showed no sign of bacterial growth.

I may mention that the temperature of the contents of the cauldron varied from 95° C. to 97° C. This is accounted for by the elevation of Pretoria, which is over 4,000 feet above the sea level.

Dr. Dodd is making further bacteriological investigations on this subject in order to demonstrate the completeness and rapidity of the process in destroying the vitality of organisms so dangerous to human life and so liable to become disseminated by dust and flies in a country like Africa. He hopes to communicate the result a little later. This process is, I believe, about to be introduced into other hospitals in Pretoria.

ACCORDING to the *Philadelphia Medical Journal*, the Board of Education in that city is about to undertake to train school children in ambidexterity through a regular course of exercises to be carried out in the schools.

THE TREATMENT OF DYSENTERY.

BY WILFRED WATKINS-PITCHFORD, M.B.LOND., F.R.C.S.ENG.,

C.M.O. with No. 7 General Hospital, South Africa Field Force, Estcourt, Natal.

DURING the later months of last summer (January to April) cases of severe dysentery were very numerous on this side (Natal), and I think that nearly every known method of treatment was resorted to in this hospital. In speaking of "dysentery," I do not wish to confine myself to any one of the varieties of colitis which come under that comprehensive and expressive denomination. Diversity of pathology has not, I believe, so far, called for any serious variations in treatment.

Saline Aperients.—As in other "general hospitals," our cases have been almost all handed over to us from either field or stationary hospitals nearer the front. For this reason we have had little opportunity of treating dysentery in its initial stages, and it is probably on this account that the treatment by saline aperients, sodium or magnesium sulphate, has met with little success. When the condition has become well established it has appeared quite evident that the saline treatment is all but useless.

Ipecacuanha.—The much-credited ipecacuanha cure, in the forms of simple powder, ipecacuanha "sine emetine" or Dover's powder, used in cases of many degrees of severity also proved disappointing. The failure was perhaps for the same reason, that is, the disease was not encountered in its earliest stage.

Monsonia Ovata.—The tincture of "Monsonia ovata," the South African plant which Dr. John Maberley considered almost a specific for dysentery, appeared to produce no effects whatever except nausea and depression.

Perchloride of Mercury, Bismuth, and Opium.—Greater success attended the use of mercury perchloride in mixture with bismuth and opium, and several of our cases which recovered undoubtedly owe much to this combination.

Bismuth, Chlorodyne, and Izal.- Dr. G. R. K. Crossland, who is one of our civilian medical officers, suggested the use of "izal" in 5-minim doses, and this preparation certainly produced amelioration of symptoms. For my own part, after so many disappointments, I have been much gratified to find that izal combined with bismuth and chlorodyne gives a most satisfactory result. The formula which I am using is ℞ "Izal" ♏iij, bismuthi subnitratis gr. x, tincturæ chloroformi et morphini ♏viij, mucilaginis acaciæ ad ℥j. To be taken every two, four, or eight hours, according to the severity of the symptoms. In the few sporadic cases of dysentery which have arisen in our hospital, this combination of drugs has in every case brought about a rapid cure, and in those well-advanced cases of a severe type which have come under our care the results of its use have been equally gratifying.

Diet.—The fact that milk was not a suitable diet for dysentery patients was pointed out to us by Dr. Campbell, the medical officer with the Durban Light Infantry when that regiment was our near and hospitable neighbour. This observation we speedily confirmed both clinically and after death. In several *post-mortem* examinations of cases of dysentery, as well as in some of enteric fever, made during the earlier part of the campaign, clots of bile-stained casein, the residue of milk diet, were discovered as far down as the third portion of the rectum. My own cases, even those of a severe type, have been given a fairly generous diet. Beef-tea and bread with butter satisfy, and leave a residue which appears to cause but little colic or rectal irritation.

Risks of Enemata.—Our *post-mortem* observations brought other facts home to us. Great risk must frequently accompany the giving of rectal injections, especially when combined with abdominal massage. Clinically I have found antiseptic enemata and rectal irrigations, even when speedily followed by opiates, to be productive of great distress and no proportionate benefit. After death we have often found the walls of the cæcum, colon, and even rectum so eroded and softened that gentlest manipulation produced laceration or broke down the very feeble adhesions at the sites of impending perforations. I cannot think that liquid introduced into the rectal

or sigmoid gut can be made to reach the cæcum except by the aid of very violent massage.

Co-existence of Enteric Fever and Dysentery.—The co-existence of enteric fever with dysentery was more than once unexpectedly disclosed in our mortuary tent, and I am permitted to state that the medical returns of the hospital will show how very often the two diseases occur, if not simultaneously, within a short interval of one another. When co-existent the cardinal symptoms of either are certainly much modified, and it is in these cases especially that Widal's reaction has been of the greatest service to us.

NOTES ON A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER.

By G. H. PEARCE, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glas.,
Medical Officer and Public Vaccinator, Darton District Barnsley Union; Medical Officer of Health, Darton.

I have been led to offer these few notes of an extremely interesting case, partly on account of its comparative rarity, the disease usually being seen in pregnant women, and also because it occurred in a man living under very healthy conditions, who spent a very active life, mostly in the fresh air. I saw him frequently before he was taken ill, the last time being a week before when he was out walking.

On the morning of June 16th, 1900, I was sent for to see the patient, who was a farmer 33 years of age. His family history was good, and as far as I could ascertain he had never had any illness with the exception of a cold occasionally. He informed me that his brother, two years younger, used to suffer from "the liver," but he had been all right for some years. The patient's wife told me that her husband had complained of feeling tired and exhausted for several days, and had frequently had to come in to rest whilst pursuing his ordinary avocation on his farm. Two days before calling me in he took to his bed, thinking he would be all right with a day's rest, but getting worse they became alarmed, and decided to call in medical aid.

The temperature was 102°; the tongue was dry and baked, reminding one almost of the appearance in some cases of enteric fever; his eyes were glassy and his face slightly flushed; he complained of slight headache and sleeplessness; he also said his throat felt sore, but on looking into it I found very little to account for it. His pulse was 105, but of good tone. The heart was slightly displaced downwards and outwards, and there was a suspicion of a slight murmur at the apex. His lungs were congested at the bases, his respirations numbering 25; he had no cough or expectoration. His abdomen was swollen and tympanitic. The area of hepatic dulness was almost entirely gone, and he had great pain on pressure over both the liver and spleen. The tenderness over the liver got better in two days, but worse over the spleen. He had not vomited, but the bowels had moved naturally. His water contained a trace of albumen, and was highly coloured. He wished for no food, but was very thirsty. He complained of a good deal of pain in the muscles of his legs.

The next day he felt somewhat better, and his temperature and pulse were 100° and 90 respectively; the respirations had also fallen to 20. He passed a fairly good day, but got restless towards night.

The next day he was much the same, but the temperature and pulse were lower.

On July 19th his pulse, temperature, and respirations were quite normal. He, however, could not rest anywhere in the bed, had had a sleepless night, and was slightly jaundiced; he had also vomited several times. His bowels had moved every day, but the motions had gradually got lighter in colour; his urine was also much darker and responded to the test for bile.

On June 20th I was called at 7 A.M., and found him suffering from a violent hæmorrhage from the nose, which had only been going on for about twenty minutes, but during that time he had lost a great quantity of blood. His skin was intensely jaundiced, and numerous small hæmorrhages had occurred under the skin all over his body. He vomited several times during the day, but there was nothing special in its character. The nose was plugged both anteriorly and posteriorly, but the bleeding continued to a smaller extent the whole day.

On June 21st he was much worse, with continued vomiting. Both vomit and motions contained blood. The epistaxis continued the whole day in spite of everything that was done, but towards evening it abated, and finally ceased during the night. The jaundice was intense. The urine contained a large amount of albumen. There was great tenderness over the spleen. The abdomen was not distended. The temperature was quite normal, but his respirations were quicker, there being a good deal of congestion about the bases of the lungs.

On June 22nd he seemed a little better, and said he felt so, but towards night he commenced to ramble, and a man had to sit with him the whole night through, as he wanted to get out of the window, and had several times to be restrained.

He was quite sensible on June 23rd, but was getting perceptibly weaker. I saw him four times that day, the last time in consultation with Dr. Horne, of Barnsley, who concurred in the diagnosis. The patient sank rapidly, and in the afternoon he was speaking to his brother when he suddenly fell back dead. He was quite sensible up to the end. I tried hard to get the relations to allow me to have a small piece of the liver in order to have it examined microscopically, but all my attempts were unavailing. I may add that whatever treatment was resorted to was entirely useless, the case gradually progressing to a fatal termination.

A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER.

By C. T. ANDERSON, M.R.C.S., L.R.C.P.,
Resident Medical Officer, Somerset Hospital, Capetown, South Africa.

This is the first case of acute yellow atrophy which has occurred in Somerset Hospital, and, as far as I can ascertain, in Capetown. The case was by no means typical, and the diagnosis was only arrived at four days before death.

A. E. M., aged 22, was one of the senior nurses at Somerset Hospital. She was a tall, healthy, active girl, and had never been ill before. She was supposed to have had some mental worry, but it was not serious. Her character was irreproachable.

History of Illness.

She returned to the hospital from her annual holiday in the early part of January, 1898, looking as well as usual, but told another nurse that she had slightly hurt her side some days previously, how or to what extent was never discovered. A week later, on January 13th, she was noticed to be quieter than usual, and complained of a headache, but she continued on duty without saying anything more about it. On January 16th she took a pil. col. et hyosc., which acted on the following day, but later in the day she complained of indigestion. On January 18th she was worse and was sent to bed. In the evening she complained of a constant feeling of sickness, with but little vomiting; bismuth and morphine gave no relief. On January 19th, besides the constant retching, she complained of great pain and tenderness all over the abdomen, which was very rigid. On January 20th she was distinctly worse; the vomiting and pain continued, the latter being especially marked in the epigastrium. On percussion it was noticed that there was a marked diminution in the area of liver dulness. After two days constipation, castor oil and several enemata proved all but ineffectual. A vaginal examination cast no light on the subject, although perimetritis was suspected at this stage. The urine on this day became slightly bile stained, and in the evening the patient became mildly delirious. Morphine was injected, but it caused little relief. On January 22rd the urine was found to be very dark indeed, almost black, and it continued very dark to the end. It was found to contain the bile pigment, and salts and a great number of leucin plates, but no albumen, blood, or pus. The specific gravity was 1028.

The patient continued in much the same condition for the next two days, the chief trouble being the constipation. On January 24th a dose of oil and soap enema was followed by a large normal stool, and very soon after the patient seemed much better and brighter, the temperature, which had never been high, fell to normal, the pulse was good, and the pain left her.

On January 26th marked cerebral symptoms supervened. There was a feeling of weakness in both legs, which gradually [illegible] and almost anæsthesia. On January 28th the [illegible] to the hands, and the patient began to wander [illegible] was now quite limited to the area in front of [illegible] liver dulness was still diminished, although [illegible] previously. The diagnosis of acute yellow at[illegible] made. The cerebral symptoms became more marked [illegible] lucid intervals became shorter and [illegible] her on Monday, February 1st, and were [illegible] tose on Tuesday afternoon, and she died in the evening.

Necropsy.

Naked-eye Appearances.—The necropsy was made twenty hours after death. Very little wasting was found, and there was no distension of the abdomen. The mesentery was very yellow, and the whole of the peri-

toneum was yellowish. The liver was the only organ which was at all abnormal; it weighed 50 ozs., and was soft and flabby; the left lobe was very flat, and had a small growth on its upper surface, the size of a hazel nut; the capsule was rough and peeled off easily. On cutting into the liver the cut surface was seen to be covered with reddish and yellow spots irregularly scattered over the surface. The heart, lungs, brain, intestines, kidneys, spleen, suprarenals, bladder and uterus were all normal. The pancreas and end of the Fallopian tubes were found slightly congested, and the gall bladder was empty.

Microscopical Examination.—A piece of the liver was examined by Mr. Pakes, of Guy's Hospital, who reported as follows: "The liver throughout shows granular and pigmentary degeneration; in places the pigmentary degeneration is well marked, and resembles what is frequently found in cases of malaria. In certain areas the liver cells show more advanced changes of fatty and granular degeneration; the outlines of the cells are blurred and indistinct, and the nuclei stain with difficulty or not at all; here and there this change has gone on to the complete destruction of cells. There is no large area of complete destruction, and scarcely any infiltration of round cells, the spaces previously occupied by the degenerated liver cells being occupied with loose fibrous tissue.

There was some doubt whether the case was really one of phophorus poisoning or of acute yellow atrophy. The most careful inquiries, however, were made, and, as far as we could tell, there was no chance of her having either by accident or design taken any phosphorus, nor was there any evidence of this substance in the matter vomited. I am convinced, therefore, that the diagnosis which heads this paper is the correct one.

AN ACCOUNT OF SEVEN CASES OF ACUTE IRRITANT POISONING.*

By W. H. PACKER, M.D., L.R.C.P.,
Cressage, Salop.

HISTORY.

ON SEPTEMBER 27th, 1900, seven members of a family of eight living in a small farmhouse partook of supper at 9 P.M. It consisted of stewed goose giblets to which had been added scraps of goose and slices of beef. During the night following they were all taken violently ill with purging, abdominal pain, and vomiting. The first case began to suffer about midnight and the others soon after. The eighth member of the family, and the only one who escaped, went supperless to bed suffering from toothache.

At first apparently no very great importance was attached to their condition, possibly they were too ill to think, as I was not sent for till after midday, September 28th. When first seen all seven were found to be in a very serious condition. Diarrhœa was profuse, frequent, watery, and smelling horribly. Pain referred to the umbilical region recurred every few minutes, and vomiting was incessant. This had been going on for some hours. The pulse was small and frequent. The history and symptoms clearly indicated some kind of irritant poisoning. The family affected consisted of the widow, A. H., aged about 65, her son and two daughters, the one daughter's husband and two children and the widow's brother.

As the stomach had evidently been very thoroughly emptied already, and as sixteen hours had elapsed from the beginning of symptoms, no antidote was indicated, even if one had been known. Stomachic and systemic sedatives and cardiac stimulants were ordered. One dose of castor-oil was given to each sufferer.

These symptoms continued on September 29th, but were slightly ameliorated, except in the case of the boy aged 14, who was then found markedly collapsed, with cold extremities, imperceptible pulse, and delirium. He rallied somewhat after a hypodermic injection of strychnine gr. $\frac{1}{30}$. His condition varied slightly, sometimes better, sometimes worse, but with a steady downward tendency, until October 4th, when he sank. The hypodermic injections of strychnine were given two or three times during each twenty-four hours, and apparently kept him alive. Towards the end the vomiting and diarrhœa almost ceased, and he drank greedily of water, but was with difficulty induced to take milk and eggs in very small quantities.

The widow, A. H., seemed to be doing fairly well until the morning of September 30th, when the pulse was noticed to be irregular and intermittent. On October 1st she was collapsed, cold, and delirious, and the radial pulse was not to be made out. Strychnine was given hypodermically, and free stimulation was resorted to, but she sank rapidly during the night.

The others continued in much the same state, though luckily with no collapse, for some days, when the pain and vomiting ceased, and the intestinal flux was stayed. The temperature ranged from normal to 103° F. at various times and in the different cases. It fell below normal in the collapse stages. At the date of writing (October 18th) the survivors are about again, but still feeble. The granddaughter, aged 13, had stomatitis after the other symptoms had abated, but it soon yielded to treatment, and the brother, a man of 50, is suffering from congestion about the rectum, with a small but very painful fissure. It is to be noticed that the deaths occurred in the case of the oldest and the weakest (the boy was always weakly), and was due more to exhaustion than to the immediate action of the poison. The boy is also said to have eaten very heartily of supper. The fact that the first symptom of mischief in each case was diarrhœa, rapidly followed by pain and vomiting, is worthy of note.

The patients were seen several times daily by my colleague (Dr. J. F. Fernie) and myself, but although we discussed the probabilities of many irritant poisons, we failed to recognise symptoms pointing to any particular one, unless it were an animal toxin. The history points undoubtedly to an irritant poison taken at the supper of giblets. The only member of the family who escaped the attack had no supper. The bread and the beer taken at that meal may be excluded, as others ate of the former without harm, and several sufferers had no beer. A workman who did not live in the house partook of dinner with them and was not a victim, whilst A. H., who had her midday meal from home, suffered. This still further narrows it down to the supper.

It is therefore essential to further consider the history of the incriminated giblets and gravy. The ancient festival of the harvest home is still continued in this village, the amusements being in common, but food is provided in each farmhouse for its own workpeople.

At a certain farmhouse (W.'s) three geese were killed, and the patient A. H. assisted her neighbours to prepare and cook them. The giblets were stewed on September 26th, about 6 P.M., and partaken of by W.'s family. The geese were cooked the following day and placed before the workmen about midday; no one was ill after either of these meals. A. H. was given a portion of the giblets cooked on the previous day, consisting of gizzard, etc., with the giblets gravy, and pieces of goose and slices of beef also were placed in the same china dish. She took this home with her about 2 P.M. on September 27th, and placed it in her pantry. This concoction was produced at supper, not having been recooked, and was eaten cold.

NECROPSY.

A *post-mortem* examination was made by Dr. Willoughby Gardner by order of the coroner. Intense congestion of the intestines and stomach was found. The kidneys were small and the heart flabby. No indication of any special poison was found. The stomach was tied at both ends, as were pieces of large and small intestine, and, together with the liver, were sent to the analyst.

Mr. Blunt, an experienced county analyst, was unable to find any poison either in the remains of the supper or in the viscera of the deceased woman. Ptomaines were not looked for, as they would necessarily have been present in the then condition of the tissues and would have proved nothing. Nevertheless, it seems to be narrowed down by a process of exclusion to the so-called "ptomaine poisoning." This, I am told, is not a scientific term, but I understand it to mean the toxin or animal alkaloid formed by the multitudinous and unrecognised germs which usually lead to putrefaction and are generally present in decaying animal matter.

COMMENTARY.

Although animal matter has been known for many years to produce, after undergoing certain unknown changes, on rare occasions illness and death, as far as I can ascertain the bacteriologist has not yet succeeded in isolating either the special toxin or the virulent bacterium that is responsible for its manufacture. Gaertner in 1888 isolated a bacillus (B enteritidis) from the meat and spleen of a diseased cow, from eating the flesh of which a man had died. This closely resembled a typhoid bacillus. He remarks that it acts most

* Read before the Shropshire and Mid-Wales Branch of the British Medical Association.

strongly on the intestine, and that there is desquamation on recovery. This was so in my cases, the desquamation being strongly marked in the little girl. Durham and others have found bacilli after meat poisoning since Gaertner's cases, but these differ slightly, and probably belong to different groups. Klein found a bacillus (B. enteritidis sporogenes) in rice and milk puddings that were said to have given diarrhœa to the whole of the patients in a hospital ward. Gaertner mentions that his bacillus causes illness after 24 hours, but that the toxin acts much sooner.

Unfortunately these changes in food can occur without being perceptible to taste or smell. Twenty-seven hours elapsed from the cooking of the giblets to their consumption by my patients at 9 P.M. When eaten immediately after preparation they were shown to be harmless. The gravy would make an excellent culture medium, and we are told that the bacilli begin to increase and multiply in half an hour, and may have 17 million lineal descendants in twenty-four hours. Presuming that in some unexplained manner one germ inoculated the medium soon after it had cooled sufficiently, there seems time for the stew to have become poisonous before it was consumed by the sufferers.

I would draw special attention, from the diagnostic point of view, to the fact that diarrhœa was the first symptom, and that desquamation occurred during convalescence.

The coroner's jury, after an exhaustive inquiry, found a practically open verdict of "accidental poisoning."

A CASE OF LEAD POISONING BY BEER.

By E. RICE MORGAN, M.R.C.S.Eng.,
Morriston, Glamorganshire.

The following notes of a case in which lead was absorbed by a person drinking beer which held small quantities in solution, and which eventually caused death, seem to be worthy of record.

W. O., aged 43 years, a wheelwright and carpenter in a tin works, came under treatment first on May 2nd, 1898; the diagnosis then was gastric catarrh. He improved, and was not again visited till May 16th, when he got much worse, and I find my assistant then changed the diagnosis to hepatic disease. Early in June I saw him. As he was emaciating rapidly and as he could not retain much food, I was inclined to look upon the case as one of carcinoma of the stomach. On June 17th we called into consultation Dr. T. D Griffiths (Swansea), who could arrive at no definite conclusion; there were no physical signs to point to cancer, still it was not excluded. At this time there was great prostration and general muscular trembling; he could not stand, he could not lift a cup with his hand, and had scarcely sufficient control of the facial muscles to speak; there was constant vomiting, persistent constipation, pains all over, and progressive loss of flesh. On July 4th, after very thoroughly going over the case I felt that there ought to be a proper explanation of the great muscular weakness as well as the marked nervous depression, and I then for the first time examined the gums, when at once the explanation of everything became plain, for there was a very decided blue line. As I have held appointments to lead works and spelter works for some twenty years it is a matter of surprise to me that I did not detect the nature of the case much earlier. The only explanation I can give is that as this man worked in a tin-plate works I was put off the scent, whereas I have little doubt that had he come from one of the spelter works I would have jumped at the cause at once. At the end of July his friends persuaded him to go into the Swansea Hospital, where my diagnosis was confirmed.

The difficult question arises, how this man with a very healthy occupation came to absorb so much lead. Every possible source at his home had to be excluded, but a hint was given me to the effect that he was rather fond of his pint of beer. Though I little anticipated I should discover anything at the public-house where he was in the habit of calling for his beer, still I deemed it well to go and see the place. I asked the landlady in her bar which beer this particular man usually drank, and she showed me the tap which drew the beer up from the cellar in leaden pipes. I was allowed to inspect the cellar, and there were two sets of leaden pipes very old and much worn, and the distance from the cellar to the bar was at least 20 feet. From the landlady I gleaned another most vital bit of information, which was that this man very "commonly," or, as it should be read, "daily," called for his pint of beer early in the morning—before breakfast, in fact—on his way to or from his work, and that he generally was the first to get the "draw" through one of these leaden pipes. I asked her if she would allow me to have, say, a pint drawn the first thing in the morning from these pipes, and allow an analysis of it to be made. She readily assented to this, and on the following Sunday morning I sent my groom with two large bottles, and told him to witness where the beer was drawn from. About a pint from each tap was drawn, and this was sent the following day to Mr. Seyler, Public Analyst to the county borough of Swansea, who on July 13th, 1898, reported that both samples contained lead in solution.

I had earlier sent off a sample of the patient's urine to the Clinical Research Association, London, S.E., and they reported the unquestionable presence of lead in the urine.

I think, therefore, that I have proved that this man was unquestionably suffering from the presence of lead in his system, that the evidence is fairly conclusive that he was in the habit of drinking beer early in the morning at this inn, and that by drinking the "first draw" of beer in the morning he ran the risk of taking a certain quantity of lead daily. He lived for years in the same house, he worked for years in the same works, and he passed this public-house some half a dozen times a day. I am fully satisfied that this beer was the source of his lead poisoning.

He remained some time at the hospital. When he came out he was still very weak, and scarcely able to walk. He was again confined to his bed in November, the main symptoms being much the same—great prostration and muscular tremors. Towards the end of the month he got a little better, and was able to get out a little; and from this date I lost sight of him as far as treatment was concerned.

As naturally follows in such chronic cases I found he was trying treatment elsewhere, but from occasionally meeting him out of doors I could see that he was making no progress, and the last I heard of him was that in the following January he fell down in a fit and lingered a few hours before he died. This is not an infrequent ending of cases of lead poisoning—the patient suddenly has a convulsive fit, which, with intermissions of 15 to 20 minutes, may go on for hours, but death nearly always follows in less than 48 hours.

If in this case it has been demonstrated clearly enough that the lead from the pipes from which beer is given to the public to drink is to be found in sufficient quantity to lead to lead poisoning and subsequent death, surely it is full time the public should be made thoroughly aware of the fact. I have heard of cases of men at large hotels complain of the first "draws" of beer in the morning that it does not taste nice and that it often will not stay on their stomachs—lucky for them that it does not stay there—but I have never heard of or read of a death from such a cause as this.

NOTES OF A SERIES OF CASES OF GLANDULAR FEVER OCCURRING IN EPIDEMIC FORM.

By LESLIE DURNO, M.D.,
Stoke Newington.

During the months of January, February, and March, 1900, a number of cases came under my notice presenting symptoms and a history very similar to those first described by Pfeiffer in 1889, and called by him "*Druesser Fieber*," and subsequently recognised by Dr. Park West and Dr. Dawson Williams.

With the exception of an adult, a mother who had nursed three of her children through the same illness, the ages of the victims ranged from 2½ to 13 years.

In every household in which the malady appeared very few of the younger members escaped.

The symptoms, physical signs, and general condition of the patients were practically the same, though differing very much in severity. There were no premonitory symptoms, the ill-

ness commencing with headache, nausea, and sickness, pain in one side of the neck, and in by far the greater proportion the left side. Head turned towards painful side, and pain on moving or raising head from pillow. Temperature ranging from 100° F. in the milder to 105° F. in the more severe types. Pulse-rate high. Respirations quickened. The tongue varying from moist to dry and brown, according to the severity of the attack. Constipation was the rule, with pale stools. Convulsions ushered in the attack in two of the cases.

From 12 to 36 hours after the onset there appeared a distinct and definite swelling on the affected side of the neck, generally under the anterior edge of the sterno-mastoid muscle. In a few cases in the anterior triangle. On palpation the swelling proved to be a group of from three to five lymph glands, ranging in size from that of a pea to a walnut; very tender; separate, and quite movable. There was very little subcutaneous puffing around the glands, no redness of the skin over them, and no tendency to suppuration. In about one-third of the cases from the fifth to the seventh day the corresponding glands on the opposite side of the neck were similarly attacked, though much less severely, but always accompanied by an aggravation of the general symptoms.

In a few cases the posterior cervical glands were enlarged, and in three cases the inguinal glands. In a large proportion there was general tenderness over the abdomen, presumably due to an inflamed condition of the mesenteric glands, though none could be definitely palpated. In most of the cases the glandular swelling disappeared during the third week.

Except in the very mild types, there was well-marked increased hepatic dulness and tenderness. In a few cases there was tenderness over the spleen. In every case there was a peculiar deep purplish blush extending over the mucous membrane of the fauces, tonsil, and pharynx of the affected side, contrasting markedly with the healthy side. There was very little œdema of the mucous membrane, except in the worst cases, and in those the throat symptoms were more pronounced. Dysphagia was present in all, but more marked in some.

There was no evidence of any nasal discharge, though in a good many cases a nasal tone was developed towards the end of the first week. Slight deafness on the affected side was common, and in a few cases earache. In two cases acute otitis media occurred as a complication towards the end of the illness.

No special pulmonary symptoms were observed. Urine was highly coloured and apparently normal, except in two cases in which hæmorrhagic nephritis was developed as a complication.

About the end of the first week in most cases the previously existing constipation was replaced by diarrhœa, with slimy stools varying in colour from pale yellow to dark green, and very offensive. The onset of the diarrhœa seemed to mark a crisis, for in all the cases except those with complications there was a distinct improvement in the general condition of the patient. Nausea and sickness were specially prominent symptoms during the first stage, and in not a few cases persisted more or less during the whole illness.

Acute anæmia developed very rapidly, and in the worst cases was extreme. Convalescence in the majority started between the second and third week of the illness, was very protracted, even in the mild types, out of all proportion to the severity of the attack. There were no deaths.

So far as I am aware, the pathology of the disease is still unknown. That it is highly infectious—specially attacking the lymphatic glands—and is almost entirely confined to childhood, there can be no doubt. It has been suggested that the most likely centre of infection is the intestinal tract. The peculiarly disturbed condition of the mucous membrane of the fauces, tonsil, pharynx, and also in many of the cases that of the nasopharynx, Eustachian tube, and middle ear, and the very early inflamed state of the cervical glands seem to point to the throat as the most probable primary region of infection.

Sodium salicylate, with one or two calomel purges in the feverish stage, arsenic and iron during convalescence appeared to give good results. It would seem that an important element in the treatment is to maintain as thorough an antiseptic state of the mucous membrane of the throat and pharynx as possible. In a few of the earlier cases this precaution was neglected, and it was in two of these that otitis media occurred. Either a spray of 1 in 5,000 mercuric perchloride or a swab of glycerine and carbolic acid was used to disinfect the throat. This had the effect of checking any further trouble in the middle ear.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

THE "HEPATIC ODOUR" IN ABSCESS OF THE LIVER.

IN an interesting article on hepatic abscess, published in the BRITISH MEDICAL JOURNAL of September 1st, Mr. Johnson Smith gives a summary of the symptoms met with in cases of this disease, and truly remarks that the difficulties in diagnosis are considerable. There is one symptom which I have several times noted, but which I have never seen referred to by any writer, and that is "a strong hepatic odour from the patient."

No doubt this symptom would be most likely present only when there was an abscess of considerable size present, and therefore its value may not often be very great. Still in a patient who had suffered and had been treated for chronic diarrhœa of two months' standing, the presence of this smell guided me to suspect the liver, and as the temperature was subnormal and the liver very slightly enlarged, the medical attendant had not considered the liver at all affected. I tapped and afterwards evacuated the abscess, which was rather a large one. In hospitals so well ventilated and open as ours in Bombay it is very difficult to detect the odour, but I have done so and pointed it out to my colleagues and class. In a small, close room such as the poorer class natives inhabit it is often easy to at once perceive the odour, especially when the clothes are turned down for examination purposes. It would be interesting to me to know whether others have had a like experience.

W. K. HATCH, F.R.C.S.,
Bombay. Lieutenant-Colonel I.M.S.

LAPAROTOMY FOR INTESTINAL OBSTRUCTION REPEATED WITHIN SEVEN MONTHS.

ON April 21st, 1899, I received a telegram from Dr. Humphry, of Kurseong, near Darjeeling, asking me to go there prepared to operate on a case of intestinal obstruction. On arrival I found the patient, a young lady of 28, with all the symptoms of an advanced stage of obstruction, such as collapse, intense pain in the abdomen, which was distended, and constant retching. Assisted by Dr. Humphry and Dr. Seal, I opened the abdomen by the usual median incision, and found about 6 inches of the small intestine contracted to about the diameter of a lead pencil, the part above being greatly distended. No constricting band could be found. After pressing the contents of the upper part of the bowel through the constricted portion the incision was closed in three layers, and she made a good recovery. But about three months later she began to complain of abdominal pain, which felt, she said, as though "something was drawing the cicatrix backwards to the spine." I heard no more of her until November 5th, when Dr. Humphry telegraphed again under the same conditions as before, but as I could not go to Kurseong he brought the patient to me, and on November 6th I again opened the abdomen through the former cicatrix. I hoped the operation might have thrown some light on those abdominal pains of obscure origin which are not uncommon in the after-years of patients who have undergone abdominal section; but it did not do so; no bands or adhesions were found, and the condition of things was a precise reproduction of that found at the previous operation—namely, extreme contraction or collapse of a few inches of the small intestine. Again she made a quick recovery, and there has been no return of abdominal pain since the second operation. Of the anatomical cause of the obstruction nothing definite can be stated further than to say it was not due to either a band or an opening in the mesentery, nor did the constricted part of the intestine appear to lie in a retroperitoneal pouch. Hence one is almost driven to conclude

that obstruction may be caused by spasmodic contraction of the gut itself. The history of the first attack is suggestive, as it came on after an effort to carry upstairs a housekeeper who had supped not wisely but too well.

J. Lewtas, M.D Lond.,
Welbeck Street, W. Lieutenant-Colonel I.M.S.

THE TREATMENT OF DIPHTHERIA BY IODINE.

It is now more than a quarter of a century since I began to treat this disease with iodine. I was led to do so by reading the report of some cases in the *Lancet* by Dr. Waring-Curran. During my professional career I have had a great number of cases to treat, and my faith in the curative power of iodine is very great, for since I adopted it my fatal cases have not numbered more than two. I regret that I have no record of the exact number of cases, but amongst them there have been severe and mild ones occurring in young and old.

On being called to a case I generally give a good dose of calomel. I paint the throat, tonsils, back of pharynx and uvula well with the tincture of iodine by means of a camel's hair brush or a swab of cotton wool, and I advise the repeated inhalation of the tincture of iodine in hot water—about one teaspoonful of the tincture in a quarter of a pint of hot water—for about five minutes at a time every half hour or so, or even in severe cases more frequently.

The good effect of this is soon seen by the quick arrest of the fœtor of the breath, and in a short time by the peeling off of the membrane. The inhalation must be well done; and I advise my patients to inhale through the nose and throat, by which means the vapour of the iodine is thoroughly carried through the nasal passages and throat to the lungs, etc.—a most important matter.

I saw a very severe case some short time ago late at night, and fortunately I had with me some tincture of iodine which I promptly applied without dilution to the back of the patient's throat, uvula, pharynx, and tonsils, and told him to inhale repeatedly the iodine vapour. The next day I went prepared to inject antidiphtheria serum, but I found him so much better that it was unnecessary to do so. The membrane had nearly all peeled off the parts attacked, and he expressed himself—to use his own words—"a different creature." I advised him to continue the inhalation, but not so frequently, and painted his throat again. He soon got well. In addition to this treatment, I always give quinine and the tincture of the perchloride of iron, brandy and port wine as required, with plenty of beef-tea and such things. I also sometimes give small doses of the tincture of iodine internally, but I do not often find this necessary, and volatilise on a hot shovel some grains of iodine for disinfection of the air in the room. I believe it is owing to the strong deodorising, antiseptic, and disinfectant properties of iodine that such good results accrue from its use.

I am one of those who entertain the belief that diphtheria commences in the throat, and that the general system is rapidly affected afterwards, thus necessitating the prompt application of treatment to the membranous exudations on the fauces, so as to prevent as much as possible the infection of the whole system.

Wroxham. Hugh Taylor.

CASE OF BULLOUS URTICARIA.

On October 16th I was called to see Mrs. D., aged 35, who gave a history of having on the previous night eaten some cod-fish for supper. Almost immediately afterwards she complained of discomfort about the eyes and itching of the face. When I saw her she had developed a marked urticarial rash over the upper extremities, face, and upper part of the trunk. This was soon followed by the appearance of large bullæ on the lobes of both ears and on the wrists and forearms, simulating closely the effects of a scald. The eruption also severely affected the mouth and pharynx, so that she could scarcely swallow, and the lips were excoriated and covered with blood. The highest temperature reached was 103.6° F. There were innumerable small vesicles, which were distinctly seen to rise from the original urticarial wheals, so that there was no question of pemphigus. The itching was very great at first, giving way later to severe burning, and she could hardly bear the touch of the bedclothes. There was much œdema about the eyes, which discharged freely, and a quantity of offensive matter came from the mouth. I can find the condition pictured in Hebra's *Atlas* only.

Hatcham, S.E. Sidney H. Carr, M.D.Edin.

LIQUOR THYROIDEI IN HÆMOPHILIA.

In 1898[1] I reported a case of hæmophilia in a girl of 8 years of age who had had from infancy very extensive hæmorrhages every two or three weeks from the mucous membranes of the digestive tract. Iron, cod-liver oil, sulphuric acid, calcium, and arsenic all failed to have any effect, and I had ceased trying any drug when my attention was drawn to the fact that Delace had given thyroid in one case with success. I tried it in my case, giving 4 minims of liquor thyroidei three times a day, beginning on May 1st, 1900; there was a slight hæmorrhage a fortnight later, but none since. She continued taking the drug for six weeks; since then there has been no return of the bleeding, and the child looks far healthier and stronger than she ever did before. There seems little doubt that this good result is due to the thyroid treatment.

Bunbury. C. Royds Jones.

APOMORPHINE AS A HYPNOTIC.

The summary of Douglas's paper in *Merck's Archiv*, published in the Epitome of the British Medical Journal for October 20th, par. 173, recalls an experience of the hypnotic properties of apomorphine which may perhaps be of interest.

Some little while ago I was called to see a middle-aged woman who, by her excitable and restless behaviour (due to alcohol) was causing no little inconvenience to those in her immediate neighbourhood. As a first step I deemed it would be advantageous if she and some of her unabsorbed alcohol could be made to part company. To this end I decided to administer apomorphine, declining the siphon from, I fear, not altogether disinterested motives. A hypodermic injection containing gr. $\frac{1}{5}$ of this drug was accordingly given. The expected, however, did not occur. In about twenty minutes she was quietly sleeping, much to the relief of her friends and the surprise of her medical attendant.

The dose, it will be noticed, though smaller than usual, is yet double that mentioned in the paper referred to above, and its hypnotic effect in this case is rendered the more curious by reason of the fact that so far from aiding the ineffectual retching which was present, this latter was quelled by its exhibition.

Sheffield. E. W. Adams.

A CASE OF COMPOUND DISLOCATION OF THE WRIST.

A young man in emptying a cart of coal was lifting up the front end of it, when the horse quickly plunged forwards, whereby the weight of the coal and the moving cart was thrown with great force upon the palm of the right hand; as the elbow was fixed on the shaft, a compound dislocation of the wrist resulted.

When I saw the case I found the lower ends of the radius and ulna partially denuded of periosteum projecting $4\frac{1}{2}$ inches into the palm of the hand. There was great hæmorrhage and considerable laceration of muscles and ligaments. The lower end of the radius and ulna were in fact stripped of all muscular and ligamentous attachments, and looked as if they had been scraped.

The parts were washed well with a strong solution of creolin and the dislocation reduced under chloroform. The lacerated and torn muscles, nerves and tendons were brought together with catgut and the skin sutured. Free drainage was provided for, and the parts well dusted with boric acid and dressed with carbolised gauze and the whole arm put into splints.

The parts healed by first intention, and at the end of three weeks massage and passive movement were regularly persevered in, with the happiest results—a perfectly movable joint with no deformity.

Newcastle-on-Tyne. Wm. Tiplady, L.R.C.P.E.

[1] British Medical Journal, October 1st, 1898.

The trustees of the Gesto Hospital, Edinbane, Isle of Skye, have appointed Dr. Alfred Charles Sandstein Resident Medical Officer. The Gesto Hospital is the only one of the kind in the Isle of Skye, and it ministers to a wide district.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

STATION HOSPITAL, DEOLALI.

ENTERIC FEVER ASSOCIATED WITH MALARIA.

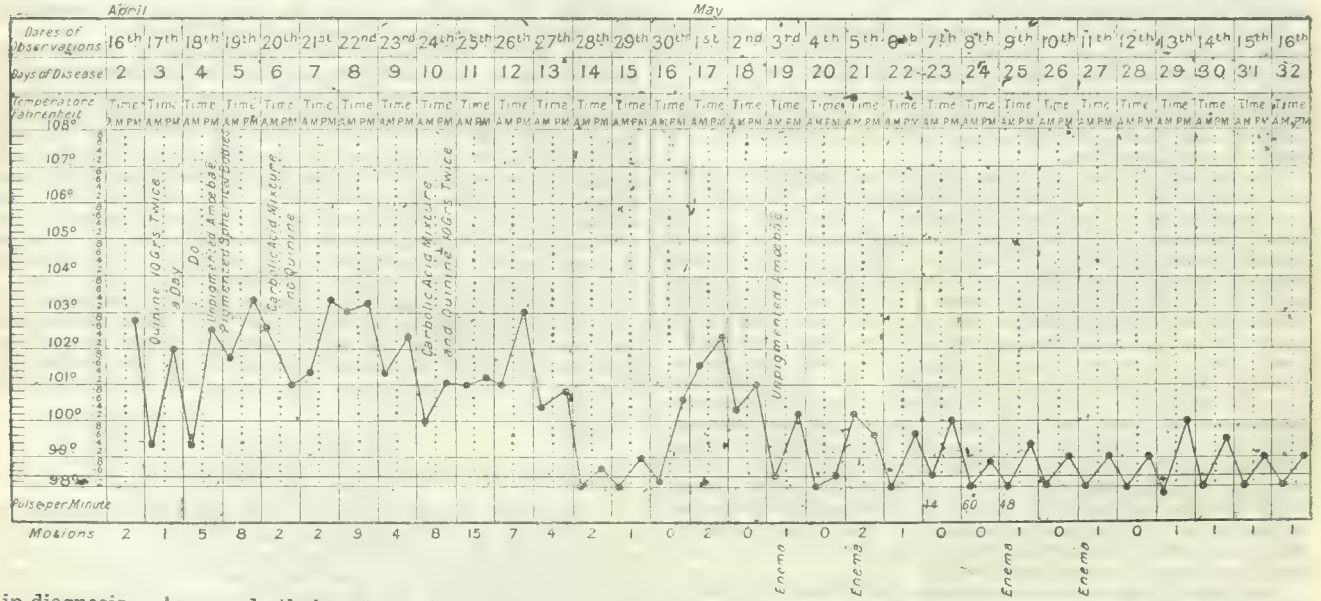
(Reported by J. G. McNAUGHT, M.A., M.D., Capt. R.A.M.C.)

THE following cases may prove of interest in connection with the case reported by Major M. T. Yarr, R.A.M.C., in the BRITISH MEDICAL JOURNAL of September 8th, 1900. The first of the cases is alluded to in an article on the examination of the blood in malarial fever, which I contributed to the BRITISH MEDICAL JOURNAL of September 26th, 1896. In the *Journal of Tropical Medicine* for August, 1900, there is a case reported by Dr. Rho, in which Widal's test gave a positive reaction, and in which the malarial parasite was found in the blood during the course of the fever.[1] The two cases I am now reporting occurred before I had begun to use the serum test in diagnosis. As regards their nature, they formed two of a group of five cases of continued fever which occurred in the same detachment of men occupying the same barracks. The remaining cases presented the clinical features of enteric fever—in all of them rose spots, enlarged spleen, and diarrhœa were present; in the one case which proved fatal the characteristic lesions of enteric fever were found *post mortem*.

CASE I.—Lance-Corporal A. S. was admitted to the Station Hospital, Deolali on April 4th, 1896, the day after his arrival in the station. He had been feeling out of sorts for two or three days, and complained of headache and diarrhœa. He was thin and anæmic, and his medical history sheet showed several admissions for malarial fever. On April 18th I examined a drop of blood from the finger, and found a few free pigmented spherical bodies and some unpigmented intracorpuscular amœbæ. On April 19th his tongue was rather dry, furred in the centre and red at the edges. The abdomen was slightly distended, but no rose spots were noticed. He still complained of frontal headache. On April 20th his tongue presented appearances suggestive of enteric fever; the centre showed a strip of whity-brown fur, while the tip and edges were very red. Diarrhœa was rather severe (eight loose stools in twenty-four hours), and persistent frontal headache was complained of. Since admission he had been taking 10 grs. of quinine twice a day without any effect on the course of the temperature: the quinine was now discontinued, and he was put on a carbolic acid mixture. On April 21st it was noted that he had passed a restless night; the diarrhœa had ceased, the number of motions having fallen to two in the twenty-four hours. The subsequent notes are as follows: April 22nd. Restless and delirious during the night; slept towards morning. No rose spots have appeared, spleen not palpable, lungs normal. April 23rd. Slept fairly well, but diarrhœa again excessive; had seven fluid slate-coloured stools during the night. April 24th. From to-day 10 grs. of quinine were given twice a day in addition to the carbolic acid mixture. Tongue still furred in the centre and red at the tip and edges. Abdomen slightly distended; no rose spots noticed. April 26th. Passed a very bad night; delirious. Motions very frequent, small, mixed with a little blood and slime. He suffers from piles. April 27th. Had a fair night's rest, and feels much better. Tongue moister; diarrhœa less frequent. On April 28th the temperature reached normal, but rose again two days later. May 3rd. The temperature has been elevated for the last three days, but is normal this morning. He is now constipated. Blood from finger examined; a few unpigmented intracorpuscular amœbæ found. From this date the patient continued to improve, the tongue became moist and gradually cleaned; he was allowed up on May 26th, and left hospital on June 20th. His temperature chart shows that from May 18th the temperature was normal both morning and evening.

CASE II.—Private J. McG., South Lancashire Regiment, aged 25, was admitted to the Station Hospital, Deolali, on April 30th, 1896, a few days after his arrival in the station. He had been suffering from headache, fever, and general *malaise* for some days. On admission he still had fever, headache, and diarrhœa; his tongue was furred in the centre, and red at the tip and edges. The course of the temperature was irregular, suggesting a malarial element in the case. Two successive crops of rose spots appeared on the chest and abdomen in the course of the fever. During convalescence he had several attacks of ague.

Blood from the finger was examined on these occasions, and large numbers of pigmented, intra-corpuscular amœbæ found; the amœbæ were large, and the infected corpuscles pale and swollen, the type of fever being, therefore, the "mild tertian."



SALISBURY INFIRMARY.

CALCULUS IN THE BLADDER WITH A FLEXIBLE CATHETER AS THE NUCLEUS: SUPRAPUBIC LITHOTOMY.

(Under the care of HARCOURT COATES, M.R.C.S., L.R.C.P., Senior Honorary Surgeon to the Infirmary.)

S. L., aged 42, male, was admitted into the Salisbury Infirmary on February 24th, 1900, complaining of difficulty in micturition with much pain. Two years previously he received a severe blow on the right side of the head causing complete insensibility for three days. Four months after he had "some sort of fit," which left him partially paralysed on the left side but did not render him unconscious. Three attacks of this nature occurred. He was found to be partially paralysed on the right side throughout. His mental faculties were not impaired. He complained of difficulty in micturition, with incontinence of urine, pain at the end of the act of micturition along the urethra. The urine was alkaline, contained some albumen, much phosphates, and some pus.

On March 15th I passed a sound into the bladder and detected a large calculus. It was difficult to pass the sound as he had a stricture of the penile portion of the urethra and another just anterior to the triangular ligament.

On March 16th I opened his bladder suprapubically, and removed a very friable phosphatic calculus weighing rather over 2 ozs., with many smaller calculi and phosphatic concre-

[1] *Journal of Tropical Medicine*, August 15th, 1900, p. 3.

tions. The large stone was surrounding the centre of a gum-elastic catheter between 5 and 6 ins. in length. There was much hypertrophy of the bladder wall, and it was so rotten that it tore away from the forceps when brought up to the surface wound for the purpose of washing it out.

By April 14th the wound was healed with the exception of a small sinus, and the urine had an acid reaction and contained no pus or blood.

Remarks.—The following history has recently come to light. During his insensibility from the accident the patient had retention of urine and was frequently catheterised, and there is a suspicion that a flexible catheter was tied into the bladder. This catheter evidently slipped, and it was not found until two years afterwards when I opened the bladder. The vesical symptoms dated from a month after the first time a catheter was passed.

HOSPITAL FOR WOMEN AND CHILDREN, LEEDS.

A CASE OF CÆSAREAN SECTION FOR CONTRACTED PELVIS: RECOVERY OF MOTHER AND CHILD.

(By E. O. Croft, M.D., M R C.S., Honorary Surgeon to the Hospital, and Demonstrator of Obstetrics in the Yorkshire College.)

History.

T. G., aged 20, married, was delivered in May, 1899, of a still-born fœtus at the sixth month of pregnancy with considerable difficulty. On June 16th, 1900, she sent for Dr. Waddington, who found her at the full term of pregnancy, but not in labour. Recognising the condition of affairs, Dr. Waddington decided to await the first indications of labour as the most suitable time for operation. Early on June 20th labour was threatening, and the patient was sent to the hospital and prepared for operation.

Condition on Admission.

No active pains were present, but she stated that they had occurred during the day, and that there had been a blood-stained watery discharge. The cervix was relaxed and dilatable, but not actually dilated. The membranes were not ruptured, and did not bulge into the cervical orifice. The vertex presented at the brim. The fœtus lay in the right occipito-posterior position and was living. The patient showed obvious signs of rickety deformity. Her height was 4 feet 9 inches. There was marked antero-posterior curvature of both tibiæ. The pelvis, which was much deformed, measured as follows: Between iliac crests, 10½ inches; between anterior superior spines, 9⅛ inches; external conjugate, 6¼ inches; diagonal conjugate, 3 inches.

In the rickety pelvis the difference between the diagonal and true conjugate is rather more than half an inch owing to the increased depth of the symphysis and the relatively greater distance of the lower margin of the symphysis from the sacrum. The true conjugate in this case would be therefore estimated at something less than 2½ inches. The treatment lay between craniotomy and delivery by abdominal section in some form. Symphysiotomy in a pelvis showing general contraction with a conjugate of less than 2½ inches would be inadmissible.

Operation.

The time and conditions being favourable for the conservative operation (Cæsarean), this was recommended and consented to by the patient. After the usual preparations the patient was anæsthetised with ether. The abdomen was opened as usual, the incision extending about 3 inches above and 3 inches below the umbilicus. The edges of the wound were well wrapped in folds of sterilised gauze, and pressed down against the uterus. A rubber tube was slipped over the fundus and placed round the cervix in case of emergencies (Porro) but was not employed. Owing to difficulty in fixing the uterus in an exactly symmetrical position, the uterine incision of about 5 inches was made slightly to the left of the middle line. The membranes at once bulged and were punctured, the liquor amnii escaping. The incision was found to have just missed the edge of the placenta, which was attached to the left and posterior part of the uterus. The left buttock presented, and the fœtus was easily delivered head last. The cord was clamped, and the child kindly taken in hand by my senior colleague, Professor Wright, who was present, and who soon established the breathing and crying functions of the fœtus, who was a healthy, well developed female child weighing 6½ lbs.

The placenta and membranes were removed by the hand. The uterus was then brought out of the abdomen wrapped in sterilised gauze and grasped by the hand to promote contraction and hæmostasis. During the suturing of the uterine wound it was found convenient to control the bleeding from the cut edges by compressing the vessels in the broad ligaments by means of digital pressure, a thumb on one side and fingers on the other side of the cervix. The uterus was felt to be empty, and after mopping its cavity a strip of iodoform gauze was passed downwards through the cervix into the vagina to ensure drainage.

Eleven silk sutures were passed about one centimetre apart deeply through the uterine wall, avoiding the lining membrane. These were tied and the ends cut short. The peritoneum was then accurately brought together by picking up a fold from each side of the wound in Lembert fashion, and uniting them over the line of deep sutures so that the knots of the latter were completely buried. For this purpose some fifteen interrupted sutures of catgut sterilised in xylol and absolute alcohol were used instead of silk. It was found quite easy to draw the folds of peritoneum across without resorting to any means for separating the layers from the uterine tissue or incising the latter as originally suggested by Sänger. The uterus was thoroughly cleansed and returned into the abdomen and the peritoneal cavity dried with sterilised gauze pads. The abdominal wound was closed in three layers. A running suture of gut taking the peritoneum in one layer and the aponeurosis in the next, a row of interrupted silkworm gut sutures closed the superficial parts.

After-History.

For about a week after the operation the patient caused some anxiety owing to an attack of bronchitis with congestion of the bases of lungs, probably associated with etherisation. This, however, cleared up, and by the ninth day the temperature had become normal, the wound was dressed for the first time and found to have healed. The secretion of milk failed, but in other respects the puerperal and surgical aspects of the case were perfectly normal. The patient was kept in bed a month and returned home with her child a few days afterwards. Both were well when seen four months later.

MISSION HOSPITAL, JALALPUR, JATTAN, PUNJAB.

CASE OF URINARY CALCULI LODGED IN THE VAGINA; AND A CASE OF SUPRAPUBIC LITHOTOMY FOR A LARGE STONE.

(Reported by H. F. Lechmere Taylor, Surgeon to the Hospital.)

The patient, a Hindu girl, apparently aged about 15 years, was brought to the hospital on February 2nd, 1899, in a semi-conscious condition and an extreme stage of emaciation. The parents, who were very dull mentally, stated that a stone had been removed four years before, but could give no information as to the operation. The patient was suffering from diarrhœa and incontinence of urine, and there was a foul greenish mucous discharge from the vagina. On passing the sound a stone was felt within half an inch of the meatus; an attempt to grasp it with dressing forceps was unsuccessful. On passing the finger into the vagina a stone the size of a walnut was encountered. The vulva was slightly incised in the middle line posteriorly, and the stone removed with lithotomy forceps. Behind it were found four others packed into the fornices of the vagina, which were widely distended, the whole canal being tubular, with the os palpable as a dimple in the roof. The patient appeared to be moribund, but gradually rallied after a hypodermic injection containing 5 minims of the liquor strychninæ. Owing to her general state no further attempt was made to explore the local condition. During the next eighteen hours two enemata were given containing an egg beaten up in milk, with bovril and some alcohol. Next morning she began to take food by the mouth. The stones were rounded in shape, facetted, evidently largely composed of lime salts, and weighed altogether 2 ozs. 100 grs. A superficial sloughy ulceration set in, which was treated by frequent antiseptic syringing and dusting with iodoform and boric acid. On the sixth morning, on removing a slough,

another stone was revealed. Chloroform was given, the stone removed, and a thorough examination made. The septum between the vagina and urethra was absent except at the meatus, where a ring about ¼ inch broad remained. Between the neck of the bladder and the os cervicis was found an irregular circular opening with thickened edges—a vesico-vaginal fistula, which admitted the index finger. The bladder was empty. The sixth stone weighed 1 ounce 45 grs. The patient made no headway, and on February 10th a dome-shaped slough, about the size of half a goose's egg, was removed from the vagina. She died early on the morning of February 12th.

In the second patient, a man aged 20, a large stone could be felt *per rectum*. The operation was uneventful, but the wound had to be repeatedly enlarged, the muscles also requiring division transversely. Considerable force was used in the removal of the stone, which weighed 8 ozs. 2 drs. and some grains. No attempt was made to sew up the bladder. Considerable sloughing took place, and once secondary hæmorrhage threatened to be serious. The wound opened into a cavity through which the interior of the bladder could be seen. A red rubber catheter was kept in (its end having been cut off from above and several perforations cut in its sides) to ensure good drainage. The patient gradually sank, and died on the thirtieth day after the operation.

REPORTS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.

W. Watson Cheyne, F.R.S., President, in the Chair.

Tuesday, November 6th, 1900.

Meeting held at the Conjoint Laboratories, Examination Hall.]

Phloridzin Glycosuria.

Dr. F. A. Pavy, F.R.S., Mr. R. L. Siau, and Dr. T. G. Brodie gave a demonstration of the observation that if phloridzin is injected into one renal artery sugar appears in the urine secreted by the corresponding kidney before it does in the urine from the other.

Cardiac Reflexes.

Drs. A. E. Russell and T. G. Brodie demonstrated the fact that stimulation of the pulmonary branches of the vagus produces slowing of the heart.

Pulmonary Muscular Mechanisms.

Drs. W. E. Dixon and T. G. Brodie showed that bronchial spasm resulted on the intravenous injection of pilocarpin.

Other demonstrations were given by Drs. W. D. Halliburton, F.R.S., and F. W. Mott, F.R.S., on the chemistry of nerve degeneration; and by Mr. W. Edmunds on the results of thyroidectomy in dogs.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

John Gordon Black, M.D., President, in the Chair.

Friday, November 2nd, 1900.

Landry's Paralysis.

Dr. Rowden read notes of a case of descending Landry's paralysis in a child.

A boy, aged 10, had whooping cough in 1897 and chorea in 1898, but had since been in good health. On September 14th, 1900, he slipped into a pit but seemed none the worse. On the 15th he appeared to have a stiff neck, and on the 16th he did not seem very well and had a restless night. On the 17th there was paralysis of the muscles of the neck and of the deltoids, with a temperature of 103° F. On the 18th there was complete paralysis of the neck, arms, forearms, and intercostals, and later on the muscles of the legs, face, and tongue became affected. The child died completely paralysed at 1 A.M. on September 19th from cardiac failure.

There was no evidence of scarlet fever or diphtheria in the case, and the fall seemed to be a coincidence as there was no injury to the spine.

Dr. Wardrop Griffith agreed with the diagnosis of Landry's disease, and referred to other instances where the paralysis was descending instead of ascending. He argued that the simple conception of a lesion, organic or nutritional, passing along the cord, was often at variance with the march of the palsy, as in many of the ascending cases the arms were affected before the trunk. On the other hand, a purely peripheral affection of the nerves, though it accounted for most of the phenomena of the disease, and notably for that variability in the combination of motor and sensory symptoms which Landry himself had pointed out, did not account for all; and the association of right-sided facial palsy with paralysis of the external rectus on the same side, which was observed in one undoubted case, pointed to a lesion of the closely associated nuclei of the seventh and sixth cranial nerves. He therefore favoured the view that Landry's disease was due to a toxic process, affecting various parts of the nervous system in different cases, and in some instances leading to demonstrable inflammatory lesions.

The President, Dr. Barrs, and Dr. J. Campbell discussed the case.

Dr. Rowden, in reply, pointed out the similarity between Landry's paralysis and infantile paralysis, and suggested that the former might also be caused by an acute anterior poliomyelitis, but of a more regular and spreading character than in the latter.

Diphtherial Paralysis.

Dr. Trevelyan related 6 cases of diphtherial paralysis, and commented upon the chief symptoms presented by them. The occurrence of severe, and even fatal, paralysis after a very slight initial throat lesion was discussed. The loss of control over the sphincters seen in 1 of the 6 cases was attributed more to the apathetic state of the child than to actual paralysis. The toneless cough observed in 2 cases was probably due to paralysis of the adductors of the larynx. A moderate degree of ataxia was not uncommon, but it might to some extent be masked by paresis. There was no difficulty in distinguishing from tabes dorsalis a case in an adult with ataxia which was seen long after the initial sore throat. The mortality from diphtherial paralysis seemed to be greater than was usually taught. The uncertainty introduced into the prognosis by the possible supervention of fatal cardio-pulmonary symptoms, even in mild cases, was exemplified by one of the cases. Even apparently desperate cases of diphtherial paralysis might recover, as was illustrated by another case with respiratory paralysis. The importance of rest was emphasised both in the prevention and treatment of the paralysis. The question of the serum treatment and the prevention of paralysis was discussed in the light of recent researches.

Dr. Barrs spoke of the importance of complete rest in bed until the knee-jerk had returned. So long as the knee-jerk was absent the patient was the subject of diphtherial palsy. It was important to avoid all restrictions in diet, even in the acute stage of the disease, beyond those imposed by the difficulty in swallowing and the loss of appetite inevitable to an acute infective state.

The President, Dr. Draper, Dr. Wilson, Dr. S. Lodge, Dr. Campbell, and Dr. Eddison also took part in the discussion.

Dr. Trevelyan, in reply, thought that the time of the reappearance of the knee-jerk was too variable, and sometimes too delayed, to be taken as a guide in the question of rest.

Cases, Specimens, etc.

The following were shown: Dr. Gordon Sharp: Some new drugs. Mr. E. Ward: (1) Mauser bullet wound of the lumbar region, received at Willow Grange, producing immediate paraplegia, and followed by recovery after a long interval; (2) a case of gastro-jejunostomy.—Dr. Barrs: (1) Gangrene of the lung; (2) retroperitoneal growth; (3) tuberculous disease of the suprarenal capsules.—Dr. Bennett (Otley): A patient who ten years ago was believed to be the subject of intracranial tumour.—Mr. G. B. A. Moynihan: (1) Four cases of molluscum fibrosum in the same family; (2) a tumour connected with the vagus nerve removed from one of the above patients; (3) skiagraph and plaster cast of a sub astragaloid dislocation of the foot; (4) skiagraph of a case of club hand; (5) case of hypertrophic osteoperiostitis following gonorrhœa; and (6) a large fibro cystic tumour of the uterus, removed by Kelly's operation.—Dr. T. Wardrop Griffith: (1) Premature closure of the foramen ovale; (2) fragilitas ossium; (3) Raynaud's disease associated with ichthyosis; (4) lupus, almost completely cicatrised.—Mr. Lawford Knaggs: A case of intestinal obstruction resulting from an operation for radical cure of hernia, and depending upon a congenital abnormality.—Mr. Mayo Robson: A case of chronic osteitis and abscess of the femur.—Dr. Barrs and Mr. Lawford Knaggs: A case of duodenal stricture in a youth of 17, for which pyloroplasty was performed.—Dr. J. B. Hellier: (1) A pregnant uterus with myoma removed by abdominal hysterectomy; and (2) bilateral ovarian abscess removed by abdominal section.—Dr. E. F. Trevelyan: (1) A case of juvenile phthisis in a girl of 14, who had been under observation for some years; (2) a case of hemiplegia of slow onset, in a syphilitic subject, in which improvement had occurred under antisyphilitic treatment.

—Mr. H. Secker Walker: Case of rodent ulcer of the orbit, treated by removal and skin grafting.—Mr. C. J. Wright: Specimens from a case of ectropion vesicæ with absence of the large intestine.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

Pathological and Clinical Section.

T. F. Chavasse, F.R.C.S., in the Chair.

Friday, November 2nd, 1900.

Spasmodic Movements of the Head.

Dr. Douglas Stanley showed a girl, aged 12, who for four months had suffered from sharp spasmodic movements of the head. These movements were lateral at times, and seemed to be produced by sudden contraction of each sterno-mastoid muscle. At other times the posterior muscles contracted sharply, and the head was drawn back. There was nothing in the history of the case supporting the idea of a choreic affection, and the diagnosis of habit spasm or a form of wryneck was discussed.

Hysterical Tremor.

Dr. Douglas Stanley also showed a case of well-marked hysterical tremor in a girl, aged 13. This had appeared at intervals since the age of 10, and affected the left arm.

Large Aortic Aneurysm.

Dr. Foxwell showed the heart and aorta of a man, aged 39, who had had syphilis and malaria fifteen years ago in India.

Two years before admission he had fallen from a height of 16 feet upon his chest; a doctor then told him that his heart was "affected" and since this accident any slight excitement would induce palpitation; but he had been able to continue at his work as a plasterer till last winter, when he began to cough. This cough increased and shortness of breath arose, which has confined him to his room since the middle of April. On admission the apex beat was in the sixth space 1½ inch to the left of the sternum. There was a double aortic murmur, the cardiac impulse lifted the manubrium, there was much infraclavicular pulsation, the cough was brassy but the cords moved well, and over the lower precordium pericardial friction existed. This dull area steadily increased; the lungs became involved, the liver greatly enlarged, and he gradually sank, dying on July 29th. At times a double mitral murmur was also heard. At the section the pericardium was universally adherent by recent œdematous adhesions. The heart muscle was slightly fibrosed. The aortic valves were thickened and "rolled," the cusps being rigid and incompetent. The mitral valves showed slight atheroma. On the anterior wall of the aorta, slightly involving the origin of the innominate, was a smooth-edged quite circular opening, some three-quarters of an inch in diameter. This led into a large aneurysm which passed down beneath the manubrium and gladiolus as low as the fourth space, pressing back the great vessels and the right auricle. There were patches of atheroma in the aorta, but these were almost confined to its descending portion. The kidneys were granular.

This large extension downwards of an aneurysmal sac which had its origin at the commencement of the transverse arch Dr. Foxwell thought very unusual.

Perforated Gastric Ulcer.

Dr. Foxwell also showed the stomach of a girl, aged 18.

This patient two years previously was confined to bed seven weeks with acute rheumatism. During convalescence she had much epigastric pain and vomiting, twice bringing up blood. Mr Pooler, who attended her, diagnosed the condition as one of gastric ulcer. She had always suffered from indigestion since. On October 22nd she had breakfast in bed and vomited after it. At 1.30 P.M. whilst making beds she was seized with a sudden pain over McBurney's point, became collapsed, and vomited. On the afternoon of the 24th she was seen by Mr. Pooler, the collapse then was not great, the localisation of the pain was very exact with swelling in the right flank. The vomiting still continued and the bowels had not been opened since the onset. She was admitted to the Queen's Hospital in the evening of the 25th obviously fast sinking from general peritonitis. Mr. Bennett May at once opened the abdomen in the middle line and let out a large quantity of sero-pus (serum with lymph flakes in it) which had no offensive smell. The abdomen was washed out, but her condition would not allow of any thorough cleansing nor any search for the cause. Up to the 30th she improved; then a large collection in the right flank formed, and had to be drained. She died on the 31st. The stomach showed extensive puckering around a cicatrix of a healed ulcer. Some 3 inches from the centre of this, on the anterior surface of the lesser curvature near the pylorus was a fresh ulcer with a circular opening in its centre of half an inch in diameter. The lesser sac of the peritoneum was free, otherwise the peritonitis was general, there being a large collection of pus in the pelvis.

The chief point of interest clinically was the close resemblance of its symptoms to those of perforated appendix.

Submaxillary Tumour.

Mr. Haslam showed a large tumour he had removed from the submaxillary gland of a woman aged 54. It was first noticed thirty-five years ago, but had rapidly increased in size during the last ten months. On section it proved to be an adeno fibroma undergoing myxomatous degeneration.

Specimens.

Mr. Gamgee showed a specimen of a pure enchondroma of the parotid.—Mr. Heaton showed a vermiform appendix strangulated in a hernial sac.

GLASGOW SOUTHERN MEDICAL SOCIETY.

William Watson, M.D., President, in the Chair.

Thursday, November 1st, 1900.

Plague.

Dr. J. W. Allan introduced a discussion on the plague and commented on the fact that the disease seemed to be dying out in Glasgow. Some people were inclined to say "supposed plague," which in his opinion was foolish; for the opinion of experts and bacteriological examination had proved the presence of the disease beyond doubt. So far Glasgow had been fortunate in the smallness of the number attacked and in the number of fatal cases. While, however, there remained even only a few cases in the city the position was still serious on account of the interference with commerce and shipping. Failure to detect and deal with the early mild cases might result in the development at a later stage of a more virulent form of the disease, and also the conversion of the city into an endemic centre. Professor Simpson said:

Two features are specially characteristic of plague, first the slow, irregular and gradual manner in which the disease acquires a hold over a locality into which it is imported and which may later on become the scene of an epidemic; and, secondly, the obscurity which often surrounds the earlier cases.

From this statement it could be understood how important it was to deal quickly and thoroughly with early cases of the disease. Of the types of the disease which he had seen at Belvidere Hospital the impression he formed, as he saw them at the time, was that they showed nothing characteristic until the local manifestation had been revealed. In one case the fæces suggested to him typhus fever, and in that of an old woman very ill—bad typhus. The lesson seemed clearly conveyed that bubonic plague might easily be missed unless one were on the look-out for it. Dr. Allan proceeded to describe briefly the various types of plague as enumerated by Professor Simpson and Mr. Cantlie, namely, (1) The larval, ambulant, or abortive type, or pestis minor, (2) the bubonic, (3) the pneumonic, (4) the intestinal, (5) the typhus, (6) the septic, (7) the nervous, (8) the puerperal. In view of the different varieties of the disease of plague the diagnosis was no easy matter, and the mild or larval type might readily be overlooked. Positive information, however, might be obtained by the aid of the microscope, and he would point out the value of "association" as a key in doubtful cases. What might be called the "house affection" or the "family connection affection"—the association by personal contact—was to be regarded as a valuable guide in diagnosis. Speaking of the variable nature of the malignancy of plague, Dr. Allan gave some interesting information. Quoting from the *Memorandum on the Progress of Levantine Plague in 1878-79, including the Reappearance of the Disease in Europe*, by Mr. Netten Radcliffe, he showed how at first the disease at Vetliauka, on the Volga, was of the mild glandular form, but this was succeeded in time by a more virulent type, and finally ending in the pneumonic form, in which there was a mortality of 100 per cent. This increased severity of the plague at Vetliauka was attributed to the approach of winter, which caused the inhabitants to pack themselves in their ill-ventilated stove-heated houses. With regard to the geographical distribution of the disease, it had been known for years in India and China. Endemic in certain parts of these countries, violent outbreaks spread from time to time. It was only too evident that the disease had now travelled beyond their boundaries, probably by commercial relationships, and had become pandemic. Seeing that plague might assume so many clinical aspects, and that the possibilities of its reintroduction to Glasgow were neither few nor remote, it behoved the medical profession to keep on the alert for some time to come, and to report promptly to the medical officer of health all doubtful or suspicious cases.

Dr. Chas. E. Robertson gave a short account of the illnesses of the patients who in hospital were recognised as the first cases of plague. After a consultation with Dr. Thomas Colvin,

who had also visited the family, both concluded that they had an infectious disease to deal with, and that the patients should be isolated in hospital. Accordingly the patients were then notified and removed as cases of doubtful enteric fever. Dr. Robertson further remarked that during his attendance on the family the cases presented features which, after excluding poisoning by irritant ingesta, suggested to his mind the possibility of typhus fever.

Dr. THOMAS COLVIN thought one practical outcome of the discussion would be a resolution to the effect that the sooner the Corporation appointed a port sanitary medical officer the better. He then discussed at length the differential diagnosis of plague and enteric fever as seen in general practice, and said that in his opinion plague in the forms met with in Glasgow simulated many other diseases, and the only valuable differential sign was the bubo. From the bubo had to be excluded syphilis, gonorrhœa, and septic irritation. Finally, to complete the diagnosis, the plague bacillus had to be found by bacteriological examination.

Dr. MATTHEW DUNNING gave a short account of the important features of the cases of plague seen in his practice during the epidemic.

Dr. A. K. CHALMERS gave a history of the course of the plague in Glasgow. With regard to its similarity to typhus fever, in respect of the rash that was seen at times in plague, it was to be noted that the rash of plague resembled the late stage of the rash of typhus, and, moreover, was found at an earlier stage in the course of the disease. While the plague, as seen in Glasgow, might reasonably be called a mild form of the disease, it was yet true that the mortality was considerable, being no less than 47 per cent., and approaching the mortality of the epidemic in Cairo. In conclusion, Dr. Chalmers discussed the probable means of transmission of plague and the causes of variable malignancy.

SPECIMEN.

Dr. JAMES WEIR showed a fresh specimen of hydatid mole which was examined with interest by the members.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—At a meeting on October 24th, Dr. A. J. HARRISON, President, in the chair, Mr. G. PERNET showed (for Dr. RADCLIFFE CROCKER) a case of acquired syphilis in an infant 15 months old. In the discussion which followed some difference of opinion was expressed as to whether this was really acquired or hereditary syphilis.—Dr. P. ABRAHAM showed (1) a case of leprosy (previously brought before this Society); manifest improvement had taken place on treatment with chaulmoogra oil; (2) a case of monilethrix, the hair of the scalp and eyebrows being affected; (3) a case of verruca of the lips.—Dr. H. STOWERS showed a case of tertiary syphilide of the forehead and face simulating acne rosacea.—Dr. A. EDDOWES showed (1) a case of combined psoriasis and acquired syphilis, eruptions characteristic of both diseases being present at the same time; (2) a case of acne lupus. Dr. STOWERS deprecated the term "acne" being used to describe this case, which appeared to be ordinary lupus.—Dr. W. F. FREEMAN brought forward a case of diabetic eczema.—Mr. PERNET exhibited cultures and microscopic specimens illustrating (1) ringworm, (2) monilethrix hairs, and (3) sections of skin from the case of leprosy shown by Dr. Abraham, in which bacilli lepræ were numerous.

BRITISH ORTHOPÆDIC SOCIETY.—At a meeting held at the Royal Orthopædic Hospital on October 27th, Mr. H. A. REEVES showed the following: (1) Contraction of toes following cauterisation of a nævus of the dorsum of the foot, accompanied by exostosis of the tibia; (2) paralytic genu valgum, with lateral curvature of the spine; (3) congenital talipes equino-varus, for which he had removed the upper articular surface of the astragalus; (4) two cases of talipes calcaneo-valgus, in one of which he had performed arthrodesis. He also showed (5) photographs of Charcot's disease of the ankle in a woman aged 52; on admission to the hospital she could not walk at all; after the loose and degenerated articular cartilages were removed she left the hospital able to walk well with instrumental support. (6) The bones of the foot and lower half of the leg from a case of congenital absence of the fibula. Mr. D'ARCY POWER, Mr. CHISHOLM WILLIAMS, and Mr. MUIRHEAD LITTLE discussed these cases.—Mr. REEVES showed photographs of a case of paralytic deformity of the elbow and wrist due to congenital hemiplegia. He divided the biceps and straightened the elbow, but a sharp attack of arthritis followed. He then divided the palmaris longus and the flexor carpi radialis with excellent results. The patient's age was 28. It was seldom necessary to divide the deeper tendons in such cases, even when of long standing.—Mr. MUIRHEAD LITTLE showed a child, 2 months old, suffering from congenital talipes calcaneo-valgus, and having a tumour (so called hæmatoma) of the left sterno-mastoid. Labour had been tedious and difficult, but the head presented and forceps were not used. Mr. D'ARCY POWER referred to his investigation on this subject. Out of 50 or 60 cases of tumour of the sterno-mastoid, only 3 or 4 came up for tenotomy afterwards.—Mr. MUIRHEAD LITTLE showed an apparatus designed to strengthen any group of muscles of the ankle and foot by means of voluntary exercises. The resistance to be overcome was furnished by means of weights attached to cords running over pulleys. He demonstrated its use on a child, and pointed out that it was applicable to all cases of talipes where there was not too extensive paralysis, and also for flat feet.—Mr. TUBBY read a paper on the treatment of deformities of the hand and fingers. As regards Dupuytren's contraction, he had found that open incision and dissection of the thickened fascia, and its removal as far as possible, gave good results in suitable cases; but the surgeon himself must see that aseptic conditions were attained, or the result would be bad. Bleeding must be quite stopped before the wound was closed. Careful asepsis must be persevered with until every scab had disappeared. As regards club hand, he had not operated on such cases, preferring to treat them by splints. If any operation were needed, he should prefer M'Curdy's. The functional prognosis of tendon suture in the hand was then discussed. Mr. NOBLE SMITH and Mr. LITTLE made some remarks, and Mr. TUBBY replied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—The inaugural meeting of the Society was held at the General Dispensary on October 10th. The PRESIDENT (Dr. Wray) was in the chair, and there was a large attendance of members and visitors. Dr. F. W. MOTT, F.R.S., Pathologist to the London County Asylums, and Physician to Charing Cross Hospital, gave an interesting address on the selective action of poisons in relation to nervous diseases, illustrating his lecture by means of limelight pictures and diagrams of neuropathic conditions.—At the conclusion of a pleasant evening a hearty vote of thanks, proposed by Dr. RANSOM and seconded by Dr. CATTLE, was accorded to Dr. Mott.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At a meeting on October 25th, Dr. WEARNE CLARKE, President, in the chair, Dr. C. N. GWYNNE showed a large growth, probably papillomatous, removed from the labia minora.—Mr. R. FAVELL showed a specimen of double pyosalpinx removed from a woman, aged 23, and a complete cast of the mucous membrane of the bladder passed *per urethram* six weeks after labour.—Dr. J. MENZIES showed a large branched renal calculus—oxalate of calcium—removed, together with the kidney, from a woman aged 57. Special features of the case were the absence of hæmaturia and of characteristic pain during the six years which intervened between the onset of symptoms and the operation.—Mr. V. K. BLACKBURN showed the following specimens: (1) Duodenal ulcer, (2) new growth of the lung perforating into a pulmonary vein, (3) gastro-enterostomy for dilatation of the stomach, (4) primary new growth of the liver.—Dr. SINCLAIR WHITE read a paper on the operative treatment of pyloric obstruction, and illustrated it by exhibiting a series of patients on whom he had operated. Attention was called to the simple and safe way of demonstrating a dilated stomach by pumping air into it through a soft œsophageal tube. The differential diagnosis of the obstructing agency was often difficult or impossible until the abdomen had been opened, and even then certain cases of inflammatory thickening around the pylorus were liable to be taken for malignant disease. All cases showing definite symptoms of pyloric obstruction should submit to early operation if in a fit state to be operated

on. It had been conclusively shown that a large proportion of pyloric cancers remained for a considerable time strictly local growths capable of removal by pylorectomy at a risk to life which was not prohibitive having regard to the issues involved. In the treatment of non-malignant cases the surgeon had a variety of devices at his command, but the choice was gradually being narrowed to pyloroplasty and gastro-jejunostomy. While both operations gave excellent results pyloroplasty was theoretically the better of the two, but it was not sufficiently so to justify its adoption if it was less safe to life than gastro-jejunostomy. The ease, and to a large degree the success, with which pyloroplasty could be performed was influenced most of all by the mobility of the pylorus. If the pylorus could readily be withdrawn through the abdominal wound and isolated by gauze packing, the operation was an ideal one, and should be practised to the exclusion of all other methods; but if, owing to adhesions, the pylorus should be fixed at the back of the abdomen, pyloroplasty becomes a tedious, difficult, and dangerous operation, and should give place to gastro-jejunostomy, which could always be performed with the parts involved outside the abdominal wall.

Rochdale and District Medical Society.—At a meeting on November 1st, Dr. A. Wallace gave a presidential address on medical organisation and reform. He pointed out how the medical student had impressed on him by his teachers the dignity and honour of his profession, and how little he was told of the other side of the picture. The consultant took little interest in the welfare of the general practitioner, and knew little of the conditions under which general practice was carried on. Consequently, while the remedy for grievances lay in organisation, representatives chosen from the consulting class were likely to do little. The number of organisations was probably overdone, and the matter should be taken up by the British Medical Association aided by small local societies. With regard to the difficulties encountered in general practice, there was, for example, the nurse with her thermometer and bag of dressings making irresponsible diagnoses and giving irresponsible advice. There was ambulance work helping to produce quack doctors. As matters in which legislation was called for, special reference was made to death certification and the midwives question. These and other subjects could not be properly dealt with by the General Medical Council, itself composed of men who seemed to think so much of the dignity of the profession and so little of its difficulties. More direct representation was wanted on the Council before it would recognise, for example, that the medical aid system, which might require a doctor to go three miles, pay a visit and supply medicine for threepence, should be brought to an end. Credit was due to the Council for raising the standard of medical education, but it apparently cared little for a man after he was qualified. The profession should be organised, with small local societies as the units. Messrs. Chadwick, Sellers, Malins, Rodley, and Dr. Kerr took part in the discussion which followed, and a cordial vote of thanks was then given Dr. Wallace for his address.

Newport Medical Society.—The adjourned annual meeting of the Society was held on October 31st, the newly-elected President, Mr. Walter Basset, in the chair. There was a good attendance of members. The following were elected officers for the session 1900-1901:—*President*, Walter Basset; *Vice-President*, T. G. Macormack; *Honorary Secretary and Treasurer*, J. Howard James; *Honorary Librarian*, A. Falconer Hoyden. *Committee*:—T. Morrell Thomas, T. G. Macormack, O. W. Morgan, C. Stuart Vines. After the usual business proceedings had been disposed of, a case of tumour of the soft palate of rapid growth in a child of 10 years of age was shown by Dr. R. J. Paton. This was followed by an address by the President on "Curious Midwifery Customs." An interesting account was given of the various methods of conducting and assisting labour which had been in vogue at different times among both savage and civilised races. In the discussion which followed several members took part, including C. Brooke Gratte, A. Garrod Thomas, G. A. Davies, and H. B. Seddon. The question of holding an annual dinner conjointly with the Law, Architect and Surveyors' Societies was referred to the Committee for consideration. The membership of the Society now numbers 32, a net increase of 5 on the record for any previous year. The funds of the Society likewise showed a balance in hand on last year's accounts of over £10.

Southport Medical Society.—The annual meeting was held on October 10th, twenty-one members being present. The annual report of the first year's working and balance sheet were adopted. The following officers were elected: *President:* Dr. Robert Harris. *President-elect:* Dr. Charles Pinkerton. *Vice-President:* Dr. G. C. Walker. *Treasurer:* Dr. Baildon. *Honorary Secretary:* Dr. R. M. Littler. *Committee:* Drs. Anderson, Ashworth, Baines, Barrett, Russel, and A. J. Popert. The President delivered an inaugural address entitled Some Observations on the History of the Profession in England during the Century, in which the gradual changes that had taken place in the position and status of the profession, the various enactments of Parliament, and in the licensing bodies and their powers during this period were described. The annual dinner was held at the Queen's Hotel on October 31st under the Presidency of Dr. Harris, forty gentlemen being present, including several visitors from neighbouring towns.

Newcastle-upon-Tyne Clinical Society.—The first meeting of the present session was held on November 1st, Mr. H. Brunton Angus, the retiring President, in the chair. The following officers were elected:—*President*, Dr. Frank Hawthorn; *Vice-President*, Dr. O. Watson-Ogden; *Treasurer*, Dr. W. E. Alderson; *Secretary*, Mr. T. G. Ouston. *Committee*:—Dr. Ranken Lyle, Dr. Beattie, Dr. Foggin, and Mr. A. Martin. Mr. H. B. Angus showed a man, aged 58 years, with a large pulsating tumour on the top of his head. There was a history of severe blows on the head eight years and one and three-quarter year ago. At this latter period the growth was explored and removed by Mr. Page, and found to be outside the dura mater after trephining the skull. The growth was a pure adenoma, but recurrence had gradually taken place. No primary cause, such as a thyroid tumour, could be found, but Mr. Angus thought the growth secondary. Messrs. Bolam, Beattie, and Onslow discussed the possible origin.—Mr. W. H. Vickery showed a child 9 months old, from whose thigh a lipoma weighing 12½ ounces had been removed. The tumour which (with a photograph taken previous to operation) was exhibited extended from the ischial tuberosity to the popliteal space. The only difficulties presented in removal were from its adherence to the great sciatic nerve and shock to the child. Messrs. Hawthorn, Angus, and Onslow made comments.—Dr. Collis (for Dr. Coley) showed a boy suffering from symptoms resembling an advanced stage of pseudo-hypertrophic paralysis. The feet were in a position of talipes equinus. Dr. Beattie and Mr. Martin agreed in the diagnosis as against anterior poliomyelitis.—Dr. Collis (for Dr. Beattey) showed a boy with tumours in both iliac fossæ. He also had enlarged lymphatic glands in the neck which had previously suppurated, and also in one axilla. The tumours had remained of the same size for three months, and there had been no rise of temperature during that period. No alteration in the blood cells or spleen could be detected. Messrs. Martin, Angus, and Ouston thought the tumours tuberculous lymphatic glands, and Messrs. Beattie, Bolam, and Turner favoured the view of lympho-adenomata.—Dr. Foggin read a paper on minor eye injuries and antisepsis. Attention was drawn to the fact that no fewer than twelve varieties of bacteria had been isolated in the normal conjunctival sac, and to the many virulent organisms that caused inflammation with or without direct traumatism. The corneal epithelium should be treated as carefully as the peritoneum. In treatment discs of atropine, cocaine, protargol, etc., were superior from an aseptic point of view to solutions kept ready made, whether used by surgeon or patient, but gelatine discs were more liable to be septic than the compressed form, and were not so readily absorbed. Discs had the further advantage of exact dosage. Reference was made to the use of fluorescine as a means of diagnosing actual corneal abrasions, also to the use and abuse of the eyepad and bandage.

REVIEWS.

SOME RECENT WORKS ON SURGERY.

THE rapidity with which Mr. WALSHAM's textbook of *Surgery*[1] has reached a seventh edition, and the extent of its circulation as shown by the number of copies already published, afford indisputable indications of its value and usefulness. In the preparation of the last issue the author, with the assistance of Mr. W. G. Spencer of the Westminster Hospital, has evidently left nothing undone to maintain in the seventh edition the high standard of previous issues. Much fresh matter has been added, matter regarded as obsolete has been omitted, and some of the sections have been rewritten. In this extensive revision special attention has been given to the subjects of cranial and abdominal surgery. Quite apart from the excellence and practical character of its teaching, this work has the great advantages of being clearly printed and well illustrated, and of containing the information that either surgical practitioner or student can reasonably require in the relatively narrow compass of a single volume. A special feature of this edition is the insertion, together with many other new illustrations, of several very clear skiagraph plates prepared by Dr. Hugh Walsham.

MR. CARWARDINE'S book on *Operative and Practical Surgery*[2] is designed to supplement general treatises on scientific surgery. It is intended to be used only in conjunction with practical work to which he states in the preface it should act as a guide. It is very comprehensive, as it deals in turn with bacteriology, bandaging and minor surgery, operations major and minor in different regions of the body, and finally with the surgical examination and treatment of the eye, ear, and other special organs. Mr. Carwardine is well fitted to undertake a work on practical surgery, and he has, in this instance, been well supported by Mr. H. R. Cross, Dr. T. O. Syme, and other fellow-workers. The endeavour to compress much information into a small compass has detracted from the interest of the book. The different subjects, though evidently written by authors who understand them well, are disappointingly short. As a a set-off to the brevity and the somewhat "jerky" style of the descriptive matter, we would refer to the many clear and excellent illustrations, most of them original drawings by Mr. Carwardine, which are scattered throughout the volume.

Though Mr. ERNEST MAYLARD'S *Student's Handbook of the Surgery of the Alimentary Canal*[3] follows the same lines as his earlier and larger book, it may be regarded as something more than a fresh edition. Whilst it has been abridged by the elimination of clinical records and comments on cases observed by the author, it has been amended by the addition of the results of personal experience and study gained during the last four years. To the many illustrations taken from the *Treatise*, including some copies of excellent photographs, a few additions have been made. Mr. Maylard's book in its present form is certainly well adapted to the needs of the advanced student. The anatomical introductions to each section are full and instructive, and the omission of clinical reports and of critical reviews of the works of other authors, though it may have lessened the interest of the volume, has rendered it more convenient. We hope that in future editions of this handbook, attention will be given to some few faults of omission. In the all-important subject of operative technique we notice here and there a scantiness of detail, and a failure of correspondence between the description of an operation and the accompanying illustrations. In the description of Frank's method of performing gastrostomy no mention is made of the important detail of stitching the stomach to the margins of the incised peritoneum, although in both the illustrative diagrams the sutures applied for this purpose are clearly defined. Again, in the reference to Maunsell's method of suturing after enterectomy, it is stated that "one or two sutures should be put in the mesentery," although the accompanying figure of the completed operation indicates the advisability of greater care in this matter.

In a kindly preface Professor OLLIER introduces Dr. CORNEL'S *Pratique de la Chirurgie Courante*,[4] which may be considered as an expression of the work done in the surgical clinic at Lyons. It is written by a young and evidently enthusiastic surgeon, who details with a lavish precision the attendant circumstances of every operation he describes. The room and the light best suited for the operation, the clothing and demeanour of the surgeon and of his assistants, and the position and responsibilities of each are all matters of such moment that they earn frequent recognition. Similarly all the circumstances demanding or negativing operation, even the most frivolous and inconsequential, are minutely stated. Of the surgical part proper it is not possible to speak in terms of praise; much labour and much patience have been shown in the preparation, but the result is merely that attainable by a diligent fourth years' student who writes down without discrimination all that he may be taught by many surgeons. The book is a tightly-filled notebook, in the writing of which the author has doubtless learnt much, but for the reader there is no harvest worth the reaping.

The object with which Dr. LILIENTHAL has written his book on *Imperative Surgery*[5] is stated in the preface to have been to prepare a work "for the general practitioner who rarely takes up the scalpel, the specialist whose path seldom leads him to the operating room, and the recent graduate who has seen but little surgery at close range." Upon the word "imperative" a very generous interpretation—vastly too generous—has been placed. Several of the operations included in this volume would certainly never be attempted by any of those for whom the work is avowedly written. It is difficult to conceive any circumstances under which the word imperative, in the sense in which the author uses it, could be applied to the operation of gastrostomy, or resection of the intestine, or colotomy. In all these cases there would be as a rule ample time to obtain the services of a surgeon of experience in such operations. Apart from this criticism, there is little to be said of the book save in praise. The essentials for surgical manipulations, instruments and their selection, dressings and their preparation, splints, and so forth, are all admirably and succinctly described. The treatment of wounds, the complications, septic and infective conditions, and erysipelas are considered. The operations of urgency are described according to the regions they affect. The teaching in many instances may be taken as representative of the best practice of the day. As a rule, only one method of carrying out any operation is alluded to, and preference is given very properly to that which has answered its purpose best in the hands of the author. In some cases there is a strange departure from the average high standard, as in the account of the operation for fracture of the patella. The description of the operation for the radical cure of femoral hernia is trivial, and the amazing statement is made that "the radical cure of femoral hernia is not so satisfactory as that of the inguinal variety," and for this reason it is advised that a truss should be worn after femoral but not after inguinal operations. The volume is well produced, and the illustrations are most effective, but the style is crude and harsh. It is possible that in America, owing to differences in the methods and division of work, there may be a medical public needing a book of this kind, but frankly, we cannot see that any special requirement of the English reader is met by it.

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[1] *Surgery: its Theory and Practice.* By William Johnson Walsham, F.R.C.S., M.B., C.M.Aberd., Surgeon and Lecturer, St. Bartholomew's Hospital, etc. Seventh edition. London: J. and A. Churchill. 1900. (Crown 8vo, pp. 953, 483 illustrations. 15s.)

[2] *Operative and Practical Surgery: For the Use of Students and Practitioners.* By Thomas Carwardine, M.S.Lond., F.R.C.S., Assistant-Surgeon, Bristol Royal Infirmary. Bristol: John Wright and Co., and London: Simpkin, Marshall, Hamilton, Kent, and Co. 1900. (Demy 8vo, pp. 661, 550 illustrations. 10s. 6d.)

[3] *The Student's Handbook of the Surgery of the Alimentary Canal.* By A. Ernest Maylard, M.B., B.S.Lond., Surgeon to the Victoria Infirmary, Glasgow, etc. London: J. and A. Churchill, 1900. (Crown 8vo, pp. 510. 97 illustrations. 8s. 6d.)

[4] *Pratique de la Chirurgie Courante* [Practical Surgery]. Par Dr. Marius Cornel. Preface by Professor Ollier of Lyons. 1900. Paris: F. Alcan. (Cr. 8vo, pp. 554; 111 illustrations. Frs. 6.)

[5] *Imperative Surgery for the General Practitioner, the Specialist, and the Recent Graduate.* By Howard Lilienthal, M.D., Attending Surgeon to Mount Sinai Hospital, New York City. New York and London: Macmillan and Co. 1900. (Demy 8vo, pp. 412, 153 figures. 17s.)

The aim of Mr. McAdam Eccles's book on *Hernia*[1] is, in the words of the author, chiefly to consider "the aspect of actual treatment." There is, however, a general description of the etiology, pathology, and symptoms of the various forms of hernia, given at moderate length This latter portion of the book is not wholly satisfactory. There is a hesitancy in the description of symptoms, a lack of emphasis, and of vivid portrayal. The author is evidently desirous to set down carefully all the symptoms, all the alternative diagnoses, all the arguments on both sides of almost every question, to give in tabular form all the circumstances worthy, or even unworthy, of mention. It would have been better to have given clear and effective descriptions, the outcome of intimate personal experience. There is, in fact, in this part of the book a lack of relative emphasis, an absence of perspective. The best feature of the volume is that which deals with the treatment of hernia, and more particularly that having reference to the application of trusses. Owing to his appointment to the City of London Truss Society, Mr. Eccles has had a very wide experience in the treatment of all forms of hernia by mechanical appliances, and this experience he has embodied in a series of chapters, which, beautifully illustrated, should result in a better and wider knowledge of this very important subject. The surgeon too often considers that his duty to the patient ends with the ordering of the truss, the result being that the instrument-maker supplies, with little skill and no compunction, that implement which seems to him most suitable. The surgeon would do well, however, to see to the fitting of the truss himself, and as a help to him no better guide could be desired than this work of Mr. Eccles. The illustrations, many of them original, are exceedingly well done, and are remarkable both for clearness and accuracy.

NOTES ON BOOKS.

Dr. Saundby has issued a fourth edition of his *Lectures on Renal and Urinary Diseases* (Bristol: John Wright and Co.; London: Simpkin, Marshall and Co. 10s. 6d.). Those portions of the book which deal with the pathogenesis and treatment of diabetes have been rewritten, but otherwise the lectures are unaltered except that a few corrections and additions have been made. The earlier editions of the volume have been reviewed in our columns, and the work is too well known to call for an extended notice.

The fifth issue of *The Edinburgh University Student's Handbook* (1900-1901) (published by The Student's Representative Council, price 6d.) has appeared. It must be invaluable to students, especially freshmen, who are apt to find the *University Calendar*, and the Calendars of the schools, anything but easy reading. Here in 98 pages is a perfect mine of information methodically arranged. There is a Students' Calendar of the Academic Year, giving all important dates; then follows a brief history of the University, written, we understand, by Professor Kirkpatrick. The constitution of the University is set forth, information is given under the heading of the various Faculties as to the classes and courses that ought to be taken, the hospitals and other medical charities of Edinburgh are described briefly, and the way in which they can be utilised for medical education is pointed out. This occupies nearly 46 pages, and is followed by what is called "Miscellaneous Information," an odd group. The University and other sectional libraries are spoken of, then the Union, volunteers, societies, and clubs. The last ten pages are given up to women students' societies, addresses of professors and lecturers, deans of faculties, postal information, and Edinburgh places of interest. There are 20 full-page illustrations of University officials and buildings, the first being the Right Hon. A. J. Balfour, the Chancellor of the University. There is a fairly serviceable index. Why is there no similar handbook for the extra-academical school or why should a place not be found in this *Handbook*?

The useful *Medical School Calendar for Scotland*, 1900-1 (Edinburgh: E. and S. Livingstone; price 2s., post free 2s. 3d.) has now reached its twenty-first year of publication. It grows steadily in size. Its accuracy is guaranteed by the fact that each professor and lecturer in the various universities and medical schools of Scotland is alone responsible for the matter contained in his syllabus. It fills a place not occupied by any other publication. If a suggestion may be made towards the improvement of a thoroughly practical book, it would be in the direction of having a fuller index, a fuller calendar of events of interest to the student, and less space given to examination questions. No fewer than 138 closely-printed pages of small type are devoted to examination questions. Might not some of this space be given to lists and prices and publishers of the most suitable textbooks in the various subjects in use at the various schools and colleges? Fuller details regarding some or all of the hospitals might be given with advantage. Lastly, it would be well if the *Calendar* were issued considerably earlier in the year.

[1] *Hernia, its Etiology, Symptoms, and Treatment.* By W. McAdam Eccles, M.S.Lond., F.R.C.S.Eng., Assistant Surgeon, West London Hospital and City of London Truss Society, etc. London: Baillière, Tindall, and Cox. 1900. (Pp. 231, demy 8vo, 198 illustrations, 10s. 6d.)

VACCINATION AND SMALL-POX IN GERMANY.

2,630,176 Vaccinations; 15 Deaths from Small-pox.

Separate articles on vaccination and small-pox in Germany in the year 1897 and 1898 respectively appear in the official volume on the general mortality throughout the German Empire during the year 1897, which has just issued from the Kaiserliche Gesundheitsamte in Berlin.

Small pox in Germany in 1898.

The following is a literal translation of the Report on the Small-pox Mortality of 1898, by Dr. Burkhardt.

In the year 1898 the mortality from small pox—namely, 15 deaths—although slightly higher than in the two previous years (5 in 1897, 10 in 1896) remains considerably lower than the average for the ten years ending with the year 1895. Per million of population the deaths are as follows: In 1898, 0.28; in 1897, 0.09; in 1896, 0.19; and in the decade named the average is 2.34 yearly.

The 15 deaths of the year 1898 belong to eleven distinct localities—namely, eight in Prussia, two in Bavaria, and one in Alsace. There was no great extension of the disease in any locality, and except that 3 deaths occurred in one district, and 2 in another, the deaths were isolated. Nine of the deaths occurred near the frontiers, and one fatal case was immigrant.

Of the 12 deaths in Prussia, 8 occurred in districts adjacent to the Russian frontier, and one child died whose mother was a Russian immigrant. In Bavaria one woman, aged 67, died in Munich; also a child near the Austrian frontier. In Alsace one soldier died of small-pox. [Regarding this last case, the next article in the volume is a report on the small-pox illnesses during the year 1898, which informs us that the soldier had been successfully revaccinated a year before he was admitted to Fort Bismarck in Wolfisheim with discrete small-pox. He was removed to the garrison hospital in Strassburg, and died there after inflammation of the lungs had set in.

[Then follows a table of the ages in the fatal cases, namely, in the first year of life 3; in the second, 2; aged 3 to 10 years, 2; 11 to 20, 2; 21 to 30, 1; 31 to 40, 1; 41 to 50, 0; 51 to 60, 1; above 60 years, 2.]

The 3 children under 1 year old who died were unvaccinated. Of the 2 children 1 year old, 1 was unvaccinated and the other was vaccinated too late, namely, 2 days before small-pox appeared. In the next class (3 to 10 years) 1 child died unvaccinated, and of the other nothing is known as to the vaccination; the mother of the child was a Russian workwoman. In the age class 11 to 20, 1 youth aged 15 died after successful revaccination a year previous; in the other case no report as to vaccination was made. The death in the class 21 to 30 years of age was that of the soldier above mentioned. In the class 31 to 40 years, a woman died who had been once successfully vaccinated in childhood, and a man of whom nothing is known as to vaccination. In the class 51 to 60, a leather-cleaner died who had been revaccinated, apparently without success, 24 years previously. In the class above 60, 1 patient had been vaccinated as a child, and again only a few days before the attack, the other was a case of which nothing is known as to vaccination. As to sex, 11 cases [illegible]

As to other European countries, we have reports for the year 1899 only of certain groups of towns, as shown in the [illegible] pared below with German towns of over 15,000 inhabitants.

[This table gives the following information:

282 German towns, 5 deaths, 15 million inhabitants—deaths, 0.3 per million.

33 English towns, 13 deaths, 11 million inhabitants—deaths, 1.2 per million.

12 Dutch towns, 2 deaths, 1½ million inhabitants nearly—deaths, 1.4 per million.

116 French towns, 57 deaths, 9 million inhabitants nearly—deaths, 6.6 per million.

15 Swiss towns, 5 deaths, 660,000 inhabitants—deaths, 7.6 per million.

72 Belgian towns, 62 deaths, over 2 million inhabitants—deaths, 25.7 per million.

58 Austrian towns, 128 deaths, 3½ million inhabitants—deaths, 36.4 per million.]

If we take the German small-pox town mortality as unity, then the other groups of towns show the following mortalities: English 4, Dutch 5, French 22, Swiss 25, Belgian 80, and Austrian 121-fold mortality as compared with German towns.

[The mortality in various cities is given in a table. London had 1 death, Leeds 2, Ghent 6, Madrid 70, Antwerp 43, Warsaw 313.]

In Germany there was one death in each of three towns—Frankfort-a-O., Munich, and Strassburg, no other towns of over 15,000 population had any deaths to show.

We turn now to the articles on vaccination in Germany in 1897, which explains the above almost insignificant small-pox mortality.

VACCINATION IN GERMANY IN 1897.

The following is an analysis of the official Report:

Nominally due for primary vaccinations, 1,737,878; secondary, 1,211,672 persons.

Legally withdrawn—primary, 80,216; secondary, 6,223 persons.

Leaving actually due—primary, 1,657,662; secondary, 1,205,449 persons.

Of these, there were vaccinated—primary, 1,455,349; secondary, 1,174,827 persons.

Leaving unvaccinated—primary, 202,313; secondary, 30,622 persons.

Illegal withdrawals—primary, 35,354; secondary, 5,410 persons.

Of the total vaccination nearly all were made with animal lymph—99.96 per cent., against 99.88 per cent. in the previous year.

Primary Vaccinations.

Of the 1,455,349 primary vaccinations, 1,409,312 were successful, 42,838 were not so, and in 3,199 cases the result is unknown; further, 1,450 were vaccinated a third time without success, thus satisfying the law. The successful primary vaccinations were 85.02 per cent. of those due for vaccination, and 96.84 per cent. of the actual primary vaccinations.

There remained unvaccinated 202,313, as above stated. This is thus explained: Vaccinations officially postponed, 153,278; children not to be found or absent, 13,681; actual illegal withdrawals, 35,354, or 2.13 per cent. of the total due. In six districts these withdrawals reached 5 per cent. Human lymph was used in only 0.02 per cent. of the cases. Regarding animal lymph, 1,413,326 of these vaccinations were made with glycerine lymph, 47,646 with lymph otherwise preserved, and only 240 were arm-to-arm. Of those who were born during the year 1897, 63,307 were successfully vaccinated.

REVACCINATIONS.

Of the 1,174,827 revaccinations, 1,076,045 were successful, 96,776 unsuccessful, and in 2,006 cases the results are unknown; 10,774 were unsuccessfully vaccinated three times, apart from the vaccination in childhood. Of every 100 revaccinations, 91.59 were successful; only 0.17 per cent. failed to appear for inspection. As to the 30,622 due for revaccination, but not revaccinated, 15,284 were postponed by certificate, 6,888 removed from inspected schools, 3,040 were not to be found, and 5,410 were illegally withdrawn—that is, only 0.45 per cent. of those due for revaccination, a very gratifying result. This percentage has steadily lowered since 1893. Animal lymph was used in nearly every case—99.97 per cent.

A small appendix to the statistics shows what great care is exercised in Germany wherever small-pox appears.

An unusual vaccination was made in Munich on account of an imported case of small-pox, when 180 persons were vaccinated, all successfully. In two places in the district of Zweibrucken, an unusual vaccination was made because of a solitary case of varioloid. In Nuremberg, a platelayer had varioloid, and all the residents of the house were vaccinated. In Donaworth, 80 persons were vaccinated owing to a case of varioloid.

General Observations on Vaccination in 1897.

Time of Year.—The prescribed time for vaccination is the period May to September, but in many districts vaccinations were made earlier or later in the year.

Antiseptic Precautions.—One curious result is noticed. A Circular of March 31st, 1897, ordered a minute inspection of vaccination arrangements by superior medical officials in Prussia. It was to be expected that the oldest vaccinators, who had qualified before the antiseptic era, would be averse from the required minutiæ, that the middle-aged would be rather indifferent in the use of antiseptic precautions, and that the youngest, being more trained in such use, would be very precise, zealous, and careful. But the case turned out exactly contrary. The old practitioners were found to be very conscientious and painstaking, while the young ones were careless in the extreme. The latter attached no importance to the cleanliness and dressing of the vaccinated arm. Others had no idea of sterilising their instruments; a few drops of fluid carbolic acid carried in the waistcoat were intended to serve for three or four vaccination stations, and they often used lead pencils or even aniline stamps in signing.

Vaccination and Epidemic Diseases.—Arrangements were often upset by the breaking out of scarlatina, diphtheria, etc., in a locality. In such cases vaccination was postponed to a later month. No widespread infectious diseases occurred as a consequence of the meeting of children at any station. No epidemic thus started; but a few isolated cases were suspicious.

Method of Vaccination.—The method of vaccination is by slight incisions on one arm only, in from four to six places, seldom by puncture. As to instruments, Weichardt's exchangeable blades were found extremely useful; some vaccinators had over a hundred of these. A fresh blade is used for each child; this takes much less time than heating and cooling platinum-iridium pointed knives. The dressing of the site of vaccination is a difficulty. Any application must be absorptive, and strictly should be changed daily, which becomes expensive. Too long use of any dressing prevents the pustules from drying up as they should do normally. Protection from friction is the main thing.

Lymph Used.—The lymph furnished by private institutions, of which there are several in Germany, was sometimes found to be weak and even ineffective, but on the whole was fairly good. But public vaccinators are required to use the lymph furnished by State institutions, which undoubtedly is more certain in results.

Postponement of Vaccination.—The chief reasons assigned for postponement were scrofula, seldom syphilis; for example, in Berlin 357 children were referred for scrofula, 35 scrofula and rachitis, 51 for scrofula and atrophy, 86 for rachitis, 100 for atrophy, 52 for tuberculosis, and only 3 for syphilis, also 2 for epilepsy.

Clarified Lymph.—Experiments have been continued in three State institutions—Berlin, Stettin, and Cologne—to obtain a transparent though diluted lymph by deposition or removal of sediment, with the aid of centrifugal apparatus and glycerine. Several vaccinators reported most favourably of this lymph, clear as water; for it seemed to cause little or no irritation of the skin, in fact, "ideal pustules" were obtained; all agree in this. But other vaccinators have reported that it is weaker in action. It seems that in using such lymph, blood must not be drawn, the incision must be very small and carefully made, and then the lymph acts perfectly.

Results as to Health.

Deaths after Vaccination.—No death is reported as directly due to any of the 2,630,176 vaccinations in 1897, but 7 or 8 deaths occurred from late erysipelas due to contamination of the vaccination sores. Each case is separately described in a few lines in the report, for example:

In Löwitz (Kreis Lublinitz, Reg. Bez., Oppeln) a child died of erysipelas on May 23rd who had been vaccinated April 27th, and had been found apparently healthy on the day of inspection. Medical help was first called in by the parents on May 12th.

One doubtful and 1 unexplained case are detailed. Also the names of 6 children, with their ages, are given who died soon after vaccination from diseases unconnected in any way with vaccination, namely, chiefly gastro-intestinal derangements but made the most of by antivaccinists. These are all the deaths reported. Nine deaths published to the world as due to vaccination were found on official inquiry to be quite unconnected with vaccination. One was from hip-joint disease, another from pemphigus (then prevalent in the same town), another from scarlatina, and so on.

Illness after Vaccination.—Further, no severe non-fatal diseases occurred as a consequence of vaccination. Areolar inflammation is excepted when it runs its normal course; for example, in Berlin there were 412 such cases among 64,521 vaccinated; no lasting injury occurred in any case. Inflammation of the axiliary gland was rare, and usually only temporary; in only 6 cases suppuration occurred; all recovered perfectly. Erysipelas was not remarkable in any district, for this dangerous wound disease is not transferred by the hands of the vaccinator, nor by his instruments, nor by the lymph. The few reported cases argue infection at the home. No case of blood poisoning and of transference of syphilis was re-

ported. Various eruptions occurred in many districts: secondary pustules were rare.

Accidental Vaccination.—One vaccinating officer vaccinated himself accidentally by scratching the ball of his left thumb with the lancet while operating on a restless child. A small vesicle appeared in four days which became very large and set up inflammation of the lymph vessels and glands of the arm. He had been unsuccessfully vaccinated thirteen years previously.

Apparent Immunity.—One case of apparent immunity towards vaccination is reported. A girl was vaccinated without results, who had been already vaccinated three times without results—on one occasion with human lymph arm to arm. But against this case another must be mentioned, in which a primary vaccination was successful after four previous failures.

So ends the report, to which the German Government officials may point with pride as furnishing evidence of the thoroughness and efficiency of all their work connected with vaccination and revaccination. In the light of our present knowledge the one without the other is irrational.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

(Continued from page 1218.)

ST. GEORGE'S HOSPITAL.

Address by Sir Michael Foster.

Sir Michael Foster, K.C.B., M.P., distributed the prizes to the students of St. George's Hospital Medical School on November 6th. The ceremony took place in the Board room of the hospital, and there was a large attendance. The Brackenbury prize in Medicine and the Brackenbury prize in Surgery were gained by Thomas Crisp English; the Webb prize in Bacteriology by Harold Robert Dacre Spitta, M.B., B.S.; an Entrance Scholarship in Arts, of the value of £150, by Valentine Henry Blake; and an Entrance Scholarship in Arts (Pauline), of the value of £50, by James Aubrey Torrens.

Experiment and Analysis in Practice.

Sir Michael Foster, after presenting the prizes, said that he thought that the opportunities afforded by the great hospitals for the advance of medical knowledge were not adequately laid hold of. He was quite aware that there were persons who maintained that these charitable institutions, the hospitals, ought not in any way to serve for the advance of medical knowledge. There had been much misdirected talk about the hospitals being used for purposes of experiment. All this was mere kicking against the pricks, for from the beginning hospitals had been and always would be a means for the advancement of medical knowledge. It did not seem to be recognised that when a sick man placed himself in the hands of a healer he became at once the subject of an investigation. Every touch of the surgeon, every counsel of the physician was by its very nature experimental. The fact that the action of the surgeon or of the physician was directed not to the advance of knowledge but for the welfare of the patient did not at all interfere with his action, being in reality an experiment. In every action there was always a factor of uncertainty—it might be almost insignificant, it could never be wholly absent. In all cases there was an element of uncertainty. In all cases the physician or surgeon was prepared to profit by the result of his action, and that made his action in the treatment of every case an experiment. In hospitals and consulting rooms there were repeated day after day what might be called scientific experiments. Every experiment of a surgeon or physician was directed to the welfare of the patient, and it was his duty to profit as much as possible by the teaching of such experiment, for it tended sometimes in an almost inappreciable manner, sometimes clearly and obviously, to diminish that great factor of uncertainty, and to make their art less and less experimental. It was not only the duty but the privilege of every physician and every surgeon to avail himself of the teaching of each experiment, and he, Sir Michael Foster, urged that in their great hospitals the possible teaching of these experiments was not laid hold of as fully as it might be, especially in that the analysis of the phenomena presented at the bedside and in the *post-mortem* room was not carried out as exactly, completely, and systematically as it might be. Since his student days great progress had taken place; it was while he was a student that the thermometer was introduced into practice; that was a type of the exact analysis of clinical phenomena. The analysis must be directed and governed for the welfare of the patient, it was not to be carried on so as to worry the patient, but the distinction between necessary careful examination and unnecessary worry was one which must be settled in each particular case, and against a certain amount of prejudice. When he was a young man putting a thermometer into a patient's mouth or axilla was spoken of as worrying the patient.

Clinical Laboratories.

Such an analysis as he had in his mind could only be carried on by means of thoroughly equipped laboratories in connection with the hospitals. The days when a test tube and spirit lamp were all that was needed had gone by; all the recondite appliances of modern science were now necessary, and to make these of use to the patient there must be thoroughly-equipped laboratories for research attached to the hospitals. He thought that in London the hospitals were less properly equipped in this direction not only than the hospitals of other countries, more especially those of America and Germany, but even less than the hospitals of the provinces. The data gained by such research would be of very great value for the mere detection of facts. Again and again facts which had been discovered by these means had thrown an absolutely new light on the nature of the disease and the condition of the patient, and had led to an absolute change in the treatment and in the end to the recovery of the patient.

Teaching and Examination.

The present system of examination and a great deal of the teaching did not adequately train the student in grappling with the unknown. It was just when he was clear from all the trammels of examining bodies that the student was in the most fit condition to be put on a proper path of inquiry, to be trained to the true methods of research, to be trained to work so as to satisfy not the demands of examiners, but the demands of Nature herself, and he thought that post-graduate study of that kind as a definite inauguration would be of very great value indeed to the profession. He had just returned from America, where he had heard, not once only, but again and again, that when they sent their graduates to England, they found the training of the ordinary student of unsurpassed excellence, but they themselves as graduates, seeking post-graduate aid, got very little at all either from the general hospitals or the special hospitals. He ventured to suggest to members of the staffs of the several hospitals that at no great expenditure of time or labour on their part, but by well-directed organisation only, they could put a number of men upon many small or large problems, and so train a number of observers in the right way of looking at medical truths, and thus add largely to medical knowledge.

QUEEN'S COLLEGE, CORK.

Address by Professor Yelverton Pearson.

The inaugural address of the winter session at Queen's College, Cork, was delivered by Professor C Yelverton Pearson, who took for his subject, Surgery as a Science and an Art. After a personal reference to his connection with the College and an allusion to the position of surgery as a science, he said it was absolutely essential that the surgeon should possess a considerable knowledge of natural science or biology, physical science or natural philosophy, chemistry, anatomy, physiology, including histology, and pathology including bacteriology. To these should be added at an early period an elementary acquaintance at least with logic, the science of the laws of thought, or of reasoning. The foundation stone of surgery was anatomy. Anyone who desired to become a surgeon should first become an anatomist. The reason of a student's knowledge of anatomy not being of so intimate or permanent a nature as twenty years ago was because of alterations that had been made in the order of examinations, and consequently many students thought that because they had not anatomy in their final, as was the case formerly, they should forget it as soon as possible, once the anatomical examination was over. He thought that when a student presented himself for a degree or diploma

in surgery he should be prepared and required to answer any reasonable question in surgical anatomy; also that examiners in anatomy might aid all surgeons somewhat more than they did by laying special stress on such a knowledge of anatomy as was calculated to prove really valuable to the physician or surgeon, and less on certain details which, though interesting to a professor of anatomy, could be of little value in practice.

The surgeon could not dispense with an intimate knowledge of anatomy, and there was as great a difference between the person who studied anatomy from models, casts, and drawings and a real anatomist as there was between the art critic who derived his knowledge from walking picture galleries and the real artist who had worked with his pencil and brush from boyhood. Anyone who would undertake to perform an important surgical operation without an accurate knowledge of the structures through which he was about to cut, or of the parts he was about to expose, might be likened to a mariner who attempted to navigate a dangerous coast without previous knowledge of its risks, or who was provided only with a chart of which he had good reason to doubt the accuracy. It was most requisite also that the surgeon should possess a knowledge of morbid anatomy in its strict sense. Closely associated with anatomy was physiology, or the science which treated of the natural functions of living organisms. But anatomy and physiology did not occupy the leading position chronologically in the curriculum of the medical student. Certain other sciences were placed in the forefront. These were biology, physics, and chemistry, all of which were essential, as experience proved, to surgery. Last, but by no means least, he should refer to the science of pathology, or the study of diseased conditions and processes which, strictly speaking, bore the same relation to morbid anatomy that physiology did to normal anatomy. So far as the study of diseased conditions in the living was concerned they were provided with ample material in clinical hospitals. On the other hand, it was with deep regret that he felt obliged to admit that the opportunities for the study of morbid anatomy and pathology were not all that was desirable. This was in part due to the natural prejudice, amounting almost to a superstition, that existed in Ireland against the performance of *post-mortem* examinations.

In his opinion it would be much better for the whole community at large if that state of things were altered. In many cases of death where the obedient coroner's jury brought in a verdict of "Death from heart disease" (often without the slightest medical evidence) would a carefully-conducted *post-mortem* examination reveal a totally different cause of death. He had long been fully persuaded that the extremely careless way in which burials were permitted in Ireland previous to registration, and often without proper certification, was a practice strongly to be deprecated, and calculated to be a direct incitement to crime, and it was certainly time that the authorities awoke to a proper sense of duty in this respect. There was, however, another aspect in which he wished to review this question, and that was the condition in which that and the sister colleges had been obliged to remain with regard to the teaching of pathology. It certainly would be an unpardonable evasion of duty on his part if he did not protest in the strongest manner at the neglect to which they had been subjected in that respect, and it certainly did not redound to the credit of successive Governments that, at a time when the importance of pathology in relation to the prevention and treatment of diseases had been recognised in all the civilised countries throughout the globe, it should be left to the respective governing bodies of the Queen's Colleges in Ireland to provide a teacher in pathology for their medical schools in order that they might not be behindhand. The manner in which the subject of pathology had been permitted to remain unendowed in the Cork Medical School at the end of the nineteenth century was nothing less than a national disgrace. Apart from its importance in relation to medical and surgical teaching, there was the advantage to the public of having a skilled pathologist in a fully-equipped laboratory, to whom to refer such questions as doubtful cases of rabies, the bacteriological examination of milk and water, and at the present moment doubtful cases of the much-dreaded plague. Reference was then made to surgery as an art, the importance of training in the manipulative part of surgery was emphasised, and in conclusion the means by which a knowledge of the science and art of surgery might best be acquired were described.

THE WAR IN SOUTH AFRICA.

IMPERIAL YEOMANRY HOSPITAL.

We have received the following letter from Mr. C. Stonham, Chief Surgeon and Officer Commanding Imperial Yeomanry Field Hospital; Senior Surgeon, Westminster Hospital, etc.:

Barberton, September 20th.

I feel sure that you and our friends and colleagues at home will be interested to hear something of the doings of the Imperial Yeomanry Field Hospital and Bearer Company, occupying as they do a unique position as the only field hospital and bearer company which has ever left the country under civil auspices. Let us hope we shall but prove to be the pioneers of many such, should the needs of the Empire unfortunately require their services.

Before leaving England, I heard it asserted more than once that, although civilians would prove of inestimable benefit in supplying the needs of stationary and base hospitals, they could not succeed in the more arduous and hazardous duties of caring for the wounded on the field, nor would they themselves be fitted to withstand the fatigues and hardships necessarily entailed by marching with an army at the front.

The career of our Field Hospital and Bearer Company has abundantly proved that doubts such as these are unfounded, and I venture to express the opinion that when the final verdict is passed upon our work, even the most captious must fain admit that the Field Hospital and Bearer Company have fully justified the most sanguine hopes of those who so patriotically equipped and sent them out.

The Staff.

I have the good luck to have associated with me Major G. E. Hale, D.S.O., R.A.M.C., who is in command of the Bearer Company. No man could be more agreeable as a companion and fellow-worker, and his expert knowledge of transport and camp life has been of the utmost service.

Our non-commissioned officers and men have, as a whole, worked hard and well, comparing most favourably with the men of the regular army, and as the majority of them are but 'prentice hands they are much to be commended.

In this and my succeeding letters I propose to give you a brief outline of the work we have done.

The Difficulties of the War.

On leaving England our great anxiety was that the war would be over before we could reach Capetown; now our aspirations are in an opposite channel, and our thoughts are turned homewards. Our mental condition has undergone much the same change as did the lady's on her first voyage—for the first twenty-four hours she expressed fears that the ship would go down, during the next few days she was afraid it would not. By the way, our voyage was not propitious, for, as is well known, our transport, the *Winkfield*, collided with and sank the Union liner *Mexican* seventy miles from Table Bay.

Had we known the country to which we were going we should not have had any anxiety as to the speedy termination of the war. The British are fighting physical geography rather than a people, and those who have been out here and have seen what we have seen will be the most lenient in their judgment of reverses and checks which are so easily condemned by some who have only the morning paper as a source of information, and know only the physical characters of their own country.

The Work of the Hospital.

Since we left England we have marched from Bloemfontein on May 28th up to the present date 1,150 miles, have been present at eleven engagements, and have afforded relief to 1,850 patients. We have admitted 650 men into hospital who have been carried by the Bearer Company's ambulances, sometimes for days and for long distances, until they could be sent

by sick convoy to the nearest stationary or base hospital. We arrived in Table Bay on April 6th, and, as our ship was considerably damaged in collision, we were at once sent into the dock instead of waiting our turn to disembark. I need not dwell upon the difficulties we experienced in Capetown in being sent on; at last they were overcome, and we entrained on April 29th to proceed north, although our actual destination was apparently unknown. However, in due course we arrived at Bloemfontein on May 2nd, having stopped for a few hours at Deelfontein to see the Yeomanry Base Hospital, and have breakfast with our numerous friends there. At fever-stricken Bloemfontein we were allotted camping ground in the foulest place which could be found, and here we waited till May 28th before we could get transport animals. We here packed our wagons, and made all ready for a start as soon as we should get orders.

THE ACTION AT RHENOSTER RIVER.

On May 28th we marched under orders to proceed to Kroonstadt. We were quite alone and had no escort; indeed we marched alone as far as Pretoria—a very different condition of things, as we were to find later, to forming part of an advancing army.

We arrived at Kroonstadt on June 4th, drew four days' rations, and started the next morning for Johannesburg, but we were not destined to reach there so quickly as we thought. It is now well known from my telegrams and letters (which we have seen in the *Daily Telegraph*) that we were present at the action of June 7th, when the Boers under General C. de Wet destroyed the line at Rhenoster River, cut up the 4th Derby Militia, and destroyed our mails, stores, warm clothing, and ammunition at Roodeval Station, which they eventually blew up. It was here that we first came under fire; the Boers, mistaking us for a convoy and reinforcements, firing on our waggons, but fortunately doing no harm. They, however, made no prisoners, but gave us every facility for carrying on our work, and showed us many kindnesses until they were driven back by Lord Methuen on June 11th, after which action we admitted to the hospital 12 wounded Yeomen.

On June 7th we had 29 killed and 91 wounded, the latter keeping us hard at work for two days. Many of these men had been injured by fragments of shell, the wounds in some cases being exceedingly severe, the soft structures being lacerated and the bones much comminuted. Our arrival on the scene was providential; Dr. Buchanan, the regimental officer attached to the Derbys, was singlehanded, and had not the necessary equipment with him for dealing with so many severe cases, even had it been in the power of one man to do so.

Our experiences at Rhenoster were most interesting, and I think I may say unique; but as my letters already referred to have given a short account of them, I need not dwell on them further. It was most unfortunate that we had to move our camp on June 9th, a step rendered imperative by the impending action (June 11th), as De Wet meant to occupy the kopje beneath which we were. Moving the patients necessarily entailed considerable suffering and, I regret to say, cost some lives which would, I think, have otherwise been saved.

On June 11th, after the action, Lord Methuen came round the hospital, saw all the wounded men, and expressed his satisfaction with our arrangements. With the advent of such a large force we of course became very busy, as it soon became known that our equipment was all that could be desired.

On June 14th we sent a sick convoy of 106 by road to Kroonstadt, four ambulances taking them all under Major Hale's command. He returned on June 18th, and on the following day I took a further convoy of 102 by train, returning the next day.

JOHANNESBURG AND PRETORIA.

On June 22nd we struck camp, and proceeded on the way to Johannesburg, arriving there on the 27th, and camped in the grounds of the Wanderers' Club.

On June 29th we set out for Pretoria, and reached there the next day, when I had an interview with Lord Roberts in reference to our experiences at Rhenoster River, as the result of which he wrote to General de Wet thanking him for his kindness to us during the time we were in his hands. We remained at Pretoria until July 7th (camping at Arcadia), when we received orders to march and join General Mahon's brigade, which was at Rietfontein near Irene. Failing to come up with him there, we were to continue our march until we found him. Accordingly we marched to Rietfontein, but the brigade had left, so the next day we determined to push on, although we had no means of finding out where General Mahon was; but an officer commanding a detachment of Irish Fusiliers, who were holding a position near our camp, told us he thought Mahon was at Bapsfontein. We eventually found the brigade, which had joined General Hutton, at Rietfontein No. 6; but on our way we nearly marched into the Boer lines, for we had taken a wrong road, and only discovered our mistake when we saw and questioned our own advanced outposts whose line we had passed through.

On July 9th, 10th, and 11th we sent out ambulances, as fighting was in progress; but we had very few casualties, the Boers being strictly on the defensive.

On July 12th the camp broke up and the force marched back to Pretoria. We, however, went with 50 sick to Springs, where we arrived late in the afternoon, and were lucky enough to be able to send the sick to Johannesburg the same evening by train. The following day we telegraphed to the P.M.O. Pretoria for instructions, and received orders to return to Pretoria at once. We marched on July 15th and arrived on the 17th.

Up to this time we had been marching by ourselves; but we were now to become part of an advancing force, particulars of which I shall give you in my next letter.

SPECIAL HOSPITALS IN SOUTH AFRICA.

THE WELSH HOSPITAL.

THE Committee of the Welsh Hospital now in South Africa has received a telegram from Lord Roberts, through the War Office, expressing the hope that it might be possible for the hospital to remain for an additional three months. A special meeting of the Executive Committee of the hospital was held on November 3rd, under the presidency of Sir David Evans, when it was proposed by Sir John Williams and seconded by Mr. Edmund Owen:

That in accordance with the desire of Lord Roberts the Executive Committee hereby consents to the Welsh Hospital remaining in South Africa for a further period of three months.

Lord Roberts has been informed of the Committee's decision by telegram.

THE EDINBURGH HOSPITAL.

IT has been arranged by the Hospital Committee that the reception to the returning staff of the Edinburgh and East of Scotland South Africa Hospital shall take place on Monday, November 19th, in the Quadrangle of the Old University. The ss. *Dilwara*, which is bringing the staff, is due to arrive at Southampton on November 16th, but, to prevent mishap to the arrangements, the reception is to be delayed till the date named. If time be kept, the staff should reach Edinburgh on Saturday, November 17th, or on the following day.

IMPERIAL YEOMANRY HOSPITALS.

LIEUTENANT COLONEL SLOGGETT, R.A.M.C., Commandant and Principal Medical Officer of the hospital at Deelfontein, has reported that, on October 15th, 8 officers and 597 non-commissioned officers and men remained in the hospital, of whom 2 officers and 405 men belonged to the Imperial Yeomanry.

Captain Turner, R.A.M.C., Principal Medical Officer of the Maitland Hospital, has reported that, on October 12th, 3 officers and 128 men were under his care, all of whom belonged to the Yeomanry.

Surgeon-Major Kilkelly, Commandant and Principal Medical Officer of the hospital at Pretoria, has reported that 35 officers and 348 non-commissioned officers and men remained in that hospital. He has also stated that Majors Stonham and Hale, with the staffs of the Imperial Yeomanry Field Hospital and Bearer Company, had, after arduous marches, returned to Pretoria all well.

THE PREVENTION OF TUBERCULOSIS.

CONSUMPTION AND TUBERCULOUS MILK.

A CONFERENCE was held at Wakefield on October 24th between the Sanitary Committee of the West Riding County Council and a deputation representing the Urban and Rural District Councils of the Riding to consider the relation of the milk supply to public health, and the treatment of consumption in the human being. The want of unanimity amongst the various councils on the adoption of the "model milk clauses" suggested the desirability of an appeal to Parliament for general legislation on the lines of the Public Health (Scotland) Act of 1897. The education of Parliament being, however, a costly undertaking, it was decided to invite the representatives of the county boroughs to a friendly conference at which the whole subject of tuberculosis in milk and in human beings will be considered.

SANATORIUM FOR CONSUMPTIVES FOR PORTSMOUTH.

The Portsmouth Board of Guardians have recently had before them the question of the fresh-air treatment of consumption. The medical officers of the infirmary having considered the matter, Dr. Gaston reported that with certain alterations two of the existing wards of the infirmary might be made suitable for the purpose. Drs. Knott and H. W. Morley, though agreeing that the two wards selected were the best available in the infirmary, considered that the treatment should be carried out in a specially constructed sanatorium and under a specially trained staff of nurses and medical officers who could carry out the necessary discipline. The Board, after consideration, agreed with this view of the matter, and unanimously passed a resolution in the following terms:

That in the opinion of this Board accommodation for the isolation and treatment of persons suffering from consumption should be provided by sanitary authorities, and that the whole of the Boards of Guardians in the county be requested to join this Board in petitioning the Hants County Council to provide a sanatorium to which Boards of Guardians may send patients at a fixed rate.

CONSUMPTIVE HOSPITAL FOR PERTH.

The Committee of Management of the Society for the Treatment and Relief of Incurables and Chronic Ailments and Care of Convalescents in Perth and Perthshire have secured ground on the Barnhill Slope, 300 feet above sea level, for the erection of a sanatorium for consumptives. The building, which will accommodate from 16 to 20 patients, will have a southern aspect and be well sheltered from the north and east. Sir Robert and Lady Pullar have provided the necessary funds to build the sanatorium. A bazaar, supported by many persons of rank and influence, is to be held in Perth in September, 1901, to raise the remainder of the sum of £10,000 required for endowment, nearly half of which has already been subscribed.

THE PREVENTION OF TUBERCULOSIS IN LANCASHIRE.

The Lancashire County Council having decided—as that of the West Riding of Yorkshire and other councils have already done—to consider the question of a systematic campaign against tuberculosis, the Public Health Committee of that body requested the county medical officer to prepare information which would place the Committee and the County Council in a proper position for giving this very important subject the thoughtful consideration it deserves. Dr. Edward Sergeant has accordingly prepared a report on the prevalence and prevention of tuberculous, with special reference to the establishment of sanatoria. He points out that in the administrative county of Lancashire the deaths from phthisis during the year 1899 numbered 2,305, representing a total of from 6,000 to 7,000 persons suffering from the disease. If the phthisis mortality of the county could be reduced by a quarter—which is well within the possibilities of sanatorium treatment—the saving to the county might be represented by £75,000 per annum, after allowing a good sum towards the cost and maintenance of patients whilst under treatment.

Dr. Sergeant gives examples of sanatoria in England and on the Continent to show what has already been done. He finds that the usual cost of treatment in these sanatoria varies from £3 to £5 a week with extras, and is therefore prohibitive to the vast majority of sufferers. The Grabowsee Sanatorium, about 20 miles north of Berlin, which has been in existence four and a half years, and is intended for the poorer class, shows that the average daily cost for each patient can be brought down to about 3s. This institution, which was described and illustrated in the BRITISH MEDICAL JOURNAL of July 29th, 1899, p. 283, consists of a dozen to eighteen Döcker huts, each capable of accommodating eight patients. By the establishment of a colony of such huts the cost of a sanatorium need not exceed £150 to £300 per bed. This amount will, however, necessarily vary according to the number of patients to be provided for and the character of the building.

Although Boards of Guardians appear to have the power to provide sanatoria, it is a question whether similar power belongs to county councils. Dr. Sergeant, however, points out that under the Isolation Hospitals Act, 1893, it is the duty of county councils to provide hospitals for those suffering from "infectious diseases," including certain diseases specifically mentioned in the Notification Act and any other infectious disease, by order of the Council. It seems therefore permissible under this Act for county councils to erect sanatoria for consumptives.

THE DOSAGE OF DIPHTHERIA ANTITOXIN.

[FROM A CORRESPONDENT].

IT appears from inquiries which have recently been addressed to the BRITISH MEDICAL JOURNAL, that the question of the dosage of diphtheria antitoxin is one which still presents difficulties to some practitioners. Nor is this surprising. In the first place the dosage of the serum remedies is based upon principles very different from those which hold in ordinary pharmacy; we have to deal with units instead of grains or minims. In the second place, in some parts of the country diphtheria is rare, so that a practitioner resident therein may have had no occasion to treat a single case since the introduction of the remedy into this country in 1894. Consequently, the following remarks, based upon an experience of a very large number of cases extending over six years, may be found useful, and are offered in the hope that they may prove of service to some practitioner whose experience of the treatment of the disease since the introduction of antitoxin has been limited.

GENERAL CONSIDERATIONS.

In the first place, it must be pointed out that it is impossible to give a fatal overdose of antitoxin; it is not like opium and strychnine and such drugs, to the dose of which there is a definite limit. Why not, therefore, it may be asked, give a large dose straight away in every case, whatever its degree of severity? Against this there are three reasons. First, the volume to be injected is large with very big doses, which increases the discomfort at the seat of injection, and is more likely than a small dose to give rise to the rash and febrile disturbance which is often met with a week or so later. Secondly, the expense of the treatment is increased, especially if, to lessen the volume, a concentrated serum be employed. Thirdly, it is quite unnecessary to inject a large dose in a mild case. Even in the severe forms of the disease there is a limit dose, to exceed which is merely to waste the material. Out of these considerations arise the questions, What is a mild case of diphtheria, and what are the minimum and maximum doses?

MILD CASES IN CHILDREN.

In answering the former in any given case the age of the patient is of the highest importance. Before the introduction of the antitoxin treatment half the patients under 5 years of age admitted to the hospitals of the Metropolitan Asylums Board died, and many of the remaining half narrowly escaped death. Diphtheria in children under 5 is an exceedingly serious disease, it is very serious up to 10 (28 per cent. mortality), and is still serious from 10 to 15 (10 per cent. mortality). After that age it becomes less serious (4 to 5 per cent. mortality) up to the age of 40, when it again rises. Therefore every child under 15 should certainly be treated with antitoxin. If the case is a mild one—that is to say, if the exudation or membrane is limited to a part of one or both tonsils, and there is no nasal discharge or evidence of laryngeal implication; and, further, if there is little or no glandular

enlargement, no albuminuria, and no obvious constitutional disturbance, then 2,000 units should be injected. In such a case there is usually no necessity to repeat the dose; but if, as sometimes happens, the faucial condition gets worse or constitutional symptoms appear, the dose should be repeated within twenty-four hours.

Severe Cases.

If the case is not a mild one—that is, if either the tonsils are entirely covered with thick membrane, or the palate, the nasal passages, or larynx are attacked, or if there is enlargement of glands, fœtor, increased frequency of pulse, albuminuria, pyrexia, and restlessness, then the dose should be from 4,000 to 10 000 units, according to the extent of the mucous membrane implicated or the acuteness of the constitutional symptoms. In any case a second injection should be made within twenty-four hours, half the initial dose being given if improvement is observed, the same as the initial dose if there be none. The writer believes that if any good is going to be done by antitoxin in a bad case of diphtheria, it will be accomplished by about 16,000 (certainly by 20,000) units given within twenty-four hours.

Inject Early in Children.

A severe case of diphtheria is nearly always one which has come under treatment late. Now and then one meets with cases in which the extension of membrane and absorption of toxins is so rapid that within twenty-four hours from the onset the patients show toxic symptoms. Such cases must be treated with 8,000 to 10 000 units at once. But usually for the first day the symptoms are slight, and, if antitoxin be given at once, they will not become severe. Therefore, it is of the utmost importance to inject antitoxin early, and not to wait to see whether the case will assume a severe form.

Another argument for treating every case, however mild, in children with antitoxin is that one never knows whether the disease will spread to the larynx or not. This serious development can certainly be avoided by a timely use of serum.

Adolescents and Adults.

In patients over 15 very mild cases may be left without antitoxin, cases, that is to say, in which the exudation is small in amount and strictly limited to the tonsils. Should there be more extensive exudation, or constitutional symptoms, or albuminuria (which may be taken as evidence of toxæmia), the case should be treated with antitoxin, the dosage being the same as that recommended above for children; but the cases not treated should be carefully watched, and at any sign of progress on the part of the disease antitoxin should be administered. The larynx is not implicated so often as in children; the first, and often the only, sign in adults is aphonia.

Prophylactic Dose.

When antitoxin is employed as a prophylactic, a dose of 600 units is sufficient.

Keeping the Serum.

Antitoxic serum, if kept in a cool, dark place, will preserve its therapeutic properties for several months, but no attempt should be made to keep for future use the contents of a bottle that has been opened.

THE MEDICAL SICKNESS AND ACCIDENT SOCIETY.

The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held on October 26th at 429, Strand, London, W.C. There were present Dr. de Havilland Hall (in the chair), Dr. J. B. Ball, Mr. J. Brindley James, Dr. M. Greenwood, Dr. J. W. Hunt, Dr. W. Knowsley Sibley, and Dr. Alfred S. Gubb.

The accounts presented showed that the sickness experience of the Society during 1900 has so far been under the amount expected and provided for. During the autumn months the Society usually experiences a few claims arising from accidents occurring to members while holiday making, and this year the number of claims of this kind has been somewhat greater than usual. Several rather heavy claims have also been paid in respect of members invalided home from South Africa with enteric fever, and there is reason to believe that the last of these claims has not yet been received. Again, while 1900 has so far been a light influenza year, only a very few claims having been received for ordinary attacks of this disease, a considerable number of members have been incapacitated by weak heart's action and other sequelæ of influenza, and these claims usually last for a considerable time.

The Committee has always conducted the operations of the Society in a very economical manner, recognising that the objects with which the business was founded exclude any large expenditure for the mere purposes of expansion, and hitherto the total cost of carrying on the work has been less than 5 per cent. on the contributions. At the last meeting the Committee examined a statement, ordered by them at the previous meeting, showing the amounts paid each year since the starting of the Society for printing and stationery, and it was found that in consequence of the recent alteration of the method of paying premiums from quarterly to annually or half yearly, and of other economies, the amount now being expended under this heading was less than was required ten years ago when the Society contained only about half the present number of members.

Prospectuses and other information can be obtained on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

SOME INDIAN SANITARY REPORTS.

Bengal.

The report for 1898 has been drawn up by Major H. J. Dyson, I.M.S., Sanitary Commissioner, and was submitted to Government through the Inspector-General of Civil Hospitals who, it is stated, appended to it a valuable note in which he reviewed the salient points in the sanitary history of the year, and compared the figures with those derived from the statistics of hospitals and dispensaries. It seems a pity that this note was not bound with the report. The year was a healthy one; meteorological conditions were normal, temperature moderate, and rainfall ample and well distributed. The cost of food declined from the famine rates of 1897, and the stamina of the people seems to have been restored. The birth-rate was low, being 35.79 per mille against 36.94 in 1897. The depression is thought by the Sanitary Commissioner to be due to the famine conditions of the preceding year. The Government does not concur in this view, and points out that the increase of births towards the close of the year was not due to restored vigour of the population, but constituted a feature of annual recurrence dependent on the selection of certain lucky months for contracting marriages. The death-rate was 26 57 per mille, against 32 94 in the preceding year. "The fever mortality was lower than usual, and that from cholera the lowest ever recorded in the province." The latter disease, however, claimed a large number of victims in Chittagong, which had been ravaged by a cyclone and cyclonic storm wave, and in Puri, which is a favourite resort for pilgrims. Small-pox mortality was below the average, and bowel complaints were less fatal than usual.

The registration of vital statistics is still very defective and uncertain in the province, and many interesting statistical problems raised by the reporter are dismissed by the Government with the remark that the deficiencies of registration are such that no useful inferences can be drawn from the figures. Such being the case, it is difficult to understand why these are displayed so voluminously and discussed so elaborately. The report, with its tables and appendices, covers some 188 foolscap pages, and nine-tenths of the material consists of figures, presenting an aspect of great precision and accuracy, but thoroughly doubtful and inconclusive. Indeed the six pages of Government resolution accompanying the report contain almost all the facts which it is worth while to record and know. Elaborate precautions were adopted by inspection of passengers by rail, and segregation of the suspected to prevent the introduction of plague into the province. These appear to have been effective as regards the districts, though the disease broke out and prevailed on a small scale in Calcutta. The Sanitary Board met only once during the year, but it conducted some useful business by means of correspondence, and the sanitary engineer gave

valuable help in regard to large schemes such as water and drainage works. The municipalities spent about 46 per cent. of their revenue on sanitary measures, the whole expenditure on these (excluding Calcutta) amounting to some 19½ lakhs of rupees. There is a lengthy return covering 25 pages appended to the report, showing the chief sanitary defects of municipalities, and what was done to remedy them. The information is of parochial rather than general interest, and the wonder is when the time will arrive when the digging of a ditch or well and the carting and shooting of rubbish will no longer be esteemed an incident worthy of formal record in a provincial report. As a curiosity of Indian sanitation it is noted that five boats are employed on the Hooghly in discovering and sinking the floating carcasses of men and beasts.

North-Western Provinces and Oudh.

The year 1897 was a disastrous one in these provinces. Famine prevailed extensively, malaria was rife and deadly, and plague threatened—indeed actually broke out—on a limited scale at and around Hardwar, but was seemingly extinguished by strenuous and well-directed efforts. A pleasing contrast was presented by 1898; it was a year of favourable climatic conditions, rapid recuperation, diminished prevalence of disease and lower mortality. The birth-rate was low in the early months of the year, but recovered towards its close, reaching for the twelve months a high level —37.35, against 31.10 in 1897; and 36.41 for 1893-7. The death-rate was 27.38, against 40.46 and 33.90. The improvement may partly have been due to the killing off of weaklings in the preceding year. There was a decrease under all heads of causes of death. The cholera mortality was the lowest on record; the small-pox mortality also the lowest with one exception; and the deaths caused by fevers and bowel complaints much fewer than usual. It is also very significant that there was a great reduction in deaths by suicide both of males and females, the latter being, however, over three times as numerous as the former. The experiences of the year was very similar to those of Bengal. Elaborate precautions were adopted to exclude plague, but the disease broke out at Jwalapur, a town near Hardwar, which was evacuated and cleansed. These measures appear to have been effective there, as well as in some villages where the disease appeared. Sanitation in these provinces is carried out with vigour. Special health officers were appointed to large towns, and a large special staff employed for plague and other duties. The local government warmly commends the administrative ability and activity of Lieutenant-Colonel S. J. Thomson, I.M.S., C.I.E., who compiled this report, but its bulk and arithmetical elaboration make it open to the same criticisms as the Bengal report.

Bombay.

Western India shared with Eastern and Northern India the improved health conditions of 1898 with one exception, namely, the increased prevalence and mortality from plague. The birth-rate, owing to the unfavourable influences of the preceding year, was low—30.94 against 33.46 in 1897, and 36.06 in the previous decennium. Attention is again drawn to the large number of stillbirths in the city of Bombay. The percentage of stillbirths to live births for the Presidency was 1.35 against 1.08 in 1897. In Bombay the rate rose from 10 to over 14. The increase is attributed to plague. The corresponding rate in Calcutta is about 7.5. The death-rate for the Presidency was 29.16 against 39.84 in 1897 and a decennial mean of 30.08. The number of deaths caused by plague was 86,191, or 4.58 per 1,000 of population; 2,086 deaths from this cause were registered in 1896, and 46,944 in 1897; so that 135,221 casualties have been due to this disease since its first outbreak. The city of Bombay and the districts of Dharwar, Belgaum, Satara, Thaua, Karachi, and Surat suffered most, but only three districts escaped altogether. Cholera and small-pox presented an almost unexampled decrease, and fevers and bowel complaints claimed a decided dimunition of victims. Municipalities expended 24⅗ lakhs of rupees, and district local Boards over 4¾ on sanitary work such as conservancy, improvement of town and village sites, water supply, arrangements for fairs and festivals, markets, and slaughterhouses. Large sums were also spent on precautionary measures against plague and on plague hospitals and sheds for segregation. The work done by Major J. Crimmin, V.C., I.M.S., the Health Officer of the Port of Bombay was onerous, and its efficiency is attested by the Government. Lieutenant-Colonel A. W. F. Street, I.M.S., the Acting Sanitary Commissioner, by whom the report for 1898 has been compiled, shared with Lieutenant-Colonel J. W. Clarkson, I.M.S., the permanent incumbent, the arduous and anxious duties of the office. The report indicates that sanitary administration and work in the Bombay Presidency are the subject of lively interest and well-directed energy.

EDINBURGH ROYAL SOCIETY.

The Feeding of the Working Classes.

The first ordinary meeting of the session was held on November 5th, Sir Arthur Mitchell, one of the Vice-Presidents, in the chair.

Dr. Noel Paton gave an account of the investigations on the physique of the poorer classes of Edinburgh, which he had made in conjunction with Dr. Craufurd Dunlop and Dr. Elsie Inglis. He first alluded to the puny children and poorly-developed adults met with in the slums, and stated that the investigation was undertaken primarily to ascertain if deficient feeding was an important factor in the production of this imperfect physical development, and whether, on the average income of a labourer, it was possible to provide suitable nourishment for a family and to leave at the same time an adequate surplus for the other necessities of life and for some recreation. He pointed out that food was taken to provide the energy for mechanical work, for heat production, and for growth, and to afford the material for building up and repairing the great energy-liberating tissue, the muscle. The amount of energy required by a man during ordinary work was shown to be equivalent to the heat required to raise 3,500 kilograms (about 8,000 lbs.) of water through 1° Centigrade, or 3 500 calories. The amount of flesh-forming food required was shown to be about 120 grams (4 ozs.) of albumen. The method of studying the social condition, food consumption, and expenditure in the families investigated was described. These families were classified into three groups: (1) those with irregular incomes, generally under 20s. a week; (2) those with regular incomes of about 22s. a week; (3) those with incomes of over 30s. a week. It had been found that while the thrifty poor of Class 2, and some of those on irregular incomes in Class 1, succeeded in procuring a diet yielding a supply of energy capable of supporting light or moderate muscular work, as a general rule the supply of flesh-forming food in these classes was deficient. The average diet of the thrifty labouring class family was found to yield 3,275 calories and 108 grams of flesh-forming material. Speaking generally, the most important fault was the retrogression from the old national diet of oatmeal porridge and milk to one of tea, bread, and butter. A comparison with the dietaries of the poor in other countries and in public institutions showed that the food supply of the Edinburgh poor was at least equal to that of similar classes in America, but that it compared unfavourably with the diet of public institutions with the exception of that of the Scottish poorhouses, which was shown to be very insufficient. The economic question of the work value of expenditure on food was considered, and it was shown that if work was paid for by amount done the return in money, properly spent on food, would be something like 500 per cent. The limitations of the supply of energy by the state of the digestive organs, especially in town dwellers, was, however, pointed out. Lastly, it was shown that while demand for food for growth in children, for work production in adults, and for heat products in both was so imperious that it had to be fairly well satisfied, the providing for this out of such a small income as 22s. a week left a most inadequate surplus for other necessaries. For a man, woman, and four or five children, the average food expenditure was 15s. 6d. a week, which after payment of rent left only 3s. 2d. Since the rent averaged 3s. 4d., only by the constant exercise of self-denial and thrift was it possible for a labourer's family to live upon such an income, and even a moderate indulgence in drink must render it impossible. Some good might be done by disseminating elementary instruction in dietetics. Acknowledgment was made to the Town Council for their assistance in voting a sum of money to defray the expenses of the investigation.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, NOVEMBER 10TH, 1900.

YELLOW FEVER AND MOSQUITOS.

For many years Dr. Carlos I. Finlay of Havana has held that yellow fever could be conveyed by mosquito bite. He has further asserted that a mild form of the disease, protective against the naturally acquired and generally graver form, could be conferred by regulating the amount of virus introduced by the infecting mosquitos. This, he stated, could be done by limiting the number of the bites to one or two. Finlay's statements apparently led to no general adoption of his method of conferring immunity, nor, indeed, were they generally accepted.

The epidemiological facts in connection with the spread of yellow fever are peculiar and, if properly considered, lead to the inference that the germ does not pass directly from the sick to the sound; on the contrary, they favour the idea that, before it can become infective like the germ of malaria, it has to undergo some change, or perhaps process of multiplication, outside the human body. This inference is strongly supported by the recent observations made by Surgeon Henry R. Carter, U.S. Marine Hospital Service, at Orwood, and Taylor (Miss.), U.S.A., referred to in the British Medical Journal (September 8th, 1900). It is recognised that yellow fever can be contracted only within the endemic area; that the clinical manifestations of successful infection begin to show themselves after an incubation period of from one to seven days; and that new endemic foci can be created by introducing yellow fever patients into hitherto unaffected localities. Carter has now shown that it is only after some nine to sixteen days, dating from the time of introduction of a yellow fever case into a previously unaffected place, that this place becomes infective; that is to say, the germ must be present in a locality for more than a week before it is communicable to man.

The question now arises, where is the germ, and what is happening to it during this period of latency? The experiments and observations recently carried out in Cuba by Surgeon Reed and Acting Assistant-Surgeons Carroll, Agramonte and Lazear, U.S. Army,[1] possibly supply the answer to these questions. They certainly tend to support Finlay's neglected hypothesis. Seven non-immune individuals were subjected to mosquito bites, the insects employed having fed from two to eight days previously on yellow-fever patients at different stages of the disease: none of these individuals developed yellow fever. Four non-immune individuals were bitten by mosquitos that had fed on yellow-fever cases from ten to thirteen days previously; of these, two developed unquestionable yellow fever. Dr. Lazear was bitten in the wards of a yellow-fever hospital by a mosquito which presumably had previously fed on the blood of a yellow-fever patient; five days later he developed yellow fever, and died on the sixth day of the disease.

At first glance these experiments appear to show almost conclusively that the germ of yellow fever is conveyed by a special species of mosquito—*Culex fasciatus* presumably—and that the insect becomes infective only after from ten to thirteen days from the time of ingestion of the germ. Unfortunately the mode in which the experiments were conducted detracts much from their value. They are really by no means conclusive. The experimenters themselves are of this opinion. At most they are suggestive. It is to be regretted that, considering the great danger to which the subjects of these experiments were exposed, greater care was not exercised that the conditions of the experiments were absolutely free from objection. If life was to be risked, it was surely imperative that this risk should not be incurred in vain; that it should be unnecessary to go over the ground afresh, and thereby entail further risk.

Manifest objections to the conclusion that the mosquito did convey the disease in the three cases which yielded a positive result are, first, that nine out of the twelve individuals subjected to mosquito bite did not contract yellow fever; secondly, that those individuals who did contract the disease had entered the local endemic yellow fever area about the time they were bitten: they might have contracted the disease in the ordinary way, therefore, and not from the experimental mosquitos; thirdly, that the germ of yellow fever has been recognised neither in the mosquito nor in human blood.

Dr. Lazear's life has not been altogether thrown away if these experiments lead, as they must, to their repetition under more rigid conditions; and if it be found that yellow fever is conveyed by the mosquito, the important sanitary measures which will result from the discovery will atone in a measure for the regrettable sacrifice. Meanwhile the bacillus icteroides of Sanarelli is being discredited, and, like so many of its predecessors, may have to give place to some other micro-organism, in this case, possibly, of a protozoal nature.

[1] *Philadelphia Medical Journal*, October 27th, 1900.

ENTERIC FEVER IN THE BRITISH ARMY IN INDIA.

The nature of the recent evidence as to the connection between water supply and enteric fever in India, the great difficulty very frequently met with in tracing the infection to water, and the disappointing results of the strenuous efforts made during recent years to safeguard the drinking-water supply, have recently been pointed out by our special correspondent. The question is greatly complicated by the facilities for infection in the bazaars of large cantonments, as it is impossible to ensure the purity of drinks which are there sold to British soldiers. That this is a frequent source of infection there is good reason to believe, although it is very difficult to estimate the exact degree of disease brought about in this way.

Thus in Poona all the women and children escaped,

while out of three or four hundred soldiers employed in the bazaars on plague duty there were seven admissions for enteric during the early part of the year, and during the same period no case occurred among 1,500 men who were living under similar conditions with the exception that the bazaars were out of bounds to them. In Pindi, again, most of the enteric was considered to have been contracted in the bazaar, with the exception of a large number of cases among the troops returning from field service in Tirah, who furnished some 70 cases in three months. One medical officer points out that men admitted for venereal disease not uncommonly develop enteric soon after admission to hospital, both diseases having probably been contracted in the bazaars at the same time. Another possible source of infection is through native cooks, so that the present trial of the plan of displacing these by the soldiers themselves, which was first adopted by the Gordon Highlanders, will be watched with interest. In Jhansi the prevalence of enteric fever was attributed to a low ground water-level due to the extremely low rainfall of the previous three years. In Bangalore all classes of the men were said to suffer alike, whether they frequented the bazaars or not.

These various opinions do not throw much new light on the origin of the disease, but there remains to be mentioned a very instructive outbreak at Quetta, which strongly points to dust as the vehicle through which the infection is distributed, as has for long been suspected to be the case by many. The water supply of this cantonment is brought from a deserted spot enclosed by high hills thirteen miles from Quetta, and is considered to be above suspicion. With the exception of 2 cases in January, there had been immunity from the disease up to May, when the usual dust storms commenced and were very prevalent from the 2nd to the 13th of that month, and at this time an epidemic of sore throat and tonsillitis occurred, which was possibly caused by the inhalation of impure dust, and was immediately followed by an outbreak of enteric fever, several of the cases beginning with sore throat. The night soil of the cantonment was deposited in filth pits to the north-west, which was the direction from which the prevailing wind blew at this time of the year, while owing to the dryness of the air deposited matters were rapidly dried up and converted into dust, which was blown about. Further, the infantry regiment and the garrison company of Royal Artillery, which suffered much more than the others, were accommodated in the barracks which were nearest to the filth pits, and although they had arrived in India more recently than the others, yet the difference between the incidence is considered to have been far too great to be accounted for by this factor. Lastly, the air from the quarter in which the filth pits were situated was found to contain large numbers of germs that are invariably present in fæcal matter and not in pure air, although the enteric bacillus itself was not isolated. As an example of the distribution of the disease, it may be mentioned that in three infantry bungalows of the barracks nearest to the filth pits there were 36 cases of enteric, while in three similar bungalows in the other lines only 6 cases occurred during the same period, the only difference between them being that the former are situated 800 yards nearer the trenches than the latter. The occurrence of sore throats points to the dust-laden air having been a direct mode of infection, while food and drinks, including milk, might easily have been infected through the dust.

The above instance affords very strong evidence, if not actual proof, of the possibility of dust carrying still living enteric organisms being a source of infection, while recent research work has shown that this organism can flourish for months in fæcal soil impregnated with fæcal matter. That the soil of all cantonments which have long been occupied is so contaminated is beyond question, and the possibility of such a method of infection being a common one in India deserves very serious consideration. If we examine the seasonal distribution of the disease in relation to such a possibility we are at once struck with the fact that the maximum enteric month is the dry, hot, dusty May. Further, an examination of the monthly figures for different provinces and divisions shows that the second maximum in August is due to the prevalence of enteric in hill stations, and in the Deccan during July and August, the former having very few soldiers in residence in the cold weather, while the latter does not get the full effect of the monsoon. If we take the figures for Groups V and VI, which will include nearly all the important stations in Bengal, the North-West Provinces, and most of the Punjab, that is, parts of India which get the full effect of the monsoon, and hence have four wet months from the middle of June to the middle of October, the remaining eight months being very dry, then we find no second maximum in August, but quite the contrary. Thus, allowing two weeks for the incubation period of the disease, the average number of enteric cases among British troops in the huge area mentioned during the four wet months from July to October in 1898 was only 21, while in the eight dry months it averaged 84, or just four times as many—a remarkable difference, which strongly points to dust as a common source of infection. This is also borne out by a slight decrease of the disease in February and March, corresponding with the occurrence of the winter rains in January and February. If this be the case, then the comparative failure to prevent enteric fever by measures directed to safeguard the water supply is easily explained, and attention should be directed to preventing the entrance of dust into food and drinking water—a very difficult task.

MEDICAL CERTIFICATION OF PAUPER LUNATICS.

THIS is a subject on which we have been repeatedly asked for an opinion, and it has consequently more than once been stated in the BRITISH MEDICAL JOURNAL that in all cases where any medical practitioner is called upon to give the statutory certificate necessary to enable any pauper to be sent to and detained in a lunatic asylum, a fee of not less than one guinea should be paid for such certification; any lower fee would, we consider, not be fair remuneration considering the responsibility incurred, and the time and trouble necessarily associated with the process.

It must be ascertained by personal examination that the patient is a lunatic, and a fit and proper person to be detained in an asylum; and further, that the patient is in a fit state to bear the removal to the asylum selected for his detention, not infrequently many miles

distant. This latter question is often a very difficult one for the medical practitioner to decide. Any other person whose duty it may be to act in the case, and to certify in a non-medical capacity incurs little or no responsibility by so doing; it is on the medical practitioner that the responsibility mainly if not solely falls. Many guardians fail to appreciate this, and appear to think that a fee of half a guinea ought to be graciously accepted for the performance of this serious duty, and we understand that some Boards are endeavouring to get the ordinary payment reduced, and this by means which we are not aware have ever hitherto been adopted.

It seems necessary, therefore, that all such guardians should fully understand that, though they themselves are not in any way responsible for the care and management of pauper lunatics either in or out of an asylum, it is incumbent on them to provide the means by which the safety of such persons can be assured. Moreover, that it is the duty of all Boards of Guardians to pay a reasonable and proper fee to the medical practitioner who, by certifying proper cases, is mainly instrumental in providing not only for the care and treatment of the patients themselves, but by so doing frequently contributes to the comfort and sometimes even to the safety of the public.

By Section CCLXXXV of the Lunacy Act, 1890, the amount of the fee to be paid for medical certification is to be decided by the magistrate who makes the order for the patient's detention in an asylum. The law gives no authority to the guardians to question or dispute the order so made. The magistrate is the sole authority for fixing the fee for the professional assistance he is compelled to call for, and by means of which he becomes enabled to adjudicate upon the case.

The process of sending a pauper to an asylum as a lunatic is a simple one when once understood. It is the duty of every relieving officer when he has reason to believe that any pauper in his district "is deemed" to be a lunatic, and a proper person to be detained in an asylum as such, to bring the case under the notice of a magistrate who has jurisdiction in the district where the alleged lunatic is; and it then becomes the duty of the magistrate to call to his assistance a registered medical practitioner; and if, being then guided by the certificate of the latter, he becomes satisfied as to the lunacy of the patient, to make the necessary order for removal to, and reception in, an asylum.

This, then, being the law on the subject, it is with no little surprise that we hear of any Board of Guardians making strenuous efforts to evade it by endeavouring to induce a Bench of Magistrates to undertake to order lower fees to be paid for medical certification of lunatics in the future than they, the same magistrates, have been accustomed to order in the past. This appears to us to be verging on illegality, and we are glad to find that up to the present time these efforts have not been successful. It is contrary to all practice for judges or magistrates, or any other public officials, when acting in a judicial capacity, to come to any decision whatever in reference to cases which have not been brought before them; and it is universally held that any private influence exerted with this object is wrong in principle, if not wrong in law. We commend this to the consideration of those Boards of Guardians who show an inclination to evade the requirements of the Lunacy Law, which unmistakably casts upon them the responsibility of providing all the means necessary to ensure the safety and proper treatment of the insane poor.

ORIENTATION.

Under the term "orientation"[1] Dr. Pierre Bonnier discusses our cognisance of position, that internal to ourselves being styled subjective, and that external to our bodies objective, orientation.

He objects to the generally-accepted term "muscular sense," and does not admit that either physiology or pathology affords any justification for its adoption. Reviewing the various theories which have been advanced, from that of Wundt who suggested that we have a subconsciousness of the nerve discharge which puts muscles into operation, to that which attributes to the muscle itself the power of exciting sensations giving cognisance of its position at any moment, he comes to the conclusion that there is no reason for invoking a new and unknown sense, but that all the phenomena are explicable by something not essentially different from ordinary tactile sensation. In fine, he holds that we have a sense of the attitude of any segment of our bodies by the sum of the tactile sensations in intermuscular planes, in tendons, in articulations, and in the skin overlying them, and also perhaps in the muscle itself, and he argues that it would be just as appropriate to talk of a tendinous sense, or an articular sense, as of a muscular sense. This tactile sense he holds to be one and the same whether it be specialised in the skin, where it is ordinarily fully recognised by consciousness, or in places where it is habitually disregarded owing to the constancy and frequent repetition of its excitations, only forcing itself into conscious recognition when exaggerated by morbid conditions, as in the case of the organs of organic life.

Even when considering the knowledge of distance which we derive from the degree of convergence of the eyes, Dr. Bonnier will not admit that we have any valid ground for asserting that the sensation of which we take cognisance is muscular, but prefers to refer it to the sum of impressions in the muscles, in the eye, and in its surroundings. He sums up by saying that there is no special muscular sense. We are conscious of our will; we are also conscious of its effects at the point of our body segments on which it acts.

Passing from this recognition of attitude, which he attributes mainly to an internal sense of touch, he goes on to consider those sensations, which are partly subjective and partly objective. All special sense organs are specialisations of the integument, generally arrived at by its more or less elaborate invagination, and this results sometimes in the formation of such special sense organs as the eye, ear, or nose, and sometimes of organs which are merely elaborate tactile structures. Even in the invertebrates such organs are met with in the form of open or closed sacs containing otoliths, sometimes poised upon hairs and sometimes resting against their walls. Sometimes even the otoliths are dispensed with and the fluid contents alone suffice to give information of movement. The lateral line of fish consists of a

[1] [illegible] par le Dr. Pierre Bonnier. Scientia-Biologie, No. 9, Paris: C. Carré et C. Naud (P. 00. Frs. 2.)

series of such structures, and it is claimed that the first appearance of the semicircular canals is by a specialisation of the anterior end of the lateral line. In myxine this does not proceed far, but in the lamprey two canals with a common chamber appear and in the higher fish, as in all higher vertebrates, three semicircular canals lying in different planes exist. It is noteworthy that in the development of the ear the first stage is a vesicle open to the exterior, and from this primitive otocyst the labyrinth is developed. Here again Dr. Bonnier claims that we have to do with nothing beyond a tactile sense excited by the movements of the fluid or solid (otoliths) contents.

The idea that a sense of orientation is possessed by all animals is further extended to explain the homing of animals, and even the courses of migrations, which are explained as due to a sensorial memory of an orientation with regard to the point of departure. Whether the reader will be disposed to go the full length of his inferences or not, the essay is a careful, if perhaps somewhat prolix, endeavour to reduce to order conceptions which are apt to be somewhat vague.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

WE print at p. 1398 an important letter on the National Hospital for the Paralysed and Epileptic which appeared in the *Times* of November 3rd. The document bears the names of some sixty of the leading members of the medical profession in London, and represents the medical staffs of all the principal hospitals in London through their senior members. Had it been deemed necessary, the list of signatures might have been considerably extended. So authoritative an expression of opinion can hardly fail to make a deep impression on the public mind. The controversy as to the management of the hospital has now been waged for some months with increasing acrimony, and the dispute is apparently still far from a satisfactory settlement. It is unfortunate that in the heat of argument certain accidental elements have been imported into the controversy which have tended to obscure the essential point at issue, and the letter of Lord Lister and his eminent co-signatories will be particularly useful by putting this in a clear light. The principle for which the medical staff are contending is that they should have a voice in the conduct of the affairs of the hospital by being fairly represented on the Board of Management. What they ask for is so reasonable in itself, and so fully justified by the experience of most hospital administrators that it is difficult to see any valid ground for its refusal. Certainly the Board of Management of the National Hospital for the Paralysed and Epileptic has failed to furnish any such ground. The reasons which they have so far given for rejecting the demand of the staff simply amount to this, that they prefer to be independent of medical control. The question therefore is, Shall the National Hospital, which owes its reputation wholly to its medical staff, be managed by an autocratic official who, like another Barbarossa, would seem to regard himself as *supra medicinam*, or is the staff to have a constitutional means of making the force of their skilled judgment felt in the counsels of the institution of which they are the most important part? So stated the question admits of only one reply. A hospital managed by a lay official independently of its medical staff would be like a man-of-war managed by a purser or a chaplain independently of the navigating officers. The obstinacy with which the Board of Management has hitherto resisted the reasonable demands of the medical staff scarcely encourages us to hope that it will give way except to *force majeure*. The resolution passed at the *conciliabulum* of governors held on August 11th cannot, as we pointed out at the time, be accepted as in any sense a settlement of the matters in dispute. We appeal to the good sense of the governors as a body to save a hospital which has done, and may yet do, splendid work, from the ruin which must overtake it if the management is not placed on a basis satisfactory to those on whose services the institution mainly depends for its existence.

THE RECONSTITUTION OF THE MINISTRY.

CERTAIN of the changes which have been made in the Government affect departments which have direct relation with medical interests. Mr. Chaplin, who retires from the Presidency of the Local Government Board—an office the duties of which were probably never very congenial to him—is succeeded by Mr. Walter Long, who was Parliamentary Secretary to the Board from 1886 to 1892, and has been Minister of Agriculture since 1895. In the latter office he has shown himself capable of forming a strong opinion upon a scientific question—the muzzling of dogs to prevent the spread of rabies—and courageous enough to adhere to it in the face of a noisy and not always very scrupulous agitation. The retirement of Sir Matthew White Ridley from the Home Office will be generally regretted. The straightforward way in which he addressed himself to solve the difficult problems involved in factory legislation showed that he had given serious study to them. It was hoped that he might have found fresh opportunities for the exercise of the statesmanlike qualities which he has displayed. For many reasons it is to be regretted that the projected Factory Bill of last year was not pushed forward. Had present factory legislation been consolidated, amended, and further extended the circumstance would have given satisfaction to many a social reformer. It is with the Workmen's Compensation Act that the name of the late Home Secretary will be principally associated. Perhaps no labour measure introduced and carried by a Conservative Government could have given rise to greater dissatisfaction or caused more splits in the party. On its introduction it was not simply severely criticised by both political parties, neither of which was satisfied; it was regarded with dismay as being socialistic in its tendency, and too democratic. The Bill passed, and already sufficient time has elapsed for the country to express an opinion upon it. To Sir Matthew White Ridley and his quondam colleagues it must be extremely gratifying to know that the fears and forebodings of employers of labour have not been justified. The Act has proved to be a blessing rather than otherwise. Collieries that we were told would be thrown idle in consequence of the Act have never been busier than to-day; seldom has more money found its way into the pockets of colliery proprietors and rarely have miners received larger wages. It is not for a moment suggested that these are consequences of recent legislation. The Workmen's Compensation Act is an illustration of what frequently happens, namely, that where reasonable attempts are made by legislation to make industrial occupations healthier and accompanied by less risk to life, while in the first instance the expense falls upon employers, in the long run it is beneficial to employer and employed. It is for this reason that we should have liked to have seen Sir Matthew White Ridley introduce a new Factory Bill. In other directions also the office of Home Secretary is no sinecure. Perhaps one of the most trying duties to perform is that of refusing to interfere in questions relating to capital punishment. Every year public opinion seems to view with increasing disfavour the exaction of the last penalty of the law. On several occasions, when applied to, the late Home Secretary found no cause to interfere with the sentences of the judges. In none of these do we think

he committed any error. Experience has shown that he was right. The verdict of the country is with him. Firmness is not cold-heartedness. Sentiment may incite to noble, kindly acts, but if unrestrained it leads to the miscarriage of justice, and cannot but encourage crime. He is succeeded by Mr. Ritchie, who, as President of the Local Government Board from 1886 to 1892, had a large experience of questions affecting the health of the people. We trust that Mr. Gerald Balfour, his successor at the Board of Trade, will not forget the pledges given by his predecessor as to the necessity for an amendment of the Companies Acts to prevent their abuse by the formation of companies to carry on medical or dental practice or the business of a pharmacist.

THE UNIVERSITY OF LONDON.

The second meeting of the new Senate was held on Wednesday, November 7th, and it is understood that the work of reorganisation was proceeded with. One of the first duties of the Senate under the statutes was to appoint three new standing Committees: (1) The Academic Council, to have regard mainly to the internal students; (2) the Council for External Students; and (3) the Council charged with the duties of University Extension. The constitution of the first two of these bodies is in part fixed by the statutes, and it is the duty of the Senate to elect the remaining members to complete their full strength. An early duty of the Senate, unless it determine otherwise, will be the appointment, under Statute 118, of an Advisory Board for the admission of students—that is to say, to make suggestions as to the Matriculation Examination. One-third of this Board, it is provided, shall be members of the Academic Council, and one-third members of the Council for External Students; the remainder presumably will be either chosen from other members of the Senate or, it may be, from persons outside the Senate. How far the same matriculation examination will be found suitable for all classes of students, internal and external, medical and musical, economic and engineering, will no doubt exercise the careful attention of the Advisory Board and of the Senate to which it will report. Much dissatisfaction exists, we understand, in regard to the Imperial Institute buildings as the place of meeting for the Senate, its numerous Committees, and the Faculties and the Boards of Studies, and it is possible that some more central and more generally convenient place may be found, at any rate, for the Faculties and Board of Studies. The name of the road in which the University is now situate, despite the issue of notices indicating its intended rechristening, still continues to be Imperial Institute Road.

THE NEW BOROUGH COUNCILS IN LONDON.

The result of the first election of borough councils in London has been the return of a great majority of "Moderate" candidates over "Progressives." In some 20 out of the 28 new metropolitan boroughs there will be a working Moderate majority. It must not, however, be too hastily assumed that this implies a triumph for anything in the nature of a reactionary policy. The somewhat uninspiring term, "Moderate," in the recent contest has been used to describe a programme which includes the transfer of the private water companies' undertakings into public hands, as well as an advanced housing policy, and increased vigilance in matters of sanitary reform. It seems likely that the new councils, which contain altogether forty-five medical members, will in many instances be able to secure men of light and leading as mayors. Thus the Duke of Norfolk is spoken of as the first mayor of the new and enlarged Westminster, and the Duke of Bedford is also mentioned as the probable mayor of Holborn. It may seem anomalous that London, which has shown itself so conservative in Imperial matters and now has indicated its preference for moderation in parochial matters, should yet possess as the central governing body a "progressive" County Council. The explanation is probably found in the fact that it is mainly in regard to great central questions of main drainage, water supply, health administration and housing that London has suffered neglect, owing to the non-inclusion of the metropolis in the great municipal Reform Act of 1835, which so entirely altered the conditions of our large provincial towns. We observe that the Chairman of the County Council has already taken a step calculated to promote harmony and courtesy between the central and the local authorities by inviting the new mayors to dine with the County Council, and H.R.H. the Prince of Wales has consented to recognise the importance of the occasion by his presence.

MEDICAL ANTISEPSIS.

In a paper read some little time ago before the Paris Académie de Médecine M. Grancher directed attention to the importance of antiseptic medicine as distinguished from antiseptic surgery, and gave statistics of the cases of infection which had occurred during the last ten years in his wards at the Children's Hospital in Paris. He approached the problem from its most difficult side in attempting asepsis in the general ward of an old hospital used for teaching. The method he adopted was described and illustrated in the British Medical Journal of November 10th, 1894. He employed as the only means of isolation a simple screen placed round the bed of the infectious or "suspect" patient. The only value this screen can have, as he points out, is, while preventing contact between the children in the ward, it acts as a reminder to the medical and nursing staff that certain precautions should be observed before entering or leaving the enclosure. The precautions which he enjoins on all are to don a blouse kept solely for use within this enclosure, and to wash the hands with soap and sublimate lotion 1 in 1,000. He requires, moreover, that everything that has been used by the patient, at meal times for example, shall be sterilised with boiling water, and the clothing, bedding, and bedstead disinfected by dry heat. The oilcloth on the floor must be washed twice a day and the walls twice a week with acid sublimate solution 1 in 1,000. This procedure, which, he finds, becomes quickly automatic on the part of the doctors and nurses, depends on the idea that, for all practical purposes, the germs of infection are attached to the patient, covering his trunk, his hands, his face, his mucous membranes, his clothing, his bed, but are not floating in the air around him. Therefore, according to this idea isolation occupies a position subsidiary to antisepsis. During the ten years in which this antiseptic system has been followed in his wards the infected cases of that highly infectious disease, measles, have been reduced by two-thirds, those of scarlet fever and diphtheria from about 24 per annum to *nil*, while with 357 cases of whooping-cough in the wards there have been only 7 cases of infection, with 240 cases of broncho-pneumonia not a single infection, and with 23 cases of mumps only one instance. It is undoubtedly true that the infectious entity is not an intangible gas easily miscible with the air, but that it consists of ponderable particles heavier than air and tending, therefore, to fall to the ground by which its natural purification is brought about. Of course the spray accompanying the cough of a patient suffering from diphtheria or the expectoration of a phthisical patient is dangerous to those at hand although his breath is harmless. If, moreover, desiccated phthisical sputum form an ingredient of the dust of ill-cleaned places there is a constant element of risk from the air, but this in a hospital and in the sick room is preventable. The hopeless dread of aërial miasmata and of mephitic vapours is doubtless a thing of the past and an aggressive policy has taken its place which

by the avoidance of contact between the diseased and the healthy, whether direct or indirect, as by uncleansed hands and instruments, or by flies, mosquitos, or fleas, together with rigid antiseptic medical precautions, allows of even the specific infectious fevers being fought at an advantage. The methods so ably advocated by M. Grancher should be of especial value under those conditions of hospital work, say, in the field, where isolation is well-nigh impossible, and in general where accommodation is limited or emergency pressing.

A MEDICAL DECLARATION OF INDEPENDENCE.

THIS the reader is assured is what is to be found in every issue of the *Medical Liberty News of Chicago*. It is devoted to "medical science and reform, opposes vaccination, vivisection and the liquor traffic." It calls surgeons "butchers," and proclaims the dawn of a new era in medical education. Its title-page bears four names to which are appended the letters M.D. or Ph D., or both, and few will quarrel with its description of itself, for postal purposes, as "second class matter." Two institutions, located in the same building, fight under its flag: the one the Metropolitan Medical College, which does not care about a four-year curriculum, but "confines the graduation of its candidates to practitioners only" (*sic*). Who are these practitioners? Are they persons usually designated less respectfully by a monosyllable? The second is the Independent Medical College, which complains that its opponents have falsely stated that it was closed up and adds that "Candidates who graduate from the Independent Medical College desiring to become legal practitioners in the State of Michigan" should register not later than a certain date. No unreasonable difficulties are placed in the way of graduation, for it "graduates worthy candidates who can furnish evidence by examination, and otherwise, that they are sufficiently qualified to begin the conducting of a safe practice." On the cover is an advertisement which gives no address beyond a postal box and so cannot be identified; this offers "Justice to Skilful Undergraduates" who can have the "appropriate degree conferred by a chartered institution at home without attendence" and proof of professional skill may be established by, amongst other equally satisfactory evidence, letters from responsible citizens. The students in attendance are graduated "when qualified."

PROPOSED UNIVERSITY FOR NEWCASTLE-UPON-TYNE.

IN a speech delivered by Lord Barnard two or three days ago, in opening the New Science Building of the North-Eastern County School, at Barnard Castle, he alluded to remarks that had fallen from Earl Grey a few weeks previously, at the opening of the Durham College of Science, Newcastle-upon-Tyne, bearing upon the subject of a University for Newcastle. To most of our readers it is well enough known that while the Faculties of Medicine and Science are in Newcastle-upon-Tyne, and the work is carried on in the Colleges that bear these names, the University is in Durham. It is not felt that any serious inconvenience has at any time arisen in consequence, for the distance between Durham and Newcastle is only fifteen miles, and the journey by rail can be accomplished in twenty minutes. For some reasons it is desirable that the connection should be maintained. Durham has a reputation as a theological and scholastic centre, and theoretically the University at Durham could not be better placed. The development of the Birmingham University, however, has given occasion to Earl Grey and other distinguished men in the North of England to ask themselves the question whether the time has not come for Newcastle-on-Tyne to have a University of its own. There is a tendency in these days for seats of learning to spring up rather amid the busy haunts of men than in quiet Arcadian groves. Money is the chief consideration. It is extremely creditable to Birmingham that in a very short space of time it has raised nearly £400,000 for the purposes required, whereas for the Newcastle College of Science only £86,000 has been obtained. Newcastle is a smaller town, but it is wealthy for its size, and contains several men who have made large fortunes. Some of this wealth has already found its way to universities not in the neighbourhood, and it is thought that if local wealthy men would do as wealthy Americans have done—endow chairs in the colleges or build a university—the cause of science education in the North would be much promoted. In supporting Earl Grey's plea for a university for the North of England, Lord Barnard might have shown what is being done by other countries in this respect. We may as a nation close our eyes to the fact, but sooner or later it will be borne painfully in upon us that our commercial supremacy is a thing of the past. Germany, with its technical education and its highly-trained factory managers, is already showing, to our cost, what higher education combined with practical experience and painstaking research work in the chemical laboratory can accomplish. Britain ought to deal with the question, and there is no part of England capable of solving the problem more effectually if only some of the leading citizens in Newcastle and the neighbourhood would lead the way in the direction indicated by Earl Grey and Lord Barnard.

THE ACTION OF HOT BATHS IN SYPHILIS.

THE effect of balneo-therapeutic simultaneously with mercurial treatment has generally been regarded as beneficial in at least many cases of syphilis. Dr. M. Ussass, of St. Petersburg, has endeavoured to throw light on the action of hot baths—sulphurous and other—in this affection by studying the results of the local application of heat. He used very hot foot baths applied so as to come up to the knees, while the temperature of the water—108·5° F. to commence with—was in three to seven minutes gradually increased until 113°, and sometimes even 117.5° was obtained. The temperature of the bath ought not, he found, to be raised after the patient's pulse-rate reached 112 beats in the minute. When this treatment was carried out before the appearance of secondary symptoms, the general eruption was, he says, always less marked, so far as could be judged by comparison with patients not treated in the same way. Moreover, if the treatment were commenced before the lymphatic glands were affected, and especially if the primary sore were likewise locally treated by heat, the glands seemed to remain unaffected, or became only slightly enlarged, and the general eruption was delayed, so that it appeared only after six months or even not till the end of a year. Secondary symptoms could not, however, be altogether prevented by these means. This work of Ussass, together with several other recent Russian articles on the same subject, are discussed by Dr. A. Dworetzky, of Kreutzburg, Russia, in an interesting communication to the *Zeitschrift für diätetische und physikalische Therapie*, 1900, vol. iv, p. 68.

THE ARMY HOSPITAL ORDERLY.

WE cannot but think that a good deal of what has lately been said concerning the hospital orderly as a man and his various duties is, to say the least, very questionable. Such a reflection is emphasised by some notes before us of a recent address at Dukinfield, in support of the St. John Ambulance Association, by Surgeon-Major G. A. Hutton (retired). He takes exception to Mr. Treves's assertion that the hospital orderly is in an "impossible position," inasmuch as he has to pitch tents, dig trenches, etc., as well as nurse complicated cases, because, he says, the word "impossible" should not be mentioned in war. But if the hospital orderly's duties appear incompatible, this is due to his position and function. The orderly is an enlisted soldier, partially

trained to arms, as well as a sick nurse; he may be, as he has been, called upon to defend as well as nurse his sick comrades. If the hospital establishment is not to pitch and strike tents, and generally handle hospital equipment in the field, who is to do it? There are many fatigue duties, as they are called, connected with military hospitals which can only be performed by those in direct contact with the sick. Those who think only of the hospital orderlies acting in large bodies in time of war, seem to forget that these same men have to serve during peace in small detachments of twos and threes in isolated hospitals, where each man has to be trained in every duty connected with the hospital, fatigue as well as nursing. To separate the duties would involve enormous and probably inefficient establishments, when individuals are, as they often must be, thrown upon their own resources and training. Surgeon-Major Hutton thinks the St. John Ambulance and various voluntary associations under the Central Red Cross Committee could be made a very valuable reserve to the regular hospital service; provided, as Sir John Furley wisely lays down, such bodies are properly trained and organised in time of peace. The want of such training in the civil orderlies was both seen and felt during the earlier stages of the war.

COMPLIMENTARY DINNER TO SIR GEORGE HARE PHILIPSON.

At a meeting of the Southern Council of the Durham University Medical Graduates' Association, held at the rooms of the Medical Society of London on November 1st, it was unanimously resolved to invite Sir George Hare Philipson to a complimentary dinner at the Café Royal on Thursday, November 29th. All graduates of the University who are members of the Association in the South are invited to join in honouring the guest of the evening, who is one of the founders of the Association and one of its strongest supporters. Further particulars may be obtained from the Honorary Secretary for the South, Dr. T. Outterson Wood, 40, Margaret Street, Cavendish Square, London, W.

THE NEWCASTLE INFIRMARY AND THE TREATMENT OF MENTAL DISEASES.

At the last quarterly meeting of governors of the Royal Infirmary, Newcastle-on-Tyne, the question of establishing an out-patient department for mental diseases was under discussion. A proposal had been forwarded by the honorary staff to the House Committee, recommending that there should be such a department, and that such steps should be taken to alter the statutes and rules as would allow of the appointment of one physician for the Department of Mental Diseases. This was carried. It was subsequently proposed:

That every candidate for the office of honorary physician to the Department for Mental Diseases shall have the same qualifications as a candidate for the office of honorary physician, provided always that he is a medical superintendent or resident medical officer to a public asylum in either of the counties of Northumberland or Durham.

The submission to the Court of Governors of the qualifications required of candidates for the post gave rise to an animated discussion. Newcastle-upon-Tyne is a city and county in itself, and steps were taken to include it in the above proposal. Thus amended, it was carried by 18 to 12, but notice was given that at a future meeting a resolution would be moved to rescind the motion. Meanwhile, steps will be taken to fill the appointment. Having regard to what has been accomplished at St. Thomas's Hospital and elsewhere, we trust that this neglected branch of the work of our general hospitals will be recognised as imperatively requiring attention in other institutions. It is extraordinary that nothing has been done in Edinburgh, where clinical teaching is so perfected, to induce the attendance of those suffering from incipient or ill-defined mental disorders at the Royal Infirmary. No doubt in Edinburgh, as elsewhere, clinical teaching in psychiatry is part and parcel of the student's work; but that teaching relates to cases of pronounced insanity as seen in asylum care. We quite recognise that the patients who are likely to seek medical advice from the mental physician of a general hospital are not numerous; but it has been shown that effective work can be done in this direction, and, if but few are saved the necessity of asylum treatment, it is a great gain to the public.

HOUSING OF THE POOR IN DUBLIN.

The Corporation of the City of Dublin has sanctioned the purchase of two and a-quarter acres of slum property on which will be built new housing accommodation for about 2,000 of the very poor of the city. The area to be cleared is composed of some of the most disreputable and insanitary streets in Dublin, and lies adjacent to Talbot and Amiens Streets. The purchase money will amount to something under £8,000, but the total cost of the scheme is estimated roughly at £50,000. It is believed that even with the small rent of 2s. a week for a room in the new buildings the scheme will not be a costly one to the ratepayers.

THE IRISH HOSPITAL.

The entire staff of the Irish Hospital will be entertained at a banquet in the Royal College of Surgeons in Ireland on Saturday, November 24th. It is hoped that the Duke of Connaught and Lord Iveagh will be present. Sir William Thomson and his staff are expected to arrive in Dublin a few days previous to the date mentioned.

THE HUGHLINGS-JACKSON LECTURE OF THE NEUROLOGICAL SOCIETY.

The Hughlings-Jackson Lecture of the Neurological Society of London for 1900 will be delivered by Professor Hitzig, of Halle, at 9 P.M. on Thursday, November 29th, in the theatre of the Examination Hall, Victoria Embankment, W.C., on Hughlings Jackson and the Cortical Motor Centres in the Light of Physiological Research. It will be remembered that this triennial lectureship was founded by the Neurological Society in honour of Dr. Hughlings Jackson, its first President, who also three years ago delivered the first Hughlings-Jackson Lecture. All members of the medical profession are invited to be present at the lecture, which will be delivered in English.

THE QUEEN.

We are glad to be able to state that in spite of the anxiety which the Queen has shared with her subjects during the last year, and in spite of the grief which the serious illness of the Empress Frederick and the unexpected death of Prince Christian Victor have caused to Her Majesty, the alarming rumours regarding the Queen's health that have been recently in circulation are groundless.

The Queen has appointed Sir William Thomson, M.D., Surgeon to the Richmond Surgical Hospital, Dublin, and Chief Surgeon to the Irish Hospital in South Africa, to be one of the Surgeons in Ordinary to Her Majesty in Ireland, in the room of Sir William Stokes, M.D., deceased.

Dr. J. Milford Atkinson, Principal Civil Medical Officer, Hong Kong, will give a lecture on the diagnosis of plague and the measures necessary to prevent its extension, in the anatomical theatre of the London Hospital Medical College, on Thursday, November 22nd, at 4 P.M. After the lecture, Dr. Bulloch, Bacteriologist to the hospital, will give a practical demonstration on plague.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

THE following letter was published in the *Times* of November 3rd:

SIR,—The controversy which has been carried on in your columns between the Board of Management of the National Hospital for the Paralysed and Epileptic and its medical and surgical staff is of public importance. The main point for which the staff of the hospital is struggling is a moderate representation on the Board of Management, the absence of which has led to irritating friction and to the present unhappy state of affairs.

It is impossible that the inclusion of representatives of the staff could do otherwise than strengthen the Board of Management in wisely carrying on the great charitable work with which it is entrusted by the Governors.

From long experience of hospital administration we desire to record our firm conviction that the demand of the staff for representation on the Board of the hospital is a perfectly reasonable one, and one which in other hospitals has conduced to harmonious working and efficient administration.

We venture to express the hope that the Board of Management and the Governors will put an end to this controversy by granting the representation asked for, in order that the hospital, whose reputation is more than national, may continue its career of usefulness.

We are, Sir, yours, etc.,

LISTER.
WILLIAM H. BROADBENT, M.D., F.R.C.P., F.R.S.
JOHN WILLIAMS, M.D., F.R.C.P.
J. FAYRER, K.C.S.I., F.R.S.
HENRY THOMPSON, F.R.C.S.
WILLIAM MAC CORMAC, K.C.V.O., F.R.C.S.
J. BURDON SANDERSON, F.R.S.
R. DOUGLAS POWELL, M.D., F.R.C.P.
SAMUEL WILKS, M.D., F.R.C.P., F.R.S.
WALTER FOSTER, M.P., M.D.
JOHN BATTY TUKE, M.P., M.D.
W. B. DALBY, F.R.C.S. (St. George's Hospital).
DYCE DUCKWORTH, M.D., F.R.C.P. (St. Bartholomew's Hospital).
T. LAUDER BRUNTON, M.D., F.R.C.P., F.R.S. (St. Bartholomew's Hospital).
HERMANN WEBER, M.D., F.R.C.P. (German Hospital).
T. CLIFFORD ALLBUTT, M.D., F.R.C.P., F.R.S. (University of Cambridge).
W. H. ALLCHIN, M.D., F.R.C.P. (Westminster Hospital).
ARTHUR E. BARKER, F.R.C.S. (University College Hospital).
THOMAS BARLOW, M.D., F.R.C.P. (University College and Great Ormond Street Children's Hospitals).
. BOYCE BARROW, M.B., F.R.C.S. (Royal Free Hospital).
WILLIAM H. BENNETT, F.R.C.S. (St. George's Hospital).
JOHN ASTLEY BLOXAM, F.R.C.S. (Charing Cross Hospital).
J. MITCHELL BRUCE, M.D., F.R.C.P. (Charing Cross Hospital).
THOMAS BRYANT, F.R.C.S. (Guy's Hospital).
ROBERT W. BURNET, M.D., F.R.C.P. (Great Northern Hospital).
WILLIAM CAYLEY, M.D., F.R.C.P. (Middlesex Hospital).
W. B. CHEADLE, M.D., F.R.C.P. (St. Mary's and Great Ormond Street Children's Hospitals).
H. H. CLUTTON, M.A., F.R.C.S. (St. Thomas's Hospital).
ALFRED COOPER, F.R.C.S. (St. Mark's Hospital).
WILLIAM EWART, M.D., F.R.C.P. (St. George's Hospital).
GEORGE P. FIELD, M.R.C.S. (St. Mary's Hospital).
T. HENRY GREEN, M.D., F.R.C.P. (Charing Cross Hospital).
WARRINGTON HAWARD, F.R.C.S. (St. George's Hospital).
CHRISTOPHER HEATH, F.R.C.S. (University College Hospital).
DONALD W. C. HOOD, M.D., F.R.C.P. (West London Hospital).
HENRY G. HOWSE, M.S., F.R.C.S. (Guy's Hospital).
C. B. KEETLEY, F.R.C.S. (West London Hospital).
D. B. LEES, M.D., F.R.C.P. (St. Mary's and Great Ormond St. Children's Hospitals).
STEPHEN MACKENZIE, M.D., F.R.C.P. (London and Royal Ophthalmic Hospitals).
J. MACREADY, F.R.C.S. (Great Northern Hospital).
HOWARD MARSH, F.R.C.S. (St. Bartholomew's and Great Ormond Street Children's Hospitals).
HENRY MORRIS, M.A., F.R.C.S. (Middlesex Hospital).
WILLIAM M. ORD, M.D., F.R.C.P. (St. Thomas's Hospital).
EDMUND OWEN, F.R.C.S. (St. Mary's Hospital).
F. W. PAVY, M.D., F.R.C.P., F.R.S. (Guy's Hospital).
BERNARD PITTS, M.A., F.R.C.S. (St. Thomas's and Great Ormond St. Children's Hospitals).
JAMES E. POLLOCK, M.D., F.R.C.P. (Brompton Hospital).
SYDNEY RINGER, M.D., F.R.C.P., F.R.S. (University College Hospital).
FREDERICK T. ROBERTS, M.D., F.R.C.P. (University College Hospital).
WILLIAM ROSE, F.R.C.S. (King's College Hospital).
SEYMOUR J. SHARKEY, M.D., F.R.C.P. (St. Thomas's Hospital).
WALTER G. SPENCER, M.S., F.R.C.S. (Westminster Hospital).
WAREN TAY, F.R.C.S. (London and Royal Ophthalmic Hospital).
FREDERICK TAYLOR, M.D., F.R.C.P. (Guy's Hospital).
FREDERICK TREVES, F.R.C.S. (London Hospital).
SAMUEL WEST, M.D., F.R.C.P. (St. Bartholomew's and Royal Free Hospitals).
ALFRED WILLETT, F.R.C.S. (St. Bartholomew's Hospital).
C. THEODORE WILLIAMS, M.D., F.R.C.P. (Brompton Hospital).
I. BURNEY YEO, M.D., F.R.C.P. (King's College Hospital).

We are informed that the letter was submitted by its originators for signature to the two seniors on the acting staff of every London hospital with over 100 beds, as well as to those gentlemen who are baronets or knights or hold leading Court appointments, or who are Past Presidents of the Royal Colleges. The latter were chosen on account of their individual weight with the public, the former for obvious reasons.

We understand that had it been thought desirable the list of signatures might have been extended almost indefinitely, and we believe that this is a point upon which the medical profession is quite unanimous.

SOUTH AFRICAN HOSPITALS COMMISSION.

MRS. RICHARD CHAMBERLAIN'S EVIDENCE.

THE Hospitals Commission sat for the first time since its return from South Africa on November 5th, when Mrs. Richard Chamberlain was examined. It will be remembered that this lady has been particularly vehement in her denunciations of the condition of the military hospitals at the Cape, and has made sweeping charges against the officers of the Royal Army Medical Corps of inefficiency and general mismanagement; callousness to the sufferings of their patients, "whom they would have treated as prisoners rather than as intelligent human beings who have suffered in the service of their country"; stifling complaints; boycotting impartial visitors; refusing to let outside help supply their own deficiencies; and opposing the efforts of voluntary workers to minister to the needs of the wounded.

In her evidence before the Commission, she said that her experience related chiefly to the hospital at Wynberg. She landed in South Africa about the beginning of November, and there was no trouble till after Christmas. Then difficulties arose, as she alleged, owing to her having reported to persons in authority that things were going wrong. She denied that she had ever given buns to enteric patients or taken icebags from their heads. Neither had she given tobacco to patients in opposition to the orders of the medical authorities. She was in the end forbidden to go into the hospital, but she did go all the same. The reason for this was that an officer died of hæmorrhage which could have been stopped if properly managed. She therefore decided to go when sent for, till ultimately she was excluded by a written order from Lord Roberts. The Wynberg Hospital in her opinion was in a most horrible muddle—typhoid, dysentery, and surgical cases being together in one ward. The Commissioners saw the hospital after it had been swept and garnished. Asked if she thought she knew better than the doctors, Mrs. Chamberlain said she had no doubt she knew better than some of the doctors. The authorities seemed to have no foresight and were short of everything. The chief deficiency was in nursing sisters. The place was dirty until it was known that the Commission was coming out. For want of supervision, things were most wastefully managed. Though there should have been no difficulty in obtaining fresh milk, tinned milk was often supplied to patients who were really ill and refused to take it. There was great want of care in regard to sanitary arrangements. She had seen sheets taken off the beds of typhoid patients, run through cold water, and then about to be used for other patients who were brought in. "But they did not dare to do it, because she told them not to." Doctors of "unsteady habits" were recklessly selected to take charge of invalids returning home on transports. She mentioned three instances, but, on being asked to give the names of the drunken doctors to whom she referred, she wrote down only one, stating that she could not remember a second, and declining to name the third, as he was "rather a nice man." She admitted that she had not visited the transport ships. Mrs. Chamberlain, who had repeatedly to be reminded by Lord Justice Romer that what the Commission wanted was facts, not hearsay evidence or opinions, complained that she was being cross-examined as if the Chairman were "a counsel retained by the army doctors." Referring to the treatment of lunatics, she spoke of an officer who, though "really raving mad," was kept for some time in the hospital until protests became so strong that he was removed. Another young man who was very melancholy and had tried to poison himself was allowed to wander about without sufficient supervision. He was eventually removed to a convalescent home, without warning being given as to his condition, and there he shot himself the next morning. Asked by Lord Justice Romer if she thought she knew better than the doctors how lunatics should be treated, Mrs. Chamberlain replied in the affirmative. "If," (she added) "I thought the doctors did know better than me, there would be nothing for me to say." After some further statements as to Woodstock and other hospitals, she informed the Commissioners that she had received no hospital training before going to South Africa.

On the conclusion of Mrs. Chamberlain's evidence, the Chairman stated that the Commission would take no further

evidence, but would proceed to prepare their report. A detailed report of the evidence, condensed from that published in the *Times* of November 6th, is given below.

Mrs. Richard Chamberlain, in answer to Lord Justice Romer, said she landed in South Africa about the beginning of November, and left on August 8th. Nearly the whole of that time she was in the vicinity of Capetown, but for a short time she was at Mafeking. Her experience related chiefly to the hospital at Wynberg.

Wynberg Hospital.

She was taken to No. 1 General Hospital at Wynberg by General Walker, the general commanding the lines of communications, and received permission to go into the hospitals three times a week. As a matter of fact she went every day. The Principal Medical Officer did not make any complaint to her at that time about her going every day. He complained about seven months afterwards. As he did not complain at the time, and as she saw him every day and generally had lunch with the Second Principal Medical Officer, she gathered that there was not much objection to her action. General Walker also knew she went every day, and made no representations to her about her doing so. No difficulties arose until some time after Christmas, and then the difficulties were due to her having reported several times to persons in authority that things were going wrong. She heard indirectly that she had been accused of giving buns to enteric patients. As a matter of fact, she was absolutely certain that she never gave things to the patients without the permission of the medical officer. There was no foundation for the statement that she gave the patients any food, nor did the medical officer ever communicate with her on the subject, either verbally or in writing.

"Surgeon-General be Blowed!"

Questioned as to a letter she had written about supplying tobacco to the patients, she said that the Principal Medical Officer sent up to her one day and said that they had no Government stores of tobacco, and asked if they could borrow from her. She replied that it was unnecessary for them to borrow from her, as she would give them tobacco on Sunday, and she thought it undesirable that the patients should have a double allowance—one from her and one from the medical officers. The Principal Medical Officer wrote back that he would like to distribute her tobacco. She received the letter through a private friend of her own, to whom she wrote back as follows: "Surgeon-General be blowed! I am going to give the men cigarettes to-morrow, and if Colonel Anthonisz does not like it he can complain to Wilson."

An Order of Exclusion from Lord Roberts.

Proceeding, the witness said that when the hospital authorities said she must not go to the hospital she did go. She went three times in answer to special appeals. A sergeant informed her that she must not enter, and she said. "Go back, sergeant, and report that you have communicated your orders to me." She disobeyed the orders, and ultimately had to be excluded by a special order from Lord Roberts.

"A Most Horrible Muddle."

Lord Justice Romer asked the witness to explain what it was that she condemned in the hospital. She replied that it seemed to her that the whole place was in a most horrible muddle. First of all, there was an absence of proper method in regard to convoys coming into the hospital, which necessitated patients being moved more often than was necessary, and cases were left mixed up in a most undesirable way. The patients might have been classified at the station, which was some little way from the hospital, before being placed into ambulances. They would then at once have been put into proper wards when they arrived at the hospital. This was done in the case of No. 2 Hospital; it was not done, or rarely done, in the case of No. 1. The consequence was that the patients arrived all mixed up in ambulances, and were put, so mixed up, into wards. Then, if they attempted classification, the patient had to be moved again into a special ward, and this in typhoid cases was dangerous and sometimes fatal. But constantly no classification was attempted, and typhoid, dysentery, and surgical cases were together in one ward. The Commissioners saw the hospital and ambulance trains after the whole thing had been swept and garnished and not as she saw it. There was never any forethought or any foresight. They were always short of splints; they were short of every necessary utensil, from cups and saucers and plates down to bedpans and things of that sort. They had no proper air cushions, air beds, water beds, hot-water bottles to put into beds when the men were in a state of collapse.

Deficiency of Nurses.

The chief deficiency was in respect to nursing sisters. When she arrived at Capetown the nursing staff was so inadequate that if they took the day and night nursing sister it came to one sister having charge of 175 patients at a time. At that time Capetown was full of certificated nurses, so that it was only a question of red tape which prevented them from getting more. The nursing sisters were overworked. After the first rush was over there was enough orderlies had they been properly organised and taught a little of what they had to do. With regard to champagne and port wine for the use of the patients she never knew that the hospital was short of these things. There was nothing in the way of chairs and couches for the patients; there were no warm things to wrap them up in the evenings when it was cold.

Shortage of Everything except Drugs.

In short, there was a great deficiency of almost everything except drugs. They could not get buckets for such sanitary purposes as the disinfection of sheets and linen; the nurses had no apparatus with which to make hot water for washing the patients, who, as a matter of fact, were filthily dirty. The shortage of these things lasted pretty well the whole time. The place was dirty until it was known the Commission was coming out. They used the old military huts, and they were swarming with vermin. The result of the attempts at cleaning was most inadequate. The system of night nursing was very bad. They used to take a certain number of orderlies, put them into a tent, and post them for two hours at a time as if they were posting a guard. It was absolutely impossible for a doctor to get from a man posted for two hours any definite information. She would have had proper night nurses.

Wasteful Housekeeping and Theft of Liquors.

For want of supervision at No. 1 Hospital, Wynberg, things were most wastefully managed. Linen which ought to have been used for napkins was used for cleaning knives; crockery which ought to have been looked after was knocked about and smashed, necessitating the procuring of other articles. Owing to want of proper management and supervision, two-thirds of the wine and spirits in the officers' quarters was lost by theft, because there was no place provided in which to keep it. She proved this on one occasion by locking up these supplies, and during the time they were so locked up only one-third of the usual quantity was consumed. The food was improperly cooked and dirtily served to the officers. There was an utter absence of cleanliness and method.

The Milk Supply.

Proceeding to the next subject of complaint, the witness said that, although they had no difficulty, or should have had none, in obtaining a proper supply of fresh milk, they very often ran short of it, and used tinned milk instead. She had seen patients who were really ill having tinned milk supplied to them, and refusing to take it. This happened many times. Fresh milk, when used, was hardly ever sterilised.

Neglect of Sanitary Precautions.

There was a great want of care in regard to sanitary arrangements. The sweepings and refuse of wards were put in a heap, close to the entrance to the hospital, and, though ultimately burnt, while it was lying there the Kaffirs used to come and take anything they wanted, so that this refuse became a possible source of spreading disease outside. Another very serious thing, which was that they used to take the sheets from a typhoid patient's bed, and rinse them in cold water, and be prepared to put them into another patient's bed, no disinfectants being used. The handling and disposition of bedpans was extremely careless, and very little proper attention took place before they were passed from a typhoid fever case, who had used them, to others. Men who had been in hospital far too long to have brought the germs of typhoid in with them contracted the disease at No. 1 Hospital, Wynberg. The doctors were practically allowed to do whatever they liked. An inspection by a general or other military officer was worth nothing, as notice that it was about to take place was given beforehand.

Drunken Doctors on Transports.

Speaking of the reckless manner in which doctors of unsteady habits were selected to take charge of invalids returning home on transports, witness referred to the case of a doctor whom she saw generally intoxicated, and who, when he got into a row and was turned out of his appointment as second in command of a hospital, was sent home in charge of transports. She also saw two other doctors frequently drunk, and these others were practically put in charge of invalid transports. She reported the matter to Lord Lansdowne. Asked to write down the names of the three doctors to whom she referred, the witness wrote down the name of one, a second she could not remember, the third she said she would rather not give, as the doctor in question was rather a nice man. The names of the transports upon which two of the doctors were employed were the *Aurania* and the *Cymric*. The doctor whose name she had given she had seen intoxicated in the hospital.

Benevolent Plans "Crabbed."

Witness said it was very desirable that men should be kept amused when they were getting well. The convalescent patients were apt to get insubordinate, and very noisy too. Every plan which one had for amusing these men, though not exactly forbidden, was always very severely "crabbed." She wanted to start a library, and the chaplain agreed with her that it would be a very good thing to use on week days the school-house, which was used for service on Sundays, as a recreation and concert room. But the plan was vetoed by the army doctors, and only carried out by her after a great deal of opposition.

Treatment of Lunatics.

Another thing was the way in which they treated lunatics. These patients certainly ought to have been placed where they would not have been a nuisance to the ordinary patients and a source of very serious alarm to the bedridden patients. One of the lunatics was a young officer of the Royal Artillery, who came down and was for some time at Wynberg Hospital. He was really raving mad, and would dress up in wreaths and flowers and play the banjo and dance in the ward where men were lying in bed. He was not violent to the patients, but became violent to the orderlies if they spoke to him. Eventually the representations against his remaining at the hospital were so strong that he was [illegible]. Another case was that of a young man who was very melancholy. He had once tried to poison himself. In her opinion the doctors did not give him sufficient supervision in the hospital, but let him [illegible]. He was eventually removed to the military convalescent [illegible] ment. The authorities gave no warning to the military authorities at Claremont, and he shot himself the next morning.

Asked by the Chairman if she thought she knew better than the doctors how such cases should be treated, she replied that she did think so, and that it was because of the shortcomings of the doctors that she had attended to give evidence before that Commission.

Woodstock and other Hospitals.

Asked as to Woodstock Hospital, she said that in her opinion it was filthier than Wynberg, but not when the Commissioners went [illegible] there. No. 3 General Hospital, at Rondebosch, under Colonel Keogh, was a model of the best military hospital possible under the present system, which was a bad system. She saw at Mafeking a hospital which the army people had divided into a civil and a military hospital. She went in and saw the army patients, and among them was a man lying ill with enteric

and likely to die. He had some condensed milk, while across the passage in the civilian convalescent wards, the men were drinking fresh milk. She ordered a supply of milk to be sent up to this patient, and tipped the sergeant-major to see that he got it. The sight of the civilian and the military hospitals side by side was very interesting to any impartial person who wanted to see how the two systems were run in Mafeking.

MRS. CHAMBERLAIN'S PREVIOUS HOSPITAL EXPERIENCE.

In answer to Dr. Church, the witness said she had received no hospital training before going to South Africa, but had been for three years a visitor at the Guards' Hospital, Rochester Row, and had also had experience of hospitals in Birmingham.

PROFESSOR CALMETTE ON PLAGUE.

THE first of the three Harben Lectures for 1900 was delivered at the Examination Hall of the Royal Colleges of Physicians and Surgeons, London, on November 7th, by Dr. A. Calmette, Director of the Pasteur Institute of Lille. After a short reference to the history of plague, he said it was possible for him to bring forward some modern views of the disease from his recent researches made as the result of his mission to Oporto last year with Salembeni. After giving a description of the plague bacillus, Dr. Calmette said plague assumed two principal clinical forms, bubonic plague, and plague without buboes. After describing the symptoms of plague he showed that the localisation of the lesions in the gland determined the special attitude of the patient. The forms of the plague without bubo occurred more rarely than the classical forms of bubonic plague. Primary pneumonic plague was evidently due to the penetration of the microbe into the respiratory channels. It could be diagnosed only by bacteriological examination of the sputa, because the aspect of the sputum, the clinical symptoms, and the auscultatory signs resembled those of ordinary pneumonia. Another and still rarer form of plague without buboes was septicæmic plague or pesticæmia, which developed with extreme rapidity like acute septicæmia. It was caused by the rapid growth of the plague bacillus in the blood and in all the organs. It was not exactly known where the virus first effected an entrance in these cases, but the hypothesis was that it penetrated by the gastro-intestinal tract. When plague was studied in an epidemic centre all the forms described were met with, but sometimes it happened that the first cases did not present such clear characteristics, and it was thus possible that they might be incorrectly diagnosed. At the commencement of a case of bubonic plague, that is to say, at the period when there was only glandular congestion and fever, to ascertain whether the plague microbe was present or not, a puncture should be made with a Pravaz's syringe into the lymphatic tissues, and some drops of fluid extracted. This could be inoculated in the usual manner, and examined immediately after staining. To put the patient beyond the danger of any possible reinfection, it was only necessary, directly after the puncture with the syringe, to inject about 5 c.cm. of antiplague serum into the middle of the gland or at a short distance from it. If on examination of the fluid the microbes were found free and very numerous, the prognosis was serious; if the microbes were nearly all enclosed in polynuclear cells, it might be hoped that the case was non-malignant and that the infection would remain localised. It was essential, in testing the virulence of a plague microbe by experiments on animals, to use a recent culture, not older than twenty-four to forty-eight hours at the most.

Mice, rats, and guinea-pigs were very susceptible to plague, but it was thought that many other animals could take the plague. In this respect the pig, the ox, and poultry had been mentioned, but these animals did not take the disease spontaneously. Birds were not easily infected by plague bacillus; the vultures on the Towers of Silence near Bombay suffered no ill after devouring plague corpses, but it was not proved that they did not scatter the plague microbe with their excreta on the surface of the soil. The monkey easily contracted plague by inoculation, and also spontaneously when placed in a cage side by side with another infected monkey. The bacilli could also be transported by fleas, by the other parasites of the skin, and by flies. Healthy mice placed in the same cage with infected mice, but separated by wire, so that they could not touch each other, contracted the plague at the end of a few days; the contamination in these cases was due to fleas and flies. Professor Calmette illustrated his lecture with lantern slides, depicting patients affected with plague.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

GREAT BRITAIN.

Glasgow.—The last of the plague patients has been discharged from the Plague Hospital, and should no more cases occur in the city within ten days, the port will be declared free of the disease, and clean bills of health will be allowed to the vessels leaving the harbour. No one will grudge the highest meed of praise to Dr. Chalmers, the Medical Officer of Health, and to the sanitary staff in the City.

The outbreak has extended over a period of nearly three months, and 28 cases have been dealt with, 8 of which terminated fatally. Fully 170 "contacts" have passed through the reception houses, over 120 being under observation there at one time.

Tyne Ports.—The Tynemouth Hospital and the Tyne Floating Hospital, specially set apart for plague patients, have each a case of suspected plague. Up to the present, however, the diagnosis of plague has not been confirmed.

Precautions against Plague in Essex.—The medical officer of health to the Essex County Council, Dr. J. C. Thresh, has had printed for circulation a memorandum on plague which describes the clinical types of the disease, the arrangements made for obtaining a bacteriological diagnosis, and the measures which should be taken to isolate any suspicious case.

GERMANY.

From Bremen a fatal case of plague is reported as having occurred there on November 5th. The victim of the disease, a sailor named Kunze, arrived at Bremerhaven on October 27th on board the steamship *Marienburg* from Buenos Ayres. Kunze went to stay in a private home, where he fell ill on October 30th. From thence he was removed to the general hospital, but afterwards to an isolation hospital, where he was found to be suffering from plague, of which he died on November 5th. All persons who came in contact with the plague patient have been placed under strict observation, but so far all the contacts are in good health.

INDIA.

The mortality from plague for all India increased from 2,123 during the week ending October 7th to 2,322 during the week ending October 14th. In the Bombay Presidency the deaths from plague during the same periods rose from 1,142 to 1,415. In Calcutta the number of cases of plague has fallen most satisfactorily. On October 12th, 13th, 14th, and 15th the numbers of plague cases in Calcutta were 1, 2, 1, and 3 respectively, the fatal cases 1, 2, 1, and 3 during the same day.

Important modifications in the existing plague regulations have been made by the Government of Bengal. The rules issued in 1898 have been cancelled, their place being taken by regulations of a simpler nature. Isolation, segregation, and inoculation are to largely give place to sanitary and disinfecting precautions, so as to avoid every chance of friction with the natives, and of fighting against their superstitions and prejudices.

In Bangalore, plague during the third week of October was increasing rapidly, plague corpses being found cast away in the municipal drains, etc., and the natives are deserting their dead. In Bangalore city for the week ending October 12th there were 99 cases of plague and 79 deaths from the disease, and in the Bangalore cantonment 54 cases and 36 deaths from plague.

In Mysore there was a slight decline in the plague mortality, the number of deaths during the week ending October 12th in the city of Mysore being 428 from that cause.

In the Kolar Gold Fields the fresh outbreak of plague has caused considerable alarm. For the present it is confined to the Coromandel gold mine and to a village adjoining the mines. The infection is supposed to have been conveyed through a supply of flour imported from Bombay.

The plague in Poona city shows no signs of abatement. On October 15th and 16th respectively, there were 103 and 81 fresh cases of plague, and 78 and 79 deaths from the disease. The exodus from the city continues, and Poona seems to be once more in the throes of a severe epidemic.

MAURITIUS.

For the week ending November 1st, 40 fresh cases of plague and 40 deaths from the disease are reported as having occurred in Mauritius.

THE SOCIETY OF APOTHECARIES OF LONDON.

WE have received the following circular, with a request for its publication:

Society of Apothecaries of London.

Since the resolution of the Court of Assistants of June 19th, 1900, was communicated to the medical journals, constant applications have been made by Licentiates in reference to the titles they may adopt and suggestions offered as to particular letters and signs descriptive of the qualification of L.S.A. 1886.

By a further resolution of the Court of Assistants of October 8th, 1900, it has been resolved that the only titles which the Society can authorise as a proper description of the L.S.A. 1886, are those of Physician and Surgeon, either added to the title of L.S.A. 1886, or used alone.

And it was further resolved that the Society should discourage, in every possible way, the use of any other titles or letters on the ground of its tending to cause confusion and destroy uniformity.

The Society trusts that its Licentiates will co-operate in adopting a course which, it is believed, will prove beneficial to themselves.

We have also received the following letters:

SIR,—I have read with much interest the valuable correspondence in the BRITISH MEDICAL JOURNAL of October 20th. I have long felt that the great difference between the qualifying corporations and the universities is that the latter have within their sphere numerous faculties instead of only one. Personally I am most strongly in favour of Dr. Higginson's selection of titles instead of L.S.A. That the matter will be brought strongly forward by our Association I do not doubt.—I am, etc.,

PERCY G. LODGE,
President of the Associated Licentiates of the Society of Apothecaries.

Bradford, Nov. 3rd.

SIR,—I think that it is very generally conceded that the title L.S.A. (whatever may be its value from an antiquarian's point of view) does not make it clear to the public that the holder thereof is a fully qualified medical practitioner, or, for the matter of that, a medical practitioner at all.

We are not ashamed of our qualification, but we desire that justice may be done to us in this matter of title. This will not be obtained by merely writing letters to the BRITISH MEDICAL JOURNAL. If united in an association comprising all or most of the Licentiates, we shall stand a good chance of attaining our wishes. The Association already exists, and I appeal to all Licentiates of the London and Dublin Halls to unite without delay. The Honorary Secretary is Mr. Gerald Dalton, 453, Strand, W.C.—I am, etc.,

RIVERS WILLSON.

Oxford, Nov. 3rd.

REFORM writes: A peculiar incident happened to me in connection with the title L.S.A., which has some bearing on the alteration of that title. One of my nearest and dearest friends, when speaking of it, said, "Get rid of it, of course"; and, in a lower voice, "it has come to be regarded by many who know nothing about it as 'the stamp of Cain.'" Comment is needless.

CONTRACT MEDICAL PRACTICE.

THE MEDICAL BRANCHES OF THE COMMERCIAL TRAVELLERS' ASSSOCIATION.

A CORRESPONDENT sends us a copy of a circular in terms identical with that which we printed on p. 762 of the BRITISH MEDICAL JOURNAL of November 15th. We deprecate the establishment of these branches, which we regard as indicating a dangerous extension of contract work to a class which forms the backbone of most general practices.

PROPOSED MEDICAL PROVIDENT LEAGUE.

WE have received from several correspondents a copy of a printed circular letter, dated Nov. 1st. 1900, and signed by Dr. J. W. J. Oswald, of 245, Kennington Road, London, S.E. The circular letter states that it is proposed to found a body to be called the Medical Provident League, consisting of medical practitioners. This body would nominate two members of the General Committee of the National Deposit Friendly Society, and medical referees to an insurance branch of that Society which, it is stated, is to be started on January 1st next.

With regard to this scheme we can only say that the scale of fees of the National Deposit Friendly Society has been considered by the Council of the British Medical Association, and that it has refused to express approval thereof (see report of Council, BRITISH MEDICAL JOURNAL, November 3rd, 1900, p. 1340).

LOW RATES OF PAYMENT.

THE *Macclesfield Courier and Herald* of October 13th reports a meeting of the Macclesfield General Burial Society, in which the question of medical aid came under discussion. It would appear that the society employs two medical practitioners to attend on their members in sickness, and pays them at the rate of 9d. a quarter a member; and that the medical staff, not being satisfied with this remuneration, are demanding the not extravagant payment of 1s. per member. One of them has plainly intimated that if this increase is not given he will resign his office, and the question before the meeting was what was to be done under the circumstances. In the discussion that ensued there seemed a tolerable unanimity of opinion that the doctors were well paid, and deserved no increase in their salaries. Several members made complaints as to the unsatisfactory medical attendance given, which, considering the payment made to the doctors, is scarcely to be wondered at. Another suggested that it would be better to employ a surgeon to give his whole time to their service, but the secretary pointed out that it was not so easy to do this at the present time. It was finally resolved to leave the matter in the hands of a committee, and from the course the discussion took it is plain that the threat to resign had a wholesome effect on the members. It is to be regretted that both medical officers were not at one on this point, and it is high time that all practitioners should refuse to hold such appointments at rates under 1s. a quarter a member.

ASSOCIATION INTELLIGENCE.

THE LIBRARY.

THE Council Room will be required for the purpose of meetings of Committees of the Association on Tuesday next, November 13th, and therefore the Library will be closed on that day.

BRANCH MEETINGS TO BE HELD.

METROPOLITAN COUNTIES BRANCH: EAST LONDON AND SOUTH ESSEX DISTRICT.—The next meeting of this Branch will be held at the London Hospital on Thursday, November 15th, at 4.30 P.M. Dr. F. J. Smith will preside. Dr. J. H. Sequeira will give a demonstration of the new method of Treatment of Skin Disease by Light, illustrated by cases. Visitors are invited.—C. J. MORTON, 56, Orford Road, Walthamstow, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: NORTH LONDON DISTRICT.—The first meeting of this District for the session 1900-1 will be held at the Tottenham Hospital, on Wednesday, November 14th, at 4.30 P.M. Dr. Hooper May will preside. Mr. H. Stansfield Collier, F.R.C.S., will read a paper on Some Experiences and Mistakes in the Surgery of the Vermiform Appendix. Cases of interest will be shown in the wards of the hospital. The District Committee will meet at 4.15 P.M.—J. DYSART MCCAW, M.D., East Finchley, N., Honorary Secretary.

SOUTH-EASTERN BRANCH: WEST KENT DISTRICT.—The next meeting will be held at the Kent County Ophthalmic Hospital, Maidstone, on Friday, November 23rd, at 3.30 P.M., Mr R. T. Cæsar in the chair. Mr. M. A. Adams, F.R.C.S., will read a paper on the Waters of Carlsbad. Dr. Cartwright: Ophthalmia Neonatorum. Dr. Ground: Case of Morphine Poisoning Cured by Atropine.—T. T. BRUNYATE, 34, Maidstone Road, Rochester, Honorary Secretary.

PERTHSHIRE BRANCH.

THE twenty-first anniversary meeting of this Branch was held at Perth on November 2nd; Dr. SIMPSON (Glenalmond), President, in the chair.

The late Dr. Buist.—The SECRETARY read a letter from Mrs. Buist in acknowledgment of the minute of condolence entered in last minute.

New Members.—The following members were duly elected: Robert James, M.B., C.M. (6, King's Place, Perth), Dr. William Shaw Soutar, L.R.C.P., L.R.C.S., L.F.P.&S.Glas. (Pitcairngreen).

Election of Officers.—The office-bearers for the ensuing year were elected as follows:—*President:* Dr. Simpson. *Vice-President:* Dr. R. Stirling. *Joint Secretaries:* Drs. Urquhart and W. A. Taylor. *Treasurer:* Dr. Macaulay. *Council:* Drs. Norwell, Parker-Stewart, Hume, Liddell, and Soutar.

Reports.—The Report of the Branch Council was submitted. Report of Treasurer: Dr. MACAULAY reported that the credit balance was £6 4s. after payment of current expenses. He reported that a small sum lying at the late treasurer's account (Dr. A. J. A. Campbell) had been paid over to him. Report of Representative Member: Dr. NIVEN made a verbal statement as to his attendance in London.

President's Address.—Dr. SIMPSON (the President) then gave an address on the Management of Infectious Diseases in Schools. After some preliminary remarks, Dr. Simpson pointed out that an outbreak of infectious illness in a boarding school was a serious matter, as the infectious disorders were apt to spread rapidly through a community in which the younger element so largely preponderated, and, apart from anxiety caused by the severity of the disease or its complications in individual cases, the work of the school was interfered with and when the percentage of cases was high the school discipline was apt to be seriously affected. To minimise the risk of introduction of sources of infection was the duty of the school authorities. They must insist that the pupils should not be sent to school without a certificate signed by the parent or guardian not earlier than the day before the school assembled, stating that to the best of the knowledge and belief of the signatory the pupil had not at home or elsewhere been exposed to any infectious disease during the previous three weeks. The general health of the school must be maintained at as high a level as could be secured. This involved judicious regulation of work and exercise, attention to feeding

and sources of food supply—particularly milk—proper warming and ventilation, efficient sanitation, etc. Notwithstanding precautions infectious illness would occur, and provision had to be made for the isolation and treatment of cases in a separate building or sanatorium. The question of the number of beds required and the general arrangement and washing of the sanatorium was discussed. Afterwards the paper dealt with the writer's experience of infectious illness at a public school during the past ten years. In his experience scarlatina, varicella, and whooping cough were capable of speedy arrest, provided an early and accurate diagnosis were made, but measles, epidemic roseola, influenza, and mumps could not be stamped out, although by prompt isolation it was possible to delay their spread. Some cases resembling scarlatina were described. In connection with epidemic roseola attention was directed to the early, and in the writer's experience invariable, enlargement of lymphatic glands as an aid to diagnosis. It was pointed out that Filatow's or Koplik's spots might prove to be of great diagnostic importance, as evidence was accumulating that they were always to be seen on the first day of the rash of measles and the day before that, whereas they were never present in epidemic roseola or scarlatina. The question of quarantine after infectious illness was then entered into, and the paper concluded with a description of the means to be adopted to keep convalescents employed and interested during their detention. Neglect of this point might lead to serious evil.

Vote of Thanks.—Dr. DOW moved a vote of thanks, and this was seconded by Dr. FERGUSON. Drs. LIDDELL and MOORHOUSE continued the discussion, and the meeting heartily signified its appreciation of the admirable and practical address given by the President.

The Plague.—Dr. PARKER STEWART read a paper on the plague, and illustrated it with a microscopical demonstration and a specimen of the cultivation of the bacillus. He was accorded a hearty vote of thanks on the motion of Dr. FERGUSON.

Decay of Teeth Committee.—Dr. URQUHART laid on the table the report of the Decay of Teeth Committee, and suggested that the Secretaries should be instructed to ascertain what members of the Branch are willing to answer the questions proposed, so that copies of the report may be sent to them and future action considered. This was agreed to *nem. con.*

Epsom College.—Dr. URQUHART laid before the meeting an appeal on behalf of the Epsom College, and this was remitted to the Branch Council for consideration and report.

Meeting.—Arrangements for the next clinical meeting were left in the hands of the staff and the Secretaries of the infirmary.

Dinner.—As usual, dinner was served after the meeting, and sixteen were present. After dinner, Dr. URQUHART read a short retrospective paper on the Perthshire Medical Association. On the motion of Dr. FERGUSON he was instructed to have it printed at the expense of the Branch, for distribution to the members. Several informal congratulatory speeches were delivered on the occasion of the twenty-first anniversary of the foundation of the Society before the close of a successful meeting.

SOUTHERN BRANCH: SOUTH-EAST HANTS DISTRICT.

THE autumn half-yearly meeting was held at Portsmouth on November 1st, the chair being taken by the President, Surgeon-General CUFFE, C.B. Twenty-three members were present.

Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The following were elected members of the Branch; Fleet Surgeon W. E. Breton and Dr. P. N. Vellacott.

Correspondence.—A letter from the General Secretary was read relating to the report of the Committee on the early decay of teeth. A letter of thanks for the use of the library during the annual meeting, 1899, was also read.

Election of Officers.—Dr. J. Ward Cousins was elected President for the coming year, and Drs. Garrington and Newby were elected auditors for the current year.

Next Annual Meeting.—The SECRETARY announced that the Southern Branch had accepted the invitation of this District to meet at Portsmouth in 1901, and that Dr. Charles Knott had been chosen President-Elect of the Branch.

Reports.—The SECRETARY reported that several new works had been purchased for the library.—Mr. A. L. BENTHAM presented a financial statement as to the disposal of the balance of the fund subscribed for the annual meeting in 1899.

Cases.—Dr. J. WATSON exhibited a young lady who, for the sake of experiment, had submitted to the influence of the *x*-rays. A 10-inch spark was employed. The first sitting occupied one hour and ten minutes, the second sitting (two hours later) lasted forty minutes, and the third sitting took place after the lapse of twenty-four hours, and lasted forty minutes. The focus tube was placed at a distance of 16 inches from the surface of the skin, which was covered with a flannel garment. The skin of the upper and inner aspect of the right thigh and that of the abdomen adjoining was in a sclerodermic condition, with dilatation of the cutaneous vessels, which were apparently permanent.—Dr. C. KNOTT showed two microcephalic idiots (brothers), who possessed mental qualities of an opposite character.—Mr. H. RUNDLE showed two cases of excision of the hip in young boys. In both cases the head and neck of the femur were excised, and in one case the acetabulum was carious. The final result was good in each case, the patients being able to walk well, with fair mobility at the joint.—Dr. MAYBURY exhibited a child with malformed hands, together with a skiagraph.—Dr. VELLACOTT showed a patient with an ulcerating growth of the external ear. As there was some doubt as to its nature, it was decided to submit a portion of the growth to microscopical examination.—Dr. T. A. M. FORDE exhibited a case of hyperidrosis.—Dr. J. G. BLACKMAN presented for diagnosis a patient with an unusually large tumour growing from the right flank; it had been four years in attaining its present size. The approximate weight was 10lbs.

Communications.—Dr. C. H. G. GOSTWYCK read notes of a case of Snakebite Poisoning. The patient was greatly collapsed on admission to the Royal Hospital, but ultimately made a good recovery. The snake was shown.—Dr. T. A. COLT read notes of a case of Peripheral Gangrene, with hypertrophy of the feet and digital contractions, following an injury to the spine in the upper dorsal region. Photographs of the patient were exhibited.—Dr. J. G. BLACKMAN read notes of a case of Cyanoderma.

BATH AND BRISTOL BRANCH.

THE first meeting of the session was held at Bristol on October 31st. Mr. A. W. PRICHARD, President, in the chair. Forty-three members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The following were elected: W. Kenneth Wills, M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. (Clifton), D. L. Hamilton, L.R.C.P. and L.M.Edin., F.R.C.S.Edin. (Timsbury).

Exhibition of Cases, etc.—Dr. BERTRAM ROGERS showed a well marked case of sporadic cretinism in a child of 8 years, and made remarks on the treatment of the disease by thyroid extract.—Dr. F. H. EDGEWORTH also showed a child suffering from the same disease, and said that the maximum dose which would be given without ill effects in this case was 2½ grs.—Dr. MICHELL CLARKE and Dr. TAYLER also remarked on thyroid treatment.—Mr. F. H. ROSE showed an improved Clover's apparatus for the administration of ether.

Cerebellar Abscess.—Dr. MICHELL CLARKE and Mr. MORTON reported a case.

The patient was a girl of 14 years of age, and the abscess was in the left lateral lobe of the cerebellum. The abscess followed otorrhœa in the left ear of four months' duration. At the operation Mr. Morton evacuated about 2 ounces of pus, and the girl made an uninterrupted and complete recovery.

Hydrochloric Lead Poisoning.—Dr. G. PARKER showed specimens from a case of hydrochloric acid poisoning.

The patient swallowed "spirits of salts" used in his work. There was great blackening of the mucous membrane of the stomach, œsophagus, and intestine, and the case was remarkable for the extent of the lesions. There was no perforation.

A discussion followed, in which Drs. WATSON WILLIAMS, STACK, TAYLER, FISHER, and HARRISON took part.

Lateral Sinus Thrombosis.—Mr. J. L. FIRTH read notes of a

case of lateral sinus thrombosis in which he had operated successfully without ligature of the internal jugular vein. He referred to cases recently published, and considered that it was not necessary to ligature the internal jugular vein in all cases of sigmoid sinus thrombosis, especially in cases where the sinus had already been cleared out by opening, and in those in which firm clot blocked the internal jugular. Mr. HARSANT agreed generally with the conclusions expressed in the paper, and mentioned two other cases in which the internal jugular was not tied, and recovery ensued. Mr. MORTON was in favour of ligation of the vein, because of the risk involved in clearing out clot from the sinus, and thought that the external jugular should be tied as well.

Cystoscope and Ureteral Catheter.—Mr. T. CARWARDINE showed a number of interesting lantern slides illustrating the value of the cystoscope and ureteral catheter in diagnosis. He gave an account of several cases which showed the importance of these procedures in diagnosis, and of the light which was thus thrown upon obscure cases. Messrs. MORTON, FIRTH, Drs. AUST LAWRENCE, ROGER WILLIAMS, and SYMES discussed the paper.

YORKSHIRE BRANCH.

THE October meeting of this Branch was held on the 24th ult., at Harrogate, Dr. CUFF, President, in the chair. About 40 members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Cases.—Dr. LIDDELL (Harrogate) showed (1) two cases of general exfoliative dermatitis, which were discussed by Dr. EDISON, Dr. GORDON BLACK, and Mr. BASIL HALL; (2) two cases of lupus vulgaris, one with unusual rupial characters, and a second illustrating the results of treatment by salicylic and creosote plaster. Dr. GIBSON (Harrogate) showed a series of cases of psoriasis illustrative of the various forms of the disease. In the discussion that followed Drs. EDDISON and CHADWICK (Leeds), Dr. TEMPEST ANDERSON (York), Drs. GORDON BLACK and HOBSON (Harrogate) spoke.

Angioma of Orbit.—Mr. A. L. WHITEHEAD (Leeds) read notes of a case of cavernous angioma of the orbit. Specimens and photographs were shown.

A male, aged 51, presented himself with extreme proptosis of the right eye, which had been gradually increasing for about ten years. The pupil was dilated, the fundus healthy. Vision $\frac{6}{18}$ths. Movements were lost. The tumour was seen through the conjunctiva, bulging forward at the upper and outer segment of the orbit as a bluish soft swelling. Under ether the outer canthus was slit as far as the orbital margin, and the conjunctiva divided inwards to the corneo-sclerotic junction. The tumour was then shelled out without any serious hæmorrhage. The mass consisted of true cavernous tissue with a rather unusual amount of fibrous tissue between the cavernous spaces. The patient recovered completely with normal vision.

Dr. BRONNER (Bradford) observed that in a considerable percentage of the few cases recorded of this rare condition, operation had been followed by loss of vision owing to damage of the optic nerve.

Landry's Palsy.—Dr. WARDROP GRIFFITH (Leeds) read notes of two cases of Landry's palsy presenting unusual features.

The first case, occurring in a woman, aged 40, seen in consultation with Dr. Hillman (Castleford) presented as its salient features premonitory pains followed by rapidly-developing palsy, more or less, but not strictly ascending in character. Thus, coupled with great weakness of the legs and of the forearms, there was perfect power in the shoulder muscles but palsy of the sterno-mastoids, especially on the right side, and paralysis of the right facial and sixth nerves. There was loss of the deep reflexes but practically no affection of the sphincters. There was decided anæsthesia, well marked, but of a less extensive distribution than the motor palsy. The duration of the disease, attended by respiratory palsy, was eleven days. In the second case, occurring in a woman, aged 24, the duration was much longer, lasting as it did two and a-half months from the first onset to the fatal ending, which was also by respiratory palsy. Sensory phenomena were the earlier, and at one time were so strictly unilateral as to raise a strong suspicion that the case was hysterical, but the absence of one-sided limitation of the field of vision and of unilateral achromatopsia negatived the conjecture. The spread of the anæsthesia was very irregular, and was followed by motor palsy. A striking feature was the persistence of the knee-jerk and its actual increase on the left side.

Dr. Griffith held that spinal myelitis, in the ordinary sense of the term, might be safely excluded, as the paralysis, motor and sensory alike, was so marked and so extensive that, if due to this affection, it must have been associated with a more unquestionable affection of the sphincters, and with some tendency to the formation of bedsores. Discussing the nature of Landry's disease, he gave the arguments in favour of some toxic process, the nature of which was unknown, but the brunt of which fell on the peripheral nerves, not exclusively, however, but also on the nerve centres and on the tracts in the cord. In his opinion this was the only view compatible with the great variability in the clinical phenomena. Accepting it, one could understand how, just as in peripheral neuritis, the symptoms might be purely motor, mixed, or for some time purely sensory. If the lower motor neurons were mainly affected the reflexes would be abolished, while they might be in the first instance increased if the upper motor neurons—that is, lateral tract of the cord—were the chief seat of the toxic processes. Drs. EDDISON, CHADWICK, TREVELYAN, and ROWDEN also spoke.

Gastro-jejunostomy.—Mr. MOYNIHAN (Leeds) read notes of a case of gastro-jejunostomy for complete rupture of the intestine at the duodeno-jejunal flexure.

The patient, a boy aged 5, was admitted into the Leeds Infirmary on September 9th, 1899. He was in a state of great collapse, with obvious fluid in the peritoneum, and other signs of ruptured intestine. Under ether laparotomy was performed. The abdomen was found full of blood and fluid, and a complete rupture of the gut was present at the junction of the duodenum and jejunum. The latter bowel was also torn from its mesentery for some distance, necessitating resection of 7 inches of bowel. The duodenum being irregularly torn, and end-to end junction impossible, a gastro-jejunostomy was done, and the open end of duodenum closed by suture, a flap of mesentery being used as a graft to make the closure more secure. Every means was used to combat shock. The patient recovered and seemed in perfect health for eleven weeks, when he was suddenly seized with symptoms of perforation, and died collapsed on December 21st, 1899. At the operation a Murphy's button had been used, and after the boy recovered the question was raised as to whether a second operation should be undertaken in order to effect a communication between the closed duodenum and the bowel lower down, in order to allow the bile and pancreatic juice to be discharged into the alimentary canal without traversing the stomach. As the boy seemed in such perfect health, however, this suggestion was not entertained. At the *post-mortem* examination it was found that the Murphy's button had passed from the stomach into the closed duodenum, and lodging in the blind end of this gut had ulcerated through the wall, thus bring about a fatal perforation.

Mr. Moynihan laid stress on the fact that the patient enjoyed normal health, although the whole of the bile and pancreatic juice was passed into the stomach, and quoted a number of experiments by numerous observers in which the same facts had been demonstrated. He also laid stress on the means of treating the accompanying shock. The theatre was kept at a temperature of 75°, and the operation performed on a heated table. The case was admitted in the evening, and the patient remained on the table all night. The chief feature of the treatment was the administration of large doses of strychnine, amounting in all to nearly one-fifth of a grain, between 10 P.M. and 7 A.M. The remarkable tolerance of this drug during the shock, as pointed out by Mr. Basil Hall in 1898, was discussed.

Harrogate Waters in Respiratory Disorders.—Dr. SOLLY (Harrogate) read a short paper on the local use of the Harrogate mineral waters in certain respiratory disorders. He stated that in nasal affections, such as chronic rhinitis, in pharyngitis and clergyman's throat, considerable relief and benefit was obtained from local application of the waters in the form of spray. The corrosive action of the chlorides in the water, however, had up to the present made this treatment somewhat impracticable, the sprays rapidly becoming useless. Latterly, however, he had had all the sprays and nozzles made of celluloid, which substance, being unaffected by the salts in solution, had rendered this form of treatment practicable and worthy of an extended trial.

Dinner.—Some thirty members dined at the hotel after the meeting.

STIRLING, KINROSS, AND CLACKMANNAN BRANCH.

A GENERAL meeting of this Branch was held in the Crown Hotel, Falkirk, on Tuesday, October 30th, under the presidency of Dr. FERGUSSON.

New Member.—Dr. James Smith (Camelon) was elected a member of the Branch.

Royal Medical Benevolent College.—It was agreed to forward a donation of two guineas to the Treasurer of the College.

Address.—Professor STOCKMAN delivered an address on the action and value of iodides, arsenic, and potassium bichromate. The address contained much of the original work done by Professor Stockman on the action of these drugs. Illustrations of the various points in the paper were given by

means of a lantern, exhibiting tracings and photographs. Professor Stockman was cordially thanked by the meeting.

Dinner.—After the meeting the members entertained Professor Stockman to dinner at the hotel.

SYDNEY AND NEW SOUTH WALES BRANCH.

THE regular general meeting of the Branch was held at the Royal Society's Room, Sydney, on August 31st, Dr. COUTIE, President, in the chair. There were forty members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Communications.—Dr. WORRALL exhibited specimens: (1) Unusual form of cervical myoma; (2) a two months'-old ovum retained *in utero* for nine months.—Dr. HARRIS exhibited a cast of a cirsoid aneurysm of the scalp.

SPECIAL CORRESPONDENCE.

PARIS.

The Académie de Médecine.—Mortality from Tuberculosis in Country Districts and Towns.—Reduction of Strangulated Hernia by Compressors Soaked with Ether.—Opening of the Winter Session.—New Buildings for Stomatology and Dental Surgery at St. Louis Hospital.

AT a recent meeting of the Académie de Médecine Professor Brouardel called attention to an inquiry conducted by Dr. Lesage of Rennes, into the mortality from tuberculosis in 84 communes, having fewer than 4,000 inhabitants, in the department of Ille et-Vilaine. The statistics of the Minister of the Interior give the mortality in large towns as follows:—

Towns of more than 50,000 inhabitants	... ...	41.3 per 10,000
,, 10,000 to 50,000 inhabitants ...	... ...	30.1 ,,
,, 5,000 to 10,000 inhabitants ...	... ...	26.7 ,,
In 89 towns of fewer than 5,000 inhabitants	...	24.5 ,,

On comparing the two periods of 1891-5 and 1896-7 it appears that the mortality from tuberculosis in towns of fewer than 5,000 inhabitants has increased by two units. The following are the conclusions of Dr. Lesage for the country districts:—

1. The annual mean mortality from tuberculosis during the years 1890-99 per 10,000 inhabitants was 22.56 for the 84 communes studied in Ille-et-Vilaine.

2. The mortality from tuberculosis undergoes variations according to the population, but we must distinguish: the total population of the commune, the population agglomerated in the county town (the chief aglomerated population), and the relationship of these populations.

(*a*) This mortality does not present any distinctly appreciable relationship to the total population of each commune.

(*b*) This mortality, on the contrary, offers quite a marked relationship to the agglomerated population of the county town, and this relationship is more marked still with the proportion of the population of the county town to the total population of the commune. This mortality appreciably increases with the increase of the population of the county town, and also when there is an increase in the rates of the population of the county town to the total population of the commune. This increase is more marked in the latter case.

3. The variations in the total mortality, compared to that of the population, and of their relationships, follow the same curves as the variations in the mortality from tuberculosis, but the latter increases rather more rapidly in proportion than the total mortality, with the increase in the agglomerated population of the county town or the relationship of these two populations. This point is of interest, showing that agglomeration is still in the provincial districts a factor in the mortality from tuberculosis.

4. The mortality by tuberculosis varies with the age and sex.

(*a*) It is higher in males than in females, at nearly all ages.

(*b*) In both sexes the maximum mortality occurs between the ages of 20 and 30.

M. Fiessinger made a communication on the prolonged application of compresses of ether in strangulated hernia. He found that the majority of cases of strangulated hernia, formerly calling for operative interference, yield to this simple means. In January, 1900, M. Fiessinger published the history of a case of crural hernia, strangulated for forty-four hours, and reduced by compresses soaked in ether applied during three-quarters of an hour. The hernia disappeared of itself, after three attempts at taxis had failed, and although the patient was much exhausted by fæcal vomiting during the previous twenty-four hours. He has since received several letters from other practitioners relating to the history of similar cases with repeated success. After a lapse of time varying from a quarter of an hour to two hours the hernia—crural, inguinal, or umbilical—disappeared by itself, or after a slight and insignificant pressure by the surgeon. The ether is allowed to fall, drop by drop, on to a compress, such as a handkerchief or piece of gauze, which is thus always damp. The quantity of ether used in one case amounted to 250 grams. The method was almost marvellous in its results, most painless in application, and of great service to the country doctor. During the first thirty-six hours there was every chance of success; after this period it would be better not to attempt this method, owing to the risk of returning a gangrenous loop into the abdomen. He thought that the ether acted reflexly, causing a great vaso-constriction. The loop of intestine was no longer congested, and re-entered the abdomen as easily as it slipped out. Ether was more practical than ice, being more easily obtained and possessing greater power.

The winter session in the Faculty of Medicine has commenced, and most of the courses of lectures start during the current week. The competitions for the post of *interne* (resident) in the Paris hospitals began on October 15th. The number of candidates this year is 456, that is, 123 more than in 1899. The competition for the post of *externe* (clerks and dressers) began on October 16th.

The new buildings in the Saint Louis Hospital destined for stomatology and dental surgery have just been inaugurated. This is the first complete service of its kind in the Paris hospitals, and Dr. A. Combe has been appointed to the post.

INDIA.

Increase of Plague and Decrease of Famine.—The Field Force for China.

PLAGUE is increasing slowly but steadily while the famine figures have at length begun to decline, thanks to very good rain in all the affected districts. The total fall for the present monsoon is now up to the average over all the central north-eastern parts of India, although there is still some defect in the North-West Provinces and parts of the Punjab. If the current maintains its strength through September all danger of another and worse famine will be at an end. The visit of the Viceroy to the worst parts of Bombay has had a most reassuring effect on the people, for the heavy rain which coincided with his visit has been attributed by the simple inhabitants to his happy intervention on their behalf.

The third brigade of the China force has nearly all sailed, and the fourth is being got ready. Over fifty civil surgeons have already been recalled to military duty, the Bengal Province, for example, having been deprived of over one-third of its strength, while not only has all leave been stopped for the third time in five years, but those on leave are to be recalled. During peace times only one medical officer is allowed for each native regiment, yet when a force is mobilised in order to supply field, base, and lines of communication hospitals, about six medical officers are required for every regiment in the field, with the result that civil work is greatly crippled. If this was only an occasional event it would not be such a serious matter, but ever since the Chitral expedition in 1895 it has been a nearly yearly one, and has again recurred just as the civil department was recovering from the effects of the strain brought about by the frontier war; it is evident that things have now reached a crisis. It is, however, under consideration to considerably strenthen the Indian Medical Service, on which the stress falls, and it is to be hoped that there will be no loss of time in carrying out this very necessary reform.

SHEFFIELD.

The Royal Infirmary.—The Medico-Chirurgical Society.—Proposed New Hospital.

THE new operation theatre and the enlarged out-patient buildings of the Royal Infirmary were opened by the Duke and Duchess of Portland on the 3rd inst. The Duke of Norfolk, President of the institution, took the chair, and was supported amongst others by Lord Edmund Talbot, the Lord Mayor, the Master Cutler, and three of the city members of Parliament. The ceremony was a great success, and at its conclusion the whole of the infirmary was thrown open to the guests and later on to the public. Altogether some thousands of people

visited the institution. The extensive additions at the Royal Infirmary commenced to celebrate the centenary (1897) have now been completed. The original buildings contemplated consisted of an ophthalmic block, a nurses' house, and a new laundry. The ophthalmic block, affording accommodation for forty eye patients, and the other buildings just mentioned were opened in the centenary year and have been in full working order since. The ophthalmic block contains also a well-constructed operation theatre, replete with every modern convenience, and constructed only after the most recent theatres elsewhere had first been inspected. The walls are of marble and alabaster, and the floor of terrazzo, which is used also throughout the whole block. Other pressing wants were next attended to. Amongst these the need of an up-to-date surgical operation theatre had for long been felt, as was also the requirement of a considerable enlargement to the out-patient building. Both these objects have now been accomplished. The services of Mr. Keith Young, architect, were secured, and under his directions an operation theatre second perhaps to none in the country has been built. The floors of the various rooms are of vitreous mosaic laid in Portland cement, and the walls and ceilings are lined with "opalite." The theatre is well lighted with two windows 7 feet wide and 8 feet 8 inches high, prolonged into the roof to the length of 9 feet. Behind the operation theatre on one side is the anæsthetic room, while on the other is the recovery room, and between the two the instrument room. Four shafts driven by electric fans, with an exhaust in the ceiling, serve for the ventilation of these rooms. The patients are brought from the wards by a lift to a vestibule, whence they are taken to the anæsthetic room. The out-patient department, which was erected in 1884, has undergone considerable enlargement as well as having new rooms added. It is now replete with a suite of rooms for physicians, surgeons, ophthalmic surgeon, skin and casualty departments, together with a Roentgen ray room. The whole Infirmary has now been brought well abreast of the times. The sum asked for in the first instance has been considerably exceeded, and the total amount required to meet the cost of the whole of the alterations is no less than £40,000, of which £12,000 is still needed. An appeal for this sum is at once to be made, and it is to be hoped that the cordial support accorded to the project by the Duke and Duchess of Portland and the large and representative audience at the function will result in the Infirmary, with its usual good fortune, not finding any very great difficulty in meeting the deficiency.

The Medico-Chirurgical Society commenced its meetings on October 11th, when the President, Dr. E. Wearne Clarke, delivered the address on Medicine in Fiction. It is always refreshing to find the subject of one of these annual addresses taken from out of the usual beaten track, and in this instance the speaker treated his theme in a scholarly and interesting manner.

There is a prospect of one of the liberal-minded townspeople of Chesterfield providing a medical hospital for that town. There already, however, exists a hospital devoted to surgical cases, and it seems to be a far better arrangement to tack a medical side on to the existing institution rather than to found a fresh one. The multiplication of medical charities in a town is, generally speaking, to be deprecated, and the advantages of a hospital taking medical and surgical cases is usually obvious.

BELFAST.

Irish Medical Association Annual Meeting in Belfast in 1901.—Ulster Medical Society: Professor Thompson's Opening Address.—Dr. Robb's Election as Visiting Medical Officer to Union Fever Hospital.

A MEETING of the members of the Irish Medical Association of the counties of Antrim and Down was held in Belfast on November 1st, with a view to invite that Association to hold its annual meeting next year in the town. A very successful reunion had been held in Cork in 1897, and it was considered proper and advisable in every way not to confine the place of meeting to Dublin, but from time to time to select various provincial towns, and so spread the interest in the Association, which has for many years been doing excellent work on behalf of the Poor-law medical officers. The Antrim and Down meeting was fortunate in obtaining as Chairman Dr. Keown, of Belfast. Dr. Coates, the Secretary for County Antrim, and Dr. Olpherts, the Secretary for County Down, having explained the various points, it was unanimously resolved to send a formal invitation to the Irish Medical Association to hold its annual congress for 1901 in Belfast. During the discussion, references were made to the disgraceful proceedings that unhappily characterise so frequently the meetings of Poor-law guardians in their attitude towards their medical officers; some members present had no hesitation in saying that unless the Local Government Board exercised its authority with greater firmness and uniformity, there was no resource left but an organised boycott of the service. Dr. A. G. Robb, 241, Grosvenor Road, Belfast, was appointed Honorary Secretary of the meeting.

The first meeting of the session of the Ulster Medical Society, held on Nov. 1st in the Museum, Belfast, was well attended. Professor Thompson, the President for the year, delivered his opening address on the close connection of physiology and clinical medicine. He dealt chiefly with Pawlow's experiments in the St. Petersburg Imperial Institute on gastric digestion, and showed how the knowledge gained might be of inestimable value in the clinical appreciation of gastric affections. The address was illustrated with lantern slides both of the method of procuring pure gastric juice, and also of the statistical results, which, by this means, were followed with perfect ease. The paper was keenly appreciated by the audience, not merely from its clearness and conciseness but also from the practical potentialities held out to the practitioners. Dr. Thompson received a very hearty vote of thanks from the meeting. The report of the Council of the Society was read by the Honorary Secretary, Mr. Robert Campbell, F.R.C.S., and with some slight modifications was adopted. The annual dinner was fixed for November 24th. Several new members were proposed for election.

At their meeting on October 30th the Belfast Board of Guardians elected Dr. A. G. Robb to be Visiting Medical Officer to the Union Fever Hospital, in succession to Dr. Bigger. There were several candidates in the field, and the contest was by no means a light one. Dr. Robb's election, however, will be popular, and generally approved of by the profession; he has served the guardians as resident medical officer in the infirmary and hospital, and latterly as dispensary medical officer, and the guardians have shown by this promotion their appreciation of the services of a talented and efficient officer.

CORRESPONDENCE.

AN APPEAL BY LORD ROBERTS.

SIR,—Will you kindly allow me, through the medium of your paper, to make an appeal to my countrymen and women upon a subject I have very much at heart, and which has been occupying my thoughts for some time past?

All classes in the United Kingdom have shown such a keen interest in the army serving in South Africa, and have been so munificent in their efforts to supply every need of that army, that I feel sure they must be eagerly looking forward to its return, and to giving our brave soldiers and sailors the hearty welcome they so well deserve when they get back to their native land.

It is about the character of this welcome, and the effect it may have on the reputations of the troops whom I have been so proud to command, that I am anxious, and that I venture to express an opinion. My sincere hope is that the welcome may not take the form of "treating" the men to stimulants in public-houses or in the streets, and thus lead them into excesses which must tend to degrade those whom the nation delights to honour, and to lower the "Soldier of the Queen" in the eyes of the world—that world which has watched with undisguised admiration the grand work they have performed for their Sovereign and their country.

From the very kindness of their hearts, their innate politeness, and their gratitude for the welcome accorded them, it will be difficult for the men to refuse what is offered to them by their too generous friends.

I, therefore, beg earnestly that the British public will refrain from tempting my gallant comrades, but will rather

aid them to uphold the splendid reputation they have won for the Imperial army.

I am very proud that I am able to record, with the most absolute truth, that the conduct of this army from first to last has been exemplary. Not one single case of serious crime has been brought to my notice—indeed, nothing that deserves the name of crime. There has been no necessity for appeals or orders to the men to behave properly. I have trusted implicitly to their soldierly feeling and good sense, and I have not trusted in vain. They bore themselves like heroes on the battlefield and like gentlemen on all other occasions.

Most malicious falsehoods were spread abroad by the authorities in the Orange Free State and the Transvaal as to the brutality of Great Britain's soldiers, and as to the manner in which the women and children might expect to be treated. We found, on first entering towns and villages, doors closed and shops shut up, while only English-born people were to be seen in the streets. But very shortly all this was changed Doors were left open, shutters were taken down, and people of all nationalties moved freely about, in the full assurance that they had nothing to fear from "the man in khaki," no matter how battered and war-stained his appearance.

This testimony will, I feel sure, be very gratifying to the people of Great Britain, and of that Greater Britain whose sons have shared to the fullest extent in the suffering as well as the glory of the war, and who have helped so materially to bring it to a successful close.

I know how keen my fellow-subjects will be to show their appreciation of the upright and honourable bearing as well as the gallantry of our sailors and soldiers, and I would entreat them, in return for all these grand men have done for them, to abstain from any action that might bring the smallest discredit upon those who have so worthily upheld the credit of their country.

I am induced to make this appeal from having read, with great regret, that when our troops were leaving England, and passing through the streets of London, their injudicious friends pressed liquor upon them and shoved bottles of spirits into their hands and pockets—a mode of "speeding the parting" friend which resulted in some very distressing and discreditable scenes. I fervently hope there may be no such scenes to mar the brightness of the welcome home.—I am, etc.,

Pretoria, Sept. 30th. ROBERTS, F.M.

PROFESSOR OLIVER AND THE ROYAL BOTANICAL SOCIETY.

SIR,—My attention has been called to a letter in your columns[1] signed by a member of the Council of the Royal Botanical Society, and lest misapprehension should arise, I beg you to grant me space for a reply. The writer in effect says that, speaking on a recent occasion, I did the Society an injustice, and further that some three years ago, when the Society propounded a scheme, I, in common with other teachers of botany, assumed an attitude of veiled hostility. My recollection of the discussion that took place at that time, and in which I took much interest, differs in some respects from that of your correspondent.

There was a paper by Mr. William Martindale, in which a rather elaborate scheme was unfolded for a botanical institute, and this was very fully discussed by a large number of botanists, some of whom were teachers. Mr. Martindale handled his subject with ability and earnestness, and no one present doubted that he was sincerely anxious to promote the botanical objects for which the Society was founded. It was pretty generally agreed, however, that the moment was hardly opportune for Mr. Martindale's scheme, as the new University of London still dragged, and the Society was scarcely adapted of itself to carry through so large an enterprise. Furthermore, a considerable portion of the work contemplated was already being performed by existing institutions.

As a result of this discussion a Committee was formed to evolve a scheme, and several of those who had been present were asked to contribute in writing their views as to what the Society might usefully do. I availed myself of the invitation to bring forward a series of proposals.

Mr. J. B. Carruthers also made a contribution urging the Society to found a seed-testing bureau, and Mr E. M. Holmes had something to say about the economic side of botany. Two points from my paper alone remain in my recollection, and since they have a distinct bearing on the subject of the present correspondence I venture to allude to them here.

One proposal was that facilities should be given at the gardens for the holding of classes in practical plant physiology, and it was my hope that (with others) my own students from University College would be able to do this part of their work at the garden instead of, as heretofore, at a certain disadvantage in Gower Street.

The other proposal was that the London teachers should nominate representatives from amongst themselves to act with the Garden Executive and keep it fully informed of their requirements from time to time; in fact, to help them to make the more scientific portion of the garden into a real botanic garden, meeting the requirements of teachers and students of botany.

Well, the Committee considered the various contributions in detail, and its final recommendation to the Council was essentially based on the scheme which I had drafted together with excerpts from the other two contributions. The Council in its turn adopted the Committee's recommendation as its scheme and an appeal was to be made for funds. I am not aware that anything has happened since or that the appeal was ever issued. Your correspondent, a member of the Council, says that "the Society felt that it had no responsibility in the matter." With this view I cannot agree. The Society invited London teachers to join a committee, approved and adopted their scheme as its own, and—did nothing. I have never traced the subsequent history of the affair, but by adopting the scheme the Council has always seemed to me to have assumed the fullest responsibility.

The inference that the Society had grown lukewarm, or that the movement originally voiced by Mr. Martindale lacked support amongst the members at large seemed the simplest explanation.

My only reason for troubling you at such length is to repel the insinuation that the London teachers of botany were not zealous helpers on this occasion, or that by any attitude of veiled hostility they justified the comment contained in the sixth paragraph of your correspondent's letter. The contrary is the fact, and they did all in their power to guide the movement which had found expression in Mr. Martindale's paper along useful channels. As a mark of their appreciation of the teachers' services the Council of the Society shortly afterwards very courteously elected representatives from amongst the teachers to honorary membership of the Society.

That nothing should have come of the movement is a matter of regret to me personally, but I have refrained from intervention of any sort till the founding of the new University should be an accomplished fact. This is now the case, and it will, I hope, be possible for negotiations to be opened up in the near future, when the University has found its feet and the Boards of Studies have commenced operations.

That the Society gives freely what it has, is gratefully acknowledged on all hands; that it appears to devote its energies unduly towards perfecting itself as a mechanism for the entertainment of its members and their friends, was the subject of my comment.

Your correspondent in claiming that the Royal Botanical Society was "the first teacher of botany in the metropolis," forgets that Lindley had already held the Chair of Botany at University College some fifteen years at the date of the founding of the Society, whilst the records of the Chelsea Physic Garden seem to indicate that the teaching of botany in connection with that old foundation dates back to a hoary antiquity.—I am, etc.,

Chelsea, Nov. 3rd. F. W. OLIVER.

BLACKWATER FEVER AND MALARIA.

SIR,—As the case of blackwater fever described by Dr. Thin in the BRITISH MEDICAL JOURNAL of September 1st, p. 554, was seen by us in British Central Africa, and described by us in Reports to the Malarial Committee of the Royal Society, 1899-1900, p. 26, we think we may be justified in commenting on the remarks made by Dr. Manson and Mr. Rees in the discussion following Dr. Thin's paper. Mr. Rees said, "I came to the conclusion that the malaria that was present was due to previous malarial infections." From the distribution

[1] BRITISH MEDICAL JOURNAL, October 27th, p. 1287.

of the pigment, however, we, as Dr. Thin has done, drew the only conclusion possible, namely, that the patient had suffered from a very recent malarial infection. Indeed the distribution of the pigment is identical with that described by Italian and American workers as typical of very recent malarial infections.

We, however, also saw the patient during life, and had no doubt that he was suffering from an actual malarial infection whilst the hæmoglobinuria was in progress. Parasites were absent, but the blood examination showed two conditions which we have never seen except in close association with malarial infection.

These are:—(1) Pigmented leucocytes, (2) an increase in the number of large mononuclear leucocytes.

Pigmented leucocytes were present in considerable numbers and the increase in the large mononuclear elements was well marked—22.7 per cent.

We have seen numerous cases of tropical malaria in which subsequent to the taking of quinine (10 to 30 grams) parasites previously present have completely disappeared though the high temperature and vomiting may remain for days. If not seen prior to the taking of quinine these cases can only be rightly diagnosed by means of the two above-mentioned conditions. The patient in the present case had taken 15 grains of quinine (whether more could not be ascertained) and the absence of parasites is perfectly intelligible. We had no doubt during the life of the patient from blood examinations that he was suffering from malaria. Our *post-mortem* examination led us to exactly the same conclusion.

Dr. Manson said: "It would be strange if we did not find the *post-mortem* evidences of recent malarial infection in a large proportion of all cadavers of Europeans who die in such highly malarial countries as British Central Africa." We may offer the following facts which we think negative this opinion. An examination of 38 Europeans during life showed that evidence of malarial infection occurred only in 16.6 per cent. These Europeans, however, were selected from communities living under the worst conditions of exposure to infection (*Anopheles*) and the majority habitually slept without mosquito nets. Had the percentage been deduced from Europeans living under better conditions the figure would have been much reduced, as an examination of Government officials showed no evidence of malarial infection.

On the other hand, of 16 cases of blackwater seen by us we have been able to demonstrate malaria in 14, that is, 87.5 per cent. The difference is sufficiently striking. The cause of blackwater in these cases we do not here discuss.

We may add that a *post-mortem* examination of a case of suicide in a highly malarious district of British Central Africa revealed not a trace of pigment.—We are, etc.,

J. W. W. Stephens, M.D.Cantab.
S. R. Christophers, M.B.Vict.

Sierra Leone, October 24th.

THE RULE OF HOSPITAL RETIREMENT.

Sir,—The scandal of former days, when hospital appointments were for life, has given way to rules which in some cases react harmfully, not merely on individuals but on the charities concerned. That a physician or surgeon should retire at the age of 65—as at St. Bartholomew's, King's College, University College, and Middlesex Hospitals—is perfectly reasonable, for the officer, however willing, is by that age necessarily less active than of old. Retirement at 60—as at Guy's—is, perhaps, a little premature; but the same rule with the rider "or after twenty years' service in charge of beds" is distinctly unfair, since it introduces an element of chance which ought not to govern hospital appointments.

Supposing a medical officer to succeed in obtaining beds at 30, he will be retired at 50, just when his skill has become tempered by experience and when his teaching powers are at their best. It is true that this does not often occur; but it is perfectly well known that Sir William MacCormac at St. Thomas's, Mr. Jonathan Hutchinson at the London, and Mr. Pick at St. George's were retired before 60, when their bodily powers were not abated and their ripe experience would have been beneficial to both students and patients.

Of course it may be said that there are always as good fish in the sea as ever came out of it, and that the junior staff of every hospital is ever ready to trip up its seniors. What I would insist upon is that too rapid promotion is bad both for the individual and the hospital, and that a fixed tenure of office up to the age of at least 60 is the best for everybody. —I am, etc.,

November 5th. Chirurgus.

LECTURES TO MIDWIVES AND MONTHLY NURSES.

Sir,—It is humiliating to the profession that this question is again before your readers. That it has not been settled long ago is entirely the fault of the Council of the Association in its neglect to carry out the resolutions so frequently passed at annual and other general meetings of the Association upon this and many other matters of much-needed reforms.

These are the resolutions passed at Portsmouth without a dissentient voice, and when 135 members were present:

Resolutions passed at the Annual Meeting.	*Notes as to the Action taken by the Council, October, 1899.*
1. *Midwives Bill.*—That this meeting records its appreciation of the attitude of Mr. T. P. O'Connor and Mr. W. J. Galloway towards the Midwives Bill recently before Parliament, and begs to assure these gentlemen that, in the main, their objections to the proposals (as reported in the *Times*, April 13th, 1899) are shared by a large majority of the medical profession.	Ordered to lie on the table.
2. That this meeting regrets the course adopted by Sir William Priestley during the second reading debate upon the Midwives Bill recently before Parliament (as reported in the *Times* of April 13th, 1899) in stating that "it was quite true that there was a certain amount of opposition to the Bill among a certain section of the medical profession, but the danger likely to arise to the interests of the medical practitioners had been greatly exaggerated. The object of the Bill was to secure that women of the poorer classes should have the assistance of properly skilled midwives."	
3. *Teaching Midwifery.*—That this meeting condemns the action of those members of the British Medical Association who continue to lecture to persons other than duly recognised medical students—upon midwifery and the diseases of women and children—and records its displeasure at the free distribution, by certain unauthorised examining bodies, of certificates and diplomas to these irregular persons, asserting that the holders of such documents are "skilled" in the practice of midwifery.	Ordered to lie on the table.

Had these been put into force there would have been no need for the Medical Guild to give the Council another lead; but this last warning from the outside seems to have had no effect, for I gather from the very scant report of the proceedings of Council[1] no discussion upon the resolution forwarded by the Guild took place. This is strange, seeing that two of the Lancashire and Cheshire representatives hold high positions in the Manchester Branch of the Guild. Further, it would be a matter of interest to this Branch to know what attitude its two fresh representatives, Dr. O'Sullivan and Mr. Colin Campbell, adopted towards this resolution, for the last-named gentleman especially is very rightly looked upon as the supreme authority upon this question.

Dr. Groves some time past proposed, and Mr. Parkinson supported him, that an appeal should be made to the Association upon the Midwives Bill; this will have to be carried out once more, and very speedily, in order that the Association may be prepared with a solid opposition to the Bill when it appears, as it assuredly will, in the next session of Parliament. The duty of the Council is clear: it must deal with the members of the Association who are responsible for the whole of this trouble. I have again and again asked them to do this, both in the General Practitioners Committee and in the Council chamber, but I have had scant support in either place.

It is not a matter of freedom of opinion. Examine the facts. The men who train midwives must meet them in consultation, because the agitators in their Bill propose that the midwife shall report herself, and send for a doctor when she thinks fit. This is the only instruction she has, and is, therefore, an independent practitioner. But the gentlemen who support these agitators never tire of holding up a midwife as a very superior person. Dr. Cullingworth assured a meeting of lay people that a midwife after three months' trainin[illegible]

[1] The whole space occupied by the report of [illegible] Council and the various Committees is three [illegible] representing one quarter's work, so that the [illegible] work of the Council of the Association for a year [illegible] of the British Medical Journal.

would "put to shame" in a midwifery examination a medical student of three years' standing! The late Sir William Priestley in the House of Commons spoke of her as skilled. Dr. Farquharson, the late Chairman of the Parliamentary Bills Committee, supported the Bill in the House of Commons, and both these gentlemen declined to introduce the Bill drafted by the Council of the British Medical Association because of its restraining clauses. Sir J. Batty Tuke, in his maiden speech in the House of Commons, supported the Bill, and presumably all these gentlemen were familiar with its provisions. These, Sir, are published facts, and I will now ask if it is the opinion of the members of the Association that the honour or the welfare or the dignity of our Association is advanced by the presence of men who can so lightly fritter away the good name of an honourable profession and a worthy Association.

Another reference. Sir John Williams, in an address at the opening of a Welsh medical school this session, animadverted in very strong terms upon the evils of advertising quacks. I wonder were his hearers aware that he has lectured in a fashionable West End drawing room to a bevy of ladies, matrons, and probably maids on the great advantages of legalising the practice of midwives without medical control!

Our Council, however, is hopeless, and let me bring the matter up to the present date. When the last Midwives Bill was introduced into the House of Commons the Council at once took it up and modified it without, as the Chairman of the Subcommittee, who had the matter in hand, said, seriously interfering with its principles. Now, every one except the Council knows quite well that the principle of the agitators' Bill is practice of midwifery by midwives without the "intervention" of a medical practitioner. The Council suddenly dropped their Midwifery Nurses Bill, and now I see the Subcommittee is reappointed to consider it. I presume this is a toy which will last them until they have another scare from the Midwives' Institute.

The end of all this simply means that the Council is entirely in favour of midwifery lectures to midwives and the consequent diploma or certificate, or whatever form the document takes, so long as it will gratify the vanity of those aspirants to a degree in medicine without education, and be most attractive to the public.

At present I refrain from any comment on the letters of your correspondents published in Saturday's JOURNAL; these gentlemen will be thoroughly dealt with by others than myself.—I am, etc.,

Old Trafford, Nov. 6th. JAMES BRASSEY BRIERLEY.

SIR,—The cause of the resolution, which I had the honour of seconding, passed by the Council of the Medical Guild on October 11th, published in the BRITISH MEDICAL JOURNAL of October 20th, page 1222, and resulting in the resignations of Dr. John Scott and Dr. A. W. W. Lea, as well as the appearance of their letters in the JOURNAL of November 3rd, page 1346, was the following advertisement which appeared in the *Manchester Evening News* of September 20th:

MATERNITY HOSPITAL, 60, Upper Brook Street, Manchester.—M. LECTURES on MIDWIFERY, to Midwives and Monthly Nurses, will be commenced on October 1st.—Apply Matron.

Any stranger reading Dr. Scott's letter might run away with the impression that what he is doing is to educate existing midwives only, and all for the benefit of the poor, whereas the advertisement is an inducement to any woman to attend the lectures, after which they are examined and certified, or as is understood by the general public "diplomated," and so highly do these unqualified assistants, and yet independent practitioners of midwifery, value this document, that they frame it and place it in their windows. One of these I saw in a window a few yards away from Dr John Scott's house this morning, with his signature appended along with two others, and it states that she has attended lectures on the science and art of midwifery and nursing, and on the diseases of newly-born children, and that in their opinion she is competent to act as a midwife.

I will not trespass further on your space than to ask the readers of the BRITISH MEDICAL JOURNAL to peruse the above alongside Dr. Scott's long letter, and to bear in mind that these women pay a fee for the lectures and another fee for the examination.—I am, etc.,

Ardwick Green, Manchester, Nov. 6th. G. H. BROADBENT.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

SIR,—Some correspondence has lately been printed in the BRITISH MEDICAL JOURNAL on the fees proposed to be given by a wealthy American life insurance company to its medical examiners. It appears that some British offices have not an exalted view of the value of medical services. I was lately asked to examine for the Abstainers and General Insurance Company, whose offices are in Birmingham. They offer the following fees:

	£	s.	d.
Assurances under £50	0	2	6
,, of £50 to £100	0	5	0
,, of £100 to £500	0	10	0
,, of £500 and upwards	1	0	0

For half a crown they ask an examination of the heart, lungs, kidneys, liver, and the circulatory system, and replies to sixteen questions. For the ten shillings'-worth they supply a form 16½ inches long to be filled up, and require an examination of the urine. Need I say that the appointment for this district is still open?—I am, etc.,

Felixstowe, Nov. 6th. C. G. HAVELL.

SIR,—You have had recently considerable correspondence on this subject, and the offering of inadequate fees to the medical referees.

A company of good standing and repute offered me a fee of 10s. for such a report in a case about a month ago. I wrote saying I would send report for a guinea, as the report was either worth that or nothing. I got the guinea. I think so would every medical referee if he insisted.—I am, etc.,

Londonderry, Nov. 5th. W. B. HUNTER.

SIR,—As you are publishing a good deal about life insurance fees, I would like to enclose a paper which I have to fill for the Government for 5s.! I happen to have this by me, because a candidate has not turned up. When for a small insurance, the Government does not pay, but the candidate pays 2s. 6d., and I must not ask more.—I am, etc.,

October 20th. P. O.

*** The form which our correspondent encloses contains twelve questions to be answered by the medical examiner if the proposer be a man, fourteen if a woman, involving a physical examination of the chest, as to vaccination marks, and as to rupture, in fact a complete physical examination, for the twelfth question is, "Is the proposer now in good health and free from disease?" If the proposer be a woman, the question whether she is pregnant must be answered. Then follow four questions which must be addressed to the proposer by the medical examiner, who must note the answers in the margin. The medical examiner is required to state any other information which he "has elicited, and may think would tend to a better appreciation of the value of the life." Finally, he is required to sign the following:

MEDICAL EXAMINER'S OPINION.

Having carefully examined , the proposer, and considered the above evidence, I* recommend the Postmaster-General to insure the life of the proposer at the ordinary rates of premium.

I have read over to the proposer the answers taken down by me to the questions put by me, and I have also read over to the proposer the declaration at the foot hereof, which has been signed by the proposer in my presence.

Signature of medical examiner .
Address
day of 19 .

* Insert here "do" or "do not," as the case may require.

ERRATUM.—In Brigade Surgeon-Lieutenant Colonel Keegan's letter on the Mortality of Suprapubic Lithotomy in the BRITISH MEDICAL JOURNAL of November 3rd, p. 1347, the third sentence of the third paragraph should read as follows and not as printed: "Fabricant does not give the ages of these 66 patients nor the average weight of the calculi removed, and I therefore fail to see how a *bald* statement of *this kind can help* Dr. zum Busch," etc.

A MEDICAL AMBASSADOR.—Dr. Eduardo Wildo, the new Minister from Argentina to the United States, at the time of his appointment held the post of President of the Argentine National Department of Hygiene. He planned most of the medical colleges and hospitals throughout Argentina, and has won distinction as a writer on medical subjects. His first diplomatic work was the negotiation of the Sanitary Convention between Argentina and Uruguay in 1872.

OBITUARY.

ALFRED WILLIAM HUGHES, F.R.C.S., M.B., C.M. Edin.,

Professor of Anatomy, King's College, London.

The lamented death of Professor Hughes has removed a striking personality from the list of London teachers of anatomy, and has cut short a career of great promise. During the few years that he worked at King's College his abundant energy and his extreme geniality led to the recognition of the presence of a new force, acting as a stimulus both to students and colleagues. He flung himself into the movement connected with the development of the University of London, and was an advocate of the concentration of the teaching of the earlier scientific branches of medicine. His enthusiastic and patriotic temperament was early stirred by the desire to render assistance during the war in South Africa, and in January last he took a leading part in speeding forth two of his colleagues who had been selected by the War Office as surgical experts. A little later he originated the Welsh Hospital; he formed a Committee, appealed successfully for funds for its equipment, and made all arrangements for details. In June, when the efficiency of the Welsh Hospital appeared to be imperilled by a succession of deaths and by other difficulties, his feeling of personal responsibility to those who had gone out at his instigation, led him to volunteer to proceed to South Africa. All troubles seemed to vanish as soon as he arrived, but when he left, after nearly four months of strenuous effort, he carried with him the germs of enteric fever, the disease to which he has now succumbed. The first symptoms appeared within a few days of embarkation. On arriving in London he was placed under the care of his friend and colleague, Dr. Tirard, with whom Dr. Frederick Roberts was frequently associated in consultation. In spite of unremitting attention, the weakness of the circulation, which had been noted on his arrival, gradually increased, and he passed away peacefully on Saturday, November 3rd in his thirty-ninth year.



Professor Hughes was born at Fronwen, Merionethshire, and was educated at Edinburgh, London, and Leipzig. While he was an undergraduate at Edinburgh he was awarded a medal in anatomy, being head of the Senior Class of Practical Anatomy. Subsequently he was Junior Demonstrator in Anatomy and in Physiology and Histology, and after graduation in 1885 he became Senior Demonstrator of Anatomy for two years. He then engaged in private practice at Flint for two years, and at the outset of his work had to deal with an epidemic of typhoid fever, which was arrested by the energetic measures he adopted. After becoming a Fellow of the Royal College of Surgeons of Edinburgh in 1889, he was appointed Lecturer on Anatomy at the School of Medicine, Edinburgh. In this appointment his success as a teacher was soon recognised; he also found time for some extensive investigations on the rotatory movements of the human vertebral column. In 1891 he became a Fellow of the Royal College of Surgeons of England.

In 1893, on the formation of the Medical College at Cardiff, one of the constituent colleges of the University of South Wales, he was appointed the first Professor of Anatomy. This office he held for four years, during which the value of his teaching was shown by the increasing number of students and by the honours awarded to them by various examining bodies; one in July, 1896 gained the gold medal and exhibition in anatomy at the University of London.

In March, 1897, on the resignation of Professor Curnow, he was appointed Professor of Anatomy at King's College, London, and he brought with him a valuable private collection of anatomical preparations upon which he had expended large sums of money and years of labour. His methods of teaching, the interest and emulation he excited amongst his pupils, were soon recognised by his students and his colleagues. He was made Dean of the Medical Department of King's College, and was a welcome chairman at a large number of students' gatherings. Even when almost overwhelmed by the correspondence and labour connected with his organisation of the Welsh Military Hospital, he found time to pass cheerily through St. George's Hall, where a performance by the students was being given on behalf of King's College Hospital. Later, when in charge of the Welsh Hospital at Springfontein, in the intervals of his ordinary work he gave lectures and demonstrations on Surface Marking, which were attended not only by his own staff, but also by many R.A.M.C. men.

With so much enthusiasm, he was deservedly popular with all who were brought into contact with him. The feelings of his students, which will find a cordial echo in the hearts of many, may be gathered from the following inscription sent by them, with a wreath on November 5th, the day on which his body was taken from London to Machynlleth:

"In grateful appreciation of the work of Professor A. W. Hughes at King's College. From his students, who deeply mourn the loss of a teacher, a friend, and an example."

At Machynlleth the coffin was met by the staff and senior pupils of the County School, in which Professor Hughes had taken a great interest, and taken to the church at Corris, where there was a short service. The villagers watched the coffin during the night, and the interment took place on the following day, and was attended by representatives of King's College, of the Welsh Hospital, and of the University of Wales. At the same time a memorial service was being held at Christ Church, Albany Street, N.W., which was attended by, among others, numerous representatives of King's College, including the Rev. G. E. Newson, representing the Principal, Dr. Curnow, Mr. Watson Cheyne, Professor Halliburton, Professor Crookshank, Mr. Carless, Mr. Jefferies (House Surgeon), Dr. Tirard, Dr Hayes, Dr. John Phillips, and Dr. Liveing. The University of Wales was represented by Dr Isambard Owen, Senior Deputy Chancellor; the Welsh Hospital by Mrs. Brynmor Jones (Secretary of the Ladies'

Committee), Sir John Williams, Sir David Evans, and Dr. Laming Evans (Physician to the Hospital). Many students of the Medical Faculty of King's College also attended.

Professor Halliburton, who was necessarily brought into intimate contact with Professor Hughes in his daily duties, sends us the following brief appreciation of his work and character:

It is almost impossible to describe the gloom which overspread the College when the news of Professor Hughes's death became known. The teachers and students alike had been anxiously watching for news of a turn for the better; and when on the Wednesday it was reported that the disease seemed to have changed its course, there was a great feeling of relief. The news of the fatal termination in the early hours of Saturday therefore fell upon us all as a thunderbolt. Professor Hughes was a great teacher; under the spell of his magnetic enthusiasm, the dissecting room was a hive of busy workers. His lectures and demonstrations were of an especially brilliant kind, and he literally clothed the dry bones of anatomy with interest. He was indefatigable in his teaching, and for hardly a moment during the day was he absent from the dissecting room. The same untiring energy was manifested in his work as Dean of the Medical Department. His capacity for organisation has been more than demonstrated in his recent work in South Africa.

It is almost impossible to realise that his unfailingly bright presence has gone from us. We have lost a great teacher whom it will be difficult to replace; but we have lost more than that—namely, a wise counsellor and an unfailing friend. He was regarded with affection by every one of his colleagues, and by every one of the students. All we have now left is the memory of his example—a life devoted to duty and kindness, and in the end sacrificed for the good of his fellows.

The preparation for the removal of his remains to his native land left but little time for any ostensible show of the feelings to which I have alluded. It is perhaps best that this should be so. His own character was so devoid of anything in the nature of display that a quiet funeral would be in accordance with his own feelings, and less harassing to his sorrowing family. Mrs. Hughes left London for Wales early on Monday morning, and but few friends were aware of her departure. The students, however, sent a small deputation with a wreath to the railway station, and the Principal's wife carried there another wreath on behalf of the staff. This afternoon (Tuesday) work at the College will be suspended, and a large and representative assembly is expected at Christ Church, Albany Street, where the memorial service is to be held. These lines have been written in a somewhat hurried manner, and I fear they very inadequately express the deep feelings that this sad event has aroused. Adequate words indeed would be difficult to find. All who knew Professor Hughes will be better men and women for his friendship, and if they profit by his brilliant example, he will not have lived and died in vain.

Dr. Raymond Crawfurd writes: I have been asked as Co-Dean with Professor Hughes to add a few words to this memoir. I have never known a man so universally beloved by staff and student and by all with whom he came in contact. One felt the better for knowing him and working with him; he seemed to diffuse a warmth of kindliness on everyone about him. It was this wide spirit of sympathy above all that attracted so many students to him. As a teacher of anatomy he was at once picturesque and thorough, and could not fail to interest a student in his work. It is sad that he should not have lived to enjoy the greatly extended department that his generosity has done so much to beautify. As Dean he had special scope for the gifts of kindness and sympathy, the memory of which will long remain green in many hearts. He was always ready to smooth away difficulties, to see the bright side of everything, and to give well-considered advice to everyone. A man of great personal energy and many sided, he had numerous interests outside his work. I never sat beside a better whip; and here as in his work sympathy was the secret of his success; he was on the best of terms with his horses.

> He prayeth well, who loveth well
> Both man and bird and beast.

He has reaped his reward, in that he has left his spot of earth the better for his work, and the more beautiful for his character.

Dr. F. W. Forbes Ross writes: As a former pupil of Alfred Hughes in Edinburgh, I trust you will accord me the courtesy of a few words in his praise, now that the places and hearts that knew him shall know his presence no more, yet will cherish his memory as one of the few things in life worth treasuring. As a teacher Hughes had few equals. He possessed a memory which was phenomenal, and an aptitude for marshalling facts little short of marvellous; and to crown all he was able to impart his knowledge and methods to others with a conciseness and efficiency which could only be rightly appreciated when heard and seen. There is no single pupil of Hughes who will not feel his death as a poignant personal sorrow near and deep down in his affections. In Edinburgh he was known as 'the students' friend," and in after-years he "never forgot." He was no fair-weather friend; up or down, it was always the same kind, thoughtful, helpful man who greeted you. To have known him was indeed a pleasure, to have called him friend was a privilege; to meet him from time to time, to grasp him by the hand, was to taste one of the good things of life. The Welsh nation has lost a representative in the ranks of science not easy to replace. Socially speaking, to have known Alfred Hughes, his high character, and thoughtful geniality, was to gather and preserve for all time a good opinion and kindly feeling for all Welshmen. I very much regret my inability to do his memory justice, for I feel more than pen can tell, as indeed must many others, indeed everyone who ever knew him. "He never made an enemy; he never forgot a friend; ill-will he never bore to any man." What more or what better remembrance can any man die and leave behind him?

Mr. J. Lynn Thomas, who was with the Welsh Hospital, has written an appreciation of his friend, which has been published in the *Western Mail*. "I came first," he writes, "to know Professor Hughes upon his appointment to the Chair of Anatomy at the University College, Cardiff, over seven years ago, and in a short time we became bosom friends, and remained so until the end. It is difficult, perhaps, for one in my position to state temperately Professor Hughes's achievements in his short and brilliant career..... Professor Hughes will always be remembered throughout the Principality as one of the pioneers and the brilliant organising secretary of the Welsh Hospital for South Africa..... I shall never forget his arrival at the Welsh Hospital at Springfontein on July 4th—the joy we all felt at seeing him—and he was always our good guide and comforter. His first journey from the hospital was to see the graves of our fallen friends and colleagues—Professor Tom Jones, Dr. Herbert Davies, and Sister Sage—about a mile from the camp..... He was a born teacher, a man of sterling character, an emblem of loyalty and love of his country, possessing a high sense of duty, and on its altar his life was sacrificed for all that is best and noble in this world."

Mr. Garrett Horder (Cardiff) writes: Although I feel certain that you will receive many touching references to our deceased friend, yet I should like an opportunity of saying how much he was esteemed and liked even by those who did not come into close contact with him either officially or privately. His was one of those rare personalities that endeared the possessor of them to all those who met him. Whether as a lecturer or an organiser of social functions, you could not help feeling that Professor Hughes was one of those men you could not if you would, resist worshipping. His frankness and his *bonhomie* compelled you to like the man. I will not speak of the boundless energy he threw into the organisation of the Welsh Hospital, because others more capable than myself will deal with that phase of his character.

WILLIAM ANDERSON, F.R.C.S.

Surgeon to St. Thomas's Hospital, London.

One of the last remaining links between St. Thomas's Hospital of the past and the institution in its present home in Lambeth was suddenly snapped on Saturday, October 27th, by the death of William Anderson. Mr. Anderson was always a man of delicate physique, but the suddenness of his death in the full swing of work came as a sad and painful surprise to his many friends, the more so that in spite of failing health he had stuck to his post with the determination characteristic of his nature.

Mr. Anderson was born in London in 1842, and received his early education at the City of London School. Later he proceeded to the University of Aberdeen, his bent at that time being strongly in the direction of Art, an early inclination which had a powerful influence on his later career.

In 1864 he entered as a medical student in the school of St. Thomas's Hospital. His career was most successful: a steady and intelligent worker he obtained a large number of the school prizes, culminating in the gaining of the Cheselden medal, coveted by every surgically-minded student in the school until the present day. After filling the office of House-Surgeon at St. Thomas's he proceeded to Derby, where for two years he filled the post of Medical Officer to the Infirmary.

In 1871 he returned to his old school as Demonstrator of Anatomy and Surgical Registrar. In the anatomical department he was associated with his earliest teacher, Mr. George Rainey. As one of Anderson's pupils at that period the writer can testify to the excellence of his teaching, and to the high value placed upon it by his pupils. No doubt many a copy of the notes taken by pupils at his classes is still a valued possessions of men who at that time came under his influence.

In 1873 he was chosen to fill the position of Medical Director of the Naval Medical College at Tokio, and shortly afterwards he was appointed Medical Officer to the British Legation at that town. He spent six years of his life in Japan, and during that time he laid the foundation of a successful career for many a Japanese student. Some of the most prominent of his pupils, of whom might be specially mentioned Mr. Kanehiro Takaki, under his influence visited England to enlarge their views by study in a Western school. While fully occupied as a teacher and surgeon in Japan Anderson found time not only to make the splendid collection of objects of Japanese art at present the property of the nation in the British Museum, but also to carry out highly valuable researches into the history and character of these subjects. Later he embodied his knowledge in two important works, the *Pictorial Arts of Japan* and *Japanese Wood Engraving*.

Anderson's success in Japan and the value of his services were acknowledged by the Emperor, who conferred upon him the Order of the Rising Sun. What was still more valued by him was the acquisition of the friendship and esteem of a host of Japanese, as well as that of a number of his own fellow countrymen at that time working in Japan.

In 1880, soon after his return to this country, he was appointed an Assistant Surgeon to St. Thomas's Hospital, and Co-Lecturer on Anatomy in the medical school. In 1891 he became full Surgeon, and in 1898 he was appointed Co-Lecturer on Surgery. He held the posts of Examiner in Anatomy and later in Surgery in the University of London and in the Royal College of Surgeons of England. Whilst filling these positions his kindness and suavity of manner will be remembered by a large number of students who came before him.

In the year 1891 Mr. Anderson succeeded the late Mr. John Marshall as Professor of Anatomy in the Royal Academy of Arts, a position for which his artistic training and instincts highly qualified him; in the performance of the duties of that office he was most successful.

Mr. Anderson contributed articles to Morris's *Treatise on Anatomy*, Heath's *Dictionary of Surgery*, and Allbutt's *System of Medicine*; he edited Heath's *Practical Anatomy*, and translated Bruecke's *Beauties and Defects of the Human Figure*: beyond this he contributed a large number of articles to the various medical periodicals, and published a series of lectures on *Deformities of the Fingers and Toes*. The writing of critical articles on various subjects connected with art was also a favourite form of relaxation with him. His literary style was remarkably good. He wrote with ease and in finished language.

This short account of Mr. Anderson's life shows him to have been a man of exceptionally wide sympathies and a very high degree of culture. As such he gained the affection and respect of an extensive circle of friends in every profession, and his death leaves a gap deeply felt by many.

A favourite pupil of the late Mr. Le Gros Clark, Anderson emulated that fine specimen of the old surgeon in ease and grace of manner. No colleague and no pupil ever had to complain of an unkind or ungracious act on his part, even on considerable provocation. Under a quiet and reserved demeanour he possessed great strength of will and strong critical judgment, and when he had made up his mind he was a difficult man to persuade to alter his opinion. His industry and power of work were remarkable, whether in regard to literary effort or the practical part of his profession.

As a public speaker a certain diffidence stood in his way, but he always knew the right thing to say, and delivered himself with grace and polish. His utterances often astonished his audience by the familiarity he evinced with the literature of many subjects. The latter characteristic was still more marked in his conversation, and there were few subjects upon which he could not throw light or endow with interest.

As a lecturer on anatomy he was admirable. His voice, although soft and low, carried well, and he invested the subject with a practical and artistic interest which few lecturers could arouse. Many of his old pupils must remember with pleasure his lectures on facial expression, and his elaborate disquisitions on the actions of the various muscles. Topographical anatomy was an especially strong point with him. Beyond this he possessed a faculty for illustrating his lectures which can seldom have been surpassed. While speaking he would build up a section of the neck without any apparent effort, his deft fingers tracing line after line with unerring precision, while his taste made the use of his colours often strikingly effective and artistic. The anatomical attendant must certainly have often passed the ruthless daily sponge over the lecturer's slate with regret. This power, and still more that of producing an effect with a few well-chosen

lines, were appreciated to the full by his pupils at the Royal Academy of Arts.

As a surgeon, Anderson utilised his great anatomical knowledge, and showed a ready aptitude for the adoption of new ideas. He was one of the early surgeons to remove a renal calculus. He developed several individual lines: he was especially successful in the repair of deformities resulting from tuberculous lupus, and in the treatment of the various deformities of the digits. No operation, however big, disturbed his habitual quiet manner and imperturbability. An afternoon's operating that would have wearied out many a stronger man, left him smiling and prepared to enter his wards as if he had but just arrived at the hospital early in the afternoon. This, moreover, was an evidence of mental strength and self-control rather than of physical power.

This notice cannot be concluded without mention of Anderson's social characteristics In his own house he ever made a pleasing and distinguished figure. His pleasant manners and genial smile, together with his delightful cordiality as a host, will not be forgotten by those who had the privilege of experiencing them. At St. Thomas's Anderson's death is very deeply felt by colleagues, pupils and nursing staff alike. By all he was beloved. by all he will be long missed, and his personality held in affectionate remembrance.

Mr. Anderson was twice married, first to Miss Margaret Hall, by whom he had two children, a son and daughter, and secondly, to Louisa, daughter of Mr. F. W. Tetley, of Leeds.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Gotthard Bülau, of Hamburg, whose name is well known in connection with the Heber system of drainage, and as author of contributions on the treatment of empyema and on typhoid fever, aged 65; Dr. Eugène Janssens, of Brussels, a leading hygienist, member of the Superior Council of Hygiene, and of the Belgian Royal Academy of Medicine, aged 69; and Dr. Laurence Turnbull, of Philadelphia, a well-known ophthalmologist, author of a work entitled *The Use of the Ophthalmoscope*, and of numerous other writings on diseases of the eye and ear, aged 79.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

MEDICAL REPORT OF THE UNITED STATES ARMY.

SURGEON-GENERAL STERNBERG has recently issued his report on the United States Army Medical Service for the fiscal year ended June 30th, 1900.

The *Medical Department* consists at present of 192 officers, a number which barely sufficed for the needs of the army before the outbreak of the late war with Spain, and which proved inadequate in number, notwithstanding the earnest efforts of its members to form a satisfactory basis of organisation for the large increase made to the military forces during the progress of that war. Since the close of the war it has been impossible for the medical department, without professional assistance from civil life, to provide for the sanitary and medical work at the large number of new posts and stations that have been established at home for coast defence; in Cuba, Puerto Rica, and Hawaii for garrison duty, and for the military operations in the Philippine Islands. Excellent assistance has been obtained by contract with civil physicians, so far as concerns the professional care of the sick and wounded, but much experience is required to fit the medical men for the sanitary work of their position, and to familiarise them with army methods.

United States Volunteers.—At the end of the year there remained in service 34 surgeons with the rank of major, 11 of whom were captains in the regular establishment On June 30th, 1900, there were 78 regimental surgeons and assistant surgeons in the service; 25 majors, 13 of whom were captains in the regular army; 27 assistant surgeons with the rank of captain, and 26 assistant surgeons with the rank of first lieutenant. In the service, 462 acting assistant surgeons are under contract.

Hospitals.—The number of hospital corps men in service on June 30th, 1900, was 167 hospital stewards, 381 acting hospital stewards, and 3,543 privates—a total of 4,091. The number of female nurses in the Army Nurse Corps has remained approximately constant during the year, there having been 187 in the service on July 1st, 1899, and 210 on June 30th, 1900; 165 contracts were made and 149 were annulled. The movement of troops to the Philippines has occasioned a corresponding movement of nurses, and 122 are there now, against 33 at the beginning of the year. The work of the nurses continues to be highly appreciated, and their services are in demand at almost all hospitals of importance. In addition to a number of new hospitals erected at different places, a general hospital or sanatorium for the treatment of officers and men of the army suffering from pulmonary tuberculosis has been established at Fort Bayard, New Mexico.

Sickness and Invaliding.—During the calendar year, 1899, there were 229,885 admissions to the sick report recorded in a mean strength of 105,546 regulars and volunteers. Of the admission-rate for the year 714 99 was constituted by malarial diseases, 380.69 by diarrhœal diseases, and 192.48 by injury, of which 21.56 admissions per 1,000 men resulted from gunshot; typhoid fever contributed only 20.69 cases per 1,000 of strength. The death-rate from all causes was equal to a loss of 29 93 men per 1,000 of strength during the year, but only 11.80 of this was caused by disease. In the army, regulars and volunteers, during the calendar years 1898 and 1899, there were reported on the monthly reports of sick and wounded 347 cases of insanity, and 202 of these cases were committed to the Government Hospital for the Insane. Of the commitments 135 recovered in an average period of 3.9 months, 13 were improved, 6 died, and 49 remained unimproved. Of the 347 cases, 96 were reported on the monthly reports of troops serving in the Pacific Islands, and 32 of these were sent to the Government Hospital for the Insane. Of those committed 17 recovered in an average period of 3.6 months, 13 were improved, 2 died, and 11 remained not improved. The Surgeon-General says the exposures, fatigues, and excitements of a prolonged campaign are responsible for the large sick report and the relatively large death-rate among the troops in the Philippines. The latest reports received from the chief surgeon, division of the Philippines, dated August 15th, 1900, show a percentage of 8.47 sick for the command, which on that date had a strength of 60,554. Malarial fever, diarrhœa, and dysentery head the list in point of numbers.

ROYAL NAVY MEDICAL SERVICE.

FLEET-SURGEON (Retired) ALFRED G. DELMEGE, M.D., M.V.O., has been allowed to assume the rank of Deputy-Inspector-General of Hospitals and Fleets.

The following announcements, noticed in another column, appear in the *London Gazette* of November 6th: Fleet-Surgeon JAMES PORTER, M.A., M.B., to be Deputy-Inspector-General; Staff-Surgeon FREDERICK J. LILLY, to be Fleet-Surgeon: Surgeon ERNEST C. LOMAS, to be Staff-Surgeon, all dated October 21st.

The following appointments have been made at the Admiralty:—JOHN MCELWEE, M.D., Staff-Surgeon, to the *Pioneer*, November 15th; ARTHUR H. H. VIZARD, M.B., Surgeon, to the *Boscawen* for the *Agincourt*, November 15th; H. I. ROGERS, B.A., M.B., Surgeon, to the *Northampton*, November 15th; EDWARD C. CRIDLAND, M.B., Surgeon, to the Royal Marine Depôt, Deal, October 31st; MONTAGUE H. KNAPP, Surgeon, to the *Wildfire*, October 31st; GEORGE F. WALES, Fleet Surgeon, to the *Impregnable*, November 2nd; FREDERICK W. STERICKER, Staff-Surgeon, to the *Melampus*, November 2nd; EDWARD W. LUTHER, Fleet-Surgeon, to the *Hood*, additional, for Pembroke Dockyard, undated; JOSEPH H. WHELAN, M.D., Staff-Surgeon, and HENRY R. GARDNER, Surgeon, to the *Hood*, undated; JOHN K. RAYMOND, M.B., Surgeon, to the *Wildfire*, for the *Edinburgh*, undated; AUGUSTUS J. LAURIE, Surgeon, to the *Cambridge*, lent, November 6th; CHARLES S. FACEY, M.B., Surgeon, to the *Vivid*, November 6th; WALTER K. HOPKINS, Surgeon, to the *Wye*, November 6th.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Officers are granted the local rank of Colonel whilst Principal Medical Officers of Divisions in South Africa: Lieutenant-Colonel J. D. EDGE, M.D., October 21st, 1899; Lieutenant-Colonel W. DONOVAN, October 22nd, 1899; Lieutenant-Colonel R. W. MAPLETON, M.B., September 30th; Lieutenant-Colonel J. A. GORMLEY, M.D., January 2nd; Lieutenant-Colonel W. A. MAY, March 10th.

Lieutenant-Colonel W. B. ALLIN, M.B., is granted the local rank of Colonel whilst Principal Officer of a Division, and Principal Medical Officer of the Field Army, Natal, November 25th, 1899

Lieutenant-Colonel W. L. GUBBINS, M.B., is granted the local rank of Colonel whilst Principal Medical Officer of a Division, and Principal Medical Officer at Pretoria, December 23rd, 1899.

The undermentioned Officers are granted the local rank of Colonel whilst in charge of General Hospitals in South Africa: Lieutenant-Colonel O. G. WOOD, M.D., October 12th, 1899; Lieutenant-Colonel J. C. DORMAN, M.B., November 20th, 1899; Lieutenant-Colonel J. F. WILLIAMSON, M.B., February 17th; Lieutenant-Colonel B. W. SOMERVILLE-LARGE, January 4th; Lieutenant-Colonel R. T. BEAMISH, February 5th; Lieutenant-Colonel J. G. MACNEECE, January 29th; Major W. T. SWAN, M.B., June 12th.

The undermentioned officers are granted the local rank of Surgeon-General whilst Principal Medical Officers, Lines of Communication, South Africa: Colonel W. H. MCNAMARA, M.D., C.B., April 17th; Colonel J. A. CLERY, M.B., May 1st.

Colonel J. F. SUPPLE is granted the local rank of Surgeon-General whilst Principal Medical Officer at the Base, Capetown, November 18th, 1899.

Colonel T. J. GALLWEY, M.D., C.B., is granted the local rank of Surgeon-General whilst Principal Medical Officer, Natal, November 15th, 1899.

The undermentioned officers are granted the local rank of Colonel whilst Principal Medical Officers of Divisions, Field Force, South Africa: Lieutenant-Colonels S. H. CARTER, M.B., April 15th; O. TODD, M.B., May 2nd; G. T. GOGGIN, April 15th: Surgeon-Lieutenant-Colonel J. MACILL, M.D., Coldstream Guards, April 16th; Major B. M. SKINNER, July 23rd.

The undermentioned officers are granted the local rank of Colonel whilst in charge of General Hospitals, Field Force, South Africa: Lieutenant-Colonel M. D. O'CONNELL, April 20th; Lieutenant Colonel A. KEOGH, M.D., July 30th; Lieutenant Colonel H. MARTIN, M.B., July 30th: Major T. R. LUCAS, M.B., May 1st; Major H. J. BARRATT, July 23rd; Major S. WESTCOTT, April 6th.

Major J. W. JEROME fell from his horse at Reitz, South Africa, on October 17th, and sustained a simple fracture of the left forearm.

Major J. G. BLACK is reported to be dangerously ill from enteric fever at Newcastle, Natal; and Civil Surgeon A. B. DUNNE as seriously ill at Germiston, from dysentery.

The undermentioned have been discharged from hospital in South Africa to duty: Civil Surgeons A. P. GIBBONS, J. A. HOWARD, W. H. MAY, Major S. F. FREYER.

Among the officers returning to England from South Africa are the following: Major BATESON, Lieutenants BRUCE and GLOVER, Civil Surgeon J. B. CHRISTOPHERSON.

The following are returning, doing duty on the voyage: Civil Surgeons J. Dunn, G. R. Thomson, F. B. Cayley, W. T. Rowe, D. N. Greig.

Captain W. A. Ward has been appointed to the Home District (London) for duty.

INDIAN MEDICAL SERVICE.

The *London Gazette* of November 2nd announces the appointment, already reported in the British Medical Journal, of Colonel J. T. B. Bookey, Bengal Establishment, to be Principal Medical Officer with the China Expedition; and of Lieutenant-Colonel H. F. P. F. Esmonde White, Madras Establishment, to be Principal Medical Officer on the lines of communication and base.

Colonel G. M'B. Davis, M.D., C.B., D.S.O., Bengal Establishment, is appointed Principal Medical Officer to the British Contingent with the China Expeditionary Force.

Lieutenant-Colonel E. G. Russell, M.B., Bengal Establishment, is permitted to retire from the service, from August 27th. He was appointed Assistant Surgeon, March 30th, 1872, and became Brigade-Surgeon-Lieutenant-Colonel, December 21st, 1896.

THE VOLUNTEERS.

Surgeon-Major J. S. Carleton, 1st Gloucestershire Artillery, is promoted to be Surgeon-Lieutenant Colonel, November 3rd.

Surgeon-Captain A. F. A. Fairweather, M.D., 2nd Volunteer Battalion the East Yorkshire Regiment, is promoted to be Surgeon-Major, November 7th.

The undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps respectively specified: William J. Mackinnon, M.B., 9th Lanarkshire Rifles, November 3rd; Wallace A. Pride, M.B., 3rd (Renfrewshire) Volunteer Battalion Princess Louise's Argyll and Sutherland Highlanders, November 7th; John F. F. Parr, 1st Tower Hamlets Rifles, November 7th.

VOLUNTEER MEDICAL STAFF CORPS.

Mr. Harry Fulham-Turner, to be Surgeon-Lieutenant in the London Companies, November 3rd.

HONOURS FOR THE SOUTH AFRICAN WAR.

The following appointments and promotions are announced in recognition of the services of the officers named during the war in South Africa:

Surgeon Charles Clarke Macmillan, M.B., to be a Companion of the Distinguished Service Order.

Fleet-Surgeon James Porter, M.A., M.B., to be Deputy-Inspector-General of Hospitals and Fleets, October 21st.

Staff-Surgeon Frederick J. Lilly to be Fleet-Surgeon, October 21st.

Surgeon Ernest C. Lomas to be Staff-Surgeon, October 21st.

Deputy-Inspector-General Porter joined the service September 20th, 1877, and served in the Egyptian war in 1882 as Surgeon of the *Orontes* (medal and Khedive's bronze star). He served on shore with the Royal Marine Battalion defending Suakim from May, 1884, till the battalion was recalled in May, 1885, and was engaged in the operations in the Eastern Soudan in 1884-85, and was present at the action at Hasheen, at the attack on the Tofrek zereba, and at the destruction of Temai (two clasps).

Fleet-Surgeon Lilly entered the Royal Navy as Surgeon, February 11th, 1884. Whilst Surgeon of the *Blanche* he accompanied Consul-General Rennell Rodd and Commander G. R. Lindley, with an escort of twenty-five men, to Witu in July, 1893, to take over the district and to confer with a turbulent chief, Fumo Omari. In August, 1893, he was medical officer in charge of the Naval Brigade landed from the *Blanche*, *Swallow*, and *Sparrow*, and of Zanzibar and Soudanese troops to punish the above chief, who was the terror of the surrounding country; and present at engagements at Pumwani on August 7th, and at Jongeni on August 13th. He was mentioned in despatches, *London Gazette*, December 12th, 1893, and in "Foreign Office Despatches"—Mr. Rodd to Earl of Rosebery, dated August 11th and 20th, 1893 (medal with clasp).

Staff Surgeon Lomas and Surgeon Macmillan have no previous war record.

THE OPERATIONS IN CHINA.

The *London Gazette* of November 6th contains despatches from General Dorward, Commanding the British Forces at Tientsin, and dated July 19th, in which he describes the operations undertaken by the Allied Forces for the relief of the Legations at Pekin. Space forbids our entering into the full details given, but the following is of special interest: "The medical arrangements for the treatment, care, and removal of the wounded reflected great credit on Major Watson, R.A.M.C., and his subordinates. Not only were those arrangements sufficient for the British wounded, but he was also able to take medical charge of American, French, and Japanese patients, and to send them into hospital. Captain Prynne, R.A.M.C., and Assistant Surgeon Pullen, S.M.D., were in the advanced fighting line all day, dressing cases under fire. They are both valuable officers, always cool and collected." A report also appears in the same *Gazette* from Major Morris, Royal Welsh Fusiliers, Commanding the North China Field Force, which had been detailed to assist from Hong Kong, in which he says: "Major Watson, Royal Army Medical Corps, performed excellent work under great difficulties."

RETIRED PAY EMPLOYMENT AT HOME OF INDIAN MEDICAL OFFICERS.

That retired Indian medical officers have no claim on retired pay appointments at home cannot be doubted, but that they are not absolutely ineligible for such appointments recent facts have demonstrated. Other things being equal, we think these officers, if they so desired, might be accorded some prior claims to employment over civilian practitioners not belonging to the auxiliary forces or the reserve. But we do not think it would be fair (as we understand has been suggested to the authorities) that civilian surgeons already employed should be discharged to make way for the applicants for appointment, on the ground that they are retired from the Indian service.

LOCAL RANK.

Observer writes: The tardy granting of local rank to Lieutenant-Colonels R.A.M.C., performing the duties of colonels in South Africa loses much of its grace by its lateness. The war is nearly over, and the rank, confirmed for the first time, will carry increased emoluments; it will be interesting to learn from what date these emoluments commence.

*** The concession of increased local rank, if tardy, is better late than never; and we suspect has been granted in deference to the discussion of the matter in these columns, and the certainty of awkward questions when Parliament meets. But it is a mistake to say it has been granted for the "first time"; Colonel Stevenson got it some time back. That now granted ought distinctly to carry retrospective emoluments.

VOLUNTEER MEDICAL OFFICERS.

Surgeon-Captain 1st V. B. E. Y. Regiment writes: Like "Surgeon-Captain of Volunteers," who writes in the British Medical Journal of November 3rd, p. 1353, I too have been wondering if anything was going to be said upon the way the War Office treated volunteer medical officers this year in camp. I understood that all medical officers were to be paid according to their rank, the same as their brothers in the R.A.M.C. However, by a special book of pay for volunteers, we, from the junior lieutenant to the senior captain, only got 11s. a day and extras, etc. I have now held the rank of surgeon-captain for three years, and my whole pay came to 19s. 6d. a day, minus income-tax, instead of the pay for my rank, nearly 25s. a day. I certainly did not get colonel's pay, and I can also answer for all the other medical officers serving in the Eastdown Camp on Salisbury Plain this year. Through the absurd rule of allowing only one medico per battalion, we were short of medical officers, so that each officer had to do double brigade duty, as well as all his own regimental duty, which was very considerable when you had over 500 men to look after. If we go into camp next year we certainly ought to ask for (1) pay according to our rank; it is not right that a man of one year's service should be paid the same as those of ten and even fifteen years. (2) Two medical officers at least per battalion: otherwise I shall not go, and I hope the other medical officers will not either.

SCARCITY OF CANDIDATES FOR THE R.A.M.C.

A correspondent who knows personally where the shoe pinches, writes that everyone who knows will agree with "Audax" that the scarcity of candidates for the R.A.M.C. is intimately bound up with the question of pay; increase that sufficiently, and undermanning will soon be a thing of the past. The pay of the junior ranks especially is altogether disproportionate to the unavoidable expenses; and this particularly applies to India. The pay of a lieutenant in India should begin with Rs.450, and captain Rs.550 over five years' service.

HOSPITAL AND DISPENSARY MANAGEMENT.

CITY HOSPITAL FOR DISEASES OF THE SKIN, DUBLIN.

At the first annual meeting of this hospital, held on November 1st, Dr. C. M. O'Brien, Physician to the institution, stated that two thousand attendances had been registered and that the expenditure exceeded the income. Alderman Ireland, J.P., hoped that when the good work of the institution was made known the Corporation would be willing to make a grant to its funds.

MEDICO-LEGAL AND MEDICO-ETHICAL.

ACTION FOR LIBEL AGAINST A MEDICAL MAN.

DOWLING *v.* DODS.

This case was heard in the Court of Appeal (A. L. Smith, M.R., Collins and Stirling, L.JJ.) on November 6th. It came before the Court by way of a motion to enter judgment for the defendant, or to send back the case for a new trial. The case had originally been heard by Mr. Justice Darling and a common jury, when a verdict had been entered for the plaintiff (Miss Agnes Dowling), damages £100. The defendant (Dr. Dods) appealed on the following grounds: (*a*) That the verdict was against the weight of evidence; (*b*) that there was no evidence of malice to go to the jury; (*c*) that the proper questions were not put to the jury.

A full note of the case appeared in the British Medical Journal of June 25th, 1900, p. 1569.

Mr. Firminger appeared for the appellant, and Mr. Stuart Bevan for the respondent. After hearing lengthy arguments on both sides, the Court allowed the appeal.

In the course of his judgment the Master of the Rolls said: This is an action for libel. The plaintiff obtained judgment for £100 in the Court below, and the defendant now moves for judgment in his favour. It is clear that the letter imputes insanity, but the jury found that some of the statements were true and others false. The point was taken by Mr. Dickens that the occasion was privileged, and Mr. Justice Darling ruled that it was so. I have no doubt that it was privileged. Moreover, the defendant was clearly justified in sending it, for the plaintiff had assaulted

Mr. Farrer in his presence; she had written a series of letters which show that her mind was unhinged; and last, but not least, she was a dispenser of medicine. Thereupon Dr. Dods, knowing all this, wrote this letter to the Relieving Officer of Paddington, intending to convey that Miss Dowling was not a safe person to have to do with the dispensing of medicine. This was not a certificate under the Lunacy Acts, and no question under those Acts arose in the case; that it was a libel there is no doubt. [His Lordship here read the letter.] But there is very strong privilege in this case. It is perfectly plain to any man of common sense that this lady's mind was unhinged. Had I to decide upon the facts of the case I would have differed from the jury, but that is not my duty here. The law as to privilege may be stated thus: When you once allow that the occasion upon which a libel is published is a privileged occasion, it then becomes necessary for the plaintiff to prove that the defendant was actuated by a sinister and corrupt motive. In other words, malice must be proved. That issue is at once cast upon the plaintiff, and unless it is established it is the duty of the judge to non-suit the plaintiff. The jury apparently found that the doctor had some malice, but there is not a scintilla of evidence upon the point, except what the respondent's counsel seeks to establish in his very able argument. I think this Court must enter judgment for the defendant.

Lord Justice Collins said: In my judgment it would be a scandal if we were to send this case back to a jury. It is proved beyond all question that there was no express malice. It is one of the commonplaces of libel actions, and an established principle, that when once privilege is admitted the plaintiff must prove express malice if he wants to succeed, but mere negligence in seeking information does not amount to malice.

Lord Justice Stirling concurred.

Judgment for the defendant with costs.

CANVASSING FOR HONORARY APPOINTMENTS.

W. L.—In reply to a similar question addressed to us earlier in the year, it was pointed out in the BRITISH MEDICAL JOURNAL of April 14th, 1900, p. 934, that "where appointments upon the staff of a hospital are determined by the votes of the whole of the governors or subscribers there is necessarily a very great deal of undesirable broadcast distribution of testimonials, letters of application, and letters in support of candidates. For this reason it is now usual to limit the electoral body to a small number of the governors chosen annually by ballot." What view the General Medical Council would take of canvassing for honorary appointments if a case was brought before it we are of course unable to say, but it cannot be doubted that the system under which candidates for medical appointments are practically compelled to canvass a large body of governors is open to grave objection and liable to great abuse.

MEDICAL SERVICES RENDERED BY A SHIP'S PASSENGER.

MEDICO.—A shipowner differs from other employers of labour in this important respect, namely, that under Section CCVII, Subsection 3 of the Merchant Shipping Act, 1894, he is legally liable for the expense of all medicines, surgical and medical advice, and attendance given to a master, seaman, or apprentice whilst on board his ship. In this case it would appear that the owner has already acknowledged his liability by sending a cheque for £10 10s. The question, therefore, only remains as to whether this sum is adequate remuneration for the services rendered by A. or not. While A. is probably entitled to somewhat higher fees than usual on account of the special circumstances of time and place, he should recollect that no Court will sustain him in claiming anything in the shape of a fancy price for his services, and that his position materially differs from that of a medical man attached to a ship in respect of the opportunities the latter has sacrificed, and the engagement of the whole of his time and attention. Owners and masters are usually ready to defray all legitimate charges of this kind, and none of the shipping or legal authorities contain any reference to cases that bear on the subject.

"MEDICAL ADVERTISING."

MR. JOHN C. DAWBARN, Managing Director Dawbarn and Ward, Limited, writes: In the BRITISH MEDICAL JOURNAL of November 3rd a complaint from Harrogate is made under the above heading. Thinking this may possibly refer to something we have done in connection with our book *The Mineral Waters of Harrogate*, by Dr. F. W. Smith, we think it necessary to inform you that the author has had nothing whatever to do with the advertising or publishing of this book. We alone are responsible. He cautioned us at the time when undertaking the publishing to be careful not to do anything to cause him trouble in connection with his profession. We have only taken such steps to push the sale of the book as we do with every work we publish.

Trusting you will give the same publicity to this letter as you did to the paragraph referred to above, and thus clear the author from any breach of professional etiquette.

PROCURATOR-FISCALS AND MEDICAL PRACTITIONERS IN SCOTLAND.

SPECULUM writes: The body of a boy was found in the sea, apparently drowned. I was hastily summoned, and attempted resuscitation, but in vain. The procurator-fiscal in making his precognition ignores these facts, and gets his certificate from another medical man who arrived upon the scene some time after I had left the case. Seeing there is a fee of a guinea for such certificate have I a grievance, and, if so, what can I do to prevent a recurrence under similar circumstances?

*** The relationship between medical practitioners and procurators-fiscal is undefined, and has often given rise to much dissatisfaction owing to the apparently high-handed treatment which medical men have received from procurators-fiscal, who in Scotland are in charge of criminal work. The procurator-fiscal is supreme, and can employ whomsoever he pleases, irrespective of such circumstances as those mentioned by "Speculum." Thus there is no uniformity in any two counties, and the same procedure is not given effect to. "Speculum" evidently has a grievance. He might with advantage to himself and others lay the matter before the Lord Advocate, the head of the Criminal Department in Scotland; and failing to get a satisfactory answer, this might be followed by a question in the House of Commons. Medical practitioners are entitled to know their exact position. As a rule they are shabbily treated by the Crown authorities, and combined action might be conducive of much good.

THE RELATIONS OF MEDICAL OFFICERS OF HEALTH TO THEIR PROFESSIONAL COLLEAGUES.

DIPLOMATICUS.—Medical officers of health, especially those who are engaged in general practice, should be most careful to avoid appearing to interfere unduly with other men's patients. No doubt the law imposes the duty of notification upon the parents, but as they cannot be expected to possess the necessary powers of diagnosis, notification is usually made by the doctor. Our attention has been called to a circular issued by a medical officer of health in connection with a local epidemic of scarlatina, in which he says: "The earliest symptoms are feverishness and sore throat, followed generally by a red rash. Such cases should always be notified to me by the parents or those in charge of the patient even before a doctor is called in." This seems to be an example of excess of zeal on the part of the medical officer of health, and might lead to undue interference in the practice of his colleagues, which would be the more objectionable as the medical officer of health is, we are informed, an active general practitioner. It is greatly to be desired that there should be the most complete *entente cordiale* between health officers and medical practitioners.

THE TALLERMAN TREATMEN .

APPETITUS RATIONI PAREAT.—Our correspondent wishes to know whether we should approve of his acting as medical adviser to a local Committee formed for the purpose of obtaining a free grant of the Tallerman apparatus for the use of poor patients. We see no objection to our correspondent accepting the appointment on condition that the work of the Committee is properly managed. He knows the people with whom he is asked to associate himself and he should look into the agreement referred to, which he does not send to us, but which contains the conditions upon which the free grant of the apparatus is made by Mr. Tallerman. Any objection that might be entertained is not to the method of treatment, but to the way in which its advantages may be set before the public.

INQUEST WITHOUT MEDICAL EVIDENCE.

J. H. W. draws our attention to an inquest recently held near Leeds. According to the report in the local press it appears that a schoolboy of 8 years of age was found dead in his room suspended by a rope round his neck to a bedpost, and that instead of calling the medical man who had examined the body as a witness at the inquest, the coroner and the jury were content with the statement of the woman who laid out the body that she observed no marks upon the deceased with the exception of a blue one round the neck. The jury returned a verdict of suicide.

*** Doubtless in this instance the verdict was correct, but the practice of arriving at the causes of death, and giving verdicts thereon without medical evidence, is fraught with danger, and to this we would refer our correspondent to the BRITISH MEDICAL JOURNAL of October 20th, page 1225, "Coroners and Uncertified Deaths," and also to our last issue, November 3rd, page 1354, "The Value of Inquests," where he will find that special attention was drawn to the absence of medical evidence at inquests, and the dangers likely to arise from its omission.

"ARTICLES DE PARIS."

PATER FAMILIAS.—Our correspondent complains of a price list emanating from an address in Bayswater which has been sent to him on two occasions after the published notice of the birth of a child, and he asks whether some steps cannot be taken to prevent the far-reaching evil effects which he believes must result from the unrestricted sale of such apparatus. We do not think that the sellers are infringing any existing law, and although we agree with our correspondent, we do not know of any practical means to stop the distribution of these advertisements.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

Benefactions.—The Vice-Chancellor has published a list of donations to the Benefaction Fund, which brings the total up to more than £66,000. Some £1,600 has also been contributed for the special purpose of equipping an experimental farm for the department of agriculture.

Examiners.—Dr. G. E. Herman, of the London Hospital, has been appointed an Examiner in Midwifery for medical and surgical degrees. Mr. C. T. R. Wilson, F.R.S., has been appointed an Examiner in Physics for the First M.B. Examination.

Cambridge Philosophical Society.—Professor Macalister, M.D., has been elected President, and Professor Woodhead, M.D., W. H. R. Rivers, M.D., and G. Elliot Smith, M.D., have been elected Fellows of the Society.

UNIVERSITY OF GLASGOW.

GRADUATION CEREMONY.

THE usual autumn graduation ceremony took place in the Bute Hall on

November 1st, Principal Story presiding. The following degrees were conferred in the Faculty of Medicine:

Doctors of Medicine (M.D.). Old Regulations.—*L. Buchanan, M.B., C.M. (Thesis—Cyclitis: a Study of the Inflammatory Exudates into the Vitreous Body in Cases of Cyclitis); *M. A. M'I. Sinclair, M.B., C.M. (Thesis—A Study in Aphasia, with Special Reference to some of its Transitory Manifestations); A. Fairlie, M.A., M.B., C.M. (Thesis—Clinical Observations on Enteric Fever, with Notes and Impressions of a Personal Attack); J. R. Foulds, M.B., C.M. (Thesis—Puerperal Fever: its Source, Prophylaxis, and Treatment, with Cases); W. T. Hannah, M.B., C.M. (Thesis—A Clinical Study of Osteo-Arthritis); D. S. Kennedy, M.B., C.M. (Thesis—Tuberculosis in Man and the Lower Animals).

Doctors of Medicine (M.D.). New Regulations.—*Annie Louise M'Ilroy, M.B., Ch.B. (Thesis—Tubal Gestation, its Pathology and Diagnosis, as illustrated by the record of twenty-two cases); T. Campbell, M.B., C.M. (Thesis—The Sanatorium Treatment of Pulmonary Tuberculosis, with the records of several cases and the results of a year's work at the Consumption Sanatorium, Bridge of Weir); J. A. Clarke, M.B., Ch.B. (Thesis—A Study of Acute Lobar Pneumonia); R. C. Highet, M.B., C.M. (Thesis—Blackwater Fever, with notes of a case and observations on the etiology of the disease); W. L. Jones, M.B., C.M. (Thesis—The Dyspepsia of Breast Babies, with special reference to its etiology); Marion Jamieson Ross, M.B., Ch.B. (Thesis—The Sensory Phenomena associated with Hemiplegia).

* With Commendation.

Bachelor of Medicine (M.B.) and Master in Surgery (C.M.).—P. S. Clark.

Bachelors of Medicine (M.B.) and Bachelors of Surgery (Ch.B.).—†J. D. Lickley, W. A. Burns, Gertrude Jane Campbell, C. P. G. Crichton, J. Downie, M. W. Fraser, Lila Stephenson Greig, J. M. Henry, C. M. Hope, A. King, A. Leitch, D. M'F. Livingston, D. D. Logan, A. MacCulloch, G. S. M'Kinnon, D. M. MacRae (M.A.), Jean Marion Farie Marshall, P. Moir, D. Morrison, T. Neill, Agnes Brymner Sinclair, Mabel Talbot, R. B. Thom, J. Young.

† With Honours.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

The Council of the London School of Medicine for Women has recently received a cheque for £5,000 in aid of the building fund from Mr. J. R. Turle. The rebuilding of the school, which has been in progress during the last three years, is now completed. It has cost over £35,000. There is still a debt on the building of £8,000. The total number of students in the school is now 216, of whom 39 joined at the beginning of the present session.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

Examination for Registered Practitioners.—Mr. William Robert Wilson, L.S.A.Lond., having passed the necessary examination, has been admitted a Licentiate in Surgery of the College.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,379 births and 3,908 deaths were registered during the week ending Saturday last, November 3rd. The annual rate of mortality in these towns, which had been 17.1 and 17.3 per 1,000 of the two preceding weeks, further rose last week to 17.5. The rates in the several towns ranged from 9.1 in Norwich, 10.3 in Croydon, 13.4 in Cardiff, and 13.6 in Leicester, to 22.8 in Sheffield, 22.4 in Gateshead and in Manchester, 23.4 in Liverpool, and 25.5 in Salford. In the thirty-two provincial towns the mean death-rate was 18.1 per 1,000, and exceeded by 1.4 the rate recorded in London, which was 16.7 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.9 per 1,000; in London this death-rate was equal to 1.4 per 1,000, while it averaged 2.3 in the thirty two provincial towns, among which the highest zymotic death-rates were 3.1 in Leicester and in Birkenhead, 3.2 in West Ham, 3.4 in Blackburn and in Sheffield, and 3.6 in Burnley. Measles caused a death-rate of 1.3 in Brighton and 1.5 in Swansea; whooping-cough of 1.9 in Gateshead; "fever" of 1.1 in Portsmouth, 1.3 in Birkenhead, 1.4 in Birmingham, and 1.5 in Blackburn; and diarrhœa of 1.5 in Manchester and in Huddersfield, 1.6 in Haxifax, and 2.2 in Burnley. The mortality from scarlet fever showed no marked excess in any of the large towns. The 94 deaths from diphtheria in the thirty-three towns included 42 in London, 7 in West Ham, 7 in Leicestor, 4 in Portsmouth, 4 in Liverpool, and 4 in Sheffield. No fatal case of small-pox was registered in any of the thirty-three large towns; and only one small-pox patient was under treatment in the Metropolitan Asylums Hospitals on Saturday last, November 3rd. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 1,703 to 2,489 at the end of the nine preceding weeks, had further risen to 2,619 on Saturday last; 336 new cases were admitted during the week, against 322, 328, and 320 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, November 3rd, 857 births and 607 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.5 and 19.6 per 1,000 in the two preceding weeks, was again 19.6 last week, and exceeded by 2.1 per 1,000 the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 11.3 in Leith and 15.1 in Edinburgh to 22.4 in Glasgow and 24.6 in Paisley. The zymotic death-rate in these towns averaged 2.5 per 1,000, the highest rates being recorded in Glasgow and Aberdeen. The 321 deaths registered in Glasgow included 5 from scarlet fever, 2 from diphtheria, 15 from whooping-cough, 8 from "fever," and 14 from diarrhœa. Two fatal cases of measles, 3 of diphtheria, and 3 of diarrhœa were recorded in Edinburgh. Four deaths from diarrhœa occurred in Dundee; 5 from measles in Aberdeen; 2 from scarlet fever in Paisley; and 2 from "fever" in Greenock.

HEALTH OF IRISH TOWNS.

The average annual death rate represented by the deaths registered in the week ending November 3rd, in the Dublin registration area and the twenty-two principal provincial urban districts in Ireland was 20.2 per 1,000 of their aggregate population, which is estimated at 1,662,188. The deaths from the principal zymotic diseases registered in the twenty-three districts was equal to an annual rate of 2.0 per 1,000.

In the Dublin registration area 152 deaths were registered, representing an annual mortality of 22.7 per 1,000 of the population, omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the area, the rate was 31.2 per 1,000. The death-rate for this area was 1.9 per 1,000 for the principal zymotic diseases. In Belfast there were registered during the week 132 deaths, representing an annual rate of mortality of 19.2 per 1,000 of the estimated population; the rate from zymotic diseases was 2.6 per 1,000. In Cork the deaths registered numbered 24, affording a rate of 16.6 per 1,000 of the population according to the census of 1891; the zymotic death-rate was 2.1 per 1,000.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

The Registrar-General has just issued his return relating to the births and deaths registered in England and Wales during the third, or summer, quarter of this year, and to the marriages during the three months ending June last. The marriage-rate was equal to 17.8 per 1,000, and was 1.3 per 1,000 above the average rate in the corresponding quarters of the ten preceding years.

The births registered in England and Wales during the quarter ending June last numbered 232,578, and were equal to an annual rate of 28.8 per 1,000 of the population, estimated by the Registrar-General at more than thirty-two millions in the middle of this year. This rate was 1.2 per 1,000 below the mean rate in the second quarters of the ten preceding years. The birth-rates in the several counties ranged from 21.3 in Sussex, 21.9 in Rutlandshire, 22.6 in Herefordshire, and 22.7 in Oxfordshire to 31.8 in Warwickshire, 32.4 in Nottinghamshire, 33.3 in Northumberland, 34.2 in Staffordshire, and 35.7 in Durham. In thirty-three of the largest English towns, including London, the birth-rate last quarter averaged 29.6 per 1,000, and exceeded by 0.8 the general English rate. In London the birth-rate was equal to 28.6 per 1,000, while it averaged 30.2 in the thirty-two provincial towns, among which it ranged from 23.4 in Brighton, 23.5 in Huddersfield, 23.9 in Bradford, and 24.2 Portsmouth to 33.7 in Hull, 36.2 in Liverpool, 37.7 in Sunderland, and 38.5 in Gateshead.

The births registered in England and Wales during the three months ending September last exceeded the deaths by 99,488; this represents the natural increase of the population during that period. From returns issued by the Board of Trade, it appears that 105,402 emigrants embarked during last quarter, for places outside Europe, from the various ports of the United Kingdom at which emigration officers are stationed. Of these 105,402 emigrants, 38,056 were English, 9,060 Scotch, and 12,824 Irish, while 45,462 others were of foreign nationality. Compared with the averages in the corresponding quarters of the three preceding years, the proportions of English, Scotch, and Irish emigrants showed an increase of 12.5 per cent., 39.8 per cent, and 10.7 per cent. respectively.

During the third quarter of the year the deaths of 133,000 persons were registered in England and Wales, equal to an annual rate of 16.5 per 1,000 of the population, the average rate being 17.1 per 1,000. The lowest county death-rates last quarter were 8.4 in Rutlandshire, 11.2 in Dorsetshire and in Westmorland, 11.3 in Oxfordshire, and 11.6 in Wiltshire; while the highest rates were 19.1 in Staffordshire and in Northumberland, 19.4 in Lancashire, and in the East Riding of Yorkshire, and 19.5 in Warwickshire. In the urban population of England and Wales, estimated at about twenty-two millions, the rate of mortality during the quarter under notice was 17.7 per 1,000; while in the remaining (and chiefly rural) population of about ten millions the rate was 13.7 per 1,000. These urban and rural rates were both 0.7 per 1,000 below the respective averages in the corresponding quarters of the ten preceding years. Among thirty-three of the largest English towns the mean death-rate was 18.6 per 1,000, or 2.1 in excess of the general English death-rate during the same period. In London the rate was 17.8 per 1,000, while it averaged 19.1 in the thirty-two large provincial towns, among which the rates ranged from 12.6 in Bradford and in Cardiff, 13.2 in Halifax, and 13.3 in Croydon to 23.3 in Manchester, 23.3 in Preston, 23.9 in Salford, 24.5 in Liverpool, and 25.1 in Sheffield. In sixty-seven other large towns, with an estimated aggregate population of more than four millions, the mean death-rate was 16.8 per 1,000, or 1.8 below the average rate in the thirty-three great towns.

The 133,000 deaths registered in England and Wales during the three months ending September last included 15,671 which were referred to diarrhœa, 2,619 to whooping-cough, 2,502 to measles, 1,883 to diphtheria, 1,409 to "fever" (including typhus, enteric, and ill-defined forms of continued fever), 739 to scarlet fever, and 12 to small-pox; in all, 25,835 deaths resulted from these principal zymotic diseases, equal to an annual rate of 3.05 per 1,000, which was 0.11 below the average rate in the third quarters of the ten preceding years. The mortality from diphtheria and from whooping-cough was slightly above the average, while that from each of the other principal zymotic diseases showed a decline. Of the 15 deaths from small-pox registered in England and Wales during the quarter under notice, 7 were of persons belonging to the city of Liverpool.

The rate of infant mortality in England and Wales last quarter, or the proportion of deaths under 1 year of age to registered births, was equal to 188 per 1,000, and was equal to the average rate in the corresponding periods of the ten preceding years. In thirty-three of the largest English towns the rate of infant mortality averaged 241 per 1,000; in London the rate was 221 per 1,000; while it averaged 237 in the thirty-

two large provincial towns, among which it ranged from 83 in Halifax, 123 in Bradford, 146 in Bristol, and 152 in Huddersfield to 284 in Plymouth, 295 in West Ham, 320 in Sheffield, and 361 in Preston. The mortality in England and Wales last quarter among persons aged between 1 and 60 years was equal to 7.9 per 1,000 of the estimated population at this group of ages, and was 0.4 below the average rate in the ten preceding third quarters. In the thirty-three great towns the mortality at this age-group averaged 9.1 per 1,000, and ranged from 6.1 in Croydon, 6.4 in Cardiff and in Burnley, and 6.7 in Bradford to 11.2 in Sheffield, 11.4 in Sunderland, 11.6 in Manchester, 12.4 in Salford, and 12.6 in Liverpool. Among persons aged 60 years and upwards, the death-rate in England and Wales last quarter was equal to 53.1 per 1,000 of the estimated population at this age-group, against an average rate of 53.9 per 1,000 in the corresponding quarters of the ten preceding years. In the thirty-three great towns the rate was 52.7 per 1,000, ranging from 43.4 in Norwich, 45.4 in Leicester, 45.6 in West Ham, and 48.0 in Croydon to 71.3 in Sheffield, 71.9 in Huddersfield, 78.4 in Bolton, and 81.2 in Salford.

The mean temperature of the air at the Royal Observatory, Greenwich was 61.8°, and was 2.0° above the average in the third quarters of 129 years; it showed an excess of 5.1° in July, and 1.3° in September, while in August it was 0.4° below the average. The rainfall during the quarter amounted to 4.58 inches, and was 2.61 inches below the average.

ZYMOTIC MORTALITY IN LONDON.

[Specially Reported for the British Medical Journal.]

The accompanying diagram shows the prevalence of the principal zymotic diseases in London during the third, or summer, quarter of this year. The fluctuations of each disease and its fatal prevalence, as compared with that recorded in the corresponding periods of recent years, can thus be readily seen.

Small-pox.—No fatal case of small-pox was registered in London last quarter, the corrected average number in the corresponding periods of the ten preceding years being 13; 15 small-pox patients were admitted into the Metropolitan Asylums Hospitals during the quarter, and 2 remained under treatment at the end of September last.

Measles.—The deaths referred to measles, which had been 530, 602, and 762 in the three preceding quarters, declined again to 329 last quarter, and were 197 below the corrected average. Among the various sanitary areas of the metropolis measles showed the highest proportional fatality in Holborn, Clerkenwell, St. George-in-the-East, Limehouse, St. George Southwark, Woolwich, and Plumstead.

Scarlet Fever.—The fatal cases of this disease, which had been 84 and 97 in the two preceding quarters, decreased again to 70 during the three months under notice, and showed a decline of 171 from the average number in the corresponding periods of the ten preceding years. Among the various sanitary areas this disease was proportionately most fatal in St. James Westminster, Holborn, Bethnal Green, St. George-in-the-East, Limehouse, and St. Olave Southwark. The number of scarlet fever patients in the Metropolitan Asylums Hospitals, which had been 1,654 and 1,788 at the end of the two preceding quarters, had further risen to 1,899 at the end of September last. The number of new cases admitted into these hospitals, which had been 2,160 and 2,491 in the two preceding quarters, further rose to 2,616 during the quarter ending September 29th.

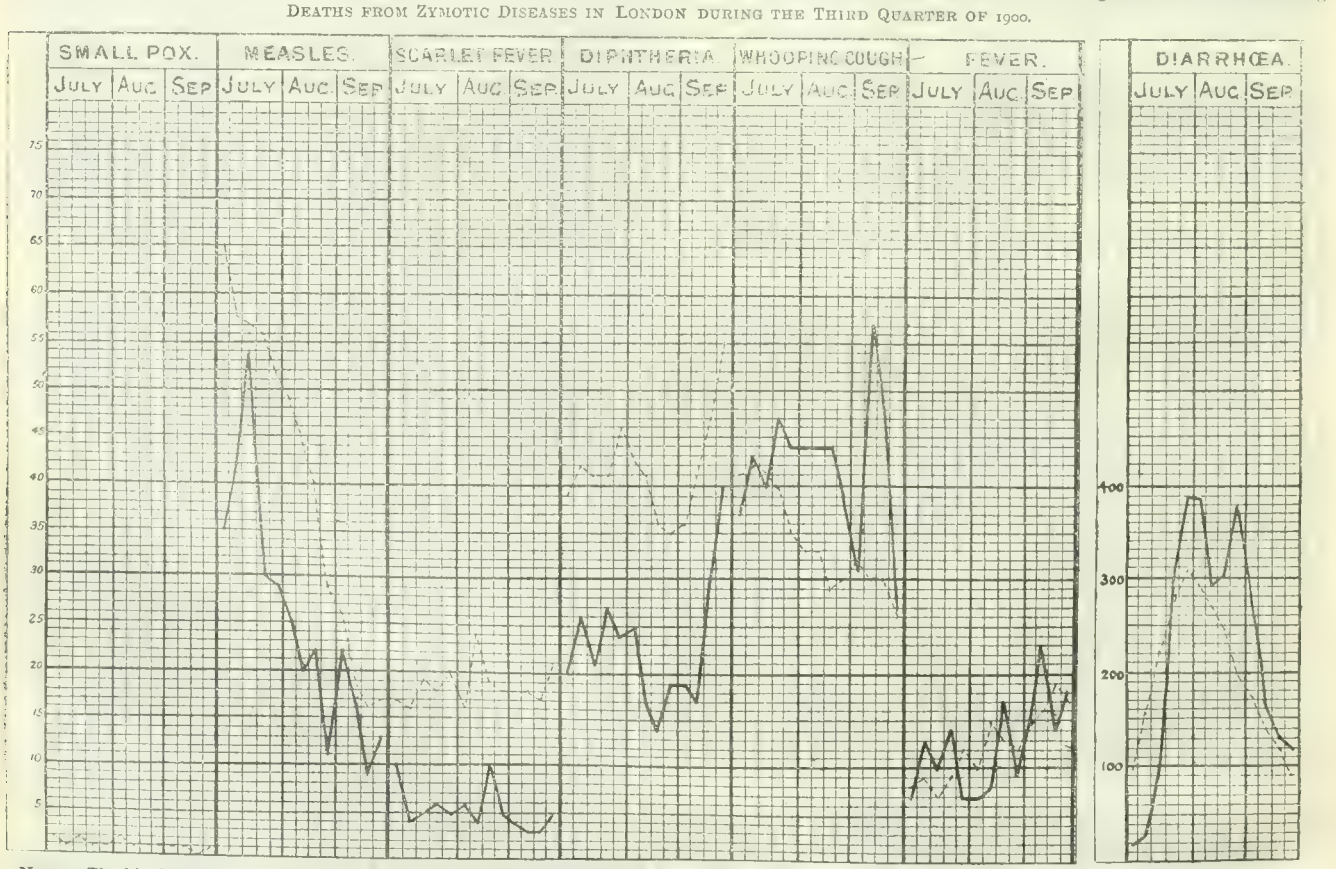
Diphtheria.—The deaths referred to diphtheria in London, which had been 636, 533, and 320 in the three preceding quarters, further declined to 299 last quarter, and were 244 below the corrected average number. This disease showed the highest proportional fatality in Fulham, Hampstead, Clerkenwell, Poplar, Rotherhithe, and Plumstead sanitary areas. The number of diphtheria patients in the Metropolitan Asylums Hospitals at the end of September last was 1,231, against 1,679, 1,236, and 1,212 at the end of the three preceding quarters; 2,180 new cases were admitted during the three months under notice, against 2,980, 2,192, and 2,004 in the three preceding quarters.

Whooping-cough.—The fatal cases of this disease, which had been 216, 518, and 595 in the three preceding quarters, declined again to 545 during the three months ending September last, but were 102 above the corrected average number in the corresponding periods of the ten preceding years. Among the various sanitary areas whooping-cough was proportionately most fatal in St. George-in-the-East, St. Saviour Southwark, St. George Southwark, Newington, Battersea, Camberwell, and Plumstead.

Fever.—Under this heading are included deaths from typhus, enteric, and simple and ill-defined forms of continued fever. The deaths referred to these different forms of "fever," which had been 381, 204, and 124 in the three preceding quarters, rose again to 162 during the three months ending September last, and corresponded with the corrected average number. Five deaths from simple continued fever, and one from typhus, were registered during the quarter under notice. Among the various sanitary areas the "fever" death-rate was highest in Chelsea, St. Giles, St. George-in-the-East, Poplar, Bermondsey, and Rotherhithe. The Metropolitan Asylums Hospitals contained 229 enteric fever patients at the end of September last, against 406, 263, and 148 at the end of the three preceding quarters: 515 new cases were admitted during last quarter, against 816, 498, and 311 in the three preceding quarters.

Diarrhœa.—The 2,87 fatal cases of diarrhœa registered in London during

Deaths from Zymotic Diseases in London during the Third Quarter of 1900.



Note.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted line shows the *average* number of deaths in the corresponding weeks of the ten preceding years, 1890-99.

the three months ending September last were 265 above the corrected average number in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in St. Luke, Shoreditch, Limehouse, Poplar, St. George Southwark, and Woolwich sanitary areas.

In conclusion it may be stated that the 4,272 deaths referred to the principal zymotic diseases in London during the third, or summer, quarter of this year were 255, or more than 5 per cent., below the average number in the corresponding periods of the ten preceding years, 1890-1899. Among the various sanitary areas, the lowest zymotic death-rates were recorded in St. George Hanover Square, St. James Westminster, St. Martin-in-the-Fields, Strand, Cityof London, and St. Olave Southwark; and the highest rates in Shoreditch, St. George-in-the-East, Limehouse, Poplar, St. George Southwark, and Woolwich.

PROSECUTIONS UNDER THE VACCINATION ACTS.

At North London, on Monday, November 5th, 17 summonses against parents for not having their children vaccinated were down for hearing before Mr Fordham. These summonses had been taken out by the vaccination officer for No. 1 District of Islington. A report of the proceedings appeared in the *Times* of November 6th. Mr. Yardley Tilley prosecuted; Mr Schultess Young defended.

In the first case a man named M'Carthy was summoned. The officer having given formal evidence, Mr. Schultess Young contended that it was necessary in these cases that the officer should be furnished with general directions to prosecute. He referred to the case of Bramble *v.* Lowe [(1897) 1 Q B 283]. He said it was there held that an officer could prosecute on a general authority, but that an authority was necessary. Continuing, he argued that, as the notice sent to the parent of the child was not before the court, the proceedings could not go on.

Mr Tilley having asked for an adjournment, in order that notice might be produced,

Mr. Fordham said: The case quoted by Mr. Justice Wright does not support Mr. Young's contention. It was there decided that a vaccination officer is, without any special authority in that behalf from the guardians of the union for which he acts, empowered to take proceedings under Section XXXI of the Vaccination Act, 1867, for an order directing an unvaccinated child to be vaccinated, notwithstanding the provisions of Article 16 of the General Order of the Local Government Board. Mr. Justice Wright there said: "Even if it was necessary for the officer in the present case to get directions from the guardians, the general directions which were in fact given to him were, in my judgment, a valid authority to proceed. But I do not think he wanted any such directions. He may proceed under Section XXXI of his own motion." I can only grant another adjournment of these cases upon terms that the costs hitherto incurred—£5 5s.—be paid to the defendants. Otherwise I must dismiss all the cases.

Mr. Tilley said his client would take the adjournment, and pay the costs.

MEDICAL ATTENDANCE ON PAUPERS REMOVED FROM THEIR OWN RESIDENCE.

IGNOTUS, a district medical officer, writes to ask whether he can charge for his attendance on a pauper case, removed from her own cottage by his (the medical officer's) consent to the house of the guardian who gave the order for medical attendance, this having been done to ensure better care and nursing of the patient.

*** If the patient, though removed from her own cottage, is still residing in the same medical officer's district, we do not see how he can establish any claim to be paid for attendance on the case.

MEDICAL NEWS.

THE degree of Doctor of Medicine has recently been conferred on Fräulein Charlotte Steinberger by the University of Buda Pesth. She is the first female Doctor of Medicine in Hungary.

THE annual students' dinner of the National Dental Hospital, Great Portland Street, London, will be held at the Holborn Restaurant on Friday next, at 6 30 P.M., when the chair will be taken by Mr. Harry Rose, L.D.S.

THE METROPOLITAN HOSPITAL SATURDAY FUND.—The annual meeting of this fund was held at the Mansion House, under the presidency of the Lord Mayor, on November 3rd. The report stated that the total amount collected during the year ending in October last was £12,695 as compared with £20,219 collected during 1899. The working expenses of 11 per cent. had been lower than in any previous year.

THE NEW HOSPITAL AT BOSCOMBE.—The first part of the new Royal West Hants and Boscombe Hospital, to which reference was made in the BRITISH MEDICAL JOURNAL of November 3rd, was opened on November 6th. The Empress Victoria ward is included in this block. It was announced that Sir Frederick Wills had presented a cheque for £1,000 to cover the cost of the Lady Wills ward for ten men.

THE annual dinner of the staff and past and present students of the Dental Hospital of London and their friends will be held on Saturday, November 24th, at the Hotel Métropole (Whitehall Salon), Mr. F. A. Bevan, a trustee and Vice President of the hospital, in the chair.

MEDICAL MAGISTRATES.—On the recommendation of His Grace the Duke of Abercorn, Lord Lieutenant of the County, the Lord Chancellor has appointed Dr. Patrick J. Hamilton, Ardara, to the Commission of the Peace for the County Donegal. Dr. T. W. Buckley, of Thrapston, has been placed on the Commission of the Peace for the County of Northamptonshire on the nomination of Earl Spencer, K.G., Lord Lieutenant.

BIRMINGHAM AND DISTRICT GENERAL MEDICAL PRACTITIONERS' UNION.—The annual meeting of the Birmingham and District General Medical Practitioners' Union was held on November 1st, Mr. Langley Browne, Chairman of Council, in the chair. In presenting their first annual report the Council said they had every reason to congratulate the members on the progress made by the Union during its first year of existence. Twelve months ago the medical profession in Birmingham was disunited; now it had a vigorous and complete organisation based on democratic principles, and securing united action of the local profession through direct representatives. The area included was that known as "greater Birmingham," extending on all sides to some five miles from the centre of the city, and it had been divided into 14 medical wards; 202 members had already been enrolled. Some modifications in points of detail of the laws adopted by the general meeting held on December 12th, [illegible] adopted. All the officers were re-elected for the ensuing year.

EDINBURGH HEALTH SOCIETY LECTURES.—The first of the series of lectures by the Edinburgh Health Society was given on November 3rd, when Dr. Leslie Mackenzie, the Medical Officer of Health for Leith, discoursed on Public Health and Individual Duty. He held that three of the urgent problems of public health were (1) the problem of tuberculosis, (2) the problem of the housing of the working classes, and (3) the problem of how to improve the keeping of the houses that already exist. These questions were discussed in detail.

DEATH OF DR. SHERLOCK IN THE UGANDA PROTECTORATE.—Reuter's Agency reports that the fighting in the Uganda Protectorate on October 13th, when Dr. J. L. Sherlock was killed and Lieutenant Henderson wounded, was in the course of the punitive operations which have been prosecuted at intervals during the last three months, and were made necessary by the persistently hostile attitude of the Nandi people, who are a branch of the once powerful Masai. The Nandi have attacked and cut up caravans along the Uganda-Mombasa road; they have destroyed the telegraph line, so that there is little or no communication with Uganda proper. A telegram was, however, recently received at the Foreign Office, sent by Sir Harry Johnston from Fort Ternan on October [illegible], stating that he had sufficient troops in the eastern provinces to deal with the disturbances, and required no further assistance.

DR. JOSEPH PRIESTLEY, Medical Officer of Health for Lambeth, had been unanimously selected by the Municipality of the City of Bombay for the appointment of Executive Health Officer, at a commencing salary of Rs 1,500 a month, but has declined to accept the appointment. The Borough of Lambeth will, therefore, retain the valuable services of Dr. Priestley, who may be trusted to see that the Council of the new Borough maintains the satisfactory position in which its Public Health Department has already attained [illegible] a recently-published Summary of Work carried out by the Sanitary Committee of the late Vestry during the past [illegible] years, during which Dr. Priestley has been their [illegible] Officer of Health.

MEDICAL VACANCIES.

The following vacancies are announced

BIRKENHEAD AND WIRRALL CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board, residence, and laundry. Applications to Mr. E. H. Tilby, Hon. Secretary, [illegible]

BIRMINGHAM: GENERAL HOSPITAL.—(1) Two Assistant House-Physicians. (2) Two House-Surgeons. Appointments for six months to [illegible] Salary £50 per annum, with board, and washing; [illegible]

BIRMINGHAM AND MIDLAND EYE AND EAR HOSPITAL.—Assistant Physician for Diseases of the Ear. Applications to the Chairman of the Medical Committee, John Wright Street, [illegible] by December 3rd.

BODMIN: CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £120, rising to £150 per annum, with board, furnished apartments, etc. Applications to the Medical Superintendent.

BRIGHTON: ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—Acting Physician. Applications to the Chairman of the Medical Committee by November 22nd.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Resident Pathologist. Salary, £70 per annum. Board and residence provided. Applications to the Secretary.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—Assistant House-Surgeon, unmarried. Salary, £60 a year, with board and lodging. Applications to the Secretary by November 24th.

CARDIFF INFIRMARY.—Assistant House-Surgeon. Appointment for six months, but renewable. Salary, at the rate of £75 per annum, with board, washing, and apartments. Applications, endorsed "Assistant House-Surgeon," to the Secretary by November 23th.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £40 per annum, with board, lodging, and washing. Applications to the Chairman of Medical Committee by November 22nd.

EDINBURGH: ROYAL COLLEGE OF SURGEONS.—Conservator of the Museum. Salary, £105 per annum. Applications to Mr. J. Robertson, Clerk to the College, 54, George Square, Edinburgh, by December 1st.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £30 per annum, with board, lodging, and washing. Applications to the House-Surgeon.

FRENCH HOSPITAL, London.—Resident Medical Officer, unmarried, and must speak French. Salary, £80 per annum, with full board. Applications to the Secretary.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Resident Medical Superintendent. Salary, 100 guineas per annum, with board and residence. Applications, on forms provided, to the Secretary by December 11th. Also Ophthalmic Surgeon must be F.R.C.S.Eng. Applications to the Secretary by November 20th.

JENNER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea Gardens, S.W.—Assistant in the Department of Pathological Chemistry. Salary, £300. Applications to Dr. Allan Macfadyen by November 15th.

KENT COUNTY ASYLUM, Chartham, near Canterbury.—(1) Second Assistant Medical Officer, unmarried, and under 3 years of age. Salary commencing at £175 per annum. (2) Third Assistant Medical Officer. Salary, £125 per annum. Board, quarters, washing and attendance provided in each case. Applications to Dr. Fitzgerald, Medical Superintendent.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST. Resident Medical Officer for the In-patient Department, Bowdon. Salary, £100 per annum, with board, apartments, and washing. Applications to the Secretary by November 14th.

MANCHESTER: ROYAL INFIRMARY.—Resident Medical Officer of the Convalescent Home at Cheadle, unmarried and not under 25 years of age. Salary, £150 per annum, with board and residence. Applications to the Secretary by December 1st.

METROPOLITAN ASYLUMS BOARD.—Four Assistant Medical Officers at the Fever and small pox Hospitals, unmarried, and not exceeding 35 years of age. Salary, £160 for the first year, £180 for the second, and £200 the third and subsequent years, with board, lodging, attendance, and washing. Applications, on forms provided, to be sent to the Office of the Board, Victoria Embankment, E.C., by November 15th.

MORPETH: NORTHUMBERLAND COUNTY ASYLUM.—Assistant Medical Officer, unmarried, and not more than 30 years of age. Salary, £125 per annum, rising to £155, with board, lodging, and washing. Applications to the Medical Superintendent by November 18th.

NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland Street, W.—Surgical Registrar. Applications to the Secretary by November 23rd.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary, £160 for first year, and £180 afterwards. Applications, on forms provided, to be sent to the Hon. Sec., Mr. R. W. Sisson, 13, Grey Street, Newcastle-on-Tyne, by November 17th.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—House-Surgeon. Appointment for six months. Salary at the rate of £80 per annum, with board, residence, and laundry allowance. Applications to the Secretary at the City Office, 27, Clements Lane, E.C., by November 24th.

NORTH-WEST LONDON HOSPITAL, Kentish Town Road, N.W.—(1) Assistant Surgeon, (2) Resident Medical Officer, (3) Assistant Resident Medical Officer. A salary at the rate of £50 per annum with board, residence, and washing is attached to the latter two. Applications to the Secretary by November 21st.

NOTTINGHAM CITY ASYLUM.—Senior Assistant Medical Officer, unmarried, and not above 30 years of age. Salary, £200 per annum, with board, apartments, and washing. Applications to the Medical Superintendent by November 23rd.

NOTTINGHAM: BAGTHORPE ISOLATION HOSPITAL.—Resident Medical Officer. Salary, £100 per annum, with board and residence. Applications to Dr. P. Boobbyer, Medical Officer of Health, Guildhall, Nottingham.

OPORTO, PORTUGAL: BRITISH HOSPITAL.—Medical Officer. Salary, £150 per annum. Applications to Mr. R. Coverley, Treasurer, 55, Rua da Reboleira, Oporto.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—Clinical Assistants. Applications to the Secretary by December 1st.

ST. PANCRAS PARISH.—Senior Assistant Medical Officer for the Workhouse. Salary, £135 per annum, with residential allowances. Applications, on forms provided, to the Clerk to the Guardians, Vestry Hall, Pancras Road, N.W.

SALISBURY INFIRMARY.—House-Physician, unmarried, and not exceeding 30 years of age. Salary, £75 per annum, with board, lodging, and washing. Applications to the Secretary by November 15th.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone Road, N.W.—Surgeon to the Out-Patient Department. Applications to the Secretary by December 5th.

SHEFFIELD: ROYAL INFIRMARY.—House-Physician. Salary, £100 per annum, with board, lodging and washing. Applications to be addressed to the Medical Staff, care of the Secretary, by November 12th.

SOUTHPORT CONVALESCENT HOSPITAL AND SEA-BATHING INFIRMARY.—Resident Medical Officer, unmarried and between 25 and 30 years of age. Salary, £150 per annum. Applications to the Chairman by November 12th.

VICTORIA HOSPITAL FOR CHILDREN, Queen's Road, Chelsea.—House-Physician. Appointment for six months. Honorarium £25, with board and lodging. Applications to the Secretary by November 17th.

VIRGINIA WATER: HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE.—Junior Assistant Medical Officer. Salary, £50 per annum, rising to £200, with board, lodging and washing. Applications to the Medical Superintendent by November 17th.

WOLVERHAMPTON EYE INFIRMARY.—House-Surgeon. Salary, £70 per annum, with rooms, board, and washing. Applications to the Secretary by November 17th.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary, £110 per annum, with board, lodging, and attendance. Applications to Mr. W. Draper, De Grey House, York, by November 21st.

MEDICAL APPOINTMENTS.

ALDERSON, Wilfred E., M.D., M.S.Durh., appointed Surgeon to the Trinity House, Newcastle-on-Tyne.

BATHURST, Lulu m Wood, M.D.Lond., appointed Assistant Medical Examiner to the Technical Education Board of the London County Council.

CAMPBELL, John Archibald, L.R.C.P.&S.Edin., L.F.P.&S.G., appointed Demonstrator of Anatomy at Anderson's College Medical School, Glasgow.

COSBET, L. F., L.R.C.P., L.R.C.S.Irel., appointed Certifying Factory Surgeon for the Kilfoughy District in the Union of Tullamore.

DAVIES, Hugh, F.R.C.S.Eng., M.B., B.S.Lond., appointed Surgeon to the Miller Hospital, Greenwich, *vice* T. Moore, F.R.C.S.Eng., deceased.

DUNHAM, Frederic, M.B., F.R.C.S., appointed Consulting Surgeon to the North-West London Hospital, Kentish Town Road, N.W.

GRANT, Lachlan, M.D.Edin., appointed Parish Medical Officer and Public Vaccinator for Ballachulish and Glencoe; also Certifying Factory Surgeon for Parish of Lismore and Appin, Argyleshire.

HAM, B. Burnett, M.D., M.R.C.S., L.R.C.P., D.P.H.Camb., appointed Commissioner of Public Health for Queensland, Australia.

HOBART, Nathaniel H., B.A., M.B., B.C.Cantab., appointed Intern Surgeon to the North Cnaritable Infirmary, Cork, *vice* N. J. Hobart, M.D.Glasg., resigned.

HUEY, John James, L.S.A., appointed Medical Officer and Public Vaccinator for the Mexborough District of the Mexborough Union.

MACGUIRE, F. J., L.R.C.P., L.R.C.S.Irel., appointed Medical Officer for the Longford Workhouse.

MACQUARRIE, I., M.B., C.M., appointed Medical Officer for the Ireby District of the Wigton Union, *vice* T. P. Thomson, M.B., C.M.Aberd.

MAUDSLEY, Noel, M.B., C.M.Edin., appointed Medical Officer for the Alwinton District of the Rothbury Union, *vice* W. F. Miller, M.B., B.S.Durh., resigned.

NICHOL, Reginald S., M.B., Ch.B.Vict.Univ., appointed House-Surgeon to the Southern Hospital, Manchester.

ROBB, A. G., M.B.R.U.I., appointed Superintendent Medical Officer to the Fever Hospital, Belfast Union, *vice* Dr. E. C. Bigger, appointed Local Government Inspector.

THOMAS, Frank, M.B., B.C.Cantab., appointed Ophthalmic Surgeon to the Swansea Hospital, *vice* Jabez Thomas, F.R.C.S.Eng., appointed Consulting Surgeon.

DIARY FOR NEXT WEEK.

MONDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Beddard: Diet in Health and Disease.

Medical Society of London, 8.30 P.M.—Clinical evening. Cases:—Dr. Cautley: Bilateral Birth Palsy. Mr. Kellock: Mounties Ossium in a Child. Dr. Caley: Vascular Swelling connected with the Thyroid. Mr. Weeks: Congenital Locomotor Ataxy. Dr. Dockrell: (1) Hyaline Degeneration of the Skin. (2) Adenoma Sebaceum. Dr. Savill: Erythromelalgia (Acroparæsthesia). Mr Wallis: Baker's Cyst of Leg (?). Mr. Little: Specimens from a Case of "Late Rickets," shown at a previous meeting.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Malcolm Morris: Consultation. (Skin.)

TUESDAY.

Hospital for Diseases of the Skin, 53, Stamford Street, Blackfriars, S.E., 5 P.M.—Mr. George Pernet: Differential Diagnosis of Syphilitic and Non-Syphilitic Affections of the Skin.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. W. Ewart: Consultation. (Medical.) 6 P.M.—Mr. James Cantlie: Class, "Applied Anatomy."

Royal Medical and Chirurgical Society, 8.30 P.M.—Dr. A. H. N. Lewers: The After-Results in Forty Cases of Vaginal Hysterectomy performed for Cancer of the Uterus.

WEDNESDAY.

London Throat Hospital, 204, Great Portland Street, W., 5 P.M.—Dr. Woakes: Nasal Polypus, with Special Reference to its Recurrence.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W., 4 P.M.—Dr. Horton-Smith: Bronchiectasis.

Royal Institute of Public Health, Examination Hall, Victoria Embankment, W.C., 5 P.M.—Professor Calmette on Bubonic Plague, Harben Lecture II.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 5 P.M.—Mr. W. H. A. Jacobson: Clinical Lecture. Some Remarks on the Question of Early Operation in Acute Appendicitis.

Hunterian Society, London Institution, Finsbury Circus, E.C., 8.30 P.M.—Dr. F. G. Stevens: Some Points in the Diagnosis and Treatment of Puerperal Sepsis.

THURSDAY.

Central London Throat, Nose, and Ear Hospital, 5 P.M.—Dr. Dundas Grant: Diagnosis of Diseases causing Stridor or Obstruction to Respiration.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Seymour Taylor: Surface Anatomy.

Royal College of Surgeons of England, 3 P.M.—Annual Meeting of Fellows and Members.

Charing Cross Hospital, Post-Graduate Course, 4 P.M.—Dr. Eden: Gynæcological Demonstration.

Harveian Society of London, Stafford Rooms, Tichborne Street, Edgware Road, W., 8.30 P.M.—Dr. Robert Maguire: The Prognosis and Treatment of Tuberculous Disease of the Lungs. Harveian Lecture III.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Lees: Demonstration of Selected Cases.

FRIDAY.

Medical Graduates' College and Polyclinic, 22 Chenies Street, W.C., 4 P.M.—Mr. J. Dundas Grant: Consultation. (Ear). 5.15 P.M.—Mr. P. J. Freyer: Some Practical Points in the Surgery of the Urinary Organs.

Society for the Study of Disease in Children, Evelina Hospital, Southwark Bridge Road, S.E., 5.30 P.M.—Cases will be shown by Drs. Carpenter, Chaffey, and Sunderland, and by Messrs. Lucas, Tubby, and Edmunds. Paper:—Dr. Theodore Fisher: Cases of Thrombosis of the Cerebral Veins in Children.

Epidemiological Society of Lon- don, 11, Chandos Street, Cavendish Square, W., 8.30 P.M.—Inaugural address by the President (Dr. Patrick Manson), on Some Problems in Tropical Epidemiology.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

KEATS.—On October 26th, the wife of William J. C. Keats, Medical Superintendent of Camberwell Infirmary, of a daughter.

WALTERS.—On November 3rd the wife of Dr. F. Ruferacht Walters, of 21, Wimpole Street, W., and Crooksbury Ridges, Farnham, of a daughter.

MARRIAGES.

CRIMMIN—LENNAN.—On October 29th, at the Church of St. Joseph, Terenure, by the Very Rev. Terence Anderson, P.P., Major John Crimmin, V.C., Indian Medical Service, to Julia (Inju), only daughter of William F. Lennan and Mrs. Lennan, St. Ronans, Orwell Road, Rathgar, co. Dublin, and granddaughter of the late Major J. J. Peett, Indian Army. No cards.

SWALLOW—ATKINSON.—On November 1st, at All Saints Church, South Lambeth, S.W., by the Rev. Canon Allen Edwards, M.A., Vicar of the parish and Rural Dean of Kennington, assisted by the Rev. Stanley Power, B.A., of St. Mary, Stoke Newington, and the Rev. W. J. Spunk, M.A., Rector of Moreton, Cheshire, Allan James Swallow, M.B., B.S., of 5, Mount Edgcumbe Gardens, Clapham Rise, S.W., eldest son of James Dodd Swallow, M.D., of Clifton Lodge, Clapham Park, S.W., to Elizabeth, elder daughter of the late John Bewley Atkinson, Esq., of Chartsey Hill, Harraby, Carlisle, and of the late Mrs. Atkinson, of 3, Lulworth Road, Birkdale, Southport.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1 p., Tu., 2.30; o.p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Roentgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Tu., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 3.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, 1.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.-p., daily, 1.30; o.-p., M., W., Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, 1.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, 1.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 3; Th., 2.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations.*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; 1.-p., Tu. Th., 2.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; 1.p., 1; o.p., 12; Obstetric, 1.p., Tu. F. 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 2.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Tu., 9; Throat, Tu. F., 3; Skin, M. Th. 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9 *Operations.*—M., 3.30; Tu. W. F., 3; Th., 2.30; S., 10; (Opathalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 1.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 8.30; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

L.S.D. (LONDON) would be glad if any member could recommend him a reliable collector of debts.

INQUIRER would be glad to have reliable information regarding the climate and sanitary arrangements at Durban, Natal.

L.T.T. wishes to know whether the Harrogate "massage douche" baths can be obtained in London.

M.R.C.S. has a patient who suffers from chronic diarrhœa (? tuberculous). No benefit has been derived from drugs. What part of England, he asks, would be the most likely to prove beneficial during the winter?

S. asks what fee should be charged for the services of himself and another qualified practitioner for making a necropsy on the body of a gentleman who had directed that a *post mortem* examination should be made. The income of the deceased is estimated at £150 a year.

*** We are advised that if the deceased was a bachelor £5 5s. would be a suitable fee; if leaving widow and family, £3 3s.

PERSISTENT PLEURITIC FRICTION.

JUVENIS asks for advice as to the treatment and prognosis of the following case: A lady, aged 32, during a mild attack of enteric contracted a "dry pleurisy" with a harsh creaking rub. She is now quite well again, with the exception of this friction rub, which is present over the lower third of one lung. The sound annoys her, and, as there is phthisis in the family history, it renders her uneasy. It has now persisted about two months in spite of counter-irritation.

INSURANCE OF ANNUITY.

MEMBER wishes to know how a school teacher, aged 30, could best insure £20 a year to bring in an annuity at age of 50 or over. Or in other words, what insurance company offers best terms for such a case?

*** The "Provident Clerks," 27, Moorgate Street, has a special arrangement with the Teachers' Guild for assurances of this kind, and is a safe office. The "Rock" gives rates for this kind of assurance in its prospectus, and almost any first-class office would give a rate on application.

ANSWERS.

DISGUSTED PRACTITIONER has omitted to enclose his card.

D. P. It is surprising that the obvious nonsense in the advertisements in the newspapers should deceive any person of common sense. The advice of a surgeon should be obtained.

BREM.—The money value of an English translation of the *London Pharmacopœia* (1746) would not be great. The interest of the early editions of the *Pharmacopœia* of the London College lies in typographical details, which would of course be absent from a translation.

DR. G. E. SHUTTLEWORTH (Richmond Hill, Surrey) writes in reply to Dr. Herbert Hart's query, p. 1359, BRITISH MEDICAL JOURNAL, November 3rd, 1900: The National Association for Promoting the Welfare of the Feebleminded (53, Victoria Street, S.W.) has homes for mentally defective children not certifiably imbecile. Payment 7s. to 10s. per week.

MR. L. M. GRIFFITHS, Honorary Librarian to the Bristol Medical Library, writes: In reference to your reply to "G. R. J. F." the following extract from Quaritch's catalogue, p 69, No. 187, March, 1899, is of interest: "*Anatomical Exercitations, concerning the Generation of Living Creatures* .... By William Harvey, Doctor of Physick. Printed by James Young for Octavian Pulleyn .... 1653. 12mo, wanting the portrait, but otherwise a perfect copy in the original calf, rebacked. 1653. £7 10s. Extremely rare. Unmentioned by Lowndes. Mr. Hazlitt remarks, 'It is said that only 150 copies were printed, and of these 115 destroyed by fire.' A perfect copy fetched £40 10s. at Sotheby's in 1892."

ISOLATION AFTER WHOOPING COUGH.

E. AND C. R.—In the Code of Rules for the Prevention of Infectious and Contagious Diseases in Schools, issued by the Medical Officers of Schools Association (Fourth Edition. London: J. and A. Churchill. 1899. 1s.) it is stated that a patient may be allowed to mix with others "in not less than five weeks from the commencement of the whooping, and provided that the characteristic spasmodic cough and the whooping have ceased for at least two weeks."

TREATMENT OF FLATULENT DYSPEPSIA.

DR. A. O. HONNYWILL (Sutton) writes: In answer to "T. B. H. [illegible]" I suggest the following treatment, as I have often found it very effectual. In addition to the ordinary dietary treatment (abstinence from fluid, liquids, green vegetables, potatoes, etc.), the following powder will, I think, be found efficacious: R Bism. subnit. gr. v; carbonis ligni gr. viij. To be taken after each meal.

DR. ARTHUR WATSON (Llanymynech) writes: I think much relief, if not cure, would result from taking half an hour before each meal: R Pulv. rhei gr. jss; sodii bicarb. gr. x; bismuthi nitrat. gr. v. Misce. Ft. pulv. Sig. To be taken in oo size gelatine capsule of P. D. and Co. without water. And take diastase gr. ijss in tablet form with each meal.

CURE OF THREADWORMS IN CHILDREN.

E. P. writes: In my former communication I find that I recommended the unguentum hydrarg. mitius, or milder mercurial ointment. This preparation is not found in the present *Pharmacopœia*, but is given in that of the College of Dublin, where I received my early education. It is made with twice the weight of lard used in the preparation of unguentum hydrargyri. There is half a drachm of mercury in 2 drachms of the

milder ointment. Of this 10 grs. should be passed into the rectum on two or three successive nights, to be followed next morning by a dessert-spoonful of castor oil.

Treatment of Chilblains.

RUSTIC asks for suggestions for the treatment of a case of chilblains in a child of 12 in which innumerable remedies have been tried without success.

*** In reply to similar questions in the past correspondents have pointed out that it would be well to combine general with local treatment, and particularly to administer cod-liver oil or maltine. Professor Bälz has recommended the following treatment: Caustic potash, ½ per cent.; glycerine and alcohol, of each 20 per cent.; water, 60 per cent. The hands are bathed in warm water, and this mixture is rubbed into the skin of the hands. A cure is said to follow two or three applications. Surgeon W. G. Macpherson has drawn attention to the value of ichthyol in relieving the itching rapidly and completely, and eventually in bringing about a cure. He recommends a 30 per cent. ointment with lanolin or vaseline. The following prescription has been found useful: R Linimenti aconiti, 3iss; linimenti belladonnæ, 3iss; tincturæ opii, 3iij; olei amygdalæ amaræ, mv; vel olei lavandulæ, mx; linimentum saponis, ad. 3ij. About 3ss to 3j of this is applied to the painful part night and morning.

The Treatment of Tapeworm.

J. S. writes to ask if a drachm of chloroform is not too large a dose for administration by the mouth as recommended by a correspondent for the treatment of tapeworm on p. 1295 of the BRITISH MEDICAL JOURNAL. Our original correspondent to whom we referred the question writes: "I am quite aware that the dose recommended is not a usual one, nevertheless it will be found to be a perfectly safe one for adults. I find the same dose recommended in several instances in the synoptical index to the *Medical Annual*."

NOTES, LETTERS, Etc.

Frequency of Femoral Buboes in Plague.

DR. ALFRED EDBOWES (Wimpole Street) writes: In the official memorandum on The Signs and Symptoms of Plague, written by Mr. Cantlie and issued by the London County Council, attention is specially drawn to the fact that the femoral glands are the most usual seats of buboes. The author says: "The selection of this group (of glands) is frequently attributed to the fact that the majority of persons affected by plague in warm countries go barefooted. Against this conclusion are the facts that skin abrasions are but seldom found, and that persons not going barefoot have their groin glands most frequently attacked." "It is supposed that the baculi gain entrance frequently through the skin of the legs, but so far no completely satisfactory explanation has been found." Mr. Cantlie thinks it is possible, if vermin are the intermediaries of contagion, "that they could settle more quietly and undisturbedly on the lower extremities, even beneath the garments, than on the more exposed parts, such as the hands and face, where they are liable to be disturbed or brushed off."

As I gather from Mr. Cantlie's words that those who go barefooted are no more liable to show the disease specially in the femoral glands than those who wear a covering to their feet, it would be of interest, and possibly of importance, to know what kind of foot gear the latter are in the habit of wearing. While studying the literature of leprosy some years ago I remember that one author drew attention to the frequent occurrence of the first signs of leprosy on the feet or legs, and suggested what appeared to me a reasonable theory in explanation. The foot gear, which consisted mainly of slippers or sandals, was practically the common property of each member of every household. In this way we can easily see how blood from scratches or discharges from wounds containing bacilli could be deposited in a slipper, and remain in readiness to be inoculated into any scratch or vulnerable portion of skin of any foot subsequently wearing it. So important a part may boots play in the conveyance of infection, even when stockings are worn, that I consider any treatment for such a condition as bromidrosis incomplete which does not provide for the thorough disinfection of all boots and slippers worn by the patient.

The Housing of the Working Classes.

BACCALAUREUS writes: The card of a rent collecting agency has been left at my house, and I find that now, when the housing of the population is so prominent a question, such a card may teach us a good deal.

1. The cost of the collection by the certified bailiff has in the end to come out of the pockets of the tenants—good and bad alike. If all tenants paid promptly to their landlord or owned their own houses the money spent on keeping a rent collector capable of dealing with troublesome tenants would go to the improvement of the dwellings themselves.

2. Even at the present time weekly property under an energetic man can be made into a good investment. That is to say, that the poor who live in a business-like and purposeful way do succeed in paying their rent, high as it is. They do more: they reimburse the owner for his bad tenants ejected for being troublesome, for such tenants cannot possibly be regarded as remunerative, as in their case no attempt to distrain would pay for the expense of the process.

3. The process of distraining for arrears is responsible for prompt settlement. It is mistaken kindness to let people run on into debt, and it keeps the property from earning interest on the capital sunk in it.

I cannot help suggesting that much of the misery and squalor of London and other great towns is directly due to the habits of the people themselves, and that no amount of reconstruction of buildings will prevent them from falling back into their old dirty ways. On the other hand a system which encouraged prompt payment and thrift, while it directly punished procrastination, extravagance, idleness, and dirt, might convert even old and apparently worn-out slum property into habitations fit for decent people. Strict and stern business ways, no credit, but discount for cash and reduction for advance payment may follow free trade in house property and a supply of houses equal to or in advance of the demand. To lower the absurd price of slum property competition must in the end be effective. Why do not owners of land sell it for workmen's dwellings? Because they fear the workman, when settled, will demand a gin palace, a pawnshop, a street market, and an army of costermongers—a combination certain to drive away middle-class residents. Will the working classes never see that, if they would live with good neighbours, they must themselves be neighbourly? Does anyone believe for one moment that there is any real need for his neighbour the bricklayer to reel home at midnight (because the public-house cannot by law keep him any longer) howling at the top of his voice some only too familiar music-hall song; pausing, perhaps, to vomit over someone's front gate, cleaned up the last thing on Saturday night to look tidy for Sunday morning. That is why the classes and the masses do not live together, and whose fault is it? For my part, the poorest amongst working men have been patients that I have been proud to serve, for they have been honest, patient under age and suffering, determined to do their best to the end; but I can recall many a well-paid artisan whose congested pharynx tallied well with his insolent demeanour. With the former I would gladly share all I could; for the latter I can feel only contempt.

LETTERS, COMMUNICATIONS, Etc., have been received from

A Adams Patient Sewage Lift Co., Manager of, London; Dr. C. Aitken, Penarth; Dr. T. D. Acland, London; A. G.; A. A. M.; Agoraphobia; A. W. S.; Mrs. E. Garrett Anderson, M.D., London. **B** Mr. S. I. Baker, Abington; Mr. W. P. Blumer, Sunderland; Dr. A. Bronner, Bradford; Mr. H. W. L. Browne, West Bromwich; Borealis; Mr. G. H. Broadbent, Manchester; Mr. T. W. Buckley, Thrapstone; Dr. T. T. Brunyate, Rochester; Mr. L. A. Bidwell, London; Dr. J. B. Brierley, Manchester; Mr. J. G. Blackman, Portsmouth; Dr. E. A. C. Baylor, Dover. **C** Celeritas; Messrs. T. Christy and Co., London; Dr. J. M. Clarke, Clifton; Dr. J. Crabb, London; Mr. F. R. Carter, Leeds; Colonel J. A. Fergusson, Cheltenham; C. L. G.; J. H. Clayton, M.B., Birmingham; Dr. W. T. Cocking, Sheffield; Dr. R. H. P. Crawford, London. **D** Mr. R. De La Ward, Cambridge, Mass.; Doubtful; Mr. H. W. Drew, Ballyduff; Disgusted Practitioner; Mr. L. F. Dods, London; D. C. K.; Messrs. Dawbarn and Ward, London. **E** Dr. G. Elliott, Toronto; D. E. Evans, M.B., Swansea; Mr. F. T. Egan, Dublin; P. G. Edgar, M.B., Ipoh, Straits Settlements. **F** Mr. H. G. Falkner, Hull. **G** G. H. S.; Glasgow; G. P. **H** Hopeful; Mr. W. J. H. Haslett Sunbury-on-Thames; Mr. H. Hemsted, jun., Winchester; Mr. S. Harman Maidstone; Dr. J. G. Houseman, Houghton-le-Spring; Mr. A. O. Honnywill, Sutton; Dr. A. Haig, London; E. H. Houlton, M.B., Shirebrook; Dr. C. H. Havell, Felixstowe; Mr. G. A. Hawkins-Ambler, Liverpool; Dr. W. B. Hunter, Londonderry; P. J. Hamilton, M.B., Ardara; Dr. P. Hoyle, London. **I** I.M.S.; Inquirer; Ignotus; Dr. F. Imlach, Liverpool. **J** Dr. L. Johnson, London; Dr. J. Johnston, Bolton; Dr. J. H. Joy, Tamworth; Juvenis; Dr. J. H. Jones, Newport; Mr. M. H. Judge, London. **K** Dr. S. J. J. Kirby, Fressingfield. **L** Lancashire; G. R. Leighton, M.B., Pontrilas; C. F. Lillie, M.B., Capetown; L.S.D.; Lady Pippinworth; L.T.T.; Mr. E. M. Little, London; Mr. R. M. Littler, Southport; Mr. W. Latham, Ashton-in-Makerfield. **M** Mr. V. Matthews, London; Dr. R. L. Meade-King, Taunton; M.B.; Member; Messrs. J. MacLehose and Sons, Glasgow; Mr. B. E. Matheson, Dublin; M.D., M.R.C.P.; Dr. J. D. McCaw, London; M.D.; Dr. C. J. Morton, Walthamstow; Mr. H. Markby, Chester; M.R.C.S., L.R.C.P.; Mentor M.R.C.S.; Dr. J. E. Moorhouse, Stirling; Dr. J. A. Menzies, Rochdale; Mr. S. W. Macilwaine, Redhill; Dr. T. McClure, Chesterfield; Mr. D. A. McCurdy, Londonderry; Mr. E. H. Monk, London. **N** Nottingham Medico-Chirurgical Society, Secretary of, Nottingham; Mr. W. E. C. Nourse, Torquay; G. P. Newbolt, M.B., Liverpool; Mr. J. Neal, Birmingham; Dr. J. T. C. Nash, London. **O** Dr. H. O'Neill, Belfast; Dr. T. Oliver, Newcastle-on-Tyne; Observer; Mr. T. G. Ouston, Newcastle-on-Tyne; Mr. T. W. Oliver, London; Dr. J. A. Ormerod, London. **P** Mr. A. G. Pratt, Boscombe; Pater Familias; V. Pendred, M.B., Marseilles; Mr. J. P. Pink, London; Mr. H. C. Phillips, London; Mr. D. Priestley, Bradford. **R** Mr. G. A. Richardson, London; Dr. H. Rennev, Sunderland; Rusticus; Dr. F. W. F. Ross, London; G. A. Reid, M.B., Southsea; Reform; Rosin; Mr. G. Rees, Glan-Garnant; Dr. J. Reid, Redhill; Dr. H. D. Rolleston, London; L. A. Rowden, M.B., Leeds. **S** S.; Sauertig; Sanitas Co., Manager of, London; Mr. O. Stoneham, Barberton; Dr. J. G. Sharp, Leeds; Dr. H. Snow, London; Dr. W. M. Stevens, Cardiff; Mr. H. K. Swaleon, Chesterfield; S. B.; Slaves; Mr. P. L. Sclater, London; Dr. J. W. W. Stephens, Sierra Leone; J. Simpson, M.B., Glenalmond; Mr. T. D. Sewell, London; S. Stephenson, M.B., London. **T** Dr. J. C. Thorowgood, London; Dr. F. Taylor, London; Dr. W. H. Thompson, Belfast; Dr. E. F. Trevelyan, Leeds; Mr. W. A. Thomson, Maidenhead; Dr. A. J. Turner, Townsville; Mr. J. L. Thomas, Cardiff. **U** Unique Trading Co., Manager of, Rotherham. **V** Veritas; Mr. V. C. Vanderstraaten, Colombo. **W** Dr. A. Watson, Llanymynech; Dr. J. H. Wigham, Aberford; Dr. F. Willcocks, London; A. Wauchope, M.B., Glasgow; Mr. A. Wyllie, London; Mr. A. Wiglesworth, Liverpool; Dr. R. Willson, Oxford.

BOOKS, Etc., RECEIVED.

The Prolongation of Life. By R. E. Dudgeon, M.D. London: Chatto and Windus. 1900. 3s. 6d.

Essays on Consumption. By J. E. Squire, M.D., D.P.H. London: Sanitary Publishing Co. 1900. 10s 6d.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

A CLINICAL LECTURE ON VARIX.

Delivered at the Manchester Royal Infirmary.

By WILLIAM THORBURN, F.R.C.S.,
Surgeon to the Infirmary.

Current Opinion.

Gentlemen,—No disease is seen among the out-patients of our hospital more commonly than varix of the lower extremity, and probably, for this very reason, there is none which generally attracts less interest. The student assumes that he is perfectly familiar with varicose veins of the leg, and that he has nothing to learn concerning the affection, in accordance with which view he passes on to cases which are regarded as more obscure, and, therefore, as more interesting. But, as a matter of fact, there are few common diseases regarding which we find a divergence of opinion greater than that presented to us by the current textbooks of surgery in the chapters dealing with this affection. Its symptoms are indeed recognised with clearness and comparative unanimity, but regarding its causes, its true nature, and even its common complications, we find the widest discrepancy of opinion.

In illustration of these remarks I may quote to you passages from two of the most recent and most popular textbooks of surgery. In one we read as follows:

> Varix is induced by any condition which leads to a frequently repeated or more or less permanent distension of a vein, such as prolonged standing ..... the pressure of tight garters ..... prolonged or forcible exertion, the pressure of a pregnant or displaced uterus or of a pelvic tumour, or obstruction to and occlusion of the deeper veins ..... Moreover, chronic constipation often hinders the return of blood from the lower limbs, whilst inherited weakness, or the relaxation of system due to sedentary habits, must also be looked on as predisposing causes ..... The effects of this condition are very varied ..... there is usually a little œdema of the ankles ..... congestion of the skin often follows. Eczema is frequently induced by the irritation (of congested patches) ..... and may terminate in actual ulceration.[1]

Such may be taken as the more widely-adopted view, but the following quotations from Mr. Pearce Gould's article in Treves's *System of Surgery* appear difficult to reconcile with the above:

> Facts render it exceedingly probable that the real cause of varix is an inherited tendency to over-development of veins, or perhaps to some defect in the veins. It is important to bear in mind that the conditions which reveal varicose veins are by no means necessarily those which induce them. Anything which produces fulness of the venous system not only makes the large veins evident to sight, but the distension of the dilated veins may cause pain. It is this fact which leads patients, and surgeons too, to attribute too great an etiological importance to standing or exercise, to pregnancy or constipation. In many cases these are only the conditions which lead to the varix being noticed. The frequent association of chronic congestion, œdema, eczema, ulceration, and chronic induration of the skin with varicose veins is a fact, but that they are related as cause and effect is highly improbable.

Etiology.

Having thus briefly referred to the current teaching upon this subject, let us turn to the clinical facts and endeavour to ascertain which of these two somewhat opposed views best meets the actual conditions. Accepting the definition of varix as a permanent dilatation of a vein, we may conclude on *a priori* grounds that such dilatation must be due to one or other of the following conditions, acting either alone or in combination:

I. The resisting capacity of the vein may be diminished owing to:

1. Lack of external support.
2. Weakness of the wall or of the valves due to (*a*) congenital peculiarities, (*b*) acquired defects.

II. The distending force of the contained blood may be increased by:

1. An obstacle to the escape of blood from the veins, such as diseases of the heart, lungs, and liver, and local pressure upon veins or gravitation.
2. An increased afflux of blood from the arteries and capillaries.

Certain of these possible causes of varix we may quickly exclude, as their presence would be tolerably obvious, and they are certainly absent in all ordinary cases.

The lack of external support may well determine the localisation of varix in the superficial rather than in the deep veins, and doubtless often does so, but it can hardly be regarded as a cause of the disease.

Acquired weakness of the venous wall is not as a rule present as a primary condition, the wall being generally hypertrophied—at least in the earlier stages of the disease.

Local weakness of the vein may in rare cases be produced by an injury and lead to varix.

Thus, then, we reduce the possible common causes of varix to three classes:

1. Congenital enlargement of the veins or weakness of their walls or valves.
2. Obstruction to the exit of blood from the veins.
3. Increase in the influx of blood to the veins.

Clinical Classification.

Let us now endeavour to divide into groups the cases which come before us. If you will do so I think that you will recognise three main types, which are by no means always well defined or mutually exclusive, but which nevertheless present a certain broad distinction.

A.—*Developmental Varix.*

First we have a group of cases in which a large trunk stands out from a limb whose tissues are otherwise healthy. This condition may be present in one or both limbs, but is often strictly unilateral even when highly developed. It is more common in the left side. The internal saphena, with or without some of its larger branches, may be alone affected, or the disease may be limited to the external saphena vein, or large branches only of either trunk may be selected. In most cases the special characteristic is the limitation of the disease and its selection of large channels. The subjects are often young adults, and the most marked cases occur in perfectly robust young men; the type is commonly met with among rejected candidates for the public services. There is often a history of hereditary tendency to varicose veins or to hæmorrhoids. In some cases the veins of the upper limb are also prominent. Œdema, eczema, and ulceration are conspicuous by their absence, or if ulceration occurs it is from atrophy of the skin overlying a large venous pouch and is not of the type of the ordinary "varicose ulcer." Hence almost the only secondary troubles due to this disease are pain and a risk of hæmorrhage from injury to a large subcutaneous vein. No external cause is discoverable; pregnancy, constipation, and the like are readily excluded. The only etiological indications which we possess are the history of heredity and the not infrequent association with varicocele with enlargement of the veins of the arm and chest and occasionally with nævus.

It is difficult to believe that such cases can be due to any known cause of venous dilatation other than a congenital peculiarity. The primary hypertrophy of the venous wall, the distribution of the disease, which, whether it be universal or very sharply localised, is in either case inexplicable by any known cause of obstruction; the fact of development at a fixed age—that of puberty; the hereditary history; the association with nævus, which is certainly a congenital disease of blood vessels; even the special proclivity of the male sex; all combine to indicate a congenital origin and we may characterise these cases as *developmental varix*.

B.—*Obstructive Varix.*

Secondly, we have a more common group of cases in which the varix is far less sharply limited. It is bilateral, except at its earliest appearance. We no longer find one or a few large and sharply-defined trunks, but we have an almost proportionate swelling of veins of all sizes, and therewith the wall is apt to be slightly obscured in outline by some swelling around the vessels. Rare in the young and in early adult life, this type increases in frequency with later years. It is more common in the female sex. Complications, such as œdema, eczema, or chronic ulceration are almost always ultimately developed, but we do not often find large thin-walled venous sacs, with their possibilities of profuse hæmorrhage. It is in these cases that we can very commonly obtain information as to a possible cause of venous obstruction, and especially we find that pregnancy may be referred to; the frequency of the disease among women has been already noted, and it will be found that such women have usually borne children; while in a large number of cases there is a direct connection as regards

time between the development of the varix and the occurrence of pregnancy.

Here then our indications point to obstruction of the venous return as the prominent cause of the disease. Its development in later life, its dissociation from other vascular abnormalities, its symmetry and diffused character, its association with œdema and other effects of raised intravenous pressure, the obscuring of the outlines of the venous walls by slight inflammation, the definite association with pelvic pressure, all these allow us to use provisionally the term *obstructive varix* for this group of cases.

C.—*Hyperæmic or Inflammatory Varix.*

Thirdly, we find occasionally no varix of the larger trunks, but we have patches scattered over the surface of the leg in which the venules only are enlarged, and present themselves as somewhat radiating stellate or leash-like areas of dusky red streaks. An analogous condition is met with in the veins of the pharynx in many cases of chronic pharyngitis and in the smaller facial and other veins of plethoric subjects. The affected areas are generally infiltrated with the products of old chronic inflammation, and it is probable that these small varices are a direct result of such inflammation and of the prolonged hyperæmia connected therewith. On these grounds we may describe the condition as *hyperæmic or inflammatory varix*, and regard it as probably due to a long-continued increase in the arterial blood supply. In the lower limb this condition is not common, but it may be met with in association with various inflammatory conditions as with chronic ulcerations, exposure to heat, and the like.

DEVELOPMENTAL AND OBSTRUCTIVE VARIX.

If now we omit from further consideration the third of these types of varix we find that we are left with two main groups of cases—the "developmental" and the "obstructive."

The first corresponds to the description quoted from Mr. Pearce Gould, the second to that of Messrs. Rose and Carless. The first is the simpler type; its characters are well-defined, its causation is tolerably obvious. It is devoid of any complications due to a defective blood current in the limb because no resistance is offered to the circulation. An abnormally large channel will hold an abnormally large quantity of blood, but has no direct effect in preventing the flow of that blood along its lumen—in fact a larger channel would *per se* tend to assist the circulation, unless complications were introduced by the failure of its valves. Wherein the congenital defect consists is less readily ascertained. In the majority of cases it is probable that the wall of the vein is affected and that the true pathology is a condition of hyperplasia. In some cases possibly a defective valvular structure may originate the condition, but this cannot be the usual primary lesion, as defective valves alone would only cause varix by interfering with the flow of blood through the vein, and would thus lead to general tissue congestion with its resultant defects of nutrition. The essential condition of purely developmental varix is that the venous enlargement is primary and the accumulation of blood within the vein is secondary.

The obstructive type is of more complicated origin. Venous obstruction alone does not readily give rise to varix, but produces only a congestion, which is not permanent, but which disappears with the removal of its cause. Nothing is more common than to find in pregnant women an enlargement of the veins of the labia and lower limbs, which is commonly called varix, but which is wanting in the distinguishing character of permanency. Such dilatations often pass away after the birth of the child and the consequent removal of intra-pelvic pressure upon the large veins. It is only in a limited number of cases that a permanent varix is produced. Hence we require some condition beyond mere obstruction, and such a condition might merely be one of the degree of obstruction, or might consist in some special peculiarity of the vessels of the individual. As regards the degree of the congestion, we might regard the development of varix as requiring a certain considerable lapse of time or frequency of repetition, or a certain excessive amount of obstruction. We find, however, that in very many people neither frequency, duration, nor intensity of obstruction suffice to cause varix. Extreme congestion may appear with each of many pregnancies, and may still fail to acquire permanency, while every degree of severity of pressure due to operation, accident, and disease may fail utterly to produce varix. Thus venous obstruction alone does not produce the development of a truly varicose condition, and we are forced to the conclusion that obstructive varix must be due to obstruction acting upon weakly veins which are prone to dilate. As we have already seen that there is the strongest evidence that venous dilatation may arise apart from any obstruction, and as a direct result of developmental peculiarities, it is reasonable to assume that a minor degree of such developmental defect may well fail to cause varix under ordinary conditions, but may, when slight or temporary obstruction has been produced, readily render itself obvious. Thus, then, we again seek in congenital venous defects the determining factor of the permanent varix which follows congestion, and our obstructive type owes its origin to a combination of developmental error and acquired obstruction. Either factor may predominate, but both are present.

And, lastly, we must assign to the obstructive factor the common complications of varix, complications the existence and frequency of which cannot be denied or assigned to an accidental association. Obstruction alone, and not dilatation, will produce œdema, tissue degradation, eczema, and ulceration; when these conditions exist there is not a mere congenital hyperplasia of veins. The results are, however, complicated by the fact that in obstructive varix the removal of the primary obstacle to the circulation is liable to leave further cause of obstruction. The mechanism of the condition is different from that of the purely developmental type. There is no longer an active enlargement of the vein with mere accumulation of its contents. The vein has now been stretched by pressure from within, and thereby its valves have probably been rendered incompetent, and its muscular fibres have undergone some atrophy. Hence we have a permanent source of obstruction and a permanent tendency to retention of blood in the capillaries, and to consequent tissue changes.

TREATMENT.

These considerations will influence to some extent our methods of treatment, in so far as they influence our prognosis after operation. The excision of varicose veins, however performed, is capable of relieving the patient of dilated areas and of developmentally imperfect vessels; it is not capable of relieving obstruction except by the indirect method of substituting healthy for valveless channels. When the developmental defect is limited to few trunks, to a single trunk, or even to a large pouch, the best results will be obtained. Where it is more widely distributed, and especially in cases in which the veins are large throughout the whole body, operation is far less successful. In the obstructive type of the disease the probabilities of success will largely depend upon the relative etiological importance in each case of developmental error or of obstruction. Thus varix of large vessels persisting after a first pregnancy indicates a marked developmental error, and is fairly amenable to operative treatment; diffused varix with tissue congestion of slow production is more typically obstructive and is far less favourable for surgical treatment. Obviously many other factors come into play in determining the prognosis after operation, but these considerations as to the essential origin of the disease have none the less a real value in guiding our advice.

In conclusion, may I once more insist upon the fact, which is too often ignored, that the essential cause of varix is in nearly all cases a congenital venous defect; that such defect may, if severe, show itself spontaneously, although in a comparatively mild and uncomplicated form, but that slight deficiencies are only rendered prominent by a superadded cause of congestion, and that unfortunately they are then liable to be accompanied by other troublesome results of a retarded venous circulation?

REFERENCE.

[1] Rose and Carless, p. 297.

PASTEUR INSTITUTE AT KASAULI.—Since this institute was opened under the direction of Major Semple, 75 patients have been under treatment and 62 have been discharged. Although several of them have been bitten on the face by dogs and jackals there has been no failure. Seven British officers, 25 privates, 12 European civilians, and 31 of the native population have been treated.

CLINICAL LECTURE
ON
SOME EXCEPTIONAL CASES OF GASTRIC SURGERY.

Delivered at the Westminster Hospital on October 15th, 1900.

By WALTER SPENCER, M.S., F.R.C.S.,
Surgeon to the Hospital.

GENTLEMEN,—There has been of late in my wards a series, especially among the females, of cases suffering from the effects of chronic gastric ulceration, most of whom have been passed on to me by my medical colleagues as being no longer amenable to medical treatment. Some of these cases have presented exceptional features, which I will make the subject of to-day's lecture.

Pyloric Obstruction caused by an Impacted Fishbone.

A married woman, aged 48, was transferred to me by Dr. Murrell with the following history. She had been in very good health until ten months ago, when suddenly one day, whilst walking in the street, she was seized with a violent pain in the epigastrium which made her feel as though she were going to burst. The abdomen swelled up, but she did not pass flatus; for seven weeks she was in bed on a fluid diet, with poultices on the abdomen. Then she got up and tried to take ordinary food, but it caused a choking sensation, with an aching pain in the epigastrium. On several occasions the attacks of pain seized her as at the first, with swelling of the abdomen, constipation, and scantiness of urine. A fixed lump appeared in the epigastrium, and the pain became worse whilst moving about and caused her to suffer from dyspnœa.

In the medical ward the patient could only take fluids, and did not improve. It was decided therefore to explore the painful lump in the epigastrium; and the case is an admirable instance of the value of surgical exploration in obscure and stationary cases. The pyloric third of the stomach was found adherent to the back of the abdominal wall, being pinned there by a fishbone 2½ inches in length, and of the size of a stout needle. One end was fixed in the left rectus muscle, and the other end of the fishbone projected into the pyloric third of the cavity of the stomach, the middle of the bone being surrounded by a small thick-walled abscess cavity. The fishbone, after being swallowed, having arrived at the pylorus, instead of passing through end on, had become wedged athwart the orifice and subsequently, by the peristaltic movements of the stomach, one end had been driven through the stomach into the abdominal wall. This accounts for the sudden attack, the immediate result of which was a reflex inhibition of intestinal peristalsis, causing the abdomen to become swollen by tympanites, and inducing constipation and scanty flow of urine. At the same time there was partial obstruction to the escape of food from the stomach, hence the subsequent difficulties in digestion. The patient could never recall having swallowed the bone. The fishbone was extracted, and the adhesions of the stomach to the abdominal wall divided. The portion of the anterior wall of the stomach, which had formed a thickened mass about an inch and a half in diameter around the bone, was excised, then the gap was closed by a double row of seromuscular sutures. The abdominal wound healed at once; a sinus leading down to the abscess cavity closed after a short delay, and she was seen some time after her discharge from the hospital in good health.

Two Cases of Severe Recurrent Hæmatemesis: Gastrorrhagia.

The treatment of severe hæmatemesis by a surgical operation is at present somewhat experimental. It appears very unlikely that any attempt to arrest the bleeding whilst still in progress can be successful on account of the uncertainty as to the whereabouts of the bleeding point, which must involve a more or less prolonged search in a very weak patient. Nor, for the same reason, is it feasible to operate soon after the spontaneous arrest of the hæmorrhage whilst the patient is still acutely anæmic. If the patient does not die at once from the gastric hæmorrhage it will most probably cease of its own accord, and not recur for some weeks. But when a patient, after recovering from the acute anæmia and having again a more or less normal pulse tension, is attacked a second or third time by bleeding from the stomach, the prognosis becomes more grave, and death will sooner or later take place, either from anæmia and exhaustion, or from sudden ulceration into one of the larger arteries.

The dread of another attack hangs over the patient's head just as she is beginning to recover strength, and it is at this juncture that surgical procedures offer some prospect of being successful. There is in the first place the indirect methods of gastro-jejunostomy or pyloroplasty which, by getting rid of the "gastric stasis," the delayed digestion and decomposition of the food, allow the stomach to empty itself rapidly, so that the ulcer from which comes the hæmorrhage tends to heal. The direct method of securing the bleeding point or the blood vessel supplying the ulcer is dependent for success upon finding the ulcer, and may involve a prolonged examination of the inside of the stomach. This has been done by passing a finger behind the organ and pushing the posterior wall forwards into an opening made on the anterior aspect. Successful cases have been met with, as by Professor Kocher, who found a large ulcer in which a fruit stone was so firmly lodged that the ulcer could not possibly have healed unless it had been exposed and the foreign body removed.

Excision of the chronic ulcer—this can only be accomplished when it is single and circumscribed, situated on the anterior wall at a distance from the pyloric or cardiac orifice. The ligature of the arteries and veins connected with an ulcer seems to be a hopeful measure, but it was not ultimately successful in the case I am about to mention. Any attempt to ligature the gastro-duodenal artery or one of its larger branches would certainly entail gangrene of the area supplied by the ligatured vessel, owing to its being an end artery, without free anastomosis with the neighbouring blood supply. Amongst the cases I have operated upon hæmorrhage has frequently been an incident, adding to the exhaustion of the patient. But in two cases the only sign of the chronic ulceration was recurrent gastric hæmorrhage rendering them acutely anæmic.

Recurrent Gastric Hæmorrhage Treated by Pyloroplasty.

An unmarried woman, aged 44, had been rendered acutely anæmic by severe attacks of hæmatemesis, which had recurred with increased frequency for twenty years, and until she could no longer follow her occupation. Nothing could be made out on clinical examination except a slight dilatation of the stomach. She was treated in bed for a month, until she had become less anæmic. At the operation the stomach was found to be dilated with large and tortuous vssels; whilst there was some pyloric constriction. No ulceration nor scarring could be discovered, and it was supposed that the hæmorrhage resulted from venous congestion following upon the dilatation. Hence pyloroplasty was done, and you have seen the patient, more than a year and a-half after the operation, stout and in good health and following her occupation without any return of hæmatemesis or other gastric disturbance.

Severe Recurrent Hæmatemesis, Treated at First by Invagination of the Ulcer, after Ligature of the Artery and Vein Connected with it, and later by Gastro-jejunostomy.

I was asked by Dr. McDonald, of South Lambeth, to see a woman, aged 37, who, five weeks after the birth of her child, had had a recurrence of severe hæmatemesis, so as to render her unconscious and pulseless. Dating from ten years before, and at intervals of about two years, she had these severe attacks of hæmatemesis. They had come on, without warning, with a sense of rapid filling of the stomach by a warm fluid, and then blood had flowed from the mouth until she fainted. When I first saw her she was acutely anæmic, only partially conscious, and the pulse scarcely perceptible at the wrist. She was kept in the ward for five weeks before operating, during which she recovered a good deal from the anæmia. On exploration an ulcer was found at the junction of the middle and pyloric third of the stomach, on the anterior wall, about 1½ inch from the greater curvature. To its floor a considerable artery passed, attended by a corresponding vein. I therefore ligatured these vessels close to their junction with the main vessels running along the greater curvature, and invaginated

the floor of the ulcer by a double row of sero-muscular sutures. No other disease was discovered, and for a time the operation seemed a success. A year afterwards she came to show herself in good health and strength, with a marked colour. A week later, however, she was brought back to the hospital, again in acute anæmia following hæmatemesis. After a month of general treatment I reopened the abdomen, to find an extensive ulceration involving the pyloric third of the stomach, and thereupon performed gastro-jejunostomy. Since then nearly a year has elapsed, she is here in good health, and with a fresh colour, but obviously a long time must be allowed before it can be said that she is cured. Evidently the ligature of its vessels and the invagination of the ulcer did not arrest the ulcerating process.

Extensive Ulceration and Sloughing of the Inner Wall of the Stomach, due to Hydrochloric Acid Poisoning, followed by Obliteration of the Cavity, treated by Gastro-jejunostomy.

Last March there was in the ward a difficult case successfully relieved by gastro-jejunostomy. A cabdriver, aged 34, was sent into the hospital by Dr. Bourns, with the history that in the previous November, whilst in drink, he had swallowed 2 ounces of spirits of salt (commercial hydrochloric acid). He was admitted into the medical ward of another hospital for three weeks until he could swallow and retain liquid food. A week after leaving the hospital he could no longer swallow liquids, and went back to the same hospital, where he was admitted to a surgical ward and œsophageal bougies passed. When he could swallow and retain liquids again, he discharged himself. He could for a time take even solid food, then pain and vomiting began to come on after meals. When first seen by me he could swallow well, and the largest-sized œsophageal bougie passed without difficulty; but he could not retain food, vomiting coming on a quarter of an hour to three hours after meals. For the last three days before operation he subsisted entirely on rectal feeding, as nothing was retained by the stomach. At the operation a very small stomach was exposed, with a thick, rigid, puckered wall, but without external adhesions. On proceeding to do gastro-jejunostomy, no cavity of the stomach was at first reached until the incision was extended upwards towards the cardiac orifice, through 1 inch of indurated inflammatory tissue. The small cavity remaining was lined by ulceration and sloughs of mucous membrane were extracted; these were not foul, nor was there any food *débris*. Fortunately the jejunum was free and healthy, and hence I was able to complete the gastro-jejunostomy, and the patient made a good recovery. In four weeks he could take ordinary diet, including mutton chops, felt hungry, and was putting on flesh. After leaving the hospital he continued well, without gastric symptoms, but seemed to be indulging freely in alcohol.

The main success of gastro-jejunostomy clearly lies in converting the stomach into a continuation, as it were, of the œsophagus, so that all the food passes through without delay or decomposition to be digested entirely in the intestines.

Gastro-duodenostomy.

In one case transferred to me by Dr. Murrell I found it impossible to carry out either pyloroplasty or gastro-jejunostomy. A woman, aged 61, dated her gastric troubles from an attack six years before, which had recurred at intervals with hæmatemesis. During the previous four months there had been frequent attacks of vomiting, brown-black frothy material being brought up. She had had constipation throughout, and had recently wasted. On examination, only dilatation of the stomach could be made out. As she made no improvement under medical treatment, I explored and found the pylorus buried in thick adhesions and fixed under the liver, without any signs of tumour formation. The anterior wall of the cardiac half of the stomach was firmly adherent to the abdominal wall, in which also the transverse colon was involved. There remained free only the junction of the pyloric with the middle third of the stomach and the adjacent descending duodenum. I therefore adopted the operation of gastro-duodenostomy introduced by Professor Mikulicz. It would have been impossible, in the weak state of the patient, to have divided the adhesions, which in any case would have quickly re-formed. The operation was easily accomplished by drawing the duodenum forwards in front of the neighbouring wall of the stomach. The patient left the hospital five weeks later taking solid food and gaining weight.

Some Points concerning the Operations.

In conclusion, I will add some remarks which apply generally to these operations. In the first place, the patients have been kept on nutrient enemata alone for a day before the operation, so as to allow of the interior of the stomach becoming aseptic by the agency of the hydrochloric acid of the gastric juice. I do not find it necessary to wash out the stomach. Any danger which may exist of setting up hæmorrhage or perforation is thereby avoided. After the operation rectal feeding has been continued until the patients can keep down water, when food is given by the mouth in small quantities and at frequent intervals. Meanwhile hypodermic injections of morphine and atropine are given every three hours or so to prevent vomiting. The patients should be propped up in bed, not kept recumbent, as is customary in abdominal cases, and a movement of the bowel should be obtained by calomel on the second day.

I use for all operations a fine silk suture on a small round sewing needle. Two rows of continuous sutures are inserted, one deep, taking in all three coats, or avoiding the mucous membrane, and the superficial sero-muscular, burying in the deep row. All operations on the stomach and intestines can be done with this suture, and any student who desires to learn these operations should, besides watching them in the operating theatre, practise on the fresh stomach and intestines in the *post-mortem* room. The use of a special apparatus, such as Murphy's button, is a question upon which surgeons are divided. The merit of Murphy's button for gastro-jejunostomy is the speed with which it can be inserted. A great deal of the time entailed by gastro-jejunostomy is taken up by suitably anæsthetising the patient, examining the stomach as to the nature, situation, and extent of the disease, and the approximating of the loop of the jejunum to the stomach. The more the suture is used the more speedily is the anastomosis performed. There are cases where it is difficult to fit Murphy's button in position; in the mineral acid poisoning case just mentioned, no button could possibly have been fixed in the indurated thickened stomach wall. Besides, many cases are fatal from leakage beside the button into the peritoneal cavity. I have not seen the continuous suture fail or be followed by leakage. I have successfully performed gastro-jejunostomy where there was already general peritonitis following perforation with a pint of the stomach contents in the pelvis. A pyloric ulcer had perforated in three places, and could only be treated by filling the wound with gauze and draining the pelvis, yet the patient recovered, relieved from the previously existing pyloric obstruction. Moreover, there is a tendency for Murphy's button to fall back into the stomach, from which it has to be removed by a second operation.

The main lesson I would impress upon you by means of this lecture is the importance of a surgical exploration in all obscure cases which are not quickly relieved by medical treatment, or in which the symptoms tend to recur. Not only is this important for cases where chronic gastric ulceration is present, but, more important still, it is the only way of making such a sufficiently early diagnosis of cancer as to offer any chance to the patient of being cured.

KENT COUNTY OPHTHALMIC HOSPITAL, MAIDSTONE.—At a meeting of the Board of Management of this institution, held in September last, the resignation of Dr. Adams, of Maidstone, was received, and with great regret accepted. A resolution was passed expressing, on behalf of the governors and subscribers, "their deep sense of indebtedness to Dr. Adams, and their appreciation of the assiduous and gratuitous services rendered to them and to the inhabitants of the County of Kent, for the long period of more than 37 years, during which time he has been the Surgeon to the hospital, and upon whom has devolved, to so large an extent, the conduct of the institution, and the benefits conferred upon the many thousands who have availed themselves of this free institution." At the following meeting of the Board Mr. Ernest H. Cartwright, B.Ch., M.D.Oxon., who has up to this time acted as Assistant Honorary Surgeon to the hospital, was appointed Surgeon in succession to Dr. Adams.

TWO UNUSUAL CASES OF STRICTURE OF THE ŒSOPHAGUS IN WHICH GASTROSTOMY WAS PERFORMED.

BY

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In each of the following cases the œsophageal lesion which necessitated gastrostomy was of a most interesting nature; in the one case it was a cicatrix after previous ulceration, and in the other swelling caused by an existing ulcer.

The first case is that of a married woman now barely 32 years of age, who first came under the care of Dr. Walker Downie in September, 1898, complaining of great difficulty in swallowing.

History.—She said that during the past two years she had had occasional sore throat, but had observed no particular difficulty in swallowing until Christmas, 1897. On that day a piece of meat became impacted in her gullet, and as she was unable to get it either up or down she went to the Western Infirmary, and there the house-surgeon on duty pushed the impacted bolus into the stomach. The patient appeared to experience no further difficulty in swallowing until April, 1898, when she began to remark, both to herself and to her friends, on the difficulty she had in swallowing butcher's meat. Even when carefully masticated the meat would stick somewhere about the level of the upper border of the sternum, where it caused great discomfort. On these occasions she usually discharged the food by tickling the fauces so as to cause vomiting. In the following month she received extensive burns over the body and extremities while escaping from her house which was on fire, and for the treatment of these injuries she was an indoor patient of the Western Infirmary for four weeks. She subsequently attended as an out-patient till August, by which time the sores were healed. At the end of this month, August, she had again to go to the infirmary on account of a bolus of meat becoming impacted in the gullet, which, as on the former occasion, was pushed onwards by an œsophageal bougie. Up till this date she considered that she simply had what she termed "a narrow swallow," and had experienced no difficulty in swallowing the ordinary articles of diet, with the exception of butcher's meat, provided the food was well masticated; and she had no difficulty in swallowing fluids. In September, however, the swallowing of both semi-solids and of fluids caused her considerable trouble, and she found it necessary to assist their passage downwards by pressure and by massage of the neck. She now partook of milk in sips, and would take from twenty to thirty minutes to swallow a cupful, and if she attempted to drink hurriedly the fluid regurgitated through the nose.



Fig. 1.—Patient in act of feeding herself with porridge and milk. Photographed ten months after operation.

Condition on Examination on September 16th, 1898.—The woman was pale and thin, weighed 8 stone, and was 5 ft. 5 in. in height. It was observed that when she spoke her voice was variable and slightly husky, and on her attention being drawn to this fact she stated that both she and her friends had noticed this peculiarity early in the course of her illness. On examination, her fauces and pharynx were found to be healthy, and while the appearance of the larynx was also healthy, the left vocal cord was found to be fixed very near to the middle line—left abductor paralysis—and that during phonation the right cord, which moved freely, crossed over to meet the fixed left cord. No other intralaryngeal abnormality was observed. On examining the gullet a hard, firm stricture was detected at a distance of 7¾ inches from the upper incisor teeth—that is, in this patient about the level of the second tracheal cartilage. By careful manipulation a medium-sized gum-elastic bougie (diameter 8 mm.) was passed with difficulty, and smaller sizes passed readily beyond the stricture and on to the stomach. No bleeding resulted from the passage of the bougies. Examination of the chest revealed no abnormality, or any explanation of the recurrent laryngeal paralysis, and no swelling in the neck could be detected.

The condition was looked upon as probably syphilitic, and iodide, combined with the bromide of potassium, was prescribed, and the regular passage of bougies recommended. The patient attended irregularly, and towards the end of November, by which time deglutition appeared to have become somewhat less difficult, she ceased to attend. Towards the end of May, 1899, she again presented herself. Deglutition then was well-nigh impossible, and the stricture had so increased that no bougie could be passed. She was then urged to become an in-patient without delay.

She was admitted to Dr. Patterson's wards on June 6th, 1899. As already stated, she was able to swallow liquid food only with considerable difficulty in small quantity and after prolonged efforts, and all attempts to pass an œsophageal bougie failed. Although the patient had experienced so much difficulty in swallowing over so prolonged a period of time, yet her condition was still fairly good, and she seemed to be a very favourable case for the operation of gastrostomy. Her weight after ten days' rest and careful feeding in the wards was 7 st. 2 lbs. On June 22nd Dr. Kennedy performed gastrostomy by Frank's method. The abdomen was opened by a small longitudinal incision through the upper part of the rectus muscle. The peritoneum was then attached by suture to the edges of the external layer of the sheath of the rectus. The forefinger and thumb were then introduced into the abdomen and a suitable portion of the stomach wall seized and pulled out sufficiently far to allow the apex of the cone to reach nearly to the costal margin. The base of this cone of stomach was then attached by a circle of Lembert sutures to the peritoneum and muscular portion of the abdominal wall. A second cutaneous incision, about three-quarters of an inch in length, was then made near the costal margin above and to the outside of the first cutaneous incision, and the subcutaneous tissue separated from the deep aponeurosis between the two incisions. The apex of the cone was then drawn through and attached to the margins of the second incision by a circle of fine silk sutures. The longitudinal incision over the rectus was closed with silkworm-gut sutures, and finally the wounds were covered with celloidin, leaving only a small area of the stomach wall exposed through the small incision at the costal margin. Although the patient had been fed with so much difficulty for so long a period of time, the stomach was not found greatly contracted, admitting the procedure of pulling out the cone of stomach without any difficulty. There was comparatively little shock, and after the operation there was very little pain, and none at all after the first two days. After the operation the patient was fed entirely by means of nutrient enemata until the fourth day, when the stomach was opened by a small incision and by means of a No. 14 soft catheter, 10 ozs. of peptonised milk was introduced. This was repeated on two other occasions during the day. The catheter was withdrawn as soon as the liquid was introduced. The amount of liquid food introduced by the tube was day by day increased, and the nutrient enemata proportionately decreased, until by the tenth day the patient was entirely fed through the tube. During her stay in hospital she was fed on milk, beef-tea, eggs, and arrowroot, and made no attempt to take food by the mouth. From the tenth day onwards she was taking in the twenty-four hours from 5½ to 8½ pints of liquid food, and frequently as much as 1½ pint was introduced through the tube at one time before the patient indicated that her hunger was appeased. There was at no time sickness or other trouble with the digestion. She was dismissed from hospital on July 15th, having learned to pass the stomach tube herself. At this time she weighed 7 st. 0½ lb. Since returning to her home the patient has had very little difficulty, and [illegible] all her food by means of the stomach-tube. Besides liquids, she introduces into the stomach finely divided solids, which she forces into the stomach by compressing the tube. Only on one occasion did she return to the wards on account of some difficulty in introducing the tube caused by narrowing of the opening in the stomach, and this was easily rectified by leaving a tube in place for several days. There has been no leakage from the stomach, except occasionally during severe fits of coughing, and there has been no irritation of the surrounding skin. The patient's nutrition has improved, and on November 30th she weighed 7 st. 13½ lbs., having thus gained 13 lbs. since the date of her dismissal from hospital.

It is now about sixteen months since the operation was performed, and for some time the patient has worn a tube in position on account of the increasing difficulty of introducing it at meal times. It was also recently observed that there was a tendency—particularly on coughing—to the

production of a ventral hernia of the stomach through the opening in the rectus, the diameter of the gap having considerably increased, its margins being felt as a firm ring. She is now absolutely unable to swallow anything, and a recent laryngoscopic examination made by Dr. Downie shows that there is bilateral abductor paralysis of the vocal cords, and that the cords are fixed close to the middle line. While there is no marked change in her voice, she becomes breathless on the slightest exertion.

The second case was that of an unmarried woman aged 31. She was seen by Dr. Walker Downie on the recommendation of her medical adviser on November 30th, 1899, at which time she complained of difficulty and pain on swallowing.

History.—Towards the end of January, 1899, she first experienced difficulty in swallowing. The difficulty varied from time to time, and was then unaccompanied by pain: but within a very few weeks of the onset of the difficulty every attempt at swallowing caused pain. For months she had to take food very slowly, masticate it well, and use considerable quantities of fluid to get it down. The difficulty slowly became more marked, till in August food frequently became lodged in the gullet, where its presence excited vomiting which expelled it. Occasionally at this time also while in the act of drinking, a portion of the fluid would return through the nose. She lived almost wholly on thin porridge, various milk preparations, and soups.

Since the beginning of October there had been a constant "roasting and jagging pain" in the neck immediately behind the lower border of the larynx on the left side. Later the pain affected both sides equally.

As a child of eight she had suppurating glands on each side of the neck, but apart from this she had, up till last January, enjoyed excellent health.

Condition in November, 1899.—The patient was of a ruddy complexion and healthy appearance. She was 5 feet 6 inches in height, and her weight was 9 st. 12 lbs. The line of scars in the neck behind and beneath each angle of the lower jaw altered the contour of the neck, and the resulting matting of the parts rendered examination by palpation somewhat unsatisfactory. There was, however, a small, hard, smooth swelling on the left side of and behind the trachea, firmly adherent to it and to the surrounding structures, and apparently pushing the trachea slightly towards the right. No abnormality could be detected in the lungs or mediastinum by percussion or auscultation. Her fauces and pharynx were found to be healthy. Her larynx was in a condition of general hyperæmia, but the movements of both vocal cords were free and equal.

On examination of the gullet a medium sized gum-elastic bougie (diameter 8 millimetres) encountered an obstruction in its passage at 7 inches from the upper incisor teeth, which corresponded to the level of the upper border of the first tracheal cartilage. With slight pressure this bougie passed through the obstruction and onwards to the stomach. The passage of the bougie caused considerable pain at the seat of obstruction, and its withdrawal was followed by some bleeding. There was here an extensive ulcer of the gullet accompanied by considerable swelling.

She was advised to become an in-patient of the infirmary and was admitted on December 15th, 1899. On admission her respirations were 18 per minute, and the respiratory murmur was in every respect satisfactory. There was no cough, her pulse was 66, her temperature on the evening of admission 99.2° F., and her weight 9 st. 10½ lbs. The swelling formerly observed on the left of the trachea had increased in size and there was a similar gland-like swelling on the right side below the sterno-mastoid muscle and about an inch and a-half above the sterno-clavicular articulation.

On December 20th her weight was 9 st. 8½ lbs., and her evening temperature 99.6° F. On December 26th there was observed an œdematous swelling of the left arytenoid and left ary-epiglottic fold. The left ventricular band was also swollen and interfered with a full view of the left vocal cord, but both vocal cords met in the middle line during phonation. Swallowing had become more difficult and more painful; and there was now considerable tenderness in the neck on each side of the trachea.

On December 27th her weight was 9st. 6lbs.

On January 5th, 1900, there was a further increase in the œdematous fulness of the left arytenoid and ary-epiglottic fold, and of a portion of the interarytenoid membrane; and there was in addition a fold of œdematous mucous membrane visible between the interarytenoid membrane and the posterior wall of the opening of the gullet.

By January 6th this œdematous swelling, which appeared as a reduplication of the mucous membrane immediately behind the larynx, had risen to the level of the right arytenoid body, and after careful examination this swelling was seen to be from the anterior wall of the gullet, and was in all probability the mucosa forming the upper border of the œsophageal ulcer. Laryngoscopic examination on this day revealed a further increase in the supraglottic œdema, and the left vocal cord was found to be fixed slightly outside the middle line. Her weight was now 8st. 12⅝lbs. There was increased swelling and tenderness over the left side of the neck, and while no fluctuation could be detected pus formation was suspected. The temperature was 102° F., two days later it was 103.4° F., and on the following day the swelling and tenderness suddenly disappeared, and the temperature subsided, and again resumed its former course. An abscess had apparently formed close to the gullet, and into which it burst and discharged. Only a very small quantity of pus came into the mouth, the bulk of it having in all probability passed into the stomach.

From this date until January 17th, on which day her weight was further reduced to 8 st. 8¾ lbs. (that is, a loss of 17¼ lbs. in five weeks). Deglutition had been becoming almost impossible, and each attempt was accompanied by very severe pain and a gurgling, churning noise in the throat. Dr. Downie had, earlier in the course of the disease, discussed the desirability of having gastrostomy performed, with the object of administering a sufficient supply of nourishment, of giving the gullet rest, and relieving the patient of the agonising pain which now accompanied each act of swallowing. It was put before the patient and her parents as a purely palliative operative measure, but they readily consented to its performance.

On January 20th Dr. Kennedy performed Witzel's operation as follows: The abdomen having been opened by a small incision through the upper part of the rectus muscle, a suitable portion of the stomach was pulled out. A small incision was made in the stomach wall down to the mucous membrane, sufficiently large to admit a tube about half an inch in diameter. Before opening the mucous membrane a suture of catgut was run round the edges of the small incision in the wall of the stomach in the form of a purse-string suture. A small opening was then made in the mucous membrane, and about 4½ inches of the tube introduced into the stomach. The purse-string suture was then tied sufficiently firmly to slightly constrict the indiarubber tube, and thus prevent the escape of liquid from the stomach along the sides of the tube. An oblique passage in the stomach wall, about an inch and a-half in length, was next formed by suturing two folds of stomach wall round the tube. The area of stomach wall in which this oblique passage had been formed was then sutured to the abdominal wall, the stitches entering at the peritoneal layer, and passing through the entire thickness of the abdominal wall. These sutures were tied on the skin so as to be capable of being withdrawn. The abdominal wall was then sutured closely round the indiarubber tube. A hare-lip pin was then tied transversely to the side of the tube at the level of the skin. This acted as a support to the stomach, which was thus, quite independently of the sutures, held firmly to the abdominal wall by means of the tube which was immovably fixed between the purse-string suture and the hare-lip pin.

The patient had after this operation practically no shock. She was fed during the first day by nutrient enemata, but on the day after the operation feeding by the tube was commenced. This was gradually increased, and there was no trouble with the digestion. Her condition improved for some time, and the stitches were removed on February 10th, when the wound was found healed. There was no discomfort from the administration of food, which was freely and regularly given, and the great pain and distress in the gullet formerly experienced entirely disappeared. On January 28th there was for the first time some blood mixed with the mucus which collected at the lower part of the pharynx; and on January 31st the urine, which formerly had been of a healthy character, contained a large deposit of pus. Tubercle bacilli were found by Dr. A. R. Ferguson in the discharge from the gullet and in the pus in the urine. She was not permitted to leave her bed to get weighed, but her strength was improved, and the absence of pain in the throat allowed her to rest more comfortably. Her temperature remained within the limits of normal till February 9th, when it rose to 101° F., and on the following day to 103.8° F. This was accompanied by a return of the swelling, and tenderness over the left side of the neck, where, later, fluctuation was detected, and on February 16th the abscess was opened under chloroform. It contained gas, along with a quantity of foul-smelling pus, and on exploring the cavity with the finger it was found to communicate with the trachea at the level of the first ring. As the abscess healed symptoms of pulmonary abscess developed, and she died on March 3rd, exactly six weeks from the date on which the stomach was opened.



Fig. 2.—Larynx and gullet from Case II, showing extensive œsophageal ulcer. Probe lies in sinus leading to necrosed tracheal cartilages.

At the *post-mortem* examination extensive ulceration of the gullet was found. The ulcer, beginning above at the level of the upper border of the cricoid cartilage, extended downwards for fully 3 inches. At the upper part it affected the whole circumference of the gullet, and becoming less extensive as it descended, it affected the anterior wall only at its lower border (see Fig. 2). In the photograph a probe is passed through an opening leading into an abscess cavity between the gullet and trachea, and to necrosed tracheal cartilage beyond. On microscopic examination the ulcer was found to be epitheliomatous.

Examination of the abdomen showed the stomach to be contracted to about one-half the average capacity. It was firmly adherent to the abdominal wall over an area about the size of a half-crown piece, and the opening into the stomach passed through the centre of this adherent area. The opening still retained a moderate degree of obliquity, and the abdominal wall immediately surrounding the opening was of normal thickness, including, as it did, the muscular layer. The peritoneum was normal.

Remarks.

The œsophageal lesion in the first case was undoubtedly due to previous intra-œsophageal disease, beginning probably as an ulcerative lesion, and resulting, on healing, in the formation of cicatricial tissue. The inconvenience at first had been slight, but, as cicatrisation progressed, the gullet became more and more narrowed, until at the present time the finest bougie cannot be passed, nor can the patient swallow anything whatever, not even her saliva. But the diseased process, whatever its nature, has not been confined to the interior of the œsophagus; for while the calibre of the gullet was being slowly encroached upon, there were evidences of implication of structures external to the gullet, and first (apparently early in 1897) the left recurrent laryngeal nerve was involved, causing left abductor paralysis with impairment of voice; and within the last two months, as the œsophageal stenosis was becoming complete, the right recurrent nerve became implicated, and the result is a bilateral abductor paralysis.

In considering the etiology of the lesion in this case, there was no history of injury to the throat at any time, nor was the patient addicted to the use of alcohol. No tumour, aneurysmal or of other nature, could be detected in the mediastinum or in the neck. The probability of malignancy appeared, after a careful consideration of the course and history of the case, to be negatived; and the length of time during which symptoms of constriction have been present is much too long to accord with the usual course of cancer of the œsophagus. There was no history, and there were no evidences, of a tuberculous tendency, and there was certainly no active ulcer in the œsophagus. The patient, her husband, and their surviving child were healthy, and there had been no symptoms indicative of syphilis. Yet by a process of exclusion the possibility of it being a late lesion, the result of inherited syphilis—more frequently met with in the larynx than in the gullet—appeared to be the most probable explanation of the nature of the affection; and, while the patient was able to swallow, antisyphilitic remedies were administered.

In the second case there was no firm stricture, but an ulcer accompanied by great swelling of the wall of the gullet around the ulcer. In the early weeks of her complaint the difficulty experienced in swallowing had been looked upon as being of a purely spasmodic nature, and had accordingly been treated lightly. But on her first visit to the infirmary there was no doubt as to the presence of the ulcer. There was no history of any injury, and there was no reason to suspect syphilis as being the cause. There also appeared to be good grounds for thinking that it was not cancerous. Nine months had elapsed since she had first experienced difficulty in swallowing, and during that time she had not lost weight appreciably. She was barely 31 years of age, had a florid complexion, and her pulse was 66. Then in the neck there were evidences of former extensive tuberculous disease, which had been active in early life; and, although there had been no acute mischief in this region during the past twenty-three years, and although there was no evidence of pulmonary tuberculosis, yet these various facts lead to the opinion that the ulcer was probably tuberculous, and that it was unconnected with disease of the vertebræ. This diagnosis was further supported by the discovery of tubercle bacilli in pus expectorated at a later period (January 31st). Notwithstanding these facts, a microscopic examination of the ulcer after death showed, as has already been stated, that the disease was epithelioma.

In the first case the patient's condition was one which would have proved fatal simply from the difficulty of introducing food into the stomach, while in the second case, in addition to this, there was a condition which had a probability of a fatal termination at no distant date, a termination, however, which was being rapidly hastened by the irritation of the affected parts and pain caused by attempts to swallow food. The operation was therefore in the first case undertaken with the view of giving a permanent result, but in the second case only of giving relief from pain, and with the hope that general improvement would result from the rest given to the œsophagus by means of the operation. Although in the second case the patient lived only for six weeks, her life by the operation was probably prolonged by several weeks and made fairly comfortable. The probability of the relief being permanent, or at least prolonged, in the first case led to the choice of Frank's operation, while in the second case, the probability being that the opening in the stomach would be required only for a short period of time, led to the choice of Witzel's operation. This choice was made in the belief that the opening in Frank's operation, being lined by mucous membrane, does not readily close, requiring it is said a plastic operation for its closure, while in Witzel's operation, the opening being lined by the serous coat of the stomach in its inner, and by granulation or cicatricial tissue in its outer half, undergoes contraction very readily, and left without the tube for some days is said to completely close spontaneously. In Frank's operation, therefore, the tube could safely be left out between meals, while in Witzel's the tube had to be constantly kept in position in order to keep the opening patent.

The opening formed in Frank's operation is, however, not quite devoid of the tendency to contract in course of time, as shown in the case reported, where the patient was ultimately after many months obliged to wear the tube constantly on account of the increasing difficulty of introducing it at meal times.

With regard to the valvular character of the opening which prevents leakage, this depends in Witzel's operation on the obliquity of the opening formed in the stomach wall, and also and especially on the length of the passage. The stomach is not attached to the skin, but to the peritoneum, and the entire thickness of the abdominal wall is closely sutured round the tube. In Frank's operation, however, the valvular character depends entirely on the portion of stomach which is fixed between the layers of the abdominal wall, and the apex of the cone of stomach is attached to the skin. There is, then, the possibility that if dilatation of the opening in the rectus muscle occurs, the valvular character of the passage will be lost and the stomach left attached directly to the skin, with a result no better as far as a valve action is concerned than was obtained by the old operation. The case described shows that this danger is not at any rate an inevitable one, as at sixteen months after the operation there is still no leakage from the opening, and in this case the dilatation of the opening in the rectus muscle, which might be supposed to give rise to such a condition has actually occurred, yet without destroying the function of the valve.

A remote disadvantage of Frank's operation is one which is illustrated in the patient whose case has been described, namely, the tendency to the production of a ventral hernia. The opening which is left in the muscular layer of the abdominal wall for the accommodation of the base of the cone is so large that this result would seem to be a not unexpected one to happen in the majority of those patients who live long enough for the dilatation to take place. In Witzel's operation, the abdominal wound being entirely closed except where the tube passes, allows very little chance for the occurrence of a hernia no matter how long the patient should live.

Although we have not seen a case in which there was contraction of the stomach sufficiently marked to resist the formation of a cone of stomach sufficient for Frank's operation, yet this is clearly a possibility, and under such circumstances Witzel's operation, or a modification of it, would require to be performed. The mode of making the opening in Witzel's operation demands that the stomach be opened during the operation, while in Frank's the opening need not be made for several days after the operation, when all chance of sepsis resulting from escape of the stomach contents has passed. When a purse-string suture is run round the opening in the stomach and tightly tied round the tube in Witzel's operation, the danger of sepsis resulting from escape of liquid is no doubt reduced almost to the vanishing point; but even with this it cannot be considered as absolutely safe as the procedure of waiting for a day or two before opening the stomach. Both operations have thus advantages and disadvantages, but Frank's is perhaps to be preferred in the

majority of cases as it can be more rapidly performed, it presents perfect security against sepsis by escape of the contents of the stomach, provided that the opening of the stomach is delayed for a day or two, and it is possible to dispense with the use of buried sutures, which in Witzel's operation cannot be avoided.

SUCCESSFUL REMOVAL OF AN ENLARGED AND DISPLACED SPLEEN.

By D'ARCY POWER, F.R.C.S.Eng.,

Assistant Surgeon to, and Teacher of Surgery at, St. Bartholomew's Hospital; Surgeon to the Victoria Hospital for Children, Chelsea.

A WIDOW lady, aged 43, mother of two children, the youngest being 25, consulted my friend, Dr. W. S. A. Griffith, for an abdominal tumour which was thought to be ovarian. Examination showed that the uterus and its appendages were normal, and the patient then came under my care.

History.—Three and a half years previously she struck her left side just over the lower ribs whilst she was moving a piece of furniture, and she dates the beginning of her abdominal discomfort very definitely from the time of the blow, though it was not until two years later that she noticed the lower part of her abdomen increasing in size. She has suffered much pain and inconvenience from the swelling during the last twelve months, and she has been losing flesh lately and has had attacks of indigestion and vomiting.

Anamnesis.—The patient was a healthy-looking woman with a florid complexion, who complained less of the inconvenience of the tumour than of the remarks to which it gave rise, for her abdomen was as large and prominent as it had been during the sixth and seventh months of her former pregnancies. Examination of the abdomen showed a large tumour filling the whole of the left side and extending to the right of the umbilicus. The surface was smooth and there was a definite edge, notched at its lower part. It was freely movable from side to side, but any attempt to push it upwards caused pain, and it was tender at the upper part just beneath the ribs. The tumour was dull on percussion in the flank, but resonant in front where the intestines lay above it.

Operation.—I opened the abdomen at 3.30 P.M. on Wednesday, September 6th, 1899, in the presence of Mr. S. T. Huggins and his son, Dr. S. P. Huggins, making a 5-inch incision in the left linea semilunaris. The spleen was easily delivered from the abdominal cavity, and measured 8 inches in length. It was attached by so long a pedicle that it hung free by the side of the patient, and almost lay upon the operating table. The patient showed signs of collapse when the pedicle was stretched, but recovered as soon as the spleen was supported. The pedicle measured 4 inches across, and consisted of fatty connective tissue with many large veins; the tortuous splenic artery was easily seen lying in the centre. The connective tissue overlying the artery was first dissected away for about an inch, and a double silk ligature was passed beneath the vessel, which was tied in two places about half an inch apart and divided. The pedicle was afterwards ligatured in half-inch segments from below upwards and was divided. The cut end of the pedicle was carefully examined to ascertain whether any vessel had escaped ligature, and the operation was delayed for nearly ten minutes until I had satisfied myself that it was absolutely free from oozing. When everything appeared secure the stump of the pedicle was returned to the abdomen. The suspensory ligament was only represented by a little loose connective tissue, and gave no trouble, as it was secured by a single ligature of silk. The wound was closed by a continuous suture of fine silk through the peritoneum, three interrupted sutures of sterile catgut through the abdominal muscles and aponeurosis of the external oblique, and a continuous suture of silkworm gut through the skin. There was very little hæmorrhage during the operation, but the spleen contained a good deal of blood, which ran out and clotted after the organ had been removed. The operation lasted an hour and a-half from the beginning of the anæsthetic—gas and ether being administered during the first three-quarters of an hour, chloroform afterwards—to the application of the dressing, some part of the time being occupied in making the skin aseptic.

After-History.—The patient bore the operation excellently, her pulse being 96 and of good volume after she had been put to bed. She passed a fairly good night, and on the following day was only complaining of a little flatulence, which soon passed off. From the time of the operation until the fifth day the patient presented evidence of sympathetic irritation in a curiously agonised expression, of which she was quite unaware, reminding me of those who suffer from abdominal cancer or commencing tetanus. It seemed to be due to a slight tonic contraction of the platysma and its connections, but in no other way was there any indication of sympathetic disturbance, and the patient was quite cheerful. She remained comfortable for many days with a normal temperature and a pulse of 64. The stitches were removed on the seventh day, when the wound was healed except for a slight stitch abscess at the lower part, which had disappeared on the ninth day. I then went away for my summer holiday, and on my return found that she had progressed satisfactorily until September 28th—the twenty-second day after the operation—when her temperature began to rise. Two days later she was suddenly seized with intense pain in her left side, whilst the action of the heart and diaphragm was impeded, and she was thought to be dying. The symptoms, which were evidently very alarming for a short time, passed off spontaneously, and were succeeded by a similar attack two days later. Mr. Walsham then kindly saw the patient in my absence, and opened a localised subdiaphragmatic abscess by an incision carried parallel to the scar of the former wound, and about 2 inches to the outer side. There was free bleeding for several days, apparently from a small artery at the bottom of the abscess cavity, pus was discharged by the bowel, and a small fæcal fistula formed. The fistula soon closed, leaving only a small sinus through which a silk ligature came away from time to time. The general condition of the patient remained good; she increased in weight; her temperature again became normal; and she went home on October 18th, the forty-second day after the operation. I have since seen her on two or three occasions, the last time being in September, 1900, and except for the sinus and some occasional colicky pains on the left side, she appears to be well, and is meditating a return to her former profession. Physiologically, she has sustained no inconvenience from the loss of her spleen.

Description of Spleen Removed.—The spleen was estimated to weigh about 2½ lbs. immediately after the operation, and whilst it was full of blood. It weighed between 17 and 18 ozs. after it had been kept in spirit for six months. The enlargement was due to simple hypertrophy.

Blood Examination.—Dr. J. H. Drysdale, who kindly examined the blood of the patient on September 14th, 1899, the eighth day after the operation, reports: "Hæmoglobin, 69 per cent.; red cells, 4,230,000; number of leucocytes, 17,000; lymphocytes, 18.75 per cent.; large mononuclear, 12.5 per cent.; polymorphonuclear, 65.5 per cent.; eosinophile, 3.5 per cent. There were no myelocytes or atypical cells. The blood was taken before the midday meal, the patient having had a boiled egg, toast, and coffee for breakfast, with lamb, vegetables, and a fried sole on the previous day. *Remarks.*—Leucocytosis, the large lymphocytes (mononuclear), relatively as well as positively increased."

The case bears out the conclusion that the splenectomy is a successful operation in cases of enlarged and displaced spleens when the enlargement is not leucocythæmic. Some credit may be given to the patient's statement that the whole mischief started from an injury over the region of the spleen, as she was a healthy woman who had not been pregnant for many years, but had not approached the menopause, and consequently there had been no disturbance of the relations of her abdominal contents. The operation showed that some absorption of the suspensory ligament had enabled the spleen to weigh anchor and sail away into the depths of the peritoneal cavity, whilst it also proved that the shock attending manipulation of the enlarged organ is due chiefly to impulses communicated through the pedicle, and not, as some have suggested, to interference with the diaphragm through the suspensory ligament. The gradual elongation of the pedicle led to alterations in the vascular supply causing chronic congestion of the spleen ending in hypertrophy. The etiology of the enlargement, therefore, is somewhat clearer than usual. I was somewhat surprised during the operation to find how little the spleen shrank when it was handled, due apparently to the fact that the muscular tissue had not increased proportionately to the other elements in its structure. The formation of an abscess near the pedicle was a most unfortunate occurrence, and marred what would have otherwise been a very successful result. It was due, apparently, to a contamination of one of the silk ligatures used in securing the pedicle. The organism, however, could not have been very virulent, as the patient seemed to be perfectly well for twenty-two days after its introduction. The sudden and alarming effects which the abscess produced when it reached the under surface of the diaphragm are well worthy of remembrance.

The interesting statistics collected by Dr. Vanverts[1] show that between 1876 and 1897 16 cases of movable, displaced, and enlarged spleen had been removed with a single death. All the cases occurred in women.

I owe my best thanks to Mr. S. T. Huggins for his kind and skilful attendance upon the patient during my absence, and to his son, Dr. S. P. Huggins, formerly my House-Surgeon at St. Bartholomew's Hospital, for taking careful notes of the case.

REFERENCE.

1 *De la Splenotomie*, Paris: Steinheil, 1897.

ABDOMINAL TUMOUR (INCLUDED FŒTUS)

OCCURRING IN A CHILD AGED 3 MONTHS: LAPAROTOMY: DEATH.

BY

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and

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[With a report on the Specimen by J. W. BALLANTYNE, M.D., F.R.C.P.E.; and drawings by W. E. FOTHERGILL, M.D.]

HISTORY (BY DR. WYLIE).

THE child was a female, aged 2 months when admitted to the Manchester Hospital for Sick Children on March 10th, 1899. The mother gave the following history: The child's abdomen had been swollen since birth, labour having been long and

difficult. The abdomen had gradually increased in size, with the result that the patient developed a cough and difficulty of breathing. She also wasted and seemed poorly in herself.

Condition of Child on Admission.—The child was a moderately well-nourished infant. It had slight general bronchitis. On examining the abdomen, one found an enormous mass on the left side, which, commencing in the left lumbar region, reached forward to beyond the umbilicus. There was a distinct interval between it and the right costal margin, also between it and the anterior portion of the left costal margin; behind, however, it was lost under the left lower ribs. The tumour was quite dull; its front and upper portion seemed to be cystic, but it was more solid behind. The tumour was smooth and uniform and not tender; it bulged into the loin behind, and its edge was fairly well defined. The liver was not enlarged, and was quite separate from the tumour. The spleen could not be felt.

On March 14th the tumour was tapped, and 19 ounces of clear yellow fluid, the colour of pale urine, removed. In this fluid were floating small shreds of mucous-looking tissue. The fluid was slightly albuminous, containing 5 parts per 1,000 by Esbach's albuminometer; it gave a slight reaction with sodium hypobromite solution, and when tested by Southall's ureometer a small bubble of gas was evolved. Two days after the tapping the tumour was on examination found to be much smaller; it felt firm and non-fluctuant, and its left and superior edges were distinctly felt. It was fairly movable, and did not reach either into the loin or under the ribs. It had in addition a nodulated feel.

On March 20th the growth was found to be distinctly larger, and on March 25th it had attained its former size and position, but this time was not quite so far back in the loin. The patient was then transferred to the surgical wards under Mr. Wright, and was operated upon on April 6th.

Operation.—Chloroform having been administered, an incision about 4½ inches in length was made in the left lumbar region, over the most prominent part of the tumour. The abdominal wall was divided, and the tumour immediately bulged forward into the wound, the omentum being in front of it. This was divided, and the cystic portion of the tumour tapped, about 20 ozs. of clear yellowish fluid being removed. The growth was now found to have wide attachments and was evidently not of a renal nature. It was then as rapidly as possible removed, there being a large number of vessels, chiefly veins, in the capsule, these being ligatured. It should be mentioned that the large intestine (transverse and descending colon) had to be carefully stripped from the capsule before the tumour could be removed. The child being now rather collapsed, was given an enema of bovril and brandy, and a small injection of strychnine. The abdominal wall was then quickly sutured up and the usual dressings applied. As the child was now in a condition of profound shock it was given another nutrient enema and then transfused, an operation which was attended with a good deal of difficulty owing to the small size of the child's veins, the left basilic being the one used. About 9 ozs. of normal saline solution was injected, with the result that the child's contion improved materially. It was ordered nutrient enemata every three hours, and remained in much the same condition until half-past 3 the same afternoon, when it had an attack of vomiting, during which it died.

Report of Necropsy.—The growth was found to have been situated in the cavity of the lesser peritoneum, and had been attached to the surrounding tissues merely by general adhesions and not by any definite pedicle. There was no definite attachment to vertebral column.

The great omentum covered it in front, and the stomach was displaced by it into the left hypochondrium. The kidneys and suprarenals were normal. The uterus, ovaries, broad ligaments, etc, were all normal as regards size, position, relations, etc. All the other organs were healthy.

Report on Specimen of Fœtus in Fœtu.

Dr. J. W. Ballantyne's report is as follows:

In the first week of October, 1899, I received from Dr. D. S. Wylie, of the Manchester Children's Hospital, Pendlebury, a partly solid, partly cystic mass which, it was reported, had been removed by operation from the lesser peritoneal cavity of a female infant two months old. The solid portion it was stated was intact, but of the cystic portion only a part of the cyst wall remained, and that was attached by means of pins to the solid part. The solid part was somewhat disc shaped, and had therefore two surfaces, one of which was evidently covered with skin, and had been directed towards the cavity of the lesser peritoneum (see Fig. 1); the other showed coils of intestine, and had been directed towards the interior of the cystic cavity (See Figs. 2 and 3). The former surface I shall in future call dermal or epiblastic, the latter visceral or hypoblastic. The whole mass had, it was stated, been attached to the investing peritoneum, not by a pedicle but simply by adhesions. The solid part had a diameter varying from 11 cm. to 7 or 8 cm., and a thickness of from 4 to 5 cm., the thickness being greater at the centre of the disc. I shall describe first the surfaces of the solid part, and secondly the appearances of sections of it.

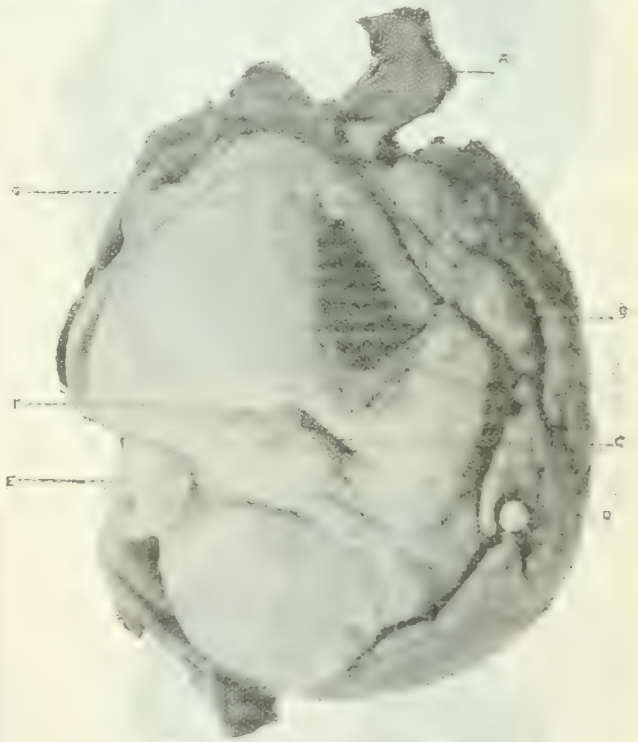


Fig. 1.—Dermal or epiblastic surface.

The dermal or epiblastic surface presented some projections and some openings. For convenience I name the parts right and left and so forth according to their position on the photograph. Of course this is a perfectly arbitrary procedure, and not warranted by the anatomical details. Towards the upper left corner, according to my plan of arrangement, there was a small projection measuring 1.5 cm. in length and resembling a pair of rudimentary digits (Fig. 1, G). About the middle of the left side, at the point where the mass had its minimum breadth, was another projection, measuring 2 cm. in length and about 1.3 cm. in breadth. Its resemblance to a two digited rudimentary hand or foot was very striking, E. On the right side of the dermal surface of the mass was a pea-sized projection which may have indicated another but a very rudimentary extremity, D. At a point practically corresponding to the centre of the dermal surface was a linear opening, C, running from above downwards and towards the right side; it measured 1.5 cm. in length. Above and to the right of this slit was a large opening, B, measuring about 2.5 cm. vertically and about 2 cm. transversely. Through this opening the probe could be passed in various directions into cavities in the substance of the mass, and it was specially noted that the linear slit also opened into one of these cavities. The whole surface had the appearance of skin, and a few hairs, dark brown in colour, were seen attached to it but they were quite scanty. In the grooves was a quantity of

a whitish substance resembling the vernix caseosa. Most of the right side of this surface as also its lower end gave attachment to a thick membrane which is now cut into pieces, A, but which, it may be supposed, passed quite round the opposite or visceral surface of the mass, and formed the cavity containing the clear yellow fluid removed at the time of operation. An incision had been made into the mass along the left upper angle.

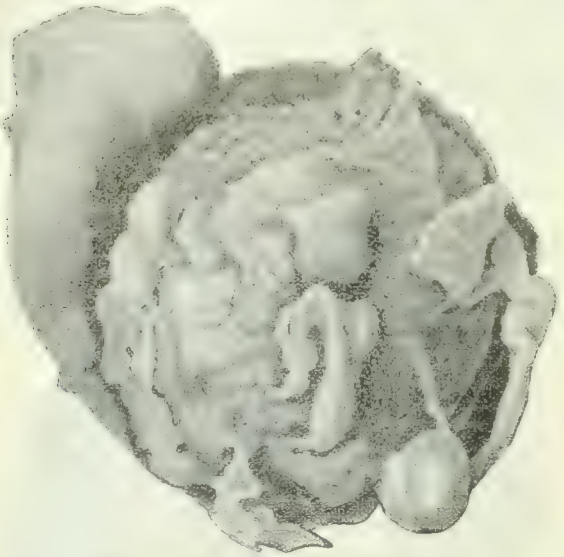


Fig. 2.—Visceral or hypoblastic surface.

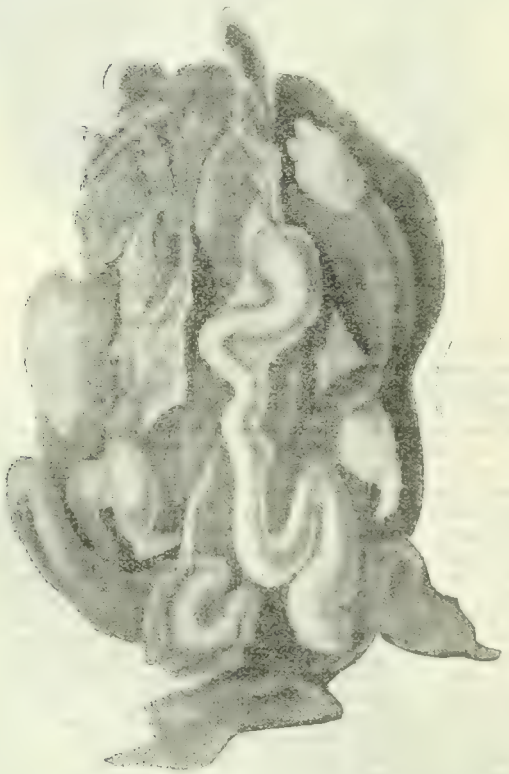


Fig. 3.—Side view of mass, showing rudimentary viscera, etc.

The opposite surface, which I have named visceral or hypoblastic, did not lend itself readily to description (Figs. 2 and 3). On raising the membranous sac covering it one saw several coils of intestine attached to it, and these coils seemed to be arranged in two pieces not communicating with each other. To one of the pieces was attached a bit of bowel very much like the vermiform appendix of the cæcum. It did not appear that the two pieces of bowel communicated with a cyst lying near them on this surface; this cyst had a thick wall, and when cut into its inner surface was thrown into numerous well-marked ridges, and had an appearance recalling that of the stomach; its size was about that of a walnut. Near the edge of this visceral surface were two small hard bodies resembling a bicuspid and an incisor tooth, and alongside of them was a structure which might be regarded as a rudimentary maxilla containing tooth germs (?) Sections were made of the bowel at two places, and under the microscope the wall showed the characteristic intestinal villi and epithelium and glands; but these structures did not seem to be fully developed.

Sections of the solid mass were now made. It was found to be made up largely of adipose tissue with, scattered through it, irregularly-shaped pieces of cartilage, one or two of which showed commencing centres of ossification. The openings on the skin surface were found to communicate with cavities in the mass, irregular in shape and lined by a darkly pigmented fine membrane thrown into gill-like folds. It could not be traced that these cavities had any connection with the intestine or with the stomach-like cavity. It was quite impossible to identify any of the small pieces of cartilage. Under the microscope the main constituent tissue had the appearances presented by fœtal adipose tissue, very regular network of spaces, etc. It may be noted also that the skin had the usual microscopic appearances save for the absence of sweat ducts and glands; sebaceous glands were very plentiful, as were also hair follicles.

It is difficult to say what relation the cyst wall bore to the solid part above described, but it would seem that it covered the visceral aspect of it, and thus formed the cavity containing the fluid spoken of as having been present at the time of operation. The intestines seem also to have been covered with a more transparent, peritoneum-like membrane, but this has been cut away apparently. Under the microscope the membranous sac wall was seen to consist of connective tissue bundles with numerous elastic fibres, but without an epithelial or endothelial investment.

It may be added that both in the wall of the intestine and in the subcutaneous adipose tissue blood vessels were visible, but no single large entering artery was noted at any point of the solid mass.

I think there can be no doubt that this was an example of the monstrosity known as the "included twin" or "fœtus in fœtu." As regards location it was of the intra-abdominal variety, and as regards organisation it was of the type amorphus or anideus. I have elsewhere described the fœtus amorphus, as it occurs not inside another fœtus, but attached to another fœtus by means of the vessels of the umbilical cord. A reference to that paper[1] will serve to show that the fœtus amorphus there described as born along with a normal twin very closely resembled the mass removed from the abdominal cavity of the female infant at Pendlebury Hospital. To account for its position inside the body cavity we have to suppose that it has been caught therein before the closure of the somatopleure (in the manner suggested by Ahlfeld). Its low state of organisation may be regarded as due to the abnormal position and unsatisfactory developmental environment which it had; but it may also have been originally of very low vitality, and its position inside the body of the other fœtus may have been the means of perpetuating its existence in a parasitic sort of way. It cannot be said which of the two explanations is the more probable.

Some thirty cases of included fœtus in the cavity of the abdomen have from time to time been put on record; but the position occupied by the parasite, as well as the degree of development of it, have varied very much. The present case, however, agrees with the majority in the fact that it was situated in the left side, and in its very rudimentary organisation and the absence of more than a very few recognisable viscera and structures. It may be hazarded that the parasite had advanced little further in development than the stage when there is on one side epiblast and on the other hypoblast with confused mesoblastic derivatives between. The cystic part may have been a development from the umbilical

vesicle, but more probably it was, in part at least, a spurious capsule formed from the surrounding tissues by irritation.

Remarks by Mr. Wright.—The history, the physical signs, the result of tapping and probabilities all led us to think that the tumour in this case was very probably renal or perirenal in origin. It was fully recognised that the operation was a forlorn hope, but it was the only chance. As is so often the case in abdominal tumours, when once the operation is begun it is impossible to stop short. Lacerated soft friable tissue may make partial removal or abandonment of an operation impossible on account of bleeding. The only thing to do is to clear away the whole mass as quickly as possible. In this operation it was recognised fairly early that we had a teratoma to deal with, and that its attachments were such as to make its removal almost hopeless, but it was still the only chance. It is of course very unlikely that another similar case will be met with by any of those who saw this child, but it is worth recording, and the possibility of such a case is worth bearing in mind in doubtful congenital tumours. We are greatly indebted to Drs. Ballantyne and Fothergill for the care and trouble they have taken in examining and drawing the specimen.

REFERENCE.
1 *Teratologia*, i, p. 1, 1894.

FOUR CASES OF LAPAROTOMY FOR INTUSSUSCEPTION.

By KEITH MONSARRAT, F.R.C.S.E.,
Assistant Surgeon, Liverpool Infirmary for Children.

I HAVE had the opportunity of operating on four cases of intussusception since the beginning of this year, all presenting some points of interest.

CASE I.

A male infant, aged 5 months, was admitted to the Infirmary for Children, Liverpool, at 3 P.M., on February 25th.

History.—Twenty-four hours before admission the child screamed out, and was evidently in great pain. Shortly after he passed a green slimy motion, and the mother then gave him a dose of castor oil. At 6 o'clock he passed some blood *per anum*, and continued to do so off and on until 9 P.M. After this nothing further was passed, and the signs of pain continued until admission next day. On admission the child was very collapsed, and his temperature was 97° F. Rectal examination revealed a tumour within easy reach of the finger, and in the abdomen a characteristic swelling was found extending from the right lumbar region across the middle line and down into the pelvis.

Operation (4 P.M.).—Through an incision in the right semilunar line the tumour was reached, and about 18 inches disinvaginated; the last 2 inches could not however be expressed. Enterectomy was consequently done by Barker's method, the remainder of the intussusception removed, and the severed edges of bowel united. The intussusception was ileo-colic in type.

Result.—The child never recovered from the operation shock, and died an hour later.

CASE II.

A female infant, aged 7 months, was admitted on June 10th.

History.—On the morning of June 9th the child passed a green stool and appeared to have pain in the abdomen. At 9 P.M. she vomited, passed blood by the rectum, and both these symptoms continued during the night and until admission. She was brought to the infirmary at 6 P.M. The abdomen was distended, and a definite characteristic tumour was easily made out; its apex was felt by the finger in the rectum.

Operation (8 P.M.).—An incision was made in the middle line below the umbilicus, and a considerable quantity of blood-stained fluid escaped when the peritoneum was incised. The intussusception was easily and rapidly reduced.

After-History.—The pulse was very feeble and rapid after the operation, and 3 minims of ether were injected subcutaneously. Two minims of tinct. opii were also ordered every four hours until the following morning. Calomel gr. ½ was administered on the 11th, and the bowels acted three times during the day, the stools being green and mainly of mucus. Until June 14th the temperature was above normal, reaching 103° F. on the 12th and 13th, and the signs of intestinal catarrh continued. On the 14th, however, there was marked improvement, and from this onwards the convalescence was uneventful. The child is now (September 25th) quite well.

CASE III.

A male infant, aged 7 months, was admitted on June 16th.

History.—On the evening of June 15th the child vomited and passed several stools in rapid succession, slimy and tinged with blood. He had been fed entirely from the breast, and the bowels had acted regularly. When admitted he was collapsed, but did not appear to be in much pain; no tumour was to be felt on palpating the abdomen or in the rectum; some green, slimy mucus came away on the finger, but no blood. It was thought that the symptoms might be accounted for by gastro-enteritis, and no operative interference seemed to be at the time indicated. At 7 P.M. he was given 2 ounces of peptonised milk by the mouth, and kept them down; the same quantity at 11 P.M. was vomited. On June 17th it was recorded that nothing had been kept down since the 7 o'clock feed the evening before; nothing had been passed *per anum*.

Operation.—During the afternoon, on examining the abdomen, an ill-defined area of increased resistance was felt to the right of the umbilicus; laparotomy was consequently performed, and an ileocæcal intussusception about 6 inches long found and easily reduced; 3 minims of ether were given hypodermically, when the child was returned to bed.

After-History.—At night one and a-half minim of tinct. opii was ordered every three hours. Next day the general condition was not improved, the pulse was small and rapid, and the temperature 101° F.; there had been two loose motions. A mixture of cream, whey, and barley water had been given three-hourly since the operation. Death took place during the afternoon (18th).

These cases are examples of acute intussusception. The first is chiefly remarkable for the high degree of strangulation found, considering the comparatively short duration of the symptoms. This was probably in part due to the castor oil, aperients notoriously increasing the severity of the condition. The history of some cases appears to indicate an oscillating invagination and disinvagination in the early stages, and in some instances undoubtedly spontaneous disinvagination occurs. I refer to cases which are brought to hospital from time to time with signs of enteritis, and a history of sudden abdominal pain and bloody stools perhaps a week or more previously. On the other hand in a certain number the invagination and strangulation progress steadily and rapidly, and there is no halting in the symptoms. Case I is an example of the latter type. Case III is an example of the oscillating form, and on admission there were no physical signs to guide one, only the history of vomiting and blood-tinged stools the day before.

Comparing Cases II and III the condition of the bowel was much worse in Case II, as indicated by the considerable quantity of bloody serum in the peritoneal cavity, and the severe enteritis for three days after operation. In Case III *post mortem* the invaginated section of gut, though injected, was not much swollen or altered from the healthy. The general condition was much the same in both cases on admission, and the fatal result in Case III must be attributed to the postponement of the operation until the invagination had been present for forty-eight hours. It is not, perhaps, correct to say that this delay was inevitable, but in the absence of all signs and symptoms beyond collapse I hesitated to operate on the ground of the parent's history alone.

In spite of the delay, I am inclined to think that if the child had received a small dose of opium immediately after the operation instead of waiting until five hours later, and if stimulants had been more freely given, the result might have been different. With regard to this dose of opium, it has been objected to on the ground that it checks peristalsis and the recovery from obstruction. In answer to this it may be urged that there does not appear to be any considerable danger of paralysis of the gut after reduction—at any rate, not to anything like the extent to which after-paralysis is to be feared in some other forms of intestinal obstruction; secondly, the histories of those cases where the drug was given in small doses do not point to its delaying the emptying of the bowel; rather the contrary. Many of these infants are almost moribund when admitted from the exhaustion of pain; add to this the shock of operation, and we have a condition which it is imperative to relieve. Opium is probably the only drug which will meet the case, though minute doses of chloral might be useful if opium seemed to be distinctly contraindicated.

CASE IV.

History.—A boy, aged 4 years, had suffered from paroxysms of abdominal pain off and on for a month before admission, and had been treated for this at other hospitals. Sometimes he was without pain for as much as forty-eight hours together. The bowels had been constipated, and aperients had been given often and with good results. He was in the hospital for six days before I saw him, and during that time had frequent attacks of colicky pains on the right side of the abdomen. The day after admission (August 24th) he had four loose motions; after that his bowels were open two or three times daily, and on one occasion (26th) he passed some blood and mucus. There was no vomiting.

Anamnesis.—I first examined him on August 29th; he looked [illegible] inched and pale, and complained of pain in his right side. On [illegible] part of the abdomen an elongated swelling was felt in the right [illegible] region, and extending from this above the umbilicus an inch and a-half across the middle line. This could be reduced by manipulation into the loin, but could not be made to disappear altogether; it was evidently an intussusception. On August 30th the swelling was of the same character and of same size as before the partial reduction; he had one motion during the morning of this day, fully formed and containing neither mucus or blood.

Operation.—On the morning of August 31st the abdomen was opened in the right semilunar line; the intussusception was reduced very easily without bringing the gut into the wound except the last knuckle, which proved obstinate. It was brought to the surface, and by using the fingers somewhat in the same way as one uses them to undo a paraphimosis, the last portion was turned out. At the apex of this knuckle was the appen-

dix invaginated into the cæcum in such a way that only a very small portion of its distal extremity was visible. Its wall and the wall of the cæcum over a circular area around it were hard and indurated. The appendix except for this was apparently healthy and contained no concretion; it was removed and the abdomen closed

After-History.—The wound was dressed and the stitches removed on September 7th, and the boy was discharged on the 21st, having had no pain since the operation.

The case is of interest in relation to (*a*) the mildness of the symptoms and (*b*) the invagination of the appendix. The boy had attacks of pain for four weeks before admission, and only on one occasion was there any discharge of blood or mucus from the bowel. The invagination was never found to reach the splenic flexure, and at the operation the swelling of the apex was not extreme, rather a hard induration than a marked congestion; there was never in fact any real strangulation. If the variety of intussusception is to be named according to the portion of gut which forms the apex of the intussusceptum, such a case must be called appendico-cæcal. There are now a sufficient number of similar cases recorded to justify their grouping as a distinct variety; their number, as far as I have been able to discover, being eight.

In none of the above 4 cases were injections given a trial, and though it is not proper to argue from one or two examples, the reasons for this course of procedure may be given. After the use of injections, however apparently successful, the complete reduction of the intussusception must remain to a certain extent in doubt. The frequency of relapse after recorded success with this treatment is evidence of this. To leave a child whose limit of endurance has been probably almost reached in this questionable condition seems to me an unsatisfactory course to pursue. The operative results in the simple easily reducible cases are now good and are gradually improving; in the cases where reduction is difficult or impossible operation is the only chance. In what cases, then, is it worth while spending valuable hours waiting to see whether the treatment by injections has been successful or not?

A CASE OF APPENDICITIS WITH ABSCESS PERFORATING INTO THE BLADDER: RECOVERY.

BY A. PERCY ALLAN, M.D., B.S.LOND.
Croydon.

THE following case—from all I can gather, one of extreme rarity—is of peculiar interest owing to the complete recovery the patient made. Dr. Pye-Smith has thought a similar case, which also recovered, worthy of mention in Fagge's *Principles and Practice of Medicine*:

F. E., aged 16 years, an electric workman, I saw first on June 23rd, the day after his symptoms had begun.

History.—I learned that he had had a similar attack some seven years before, which had been diagnosed, the mother informed me, as "inflammation of the bowels."

Present Attack.—This commenced with abdominal pain, sickness, and diarrhœa. The sickness started after well-marked rigors the previous afternoon, and it had continued on and off all night. When I saw him the vomiting was frequent and the vomit thin and bile-stained.

Condition on Examination.—The abdomen was full and tender, especially in the right iliac region, where dulness was uniform and well marked. McBurney's tender point was very obvious. The temperature was 102° F.

Treatment.—The patient was given a mixture of bismuth carbonate, a dose every two hours, and as soon as possible got under the influence of opium, ext. opii. gr. j being given every 4 hours. Ice poultices were constantly applied to relieve the pain. For a week he was on small quantities of milk and somatose. In a day or two the patient was fairly comfortable, but I continued the opium as before.

After-History.—He complained of great difficulty at times in passing water. The temperature never remained high, the maximum being 103° F. on one or two occasions, but it was frequently normal or nearly so, though rising at night to 100° to 101° F. There were no more rigors, nor were there any exacerbations of pain. The dulness continued as before, being very sharply defined internally, but shading off indefinitely at the lower part. As the case developed I noted a very tender process, feeling like a mass of scybala, deep down, extending towards the inguinal region, about an inch above Poupart's ligament, and continuous apparently with the general mass. After a week the patient's bowels were moved by an olive-oil enema, the motion being passed with a small quantity of slime and a little blood. The temperature some days afterwards being normal or but little raised, no pain being present, I gradually cut down the opium, and added small quantities of beef-tea, jelly, and custard to his milk diet. The general dulness in the iliac region gradually diminished, but the tender prolongation above mentioned still remained unaltered.

Rupture into Bladder.—On July 4th I left the case to my *locum tenens*, Dr. Sear, having drawn his attention to the tender mass. Three days after I left home the patient was seized with much pain and total inability to pass water. The tender mass had disappeared and the iliac region was more resonant. A catheter was passed and a quantity of putrid urine drawn off. A rectal examination revealed nothing. Dr. Sear called in a local consultant, and the conclusion was come to that an abscess had formed round the appendix, which, burrowing downwards and inwards, had ruptured into the bladder. They decided to drive the patient up at once to a London hospital. There, owing to some mistake, he was kept waiting three hours in the surgery, and sent home again, a distance of twelve miles. He arrived back in a very exhausted condition.

Treatment.—Dr. Sear continued to wash out the bladder daily with a solution of Sanitas for four days, until my return, and gave him a mixture containing hyoscyamus. I found the patient much altered on my return, very thin, weak, and sunken round the eyes. I continued to wash out the bladder daily, using a solution of chinosol, and gave him hexamethylene tetramine, gr. v, t. d. s. After a week the urine became less fœtid, and I then washed out the bladder on alternate days. Finally the urine became quite normal, and all pain and physical signs disappeared. I got the patient up each day until July 28th, when he was again seized with rigors, and the urine became again as foul as ever. I concluded from this that the opening had temporarily closed, and that the pus had again collected.

Convalescence.—After daily washing out, I got the urine into a normal condition. His appetite was good all the time, and I kept him well fed, so that he gained strength and put on flesh. He made an uninterrupted recovery, except that two weeks after I had given up attending he developed double orchitis after a long walk which he injudiciously took. In a few days the testicular swelling went down under treatment, leaving the patient perfectly well. There have been no relapses since, nor are there signs that any mischief remains.

OPERATION FOR SEVERE HYPOSPADIAS.

BY R. HAMILTON RUSSELL, F.R.C.S.ENG.,
Surgeon to the Melbourne Hospital for Sick Children.

THE operative treatment of the severer forms of hypospadias has always been a source of despair to surgeons. Various methods have been from time to time designed for the purpose of improving the lamentable condition of the unfortunate subjects who have been born with this hideous deformity; but the success that has hitherto attended all such efforts has been so meagre, and the results of operation in even the most successful cases so unsatisfactory, that it is not surprising to find many authorities holding the opinion that operation in bad perineo-scrotal hypospadias is not worth attempting. On the other hand it has been suggested that, in view of the hopelessness of providing the subject with an effective sexual organ, it would be a wise and humane proceeding to perform castration during childhood. I need make no apology, therefore, for bringing before the profession a new method of operating which appears to me to hold out a prospect of benefit such as has never been offered by any method previously devised. Let me first set forth the difficulties with which we are confronted in a case of severe hypospadias such as is depicted in Fig. 1.

While the urethra opens in the perineum at A, there is seen extending forwards from the orifice for a short distance a sulcus (A, B) lined with mucous membrane, which for convenience of description I will designate the "perineal urethra."

At the extremity of the perineal urethra the glans penis is bound down, so that erection of the organ in the straight

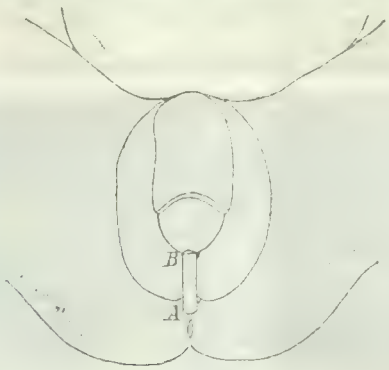


Fig. 1.

position is impossible. There is no vestige of a urethra throughout the penis, and the glans penis is imperforate. It would, of course, be possible to close the perineal urethra and so prolong the urinary channel for an inch or so, but such a proceeding alone would be valueless, for neither of the two great objects of operation in hypospadias would be accomplished. These two objects are (1) to so alter the penis as to render it effective as a sexual organ; and (2) to enable the subject to perform the act of micturition in masculine fashion.

It is essential for both of these objects to, in the first place, release the glans penis from its attachment to the extremity of the perineal urethra, severing the structures that bind it down until the organ can be straightened. When this is done, however, there will be created a lengthy interval between the extremity of the perineal urethra and the end of the glans (Fig. 2, B C). The problems that now confront us



Fig. 2.

are, first, to form a urethra which shall traverse this distance; secondly, to so manage that this penile urethra shall be continuous with the perineal urethra when the latter is closed; and thirdly, to close the perineal urethra.

The only method hitherto devised that is said to have been attended with anything like an approach to substantial success is the method of Duplay. Without going into a description of Duplay's operation, I may point out that it consists of three stages, of which the first comprises the straightening of the organ and the formation of a glandular urethra which is not lined by mucous membrane; in the second stage the penile urethra is formed from lateral flaps of prepuce, but this channel is not directly continuous with either the perineal or the glandular urethra; while at the third operation the two urethræ, the perineal and the penile, are joined. The great drawbacks and difficulties imposed by the break in the continuity of the channel at the junction of the perineal and penile portions are evident, while the glandular urethra made in Duplay's way must surely be very unsatisfactory.

The method of operating I am about to describe obviates all these troubles; by its means a mucous-lined urethra is provided which extends without any break in continuity from the perineal urethra to the meatus, and the length of penile urethra that has to be formed in this way will be found to present no difficulty.

The operation, which I consider it desirable should be divided into two stages, is performed as follows:

First Operation.

A thread is passed through the glans penis to serve as a tenaculum and the glans drawn upwards.

Step I.—An incision through the frænum which binds down the glans. This incision may be carried at once right round the penis, so as to divide the prepuce on the dorsum by a circular sweep, not too close to the corona. The tip of the left index finger is inserted into the gaping wound in the concavity of the penis, and the structures which bind it down are felt and divided by successive cuts with scissors. In this way will be divided a number of dense fibrous bands and portions of the sheaths of the corpora cavernosa, and the scissors must be freely used until the penis is quite released and can be drawn out straight. There will now be a great length of raw surface exposed between the extremity of the perineal urethra and the glans, and the median sulcus between the corpora cavernosa may be deepened by a little careful dissection, and removal of the remains of the longitudinal fibrous bands that have been divided (Fig. 2: the shaded portion shows the shape of the raw surface exposed).

Step II.—Perforation of the glans for the reception of the glandular urethra: A tenotomy knife, with the edge turned towards the dorsum of the organ, is thrust through the substance of the glans, close to the under surface; the structure is incised freely towards the dorsum, leaving a capacious channel through its substance.

Step III.—The incision indicated by the dotted lines E E', Figs. 2 and 3, starting near to the extremity of the perineal



Fig. 3.—Dorsal vein of penis after the incision E E' has been made.

urethra, about one-third of an inch or less from the cut margin of the skin, the incision is carried, always parallel to the cut margin, over the dorsum of the penis to the corresponding point on the opposite side. By this incision a strip of prepuce will be marked out which surrounds the penis in a manner closely resembling a clergyman's stole (Figs. 2 and 3). This



Fig. 4.

loop of skin is then detached from its connections everywhere except at its extremities, and slipped over the end of the penis, exactly as a clergyman removes his stole. The loop of prepuce is then simply manipulated so that the cutaneous

surfaces are placed in apposition, the raw surfaces being turned outwards; a sinus forceps is passed through the channel in the glans, the loop seized and pulled through (Fig. 4). The redundant portion of the loop is then cut off and the two lateral portions of the new urethra fixed in position by one or two stitches at the meatus (Fig. 5).

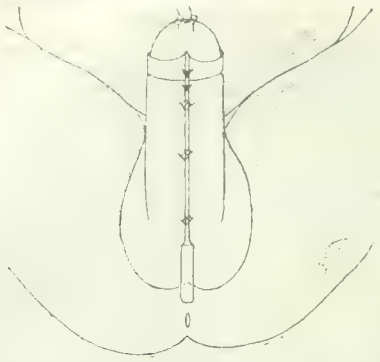


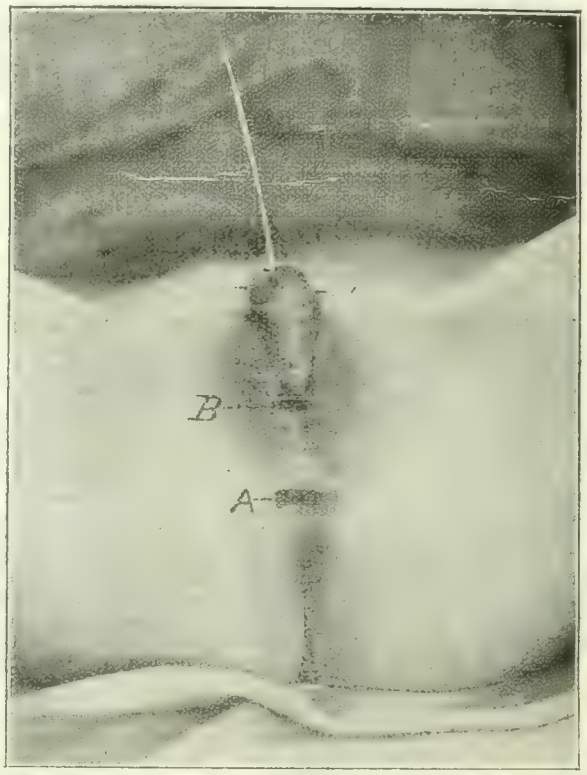
Fig. 5.

Step IV.—Adjustment and suturing of the preputial flaps. On the dorsum of the penis this is just a simple procedure as in circumcision. On the under surface of the organ, where the prepuce is made to cover over the two edges of the new urethra, these edges should be included in the sutures, so that in each suture four cutaneous edges are brought together, namely, two of prepuce and two of new urethra (Fig. 4). Before finally tying these sutures inspection should be made of the spot where the perineal urethra becomes continuous with the new penile urethra; a nipple-like projection of skin is likely to be present at this place and should be snipped off with scissors. Fig. 4, which illustrates this stage of the operation, is not entirely satisfactory. The two strips forming the new urethra will appear edge on to the observer, and not as depicted in the diagram. Also the sutures will not directly pierce the new urethral walls as represented, but will catch them on the raw surface close to the edge, and will be, in fact, similar in plan to very fine Lembert sutures, so that the edges of the new urethra will be somewhat inverted. The posterior (or dorsal) edges of the new urethra will be adjusted in the mesial sulcus between the corpora cavernosa, and will not require any suturing. The sutures having been tied, a narrow bandage of iodoform gauze may be then wound round the organ, and left undisturbed for several days. The result, when completed, is portrayed in Fig. 5. It is scarcely necessary to remark that no rod of any kind should be inserted in the new urethra. Should there be any defect in the success of this operation it would be wise to remedy it before finally proceeding to the closure of the perineal urethra.

SECOND OPERATION.

Suprapubic Cystotomy and Closure of the Perineal Urethra.—This last is really by far the most difficult part of the whole procedure, and demands care, skill, and experience in this kind of plastic work. To the operator who brings these qualities to the task, however, success will come easily. There is one point of paramount importance to the success of this part of the operation. It is necessary to define accurately the ridge where the urethral mucous membrane merges into the skin of the perineum; the separation between the two must be made exactly at that ridge, and it is best accomplished by taking a delicate pair of scissors and cutting off the crest of the ridge all the way round. It will be necessary to incise the skin of the perineum posteriorly to a small extent in order to expose the hinder margin of the urethral orifice. The reason for such great precision on this point is that if any of the perineal skin be left attached to the urethral margin at any spot, the attempt at closure will certainly fail at that point; while if, on the other hand, the incision is so made as to leave any portion of urethral wall attached to the perineal skin, that will be a sacrifice of urethral wall which can by no means be afforded. The edges of the urethra should now fall naturally together when the thighs are approximated, and they need not be sutured. The perineal skin should be undercut slightly and approximated by a few sutures, and the wound dressed with a layer of gauze and collodion. Should healing have taken place throughout, the bladder drain may be removed in a fortnight.

The accompanying photograph shows the result obtained



by this method in a boy aged 9, on whom I operated in February, 1899. A probe is introduced into the urethra. The ink marks that I have made on the perineum indicate the limits of the perineal urethra, so that the urinary orifice was at the hindmost mark (A), and the glans penis was bound down at (B). The urethra from (B) to the meatus has been quite successfully made with the exception of a small hole about the middle of the penile urethra. By drawing lightly upon the organ during the act of micturition the sides of this opening are approximated so that none of the urine escapes there, but is all passed freely through the meatus. This imperfection, though really of no importance to the patient, has been mortifying to me, for it is the result of an error of judgment of which I was guilty in the first instance, and can hardly occur in any future case. The error consisted in the attempt to carry out the whole procedure in one operation, instead of dividing it into two as recommended above. Theoretically, no doubt, it might be done in one operation, and I think it probable that with the experience I have gained I should succeed on another trial, but I do not intend to try. It would seem distinctly the wiser course to get the penis portion of the operation completed first, thus leaving as little as possible to be done with the aid of bladder drainage. In my case we became involved in a vortex of troubles through being obliged to make the suprapubic opening a second time when, owing to implication of the peritoneum in the old cicatrix, that membrane was incised. The silk suture used for repairing the opening in the serous membrane subsequently gave rise to a urinary fistula which persisted for three or four months. Healing has, however, long since been complete, and the result of the operation has been to accomplish the two aims of it—namely, to confer on the boy an organ which will undoubtedly render him sexually potent, and enable him to micturate like other males. Thus the small defect in his urethra is an artistic blemish rather than a defect of serious

importance; it is obvious also that it can be easily guarded against in any future case submitted to operation.

In conclusion, it is not necessary for me to dilate upon the strong points of this method of operation, which will be obvious at a glance. Seeing that it can be performed aseptically, it is inconceivable that the formation of the penile urethra should present any difficulty; the very elements of failure are not present.

As to the age at which the operation should be undertaken, its simplicity and ease of performance render it quite unnecessary to wait until puberty, and I should suggest the age of about 8 years as being the most suitable. The great benefit of such early operation will be appreciated at once when we consider that the time intervening between 8 years and puberty might well be a period of great unhappiness and mental injury to a boy afflicted with such a deformity.

I confidently submit to the profession this operation, which I honestly believe will be found to have inaugurated a new era of hopefulness for the relief of the unfortunate victims of this dreadful malformation.

The illustrative diagrams have been executed from my description by a skilful and intelligent lay friend. For the photograph of my patient I have to thank my colleague, Dr. Herbert Hewlett.

A CASE OF SEVERE SUBCRANIAL HÆMORRHAGE: OPERATION: RECOVERY.

BY

F. G. PROUDFOOT, M.A., M.D.Edin., Oxford.

and GABRIEL W. FARMER, M.A., M.Ch.Oxon., F.R.C.S., Surgeon to the Radcliffe Infirmary, Oxford.

History.—S. S., a married woman, aged 56, of intemperate habits, was found on the night of September 8th, 1899, lying unconscious outside a public-house, and was removed home in a barrow at about midnight. The following morning she regained consciousness, and with the assistance of her husband was able to walk to the closet. On returning to bed she complained of pain in the head, and gradually became very drowsy. During September 10th this drowsiness passed into unconsciousness. As the unconsciousness supervened it was noticed the left arm and then the left leg became impaired as regards movement. These facts were elicited from the husband by Dr. Proudfoot, who was summoned to see the patient on the evening of September 10th. Dr. Proudfoot held a consultation with Mr. Farmer, and on both agreeing that it was a case of subcranial hæmorrhage, the patient was transferred to the Radcliffe Infirmary for immediate operation.

Condition on Admission.—Well nourished; slightly obese. Well-defined bruise overy right parietal eminence. No fracture to be felt. Some slight bruising over right shoulder and hip. (No evidence as to how she came by these bruises.) Completely unconscious. Breathing deep, slow, and stertorous. Pulse full, regular, 107 per minute. Paralysis of left arm and leg; no facial paralysis discernible. Pupils equal and dilated, giving no reaction to light. No paralysis of ocular muscles to be made out. Temperature 97.2°.

Operation.—The patient was at once prepared in the usual way for the operation of trephining and removed to the theatre. Chloroform having been administered, a large semicircular flap was made on the right side of the head. This flap measured about 3 inches by 3 inches, the centre of the base being approximately 1 inch above the external auditory meatus and included the bruise. Everything down to the bone was reflected in the flap. It was noticed that the tissues were distinctly ecchymosed, but on examining the underlying bone no trace of fracture could be found. A 1½ inch trephine was then applied, its centre corresponding to a point about 2½ inches above the zygoma in a vertical line running immediately in front of the external auditory meatus. On the removal of the crown of bone (which was placed in sterilised saline) a large clot bulged into the wound. Almost instantaneously the stertorous character of the breathing ceased. The clot on exploration was found to extend beyond the trephine hole in all directions but one, namely, the lower. The whole of it was easily scooped away without enlarging the opening. A large depression in the convexity of the brain presented itself and the dura did not bulge to its normal level. Hæmorrhage was very free coming, not from any single vessel, but from several. Where possible, these were picked up with fine pressure forceps, and tied. Some vessels had to be tied by passing fine sterilised silk with a curved Hagedorn needle through the thickness of the dura mater. There was still some oozing, however, and, as the depression showed no signs of bulging out, the hole was gently packed with sterilised gauze, and the edges of the skin brought together by means of temporary silk sutures without replacing the bone. A plain sterilised dressing was then applied, and the patient removed to the ward.

After-History.—September 11th. Consciousness returned. Some movement of left leg. General condition good. Temperature 98.4°, rose to 100° in the evening. Pulse rose from 68 to 104, respirations 20. September 12th. More power in leg. Plugging removed; dura well up to its proper level. Skin flaps sutured with silk. Temperature normal, pulse 80, respirations 20. September 13th. Movement in left arm began to return. September 16th. Sutures removed. Wound healed completely. From this time the patient made a perfect recovery, regained complete power over left arm and leg; left hospital on October 14th.

Remarks by Dr. Proudfoot.

I saw the case for the first time on Sunday evening, September 10th, 1899, and the points which enabled me to come to the diagnosis of subcranial hæmorrhage were the recovery of the patient from the original unconsciousness, which I attributed to the concussion caused by the injury, the gradual return of the unconsciousness after some exertion, due this time to compression, and, as has been already stated, the discovery on examination of the head of a well-defined bruise over the right parietal eminence.

Remarks by Mr. Farmer.

The symptoms in the above case clearly pointed to hæmorrhage from the anterior branch of the middle meningeal artery rather far back, causing compression over the mid-Rolandic area, spreading upwards. The bruise practically corresponded with this region. I was thus guided with regard to the point of application of the trephine. The above case would have been admirably adapted for opening the skull by Wagner's method, namely, reflecting a flap of bone with the skin, and thus preserving the anatomical relations between the outer table of the bone reflected and the skin. My reason for not adopting this method was simply the fact that I had not a suitable osteotome at hand. I have on several occasions seen Wagner's method performed on the Continent with a chisel, and cannot help feeling that the vibration thus produced must be harmful, especially in a case of subcranial hæmorrhage. The most troublesome part of the operation was the stopping of hæmorrhage, and at one time I felt inclined to trephine over the main trunk of the middle meningeal artery. By adopting the method of passing fine silk sutures through the dura, where one could not pick up the bleeding point, I was finally, however, able to reduce the bleeding to a slight general oozing. It was obviously essential to plug the large depression in the brain, owing to this oozing; for this reason I did not feel justified in replacing the crown of bone. If the bone had been replaced it would have been resting for twenty-four hours upon gauze and covered by skin. It would then have been removed and replaced during the first dressing when the gauze was removed. I think it very doubtful whether under these conditions it would have retained its vitality. The patient was shown before a Branch meeting of the British Medical Association about three months after the operation. The trephine area was marked by a slight depression in which the pulsation of the brain could be seen and felt. There was absolutely no sign of any yielding of the cicatrix, and the patient stated that she felt as well as she had ever done in her life.

NOTES OF TWO CASES OF EXCISION OF THE GASSERIAN GANGLION FOR EPILEPTIFORM NEURALGIA.

By J. CRAWFORD RENTON, M.D.,

Surgeon and Lecturer on Clinical Surgery, Western Infirmary, Glasgow; Examiner in Surgery in the University of Edinburgh.

The two following cases illustrate the value of the operation for excision of the Gasserian ganglion in cases of epileptiform neuralgia. Along with the cases recorded by Mr. Victor Horsley, Mr. Hartley, Mr. Krause, and Mr. Jonathan Hutchinson, jun., they encourage us to hope that one of the most severe complaints can now with safety be relieved:

Case I.

History.—A. B., aged 57, was placed under my care by Dr. Haldane, of Bridge of Allan, and Dr. White, of Stirling. He had suffered for seven years from increasingly severe attacks of epileptiform neuralgia of the left fifth nerve, so much so that he sometimes had as many as thirty attacks in the hour, with spasm of the left arm, and he was compelled to be kept under large doses of morphine, having sometimes 4 grs. daily. Professor Chiene and Dr. Beatson saw him also in consultation, and we were all agreed that the only operation which would permanently relieve him was removal of the Gasserian ganglion. He had the typical appearance during the attacks of pain with convulsive spasm of the facial muscles and depressors of the lower jaw, invariably covering his face with his left hand to try and stop the spasm, the left hand twitching during the attack.

Operation.—In November, 1898, assisted by Dr. Beatson, Dr. Bryce, Dr.

White, Dr. Guthrie, and Dr. Campbell, I removed the ganglion, adopting the method of Hartley and Krause, which we may call the high road, in contradistinction to the low road through the base of the skull, after removing the zygoma or following the inferior orbital nerve to the ganglion. By the high road a flap of skin, fascia, and muscle is turned down with its base either below or in front of the ear, and a large portion of bone removed by the trephine or burr (1½ inch), the aperture being increased in size by the clipping forceps close to the zygoma. The tendency is to be too high up. The opening being sufficiently large for working purposes, the dura was punctured and carefully separated from the skull until the foramen spinosum was reached, and out of which the middle meningeal artery was seen emerging. It gave no trouble; I did not, therefore, attempt to put a double ligature on it or to plug the foramen. After some delay with oozing, which is the great difficulty of the operation, I exposed the foramen rotundum and foramen ovale, and drew out the superior and inferior maxillary divisions of the fifth, dividing them with scissors, avoiding the ophthalmic division, which is best left alone on account of troublesome eye symptoms which may follow its removal. The ganglion was then raised up and pulled away. A gauze drain was left to prevent collection of blood, and the soft parts stitched without replacing any bone.

After-History.—The patient suffered from shock for twelve hours, but gradually recovered, and made progress daily until a month after the operation he was able to sit up in bed. He would not have been so long kept at rest, but he was so exhausted with pain, and required so much morphine previous to the operation, that it was ten days after it before he realised clearly where he was or what was going on around him. Since the operation in November, 1898, he has remained quite free from spasm and pain, and has been able to attend to his business. On two occasions he had a slight general epileptic attack, one at the commencement of an attack of influenza.

CASE II.

History.—R. S., aged 67, a patient of Dr. Love's, had suffered from epileptiform neuralgia for five years, the pain being principally referred to the right inferior dental nerve, was admitted to the Western Infirmary under my care in August, 1899. I had previously removed the inferior dental nerve with complete relief for three months, but the pain was now so severe and constant that she and her family begged that something more should be done. Her husband said he could not bear to see her suffering so much any longer.

Operation.—Assisted by Dr. Fortune, Dr. McDonald, and Dr. Lindsay, I performed the same operation as in the first case, removing the ganglion and dividing the superior and inferior maxillary divisions of the fifth, avoiding the ophthalmic branch.

After-History.—This patient had no shock, and three days after the operation wished to get out of bed and go home. In three weeks she was out of bed, and went home at the end of the fourth week, and has remained quite well since the day the ganglion was removed.

Rose's operation by the pterygoid route seems more dangerous than that performed in these cases, and the view obtained of the ganglion is not nearly so satisfactory as by the temporal or high road. Septic infection is more apt to occur, owing to the possibility of opening the Eustachian tube, and the danger of necrosis of the zygoma resulting must also be borne in mind.

Regarding the operation by the high road, it is laborious, and requires great patience, as the bleeding is very troublesome; and in one case which Mr. Hutchinson recorded in 1898 he had to divide the operation into two stages, on account of the hæmorrhage. Elevation of the head during the operation diminishes the oozing considerably. Having separated the dura mater from the bone with a small, slightly curved, periosteum detacher, the temporo-sphenoidal lobe, covered with dura, is held up with thick glass retractors, and, when the foramen spinosum is reached, the middle meningeal is generally secured by a small wooden plug being pushed into the foramen. I did not find this necessary in either case. Should any difficulty be experienced in drawing up the brain from tension of the dura mater, the dura may be punctured with a tenotomy knife, and the escape of fluid will materially increase the space to work in. Continuing to separate the dura inwards from the foramen spinosum, the ganglion with the foramen rotundum and foramen ovale are seen, and the nerves drawn out with a strabismus hook, and divided either with a knife or scissors. Separating the divided nerves, the ganglion is raised up and removed, leaving the ophthalmic branch intact. This saves any ulceration of the cornea, and the possibility of having to remove the eye.

All the evidence that I have been able to collect as regards this operation has strongly impressed me with the importance of its being performed earlier than formerly, before the patient has been weakened by continuous pain and large doses of soothing remedies; and, further, there seems little use in operating on the terminal branches of the nerve, as no permanent relief results unless limited to one branch.

The examination of the ganglia by Dr. Bryce and Dr. Fortune has not shown any disease. Adhesions round the nerves have been found in some cases, but there seems little doubt that Mr. Horsley is correct in ascribing most of the cases to a descending neuritis.

THE MANAGEMENT OF THE SOFT PARTS IN THE MASTOID OPERATION.

BY JAMES KERR LOVE, M.D., C.M.,
Aural Surgeon, Glasgow Royal Infirmary; Aurist, Glasgow Institution fo the Deaf and Dumb.

SCHWARTZE'S OPERATION.

THE more thorough treatment of the antrum and middle ear rendered possible by the radical operation of Schwartze is the greatest amongst the many recent great advances in the surgery of the mastoid. The principle of this radical operation is that the middle ear, its attic, the aditus ad antrum, the mastoid antrum, and the air cells surrounding the antrum are laid into one smooth bony cavity. But it is a curious fact that to the soft parts—so much more easily dealt with—the same principle has not been, and is not yet often, applied. The usual practice is to drain the resulting large cavity in the bone through the mastoid wound, and either to keep it permanently open or to close it slowly after very long packing when the surgeon deems it safe. By this method the posterior wall of the cartilaginous external auditory canal is left as a partition between the two channels, the mastoid and the external auditory canal.

ITS DISADVANTAGES.

Several difficulties arise during this treatment, which might be called that by the double channel operation:

(*a*) The patient must wear an external dressing for a long time—generally some months—to cover the mastoid wound.

(*b*) When it is determined to close the wound there is great doubt as to the conduct of the inner end of the mastoid channel. Will it become an undrained sinus or pocket in which pus will collect and give trouble in the future? It is at least quite certain that chronic suppurative discharge continues after the most careful treatment in many cases.

(*c*) Even if healing eventually occurs, there is apt to be an unsightly pit left behind the auricle.

(*d*) The surest result is to keep the mastoid wound permanently open, or to keep it open till all discharge from the middle ear has ceased, and then to close it by a plastic operation. But it may take many months or years before this can safely be done.

MR. BALLANCE'S OPERATION.

The above difficulties amongst others have suggested to Mr. Ballance a very ingenious operation by which the mastoid wound is more rapidly closed and the middle ear and antrum more rapidly healed. After the radical operation on the bone has been done the posterior wall of the external canal is slit and the canal packed, the mastoid wound being carefully stitched. From ten to twenty days after this operation the mastoid wound is deliberately ripped open, and pieces of skin grafted into the middle ear and antrum. Again the mastoid wound is closed, and all further treatment conducted through the external canal. This treatment, which I have tried, undoubtedly hastens healing and gives good results.

It is curious that although the idea of grafting the middle ear had not occurred to me, I had been groping in the direction of a simpler method of dealing with the soft parts, and had, like Mr. Ballance, begun to slit the soft parts behind so as to do away with the mastoid channel altogether. This is the operation which, minus grafting, I do in nearly every case, and which I should like to name the single channel operation for the cure of mastoid and middle-ear disease.

There is one serious objection to Mr. Ballance's operation. Just as the patient is convalescing from the first operation he has to be put under chloroform a second time, the mastoid wound ripped open, and the surgeon has to spend almost as long as at the original operation in placing skin grafts and covering these with gold leaf, a procedure which would have assuredly given rise to a new English word, had not the name of Tantalus already given us a fit one. This means a month with the head of the patient swathed in unsightly bandages, and the unpleasant vision of a second operation before his mind during the first fortnight of his treatment. With professional and business men the first consideration is of importance, for a fortnight would do if the mastoid wound were not interfered with; the second consideration appeals to every patient.

Single Channel Operation.

A short description of what I have called the single channel operation is as follows:

The bone is dealt with as in the ordinary radical mastoid operation. Special attention has to be given to the upper and lower margins of the groove, which results from the removal of the posterior wall of the external auditory canal, for it will form the posterior wall of the new and wider canal, and the slit cartilaginous meatus must be closely applied to this new surface. The bony edges, therefore, must be smoothed off, and a plain walled cavity produced. The posterior superior wall of the cartilaginous canal is then slit throughout its entire length. This may either be done by the scissors or a probe-pointed knife from within outwards, or a sharp-pointed knife may be made to transfix the canal at its outer end, and, guided by a director, placed in the mastoid wound, the knife may be driven inwards till it reaches the middle ear. The mastoid skin wound is then closely stitched, and a careful packing *viâ* the external auditory canal causes the slit posterior cartilaginous wall to apply itself to the posterior wall of the widened bony canal. A groove of granulation tissue fills up the gap in the slit cartilaginous canal, and the result is a much widened canal through which it is easy to conduct future treatment. This treatment consists almost entirely of careful packing with special absorbent gauzes. Individual granulation masses in canal or middle ear may require special treatment, such as the application of chromic acid. This is very easily done, and indeed the accommodation is so ample for manipulation of this kind that grafting of pieces of skin would be easy *viâ* this external auditory canal.

The advantages of this method of operation are:

1. All dressings are removed from the side of the head within a fortnight, and the patient may resume work at that date.

2. All treatment is carried on *viâ* the widened canal, which is so capacious that every part of the healing surface can be easily seen through the speculum, and every nook of it cleaned and packed with absorbent gauze.

3. Complete healing takes place within three months, and two dressings per week are sufficient, as a rule.

A PLASTIC OPERATION FOR THE CLOSURE OF RETRO-AURICULAR POST-OPERATIVE FISTULÆ.

By RICHARD LAKE, F.R.C.S.,

Surgeon to the Royal Ear and Metropolitan Ear and Throat Hospitals.

It occasionally happens after the so-called radical operation for the cure of chronic suppurative disease of the middle ear and mastoid antrum that when healing has been obtained a fistula remains in the site of the operation wound. The cases in which this formation of a fistula follows are those in which the extent of the disease was sufficient to necessitate an unusually free removal of bone. It would probably never occur if Ballance's method were generally adopted; and even when it does occur its importance is only obvious to the friends or relations of the patients—that is to say, the æsthetic effect is the only unsatisfactory one. The case in which the method to be described was adopted to close such a sinus was that of a lad aged 6. He had had his mastoid opened twice previously without obtaining a cure. The case was under the charge of Dr. Hall in the Watford Cottage Hospital. Towards the end of 1899 we did the third operation, and, as far as the discharge went, obtained a cure, but left a retro-auricular sinus. This we proceed to close about eight months after the mastoid operation. The parts were carefully cleansed both outside and inside. Two U-shaped flaps, with the convexities looking backwards, were marked out; one *a*, *a'*, *a''*, in the groove leading into the sinus, somewhat larger than the hole it was destined to cover, and a second, *b*, *b'*, *b''*, on the posterior surface of the auricle of the same width as the *a* flap, and cut so as to pare the margin of the sinus (s Fig. 1).

The flaps were then dissected up and the *a* flap war turned forwards on its base, so that its outer or skin surface lay over the sinus: its edges were carefully attached to the edges of the sinus, keeping the skin surface of the flap inwards (Fig. 2).

The *b* flap was drawn directly backwards to fit into the place whence the *a* flap was taken, thus having the thin *a* flap backed by the tissue of the auricle, and consequently quickly and well nourished.

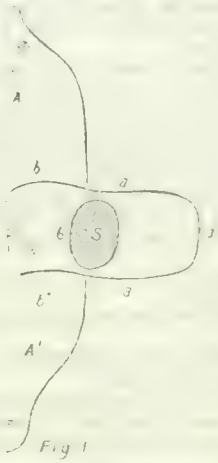


Fig.—A A' auricle. *a a' a'* posterior flap. *b b' b'* anterior flap. s sinus.

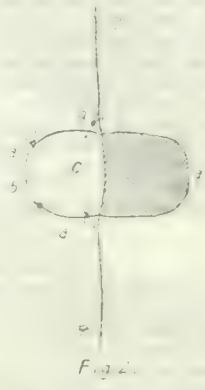


Fig. 2.—C posterior flap in position.

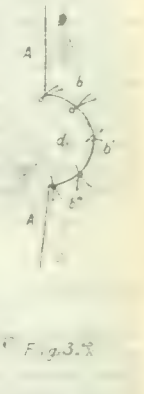


Fig. 3.—*d* anterior flap in position.

The case did admirably, and healed, with the exception of two minute points, by first intention. The double flap was devised to obviate any tendency the operation might have to re-establish a discharge from the ear, which it effectually did. In a similar case the flaps might be cut out more rectangular.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

DEATH FROM AN INSECT BITE.

A girl, aged 8, was brought to me suffering from a bite of an insect received that day on the right side of the nose, and as I thought very probable, another in the orbit. There was swelling and erythema of the nose, proptosis, and well-marked chemosis suggesting orbital cellulitis. The next day she was much worse, the swelling extending on to the forehead, to the other eye, and down to the neck on the right side. The temperature was 104 4° F., the pulse was over 200, and not palpable at the wrist. There was twitching of the hands and arms, rigidity of the arms and legs, and the muscles of the neck, and photophobia, suggesting meningitis. I sent her to hospital, where she died on the following day from heart failure.

A *post-mortem* examination was performed. A primary focus of infection was found inside the lower lid of the right eye (an ulcer, sting, or bite). There was a few drops of pus in the conjunctiva surrounding. The inflammation had extended back into the orbit, causing orbital cellulitis, and also into the skin of the forehead. Contrary to expectations, there were no signs of meningitis: but in the left lung several recent pyæmic infarcts were found with a pyæmic abscess under the visceral pleura, and some pleural effusion. There was also some serous pericarditis. A cultivation of the blood showed a general septicæmic infection by the staphylococcus pyogenes aureus.

The case was a very remarkable one owing to the rapid onset of septicæmia from a cause which one is accustomed to regard as a trivial accident. The dissemination of the staphylococcus must have taken place very early, as only two days and a half elapsed from the time of the accident to the fatal termination.

Walthamstow. Chas. J. Moore, M.B.R.U.I.

SHOCK CAUSED BY HIGH EXPLOSIVES.

The following case may be of interest as showing the effects of shock caused by high explosives.

On May 25th, 1900, an accidental explosion of dynamite took place in one of the "drives" of the Surprise Mine,

Selnhwe District. Several natives were injured and one was killed. As there were no external marks of injury on deceased beyond a fracture of left leg, and the body was found in a "winze," or small shaft, containing about 2½ feet of water, into which he had fallen from the drive when the explosion took place—a fall of a few feet—the question arose, in view of the inquest which would be held, as to whether death was due to drowning or to effects of explosion.

On making a *post-mortem* examination I found that death was not due to drowning. There were no external marks of injury on thorax nor any fracture of ribs, but when I opened the pericardium, which was intact, I found that the heart was extensively ruptured. There was a wide laceration on the posterior surface of the left ventricle, 4.5 c.m. in length, extending to within a few lines of the apex, another rupture of the upper surface of the left ventricle measuring 3 c.m., and one of the right ventricle 7 c.m. long. The native was in good health, young, and strong.

Alexander W. Forrester, L.R.C.P. & S.Edin., L.F.P. & S.G.
District Surgeon, Selnhwe, Matabeleland.

A CASE OF TOLERANCE OF ABDOMINAL SECTION IN TWO DIFFERENT PREGNANCIES.

Three years ago Mrs. M., aged 31, came to my out-patient room with abdominal enlargement. She was found to be about four months pregnant and to have an ovarian cyst of the right side about the size of a child's head.

The patient was admitted and the ovarian tumour removed. The method of suture was that of silkworm gut, including all layers, and although the patient made an uninterrupted recovery, she has since developed a slight hernia of the scar. There was no suppuration, and I put the hernia down to insufficient or non-seizure of the fasciæ by the sutures and the consequent absence of coaptation and union. However, she is now pregnant about three months, and three weeks ago I, knowing how she fared before, took her in and resutured the parietes in tiers with catgut and silkworm gut for the skin. She has done well, and union by first intention has occurred.

Perhaps points of interest are: (1) Toleration of two abdominal operations during two pregnancies, (2) resuture of hernia of incision during pregnancy.

There is an opinion abroad that it is advisable to leave hernia of the belly walls until labour is over, but I cannot see why careful aseptic union in layers of the parietes or careful radical operations on inguinal and femoral hernias should not succeed as well during the early months of pregnancy as at any other period, provided the wound heals *per primam*, and the anæsthetic be given carefully.

Wolverhampton. Frederick Edge, F.R.C.S.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

THE CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.

A SUCCESSFUL CASE OF GASTROTOMY FOR FOREIGN BODY IMPACTED IN ŒSOPHAGUS.

(By Flavell Edmunds, M.R.C.S., L.R.C.P., Honorary Surgeon to the Hospital.)

The following case seems worthy of recording, as, according to Mr. Treves's recent edition of *Operative Surgery*, the only two similar cases on record were performed by American surgeons, Dr. Richardson of Harvard and Dr. Bull of New York, in 1886 and 1887. About midnight on April 10th, 1900, T. S., aged 45, having as usual gone to sleep without removing his plate of false teeth (consisting of three teeth and three hooks, and measuring about 2 inches by 1 inch), woke feeling suffocated. After drinking he immediately felt a certain amount of relief in his dyspnœa, the plate evidently passing from the pharynx into the gullet. He was admitted to the hospital early in the morning of April 11th, feeling fairly comfortable, and having very little pain. Dr. Naylor, the house-surgeon, attempted the removal of the foreign body by means of a horsehair probang, but was unsuccessful, although on the first occasion the probang was felt to catch the plate. I saw the patient later in the day, and passed a probang into the stomach without meeting any obstruction. On the following day the man suffered from acute paroxysms of pain, referred to the epigastric region, with excessive tenderness over that area, but as no vomiting occurred it was concluded that the plate was impacted at the cardiac orifice of the stomach. After consultation with my colleagues, Dr. Symes and Dr. Green, I decided to attempt the removal of the foreign body through an opening in the stomach. Half an ounce of castor oil was given that night, with an enema next morning, and just previous to the operation the stomach was well washed out with boracic solution. On passing the tube for this purpose, Dr. Naylor distinctly felt an obstruction before the tube entered the stomach.

An oblique incision 2½ inches long was made about 1 inch below the costal border, to the left of the middle line. The stomach was at once found and held up into the wound by two silkworm-gut sutures passed through the serous and muscular coats only. Having packed it well round with sponges to avoid fouling of the peritoneum, I made an incision through the wall of the stomach, transversely to its long axis, sufficiently large to admit the finger. No trace of the plate was felt, so the opening was enlarged to about 4 inches, sufficient to admit the hand. On inserting the hand and passing the index finger into the œsophagus I could feel one of the hooks of the plate about two inches above the cardiac orifice. The plate was firmly fixed by means of two of the hooks to the œsophageal wall, but manipulation with long curved forceps passed along the finger released it, and it was removed through the stomach. The opening in the stomach was closed by a long continuous suture of fine silk for the mucous membrane alone, and the serous and muscular coats were brought into apposition by means of 30 or 40 Lembert sutures, also of fine silk. The parietal incision was closed by means of silkworm-gut sutures through the whole thickness of the wall. For three days following the operation, no food whatever was given by the mouth; thirst, which was a very troublesome symptom, was allayed by means of ice.

The strength was maintained by nutrient enemata, which were continued for six days. Hypodermic injections of morphine were needed to procure sleep. On the fourth day after the operation half-an-ounce of peptonised milk was given hourly by the mouth, and on the next day one ounce of milk with half-an-ounce of bovril were given alternately every two hours. On April 30th, seventeen days after the operation, the patient was taking solid food, and the week following he was taking ordinary meat diet. The temperature for the first ten days alternated between 99° and 100°, and after that fell to and remained normal. The wound was first dressed on the sixth day after the operation, and healed by first intention save for two small sutural abscesses which caused no trouble.

The remarkable feature of the case to me is that subsequent to the operation no pain whatever was complained of, either gastric or peritoneal, and the patient has been entirely free from vomiting and all dyspeptic symptoms. Now, seven weeks after the operation, he is following his occupation—that of a plumber—and feels in perfect health. The successful result of the operation was largely due to the constant attention of Dr. Naylor, the house-surgeon, and of the efficient nursing staff.

Professor Robert Koch, whose return to Berlin was mentioned in a recent number, had been absent for a year and a-half, during which he had been engaged in the study of tropical diseases. His investigations were made first in Italy, then in Batavia, and lastly in New Guinea. Translations of his reports on malaria in New Guinea have been published in the British Medical Journal. Professor Koch was accompanied in his expedition by Staff-Surgeon Ollwig.

If some experiments recently reported by Jousset to the Société de Biologie are to be accepted, the tubercle bacilli contained in tuberculous sputum are not absolutely killed when exposed to sunshine, but as tested with guinea-pigs become much less virulent.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

F. W. Pavy, M.D., F.R.C.P., F.R.S., President, in the Chair.

Tuesday, November 13th, 1900.

The After-Results in Forty Consecutive Cases of Vaginal Hysterectomy Performed for Cancer of the Uterus.

Dr. Arthur H. N. Lewers, who gave this communication, stated that the object of the paper was to record the after-results in 40 cases of vaginal hysterectomy for cancer of the uterus which had occurred in his practice up to the end of April, 1899. The 40 cases might be divided into groups as follows:—In 12 cases there had been no recurrence. In 18 cases there had been recurrence, and 4 cases had died. In 2 cases the nature of the disease could not be proved by examination of the specimens. In 3 cases no definite information was obtained whether the disease recurred or not. In 1 case the disease proved to be primary tuberculous ulceration of the cervix, and not malignant disease. Omitting one case, in which little more than a year had elapsed (without recurrence), there were 11 cases (or 27.5 per cent.) remaining well from two to more than seven years subsequent to the operation. The author believed that this high percentage was largely due to the careful selection of cases. His rule had been to examine under anæsthesia, and only to operate on those cases in which, according to the physical examination, the disease seemed to be limited to the uterus itself. In each of the 12 cases in which the disease had not recurred the specimen had been independently reported on by Mr. Targett for the Clinical Research Association, and his report was given in the paper. In each of the same 12 cases full details also were given of the evidence on which it was claimed that the disease had not recurred. On this point the evidence was more precise and in fuller detail than had been given previously over a series of cases. The conclusions arrived at from a consideration of the cases reported in the paper were: (1) That in a certain proportion of cases patients suffering from cancer of the uterus might be relieved by operation for periods of many years; in some cases for so long a time—seven years and upwards—that there seemed a probability that the relief might be permanent. (2) That the proportion of cases in which this result could be expected must remain very small so long as cases generally sought advice at a late stage only of the disease, and that consequently (3) the great desideratum was early diagnosis. Especially important was the more general recognition of the gravity of bleeding occurring after the menopause, or, at an earlier period of life, between the menstrual periods. It was almost equally important to bear in mind that patients suffering from cancer of the uterus might, and generally did, for a relatively long period, look quite well; they might be well nourished, and not infrequently excessively fat, and as regards the facial aspect appear to be in perfect health.

Professor H. Briggs (Liverpool) said the results described in the paper went further to establish the position of vaginal hysterectomy as an operation than his own. He had performed the operation in 83 cases. Of 57 cases of squamous epithelioma, 10 were living, 5 of these being malignant disease of the body; 5 of 47 cases of malignant disease of the cervix promised to be free from recurrence. The lack of observation of the discharges occurring about the time of the menopause was responsible for the delay in operation. Recurrence seemed to be more frequent in squamous-celled epithelioma than in malignant adenoma. His operative treatment was similar to that described in the paper.

Dr. Amand Routh had done 40 cases of vaginal hysterectomy, 14 being of the body and 26 being cancer of the cervix. Those of the body came earlier, and hence more of such cases were operable. His mortality was 3 in the 40, 2 of which died quite suddenly. Recurrence in cases of cancer of the body was rather less early than in cancer of cervix. In one case of cancer of the cervix, recurrence took place seven years later; in two cases there had been freedom for 8 and 5 years respectively. He never now used forceps in the operations if he could use ligatures. He did not operate if the broad ligaments or bladder were involved. He left the gauze packing in for seven to ten days.

Mr. Bowreman Jessett had performed the operation in 150 cases. He had had a good percentage of cases practically cured, that is, relieved from five, to seven, or nine years. The practical outcome of the paper was the indication of the importance of early diagnosis. It was the medical man's duty to insist on an early examination. The operation was not a dangerous one, its mortality not being more than 5 per cent. It was sometimes a very difficult operation. He asked why the author of the paper preferred forceps to ligatures. The difficult cases were those with extensive adhesions. A danger in using the forceps was the establishment of a recto-vaginal fistula, and another was of tearing into the bladder. In using forceps he had on two occasions nipped the ureters. He thought it not an uncommon thing for fibroids to take on a malignant action, and these he thought were the most favourable cases. Carcinoma of the body of the uterus was not in his experience easy to recognise, and only with certainty by microscopic examination after curetting. One of the very first symptoms was a slight hæmorrhage after coitus. The sacro-iliac bands were involved, he had found, in only a very small number of cases. The treatment of the peritoneum was important; it had a tendency to curl up and give trouble later. He was accustomed to draw the flaps of peritoneum down into the vagina.

Dr. Charles Ryall referred to the frequency of recurrence of cancer of the cervix as compared with that of the fundus. In the former it was possible that the wound was infected at the time of the operation. His use of the actual cautery might account for the excellent results Dr. Lewers had obtained. He gave an instance of infection of the abdominal wound from a cancerous uterus. He thought relief for even six months justified the palliative operation.

Dr. Walter Tate had performed the operation over 70 times. He thought it should not be limited to those cases alone where the disease was definitely localised to the uterus, but also in cases of slight thickening of the broad ligaments if the uterus could be drawn down easily, when much relief might be given. The mortality from the operation had been only 4 in his 70 cases.

Dr. Champneys said cancer was always a disappointing disease, but Dr. Lewers's results showed that the operation should not be given up. A rectal examination was very valuable in making the diagnosis. He had begun with ligature and had come to use forceps, but the serration of the blades should be diagonal. If the disease had gone beyond the uterus the operation should not, he thought, be done. In advanced cases little if any good resulted, and the relief was not worth the risk. He could not understand fibroids frequently taking on a malignant action, although the two might coincide.

Dr. Herbert Spencer referred to reinfection of cancer, but he knew of no case so conclusive as that of the infection of the abdominal wall mentioned by Dr. Charles Ryall. This fact of infection led him often to prefer the high amputation of the cervix by the galvano-cautery. This operation was practically a safe one. Foreign operators who cut up the uterus very much had frequent cases of recurrence, and therefore in cancer cases he thought the cautery preferable lest implantation should occur on the raw surfaces.

Dr. Lewers, in reply, thought cancer of the body was found rather more frequent at an early stage than that of the cervix. In the early stages of both there were probably no symptoms at all. Some of his best cases in regard to recurrence were of the high amputation of the cervix, one having thirteen years and another twelve years of freedom, but these were cases in a much earlier series. He would prefer to use ligatures, but it was difficult to apply them so as to ensure that hæmorrhage would be prevented. The gauze packing was left in for four days until the forceps were taken off. If the uterus were so big that it could not be removed by the vagina, it was probable that vaginal hysterectomy was not indicated, and the abdominal operation was preferable. He knew nothing about fibroids becoming malignant. Results described that evening showed that the glands were not at any rate always infected.

CLINICAL SOCIETY OF LONDON.

Sir R. DOUGLAS POWELL, Bart., M.D., F.R.C.P., President, in the Chair.

Friday, November 9th, 1900.

SEQUEL TO A CASE OF HYDATID OF THE LIVER, SHOWING THE RESULTS OF ABDOMINAL SECTION ON ASCITES.

DR. NORMAN DALTON read a paper on the above subject.

The patient was a girl who, at the age of 11 years, was under the care of Dr. Barlow, at Great Ormond Street Hospital, for hydatids of the liver. While in hospital she passed hydatids *per rectum*, and expectorated bile from the right lung. She recovered, and remained well until the age of 16, when ascites set in, and she was admitted into King's College Hospital under Dr. Dalton. After a time it became necessary to tap the abdomen every fortnight: an exploratory abdominal section was therefore performed by Mr. Watson Cheyne, in the hope that a new hydatid, or some remains of the old, might be found and removed. However, nothing which could be removed was found; and no adhesions were present except above the liver round the fistula into the lung. The wound healed well, but paracentesis was necessary twice in the fortnight after the operation. After this, however, the ascites did not recur, and the patient was quite well for five years. A small quantity of fluid, however, remained in the hypogastrium, while the rest of the peritoneal cavity was thought to be obliterated by adhesions. In May, 1899, the patient died at the age of 23 of septic peritonitis, apparently due to bruising of the intestines in a ventral hernia at the site of the operation wound during a strong muscular effort. *Post mortem* the old cyst was found in the liver, communicating below with a dilated bile duct, and above, through the diaphragm, with a dilated bronchial tube. Glisson's capsule was greatly thickened, and the liver showed a cirrhosis which had spread from Glisson's capsule inwards. The peritoneal cavity was obliterated by old fibrous adhesions, except in the hypogastrium, where there was now a collection of turbid fluid. There were also a few loculi among the intestines, and these contained pus. The omentum and mesentery were short, thick, and fibrous, showing chronic peritonitis.

It would appear that the almost complete cure of the ascites was due to the formation of extensive adhesions, which Dr. Dalton believed would not merely stop the ascites by mechanically filling up the peritoneal cavity, but would relieve the portal congestion by opening up communications between the portal capillaries and those which joined the veins in the abdominal wall, diaphragm, etc. Dr. Dalton also thought that the cause of the extensive adhesion was the exposure to the air of the endothelium covering the peritoneum. In ascites this endothelium was ill-nourished, and any irritation might bring about its detachment, and so lead to the formation of adhesions. In support of this idea was the fact that cases of tuberculous peritonitis, in which ascites was present, were often cured by abdominal section; and presumably in those cures extensive adhesions formed. This case distinctly encouraged the plan of treating the ascites of cirrhosis of the liver by abdominal section, because for the last few years of the patient's life the hydatid was practically cured, and the condition was really that of cirrhosis of the liver.

The PRESIDENT remarked that the peritoneal adhesions were inferred from the subsequent uneven distribution of the aseitic fluid. He mentioned such a case where after several tappings the fluid quite disappeared. In that case also the patient, a heavily-built man, felt something give way in the abdomen, and died of acute peritonitis. No necropsy was allowed, but he had probably lacerated some adhesions, giving rise to hæmorrhage. The adhesions, he suggested, by permitting collateral circulation, relieved the portal congestion.

Mr. HOWARD MARSH said that Mr. Morison of Newcastle had operated in such cases for the purpose of producing such adhesions and obtaining a collateral circulation.

Dr. ROLLESTON referred to a paper on the subject presented by Mr. Turner and himself a year ago to the Medical Society of London, in which it was shown that of 15 such cases operated upon 5 had been quite cured, some had died at once, and the remainder were temporarily relieved. In that paper they had accepted the hypothesis that the adhesions partly explained the diminution of the ascites, but other symptoms were also relieved. The result of short-circuiting the portal vein into the vena cava in animals was to produce a condition akin to uræmia. Mr. Morison's patients also after the operation had been very ill at ease. Probably the peritoneal adhesions brought more blood to the surface of the liver and increased its nutrition, whilst the deviation of part of the portal stream from the liver enabled the organ to discharge its functions better.

Dr. ALEXANDER MORISON suggested that the adhesions acted by lessening the size of the abdominal cavity; collaterally, increasing the aspirating power of the thorax in inspiration, and thus clearing the liver of some of its surplus blood. A frequently successful method was to compress the abdomen by means of adhesive plaster encircling it, and worn for a long period. He described the case of a young patient with ascites, who was many times tapped, but whose abdomen always subsequently refilled until the recurrence was at once arrested by the application of the plaster. In another case, aged 18, after repeated tappings, the plaster was applied, the urinary secretion immediately increased, and the ascites did not recur.

Dr. TOOGOOD related the case of a woman, aged 50, admitted to the Lewisham Infirmary in 1898 with ascites, hæmatemesis, and melæna.

She was tapped every fortnight for three months, about 68 pints being removed each time. He then opened the abdomen, and found the omentum firmly attached to the abdominal wall. He scarified this and put in a few sutures, and the patient did very well. Six months later it was necessary again to open the abdomen, as there was a strangulated hernia. The same thing occurred four months later, since when (nearly two years ago) there had been no recurrence of the ascites. He thought the adhesions increased the aspirating power on inspiration.

Dr. NORMAN DALTON, in reply, pointed out that for five years much blood which should have gone through the liver had passed by way of the adhesions without any toxic symptoms. One serious consideration in connection with the operation was the subsequent liability to hernia, of which the patient had apparently died.

DIASTOLIC CARDIAC SOUND CAUSING SPURIOUS REDUPLICATION OF SECOND SOUND AT APEX (SOMETIMES CALLED THE THIRD SOUND OF THE HEART).

Dr. T. STACEY WILSON discussed the causation of the sound, and advanced the following suggestions as to its mode of production: (1) The third sound of the heart was not produced by the first inrush of blood into the ventricle. (In some cases of mitral stenosis he believed that a sound or a murmur might be produced at the mitral orifice by this inrush, but it was, of course, synchronous with the second sound.) (2) During the expansion movements the segments of the mitral valve were presumably kept tense by the activity of the expanded muscles, but on the onset of relaxation they were free to move. If, therefore, a powerful enough stream of blood was still flowing through the mitral orifice at the onset of relaxation, it would be apt to move the valve segments with an audible sound at this point of time. (3) If this view were correct, the occurrence of a third sound was evidence that the auricle was unable to empty its contents into the ventricle as rapidly and completely as normal. (4) This prolongation of the flow would occur: (*a*) where there was a narrowing of the mitral orifice; or (*b*) where the auricle held more blood than the ventricle could draw through the normal mitral orifice during the expansion movement. (5) There might, therefore, be a third sound occurring; (*a*) in mitral stenosis; (*b*) where the auricle was so dilated as to hold more blood than the ventricle could contain; (*c*) also, probably, where the muscle of the ventricle was too weak to develop an amount of aspiration sufficient to empty the auricle as rapidly as normal. In support of his thesis, Dr. Stacey Wilson showed cardiographs from several cases of mitral disease in which the third sound of the heart was well marked, and dwelt at some length upon one case in particular, which threw considerable light upon the cause and meaning of this sound.

The case was that of a girl who suffered from mitral regurgitation and pericarditis, and to whom he had briefly referred in his paper read at the Ipswich meeting of the British Medical Association. In this case there was a loud third sound, and the cardiograph was of a peculiar description. Instead of the tracing showing the usual small recoil wave following the diastolic fall of the lever of the cardiograph, there was an extremely prominent one. This rise, occurring during the period of ventricular relaxation, was sharp and pointed, and often nearly as high as the systolic rise itself. This was evident all over the heart, and its occurrence seemed to give conclusive evidence that after the onset of muscular relaxation, the ventricle was distended and subsided again. The force producing this diastolic distension of the ventricle was in his opinion its own aspirating action upon the blood in the auricle. The child died of ulcerative endocardis, and at the *post-mortem* examination it was found that there was no stenosis of the mitral valve, in spite of the well marked third sound. The valve was, however, to all appearance, incompetent. There was no dilatation of the left ventricle, and its content was only the normal 90 c.cm. The left auricle, on the other hand, was greatly dilated, holding 164 c.cm. The absence of compensatory dilatation was no doubt due to an adherent pericardium, and the absence of compensation explained certain anomalous symptoms which existed during life. The largeness of the auricle in comparison with the ventricle explained the peculiar wave in the cardiograph. At the end of the ventricular systole the whole of the 164 c.cm. contained in the auricle would be set in motion by the ventricular aspiration, but as the ventricle could only hold 90 c.cm.

at the most, the remainder would try and force its way into the ventricle (in consequence of its momentum), and so cause the temporary dilatation of the ventricle which was shown in the cardiograph.

This case, in Dr. Stacey Wilson's opinion, clearly showed how compensatory dilatation of the ventricle was attained in mitral regurgitation. Brief notes of other cases illustrating the theory here advanced were also read, and cardiographs shown.

Dr. Rolleston was glad that the author had been able to confirm by cardiographs what he himself, in conjunction with Professor Roy, had suggested in 1887, from results obtained by means of Professor Roy's instrument for estimating the endocardial pressure in animals, and which showed that the suction-pump action of the ventricles was a certain and definite thing. In their paper they had suggested that the mid-diastolic murmur was due to the suction-pump action. Dr. Galabin had also investigated the matter, and published his results in the *Guy's Hospital Reports* for 1873, concluding that the murmur was due to irregular contraction of the left auricle. The author's cardiographs apparently confirmed the view, generally held in London, that the third sound in cases of mitral stenosis was probably due to the suction-pump action.

Dr. Sansom objected to the term "third sound" of the heart, as it did not occur in healthy subjects. It was an interpolated sound that occurred during the diastolic period.

Dr. A. Morison would draw a hard-and-fast line between the cantering murmur and the reduplicated sound at the apex, which also differed greatly in tone. He urged that a reduplicated sound at the base might be audible also at the apex, or in the back, but not in the pulmonary area. He declined to admit that it was produced in the arterial orifices.

Dr. Seymour Taylor would arrange the diastole, clinically, in three periods—early, middle, and late; and compared it, for teaching purposes, to people entering a theatre. There was a rush when the doors were opened, then a smaller inpour, with a final rush before the performance began—the last period being that of the auricular systole. The intensity of a murmur depended upon the roughness of the surface and the muscular force behind it, so that a loud murmur indicated that the heart was acting well. In certain cases in low states of health the murmur disappeared, returning when the patient was put to bed and nursed. If the author could show with his cardiograph in these cases that the elastic recoil was wanting, it would lend support to his theory.

Dr. Forbes Ross suggested that the sound was probably due to the impact of the heart against the chest under the hydraulic recoil action of the filled aorta.

Dr. Stacey Wilson, in reply, could not admit that the sound was caused by the impact of the apex against the chest wall; moreover, it was not a murmur, but a sharp, short sound.

MEDICAL SOCIETY OF LONDON.

Clinical Evening.

John H. Morgan, F.R.C.S., President, in the Chair.

Monday, November 12th, 1900.

Chronic Follicular Colitis.

Dr. E. Cautley showed a patient whom he believed to be suffering from this disease. A girl, aged 4½ years, with a good past history, had suffered for about eleven months from wasting, abdominal pain, and diarrhœa. For two weeks blood had been passed. Nothing but slight enlargement of the liver was to be found on physical examination. The stools were loose, offensive, and contained small blood clots of the size of hemp seeds. There was no pyrexia, but the child vomited occasionally.

Mr. F. C. Wallis suggested the possibility of tuberculous peritonitis.

Dr. A. Vœlcker asked if there had been any œdema of the hands or feet, such as sometimes occurred in similar cases. He had found good results in such cases from the administration of creosote with small doses of castor oil.

Dr. Cautley thought the character of the stools negatived tuberculous enteritis; œdema had not been noticed.

Mollities Ossium.

Mr. T. H. Kellock showed a girl, aged 7, who was nursed by the mother for three days, and later fed on suitable diet. The left thigh, when 5 months old, had fractured; later the tibia, the humerus, and the femur of the other side more than once, and several other long bones, preceded in many instances by localised pain. She was much undersized. There was slight right ptosis. The long bones of the limbs were tender and bent, and showed evidence of united fractures. The teeth were ill-developed and carious. There was no evidence of visceral disease. The urea and phosphates of the urine were both double the normal.

Mr. Muirhead Little demonstrated specimens of a case which he had described as late or continued rickets, and had shown at the Society last year.

The President alluded to the case of a boy under his care two years before, who exhibited numerous fractures of almost all the long bones. The specimens shown by Mr. Muirhead Little gave ground for calling the condition rickets.

Vascular Swelling Connected with the Thyroid.

Dr. H. A. Caley showed a man, aged 56, with a pulsating non-expanding swelling on the right side of the neck associated with some pain radiating up to the ear and down the arm, and some dyspnœa on exertion. There was a marked diastolic rebound and a loud second sound. Over the upper part of the chest were signs either of dilatation of the aorta or aneurysm. The radial pulses were unequal, but not those of the carotids. There seemed to be evidence of dilatation of the innominate artery. The swelling was freely movable with the thyroid. It was diminishing in size under potassium iodide. He discussed the possibility of an aneurysm of the inferior thyroid artery, sarcoma of the gland, and of a cystic goître. He inclined to the former view.

Dr. William Ewart remarked on the large size of the swelling without any evidence of extension down into the thorax.

Mr. F. C. Wallis was inclined to exclude the likelihood of aneurysm of the inferior thyroid artery. He thought the swelling was probably a cystic swelling of the thyroid, and that the pulsation was communicated.

Dr. Caley said that the intra-thoracic condition was quite distinct from that of the thyroid gland, and that the localised character of the pulsation, the diastolic rebound, and the accentuation of the second sound were adverse to the theory of communicated pulsation.

Congenital Locomotor Ataxia.

Mr. C. C. Weeks showed a boy, aged 8½, who had incontinence of urine and general restlessness. There was evidence of congenital specific disease in the family. There was general motor inco-ordination, the ataxia being worse in the dark. He had had pains in the abdomen and lower limbs, sensations of pins and needles in the feet, and doubtful hyperæsthesia over the upper part of the abdomen. The knee-jerks were absent, the pupils reacted rather sluggishly to light. There were no trophic changes and no nystagmus. The father showed all the signs of locomotor ataxia. There were no other cases of the same condition in the family.

Adenoma Sebaceum.

Dr. Morgan Dockrell showed two cases of this condition—one in a young woman and another in a child. In one of the cases there was a history of a fit, but in neither of any mental dulness.

Dr. Galloway had examined a case microscopically, and had found distinct adenomatous overgrowth. He took exception to the name of adenoma sebaceum.

Dr. Eddowes referred to a case he had at present under care in which there was no loss of intelligence as had been described in other cases.

Hyaline Degeneration of the Skin.

Dr. Dockrell also showed a girl, aged 20, with a number of waxy translucent tumours just under the eyelids. The case showed a hyaline degeneration of the connective tissue of the skin. He read a letter from Dr. Unna, of Hamburg, giving his opinion that the microscopic specimens revealed a special and new condition.

Dr. Galloway alluded to several similar cases described as xanthelasma and colloid milium that he had seen clinically, but Dr. Dockrell's microscopic specimens stained with

aniline dyes revealed a new degeneration of the elastic tissue. He suggested that changes induced by the microscopic processes should be excluded.

Baker's Cyst of the Leg.

Mr. F. C. Wallis showed a man with his left knee-joint full of fluid and an apparently distinct cystic swelling on the outer side of the knee. There was evidence of specific disease. Microscopic and bacteriological examination gave no further information.

Alopecia Areata with Baldness.

Dr. Eddowes showed a case exhibiting ordinary coronal baldness associated with alopecia areata.

Results of an Untreated Fracture.

The President showed a boy, aged 16, who in jumping a fence was suspended for a time by the foot. He had pain, but without special treatment returned to work. After eighteen months he exhibited a swelling due to incurvation of the lower end of the tibia due to a slowly united fracture.

OBSTETRICAL SOCIETY OF LONDON.

Alban Doran, F.R.C.S., President, in the Chair.

Wednesday, November 7th, 1900.

An Anomalous Case of Ectopic Pregnancy, probably Ovarian.

Dr. E. O. Croft read a paper on this subject. The history and physical signs pointed to a diagnosis of some form of extra-uterine gestation, and the sac and its contents found entire were removed by abdominal section. There was free bleeding from rupture during operation, and although it was soon controlled by ligature of the broad ligament the patient did not rally, and died a few days afterwards. The necropsy revealed an absence of peritonitis, and the pelvic organs were removed for further examination. The sac before rupture contained the complete ovum—fœtus of about four months' growth, with placenta, membranes, and amniotic fluid. There was no blood or clot in the sac. Its relations were those of an ovarian tumour with short pedicle. The surface of the cyst contained follicles (? Graafian), and no separate structure corresponding to an ovary was evident on the same (right) side. The microscopic evidence of ovarian tissue in the wall was uncertain. The Fallopian tube was present and uninjured, the fimbriated end free and patent, and the layers of the mesosalpinx undisturbed. The uterus was intact, and the appendages on the opposite (left) side were normal. The possibility of the pregnancy being ovarian was suggested.

Repeated Ectopic Gestation.

Dr. A. H. N. Lewers read a paper on a case of repeated ectopic gestation in the same patient, on whom laparotomy was performed on each occasion.

The patient, who was 29 years of age, had been the subject of ectopic gestation on two occasions. There had been no uterine pregnancy. The first ectopic pregnancy occurred early in 1894. Laparotomy was performed in March, 1894, and the left Fallopian tube was removed, containing a tubal mole. This specimen was reported on by a Committee of the Obstetrical Society[1]. The ostium of the tube was open, but not dilated. The case on that occasion was one of threatened tubal abortion. In May, 1900—that is, after an interval of a little more than six years—the patient was again the subject of ectopic gestation, and laparotomy was again performed. The parts removed consisted of the right Fallopian tube and ovary, and a tubal mole. The ostium of the tube was widely dilated, and the mole had either been expelled into the peritoneal cavity, or was lying loose in the dilated ostium, at the time of the operation; so that on the second occasion the case was one of complete tubal abortion. The patient recovered well on both occasions.

Reference was made to Dr. J. Haig Ferguson's paper on Repeated Ectopic Gestation in the same Patient,[2] from which it appeared that while a considerable number of cases had been reported of repeated tubal pregnancy in the same woman, laparotomy performed twice on the same woman was mentioned only in 14 cases. According to the same authority the interval between the ectopic pregnancies in the same patient had varied from six weeks to five years. In the author's case the interval, which was more than six years, seemed therefore to have been exceptionally long. Reference was also made to Dr. Edgar's paper on the same subject, also published in the *Edinburgh Medical Journal* for 1899.

[1] *Obstet. Soc Trans.*, vol. xxxviii, p. 87.
[2] *Ed. Med. Journ.*, 1899, p. 145.

Dr. Peter Horrocks thought that the specimen shown by Dr. Croft was well worthy of further examination and report by a subcommittee. He did not think the fact that ovarian tissue was not found in all parts of the wall was proof that it was not an ovarian ectopic gestation; neither could he see any *a priori* reason why an ovum should not become impregnated and develop whilst still in a Graafian follicle. Referring to Dr. Lewers's case, Dr. Horrocks said he had seen one or two instances of such repeated tubal gestations. He related a case in which he had removed a ruptured tubal gestation sac eight years ago and again six years ago. Dr. Jolly (Sydenham) had diagnosed the condition on the second occasion, but Dr. Horrocks rather doubted its probability owing to the extreme rarity of a repeated tubal gestation. The diagnosis was, however, confirmed by operation, and verified by chorionic villi being microscopically proved to be present.

After some remarks by Dr. W. S. A. Griffith,

Mr. Bland-Sutton said he could not satisfactorily discuss the question of ovarian pregnancy on a specimen in which the gestation had gone so far as in Dr. Croft's specimen. He would be convinced of ovarian pregnancy when he saw "an early embryo and its membranes contained in a sac in the ovary." This he considered a fair requisition, and corresponded with the facts on which the present knowledge of tubal pregnancy was based. In regard to Catherine van Tussenbroek's specimen of suspected ovarian pregnancy, he could state, after careful study of the paper and the figures, that there was no evidence of chorionic villi, and nothing conclusive as to the presence of an embryo. Part of a true corpus luteum was, however, distinctly displayed in the drawing. Till he had obtained the proofs he desired, he must remain a very active sceptic on the subject of ovarian gestation.

After a few remarks by Dr. Heywood Smith,

The President said he agreed with Mr. Bland-Sutton that van Tussenbroek's evidence, though important, was not conclusive. He himself had indicated sources of error, in accounts of cases of alleged primary ovarian gestation, in his notes on Dr. Arthur Beale's case of minute fœtus found in the peritoneal cavity. The notes were published.[3] Still, it was unscientific to insist that this form of gestation was impossible. Perhaps Dr. Croft's specimen, which would be examined by a committee, might be quoted in future days as historical, being, with van Tussenbroek's report, the evidence which first convinced scientific observers of the possibility of primary ovarian gestation. The fact that both Fallopian tubes were normal did not preclude the possibility of very recent tubal gestation in one of them. This fact was interesting in relation not only to Dr. Croft's but also to Dr. Lewers's case. The President had reported a case where repeated gestation had probably occurred within a very short interval, remarking that "tubal abortion very early in pregnancy need not necessarily spoil the tube for its functions, nor prevent subsequent pregnancy in its canal."

Dr. Croft, in reply, said he would much appreciate the opinion of a Committee appointed to examine further and report on the specimen. He referred briefly to a case that had occurred in the practice of a colleague since the paper had been sent in. The patient was operated on for abdominal hæmorrhage thought to be due to a ruptured tubal gestation. On the abdomen being opened and the blood removed, the tubes were found normal and free, but the bleeding was found to proceed from a small ruptured cavity in an ovary of ordinary size. The cavity proved to have the structure of a corpus luteum, and its contents to be a small ovum presenting on microscopic examination definite evidence of chorionic villi. He thought this specimen, which he had himself seen, would be likely to accord with the criteria of a primary ovarian gestation as stated by Mr. Bland-Sutton. Dr. Croft hoped that he would be able to persuade the owner, Mr. G. P. Anning, of Leeds, to bring his specimen before the Society at a future meeting.

Dr. Lewers also briefly replied.

Cases and Specimens.

The following were communicated: Dr. A. E. Giles: Note on a case of fibromyoma of the uterus in a patient aged 23; with remarks on enucleation and myomectomy.—Mr. J. D. S. Nodes and Dr. Frank Hinds

[3] *Obstet. Soc. Trans.*, 1897.
[4] British Medical Journal, vol. ii, 1891, p. 789.

(Introduced by Dr. Herbert Spencer): Note on a fatal rupture of an aneurysm of the splenic artery, death occurring immediately after labour.—Mr. J. Bland-Sutton: A tubal mole in process of expulsion from the fimbriated end of the tube (progressing tubal abortion).—Mr. J. H. Targett: Acute suppurative ovaritis showing streptococcal infection, with microscopical section.—Dr. Robert Wise: A new douche.—The specimens were discussed by the President, Dr. Robert Boxall, Dr. W. S. A. Griffith, Dr. G. E. Herman, Dr. P. Horrocks, Dr. Amand Routh, and Dr. Herbert Spencer.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

G. Anderson Critchett, M.A., F.R.C.S.E., President, in the Chair.

Thursday, November 8th, 1900.

Influence of the Eye on the Growth of the Orbit.

Dr. W. Ernest Thomson read a paper on the determination of the influence of the eye on the growth of the orbit by experimental enucleation of one eye in young animals. The research was undertaken in order to determine whether removal of an eye in early life resulted in faulty development of the orbit. Such faulty development had been both asserted and denied, although experimental evidence had seemingly been hitherto wanting.

One eye in a series of rabbits was enucleated under ether about the twentieth day of life. The animals were kept for periods varying from six to eight months, and were then killed. The orbits were carefully measured and the results found to be a very marked difference between the normal and the anophthalmic side. The deficiency was very uniformly distributed over the length, height, and depth of the orbit, and amounted to something like 10 per cent. in the macerated skull and from 10 to 15 per cent. in the wet condition. It thus appeared that the greater fault was in the development of the bones, and the lesser in that of the soft tissues. Lantern slides were shown which brought out the various points, and the skulls were themselves exhibited.

The President thought the paper one of great interest and practical importance. He strongly advocated the insertion of artificial eyes early.

Dr. Gruber thought that the attachment of the muscles to the eyeball and the increased blood supply consequent on the normal functions of the orbit being exercised had far more to do with the development of the orbit than had the mere presence of an artificial eye in the conjunctival sac.

Dr. Thomson briefly replied.

Etiology of Lamellar Cataract.

Mr. Norman G. Bennett read a paper on this subject. He began by referring to the measurements of lenses taken by Bernand Duband and Treacher Collins, either ophthalmoscopically during life or after removal of the lens, from which it appeared that the diameter of the opaque zone was never larger than that of the lens at birth, and that, therefore, either the lesion was occasioned before birth, or the part affected was not the most peripheral at the time of its occurrence. He then described the structure of the hypoplastic teeth usually associated with lamellar cataract, and detailed the dates of calcification of the two dentitions according to the investigations of Röse, showing what parts of the teeth might be affected by any cause acting during the first two years of life.

Mr. Bennett described minutely the teeth as they existed in 22 cases of lamellar cataract which he had collected. They naturally fell into two classes on the basis of the extent of enamel affected, but in both classes it appeared evident, if the facts were taken in conjunction with the dates of calcification as investigated by Röse, that the affection had its commencement almost immediately after birth. Its period varied considerably in one class of case, and appeared to be about two years in the other larger class. The exact causation had long been a matter for discussion. After referring to the various causes that had been suggested from time to time, Mr. Bennett described a large number of cases of hypoplastic teeth, showing that among those not associated with lamellar cataract the same uniformity of type was not met with, the determining cause of the defect obviously having occurred at a much later date in a large number of cases. From a number of cases with definite histories he showed that this latter type of tooth was frequently, though not always, the result of an exanthematous fever, whereas those more frequent cases of teeth affected soon after birth were often associated with a history of convulsions and general disturbance of health of an indefinite kind. Sometimes the teeth would have two or more horizontal depressions corresponding with a series of definite attacks of illness.

The inference was, then, that lamellar cataract was a disease of early infantile life occasioned by some general derrangement of health, the most probable being errors of diet and nutrition. In emphasising this conclusion, Mr. Bennett referred to the developmental similarity between lens and enamel, and cited an opinion of Mr. Collins to show that the inferences he drew were not necessarily inconsistent with those afforded by the measurement of lenses referred to above, but that lamellar cataract might be the result of contraction of the nucleus of the lens some time after birth.

The President asked Mr. Bennett whether he had noticed the disease to occur in many members of the same family, and he recounted a case which had occurred in his own practice in which there was a very strong family history. The father suffered from lamellar cataract, while two of his children were affected with the disease; he had or had had seven cousins affected, as well as one niece and two sisters.

Mr. Treacher Collins stated that he had investigated 10 cases of congenital cataract, but in none of them was the enamel defective.

Mr. John Griffith expressed his strong opinion that the disease was a congenital and not an infantile one.

Mr. Bennett briefly replied, and in answer to the President's question he stated that he had not carefully investigated the family history.

Card Specimens.

The following card specimens were shown:—Mr. Simeon Snell: Epithelioma of the cornea. The patient was a soldier aged 45, with a history of injury seven years ago. In May, 1898, it was removed, but it recurred. Mr. Snell first saw the patient in August, 1900, when the growth filled the interpalpebral space. The eyeball was enucleated, and the tumour shown to be an epithelioma.—Mr. John Griffith: Specimen of osteosarcoma of the orbit.—Mr. Treacher Collins and Mr. Vernon Ford: Case of bullet wound of the orbit followed by blindness of both eyes. The patient was with Admiral Sir E. H. Seymour's expedition for the relief of Pekin. He was shot through the head with a bullet, and it was found that in one eye the choroid was ruptured, while in the other the retina was detached.—Mr. A. W. Ormond: Chancre of the upper lid at the retrotarsal fold.

BRITISH GYNÆCOLOGICAL SOCIETY.

H. Macnaughton-Jones, M.D., ex-President, in the Chair.

Thursday, November 8th, 1900.

Some New Methods in Pelvic Operations in the Female.

Mr. Rutherford Morison (Newcastle-on-Tyne) read a paper and gave a lantern demonstration on this subject. The operations considered were as follows: 1. *Abdominal resection of the sigmoid or upper portion of the rectum.*—This operation was intended for cases in which suppuration of the left uterine appendages involved the bowel to such an extent as to demand its removal or in which the abdomen was opened for a cancerous growth of the sigmoid in mistaken diagnosis for a diseased and enlarged ovary. The steps of the operation were:

(1) The diseased bowel is excised: (2) a glass bobbin with indiarubber tube attached is tied tightly into the upper end of the sigmoid flexure: (3) the indiarubber tube is passed down from above through the lower cut end into the rectum, where it is aided to pass through the anus by the finger of an assistant; (4) the tube is drawn upon till the ligature on the upper cut end of the bowel is inside of the lower cut end of the bowel; (5) a ligature is then passed round, immediately below the lower cut end, and tightly tied; this makes the junction watertight; (6) the tube is again pulled upon, whilst the lower portion of the bowel immediately below the button is steadied till by traction from above a short intussusception is produced. This is maintained by a few Lembert sutures. In four to eight days the ligatured sloughing bowel separates, and the tube is thus released.

He had done this operation 14 times, in 2 cases for complicated pyosalpinx, and in 12 for malignant disease; 7 died; the percentage mortality was therefore high, but might be diminished by avoiding the mistake he had made of performing this operation in cases of obstruction with loaded colon, for experience had taught him that in these cases the colon should be emptied by a preliminary colotomy before a radical operation was attempted. 2. *An operation for certain forms of parametric abscess.*—Mr. Morison divided cases of pelvic cellulitis into three classes: (*a*) The floor of the broad ligament is involved; the abscess points towards the vagina. (*b*) The cellular tissue of the broad ligament between its peritoneal folds is invaded; the abscess points above Poupart's ligament. (*c*) The lymphatic vessels and glands alongside the iliac vessels are affected, and the abscess is found high upon the back wall of the pelvis, or in relation to the psoas and iliacus muscles. In the third form the pus was out of reach from the vagina, and having had two fatal cases in which he evacuated the pus by opening the abdomen, he devised the following plan:

The abdomen is opened by an incision 3 or 4 inches long, made in the

middle third of a line drawn from the centre of the back of the ilio-costal space behind to 1 inch above the symphysis in front. Through this incision the diagnosis is confirmed by palpation of the uterus, ovaries, and tubes, and the relations of the abscess are ascertained. The incision is next prolonged to the back of the ilio-costal space, through the oblique and transversalis muscles, leaving the transversalis fascia and peritoneum intact. The peritoneum and fascia are then held forward with forceps, and with the left hand in the abdomen as a guide, the index finger of the right hand introduced posteriorly opens the abscess by bluntly perforating the transversalis fascia under the thickest part of the swelling. A drainage tube and iodoform gauze packing round it complete this part of the operation.

Twenty cases operated on by this method had all recovered. (3) *The control of the uterine arteries in abdominal hysterectomy.*—Since completing his notes he had found that his plan was neither new nor peculiar to himself. The special point about it was that the uterine arteries were seized with forceps and the uterus cut away before the vessels were ligatured. (4) *Operation for incontinence of urine in the female.*—In a case of incontinence with a patulous urethra, he performed the following operation:

An incision 1 inch long was made in the middle line of the abdomen midway between the umbilicus and the symphysis down to the peritoneum. The patient was then placed in the lithotomy position, and a circular incision was made round the orifice of the urethra. A second incision was made through the anterior vaginal wall along the course of the urethra, and for 1 inch on to the base of the bladder. The urethra and neck of the bladder were then entirely separated. A pair of closed hæmostatic forceps was next passed down from the opening above the pubes close to the pubic symphysis and into the vagina; the end of the urethra was caught in the forceps, drawn upwards, and attached to the skin of the incision in the abdominal wall. The remainder of the incision was closed round the urethra, and an indiarubber catheter was tied in the bladder and projected from the anterior abdominal wall. On the seventh day the dressings were dry and the wound was healed.

He had only hoped to make a continent bladder which could be readily emptied by the catheter, but more had been gained, for the bladder would now hold 1½ pint of urine against every effort to make it leak, such as coughing, straining, and alterations in posture; and when the patient was in good form she could easily and entirely empty it by voluntary effort.

The paper was discussed by Dr. HERBERT SNOW, Mr. SKENE KEITH, Dr. P. Z. HEBERT, Dr. WILLIAM TRAVERS, Dr. HEYWOOD SMITH, Dr. E. A. NEATBY, Mr. CHARLES RYALL, Dr. R. H. HODGSON, Dr. ARTHUR GILES, and Dr. MACNAUGHTON-JONES; and Mr. RUTHERFORD MORISON replied.

SPECIMENS.

The following were shown:—Dr. R. T. SMITH: Case of degenerating fibromyoma.—Mr. CHARLES RYALL: Case of hysterectomy for fibromyoma.—Dr. MACNAUGHTON-JONES: (1) Case of hysterectomy for fibromyoma; (2) case of broad ligament cyst. In the discussion on these specimens the following speakers took part: Dr HEYWOOD SMITH, Dr. HERBERT SNOW, Dr. ARTHUR GILES, Dr. J. MACAN, and Mr. RUTHERFORD MORISON.

COMMUNICATION.

Dr. MACNAUGHTON-JONES read a short communication on a case of salpingo-oöphorectomy.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

A. G. MILLER, M.D., F.R.C.S., President, in the Chair.

Wednesday, November 7th, 1900.

OPERATIONS FOR UNDESCENDED TESTICLE.

PROFESSOR ANNANDALE read a paper on the operations for congenitally misplaced and undescended testicle, with notes of two cases of congenital deficiency of the testicle, which will be published.

The paper was discussed by Professor CHIENE, Mr. JOHN SHAW MACLAREN, Mr. STILES, Dr. BALLANTYNE, and Dr. SHENNAN; and Professor ANNANDALE replied.

UNUSUAL MULTIPLE TUMOURS.

Mr. COTTERILL and Dr. D. A. WELSH read a short note on a case of multiple tumours of unusual type.

The patient, formerly a joiner, now an insurance agent, had an accident to his wrist seven years ago. Four months later there appeared on the wrist a small growth, which ulcerated and spread until it had formed a large, deep, ragged ulcer, which had eaten its way almost half through the wrist, all tissues, bones, tendons, and soft parts being eroded by the growth. He was under treatment in a Glasgow hospital for over a year. It was there believed to be gummatous in nature, but was not improved by free antisyphilitic medication. Some improvement followed scraping and cauterisation, but only for a time. The ulcer again enlarged. He was admitted to the Edinburgh Royal Infirmary in May, 1896. Again the exhibition of antisyphilitic remedies was useless. Secondary growths in the forearm and epitrochlear gland appeared, the hand was useless, the disease was growing, therefore the arm was amputated above the elbow. The wound healed well. In July, 1899, the patient returned to the Royal Infirmary with a similar growth on the forehead, and another over the deltoid of the amputated arm. That on the forehead looked like a rodent ulcer, that on the deltoid affected the subcutaneous tissue, and had the naked-eye characters of a small sarcoma or "recurrent fibroid," as they used to be called. These two growths were freely removed, and the man was well for a year. He came back in July, 1900, with a recurrence on the scar of the deltoid, on the fore and little fingers of the left hand, on the great and second toes of the right foot, great toe of left foot, and with ulcers on the right foot and thigh. Those on the fingers were said to come on after a crush, those on the great toes after ingrowing toenails. All these were removed. A beginning growth on the upper lip and columna of the nose was left alone. Thyroid extract did harm. Mercurial inunction combined with potassium iodide was exhibited, but during and despite this new tumours had appeared on the thighs.

The interest of the case was diagnostic. It had been seen by many surgeons and many pathologists, and various opinions had been hazarded. Among these were: (1) *Tubercle.*—But there was no family or personal history, nor manifestation in gland, joint, skin, or internal organ, nor bacilli in the ulcers. (2) *Epithelioma.*—Against this the age of the patient, the partial healing of ulcers after scraping, the sites, the non-involvement of lymphatic glands (save in one instance), the soft edge of ulcers, the chronicity (seven years). (3) *Sarcoma.*—Against this again the chronicity, partial healing, and no internal spread. (4) *Rodent Ulcer.*—The multiplicity and position of the growths was against this. (5) *Syphilis.*—No gummatous slough ever separated; there were no shotty glands, nor any other sign of congenital or acquired syphilis; there was the absolute therapeutic failure, new tumours appearing during treatment. (6) *Farcy.*—But there was no acute initial attack, no suggestion of this in nose, throat, or skin; the long duration was not farcy-like. Injections into guinea-pigs gave negative results. (7) *Mycosis Fungoides.*—There was absence of the yellow spots like pustulation, as well as the characteristic fungation. The history, too, was against this diagnosis. The patient was then shown; the arm and other parts removed were exhibited, as were also photographs taken at different stages of the disease. Dr. Welsh next discussed the histology and pathology of the case, and gave a lantern demonstration of photomicrographs of the tumours. On the whole, he inclined to the view that the process was an infective one and probably syphilitic.

Professor ANNANDALE said it appeared to him that the case was one of what used to be called recurrent fibroid, and was probably of an infective origin.

Mr. CAIRD thought the case was syphilitic in origin, despite the wide therapeutic failure.

Dr. W. A. JAMIESON was inclined to think the case one of glanders.

Dr. NORMAN WALKER leant strongly to the view that it was a case of multiple rodent ulcer.

Mr. STILES, on the contrary, was quite satisfied that rodent ulcer did not and could not explain the case.

Both Mr. COTTERILL and Dr. WELSH replied, and again indicated that in their opinion syphilis was the most likely explanation.

CASES.

Dr. G. A. GIBSON showed two cases of Friedreich's ataxia.—Dr. H. E. LANGWILL showed a feebly-developed youth, aged 19, who suffered from regurgitation of food of obscure causation.—Dr. BYROM BRAMWELL showed a case of preataxic tabes.—Dr. ALLAN JAMIESON exhibited: (1) A case of acne keloid in a woman, aged 40; it commenced rather more than eighteen months previously, by the formation on the nape of the neck of a number of pustules, which she used to scratch or pick; first a swelling the size of half a marble appeared, and this grew to its present size; the growth was hard, firm, and dense, as large as half a well-grown pear, movable with the skin, and only occasionally the seat of pricking sensations; (2) a case of tylosis palmæ et plantæ in a boy, aged 5, in whose family the same malformation could be traced back in various members for at least five generations; (3) a case for diagnosis in a woman, aged 36; there were three tumours of a pinkish hue in the skin of the chest near the axillary end of the left clavicle; they had been noticed nine months ago, and she did not think much change had occurred in them since; they were firm, painless, smooth, and from the size of half a walnut to an almond; over the larger some dilated venules coursed; between them there was a thin glistening atrophic skin, not due she affirmed to the absorption of previous tumours; the growths were most probably carcinomatous, but there was no implication of the neighbouring glands.

SPECIMENS.

Mr. DAVID WALLACE showed a middle lobe of the prostate removed by suprapubic cystotomy.—Dr. BYROM BRAMWELL showed a brain tumour of large size, which had protruded through an exploratory trephine opening.

OFFICE-BEARERS, ETC.

The following have been appointed office-bearers for 1900-1901: *President:* Alexander Gordon Miller, F.R.C.S., M.D., etc. *Vice-Presidents:* Dr. James Andrew, P.R.C.P.E., Dr. James Dunsmure, P.R.C.S.E., Dr. Charles E. Underhill. *Councillors:* Sir John Batty Tuke, M.P. M.D., etc., Dr. Mackenzie John-

ston, Dr. Graham Brown, Dr. David Wallace, Dr. J. W. Ballantyne, Dr. George Kerr, Dr. Kenneth Douglas, Mr. Stiles. *Treasurer:* Dr. Harvey Littlejohn. *Secretaries:* Mr. Cotterill, Dr. Melville Dunlop. *Editor of Transactions:* Dr. William Craig.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

E. Wearne Clarke, M.D., President, in the Chair.

Thursday, November 8th, 1900.

Tuberculous Obstruction of Bowels.

Mr. Atkin read notes of a case of obstruction of the bowels from tuberculosis, ending fatally from hæmorrhage.

A woman, aged 37, was sent to the Royal Infirmary suffering from obstruction of the bowels. After copious enemata the bowels were well opened. The symptoms then pointed to hypostatic pneumonia, though some abdominal tenderness persisted. The woman was enormously fat, and enteric fever was excluded. After a fortnight's irregular temperature, hæmatemesis occurred followed by copious bleeding from the bowel. *Post mortem*, three or four large tuberculous ulcers were found, the whole alimentary canal from the duodenum downwards was full of blood, the peritoneum was studded with masses of tubercle beginning to caseate, and with miliary tubercle. No ulcer was found in the stomach; therefore the blood must have regurgitated through the pylorus.

Pyloroplasty for Gastric Ulcer.

Mr. Atkin also read notes of a case of gastric ulcer for which pyloroplasty had been tried. Though symptoms had persisted for five years, no ulcer was discovered. The operation was chosen in preference to gastro-enterostomy, as the pylorus was free from ulceration though spasmodically stenosed. The girl gained considerably in weight after the operation. The menses were never irregular.

Colotomy for Rectal Cancer.

Mr. Atkin also showed a young married woman, aged 26, on whom he had performed colotomy for cancer of the upper third of the rectum. There was a history of pelvic cellulitis on the left side six months before, and no other symptoms till those of acute obstruction of the bowels appeared. The growth was fixed and could not be brought up into the wound, and there was secondary growth in the peritoneum.

Hysterectomy for Cancer.

Mr. Atkin showed a uterus which he had removed for cancer, that was apparently localised to the interior of the organ.

Acute Inversion of Uterus.

Dr. Martin read notes of a case of acute inversion of the uterus occurring in a primipara, aged 26. Six hours after a perfectly normal labour the patient became collapsed and profuse hæmorrhage occurred. The inversion was reduced by taxis and the patient made a good recovery.

Cases.

Dr. Arthur Hall showed: (1) Dermatitis herpetiformis in an elderly woman; the affection had lasted on and off for four years, during which the patient had had repeated attacks of polymorphous painful eruptions on the arms, thighs, back, and face; arsenic in large doses had given temporary relief; at present there was no eruption, but intense pigmentation wherever the spots had been; (2) eczema of the hands and face due to occupation ("occupation dermatitis"); the patient, a young woman, was a "wiper of pocket-knife blades," in which occupation she used lime freely; acute dermatitis attacked both hands, and was followed later by a similar affection of the face; Dr. Hall contended that there was no hard-and-fast line between ordinary eczema and so-called occupation dermatitis, and that it was inaccurate to cease to designate as eczema an affection which would otherwise be classed as such directly an external irritant had been discovered; in this case the eruption on the face was not the direct result of the irritant, but a reflex secondary outbreak in a distant part of the body; (3) two cases of lupus erythematosus in elderly women; (4) tertiary syphilide presenting unusual appearances, being probably modified by occurring in a seborrhœic patient.—Dr. Cocking showed: (1) A well marked case of pseudo-hypertrophic paralysis in a boy, aged 8; (2) a case of Charcot's disease of the right knee in a woman, aged 40.

LIVERPOOL MEDICAL INSTITUTION.

A. Bernard, M.B., Senior Vice-President, in the Chair.

Thursday, November 8th, 1900.

Unusual Form of Rodent Ulcer.

Mr. F. T. Paul showed a patient suffering from an unusual form of rodent ulcer.

It was a very large tumour of the left side of the face, measuring about 5½ inches across, and from 2 to 3 inches in thickness, and had the structure of the glandular type of rodent ulcer. There were no secondary deposits. The patient was a man aged 43. At 19 years of age he knocked the skin of the cheek below the eye; this never properly healed, and at 32 the late Mr. H. O. Thomas excised a small sore; at 34 he was operated on by Mr. Robert Jones; and at 35 by Mr. Paul, who examined the growth and pronounced it rodent ulcer. It returned within a year, and had been growing since to its present dimensions.

Mr. Paul considered all forms of so-called rodent ulcer to be varieties of carcinoma of the appendages of the skin. The ordinary form was carcinoma of the sebaceous glands; but cases like the present probably originated in the sweat glands.

Mr. Rushton Parker remarked that any difficulties of nomenclature alluded to by Mr. Paul probably arose from the use of the term "rodent ulcer" in the British islands, and abroad the term "carcinoma," "*Haut-krebs*," or "skin cancer" for the same class of cases irrespective of variety. He considered Mr. Paul's case an ulcerated carcinoma of the skin of the face, but not rodent in a physical sense, as there is a gain rather than a loss of substance. But its histological characters are obviously a variety of what is known as "rodent carcinoma."

Dermatitis Herpetiformis Multiformis.

Dr. Stopford Taylor read notes of a case of dermatitis herpetiformis multiformis.

The patient was a man aged 66, and the disease ran an acute course in about 14 days, and when hopes of recovery were entertained pneumonia supervened and death resulted. An unusual and unprecedented symptom was the great quantity of serum which exuded from the erythema—multiforme-like type of the eruption situated upon the back and buttocks.

This condition was rightly described as a chronic disorder, yet this was his second acute case followed by a fatal termination.

Dr. F. H. Barendt considered that the pneumomia was incidental and not a consequence of the skin lesions. He alluded to herpes gestationis, which clinically was the same disease occurring in pregnancy. The etiology was still obscure, probably it would be cleared up when our knowledge of toxins became more exact and definite.

Dr. R. J. M. Buchanan referred to two cases, in one the herpetic eruption resembled confluent small-pox, but the association of croupous pneumonia cleared up the uncertainty of diagnosis; in the other, the herpetic eruption appeared after the acute pneumonia was advanced and the pneumococcus was present in the exudation from the vesicles.

Dr. Stanley Gill called attention to the connection there seemed to be between skin and pulmonary diseases, and cited a case in which a patient when cured of eczema suffered from asthma, which was only relieved by the reappearance of the eczema.

Invasion of Pulmonary Tuberculosis.

Dr. R. J. M. Buchanan read notes on cases of pulmonary tuberculosis in reference to the probable origin of the invasion. In many cases the tuberculous history was definitely referred to an attack of so-called influenza. He offered the suggestion that many of the so-called sporadic attacks of influenza were probably the expression of the initial infection with the tubercle bacillus, and that special attention should be given to the diagnosis of tuberculosis in its primary invasion. He related 3 cases of pulmonary tuberculosis, in which he had traced the source of infection. The cases, previously healthy, were infected in offices where clerks suffering from consumption had been employed. He had been able to persuade the employer in one of the cases to have his offices disinfected, and the office books stored.

Dr. Cullan cited a case under his care, in which he had been able to trace a definite source of infection. He considered the stage of convalescence following true influenza, which was always associated with great debility, very liable to take infection of tuberculosis.

Dr. C. J. Macalister directed attention to the fact that a number of seamen suffered from phthisis, notwithstanding their open-air life, and he advocated care in regard to cleanliness and ventilation of their quarters.

Disease among Natives of the Nyassalan[illegible] Plateau.

Mr. S. Kellett Smith read a paper upon disease among the natives of the Nyassaland plateau, compiled from notes in his medical diary kept during the exploration of the country in the years 1895-96. Anthropometrical statistics of various tribes were given and the general physical development of the native described. Points of interest brought forward were

the existence of tetanus and rabies, the absence of deformities, and the question of hernia. Umbilical herniæ were shown to be very frequent, and to disappear spontaneously during the earlier years of life. Inguinal herniæ were practically unknown, and Mr. Kellett-Smith thought this was accounted for chiefly by the position in which the newly-born infant was nursed, with its legs embracing the mother's flank, and its inguinal regions supported by the conforming pressure of the mother's side, and, in later life, by the posture adopted by the native when disposing himself for the necessary eliminating functions. Syphilis seemed to be incapable of permanence among the natives of this country. All scars tended to become keloid but the keloids never took a malignant tendency. Especially was it that in this primitive part of Africa malignant tumours, whether of epithelium or connective tissue, seemed to occur so rarely as to be practically unknown.

MANCHESTER MEDICAL SOCIETY.

T. C. RAILTON, M.D., President, in the Chair.

Wednesday, November 7th, 1900.

THE OPEN-AIR TREATMENT OF TUBERCULOSIS.

DR. THOMAS HARRIS, in opening a discussion on the open-air treatment of tuberculosis, referred to the pathological and clinical evidence as to the arrest of pulmonary tuberculosis. He considered, however, that it was much better to speak of an arrest of the process rather than a cure, as so frequently the disease became lighted up again. He described the various points in the open-air treatment. The putting on of a large amount of fat, which so many of the patients did under the treatment, was not to be considered in every case a satisfactory feature, as this was sometimes associated with a great amount of discomfort to the patient, and in a large number of cases, although fat was accumulated, the pulmonary disease was not stayed. Reference was made to the importance of providing sanatoria for advanced cases, and the opinion was expressed that these would be specially advantageous to medical officers of health in preventing an extension of the disease. Investigations as to the cause and prevention of tuberculosis should occupy a foremost place in any crusade against the disease. More was to be hoped from a study of preventive medicine than from the open-air treatment of tuberculosis in sanatoria or other places. Dr. Harris referred especially to the great danger of sanatoria being conducted by unscrupulous persons, being places of quackery, and where payment of a dividend was the first consideration; and although there were many satisfactory and well-conducted sanatoria in this country, he considered that medical men should be very careful what sanatorium they recommended to their patients.

Professor S. DELÉPINE, Dr. JAMES NIVEN, Dr. H. R. HUTTON, and Dr. E. S. REYNOLDS took part in the subsequent discussion.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—At a meeting on October 19th, Dr. A. ERNEST SANSOM in the chair, Dr. THEODORE FISHER showed a specimen of rheumatic dilatation of the heart from a patient who died from cardiac failure one year after an attack of acute rheumatism. The heart was hypertrophied also, and weighed 19½ ounces. The valves were healthy, and the pericardium was adherent over only a small area near the apex of the left ventricle. Dr. Fisher mentioned another case in a child 11 years of age, with rheumatic nodules, where there was an almost entire absence of valvular disease. The heart was found to weigh 11¼ ounces. Dr. FRANK PENROSE referred to the work of Dr. Poynton, whose experience was that myocarditis was generally present in dilatation. Dr. WILLIAM EWART remarked that the action of the cardiac valves and walls (as pointed out by Dr. Sansom) might suffer from fibrosis at the base of the heart, such as might result from pericarditis, even when the latter did not lead to great effusion or adhesion. Dr. FISHER, in reply, stated that in his first case there had been a slight interstitial myocarditis. In his second case there was naked-eye evidence of recent degenerative changes. Professor Stanley Kent, in cultures from the heart muscle, had found a diplococcus resembling that recently described by Drs. Poynton and Paine.—Mr. R. CLEMENT LUCAS exhibited an infant, 6 months old, in whom the rectum terminated in the vagina. The deformity had passed unnoticed until the child was 4 months old. Mr. Lucas proposed, first, to establish a permanent anus in the normal position, and later to endeavour to close the vaginal aperture by a plastic operation. Mr ALFRED H. H. TUBBY in a child aged 1 year had operated twice for the relief of the condition with a good result. Dr. JAMES TAYLOR showed a lad, 5 years of age, affected with Mongolian imbecility. There was a suspicion of congenital syphilis. Dr. FLETCHER BEACH said that in his experience syphilis accounted for only 1 per cent. of these cases. Dr. G. E. SHUTTLEWORTH stated that about 5 per cent. of the children at the Royal Albert Asylum were Mongolian imbeciles. He said that some 40 per cent. of such children were the youngest members of large families, and anything that depressed the procreative powers of the mother might conceivably be a factor in the production of the cases. He had commonly found a family history of phthisis, and had observed that Mongols themselves, when they survived infancy, were prone to phthisis, and that those who died young succumbed in many instances to some form of tubercle.—Dr. ALFRED H. TUBBY showed a child, aged 3 months, with cephalhæmatoma over the right parietal bone, the labour had not been protracted, the presentation was vertical, and forceps had not been used. Mr. Tubby also exhibited a girl, aged 6 years, suffering from a congenital anterior dislocation of the right hip. Radiographs showed the position of the great trochanter and curvature of the neck of the femur. An attempt had been made to remedy the condition by forcible movements after dividing the tendons of the adductors, sartorius, and the tensor vaginæ femoris, but the deformity had recurred. Mr. J. JACKSON CLARKE, in connection with this case, brought forward several interesting skiagraphs. One of his patients, a girl aged 2 years, had been treated by the method adopted by Mr. Tubby. She was practically cured.—Mr. SYDNEY STEPHENSON showed a case of early myxœdema, associated with ectropion, in a girl aged 12 years.—Dr. GEORGE A. SUTHERLAND showed an instance of extreme adiposity in an infant aged 8 months. It weighed 29½ pounds. The child had been fed exclusively from the breast. The general health had been good; it could sit up and move its limbs actively. Examination of the maternal milk showed the presence of 8.2 per cent. lactose and of 44 per cent. proteids, the other constituents being normal. In reply to Dr. EDMUND CAUTLEY, Dr. SUTHERLAND said that he was satisfied, from his inquiries, that the child had had no food other than breast milk.—Dr. J. H. SEQUEIRA showed a case of polyuria in a child aged 3 years. The pale urine had a specific gravity of 1010, and an alkaline reaction. It contained a trace of albumen (at times reaching 1 per cent.) but no deposit or casts. The quantity of urine averaged 36 ounces a day, and once it reached as much as 47 ounces. The urine could be rendered temporarily acid by the administration of acid sodium phosphate in 5-gr. doses three times a day, as advised by Dr. Robert Hutchison. Dr. PERCY G. LEWIS had been working at an allied subject, namely, bed-wetting in children, which he believed to be due to polyuria, and to be associated with the indigestion of starchy foods. It could be stopped at once by an antidiabetic diet.—Dr. GEORGE CARPENTER showed a case of typical epiphysitis in a child 7 weeks old.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The second meeting of the forty-fourth session was held at the Royal Kent Dispensary, Greenwich, on November 2nd, Dr. SEPTIMUS SUNDERLAND (President) in the chair. Dr. JAMES DONELAN read a paper on tracheal hæmorrhage as a sequel of influenza, in which he drew attention to this affection as a source of error in the diagnosis of the cause of hæmoptysis. The evidences of the disease were a history of recent influenza, persistent cough with tickling in the throat, occurrence of hæmoptysis in quantities ranging from a few drops to 4 or 5 ounces in twenty-four hours, absence of fever, except temporarily, when the amount of blood lost was large, or the patient much alarmed. The most important evidence was the laryngoscopic observation of congestion of the veins of the subglottic plexus and the occurrence of bleeding in this situation. This could only be observed with certainty in the period of calm which

intervened between one attack and another, and while a little oozing from the veins was still going on. The veins in most of the cases appeared to follow the direction of the intercartilaginous spaces, though sometimes they formed a close plexus crossing over from one space to another as far down as the fifth or sixth ring. Dr. Donelan had collected twelve cases occurring in hospital and private practice from 1895 to the present time. Nine had made good recoveries, and had never had any trace of pulmonary trouble. Three developed pulmonary tuberculosis, and two had died. The reason these cases were included amongst the twelve was that there was no evidence of tuberculous infection when the hæmorrhage occurred, and chiefly because it was observed to proceed from the subglottic venous plexus, and not from any point lower down. The treatment was that commonly employed for pulmonary hæmorrhage—rest, opium, ice, hamamelis and ergot or ergotin. Dr. Donelan referred to the absence of literature on the subject of tracheal hæmorrhages, the only article on the subject that he was acquainted with was that of Professor Massei which appeared last year in the Italian Archives of Laryngology, entitled Chronic Hæmorrhagic Tracheal Catarrh. The cases, however, did not occur in connection with influenza, though in other respects the history was the same.—The following took part in the discussion which followed. Drs. Moon, Tayler, Toogood, Keay, and Weekes.—Dr. Donelan then gave a demonstration of a few of the commoner positions adopted in the operation for naso-pharyngeal adenoids. He was strongly in favour of the position with the head extended over the end of the table, as it permitted a more careful and deliberate removal of the offending tissues, and was free from most of the sources of trouble and inconvenience which rendered the sitting and lateral positions objectionable.—Drs. Joscelyn, Weekes, Scholefield, Toogood, and White joined in the ensuing discussion, and Dr. Donelan replied.—The proceedings concluded with a hearty vote of thanks to the lecturer.

Clinical Society of Manchester. — Election of officers: The following have been elected office-bearers for 1900-1901:—*President:* Frederick Armitage Southam, M.B. *Vice-Presidents:* T. Arthur Helme, M.D.; J. E. Platt, M.S. *Honorary Treasurer:* C. H. Braddon, M.D. *Honorary Librarian:* J. W. Smith, M.B. *Committee:* W. G. Booth; G. H. Broadbent; A. Brown, M.D.; J. Gray Clegg, M.D.; J. Daniel, M.D.; W. E. Fothergill, M.D.; J. W. Hamill, M.D.; James Holmes, M.D.; C. F. H. Kitchen; M. P. Ledward, M.D.; E. T. Milner, M.B.; R. T. Parkinson, M.D.; E. S. Reynolds, M.D.; J. Rust; F. H. Westmacott. *Honorary Auditors:* A. B. Fulton, M.B.; E. J. Walker, M.D. *Honorary Secretary:* J. H. Ray, Ch.M.—The first meeting of the session was held on October 16th, Mr. Southam (President) in the chair.—The President opened a discussion on the Treatment of Appendicitis (medical and surgical) under the following heads:—(1) simple or catarrhal (non-suppurative); (2) suppurative, (*a*) local abscess, (*b*) diffuse suppuration (purulent peritonitis); (3) recurrent appendicitis. An interesting discussion followed.

West London Medico-Chirurgical Society.—At a meeting on November 2nd, Dr. Schacht (President) in the chair, Mr. T. R. Atkinson showed a card specimen of tubal pregnancy.—Mr. J. Jackson Clarke showed two patients illustrating some points in his paper on Some Phases of Rheumatoid Arthritis and Gout. The paper was, however, postponed by consent until the next meeting.—Mr. G. Lenthal Cheatle communicated some personal experiences of the late Boer war, illustrated by a fine collection of photographs, which were shown on a screen by means of the lantern. Mr. Cheatle also showed a number of shells, bullets, etc., collected from the battlefield.

Folkestone Medical Society.—At a meeting on November 2nd, Dr. Tyson (President) in the chair, Mr. H. A. Powell read notes of a case of congenital heart disease, in which, at the age of 3 years, there occurred a gangrenous condition of the gums, leading to necrosis of the jaw. Perchloride of mercury was applied, and the child eventually recovered. Mr. Powell also related the case of a vigorous, healthy man, aged 48, who was suddenly attacked by diffuse cellulitis of both buttocks and perineum, due to a perforating ulcer of the rectum high up. On the second day of the acute symptoms free incisions were made, and at a depth of 4 inches from the surface a mass of foul sloughing tissue was laid open. Anti-streptococcus serum was also injected. Mr. T. Bryant and Dr. Eastes both saw the case in consultation. The sloughs came away on the fifth day, and most of the wounds healed in three weeks, and the patient left his bed in another fortnight. Mr. Powell remarked on the probable origin of the case and its bacteriological aspect. Dr. Eastes, Dr. Lewis, Mr. Linington, Dr. Tyson, Dr. Chubb, and Mr. Chambers also spoke.

REVIEWS.

SOME RECENT WORKS ON SURGERY.

(Continued from page 1383.)

In the new edition of his *Treatise on Appendicitis*,[7] Dr. Deaver has added considerably to the original form of the work, and given much fresh information. The book may indeed be regarded as quite new. Every chapter, it is stated in the preface, has been carefully revised. The additional matter includes an excellent chapter on the pathology of appendicitis, by Dr. A. O. Kelly, and among the illustrations is a series of clear plates showing the microscopic lesions in the different varieties of the disease. Influenced mainly by the proportion of relapses in his own experience, which proportion is far in excess of that recorded by other authorities, Dr. Deaver is an advocate of early removal of the inflamed organ in most cases of appendicitis. Increasing observation and experience, he writes, have confirmed him in the opinion that the most appropriate course to pursue in order that the best results may be obtained, is to remove the diseased organ as soon as the diagnosis of appendicitis has been made. Notwithstanding this decided expeession of opinion in favour of operation as a general practice, full and instructive details are given of strictly medical treatment applicable to a somewhat wide range of exceptional cases.

Professor Leser's concise textbook of surgery for the use of practitioners and students has in the course of the past ten years passed through four editions, and in each fresh issue has been carefully revised by the author. To those acquainted with German books on surgery, its chief merit consists in its full and lucid descriptions of injuries, especially those involving bones and joints. The author has still further improved these portions of his work by giving his experiences of the use of skiagraphy, which he regards as a valuable aid to the diagnosis and treatment of fractures, although occasionally attended with some difficulty in its interpretation. With the object of removing, as far as possible, a previous disproportion in the length of some of the sections, their number has been increased, and the different subjects considered in former editions in fifty lectures are now spread over sixty.

Professor Gumprecht's book—*Die Technik der Speziellen Therapie*[9]—is a striking instance of German thoroughness and capacity for earnest and conscientious work. In its scope and the class of subjects with which it deals it seems to be almost unique, and, as the author found whilst preparing the first edition, no example of such a special work then existed. It describes those minor operations which every student is expected to learn, and which any practitioner may be called upon to perform. As instances of what the author calls special treatment we would mention transfusion, vaccination, irrigation of the stomach and intestinal canal, paracentesis of

[7] *A Treatise on Appendicitis.* By John B. Deaver, M.D., Surgeon in Chief to the German Hospital, Philadelphia. Second edition. Philadelphia: P. Blakiston's Son and Co. London: Rebman Limited. 1900. Demy 8vo, pp. 300; 20 illustrations. 16s.)

[8] *Die Specielle Chirurgie in 60 Vorlesungen* (Special Surgery in Sixty Lectures). Von Dr. Edmund Lesor, Professor in the University of Halle. Fourth Edition. Jena: Gustav Fischer. 1900. (Roy. 8vo, pp. 1092, 350 illustrations. M 28.)

[9] *Die Technik der speziellen Therapie.* (The Technique of Special Treatment). Von Dr. F. Gumprecht, Professor in Jena. Zweite neu durchsehene und vermehrte Auflage. Jena: Gustav Fischer. 1900. (Roy. 8vo, pp. 354, 182 illustrations. M 7.)

the chest and abdomen, and catheterism. Each subject is discussed very fully, for the author takes a serious view of every therapeutical detail however slight it may seem to be. Though somewhat too discursive and elaborate, the author throughout his bulky and closely printed book is never tedious, as his teaching is thoroughly practical and directed to affording reliable instruction on the best and most recent methods of treatment.

We welcome the second edition of Drs. BRADFORD and LOVETT's *Orthopædic Surgery*.[10] It is nine years since the first edition appeared, and much progress has been made in many branches of this subject, more especially in the pathology and treatment of the various forms of arthritis which, according to the custom of American surgical writers, is included in the special branch of orthopædic surgery. Of the pages in this volume, no fewer than 200 are devoted to the consideration of chronic joint-disease, mainly of the hip-joint, knee-joint, and ankle-joint. Of the subject matter treated in the former edition, a careful selection has been made, and some that is out of date has been excluded, whereas much new material is added where called for. On the question of forcible straightening of angular deformity, the authors speak with a considerable amount of knowledge, but with some reserve, and their attitude is summed up thus:

> It would therefore appear that the use of forcible correction in Pott's disease is somewhat more limited than was at first supposed: first, by the judicious selection of cases; and, secondly, by the number of cases in which the after-treatment can be properly carried out, for it is manifestly absurd to straighten the spinal column, exposing the patient to a certain amount of risk, and later to allow the patient to relapse into a condition as bad as before the operation.

On the vexed question of the treatment of congenital dislocation of the hip, the authors are inclined to advocate forcible reposition without an incision, and they give full directions for carrying out this procedure. The subject of the surgical treatment of infantile paralysis is well dealt with, and is fully up to date. The indications for the various forms of tendon grafting and the methods are given, while in infantile spastic paralysis the authors speak with no uncertain words. "They would unhesitatingly claim great benefit from the operation of tenotomy in suitable cases." Many surgeons will be glad to have this expression of opinion put in so decided a manner. Altogether the volume is excellent, and reflects great credit upon the authors and publishers.

The little monograph by Dr. STEELE PERKINS dealing with the difficult subject of *Lateral Curvature of the Spine*[11] ardently advocates exercise alone as the rational treatment of curable or improvable cases. He repeats the arguments for and against spinal supports. Unfortunately the author says in a note: "Time did not permit me in the paper to describe the necessary exercises to be carried out in these cases. This I propose dealing with at a later date." The pamphlet is therefore incomplete, for above all things the reader will desire to know the methods by which Dr. Steele Perkins attains his results. The author further remarks that nasal and pharyngeal obstruction are causes of lateral curvature which to his knowledge have never been mentioned; but a reference to text-books on the subject will show this to be incorrect. Dr. Steele Perkins is a lover of involved and lengthy sentences. We do not remember often to have seen twenty-eight consecutive lines without a full stop; but the introduction to the paper affords a case in point.

Mr. LANE is to be congratulated on the success that has attended the publication of the first edition of his essays on *Fractures, Cleft Palate, etc.*[12] We have no doubt that the new volume to which additions have been made where, in its original form, detail had been somewhat sacrificed for brevity, will find still further favour as a collection of original and suggestive essays on subjects relating to practical surgery.

We have received the second edition of Professor HOFFA's well-known handbook of bandaging and surgical dressings.[13] From the preface it appears that the volume contains the "course which is gone through in the author's class at Würzburg." The first section deals with the application to the human body of the different forms of "roller-bandage." Sixty-six plates of illustrations and 38 pages of text are devoted to this part of the subject. The illustrations are very clear, and readily convey the author's meaning. The second portion is devoted to a consideration of the modes of employment of "triangular bandages" (*Tucherverbande*), and contains many good illustrations. The third part is a short chapter on the application of the forms of bandage already described to wounds in different parts of the body. In the remaining portion of the book the various forms of immovable bandages or dressings and their modes of application are discussed, in relation especially to different parts of the body, and to the fixation of splints. The book contains a large amount of useful practical information. Some of the forms of splint which are advocated are little known to English surgeons.

[10] *A Treatise on Orthopædic Surgery.* By Edward H. Bradford, M.D., Assistant Professor of Orthopædic Surgery, Harvard Medical School, and Robert W. Lovett, M.D., Assistant Surgeon to the Children's Hospital, Boston. Second Revised Edition. London: Baillière, Tindall, and Cox. 1900. (Roy. 8vo, pp. 685, 621 illustrations. 18s.)

[11] *Lateral Curvature of the Spine.* By G. Steele Perkins, M.D. Being an Address delivered before the South-Eastern Branch of the British Medical Association, November, 1899. London: Bemrose and Sons. 1900. (Demy 8vo, pp. 20, 3 illustrations.)

[12] *Fractures, Cleft Palate, etc.* By W. Arbuthnot Lane, M.S. Second edition. London: The Medical Publishing Company. (Demy 8vo, pp. 344; 166 illustrations. 6s. 6d.)

[13] *Atlas und Grundriss der Verbandlehre* [Atlas and Handbook of Bandaging and Surgical Dressings]. Von Dr. Albert Hoffa, Professor an der Universität Würzburg. Zweite vermehrte und verbesserte Auflage. München: J. F. Lehmann. 1900. (Crown 8vo, pp. 134; 144 plates. M. 7.)

NOTES ON BOOKS.

TRANSACTIONS.

The Transactions of the Bombay Medical and Physical Society for August, 1900, contains a paper by Dr. G. TAYLOR on cases of acute pemphigus contagiosa, with pyrexia, in which a diplococcus and a bacillus were found in the blood. There are also records of a case of leprosy of the hand, and a case of beri-beri. Dr. N. F. SURVEYOR communicates a paper on the parasitic invasion of the eggs of the common cockroach.

Dr. GEORGE BLACK, formerly Medical Officer of Health to the Keswick Urban Council, has written a monograph on the *Common Mistletoe* (*viscum album*) (London: Gould and Son, 1899. 1s.), which includes an account of its natural history, its traditional virtues, and its popular and scientific uses in the treatment of disease.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

An Improved Paul's Tube.—Mr. BERNARD SCOTT (Bournemouth) writes: Everyone must from time to time have experienced some difficulty in cutting the thread which has tied a glass tube into a gall bladder, which is contracted, and cannot be brought up to the wound in the abdominal wall. Messrs. Bridge and Company, of Bournemouth, have, at my suggestion, overcome this difficulty by interruptions in the rim of the glass tube—as shown in figure —which makes it quite easy to cut the thread.



THE WAR IN SOUTH AFRICA.

THE IMPERIAL YEOMANRY FIELD HOSPITAL.

We have received the following further letter from Mr. C. Stonham, Chief Surgeon and Officer Commanding Imperial Yeomanry Field Hospital; Senior Surgeon, Westminster Hospital, etc.:

II.

At Pretoria.

The Devil's Kantoor, October 6th.

In my letter from Barberton I gave a short outline of our marches and work up to our return to Pretoria from Springs on July 17th.

We entered Pretoria early in the morning, and sending our convoy to our old camping ground at Arcadia, Major Hill and I went to report to the Principal Medical Officer, and obtain further orders.

It was decided that we should have a detachment of the Field Hospital and Bearer Company with some of our transport animals and waggons at Pretoria, while the main body marched to rejoin General Mahon's brigade. We accordingly left Mr. Openshaw and Dr. Purves Stewart with 50 men, 5 waggons, and the necessary equipment and stores for the formation of a rest camp hospital. Next morning we marched with the remainder, and came up with General Mahon in the afternoon at Kameel's Drift. There had been two days' fighting here, and we did not leave the ridge until July 20th, on which day we passed Pretorius's farm, and spent nearly all day in crossing the Pienaar's River; the drift was very steep, and hence the waggons, and especially the heavy guns, required many teams to drag them over.

South African "Drifts."

These drifts are passages of the usually rocky beds of rivers, with at this season of the year comparatively little water. During the rains there may be as much as 40 feet to 50 feet of water at the drifts, which are consequently rendered impassable. Many drifts have very steep banks and abominable approaches, which when a few waggons have passed are often a foot deep in mud and slush. In this carts sometimes stick and it becomes necessary to employ double or even treble spans of mules or oxen to pull them out. I need hardly say that the passage of such drifts by ambulance waggons causes very considerable suffering to sick and wounded men and delay to the whole convoy, which may extend for many miles. On some days we have had to pass as many as half-a-dozen drifts, our march being consequently slow and most arduous, not to mention the wear and tear to transport animals.

Ambulance Waggons.

Drifts are a very severe test of the strength and durability of a waggon. In this respect we certainly have much reason to thank the builder of ours; they are most excellent, have stood wear and tear admirably, and I think I may say are the best in the country. Our ambulance waggons are built differently to those in use in the army, which only carry two patients lying down, whereas ours will take four and are much lighter.

The March to Balmoral.

On July 21st at 8.30 there was heavy firing about 10 miles ahead of us, and it continued at intervals all day until we reached our camp, where we found that the Boers had been shelling Colonel Hickman's force near a spruit. Colonel Hickman with 800 men were camped here, and the next day he transferred our sick to his field hospital, which was going back to Pretoria.

On July 22nd Mahon's brigade joined Ian Hamilton's division at Rustfontein, where we remained the next day to give Pole-Carew and Clery time to march up on our right flank. Just before reaching camp at dusk, one of our waggons, I regret to say, came to grief in a hole, the native driver being killed and the waggon orderly receiving two very severe scalp wounds.

On July 24th we camped at Bronkhorst Spruit, the enemy sniping our rear during the march here. We found a large force—about 20,000—Lords Robert and Kitchener having come up in the morning. The next day Hamilton's division, of which our brigade was now a part, marched from Balmoral, 17 miles distant, but we were not destined to reach there without mishap. The weather had been very threatening all day, and rain began about 2 P.M.; about 3 miles on the wrong side of Balmoral our own convoy was brought to the halt at a drift in which a Cape cart and a 4.7 gun had stuck; the former was, however, the offender so far as our further progress was concerned. By this time it was pitch dark, the rain was coming down in a pitiless torrent, and the wind was icy cold. To proceed was impossible, and we had to stay here the night, three miles of convoy in our rear being in the same plight—no food, no shelter. Major Hale with characteristic energy walked on to Balmoral to report, and on coming back wet through he and I made the best of it in a Cape cart which I had fortunately commandeered at Rustfontein.

To describe this night is beyond my powers, but when I say that we alone lost 12 mules, and that I counted 195 dead animals within quite a short distance, some idea may be formed of its severity. Early in the morning we made ready to proceed, when we heard that an officer of the Argyll and Sutherland Highlanders had died in the night from exposure, we sent back a stretcher party, and carried the body in with us to be buried by the regiment.

We reached Balmoral at 10.30 and looked forward to a day's rest, but were doomed to disappointment, as orders came at 11 P.M. for us to march at 12.30 back to Pretoria.

Return to Pretoria.

Many guesses were made as to the reason for the return of the division, and we thought we were being done out of the final advance to Komati Poort and neighbouring district; but events proved that this was yet far distant, important work having to be done in the Rustenburg district before the final advance could be undertaken. Our return march was uneventful. We reached Pretoria on July 30th, and the division marched past Lord Roberts and a large crowd of people at 12 o'clock on its way to camp at Daaspoort, two miles to the west of the town. We sent all our sick, chiefly cases of fever and intestinal trouble, to the detachment that I found had been installed by the principal medical officer in a house which they were energetically preparing as a military hospital and was taken over by the R.A.M.C., our officers and men being lent for use until we should require their services in the field. Unfortunately our mules had been handed back to the transport, and hence we could not obtain fresh animals. This day in Pretoria was a very busy one, as we were under orders to march the next morning.

The March to Rustenburg.

On August 1st Mahon's brigade marched through Vanderboom Pass, and then westwards on the Rustenburg road. Pilcher was on our right and the rest of Hamilton's division on the left, separated from us by the range of hills. At 8 A.M. fighting began and continued all day, our guns dislodging the Boers from a kopje at Middlewater, where we camped for the night. Two of our ambulances went out after the fighting and brought back five wounded, all flesh wounds of the thighs or buttocks, made as the men were lying down. We finished dressing these cases by 10 P.M., and sent one of our ambulance waggons with the wounded back to Pretoria the next morning. The next day we marched forwards, heavy firing proceeding all day from Hamilton's direction, but Mahon's brigade did not come into action. In the evening we camped at Zilkaatz Nek, where the Lincolns had been attacked some time before. The fighting on this day had been with a [illegible] holding this pass, and Hamilton had about forty casualties, which were dealt with by his own field hospitals.

The country we were now in is very pretty, certainly the garden of the Transvaal; the valley, bounded by considerable hills on either side, is very fertile and studded by prosperous farms in many cases well stocked. Oranges, lemons, and similar fruits grow in abundance, and proved most acceptable. The want of fresh vegetables and fruit is very severely felt after a time, and these are eagerly taken when a chance offers. On August 3rd our march was very short, as we had to cross the Crocodile River by a bad drift. We camped just the other side of it, opposite Commando Pass, but saw nothing of the enemy, although about twenty prisoners were brought in from neighbouring farms. The next day we marched to Sterk-

stroom, and a runner came in from Baden Powell, who was hemmed in at Rustenburg, bringing a map made by him, and indicating the various positions occupied by the Boers and their numbers. When we advanced on August 5th, however, they were not to be found, and we reached Rustenburg unopposed.

THE ACTIONS ABOUT RUSTENBURG.

The country is naturally fortified on this side of Pretoria, and if the Boers do not defend it it argues most strongly that they will not again stand. On August 6th Major Hale and I marched out with part of our ambulances towards Majata Pass, where the enemy was said to be in force, but we returned at night without having seen anything of them, although heavy gun fire was heard all day some miles distant, and it was feared the Boers had captured one of our convoys coming up from Mafeking. The next day we marched back, as we thought for Pretoria, having relieved Rustenburg, and Baden Powell marching with us. We carried in our waggons all the sick and wounded who were fit to leave the Rustenburg Hospital, and supplied the doctor in charge of those who could not be moved with medical comforts from our own stores. On August 9th we passed over Commando Pass, and camped at Grootplatz, from which place we sent a sick convoy to Pretoria.

On the 11th we again proceeded westwards, passing through Hekpoort the next day and camping at Thorndale. On August 13th Major Hale and Dr. Green with two ambulance waggons went on with a flying column under General Watson, the rest of us following with the remainder of the division. We came in touch with Kitchener and Methuen on August 15th, who were pursuing a commando under C. de Wet, who was making for Rustenburg to join Delarey. Mahon's column came back to our camp on this day.

On August 17th, having camped the night before 5 miles to the westward, we moved on to Olifant's Nek, half a battery and some infantry going on ahead with four of our ambulances under Major Hale. After some shelling the Boers were driven from the Nek and we proceeded to Rustenburg. From this action we had only two wounded. The next morning we again left Rustenburg and marched towards the Crocodile River, near which at Zwartkopps Mahon's brigade had a two days' action (August 19th and 20th) with De Wet's commando. On the first day one of our waggons was taken, together with an Australian ambulance, by the Boers, but Major Hale rode back and represented the facts to the General, who at once sent a doctor from one of the Boer ambulances which was in our lines and which we had helped with drugs and medical comforts, to interview the Boer commandant, with the result that the ambulance came in later in the afternoon and brought in some wounded.

On the night of August 20th the Boers vacated their position, and we went in pursuit as far as Warm Baths, but we failed to come up with them (August 24th).

On August 26th we left for Pretoria where we arrived on August 28th to leave again, however, after one day's rest for our march to Barberton.

THE METROPOLITAN BOROUGH COUNCILS.

THE following is, we believe, a complete list of the medical men who have been elected members of the first Metropolitan Borough Councils:

Battersea.—Councillor: Dr. L. S. McManus.

Bermondsey (including the Parishes of Rotherhithe, Bermondsey, Horsleydown, and St. Olave and St. Thomas, Southwark).—Councillors: F. Dugon, L.R.C.P., M.R.C.S., and J. Mulqueen, L.R.C.P.I., L.R.C.S.I.

Bethnal Green.—Councillors: W. A. Farebrother, L.S.A., and F. E. Rogers, M.R.C.S., L.R.C.P.

Camberwell.—Councillor: A. Smith, L.R.C.P.I.

Chelsea.—Councillor: J. W. Erskine, M.B.

Deptford.—Councillor: F. T. Tayler, M.B.

Finsbury.—Councillor: E. Jones, M.R.C.S., L.R.C.P.

Fulham.—Councillor: H. J. Jones, M.R.C.S.

Greenwich.—Mayor: Surgeon-Lieutenant-Colonel Gooding, J.P., V.D.

Hackney.—Aldermen: Dr. J. O. Adams, Dr. F. H. Daly, T. Hoskin, L.R.C.P., M.R.C.S. Councillors: F. M. Miller, M.R.C.S., L.R.C.P., F. Wallace, L.R.C.P., M.R.C.S., M. E. A. Wallis, L.R.C.P., M.R.C.S.

Hammersmith.—Councillors: O. C. Coker, L.R.C.P., L.S.A., W. A. Davidson, L.S.A.

Hampstead.—Councillors: Dr. E. C. Andrews, C. W. Cunningham, M.R.C.S., Dr. A. O. Grosvenor, F. E. Scrase, F.R.C.P.

Holborn.—Councillor: Dr. W. R. Smith.

Kensington.—Councillor: F. H. Alderson, M.B., E. D. Vinrace, M.R.C.S.

Lambeth.—Alderman: J. G. Albert, L.D.S.

Lewisham.—Alderman: J. W. Elliott, M.R.C.S. (retired). Councillors F. J. L. Hart, M.B., F. S. Smyth, F.R.C.S., H. Visger, M.R.C.S.

St. Marylebone.—Councillors: L. A. Bidwell, F.R.C.S., and Dr. J. Edmunds.

Paddington.—Councillors: J. L. Atkinson, L.S.A., Dr. B. F. Popham, A. Prince, L.R.C.P., M.R.C.S., and D. A. Waite, M.R.C.S.

St. Pancras.—Alderman: W. Smith, L.R.C.P., L.R.C.S. Councillors: J. A. Angus, W. F. Hazel, M.R.C.S., R. P. Long, L.F.P.S.Glasg., E. F. T. MacCarthy, L.R.C.P. & S.I., Dr. R. Paramore, and Dr. J. Thompson.

Shoreditch.—Councillor: Dr. J. Davies.

Southwark (including the Parishes of St. George the Martyr, Christchurch Southwark, St. Saviour Southwark, and Newington).—Alderman: W. G. Bott, L.R.C.P., M.R.C.S. Councillor: Dr. E. C. Perry.

Stoke Newington (including the Parish of Stoke Newington and the Urban District of South Hornsey).—Councillor: R. Ostlere, M.B.

Wandsworth.—Alderman: Dr. Howell. Councillors: J. Gay, L.R.C.P., M.R.C.S., and C. R. Lucas, M.R.C.S., L.R.C.P.

Westminster (including the Parishes of St. Margaret and St. John Westminster, St. George Hanover Square, St. James Westminster, and St. Martin-in-the-Fields, the District of the Strand Board of Works, the Close of the Collegiate Church of St. Peter Westminster, and the Liberty of the Rolls).—Councillor: Dr. H. A. Des Vœux.

Woolwich.—Councillor: J. Jeken, M.R.C.S.

AN APPEAL.

A COMMITTEE consisting of Drs. H. Macnaughton-Jones and F. J. Smith, Mr. P. J. Freyer, Drs. Rogers, O'Dwyer, Daly, O'Malley, Cahill, Sheehan, and Mr. Winter, with Dr. R. Ambrose, M.P., 1, The Mount, Whitechapel Road, E., as Honorary Treasurer, and Dr. R. Moynahan, 150, Bethnal Green Road, N.E., as Honorary Secretary, have issued the following appeal on behalf of the family of the late Dr. Quinlivan, of 254, Bethnal Green Road:

We beg to bring before your notice this appeal as being one well deserving of your sympathy. Dr. Quinlivan died at the age of 36 years, unexpectedly, from an attack of acute pneumonia, leaving a widow and a family of seven children, whose ages range from 9 months to 13 years, unprovided for. The Committee confidently appeal to you to aid them in purchasing a small business by which the widow may support herself and her family.

The following subscriptions have been received:

	£	s.	d.
Dr. Starkie, 47, Sussex Street Warwick Square, W.	1	1	0
Dr. O'Donnell, 65, Judd Street, Brunswick Square, W.C. ...	2	2	0
Dr. McSheehy, Donoman, Denmark Avenue, Wimbledon ...	1	0	0
Dr. Moore, 53, Well Street, South Hackney	1	1	0
Dr. Grandy, 314, Commercial Road, E.	0	10	6
Dr. O'Meara, Haslar, High Road, South Tottenham... ...	1	1	0
Dr. Neville, 123, Sloane Street, S.W.	2	2	0
Dr. Ambrose, M.P., 1, The Mount, Whitechapel Road ...	3	3	0
Dr. Wynn Westcott, 396, Camden Road, N.	1	1	0
Dr. Barragry, 150, Junction Road, N.	1	1	0
Dr. Gahagan, 178, Clerkenwell Road, E.C.	0	10	6
Dr. Moynahan, 150, Bethnal Green Road, N.E....	3	3	0
Dr. Ross, Eleanor Lodge, Dalston, N.	0	10	0
Mr. Jeremiah McCarthy, F.R.C.S.	5	5	0
A Friend, Finsbury Square	0	2	6
Dr. Molony, Murroe, co. Limerick...	1	1	0
Dr. Mullane, 55, Union Road, Nottingham	1	1	0
Dr. Rogers, 103, Bethnal Green Road, N.E.	3	3	0
Dr. Barker, 47, Green Croft Gardens, N.W.	1	1	0
Dr. Campbell, Virginia Road, N.E.	0	10	6
Dr. M. Cahill, Ellesmere, Cheshire	1	1	0
Mr. Brooks, Bethnal Green Road, N.E.	0	5	0
Dr. W. Cahill, 217, Bethnal Green Road, N.E.	1	1	0
A Friend	0	2	6
Dr. M'Donnell, Hailsham, Sussex	1	1	0
Dr. O'Callaghan, 91, Duke Street, Park, Sheffield	1	0	0
Dr. H. Macnaughton-Jones, F.R.C.S.I.	5	5	0
Dr. M'Cormack, Mare Street, Hackney	0	10	0
Dr. Guthrie, Green Street, Bethnal Green, N.E.	1	1	0

BRADFORD SCHOOL BOARD ELECTION.—A meeting of medical practitioners convened by a circular signed by the leading members of the Medico-Ethical Society and the Medical Union, was held on November 12th at the Victoria Hotel to consider the advisability of promoting the candidature of a medical man for the School Board. Mr. G. Gilchrist Burnie presided, and there was a large and influential gathering. Speeches were delivered by Dr. O'Brien, Mr. Metcalf, Dr. S. Johnson, Dr. Mitchell, Dr. Hime, and others, and finally it was resolved to adopt such a candidate. Three names were subsequently proposed, and ultimately Dr. Hime was unanimously elected as a candidate. Dr. Hime returned thanks for the honour conferred on him of being selected for such an important duty by the members of a profession so capable of forming a sound judgment on such a question. All present formed themselves into a committee with power to add to their numbers to forward the interests of the selected candidate.

THE PLAGUE COMMISSION IN INDIA.

The inaugural address of the 164th session of the Edinburgh Royal Medical Society was given in the Society's Hall, Melbourne Place, Edinburgh, on Friday evening, November 9th, by Professor T. R. Fraser, on the Plague Commission in India. The chair was taken by the Senior President of the Society, Dr. Stewart. There was a very large audience.

The Work of the Commission.

By means of a map Professor Fraser first indicated the amount of country over which the Commission had travelled, the places visited, the mode of travel, their mode of daily work, and other interesting details. He had at his disposal an enormous amount of material relating to the present epidemic of the plague in India, and also to the work of the Commission. It was therefore not possible for him to do more than touch upon a very few of the more interesting and perhaps more important matters that had come under his observation. He had been greatly impressed with the magnificent success of British government in India, more particularly as to security of life, protection from oppression, strict justice in the redress of wrongs, the settlement of disputes, and the effective assistance in relief of famine and plague.

Native Prejudices as Hindrances to Sanitation.

Native prejudices were a terrible barrier in the way of even further improvements. And nowhere did these prejudices come into play with greater force and greater harm than in the matter of sanitation, which was somewhat crude in many parts. Fair, and sometimes good, water supplies had been introduced into cities and towns, and improvements in the same direction had taken place in a few villages. Effective disposal of sewage was everywhere sadly lacking. The admission of air and light to dwelling houses was not provided for; there was much overcrowding, and animals lived in too close proximity to dwelling houses.

Plague the most Virulent of Diseases.

The signs and symptoms he had observed of the plague in India went to show conclusively that it was actually and absolutely the same disease that had for many centuries carried devastation over the whole world. It was capable of assuming a virulence which far exceeded that of any other known disease, with perhaps the exception of the temporary and extraordinary virulence which now and then occurred in certain localities in the cases of cholera and yellow fever. But, taking these two diseases all over, neither of them came anywhere near to the plague in virulence, as that disease manifested itself in India and other eastern countries. Edinburgh and Scotland had been visited by the plague in the sixteenth century and had suffered severely. The reason of the outbreak in Edinburgh at that time had been assigned to the misbehaviour of an important lady of high estate. Such, at least, was the misconception at the time; such, indeed, was one of the many extraordinary misconceptions about the plague which existed at one time in this country, and which to-day existed with all their full and evil force among the natives of India.

Plague in India.

Before the year 1800 there really did not exist any historical record in regard to occurrences of the plague in India. Since 1800 there had been at least two great outbreaks in that country, both in the northern parts. The first (the record tells us) continued to lay waste the country for eight years. At or about the same time the land was overrun with mice; the mice and the plague seemed to have had some very close association. Substitute rats for mice, and the statement would strictly apply to the present epidemic in India. The bubonic plague had been endemic in India for practically an unknown time. The present outbreak began in Bombay in July or August, 1896, and had been characterised by great diversity of symptoms in individual cases.

Pestis Minor.

There was first of all the mildest form of the disease, where there was practically nothing but bubonic swellings, with almost no pain. The sufferer might be able to go about his ordinary occupation. The plague bacillus had been identified in this form of the disease, "pestis minor" This mild form of the disease was of little import to the individual, but of the greatest importance to the country, because it was infectious and could assume a new type under favourable circumstances for increasing its virulence.

Pestis Major.

In the "pestis major" type they had fever and bubonic swellings, with great prostration and other signs and symptoms of an extremely severe infective process. As it existed in India, it was a very fatal disease.

Varieties.

There were several varieties of the "pestis major" type. In one variety, where the bacillus appeared to confine itself to the lungs in large measure—the so-called pneumonic type—recovery very rarely took place. It was mainly a bronchial pneumonia, though he had seen cases where the entire lung was affected. How the bacillus entered the lungs he was not prepared to say. In India the great mass of the cases were of the bubonic variety.

The Bacillus.

The bacillus itself had little power of resistance, was easily killed, at least as compared with many micro-organisms. It flourished in shade, darkness, and polluted air. It could not live long in the open air in India at almost any time of the year. The ignorance of the natives was a great difficulty to the authorities in adequately dealing with the matter, but when the real condition of affairs had been realised the natives displayed remarkable fortitude and patience, and quietly submitted to hardships which he was quite sure the crowds of the poorer classes of the large cities in this country would never submit to.

Rats as Distributing Agents.

Rats had been one of the most potent means of spreading the disease, not from one distant part of the country to another, but wherever it had been introduced. The construction of the native houses fostered the prevalence of rats, and they were responsible for a large part of the extension of the disease.

Measures of Prevention.

Disinfection by chemical means was disastrously unsuccessful. No material success had attended any measure except observation of seaports, and so far as the extension of the disease was concerned, the total, not partial, evacuation of any plague-affected town or village. It had existed now for four years in Bombay, the largest city in India, and the second largest city in the British Empire—a very serious state of affairs. If then evacuation was the only effective measure in India, how impossible was it to stop it in the present condition of affairs in that country by any human agency or any known means. The lack of sanitation in the native dwellings was what made evacuation so absolutely necessary. This was the soil for extension and increase of virulence.

Need of Sweeping Sanitary Reform.

It was in reality a question of sweeping sanitary reform Better houses with air and sunlight, and a system for the effective disposal of sewage were required. It would be impossible to stop the plague in India by any other means. The houses in India should to some extent approach to the character of the bungalow of the European in India. If even a slight reform in the character of the houses was made, disinfection would become a practical measure, and the evacuation of large districts would not be required.

[During and at the close of the lecture a large number of photographs were thrown on the screen. These showed the train in which the Plague Commission travelled, views in cities and villages, plague stricken localities and dwellings, evacuation camps, and lastly a series exemplifying the more outstanding signs of the disease—the facial expression, the glandular swellings in the neck, the condition of the tongue and eyes, and the various manifestations of the plague in the skin. The lecture and its illustrations were followed with the closest interest and appreciation for fully two and a-half hours.]

On the motion of the Senior President, seconded by Professor Crum Brown, Professor Fraser was awarded a hearty vote of thanks for his most interesting and instructive lecture.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

A CORRESPONDENT sends us a communication which he recently received from the General Manager of the London office of the London, Edinburgh, and Glasgow Assurance Company, Limited. In this communication he is requested to make a report upon a lady who proposes to insure for the sum of £100; she resides six miles from our correspondent's house. The paper to be filled up by the medical referee contains some twenty questions to be answered by him, with an outline of a private and confidential report involving a complete physical examination, together with an expression of opinion as to the value of the life. The scale of medical fees is stated as follows:

If the sum assured is £25 or under...	3s. 6d.
Over £25 but not exceeding £50	5s. 0d.
Over £50 but not exceeding £100	7s. 6d.

For sums exceeding £100 the larger form of Medical Report must be used.

Our correspondent adds that he has refused to undertake the examination for a less fee than 1 guinea.

Another correspondent sends us a circular letter which he has received from the Salvation Army Life Assurance in connection with the Methodist and General Assurance Society, Limited. This company asks 34 questions, involving a complete physical examination; in the case of women 39 questions; and the examiner is also required to classify the life. For this the following scale of fees is offered:

For an Assurance of	Single Life.	Joint Life.
£25 and under £50	£0 3 6	£0 5 0
£50 „ £100	£0 5 0	£0 7 6
£100 „ £250	£0 10 0	£0 15 0
£250 and above	£1 1 0	£1 11 6

Another correspondent sends us two forms used by the British Natural-Premium Life Association. The one is to be used in cases in which the proposal for life assurance does not exceed £100, the other is for larger amounts. In the case of the smaller amount, the medical examiner is required to state whether the organs of respiration and circulation, and the abdominal organs are free from disease, and to advise the company whether the applicant is safely insurable as a good average life, an under-average life, or whether he is uninsurable. For this we are informed that the fees offered are:

For assurance under £50	£0 2 6
For assurance of £50 and not exceeding £100 ..	£0 3 6

The other form is much more elaborate and involves an examination of the urine and detailed statements as to the respiratory, circulatory, and abdominal viscera. For this the fees offered are:

For assurance over £100 and under £200 ...	£0 7 6
„ „ of £200 „ £500 ...	£0 10 6
„ „ of £500 and upwards ...	£1 1 0

The best comment upon these rates is contained in a letter from our correspondent, Dr. Havell, of Felixstowe, published in another column (p. 1469).

PROFESSOR CALMETTE ON THE PLAGUE.

THE second Harben Lecture on Bubonic Plague was delivered by Professor Calmette, Director of the Pasteur Institute of Lille, on November 14th, at the Examination Hall of the Royal Colleges of Physicians and Surgeons.

Professor Calmette dealt in detail with the facts and theories concerned in the therapeutic use of antiplague serum. It had been possible in the recent plague outbreak to determine with fair accuracy the way in which the bacillus entered the human body. At Koloborka all the cases presented the primary pneumonic form; the mode of entry therefore was exclusively through the respiratory passages. Other cases showed that infection had followed excoriations of the skin or bites. Whatever might be the mode of entry, the result of infection was the multiplication of the bacillus first in the lymphatic channels and afterwards in the blood. Experiments had led Drs. Calmette and Salimbeni to advocate a new method of administering plague serum. Instead of injecting it beneath the skin it was introduced directly into the veins as soon as possible after infection. Yersin treated in this manner 26 cases, of which only 2 ended fatally. At Oporto in 1899 there were 142 cases thus treated in hospital, of which only 21 died. It appeared that almost immediately upon the introduction of the serum into the general circulation an intense phagocytosis of the plague bacilli was produced, especially in the lymphatic glands. In a few hours the bacilli were swallowed up in the leucocytes, and none were to be found in a free state. In animals it was noted that it was not long before the bacilli disappeared completely and the animal was cured. In man within four or five hours after intravenous injection of the serum the temperature fell, and if the treatment were carried out early, cure was effected in two or three days. Where treatment had been delayed all tissues as yet intact remained immune. The lymphatic glands mostly remained affected for a long time, but slowly returned to their normal condition. It had been shown that the serums of vaccinated animals contained two substances, one called alexin and the other the reacting substance. Alexin was a kind of digestive ferment which existed in normal serums. The reacting or intermediary substance existed only in very small quantities in normal serums. These two substances were produced principally by the leucocytes, and they digested and destroyed infectious microbes in vaccinated animals. In unvaccinated animals when a serious infection occurred the reacting substance was not present in sufficient quantity to enable the normal alexin to act. Antiplague serum contained no alexin, and was a reacting substance. If serum was injected under the skin the reaction substance only worked slowly, but it was indispensable that the process should be carried on throughout the organism as rapidly as possible, therefore the plague serum was injected into the general circulation by the intravenous method in order to secure the almost immediate disappearance of all the microbes by the action of the two substances mentioned. Experience showed that a very small quantity of serum sufficed to react on an enormous quantity of alexins. The antiplague serum reacted on the alexins, and the action on the phagocytic elements was prompt and simultaneous. A doctor confronted with a case of plague must at once inject 20 c.cm. of antiplague serum into a superficial vein without waiting for the clinical diagnosis to be bacteriologically confirmed. As a prophylactic antiplague serum was useful for from eight to ten days, and the injection should be renewed weekly.

Finally, Professor Calmette emphasised the fact that the serum presented the immense advantage of conferring immunity in a few hours.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

THE total death-rate from plague for all India during the week ending October 21st amounted to 2,505, against 2,322 during the previous week.

Bombay.—In the Bombay Presidency the numbers were, however, fewer, having fallen from 1,415 during the week ending October 14th to 1,285 for the week ending October 21st. The city of Bombay also shared in the improvement, the plague deaths during the two weeks being 82 and 72 respectively.

Mysore State.—In this State an increase has occurred, the numbers being 687 and 904 for the weeks ending October 14th and 21st respectively. In the city of Mysore the numbers have actually decreased, and the same holds good in the city of Bangalore; but in the State of Mysore the area has extended, and Seringapatam has been declared infected.

Kolar Goldfields.—Plague has spread beyond the Coromandel Mine, where it first appeared, to the mines of Champion Reef, Ooregaum, Tank, Block, Oriental, and the goldfields of the Mysore mines. Fire being considered the best agency the affected houses were burned.

Calcutta.—In Calcutta 44 deaths from plague were reported for the week ending October 21st, and for the Bengal Province 184, the chief plague incidence being in Patna and Gya.

Inoculation in Bombay.—Inoculation is being practised with fair success. During the week ending October 10th, 98 persons were inoculated, the majority belonging to the high caste Hindus. The total number of persons inoculated since October 1st, 1897, up to October 10th, 1900, were 200,189.

MAURITIUS.

For the week ending November 8th, 50 fresh cases of plague were reported, and 36 deaths from the disease.

PRESENTATION.—Dr. Crone, J.P., Chairman of the Willesden District Council, has been presented by his colleagues and officials of that body with a silver cradle to commemorate the birth of a son during his term of office. Amongst those present at the presentation was the eldest son of Dr. Crone who has just returned from South Africa, where he served with the mounted infantry of the City Imperial Volunteers.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

SUBSCRIPTIONS to the Association for 1900 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, NOVEMBER 17TH, 1900.

THE BUSINESS OF THE GENERAL MEDICAL COUNCIL.

WE are unable to understand why the General Medical Council should not, in the matter of the publication of the reports of its Committees, follow what is in fact the practice with regard to reports of Royal Commissions and Departmental Committees. A report is the act and deed of a Committee, not of the body by which it is appointed. The Crown may or may not act upon the recommendations of a Royal Commission; the House of Commons may or may not legislate on the lines suggested by the report of a Parliamentary Committee; a Government department may or may not introduce into its methods the reforms suggested by a Departmental Committee, yet the reports of Commissions appointed by the Crown are always published, and those of Departmental Committees are usually published. The report of a Parliamentary Committee is invariably published, usually with the evidence on which it is founded, and it is never discussed until some days, weeks, or months after publication. The fact that a report has only been in the hands of members for a short time is frequently pleaded as a reason for postponing the discussion of the subject with which it deals, and the most imperious and powerful Ministers have never ventured to make light of such a plea. This delay is claimed ostensibly to allow members of Parliament time to study the report, but everyone knows that a stronger motive is a desire to give public opinion time to find expression through the press, and through the representations made by constituents to their members.

The procedure in the General Medical Council is usually quite different, and the course pursued not only differs from established constitutional usage, but deprives the debates of the Council of much of their interest, and its decisions of no little of their force and influence with the profession. If the Council refers some matter of importance to a special committee or to one of its standing committees nothing is, as a rule, heard of the matter for six months or a year. Then one day, during a session of the Council, the report is brought up; it is, as a rule, at once discussed, and a decision reached on the same afternoon. The members of the Council may have had the report in their hands for a few days, and sometimes the public proceedings indicate that they can have had it only for a few hours. On the first day of the session of the Council it rises early in order to give its committees an opportunity of meeting; on other days its committees sit before the hour of the Council meeting, and it often happens that their reports are not ready when set down upon the programme of business. It may no doubt be difficult to collect members resident at a distance, and in some cases this haste in committee may not lead to any serious inconvenience, though it must always tend to cause some loss of time in the Council itself. In other cases, however, in which careful deliberation is desirable, it is hardly possible to avoid the suspicion that the work is liable to be done in a rather perfunctory way when it is put off to the last moment.

However this may be, the reports are marked "private and confidential" until after they have been discussed. This is the rule, and if it be not invariably followed the exceptions are few. Thus the representatives of the corporations have no opportunity of consulting the bodies by which they are appointed, the direct representatives no opportunity of gathering the opinion of the profession at large until after the discussion by which the Council may be committed to a course of action before its members have had adequate opportunity for study and consultation. It will be said, perhaps, in defence of the present system that the members of the Council are representatives, not delegates, but so are members of the House of Commons, and surely the method now followed carries the representative doctrine to an absurd extreme. No other method probably was possible when the knights of the shires rode to the Parliaments of Edward III, but the Crown, Parliament, and the State departments have long ago recognised that the printing press has put it out of date, and that it is not only politic but right to give public opinion the opportunity of making itself heard.

What evil it is supposed could result from the publication of the reports of the committee of the General Medical Council before they are discussed by that body we cannot conceive. There are some people who appear to believe that it is the great ambition and desire of a journal or newspaper to commit what Lord Rosebery calls (when they are committed by Lord Salisbury) "blazing indiscretions," but really it would be difficult to be blazingly indiscreet about the ordinary business of the Council. Of course everyone recognises that there are some reports on matters with which the Council has to deal as a disciplinary body that should not be made public, that should, in fact, be treated as strictly "private and confidential," at least until the Council has considered and adjudicated upon them, but we think that discrimination should be exercised with regard to reports on matters of general policy.

According to its Standing Orders, "Unless, for reasons of public emergency, the President shall otherwise direct, the General Council shall meet every year for general business on the fourth Tuesday in May . . . and, if necessary, again on the fourth Tuesday in November." We presume, therefore, that the Council will meet on November 27th next, and it is stated that members of the Council have received summonses to this effect. Here again we would venture to suggest that the General Medical Council might follow the usual constitutional practice of causing public announcement of the date of its assembly to be made some time before each session. Again according to the

Standing Orders, the Executive Committee of the Council should have met last July, but on applying recently to the Council's publishers to purchase a copy of the minutes of that meeting, we received the reply from Messrs. Spottiswoode that they were "informed that there were no meetings during that month."

No programme of business is, we believe, furnished even to the members of that body until close upon the date of meeting, and even that is not available for general information, as it is held to be a confidential document. Hence it is not possible to forecast the work of the General Medical Council with any degree of accuracy, for the only source of information is a study of the minutes of the last meeting, which usually discloses a portentously long list of matters that for one reason or other have been postponed.

On the question of reciprocity of practice with foreign countries, which at present relates to Italy only, the position appears to be this. The Privy Council had communicated the step which they proposed to take in setting in operation the clauses of the Act of 1886 that bear upon it, but which hitherto have never been put in force. As it appeared to some members of the Council that the reciprocity proposal was unequal, more being conceded to the Italians than they proposed to concede to us, it was resolved that a representation be made to the Privy Council pointing out the inequality. Presumably this has been done. We await the answer with interest. We may remind our readers that as the Italian Chamber was dissolved shortly after the debate in the Council, and as the whole question turns upon the nature of a new measure which it was proposed to introduce into the Italian Parliament, it is not probable that any decisive step can have yet been taken by the Privy Council, although the previous action of that august body does not seem to promise that it will necessarily defer to the opinions of the General Medical Council upon this subject.

Of the legislative work with which the Council was engaged, the Bill for the conferring of additional disciplinary powers fell through last session, owing to there being no time left in which to bring it on; it may be presumed that it will be reintroduced. It is to be expected, also, that some further steps will be taken as regards the clause in the Companies Bill of last session, which it may be remembered was dropped by Mr. Ritchie, then President of the Board of Trade, before it had undergone any discussion upon its merits.

The Midwives Bill, which had engaged a good deal of the time of the Council, having failed owing to a series of accidents—if the talking of it out by its own supporters may be called an accident—ought again to be considered by the Council, even if it do no more than pass a resolution adhering to its former position, and instructing a committee to watch any attempted legislation. It is highly probable that this Bill will be brought forward before the May meeting of the Council, in which case it would be well that their attitude should be defined.

The question of the financial arrangements of the Council, which has been brought to a head by the impecuniosity of the Irish Branch Council, will have to be again discussed upon the report of a committee appointed to consider it. It is to be hoped that the somewhat serious nature of the position may be fully realised, and some means be taken to grapple with it. As we pointed out some months ago, the bankrupt position of the Irish Council is by no means the whole issue. The annual expenditure of the whole Council now exceeds its income, and the expenditure is steadily growing, and seems likely to increase yet further, whilst the income shows no corresponding tendency. It is true that the English Branch Council stands possessed of considerable accumulated funds, and the Scotch Branch Council of a much smaller accumulated fund; but these are diminishing annually, and their final exhaustion is merely a matter of time. The separation of the funds of the several Branch Councils and the appointment of separate treasurers is definitely prescribed by the Act of 1858; but it is an arrangement which serves no good purpose, for these Branch Councils only exist as parts of the General Council, which has no funds at all, and indeed has no direct source of income. Surely it would be desirable that, whenever the Council goes to Parliament for any additional powers, it should seek at the same time powers to consolidate the funds of the Branch Councils and to place the finances of the Council upon a more satisfactory basis than at present.

The action of the Conjoint Board in England with regard to the place of study and the nature of the instruction to be recognised as constituting the first year of professional education must come before the Council on the resolution forwarded by the Royal College of Surgeons in Ireland. This matter was discussed at some length in our issue of November 3rd, p. 1331.

FIRST AID IN THE MERCHANT SERVICE.

THE Board of Trade has very properly drawn the attention of shipowners and others to the necessity of making some provision beyond that made obligatory by law for the care and treatment of sick and injured seamen on ships which are not required to carry a surgeon. Shipmasters are compelled by law to carry the requisite means of medical and surgical treatment in the shape of drugs and various stores and appliances, but they are neither compelled themselves to acquire the experience and knowledge necessary for their proper use, nor to see that some member of the ship's company is qualified in this respect. The philanthropic instincts of landsmen have long since responded heartily to the call for attention to such matters ashore, but although people stand in much greater need of such assistance in emergencies at sea, there seems to have been no general desire on the part of the shipping interests to provide for it. Ever since Sir John Furley first raised the question many years ago a sort of spasmodic interest has been taken in the subject, but somehow or other no real advance has been made in the way of persuading either owners or masters to make provision for this purpose. Ambulance classes have been established in some few ports, and the authorities have allowed the ambulance qualification to be endorsed on the back of masters' and mates' certificates, but these measures appear to have met with very little real success; very few officers have availed themselves of the opportunities thus offered. The reason for this is obvious. The men

themselves do not possess the requisite inclination to devote themselves to any kind of work or study ashore that does not appear to be likely to be directly advantageous or profitable, and the philanthropic instinct has too often been knocked out of them by the hardships they have had to endure and the little interest that has been taken in their lot. That the work itself is not of a kind that is quite congenial to their disposition and tastes or altogether in harmony with their usual proclivities is made abundantly manifest by the indifference they have shown towards it.

It has very naturally occurred to the commercial mind of the Board of Trade that as persuasion has so far failed, compulsion might be tried with better success. It has been suggested that candidates for masters', mates', or engineers' certificates of competency might be required to pass an ambulance examination. It seems very doubtful, however, if it would be competent for the Board of Trade, without unduly straining its statutory powers, to make it incumbent on candidates for certificates of competency as defined by statute to prove any degree of proficiency in ambulance work or even of any such knowledge at all, however desirable such an arrangement might be. Nor is it by any means clear that if it were able to do so it would be the most judicious course to pursue. A story is sometimes told of a shipmaster who had run his vessel ashore excusing himself from blame on the ground that at the time of the accident he was down in the cabin attending a man who had broken his leg. Whether the plea succeeded or not history does not say; but it is no doubt true that any one of the officers might in this way be seriously hindered from attending to his own particular duty at some critical moment.

The question whether it would be altogether desirable to entrust the care of a patient to one who was not legally responsible for his safety, or to the tender mercy of men whose duty it is to make a passage, and who sometimes cannot afford to spare a single hand, need hardly detain us, for this applies to the condition of things which exists at present.

For these and sundry other reasons it would probably be far better policy to select the ship's steward, or, in ships which have no special steward, the cook-steward, as the most suitable man. It would be far easier for them to attend the necessary classes, and to get the requisite knowledge, and they would have less inducement to say a man was fit for duty when they knew he was not, or so far as quarantine and sanitary regulations ashore are concerned, to report the crew as being all well when there was someone grievously sick below. On the whole, if compulsory powers are really required, the Act might now be usefully and advantageously amended so as to make it compulsory for certain ships to carry a man, whether master, mate, engineer, or steward, who has been specially trained in ambulance work, and also in elementary hygiene. This would appear to be a far more reasonable course to pursue than to compel all officers, whether they like it or not, to qualify in things that do not really pertain to their duties. Such an arrangement would be more business-like than that now said to be contemplated; it would be more in keeping with the times, would relieve the executive officers both ashore and afloat of unnatural responsibilities and of work which must always be irksome and sometimes unpalatable, would avoid much friction and muddle, would be more agreeable to the sick, would induce a large number of seafaring men voluntarily to obtain certificates, and would make it more feasible eventually to introduce the system generally into the merchant service. The Civil Service of this country, says Sir Algernon West, should court every form of publicity, should welcome any suggestions for its improvement, and should try to assimilate itself to a state of things which is ever becoming new; and we can only conclude that this applies to the Board of Trade as to any other department of the public service. But it is to be feared that so long as the Board of Trade is satisfied to continue in its present anomalous position of a body charged with the administration of medical regulations without itself possessing any medical adviser, its efforts in these respects will never prove very successful.

THE MEDICAL EXAMINATIONS OF THE UNIVERSITY OF LONDON.

An interesting memorandum by Sir Samuel Wilks upon the practice of the University of London in classifying the successful candidates at its Pass Examinations, up to and including the M.B., in two divisions, first and second, is printed at page 1478. As years have gone by the second division list has been constantly increasing in length, until in July, 1899, only 3 candidates at the Intermediate M.B. were found worthy of a place in the first division, 52 being relegated to the second division. At the M.B. in October, 1899, the first division contained 11 names, the second 53; and in May, 1900, there were 4 names in the first division and over 30 in the second division. These are the results of the examinations after the absolute rejection of about half the candidates who presented themselves.

With such figures before them the Senate resolved a year ago that the reports of the examiners should be referred to the Committee on Examinations in Medicine. This Committee by its inquiries of the examiners and medical schools was unable to discover "that either the teaching or the examinations at the University were of an unsatisfactory nature"; but it did "learn from those engaged in teaching that the majority of candidates cannot by any means be thrust into the class where the exceptional men are found."

Now it would seem that both these statements cannot be true. There must surely be something wrong with Pass examinations, at which the candidates are of more than average ability and industry (for we think that this may be stated generally of those presenting themselves at the London University), which yet result in the plucking of about half the candidates, while from 80 per cent. to more than 90 per cent. of those who pass are placed in the second division. Sir S. Wilks's memorandum affords strong support to the contentions in an article on Medical Students and the London University in the British Medical Journal for October 6th (p. 1031). He says that the Pass Examination is treated as an Honours Examination, and it was against this that we protested.

The classification of candidates in two divisions is as old as the University. In the first Calendar we find it stated that on

a certain day the examiners would publish a list of the successful candidates arranged in two divisions. And in the next paragraph it is stated that candidates who pass in the first division—and they form a good proportion—may be examined for Honours. From the first the University of London has paid much more attention to its Pass Examinations in all the Faculties than to its Honours, being stimulated thereto, doubtless, by the very low standard of attainment then required for a poll degree at the "old" universities, where attention used to be concentrated upon getting as many men as possible on the Honours list—the curriculum and examinations for which are quite different from those for a mere Pass. As was said in the article to which reference has already been made, provided the examination is suited to its purpose and to the age and the time at the disposal of candidates, the maintenance of a high standard may be approved, and we believe that in its earlier years the influence exerted by the London University in this respect was most valuable. Under the original regulations the division of the candidates in the Pass examinations into these two classes may have had the wise object of preventing early specialisation, and have been intended to secure that only those who acquitted themselves well in all subjects should be allowed to compete for Honours. A man who did very well in Physiology but only just passed in Anatomy would find himself in the second class and disqualified for Honours in Physiology. But if this was the intention of the early Senators it was entirely upset by the action of the University many years ago in allowing second class candidates to enter for Honours to obtain which they had neglected one or more portions of the curriculum. It is very desirable to prevent this; and before adopting the recommendation of Sir Samuel Wilks and his colleagues to abolish the two divisions, it appears to us that the Senate would do well to consider whether it would not be better to revert to the original rule of the University as regards Honours, that is, to have an Honours examination in connection with each Pass examination, and to allow only candidates who pass in the first division to enter for Honours. If the first division cannot be thus used to distinguish the "good all-round" man (not the highly distinguished) from the "weak in one or more subjects," it would be better to abolish the classification.

We cannot share Sir Samuel Wilks's view that the approval by the General Medical Council of the Pass Examinations should be a sufficient guarantee of their excellence. We have, unfortunately, no "*Staatsexamen*," no State Licence of fairly uniform standard in this country. The General Medical Council endeavours to see that no licensing body shall sink in its requirements below the minimum standard necessary for registration, but the Pass Examinations of a university should always mean more than this.

MEDICINE, HYGIENE, AND SCHOOL BOARD ELECTIONS.

At the annual meeting of the Association of Certifying Factory Surgeons, lately held at Bradford, Dr. C. W. Thorp, in his presidential address, expressed the opinion that the "half-time" children were in a much better mental and physical condition than those attending school for the full time. This he attributed to the bad sanitary conditions of many schools, and to the comparatively healthy surroundings in modern mills. If this be so, those who accept Mr. Herbert Spencer's formula that the first condition of national prosperity is to be a nation of healthy animals will agree that it calls for serious consideration. for attendance at school is now compulsory. It would be well if the question of the physical well-being of school children could be put forward prominently as an issue at the pending School Board elections. Mr. T. J. Macnamara, M.P., in an article in the *Fortnightly Review* for November, recounts with pardonable pride the efforts made by the London School Board to secure for the young Londoner a sound body as well as an educated mind. During 1899-1900 no fewer than 38,176 boys and girls received instruction in swimming. The Board determined also that when a higher standard school was erected a gymnasium should form part of its equipment. In a few instances the Board has provided school kitchens with boilers and gas stoves for the preparation of dinners, but the conclusions of a Committee of Inquiry dealing with this and other health matters were rejected by 35 to 14 votes. This inquiry started from the position that the first duty of the community to the child whose guardianship it had in part assumed was to see that it had a fair equipment for life. The main conclusions of the Committee were: First, that it was the duty of the School Board to ascertain what children came to school in a state unfit to get normal profit from school work, whether by reason of underfeeding, physical debility, or other cause. Secondly, that there should be the necessary inspection for that purpose. Thirdly, that if the children were sent to school underfed they should be provided with food. And fourthly, that if they were underfed from the culpable neglect of parents, whether by reason of drunkenness or other gross misconduct, the Board should prosecute the parents for cruelty. The last clause was the crux, for it appeared to some to contain possibilities of an unreasonable amount of interference with the liberty of the subject. The Committee did not, perhaps, take a sufficiently wide view of the scope of the inquiry necessary. Physical debility is not due to underfeeding alone. The *Nineteenth Century* for October contained an amusing and characteristic article by Dr. Hely Hutchinson Almond, Head Master of Loretto, in the course of which he dealt with a number of points on which he has formed strong opinions, including regular open-air drill for children; an interval, not to be encroached upon, for daylight play; free ventilation of class rooms, not inhibited by terror of draughts; and, if we mistake not, some judicious ignoring of "grants." Other good doctrine is to be found in an article entitled "Disillusioned Daughters," in the current number of the *Fortnightly Review*. The writer, who is a lady, argues for the correction of untoward effects of protracted brain work in girls by the soothing influence of light manual labour such as sewing, embroidering, knitting, lacemaking, and housework generally. In many of the chief public and preparatory schools for boys, carpentry, bookbinding, and so forth, are already recognised recreations, and a lad was to be seen not long ago on one of the rivers of the East Coast sailing a boat which he had made with his own hands in the carpenter's shop at Harrow, to the peril, as was thought, of his own and his sisters' lives, though, in fact, with no worse result than a night on a mudbank. A change in the type of the occupation, it may be suspected, has a powerful influence in producing the difference alluded to by Dr. Thorp between the physical tone of the half-timers and that of the full-timers. Even sharpening of the memory, which seems to be the chief product of the modern School-Board system, depending, as it does, on the crispness of the original impression, is a function of the healthy activity of brain protoplasm. We believe that much good would result were more medical men elected on School Boards, and we are glad to

see that the medical profession in Bradford is making an organised effort to return a medical man resident in the borough—Dr. Hime. The end sought in education is the power to think and judge and to choose what shall be thought about, and education can only be really sound when the physical conditions under which instruction is given ensure a healthy body. It would be well for the future, both of the individual and the State, if the need for greater attention to the physical well-being of school children, both in school and out of it, were more fully recognised, and as a means to this end we think the community ought to welcome, and, we believe it would welcome, the candidature of members of the medical profession.

THE EDUCATION OF EDUCATORS.

Not very long ago, in connection with the examination for medical degrees in one of the British Universities, it was remarked by someone in authority that examiners ought to be "angels from heaven." Probably the authority in question meant in wisdom and graces rather than in the possession of special medical knowledge. A similar idea must have entered not infrequently the minds of parents, guardians, and all who have charge over the young, including Board School teachers. There is a real need, not so acutely felt as it should be, for the education of the educators, particularly in physiological matters. It is said, with a wise neglect of mathematical accuracy, that every child who is brought to a hospital on account of chorea has received physical punishment on at least three separate occasions—once for general restlessness and naughtiness, again for breaking crockery, and a third time for making faces at his grandmother. How often has an unfortunate child suffering from nocturnal enuresis been subjected to active discipline on account of a supposed moral defect termed laziness, when the real defect that needed a direct remedy was the over acid condition of the urinary secretion. How often has physical castigation, including all sorts of torture, been applied by affectionate friends to so-called hysterical children, who were really passing through a post-epileptic automatic state. It has been said, somewhat dogmatically perhaps, that if we knew everything we should forgive everything. And it may equally well be said that if we knew everything we should actually punish the ordinary child little or not at all. Dr. Savage has recently referred to the saying of Sir Samuel Wilks, who, when called in consultation to see an imbecile child who had been given all sorts of medicine, some presumably atrocious in flavour, by the conscientious person in attendance, asked if it was expected thereby to produce an additional cortical convolution. One of the early steps in the wise education of children is to recognise their limitations before exhibiting moral treatment.

METROPOLITAN WATER SUPPLY.

At the meeting of the London County Council on November 13th the question of the water supply of the metropolis once again came under review. The occasion was a recommendation of the Parliamentary Committee that a Bill should be promoted in the session 1901 for the purchase of the water companies' undertakings. It appears that the Government has taken no legislative steps with a view to action upon the lines of the report of the Llandaff Royal Commission, although the admission is made on all hands that in the interests alike of the water consumers and the water companies further delay may be disastrous. The two fundamental problems are the terms of purchase and the nature of the proposed purchasing and administrative authority. There appears to be little difficulty in coming to an agreement as to the former, while in regard to the latter the divergence of opinion seems to be accentuated and internecine. It is generally admitted that the terms of purchase cannot be decided upon ordinary arbitration procedure and principles, that the 'prices' paid should have regard both to the rights and obligations of the companies, and that no "solatium" for compulsory purchase should be allowed, though the cost of reinvestment might reasonably be awarded. In the matter of the future water authority, however, the recommendations of the last Commission were even more hostile to the London County Council than the proposals contained in Lord James's ill-fated Water Bill. Three-quarters of the population supplied by the companies, and 84 per cent. of the rateable value on which they assess their water rates, are contained within the area of jurisdiction of the London County Council. It is clear, therefore, that a water authority or trust, one-third of which is to be elected by the Council, is, to say the least, anomalous. We are also concerned that the water authority and the central sanitary authority should be one and the same, as is the case in so many provincial municipalities, and we are not surprised that the County Council by a large majority carried the recommendation of their Parliamentary Committee after rejecting an alternative proposal in harmony with the Royal Commission's recommendations.

"ROWS" IN LONDON.

Sir Frederick Bramwell has confided to the *Times* a scheme for doubling the number of shop windows in the new street to be constructed from north to south of London by making a second footway on a level with the first floor on the top of the ground-floor shops, something after the fashion of the "rows" at Chester. Our eminent contemporary, in its comments upon the scheme, becomes almost lyrical, although, as the article proceeds, difficulties crop up as it were involuntarily. So far as we can see, there is on theoretical grounds no hygienic objection to the scheme suggested; in fact, it would result in the upper storeys being set back some 14 feet; but, like all schemes for getting more people on to a given area, it would call for special sanitary regulations, and for the very strict enforcement of such regulations. In the first place, the easy-going system which now permits the shopkeeper in an important street to shake out his mats and sweep the dust from his shop on to the pavement or roadway between 9 or 10 o'clock in the morning would have to be stopped. In the construction of shops upon such a principle, special attention would have to be given to the arrangements for the removal of refuse, and also for the ventilation of shops on the ground floor, which would be likely to present special difficulties, since there could be no roof ventilation, as the roof would be used for the upper pavement. Moreover, as the *Times* itself admits, the municipal authorities would have to be very much more careful to keep the upper pavement clean, both in dry and wet weather, than they now are as to ordinary pavements, otherwise the filth carried up on the feet of the passengers would rapidly accumulate, and would produce conditions very inimical to health; further the policing of the upper footway, which it is proposed should be partially covered in, would require special provision, otherwise we suspect that it would become the haunt of objectionable characters, and the high rates which Sir Frederick expects the upper shops to command would not be obtained. One advantage, which nobody will deny, would be that it would be possible to throw light foot-bridges across the road between the upper footways, as Sir Frederick Bramwell suggests. As to this arrangement there appears to be no objection if the police could succeed in preventing boys from using the bridge as a coign of vantage to cast filth on the passengers below as they now use the bridges over the Thames to cast stones and horse-dung on the passengers in the penny steamboats.

A FRENCH RED CROSS SOCIETY.

The *Revue du Cercle Militaire*, a French military weekly publication, which is very carefully edited, and, judging by its reports and comments on the war in South

Africa, is extremely well informed on current military affairs both at home and abroad, contained in a recent issue an article entitled "Guerre et Humanité." It contained an account of the "Société Française de Secours aux Blessés Militaires," which is the French equivalent of our Red Society. The Cross Society has a respectable age, having been instituted under the Second Empire in 1864, the year of the Geneva Convention, with General Duke de Fezensac as its President. Its aim was succinctly stated, "to contribute to the relief of the wounded and sick on the field of battle by ambulances and hospitals." Its organisation was made national by the formation of Committees in the different Departments of France. Its advance was so rapid that it exhibited ambulances and field equipments in the Universal Exposition of 1867. But in 1869 it had fallen into low water, so that, when the war with Germany suddenly broke out in 1870, it had to make strenuous appeals to the French public for money. These appeals were met by a generous response, and two and three quarter millions of francs were contributed by August of that year. Nevertheless the Society was not at first welcomed by the military authorities; it was excluded from the field of battle, and treated with official contempt. But the disasters of the war soon produced a fairer and better spirit, and by October it had thirty-two ambulances at work, and had already expended two and a-half million of francs. Assistance now came to it from England, Belgium, and Holland; hospitals were set up in different towns near the seat of war, and ambulances were prepared for the siege of Paris. In all the Society had no fewer than 350 ambulances in use, each with a chaplain, surgeon, and assistants; and it afforded succour to 26,000 French and German wounded, who finally reached their homes through its guidance. It took care of the dead as well as the living, and erected many tombstones and monuments over the fallen. Altogether during the war it received fifteen million francs; of this sum, twelve millions was disbursed, while three were placed to reserve. Its organisation has since gone on, so that in 1880 it began work in the French colonies (Tunis, Tonkin, Madagascar). Lately it sent to China two complete field hospitals, and chartered a hospital ship, the *Notre Dame du Salut*, with between three and four hundred beds. Altogether the admirable Society is less known in this country than it should be, while its organisation seems quite equal, to say the least, to the best organised of our own aid societies.

THE HUXLEY LECTURE OF THE ANTHROPOLOGICAL INSTITUTE.

It is interesting to be reminded, as Lord Avebury, still perhaps better known as Sir John Lubbock, reminded his audience at the meeting of the Anthropological Institute before which he delivered the Huxley Lecture on November 13th, that Huxley was a member of the London School Board elected in 1870, and that he rendered important services in that capacity. He advocated, to use his own words, that the "masses should be educated because they are men and women with infinite capacities of being, doing, and suffering, and that it is as true now as ever that the people perish for lack of knowledge." On the School Board he argued that no boy or girl should leave school without having been more or less disciplined in the methods of science. With regard to higher education, as is well known, he was a strong advocate for science and modern languages, although he did not propose to drop classics altogether. Lord Avebury classified Huxley's works apart from his professional and administrative duties into three principal divisions—science, education, and metaphysics. His work on education has already been referred to; as to science, Lord Avebury pointed out that the Royal Society's Catalogue enumerated more than 100 contributions, and every one of these, in the words of Professor Parker, "contained some brilliant generalisation, some new and fruitful way of looking at the facts." Finally, Lord Avebury enlarged upon Huxley's works in metaphysics, and at the conclusion of a most interesting lecture the President of the Institute presented the lecturer with a medal, which will be given annually to the Huxley Lecturer.

THE HOWARD ASSOCIATION.

There is a kindly and humane, yet judicious, tone about the report of the Howard Association for 1900 which promises well for useful practical work. The dominant note is that reclamation of the criminal should be the aim of punishment, undue leniency being avoided on the one hand and undue severity on the other. Reference is made to the International Prison Conference at Brussels, in which, amongst other topics, the training of neglected and criminal youth, and the question of extradition were discussed. The question of the appropriateness of bread-and-water punishments in the case of prisoners certified as weak-minded, epileptic, or insane, especially when inflicted for such offences as "foul language," has been brought by the Society under the notice of the Prison Commissioners, upon whom it has been urged—we think with reason—that if criminals of this class are to be retained at all in a prison, it should be governed by the rules and in the manner of a lunatic asylum. Kindly admonition and good-humoured tact are rightly recommended in the prison treatment of the young especially, and an instance is given in which a troublesome prisoner became orderly and tractable, assigning as the reason for the change that "the chief warder had spoken so politely to him, even saying 'Please' when giving an order, that he had resolved, in return, really to try and please him by good behaviour." The polite policy of Sir Joseph Porter, K.C.B. (of *H.M.S. Pinafore*) would seem to have a place even in prison management! It is interesting to notice that in Australia "Larrikinism"—the equivalent of our London "Hooliganism"—is best dealt with by placing the lads separately out on farms where they have to "rough it." The tendency of institution life in such cases is not only to mass together mutually-contaminating individuals, but to make them too comfortable; and it is alleged that truant schools are apt to err in this direction, so that in some cases they are attractive rather than deterrent to the boy who dislikes the ordinary day school. Against sentimentalism producing such results the Association very properly protests, quoting from a speech of Mr. Picton, M.P., as to the successful operation of the punishment schools (*Straf-Schulen*) existing in Germany. In the same spirit the wrecking of the Juvenile Offenders Bill by "mistaken persons actuated by a nominal humanitarianism" is deplored, the opinion being expressed that, on the whole, the Bill, even as introduced, would have been very useful in repressing the "Hooliganism," of which there has recently been so wide and wild an outburst in London.

THE CAMBERWELL VESTRY'S CAMPAIGN AGAINST DIPHTHERIA.

We have received the report of Dr. E. C. Bousfield, the Bacteriologist to the Camberwell Vestry, on the work in the bacteriological department during the year ending March 31st last. Investigations of material in suspected cases of diphtheria, enteric, and pulmonary tuberculosis were undertaken free of charge for medical men living within the parish. This resulted in the receipt of 426 specimens from suspected cases of diphtheria. The specific bacillus was found in 207. In 192 it was not found, and in 27 it was not possible to decide with certainty. Altogether 1,338 notifications of diphtheria were sent in. The number of deaths was 193, equivalent to a case mortality of 14.42 per cent. Dr. Bousfield deplored the fact that two-thirds of the medical men of the parish had failed to avail them

selves of the advantages of bacteriological investigations, and suggested to the Vestry that it should circulate a pamphlet throughout the parish pointing out the desirability of early treatment and announcing to the inhabitants that antitoxin was distributed gratis to doctors. This the Vestry has done. In plain and forcible language the Vestry tells of the benefits of antitoxin as a preventive and cure, and urges on the householders and others the necessity of calling in the doctor in the early stages of sore throat, whilst it seems also to advise them to recommend to the medical men in attendance to have a "swabbing" examined and meanwhile introduce a dose of antitoxin by way of prevention or cure. Dr. Bousfield also examined 14 specimens of sputum for tubercle bacilli and 8 specimens from cases of blood by Widal's test. This seems to be a very small number. He also examined the water supply of the Kent, Lambeth, and Southwark and Vauxhall Companies, and found that, though upon the whole satisfactory, all three gave evidence at times of temporary contamination. Appended to his report are a chart of the diphtheria notifications, examinations and deaths, and some excellent photographs of various bacteriological preparations, so that he evidently believes in instructing his Vestry in his particular work, and we can only hope that the new Borough Council will take as much enlightened interest in the prevention of disease.

THE CASE OF DOWLING *V.* DODS.

A report of the trial of this action for libel was published in the British Medical Journal of June 25th, 1900, p. 1569. The alleged libel was a letter written by Dr. Dods to the relieving officer stating that the plaintiff was a person of unsound mind and giving grounds for this opinion. The letter was not a medical certificate in unacy, but a confidential communication addressed to the relieving officer by a member of the public. The learned judge who tried the case in the Queen's Bench Division held that the occasion was privileged, and that it was incumbent upon the plaintiff to shew that the defendant was actuated by malice. The jury came to the conclusion that the defendant had acted maliciously, and judgment was entered for the plaintiff. At the time this verdict seemed to us extraordinary, but we refrained from commenting on it as the case was under appeal. The appeal was heard on November 6th, and the proceedings were briefly reported in the last issue of the Journal, p. 1413. The verdict has now been set aside. As judgment has been entered for the defendant by a court consisting of the Master of the Rolls and Lords Justices Collins and Stirling, we take this opportunity of congratulating Dr. Dods. It was difficult to understand how he could have borne any ill-will towards the plaintiff, and it is still more difficult to understand his motive for sending such a letter to the relieving officer unless he took that course in the best interests of the public and the plaintiff herself. It is satisfactory to note the emphatic statement of all the judges who heard this case that the occasion was privileged. Privilege is a good defence in an action for libel, unless "express malice" is proved. What, then, constitutes express malice? It is not sufficient to show that he who shelters himself behind the plea of privilege was negligent. It must be proved beyond all doubt that he was influenced by some base and sinister motive for injuring the plaintiff. While, therefore, communications made by medical men—or even by members of the public—to the relieving officer are privileged, is there any reason why they need go further? Cannot a relieving officer prosecute his inquiries without disclosing the name of his informant? He cannot expect people to bring him information about persons alleged to be of unsound mind if when he receives such information he hands it on to the friends of the person about whom the information is given.

A STATE INEBRIATE REFORMATORY.

The London County Council has adopted a resolution urging the Government to take action under the Inebriates Act, 1898, and erect a State reformatory for inebriates who cannot be suitably dealt with in certified reformatories. It certainly appears desirable that the fullest opportunities should be taken in making the experiments contemplated by the framers of the Act of 1898. A Departmental Committee apppointed to advise as to the regulations to be made emphasised the importance of remembering the remedial rather than the penal regimen suitable for cases committed to certified reformatories. Moreover, a circular issued by the Home Office early in 1899 proposed to seek authority at the proper time for the erection and equipment of a State reformatory to serve as a model to other institutions. It was clearly intended that the more criminal and dangerous classes of inebriates should be committed or transferred to such State reformatory, while cases more susceptible to amelioration by less severe discipline should be treated in certified reformatories managed or supported largely by local authorities. Several such authorities have contributed towards the establishments of this kind, and the London County Council has erected one of its own at Farmfield, near Horley. It certainly remains for the Home Office to move in the direction indicated, and so fulfil the obvious intentions of the Legislature.

THE STATUS OF PUBLIC VACCINATORS.

At a meeting of the Council of the Association of Public Vaccinators, held on November 9th, it was decided to take immediate steps to press on the new Government the claims of public vaccinators to be considered as officers, and to be eligible for superannuation; and, if necessary, to proceed by the introduction of a private Bill in the ensuing Parliament. As considerable expense will probably attend such an undertaking, it was decided to make a special appeal to members of the Association of Public Vaccinators, and public vaccinators generally, so as to guarantee that the matter should not suffer for lack of funds. A letter was read from the National Poor-law Officers' Association promising its help in any such enterprise.

AN AMERICAN MEDICAL DEFENCE UNION.

A medical defence union has been incorporated under the laws of Indiana by the title of "Physicians' Guarantee Company." It has its headquarters in Fort Wayne, and the President of the Company is Dr. A. P. Buchman, of that city. The sole work of the Company is to defend its contract-holders in suits for malpractice. The prospectus announces that it has a staff of competent lawyers who have made a special study of malpractice cases. The Company will bear all the expenses in a case, including the fees of a lawyer living in a subscriber's own county, to be chosen by him, up to the amount of 5,000 dollars (£1,000) in one case; and it is ready to render its services in two cases annually to any one subscriber so long as the contract remains in force. Most suits for malpractice (says the *New York Medical Journal* in commenting on the formation of the Company) are mere blackmailing schemes, but occasionally it happens that a practitioner has really been in error and a compromise is judicious. The Company does not take upon itself to decide what cases are of such a nature and what are not; if the physician elects to fight the case, the Company fights it for him. If, however, both the Company and the defendant think it best to compromise, the Company conducts the affair in the direction of an agreement with the plaintiff. On the other hand, the Company will not compromise on the defendant's initiative alone. In calling attention to the new Company, our contemporary says it does not know that there is any other corporation of the sort in existence. Apparently it

does not follow Dr. Johnson's advice, and let its observation

With extensive view
Survey mankind from China to Peru;

or perhaps in the very breadth of its survey it may have failed to note our little island, where two "corporations" of the sort are in vigorous existence.

A ST. LUKE'S DAY MEDICAL CELEBRATION IN FRANCE.

ST. LUKE'S DAY was celebrated by members of the medical profession at Lille by a Mass, followed by recital of a litany of medical saints with prayers for the souls of departed doctors. Although it was holiday time the service was attended by a large number of medical men. On the following Sunday the Society of St. Luke, St. Cosmas, and St. Damian held a meeting in Paris. A Mass was celebrated in the Basilica of Montmartre, in a chapel specially consecrated to the patron saints of the Faculty, which has been erected by the subscriptions of French doctors. About a hundred members of the profession were present. The Abbé Fonsagrives, a son of the late Professor Fonsagrives, of Montpellier, officiated, and after the gospel delivered a funeral oration on the late Dr. Ferraud, President-General of the Society. Dr. Gouraud, Vice-President of the Society, then in the name of the Society pronounced an act of consecration to the Sacred Heart. After Benediction those present went to the Cercle du Luxembourg to hold the general meeting, which was attended by doctors from all parts of France. Dr. Gouraud was elected President-General. The General Secretary gave an account of the annual pilgrimage to Luzarches. Dom Sauton, who was present, distributed pamphlets intended to interest the members of the Society in the scheme for the relief of lepers in France, to which reference was made in a recent number of the BRITISH MEDICAL JOURNAL. A proposal was brought forward to start a subscription for the erection of a statue to St. Luke in the Chapel of the Saints-Médecins in the Montmartre basilica.

FATAL RUPTURE OF ANEURYSM OF SPLENIC ARTERY IN LABOUR.

AT the last meeting of the Obstetrical Society of London, notes of an important case of this rare form of aneurysm were read by Dr. Herbert Spencer for the authors, Mr. Nodes and Dr. Hinds of Worthing. The patient was 33, and in her fourth labour, which lasted six hours and proceeded quite naturally. The child having been delivered, the placenta was expelled by the next pain. Ten minutes later the patient was seized with a kind of convulsion, and her face turned dusky, there was great restlessness, then pallor, and within a quarter of an hour she died. At the necropsy, ordered by the coroner, the peritoneal cavity was found full of blood, mostly liquid. A ruptured aneurysm, of the size of a grape, was discovered in the splenic artery just before its division at the hilum of the spleen. The specimen, which was exhibited, is now preserved in the Museum of University College, London. The authors collected in their report brief notes of previous cases of aneurysm of the splenic artery.

HYGIENIC INSTRUCTION FOR WOMEN.

ON the initiative of Madame Edwards Pilliet, M.D., and as the result of a vote of the second Congress of Women's Work and Institutions, a Society for the Propagation of the Teaching of Hygiene to Women has just been founded in France. It is under the patronage of an honorary Committee, which includes the heads of the medical profession and many leading teachers and publicists. The affairs of the Society are managed by an acting committee, whose president is Madame Biquel, of Vienna, and includes the names of Mesdames Edwards Pilliet, Helena Gaboriau, Tourangin des Brissards, Goutchoroff, Landais, all Doctors of Medicine; Mesdames Siegfried, Louis Debor, Roubinowich, Legrain, Dussaud; and of Doctors Legrain, Pecker, and A. Gaboriau. The aims of the Society are stated to be the following: That the study of the hygiene of the family and the child should be a compulsory part of all programmes of female instruction, whether primary or secondary; that candidates at all examinations should always be questioned on hygiene in accordance with a special programme adopted for each of these examinations; that in courses for young girls (adults) an important place should be given to the teaching of the hygiene of the family and the child; that lectures on practical hygiene, intended for women aged from 18 upwards should be organised in all towns and rural districts by societies and leagues of education already existing, and by new societies which may be created *ad hoc*; and that school *crèches* should be founded for the purpose of training teachers and instructing young girls on the elementary notions essential to the hygiene of infancy. The Society intends to arrange for lectures to be given in the suburbs of Paris. Attractions of various kinds are to be provided with the object of inducing people to come to the lectures

"HOSPITAL SCANDAL AT CHESTER."

WE have received a letter from the house-surgeon to the Chester Infirmary enclosing copy of a letter addressed by the secretary on behalf of the Weekly Board of the infirmary to the Chester Board of Guardians. These letters dispute the assertions of the medical officer to the workhouse made in the course of the evidence at the coroner's inquest to the effect that on admission the patient was in a delirious state, with a weak pulse and filthy. We are assured that he was seen by the visiting surgeon, who concurred with the house-surgeon as to his being in a fit state for removal from the infirmary, and we are also assured that the removal was conducted with the utmost care. It is to be regretted that opportunity was not afforded for rebutting evidence to be given at the inquest. Our comments were chiefly directed to two points—the absence of an ambulance and of proper means for isolating noisy patients at the Chester Infirmary. As to the first, there can be no doubt that a proper conveyance should be provided by the city authorities; as to the second, we quite understand that the removal of a noisy patient becomes absolutely necessary when he is in a ward with a number of other persons. But we cannot approve of the continuance of the practice of sending such cases to the workhouse, which seems to be justified mainly on the ground that it has been some years in existence, and we hold it to be the duty of the governors to provide proper isolation wards.

WARMTH IN NARCOTIC POISONING AND SURGICAL SHOCK.

THE effect of cold or chill in increasing the susceptibility of the body to infection by microbic agencies, for example by the anthrax bacillus in fowls and by the pneumococcus in man, is fairly well recognised, but its effect in increasing the sensitiveness of the body to poisons is not so well known. Hermann long ago showed that alcohol was much less toxic to rabbits when they were kept warm. The observation made by Stricker that animals used in his experiments often required a second dose of chloral to maintain anæsthesia when they were wrapped in cotton wool, and still more when they were kept in a warm atmosphere, led Brunton to perform experiments on guinea pigs, which showed that if wrapped in cotton wool they might completely recover from a dose of chloral which was sufficient to kill them when exposed to the cooling influence of the air of a room; and, further, that recovery from its narcotic effect was much quicker when the body temperature was thus maintained, and still more rapid when the animals were placed in a warm bath. What is true for

alcohol and chloral is probably true also, as Haldane has shown, for carbonic oxide gas. At the time of the colliery explosion in South Wales in 1894, it was observed in the case of some of the miners who were found to be alive but suffering severely from the effects of the after-damp—the chief harmful constituent of which is carbonic oxide gas—that when they were brought into the cold air at the bottom of the downcast shaft they gradually sank. Haldane has, moreover, demonstrated that a fall of temperature plays an important part in poisoning by carbonic oxide in the case of mice—animals very susceptible to its influence. He found that if a mouse thus poisoned were warmed it recovered. Alcohol, chloral, carbonic oxide gas, and some other substances appear to produce a vasomotor paralysis of the vessels of the skin, which by permitting loss of heat through radiation causes a harmful depression of the temperature of the body. It is recorded that in one case of profound alcoholic intoxication the body temperature fell as low as 75.2° F. It is probable that a very important, if not the principal, factor in collapse from any cause, as in surgical shock, is a similar vasomotor paralysis, and one of the practical benefits obtained from experimental investigation is the knowledge that a high external temperature very materially reduces the element of operative shock in animals. The practical deductions from these observations are self-evident. In poisoning by alcohol, chloroform, chloral, morphine, and other narcotic substances a primary indication is to bring back and maintain the normal temperature of the body. It should be remembered, however, that injury may be caused in chloral poisoning, at any rate, if excessive heat be applied, the heat, regulating mechanisms being out of gear. The advantages of warmth in poisoning with carbonic oxide gas have been recognised empirically by the men in some of the large ironworks. It is the custom when one of their number is found overpowered with the noxious gases, chiefly carbonic oxide, generated in some of the processes, or as it is popularly termed "fired," he is taken away and buried in hot sand. He is put into this in an unconscious condition and in it he remains until he comes round. Surgical shock was, as Professor H. C. Wood has stated, long ago successfully treated by the late Dr. Charles Hunter, with heat, in the absence of any satisfactory effect after the administration of alcoholic and other stimulants, and to-day hot-water tanks form a part of the best-appointed operation tables, and particularly of those used for operations on the brain and spinal cord. Some surgeons aim to have the temperature of the operating room between 80° and 90° F. In all conditions of apyrexia it is necessary to remember that non-conductors such as blankets are not in themselves sufficient, but that external heat must be supplied as well, by means of water bottles, hot bricks, or sometimes with advantage from an open fire. But the most trustworthy source is the hot bath, which should be filled and in a warm room. At first its temperature should be about 104° F., and then gradually increased to about 110 F. until the body temperature, as taken in the mouth, becomes normal.

THE CONSTITUTION COMMITTEE.

The second meeting of the Constitution Committee of the British Medical Association was held at the offices of the Association on Tuesday, November 13th. There was a large attendance, and the Committee made substantial progress in settling the general principles which they should recommend to be followed in reorganising the constitution of the Association. It was arranged that the next meeting of the Committee should be held on Thursday, December 6th.

LONDON UNIVERSITY.

We understand that the Academic Council and the Council for External Students met for the first time on November 14th, and are engaged in considering their proposals to the Senate in regard to the number and constitution of the various Boards of Studies. The question of finance must receive early attention, as it is clear that the old system under which the University was tightly tethered by Treasury strings cannot continue, to say nothing of the need of a handsome grant in aid from the national exchequer.

Dr. W. Calwell, of Belfast, has been appointed by the Lord Chancellor of Ireland a Medical Visitor in Lunacy for Belfast and District in the place of the late Dr. Strafford Smith.

At a meeting of the Trustees of the Hunterian Collection, held at the Royal College of Surgeons of England on November 9th, Sir Joseph Fayrer, Bart., K.C.S.I., was unanimously elected a Trustee of the Collection in the vacancy occasioned by the decease of the Duke of Argyll, K.G., K.T.

Under the will of the late Dr. D. J. Leech, Professor of Materia Medica and Therapeutics in the Owens College, Manchester, that College will eventually benefit to the extent of £10,000, which Dr. Leech bequeathed for the purpose of endowing a Chair of Matera Medica and Therapeutics. The bequest will take effect upon the demise of Mrs. Leech.

On the expiration recently of Dr. J. O. Affleck's appointment as an ordinary physician to the Edinburgh Royal Infirmary, he was unanimously appointed one of the consulting physicians, and a minute was made expressing the Board's appreciation of the skill and devotion which he had bestowed on the health and welfare of the patients as well as of the nurses.

In memory of the late Professor Thomas Jones of Manchester, who died at Springfontein while acting as chief surgeon to the Welsh Hospital in South Africa, Mrs. Jones has founded a scholarship at the Owens College, Manchester, of the value of £100. Candidates must be graduates in medicine and surgery of the Victoria University, or have passed the Final Conjoint Examination of the Royal College of Physicians and Surgeons, and must have spent at least three years of their course of medical and surgical study at the Owens College. The scholarship will be awarded triennially.

A general meeting of the Medico-Psychological Association of Great Britain and Ireland will be held at the rooms of the Medical Society of London on Wednesday next at 4 P.M., when a discussion on mental disorders dependent upon toxæmia will be opened by Sir Dyce Duckworth. Among those who intend to take part in the discussion are Sir W. H. Broadbent, Sir Richard Douglas Powell, Sir William Gowers, Drs. Pye-Smith, Buzzard, Mercier, Mott, Isambard Owen, and H. H. Tooth. Papers will also be read by Dr. George H. Savage, on Travel, its Use and Abuse in the Treatment of Mental Diseases, and Dr. Le[illegible] on the Application of Electricity in Certain [illegible] Mental Disease.

Yellow Fever in Cuba.—According to the *Philadelphia Medical Journal* yellow fever is still rife in Cuba. [illegible] Lee says that heretofore the disease has been confined to small, narrow, unclean streets, but now it appears in places where it was never known before. The winter in Cuba does not become cold enough to stamp out the disease before January. General Lee says that the sanitation is excellent in all places where the disease is raging, and has been for months, as the sanitary laws have been carried out strictly since the United States military authorities took over the charge of the island.

CONGRESS OF THE ITALIAN SURGICAL SOCIETY.

THE fifteenth Congress of the Italian Surgical Society was held at the University of Rome from October 27th to the 30th. Professor Durante, President of the Executive Committee, acting as the provisional President of the meeting, gave a short address in which he said that the continuous progress of Italian surgery was now equal to that of other civilised nations. This was proved by the fact that while formerly Italian science was neglected, nowadays foreign surgeons felt the necessity of studying the Italian language, as he with pride had observed during his recent visit to England. He finally commemorated the memory of the late Professor Bruno, the director of clinical surgery at the University of Turin, speaking of him as a scientist and a patriot.

ELECTION OF OFFICERS.

The meeting then proceeded to the election of Professor Ceci, of Pisa, as President of the Congress, Professors Cecchelli of Parma, and Roth of Sassari, as Vice-Presidents.

OPERATIONS ON THE SPINAL CORD.

After a brief discussion from the President on the present flourishing condition of Italian surgery, Professor Biondi read some Clinical Notes concerning Eight Operations on the Spine, in which he stated that besides 32 tuberculous vertebral lesions he had to treat 15 patients suffering from more or less severe spinal nervous lesions. In 28 of them the disturbances were caused by tuberculous osteitis of the vertebral body and 7 by injuries. In 3 cases of osteitis he did not intervene owing to the gravity of the disease or other causes. In a fourth case emptying the abscess alone was sufficient to relieve the symptoms. In 4 other cases with paralysis of the limbs and sphincters and anæsthesiæ evacuation of the vertebral bodies was performed by means of the lumbo-abdominal incision which extended from the anterior margin of the quadratus lumborum to the ilio-pectineal eminence, by which he was able to reach the body of the ninth dorsal vertebra. In 3 cases of vertebral traumata he did not intervene in consequence of the gravity of the spinal lesion; a fourth patient with paresis of the lower extremities due to a fall on the twelfth dorsal gradually got well without operation. In 4 cases —3 with fracture and 1 with dislocation. plus paralysis, anæsthesiæ, hypæsthesiæ, etc., for a variable time—he performed laminectomy, which was once simple, and in 3 cases extended to 2 arches and was complicated with opening of the dura mater.

Of the 8 cases operated upon 1 died 5 months after from rupture of the vertebral column, another had a relapse of the tuberculous process and of the nervons disturbances, 6 were cured of the disease which had produced disturbances of the cord and of the roots of the nerves. In 4 of the 6 cases the nervous disturbances were also completely cured, in 1 improvement took place, and in the sixth an equal improvement which it was hoped would in time be complete.

TREATMENT OF VERTEBRAL TUBERCULOSIS.

In dealing with this subject Professor Ceccherelli said that he would confine himself to cases in which there was paralysis or at least difficulty in walking and spinal curvature. His experience made him opposed to surgical intervention, such as laminectomy. He agreed with Calot that when possible the tuberculous foci should remain closed and consequently that the abscesses should not be burst, but punctured, marked out, and injected with substances that would modify the abscess sac and possibly the tuberculous focus. The paralytic phenomena were frequently not produced by the invasion of the tuberculous process in the vertebral canal and its contents, but by compression in or lesions of the spinal nerves. Hence operations on the vertebral column were useless. For curvature he had found Calot's method, even when improved, irrational and injurious. The tuberculous forms should be treated with rest, and he did not agree with Lucas-Championnière and Ménard who recommended massage and movements. He believed that the cases of alleged cure were wrongly diagnosed.

CEREBRAL SURGERY.

Professor Durante referred to two cases of cerebral surgery.

The first was that of a youth of 20 in whom the disturbances had existed for a year, under the form of convulsions without loss of consciousness repeated three or four times and then ceasing. He came to the clinic with right frontal headache, choked disc, vision much reduced, diminution of smell and taste, and psychic disturbances. The diagnosis of a tumour of the right frontal lobe was made, the patient was operated upon by the osteo-periosteal flap and a tumour found which implicated the anterior section of the lobe resting in the anterior cerebral fossa. The tumour was removed and the patient rapidly recovered from the operation. All the symptoms were cured except the defect of sight, which gradually became worse to total blindness. After eight months from the first intervention the psychical conditions again became worse. Having a second time lifted the flap it was found that the tumour had recurred and was larger than before. It was removed in pieces, but the operation had to be suspended owing to severe hæmorrhage. After three days the tumour was extirpated as far as the middle fossa, the lateral ventricle being opened and the anterior portion of the temporal lobe attacked. There was a free discharge of cerebro-spinal liquid. Healing took place by second intention, but recurrence took place in eight months with identical symptoms, and death occurred from coma.

Professor Durante insisted upon the importance of the anterior frontal lobes in the *morale* of patients, and explained the fact of the improvement even after the complete extirpation of the affected lobe as a function of compensation which could not have occurred before owing to the presence of the tumour. The auditory centre being bilateral the function could readily be compensated; the right temporal lobe being wounded the patient lost his hearing on the opposite side, but in a short time he reacquired it almost completely.

The second case was that of an individual who for eighteen months had suffered from a slight weakness of the left leg, which subsequently extended to the arm; for a little time there was formication of the lower extremity with forms of Jacksonian epilepsy, but never general or partial convulsive attacks. A lesion of the motor and psychic centres was therefore excluded, and instead a tumour was localised in the post-Rolandic region, where there was cranial tenderness. Here in fact the tumour was found the size of the fist (130 grams), originating from the dura mater, and not adherent to the brain. The evening of the operation hemiparesis came on, which became hemiparalysis the following day; but it subsequently disappeared, and the patient now enjoyed perfect health.

This case seems to prove that the sensory centres were also localised in great part in the post-Rolandic region.

Professor Maffucci said that from his examination of the *post-mortem* records and histories of 30 cases of cerebral tumour, he was convinced that only tumours of the frontal lobes gave rise to the classic intellectual disturbances. In fact, the cadavers studied by him came from the lunatic asylum. Epilepsy was not only the expression of lesions of the Rolandic region, but also of tumours of other parts of the brain which acted on that region by indirect compression.

BLASTOMYCETES IN SARCOMATA OF THE BRAIN.

Professor Roncali said that his communication might be considered as the histological illustration of the second case of tumour of the brain communicated to the Congress by Professor Durante. The tumour, as had already been said, was situated in the right post-Rolandic region, was of dural origin, and the histological examination showed that it was a genuine fibrosarcoma. What, however, rendered the neoplasm interesting was the parasitic contents, which undoubtedly corroborated the theory of the blastomycetic origin of malignant tumours, and at the same time destroyed for ever the hypothesis of secondary blastomycetic infection of malignant tumours.

The author, after having described the parasites morphologically and their particular seat in this neoplasm, which clearly indicated that between the parasite and the tumour a genetic correlation existed as between cause and effect, proceeded to discuss the following points: (1) The blastomycetes are not and cannot be accidental in malignant tumours. This he demonstrated by referring to the experiments made by him, and the conditions observed in the tumour in question. (2) The failure to find the parasites in a tumour does not mean that they do not exist or that those which are there are degenerations, inasmuch as when the parasites assume the character of Russell's bodies they cannot be cultivated, as Sanfelice has recently shown. (3) The parasites can always be found in malignant tumours, provided one knows how to recognise them and has the patience to search for them. This has been proved by the author's researches, and by those recently made by Plimmer. (4) The coccidia which have been described in the tissues of cancer and of sarcoma are nothing but blastomycetes, as the author has maintained since 1895; this has recently been confirmed by Podwissoski. (5) The blastomycetes are the real etiological factors of epithelioma and of sarcoma, as the author on the basis of his histological re-

searches and of the clinical course of these neoplasms had maintained since 1895, and which he considered had been demonstrated by the experimental work of Sanfelice first, and then by that of Plimmer, Bra, and Leopold.

In the discussion Professor Bastianelli thought that it was not sufficient to have stained and described these round corpuscles to maintain that they were blastomycetes. It was necessary to give the proof, which Roncali had not done.

Professor Biondi said that of all the experiments made up to now on the parasitic theory of malignant tumours, the only important fact which remained, and which undoubtedly gave food for thought, was the result obtained by Sanfelice, who in 63 experiments succeeded three times in producing with pure cultures of blastomycetes adeno-carcinomata in the mammæ and testicles of dogs.

Professor Durante said that he was not a supporter of the blastomycetic theory, because the precise conditions which would enable one to say that the blastomycetes were really the causal factor of tumours were wanting. He would accept this hypothesis only when a cancroid or a skin tumour transplanting itself in the glands reproduced elements of the same type. The transplantations obtained by Sanfelice had not offered precisely this character.

Professor Roncali, in reply, said that if the tumours obtained by Sanfelice four years ago could not be considered absolutely convincing, those of which he spoke in his fifth memoir, and the sections of which he had lately had the opportunity of examining, made him really believe that the question of the etiology of cancer had been solved.

LUNACY IN ENGLAND AND WALES.

Diminished Rate of Increase.

According to the returns made in the fifty-fourth report of the Commissioners in Lunacy there were 106,611 lunatics in England and Wales on January 1st, 1900, showing an increase of 1,525 only, as compared with an increase 3,114 in the previous year. This is 550 below the average increase in the ten years ending with 1898. Again, the number of insane patients admitted into institutions for the insane or as "single patients" in 1899 was 25 fewer than the number admitted in 1898. The Commissioners state that they think the diminished annual increase in the total number of lunatics they now report is mainly due to the stationary character of the admissions (the cause of which they are unable to state) combined with the higher recovery and death-rates in the past year.

A point worthy of note is that the private patients increased by 140 and the paupers by 1,400, while the criminals decreased by 15.

Private Patients in Public Asylums.

To show the trend of recent lunacy legislation dealing with the providing of accommodation for private patients by public asylums, it is stated that in county and borough asylums the private patients increased by 55 up to the end of last year. It is probable a larger increase will occur in the current year.

Decrease of Lunacy in Proportion to Estimated Population.

Dealing further with the total increase for the year it is found that there was on January 1st of this year 1 lunatic officially known to the Commissioners to 301 members of the estimated population of the county as against 1 to 302 on January 1st, 1899. With regard to the admissions, eliminating mere transfers from one institution to another and some technical readmissions (excluding of course idiots), the total number is 19,289 or 25 fewer than the total number in 1898. It is, as the Commissioners say, a very satisfactory feature, and it bears the ratio of 6.08 per 10,000 of the total estimated population.

Recoveries and Deaths.

The number of patients discharged recovered numbered 7,575, giving the satisfactory average of 39.26 of the total admissions, and is 2.39 per cent. higher than the previous year. The death-rate for 1899 is 9.87 per cent. of the daily average number of patients, and 7.79 per cent. of the total number of patients under treatment. This death-rate is 0.42 higher than 1898; and in connection with the diminished increase in the total number of lunatics in 1899 it must be borne in mind that there were 454 more recoveries and 558 more deaths in 1899 than in 1898.

Lunatics in Workhouses or with Relations.

The change in the locality of treatment continues as the proportion of lunatics living with relatives or others or maintained in workhouses shows a further decline, so that on January 1st last only 6.02 per cent. of the registered pauper lunatics lived out of institutions for lunatics or workhouses, while forty-one years ago the proportion was 18.46 per cent., or more than three times as great.

Increased Age of Patients.

There is an increase in the average age of patients under care, those aged 65 years and upwards being in the proportion of 12.37 per cent. of the whole. The Commissioners attribute this advance, which seems to be progressive, partly to increased longevity in asylum patients, and partly to the more frequent sending to asylums of cases of mere senile failure.

Suicidal Cases.

The average proportion of patients admitted who had suicidal propensity is given as 24.1 per cent. for the five years, 1894-1898, being 1.5 per cent. less than in the previous five years.

Causation.

There appears to be a larger proportion of cases in which drink and old age are given as causes, but it is to be regretted the Commissioners (as they have pointed out in previous reports) do not regard the information under this head as affording a very reliable guide to an opinion as to the causation of insanity. At the same time there can be no doubt much more care is now taken by the medical superintendents of our public asylums and their assistants to arrive as much as possible at the true causes at work in each individual case. Comparatively few cases depend solely upon one cause.

Superannuation Allowances.

As regards pensions the Commissioners give it as their deliberate opinion, founded upon wide experience, and as an expression of their continued and increased conviction, that the granting of such allowances is desirable. This expression of opinion of so high an authority deserves to be quoted in full:

> It is obviously of the first importance to the welfare of the insane to attract well-qualified persons to the service of the asylums and to retain them therein when, by the experience they have gained, their service has become valuable. This can only be done by offering adequate remuneration. Economy must no doubt be kept in view, but efficiency must not be sacrificed to it. ..... Fair salaries and wages, with the prospect of liberal pensions after disablement or reasonable length of service offer, we think, the most influential inducements to really suitable persons to enter asylum service, and to remain in it as a permanent occupation. ... The system of moderate salaries, with superannuation, has had a fair trial in the past and, we consider, with satisfactory results, and we would most strongly deprecate any departure from it in the future.

Asylum Construction.

With regard to restricting the permanent use of parts of asylum buildings to the purposes for which they were originally intended and sanctioned, the Commissioners point out that when an asylum is designed it is made up of several departments arranged to balance each other, and so make up an establishment complete in its various subdivisions as a hospital for the treatment of mental diseases. They therefore are anxious that the law should step in and prevent any disturbance of the working equilibrium of the building, and render it less fitted for its specific purpose, and they give as their reason that:

> During the last four years visiting rooms, store rooms, and workshops at several county asylums have been converted into dormitories, unsuitable for their purpose, and giving an excess of night space with the resulting overcrowding of dayrooms, and that day space has been extensively turned into night space. Isolation hospitals have been devoted to the accommodation of ordinary patients ... that it has been proposed to us to use a detached chapel, in no special emergency, for day and night accommodation of patients, and its organ chamber and vestry as water-closets and lavatories.

Upon the subject of asylum construction the erection of complete hospitals for acute cases of insanity and cases of acute sickness, together with the erection of less expensive buildings for the chronic incurable is advocated. So long as asylums are composite in the present sense, and the more expensive therapeutic machinery is common alike to those who need it and those who can derive no benefit from it, so

long must the average cost a head be maintained at least at its present standard.

PATHOLOGICAL RESEARCH.

The pursuit of scientific investigations is being actively carried on in several asylums, and it is hoped that the movement to establish a central pathological laboratory in connection with the asylums of the Midlands will be successful. A clause enabling local authorities to combine for such a purpose has been introduced into the new Lunacy Bill. The Commissioners record their appreciation of the work of Dr. Mott at the laboratory at Claybury, and also their appreciation of the importance of this work, which, through the publication of the *Archives of Neurology*, will now become more widely known.

LITERARY NOTES.

MR. G. H. MAKINS, Surgeon to St. Thomas's Hospital, who was Consulting Surgeon with the forces in South Africa for ten months, has written a work on his surgical experiences in South Africa which will be published shortly by Messrs. Smith, Elder, and Co. It will deal especially with wounds produced by small-bore bullets.

The current issue of the *Progrès Médical* (November 10th) is the Students' Number, and contains full information as to the provisions for medical education in France, the conditions of graduation and medical study, schools, hospitals, and universities. It may be useful to some of our readers to know that the *Progrès Médical* is published at 14, Rue des Carmes, Paris.

Mrs. Rolleston, of Croffside, Sevenoaks, recently presented to the library of the Royal Geological Society of Cornwall the five volumes of MSS. of Sir Humphy Davy and six similar MS. books of his brother, Dr. John Davy, F.R.S. Those of Sir Humphy Davy were written in 1805, and consist of notes on geology and natural science, whilst those of Dr. John Davy comprise the records of his voyages to Spain and the West Indies, with a considerable amount of incidental matter.

Dr. J. G. Wallace-James (Haddington, N.B.) writes:

In reference to the paragraph in Literary Notes mentioning Mr. Jonathan Hutchinson's article on the *post-mortem* appearance of King James I, I may point out that Dr. Munk a few years ago contributed to the *Genealogist* a very full contemporary account of that monarch's last illness and the appearances in the sectio. This account is written in Latin, and differs from the Harleian MSS. somewhat, especially mentioning that two stones were found in the right kidney.

It is hoped, says the *St. Bartholomew's Hospital Journal*, that the thirty-sixth volume of the *St. Bartholomew's Hospital Reports* will be issued to subscribers before the end of the year. It will contain articles of unusual interest: memoirs of Sir James Paget and Sir Richard Thorne-Thorne; plague experiences by Dr. Sandiland; a series of cases of volvulus by Captain Bird, I.M.S.; and papers by various members of he staff.

Professor Edward Arber, F.S.A., who has laboured so strenuously and successfully to rescue much of our older literature from oblivion, proposes to issue by subscription a privately printed edition, signed and numbered, of *The Term Catalogues* (the *Bookseller* and *Publishers' Circular* of their day), 1668 1709. The work will be a line-for-line reprint of a contemporary bibliography of English literature in the reigns of Charles II, James II, William and Mary and Anne, containing the titles of about 20,000 editions of books. *The Term Catalogues* will not only be a work of reference, but a ready-made historical, classified, and indexed catalogue of new books and new editions from 1668 to 1709. The reprint will enable collectors to know at once not only what editions of these forty one years are in their libraries, but what other editions of that age they have yet to seek for. A few examples of entries relating to medical books will show the nature of the work. In the *Catalogue of Books* printed and published at London in Michaelmas Term, 1686, the following occur under the heading "Physick:"

1. Collections of acute diseases, taken from the best authors that have written most accurately of some particular acute diseases, very useful for surgeons that attend on the army or go to sea, and for others that can't procure or have not leisure to peruse larger volumes. The first part contains all that the learned and experienced Dr. Sydenham has written of the small-pox and measles, being the most exquisite description of the nature and several kinds of these diseases, with the manner of their beginning, increase, state, and declination, as also of the various symptoms that accompany them, together with most exact method of managing he sick, and properest remedies to be exhibited to them. Octavo. Printed for H. Bonwick, at the Red Lion in St. Paul's Church-Yard.

2. Curious observations in that difficult part of chirurgery relating to teeth; showing how to preserve the teeth and gums from all accidents they are subject to. To which is added a Physical Discourse, wherein the reasons of the beating of the pulse, together with those of the circulation of the blood are explained, and the opinions of several ancient and modern physicians and philosophers, as Galen, Gassendus, Cartes, Lower, Willis, etc., upon this subject are examined. Printed at Dublin, and sold by W. Whitwood, in Duck Lane.

Among "Libri Latini" in the same "Catalogue" we find the following:—

3. *Schedula Monitoria de Novæ Febris ingressu*: per Tho. Sydenham, M.D. Printed for W. Kettilby at the Bishop's Head, in St. *Paul's* Church-Yard.

6. D. Abercrombii, M.D. *Opuscula Medica hactenus edita.*

1. *De Luis venereæ absque Salivatione Mercurialis curatione.* 2. *De modo curandi Bubonis veneriі et tutiore Salivationis methodo.* 3. *De varietate et variatione Pulsus.* 4. *De dignoscendis medicis Plantarum ac corporum quorumcumque virtutibus ex solo sapore.* Octavo. Printed for S. Smith, at the Prince's Arms, in St. *Paul's* Church-Yard.

7. Marcelli Malpighii *Philosophi et Medici Bononiensis e Regia Societate, Opera omnia figuris elegantissimis in æs incisis illustrata, Tomis duobus comprehensa.* Fol. Sold by T. Sawbridge at the Three Flower-de-Luces, in *Little-britain.*

Again, under the head "Reprinted," we find:

3. *De Morbis Fœminis.*—The Woman's Counsellor: or the Feminine Physitian, enlarged. Modestly treating of such occult Accidents and secret Diseases as are incident to that Sex, which their too much modesty, too often to their sorrow, causes them to conceal. Also a Suppliment touching Agues and Fevers, usually applicable to both Sexes. Whereunto is added The Man's Counsellor, healing of Ruptures, and particular Diseases belonging to Men. The fifth Edition. By R. Turner. 8vo. Sold by J. Salisbury at the Atlas in Cornhill.

14. *Thesaurus Chirurgiæ.*—The Chirurgical and Anatomical Works of Paul Barbette, M.D. Composed according to the Doctrine of the Circulation of the Blood, and other new inventions of the Moderns. Together with a treatise of the Plague, illustrated with observations. Done into English. The fourth Edition. To which is added the Surgeon's Chest, furnished both with Instruments and Medicines all useful. with several Copper Plates; as also a Treatise of Diseases that attend Camps and Fleets. Octavo.

The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, amounting to about 180 dollars (£36), will be made on July 14th, 1901 provided that an essay deemed by the Committee to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but must be unpublished. They must be received by the Secretary of the College on or before May 1st, 1901. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. The successful essay, or a copy of it, shall remain in possession of the College; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1900 has been awarded to Dr. David de Beck, of Cincinnati, Ohio, for his essay entitled, "Malarial Diseases of the Eye."

NOTES ON HEALTH RESORTS.

OOTACAMUND, MADRAS PRESIDENCY.

WE are indebted to Colonel R. Temple Wright, M.D., I.M.S. (ret.), for the following notes on the hill station of Ootacamund: The interesting address by Sir Joseph Fayrer on the Hill Stations of India as Health Resorts[1] deserves attention. So much money has been spent in India unavoidably on famine relief, strategic railways, frontier expeditions, and precautions against plague, that no funds became available till quite recently to develop the hill stations. Two of these places which are more readily accessible than the others, Darjeeling in Bengal, and Nynee Tal in the North-West Provinces (each being the summer headquarters of the Provincial Government) are distrusted because they are subject to destructive landslips. Simla, the summer capital of the Government of India and of the Government of the Punjab, is for many people unattractive, as it is too fashionable, and has no sport. Mahableshwar, the summer capital for Bombay, is too rainy and damp. Pachmarhi, in the Central Provinces, is a hill station only by courtesy, as a punkah is required in the day time.

Ootacamund, or Utakamund ("the place of springs"), the summer capital of Madras Presidency, surpasses all others whether for climate, accessibility, comfort, or colonising. It has no extremes of temperature, the thermometer indoors

[1] BRITISH MEDICAL JOURNAL June 9th, 1900

varying from 55° F. to 65° F. all the year round, and is equally pleasant as a residence in winter and in summer. It has no snow, only a slight hoar frost in winter which freezes the dew on the grass till about 10 A.M. It receives rain both from the north-east and from the south-west monsoons. The soil consists of laterite in which granite boulders are embedded, and the slopes of the hillsides carry off the water so fast that exercise can be had every day at some time or other between the showers, no matter how heavy they are, for there is no mud. The roads are good, both in the station and in the district, and so broad that people drive in the same carriages that they use in the plains, instead of having to go about in rickshaws or dandies as one must do in other hill stations on their narrow pathways by courtesy called roads.

As Sir Joseph Fayrer points out, the Nilgiri district is unusually fortunate in its climate and localities, for though the annual rainfall is between 40 and 50 inches, it is distributed with such apparent caprice that it is quite easy for people who dislike rain "to dodge the monsoon" and live in a perpetual summer at whatever altitude suits their constitution best. The capital of the district is Ootacamund, which is twelve miles from Coonoor, ten miles from Wellington, and eighteen miles from Kotagiri, all of these places being connected by roads which can be traversed all the year round in four-wheeled carriages, in two-wheeled tongas and dog-carts, in rickshas, and on bicycles.

In Ootacamund itself, where the houses are built at various heights from 7,000 to 7,500 feet above mean sea-level, we find the following attractions in a basin at the lowest part of the station, going from east to west: (1) The Hobart Park, a fine level piece of grass, large enough to be used as a playground both by the town and by the gymkhana club, and where cricket, football, polo, and tennis, are all played daily at the same time, with plenty of space for all; a nice racecourse surrounds the whole, where morning rides are most enjoyable; at the west end of it is the pavilion of the gymkhana club, which provides shelter from rain, and is arranged so as to be a convenient grand stand during the races; (2) a small but pretty lake, on which one can row, but not sail; by the boat-house is the trap-shooting ground; (3) beyond the lake are the golf links, and beyond these again are the Downs, on which jackal hunting affords fine cross-country riding all through the summer; shooting, both of large and of small game, is readily procurable in the season.

The Madras Railway is already open as far as Coonoor, and will be extended to Ootacamund as soon as funds are available. It would have been finished ere now but for the enormous sums spent by Government on precautions against plague, which have been so successful that Madras is the only province in India which has been kept free from plague. There was plague in Bangalore, but that is in Mysore, and it has not spread thence.

Bad Salzschlirf in Hesse-Nassau.

Dr. F. A. Philippi informs us that this spa, though scarcely known even by name in England, is rapidly rising into prominence in Germany on account of its good effects in cases of gout and rheumatism, renal concretions, kidney and bladder disease, cholelithiasis, liver disease, and in disorders of the stomach and bowels. The St. Boniface spring, by far the most important both in quantity and quality of the five in use, contains a high percentage of sodium chloride (10.2 parts in 1,000), and it is said the highest amount of lithium chloride known in natural waters—namely, 0.218 parts in 1,000, or about five to ten times as much as most springs contain. According to Fresenius, it contains also magnesium iodide and bromide, calcium sulphate, and a large amount of carbonic acid gas. The water is bottled, but the best results are said to be obtained at the place itself, especially when used in conjunction with the baths, for which the same spring is used. The other wells are the Tempelbrunnen, containing iron bicarbonate in the proportion of 0.05 parts in 1,000; the Kinderbrunnen, which may be described as a dilute form of the Boniface water: the Hessian bitter water (St. George), a mild aperient; and the Schwefelbrunnen, or sulphuretted spring. Besides the baths referred to above, mud baths are given, and it is claimed that the moor from which they are prepared is especially rich in iron, as well as formic acid, humic and acetic acid, and other active principles. The baths are recommended also in scrofula, diseases o the female pelvic organs, heart disease, chronic bronchitis, obesity and neurasthenia. The place is prettily situated in a broad valley, through which a trout stream flows, and is surrounded on nearly all sides by wooded hills, so that it is protected both against excessive heat at the height of summer and cold winds at other times. The climate is described as bracing.

Waterberg Hot Springs, Warmbad, Transvaal.

Captain F. Smith, R.A.M.C. (attached 2nd Wilts Regiment), writes: It may be news to some members, as it was to me, that a really well-arranged hydropathic institution is to be found in the Transvaal bush veld some 50 miles north of Pretoria and accessible by rail. The late Transvaal Government did at least one good service to mankind by protecting this natura hot spring and building over 100 bath rooms, each containing a roomy iron bath with hot and cold taps for free use by the public. The delight of the "Khakies," as the Dutch call us, officers and men, at sight of this oasis on coming from a dusty march may be imagined. Every man could be clean on active service for once. Four baths were reserved for officers and the rest left to the troops. All day opposite each of the officers' baths a string of about six officers, ranging from grey colonels to beardless subalterns, was to be seen each patiently waiting with a change of clothing and a towel under his arm. The difficulty at Warmbad is to get enough cold water. Normally it has to be obtained from a tank in which the hot water has been allowed to cool, but this supply ran out, and the soldier had to submit to be parboiled at 120° F. or more.

The locality is healthy and cool in the dry season, but there is some malaria I am told during the rains. The hotel is well appointed, accommodating about 90 people, and the proprietor kindly placed it at the disposal of the Imperial authorities as a hospital. It boasts a white chef, and waiters, etc. Though only open for a year or so it has already proved too small to accommodate the throng of jaded Randites and Pretorians who visit it for rest and quietness. It will prove, I imagine, a good place for consumptives, who do so well in South Africa, but often find it difficult to get good hotel room away from the towns. Many of the Europeans in this sunshiny country seem to have fled from the old land owing to chest complaints.

The water is not unpleasant in taste. Horses will drink it when it is cooled. It has a slightly laxative effect on men and animals, and is reputed to be good for rheumatism. The following was handed to me as an analysis made by the Professor of Chemistry in the Cape University:

Carbonate sodium,	grs. per gallon	...	16.84
Chloride sodium,	"	...	9.68
Carbonate lithium,	"	...	0.12
Carbonate lime,	"	...	1.82
Carbonate iron,	"	...	0.20
Sulphate magnesium,	"	...	0.4
Silica,	"	...	2.45
Temperature, 120° to 140° F.			
Carbonic acid gas free.			

The station is known as Warmbad, on the Pretoria-Pietersburg Railway, which is run by an English company, and is probably already familiar by name to readers of South African war news.

The Dental Hospital of London, Leicester Square, has received a donation of £100, and a new yearly subscription of £10 10s. to the general maintenance fund, and £100 as a special donation towards the amount urgently required for rebuilding the hospital, from Lord Grimthorpe, Q.C.

Election of Mayors.—In the list of mayors elected in the principal cities and towns on November 9th for the ensuing year occur the names of the following members of the medical profession:—Barnsley: Dr. J. Fletcher Horne, J.P. Bolton: Alderman J. E. Scowcroft, re-elected. Carnarvon: Alderman W. J. Williams, re-elected. Cheltenham: Alderman G. Norman, re-elected, third year. Crewe: Dr. Charles Wilson. Harrogate: Dr. James A. Myrtle, J.P., re-elected. Lostwithiel: Dr. Robert Barclay Allardice, re-elected. Pwllheli: Alderman W. Griffith, re-elected. Ruthin: Dr. J. Medwyn Hughes, re-elected, fourth year. Saffron Walden: Dr. John Parkinson Atkinson. Winchilsea: Dr. J. R. Skinner, elected last Easter Monday.

ASSOCIATION INTELLIGENCE.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1901.

Meetings of the Council will be held on January 16th, April 17th, July 10th, and October 23rd, 1901. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before each meeting—namely, December 26th, 1900; March 28th, June 20th, and October 2nd, 1901.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

South-Eastern Branch: West Kent District.—The next meeting will be held at the Kent County Ophthalmic Hospital, Maidstone, on Friday, November 23rd, at 3.30 P.M., Mr. R. T. Cæsar in the chair. Mr. M. A. Adams, F.R.C.S., will read a paper on the Waters of Carlsbad. Dr. Cartwright: Ophthalmia Neonatorum. Dr. Ground: Case of Morphine Poisoning Cured by Atropine.—T. T. Brunyate, 34, Maidstone Road, Rochester, Honorary Secretary.

South-Eastern Branch: East Kent District.—The next meeting of this District will be held at the Kent and Canterbury Hospital on November 20th, at 3 P.M., Dr. Halstead of Ramsgate in the chair. The Chairman kindly invites members to luncheon at the County Hotel, Canterbury, from 1.30 to 2 P.M. Members intending to avail themselves of Dr. Halstead's hospitality are requested to send acceptances by Tuesday, November 27th, or they will not be expected. Agenda:—Dr. Robinson: Notes on Plague, and its Recognition. Dr. Whitehead Reid: Two Rare Cases. The Chairman: Neuroses. All members of the South-Eastern Branch are entitled to attend these meetings, and to introduce professional friends.—Thos. F. Raven, Barfield House, Broadstairs, Honorary District Secretary.

South Eastern Branch: East Sussex District.—The next meeting of this District will be held at the Calverley Hotel, Tunbridge Wells, on Tuesday, December 4th, at 5 P.M. The chair will be taken by Dr. Adeney, J.P. Dinner at 7 P.M., charge 6s., exclusive of wine. The following papers have been promised.—Mr. C. H. Golding-Bird: Nodal Points of Pain. Mr. J. B. Footner: Some Notes on the Treatment of Hallux Valgus, with cases exhibited. Dr. Ranking: The Management of the Menstrual Irregularities of Early Life.—J. W. Batterham, M.B., Grand Parade, St. Leonards, Honorary District Secretary.

Staffordshire Branch.—The first general meeting of the session of this Branch will be held at the North Stafford Hotel, Stoke-on-Trent, on Thursday, November 29th. The President, Dr. Alfred H. Carter, will take the chair at 5.30 P.M. Business:—Minutes of the last general meeting. Correspondence. Mr. T. Vincent Jackson will move: That the Council be requested to consider and examine the rules of the Branch, to make any suggestion as to their revision and alteration, and to report the result to the next ordinary meeting of the Branch. Exhibition of living cases. Papers:—Mr. W. D. Spanton: Notes made during the International Medical Congress in Paris, 1900. Major MacMunn: Notes on South African Hospitals (based upon recent personal experiences at the Seat of War). Mr. T. Vincent Jackson: A brief recital of a case of Chondro carcinoma of the Right Testicle for which Castration was performed. Exhibition of pathological specimens, etc. Dinner at 7.30 P.M.—F. Milnes Blumer, Stafford, General Secretary.

Shropshire and Mid-Wales Branch.—The next meeting of the Clinical and Pathological Section of this Branch will be held at 5.30 P.M. on Tuesday, November 27th, at the Salop Infirmary. Members who wish to read communications, or show cases or specimens, are requested to communicate with the Honorary Secretaries before Tuesday, November 20th. It is hoped that every member will endeavour to attend this meeting.—Harold H. B. Macleod, Leonard J. Godson, Shrewsbury, Honorary Secretaries.

NORTH OF ENGLAND BRANCH.

The autumn meeting of this Branch was held at Bishop Auckland, co. Durham, on November 7th; Dr. R. S. Peart, President, in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The following were elected: W. Tiplady, L.R.C.P. & S.Ed. (Newcastle); A. H. Jacob, L.R.C.P. & S.I. (Humshaugh); G. W. Middlemiss, M.B., B.S. (Newcastle); G. W. Ellis, L.R.C.P. & S.Ed. (Bishop Auckland).

Cases.—Dr. Mark Wardle brought forward the following cases: (1) A woman after epiploörrhaphy for the cure of ascites. The portal obstruction had been due to dense adhesions resulting probably from gall stones, and, the omentum having been freshened, had been brought into contact with the parietes by a double row of sutures, one on either side of the laparotomy incision. There was still ascites, but to a less extent than before operation. Mr. Angus, Dr. De Lacey, and Dr. Beattie discussed the case. (2) A patient after urethrotomy by a new method, which consisted in threading a gum elastic catheter backward from the perineal wound along the penile portion of the urethra, the other end of the catheter having been passed into the bladder through the divided stricture, the object being to avoid missing the proximal end of the urethra in the boggy perineum.

Specimens.—Mr. H. B. Angus exhibited two specimens of thyroid cyst: (1) A small cyst into which sudden hæmorrhage had occurred after slight injury, and in which case the child was alleged to have swallowed a ball. The dyspnœa was urgent, although the cyst was comparatively small. (2) The only interest in this specimen lay in the large size of the cyst. Mr. Angus commented upon the ease of enucleation without loss of thyroid substance, and urged the necessity of draining the cavity in the thyroid after such enucleations to avoid thyroid toxæmia.—Mr. A. M. Martin exhibited dried specimens illustrating the complications and sequelæ of acute infective epiphysitis.

Papers.—Surgeon-Major G. A. Hutton read a short paper upon the ambulance work in the South African campaign, in which he stated that the St. John's Brigade had sent out over 1,500 men to act in this campaign, most of them for duty as orderlies on board ships and in hospitals. He took the opportunity to urge continued organisation in time of peace, and also that nursing was a necessary part of instruction even for males, and especially for those attached to volunteer corps.—Dr. T. A. McCullagh read a paper upon the inception, management, and maintenance of the Lady Eden Cottage Hospital.

Dinner.—Fourteen members dined at the hotel after the meeting.

SPECIAL CORRESPONDENCE.

INDIA.

The China Expedition and the Medical Services.—Improved Famine Outlook.—Recrudescence of Plague.

The Fourth Brigade have now nearly all sailed for China, the total force consisting of 483 British officers, 582 non-commissioned officers and men, 16,326 native soldiers of all ranks, and 8,806 followers, with 14 field guns and 14 Maxims. The total number of medical officers accompanying them is 130. Of this number no fewer than 122 belong to the Indian Medical Service. All the officers of this service on leave have been recalled and are now arriving. It will be observed that the number of medical officers sent in proportion to the number of troops is far in excess of what has been the custom of late in our numerous frontier wars. This no doubt has some relation to the sensational reports from South Africa, so that it is evident that if the present arrangements are to be the rule in the future it will be necessary to strengthen the Indian Medical Service greatly if the dislocation of the civil branch and the cancelling of all leave is not to recur with every petty expedition involving the use of the native army. This is a condition of affairs intolerable except in great emergencies.

During the last month good rain has fallen, especially in the parts that had been most affected by the famine, while

the North-West Provinces and the Punjab have had heavy falls which bring their totals up to about the average. As September is now nearly over, all danger of a further extensive failure of the crops is past, while sorely-afflicted Rajputana has had more rain than for years past, and the tanks, including several large new ones constructed as famine relief works, are full to overflowing. Assam only now wants rain, but this is required more for the tea crops than for the ordinary agricultural operations of the villagers. The number on the relief works has fallen to about 3,000,000, or less than half the highest total, and a steady decrease, up to a final cessation in the autumn, when the crops are harvested, may be confidently expected. Chiefly on account of the terrible losses of the all-essential cattle, it will, however, be years before the last effects of this unprecedented affliction will have completely disappeared. Although direct expenditure on the famine works will soon be done away with, yet the Government will still be crippled by the loss of remitted land revenue for some time to come.

Unfortunately the outlook with regard to plague is not so satisfactory, as the usual recrudescence of the disease at this time of the year is well marked, and the prospects for the cold weather are distinctly unfavourable. Thus, the total number of cases has risen from 449 in the week ending August 18th, to 1,136 in that ending on September 15th—nearly three times as many. The greatest increase has been in the Bombay Presidency, where the figures have risen from 64 to 593, and in Mysore from 150 to 363. In Bombay city the rise has only been from 51 to 72, while in Calcutta the disease has been nearly stationary at about 80 cases a week, but it is too early to draw any comfort from the last figures. The outbreak in Glasgow is being followed with great interest in India, where many have been for long of opinion that it would be no easy matter to check the disease in a densely populated British city. The sanitary authorities of Great Britain will now have an opportunity of forming a better notion of the insuperable difficulties in early detection and stamping out of the disease in such a place as Bombay.

CORRESPONDENCE.

LONDON DIPLOMATES AND THE REFORMED UNIVERSITY.

SIR,—May I be allowed to add a few remarks to the discussion now proceeding regarding the disability from which London licentiates suffer. The following points are, I think, generally admitted:

1. The university degree is more useful than the diploma of the London Colleges, inasmuch that it is better understood by the public as stamping its possessor as a man of superior education.

2. The examinations of the London Royal Colleges are not below the level of the provincial universities, or at all events most of them, as tests of professional knowledge.

3. That the London University examinations, and especially the Matriculation and Preliminary Scientific, are far above the level of similar examinations in most other universities, and deter a great number of students from entering for the London degree. This was still more the case in the past, because only by degrees have school authorities recognised the necessity for preparing boys for the London Matriculation. The masters, being usually Oxford or Cambridge graduates, looked upon the new University with no favourable eye. Even at the present day, many of them regard its matriculation more as an occasion for "cram" than a test of solid knowledge. This view, held as it often is by men engaged entirely in teaching, tends to justify the action of the many London students who decided (though possibly from other motives) to push straight on with their professional work, even at the sacrifice of any hope of the London degree. Whether a few months, or possibly a year or two, devoted to Latin and Greek grammar and Anglo-Saxon derivatives, would have enabled them better to have carried out their obligations to their patients is an open question.

It has become more and more the fashion for boys to pass the London Matriculation from school, and with the advent of the Teaching University, for which many of us have been praying devoutly for the last twenty years, no doubt the London degree will become the rule instead of the exception for its own students. We alone—though possibly the two Royal Colleges may to some extent share our evil fortune—have to pay the penalty of being born too soon.

Begging for favours is an ungracious task; but justice would seem to demand that some slight concessions might be made to the London students of the past. It was not their fault that a London "university"—in the usual meaning of the word—was not in existence; probably if things were in their time as they now are, or soon will be, the greater number of those holding the qualifications of the London Colleges would have worked for the university degree.

The College of Surgeons requires for its Fellowship certain extra subjects in Arts and Science compared to the Membership. For those holding the London diplomas a somewhat similar examination, one would think, might pave the way for the professional examinations, of sufficient stringency to maintain the high standing of the University, and therefore without infringing upon the rights of its present graduates. That they regard with jealousy any lowering of a standard which has involved so much mental labour is not matter for wonder, and in justice to them alterations should be very carefully made. But after all, the real object of a degree in Medicine, or any other faculty, is to stamp the possessor as being well qualified to practise his particular profession, and examination is a very crude and insufficient mode of ascertaining this.

The probability is that a man who has been a few years in practice has so far improved the time that he is a more competent practitioner than when he started on his medical career. In therapeutics, especially if he has found time to read a little more medical history than was possible during his studentship, he will have learned that fashions change, and that in many cases to fix a proper treatment is as difficult as to fix the proper shape of a lady's bonnet. But though he may not be quite so dogmatic, the chances are that he will do better for his patients. Every mistake is a lesson, and the greater the error the more lasting the memory of it. Logically, therefore, even if a man has been only in practice a year, he is better qualified to carry on his profession, though he may have forgotten during that period a good deal of the sort of knowledge necessary for the matriculation. That some efficient test might be devised without involving the enormous, even prohibitive, waste of time that the present matriculation would mean for men in practice, is surely within the limits of possibility.

Over and above purely technical work, physics, biology, and modern languages might be of future use, and would possibly tempt many a man to snatch some time from his hours of relaxation, with the feeling that whether he passed the examination or not the work would not be wholly wasted. On the other hand, the orthodox "Latin grammar and construction, four books of Euclid, algebra as far as easy quadratics, etc.," are no use to ninety-nine men out of a hundred, unless it be as an early mental training, which is not the point at present under consideration. The man of whom I am writing has managed, without the advantage of these mental gymnastics, to develop enough intellectual power to obtain so good a knowledge of his profession that he has satisfied his examiners and passed a fair test in its theory and practice. That being the case, the mental gymnastics come too late, and having lost their proper function are an absurdity. And yet, because they will not or cannot (according to the Directory of the University Correspondence College, a boy fresh from school, and fairly well grounded, may with four or five hours' daily study work up for the matriculation in a year) comply with this absurdity, a large body of men—men who, as a rule, have the love and interest of their profession at heart, and who have shown by the examination selected that they had no desire to creep in by the easiest portal—is placed upon a different footing.

If the reformed London University finds any means of removing this anomaly it will undoubtedly earn the gratitude of the present Licentiates, and, I venture to think, obtain the approbation of posterity for performing an act of justice.—I am, etc.,

Crouch End, N., Oct. 29th. A. GREENWOOD.

THE RULE OF HOSPITAL RETIREMENT.

Sir,—While all must sympathise with any surgeon or physician who has to retire "prematurely," we would point out that not only the immediate present but the future of the hospitals and schools have to be considered. The laws governing the retirement quoted in the letter of "Chirurgus" are like those of Nature—merciless perhaps to the individual but good for the community. To have spent the most active and energetic years of life before attaining to the full physiciancy or surgeoncy is not likely to lead to the best work being done when that long-delayed honour is at length attained. Even now it is not everyone who can afford to wait, and any alteration of the existing laws, such as hinted at by "Chirurgus," would entail grave injustice on those who, now on the assistant staff or awaiting such promotion, have made their plans for life under the existing regulations. It should also be remembered that those who have to go early have come on correspondingly early, and thus comparatively early in life obtained advantages and opportunities which prolongation of his term of office, after twenty years on the full staff, would unduly postpone for their juniors.

A junior, with more leisure and his reputation yet to make, although with less experience, is more progressive and up-to-date in his teaching, and perhaps more in sympathy with the trend of modern thought than the busy and successful senior, who necessarily cannot devote so much time to the purely educational side of his hospital duties.

It is manifest that any suggested change could not come into force without considerable warning, and, further that it could not be applied to the disadvantage of any existing assistant physicians or assistant surgeons who made their life plans on the old understanding.—We are, etc.,

Hospital Physician and Hospital Surgeon.

November 12th.

MEDICAL OFFICERS OF THE HIGHLANDS AND ISLANDS.

Sir,—While the medical officers of the Highlands and Islands will no doubt feel obliged to Dr. Muir, the Secretary of the Scottish Poor-Law Medical Officers' Association, for his statement in the British Medical Journal of November 3rd, yet I am sure they will not feel altogether satisfied with the sympathy only of the Association with their especial grievances. The Association previously expressed their "sympathy" with us when organising the recent holiday memorial to the Local Government Board, but failed to give the memorial their support by signing it. Nevertheless the memorial, by the united effort of the medical officers themselves and the support it met with from members of Parliament and other influential men, was carried to as successful an issue as possible, considering the present state of the law. Its prayer—the granting of a free annual holiday to medical officers of remote parishes—also met with the approval of the Local Government Board of Scotland, who considered that the granting of such a privilege to the medical officers would tend to the advantage of the public service.

I am glad to learn that the Association "in proper cases" will counteradvertise against the misleading, not to say fraudulent, advertisements of certain parish councils in the Highlands and Islands. I am of opinion that this is a step in the right direction, but think the Association should go further and counteradvertise in every instance of a vacancy in the more remote parishes, cautioning medical men regarding the many grievances connected with these appointments, so that intending candidates should require satisfactory assurances from these parish councils before accepting such appointments.

A statement which will comprehend not only the question of fixity of tenure of office, but also every other urgent grievance of medical officers of the Highlands and Islands, is now in course of preparation and will shortly be sent to the Scottish members of Parliament and others. By this means we believe our legislators will best be fully informed of the anomalous conditions of medical service in the remote parishes of the Highlands and Islands, and so will be more inclined to help forward legislation for the amendment of these conditions.—I am, etc.,

Durness, N.B., Nov. 8th. James F. D. Macara, M.B., C.M.

Sir,—The hardships of this class of practitioners would form as exciting and interesting, if not as harrowing, a tale as any the nineteenth century has produced; and everyone interested in the matter ought to rejoice that though so long borne in silence they seem at last on the eve of being brought before the public. Dr. Macara of Durness deserves well of his fellow practitioners for his efforts in this direction. But even the "appeal"—cry, it ought to be called—of these medical officers which appeared some months ago in the British Medical Journal reveals but a tithe of their grievances. "Despairing's" pathetic letter in the Journal of October 27th is but a sample of the harsh treatment to which these men are subjected by local magnates and ignorant vindictive parish councillors.

No matter how conscientiously and faithfully the medical officer discharges his trying duties, there is never a case in which he is not once and again made to feel that his tenure of office is at the disposal of unscrupulous taskmasters, from whom he need not expect sympathy or justice, not to speak of mercy or even courtesy, should he incur their disapproval. This is the sword of Damocles which hangs over the head of every medical officer who accepts office in these remote and semi-civilised parts.

In these circumstances it need not cause much surprise that there should be some weak-kneed medical officers who stoop to curry favour from such people by sacrificing principle and professional dignity; some have been ruined morally, physically, and professionally through dram-drinking to please the laird, his factor, or droughty parish councillors. It is notorious that in some parishes non-abstaining doctors are more welcome and get on better with the powers that be. Again, the poor doctor must be very careful in ordering extras, or necessary and suitable clothing or housing for the paupers, seeing the "rates" have to be kept down at any cost. A rather amusing experience of my own speaks volumes in this connection. In a testimonial once given me by a shrewd and worthy parochial board chairman, he stated among other things that I was "sympathetic towards the poor." But in reading it over before handing it to me, the good man stopped at this phrase and expressed his doubts as to such a quality being a recommendation on the part of a doctor in the eyes of most parochial authorities. So he actually wrote out a fresh one omitting these words, and I believe he was right. A "sympathetic" medical officer is not acceptable with most parish councils. But I must not enlarge. Until parish medical officers in these dark regions obtain the right of appeal in case of dismissal to some central impartial authority there can be no improvement on the baneful conditions now existing—conditions which bear such fruits as above sampled.

One word about the holiday question. And what joys, alas forbidden to us, the word suggests! Though our very souls yearn to revisit our *Almæ Matres*, and to see and talk over the latest advances in our noble science and art, and though we know and feel it would be for our patients' benefit as well as our own to escape for a short period from the drudgery and isolation of our lives, yet we dare not mention it. Our incomes in such poor localities barely suffice to make both ends meet with the strictest economy, and to apply to the parish council to pay the *locum tenens* is simply hopeless. In the case of the most favoured of us the bare suggestion would be met with a scowl of horror such as would delight old Bumble; in the case of many it would result in humiliating censure—the relentless Pharoah's "ye are idle, idle"—or a direct dismissal. —I am, etc.,

November 1st. Rusticus.

OUR WIDOWS AND ORPHANS.

Sir,—May I, as President of the Society for Relief of Widows and Orphans of Medical Men, venture to appeal to the younger members of our profession to avail themselves more largely than at present of the benefits of this Society? We all hope, but unfortunately we do not all succeed, in providing liberally for those dependent on us, and, if cut off early in life, it must often happen that a medical man leaves his widow and orphans in very straitened circumstances, if not absolute want. Anyone who reads the touching appeals for votes for Epsom pensions and scholarships will confirm this.

The widow of a member of this Society, who has no certain income exceeding altogether the yearly value of £80, is eligible to receive a grant not exceeding £50 per annum, and an additional grant for each child under 16; but the father must have been a member for three years immediately preceding his decease.

Membership is confined to registered practitioners residing within twenty miles of Charing Cross at the time of their election, but there is no restriction as to subsequent residence, and we have lately accepted a widow whose husband died in Australia.

The subscription is 2 guineas annually for twenty-five years only, or 30 guineas in one payment; but a member whose age at the time of his election does not exceed 30 years may become a life member on payment of 20 guineas, or if under 40 years of 25 guineas. The point I wish to urge upon those recently qualified is that, while still resident in London at their several hospitals, they can, on payment of 20 guineas, make a perfectly secure provision for a possible widow and orphans, and will at the same time aid those who may not be so fortunate as themselves.

The office of the Society is at 11, Chandos Street, Cavendish Square, W.—I am, etc.,

Cavendish Square, W., Nov. 12th. CHRISTOPHER HEATH.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

SIR,—Following up the letter you published last week from me on this subject, I shall be glad if you will allow me to state that I have written to all the medical men practising in Felixstowe informing them of my refusal to examine for the company mentioned, on account of the inadequacy of the remuneration. I am glad to say that I have had replies from each of them expressing approval of my action, and promising a similar refusal.

In the absence of any machinery such as is possessed by the legal profession for regulating fees, I cannot but think that by individual effort such as this, some good could be done to prevent wealthy companies and corporations enriching themselves at our expense. We may be too apt to assume that our profession is destitute of *esprit de corps* and good fellowship, and to say too readily, "If I don't take it someone else will." This question of fees for insurance examinations could be settled in a week if in but a few districts a lead were followed as readily and loyally as mine has been here.—I am, etc.,

Felixstowe, Suffolk, Nov. 13th. C. G. HAVELL.

SIR,—Referring to the letter over the initials "P. O." in the BRITISH MEDICAL JOURNAL of November 10th on the above subject, I think it is so couched (no doubt inadvertently) as to be misleading.

While quite agreeing as to the advisability of general life assurance companies being made to pay an adequate fee (and I never accept less than 10s. 6d.), it seems only fair to add to "P. O.'s" statement the exceptional circumstances under which this 5s. fee is offered.

The office of examiner for life insurance under the Savings Bank Department of the Post Office is preferentially given to the Post Office medical officers, and they are distinctly asked whether they are willing to accept the appointment at the stated fee. Moreover, no insurances are contemplated beyond £100, and the vast majority are for little more than £30 or £40. It therefore does not lie in the mouths of those who have voluntarily accepted the appointment to cavil in the BRITISH MEDICAL JOURNAL at the inadequacy of the fee unless the whole of the facts are stated. If the fee is considered to be too small—and I question whether under the circumstances it is—the proper course, as it appears to me, would be to make a representation to that effect (through the Association of Postal Medical Officers) direct to the Department.—I am, etc.,

November 12th. AUDI ALTERAM PARTEM.

MEDICAL "FRIENDS" OF INSURANCE APPLICANTS.

SIR,—When referred by an insurance company in the above capacity, I never stop to inquire at whose instigation a form containing so many questions of a professional nature was sent to me, but simply return the document to the office, stating the wrong form had been sent, and that I would fill up the usual medical one if required to do so. This kind of letter has, up to the present, resulted in the office sending the required form followed in due course by a fee of a guinea.

Considering the increase of insurance business and the steady growth of "accumulated funds" it is nothing short of disgraceful to attempt to reduce the already inadequate scale of medical fees.—I am, etc.,

November 2nd. M.D., M.R.C.P.

SIR,—Like "Adam," whose letter was published in the BRITISH MEDICAL JOURNAL of November 3rd, I had a printed form from a company with a request to fill up a string of questions about a patient and acquaintance of mine. Bearing his letter in mind I wrote to the company and also to my patient, asking if he had given my name as a friend or as his attendant. I did not get his letter for some days, when he stated that as he was not known much in this country (being on a visit from abroad), he had given his solicitor's and my name as references. In the meantime I had a second letter from the company saying that as they had had no answer from me, they sent me a different form to fill up as medical attendant and also a guinea fee. This was done, although the applicant had been duly examined in London by their medical referee. I think this shows how with a little firmness medical practitioners may get their dues.—I am, etc.,

November 13th. LEX.

ABDOMINAL OPERATIONS: THE CASE OF DR. IMLACH.

SIR,—I desire to say a few words in support of the suggestion that the report issued in November, 1886, by the Committee appointed to pronounce upon the propriety of Dr. Imlach's method of treating diseased ovaries and tubes should be deleted. I do not support this demand on the ground that the report was *ultra vires*, though it seems clear that it was so. The core of the matter is not whether the Committee had any right to sit in judgment on Dr. Imlach, but whether in the light of present knowledge and of the additional experience of the last fourteen years Dr. Imlach's method was good or bad. Nothing of real value would be gained by deleting the report on legal grounds. If, however, it is admitted that the operation for removing diseased ovaries which Dr. Imlach helped to popularise was a real advance in the art of healing, Dr. Imlach has a right to ask for the deletion of the report which condemned him for practising it. I cannot myself doubt that Dr. Imlach did good service to women by advocating the treatment of pelvic disease by surgery. It is not necessary to labour the point that no mistakes were made in diagnosis or in the choice of cases, or to prove that all the care now taken not to operate on unsuitable cases was then taken by those who practised the new treatment. No one but the operator himself ever knows how many cases he rejects or how much trouble he takes in selecting those that he thinks suitable.

It is, moreover, certain that pioneers have always much to learn that will be obvious enough to the next generation. Advance in any direction involves the making of many mistakes, and the ability to learn from them. Twenty years ago a large number of women spent wretched and useless lives owing to the misfortune of having diseased ovaries. A considerable proportion of such cases are now cured by surgical methods, and Dr. Imlach was one of the pioneers in this direction. "It is so easy not to try to write an epic poem." The gentleman at Liverpool who set the ball rolling against Dr. Imlach attempted no "epic poem" in the direction of curing these unhappy women. Following the routine of his day, he counselled resignation to suffering and to life on a sofa. Dr. Imlach aimed at curing them, and in many cases he succeeded. Do we owe him nothing [illegible]

We know now, moreover, that some of the evils which Dr. Imlach's critics believed would follow the removal of the ovaries are in most cases much less serious than it was anticipated they would be. The dreadful threat that women would be "unsexed" by being made capable of leading active lives has lost a good deal of its force. Some people even venture to call it "rubbish."—I am, etc.,

E. GARRETT ANDERSON, M.D.

Upper Berkeley Street, W., Nov. 5th

SIR,—Your recent editorial and the letters upon the action of the Liverpool Medical Institution in relation to my professional conduct encourage me to request the publication of the enclosed.—I am, etc.,

Liverpool, Nov. 5th. FRANCIS IMLACH.

[COPIES.]

12, Granville Place, Sept. 28th, 1900.

Dear Dr. Imlach,—I have read with great care and attention the pamphlet you have sent me for perusal, and I have come to the conclusion that the argument is complete and unanswerable.

The progress of the art of surgery during the last fifteen years furnishes a convincing answer to the charges brought against you, and I trust the old adage "'tis never too late to mend" will come to the aid of the members of the Liverpool Medical Institution and induce them to do you the very tardy justice of reversing a hasty judgment by deletion of the "minutes" on the subject.

It is scarcely necessary for me to express my sympathy with you or to wish you complete success. The former you have always had, and the latter expresses the sincere sentiment of yours faithfully,

GEO. GRANVILLE BANTOCK.

38, Grosvenor Street, W.,
October 27th.

Dear Dr. Imlach,—I have read with great care the pamphlet you have sent me. It only confirms, and very strongly, the opinion I had formed in 1886 that you had been most unjustly treated, and that the report had been arrived at on altogether insufficient evidence. You have shared the fate of all pioneers who have to contend with a natural, perhaps in some cases a useful, tendency to extreme conservatism in professional work. Evidence of this could be multiplied almost *ad infinitum*: Simpson and his introduction of chloroform, Spencer Wells and ovariotomy, when on reading his cases the benches of the Medico-Chirurgical Society rang with excited cries of "Down with these belly-rippers," and many other instances which could be cited. In my own small way I have been a victim of it, for when I introduced into this country the now well-recognised way of dealing with certain neurotic states many of my professional brethren did not hesitate to tell me that I had descended to the level of a charlatan, and other comments were made which would have been amusing had they not been painful. Happily in all such cases the lapse of time and increased experience proves that opinions have been too hastily formed, and practice, at first strongly condemned, becomes the commonplace of to-day.

I do not for a moment doubt that, however distressing to you this hastily-adopted action may have been, now your professional brethren will gladly seize the opportunity of remedying, so far as is in their power, the injustice they have done you. Unhappily it is not in their power to undo its original effects on your own life and career.

I am truly yours.

W. S. PLAYFAIR.

SIR,—The publication of letters on this subject, and the reopening of the discussion in the BRITISH MEDICAL JOURNAL, have shown that while many members of the Liverpool Medical Institution believe Dr. Imlach to have been deeply wronged by the action of the Institution in 1886, there is great sympathy felt with him in the profession outside Liverpool, and by its most eminent and representative members in the department in which he practised. This feeling has been well expressed in your columns, and in other letters in the hands of those who are interested in the rehabilitation, as much of the Liverpool Medical Institution, as of Dr. Imlach. Mr. Mayo Robson, for example, writes: "Dr. Imlach has now, as at the time of the unfortunate legal action, my sincere sympathy, and in answer to your letter I shall be glad to add my name to any list for presentation to the Liverpool Medical Institution requesting them to delete the vote of censure passed some years ago."

We feel that though the action of the Committee of Inquiry was without question inspired by the best motives, they were naturally affected by the constitutional professional bias against new surgical procedures, especially when involving such peculiar ethical and social considerations. I, for one, regard their position as one entitling them to the warmest sympathy. It was an unfortunate position, but it was the mistake of the Institution, and one for which the members of that committee cannot be blamed. If the Institution of to-day will realise what everybody else does, that no imputation whatever is made on any member of that committee, there should be no difficulty in effacing from our records a resolution which had the most unhappy consequences, which must always be a source of pain to many besides Dr. Imlach, and which is so strongly adverse to real professional progress and to the spirit of modern science.

With great diffidence I would suggest that some such proceeding as the following would give an opportunity of closing this unhappy controversy in a manner conducive to the credit and good feeling of all parties. A resolution, something like the following, could be adopted by the Medical Institution without any loss of real dignity, and with the happiest result to Dr. Imlach:

That since Dr. Imlach's professional reputation and career were destroyed by the publication of the Institution Report of 1886, and many members now believe him to have been deeply wronged thereby, this meeting consents to place the whole question of the propriety and justice of the action of the Liverpool Medical Institution before the Council of the British Medical Association, with the request that they will express an opinion upon it.

I am, etc.,

Liverpool, Nov. 6th. G. A. HAWKINS-AMBLER.

THE NATURAL HISTORY OF FIBROIDS AND RECENT IMPROVEMENTS IN THEIR TREATMENT.

SIR,—I presume we are all agreed that in all cases where syphilis is present, or there is reason to suspect it, it is wise to subject the patient to the action of mercury, or of the iodides, according to the stage of the disease, whether the case be one of uterine fibromyoma or any other growth. I believe, too, that there is not much difference of opinion as to the source of the blood in menorrhagia or metrorrhagia in these cases. We all admit that the blood does not come from the tumour itself, but from the overlying or opposing endometrium. It is very possible, indeed it is very probable, that in such cases as those referred to by Dr. Shaw-Mackenzie, in which syphilis and fibromyoma were both present the hæmorrhage was mainly due to the specific disease of that membrane; that when once this was dominated by the drug, not only would the bleeding greatly decrease, but the symptoms due to the swollen and possibly ulcerated endometrium would also disappear; but it is evident that this is a very different thing from action by these drugs upon the tumour itself.

Dr. Shaw-Mackenzie quotes Boquet's statement that the observation of such results induced him to try the drug in other cases where no evidence of syphilis existed, and that in *all* the cases the bleeding was stopped, pains ceased, and the size of the tumour was markedly diminished. I presume that he puts forward this statement as convincing, but I confess that to my mind it is not so. In the first place it is too sweeping, and there is too much vagueness about the number of cases in which this wonderful result occurred. In the second place, surely Dr. Shaw-Mackenzie must have observed the phenomenal amount of literature at present prevalent about every drug under the sun, the difficulty now being to find a drug which cannot boast a testimonial and a string of cases behind it to prove its capacity to do anything. Lastly, and this is more serious, it is obvious that potassium iodide, as ergot, calcium sulphate, *et id genus omne*, must have been tried before and lauded before by many previous observers, or they would never have been so universally recommended in all textbooks as they were when Meadows, Keith, Spencer Wells, and Lawson Tait, with many other men of equal sagacity, tried them and left on record their deliberate opinion of their futility in "promoting the removal of uterine fibroids."

What is protested against cannot be too plainly stated. It is not the removal of a syphilitic factor; it is not the correction of any blood dyscrasia present; it is not the improvement of digestion or the removal of any intercurrent disorders which may complicate the case, and the previous removal of which may increase the patient's chances when operative work is undertaken; but it *is* the repetition of experiments which have already failed, and which are bound to fail; it is to the wasting of valuable time and the still most valuable strength of the patient for a purpose which previous observers who were amongst the acutest of our profession have already proved for us to be hopeless; it is against waiting in any given case until dangerous complications have come into action, complications almost certain to ensue if sufficient time be used up in experiments, which render what might have been easy and safe a dangerous and almost desperate resource. It is against this that we protest, and this at present would appear to be the greatest danger in these cases.—I am, etc.,

Manchester. E. STANMORE BISHOP, F.R.C.S.

PROTECTION FROM MOSQUITOS.

SIR,—While one evening at Furnas, St. Michaels, Azores, in 1890, having heard of mosquitos being active there, I advised fellow passengers to lather their faces, necks, hands and forearms with "surgical" carbolic (15 per cent.) soap, taken for

that purpose, and to let the lather dry on. Of those who applied it all escaped bites, but many others, without the application, were freely attacked, one man especially being scarcely able to see at breakfast-time, and looking as if with beginning of variola. Mosquitos, in my experience, do not bite all; I was not bitten that night, although the little pests kept me long awake by their pinging. I had the satisfaction of capturing some when I got up; there were not any mosquito curtains, and I had not applied the soap, trusting to previous immunity (sandflies have attacked me). None of the bitten passengers developed malaria on the way—four days—from St. Michaels to Tilbury. I did not hear of any malaria at Furnas.

I was not sufficiently acquainted with the varieties of mosquito to give the names of those at Furnas, which lies in a deep crater with abundant vegetation, and contains several geysers of hot alum, sulphur, and chalybeate waters, much resorted to by the inhabitants and visited by invalids from Lisbon and the United States for arthritic and cutaneous diseases. Mud scraped from the "Bocca d'Inferno" is much valued as a local application.—I am, etc.,

Malvern. STANLEY HAYNES, M.D.

THE DIAGNOSIS OF RABIES AND THE PROPHYLAXIS OF HYDROPHOBIA.

SIR,—I have often wondered why the "Pasteur treatment" of patients bitten by rabid, or suspected rabid, animals, as practised at the Pasteur Institute, Paris, has not been introduced into London. I had hoped that when Lord Iveagh (I believe) a few years ago gave his magnificent gift of £250,000 towards founding the "Jenner Institute of Preventive Medicine" in London the prophylactic treatment in cases of suspected rabies would have formed a very important department of that Institute, but that hope, I fear, remains so far unfulfilled. Consequently patients from the British Isles are still obliged to undertake the long, expensive, and trying journey to Paris. We have a Board of Agriculture which assumes the duty of examining the heads of suspected rabid dogs (sent up to it) by the latest scientific methods; and I had the duty of sending such a dog's head up in September last, the day after it had bitten two people, in the assurance (in my own mind) that I should within a fortnight, allowing sufficient time for inoculation experiments, have absolute proof of the existence or non-existence of "rabies" in the suspected dog. Great was my disappointment, on writing to the Board for the result of the examination, to receive a reply to the effect

That from the description of the case of suspected rabies furnished to the Board by their inspectors (who had never seen the dog), the chief veterinary officer of the Board recommended that it should be accepted as a case of "rabies," and therefore it became unnecessary to carry out inoculation experiments for the purpose of deciding whether a muzzling order should or should not be issued by the Board.

Of course I wanted a definite result, with the view of deciding whether to send the bitten persons to Paris or not, and I gave them the benefit of the doubt by sending them to the Pasteur Institute.

In a previous case in August last of suspected rabies in a dog, the Board's inspector did not visit the locality until eight days after the dog had been killed, and in this case it was held by the Board:

That the dog had been buried too long before the report reached them for any advantage to be obtained by exhuming the carcass for the purpose of inoculation.

So whether one is early or late the result seems to be the same—namely, no "scientific" examination of the dog's head.

I hope the Parliamentary Committee of the Association can be induced to move in this matter and endeavour to bring about the establishment, either by Government or other means, of a Pasteur Institute in London. I note in the BRITISH MEDICAL JOURNAL of November 3rd that a Pasteur Institute has recently been established in Kasauli, India, and therefore I ask, why not establish one in the chief city and capital of the British Empire?—I am, etc.,

Glan-Garnant, R.S.O., Nov. 5th. HOWELL REES.

WATER ANALYSIS AND BACTERIOLOGY.

SIR,—In a report made by one of its officers to the Local Government Board recently there is printed, without comment, a copy of an analysis of water made by an analytical chemist, who is also an electrical engineer and a F.C.S. After the report of a somewhat incomplete chemical analysis, there is the following statement: "I found no bacteria, animalculæ, or spores of any kind, and the water must be pronounced quite free from all suspicion of sewage or other contamination"—a very reasonable deduction to make from such premisses. The company that supplies such a water is certainly to be congratulated. But I fear that this sterile water in a competent bacteriologist's hands might not have proved to be so sterile.

Surely, Sir, this is radically wrong that the highly-complex process of the bacteriological analysis of water should be entrusted to an analyst whose report shows that he has had no adequate training in this very special branch of bacteriology. It is becoming only too common for chemical analysts throughout the kingdom to tender reports of so-called bacteriological analyses, and vestries or councils which are incompetent to form an opinion on the reliability of such reports are in serious danger of being misled, and a further danger to the public health is thereby engendered, for suspicions that might have been aroused are allayed through lack of proper investigation and the receipt of fallacious reports.—I am, etc.,

Streatham Hill, S.W., Nov. 12th. G. LESLIE EASTES.

THE DIASTOLIC EXPANSION MOVEMENT OF THE VENTRICLES AS A FACTOR IN COMPENSATION FOR DISEASE OF THE MITRAL VALVE.

SIR,—In his paper in the BRITISH MEDICAL JOURNAL of September 29th Dr. Stacey Wilson brings forward cardiographic evidence to show that the heart has the power of enlarging its chambers by a true muscular expansion movement, and goes on to demonstrate its value in compensation for disease of the mitral valve. Without going into the question at length, I should like to point out that his ingenious tracings are capable of another interpretation, and go far to prove the correctness of the view adopted by Gaule and Mink. According to them[1] the cause of negative pressure—the diastolic expansion wave of Dr. Wilson—lies in the dilatation of the aorta after the closure of the semilunar valves. From the relation of the muscular fibres of the ventricle to the fibrous ring of the aorta, the filling of the aortic sinus leads to the unfolding of the point of insertion of the muscular fibres and an untwisting of the spiral. Mink by a simple experiment has shown very conclusively that the dilatation of the first part of the aorta after the closure of the semilunar valves by producing distension of the aortic part of the ventricle is the sole cause of the diastolic expansion. On a former occasion[2] I pointed out that for this purpose the semilunar valves must be intact, and that any leakage would lead to a fall, or even the disappearance of negative pressure. Dr. Wilson has now proved the truth of this, for he says that "a marked feature of all the tracings in aortic regurgitation is the absence of the diastolic expansion wave." I contend therefore that he has failed to establish his proposition; but on the contrary has brought valuable evidence to prove the truth of what I believe is the correct view.—I am, etc.,

Cardiff. D. R. PATERSON.

SOME REASONS FOR BELIEVING THAT OOPHORECTOMY TENDS TO FAVOUR RATHER THAN TO PREVENT THE DEVELOPMENT OF CANCER.

SIR,—*Apropos* of the communications by Mr. Boyd and Dr. Herman in the BRITISH MEDICAL JOURNAL of October 20th, will you allow me to point out some reasons for believing that castration tends to favour rather than to prevent the development of cancer?

In the breast the liability to cancer is greatest after the cessation of ovarian activity, when the ovaries are dwindling in size as well as in function. Mammary cancer is a disease not of the active breast, but of the breast becoming obsolescent. Now, oöphorectomy favours premature mammary obsolescence, and it therefore seems probable *a priori* that it may favour the development of cancer.

Some time ago I took the trouble to analyse the causes of death of all Spencer Wells's patients who recovered after completed ovariotomy for cystomata. The results thus obtained

[1] *Centralblatt f. Physiologie*, Bd. iv. Nos. 10 and 21.
[2] BRITISH MEDICAL JOURNAL, 1896, vol. ii. p. 945.

tend to confirm the above-mentioned indication, for they show that extirpation of the ovaries, far from lessening the liability to cancer, caused it to be greatly increased. The facts are as follows:—Of those who had recovered from ovariotomy 117 had since died, the causes of death being unknown in 29. Of the remaining 88, no fewer than 32 had succumbed to cancer, that is to say, 1 in 2.75. During the same period I have ascertained that the cancer mortality in the general population among women of about the same age was 1 in 15. Thus the cancer mortality was nearly five and one-half times greater for those whose ovaries had been extirpated than for those who had undergone no such operation.

It has been suggested that this high cancer mortality after ovariotomy may be ascribed to the existence of malignant disease prior to the operation. But this seems improbable, for the following reasons: First, during ovariotomy and at the examination of the tumour after its removal, no signs of malignant disease could be detected; secondly, my analysis of 13,824 primary neoplasms shows that malignant tumours of the ovaries are decidedly rare, much rarer than they would be if the above-mentioned explanation were correct. For instance, my analysis shows that only 6.3 per cent. of all ovarian tumours are malignant; whereas the percentage of malignant tumours occurring after ovariotomy amounted to no less than 36.

If further evidence as to the correctness of these views were required, it might be found in the considerable number of cases that have now been recorded in which cancer is known to have supervened after the removal of both ovaries for various morbid conditions; as examples it may be mentioned that Playfair not long ago reported a case of cancer of the uterus which developed two years after the removal of both ovaries and tubes for pyosalpinx; and Blacker had previously reported a similar instance, in which uterine cancer developed eight years after double oöphorectomy for myomata. Abel, Savor, and many others have met with similar cases.

Of like import is the interesting series of cases lately reported by Neugebauer illustrating the proneness to maligant disease of persons with rudimentary, badly-developed or absent ovaries.

It strikes me as being very remarkable that of the several hundred cases of oöphorectomy for cancer that have now been done, not a single definitive cure can be instanced, unless one of Herman's cases may be so regarded. But even if a score or so of "cures" could be cited, the sources of fallacy are so numerous that little weight would attach to them, in the face of the overwhelming preponderance of the negative results.

In fact, every new specific for cancer that has been blazoned abroad during the last half century—and their name is legion—has had no difficulty in justifying itself by far more convincing crops of "cures" than any that have been adduced on behalf of castration, for example, chian turpentine, cinnamon, serumtherapy, etc. In attempting to estimate the value of therapeutic experiments of this kind, we must never forget the Hippocratic maxim, "Experience is deceptive and judgment is difficult."

The conclusion at which I have arrived, after careful study of the subject, is that as a remedy for cancer castration is worse than useless and that the sooner the procedure is abandoned the better.—I am, etc.,

Clifton. W. ROGER WILLIAMS.

THE MORTALITY OF SUPRAPUBIC LITHOTOMY.

SIR,—May I encroach once more on your valuable space to say that, having read Mr. Keegan's letter which appeared in the BRITISH MEDICAL JOURNAL of November 3rd, and the special "Stone Number" of the *Indian Medical Gazette* to which it refers me, I fail to find in either of them an answer to my question about the ultimate results of litholapaxy? True, Mr. Cunningham and Mr. Davidson touch the question in the "Stone Number," but whilst the former contents himself with saying that he has the impression that recurrence is as frequent after lithotomy as after litholapaxy, the latter writer regrets that more attention has not been paid to this question, and mentions that in his last 254 cases he has met with 16 recurrences. Birdwood—another contributor to the special "Stone Number," and an ardent litholapaxist himself, thinks that fragments are frequently left behind after litholapaxy in children, and quotes Sir H. Thompson and Mr. Cadge as witnesses for the statement that recurrences are more frequent after the crushing operations.

Whilst the special "Stone Number," therefore, does not help us in answering the important question of recurrence, it shows, at least to me, that the desire to avoid a cutting operation has occasionally led to the use of litholapaxy in quite unsuitable cases, as proved by the different accounts of broken or bent lithotrites which had to be removed by the perineal route. Some fatal results which occurred in Mr. Keegan's practice are attributed to the long duration of litholapaxy, and to the consequently great quantity of chloroform used. To avoid these drawbacks it is recommended in the special "Stone Number" to employ perineal litholapaxy more frequently. Why this operation is considered superior to the suprapubic I cannot understand. To mention only a few of the advantages which the suprapubic route offers, it is certainly the one which can be done most rapidly, no important structures can be damaged, the hæmorrhage can be easily controlled, and, what is most important, the whole operation can, and in many cases should, be done without general anæsthesia, by the aid of Schleich's infiltration method.

Before concluding, allow me to say a few words about the figures by which Mr. Keegan in his letter seeks to prove that suprapubic lithotomy in adult males is followed by a very high mortality. Mr. Keegan writes that "in 7 cases (from Assendelft's paper) where the age varied from 40 to 45 years, there were 3 deaths, a mortality of 42.8 per cent., and in 2 cases, ages between 45 and 50 years, there was 1 death, a mortality of 50 per cent.," but he forgets to mention that Assendelft himself excludes 3 of these cases from his operation for stone, as the stones in these 3 cases were of secondary importance, as large ulcerated cancers were found during the operations.

Mr. Keegan has further overlooked that in Golischewsky's paper we also find notes of 7 cases in which the age varied between 40 and 65; 6 of these patients were cured by suprapubic lithotomy, the seventh died 3 months and 20 days after the operation from general tuberculosis. But small statistics prove nothing for or against the value of an operation; what, for instance, would be said if I tried to make out that the mortality of suprapubic lithotomy in men between 40 and 82 is *nil*, because I have operated on 8 cases and lost none?

Larger statistics, and especially such as would give the number of recurrences, should be collected, and would, I am sure, prove very useful in determining the relative value of the crushing operations and the suprapubic method, which will probably remain the operation of election for all those surgeons who, like myself, are but rarely called upon to operate for stone.—I am, etc.,

Finsbury Square E.C. Nov. 12th. J. P. ZUM BUSCH.

AMBIDEXTERITY.

SIR,—May I point out an important error in Sir James Sawyer's suggestive note? He supposes that primitive man cultivated right-handedness, which has since been hereditarily transmitted. Now almost all infants are at first left-handed, and that for a very simple reason. The mother or nurse, unless herself left-handed, carries the baby with its head against her left side, and its right arm next her. Consequently it puts its left hand out to grasp objects, and grows up left-handed, until disabused of the habit by subsequent education and custom.—I am, etc.,

Gloucester Place, W., Nov. 6th. HERBERT SNOW.

VACCINIA BODIES, ETC.

SIR,—Five years ago some observations of mine were published concerning bodies that are found in the cornea of rodents after vaccination. Seeing that since that time memoirs and criticisms having reference to this subject have appeared, I am desirous of stating my present opinions on this and other matters.

I need not go farther back than the histological and critical work of Armand Hückel.[1] Hückel's opinions, as far as they concern my published work, seem to be endorsed by Monckton Copeman and Gustav Mann in their work on the Histology of Vaccination recently published by the Local Government

[1] A. Hückel, Second Supplement to *Ziegler's Beiträge*, 1898.

Board.[2] Hückel, without having seen my preparations, and without having made preparations in the same way himself, makes the following statements:

1. That extracellular bodies which I have described as parasites having a layer of granules within their periphery have, on the contrary, the granules on their surface.

2. That other free bodies, non-nucleated, described by me as parasites, are leucocytes.

3. That the process that I have described as a stage of sporulation is really a breaking up of the nucleus and cytoplasm of corneal cells.

In this place I will merely state that in each instance I adhere to my original opinion. With regard to other cognate matters, I wrote in 1897 in a book for students:[3]

I may at once admit that in many points I have modified the views I formerly expressed. The parasitic origin of malignant growths is not proven.

This change of view was chiefly brought about by my finding that the bodies known to pathologists as psorosperms of the ureter were not familiar to biologists; and, while fully maintaining my own beliefs, I realised that these bodies, on which I had to a large extent based my reasoning, had been somewhat too readily accepted by pathologists as parasitic. The proof or disproof of the problems at issue involves an increase in knowledge both in biology and in pathology. That increase in knowledge is taking place.—I am, etc.,

London, Nov. 8th. J. Jackson Clarke.

POST-OPERATIVE HÆMATEMESIS.

Sir,—In the British Medical Journal of October 20th appears a case recorded by Dr. Kenelm Winslow under the above title. A few months ago I had to examine a Pathan's abdomen to ascertain if there were any injury to the intestine after a penetrating wound of the abdomen caused by a stab. An hour after the operation he vomited a pint of almost pure blood, and fearing that a puncture of the stomach had been overlooked, I reopened the abdomen in the evening and carefully examined each aspect of the stomach without finding any trace of a lesion. After this second operation he vomited again a large quantity of blood. Later there was considerable melæna and diarrhœa. His recovery was complete.—I am, etc.,

Vaughan Pendred, M.S., F.R.C.S.,
P. and O. Co.'s ss. *Valetta*, Surgeon.
Marseilles, Nov. 1st.

THE NAVAL MEDICAL SERVICE.

Sir,—I frankly admit that our grievances are neither deep nor vital; they could be easily removed at a comparatively small cost to the State.

Relative Rank.

The average age of the freshly-joined surgeon may be put down at twenty-five years, that of a lieutenant, with whom he ranks, at twenty-two years. The surgeon serves twelve years without increase of relative rank, the lieutenant serves eight years. Thus it always happens that a lieutenant, who at one time was nearly four years junior to a surgeon, goes over his head and becomes senior to him. This may seem but a small matter to an outsider, but there is more in it than meets the eye. For example, the lieutenant would, by virtue of his newly-acquired seniority, take precedence in choice of cabins, etc.—no small advantage. Again, a lieutenant serves about twelve years as such prior to promotion to commander; he would then be about 34 or 35 years old. A medical officer to attain the same relative rank (fleet-surgeon) has to serve twenty years, and would then be about 45 years of age. I would suggest as a remedy for this want of equality that a surgeon should be promoted to the rank of staff-surgeon after eight years' service, and to fleet-surgeon after fifteen years' service. Naval instructors who join the service with the same relative rank as that held by surgeons receive corresponding increased relative rank after these periods of service. If it is considered just in their case; why should it not be so in ours?

Pay.

Up to the present I have not seen the subject of pay mentioned by any of your correspondents. This is more a question of supply and demand. If the proper class of young medical man can be obtained for the present rate of pay, the Admiralty cannot be blamed for not offering more. Whether the value of our services has increased or not will be best shown by the number of candidates coming forward for commissions. Rumour has it that the Admiralty can just manage to scrape together sufficient candidates for the competitive (?) examinations to fill the vacancies advertised. Nor is this condition of things altogether to be wondered at. The minimum professional curriculum is five years; the man who competes for the navy has probably taken six years to qualify. Looking at things from a purely business point of view, eliminating the attraction of a sea life felt by many, the question arises, Does 11s. 6d. per diem, with a rise of 2s. a day after four years' full pay service, followed by a further rise of the same amount after eight years, sound sufficiently attractive to the young surgeon?

The naval instructor, whose B.A. degree cannot be said to exceed in educational value our medical degrees or diplomas as the case may be, receives a larger salary, made up of pay and educational allowances, than the surgeon. Why should this be?

In fixing the pay of the various branches of the service it should be borne in mind that, with the exception of the chaplains, ours is the only branch the members of which require no education in a Government establishment at the expense of the State to fit them for the duties which devolve upon them.

The other grievances expressed by your correspondents, namely, lack of opportunities for study at a metropolitan hospital, the sharing of very irksome duties by the senior medical officers of the fleet, etc., are, I think, common to the great majority of members of the Naval Medical Service, and great satisfaction would be felt by all if they were removed.—I am, etc.,

Hopeful.

EMPIRICISM OR "UNEXPLAINED OBSERVATION."

Sir,—Sir R. Douglas Powell's presidential address before the Clinical Society is suggestive, and if its lines of thought were followed out would lead to results beneficial alike to the public and to the profession. It has often seemed to me that enough has not been done to obtain from the general practitioner throughout the country the results of "unexplained observation." If these results were obtained, they would form an invaluable contribution to clinical medicine, and give a fresh clue to the specialist and to the man who devotes his life to scientific research. As it is, the busy practitioner has not the inclination and will not find the time to write a paper for a medical society or a medical journal.

Sir Douglas Powell hints that "unexplained observations" might be brought under the notice of the Clinical Society, or form the graduation thesis for a university degree. But are there not hundreds of instances where the author of "unexplained observations" is worthy of a degree from one of our universities?

If there were more rewards of the kind the country practitioner would be stimulated to record many an "unexplained observation" which would cure hundreds and relieve thousands. Let me give one illustration out of half-a-dozen similar ones I could mention. A country practitioner told me three or four years ago what I did not know, and which no consultant and no one else whom I have come across knows—namely, that calomel when placed on the tongue in doses of ½ gr., and repeated every half-hour for twelve or eighteen hours, always aborts a quinsy. Since then I have always adopted this simple treatment and have never found it fail. Is not the doctor who discovered this empirical treatment—assuming it to be correct—worthy of some recognition from the "government" of our profession, the colleges, or the universities? The man who never ventures outside his text-book is about as brilliant as the general who never originates any line of action outside the manual of his staff college, and will meet with a similar result in the presence of a powerful foe.

Another suggestive remark of Sir Douglas Powell is: "The same conditions that lead up to a common cold in an otherwise healthy man would elicit an attack of ague in a fair proportion of persons who harbour the germ of that disease." This suggests influenza, pneumonia, and rheumatic fever, among other diseases. But there is no recognised treatment for a cold in the head, influenza, pneumonia, or rheumatic fever, or, if the treatment is recognised, it is far from successful. But if one reads his medical journal he will find various lines of treatment advocated, and all equally successful—all cures and no deaths. And yet I believe there is something in them, and it might be the duty, say, of a Committee of the College of Physicians, to put these various treatments to the test in some of our hospitals, and then give an authoritative opinion as to their value. The author of any valuable treatment would be worthy of honour. In preventive medicine the authorities formulate rules, but in the treatment of disease every man follows his own sweet will.

Dr. Richard Caton's lecture on the Prevention of Rheumatic Valvular Disease is a good illustration of "unexplained observation," if Dr. Caton will pardon me for using the word "unexplained" in the presence of the very likely theory which he has suggested. Blistering is not a new treatment. A quarter

[2] Report of the Medical Officer of the Board, 1900.
[3] *Surgical Pathology and Principles.*

of a century ago Leishman in Glasgow treated all his rheumatic fever patients with blisters over the region of the heart, but as far as I know it is a treatment not generally adopted. But Dr. Caton's method of using the blisters is somewhat different, and I should say better. This is one of the points I want to emphasise. It is not so much the introduction of a new remedy, as skill to use the old remedy that is required. Calomel is not a new remedy; blistering is not a new remedy, but the way of using them is new.—I am, etc.,

Sloane Street, S.W., Oct. 23rd. J. DEWAR.

THE SOCIETY OF APOTHECARIES OF LONDON.

SIR,—In answer to the further resolution of the Court of Assistants of the Society of Apothecaries, the Association of Physicians and Surgeons (Society of Apothecaries) have replied, thanking the Society for the authorisation to their Licentiates of adding to their title of L.S.A.Lond. the words "Physician and Surgeon"; and the Association hopes that in the near future a further alteration will be made in a still rather unsatisfactory title.

Licentiates may now, on the authority of the resolution of October 8th, 1900, style themselves "Licentiate Physician of the Society of Apothecaries and Licentiate Surgeon of the Society of Apothecaries, London (L.P.S.A. and L.S.S.A.Lond.)."—I am, etc.,

GERALD DALTON.
Honorary Secretary, Association of Physicians and Surgeons (Soc. Apoth.).

423, Strand, W.C., Nov. 12th.

LECTURES ON MIDWIFERY TO MIDWIVES.

SIR,—Will you allow me to call the attention of your readers to the above heading, which is over the typed copy of my letter you were good enough to publish on Saturday, because, as you put it, "Lectures to Midwives and Monthly Nurses" is wholly misleading, and indicates that I object to the teaching and training of either, whereas the point is we have a real necessity for improvement in the knowledge of monthly nurses in their proper calling, but no demand for half-educated women to take up medical practice.

I do not think the profession generally has the smallest idea of what these irregular schools are doing to degrade the profession in the eyes of the public. I have before me some extracts from a syllabus of one of these establishments, and I give you headings of a few of the subjects dealt with, and in the exact phrases therein:

The general structure of the human body, anatomy, physiology, composition of bone.

Ovulation.—The ovary is seized by the Fallopian tube and conducted into uterus. The vesicle then contracts into a yellow scar—the corpus luteum!

Signs of Pregnancy.—Ballottement! Souffle. Fœtal Heart.

Mechanism and Management of Face Presentations.—Two varieties, four positions. Right mento post, left mento post, left mento-ant., right mento-ant.

Pelvic Presentations.—Treatment: If leg in vagina gentle traction at intervals, turn face into sacrum, apply pressure to fundus.

Obstructed Labour.—Treatment by midwife: Rigid os apply heat; if descent of anterior lip or bladder press upwards and forwards. Any *tumour* descending before the head may, *if possible*, be gently pressed above the pelvis.

Superfatation —Extrauterine pregnancy—tubal, abdominal, ovarian!

Anteversion.—A belt!

Prolapse.—A pessary!

Puerperal Insanity —Give chloral and rectal enemata!

Retroversion of the Uterus.—Pass catheter, press up fundus, pushing it to one side of promontory of sacrum.

I think we must agree it would hardly be wise to entrust the care of a parturient woman and her offspring to a person whose brain has been muddled by trying to cram into it a smattering knowledge of these subjects within the space of six, or probably only three months' time.

I have been told by a medical man attached to one of these lying-in charities, that when a district midwife is in any difficulty the matron of the institution goes to her assistance if the medical officer is not at hand. The neighbourhood is well supplied with general practitioners. The inference is obvious.—I am, etc.,

Old Trafford, Nov. 13th. J. BRASSEY BRIERLEY.

SIR,—It seems that the resolution of the Council of the Medical Guild published in the BRITISH MEDICAL JOURNAL of October 20th, has occasioned the resignation of the Honorary Secretary of the Guild. As this gentleman is in no way connected with the teaching of midwives, I presume that he must have been convinced of the impolicy or injustice of the resolution before taking so serious a step.

Your correspondents of last week do not touch upon the principle that is at stake, and I should not have again troubled you if it were not to animadvert on Dr. Broadbent's letter.

In this controversy, as in many others that have lasted over a series of years, there has been a gradual shifting of the position occupied by the most active party in the dispute. I take as typical of the attitude of the profession a few years ago the remark that was made to me at the conclusion of a heated meeting by one of our most honourable opponents who has since taken an active part in the formulating of proposals for legislation. "We do not object to your teaching midwives: it is a good work. What we object to is your giving them certificates that lead them to imagine they are something different from what they really are."

It now turns out that the dictum of the Council of the Medical Guild was based upon the advertisement of the lectures to midwives at the Maternity Hospital, Manchester. Dr. Broadbent saw in a window a midwife's certificate from the Maternity Hospital. Either he knew or he did not know that that is not the certificate which has been issued from the Maternity Hospital for seven years. If he knew and did not mention it he has no right to the verdict which he got from the Council of the Medical Guild, and his best course would be to get them to rescind it. If he did not know all the facts of the case it was his duty to have informed himself before taking action involving the reputation of a fellow member of the Guild.

At the period of the agitation against the midwives' diplomas, the Maternity Hospital fell at once into line with the wishes of the profession. I ask my fellow-practitioners to believe that we never had any intention of injuring the profession with our certificates, but people may have good intentions and yet their actions may fail to harmonise with their intentions. Our certificate, never a very imposing document, was withdrawn, and I submit to you the text of our present one:

MANCHESTER MATERNITY HOSPITAL.

We hereby certify that ..... has passed to our satisfaction the examination in midwifery conducted at this hospital.

N.B.—This certificate confers no legal qualification to practise under the Medical Acts.

I may remark that the qualifying clause is printed in large characters in red ink, and is the most conspicuous portion of the document.

The whole spirit and aim of our teaching is not to give those pupils a notion of their own independence or importance, but to teach them their subordination to and reliance on the medical profession. If we fail I am sorry. I should be glad to hear from any member of the profession who is aggrieved by the action of any one trained at the Maternity Hospital.

Dr. Broadbent refers to the subject of fees. His statements are correct. The originator of these lectures, Dr. Sinclair, never took any fees for his work, but handed them over to the hospital, although in the debates of some years ago he was ungenerously accused of profiting by midwife teaching.

I take fees for my lectures. My only objection to the fees is that they are too small for the time I give to the work. The classes are small, and the reason why they are small is distinctly honourable to the Maternity Hospital. Ignorant and incompetent women do not flock to us. They know that they have no chance of getting the certificate, but I shall be glad when legislation shall take the certification out of our hands.

Allow me a reference to Dr. Brierley's letter. He says:

That this question has not been settled long ago is entirely the fault of the Council of the Association in its neglect to carry out the resolutions so frequently passed at annual and other general meetings of the Association.

Personally I do not think so. I am afraid the causes lie much deeper than that. As regards the resolution passed by 135 members, you called attention in your editorial columns, so far back as 1892, to the difficult position in which a huge body like the British Medical Association is apt to be placed by sweeping resolutions passed at comparatively small meetings. I could find more than 135 members who, man for man, weigh as much with the public as the resolutionists, who would consider resolution No. 3 utterly unwarranted and mischievous.

The General Medical Council has doubtless good reasons for ordering the resolutions to lie on the table. At any rate it refuses to be rushed.—I am, etc.,

Manchester, Nov. 13th. JOHN SCOTT.

HOTEL CHARGES DURING THE ANNUAL MEETING.

SIR,—Anyone who had not stayed at the Crown and Anchor during the annual meeting, reading the "Notes" on p. 1360 of the BRITISH MEDICAL JOURNAL, November 3rd, might wonder why I objected to pay "10s. 6d. per day," whereas my contention was that 10s. 6d. per night for the bed alone and 1s. 6d. for attendance, making 12s. per night, was excessive, and this was the amount charged to each of upwards of 100 members of the Association, 40 of whom have written me complaining of the charge.

You also omitted to say that I paid into court £1 4s., allowing at the rate of 5s. for bed and 1s. 6d. attendance, making 6s. 6d. per night, which I consider ample, 7s. 6d. per day all found being usually thought enough.

Members of the Association who do not attend annual meetings will be surprised to hear that the reception room usually closes at 8 P.M. on the Monday and 6 P.M. other days, and will perceive that if kept open in future until 10 P.M. every day it would be a great convenience.—I am, etc.,

Manchester, Nov. 5th. G. H. BROADBENT.

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

SIR,—I shall be obliged if any of your readers can furnish me with details of cases recently treated by Mr. S. J. Sherman, hernia specialist. I think it likely that he attended patients in Cardiff about June of this year, and in Preston about the beginning of September. All particulars which will assist in judging of the success or failure of Mr. Sherman's treatment will be valued.—I am, etc.,

HUGH WOODS,
Honorary General Secretary, London and Counties Medical Protection Society, Limited.

Westbury, Hornsey Lane, N., Nov. 12th.

OBITUARY.

FRANCIS JOHN BOXWELL QUINLAN, M.D.Univ.Dubl., F.R.C.P.I.,

Professor of Materia Medica and Pharmacy in the Catholic University School of Medicine, Dublin.

DR. QUINLAN'S death at his home in Lower Fitzwilliam Street, Dublin, on November 8th was not unexpected, as he had been threatened with cardiac failure several months before, and had been confined to bed for several weeks prior to the end. He was born in Dublin on May 9th, 1834, and received his earlier education from the Jesuits at Belvidere College, and later in the Kingstown School under the Rev. Dr. Stacpoole. He entered Trinity College, Dublin, in 1851, where he gained a classical sizarship, and six years later he became a graduate in Arts and Medicine of the University. In 1862 he proceeded to the degree of M.D., and in 1879 he was elected a Fellow of the Royal College of Physicians of Ireland, was Censor from 1884 to 1886, and afterwards for an unbroken period of twelve years was an Examiner in Materia Medica and Pharmacy in the College. On these subjects he lectured in the Catholic University School of Medicine and examined in them, also in the Royal University of Ireland.

Dr. Quinlan retired from active hospital work about twelve years ago at a time when he was Senior Physician to St. Vincent's Hospital, but he retained his connection with his old hospital in the capacity of Consulting Physician. His father, who had been the proprietor of a successful evening paper in Dublin, at his death left the son a considerable amount of property, so that he was not compelled to seek medical practice at any time of his life, and during his later years he devoted himself in the main to his lectures and examinations. He was particularly happy in the conduct of the examination for the Diploma in Public Health of the Irish Royal Colleges of Physicians and Surgeons, in which his subject was hygiene. Dr. Quinlan was possessed of a kindly and amiable disposition and was regarded by the students as a sympathetic examiner. He was a Unionist in politics. He was twice married, first to a daughter of the late Sir William Carroll, M.D., Ex-Lord Mayor of Dublin, by whom he had no issue, and secondly to the lady who now survives him and by whom he had an only son.

DENNIS EMBLETON, M.D., F.R.C.P.,

Consulting Physician Royal Infirmary, Newcastle upon-Tyne.

AMID many expressions of regret in Newcastle and neighbourhood, Dr. Embleton, at the ripe old age of 90, passed quietly away on the morning of November 12th. It was known for several months past that this veritable Nestor of the medical profession in the North of England was in declining health. Until he met with an accident a little over two years ago, the late Dr. Embleton was one of the best-known figures in the streets of his native town. Carrying himself, even in his latest years, perfectly erect, he walked with a briskness, a firmness, and a rapidity of step that made him the envy of many.

He was born in Newcastle-upon-Tyne in 1810, and there was no place in which he was more welcome than the city of his birth. He came of a true Northumbrian stock on both sides. From his parents, both of whom came from Alwinton in Northumberland to Newcastle, he inherited a robust constitution which carried him through a severe attack of pneumonia only a few years ago. He received his early education at Witton-le-Wear in the County of Durham. Subsequently he proceeded to London, where he studied medicine principally at Guy's and St. Thomas's Hospitals. He graduated at Pisa in 1836. Dr. Embleton was fond of travelling on the Continent and delighted to recount the story of his experience of University life in Italy and elsewhere. In 1853 he took the degree of M.D. at Durham and in 1859 was elected Fellow of the Royal College of Physicians. Finding pleasure in literature and science rather than in the practice of his profession, Dr. Embleton cannot be said to have had at any time a practice large enough to interfere with his hobbies. Always a student, his brain and pen were never idle. In his earlier years he was closely connected with the School of Medicine in Newcastle long before it became a College or the Faculty of Medicine of Durham University. In bringing about the union of the University and College of Medicine he played a leading part. In his monograph on the Rise and Progress of the Medical Schools of Newcastle the story of the two rival institutions is well told, but this is now a matter of ancient history. For several years Dr. Embleton occupied a seat on the General Medical Council, a position from which he retired in 1872.

Scattered over the North of England there are still a few practitioners who learnt from Dr. Embleton their anatomy, physiology, and medicine, and who have very kind remembrances of him as one of the physicians to the Infirmary. In the wards of the Infirmary he was perhaps less the popular clinical teacher than the student and the friend of students. Popularity had never any charm for him. He was a careful observer of facts, and extremely painstaking and accurate both in his accumulation and application of data. His ability and the peculiar bent of his mind are well shown in such of his papers as the Cause of the Shoulder Tip Pain in Disease of the Liver, and in others dealing, for example, with malformation of the heart. It was in the field of biological research that some of his best work was done, as witness the papers he contributed to the Tyneside Naturalists' Field Club on the Two Species of Rat found in England, Skull of Whale, Ribbon Fish, and Coloration of Eggs. His contributions to science attracted the attention of the late Prince Consort. Many of the papers he contributed to the Antiquaries Society have a permanent value. By the death of Dr. Embleton these societies and the North of England generally are the poorer.

In 1882 Dr. Embleton occupied the Presidential Chair of the Section of Sanitary Science and Preventive Medicine during the meeting of the Sanitary Science Congress in Newcastle. No one was more open or more straightforward in his dealings with men than the late Dr. Embleton. To many people he seemed brusque, but behind this manner there lay a kindliness of heart and a genuineness which no one who knew him can ever forget. He was beloved by all. He had long outlived most of his oldest friends, but he had up till his accident the faculty of gathering round him friends of less mature

ears. To several of the younger members of the medical profession he was especially kind. Only a few months ago his only son, Dr. Dennis Cawood Embleton, of Bournemouth, died at the age of 46, but two daughters survive. His wife died thirty-one years ago.

The Very Rev. Father Raymund Ferrers Palmer, Master in Theology of the Order of Friars Preachers, who died recently at St. Dominic's Priory, Haverstock Hill, aged 81, was originally a member of the medical profession. He was the second son of Shirley Palmer, M.D., sometime High Bailiff of Tamworth, and a medical writer of note in his day. His mother was a French *émigrée* who escaped the guillotine through the death of Robespierre on the day before that appointed for her execution. He received his education at Tamworth Grammar School and Queen's College, Birmingham. After qualifying as M.R.C.S. in 1846, he practised for some time as a surgeon in his native town. In 1853 he entered the Dominican Order, and six years later was ordained priest. His life was mainly given to historical and antiquarian research, and for full thirty years his was a familiar figure at the Record Office and the Library of the British Museum. The list of his works includes *The History of the Town and Castle of Tamworth*, *The History and Antiquities of the Collegiate Church of Tamworth*, and *The History of the Baronial Family of Marmion*. A complete list of his writings will be found in *Bibliotheca Staffordiensis*.

We regret to announce the death of Mr. Thomas Taunton, M.R.C.S.Eng., L.S.A., one of the oldest members of the medical profession in England, who recently passed away at his residence, Hern's Nest, Rugeley, Staffordshire. Born at Axminster in 1812 of an old West country Roman Catholic family, Thomas Taunton was sent first to a private school at Bonham, in Somersetshire, and in 1820 to Downside College, near Bath, where he finished his education. Having chosen medicine as his profession, he was apprenticed to Mr. Worman, a well-known practitioner of Bath, under whose tutelage he had for a companion the late Dr. Frederick Davis. In due course he entered at St. Bartholomew's Hospital, where he was known as an earnest student. He also worked, as was then the custom, in the Paris hospitals. In 1835 he became a Member of the College of Surgeons, and a Licentiate of the Apothecaries' Society. In 1840 he married Margaret, daughter of Colonel Clarke, of the Royal Marines, and had by his marriage seven sons and two daughters. On the invitation of a high personage, Mr. Taunton took up his residence in Brussels; but, although King Leopold I. personally intervened on his behalf, the Belgian medical authorities would not consent to his being granted a licence to practise without again going through the full curriculum of professional study. Mr. Taunton thereupon returned to London, where he practised for some years in the neighbourhood of Hyde Park. His health breaking down he was forced to retire to the country. Negotiations for a partnership at Rugeley, which had almost been completed, fell through owing to the religious difficulty, and Mr. Taunton set about building up a practice for himself. This he succeeded in doing; but the labours and anxieties of his work left him but little time to devote himself to the broader services of the profession to which he was devoted. Mr. Taunton was a remarkably skilful operator; his hand, even at the age of 80, was so firm and sure in the most delicate procedures that it was a pleasure to see him use the knife. His opinion, which was always judicious and well considered, was greatly valued by his brother practitioners, and in his neighbourhood he had a high reputation as a consultant. In early life he had been House-Surgeon to the Lying-in Hospital, London, and he was throughout his career particularly successful in the obstetrical branch of his art. During the whole course of his practice, extending over more than half a century, Mr. Taunton never lost a midwifery case. Always a student and wide reader, he preserved his mental faculties unimpaired to the last. In his 80th winter he read through the four folio volumes of the *Summa Theologica* of Thomas Aquinas. Mr. Taunton, who lost his wife after fifty-seven years of happy married life, spent the evening of his long and well-filled life in retirement, calmly awaiting the end, which came to him on November 5th, in the 89th year of his age.

Dr. A. T. Brosseau, Professor of Clinical Surgery in the Medical Faculty of the Laval University, Montreal, and Senior Surgeon to the Notre Dame Hospital, recently died at the age of 63. Born in 1837, he studied medicine in the Medical School of Montreal, and qualified in 1860. He had a marked taste for surgery, but his first appointment in the School of Medicine was to the Chair of Botany. The appointment was so little to his liking that he openly did his best to have the subject eliminated from the curriculum of medical study. In 1872 he went to Paris and London, and worked at surgery under Verneuil, Guyon, Gosselin, Jules Guérin, Trélat, and Sir Henry Thompson. On his return to Canada he succeeded Dr. Rottot in the Chair of Forensic Medicine in 1875. At the same time he gave courses of operative surgery and clinical demonstrations in the Hôtel-Dieu. In 1878 he became Professor of Surgical Pathology and Clinical Surgery in Laval University, and two years later took a prominent part in founding the Notre Dame Hospital. He was also one of the founders of the Union Médicale du Canada and of the Montreal Medical Society. Dr. Brosseau was very successful as a teacher, and did much for the betterment of the profession in the Dominion. He was a man of great frankness of character with occasional asperities of manner which did not, however, conceal the true goodness of his heart.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. L. Tomaschewski, Medical Director of the Nicolaus Hospital, St. Petersburg, and founder of the St. Petersburg Association of Specialists in Children's Diseases, aged 68; Dr. Hugo Bergeat, a well-known laryngologist of Munich, aged 41; Dr. Moses C. White, for many years Professor in the Yale Medical College, aged 81; Dr. Stillis, author of a well-known treatise on therapeutics and materia medica, and chief editor of the American *National Dispensatory*; and Dr. Labit of Tours, a distinguished laryngologist, and one of the founders of the *Gazette Médicale du Centre*.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE UNDERMANNING OF THE ARMY MEDICAL SERVICE.

The following is the distribution of the active list of the Army Medical Service, as shown in the Army List for November:

Distribution in the November Army List, 1900.

Ranks.	Home.	South Africa.	Other Foreign Stations.	Not Posted.	Total.	Remarks: Seconded.
Surgeon-Generals ..	5	1	4	—	10	—
Colonels	6	11	9	—	26	2
Lieutenant-Colonels...	22	41	62	—	125	4
Majors	29	183	157	—	369	3
Captains	13	71	106	2	192	6
Lieutenants	43	115	27	2	187	3
Total...	118	422	365	4	909	18

The total is one less, through the retirement of a colonel. There are 3 more at home and 3 fewer abroad, so that the distribution is practically unchanged. Only 1 colonel is graded in the superior rank of surgeon-general; none of the lieutenant-colonels are shown with a step in rank; 116 retired pay officers, including 2 of the Indian Medical Service, are employed. Some of these are retained while over 65 years of age, a wise arrangement in view of the prolongation of the war and the uncertainty of events. Sixteen retired quartermasters are employed.

ROYAL NAVY MEDICAL SERVICE.

Captain P. H. Whiston and Lieutenant D. O. Hyde accompany the Guard of Honour detailed to attend the Duke of York at the inauguration of the Australian Commonwealth.

Mr. Arthur Cooper Fenn, L.R.C.P.I., has been appointed Surgeon and Agent at Dover, from January 1st, 1901, *vice* Edwin Fenn, M.D., retired.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel R. W. Mapleton, M.B., is granted the local rank of Colonel whilst Principal Medical Officer of a Division in South Africa, from September 30th, 1899, and not as stated in the British Medical Journal of November 10th.

Quartermaster and Honorary Lieutenant C. F. Dear is placed on temporary half-pay on account of ill health, October 13th. He was appointed Quartermaster, May 5th, 1895, and was in the Zulu war in 1889, receiving the South African medal.

The undermentioned officers have been discharged from hospital in South Africa to duty: Lieutenant-Colonel P. H. Johnston, Civil Surgeons J. Barkly, A. N. Grieve.

Major J. G. Black, who is suffering from enteric fever at Newcastle, Natal, is now improving.

Among those returning from South Africa are the following: Civil Surgeons Stirling, Watt, Kinmont, M'Intyre, Graves, E. D. Hancock, H. A. J. Fairbank, Friel, and E. S. Crispin.

INDIAN MEDICAL SERVICE.

Major D. Elcum, retired, has been temporarily appointed to the medical charge of troops in the Home District.

Brigade-Surgeon Sarkies Michael Shircore, late Bengal Establishment, died at Isleworth on November 12th, aged 73 years. He was appointed Assistant-Surgeon, July 2nd, 1856; became Brigade-Surgeon, December 18th, 1883; and retired from the service, March 21st, 1885.

THE VOLUNTEERS.

Surgeon-Lieutenant H. P. V. Wiggin, 1st Devon and Somerset Engineers, has resigned his commission, November 14th.

Mr. Frederic W. Kendle is appointed Surgeon-Lieutenant in the 4th Volunteer Battalion the Devonshire Regiment, November 14th.

VOLUNTEER MEDICAL STAFF CORPS.

Mr. Walter Whitehead to be Honorary Surgeon-Colonel on appointment as Honorary Commandant of the Manchester Companies, November 14th.

CHANGES OF STATION.

The following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From	To
Colonel J. L. Notter, M.D.	Netley	South Africa.
Lieutenant-Colonel F. W. Trevor, M.B....	Bombay ...	Dublin.
,, J. L. Peyton, M.B. ...	Salisb'y Plain..	Cork.
Major L. E. Anderson	South Africa ...	Aldershot.
,, F. J. Greig	,, ...	Dover.
,, R. Caldwell	,, ...	Devonport.
,, A. Y. Reily, M.B.	,, ...	Belfast.
Captain R. C. Lewis	,, ...	Shoeburyness.
Lieutenant A. O. B. Wroughton	,, ...	Chester.
,, L. Wood	,, ...	Lichfield.
,, A. H. Safford	Aldershot ...	South Africa.
,, C. R. Evans	Devonport ...	Aldershot.
,, E. Bennett	Aldershot ...	Lancaster.
,, J. P. J. Murphy, M.B.... ...	,, ...	Salisbury Plain
,, A. R. Greenwood	,, ...	,,
,, F. H. Hardy	,, ...	,,
,, B. B. Burke	,, ...	Colchester.
,, W. B. Fry	,, ...	Devonport.
,, C. R. L. Ronayne, M.B. ...	,, ...	Portsmouth.
,, G. Baillie, M.B.	,, ...	Chatham.
,, L. L. G. Thorpe	,, ...	Dover.
Quartermaster H. G. Hasell	,, ...	Malta.
,, H. Woolley	— ...	Aldershot.

Colonel F. H. Welch and Major J. H. Nicholas, retired pay, have been appointed to the medical charge of troops in the Home District and at Brighton respectively.

Lieutenant-Colonels J. Armstrong and W. W. Kenny, M.B., have been granted the higher rate of pay under Article 362 of the Royal Warrant.

Captain F. A. Symons, M.B., has been appointed to the command of a Provisional Company at the Training School, Aldershot.

HONOURS FOR THE WAR IN CHINA

Staff-Surgeon John Lloyd Thomas is promoted to be Fleet-Surgeon, November 9th. He entered the service as Surgeon, February 11th, 1884, becoming Staff-Surgeon twelve years thereafter. From the *Royal Navy List* we learn that he was mentioned to the Lords of the Admiralty for introducing volunteer classes on First Aid to Wounded Sailors to the naval cadets of H.M.S. *Britannia*, 1887-89. As Surgeon of the *Bellerophon* (Flag) he received especial mention by their Lordships for medical services rendered during an epidemic of yellow fever at R.N. Hospital, Jamaica, West Indies, 1891-92. He also received the thanks of their Lordships for services performed to the wounded Chinese sailors and soldiers at Chefoo, North China, after hostilities between China and Japan: favourably noted; bestowed by the Imperial Government of China, through H.B.M. Minister at Peking, with the Grand Order of the First Division of the 3rd Class of the Double Dragon, in recognition of services rendered to the distressed sailors and soldiers after the wreck of the *Kwang-yi*, and also for the wounded after the battle of Wei-hai-wei. [The *London Gazette* of November 9th had erroneously stated that this promotion had been given to Staff-Surgeon John Henry Thomas, and corrected the announcement in the issue of November 13th.]

Surgeon R. J. H. Browne and J. F. Hall, M.B., are promoted to the Staff-Surgeons, also dated November 9th. Staff-Surgeon Browne's first commission dates from February 2st, 1890; that of Staff-Surgeon Hall from May 15th, 1895.

RETIRED PAY EMPLOYMENT AT HOME OF INDIAN MEDICAL OFFICERS.

We have received several letters on this subject from retired Indian medical officers. If the Director-General declines to appoint them to depôts, or other more or less permanent billets, we do not see how such refusal can be construed into a grievance. They have no claim to such appointments to the exclusion of retired officers of the Army Medical Service. The Director-General has shown his willingness to employ them under equitable conditions, and we notice that two are at present so employed. An officer "liable to recall" writes that he has unsuccessfully applied for employment; no doubt there were reasons for the refusal into which we cannot enter.

RECKLESS STATEMENTS.

Widespread disgust has lately been expressed at the unwarrantable attacks made by certain sensational war correspondents on British officers in general, and medical officers in particular during the later phases of the war. Some have so overstepped the limits of criticism as to cause wonder that responsible journals would print their letters. Our usually very fair-minded contemporary, the *Spectator*, had given publicity to a letter of a certain Mr. T. W. Edmunds which, it is stated, "began the campaign against the 'army doctors.'" That gentleman made a very sorry appearance before the Hospitals Commission at Durban, and confessed he had made the statements in his letter on no better evidence than mere idle gossip and rumour. Captain Smithson, R.A.M.C., forwarded the following summary of Mr. Edmunds's appearance before the Commission, given in the *Cape Argus*, which the *Spectator* published on October 20th with an editorial apology, expressing regret at "having published a letter which on the writer's own admission was entirely worthless as evidence, and delighted to find the allegations had no foundation in fact to support them."

"The Hospitals Commission sat in the Town Hall to-day to take evidence regarding the Natal hospitals. The first witness was Mr. T. W. Edmunds, honorary secretary of the Durban Government Hospital, who was examined in connection with a long condemnatory letter he wrote to the *Spectator* in which he charged a considerable number of army doctors with incompetence, medical orderlies with brutality, and alleged criminal lack of invalid accessories. He also stated in the letter that 'if the Commission are honestly desirous of getting at the truth, evidence enough will be forthcoming to convince the most sceptical.' In his examination Mr. Edmunds was unable to substantiate a single statement he had made. He confessed that when he wrote the letter he had no personal knowledge, and was going entirely on hearsay evidence. Some of the allegations made as to Ladysmith he said he had heard from a civilian doctor, but he declined to give the doctor's name or to give a promise that the said doctor would come forward and give evidence. He admitted he should not have made the statement as to the incompetency of the army doctors without having substantial facts to go upon. As regards the brutality of orderlies, he owned he had no evidence whatever, and said he ought not to have used the word 'criminal' in connection with the alleged lack of accessories. Lord Justice Romer then said he would like to call Mr. Edmunds's attention to his statement regarding the honest desire of the Commission to get at the truth. Mr. Edmunds said that at the time he did not know the names of the Commission, and on the President saying that perhaps Mr. Edmunds would like to withdraw the statement, witness said he would be glad to withdraw it. As witness could give no information, the President said there was no use in hearing unsubstantiated general statements."

Nothing could better justify the appointment of the Commission than the above.

SCARCITY OF CANDIDATES, R.A.M.C

Reform writes: The inadequacy of the pay of the junior ranks is one great cause of the scarcity of candidates. This is well exemplified in the average career of the young officer. His expenses for the first few years are even greater than in after-years, what with frequent moves, the buying of uniform, kit, etc. I know one officer who had fifteen moves in his first twelve months' service. He is usually sent to India after a year, and his pay there does not meet his unavoidable expenses. After three years he is called a captain, but does not get the pay until five or six years' service. He gets no horse allowance, which is urgently wanted for all officers under the rank of major. It is thus in the earlier years of service that the inadequate pay is chiefly felt, and this deters many candidates from thinking of the service. Young medical men who go through a very trying and expensive curriculum, have a right to expect that in the service of the State, at all events, they should be able to live comfortably on their pay.

THE VOLUNTEER MEDICAL SERVICE AND THE GUARD OF HONOUR FOR AUSTRALIA

A Volunteer Medical Officer writes: In the representative composite corps that sailed for Australia the Volunteer Medical Service alone was not represented. Is this another case of oversight on the part of the War Office similar to that at the Diamond Jubilee, when though a number of volunteer medical officers were requested to do duty with the troops on the route not a single one received the Jubilee medal which was given so generously to the other branches? At the present time, when all ranks of the R.A.M.C. are evidently far too weak, is it policy to detail officers and men to do duty with volunteers when there is the whole Volunteer Medical Service to select from? Your recent remarks on the dearth of surgeon-generals in South Africa has been attended to at any rate to some extent. It is not too late for the War Office to select a senior and a junior medical officer and a detachment of non-commissioned officers and men from the Volunteer Medical Establishment and send them to represent the service at the coming functions.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE AUTHORITY OF A VACCINATION OFFICER TO TAKE PROCEEDINGS.

THE case of Langham *v.* Hodges, Eastbourne Guardians third parties, which was heard by his Honour Judge Martineau at the Eastbourne County Court on November 8th raises a question of some interest. A note of his Honour's decision appeared in the *Times* for November 10th. The plaintiff was clerk to the Eastbourne magistrates, who claimed from the defendant, the vaccination officer at Eastbourne, the sum of £2 11s. 6d. in respect of fees incurred under a number of summonses taken out by the officer. The guardians who had refused to furnish their officer with the necessary funds to pay the fees, were joined as third parties.

Mr. Schultess Young appeared for the guardians, Mr. Clarke Hall for the defendant, the plaintiff being unrepresented. It was argued on behalf of the guardians that as the original proceedings had been taken by the vaccination officer in February, 1900, the period of the guardians' liability had expired on June 24th by virtue of 22 and 23 Vict., chap. 49, Section 1.

To this argument a technical objection was taken, namely, that the guardians had given no notice of a statutory defence, and that therefore it could not be raised at the trial. It was also urged on behalf of the guardians that the vaccination officer had no authority to take proceedings without general or specific directions to that effect.

In the course of his judgment his Honour said: "I think that the technical objection holds good, and that the guardians cannot now seek protection by statute. The understanding was that the guardians would pay as they had done in respect of similar proceedings just previously, and it was not until May 18th that they had passed a resolution not to pay. The law had been clearly laid down in Bramble *v.* Lowe that the vaccination officer has implied authority to take proceedings. I have never known a more contemptible or dishonest defence than that which has been set up by the guardians." He gave judgment for the amount claimed, and against the guardians.

Leave to appeal was refused.

*** It is interesting to notice that in the above case a technical objection which was taken on behalf of the guardians was checkmated by another even more technical point which came to the assistance of the vaccination officer. The guardians were entitled to plead the Public Authorities Protection Acts, but in common with other litigants *in consimili casu*, they must give notice of statutory defence if they intend to rely upon it at the trial.

BANKRUPTCY OF MR. C. B. HARNESS.

WE learn from a report in the *Daily Chronicle* that on November 8th Mr. C. B. Harness, who was well known in connection with "Harness's belts," appeared at the Wandsworth County Court for public examination in bankruptcy. The debtor's liabilities were stated at about £7,500, and assets *nil*. He attributed his insolvency to liability incurred in respect of a guarantee given in connection with the reconstruction of the Medical Battery Company, Limited, and to law costs. The inquiry was adjourned.

MEDICAL ADVERTISING.

C. L. G.—A correspondent writes that "he was requested by a large manufacturer to devise for them an efficient milk steriliser, also a method by which they might place sterilised surgical dressings on the market." Both of these he has, by considerable thought and experiment, succeeded in doing They have taken out patents for both inventions, and now ask permission to use his name in connection with the sale of both; that is to say, they wish either to call them after his name, or in some other way to publish the fact that they were devised by him. He wishes to know whether he would be acting in a professional manner in allowing them to do so, and alludes to "Gamgee" tissue and "Treves" aseptic dressings as precedents that might justify him, but he is anxious to do nothing unprofessional. We cannot recommend our correspondent to allow his name to be used in the manner suggested.

DENTISTS, ANÆSTHETISTS, AND UNQUALIFIED DENTAL ASSISTANTS.

C. W. G.—As a registered dentist, like a registered medical practitioner, is not prohibited from employing the services of an unqualified assistant under his immediate personal supervision, possibly no great exception would be taken to a medical man administering an anæsthetic for the assistant to operate in the presence of the registered dentist, his employer. But when the dentist is not present, it would unquestionably be proper to decline to give the anæsthetic. Whether the administrator does or does not himself possess a licence in dental surgery does not appear to us to affect the question at all. His medical qualification confers upon him all the rights which the minor qualification gives, and he is in the eye of the law a qualified dentist in virtue of his medical qualification, so that his position is not altered by the possession of the other. The unqualified assistant is not his servant, and he is not responsible for him; his function is simply the administration of the anæsthetic, which engrosses, or should engross, his entire attention, and were he to administer an anæsthetic for an unqualified dentist he would be countenancing an improper employment of an unqualified person acting independently, and so directly contravening the warning notice issued by the General Medical Council, who would probably regard it as an act of "covering."

THE MIDWIFE'S STATUS.

A NURSE holding the L.O.S. does not thereby acquire any superior legal status over one who has it not. A medical man who entered into "an arrangement" with a midwife to help her in all difficult cases would certainly not show a due sense of professional dignity, but every medical practitioner is bound to render such assistance to a woman in labour as it may be in his power to afford, and the fact of a midwife being in attendance does not affect this obligation. The decision of the question whether any particular arrangement amounted to covering could only be reached after full inquiry by the General Medical Council.

PROFESSIONAL ETHICS.

G. P. During our correspondent's absence on his holiday a patient sent for his *locum tenens*, and as the latter did not attend with sufficient promptitude called in a neighbouring practitioner, who saw her twice. The *locum tenens* called as soon as he could get there. Our correspondent wishes to know whether he should have called upon his neighbour to thank him, or if his neighbour ought to have called upon him or written to explain (we suppose for having interfered with our correspondent's patient); and, finally, whether our correspondent can claim a fee for the visit of his *locum tenens*? The matter does not seem one to demand either calls or correspondence. As the *locum tenens* was sent for and the visit not countermanded, a fee may legally be charged, but it may not be advisable to do so.

THE IRREGULAR PRACTICE OF A NURSE.

A. G. writes that he has been called in to see a poor woman suffering from an ulcer of the leg, who had been for some time attended by a "Church Army" nurse who works among the sick poor. He wishes to know whether by attending this poor woman he would be considered guilty of "covering" or of infamous conduct in a professional respect.

*** We do not think our correspondent need have the smallest fear of such an interpretation being placed upon his action. We understand from him that this nurse is engaged to go amongst the poor, and do what she can for them without any remuneration except that which she gets from the organisation to which she belongs. If our correspondent is sure that he is in possession of all the facts of the case, and that no other medical practitioner had previously been in attendance, he might represent to the directors of the organisation that it is undesirable for the nurse to undertake to dress wounds, etc., except under medical direction.

MEDICAL ETIQUETTE.

DR. V. C. J. VANDERSTRAATEN.—While we may regret that medical members of a city council should publicly blame a medical officer of the council, we cannot say that it was contrary to medical etiquette without knowing more of the circumstances.

SCOT.—We think the question should be addressed to the licensing bodies from which our correspondent obtained his qualifications.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

EXAMINATIONS IN MEDICINE.

THE following memorandum on the reasons for so large a majority of names appearing in the second class for the medical degree was drawn up by Sir Samuel Wilks, but no opportunity occurred for its consideration by the old Senate:

In the report to the Senate of October 29th, 1899, giving the list of those who passed the Intermediate Examination in Medicine in the previous July there appeared 3 names in the First Division, and 52 names in the Second Division. At the last examination for the Pass M.B. in May, 1900, there were 73 candidates, of whom half passed, but only 4 were placed in the First Division. The Senate therefore passed a resolution for the Medical Committee to make an inquiry as to the cause of this unfavourable result.

In connection with this it might be remarked that in the same month of October the Second Examination for the M.B. had taken place, and the list of those who had passed was laid on the table, when it appeared that 11 names were in the First Division and 53 names in the Second Division.

It may be remarked that the difference between the numbers who passed in the First and Second Class in both examinations was more marked this year, but it has always been great.

The Medical Committee have appealed to the examiners and teachers of the medical schools, but it cannot be found that either the teaching or the examinations at the University were of an unsatisfactory nature.

The Committee wish to point out what they consider to be the reason for this remarkable state of the list of medical graduates.

The unfavourable position in which the majority of the graduates stand (those who are placed in the second position) is not a real or substantial one, but an artificial one entirely of the University's construction. The inferiority is apparent only owing to our system of classification.

If we look at this list from an outside point of view it has a totally different aspect, and then the term "unfavourable" could not be applied to the position taken by graduates in the second division.

In the first place, it may be remarked that it is the duty of the General Medical Council to see that every examining body issuing a diploma should make it represent the standard of efficiency which the Council considers is necessary before its possessors can be placed on the register of qualified medical men. The examinations of this university have often been supervised by delegates from the Council, and the latter have considered them most excellent, and the diploma has been spoken of as pre-eminently good. It is sought for by the best students, and they are recognised as such at all the medical schools, the examination being more extended and severe than at most other (perhaps than at any other) university or qualifying Board. The examiners, by the wish and under the control of the Senate, put a very high mark for the attainment of the diploma, so that of an average hundred candidates nearly half are rejected. This is what occurred in the particular examination under review, when after this large rejection, 53 of the remainder were placed in the second class, and 3 in the first.

Throughout the profession a man who has taken our degree is called a first-class man, even though he has been placed in the second division by us.

It should, moreover, be noted that medical students for the most part seek their diplomas for somewhat different reasons than those in the other faculties. It is necessary to possess it for the sake of the licence to practise, whereas with others it is not so immediately available. A large number therefore seek the diploma only, not desiring any further honours. In fact they have not the time or opportunity to work beyond the point required. This being so, there is an examination once a year, in which honours are not given, and yet notwithstanding this declaration the student finds it is really a competitive one, and he is placed in classes. The curriculum for the medical degree is so severe, and the time of the student is so taken up with practical matters, that it is only the exceptionally good men who can fulfil what is required of them to obtain the diploma. Then, besides these, there are always a few men—in the present case 3 per cent. of the candidates—who can gain more marks than are required by the examiners.

It is naturally considered desirable to notify these exceptionally good men, and the method is to place them in a first division, so that necessarily the remaining majority drop into the second.

Thus the latter seem to be inferior men, although from every other point of view they are "first class" and superior men having obtained the first medical diploma in the kingdom.

Whilst the University makes its standard for the first division so high, only a few men can reach it; and the majority must fall into the second division. The Committee can render no help, for they learn from those engaged in teaching that the majority of candidates cannot by any means be thrust into the class where the exceptional men are found. It follows that if the latter be exalted the others must be degraded. Then this strange anomaly occurs, that the graduates who have obtained this high diploma of the University's making, which soon will be delivered to them in complimentary terms by the Chancellor are told that they have passed an "unfavourable" examination.

The Committee see only one method to escape the sight of this unpleasant list every six months by ceasing to divide the Past List into first and second divisions. They see many objections to the present practice, and they cannot learn that it has any advantages.

There is also another evil of a different kind attending the division of the medical list into two parts. It leads some people to think that the University gives two medical degrees, a superior and an inferior one. This of course is not so, seeing that the men in the second class must have reached the standard which the General Medical Council require as the latter discover in their visitations. When the General Medical Council have fixed a standard, the suspicion of the London University giving two unequal diplomas has already caused some misapprehension. We believe that in no other University is the pass list for medical degrees divided into a first and second division.

UNIVERSITY OF BIRMINGHAM.

Degree Examinations for Past Students.

The following ordinances relating to past students have been passed by the University Council.

Bachelorship in Medicine and Surgery.—Past students of the Birmingham School of Medicine who have taken out their whole course therein, and are duly qualified medical men, will be permitted at any period during the five years commencing on October 1st, 1900, to present themselves for a final examination for the degrees of Bachelor of Medicine and Bachelor of Surgery. Subjects of examination: (*a*) Medicine, including Therapeutics.* (*b*) Surgery and Operative Surgery.* (*c*) Midwifery and Gynæcology.* (*d*) Pathology and Bacteriology. (*e*) Forensic Medicine and Toxicology. An examination under these conditions will be held on June 25th, 1901, and following days.

Bachelorship in Science in Public Health.—Past students of the Birmingham School of Medicine who have taken out their entire curriculum or at least three years of the same therein, and have obtained a degree in Medicine in any British University, will be eligible to present themselves for the degree of Bachelor of Science in Public Health on the same terms as Graduates in Medicine of the University of Birmingham.

Bachelorship in Dental Surgery.—Past students of the Birmingham Dental School who have taken out their entire course therein, and are duly qualified and registered Dental Licentiates of some Licensing Body within the kingdom, will be permitted to present themselves at any time during the five years commencing on the 1st of October, 1900, for a final examination for the degree of Bachelor of Dental Surgery, the subjects for examination being (*a*) the Surgery and Medicine of the Mouth, (*b*) Dental Bacteriology, (*c*) Dental Histology and Histo-Pathology, (*d*) Comparative Dental Anatomy, (*e*) Dental Surgery and Prosthetic Dentistry. The examination will be partly written, partly practical, and partly oral.

Examination in Public Health.

An examination for Diplomas and Degrees in Public Health will be held in the month of April, 1901.

* This examination will consist of three parts: (1) Written papers, (2) *viva voce*, (3) clinical.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Annual Meeting of Fellows and Members.

The annual meeting of Fellows and Members took place on November 15th. A report will be published in our next issue.

The Calendar.

Fellows and Members.—In the Calendar appears for the first time a new order of "Honorary Fellows." There are 1,221 Fellows on the Roll of the College (as compared with 1,215 last year), of whom 1,098 are Fellows by examination. There are 17,510 Members (against a total of 17,384 last year) and 547 Licentiates in Midwifery, the examination for this licence having been discontinued since 1876. The Licentiates in Dental Surgery are stated to number 1,465 (an increase of 99 over last year), and the Diplomates in Public Health to number 365.

Finances.—The income from all sources amounted to £25,211 0s. 1d., the largest item of income being derived from the fees paid by candidates for the diplomas of the College, namely, £17,525 11s., the next largest being dividends on the Erasmus Wilson bequest—£5,097 16s. 9d. The expenses for the year amounted to £23,565, leaving a balance at the bank and in hand at Midsummer Day, 1900, of £1,645 17s. 3d. (against £1,152 4s. 5d. at Midsummer Day, 1899), the largest items being: Examiners' fees, £7,363 13s. 10d.; half expenses at Examination Hall for the purposes of the examinations, £4,029 7s. 3d.; half expenses of the Scientific Research Laboratories on Victoria Embankment amount to £841 14s. 10d. (this does not include any part of the rent, rates, taxes, insurance, fuel, or light); extraordinary expenses, that is, cost of Crown in appeal, *re* corporation duty, corporation duty 1894-1899, and fees for new Charter, £999 14s. 1d.; fees to members of Council, £270 18s.

Secretary's Report.—In addition to an abstract of the work of the Council and Committee, this report contains an account of the celebrations of the centenary of the College. At the annual meeting of Fellows and Members held on November 16th, 1899, it is stated that in addition to 12 members of the Council only 13 Fellows and 67 Members out of 1,221 Fellows and 17,510 Members were present. The Use of Misleading Titles by Unqualified Registered Dentists: The offending persons names were entered on the *Dentists Register* with the description "In practice before July 22nd, 1878." The persons in question adopted such titles and descriptions as "R.D.S., R.C.S.Eng.," "R.D.S.Eng.," "R.D S.E," "Registered by the Royal College of Surgeons," thereby causing it to be inferred that they were connected with either the English College or the Scotch or Irish College of Surgeons, and thus infringing the privileges of the Licentiates in Dental Surgery of those Colleges. The Council of the College, having called the attention of the General Medical Council to the abuse, received a communication from that Council, stating that the complaint against one of the persons thus advertising had been considered, and that his name had been erased from the *Dentists Register*.

Erasure of Names from College List.—During the past Collegiate year the names of two Members have been erased from the College List for "disgraceful conduct in a professional respect."

Meeting of Council.

An ordinary council was held on November 8th, Sir William Mac Cormac, Bart., K.C.V.O., President, in the chair.

The late Mr. William Anderson.—The Council passed a resolution expressing its deep regret at the death of Mr. William Anderson, and its sincere sympathy with his widow and family in their bereavement; and recorded its appreciation of his services to the College while a member of the Court of Examiners and Hunterian Professor, and deplored the loss to the College of a Fellow distinguished for his ability as a surgeon, and for his refined and cultured qualities.

Dental Examination Board.—Mr. W. J. Walsham was elected a member of the Board of Examiners in Dental Surgery in the vacancy occasioned by the death of Mr Anderson.

Bradshaw Lecture.—The President stated that this would be delivered by Mr. John Langton on December 12th next at 5 P.M., on the Association of Inguinal Hernia with the Descent of the Testis.

Report of the Finance Committee.—The Committee presented a report for the quarter ending Michaelmas Day, 1900, the first quarter of the Collegiate year. The following is a summary of the income and expenditure in respect of revenue for that period, namely:

	£	s.	d.
Income	6,272	10	9
Expenditure	6,218	3	4
Balance	£54	7	5

The income is £361 10s. 8d. less than the income for the corresponding quarter of the previous year, while the expenditure is £1,011 11s. 9d. more. Included in the expenditure of the quarter is a sum of £771 10s. 6d. representing the portion of the expenses of the Centenary Festival payable out of the College Funds.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A quarterly meeting of the Royal College of Physicians of Edinburgh was held on Tuesday, November 6th, the President (Dr. Andrew) in the chair.

Admission to the Fellowship.—Robert Miller Ronaldson, M.D., M.R.C.P.E., was admitted by ballot to the Fellowship of the College.

Admission to the Membership.—On a ballot the following candidates were admitted to the Membership of the College after examination: William Wood, M.B., C.M.; George Pratt Yule, M.D., C.M.; Stuart McDonald, M.B., C.M.

Admission to the Licence.—The Registrar reported that since the last quarterly meeting forty-one persons had obtained the Licence of the College by examination.

Bacteriological Diagnosis of Tuberculosis, Diphtheria, and Typhoid Fever.—The Secretary reported that the arrangements with the magistrates and Town Council for the bacteriological examination of suspected products in respect of tuberculosis, diphtheria, and typhoid fever, had been completed.

Investigation of Suspected Plague Products.—On a letter from the Local

Government Board for Scotland, requesting the College to undertake the investigation of suspected plague products at the College Laboratory, it was resolved that the request be acceded to.

Expulsion of Licentiates.—By vote of the College, the two following licentiates were expelled from the College and deprived of their licence—namely, Frederick William Kirkham and Harman John Tarrant.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE following candidates have been admitted to Licences:

Licence in Medicine.—Leonora Browne, J. F. Cleary, W. H. Dodd, A. D. Dunwoody, D. A. Faris, A. Fitzgerald, Harriette Lombard Hennessy, Florence Berkley Leach, Edith Annie Beaumont Marks (Honours), H. S. Maxwell, R. A. O'Donovan, J. O'Leary, A. E. O'Reilly, T. N. Smith, E. J. M. Watson, B.A., B.Ch., B.A.O., M.D.Univ.Dub.

Licence in Midwifery.—Agnes Benjamin, L.R.C.P.& S.Edin., L.F.P.& S. Glasg., and Honorine Forbes, L.R.C.P.& S.Edin., L.F.P.& S.Glasg.

CONJOINT BOARD IN IRELAND.

CANDIDATES have passed as undernoted:

Third Professional Examination.—F. J. Cahill, A. J. Connolly, V. F. Connor, C. W. Conry, A. S. Cosgrave, A. D. C. Cummins, W. N. Eustace, P. A. Frazer, S. G. Gordon, M. Graham, M. E. Lynch, W. R. Meredith, J. J. M'Grath, R. F. M'Mahon, D. J. O'Reilly, S. Potter, F. R. Thom, A. L. Tyndall.

Final Professional Examination.—Honours: Miss E. A. B. Marks. *Pass:* Miss L. Browne, J. F. Cleary, W. H. Dodd, A. D. Dunwoody, D. A. Faris, A. Fitzgerald, Mrs. H. L. Hennessy, Miss F. B. Leach, Mrs. H. S. Maxwell, R. A. O'Donovan, J. O'Leary, A. E. O'Reilly, T. N. Smith.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,485 births and 3,755 deaths were registered during the week ending Saturday last, November 10th. The annual rate of mortality in these towns, which had been 17.3 and 17.6 per 1,000 in the two preceding weeks, declined again to 16.9 last week. The rates in the several towns ranged from 11.1 in Birkenhead, 11.8 in Norwich, 11.9 in Leicester, and 12.1 in Cardiff, to 20.4 in Liverpool, 21.6 in Sunderland, 22.5 in Manchester, and 26.0 in Salford. In the thirty-two provincial towns the mean death-rate was 16.8 per 1,000, and was 0.2 below the rate recorded in London, which was 17.0 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.6 per 1,000; in London this death-rate was equal to 1.5 per 1,000, while it averaged 1.7 in the thirty-two provincial towns, among which the highest zymotic death-rates were 2.6 in Sheffield, 2.9 in Wolverhampton, 3.4 in Blackburn, and 4.2 in Sunderland. Measles caused a death-rate of 1.5 in Swansea; whooping-cough of 1.0 in Derby; "fever" of 1.0 in Derby, 1.1 in Portsmouth, and 2.3 in Wolverhampton; and diarrhœa of 1.1 in Blackburn, 1.4 in Gateshead, and 1.8 in Sunderland. The mortality from scarlet fever showed no marked excess in any of the large towns. The 88 deaths from diphtheria in the thirty-three towns included 35 in London, 7 in West Ham, 7 in Sheffield, 5 in Bristol, 5 in Leicester, and 5 in Liverpool. No fatal case of small-pox was registered last week, either in London or in any of the thirty-two provincial towns; and there was no case of small-pox under treatment in any of the Metropolitan Asylums Hospitals on Saturday last, November 10th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 1,703 to 2,619 at the end of the ten preceding weeks, had further risen to 2,702 on Saturday last; 289 new cases were admitted during the week, against 327, 320, and 336 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, November 10th, 825 births and 594 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 19.6 per 1,000 in each of the two preceding weeks, declined last week to 19.2, but was 2.3 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 14.0 in Aberdeen and 16.6 in Paisley to 20.3 in Glasgow and and 24.2 in Dundee. The zymotic death-rate in these towns averaged 2.0 per 1,000, the highest rates being recorded in Glasgow and Dundee. The 291 deaths registered in Glasgow included 3 from scarlet fever, 3 from diphtheria, 16 from whooping-cough, 4 from "fever," and 9 from diarrhœa. Three fatal cases of measles, and 2 of diphtheria were recorded in Edinburgh. Four deaths from whooping-cough and 6 from diarrhœa occurred in Dundee; 2 from measles in Aberdeen; and 2 from diphtheria in Leith.

HEALTH OF IRISH TOWNS.

THE average annual death-rate represented by the deaths registered in the week ending November 10th, in the Dublin registration area and the twenty-two principal provincial urban districts in Ireland (exclusive of deaths of persons admitted into public institutions from without the respective districts) was 20.2 per 1,000 of their aggregate population, which is estimated at 1,062,188. The deaths from the principal zymotic diseases registered in the twenty-three districts during the week were equal to an annual rate of 1.5 per 1,000.

In the Dublin registration area the death-rate was 1.6 per 1,000 for the principal zymotic diseases. In Belfast it was 1.3 per 1,000, and in Cork it was 2.1 per 1,000.

ERRATUM.—In the report on Health of Irish Towns, in the BRITISH MEDICAL JOURNAL of November 10th, p. 1415, the corrected rate was given as 31.2 per 1,000 instead of *21.9 per 1,000.*

INFECTIVITY OF DIPHTHERIA.

F.R.C.S. writes that on September 21st the sister of a boy engaged in an office, where boys and some young women were also at work, were found to have contracted diphtheria. She was removed the same night to hospital and the room disinfected. (He does not say how.) The boy was kept at home for three weeks. On October 12th a second case occurred in the house; the same course was followed and the boy again suspended from work for another three weeks. On November 6th a third case appeared; the patient was again removed the same night. All three cases were verified by bacteriological examination. The drainage of the house was tested and found in good order. What our correspondent is concerned about is whether the boy, whose parents have still three other children who have not taken the disease, should be allowed to return to the office.

*** We should say not, at least not till his own throat and the throats of all the family have been carefully examined at least twice, and found free from Loeffler's bacillus, and the whole house, its furniture, and the clothing of all its occupants disinfected. Our correspondent does not say whether in each case the boy returned to the office at the end of his three weeks' period of quarantine. If so, it might be worth while to examine the persons there. For though the period between his return and the development of the second case (eight days) is short, it is long enough for the incubation of diphtheria. The second period of four days is somewhat short. Of course if he did not go back at all, this line of investigation need not be followed, and one is thrown back upon the members of the affected family and their neighbours and schoolfellows for the source of infection. If it be important that the boy should return to the office, he might perhaps, after a thorough cleansing of his throat and air passages, and disinfection of his clothing by steam be sent to board out and, after examination of his throat a few days later, allowed to go back to the office. There is, however, little if any doubt that persons free from the disease may convey the infection; and probably this is one of the chief ways in which diphtheria is spread.

RESPONSIBILITY OF LOCAL AUTHORITIES AS TO SEWERS.

ENQUIRENS.—If a row of twenty houses in a country district, and not within the same curtilage (boundary wall), belong to one owner, and drain into a sewer, the sewer would vest in the Local Sanitary Authority under the Public Health Act, 1875. Even if the Public Health Acts Amendment Act, 1890, has been adopted (or Section XIX of that Act), the pipe would still be repairable by the local authority. It is a common practice for local authorities to endeavour to get the owner of the property to repair a sewer which to their knowledge is legally repairable by the authority. In the case stated by our correspondent it is clearly the duty of the local authority to repair the sewer, and to make provision for the satisfactory disposal of the sewage.

PUBLIC VACCINATORS AND SUPERANNUATION DEDUCTIONS.

A. A. asks whether Boards of Guardians are acting legally in deducting 2 per cent. from the quarter's vaccination fees for superannuation, and also whether they are entitled to deduct the sums from amounts paid for instruments or appliances and supplied to pauper patients.

*** In neither case do we consider the deduction justified. Public vaccinators have been expressly declared to be excluded from the benefits of the Poor-law Superannuation Act by virtue of their position *under contract* with the guardians as distinguished from the position of of officer of the guardians. We do not know of any case, however, where the matter has been legally tested.

NOTIFICATION IN IRELAND.

T. C.—(1) It is the duty of a medical practitioner in Ireland to notify cases of infectious disease to the medical officer of health in any district where the provisions of the Infectious Diseases (Notification) Act, 1889, have been adopted. Unfortunately the rural district councils have only in a very few cases seen fit to adopt the provisions of the Act, which left it optional with the sanitary authority whether to require notification or not. (2) If the rural district council has adopted the provisions of the Act the practitioner can be punished by law for neglecting to notify. (3) The Infectious Diseases (Notification) Act, 1889, and the Infectious Diseases (Prevention) Act, 1890, can be obtained for 3d. from Messrs. Alex. Thom and Co., printers, Middle Abbey Street, Dublin.

UNWHOLESOME DRESSMAKING.

SLAVES asks: Does the following case come under the Factory or other Acts, and how can information be given to the proper authority privately? A small room holds a grown-up woman (dressmaker) who has three paid young girls and three apprentices from 9 A.M. until 5 P.M. and even later at times.

*** The room is a workshop, and notice of its employment as such ought to have been sent by the occupier to the Factory Inspector. Unfortunately, notwithstanding the efforts of the British Medical Association, the Act of 1895 prescribes only 250 cubic feet a head as the minimum for factories and workshops where artificial light is not used. As workshops are under the inspection of the sanitary authority, the matter might be mentioned to the medical officer of health.

MEDICAL NEWS.

Medical Magistrate.—Mr. E. Hodkinson Monks, L.R.C.P., L.R.C.S.Edin., has been placed upon the Commission of the Peace for the County Borough of Wigan.

At the recent municipal elections at Inverness Dr. J. Munro Moir was elected to one of the two vacancies in the First Ward, and Dr. John Adam was elected for Dingwall.

At the examination for Inspectors of Nuisances held by the Sanitary Institute at Newcastle-on-Tyne on November 9th and 10th, twenty-nine candidates presented themselves, and twenty-two passed.

The annual dinner of the Harveian Society of London will be held at the Café Monico on Thursday, November 29th, at 7 P.M. Members intending to dine should communicate with the Honorary Secretary at 11, Wimpole Street, W.

At the recent general annual court of the Worshipful Company of Dyers, held at Dyers' Hall, London, on October 3rd, Mr. C. H. F. Christie and Dr. George Flux were elected Prime Warden and Renter Warden respectively for the ensuing year.

British Medical Temperance Association.—A meeting of this Association will be held in the rooms of the Medical Society of London, 11, Chandos Street, on November 30th, at 4.30 P.M., when a discussion on alcohol as it affects women will be opened by Dr. Heywood Smith.

The next dinner of the Aberdeen University Club will take place at the Trocadero Restaurant on Wednesday next at 7 P.M., when Sir William Macgregor, M.D., LL.D., Governor of Lagos, will take the chair. Members wishing to attend are requested to communicate with the Honorary Secretaries, Dr. James Galloway, 54, Harley Street, or Dr. J. A. Robson, 33, Kensington Park Gardens.

Irish Medical Schools' and Graduates' Association.—The autumn dinner of the above Association will be held at the Hotel Cecil on Wednesday, November 28th, at 7.15 o'clock, when the chair will be occupied by the President, Inspector-General W. H. Lloyd, M.D., R.N. The guests of the evening will be General Sir William Olpherts, V.C., G.C.B. and Mr. Alfred Percival Graves, the genial author of "Father O'Flynn" and other Irish songs.

The Exchange Telegraph Company is again, so far as we have observed, first in the field with a handbook of the new House of Commons, which is issued with the title *Poll-book, 1900* (17 and 18, Cornhill, 6d.). There is an alphabetical list of members, showing the party to which they belong and whether they sat in the last Parliament. This is followed by an alphabetical list of constituencies with their members, and the majority by which the seat was won is indicated in every case in which there was a contest. The same Company has also issued a coloured map showing the political complexion of each constituency.

The late Professor A. W. Hughes.—The Council of the University College, Cardiff, has resolved to establish an Alfred Hughes Memorial in connection with the Medical School of the College. An influential Committee is being formed, and a meeting will be held on November 24th, when it is hoped that all will attend who are interested in the establishment of a permanent record of Professor Hughes's great services to the College as its first Professor of Anatomy. The form which the memorial will take is to be decided upon at the meeting. Friends desirous of joining in the movement, if unable to attend this meeting, are asked to communicate with Mr. J. Lynn Thomas, Mr. D. W. Evans, or the Dean of the Faculty of Medicine.

Havana and the Immigration Question.—According to the *Boston Medical and Surgical Journal*, Governor-General Wood has appointed a Board of Immigration consisting of four physicians, who will draw up regulations concerning immigrants. Since July, 1899, 26,000 immigrants have arrived in Havana, and 10,000 are expected during the next two months. Fifty deaths from yellow fever were reported in Havana during August. While the general health of the city is better than ever before, there is a comparatively large number of cases of yellow fever, owing to the great number of immigrants. Seventy-five per cent. of the total number of cases were among immigrants who had been in Havana less than a year.

The Metropolitan Medical College of Chicago, to which reference was made in the British Medical Journal of November 10th, appears to have exhausted the long-suffering of the State Government, and we learn from the *Chicago Record* that an injunction has been granted restraining it from conducting business in violation of the terms of its charter. The court is further asked by the State Attorney-General to dissolve the corporation, which is alleged to have been conducting a fraudulent business in not requiring the personal attendance of the applicants for its degrees, and to have abused and violated its charter ever since 1896. It is encouraging to find that a stand is being made in some of the United States against institutions of this character.

The Scottish Self-control Society.—The object of this Society, whose short title is given as "S. S. S.", is stated to be "to band Scotchmen all the world over in a league to discourage and withstand over-indulgence in strong drink." Although the Society is of Scotch origin, men and women without distinction of nationality or colour are eligible for membership; and in view of such developments it is provided that the title 'Scottish' may be changed to, for example, 'Southern' if any particular community so desires. The Society is intended to supplement, not to supersede, existing temperance societies. Members are required to promise three things: (1) Not to drink intoxicants before noon nor at any time except at a regular meal; (2) not to 'treat'—that is, not to offer or accept alcoholic drink except with a regular meal; (3) not to give or accept drink in return for services rendered. Members may take a solemn pledge or make an honourable mutual agreement to be faithful to their promise so long as they retain the card of membership. "Breach of the agreement, before returning the card, will be regarded as dishonourable." What will happen to any backslider in these painful circumstances is left to conjecture. A profane person might be tempted to reply to an inquiry on the subject as the Speaker of the House of Commons is said to have done to a member whom he had threatened to "name." On the rebellious one asking what would happen then, the Speaker is recorded to have said, solemnly, "The Lord only knows." The president of the "S. S. S." is the Duke of Sutherland, and among the vice-presidents we note the names of Sir Willam Muir, K.C.S.I., Principal of the University of Edinburgh, and Alexander Miller, F.R.C.S.E. The secretary of the parent society is Mr. John Smart, jun., 1, Greenhill Place, Edinburgh.

MEDICAL VACANCIES.

The following vacancies are announced

BIRKENHEAD AND WIRRALL CHILDREN'S HOSPITAL.—House-Surgeon. Salary £100 per annum, with board, residence, and laundry. Applications to Mr. E. H. Tilby Hon. Secretary, 53, Gosvenor Road, Birkenhead, by November 19th.

BIRMINGHAM: GENERAL HOSPITAL.—(1) Two Assistant House-Physicians (2) Two House-Surgeons. Appointments for six months. No salary, but residence board, and washing provided. Applications to the House Governor by December 1st.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND [illegible] Diseases.—Clinical Assistant. Applications to the Secretary of the Committee, John Bright Street, Birmingham, by December 3rd.

BODMIN: CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £120, rising to £150 per annum, with board, furnished apartments etc. Applications to the Medical Superintendent.

BRIGHTON AND HOVE LYING-IN INSTITUTION.—H[illegible] under 30 years of age. Salary, £30 per annum, with [illegible] etc. Applications to the Clerk, 77, West Street, Brig[illegible]

BRIGHTON: ROYAL ALEXANDRA HOSPITAL [illegible] Physician. Applications to the Chairman of the M[illegible]

BRIGHTON: SUSSEX COUNTY HOSPITAL.—[illegible] annum. Board and residence provided. Applications [illegible]

BRIXTON DISPENSARY.—Resident Medical Officer [illegible] annum, with furnished apartments, etc. Applications [illegible] Brixton, S.W., by November 30th.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—[illegible] unmarried. Salary, £60 a year, with board and lodging. [illegible] tary by November 24th.

CARDIFF INFIRMARY.—Assistant House-S[illegible] renewable. Salary, at the rate [illegible] ments. Applications, endorsed [illegible] November 28th.

CENTRAL LONDON SICK ASY[illegible] Officer and D[illegible] City and [illegible] Cleveland Street, [illegible]

CLAYTON HOSPITAL AND W[illegible] House-Surgeon, unmarried. Sa[illegible] washing. Applications to the H[illegible]

CROYDON GENERAL HOSPITAL.—House-Surgeon. Salary, £105 per annum, with board, laundry, and residence. Applications to the Secretary by December 6th.

DERBYSHIRE ROYAL INFIRMARY.—(1) Honorary Physician; (2) Honorary Surgeon. Applications to the Secretary by November 23rd.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board, lodging, and washing. Applications to the Chairman of Medical Committee by November 20th.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell.—House Physician. Board, residence provided, and honorarium of £25 on completion of six months' approved service. Applications to the Secretary by December 8th.

EDINBURGH: ROYAL COLLEGE OF SURGEONS.—Conservator of the Museum. Salary, £105 per annum. Applications to Mr. J. Robertson, Clerk to the College, 54, George Square, Edinburgh, by December 1st.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Resident Medical Superintendent. Salary, 100 guineas per annum with board and residence. Applications, on forms provided, to the Secretary by December 11th. Also Ophthalmic Surgeon, must be F.R.C.S.Eng. Applications to the Secretary by November 20th.

HULL ROYAL INFIRMARY.—Honorary Surgeon. Applications to the Chairman, Committee of Management, by December 12th.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House-Surgeon, unmarried. Salary, £40 per annum, increasing to £170, with rooms and attendance. Applications to the Secretary before November 30th.

KING'S COLLEGE, London.—Professor of Anatomy. Applications to the Secretary by December 1th.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary, £100 per annum, with board and apartments. Applications to the Secretary by November 24th.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrar. Salary, £100 per annum. Applications to the House Governor by December 7th.

MANCHESTER CHILDREN'S HOSPITAL.—Assistant Surgeon, must be F.R.C.S.Eng. Honorarium, £50 per annum. Applications to the Secretary, Gartside Street, Manchester, by November 29th.

MANCHESTER: ROYAL INFIRMARY.—Resident Medical Officer of the Convalescent Home at Cheadle, unmarried and not under 25 years of age. Salary, £150 per annum, with board and residence. Applications to the Secretary by December 1st.

NATIONAL ORTHOPEDIC HOSPITAL, 234, Great Portland Street, W.—Surgical Registrar. Applications to the Secretary by November 23rd.

NEWCASTLE-ON-TYNE NORTHERN COUNTIES HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Honorary Physician. Applications to the Secretary, 40, Mosley Street, Newcastle-on-Tyne.

NEW HOSPITAL FOR WOMEN, 144, Euston Road, N.W.—Medical Women as (1) House-Physician, (2) House-Surgeon, (3) Clinical Assistant for Out-patient Department. Applications to the Secretary by November 28th.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—House-Surgeon. Appointment for six months. Salary at the rate of £20 per annum, with board, residence, and laundry allowance. Applications to the Secretary at the City Office, 27, Clements Lane, E.C., by November 24th.

NORTH LONDON HOSPITAL FOR CONSUMPTION, Hampstead.—Junior Resident Medical Officer. Honorarium, £60 per annum. Applications to the Secretary by November 30th.

NORTH-WEST LONDON HOSPITAL, Kentish Town Road, N.W.—(1) Assistant Surgeon, (2) Resident Medical Officer, (3) Assistant Resident Medical Officer. A salary at the rate of £50 per annum with board, residence, and washing is attached to the latter two. Applications to the Secretary by November 21st.

NOTTINGHAM CITY ASYLUM.—Senior Assistant Medical Officer, unmarried, and not above 30 years of age. Salary, £260 per annum, with board, apartments, and washing. Applications to the Medical Superintendent by November 23rd.

PLAISTOW: ST. MARY'S HOSPITAL FOR SICK CHILDREN.—Assistant Resident Medical Officer. Appointment in the first place for six months. Salary at the rate of £80 per annum, with board, residence, etc. Applications to the Secretary by November 28th.

RAMSGATE AND ST. LAWRENCE ROYAL DISPENSARY.—Resident Medical Officer, unmarried. Salary, £100 per annum, with furnished apartments, board, and attendance, and £10 allowed for substitute during annual holiday. Applications to the Secretary by December 8th.

ROYAL ACADEMY OF ARTS.—Professorship of Anatomy. Fees, £123. Applications to the Secretary by November 28th.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Member of the Court of Examiners. Applications to the Secretary by December 5th.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge Road, S.E.—Resident Medical Officer. Salary, £70 per annum, with rooms, board, and laundry. Applications to the Secretary by November 30th.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—Clinical Assistants. Applications to the Secretary by December 1st.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer in Chemistry and Physics. Salary, £150 per annum, and special fees for London University classes. Applications by November 30th.

SALFORD UNION.—Assistant Resident Medical Officer at the Union Infirmary, Hope, near Eccles. Salary, £130 per annum, with furnished apartments and attendance. Applications, endorsed "Assistant Medical Officer," to the Clerk to the Guardians, Union Offices, Eccles New Road, Salford, by November 27th.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone Road, N.W.—Surgeon to the Out-Patient Department. Applications to the Secretary by December 5th.

VIRGINIA WATER: HOLLOWAY SANATORIUM.—Junior Assistant Medical Officer. Salary, £150 per annum, rising to £200, with board, lodging, washing, and attendance. Applications to the Medical Superintendent by November 17th.

WESTERN GENERAL DISPENSARY.—Junior House-Surgeon, unmarried. Salary, £75 per annum, with board and residence. Applications to the Honorary Secretary.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary, £110 per annum, with board, lodging, and attendance. Applications to Mr. W. Draper, De Grey House, York, by November 21st.

MEDICAL APPOINTMENTS.

ADAMS, E. G. B., M.B.Lond., F.R.C.S.Eng., appointed District Medical Officer of the Yeovil Union, *vice* J. D. Adams, M.D.St.And., resigned.

AINSLIE, WM., M.B., Ch.B.Aberd., appointed Certifying Factory Surgeon for the Kington Urban District and Kington Rural District, except the civil parishes of Bardisley, Willersley, Winforton, and Brilley.

AYMER, C., M.B., C.M.Aberd., appointed Certifying Factory Surgeon for the Burgh of Inverbervie and St. Cyrus District of Kincardineshire.

BENGRES, F. W., M.R.C.S., L.R.C.P.Lond., appointed Second Assistant Medical Officer to the Chelsea Union Infirmary, *vice* A. F. Horn, B.Sc., M.R.C.S., L.R.C.P.Lond.

COLLS, Percy C., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Benender District of the Cranbrook Union, *vice* W. R. White, M.D.Aberd., resigned.

CROSSLEY, Leonard, M.B., Ch.Edin., appointed Second House-Physician to the City of London Hospital for Diseases of the Chest, Victoria Park, E.

FENN, Arthur Cooper, L.R.C.P.I., L.M.R.C.P.I., L.S.A.Lond., appointed Medical Officer to the Dover Union Infirmary, *vice* Edwin Fenn, M.D., retired.

GRIEVE, W. D., M.B., C.M.Edin., appointed Surgeon to the Dumfries and Galloway Royal Infirmary, *vice* P. W. Kerr, M.B., C.M.Edin.

HORN, Arthur E., B.Sc., M.R.C.S., L.R.C.P.Lond., appointed First Assistant Medical Officer to the Chelsea Union Infirmary, *vice* W. J. E. Davies, M.R.C.S., L.R.C.P.Lond., resigned.

KERR, P. M., M.B., C.M.Edin., appointed Senior Surgeon to the Dumfries and Galloway Royal Infirmary, *vice* A. Thomson, M.D.Glasg.

LIGHTBODY, J. H., M.D.Vict., appointed Certifying Factory Surgeon for the Urban District of Foxhill-on-Sea.

LIVINGSTON, George R., M.B., C.M.Edin., appointed Assistant Surgeon to the Dumfries and Galloway Royal Infirmary, *vice* W. D. Grieve, M.B., C.M.Edin.

MCFERRAN, J. R., L.R.C.P., L.R.C.S.Edin., appointed Assistant Medical Officer to the Leeds Union Infirmary, *vice* J. Guy, M.R.C.S., resigned.

MANSON, R. H., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., appointed Public Vaccinator and Medical Officer for the West and North-West District, Darlington Union, and Police Surgeon for the Darlington Division of the Durham County Constabulary, *vice* R. Taylor Manson, deceased.

MILLER, S. A., M.R.C.S., L.R.C.P., appointed Medical Officer for the Third District of the Malmesbury Union, *vice* P. H. Nutting, M.R.C.S., L.R.C.P.Lond., resigned.

MUNDE, T., M.R.C.S.Eng., appointed Certifying Factory Surgeon for the Hayle District of Cornwall.

O'MEARA, W. H., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer to the Workhouse of the Holbeach Union, *vice* E. R. Harper, L.R.C.P.Lond., M.R.C.S.Eng., resigned.

PALING, Albert, M.B., B.S.Lond., F.R.C.S., appointed Surgeon to the Burton-on-Trent Infirmary.

POLLOCK, R. G., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Tenth District of the Croydon Union, *vice* H. Rose Todd, L.R.C.P., L.R.C.S.Irel., resigned.

ROSS, Stephen John, M.B., Ch.B.Vict., appointed Honorary Assistant Surgeon to the Bedford County Hospital.

THOMSON, A., M.D., L.F.P.S.Glasg., appointed Honorary Surgeon to the Dumfries and Galloway Royal Infirmary.

THORMAN, W. H., B.A.Cantab., M.R.C.S., L.R.C.P., appointed Medical Officer of Health to the Kirkburton Urban District, *vice* W. P. T. Daniel, M.R.C.S., L.R.C.P.Lond., resigned.

TOWNSEND, Norman Ian, L.R.C.P., L.R.C.S.I., appointed Intern Physician to the South Infirmary, Cork.

LEEDS GENERAL INFIRMARY.—The following appointments have been made:
Collinson, H., M.R.C.S., L.R.C.P., to be Resident Medical Officer at the Ida Hospital.
Anderton, E. W., M.B., Ch.B.Vict., to be Resident Obstetric Officer.
Gough, W., M.R.C.S., L.R.C.P., to be one of the House-Surgeons.
Alderman, H. C., M.R.C.S., L.R.C.P., to be one of the House-Surgeons.
Lückhoff, J., M.B., C.M.Ed., to be one of the House-Surgeons.

DIARY FOR NEXT WEEK.

MONDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Seymour Taylor: Surface Anatomy.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. J. F. Payne: Consultation. (Skin.)

TUESDAY.

Pathological Society of London, 20, Hanover Square, W., 8.30 P.M.—Dr. S. H. Habershon and Dr. F. S. Hichens: A case of Pseudo-actinomycosis. Mr. W. G. Spencer: (1) Fibroma of Tongue; (2) Spheroidal-celled Carcinoma commencing in Supernumerary Nipples. Dr. William Hunter: A case of Acute Yellow Atrophy. Card Specimen: Mr. T. W. P. Lawrence: Hour-glass Contraction of Stomach.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. S. J. Sharkey: Consultation. (Medical.)

Royal Statistical Society, 9, Adelphi Terrace, Strand, W.C., 5 P.M.—Mr. T. A. Welton: On the Distribution of Population in England and Wales, and its Progress in the Period of Ninety Years from 1801 to 1891.

Hospital for Diseases of the Skin, 53, Stamford Street, Blackfriars, S.E., 5 P.M.—Dr. Phineas S. Abraham: Psoriasis.

Chelsea Clinical Society, Holy Trinity Parish Hall, Pavilion Road, Sloane Square, S.W., 8.30 P.M.—Mr. Noble Smith: The Conservative Treatment of Tuberculous Disease of Joints, with demonstration.

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 5 P.M.—Mr. James Cantlie: Clinical Lecture: Plague.

Royal Meteorological Society, Institution of Civil Engineers, Great George Street, Westminster, 7.30 P.M.

London Throat Hospital, 204, Great Portland Street, W., 5 P.M.—Dr. Furniss Potter: Selected Cases.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W., 4 P.M.—Dr. Latham: Phthisis in Early Childhood.

Royal Institute of Public Health, Examination Hall, Victoria Embankment, W.C., 5 P.M.—Professor Calmette on Bubonic Plague, Harben Lecture III.

Royal Microscopical Society, 20, Hanover Square, W., 7.30 P.M.

THURSDAY.

Central London Throat, Nose, and Ear Hospital, 8 P.M.—Dr. Percy Jakins: Demonstration of Cases of Diseases of the Throat and Nose.

London Hospital, Anatomical Theatre, 4 P.M.—Dr. J. Mitford Atkinson (Hong Kong): On Plague.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Mr. Wallace: Pathological Demonstration.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.) 6 P.M.—Dr. Seymour Taylor: Class: Applied Anatomy.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Mr. C. B. Keetley: General Treatment of Wounds and Compound Fractures.

FRIDAY.

Clinical Society of London, 20, Hanover Square, W., 8.30 P.M.—Dr. Sidney Phillips: A case of Thrombosis of the Inferior Vena Cava and of the Iliac and Femoral Veins of Acute Onset and Fatal Termination, with symptoms resembling those of perforated gastric ulcer. Mr. Campbell Williams: A case of late Syphilitic Pyrexia (intermittent essential fever of syphilis). Mr. Bland-Sutton: On a case in which Splenectomy was performed for a Wandering Spleen. Dr. Herringham: A case of Nephritis without Albuminuria: Death in six weeks: No scarlatina: Necropsy.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Holmes Spicer: Consultation. (Eye.)

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGE.

CHRISTIE—BROWN.—November 8th, at St. Mary Redcliff Church, Bristol, by the Rev. W. J. F. Robberds, M.A., Vicar, Dr. W. Ledingham Christie, F.R.C.S.Eng., of 6, St. Paul's Road, Clifton, to Ethel Mary, eldest daughter of Mrs. Brown, and granddaughter of the late H. J. Brown, Esq., late Organist of Jesus College and Trinity Church, Cambridge.

DEATHS.

BARNES.—On the 12th instant, at 23, Rochester Road, Camden Road, N.W., Dr. J. I. F. Barnes, F.R.C.S., eldest son of F. K. Barnes, late Surveyor of Dockyards and Chief Constructor, Admiralty, Whitehall, S.W.

JOHNSTON.—On the 13th instant, at 3, Carlton Terrace, Onchan Isle of Man, Aubrey Johnston, L.R.C.P.&S., in his 44th year.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Ear, Nose, and Throat, W., 9.45; Orthopædic, Th., 1. *Operations*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations,*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W. 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, 1.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, 1.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, 1.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2, (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; 1.-p., Tu. Th., 3.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; 1.p., 1; o.p., 12; Obstetric, 1.p., Tu. F. 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Tu., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 3; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30 Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M. 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30. (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429 Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the ARCHIVES MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

M.D. would feel grateful if any member residing in a city who has a personal experience of a private hansom cab could answer the following questions: (1) The best builder of private hansoms. (2) The approximate price of a well-turned-out hansom. (3) Are they suitable and satisfactory for a medical man whose driving is largely on stone pavements? (4) Are they serviceable?

THE SCILLY ISLES.

J. K. C. asks whether there is any place in the Scilly Isles where a patient, who is not well off, but could afford to pay about 15s. a week, could be sent for some weeks in the winter.

GASTRO-INTESTINAL CATARRH.

AGORAPHOBIA asks for advice in the treatment of the following case: A gentleman, aged 34, who had previously enjoyed good health, was attacked with "ptomaine poisoning" six years ago; since then he has been suffering from extreme neurasthenia, accompanied by catarrh of the stomach and large bowel. He suffers from palpitation, vertigo, and profuse perspirations in both axillæ coming on shortly after meals: he also complains of general restlessness, agoraphobia, cold shiverings with clammy sweats; the pulse is very rapid and "shotty" in character; the bowels are regular though the fæces are rather dry and knotty. He eats and sleeps fairly well. Bismuth and soda before meals with salol after have done him most good. Any further suggestions as to treatment will be very gratefully received.

TREATMENT OF URINARY HYPERACIDITY IN CHILDHOOD.

ACIDURIA will be glad of suggestions for the treatment of a girl aged 18 months, who has great frequency of micturition, especially during the day, sometimes at half-hourly intervals. There is no evidence of stone or other physical cause; but the urine is highly acid, and occasionally deposits uric acid crystals. The diet consists of milk with bread, porridge, rice, etc. Mixtures containing potassium citrate and liquor potassæ have been tried. The child appears quite well in other respects, except for excessive fretfulness; she had an attack of cystitis when 9 months old, which completely cleared up in three weeks.

EXTRAUTERINE PREGNANCY WITH LIVING CHILD.

DOLICHOCEPHALUS would be much obliged if any British or American correspondent can find the references to the following cases, reported in *Obstetrics*, February, 1800, without any statement as to where they were first published (*Obstetrics* is published in America; the article naming the case was by Dr. Ayers): Fowler, 1830 (at ninth month); Bond, 1895 (two months and a half); Eagleson, 1896 (ninth month); Frost, 1896 (ninth month); Dalton, 1898. They are not to be found in the late and deservedly lamented *Index Medicus.*

TREATMENT OF OBSTRUCTED HERNIA.

MEDICUS IN RURE writes: As one not specially practising surgery, and therefore not specially conversant with up-to-date notions, I should like to know what is the generally-accepted treatment for an obstructed hernia—ice or fomentations locally? My own experience teaches me that ice is quite the wrong treatment; unlike a fomentation, it does not relieve muscular spasm, or ease the patient's discomfort, or start any peristalsis, which often evacuates the flatus preventing the reduction. Personally I can vouch for the discomfort and inability as a pain reliever of ice locally. That it lessens congestion of the tumour seems to me to be merely a theoretical supposition. It seems very absurd to put the patient in a hot bath—a generally accepted method of treatment—and put ice on the tumour. Authorities like Walsham (1900) and Gould's *International Textbook* recommend both ice and warmth, the latter book bearing out my own experience as regards fomentations being the better in the aged, in whom one has the chief proportion of obstructed hernia, especially of the scrotal variety.

THE FORM OF GALL STONES.

DR. JOHN W. DUNCAN, M.A., M.B. (Hockley, Birmingham), writes: In the article on Progressive Pernicious Anæmia in the BRITISH MEDICAL JOURNAL of November 10th there is mentioned a fact concerning gall stones that seems to me to be very interesting. It is said there that at a *post-mortem* examination there were found forty blackberry-like gall stones in one gall bladder. Now, all the books I can recollect give as a cause for the facetted appearance of gall stones when more than one come to be found in the same gall bladder that the pressure of one stone upon another causes them to be facetted. But here we have forty mulberry or blackberry-like stones at once. Hamilton, in his book on *Pathology*, states, I think, that when there is one stone in the gall bladder it is of a mulberry shape (blackberry-like), and when there are more than one the stones are facetted. The facetted stones are utterly unlike the mulberry, blackberry-like calculi. The one is angled, smooth surfaced, facetted, pyramidal, while the other is spherical, with a surface more or less coral-like, mulberry-like, or blackberry-like, and the colour of the two kinds varies. The facetted stone is light fawn, more or less, while the blackberry-like stone is dark brown or purple, like a fairly ripe blackberry. So that there can be no doubt about the two kinds, and forty blackberry-like gall stones can never correspond to forty facetted gall stones. Surely, then, something more than mere pressure from numbers must be the cause of the facetting. When a student, on opening the gall bladder (*post mortem*), I found three gall stones, one in the body of the bladder, and the other two, slightly adherent to one another, lying where the bladder joined the cystic duct. The one in the body was angled, pale fawn in colour, facetted and lay free from anything likely to cause facetting by pressure, while the other two were smaller, spherical, dark coloured and blackberry-like. Would these two mulberry ones, if in contact with the light fawn coloured, facetted one, have become also facetted? I am much inclined

to doubt it. Perhaps some correspondent may be able to enlighten me in this matter. I should be glad to be put in the way of procuring statistics on the matter.

OLD APOTHECARIES' JARS.

A CORRESPONDENT, who recently picked up three old apothecaries' jars in blue and white delft, asks for an explanation of the lettering on them.

*** We are indebted to Mr. D'Arcy Power, to whom we referred the question, for the following notes:

The jar labelled "E. Diaprun." was evidently to contain the electuarium diaprunum or lenitive electuary which long held a foremost place in everybody's "shop." It remains to us as the confection of senna, and as Salmon says, was "a delicate thing to cool and loosen the belly, quench thirst, allay the heat of fevers and refresh the body in consumptions, hectics, and marasmus. It works without pain." There was also a purging electuary of prunes containing scammony.

The jar labelled "C. Salvia" may well have been for the salvia arestris or wood sage, which was used as a diuretic and sudorific, to heal wounds, and help the strangury. It digested humours, dried up ulcers, and consumed swellings, being taken for forty days together in decoction of guaiacum.

The jar with the spout labelled "S.E.Cic.c.Rhab." was to contain the syrupus e cichorie cum rhabarbo, or syrup of chicory with rhubarb, which was also in the College *Pharmacopœia*. Salmon says of it, "It is a pretty thing to purge flegm and choller with, cools and cleans the liver and bowels, suppresses melancholy, provokes urine, and strengthens the stomach."

ANSWERS.

Y. has omitted to enclose his card.

P. V.—Receipts as public vaccinator are assessable under Schedule D, and are therefore subject to a three years' average.

THE correspondent who sends us a page torn from a circular announcing businesses for sale has not stated the source from which the page was taken, nor has he verified his communication with his name.

WE would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided.

TREATMENT OF FLATULENT DYSPEPSIA.

DR. G. PARKER (Clifton) writes: Ten grains of benzo-naphthol in powder thrice daily, with, for a time, an alkali before meals often gives extraordinary results. If the patient has lost his molar teeth these should be replaced. Little fluid should be taken with meals, but copious draughts of hot water may be given when the stomach is quite empty, as in the morning.

NOTES, LETTERS, Etc.

RUNS AT SCHOOLS.

ANTICRIPPLE writes: Running is nowadays a regular thing at many of our large schools, and it seems to me it is a thing that might very easily be abused. A man or boy in thorough training can run long distances, but either the one or the other would be doing an injury to himself if he attempted anything like a long distance, say even a mile, without being in good condition—not merely in good health, but in good trained condition for such an effort. A boy urged by others to do a specified distance within a given time might seriously injure himself, especially if tired when he was so urged, and I should like to warn masters at our big schools to be very careful that no boy be permitted—far less urged—to undertake such a thing till in thorough training. Considering the mania that now exists for athletics, it is most important that great care be exercised in the manner in which they are conducted, and for my own part I think that pushed running is more likely to produce disastrous effects than, say, football. As this concerns the rising generation, I hope that this letter may have the effect of sounding a note of warning where I suspect it is needed, and induce others who have more experience than I have to add their opinions and advice. The fact that no boy may have died in a forced run does not prove that many may not have been seriously injured, and very probably more or less broken down for life.

THE BACTERIOLOGICAL DIAGNOSIS OF HUMAN PLAGUE.

PROFESSOR DELÉPINE sends us the following corrections to his paper on the above subject, published in the BRITISH MEDICAL JOURNAL of October 27th: Page 1239, column 1, line 22 from bottom of page, instead of 29 read 24. Column 2, line 5, instead of "the distribution of the bacillus," read "the distribution and properties of the bacillus." Line 11 from bottom, instead of "a" read "the." Line 3 from bottom, instead of "There were only two colonies of staphylococci amongst a very large number of colonies of the plague bacillus. In one of the agar cultures they were," etc., read "..... amongst a very large number of colonies of the plague bacillus in one of the agar cultures. They were," etc. Page 1240, column 1, line 17 from bottom, instead of "introduced" read "induced."

LETTERS, COMMUNICATIONS, ETC., have been received from

A Audi Alteram Partem; Mr. F. T. Aston, London; A. G. C. I.; Dr. B. H. Allen, Hastings; Aciduria; Mr. R. Ambrose, London; Anti-Cripple. **B** Dr. E. H. Bannister, Barbadoes; H. G. Barling, M.B., Birmingham; British Medical Temperance Association, Secretary of, London; Mr. H. T. Butlin, London; Dr. R. W. Batten, Gloucester; J. W. Batterham, M.B., St. Leonards-on-Sea; Mr. E. S. Bishop Manchester Dr. T. Beattie Newcastle-on-Tyne; Dr. J. W. Ballantyne, Edinburgh; Mr. G. H. Broadbent, Manchester; Dr. J. P. zum Busch, London; Mr. L. A. Bidwell, London; F. M. Blumer, M.B., Stafford; Dr. J. B. Brierley, Manchester. **C** W. L. Cullen, M.B., St. Boswells; J. J. Clarke, M.B., London; Mr. C. P. Childe, Southsea; Dr. W. T. Cocking, Sheffield; Cotswold Mutton; Dr. J. G. Clegg, Manchester; Mr. G. Cecil, London; C. W. G.; Mr. J. K. Coutts, Manchester. **D** Dr. C. A. Davies, Isle of Man; Dr. L. Dobson, London; Mr. W. A. Day, Bath; Mr. G. Dalton, London; Mr. E. Debenham, Gloucester; Dr. J. W. Duncan, Birmingham. **E** Enquirens. **F** Dr. W. H. S. Fosbery, Reading; F.R.C.S.; Mr. A. C. Fenn, Dover; N. McI. Falkiner, M.B., Dublin; Dr. G. B. Flux, London; F. F. T.; Mr. J. F. Fry, Shepton Mallet. **G** J. Gray, M.B., Stanhope; T. E. Gordon, M.B., Dublin; J. E. Gemmell, M.B., Liverpool; Dr. A. E. Giles, London. **H** Mr. F. W. Hunter, Barrow; Mr. R. G. Hebb, London; Mr. C. Heath, London; Dr. J. P. Henry, London; Dr. J. F. Horne, Barnsley; Dr. T. W. Hime, Bradford; Dr. C. G. Havell, Felixstowe; W. Haig, M.B., Crieff. **J** Miss M. D. Jones, M.D., New York; Dr. Robert Jones, Claybury; J. K. C.; R. Johnson, M.B., London; Mr. G. O. Jacobsen, Oxford. **K** J. M. M. Kerr, M.B., Glasgow; Dr. A. Kinsey-Morgan, Bournemouth; L. R. E. Lord, Colwyn Bay; C. W. Low, M.B., Stowmarket; Dr. A. E. Larking, Folkestone; J. R. Lambert, M.B., Leeds; Mr. R. J. Leeper, Market Bosworth; Lex. **M** Mr. W. M. Morrison, Catchgate; M.D.; Mr. J. T. Myers, London; Member of 25 Years' Standing; Dr. I. G. Modlin, Sunderland; Mr. W. J. Middleton, Bournemouth; Mr. S. W. Macilwaine, Redhill; Dr. J. W. N. Mackay, Elgin; Mr. H. H. B. Macleod, Shrewsbury; J. S. Maynard, M.B., London; Medicus in Rure; M.O.H.; Mr. B. G. Matthews, London; Mr. R. E. Matheson, Dublin; Mr. R. Montgomery, Dublin; Mr. Y. Moore, London. **N** New Chum; Mr. H. P. Norris, London; Nil Desperandum. **O** Obstetrical Society, Secretary of, London; Oxonian; Mr. D. Owen, Manchester. **P** Mr. J. F. Pink, London; Dr. J. E. Platt, Manchester; Dr. G. Parker, Clifton; Dr. T. D. Poole, Wolverhampton. **R** Messrs. Robinson and Sons, Chesterfield; Mr. E. J. Reid, London; Messrs. Reynolds and Branson, Leeds; Mr. D. C. Rees, London; R.A.M.C.; Mr. H. Rugg, Burton-on-Trent; Dr. G. T. Revington, Dundrum; Mr. T. F. Raven, Broadstairs; Dr. F. W. F. Ross, London; F. S. Rose, M.B., Edinburgh; J. C. R. Richardson, M.B., Saxmundham. **S** Dr. H. Snow, London; Mr. P. S. Spokes, London; Dr. A. W. Scott, Sheffield; Superfluous; Mr. M. A. Smale, London; Mr. C. Stonham, Machadodorp; Strenbo Co., Manager of, Manchester; Mrs. S. B. Steele, London; S. Stephenson, M.B., London; Dr. S. J. Stuck, London; Dr. G. A. Stephens, Swansea; Messrs Smith, Elder and Co., London; Scot; Dr. S. Sunderland, London; Dr. J. Scott, Manchester. **T** Dr. J. W. Talent, Ashton-under-Lyne; Dr. W. H. Thompson, Belfast; Mr. W. E. Thompson, Glasgow; Mr. B. Thomson, Northampton. **W** H. Walker, M.B., Glasgow; Mr. O. Williams, London; G. V. Worthington, M.B., London; Messrs. F. W. Warren and Co., London; Dr. B. C. A. Windle, Birmingham; Would-be L.M.; H. J. Walker, M.B., Durazno, Central Uruguay; Dr. T. J. Walker, Peterborough; Dr. T. Wilson, Birmingham; Dr. H. Woods, London. **Y** Y.; etc.

BOOKS, Etc., RECEIVED.

Die Entstehung und Ursache der Taubstummheit. Von Dr. F. Danziger. Frankfort-on-Maine: Johannes Alt. 1900. M.4.

Etude Pratique sur le Mal de Pott. Par Dr. V. Ménard. Paris: Masson et Cie. 1900. Frs 12.

The Tale of a Field Hospital. By Frederick Treves, F.R.C.S. London: Cassell and Co. 1900. 6s.

Food and the Principles of Dietetics. By R. Hutchison, M.D., M.R.C.P. London: Edward Arnold. 1900. 16s.

The Norfolk and Norwich Hospital, 1770 to 1900. By Sir Peter Eade, M.D. London: Jarrold and Sons. 1900. 7s. 6d.

A Manual of Surgical Treatment. By W. Watson Cheyne, M.B., F.R.C.S., F.R.S., and F. F. Burghard, M.D., M.S., F.R.C.S. Lehrbuch der Histologie und der mikroskopischen Anatomie. Von Dr. L. Szymonowicz. Lief V. London: Williams and Norgate. 1900. 3s.

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Die vasomotorisch-trophischen Neurosen. Von Dr. R. Cassirer. London: Williams and Norgate. 1901. 14s.

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Grundriss der Farbchemie. Von Dr. A. Pappenheim. Berlin: A. Hirschwald. 1901. M.11.

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Design in Nature's Story. By W. Kidd, M.D., F.Z.S. London: James Nisbet and Co. 1900. 3s. 6d.
Part IV. London: Longmans, Green and Co. 1900. 1s.

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On Sanitary and other Matters. By G. S. Keith, M.D., LL.D., F.R.C.P.E. London: A. and C. Black. 1900. 2s. 6d.

Vasectomy relative to Prostatic Disorders and Catheter Life, and Report to the Thirteenth International Congress of Medicine (Paris, 1900) on Urethro-Stenosis. By R. Harrison, F.R.C.S. London: J. and A. Churchill. 1900. 3s. 6d.

Textbook of the Embryology of Invertebrates. By Dr. E. Korscheit and Dr. K. Heider. Translated from the German by Matilda Bernard. Revised and edited by M. F. Woodward. Vol. iv. London: Swan, Sonnenschein and Co. 1900. 18s.

Children of Scorn and Medical Papers. By Lady Cook. London: National Union Publishing Co.

Some Notes on the Open-air Treatment. By Dr. E. C. Hort. Bern: Schmid and Francke. 1900.

The Present Position of the Treatment of Simple Fractures of the Limbs. By W. H. Bennett, F.R.C.S. London: Longmans, Green and Co. 1900. 2s. 6d.

An Introduction to Modern Scientific Chemistry. By Dr. Lassar-Cohn. Translated from the second German edition by M. M. P. Muir, M.A. London: H. Grevel and Co. 1901. 6s.

Laboratory Directions for Beginners in Bacteriology. By V. A. Moore, B.S., M.D. Second Edition. Boston, Mass.: Ginn and Co. London: Edward Arnold. 1900.

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PRESIDENTIAL ADDRESS

ON

PHYSIOLOGY AND THE HEALING ART.

Delivered at the Opening of the Winter Session of the Ulster Medical Society, November 1st, 1900.

By W. H. THOMPSON, M.D., F.R.C.S Eng., etc.,
Dunville Professor of Physiology, Queen's College, Belfast.

Physiology was formerly said to be the basis of rational medicine. It is a saying which has grown somewhat worn and old, but I fear the amount of conviction which it carries to the breast of the average medical man has not increased with its age. These are sentiments which perhaps I ought not to re-echo, but no real harm is ever done by fairly looking at facts in the face. All the less likely is this to happen in the present instance, because I believe the saying is in reality more true to-day than when it was first uttered. The intimate connection has only been obscured by other developments; the dissociation is more apparent than real.

Association not Sufficiently Intimate: Probable Causes.

In seeking to trace the origin of this feeling to its cause it seems to me that first and foremost should be placed the great and rapid development of the subject of physiology which carries its devotees far into fields where none but the specialist can be expected to follow them. This minute research is necessary if truths of moment are to be wrung from the secrets of nature. Nevertheless it is a process with which the man of practice cannot always sympathise. It is only when those truths are brought back, and take their place in the guidance of treatment that his interest is specially awakened.

Another circumstance to which I would assign a place in obscuring the link of connection between pure physiology and practical medicine is connected with the study and treatment of acute infectious disorders. These in themselves, always of great interest to the medical man, have been rendered doubly so by the great achievements of the science of bacteriology. The diagnosis of such maladies by the discovery of the micro-organisms, which give origin to them, and the study of the life-history of these germs themselves have filled a gap that could not have been filled by any other means. In this way the science of germs has come to occupy an engrossing position in men's minds, and to a similar extent has overshadowed, and in a sense crowded out the older subject of physiology. But even here, where most obscured, the knowledge yielded by the latter must come in when the process of diagnosis is complete, and the curative treatment, if it is to be rational, is undertaken.

I should, however, be very sorry to convey to your minds that I do not fully appreciate the great good which has been done by the study of bacteriology. I only wish to recall your attention to the fact, that there is still a solid substratum of physiological basis to the healing art, whose culture it is unwise to neglect, if we are, as I hope it is the aim of all of us, to build up a stable, well-proportioned, and durable scientific structure.

One other cause I should like to indicate, as a factor, which I think in some measure accounts for the rather small degree of sympathy which too often exists between physiology and the practice of the healing art. I will do so by asking you a question. Do clinicians sufficiently avail themselves, or are they placed in a position in this country to sufficiently avail themselves of the resources brought within their reach by the application of physiological methods to the discovery and treatment of disease?

With this question I will leave you for the present, and will ask you to follow me while I endeavour to bring before you a few of the advances which have recently been made in a physiological field intimately associated with the every-day practice of your profession.

Recent Advances in Physiology of Gastric Digestion.

Somewhat more than ten years ago an elaborate institute for the experimental study of medicine was established in St. Petersburgh. This institute consists of numerous departments, is in short the Pasteur Institute of the capital of Russia. Two of these are devoted to the prosecution of physiological research—one in the field of chemical, the other more strictly in the field of experimental physiology. The director of the former is the distinguished Professor Nencki, of the latter the no less celebrated Professor J. P. Pawlow. It is to some of the work which has emanated from Pawlow's laboratory that I wish more especially to draw your attention. During the whole of the ten or more years which have elapsed since its foundation the laboratory, consisting of the director with a staff of assistants and numerous workers, has devoted itself exclusively to a systematic study of the processes of digestion. The first results of this combined work were given out in collected form, about three years ago, as a series of lectures to Russian physicians, and soon after published in the Russian language. The book was translated into German by Dr. Walther, one of the assistants of the laboratory, about a year later, and thus was made more available to the scientific world generally. It is quite a small work, less than 200 pages, but it literally teems with results of the most valuable kind to the practitioner of medicine. The volume was supplemented a few weeks ago by a further fasciculus of fewer than 50 pages.

From the chapters of the first of these publications, which deal with the subject of gastric digestion, I purpose to draw a few facts, which will serve to exemplify the nature of the work accomplished in Pawlow's laboratory. You can then judge of their practical bearing upon the science of medicine.

Old Methods Faulty.

For a long time past, nobody had been quite satisfied with the methods by which gastric juice was obtained, in order to study its properties. This, as you will remember, used to be by means of simple fistulæ leading through the abdominal wall into the stomach. The chief fault of this method consisted of the fact that gastric juice could never be obtained in any quantity, unmixed with food. In order to make real progress it was necessary to possess a method by which the juice could be collected (1) at all times, (2) in pure condition, (3) in exact quantity, (4) while the stomach functioned normally, (5) and from an animal in perfect health.

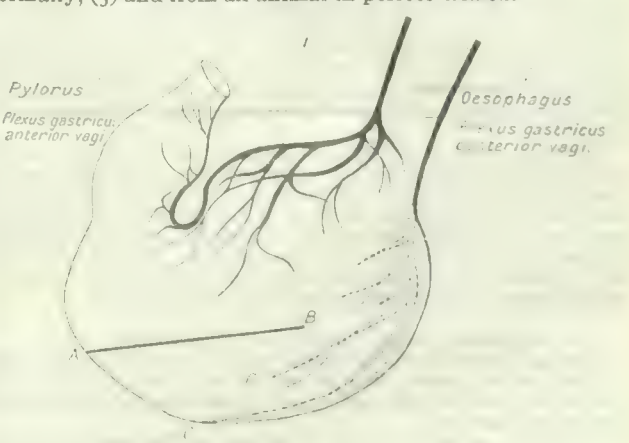


Fig. 1.—A, B, line of incision; C, flap for forming stomach pouch of Pawlow.

Pawlow's Improvements.

Pawlow achieved these desirable ends by an improvement of the old method, in which a partially isolated portion of the fundus of the stomach was converted into a little pouch which retained its nervous and vascular connections, and whose mouth was led to an aperture in the abdominal wall. The deeper end of the pouch, as well as the opening into the main portion of the stomach, were securely closed. By the application of rigid aseptic principles of surgery, no trouble was experienced in securing rapid and complete recovery of the animals. By means of a glass tube perforated with numerous small apertures, and led into the pouch, gastric juice of the purest quality could then be collected in almost any desired quantity. Figs. 1 and 2 give diagrammatic representations of the way in which this pouch is formed.



Fig. 2.—V, cavity of stomach; S, Pawlow's pouch; A, A, abdominal wall.

Some of the Results.

The first interesting fact confirmed by this method was that no secretion whatever occurs when the animal is fasting, but that a copious flow of juice can be set up by the mere act of chewing and swallowing food. This flow commences after a latent period of about five minutes has elapsed, never less than four and a half minutes, and is not due to the entry of food into the larger stomach. The latter was proved in an ingenious way—namely, by making an opening into the œsophagus in the neck, dividing the tube, and causing both ends to heal to the edges of the surface wound. After recovery the animal could be made to chew and swallow food as before, but the food came out at the opening in the neck, and unless specially led into the lower segment of the œsophagus, did not enter the stomach.

It was then seen that this "make-believe feeding" caused precisely the same secretion of gastric juice, and that the flow could be kept up as long as the animal continued to chew and swallow. Another modification of the method consisted in making the œsophagotomy as described, together with an ordinary fistula leading into the stomach. The juice excited by "make-believe feeding" could thus be collected from the whole organ, and not alone from a shut-off segment.

Queries which Pawlow set out to Answer.

Having secured an admirable means of studying the work of the gastric glands, Pawlow set out to answer the following amongst numerous other interesting questions relative to their functional activity:

1. Is the amount of juice secreted by the stomach in any way proportioned to the quantity of food eaten?
2. What is the way in which the juice is poured out? Is all or most of it discharged in one gush at the beginning of digestion, as soon as the meal is partaken of, or on the contrary by degrees, and in declining quantities suitable to the gradual digestion and removal of dissolved food from the organ?
3. Does the digestive power of the juice—the amount of pepsin which it contains—vary in any way with the different phases of digestion, or is it constant throughout?
4. Has the nature of the food any influence on the quality of the juice; or are the gastric glands in any way able to adapt themselves to the kind of food presented them for digestion?

The answers to these questions, with some of the evidence, I shall endeavour to present to you seriatim, and in as few words as possible.

Relation Between Amount of Food and Quantity of Juice.

Taking the first question as to whether there is any quantitative relation between the juice secreted and the amount of food partaken of; the facts on which the answer is based are shown you in the following table;

Table I.—*Relation between the Quantity of Gastric Juice secreted and the Amount of Food taken.*

Flesh diet	100 grams	=	26 c.cm.	Juice
	200 ,,	=	40 ,,	
	400 ,,	=	106 ,,	
Mixed diet... ...	300 c.cm. milk, 50 grams flesh, 50 grams bread	=	42 ,,	,,
,, ...	Double the above quantities	=	83.2 ,,	,,

The figures are taken from experiments in which a dog was "make-believe" fed with varying quantities, in the first instance, of a flesh diet, and in the second of a mixed one, the juice being collected from the whole stomach. On looking at these you will see that the chewing of 100 grams flesh caused a flow of 26 c.cm. of juice, of 400 grams almost exactly four times that amount. Again a given quantity of mixed diet produced a secretion of 42 c.cm., double that amount gave rise to almost precisely double the quantity of juice. The gastric glands therefore work in health with the greatest precision, apportioning their labour with beautiful exactness to the magnitude of the task before them. Increase the unit mass of any food by a given multiple, and within ordinary limits, the glands will respond with a like increase of gastric juice.

Curve of Secretion of Gastric Juice.

Next comes the answer to the question relating to the manner in which the secretion of juice is spread out over the whole period of digestion.

The reply is taken from figures yielded by two experiments in which a dog was twice fed with 100 grams of flesh each time, the amount of juice poured out by the stomach pouch being measured hour by hour.

Table II.—*Hourly Rate of Secretion of Gastric Juice (Two Experiments; Dog Fed with 100 grams Flesh in each).*

	Experiment 1.	Experiment 2.
Hour 1	11.2 c.cm.	12.6 c.cm.
,, 2	8.2 ,,	8.0 ,,
,, 3	4.0 ,,	2.2 ,,
,, 4	1.9 ,,	1.1 ,,
,, 5	0.1 ,,	1 drop
Total ...	25.4 ,,	23.9 c.cm.

Here you will see that the greatest secretion occurs during the early periods of digestion, out that the juice continues to be discharged in declining quantity as long as any food remains to be dealt with. The glands, therefore, do not pour out all their fluid at once and leave matters to themselves, but "stand by," paying out more and more with strict economy as long as the needs of the case demand, and the same result repeats itself with stereotyped exactness, as often as the same conditions are fulfilled. The course, therefore, which gastric secretion runs, follows definite and purposive laws, and is by no means a matter of blind chance. Fig. 3 represents in curve form the facts given in Table II.

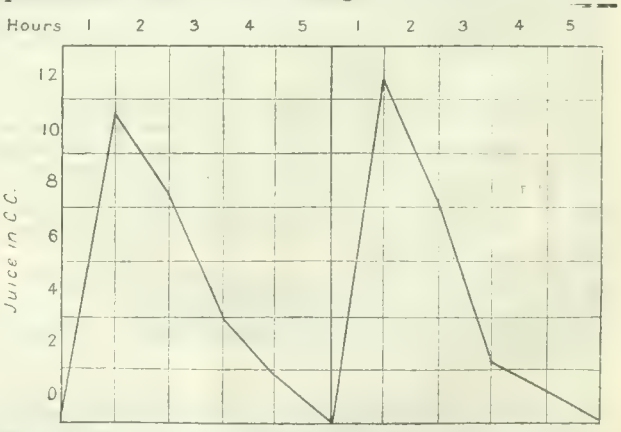


Fig. 3.—Curve of secretion of gastric juice after a meal of flesh. (Two experiments).

Digestive Power Varies with Stage of Digestion.

And now comes the reply to the third query. If the glands are thus capable of varying their rate of secretion in so remarkable a manner, according to the needs of digestion, are they not likewise able to extend similar variations to the digestive power—the pepsin content—of the juice which they secrete? I speak only of pepsin content because Pawlow has shown that the acidity of the juice, as it pours from the glands, is always constant and varies only because it comes into contact with more or less of an alkaline mucus, which latter in health should not be present.

The digestive power of the juice was determined by causing it to act on short columns of coagulated eggwhite, contained in capillary glass tubes broken into small pieces. The length of column dissolved gives a reliable means of measuring the activity of the juice. The results obtained from two experiments on a dog fed each time with 400 grams of flesh are given below:

Table III.—*Digestive Power of Gastric Juice (Quantity of Pepsin) at Different Stages of Digestion (Two Experiments; Dog fed with 400 grams of Flesh).*

	Experiment 1.	Experiment 2.
Hour 1	6.0 mm.	5.8 mm.
,, 2	4.5 ,,	4.1 ,,
,, 3	3.4 ,,	3.4 ,,
,, 4	3.5 ,,	3.0 ,,
,, 5	3.8 ,,	3.8 ,,
,, 6	3.0 ,,	3.1 ,,
,, 7	3.6 ,,	3.5 ,,
,, 8	3.9 ,,	4.5 ,,

You will see from these figures that the juice secreted at the beginning of the meal has, in the case before us, the greatest digestive power—that is, contains the most pepsin—when presumably it is most required, and that the proportion gradually declines as the need for it likewise decreases during the following stages. The glands then have also the power of varying the quantity of pepsin which they discharge in the juice according to the same laws by which they vary the total amount of secretion poured out. Fig. 4 illustrates the same in curve form.

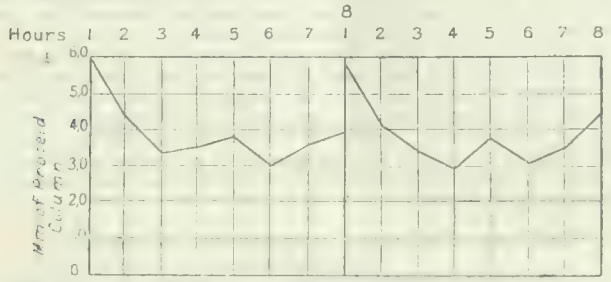


Fig. 4.—Curve showing digestive power of gastric juice hour by hour; food 400 grams flesh. (Two experiments).

So far then we find ourselves dealing with a mechanism whose adaptation to its work could not be more perfect nor more beautifully conceived.

Regulation of the Juice to the Nature of the Food.

But the fourth question is perhaps the most interesting of the whole in the series which I have selected. Has the nature of the food any influence on the quality or quantity of the juice? Are the glands capable of adapting their secretion to the kind of food presented them for digestion, and if so, how is this met?

The answer to the first part of the question is undoubtedly in the affirmative, the variations applying not only to the quality and quantity of the fluid, but likewise to the course and duration of its outflow. It would occupy too much time to quote all the experiments on which the facts are based, but these are the chief facts themselves.

Weight for weight the greatest amount of juice is poured out on flesh diet, the least on milk, bread being intermediate.

The total acidity is greatest with a flesh and lowest with a bread diet.

The digestive power—the pepsin content—is greatest with the juice poured out on bread, least on milk, the proportion being as follows: Bread-formed juice, 44; flesh-formed, 16: and milk-formed, 11. Milk, therefore, in agreement with what is known from everyday experience, makes least demands on the activity of the glands for its digestion.

Nor do the peculiarities end here. The manner in which the juice is secreted and the period at which it attains its maximum digestive power are likewise different for each class of food-stuff. This is exemplified in the following table:

Table IV.—*Influence of the Kind of Food on the Quantity and Quality of the Gastric Juice.*

	Quantity of Juice in c.cm.			Digestive Power in mm. of egg white.		
	Flesh.	Bread.	Milk.	Flesh.	Bread.	Milk.
Hour 1	11.22	10.6	4.0	4.94	6.10	4.21
,, 2	11.30	5.4	8.6	3.03	7.97	2.35
,, 3	7.60	4.0	9.2	3.01	7.51	2.35
,, 4	5.10	3.4	7.7	2.87	6.19	2.65
,, 5	2.80	3.3	4.0	3.20	5.29	4.63
,, 6	2.20	2.2	0.5	3.58	5.72	6.12
,, 7	1.20	2.6	—	2.25	5.48	—
,, 8	0.60	2.2	—	3.87	5.50	—

Quantities of Food—Flesh, 200 grams; Bread, 200 grams; Milk, 600 c.cm.

The time of maximum flow occurs therefore with a flesh diet either in the first or second hour, and both are nearly equal, with a bread diet in the first, and with a milk diet in the second hour. The period of maximum strength is reached in the first hour with flesh, in the second or third with bread, and towards the end of digestion with milk diet. Fig. 5 represents the curve of secretion of gastric juice on different diets, and Fig. 6 that of its digestive power at different stages under the same conditions.

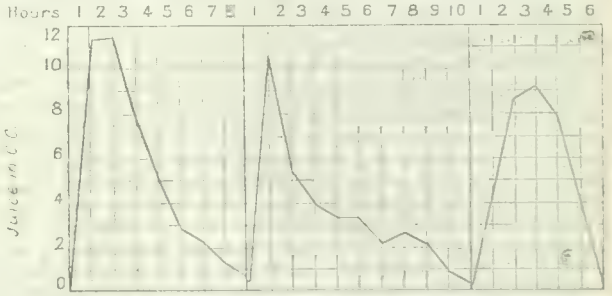


Fig. 5.—Curves of secretion of gastric juice with different diets.

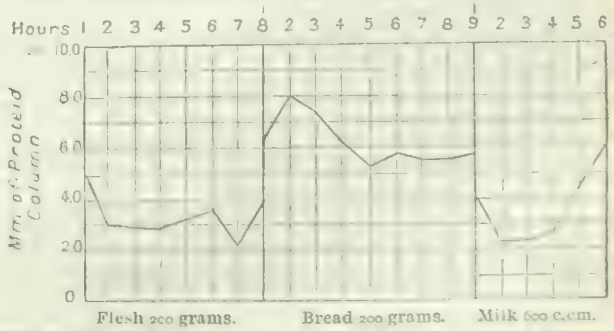


Fig. 6. Digestive power of gastric juice hour by hour on different diets.

Fixed Modifications of the Digestive Fluids to Suit Particular Diets.

Intimately connected with the foregoing is a further important question, namely, whether the digestive system is capable of permanently adapting itself to a special form of diet or not. Thus, given a continued preponderance, say of proteid in the diet, with a paucity of fat and carbohydrate, or on the other hand, a more than usual proportion of carbohydrate, with a scarcity of fat or proteid, or lastly an undue amount of fat:

what power have the digestive organs of meeting these possibilities? The answer is that a condition is gradually established whereby a steady increase takes place in the amount of special ferment which is necessary to meet the requirements of the particular diet, while at the same time a decrease in those which are superfluous sets in. Such adaptation is, however, not accomplished through the gastric glands but by means of the pancreas. The main importance of the matter lies in the fact that once having established a dietic adaptation of secretion, it cannot be undone in a day. Great alterations in a dietary, therefore, even when urgently demanded, can only be advantageously introduced by degrees.

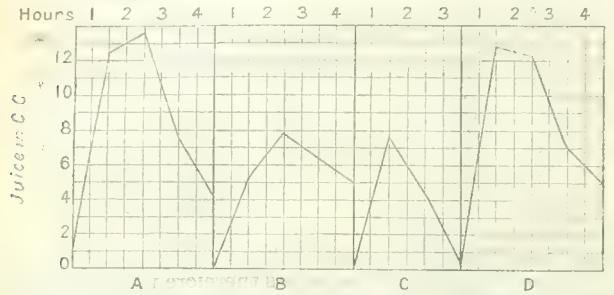


Fig. 7.—A, ordinary curve of gastric secretion, 200 grams flesh; B, curve from direct introduction of food, 150 grams flesh; C, curve from "make-believe" feeding with same; D, summation of B and C.

Flow of Juice from "Make-Believe Feeding."

And now one point more, before I leave the results which I have selected from this admirable series of researches. It is I think perhaps the neatest determination made in the whole set of experiments. This is no other than an actual estimation of the value of the combined act of chewing and swallowing in terms of gastric juice.

In establishing the fixed rate of secretion, for the whole act of digesting a particular meal (which as a matter of fact under like conditions has been found to be always the same) we have determined the value of chewing and swallowing, *plus* the further exciting effect of the food after it enters the stomach. But we can estimate the value of these two factors separately, that of chewing and swallowing, in the way I have explained to you, by receiving the food from an opening in the œsophagus and not allowing it to enter the stomach. The other factor is known if we bring the same meal directly into the main stomach of the animal through an ordinary gastric fistula, and observe its effects on the secretion as shown by the stomach pouch. Food introduced in this manner is not nearly so powerful an excitant of juice flow as when it enters in the usual way. But the curious fact comes out that the sum total of the "make-believe-feeding" or swallowing juice, *plus* that caused by the mere introduction of food is exactly equal to that of the whole meal swallowed and digested in the ordinary way. Thus by having any two of the foregoing factors, we can readily determine the third, and in this way we learn that the whole of the earlier part of the secretion is an accompaniment of the act of chewing and swallowing, and not at all dependent on the mere entry of food into the stomach.

Now this "make-believe" juice, if we may so call it for shortness, is not only copious in amount, but of a very active character. It constitutes therefore a most important part of the whole. But although an accompaniment and apparently caused by these combined events, it is not really so.

Value of Appetite in causing Secretion.

The same secretion can be excited by the mere sight of food, accompanied by an eager desire on the part of a hungry animal to have it. This implies that the food is such as will excite this keen desire, and without it the chewing and swallowing are wholly ineffective. Everything therefore which aids in creating the desire for food and in augmenting the satisfaction of having it has its material value in an increased flow of the best and most active gastric juice. Hence the importance of set preliminaries to the chief meal of the day. The customary ablutions, the change of raiment, the dismissal from the mind of business anxieties, the table decorations, the plan of the meal, the savoury odours, and, last but not least, the expectation of finding an appetising repast, these are all matters of moment and have their fixed values in terms of active gastric juice.

Need for Chemical Work in Clinical Research.

I may now return to the query with which I left off—regarding the application of physiological methods to the study of disease.

It would be ungracious of me to find fault in any way with the excellent clinical work done in this country, even if I possessed the authority or had the wish to do so. That is not my purpose. I wish rather to indicate a line of work which might, I think, be more cultivated, and which I believe has great possibilities connected with it. It is work which will necessitate a considerable expenditure of time and trouble, but these considerations must not stand as serious obstacles in one's path when the end in view is important. The line of work to which I refer consists in the fuller application of the methods of chemical physiology to clinical work.

Some years ago a means of examining the contents of the human stomach was perfected by Ewald. This consists in the introduction of a soft tube at a given time after a test meal whereby the contents can be siphoned off or expressed out of the organ. The method necessitates a careful chemical examination of the juice obtained, and, when this is done, I am told it yields information of the most valuable kind regarding disease, which cannot be obtained in any other way. But is this method, which I think I may call a physiological one, adopted with sufficient frequency in our country? Are the chemical examinations which it entails carried out with sufficient thoroughness?

Again, in the majority of departures from health, the importance of quantitative variations in the composition of the chief excreta of the body outweighs in value the qualitative. And yet, are quantitative chemical determinations of these ingredients carried out to the extent, and with the degree of precision which their importance demands? Nay, more, are the means for such examinations adequately supplied by the numerous great institutions devoted to the treatment of disease throughout our country?

Further, it must often be almost imperative in such perverted conditions of body metabolism, as one meets with in the various kinds of diabetes, of leucocythæmia, of Addison's disease, in obscure fevers, aye, even in ordinary fevers, to possess a complete picture of the whole metabolism from beginning to end, from the ingesta to the egesta. It is only by thus seriously grappling with such problems that real progress can be achieved.

Need for Chemical Laboratories as Hospital Departments.

And yet what clinical hospital in our land is adequately equipped to afford its staff the necessary amenities for carrying out such a series of investigations? I do not imply that there are no facilities for such work, but they are all too few, and the laboratories are not, as they should be, integral parts of every large hospital, just as much as well-equipped operating theatres are at the present time. That it is by no means impossible to carry out such a scheme is shown by the fact that it is adopted, for example, in the Johns Hopkins Hospital in Baltimore, and in many of the clinics in Germany.

Chemistry in the Medical Curriculum.

And now I think I come to the kernel of the whole matter. Is the training which our medical students for the most part receive, in the subject of chemistry carried out along lines that will enable them to meet such conditions as I have indicated in the later stages of the curriculum and in after-life? Are our young medical men afforded sufficient opportunity and encouragement to draw them into such fields of inquiry?

The education of our students in this branch of science—I say it with all humility—has not, to my mind, received the attention which it deserves. Till very recently, it was quite the exception for examining bodies, university or other, to require any knowledge, however elementary, of quantitative chemical analysis, and even now there are, so far as I know, only two which insist upon it.

Our students are well versed in the detection of the ingre-

dients of simple and complex chemical mixtures, many of which contain metallic elements never normally found in the human body, or likely to occur in it as poisons. But the important practical matter of quantitative estimation has been wholly omitted, and with it the invaluable training in experimental methods of precision which even a short course of this work entails. Nor has it been found impossible by those who have tried it to graft such a course of instruction on to the old scheme, by omitting here a little and there a little of unnecessary or less useful work, without prolonging the time which a student ordinarily devotes to practical chemistry.

As an indication of the necessity for alteration in the direction I suggest, I have often mentioned the fact that quite a small number of students, when they come to work at physiological chemistry, know the meaning of the simple word "titration," and curiously enough I have found my remarks very forcibly borne out by discovering not long since, in an otherwise excellent translation of an important German medical work, that this same word is all through the book rendered by the English word "trituration."

But I do not wish to lay the blame entirely at the door of the chemists. The same accusation till comparatively recently held good against the physiologists, with this difference as I think, that these latter have more quickly appreciated the requirements of the case, and have striven as far as possible under present conditions to meet them. Behind both sets of teachers however lies the Council of General Medical Education, which has not awakened to its responsibilities in this matter.

Need for Post Graduate Research Scholarships.

Such arrangements and possible legislation as I have foreshadowed can, however, only be designed to meet the needs of the average student. For specialisation and also for research the young medical man must obtain a fuller training. How is this to be acquired when as a rule he is under the necessity of toiling hard to earn a living? Well, a good deal can always be done by an earnest worker in the unoccupied hours with which the young practitioner is usually blessed.

But the progress of medicine should not be left to take its chance in this haphazard fashion. Hitherto money prizes and scholarships have been almost exclusively applied to other and perhaps very desirable objects. It cannot, however, be too quickly recognised by those able and willing to promote the advancement of medical knowledge that here is a field most deserving of support from which an urgent appeal for assistance is now issuing throughout the length and breadth of the land.

Need for more Well-equipped Laboratories.

But even these provisions will not fully meet the needs of the case. Achievements such as I have exemplified in the case of one department of the St. Petersburg Institute are only possible by the aid of combined work. For this purpose well equipped and fully-manned laboratories must be provided by some means or other, and all honour be to such men as Lord Iveagh, Mr. Thompson-Yates, Mr. R. G. Dunville, and others who have nobly come forward with their wealth to aid in this work. Philanthropists of this type are, however, far too few. Nor should the cause be left entirely in their hands. The Government of our great empire, which has hitherto shown too little sympathy with such aspirations, must awaken to its duties in this respect if our country is to take the place which its responsibilities impose upon it in the advancement of a great, noble, and humane science.

Meanwhile we must each and all of us do what little we can, and "be satisfied with success in even the smallest matter, and think that even such a result is no trifle."

Medical Students in Germany and Switzerland.—In the last (summer) semester the number of students of medicine in the universities of Germany and Switzerland were as follows: Munich, 1,421; Berlin, 1,067; Vienna, 1,033; Leipzig, 561; Würzburg, 549; Freiburg, 509; Berne, 343; Graz, 340; Erlangen, 331; Strassburg, 315; Zürich, 315; Bonn, 306; Geneva, 305; Heidelberg, 301; Giessen, 293; Tübingen, 297; Greifswald, 275; Breslau, 245; Königsberg, 246; Marburg, 239; Innsbruck, 234; Halle, 215; Göttingen, 213; Jena, 188; Kiel, 185; Lausanne, 160; and Rostock, 124.

AN ADDRESS
ON
SOME OF THE SEQUELÆ OF CRANIAL INJURIES.

Delivered at the Annual General Meeting of the Shropshire and Mid-Wales Branch of the British Medical Association.

By ERNEST TREDINNICK, L.R.C.P.Ed., M.R.C.S.Eng.,
Craven Arms, Salop; President of the Branch.

It is a most difficult matter for a country practitioner to keep notes of cases passing through his hands, even if he limit his note taking to the most interesting. The cases, indeed, which prove of most interest in their termination are often the least so at the commencement. My own notes of the past twenty-three years are scattered, but the facts that a large number of cases of cranial injuries have been under my own care, and that cases in which a fall from a horse, a carriage accident, a blow on the head, each produced some different brain lesion, have induced me to collect from other sources histories of cases of cranial injury followed by epilepsy, moral perversion, diabetes, and insanity.

I have collected as many cases as possible from unassailable sources, with their complete histories, and then deduced as well as I could those facts that should be useful in prognosis. The cases have been collected without any reference to the seat of injury, my only request being for cases of cranial injuries resulting in epilepsy, diabetes, or insanity, all of which except insanity I have personally met with. I shall preface each series with a short history of a case that has come under my own care.

The first series of cases are of a most interesting nature, as they are all the result of frontal injuries, and represent a condition that is most difficult of treatment, and consequently of prognosis. These cases were collected, like the rest of the series, with no reference to the seat of injury. The following are six cases of moral perversion following injuries to the head:

Case I.—A young married woman, with one child, was thrown out of her trap on to the frontal eminence. She was unconscious for six days, and very frightened for many months after. She then developed nymphomania, and took a violent dislike to her own people, but was otherwise sane. This condition lasted many months, but was eventually overcome by travelling, and she is now as devoted to her husband and child as ever.

Case II.—A boy, aged 12, suffered a depressed fracture of the frontal bone. No operation was performed. Prior to the accident he had a most exemplary character both at home and at school. On getting up he took to stealing things of all descriptions, useless or otherwise, and would hide them. Previously good tempered he became irritable, with violent outbursts of temper.

Case III.—A girl, aged 10, previous to sustaining a compound depressed fracture of the frontal bone, had been bright and sharp. There were no symptoms of concussion. An operation was performed and the fragments raised. This child was afterwards idle, untrustworthy, destructive, untruthful, and took to stealing.

Case IV.—A boy, aged 12, suffered a depressed fracture of the frontal bone with hernia cerebri. He had epileptic fits for five months afterwards, then his character altered, and he developed stealing propensities.

Case V.—A man, aged 35, with no family history of mental disorder, received a very severe blow on the left frontal region. The outer table was fractured, and he was unconscious for a quarter of an hour. He was not again rational until his removal to an asylum. So-called cerebral irritation set in, he was incoherent and confused, also acutely maniacal and destructive. He recovered gradually.

Case VI.—A man, aged 56, with no family history of mental disorder, sustained a fracture of the frontal bone by a kick from a horse. He was unconscious for one hour, and then began to wander about, became threatening, refused his food, and developed mania. He went to an asylum, and in five months was discharged cured. No operation was performed.

These cases are noteworthy, as all resulted from blows over the psychic area.

Traumatic Dementia.

The second series of cases, those of traumatic dementia, are extremely difficult to discuss as the histories are not complete. My idea being to get the region of the cranial injury, and I must make the best out of the material provided.

Case VII.—Skull injury; region not stated. Mania.

Case VIII.—Fractured skull; some months later cephalagia, *petit mal*, and *grande mal*. He killed his wife and shot himself. He recovered from this wound, but afterwards cut his throat.

Case IX.—Cranial injury, followed by severe headache. He became insane, and killed his wife.

Case x.—Fell down a hatchway and fractured the parietal bone. Became eccentric. He spent his money, went to gaol, then to the asylum, and attempted suicide.

Case xi.—A kick from a horse, fractured the left mastoid process. He became maniacal, and went to an asylum, where he recovered some time afterwards.

Case xii.—A man fell on his head. He was unconscious for three days. He became maniacal, was for three months in an asylum, and then recovered.

Case xiii.—Occipital injury. Unconscious for twenty-four hours; then became insane. Went to the asylum, recovered in one year.

Case xiv.—Compound comminuted fracture of parietal bone, running forwards; trephined. Mania for some weeks after. Several small pieces of bone exfoliated, and were removed. He recovered.

Diabetes after Head Injury.

The next series of sequelæ of cranial injuries are cases of diabetes, and I preface this portion of my paper with the history of one of my own patients, more especially interesting because the Accidental Insurance Company, in which he was assured, demurred to paying the claim, and he was referred to three medical men, one of whom said traumatic diabetes was unknown. However, his claim was paid, and I regret to say that he is still suffering from diabetes.

Case xv.—T. C. C., aged 30, on February 17th, 1897, running up some steps caught his head against an iron beam supporting a flap doorway. At the present time, 1900, a ridge is still to be felt, 1½ inch long, running transversely to the interparietal suture about midway. The skin was not broken. He was not unconscious at the time, but saw stars. The next day he had a sort of fainting attack, and became unconscious for a short time. He had been walking about all day, but did not feel well. Two days after the quantity of urine passed increased, and has continued excessive ever since and loaded with sugar. He was perfectly well before the accident, his weight being 12 st. 8 lbs. He lost 2 st. 8 lbs. in a month. He had lightning pains down the legs on December 4th, and these increased to acute tetanus with opisthotonos, risus sardonicus, and very acute contractions of the flexor muscles generally. Morphine (⅛ gr.) was administered hypodermically, and chloral hydrate (90 grs.) by the mouth, with no effect. He was put under chloroform, with short intervals, for four hours. The tetanic attacks lasted, with periods of intermission, until December 31st, chloroform being administered when the tetanus was most severe. In June, 1900, the urine had decreased considerably (from 18 pints to as little as 5 pints), but was loaded with sugar; specific gravity 1048 to 1025. He had taken 9 grs. of solid opium daily with chloral every since December, 1897, and had also had antipyrin occasionally, and had certainly improved. In September, 1900, it was noted that he had been taking cider regularly and eating fruit, and there was considerable irritability, with an increase in the amount of urine.

The statements of the following well-known writers on diabetes are worth quoting: Tyson says that, accepting trauma as a cause of diabetes, our knowledge of its origin is not precise. Griesenger found that 13 out of 225 diabetic cases were of traumatic origin. Senator states that traumatic diabetes makes its appearance in a few hours or days, rarely later; but Berkstein Cohen asserts that if the sugar appears earlier the case is usually mild; if later severe, and rapidly fatal. According to Richard glycosuria occurs after all forms of cranial injury; if sugar is carefully sought for it is found. Lanceraux believes that glycosuria following traumatism is much less severe than other varieties.

Drs. Higgins and J. B. Ogden found in their collection of 212 cases of cranial injury that 50 per cent suffered from diabetes, and they came to the conclusion that sugar might appear as early as six hours after injury. In 22 of their cases the injury was situated—11 on the right side of head, 5 on the left, in 3 it was occipital, and in 2 there was no external evidence of injury.

In my own collection of 10 cases, not counting that recorded above, the injuries were: 1 fractured base, 1 came heavily on to his feet unexpectedly on to a low-level platform, 3 parietal, 2 occipital, 1 vertex, 1 kicked—no region given. Diabetes death. One frontal. For these no operation was performed. Results found at the necropsies of several were that the floor of the fourth ventricle had a ground-glass appearance such as is seen in the ependyma in general paralysis.

These go to prove that the seat of the external injury has nothing to do with the resulting diabetes, but that in all cases of cranial injury the urine should be examined regularly for some weeks after the injury. After the lapse of three years the suggestion of the traumatic origin of diabetes should be received with great doubt. The symptomatology of the idiopathic and traumatic forms is identical. There are two forms of traumatic diabetes—permanent and transient. The latter usually appears soon after the accident; the former some time after up to three years.

Yearsley states that in diabetes associated with mastoid disease trephining is indicated.

Epileptic Attacks following Cranial Injury.

I preface this series also with one of my own cases:

Case xvi.—C., aged 13, was hit by a schoolmaster across the posterior superior angle of the left parietal bone with a cane in April. A month after he was said to have fainted in church, in another fortnight the same thing occurred. In October he developed epileptic fits, which steadily increased in number until in the twenty-four hours they numbered as many as 70. He was under treatment till May, and was then taken to St. Mary's Hospital for operation. The operation was done by Mr. Page. For two days after he had slight fits but none since. The inner table was thickened and the dura mater redder than normal. The brain was freely punctured with a trocar and cannula with no result. He made a complete recovery.

In a list of 45 cases collected from many sources without any suggestion from me as to the seat of injury, there must necessarily be some deductions to be made which should be of utility and interest.

Age of Patient and Nature of Injury.—The age ranged from 6 months to 45 years, varving in intensity of injury from laceration of brain substance and hernia cerebri to a simple concussion. I find that the injury was in 33 cases parietal, in 8 frontal, in 2 mastoid, in 1 vertex, and in 1 occipital. These figures are the more interesting as we know through the researches of Horsley, Séquard, and Ferrier, and other brain specialists, that the motor area lies principally in the parietal region with a small portion under the longitudinal convolution of the frontal, and it has been asserted that it is not necessary to locate the seat of injury for epilepsy.

Duration of Unconsciousness.—I have, to make the histories more complete, noted the duration of unconsciousness supervening—that unconsciousness which makes the friends so anxious as to its intimate relationship with the injury and its effects on the future of the patient. In a case in which I called to my aid the late Sir James Paget in consultation, the unconsciousness had lasted three days, and there seemed no means of judging how much longer it might last. He gave it as his opinion that, other things being equal, a certain amount of unconsciousness was good for the patient, as the shaken brain had time more or less to recover, that condition of unconsciousness being for the brain something akin to what a splint would be to an injured limb. The unconsciousness in these 46 cases has ranged from a few minutes to 4 days, 7 days, even to 32 days, a period sufficiently long to alarm the most sanguine of surgeons. In all the cases of lengthened unconsciousness the patient recovered. The average duration will be found to be between 3 and 4 days.

Period after Injury before Occurrence of Fits.—The next point of interest is the length of time elapsing after the injury before the occurrence of fits or convulsions. Here, again, great difference in time is shown, from immediately after the accident to 11 years. That the fits were due to the accident may, I think, be accepted when it can be shown that the operation of trephining was successful in a large number of cases. Amongst the fairly long periods elapsing before the occurrence of fits are: 14, 4, 15, 17, 9, 3½, 4, 2, 5, 5 years.

Treatment.—It now remains to be seen what was done for the improvement of these cases; 24 of the cases in which the injury was parietal were operated on; in 1 with no result, in 1 fits recurred, in 1 one fit a year occurred, in 1 there was partial recovery, 3 died; all the rest made complete recoveries. Of 9 of injury to the parietal region which were not operated on, 5 died, 1 was cured, and in 3 the fits continued. Seven cases in which the injury was frontal were operated on; 4 recovered, 1 improved, but died; 1 died; 1 was treated with potassium bromide, but died; one not operated on died. Of the cases in which the injury was in the mastoid region, 1 operated on had no fits for two years, and then had two; in 1 in whom no operation was performed improvement took place; 2 cases in which the injury was to the vertex were both operated on, and both recovered; 1 case in which the injury was in the occipital was not operated on and recovered.

These cases, I think, go to prove the value of trephining for epilepsy when an injury has occurred to the cranium, and in old cases of epileptic convulsions, it would be wise to examine the cranium carefully, and if any old scar be found an operation is more to be desired than dreaded. The length of unconsciousness does not seem to influence the intensity of the fits nor the result of the trephining.

An institute for the treatment of disease by means of sun baths has been organised in Strelau, near Berlin.

A CASE OF NEURITIS OF POSTERIOR ROOTS: PRE-ATAXIC STAGE OF TABES DORSALIS?

By W. B. RANSOM, M.A., M.D., F.R.C.P.,
Physician to the General Hospital, Nottingham.

The following case is of interest from its unusual group of symptoms and its diagnostic difficulties:

P. R., a man, aged 44, was first seen by me in consultation with Dr. Tresidder, on March 10th, 1898, on account of attacks of intense darting pain in the left hypochondrium.

History.—The patient, a fitter by trade, said to be an unusually intelligent workman, had been healthy until the present illness, which began about a year previously. For the last three years he had been practically teetotal, though some years ago he had drank freely of beer. He denied venereal disease, but his wife had had five miscarriages and two live children. His father had died of a stroke, his mother of cancer.



Fig. 1.—Nearly normal right root.

Present Illness.—The present illness had commenced gradually with attacks of sharp stabbing pain about the left hypochondrium and left half of the epigastric region. The attacks, which had no relation to food, exertion, or any other obvious external agent, had increased in frequency and severity, and of late he had become very irritable, suspicious, and at times depressed, threatening suicide. The memory appeared good, there were no delusions, and he had no headache or other pains. Speech was normal, and there had been no sickness. He said there were often muscular twitchings in the area of pain. His wife said he walked well as a rule, only occasionally being a little unsteady in his gait. Sexual power was said to be normal, as were the sphincters. Dr. Tresidder had found his knee-jerks present a few weeks previously, but on the day of my visit we could not obtain them. The pupils were pin-point and did not react to light. There was no nystagmus, no paralysis of cranial or spinal nerves, and no hyperæsthesia. Sensation was everywhere normal except for a small patch of slight tactile anæsthesia near the edge of the ribs in the left half of the epigastrium. The possibility of there being a tumour in the spinal canal was discussed, and as the attacks continued frequent both day and night, he was admitted into hospital on March 26th.

Condition in March, 1898.—The note of March 27th confirms most of the above statements, adding that he appears of average intelligence, and is not unduly emotional. Pupils are pin-point, react to accommodation but not to light. Gait normal; Romberg's symptom absent. Right knee jerk absent, left well marked. No ankle or rectus clonus. No muscular paralysis or wasting. The fundi were normal except for a small patch of choroiditis in the right eye. There was no anæsthesia or analgesia except a patch of tactile anæsthesia about the size of a penny to the left of the epigastrium in the area of the eighth dorsal nerve. This is the spot of the intense stabbing pains, which, however, radiate somewhat. When the attack of pain comes on, contractions of the fibres of the rectus muscle under this spot are sometimes seen. A very slight and partial anæsthesia was occasionally noted in the corresponding spot on the right side of the epigastrium, and also at the back close to the spine, in the zone of the left eighth dorsal nerve. Sphincters normal; special senses normal; thoracic and abdominal viscera normal.

The patient was kept in hospital under close observation until the end of April, mercury and potassium iodide being vigorously pushed. He had come in at his own request with the view of being relieved by operation, for which he seemed remarkably anxious. The uncertainty of the diagnosis, combined with a sense of the gravity of operations on the spinal canal, made us very loth to resort to surgery until all other means of treatment had been exhausted. It was felt that while the anæsthesia, pains, and twitchings might possibly be due to a growth or chronic meningeal inflammation implicating the region of the eighth dorsal posterior roots, yet there was as yet no confirmatory evidence from paralysis or spasm of the legs of such a growth or inflammation, and it was also felt that certain symptoms, such as the Argyll-Robertson pupils and the absence of one knee-jerk, suggested the probable onset of a more extensive spinal lesion, such as the posterior sclerosis of locomotor ataxy. On this view the pains would be early "lightning pains," and might be expected to spread. Moreover, the alleged mental peculiarities of irritability and suspicion suggested also a cerebral degeneration such as general paralysis of the insane. However, during this stay in hospital the patient's condition hardly changed.



Fig. 2.—Atrophied left root.

The attacks of pain recurred with great frequency, often several times a day, and he would sometimes have repeated spasms of pain and twitching, each of some seconds' duration, for twelve hours together. Injections of morphine had to be used, but the nurses remarked that he often seemed to be sleeping well at night although next morning he declared he had been racked with pain.

During May he continued specific treatment as an out-patient, but on readmission in June he said the pain was so bad that life was not worth living. There was still no ataxy, the left knee-jerk was lively but the right absent, and the patches of anæsthesia were unchanged. The patch in the left half of the epigastrium could always be demonstrated, but that in the left eighth dorsal area behind was often not found, while that in the right epigastrium was very doubtful.

I now came to the conclusion that the diagnosis of tumour was extremely improbable, but that there probably was neuritis of some posterior roots, affecting mainly the eighth dorsal on the left side, and to a very slight extent the same root on the right.

This condition was obviously compatible with commencing tabes dorsalis or general paralysis of the insane. As operation was therefore not likely to cure the disease, but at most to palliate the pain, I counselled the patient to wait yet longer, and to persevere with specific treatment.

Condition in November, 1898.—In November the patient returned, clamouring to be relieved of his pain at any cost. His memory seemed good and his intellect fair, but he was very restless and excited about operation. His wife said he had been very passionate, and always swearing. The objective signs were unchanged, except that the anæsthetic areas were more distinct. Thus that in the left half of the epigastric region now stretched for 4 inches towards the axilla; partial anæsthesia could be detected in the right half on a patch the size of a penny, and on the left half there was a patch of the same size opposite the sixth dorsal spine. The pain was still referred mainly to the anæsthetic area in the left half of the epigastrium, but was said now to occasionally shoot round to the right as well, so that he felt as if constricted by a rope.

I should say that between June and November the patient had gone into the surgical wards in order to have an operation, but that Mr. Anderson had hesitated to undertake one.

Operation.—However, Mr. Anderson and I consulted on the case, and thought that section of one or more roots might relieve his sufferings if it could not cure the disease. The serious nature of the operation having, therefore, been fully explained both to the patient and his family, on November 26th Mr. Anderson did a laminectomy and exposed the cord at the level of the sixth, seventh, and eighth dorsal roots. Nothing abnormal was seen on the cord or its membranes, but the eighth left posterior root was distinctly thicker than the others. Pieces were cut out from the seventh and eighth roots on both sides, those from the eighth roots being placed in osmic acid for microscopical examination. The result of the operation was not satisfactory, as, in spite of antiseptic syringing, pus formed in the wound, fever set in, and six days later the patient died.

Necropsy.—The spinal cord showed no definite tracts of sclerosis, but there were diffuse patches of softening, especially near the site of operation. There was no tumour or meningeal thickening, except fresh granulations at the wound, and the remaining nerve roots looked healthy to the naked eye. On opening the skull, the dura mater was found to be tough and rather thick, and the pia arachnoid was thickened and opaque in patches. There were no other naked-eye changes.

Microscopical examination of the removed posterior roots showed excess of fibrous tissue and a great reduction in the number of nerve fibres in the left root, while in the right there was a very slight decrease of the normal fibres. (See photographs.)

Sections of the spinal cord stained by Weigert's method or by Delafield's hæmatoxylin were examined at various levels. All the anterior roots were found to be normal. In the lumbo-sacral region a posterior root on one side showed a few degenerate fibres, while that on the other was normal. The posterior columns here showed some quite recent softening, doubtless a sequel to the operation, but I think there was a very slight chronic sclerosis also in the postero-external columns.

In the lower dorsal region the roots on both sides were normal, and no distinct sclerosis was seen. About half an inch below the site of operation the root one side showed degenerate fibres, the others being healthy. At the level of the eighth dorsal nerve the cord was somewhat disorganised from recent softening. The posterior root on one side showed but few healthy fibres, on the other was nearly normal. At the level of the fourth cervical nerve the roots were absolutely healthy, and there appeared to be a very small amount of sclerosis in the postero-internal columns, though here, as elsewhere, the recent softening of the posterior surface of the cord obscured the picture.

Sections of the cerebellum and left occipital lobe showed no morbid changes.

Reviewing the case as a whole, I think we must conclude that the pathological process was closely akin to that of tabes dorsalis; but that instead of a degeneration of a large number of posterior roots in the lower part of the cord leading to posterior sclerosis, in this case only a very few were picked out, one especially—the left eighth dorsal—undergoing degeneration of nerve fibres with formation of fibrous tissue, the growth of which caused the intense pains and—reflexly—the contractions of the rectus muscle.

The diagnosis was thus fairly accurate, and we must regret that treatment was not more successful. It is, however, the general experience that the deep wound produced by laminectomy in a muscular man is difficult to keep aseptic, and I think it probable that deficient innervation may in this case have diminished the healing powers of the tissues, just as in cases of true tabes dorsalis the cutting of a corn may lead to a perforating ulcer.

The Prince of Wales's Hospital Fund.—In view of the falling-off in the financial support of the hospitals of London in consequence, it is surmised, of the war in South Africa, efforts are being made to augment the income of the Prince of Wales's Hospital Fund. The executive committee is issuing an appeal for subscriptions to the fund to counteract the effect of this falling off. It is suggested that in order to help the hospitals to continue their work at least £25,000 additional should be contributed before December 15th next. The sum available for distribution to hospitals in 1899 was £41,000 as compared with £32,500 in 1898, and £56,826 in 1897. Of the total amount accruing to the fund in 1899 £1,000 was received from the League of Mercy.

AN EPIDEMIC OF PERIPHERAL NEURITIS AMONGST BEER DRINKERS IN MANCHESTER AND DISTRICT.

By ERNEST SEPTIMUS REYNOLDS, M.D.Lond., F.R.C.P.,

Assistant Physician to the Manchester Royal Infirmary; Visiting Physician to the Manchester Workhouse Infirmary, Crumpsall.

We are only too well acquainted with so-called alcoholic peripheral neuritis in Manchester, but lately there has been such an extraordinary increase in the number of these cases among beer drinkers that there is in such people a veritable epidemic, the symptoms varying, however, as will be seen, from those generally present in alcoholic neuritis.

I began to notice about three months ago that a most unusual number of patients presenting themselves at the out-patient department of the Manchester Royal Infirmary complained of numbness and sensations, of "pins and needles" and burning in the hands and feet. Some of these I diagnosed as erythromelalgia, but others were apparently cases of alcoholic neuritis, with the typical tenderness of the muscles, together with motor weakness. At the same time I found in my medical wards at the Manchester Workhouse Infirmary a very large number of cases of "alcoholic neuritis." At last there could be no further doubt that a distinct epidemic existed, for besides several hundreds of cases which have been under my care I found that other observers, including medical men in Salford and surrounding districts (such as Heywood) had been struck with the frequency of these cases. Dr. Dreschfeld had noticed it, and had been struck with the peculiar pigmentation present; Dr. Williamson told me that nearly half of the patients in the out-patient department of the Ancoats Hospital, Manchester, showed signs of peripheral neuritis, and Dr. Brooke had remarked to me on the great frequency during the last three months of peculiar skin eruptions (described below) at the Manchester Skin Hospital. At my own out-patient department at the Manchester Royal Infirmary fully one-fourth of the cases have shown the symptoms, and though I have not been able at present to get the exact number who have been diagnosed as "alcoholic neuritis" during the last three months at the Manchester Workhouse Infirmary, yet the actual number present in hospital to-day (November 17th, 1900) in the acute wards only is 65 (35 women and 30 men) out of a total number of patients in these wards of 284 (104 women and 180 men). This is about 23 per cent. of the cases, 30 per cent. being women and 15 per cent. men. All these 65 are, of course, cases of so severe a character that they have had to be put to bed; they do not include any of the much more numerous milder types, who can be treated in an out-patient department.

Women are affected more frequently than men, and all the patients are beer or porter drinkers, some taking spirits also, but beer was invariably the favourite and usual beverage. Although it is difficult to get to know the exact amount of beer taken a day, yet I am convinced after careful inquiry that in some at least not more than four glasses a day have been consumed, though in others larger quantities had been taken. The beer taken by these patients has not come from any particular brewery, the names of five different brewers having been already given to me by patients as supplying their favourite drink; other patients drank any beer they could get irrespective of the brewery from whence it came.

Symptoms and Physical Signs.

In answer to the usual question, "What is the matter with you?" the out-patients have given such answers as "pains in the feet and hands," "tingling and feeling of pins and needles in the fingers and toes," "burning in the feet," "pains in the limbs, with loss of power in the legs and arms," "rashes on the body with much itching" (peculiar forms of erythema). I have also noticed during the last three months quite an unusual number of cases of herpes zoster, certainly more than we commonly see at this time of the year.

External Appearances.

The aspect of many of these patients is so typical that they can be diagnosed at sight. The face is puffy especially about the eyes; the eyes are suffused and watery, and the skin of the face is often dark coloured from pigmentation. The patients often rub the fingers together, and some walk into the room as if the feet were very sore; some of them, in more marked stages, have a typical "dropped foot" due to the paralysis of the anterior tibial muscles.

On examining the skin almost all show some pigmentation, sometimes of such an extreme degree that the whole of the skin is darkened to the tint of a mulatto. But in other cases the pigment spots are isolated in patches on the trunk and limbs, the spots being about the size of a large pinhead or of a hempseed, normal skin being present between; in other cases the pigmentation looks uniform, but on closer examination it is seen to be punctiform, each minute spot being round a hair follicle. Old pigment spots on the skin become very much darker, and wherever there has been pressure, such as round the neck, round the waist, and under the garters, there is a much darker ring of pigment. Many of the cases are just like Addison's disease in appearance, the armpits, the nipples and near the genitals being deeply pigmented. There is no pigmentation on the palms of the hands or soles of the feet.

The erythematous eruptions are very varied in character and accompanied by itching; sometimes there is an almost continuous scarlatiniform rash, but more often a measly rash, these rashes afterwards becoming covered with a scaly desquamation. Many present marked keratosis of the hands and feet, which is either uniform or in warty patches; in a few cases blisters had formed exactly like pemphigus (but containing darker contents), these blisters being succeeded by a scaly round patch. Two patients suffering from neuritis had herpes zoster.

I have already mentioned that very many of the cases presented signs of erythromelalgia or the "red neuralgia" of Weir Mitchell. This pain, redness, and swelling affects not only the soles of the feet, but also in many cases the palms of the hands; the pain was burning or tingling, the skin of the palms and soles was scarlet, and the parts glistened with moisture from the excessive sweating present; the odour of this sweat from the feet was sometimes intensely unpleasant. The burning of the feet was much intensified by heat, so that these patients could not sleep unless the feet were exposed outside the bed clothes.

Nervous System.

Although some of the worst cases suffered from the mental confusion with loss of memory of time and place so characteristic and common in ordinary cases of alcoholic paralysis, yet taking the cases as a whole the number suffering from mental confusion was less than in the same number of alcoholic paralytics.

The nature of the paralysis differed in only a few points from that usually seen in ordinary alcoholic cases. In some the symptoms were entirely sensory and vasomotor, and in all, these were more marked than in ordinary alcoholic paralysis. In others the hand grasp and power of the anterior tibial muscles were merely weakened; in more marked cases there was wrist drop and foot drop with "high stepping" gait. In the most marked cases the arms and legs were entirely paralysed and atrophied, and finally the trunk muscles and diaphragm became paralysed, and several of the patients, nearly all being women, have thus succumbed. Ataxic gait slightly marked has been more frequently seen than in alcoholic paralysis. The knee-jerks in the slightest cases are increased, but in the advanced cases are of course absent. I have not seen any paralysis of the cerebral nerves.

In most of the cases showing any motor weakness there has been great tenderness of the muscles on deep pressure, so marked that one can go round a ward and diagnose the nature of the case merely by grasping the leg muscles through the bed clothes and watching the sudden expression of pain on the patient's face, generally accompanied by a forcible ejaculation of, "Oh!"

Circulation.

In some of the cases there is failure of the heart muscle with the usual œdema of the feet and legs; the pulse is low tension, and rarely there is a soft mitral systolic murmur.

Respiration.

Besides the irritability and running of the eyes, many cases in the early stages have complained of running of the nose and of frontal headache; some of the patients have a "husky" voice, as pointed out by Dr. Sissons, one of my assistants at Crumpsall, and many have bronchitis.

Digestive System.

The tongue is often coated with a silvery "fur," and some gastric catarrh may be present. Sometimes there is stomatitis. In many cases there is persistent vomiting.

Temperature.

The temperature is often raised on admission to the hospital, and, if the paralysis is severe, it remains up for ten or more days. In the fatal cases it remained high—from 102° to 103° F. continuously—until death.

Commentary.

Before drawing any inferences it is as well to put down shortly certain undoubted facts:

1. There is present in Manchester and district a wide-spread epidemic of peripheral neuritis, either sensory, vasomotor, or motor, or all three combined, associated with running of the eyes and nose (in many cases) and marked lesions of the skin.
2. Such an epidemic has never occurred in this district for the last twenty-two years to my personal knowledge.
3. The disease is only met with in beer or porter drinkers.
4. It is somewhat like the ordinary "alcoholic" paralysis at first sight, but differs from it in the greater amount of sensory and vasomotor disturbance, and especially in the presence of the peculiar skin lesions which are not present in alcoholic paralysis.

So far as I know, there are only three causes of peripheral neuritis of the type mentioned above and associated with the marked tenderness on pressure of the muscles; these are beriberi, alcohol, and arsenic. But I think all will agree that beri-beri and alcohol will not explain the lesions of the skin. Against alcohol, also, is the fact that the features of this epidemic are something new, and that drinking of ordinary beer is not by any means a new thing in this district. We are thus reduced to arsenic as a cause of the symptoms, at any rate of the skin lesions, which in their multiform character can be explained by no known drug except arsenic.

Now, it would not only be alarming but highly illogical to state that there must be arsenic in the beer which has been consumed in this district for the last three months unless one had actually found the arsenic in the beer. At present I am conducting an analysis, but as the results are not yet complete, I have merely sent privately to the Editor of the Journal an account of what I have found. But at any rate we can logically conclude that the present epidemic is either due to arsenic in the beer or else that all the classical signs attributed to arsenic may be caused by some other substance. Until more investigations have been made—and I trust that competent chemists will take up the matter at once—one cannot go further in what is obviously a highly important matter.

Addendum.—On Sunday November 18th I found a considerable amount of arsenic in certain beer used in this district, and confirmed the observation next day. I have Professor Dixon Mann's authority for stating that this morning (November 20th) he has also found arsenic in a different sample of beer. I have reason to believe that the source of the arsenic will be found to be the sulphur used in the hop industry.

The habit of snuffing cocaine is said to be prevalent among the negroes in the Southern States of the American Union, and to be common also among the natives of the Bhagalpur District in India.

British Medical Temperance Association.—The annual breakfast meeting of this Association was held at the Cannon Street Hotel on November 9th. There was a large attendance, including students from the principal London hospitals. Professor Woodhead presided, and the meeting was addressed by Mr. Pearce Gould, Mrs. Scharlieb, Dr. J. Dixon, Mr. W. McAdam Eccles, and Dr. Ridge. Nineteen students were afterwards enrolled as members of the Association.

AN OUTBREAK OF TYPHOID FEVER ATTRIBUTED TO THE INFECTION OF A WELL BY A CONVALESCENT SOLDIER FROM SOUTH AFRICA.*

BY THOMAS JAMES WALKER, M.D.,
Senior Surgeon, Peterborough Infirmary.

THE facts established during the last decade as to the presence of the bacillus typhosus in the urine of typhoid patients, and its persistence in a certain percentage of cases long after the convalescence of the patient, must greatly modify our views as to the steps necessary to prevent infection. These facts, moreover, afford a ready explanation of many outbreaks, the origin of which was inexplicable, so long as the stools of a patient actually suffering from typhoid were considered to be the sole means of infection.

Accepting the facts which have been fully dealt with by Dr. Horton-Smith[1] and others, we can understand how, where a water supply is liable to be contaminated by sewage, an individual, whose attack of typhoid may have occurred many months before, so that it is practically forgotten, arriving on the scene with his or her bladder teeming with typhoid bacilli, may originate an epidemic. The following notes of an outbreak which is still in progress illustrate a present urgent danger to the community, and I add to the notes the suggestions which I have made to the authorities to avert the danger.

In the village of Long Orton, Hunts, are two tenants under one roof both taking their water supply from the same well. The tenements may be called A and B. The sanitary conditions were, up to the time of the outbreak, such as to render the well liable to pollution from the soil pipe of the closet A, which passed within two feet of the well in its course to pits in which the sewage was treated by the bactericidal system. This soil pipe was found to be partially blocked at the time of the outbreak.

A sample of the water from the well was handed to an analyst on September 17th, 1899. It was sealed and duly labelled, but was not analysed until another sample was handed to the same analyst in September, 1900. He roughly compared the two, and reported that the specimen bottled, labelled, and sealed in 1899 was much worse than that sent in September of the present year. As to the latter sample, without going into details, I may say that chemical analysis proved it to be highly contaminated with sewage, and totally unfit for domestic use. It was not examined bacteriologically.

These analyses proved that the inhabitants of the two tenements had, for twelve months at least, been drinking water highly contaminated with sewage, but apparently without injury to their health, nor, during this period, as I am informed by Dr. Robertson, the medical officer of health, had any case of typhoid occurred in this or the neighbouring village.

On August 19th there arrived at A from South Africa the eldest son, a trooper in the Imperial Yeomanry, who had been in hospital from May 23rd to August 1st, when he was discharged convalescent from typhoid, and sent to England. Between August 21st and 23rd several young friends arrived as visitors at A, the same visitors had been there six weeks previously, and had taken no harm.

CASE I.—On September 4th J. P., one of three visitors, a lad of 17 fell ill with typhoid at a house in Lincolnshire, to which he had gone when he left A.

CASE II.—On the same day M. T., aged 21, sister to the trooper, fell ill.

CASE III.—On September 5th H. T., aged 11, another sister, took to her bed.

CASE IV.—On September 11th L. T., a brother, aged 15, did the same.

CASE V.—On September 12th A. H., aged 15, living in B, and acting as day servant at A, became ill.

CASE VI.—On September 13th M. D., aged 19, who during the last week in August was at A as extra servant, was laid up at her own home

CASE VII.—On September 14th M. T., another sister of the trooper (who had left home on September 1st), was sent back from where she was visiting, her temperature on arrival being 106°.

CASE VIII.—On September 15th E. B., aged 50, cook at A, fell ill.

CASE IX.—On September 16th T. H., a young man who had been visiting at B, was notified as suffering from typhoid at his own house in Peterborough.

CASE X.—On September 17th, C. T., aged 14, another brother of the trooper, laid up.

CASE XI.—E. W., aged 23, who had been visiting at A from August 22nd to September 3rd, was laid up at her own house in Lincolnshire.

CASE XII.—On September 24rd C. E. H., aged 20, who had on August 22nd spent an evening with a friend who lodged in B, and had drunk at least three or four glasses of water from the polluted well, took to his bed.

The facts summarised are:

In two houses taking their water supply from the same well, the inmates and their friends are known to have been, for twelve months at least, drinking water highly contaminated with sewage. No one suffered in consequence until after the arrival of a trooper invalided home from South Africa, convalescent from enteric fever. Immediately after his arrival the well became infected with the typhoid bacillus, as proved by the fact that between September 4th (the seventeenth day after the arrival of the trooper), and September 17th, 12 individuals were laid up with typhoid fever, the only link between these 12 individuals being that each one of them had partaken of water from the polluted well.

Other wells from the same village have been analysed and found to contain sewage, but no case of typhoid fever has resulted from the use of the water from these wells. No source for the typhoid infection of the well at A can even be suspected except the returned trooper, and the fact that a bacteriological examination of his urine was made a month after his return with negative result does not invalidate the conclusion.

It has been shown that in about 25 per cent. of cases of typhoid fever the bacillus may be detected in the urine. It may exist in prodigious numbers (172,000,000 in 1 cubic centimeter of urine). Dr. Horton-Smith, in speaking of the bacilli in bacilluria, says: "They generally remain present for some considerable time—for some weeks, or even months." "Many patients are discharged from hospital convalescent, but with urine still containing bacilli." Possessing this knowledge, we cannot but see danger in minimising the risk from convalescent patients.

There is, however, a remedy in urotropin which will almost certainly clear the bladder of bacilli,[2] and so strongly has the danger been impressed upon my mind by this epidemic, that on September 16th I addressed a letter to the Director-General of the Army Medical Service detailing the circumstances of this outbreak.

The conclusion of my letter was as follows:

Unless, Sir, precautions are taken to prevent the catastrophe, it must be evident that as thousands of convalescent soldiers will be returning to England within the next few months, endemic outbreaks of typhoid fever, such as that which has occurred here, must be expected on a larger or smaller scale, throughout the length and breadth of the land. I venture to suggest, first, that in order to destroy any bacilli which may be in his bladder, every convalescent soldier before his discharge, should be treated with urotropin administered as recommended by Mark Richardson, and, secondly, that every convalescent from typhoid, officer or private, should, when discharged, receive a card stating in plain and intelligible language how he may be a source of danger to others, and the best method of averting this danger, this card, which could be printed and placed in proper hands for distribution in a few days, should inform the soldiers that

"A patient who has suffered from typhoid fever may for some months after he is apparently well, continue to pass in his urine the minute bacilli which cause the fever. In country places where drinking water is drawn from wells which are liable to be polluted by sewage, these bacilli, passing into the drains and thence into the wells, make the water a source of infection to those who drink it, and may give rise to an epidemic of fever. The bacillus is destroyed and the water rendered harmless if it is boiled; therefore whenever a convalescent from typhoid returns home, no water, which has not previously been boiled, should be drunk unless it is absolutely certain from the position of the well that it cannot be contaminated. This, of course, does not apply to towns or districts with waterworks supplying water from a distant source."

The receipt of this letter has been acknowledged by the Secretary of State for War, but I have received no intimation as to the adoption or rejection of my suggestions.

Fortunately, the percentage of those typhoid patients returning from South Africa convalescent, but still suffering from bacilluria, who will encounter the conditions favourable to the pollution of wells, may not be very large, but the danger, even though I may take an exaggerated view of its magnitude, is obvious, and must be met.

REFERENCES.

1 *Lancet*, May, 1899, p. 1342. 2 Richardson, *Journal of Experimental Medicine*, 1899, vol. iv, p. 1.

* Read before the South Midland Branch of the British Medical Association, at Stamford.

A DECREE has recently been promulgated in Spain making the retirement of all professors holding public appointments compulsory at the age of 70.

ERYTHEMATOUS RASH DUE TO BORIC ACID.

By HENRY HANDFORD, M.D., F.R.C.P.,
Physician to the General Hospital, Nottingham.

Much attention is being devoted at the present time to the effects of boric or boracic acid, and the opinions expressed by capable observers vary exceedingly. The following case, therefore, may be of some value, although the fact that the ingestion of boric acid is liable to produce a skin rash is already well known.

On April 18th, G. B., aged 47, a coal miner, of Clay Cross, was admitted into the Nottingham General Hospital under my care with dilatation of the stomach. He had suffered from dyspeptic symptoms for three years, but vomiting only began fourteen months before admission. He had lost flesh and strength considerably, and been unable to work for some time. For three months and a half before admission the stomach had been washed out frequently, but without much benefit.

A non-malignant stricture of the pylorus was diagnosed; but before advising surgical treatment it was determined to give a further trial to washing out the stomach with some suitable antiseptic, as the previous washing out had been mainly carried out by the patient himself, although under medical advice. There are not a great number of efficient antiseptics which can safely be used in large amount for this purpose; and boric acid lotion 1 in 60 was selected as the most suitable. The stomach would hold 4½ pints of fluid before the patient felt uncomfortably distended; but much less than this quantity was used for each washing out. The stomach was first emptied of its contents by a tube as far as possible. Then about 2½ pints of warm boric acid solution were introduced, allowed to remain two or three minutes, and returned by the siphon action of the tube. This was repeated two or three times until the fluid returned nearly clear, and the stomach was left as nearly empty as is possible under these conditions.

The washing out was continued from April 19th to April 25th, on which day an erythematous rash appeared upon the face and back. The skin was reddened, swollen, and thickened in broad patches, and there was much itching. Plain water was substituted for boric acid solution for washing out the stomach, and the rash disappeared in two days. From April 27th to April 30th boric acid solution of a strength of 1 in 200 was used. On the morning of April 29th there was a little redness on the elbows, and by April 30th the erythema had spread to the back of the neck, eyelids, lower part of the back, and thighs. The use of boric acid was stopped, and the rash entirely disappeared by the morning of May 3rd.

The patient stated that he had not before suffered from a similar, or indeed any, rash, although the stomach had been washed out frequently for three months and a half previously, but without the employment of boric acid. He was kept under observation for another week without the recurrence of the erythema, and then transferred to the surgical wards on May 10th.

On the following day the abdomen was opened by my surgical colleague, Mr. Anderson. The pylorus was found to be greatly thickened and somewhat fixed by adhesions, but there was no definite tumour. The operation of pyloroplasty was performed and the stricture completely relieved. The patient made an uninterrupted recovery and rapidly regained weight. He is now (November 15th, 1900) in good health and working regularly as a miner.

A CASE OF ACUTE (TRAUMATIC) TETANUS SUCCESSFULLY TREATED WITH ANTITETANUS SERUM.

By SYDNEY H. LONG, M.B.Cantab.,
Physician to the Norfolk and Norwich Hospital.

In the investigation of the treatment of disease the evidence of the clinician must ever receive weighty consideration at the hands of the pathologist, whether the results of the former are in accord or are at variance with those of the latter. The experimental investigator in the laboratory of the present day is continually pointing a fresh finger of direction to the physician, but as often as not leaves it to the latter to determine whether the road is a direct one, whether there may not possibly be an alternative route, and what obstacles retarding progress are likely to be met with on the journey.

Empiricism with drugs in the treatment of many acute diseases is slowly but surely being replaced by the more rational and scientific method based upon the study of serumtherapeutics, and no better example of this can be found than in the modern method of treating tetanus. According to the more or less generally accepted view as regards the pathology of this disease, the poison, manufactured at the seat of inoculation, has a selective affinity for the cells of the nervous system, this affinity being greater for the spinal cord than for the brain; that the poison becomes "fixed" in the nerve cells; that the cells of the nervous system have, according to laboratory experiments, a much greater affinity for the tetanic toxin than they have for the antitoxin; and that, although the latter will confer a certain immunity if injected hypodermically before the disease has developed, yet it has of late been held that, if given in this manner, it has little or no power of neutralising the effects of the toxin when once symptoms have appeared. This, I take it, is the *rationale* of the intracerebral treatment of the disease.

If such is the correct view of the action of the poison and its antidote in tetanus, then, for obvious reasons, the limits of the application of the remedy must be restricted, and the value of the discovery of the latter diminished. Having carefully watched the records of cases of acute tetanus treated with antitoxin published during the last few years, I have been struck by the comparative smallness of the dose that has been given in nearly all cases; and I have, rightly or wrongly, concluded that herein in part lay the cause of the continued high mortality in this disease. The price of the serum, hitherto high, has probably been a factor in determining the dose up to the present time. Having never seen any really serious ill effects to follow the administration of the other serums, though I have occasionally given them in considerably larger doses than are usually prescribed—I speak more especially with reference to the antidiphtherial and antistreptococcic serums—I determined, when opportunity next offered, to give the antitetanus serum what I considered a fair trial, before resorting to the intracerebral method of administering it. Such an opportunity presented itself to me this year, and the following is an account of the case:

History of Injury.—On January 25th, 1900, W. Q., a lad aged 13, was admitted into the Norfolk and Norwich Hospital under my care with the following history: Five days previously (January 20th), when putting on his boots, the big toe of the right foot unexpectedly came into contact with three sharp protruding nails at the end of the boot. In his wrathful endeavour to extricate the foot, the plantar surface of the big toe received three punctured wounds from the nails, and he immediately threw the boot away, so that I never had a chance of examining it. On the following day the toe was "red, inflamed, and painful," so that he could not walk; it was poulticed, and in three days was healed. On the next day he felt seedy, had slight headache, and disinclination for food. On January 23rd, that is, the fourth day after the injury, he first felt pain in his limbs. This was brought to his notice very suddenly when out walking, for on starting to run he suddenly "felt his legs go stiff," and he fell to the ground. From this time until admission (two days later) the pains in the legs continued and increased in severity, and spread up to the lower part of the back, making walking almost impossible. During these two days also he had involuntarily bitten his tongue on several occasions.

Previous History.—He had enjoyed very good health up to the onset of the present illness. No history of any other injury could be elicited. He had never suffered from fits.

Condition on Admission.—He was a well-nourished, healthy-looking boy. He preferred to lie in bed on his side. The head was retracted, the back arched, and legs semiflexed. The expression was one of pain and immobile; risus sardonicus was well marked. The jaws were fixed in close position, but the mouth could be opened about half an inch. There was no difficulty in protruding the tongue, which had been recently bitten in several places. The fingers of both hands were kept flexed, but could be extended on volitional effort. The abdominal muscles were contracted, very hard, and tender to the slightest pressure. He could rise to the sitting posture only with great difficulty, and the effort caused him great pain in the back. With assistance, he could manage to stand, and it was then seen that the back and neck muscles were firmly contracted, the head being retracted and the back arched. On attempting to walk the legs were moved as a whole, the soles of the feet being dragged along the ground. There was no "play" in any of the joints. On the plantar surface of the right big toe were three dry punctured wounds. There was no sign of pus in or around these. The superficial and deep reflexes were exaggerated; ankle clonus and rectus clonus were obtained on both sides. The temper-

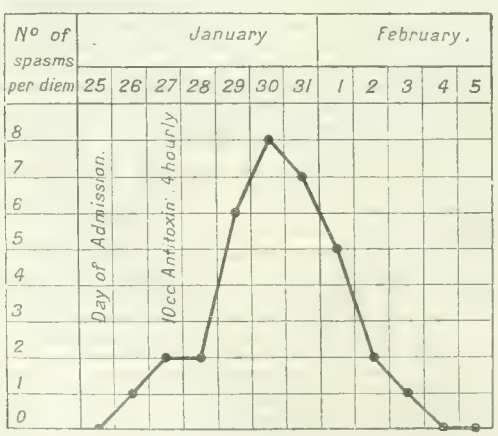
ature was 100.6° F., the highest recorded during the illness; it dropped to 99° F. in the evening, and only once again reached 100° F., and that on the day following admission. The pulse was 100, regular in force and rhythm. The urine, specific gravity 1027, contained neither albumen nor sugar. There was no difficulty in swallowing, and the patient took fluids easily out of an ordinary feeder.

After History.—On the night of admission at 2 A.M. he had a general tetanic spasm which lasted about two minutes. In this first spasm he did not go into a state of opisthotonos, though in the later spasms the body assumed this position. During this and successive spasms the pulse became almost uncountable, on account of its increased frequency. After this spasm he was given potassium bromide grs. xv, with chloral hydrate grs. x, but this was not repeated, and was, in fact, the only drug treatment throughout the illness.

Treatment by Antitetanic Serum.—The diagnosis of acute tetanus having been made, communication by telegram was made to London for a supply of antitetanus serum. This arrived the following day, and the first dose of 10 c.cm. was given subcutaneously in the loin at 1 P.M. on January 27th. The prick of the needle caused another general spasm, on which account the succeeding injections were given under chloroform, which generally, though not always, prevented further general spasms from this cause. Doses of 10 c.cm. were injected hypodermically uninterruptedly every four hours for twelve more doses. After this the injections were continued four-hourly for six more days, but were now given *per rectum*, which operation did not cause any general spasm. They were then given eight-hourly for three days longer, and finally omitted on February 9th. In all, 13 injections were given hypodermically, and 55 *per rectum*, making a total of 680 c.cm. of serum used. In the subsequent history of the case there is not much to note. On February 2nd (seven days after the first dose of serum) an urticarial eruption appeared around the seat of inoculation in the loin; this spread over the abdomen and down the thighs, but was not accompanied by any rise of temperature, and lasted only two or three days. This was the only ill-effect that could be ascribed to the serum, The patient henceforth made a slow but uninterrupted recovery.

Convalescence.—The abdominal muscles remained rigid for two or three weeks after the other symptoms had subsided, but these gradually relaxed under continued rest and hot baths. He was discharged to our convalescent home at Cromer on March 10th, feeling perfectly well.

The following curve shows the relation between the spasms and the serum inoculations:



It will be seen that the maximum daily number of spasms occurred on the fourth day after the serum treatment was commenced, after which there was a gradual decline in their severity and number to the zero line five days later. This was to be expected, since the toxin had had seven clear days to produce its effects before the serum treatment was begun; and the operation required for the hypodermic injections in part explains the frequency of the spasms, since, as I have said before, the administration of chloroform did not always prevent these.

In the war of the American Rebellion the mortality from all cases of tetanus, 505 in number, was 89.3 per cent., and in 203 of these cases there were only 2 recoveries.[1] With such a mortality one may, I think, justly ascribe the success in the above case to the serum, since all treatment by drugs was withheld. I would go further, and say that the success was due to the quantity of serum used. In many of the previously recorded cases I find that the amount of serum used is indefinitely stated, as is also the day on which the first symptom appeared. But I find that Mr. Stanley Copley[2] gave 160 c.cm. of B. I. P. M. serum plus 13½ grams of Tizzoni's serum to a case that recovered, the injections extending over a period of ten days, and, as far as I have been able to make out, this is the maximum quantity hitherto recorded as having been given.

The present case is instructive on two or three points. In the first place it confirms the belief that cases of acute tetanus can be successfully treated with the antitetanic serum if this is given in sufficiently large doses and frequently repeated. Secondly, it suggests that it is probably not necessary to resort to the intracerebral method of administering the serum provided that this be given in sufficient amount. Thirdly, it emphasises the fact that in serum-therapeutics the chances of ill-effects from over dosage is remote. And, fourthly, it encourages us not to condemn the various antitoxins before these have been standardised, and their efficiency has been disproved by a fair and unbiassed trial.

The rectal injections were given through a flexible rubber tube of small calibre under hydrostatic pressure, about an ounce of pancreatised milk being used to drive the serum into the bowel to minimise the chance of waste. A plain warm water injection of a pint was given daily to wash out the rectum whilst the enemata were being continued. There is nothing novel in resorting to this method of giving antitoxin, though I have not seen recorded a case of tetanus that was treated in this manner.

I would add for the benefit of your readers that the serum used in the above case was all supplied by Messrs. Parke, Davis, and Co., and that the total cost of the amount used was £10 10s.

REFERENCES.
1 Allbutt's *System of Medicine*, vol. i, p. 789. 2 BRITISH MEDICAL JOURNAL, vol. i, 1899, p. 337, *et seq.*

PUERPERAL ECLAMPSIA AND ITS TREATMENT BY MORPHINE.

BY G. E. FITZGERALD, M.R.C.S., L.R.C.P.,
Grahamstown, Cape Colony.

As cases of this disease are of comparative rarity in private practice, and its results usually so disastrous, this report of several cases which have come under my observation may be of interest:

In 1895, in consultation with Dr. Saunders, I saw Mrs. Q., aged 28, primipara; she had had one fit, and her urine was loaded with albumen, being almost solid on boiling. As we decided to induce labour, chloroform was administered and the os was dilated, the fits at this stage coming on at frequent intervals till a dead child was born. She remained in a dazed condition for six days, and then died.

The next case I saw two months after, again in consultation with Dr. Saunders, his partner, and Dr. Greathead; Mrs. T., aged 25, primipara, eighth month, whose urine was found to be loaded with albumen. We agreed that no operative measures should be adopted unless fits should come on. The same night she had numerous severe fits, and we all agreed that labour should be induced. Chloroform was given without any effect upon the fits; the child was born dead, and the mother, going from one fit to another, died the next day.

The next case I saw one month after this was that of Mrs. S., aged 21, in the eighth month, who had had one fit. Her face was puffed, she had severe headache, and the urine on boiling was almost solid. I ordered liq. ammon. acet. ʒij ter die. The albumen greatly decreased, while the urine increased, and she was safely delivered of a baby three weeks after without any return of the fit. The albumen disappeared from the urine one month later.

On June 5th, 1899, I was called in to see Mrs. S., primipara, aged 29. I found that she had one slight fit, from which, however, she had recovered when I saw her. She had œdema of the eyelids and legs, and her urine, on being boiled, was solid with albumen. Soon after, she had two more fits and my partner (Dr. Bays) and I saw her in a third one of a most severe character, from which we thought it unlikely that she would recover; however she slowly improved. Dr. Greathead saw her in consultation, and pulv. jalapæ co. and elaterium having been given, dry cupping was tried. A hypodermic injection of gr. ⅓ of pilocarpin, beyond making her perspire feebly, had no effect. The fits continuing severely, and the labour progressing, though slowly, at 3 P.M. I injected hypodermically gr. ½ morphine, gr. $\frac{1}{150}$ atrop. sulph. From that time she had no more fits. At 11 P.M. I repeated the injection; she was then breathing stertorously and was unconscious, taking no nourishment and passing no water. The next morning I again injected gr. ½ morphine, and at 1 P.M. the child was born naturally, the mother being conscious though somewhat dazed. For two days I gave morphine, gr. ¼, night and morning, and also put her on liq. ammon. acet. The albumen rapidly decreased in amount, and a fortnight afterwards only a trace remained, and the patient was practically well. A point of great interest was that the child, a male, when born was quite black, and after taking two or three breaths had a severe fit; he was put into a warm bath and given castor oil. For four days he took no food, his lips being moistened with milk and water. During this time he had thirty-nine fits in all; on the fifth day the fits ceased, and he is now perfectly healthy.

Eight days later my partner, Dr. Bays, saw A. L., a primipara, aged 33, who was said to be a few days over her time, and to have had six fits during the night. At 7 A.M. she was in a somewhat dazed state, had bitten her tongue, and was in the early part of the first stage of labour. Four grs. of calomel, 2 ozs. of mist. sennæ co., and a mixture of liq ammon. acet. and morphine were ordered. Three hours after he was summoned to see her, and was told that she was dying; the fits had come on much more

severely, and she was then in one which had lasted over an hour. Morphine gr. ½, with atrop. sulph. gr. $\frac{1}{75}$, was injected, soon after which the fits ceased. As the aperient had not acted, enemata were administered without effect. She remained free from fits till the evening, when they again returned with great severity; the os was then slowly dilating, and the pains coming on regularly, but with little force. Another injection of morphine gr. ½ caused a cessation of the fits, which did not return. On the succeeding morning morphine gr. ½ was injected, and the labour was found to be progressing slowly. During these two days she remained in a semi-conscious condition, not recognising anyone, though capable of feeling pain. On the evening of the second day, as the os was well dilated, and there was uterine inertia, chloroform was administered, and a dead child was delivered with forceps. The mother was in a restless and sleepless condition for four days afterwards; this was relieved by injections of morphine gr. ½. The urine, which in the early stage of the illness contained one-eighth albumen, was free from it on the fifth day. The bowels were at last moved by repeated doses of mist. sennæ co.

These cases suggest the conclusion that to induce labour, however severe the fits, is a great mistake, the two cases so treated terminating fatally, whereas those in which no operative procedures were carried out with a view to remove a cause of the fits recovered perfectly. In both cases the fits were almost at once checked by the administration of morphine, and did not return so long as the patient was under its influence. Another advantage is that morphine is free from the depressing effect upon the heart exerted by chloroform or chloral. The old idea that it exercised a bad effect in cases of renal trouble would appear to have no foundation in fact.

SYPHILIS IN THE ROYAL NAVY.

By J. P. H. GREENHALGH, M.B., Ch.B.Vict.
Surgeon, R.N.

Comparatively recently it was pointed out in the British Medical Journal that the decrease in the late venereal returns of the Indian Army could be accounted for on two grounds, these being (1) the inclusion of syphilis under the Cantonments Act for infectious diseases; (2) more efficient treatment. With reference to this question of treatment the following significant passage occurs:

> We had occasion some 18 months ago to call attention to the fact that in very many instances soldiers were only treated for syphilis as long as there was some outward sign of the disease, and that no regular and long-continued treatment was carried out. After the secondary symptoms had disappeared temporarily, and the man was discharged from hospital, only too often no further medicine was taken until the disease broke out again, probably in a more virulent form.

This is a serious indictment, touching as it does our professional responsibility to those under our charge, which, whether in the public service or out of it, I take to be our first obligation. It is no less a matter of concern to have to admit that in the Royal Navy at any rate, this allegation contains a present-day element of truth. Two examples will suffice to show its applicability:

Case I.—A. B., aged 23, stoker, contracted syphilis in March, 1899. He was sent to hospital early in July of the same year, where he remained for a period of seven weeks. In the following January he developed late secondaries; mucous patches and small ulcers were present on the lips, palate, and tonsils, and staining of the skin indicated the antecedent occurrence of a rash. He was again sent into hospital in February.

Case II.—C. D., aged 20, stoker, contracted syphilis in the middle of January, 1900. He was returned from hospital about the end of March; three weeks later he reappeared for treatment. He had then a large indurated sore occupying the same position as the original chancre, and a roseolar rash over the trunk, characteristically syphilitic.

Reading between the lines, it seems that the first case was treated until secondary symptoms had disappeared, the second until the primary lesion had subsided; both men were then discharged to duty.

The fault does not lie at the doors of the hospital staff. It is obviously impracticable for men to be retained in hospital for periods of from twelve to eighteen months in order to undergo a continuous course of treatment. And it would be ridiculous to suggest that medical men in the navy do not recognise the imperative necessity for prolonged mercurialisation in syphilis equally with their professional brethren in other spheres of practice. The evil is rather the outcome of a faulty nomenclature.

Any case of venereal disease is, in accordance with the nosological requirements at the Admiralty, returned as primary syphilis. Whether the lesion be clearly one of Hunterian chancroid infection or one of local contagious and non-infecting ulceration, the designation is the same, and here we have the crux of the whole question. A man is sent into hospital with venereal disease, and is discharged after a few weeks apparently well, with "primary syphilis" entered on his medical history sheet. Should treatment be carried on?

It is not to be denied that many difficulties at present bar the way to a satisfactory answer. It may be argued that where a differential diagnosis has been established before the patient is forwarded to hospital, it is incumbent on the medical officer primarily responsible to continue or discontinue treatment when the man returns under his care, as the case requires. Where, however, the doctor or the patient is shortly transferred elsewhere, other arrangements are necessary. In such an event a supplementary note on the history sheet would clear up the ambiguity of the official entry, and the purpose would still be served. Such an innovation, however, the effectiveness of which depends on its universal application, could only be introduced through the proper channels, and even if this were not so, is it satisfactory that individual expedients should be a substitute for official action? To the medical mind the term primary syphilis is specifically limited to the true infective process, and that it should include other conditions which *in ipsis* are pathologically distinct is as confusing as it is unscientific. Once the wide-reaching difference between Hunterian syphilis and non-infecting venereal ulceration is recognised, and its importance made obvious on the medical history sheet, the way for thorough treatment, which means diminished overcrowding of hospitals by cases of secondary syphilis, improved statistics, and a corresponding increase in the effective strength of the navy is made easy. In every depôt and on every ship a time list of men under treatment would be kept; in the case of men newly joined a brief inspection of their history sheets, coupled with the certain knowledge that where specific disease existed treatment had been regularly carried out up to date, would give all the information necessary to the completion of a prophylactic circle embracing the entire navy, and to the carrying on of an adequate campaign against this formidable and insidious disease.

NOTE ON A CASE OF PROTRACTED STUPOR OR TRANCE.

Treated in the Royal Infirmary, Newcastle-upon-Tyne.

By David Drummond, M.D.,
Senior Physician to the Hospital.

D. B., a clerk, aged 26, was admitted into the Royal Infirmary, Newcastle-upon-Tyne, on March 31st, 1900, in a state usually described as lethargy, trance, or stupor.

History.

He was always more or less melancholic and reserved, and religious to the verge of fanaticism. During the previous two years he became less and less communicative and increasingly taciturn, and for twelve months prior to his admission he seldom spoke unless addressed, lost his appetite, and became thin and pale, but attended regularly to his employment until seven weeks before his admission, when he voluntarily retired into private life, and spent his time reading the Bible and taking solitary walks. A little later he declined to leave his bed, and refused food, and towards the end of March his illness culminated in a "fit" (?), when he passed into the state to be presently described.

Family History.

A neurotic family history was elicited. His grandfather died in an asylum and his brother committed suicide, whilst one brother died of phthisis during the patient's stay in the infirmary.

Condition on Admission.

He was a tall, spare, sickly, and anæmic young man. There was no history of sexual irregularities. At the time of admission to hospital it was stated by friends who brought him that he had not moved or spoken for a week. He lay motionless and took no notice of his surroundings. His eyes were open and appeared to stare in front of him with a far-away look that suggested subconsciousness. His limbs were cold, flaccid, and unresisting. The tongue was coated and the breath foul, and nutrition much lowered. The reflexes, superficial and deep, were just perceptible, but the corneal reflex

was active, and the lids blinked in response to a menacing movement in front of the eyes. A very searching examination failed to discover evidence of organic disease of the lungs, heart, kidneys, etc. The contents of the bladder and rectum were passed unconsciously, and there was a tendency to a sacral bedsore.

After-History.

He slept well, closing the eyes naturally, but could be roused without difficulty. Liquid nourishment was administered through a short rubber tube attached to the spout of a feeding cup. When the fluid filled his mouth he swallowed reflexly, and in this way 4 pints of milk, 2 pints of beef tea, and 2 eggs were given daily. For the rest, the treatment consisted in attending to the skin and massage with passive movements. The strongest faradic current available produced no response, and week after after week he lay like a non-sentient being, moving neither arms nor legs, and apparently cut off entirely from the outer world. The pulse was fast, about 100; and the temperature varied from 97° to 98° F. At first it was supposed that he was absolutely unconscious, but the nurse in charge came to a different conclusion, for on informing him that his brother had that day been buried, she observed that tears came into his eyes. That he was really conscious was established months later, when on recovering his speech he mentioned by name the clinical clerk who noted his case at an early period, and then left, to return again in a few months after improvement had sent in.

About the middle of May he developed dry cough, and the temperature rose to 103° F. The left lung was found to be dull on percussion all over, and air entered imperfectly. The signs were those of pleural effusion, save that the heart was exposed to the left of the sternum. At first tuberculous disease was suspected, but soon the condition was cleared up by the nurse turning him on his face, when a quantity of foul smelling mucus poured from the left bronchus and air entered almost immediately. It was probable that some of the food stuff had entered the trachea and blocked the left bronchus. On another occasion a large septic abscess developed in the tonsil which prevented him swallowing for several days, when rectal alimentation was practised. During this attack the urine contained a large quantity of albumen with blood and casts.

Recovery.

Notwithstanding these accidents his condition at the end of seven months began to improve. He first moved his lips in a manner that encouraged the nurse to introduce a grape into his mouth, which he slowly sucked; then his arms and later his legs, but the power over the muscles of his limbs returned very slowly. Speech returned later, and he is now making slow but sure progress towards recovery.

Remarks.

The case differs somewhat from both anergic and melancholic stupor: from the first in that consciousness and memory were not entirely in abeyance; and from the second in that the muscles were flaccid and absolutely unresistive.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

POISONING BY LYSOL.

Cases of poisoning by lysol being rare, the following may be of interest:

On September 10th I was called to one of the schools here to see a European boy, aged 14, who had been suffering from "dysentery" (?) for about one month. At 1 P.M. he had taken an injection of rather less than one and a-half ounce of lysol in about a pint of water, using an ordinary Higginson's syringe. At 1.30 P.M. he was found in bed quite unconscious, in which state he remained until my visit at 5.15 P.M.

He was then in a state of complete collapse, perfectly unconscious, could not be roused at all, lying partly on his side, with the legs drawn up, with pinhole pupils. He was sweating, the pulse was almost uncountable and running, and the breathing rapid, but not abdominal, 40 per minute. The temperature was subnormal. The heart and respiratory sounds were normal. The abdomen was not distended and only slightly tense; there was apparently no tenderness on pressure. There was no carbolic smell from the breath or sweat. The anal orifice was slightly discoloured from the action of the lysol.

The boy was evidently dying. I gave hypodermic injections of strychnine and of ether, which had some slight effect on the pulse. I also washed out the bowel with warm water, which was at first retained, but, on making slight pressure over the abdomen, came away quite uncoloured, but containing numerous white shreds, like curds.

The boy had not been disturbed, when suddenly a quantity (2 ounces or so) of dark brown grumous blood was ejected from the mouth and nose (there was no excoriation or discoloration of the mouth), and in five minutes (5.45 P.M.) he was dead. No *post-mortem* examination was made.

It seems that in the absence of the regular medical attendant, a German physician, who was in the habit of ordering enemata of lysol (℥j to Oj) in dysentery, the headmaster told the boy to take the injection described.

I have frequently in similar cases, really lower intestinal catarrh, used irrigations with the long soft tube of half an ounce of Jeyes' fluid (creolin) in 3 pints of warm water, which has been evacuated, and afterwards I have left in, for from two to six hours, a drachm to a drachm and a-half of Jeyes' fluid in 8 ounces of water without ever having had the slightest ill-effect, and almost invariably with marked benefit. Boric acid used in a similar manner often causes severe headache and bilious vomiting. Lysol is evidently more dangerous.

Hong Kong. William Hartigan, M.D., D.P.H.

A CASE OF AORTIC ANEURYSM TREATED BY HYPODERMIC INJECTIONS OF GELATINE.

As I have not yet seen any reports of cases of aneurysm treated by hypodermic injections of gelatine in England, and as a case under my care has given most encouraging results, an account of it may be of interest.

The patient was a gentleman of 50, of good physique, with undoubted aortic aneurysm, the diagnosis having been confirmed by Sir Douglas Powell. There was pulsation, which could be seen as well as felt, in the second intercostal space to the right of the sternum, and the patient complained of great pain in the chest and shortness of breath, both increased by exertion, deep inspiration, coughing, etc.; the radial pulses were unequal, he could only lie down for a short time, had very bad nights, and was getting rapidly worse.

I began injecting a 2 per cent. solution of gelatine into the subcutaneous tissues of the abdominal wall on July 22nd, using at first 3 fluid ounces, and after the fourth injection 4 ounces. The injections were given every second day for about three weeks, and then every third or fourth day, twenty injections being given altogether, the last on September 14th. Improvement began after about a fortnight, and from that time the pain steadily diminished and the pulsation became less marked, till at the end of the treatment pain was practically absent, and pulsation only felt on deep pressure. He was then quite comfortable except for an occasional spasm once or twice in the twenty-four hours. Though much stronger he was still weak, and felt an obstruction to taking a deep breath, but the improvement in his condition was very marked, and he slept well all night.

The patient was not confined to bed during the treatment, though he moved about very little and with great care. He took 5-grain doses of potassium iodide three times a day, and his food and drink were somewhat restricted in quantity.

Ross. Arthur Cutfield, B.A. Cantab., M.R.C.S.

Memorial to the late Mr. G. J. Symons.—We learn from a letter signed by Dr. C. Theodore Williams, Treasurer, and the Secretaries of the Royal Meteorological Society, 70, Victoria Street, Westminster, S.W., that a hearty response has followed the appeal made by the Society last May for contributions to a fund to establish a gold medal in memorial of the late Mr. G. J. Symons, F.R.S. The subscription list will remain open until the end of January, 1901. The medal will be awarded from time to time by the Council of the Royal Meteorological Society for distinguished work in connection with meteorological science.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.

CASE OF INTUSSUSCEPTION OF THE BOWEL IN A CHILD AGED 8 MONTHS: OPERATION: RECOVERY.

(Reported by P. Murray Kerr, M.B., C.M., Surgeon to the Infirmary.)

The patient was a strong, healthy-looking male child. On March 26th the child's mother administered to it a teaspoonful of castor oil, which moved its bowels twice on the 27th. The child was incined to be costive, and was habitually given castor oil twice a week. Towards evening he suddenly became very ill. He screamed, vomited, strained severely at stool, and then passed a quantity of blood by the bowel. Dr. McKercher, of Dalbeattie, was called that night to see the child, and diagnosed intussusception of the bowel.

Laudanum was given in full doses, and copious enemata of hot water were given by means of a soft rubber tube passed well into the colon. As the symptoms did not disappear the child was sent into the Dumfries and Galloway Royal Infirmary. On admission to hospital on the afternoon of March 29th, the child was found to be under the influence of an opiate. It occasionally vomited some bile-stained mucus and curdled milk. It had considerable tenesmus, and some pain was elicited on pressing over the abdomen, which then became slightly rigid.

Dr. Ross, the house surgeon, who attended the child on its arrival, could distinctly feel *per rectum* the invaginated bowel. He repeated the former treatment. I saw the child perhaps an hour and a-half later but could not detect the invagination. Next day, as the child's condition was neither better nor worse, after consultation with my colleagues, I decided not to operate in the meantime, as there did not appear to be any urgency although the child vomited occasionally and had had no movement of its bowels since the 27th. Inflation with air was tried. Previous to the inflation the invagination could be distinctly felt *per rectum* but only for a short time, as it apparently soon receded out of the reach of the fingers; a sausage-shaped tumour could also be occasionally detected along the line of the descending colon. During the night the child passed a very small quantity of fæcal matter.

On March 31st the child appeared to be more free than previously from the influence of the opium which undoubtedly masked the symptoms. It was becoming weak and restless, it vomited the little food it got, and continued to strain at stool and pass considerable quantities of bloody mucus. On rectal examination I could distinctly feel the invaginated portion of the bowel, which again almost instantly passed out of reach of the finger. I decided to operate as the condition was no better although the child did not seem to be suffering much. Chloroform was administered and the abdomen was opened by a mesial incision 2½ inches long, midway between the umbilicus and the symphysis pubis. On passing two fingers into the abdomen a sausage-like tumour could be felt in the colon. The tumour, or rather the invaginated portion of bowel, seemed freely movable within the colon, for it receded quickly round towards the region of the ileo-cæcal valve. It did not, however, entirely disappear from the colon. The first part of the ascending colon was then brought out of the wound, when the intussusception could easily be seen. It was of the ileo-cæcal variety. After some gentle manipulation the invagination was reduced. The cæcum with its appendix and about 4 inches of the ileum were much congested and thickened. The bowel was carefully returned to the abdomen, and the wound speedily closed with silkworm gut. The child stood the operation well. A dressing of sterilised gauze was applied. The bowels moved freely five times that day after the operation, and the vomiting and straining disappeared. The bowels moved regularly each day afterwards. The temperature rose to 100° F. the evening of the operation, but next day came down to normal. The stitches were removed on April 8th. The wound healed by first intention, and the child made an uninterrupted recovery, being discharged on April 20th.

Remarks.—The special points of interest in the case are the age of the child, the date of operation after the onset—the fifth day, and the masking of the symptoms by the administration of opium. The child appeared to be suffering little, although the obstruction was apparently still present after the enemata. I believe that the cæcum and the 4 inches of ileum were not reduced by either the enemata or the inflation of air. Other points of interest are the great mobility of the advancing portion of the invaginated bowel—at one time it could easily be felt *per rectum*, at another it was out of reach—and the instantaneous disappearance of the straining and the bloody mucus after the invagination was reduced.

REPORTS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.

W. Watson Cheyne, F.R.S., President, in the Chair.

Tuesday, November 20th, 1900.

Fibroma of Tongue.

Mr. W. G. Spencer exhibited this specimen, which was removed with a portion of the tongue, the disease being thought carcinomatous, since it was ulcerated and extended into the muscular substance. The growth had occurred on the under surface and in the middle line, the suggestion of the exhibitor being that it arose in connection with some remains of a fœtal structure representing the glosso-hyal element present in certain mammalia, and in the tongue of the chameleon; this element, though bony in the horse, was cartilaginous in the dog. In the fœtus portions of bone and cartilage had been met with in the tongue which were explicable on these grounds.

Spheroidal-Celled Carcinoma arising in a "Supernumerary Nipple."

Mr. W. G. Spencer also recorded the above case. The carcinoma arose in a mole over the breast; it ulcerated, but led to no secondary disease of the axillary glands, and histologically was of the type of rodent ulcer. In the neighbourhood of this was a second (pigmented) mole, covered with unaltered epidermis. On histological section this exhibited structures suggestive of sweat ducts. No malignant characters had arisen in this mole, but it was easy to suppose that the structures in it might furnish such a carcinoma as arose in its neighbourhood. The origin of rodent ulcers in birthmarks and moles had been recorded also by others. The cutaneous glands that underwent enlargement in pregnancy were (as determined by Dr. Champneys and Mr. Bowlby) of the class of sweat glands.

Pseudo-Actinomycosis.

Dr. Habershon and Dr. P. S. Hichens communicated a case of so-called pseudo-actinomycosis. The specimen was derived from an errand boy, aged 17, who was admitted into the Brompton Hospital in November, 1897, complaining of cough and expectoration with pain in the right side of the chest. On admission he presented the physical signs of dulness of the lower half of the right lung with feeble tubular breathing and some bubbling *râles*. The liver was also slightly enlarged. The temperature was uniformly high, 101° to 102 4°, with occasional fluctuation. The sputum increased in amount, and showed no trace of tubercle bacilli or other organisms. Suddenly, one morning in December, a collar stud was coughed up, and as the patient improved afterwards and his temperature fell, it was believed that the foreign body in a bronchus was the source of the trouble. In three weeks' time, however, the physical signs at the right base began to increase slowly, and a month later an abscess developed in the region of the right nipple line over the sixth rib. The temperature began to develop increased diurnal fluctuations, and towards the end of February, 1898, the abscess was incised and some pus escaped. The discharge increased and became offensive, and the temperature, at first intermittent, assumed a remittent type; at the same time the liver dulness increased. Several exploratory operation were performed by Mr. Godlee without letting out any larg

amount of pus, and without relief to the patient, who gradually became weaker and jaundiced, and developed successive rigors. He died in May, 1898. The necropsy revealed an old collapse and induration of the base of the right lung, but the main disease was found in the right lobe of the liver, which was the seat of extensive caseous infiltration partly extending into the left lobe. In the caseous areas were many softened places forming cavities filled with pus, but there was no general honeycombed appearance. The capsule of the liver beneath the diaphragm was covered with a caseous layer, partly adherent to the diaphragm, forming abscess cavities in places, and one suppurating tract communicated with the external operation wound. A description was given of the microscopic appearances of the liver and its caseous areas. The pus, when examined, was found to present small granules or grains, similar in size to those of actinomyces, but differing in colour, being of a pale yellow or cream colour, and very friable. On staining a coverslip preparation with Weigert's modification of Gram's method a delicate mycelium was found, composed for the most part of delicate streptococcus-like threads, though in one specimen (illustrated) a series of most delicate filaments were shown. They were smaller in size than the normal actinomycotic mycelium, and there was much more sporulation than normal, many specimens being composed of strings of cocci. In the caseous area of the liver also a number of bodies were found, which when stained presented under a low power the same appearance of concentric rings as that of actinomyces. High magnification showed important differences. A diffuse growth of multitudes of very small cocci with delicate threads of cocci in streptothrix form with no evidence of dichotomy. The authors gave some of the literature of many anomalous forms of disease called by the names of oösporon asteroides, bacillary actinomycosis, etc., and expressed the opinion that their case differed in some essential particulars from true actinomycosis. They did not regard the absence of clubs as having any bearing on the subject, as these were rarely found in human actinomycosis, and they were unable to obtain cultures of the micro-organism in question. They ventured to suggest that it was a form of streptothrix presenting clinical and pathological similarities to the ordinary actinomycosis. Dr. Habershon further showed a specimen of actinomycosis with multiple abscesses in various parts of the body, but showing secondary caseous disease of liver as a contrast to the former case.

Professor J. MACFADYEAN had some while ago described such a micro-organism as being actinomyces, but in the absence of cultures no exact diagnosis could be made. In cultures of actinomyces this abundance of coccus forms was not observed.

Mr. S. G. SHATTOCK referred to the report of the Committee of the Society in which the use of the term pseudo-tuberculosis was condemned; that of pseudo-actinomycosis was as objectionable; a disease was actinomycosis or it was something else. In the present case, as the organism was undoubtedly a streptothrix the condition might have been classed as a streptotrichosis, but without cultivation nothing further could be said. As to the disease being primary in the liver, Israel had remarked that an intestinal lesion might heal, and in Dr. Habershon's case possibly the intestine was the site of infection, although nothing was noticed in it at the necropsy. In two cases which he had seen the vermiform appendix was the site of primary disease, the liver being secondarily affected to an extensive degree.

Mr. A. G. R. FOULERTON remarked that coccus forms occurred in cultures, but as spore chains; without cultivation, the particular variety of streptothrix concerned could not be diagnosed.

TWO CASES OF ACUTE YELLOW ATROPHY.

Dr. WILLIAM HUNTER recorded, first, the case of a woman, aged 47, in whom the disease ran a course of fourteen days: when admitted she was jaundiced and delirious. The morbid anatomy of the liver was typical. The hepatic lesion was an acute bacterial necrosis, the dead cells undergoing disintegration to the extent that only a few pigment granules were left. Around the centre of the lesion the cells showed fatty degeneration, and there was some degree of secondary inflammatory reaction. The epithelium of the bile ducts had undergone similar necrosis, was desquamating, and had produced obstruction. Dr. Eyre had obtained cultures of bacillus coli from the gall bladder and liver, but this bacillus could hardly be considered as the cause of the disease. In the second case which he recorded the patient was a child, and the disease was not so rapid.

Dr. H. MORLEY FLETCHER had examined cases where cirrhosis had preceded the acute atrophy, and asked whether this was so in Dr. Hunter's. He preferred the term icterus gravis to that of acute yellow atrophy.

Dr. AULD spoke upon the possibility of taking the presence of nuclei set free by cell disintegration for evidence of inflammatory reaction.

Dr. HUNTER, in reply, stated that there was no evidence of cirrhosis in the first of the cases, nor did he think this was a necessary antecedent. Icterus gravis he did not consider a better term, for although the grade of jaundice merged into that present in other hepatic diseases, the particular anatomical lesion was characteristic—it was an acute atrophy.

CARD SPECIMEN.

Mr. W. P. LAWRENCE: Hour-glass contraction of stomach.

EDINBURGH OBSTETRICAL SOCIETY.

R. MILNE MURRAY, M.D., F.R.C.P.E., F.R.S.E., President, in the Chair.

Wednesday, November 14th, 1900.

PRESIDENTIAL ADDRESS.

IN opening the sixty-second session of the Society, Dr. MILNE MURRAY referred to the fact that most of the epoch-making contributions to obstetric art by such masters as Sir James Simpson and Matthews Duncan were first communicated to this Society, which held its first formal meeting on January 13th, 1840. The records of the the first fifteen years showed only an occasional reference to a gynæcological subject, but the interest of its members in scientific and practical midwifery was very keen. In the last fifteen years a very different state of matters prevailed. The danger now was that the impulse to explore new fields and to win new triumphs in the department of gynæcology might unduly direct attention from the claims of obstetric medicine. Yet there were problems in obstetrics whose solution would glorify the most ambitious. The science of obstetrics was traced from its infancy. The earliest compend was to be found in the Hippocratic writings. The study of anatomy made possible a distinct advance in the obstetric art, as seen in the writings of Soranus, Galen, Aretæus, and Moschion. From the seventh till the beginning of the sixteenth century obstetric art stood still. The seventeenth century claimed our interest in virtue of the great development in practical midwifery rendered possible by the invention of the forceps, though the use of the instrument was not general till the early years of the eighteenth century. In 1668 Mauriceau published his treatise, which for many years formed the textbook of the French school. Towards the close of the century Deventer was preparing for publication his book, which in some respects might be considered the foundation of modern midwifery. The eighteenth century was a period of rapid development, and it would be difficult to over-estimate the work of Smellie, Hunter, and Denman in England; of Levret and Baudelocque in France; of Roederer in Germany. At the dawn of the nineteenth century the observations of obstetricians such as Mauriceau, Levret, Smellie, Hunter, and others had secured a certain accurate familiarity with the phenomena of pregnancy and natural labour. Something more than a glimmering of the nature of the mechanism of parturition had been acquired by the work of Ould, and especially of Smellie and Levret. More or less definite ideas had been attained on the management of abnormal labours, such as breech and transverse cases. The indications for and the mode of use of the forceps had been so far determined, and some methods of embryotomy had been evolved and practised. The Cæsarean operation had been performed, in some cases with success, but in the main with disastrous results. The management of the placenta prævia was in a very unsatisfactory condition both as to methods and results, but Smellie had laid down sound rules for the management of accidental hæmorrhage. Dr. Milne Murray then referred to three epoch-making contributions for which the nineteenth century would

ever be famous. In 1818 Naegele of Heidelberg published his pamphlet on the mechanism of labour, one of the greatest, if not the greatest, contributions to scientific obstetrics. It was the Euclid of obstetrics. Thirty years later Simpson discovered that anæsthesia by ether or by chloroform might be used to soothe the suffering without interfering with the efficient progress of labour. Twenty-three years later Lister gave to the world the principles of antiseptic surgery. A host of other workers had been laboriously adding to our records. But much remained to be done. Among the problems yet unsolved were the true significance of menstruation, its relation to ovulation and conception; the function and destiny of the corpus luteum; the structure of the placenta; the time duration of pregnancy; the cause of labour; the nervous mechanism of the uterus; the nature of the process concerned in the involution of the uterus; the cause of that obstetrical terror, eclampsia; and many other riddles of greater or less interest. But we entered on the new century with a far heavier responsibility on us than was represented by our duty in scientific research, however immediately attractive or remotely important its application might be, and it was to this grave responsibility that he ventured to draw attention. In virtue of the labours of those who had gone before we claimed that for every strictly obstetrical complication, with perhaps only one exception, we had at our disposal a procedure with which we could meet it. For all save eclampsia we professed a remedy. Yet each year, in this island alone, 5,000 perished in childbed. What were we to say for modern midwifery when we witnessed year by year this sacrifice of fifty hecatombs of the most precious lives in the whole community, most of them in the very prime of life? Let the facts be looked at a little more closely, perhaps more impressively, in tabular form:

Mortality from Puerperal Fever in England and Wales.

		Mean Deaths per 1,000
1847—1856	Early anæsthesia, no antiseptics	1.80
1875—1884	Anæsthesia general, early antiseptics	2.28
1886—1895	Anæsthesia general, antiseptics general	2.46

These figures were sufficiently startling. They had been already discussed by Boxall, Cullingworth, Williams, and others, and that deaths from puerperal fever were increasing during the last forty or fifty years was undoubtedly as true as it was appalling. Attempts had been made to account for the great proportion of septic deaths by the errors of practice of ignorant and ill-trained midwives. The facts did not support this contention. In Scotland far more labours were attended by medical men in proportion to midwives than was the case in the middle of the century. Here then was how matters stood in Scotland:

Childbed Mortality in Scotland.

	Accidents of Childbed.	Puerperal Fever.	Total.
1897	331	205	536
1898	351	227	[illegible]

Now had the increase in 1898 been proportional to the increase of population, the figures would have been 1897 = 536, and 1898 = 540, an increase of 4. Instead we had an increase of 42, more than ten times the normal. The midwife, much as she had been compelled to play the part of scapegoat, could not carry this burden into the wilderness. As far as obstetrics was concerned, were we then to conclude that the discoveries of Simpson and Lister had been in vain? Let another page of the record be looked at. We all knew the frightful mortality which during the earlier part of this century seemed bound up with maternity hospital practice. These need not be recalled. But look at the statistics of one of our great maternity hospitals, the Rotunda, for two years:

Rotunda Hospital.

	Total Cases.	Mortality.	Per 1,000.
1896-97	1,448	2	0.13
1897-98	1,513	6	0.39

A brighter picture. Here surely we were as near as might be the "irreducible minimum," and Simpson and Lister were both justified and glorified. Why were the results of private practice so far behind those obtained in hospitals such as the Rotunda? Why were the results of private practice becoming worse and worse in spite of all that had been done for our science and our art during the closing century? How could this terrible mortality, connected with what ought to be a physiological process, go on increasing year by year, in spite of improved sanitation and other civilised amenities, in spite of the advantage given by accurate scientific knowledge, improvements in instrumental appliances, and increased practical skill? The explanation might be complex, but there must be some cause or causes at work to account for it, and this was the problem we had to face in the coming century. The process of parturition was becoming more and more hazardous, and obstetric art lay under a stigma, and did so deservedly, until the reason of it was discovered, and this terrible sacrifice of human life was checked. Dr. Milne Murray felt sure that an explanation of much of the increase of maternal mortality from 1827 onwards would be found in, first, the misuse of anæsthesia, and secondly, in the ridiculous parody which, in the hands of many practitioners, stood for the use of antiseptics. In a word, the use which had been made by many of two of the greatest blessings of humanity had converted them into little else than a curse. Before the days of anæsthesia interference was limited and obstetric operations were at a minimum because interference of all kinds increased the conscious suffering of the patient. Thus forceps and turning were employed only when natural efforts had failed, and such operations as the artificial dilatation of a rigid os were not attempted until it became an urgent necessity. When anæsthesia became possible and interference became on that account more frequent, operations were undertaken when really unnecessary, and so complications arose and the dangers of labour increased. Then came the antiseptic era. Here now was the panacea for all the dangers of childbed. All that was necessary was to dip the instruments for a few minutes in a carbolic lotion, and the hands in one of half the strength for half the time and all danger was at an end. When we heard of men who admitted that forceps cases represented 30 to 70 per cent. of their practice, we wondered what the antiseptic precautions were which they claimed as their justification. Normal labour was a natural process which was best left to itself, and the less the patient was disturbed with the paraphernalia of obstetrics before or after the better. The moment we interfered it became a complex and dangerous process, and it was simply because this was being constantly ignored that the death-rate of childbed was what it was to-day. Until men realised this, and recognised the fact that the simplest obstetric operation demanded not one whit less of care as to antiseptic precautions than was required before opening the abdomen we should get no further forward. A bruised or lacerated maternal canal was quite as susceptible to microbic attacks as the peritoneum, and probably more so. When it was realised that labour was a natural process which in the great majority of cases it was criminal to disturb, when it was realised that every interference increased the inherent danger a hundredfold, and when under this consciousness the obstetrician brought with him to the lying-in room all that was possible of those principles of antiseptic surgery which had been at the bottom of the triumphs of modern gynæcology, we should not have long to wait for the lightening of the dark cloud which hung over us now.

On the motion of Dr. Halliday Croom, seconded by Dr. Berry Hart, the President was awarded a vote of thanks for his address.

Extroversion of the Bladder.

Dr. Berry Hart dealt with this subject as follows:

(1) The anatomy of extroversion of the bladder and allied lesions. The region in which such fissures occurred was the mesial one between the navel and the perineal body. They varied in extent and depth, and we might have mere cutaneous cicatrices, exposure of the anterior surface of the bladder, exposure of the posterior wall of the bladder and urethra, epispadias, subsymphysial exstrophy, and split cervix might be present in some cases. (2) The origin of the bladder and the anatomical relations of the cloacal membrane. The bladder did not arise from the allantois except at its very apex. It originated from a division of the caudal segment of the primitive gut into two parts by coronal folds; the anterior was the bladder, the posterior the rectum. Various questions as to the tail gut, entodermal cloaca, and cloacal membrane were considered, and especially the relations of the cloacal membrane to gastrulation. (3) The nature of extroversion of the bladder and allied conditions in the same region. All these lesions were due to a yielding or separation of the cloacal membrane. The immediate cause of the yielding was not yet known.

The paper was spoken to by the PRESIDENT, Dr. J. W. BALLANTYNE, and Dr. W. TAYLOR; and Dr. BERRY HART replied.

CLEIDOTOMY.

Dr. J. W. BALLANTYNE read a paper on this subject. Cleidotomy, division of the clavicle (*Schlüsselbeinschnitt*), was an operation accessory to craniotomy or basilysis. Notes of a case were given.

A primipara, aged 25 years, had suffered from rickets in childhood, had many signs of that disease had a contracted pelvis, conjugata vera of 3 inches or a little less (7 cm.), after about twelve hours in labour the head was lying at the brim in the transverse diameter with the occiput to the left. One or two attempts at extraction by the forceps were futile. Therefore basilysis was performed with Simpson's instrument. It was also necessary to break up the basis cranii. After this the head was brought to the perineum and partly through the vulva, where it got jammed. With a pair of long strong scissors the right clavicle was cut through at the point of union of the inner third with the outer two thirds. A blunt hook in the left axilla enabled delivery to be made without any great difficulty. Cases of cleidotomy as reported by Dr. H. R. Spencer in 1895, by Fenomenoff (Russia), Knorr (Germany), Strassmann (Germany), Professor von Herff (Germany), H. A. von Guérard (Germany), Kallinowsky (Germany), and E. Bonnaire (France) were referred to.

Various operations allied to cleidotomy were briefly alluded to. Cleidotripsy might be dismissed as inelegant and unsatisfactory. It was better to divide with a pair of scissors than to break up with a perforator. Cleidorrhexis was difficult to regulate and uncertain in its action. The force was applied to the shoulders. It was used in breech cases when most of the trunk had been born. Supra-acromiotomy was only to be employed when cleidotomy was impossible on account of the inaccessibility of the clavicles. It might be of great value in a limited number of grave cases such as eclampsia. It was not exact or useful otherwise. The operation of cleidotomy was described. The index and middle finger of the left hand were passed up along the anterior aspect of the infant till the clavicle was felt. These acted as a guide and director to the pair of long blunt scissors. The indications for the operation were: (1) A broad-shouldered fætus, with it might be a normal sized head, a large head, or a deformed head; (2) contracted pelvis, justo-minor, flat rachitic, or kyphotic; (3) a broad-shouldered fœtus in a contracted pelvis, neither excessive; (4) impacted shoulders in breech cases; (5) danger from eclampsia, threatened uterine rupture, etc., necessitating rapid delivery. In all, or nearly all, its indications, cleidotomy was accessory to craniotomy or basilysis, and was carried out upon the dead infant; but these were not essential restrictions. Cleidotomy would take the place of indiscriminate and unregulated embryulcia of the shoulders and thorax. It was simpler, more rapid, more elegant, and equally effective, if not more so.

The paper was spoken to by the PRESIDENT, Dr. W. TAYLOR, FOULIS, HAULTAIN, and FORDYCE; and Dr. BALLANTYNE replied.

ELECTION OF OFFICERS.

The following office-bearers have been elected for session 1900 1901:—*President:* Dr. R. Milne Murray. *Vice-Presidents:* Senior, Dr. Macvie (Chirnside); Junior, Dr. Haultain. *Treasurer:* Dr. W. Craig. *Secretaries:* Dr. J. Haig Ferguson, Dr. W. Fordyce. *Members of Council:* Dr. Halliday Croom, Professor Kynoch (Dundee), Dr. James Ritchie, Dr. E. Farr Armour, Professor Simpson, Dr. J. W. Ballantyne, Dr. Boddie, Dr. Lamond Lackie. *Librarian:* Dr. Haultain. *Editor of Transactions:* Dr. N. T. Brewis.

MANCHESTER THERAPEUTICAL SOCIETY.—The annual meeting of the Society was held in the Owens College on November 7th. The following were elected officers for the session 1900-1901:—*President:* Dr. Dreschfeld. *Vice-Presidents:* Dr. Dixon Mann, Dr. Wilkinson. *Honorary Treasurer:* Dr. Williamson. *Honorary Secretary:* Dr. Wild. *Committee:* Dr. A. Brown, Dr. F. J. H. Coutts, Dr. T. N. Kelynack, Dr. E. Vipont Brown, Dr. J. S. Bury, Dr. E. S. Reynolds. The PRESIDENT, after referring in feeling terms to the loss the Therapeutical Society has sustained in the loss of Dr. Leech, delivered an address on rectal feeding, which he said was an important and useful addition to the methods of treating disease. In many cases, however, it was ordered without proper directions as to the quantity and kind of food to be administered. A sufficient amount to keep up the body weight could not be given, but nutrient enemata might aid by diminishing the rapid decrease of body weight. Dr. Dreschfeld then dealt with the capacity of different parts of the bowel for the digestion and absorption of the different elements of food, and gave details of the methods of compounding various nutritive enemata which had been found useful by clinicians. The indications for rectal feeding were exhaustively dealt with. Professor DIXON MANN pointed out that, though egg albumen was absorbed from the rectum, albuminuria sometimes occurred, which would indicate that the albumen had not been absorbed into the tissues. Bacterial decomposition of nutrient enemata sometimes took place, as shown by the presence of indican in the urine. Dr. J. S. BURY, Dr. A. HOPKINSON, and Dr. R. B. WILD also spoke.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Professor A. C. O'SULLIVAN, M.D., President, in the Chair.

Friday, November 2nd, 1900.

A CASE OF APHASIA.

DR. H. T. BEWLEY exhibited the brain of a woman, aged 33, who, in May, 1897, had an apoplectic seizure. When, after several days, consciousness returned, it was found that there was (1) slight paralysis of the lower half of the right side of her face, which soon passed off, and (2) inability to speak. This inability gradually lessened to some extent, but soon improvement ceased, and for the remainder of her life (she died of phthisis in February, 1898, nine months after the apoplectic attack) she was aphasic. A hæmorrhage was found to have taken place in the neighbourhood of the left island of Reil, which had destroyed the grey matter of the convolutions of the insula and some of the adjacent white matter. A small cavity occupied the place of these convolutions, and around it was a quantity of a yellowish substance containing many granules of hæmatoidin.

In reply to Dr. DAWSON, Dr. BEWLEY said that with regard to the seat of the hæmorrhage, he was inclined to think that it was in the space bounded by the convolutions and the island of Reil.

The PRESIDENT was of opinion that it was an intracortical hæmorrhage.

BACTERIOLOGY OF AN ABSCESS UNDER THE SCALP.

The PRESIDENT gave particulars of the bacteriology of a case of abscess involving the frontal, parietal, and temporal bones. He isolated from the pus the streptococcus pyogenes and the staphylococcus pyogenes, albus, and aureus. The streptococcus proved very virulent, 1 c.cm. of a broth culture, injected intraperitoneally into a rabbit and subcutaneously into a guinea-pig about 2 P.M., causing death during the same night. Neither variety of the staphylococcus produced any effect when inoculated into guinea-pigs or mice.

Professor BENNETT said that some details of this case during life might prove of interest. He saw the child a year and a-half ago, and the case was remarkable as an illustration of what was not commonly seen, namely, a combination of tuberculosis with rickets. The child had rickets, and when he was six or seven years old there supervened on the rickets tuberculosis, which attacked him in many places. Over the temporal fossa of his left side was an abscess like the other tuberculous ones all over his body. He developed the symptoms of ordinary tuberculous meningitis of children, and the question then arose whether the suppurating centre in the temporal fossa should not be exposed in which a dead bone, undetached, could be felt, and the skull opened. Had he opened it he would have found nothing but a little piece of bone which

contained no tubercle. He would have probably hastened the death.

Professor McWeeney said it would have been interesting, in view of the development of general tuberculosis, if one of the guinea-pigs had been directly inoculated from the pus and not from one of the cultivations, because it was well known how very difficult it was to detect tubercle bacilli in specimens of exudation, pleural, peritoneal, or meningeal, by the microscope alone. He had come to the conclusion that in suspected tuberculous cases the only final test was inoculation.

Dr. Knott remarked that tuberculous meningitis occurring at that age was rather a local affection as contrasted with the tuberculous meningitis they found in young adults.

The President, in reply, agreed that inoculation was often the only way to determine positively the presence of tubercle, but in this case if he had inoculated the guinea-pig with this pus the streptococci would have killed it long before the tubercle bacilli could have acted. The pus was not like that of a cold abscess where the cells had completely degenerated, but was quite fresh.

Specimens.

Dr. H. C. Earl showed a specimen of thrombosis of inferior vena cava and iliac veins associated with uterine fibroids.—Dr. H. T. Bewley exhibited a heart, the subject of mitral narrowing and aortic regurgitation, taken from the body of a girl, aged 20, who, while apparently in perfect health, suddenly fell down dead while walking across a yard. At the necropsy the heart was found moderately full of blood; the blood was unusually fluid. The mitral orifice was extremely narrow, not admitting the tip of the finger; the left auricle was dilated and its wall greatly hypertrophied; the aortic cusps thickened and contracted; the left ventricle slightly hypertrophied; the muscle of the heart, the coronary arteries, and the right side of the heart normal. All the other organs of the body were healthy.

Hunterian Society.—At a clinical meeting on October 24th, Dr. Dundas Grant, President, in the chair, Dr. Fred. J. Smith exhibited (1) a case of cirrhotic kidney showing well-marked albuminuric retinitis in a labouring man, aged 40. The symptoms were principally those of ingravescing uræmia. Dr. Smith incidentally stated that great relief to the breathing had been experienced from venesection a few days previously. The changes in the retinæ showed both the glistening patches and the small scattered hæmorrhages remarkably well. The prognosis was extremely bad, not only on account of the retinal changes, which had almost certainly been present for nearly a year, but also on account of the persistent and ingravescing character of the uræmic symptoms. (2) A case of aneurysm of the thoracic aorta which had been treated with injections of gelatine. The patient was a cabinet maker, aged 55, who had previously been treated with rest and potassium iodide with considerable relief, but in autumn, 1899, injections of gelatine were begun. According to the patient's statement there had been great improvement from the injections, of which in the course of the last twelve months he had had about 25, the tumour had practically disappeared. The method adopted was at first 50 c.cm. of a 2 per cent. solution, later 150 c.cm. of the same, and lastly 200 c.cm. of a 1 per cent. solution. Though the patient's evidence was greatly in favour of the procedure, Dr. Smith felt very sceptical as to the genuine efficacy of the treatment. He added, however, that his colleague, Dr. Percy Kidd, felt convinced that much good resulted from the treatment.—Dr. David Ross showed a microcephalic idiot, a girl aged 3 years and 4 months, the eldest child of healthy parents. According to the mother there had never been any fontanelle, and the frontal suture had become very prominent, though not noticeable at birth. The circumference of the head was very small, and there was a reversal of the normal relation of size between the face and the skull. As regards operation in such a case, no one would *a priori* expect any benefit to follow. Dr. Hingston Fox and the President had known of improvement after craniotomy. Dr. Sequeira was not in favour of craniotomy, believing that the condition of the skull was secondary to the deficient development of the brain. He attributed the improvement which he had seen after the operation in some cases to the attention given to the education of the children whilst in hospital. The benefit had never been permanent.—Dr. Hingston Fox showed a case of aortic disease of at least eleven years' duration in a woman aged 79. Dr. Chaplin considered that regurgitation had supervened upon the aortic obstruction and placed the heart in a more favourable condition for compensation. Drs. Fred. J. Smith, Sequeira, and the President also discussed the case.—Dr. Hingston Fox also showed a case of recovery from rickets in a girl aged 9 years and 8 months. The signs were severe, and the treatment by drugs (cod-liver oil and red syrup) was not long persisted in. Salt-water sponging, frictions, and regulated diet and hygiene, which were also enjoined, might have been better attended to. She was now, despite a history of many ailments, a well-grown girl with straight limbs and well-formed head. Dr. David Ross, the President, and Dr. Hingston Fox urged the value of cod-liver oil in rickets.—The President showed a test case of supposed primary specific ulceration of the tonsil in a married woman, aged 32. There were no symptoms of genital inoculation, but the husband's tongue presented ample evidence of old-standing tertiary changes with a slight erosion on each side, the primary inoculation in this case dating more than twelve years back. The result of treatment seemed to confirm the diagnosis. Dr. Kelson instanced a case of syphilitic infection by means of the guillotine.—Dr. Glover Lyon showed a case of obscure condition of chest by means of the *x* rays. The patient was a boy, aged 15, with no family history of phthisis, who six months ago began to suffer from general weakness, slight cough without expectoration, and some shortness of breath. The only abnormal chest sign was very marked diminution of breath sounds all over the left side. There were some enlarged glands over the right clavicle. The diagnosis had been enlarged glands pressing on the bronchi of the left side. The shadow on the *x*-ray screen appeared to confirm this. Dark patches of indefinite shape were seen on either side of the heart's shadow corresponding to the position of the bronchial glands. These were most marked on the left side.

British Balneological and Climatological Society.—At a meeting on October 31st, Dr. Douglas Kerr (Bath) in the chair, the Treasurer's balance sheet for the year ending September 30th, which showed the very satisfactory financial position of the Society, was presented and passed.—Votes of thanks were passed to the retiring President, Council, and officials.—The new President, Dr. Frederic Bagshawe (St. Leonards) gave an address on some points in the development of seaside towns. He traced the early history and development of watering places, specially dwelling upon the steps to be taken for the sanitation and water supply of such growing towns. He showed that "the close aggregation of towns" around our coasts in certain parts must lead before long to considerable difficulty in the disposal of sewage; and that there was reason to fear lest the sewage discharged from one town might cause nuisance by being carried by the set of the tide and deposited along the shore of a neighbouring town. To remedy this either some joint scheme must be hit upon by contiguous towns, or some means must be adopted by which the solid parts of the sewage could be reduced and the effluent rendered innocuous. Of the various plans of sewage treatment hitherto in vogue, a large number aimed at the precipitation of the solid matter in suspension by the addition of chemicals, the resultant sludge being then submitted to pressure and, when dry, disposed of as manure. This was a costly and unsatisfactory process. Admirably adapted as sewage farms might be to many inland towns, they must remain an impossibility for most seaside resorts, owing to low levels and the want of available lands. The bacterial system seemed to have established itself firmly in the valleys of the Thames and Exe and in other parts, and to be receiving recognition, financially and otherwise, from the Local Government Board.

The great principle has been evolved that the rapid splitting up of the organic compounds in the sewage matters passing through the filters was due to the activity of the large number of micro-organisms therein contained. Bacteria worked their ends under two conditions: (1) in the closed or anaërobic beds, (2) in the open or aërobic beds. In the former the organic matter was gradually broken up and liquefied by the bacteria, and the inorganic matter was raised by the gases and gradually carried off in the flow, so that the quantity of solid in the septic tank did not sensibly increase, although its capacity was such as to certain only one day's sewage. The aërobic system did not apply upon septic tanks, but was found to work most conveniently and effectively with them. The sewage in this system was distributed through open channels over beds of coarse and then fine coke breeze, the meshes of which were known to be charged with aërobic bacteria. Alternate beds were employed, so that each should be used intermittently. During the period of rest these bacteria took up oxygen from the atmosphere, and resumed their power of acting upon and nitrifying fresh portions of sewage brought in contact with them. Thus employed the alternating beds continued to carry on their

work for weeks together without becoming clogged. The effluent from these beds was found to be clear, pure, and inodorous, and left hardly any sediment after long standing.

Such processes as these furnished a method to obviate danger from the discharge of crude sewage on the foreshore. Sea water was shown to be an unsatisfactory medium for the purification of sewage, partly because it contained a comparatively small number of water bacteria, but mainly because the tidal disturbances prevented sedimentation of the suspended organic matter, which allowed the organisms which lived in the absence of air and light to do their necessary work. The dangers arising from the discharge of sewage in the proximity of oyster beds might be counteracted by the use of the bacterial system. This system had recently been introduced at Morecambe, in Lancashire, and might prove very valuable where similar conditions prevailed or where seaside towns were closely aggregated. After alluding to the water supply and other hygienic conditions of health resorts, Dr. Bagshawe concluded by insisting on the importance of the presence of medical men on Boards of Health and Sanitary Committees, showing the power they possess of furthering the efforts of the medical officer of health in the cause of sanitation by the direct personal influence they could bring to bear upon these bodies.—A vote of thanks was passed to the President for his address.

Forfarshire Medical Association.—At a meeting on November 1st, Dr. C. S. Young, Vice-President, in the chair, Professor Kynoch showed a specimen of ovarian tumour removed *per vaginam* from a patient from whom he had removed a similar but larger tumour by the abdominal route.—Dr. McGillivray read a paper on advancement *versus* tenotomy in the surgical treatment of concomitant strabismus and its treatment by optic and orthoptic means. The merits of the two methods of surgical interference were discussed, convergent strabismus being taken as an example. Advancement was shown to be more rational, being based on etiology, and having for its object the strengthening of the disused and therefore weakened external recti, instead of the weakening of the unimpaired internal recti by tenotomy. Both external recti should be advanced at the same time, as the condition was a bilateral one. Over-correction was never seen after double advancement even, when in severe cases it was associated with excision of a portion of the tendon of the muscles. This could not be said of tenotomy. Cases were shown to demonstrate the above points.—Professor A. M. Stalker gave an account of a case of visceral syphilis in a man aged 47.—Dr. W. F. Foggie described the nervous sequelæ found in a man five months after he had been injured by a fall of 40 feet, which had apparently resulted in unconsciousness, retention of urine, and severe bruising, but no evident fracture. His present condition showed partial rectal and genital paralyses; symmetrical areas of thermo-anæsthesia and analgesia over both heels enclosing much smaller areas of tactile anæsthesia, numbness, and impaired sensation around the anus; increased knee-jerks, pains in the bladder and urethra as well as over each side of the small of the back. These phenomena pointed to a hæmorrhage into the cord involving to some extent the sacral segments from the second to the fifth, and probably also their roots unless the irritative phenomena above mentioned were secondary to the cystitis still present.—Dr. J. Mackie Whyte gave an account of a case of a quarryman who had during the last year and a-half frequent attacks of dyspnœa, with some cough and slight expectoration. The physical signs were those of chronic pneumonia. He died during an attack of dyspnœa. The *post-mortem* examination showed the lungs to be those of a case of pneumo-koniosis.

Nottingham Medico-Chirurgical Society.—At a meeting on November 7th Mr. G. B. Wray gave a presidential address on modern sanitation. After referring to the sanitary enactments of the last twenty-five years, and the difficulty experienced in getting rural district councils to adopt any of them, he advocated the establishment of a Board of Health (detached from any connection with Poor-law administration) to administer a new consolidated and amended Public Health Act, together with the factory, workshop, and burial ground departments of the Home Office, and the veterinary department of the Privy Council, with an efficient staff of experts to act as inspectors, part of whose duty should be to visit periodically and report on the sanitary condition of every district in the country. He further advocated the appointment of whole-time medical officers of health for every county, an increase in the powers of county councils, and the formation of combined districts for sanitary administration. After describing experiments he had been carrying out on the biological treatment of sewage, he laid special stress on the work done by the macroscopic agents of Nature, such as worms and flies, and urged a more vigorous enforcement of the Rivers Pollution Act to reclaim our dykes, streams, and rivers from the opprobrium of open sewers. Attention was drawn to the unsatisfactory condition of the houses of the working classes, and the many difficulties in the way of abating nuisances from overcrowding in rural districts, both of which were strong factors in fostering and propagating tuberculous diseases. A short allusion was made to the means which were being and might be taken for the suppression and prevention of these diseases, and credit was given to those authorities who had done good work in this direction by the registration and inspection of slaughterhouses, the inspection of meat, and the adoption and enforcement of regulations under the Dairies, Cowsheds, and Milkshops Orders.—A vote of thanks was unanimously accorded the President for his address.

Society of Anæsthetists.—At a meeting on November 2nd, Dr. J. Frederick W. Silk, President, in the chair, Mr. Carter Braine related a case in which alarming symptoms ensued when the patient, a thin, feeble woman, aged 28, was placed in the Trendelenburg position.

Anæsthesia was induced with gas and ether. After the abdominal incision had been made, chloroform was used. Mucus collected with great rapidity in the pharynx, the breathing became laboured, and there was marked cyanosis. These symptoms were relieved when restored to the horizontal position, but appeared again when the Trendelenburg position was again had recourse to.

Dr. Dudley Buxton thought the condition could be ascribed to some vasomotor idiosyncrasy on the part of the patient.—Mr. Francis, of University College, read notes of a case in which the administration of nitrous oxide to a girl, aged 10, gave rise to slow, shallow respirations, great lividity, and enormous venous distension.

The heart on ausculation and percussion was found to be distinctly distended, and a systolic murmur heard over the displaced apex. Both before and after the administration the heart was of normal size, and there was no abnormal murmur. The recovery was good, and on a subsequent occasion, when chloroform was used, no trouble followed.

Mr. Crouch, Dr. Probyn Williams, Dr. Dudley Buxton, and Mr. Fuller discussed the case; and Mr. Francis replied.—Dr. Flux described a valveless stopcock for the administration of nitrous oxide by the open system. The instrument consisted practically of two tubes, one rotating within the other, so as to open or close the opening into the bag. The inner tube was bevelled off so as to form an inclined plane, by means of which the gas was directed into the face-piece, and there was always a large air opening, the weight of the gas being relied upon to prevent undue admixture with air. Dr. Probyn Williams, Dr. Low, and the President took part in the discussion; and Dr. Flux replied.—A communication from Mr. Copestake, of Derby, was read commenting upon two recent deaths under chloroform.

Pathological Society of Manchester.—At a meeting on November 14th, Dr. Wilkinson, President, in the chair, several new members were elected, amongst them being Dr. Annie M. S. Anderson, the first lady member of the Society.—Dr. David Orr and Dr. Cowen gave a demonstration on some features in the pathology and morbid histology of general paralysis of the insane.—Dr. Thomas Harris showed preparations from a case of pulsating pyopneumothorax.

A man, aged 32, had an empyema following erysipelas of the face. The empyema ruptured through the lung, and there subsequently developed a large swelling in the left infraclavicular region, which pulsated synchronously with the heart, and to the hand felt exactly like a thin-walled aneurysm. The swelling was, however, perfectly tympanitic on percussion. The man, who was extremely feeble on admission to the infirmary, died when the pus was being drawn off from the chest. *Post-mortem* examination showed very marked necrosis of the pleura at various parts, and the pulsating air sac had been formed in the subcutaneous tissue of the chest wall.

Dr. Harris had been unable to find any record of a pyopneumothorax where the air sac pulsated.—Mr. Southam made some remarks upon the conditions met with in a series of 50 cases

of recurrent appendicitis treated by operation, and a number of preparations were shown illustrating the changes produced in the appendix as the result of repeated attacks of inflammation.—Dr. Hill Griffith mentioned two cases of rodent ulcer of the eyelid, and showed microscopical sections of the same.—Dr. C. Powell White showed two specimens of so-called infective sarcoma of the vagina of bitches.

Bournemouth Medical Society.—At the annual meeting held on October 26th, Dr. James Davison, President, who was in the chair, referred to the loss the Society had suffered by the death of Dr. D. C. Embleton, a former President of the Society, and proposed a vote of condolence with Mrs. Embleton and the family. The report and financial statement for the year 1899-1900 were considered and adopted. Dr. Davison then introduced Dr. Arthur Ransome, F.R.S., as his successor in the presidential chair. Dr. Ransome, after expressing his sense of the honour done him, proposed a vote of thanks to the retiring President, which was carried with acclamation. Messrs. A. H. Vernon, D. M. Ross, and W. H. L. Marriner, were elected Treasurer, Secretary, and Librarian respectively. The following members were elected on the Committee for the year 1900-1901: Drs. A. C. Coles, James Davison, T. Fred. Gardner, W. H. L. Marriner, and J. R. Philpots. After the meeting thirty-five members and six visitors dined together. It was mentioned by one of the founders of the Society that this meeting was the silver jubilee of the Society which was founded in 1875, and therefore a record one, as was also the large number of members dining together.

REVIEWS.

RECENT LITERATURE ON CLIMATE, HEALTH RESORTS, AND HYDROTHERAPEUTICS.

Dr. Matthes's *Lehrbuch der klinischen Hydrotherapie*[1] deserves special attention, for he has had the advantage of nearly ten years' experience as assistant in Professor Stintzing's clinic. He has dealt with the subject from the clinical point of view, and points out the uses of hydrotherapy in the various classes of cases met with in general practice and in the wards of a general hospital. He justly remarks that the material at the disposal of the medical directors of hydrotherapeutic establishments is almost necessarily very one-sided, and is especially likely to be deficient in severe organic diseases. He doubts whether the so-called "physiological basis" of hydrotherapeutics is so well-established as it is sometimes supposed to be. In regard to the action of hydrotherapeutic procedures on the circulatory system and the physiological basis of our knowledge, Dr. Matthes concludes that the hydrotherapeutic stimulus "both directly and reflexly affects the blood vessels and heart, the work done by the heart, and the distribution of blood. At present, however, we are only at the commencement of a knowledge, based on physiology, of the details of such action. Still it may, he thinks, be said "that thermal stimuli, if applied in the proper manner, as dictated by experience, do improve states of the circulation." The second part of the book, devoted to the technical side of the subject, gains very much by the insertion of many illustrations showing how the various methods are carried out. The third part, which is much the longest, deals with the hydrotherapeutic measures which can be adopted in various diseases and morbid conditions. The sections on surgical affections, ophthalmic diseases, and gynæcology are contributed by Drs. P. Cammert, E. Hertel, and F. Skutsch respectively.

Dr. Baruch's book on *The Principles and Practice of Hydrotherapy*[2] is well written on a good plan. Practically it is divisible into two parts, though this is not evident from the table of contents. The first part treats of the theory of bath treatment, whilst the remainder of the book is concerned with the practical application of water treatment. Little exception can be taken to the style beyond the fact that the author reveals his enthusiasm too often, and uses such words as "hydriatrics" and "hydriatics." We may, however, call attention to the statement made on page 421 that "in England hydrotherapy had not obtained a foothold among physicians." According to the definition of hydrotherapy given in his own book, water treatment does not consist of the application of Brand's treatment only, and it was not wise to judge of England from the results of one visit to the wards of a London hospital. We trust that Dr. Baruch during another, and perhaps more thorough, visit to English hospitals, will find reasons for correcting the statement he has made, by finding that many of the excellent and time-honoured practices advocated in his book are in active use. We may also remind Dr. Baruch that the observations of Maximilian Schüller about the reflex excitability of the vessels of the pia mater are probably wrong. The researches of Leonard Hill, Gullen, Roy, and many others have proved almost incontestably that there are no vasomotor nerves in the vessels of the pia mater—the changes in these vessels noted in trephined rabbits must be due entirely to what Dr. Baruch calls the hydrostatic effect of the blood. The author frequently throughout the book reminds readers that the effect of water treatment is not to produce a lowering of temperature merely, but also to produce a general stimulating effect, and we are indebted to Dr. Baruch for helping to dispel the former delusion. Passing on to the more practical part of the volume, we find an excellent account of the application of the cold bath in typhoid fever, and this chapter is more valuable than others because the writer has had extensive personal experiences of the treatment. Reference is made to Brand's excellent results in a large series of cases in which the bath treatment was applied as early as before the fifth day, and Dr. Baruch wisely comments upon the possibility of many of the cases having been examples of some other disease. He, however recognises the immense importance of treating typhoid with the bath quite early, and advocates its use in all febrile cases in which the temperature is maintained at a considerable height for several days, despite the fact that a diagnosis of typhoid fever may not have been made. The illustrations accompanying the chapters on the application of the wet sheets, drip sheets, etc., supply a want. The chapter on the treatment of chronic rheumatism is well worth reading, and we believe that the statements made as to the excellent results obtained are not exaggerated. Warm bathing is advocated for children in febrile complaints. No information is given on medicated and electric baths, nor is the more modern local treatment of joint troubles with very hot air mentioned, though hot air baths are described in an earlier chapter.

Dr. Labat, who has written a good deal about health resorts outside his native country as well as about those in it, now gives us his observations on the numerous places that he has visited in the British islands.[3] As usual, his remarks are interesting, and what he has to say is always concisely expressed and forms easy reading. In his preface addressed to English colleagues he writes that, though England has few spas, some of them are of the first class and well frequented, whilst the accommodation is good, the charges moderate, and the price of baths reasonable considering the comfort. At many of the spas hydrotherapeutic treatment takes an important place. He regards the sea-bathing resorts as the first in Europe, and says that the British winter resorts are not sufficiently appreciated. He points out that the latter have mild, humid, and equable climates of 5° to 7° C. Rain is abundant, fog frequent, but snow rare. Few winter days are really fine, and the sunshine is feeble, but specimens of southern vegetation may be seen. He compares the winter resorts of the British Isles with those of the south-west of France (Arcachon, Biarritz, Pau, and Dax). The winters of the latter are mild and humid, with a mean temperature of 6° to 7° C. Their climates are equable, but the mean annual temperatures are more elevated than those of the British localities owing to greater summer heat. The winds on the coast of the Bay of Biscay are as strong as those of the Irish resorts. Mediterranean vegetation is poorly represented on the south-west coast of France, whilst it is abundant on the south coast of

[1] *Lehrbuch der klinischen Hydrotherapie.* [Textbook of Clinical Hydrotherapeutics.] Von Dr. Max Matthes. Jena: G. Fischer. 1900. (Royal 8vo, pp. 410, 53 illustrations. M 9.)

[2] *Principles and Practice of Hydrotherapy.* By S. Baruch, M.D. London: Baillière, Tindall, and Cox. 1900. (Demy 8vo, pp. 429. Numerous illustrations. 16s.)

[3] *Climat et Eaux Minérales* [Climate and Mineral Waters of England]. Par le Dr. A. Labat. Paris: J. B. Baillière. 1900. (Demy 8vo, pp. 80.)

England. The days of sunshine, however, are more numerous and longer in the French resorts than in the English. Dr. Labat's little book contains much (including some remarks on English habits) to interest English doctors, and it should make English health resorts better known in foreign countries.

ROUMANIA possesses many thermal springs, some of which were known to the Romans. Thus, at Bolivari, near Cozio, on the left bank of the Olt, there is a sulphurous spring (temperature about 82° F) with the remains of the thermal establishment of "Bulidava" dating from the year 138 of the Christian era. Dr. Félix, the well known Professor of Balneology at Brussels, has recently furnished the Roumanian Government with an able report on the mineral waters of Roumania, and it is probable that as the means of travelling become easier, many of the health resorts of this country will be gradually developed. The Lakes of Balta-Alba and Lacul-Sarat have salt waters, and salt mud baths are employed there, as at some places in Russia. Vulcana, Monteor-Sarata and Slanic also possess common salt waters. Near Campu-Lungu, a summer resort at the foot of the Carpathians, are the muriated waters of Bughea. There are sulphurous and other mineral waters at Strunga and Caciulata. Arsenical waters are represented at Dorna-Scharu, about 3,600 feet above sea-level. Dr. Berger mentions all these in a pamphlet[4] published recently and also describes some climatic resorts, amongst which is Sinaïa, with the summer residence of the Roumanian courts. It is picturesquely situated in the Carpathians, amongst parks and pine woods, near the Transylvanian frontier, at an elevation of 2,620 feet above sea-level. At Mount Tigvele, in the district or Gorju, a sanatorium for consumptives is to be erected in a sheltered position 3,600 feet above sea-level. Near the sea-port of Constanza there is a sanatorium for scrofulous children.

The volume which bears the somewhat odd title, *Mémentos de Médecine Thermale*,[5] contains short articles on a great number of French mineral water health resorts written by medical men well known in connection with the spas which they describe. The whole is edited by Dr. MORICE, who, as editor of the Paris journal, *Gazette des Eaux*, is well qualified for such a task. Dr. H. Huchard, in his short introduction, declares the volume indispensable to French doctors. Probably it will be found useful by a good many English ones also, especially by those likely to be consulted by the numerous class who spend a great part of most years on the Continent. The spas are arranged in alphabetical order so that no reference to the index is necessary.

Dr. ODILON MARTIN has written a small handbook which he calls a "Formulary,"[6] on the therapeutic action of water at different temperatures and in various forms of application by sponging, packing, douche, and bath. The book will be welcome to those who have but slight acquaintance with the subject, and it would be of use to those concerned in the design of modern hospitals in which such measures ought to form one of the recognised methods of treatment. Complaint is made of the want in France of more private establishments in which treatment could be carried out, and we feel there is as great a want in England; even our large hospitals, with few exceptions, are unprovided with a complete bath equipment. A very clear account is given of the therapeutic action of water, and good reasons are adduced for the use of local water treatment. To those who have found that the application of a wet sheet for reduction of temperature is disappointing in some cases, it will be of interest to be reminded of the plan recommended by Winternitz of combining packing with massage, whereby the smaller arteries of the surface of the body are dilated, so producing increased loss of heat. Too often it is thought that the application of water is merely of use to reduce temperature, but Dr. Martin gives valuable suggestions for its use in securing a sedative action, as for example in cases of nervous excitement met with in subjects of chorea, cases of delirium tremens and of neurasthenia. In the latter case it may be far better to use a damp sheet than to apply to the nape of the neck and to the calves some irritant or blistering agent. Dr. Martin prefers the "bains de Bouchard" to the method advocated by Brand in the treatment of typhoid fever, and warmly advocates the so-called "Scotch douche" for such obstinate affections as sciatica and lumbago.

LA DIPHTÉRIE, DEPUIS ARÉTÉE LE CAPPADOCIEN JUSQU'EN 1894: avec les Résultats Statistiques de la Sérumthérapie sur deux cent trente mille cas; tubage du Larynx, Historique, Instrumentation, Technique, Séméiotique. [Diphtheria, from Aretæus the Cappadocian to 1894; with the statistical results of the antitoxin treatment in two hundred and thirty thousand cases, and an account of intubation of the larynx.] Par le Dr. RAOUL BAYEUX. Paris: Georges Carré et C. Naud. 1899. (Roy. 8vo, p. 348, with illustrations. Fr. 10.)

To anyone who is still sceptical as to the value of the antitoxin treatment of diphtheria we strongly recommend a perusal of this work. The historical extracts, selected with excellent judgment from many old writers, ought to convince him that in its clinical aspects the disease has not altered one whit during the eighteen centuries that have elapsed since it was first described by Aretæus the Cappadocian. It has been more prevalent or more severe at one time than another; but even in its least deadly epidemics it still was fatal enough to be greatly dreaded. Dr. BAYEUX's historical account further emphasises the fact that during the ages intervening between Aretæus at the end of the first and Bretonneau at the beginning of the nineteenth century no improvement worthy of mention was introduced in the treatment of this malady.

To Bretonneau and his immediate successor, Trousseau, we owe the systematic adoption of tracheotomy in laryngeal diphtheria; and it is difficult at the present time to realise the opposition that was roused against the frequent performance of this very necessary operation. Since Trousseau's day little advance was made in treatment until the year 1894. True, intubation, originally proposed by Loiseau and Bouchut, was revived by O'Dwyer; but it cannot be said that before the antitoxin era its results were more satisfactory than those furnished by tracheotomy. In 1894 the antitoxin treatment, the result of many patient researches into the question of immunity, was clearly and widely proclaimed to the medical world; and 1894 is the great date in the history of diphtheria. Dr. Bayeux has collected from every quarter of the globe well-authenticated statistics which clearly demonstrate the value of the treatment. To anyone wishing to study the question from the statistical standpoint, this portion of the book will prove a mine of information.

The rest of the work is occupied chiefly with an account of the treatment of laryngeal diphtheria by intubation. On this subject Dr. Bayeux is exceptionally well qualified to write. Not only has he an immense experience of this measure, but to him are due two notable improvements in connection with it, namely, the shortening and slight but important alteration in shape of the tubes, and the very simple method by which they can be removed from the larynx by external manipulation without the aid of any instrument whatsoever. The reader will find a lucid and graphic account of the details of this operation. It has, however, always seemed to us a pity that a less clumsy word than "enucleation" could not be employed to denote it.

In an able discussion of the indications for surgical intervention in laryngeal diphtheria the author draws attention to a symptom which he states to be of value, the contraction of the sterno-mastoid muscles during the act of inspiration. When this occurs there must be no further delay. The book is concerned only with the three subjects we have mentioned—the history of diphtheria, the statistics of the serum treatment, and intubation. But these questions are very thoroughly dealt with, and we congratulate Dr. Bayeux on the result of his labours.

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[4] *Les Eaux Minérales en Roumanie* [Mineral Waters of Roumania] By Dr. M. S. D. Berger. Paris: Office of the *Archives Orientales de Médecine et de Chirurgie*. 1900. (8vo, p. 10. Fr. 1)

[5] *Mémentos de Médecine Thermale*. Published under the direction of Dr. G. Morice. Paris: Libraire Maloine. 1900. (Demy 8vo, pp. 242. Frs 4)

[6] *Formulaire d'Hydrothérapie et de Balnéothérapie*. Par Dr. Odilon Martin. Paris: J. B. Baillière et Fils. 1900. (Pott 8vo, pp. 252, 17 illustrations, Frs. 3.)

ROYAL NAVAL HOSPITALS RECENTLY BUILT AND BUILDING.*

II.—ROYAL MARINE INFIRMARY, WALMER.

This new infirmary for the treatment of the sick and hurt of the Royal Marine Light Infantry Depôt at Walmer replaces the former one, which was the wing of a naval hospital built at the beginning of the century, the remainder of the building affording barrack accommodation. The old infirmary wards were good, their opposite windows affording through ventilation, but the administrative arrangements in that old building left much to be desired in these days. Hence the erection of the new infirmary; the old one will be utilised as barracks. The infirmary site is an old drill field to the north of the depôt barracks; the ground plans here given will indicate the arrangement of the infirmary stock-brick slate-roofed buildings, erected on concrete surfaces with a minimum thickness of 12 inches, as also the space available for future extension and additions.

The Royal Marines.

Marines are the military force of the Crown under the control of the Admiralty; they date from 1664 when Charles II authorised the raising of the Duke of York and Albany's Maritime Regiment of Foot, the care of which was recommended to the Duke of Albemarle, his Grace Lord General of His Majesty's Forces.

The original aim, since modified, was stated to be to form a nursery whence to obtain seamen to man the fleet. They were also as sworn men, which seamen are not, relied on in the days of impressed men to check or suppress the tendency to mutiny among the seamen, an idea which survived even after those days, supported by their being berthed on board ship between the officers' accomodation and that of the seamen.

The marine is especially "a handy man," or as the Chinese say, "a sailor-soldier man," and their gallant action at Graspan won them the character of "the bravest of the brave." When embarked marines act as guards, sentries, or officers' servants, while those not so employed assist in the general duties of the ship; they also help to work the guns and form part of naval brigades landed as of late in cases of emergency. They are not short service soldiers, but are recruited for twelve years, with the option of serving for nine more and securing a pension. When afloat they receive free rations, and consequently the service is popular.

Although in the present day this force is composed of Royal Marine Artillery and Royal Marine Light Infantry, it is for the latter only the depôt at Walmer is now utilised, and there their recruits are sent to qualify in infantry drill, the recruits' course of musketry, gymnasium, and swimming instruction. They are then transferred to the Royal Marine Light Infantry Divisions at Chatham, Portsmouth (Gosport), and Plymouth.



A, A, A, infectious blocks; B, infectious staff block; C, surgical block; D, D, medical blocks; E, kitchen; F, stores; G, reception block; H, guard house; I, married quarters; J, laundry; K, mortuary; L, recruits receiving station; M, future extension medical block; N, future surgeons' quarters.

Hospital Administrative Block.

The Administrative Block.—This contains a men's waiting-room, a room for women and children of the depôt requiring treatment, an examination and ophthalmologist's room combined, on one side of this one storey building; on the other side a medical officer's room, the dispensary with drug and poison store rooms, a store room for beer, wine, and "medical comforts." Separated by a good lobby space are three distinct waterclosets and lavatories.

Stores.—In this one-storey building provision is made for clothing, general and condemned stores.

Kitchen.—Also a one-storey building with floor of concrete, the kitchen floor is 29 feet by 20 feet 9 inches, the walls are plastered, with tiling around the stoneware sinks, the ranges are Deane's coal fire ranges; the cooking for both the general and the infectious hospitals is carried out here, the serveries for the two are, however, quite distinct, allowing of no contact between the inmates of the two divisions. In the same building are store rooms for groceries, bread, meat, fish, and ice, milk, vegetables, all except bread and grocery with slate shelving; also wood and coal stores, a cook's room, a weighing and receiving room, a larder, a pantry, a preparation room and scullery combined, a knife-cleaning room, etc. There is a central yard for hand carts; two waterclosets also open from it.

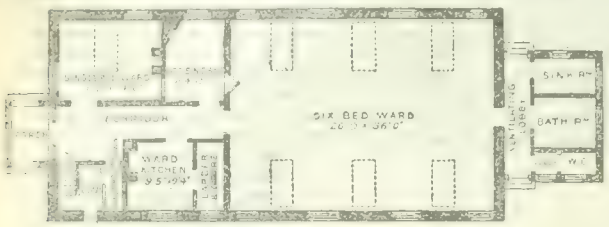
The General Hospital.

The general hospital has accommodation for 84 patients. The wards are two-storeyed, with stairs four and-a-half feet wide to the upper floor, permitting of the ready transport of cot cases.

Surgical Block. — To the left of the entrance end of this block, as an annexe, the modern aseptic operation room is situated. It has an area 20 feet by 16 feet 9 inches, with a height of 11 feet; there are two windows 7 feet by 2 feet 6 inches on the north, and two on the south side, with an overhead light 10 feet by 6 inches with a north aspect: gas lighting is provided here as elsewhere in the infirmary. The wards in this block are entered at their south end, a small verandah on the upper floor serving as a cover to the entrance, on the left of which is a broom, etc., room; next as you advance, the passage to the operating room; a linen room, two single bedrooms 12 feet 6 inches by 10 feet 9 inches, with a height of 12 feet, a lavatory and waterclosets annexe adjoining; an attendant's room 10 feet 9 inches by 9 feet, with observation windows to single bedroom and to ward; on the right of the entrance, in the following order, a coal store for the block, a larder, the ward kitchen with dresser for mess traps, a small verandah, and the bathroom which receives its hot-water supply from the ward kitchen; every bathroom has one portable bath. The wards, with an area of 40 feet by 26 feet, and height of 12 feet, are furnished with ten beds, five a-side, placed between the windows; the floors are of polished teak, save around the stoves and over the air inlets and smoke outlets from the central double-faced stoves; the windows have an upper hopper sash opening inwards; the other ventilators

* The first article appeared in the British Medical Journal, June 9th, 1900, pp. 1415-16.

are controlled by lockable rods, an excellent arrangement; the walls are coated with Robinson's cement painted duck-egg green above with a darker-shaded dado, with a still darker dividing band; all angles are rounded. At the far end of the wards, opening from a well-ventilated interspace, is a sanitary annexe with lavatory, watercloset, and a sink room, fitted with Dent and Hellyer's hospital sinks with hot and cold water supply and free discharge, special taps being provided for cleansing urinals and bedpans. The upper differs from the lower ward in the absence of a broom, etc., room and coal store, while from the sanitary annexe fire-escape stairs are available.



Ground plan.



Plan of linen room over coal cellar.

Medical Block.—The medical block wards are similar to the surgical, but have only one single bedroom; they have an area of 56 feet by 26 feet, with a ceiling height of 12 feet, and are furnished with fourteen beds.

The eaves of both blocks are 29 feet in height, the block interspaces 50 feet in width.

Infectious Hospital.

The Infectious Hospital is separated from the General Hospital grounds by a neutral zone of 40 feet wide, and accommodates 21 patients. The infectious blocks are single storeyed, and each contains one ward, 30 feet by 26 feet, with a height of 13 feet; these wards are otherwise similar in their arrangement to those of the general hospital, and contain six beds. From the entrance to the block on the left hand is a single bedroom, 14 feet by 11 feet by 13 feet; then the attendant's room, 11 feet 4 inches by 8 feet 1 inch by 13 feet, with observation windows to the single bedroom and ward; on the right hand are the entrances to the stair to the coal cellar and to the broom, etc., depository adjoining it; above these, as you advance towards the ward, is a linen room, the ward kitchen, and larder.

The sanitary annexe at the far end of the ward, with a well-ventilated lobby intervening, contains a watercloset, bath room, with lavatory and sink room, with treadle action taps. The eaves of the infectious blocks are 15 feet in height, the block interspaces 40 feet.

The drainage for the whole infirmary passes out to the sea, that from the infectious blocks being specially disinfected before discharge into the drains. The single bedrooms in all the infirmary blocks are available for officer patients if required.

The infectious staff block provides a medical officer's office, a dormitory for three attendants, with mess room and kitchen; the bathroom, lavatory, and watercloset are detached at the rear of the block.

Laundry.

The laundry is on the most modern system, with special arrangements for washing woollen articles, as also for the separate and distinct receipt and delivery of all articles from the infectious blocks. In the laundry building are a seamstress's room, a Washington Lyon superheated steam disinfector, and a destructor, so essential in a well-appointed hospital.

Mortuary.

The mortuary has all requisite conveniences, slate tables, tiled walls, granolithic flooring, and good drainage.

Special Buildings.

As a marine infirmary at a depôt for recruits, with marine orderlies as sick attendants (there are no nursing sisters at marine infirmaries), there are special buildings connected with it—namely: Guard house, with three guard bench bedplaces in the guard room, a search room, an ambulance shed, a store room, coal cellar, lavatory, and watercloset. Married quarters, a two storeyed building, containing three married orderlies' dwellings, each having a living room, scullery, parlour, larder, and coal cellar on the ground floor, with detached watercloset at back, and three bedrooms in upper storey; one has in addition two small rooms in roof. Recruits' receiving station, with undressing and dressing room, four baths, detached lavatory, and watercloset.

NOVA ET VETERA.

THE COLLECTIONS OF DR. RICHARD MEAD.

Though members of our profession still make collections and gather together books or blue china, coins or gems, water-colours or etchings, it may be doubted whether any will ever rival Dr. Mead or attain to such a vast and multifarious assemblage as he brought together in the first half of the eighteenth century. And the reason is simple; all things which he collected have now reached such prices that no one of us is likely to spend the money which would be required.

After studying at Leyden, where he was the fellow student and friend of Boerhaave, Dr. Mead travelled for some time in Italy, visiting Florence, Rome, and Naples, and finally graduating M.D. at Padua. This Italian travel probably laid the foundation of his love of objects of art and antiquity, which subsequently he gratified in such a wonderful manner. Returning to London he became physician to St. Thomas's Hospital, and took Radcliffe's house in Bloomsbury Square, whence he removed to the one in Great Ormond Street, now absorbed in the Children's Hospital. He was a Fellow of the Royal Society at the age of 31, physician to George II., and for many years the leading physician in London. He died in 1754, aged 81.

Fortunately we have the catalogues of his collections, and are able by them to see the extent of his aims, while the prices for which they were sold enlighten us as to the taste of the times as well as of the collector. By far the largest of the collections was his library, which was sold in two divisions, the entire sale occupying no less than fifty-seven days, and realising a sum of £5,496 15s. Well might Dibdin exclaim in his *Bibliomania*:

> Ever renowned Richard Mead! Thy pharmacopœal reputation is lost in the blaze of thy bibliomaniacal glory. Æsculapius may plant his herbal crown round thy brow, and Hygeia may scatter her cornucopia of roses at thy feet, but what are these things compared with the homage offered thee by the Gesners, Baillets, and Le Longs of old? What avail even the roseate blushes of thousands whom thy medical skill may have snatched from a premature grave compared with the life, vigour, animation, and competition which thy example infused into the book-world?

Dr. Mead's library contained 10,000 volumes—a small number when compared with the 50,000 of Sir Hans Sloane—but it comprised books in all the departments of literature. The sale commenced with Bibles in various languages and books of divinity. These occupied four days, and were followed by works on philosophy and natural philosophy, natural history, mathematics, printing and engraving, architecture and astronomy, medicine and surgery, languages, numismatics, Italian literature and classics. Of the latter there was a goodly array, many Aldines, some from the press of Jenson, some from that of Plantin. There was the Jenson Pliny of 1472, of which Quaritch said: "This has ranked ever since Dibdin's time as the grandest book printed by Jenson." Dr. Mead's copy was sold for £18 18s., and, as Quaritch priced it in 1897 at only £27, it must have been appreciated in 1755. The Spira Virgil on vellum also brought £18 18s.; Pfintzing's *Tewrdanskes*, £9 9s.; Brandt's *Stultifera Navis*, £2 2s.; an Aldine Petrarch of 1501, £3 3s. All these were on vellum. A Cicero's *De Officiis*, printed by Fust and Schoeffer in 1465—the first classic ever printed—was sold for £13 13s. Olivet's Cicero, large paper, was bought by Dr. Askew for £14 14s., and sold at his sale for £36 15s. The auctioneer who sold the books was Samuel Baker, of York Street, Covent Garden. The other collections were sold by A. Langford in the Piazza, Covent Garden, and the next was that of the prints and drawings, which commenced on January 13th, 1755, and was continued during the thirteen following evenings. In this

there was a vast number of engravings and etchings by various well known artists—Hogarth, Hollar, Albert Dürer, Silvestre, Vertue, Houbraken, Faithorne, Rembrandt, Callot, Nanteuil, and others. The number of these may be imagined when we read that of Hollar there were no fewer than 1,173 etchings sold in the sales of the fourteen nights. Besides many engravings after the old Masters, there were drawings by them in large numbers—Vesalius's original anatomical drawings, drawings by Raphael, Titian, Michael Angelo, Andrea del Sarto, and most of the principal painters of the preceding age. The sale of this collection brought £1,908.

The next to be sold was a wonderful assemblage of coins and medals. The catalogue fills 209 pages of an octavo volume, and all the Greek and Roman coins, copper as well as gold and silver, are fully described, obverse and reverse, in Latin, so that a lot of 35 coins required two entire pages for its description. The two first days were devoted to the sale of gold coins of Greece and Rome, numbering altogether some 252, of which 18 only were Greek, the rest being chiefly coins of the Roman emperors. Though the Greek gold coins were few, there was a long series of silver of all the cities of Greece, Magna Græcia, and Asia Minor, silver coins of the Roman emperors and Roman Familiæ, and many medals of the Roman emperors and copper coins in large numbers.

The catalogue of the British coins was in English, and illustrates largely, though not completely, the coinage of the realm. It commenced with 8 British gold coins, a few silver and a considerable number of Saxon pennies. There were 138 specimens of English gold coins, but we do not find Henry III's gold penny, the series beginning with Edward III's noble. Thence the gold coins of each reign were represented, with the exception of those of Henry IV and Edward V. Many are of great rarity and value, as the treble sovereign of Edward VI, the rose rial and spur rial of James I, the three pound piece of Charles I, and "an exquisite fine fifty shilling piece of Oliver Protector." There were five-guinea pieces of Charles II, James II, William and Mary, Anne, George I and George II, and Simon's petition crown, which even then fetched £12. There was also a large number of medals recording events of historical interest, coronations and the like, among them 34 of gold. The Blake medal sold for £21. A series of Scottish coins included about 23 of gold, among them the rose noble or rial of James VI. The amount realised by the coins and medals was £1 977 17s.

This sale was followed by one which comprised a collection of various objects and is called in the catalogue "Musei Meadiani pars altera," said to contain "Monumenta Veteris Aevi ac Gemmas cum aliis quibusdam artis recentioris et naturæ operibus." There were curios in an extraordinary medley Egyptian antiquities, including a mummy and its coffin, Greek and Roman statues and busts, relievi, statuettes of silver and bronze, sepulchral urns and stones, antique paintings, tessellated pavements, a large number of gems, cameï and intagli, ivory carvings, miniatures by Isaac and Peter Oliver, Cooper, Petitot, Rottenhamer and others, and besides all these there was a series of natural objects, animals in spirits, fossils which would now be termed minerals, and mathematical instruments, microscopes, telescopes, thermometers, etc. The mummy fetched £13 13s. and was bought by Hunter, possibly Dr. William; a bronze head of Homer went for £136 10s., and a marble Antinous for £241 10s.

What became of all these things, coins, medals, gems and statues, is a question which must occur to those who read the catalogues. Few are likely to have been destroyed. Are they in the British Museum or in other collections of the present day? None appear in the list of objects belonging to the College of Physicians, to which Mead gave a bust of Harvey, but nothing more. The same remark applies to the pictures which were sold in the first of the sales and fetched the largest sum of all after the books, namely, £3,417 11s.; as in number they were only about 150, they must have been looked upon as of considerable value even so far back as 1775. Where is now the portrait of Erasmus by Holbein, which was sent as a present to Sir Thomas More and was in the Arundel collection? It sold for £110 5s. A portrait of Vesalius by Titian brought £33; one of the Earl of Arundel by Rubens, £36 15s.; Two Lion's Heads, by Rubens, £36 15s.; the Picture Gallery at Brussels, by Teniers, £37 10s.; a portrait of Harvey by Bemmel, £42, and a Watteau, £42. In contrast to the prices of the present day a Holy Family by Carlo Maratti fetched £183 15s. There were also portraits of Sir Theodore Mayerne by Rubens, of Rembrandt by himself, of Franz Hals by himself, of Oliver Cromwell by Walker, of John Locke by Sir Godfrey Kneller, of Edmund Halley, John Radcliffe, Sir Isaac Newton, Alexander Pope, Thomas Coram, Jonathan Swift, and others. There were landscapes by Claude, Gaspar Poussin, Paul Brill, Breughel, Rembrandt, Salvator Rosa, and Van der Velde; architectural pictures by Steenwyck, Nicolas Poussin, Canaletti, and others; pictures of flowers and fruit, of animals by Rubens and Hondicoeter, and historical and sacred subjects by Giulio Romano, Palma Vecchio, Paul Veronese, Baroccio, Annibal Caracci, Spagnoletto, Watteau, who painted two pictures for Dr. Mead, Gerard Dow, and others. And there were three heads out of three different cartoons, part of the set painted by Raphael, seven of which we have long had with us.

The proceeds of the sales of the different collections amounted to £16,047 12s. What they cost Dr. Mead none can tell. Probably much more, for he was too busy a man to hunt for such things himself, and being munificent and magnificent, must have bought them as they were brought to him and given the price demanded. We read in the *Gold-headed Cane* that he did not die so rich as might have been expected. The amount he left, including the receipts from the collections, was about £50,000. After his death it was said of him that of all physicians who had ever flourished he gained the most, spent the most, and enjoyed the highest fame during his lifetime, not only in his own but in foreign countries.

G. Fielding Blandford.

DEATH CERTIFICATION,

DEFECTS OF THE PRESENT SYSTEM AND SUGGESTIONS FOR THEIR REMEDY.

I.

The movement in favour of securing by legislation a more efficient system of death certification—a reform the necessity for which has been urged again and again in these columns—has been gathering strength with increasing rapidity of late. Numerous letters, speeches, and articles attest the growing interest in the subject. Even in the last session of the old Parliament sanguine reformers hoped that something might be done before its dissolution. Now that we have a new Parliament with a Government majority of overwhelming strength, and apparently a long life before it, it is, perhaps, not too sanguine to expect that the new President of the Local Government Board will make a serious effort to remove at least the most glaring defects of a system which has been pronounced, on the very highest authority, to be "dangerously defective."

Interests of the Medical Profession.

The moment is therefore opportune for all who are interested in the matter to consider what is needed in the interests of the public and of the medical profession. All medical practitioners are profoundly interested in this matter over and above the interest which it must have for all men who ever think of the facilities which the present law and system of administration afford to persons of criminal intent. For the existing law imposes on the medical profession heavy responsibilities and burdensome duties enforced rather by penalties than by rewards, and it is quite possible that attempts will be made to enforce new duties by new penalties and to leave the reward of services done to the State to the doer's consciousness of virtue. We must see to it that this injustice shall not be. By all means let us accept all reasonable responsibilities as becomes our profession, and all duties for which we are specially fitted. But at least for any services which the State makes compulsory upon us as medical men we must demand and obtain recognition from the State to which they are rendered, and adequate remuneration for the time and energy expended on them.

We urge medical practitioners, in their own interests as well as in the larger interests of the community, to study the whole question, to consider what should be the aim of a perfect system of registration, how far our present system fails, how its defects can be remedied, and how proposed remedies will work in practice.

CREMATION AND THE EXISTING LAW.

The existing law is mainly contained in the Births and Deaths Registration Act, 1874 (37 and 38 Vict., cap. 88), but some other statutes must be consulted for particular contingencies, for example, the Coroners Act, 1887.

It is owing largely to the earnestness of the Cremation Society, founded by Sir Henry Thompson in 1874, that the inefficiency of this law has been exposed. One of the most obvious objections urged against cremation was that it destroyed all evidence which might otherwise be derived from exhumation in cases in which suspicions of poisoning or other forms of foul play were aroused after burial. An efficient system of death certification would have reduced this danger to insignificance. Speaking at the general meeting of the Cremation Society last year Sir H. Thompson said:

It was then (1885) known to many, and has now been declared on the highest authority, that the system adopted at the present day for the entire United Kingdom offers large facilities for the exercise of criminal poisoning. It was the existence of this formidable defect which led to a strong conviction on the part of the Council that their primary duty was to agitate for the reform of this system. Accordingly they agreed about 1891-92 to devote their time and energy henceforth to this task.

THE SELECT COMMITTEE OF 1893.

In January, 1893, a deputation, headed by Sir Henry Thompson, had an interview with Mr. Asquith, the then Home Secretary, who, recognising the importance of the matter, appointed a Select Committee of the House of Commons in the next session (1893)

"To inquire into the sufficiency of the existing law as to the disposal of the dead, for securing an accurate record of the causes of death in all cases, and especially for detecting them when death may have been due to poison, violence, or criminal neglect."

This Committee, presided over by Sir Walter Foster, M.P., then Parliamentary Secretary of the Local Government Board, took a great deal of valuable evidence, and the exhaustive report and recommendations drawn up by it have formed the basis of all serious discussions on the subject of death certification since then.

But nothing whatever has been done to carry out these recommendations made seven years ago, although two Ministries have expressed their approval of them. The law remains exactly as it was a quarter of a century ago. The Select Committee laid down that "it should be made impossible for any person to disappear from his place in the community without any satisfactory evidence being obtained of the cause of his disappearance;" and with deliberate emphasis, the earnestness of which is unmistakable, the Report continues:

Your Committee, fortified with the weighty opinions of the witnesses who have appeared before them, have arrived at the conclusion that uncertified deaths should, as a class, cease to exist, and that means should be devised whereby a medical certificate should be obtained in every case not certified by a registered medical practitioner in attendance.

"UNCERTIFIED DEATHS."

Yet in the latest returns—those of the Registrar-General for 1898—we find over 10,000 "uncertified" deaths. It is true that the number has been diminishing every year, and the percentage of "uncertified" deaths has fallen from 4 85 in the year 1878 to 1 89 in 1898; but although this continued diminution is satisfactory in itself, we have still to face the ugly fact that no fewer than 10,000 "disappearances from their place in the community" were registered last year on no other information than that of the so-called "qualified informant," concerning which the Report remarks:

Your Committee are convinced that a system which permits registration to take place upon information so obtained cannot be other than dangerously defective.

The decrease in the number of uncertified deaths is largely due, we readily admit, to greater strictness in the interpretation of their obligations by the registrars throughout the kingdom. But it was rather a shock to our confidence in these officials to find from the case of "Dr." Haworth, reported in the BRITISH MEDICAL JOURNAL only a few weeks ago, that in an important place like Dewsbury the registrar appears to have four times in the last year accepted as sufficient for registration purposes a "certificate" of the cause of death given by an unregistered practitioner vaguely describing himself as "M.D.(Canada)." It is satisfactory to note that this particular registrar will no longer accept these particular "certificates," which are not in fact *medical* certificates within the meaning of the Acts of Parliament.

Unfortunately this is no isolated case. A very considerable number of instances have come to light, and no doubt many more could be supplied by coroners, in which registrars have interpreted in a dangerously lax fashion the instructions of the Registrar-General as to referring cases to the coroner—the only alternative to registering without further investigation.

THE POWERLESSNESS OF THE REGISTRAR-GENERAL.

On this point the correspondence which took place in June, 1899, between the President of the General Medical Council and the Registrar-General is very instructive, not only because it supplies some interesting instances, on official authority, of the granting of documents purporting to be death certificates by unregistered persons, but also because it shows what action the General Medical Council have taken, and what is (or was) the attitude of the Registrar-General in this matter.

The subject was referred to at the autumn session of the General Medical Council in 1899 by the President, who said that he had had the following correspondence with the Registrar-General:

"(*a*) *Letter from the President to the Registrar-General, Sir "Brydges P. Henniker, Bart.*

"June 7th, 1899.

"SIR,—On December 3rd, 1896, the late Sir Richard Quain, "my predecessor in Office as President of the General Medical "Council, called your attention to a Declaration made by Mr. "Joseph Elliott, Registrar of Deaths at Hetton-le-Hole, in the "County of Durham, and to certain lists of Certificates, "signed by various persons in the district, and not by Registered Medical Practitioners.

"At the same time he enclosed a *Resolution* of the General "Medical Council, and documents to which reference was "made in the *Resolution*.

"In reply to this communication, Sir Richard Quain "received a letter from the Chief Clerk of the General "Register Office, dated December 8th, 1896, in which it was "stated that the Registrar-General did not consider the "Registrar's Declaration by any means as clearly expressed as "it might have been, but that it pointed to no irregularity of "practice which it was in the power of his Office to prevent, "the deaths being recorded by the Registrar, who took the "statement produced from the attendant as 'Information,' "and not as a Medical Certification of the cause of death.

"Since the termination of that correspondence official communications have been made to the General Medical "Council from time to time on the subject of Death Certification. On February 21st, 1898, the Executive Committee "had before it papers forwarded by the Home Secretary, consisting of original documents from the National "Society for the Prevention of Cruelty to Children, transmitting particulars supplied by their local Agent in Cornwall "in the cases of two children, named respectively Ethel "Scoveran and Thomas Henry Collins, in regard to whom "inquests were held at which it was disclosed that the deaths "were registered without being medically certified to the "local Registrar. In regard to these cases two letters "addressed to the Home Secretary by Mr. E. L. Carlyon, "Coroner for Cornwall, were also before the Executive Committee. In one of these letters Mr. Carlyon stated that he "had received information that the practice of granting Certificates by Chemists was not uncommon in some parts of "Cornwall, and that owing to the local Registrar accepting "such Certificates, deaths were registered without any further "inquiry when an inquiry into the circumstances in connection with the cause of death would appear to have been "called for. In replying to the communications received "from the Home Office, the Executive Committee of the "General Medical Council directed their Registrar to express "their opinion that the position of affairs disclosed in the "correspondence called for the serious attention of the "Authorities regulating the registration of deaths.

"On May 11th, 1898, a communication was received from "Mr. J. Dudley Price, Medical Officer of the Dudley Union, "in which he complained of the conduct of Mr. H. Rowton, of

"109, Hall Street, Dudley, a Registered Dentist, who is also "a Pharmaceutical Chemist, and who had granted a Certifi- "cate, of which the following is a copy:

"MEMORANDUM.

"From May 2nd, 1898.
"H. Rowton, M.....
"Dental Surgeon, ...
"Dudley. .....

"This is is to certify that Edward Fische, aged 3 days, 'Died' on May 2nd, 1898.

"The cause of 'Death'—

"'Debility from Birth,'
"Convulsion.

"H. ROWTON.

"In October, 1898, the Council's attention was again called "to the granting of Death Certificates by one Joseph Steel, "who was possessed of no Medical qualification, but who car- "ried on a Medical practice in the County of Durham, and "signed Death Certificates. In connection with this case a "correspondence has already taken place between Mr. Farrer, "the Council's Solicitor, and the Registrar-General.

"On March 15th, 1899, as President of the General Medical "Council, I addressed a letter to the President of the Local "Government Board, in which I requested his attention to "the present state of the law regulating the granting of Cer- "tificates of death, with a view to procuring amendments "in it. In a reply, I was told that at the date of writing, "namely, April 14th, 1899, my representations would receive "the consideration of the Board, but that the President "was unable to hold out any expectation that a Bill on the "subject could be introduced during the present Session of "Parliament.

"Since the receipt of the reply from the Local Government "Board the Deputy Coroner for Halifax has sent to the "Medical Council a Certificate of which the following is a "copy:

"4, Cromwell Terrace, Gibbet Street,
"Halifax, May 4th, 1899.

"This is to certify that I attended John Robert Prentice, aged 2 years, "and residing at Market Lane, South Owram. That I last saw him alive "on May 3rd, 1899; that he died on May 3rd, 1899, the cause thereof being "Varicella, Pneumonia, Cerebral Congestion, and Exhaustion.

(Signed) "GEORGE PEARSON,
"Unregistered Medical Practitioner.

"This Certificate is Perfectly Valid and Legal, and I expect it to pass. "My livelihood and that of my family is being imperilled by this Perse- "cution in Inquests, but I trust the Law will, when set in motion, accord "me substantial compensation and damages.

"From the above statement of facts the Medical Council "is of opinion that from the laxity permitted by the law for "the acceptance of Certificates not medically certified, oppor- "tunities are given for fraud and crime to be committed. It "is also obvious that statements as to the cause of death "made by unqualified persons must materially affect the "accuracy of the Vital Statistics compiled by the Registrar- "General from the Returns made to him.

"I am requested by the General Medical Council to submit "these facts to your careful consideration, and to express the "hope that you will bring this matter under the notice of the "President of the Local Government Board, with a view to "early legislation with regard to this subject, on the lines of "the Recommendations of the Committee on Death Certifi- "cation (September 1st, 1893).

"I am, Sir,
"Your obedient Servant,
"WM. TURNER,
"President of the General Council of Medical "Education and Registration."

"*(b) Letter from the Registrar-General.*

"General Register Office, Somerset House,
"London, W.C., June 22nd, 1899.

"SIR,—I am directed by the Registrar-General to acknow- "ledge the receipt of your letter of the 7th instant, which "has been forwarded to him by the Local Government Board.

"I am in reply to inform you that while he cordially re- "ciprocates the wish of the General Medical Council for "further legislation with a view to the due certification of the "causes of those deaths which have now to be registered "without any certification, he has absolutely no power to "initiate such legislation, and that the Local Government "Board is already fully aware of his views on the subject, "although neither the last nor the present Government have "yet shown any real intention to take action on the Report "issued by the Commission on Death Certification in 1893.

"I am in the meantime to point out that, in the opinion of "the Registrar-General, much might be effected under present "conditions by Coroners in the way of largely reducing the "number and proportion of uncertified causes of death if "more inquests were held respecting such cases in districts "where the proportion of uncertified causes is large. I am "to enclose for the information of the General Medical Coun- "cil a copy of the last Annual Report of the Registrar-Gene- "ral, on pages xl to xlvi of which the subject of the Certifica- "tion of the Causes of Death, and the action of Coroners with "reference thereto, is very fully dealt with.

"I have the honour to be, Sir,
"Your obedient Servant.
"NOEL A. HUMPHREYS,
"Sir William Turner, M.B., "Chief Clerk.
"President of the General Medical Council."

PROPOSED DEPUTATION TO THE LOCAL GOVERNMENT BOARD.

In consequence of the unsatisfactory nature of this reply, the Council resolved to send a deputation to the Local Government Board, and the President, Sir Dyce Duckworth, Dr. Glover, and Mr. Carter were appointed to be the members of this deputation.

In his address to the Council at its meeting on May 22nd, 1900, the President stated that owing to the lamented death of Sir Richard Thorne the communication which had been begun on the subject had been suspended, but that he was assured that before the next meeting of Parliament the deputation appointed by the Council would be given the opportunity of stating its case to the Government.

UNREGISTERED PRACTITIONERS.

Some instructive correspondence has been published in the *Dewsbury Reporter* since the facts with regard to "Dr." Haworth's certificates were brought to light in the course of the inquest to which reference has already been made. The line of defence taken by "Dr." Haworth, who poses as the champion of the liberty of the subject to choose his own death-certifier, and by Mr. George Pearson, who protests against the imperilling of his livelihood "by this persecution in inquests," recalls the very instructive evidence given to the Select Committee (of 1893) by a Mr. Walden, "President of the Society of United Medical Herbalists of Great Britain." Its members, numbering about 100, were, he admitted, "frankly and openly illegal practitioners," and they had given nearly 400 "notifications of death" in lieu of regular medical certificates, most of which had been "accepted" by the registrars, and only 41 of them having led to inquests.

The following dialogue between the Chairman and the herbalist champion shows very clearly what the interest of all irregular practitioners is in keeping the law as it is:

1858. But these certificates of yours are not accepted as medical certificates?—They are not medical certificates, but are merely a notification of death.

1859. Which can be given by any citizen of any calling whatever. Anyone present, for instance, at the death, or any relative, can give a certificate, can they not?—Under the Act of 1874 they can.

1860. And that protects you in giving your certificates?—Of course it does.

1861. Then you think that if that law was altered and made more stringent, and a certificate required in each case from a medical practitioner, it would injure your position as a medical herbalist?—It will.

1862. In what way will it injure you?—It would cause many a one [not] to come to us for any attendance or any medicine whatever, because they would know, if death took place, we should not be able to give any certificate whatever, and they would be greatly afraid that if we gave a notification there would be a coroner's inquest, and they dread that more than anything.

* * * * * * *

1864. And if the public knew that you could not give a certificate of death they would cease, you think, to come to you, because they would be afraid, if they died while under your charge, that there would have to be a medical inquiry or inquest by the coroner?—Yes, it would merely stamp us out in that way.

1865. Then your evidence here, I understand, goes to this, that you consider your craft in danger if the law be made more stringent with regard to death certification?—We do.

1866. And you think that would be an evil to the public as well as for your own body?—It would.

THE DISCRETION OF THE REGISTRARS.

The case of "Dr. Pleavin, U.S.A.," as he styles himself, which we noticed only a few weeks ago, shows that the herbalists are still giving these notifications, and even calling

them death-certificates, and boldly claiming they have a right to give them, and boasting they have given them for many years past—fifteen or sixteen years in Mr. Pleavin's case. The most serious part of the matter is that the registrar in Birkenhead should have accepted them apparently without question. Their worthlessness is shown by the fact that he stated the cause of death to be "teething and convulsions," whereas the jury found that it was "marasmus due to improper and insufficient feeding, accelerated by exhaustion caused by mortification of the skin."

These recent cases clearly show that if coroners could and would follow the suggestion of the late Registrar-General and hold more inquests on uncertified cases, much of the irregular notification in lieu of genuine certification would be "stamped out," as Mr. Walden expressed it. But it is not easy to see how coroners are to hold these inquests if the registrars accept the notification and register the death on it, as the late Registrar-General seems to imply they were right in doing. Why does not the Registrar-General direct that all uncertified cases shall be reported to the coroner before being registered?

Of course the root of the trouble is that under the existing law the registrar is permitted to register a death not medically certified on such information as he can get from the friends or other persons about the deceased at the time of death, including of course an unqualified medical attendant. Indeed, the registrar is not only permitted but peremptorily required to do so, unless he takes the one alternative which is generally open to him—namely, to refer the case to the coroner. The registrar is under no statutory obligation to take this alternative course, but he is instructed by the Registrar-General to take it in certain cases—namely, where the death was a violent or sudden one or there is anything suspicious about it, and whenever the cause is said to be unknown.

The position of the registrar in regard to uncertified deaths is well put by the Select Committee:

> He may legally take information on this point (the cause of death) from a person who has no real knowledge of the matter. He cannot, however, refuse to register a death, and it is no part of his duty to make any personal investigation of the facts of the case. Moreover, unless a case be reported to the coroner, there is no authority for delaying registration in order that inquiries may be made.

Well may the Committee say that much of the information so obtained must be "very far from trustworthy," and that, while in most cases the informant honestly describes the symptoms to the best of his powers, and the registrar tries honestly to fit a name to the symptoms, in other cases it is to be feared that the information given to the registrar "is not only untrue, but is known to be so by the informant. There appears to be nothing in the existing procedure to prevent a fictitious cause of death being assigned in case of a person who has been got rid of by foul play, and for a burial certificate to be issued upon registration of such information. In short, the existing procedure plays into the hands of the criminal classes."

It seems, therefore, that under the existing law the only way to secure that "uncertified deaths shall as a class cease to exist" is for the registrar to report every uncertified death to the coroner, and for the coroner to hold an inquest in every case so reported to him.

But short of this it would be a simple matter, apparently, for the Registrar-General to order all registrars to report all uncertified cases to the coroner, who, even when he does not feel justified in ordering an inquest, always makes some independent inquiry such as the registrar cannot possibly make. The knowledge that such inquiry would be made in every uncertified case, however plausible the qualified informant's statement might be, would be a very strong deterrent to would-be criminals, and a very strong inducement to patients to see that their medical attendants were properly qualified and registered.

Similar and even more marked effects would probably be produced on would-be criminals and patients if coroners would lay to heart and put in practice the suggestion of the Registrar-General contained in his letter (given above) of June 22nd, 1899, to the President of the General Medical Council, to hold more inquests than they now do in districts where the proportion of uncertified cases is large.

(To be continued.)

OUTBREAK OF DIPHTHERIA AMONG SCHOOL CHILDREN.

HISTORY OF THE OUTBREAK.

An outbreak of diphtheria has occurred recently in Cambridge and Chesterton, affecting a population of about 50,000. The first case was notified on October 14th; the last, up to the present time, on November 15th. In all there were 60 notifications distributed over the five weeks as follows:

Week ending	October	20th ...	3
,, ,,	,,	27th ...	21
,, ,,	November	3rd ...	25
,, ,,	,,	10th ...	9
,, ,,	,,	17th ...	2
		Total ...	60

Up to and including October 24th 12 persons were notified, and 4 of them died. Of the 12, 9 were children attending the infant department of a certain higher-grade school, 2 others were members of the family of a scholar, and the remaining case was a nurse in the hospital. The school was immediately closed.

On October 24th the medical officer of health, Dr Anningson, asked for the assistance of the Pathological School of the University, and Professor Sims Woodhead was appointed consulting bacteriologist; and since that time Dr. Cobbett has taken charge of the important work of bacteriological examination, and of the prophylactic injection of antitoxin where no medical man was in attendance.

PREVENTIVE MEASURES.

The steps thereafter taken were as follows:

1. The infants attending the school were visited in their own homes by a staff of willing helpers, a bacteriological examination was made, and a prophylactic injection of antitoxin was offered to all these. This was accepted in the majority of cases. A supply of antitoxin and bacteriological examination was put at the disposal of all medical practitioners for their poorer patients, and this was notified to them in a circular by the medical officer of health. Four cases, the first of which could be directly traced to the above-mentioned school, having occurred in three other schools, these were closed, and the children attending them and their young brothers and sisters were examined bacteriologically and offered a preventive injection. Circulars were sent to the superintendents of the Sunday schools throughout the town, recommending the closure of their schools.

2. A home was opened for those children in whose mouths suspicious bacilli had been found, but who had shown no symptoms of the disease. To this home about thirty children who could not be satisfactorily isolated in their own homes were sent.

3. Circulars were sent to parents whose children had suffered from diphtheria pointing out how to aid in dealing with disinfection under the supervision of the medical officer of health. A letter enclosing the circular just mentioned was sent to the medical practitioners asking them to keep their patients and suspects under supervision until three consecutive bacteriological examinations giving negative results had been carried out.

RESULTS.

The efforts made by the Sanitary Authority to stop the spread of the disease met with the most cordial co-operation of the medical practitioners.

Immediately following the preventive use of antitoxin and the commencement of bacteriological examinations, there was an increase in the daily number of notifications, largely caused, no doubt, by the recognition of mild cases which might otherwise have escaped notification.

The largest number of daily notifications (9) was reached on October 30th, after which date they fell rapidly, 10 cases only having been notified in November.

The value of the preventive injections has been shown by the fact that only one slight case of diphtheria has occurred among those treated, many of whom were found to be harbouring the diphtheria bacillus at the time; while among the elder members of their families who had not been injected several cases occurred. No complaints of rashes, etc., have been heard from the parents of the injected children.

THE NEEDS OF THE MEDICAL SERVICE OF THE ARMY.

As reorganisation and reform in the Army Medical Service will probably soon engage the attention of the War Office, it appears well to offer the following observations and suggestions, based on intimate knowledge of the inner life and duties of the service, as well as on its external relations to the medical schools and the profession at large.

The statement represents broadly the wants, disabilities, and drawbacks which still make military service unpopular, or at least undesirable, among young medical men, who otherwise might contemplate an army career.

The following reforms, the necessity for which has often been stated before, may for ready comprehension be again recapitulated under a few heads:

I.—Rank and Title.

After prolonged controversy and opposition the late War Minister, Lord Lansdowne, granted to medical officers, with the happiest results, army rank and titles in a Royal corps. That necessary and legitimate status was at once ungrudgingly accepted by the army at large, and has undoubtedly much enhanced the efficiency of both officers and men in the campaign in South Africa. All that now seems to be required under this head is that the corps be placed precisely on the same footing as other corps in the service, subject to limitation in command. This can be effected by expunging from the Regulations such obsolete orders as may seem to imply inferiority in the army status of the medical service; by carrying out official procedure as in other branches; as, for instance, by gazetting to staff appointments; conferring local or temporary rank on those acting in superior appointments; giving due recognition in ceremonial functions, and a fair share of honours and rewards, etc.

II.—Undermanning.

There need be no hesitation in stating that this notorious defect lies at the very root of the continued unpopularity of the service in the medical schools, through far-reaching consequences operating as follows:

(*a*) By necessitating sudden and frequent moves from station to station, causing a feeling of constant apprehension and unrest, and entailing much personal expenditure and loss.

(*b*) By making ordinary leave most difficult to obtain, and much-desired "study" leave impossible.

(*c*) By causing a serious disproportion between home and foreign tours of service, whereby the average officer spends two-thirds, or even three-fourths, of his service abroad, mostly in tropical climates.

(*d*) By rendering ordinary and especially "orderly" duties unduly severe, and at times excessively harassing.

The evils of an undermanned establishment in peace become much aggravated in time of war. Before the Boer war, with about one-third only of the officers at home, all the military districts at home were chronically short of their regulation complements to the extent of 20 to 50 per cent. During the war these districts have been practically denuded of officers on the active list, and duty has only been carried on under difficulties by the employment of retired officers and a large number of civilian surgeons, which latter, having necessarily no army status, placed the discipline of the hospitals in grave jeopardy.

The total number of medical officers on the active list is at present about 900. This may be contrasted with an establishment forty years ago of about 1,150; remembering further the facts that during these years the strength of the regular army has been increased at least 25 per cent.; while the militia, which then had a medical service of its own, has now practically none, and is entirely dependent on the attenuated regular medical service.

The present medical establishments, both in officers and men, are notoriously inadequate for the efficient carrying out of peace duties, and cannot provide for the mobilisation of one army corps without dislocating the duties at home, suspending foreign reliefs, and absorbing all margin for waste or casualties. The chief part of the foreign service of medical officers is naturally passed in India, where over 300 are constantly employed with British troops; but service in India would really be popular if the Government of that country acted with fairness and liberality, which unfortunately it does not, as will be mentioned under the head of pay. But the wants of India are, indeed, intimately bound up with undermanning of the Royal Army Medical Corps, for the interdependence between the latter and the Indian Medical Service steadily grows greater in proportion as India becomes a base in Eastern wars, as exemplified in the present China expedition. It may be mentioned that through that expedition the Indian Medical Service, in both its civil and military branches, is at present seriously embarrassed. Such facts must not be lost sight of in any augmentation of the medical services.

III.—Pay.

It cannot be doubted that the pay of the junior ranks of the Royal Army Medical Corps is inadequate, both at home and in India, whether it be viewed in relation to inevitable expenses or to the scale of remuneration which young medical men can command in civil life.

The element of supply and demand must be kept in view, and it must be remembered that the army as a career for young medical men has to compete at once with a more liberally endowed Indian Service, a relatively better paid Naval Service, and recently increased remuneration in civil life. Since the abolition and prohibition of unqualified assistantships in civil life, qualified juniors receive salaries as assistants or *locum tenens* from 25 to 100 per cent. greater than they did a few years ago.

The feeling among young medical men on the question of army pay may be stated as follows. They reason that bringing as they do to the service of the State a lengthened, complete, and expensive professional education (the most expensive and exacting, as recently shown, of all the learned professions), they have a right in such employment to pay which shall from the first enable them to live in reasonable comfort; but this is impossible without private means, whether at home or in India.

Inadequate pay presses on juniors quite as much or more in India than elsewhere, a fact the more damaging to the popularity of the Army Medical Service, inasmuch as the great majority of junior medical officers spend a large portion of their first years of service in that country; they are handed over to the Government of India about their second year, and cannot help themselves.

The attitude of the Government of India for many years towards the financial aspects of successive medical Royal Warrants has been most short-sighted and regrettable. It seems hardly creditable that the automatic increase of medical pay, under the rank of major in India, is still based on a warrant long obsolete, and on a scale fixed nearly forty years ago! A result is that a lieutenant of the Royal Army Medical Corps, who becomes a captain after three years, does not get the pay of his rank until he has completed five or six years' service. Again, when the important semi-administrative rank of brigade-surgeon was created, with increased pay, by the Royal Warrant of 1879, its financial consequences were long absolutely ignored in India, with the result that not a few of the rank retired early rather than serve in a false and unrequited position.

Certain limited concessions in the pay of medical officers in India have, indeed, of late years been made, but chiefly in connection with the depreciated rupee; and certainly not sufficient to invalidate the broad statement that the financial provisions of several Royal Warrants have not been given effect in India. The failure to do so has no doubt deterred medical candidates from the army, who justly reason that, as such service would entail many years in India, they had better spend it in the higher paid Indian Medical Service.

IV.—Organic and Administrative Reform.

Such reforms must be initiated on the responsibility of the War Office; but the salient points requiring attention are as follows:

1. The active list of the officers and men of the Royal Army Medical Corps should be increased sufficiently to meet (*a*) the ordinary peace duties connected with the regular army and militia at home and abroad; (*b*) to be of a strength always available at home to meet the sudden mobilisation of two army corps for service abroad, without at the same time

wholly denuding the home establishment, and altogether paralysing foreign reliefs.

2. A trained and really available reserve of officers, men, and female nurses should be formed, which will no doubt prove a difficult matter.

3. Due reserves of hospital equipment and stores must be kept up; these were officially declared to be very deficient at the beginning of the war.

4. Pay must be increased and readjusted, especially in the junior ranks, both at home, in the Colonies, and in India.

5. Larger autonomy should be conceded to hospital transport in the field; and fuller powers given to medical officers to acquire hospital equipments and supplies in emergency.

6. The Surgeon-General of an army in the field should be on the staff of the General Officer Commanding in Chief, always in close and direct communication with him, instead of on the line of communications.

7. Medical officers acting in superior appointments should be gazetted to a step in local or temporary rank, as in other branches of the service.

GERMAN MALARIA EXPEDITION.

PROFESSOR ROBERT KOCH, head of the German Malaria Expedition, has sent a sixth and final report of his investigations to the Colonial Department of the German Foreign Office. The following is a translation of the report, which is published in the *Deutsche medicinishe Wochenschrift* of November 15th[1]:

We started on our homeward journey from Herbertshöhe on August 6th. The line of steamers newly established by the North German Lloyd, which go from Sydney by New Guinea to Hong Kong, calling at the Caroline and Marianne Islands, offered the opportunity of investigating those islands, and, as far as the short stay admitted, of taking a glance at their sanitary conditions. Mainly on this ground I chose this line for the home journey, and I was able, on August 12th and 13th at Ponape, and on the 17th at Saipan, to make researches, in which I was assisted by the Government Medical Officer, Dr. Girschner.

NO MALARIA IN CAROLINE OR MARIANNE ISLANDS.

At Ponape, not only at the seat of Government, Colonia, but in six other places situated at some distance, in all 79 children were examined for malaria. In no single one were the characteristic marks of malaria—enlarged spleen and the presence of malaria parasites in the blood—observed. This leads me to conclude with certainty that this island is free from malaria. It is said that for a long time only one case of dysentery had occurred. According to the statements of Dr. Girschner the skin diseases so extraordinarily widespread in the South Sea, and frambœsia, which is frequently confounded with syphilis, seem to play no great part on this island.

At Saipan, among 24 children examined there were likewise neither swollen spleens nor malaria parasites. Therefore this island, too, is free from malaria.

FRAMBŒSIA IN THE SOUTH SEA.

Among the many persons pointed out to me as suffering from syphilis, lupus, and leprosy, there were none suffering from any of these diseases. What was mistaken for them was frambœsia, a disease which appears to be very common at Saipan. This malady, called by the English yaws, is extraordinarily widespread in the South Sea. In the Bismarck Archipelago I have seen places in which almost all the the children were affected therewith. Even the children of Europeans occasionally suffer from it. Very often frambœsia is mistaken by laymen, and even by medical practitioners, for syphilis, and I feel warranted in assuming that the statements as to the great diffusion of syphilis in the South Sea, and particularly in the German colonial region, are based on the confusion of syphilis with frambœsia. It is much to be wished that a medical man thoroughly conversant with syphilis and skin diseases—if possible a specialist—should be sent out to Dutch New Guinea in order to make a closer investigation of the relations of these diseases and the skin affections which are so extraordinarily frequent in the South Sea.

PECULIAR DISEASE AT SAIPAN.

At Saipan there also occurs a peculiar disease which in its course and symptoms—fever and lasting paralysis of individual limbs—is suggestive of beri-beri. Of cases of this kind brought to me, one was the subject of hemiplegia others of articular and muscular rheumatism. There was not a single case of beri-beri among them.

On the whole, I got the impression that the health conditions of Ponape and Saipan are very good, inasmuch as there is no malaria in these islands, and except for frambœsia they appear to be free from other tropical diseases.

MALARIA IN EGYPT.

From Hong Kong we proceeded by the main line of North German Lloyd steamers to Suez, where the journey was broken by a short stay in Egypt.

Our investigations in Egypt were directed to the clearing up of the contradictory statements respecting malaria in that country. This object has been so far attained that in Alexandria several cases of malaria which undoubtedly originated in that city or its vicinity were found, and genuine foci of endemic malaria were discovered in Helouan near Cairo, and at Wadi Natrum, west of the Nile Delta, in the middle of the desert.

STEPHANSORT.

According to the latest news which reached me from Stephansort coming down to August 8th the favourable conditions in regard to malaria described in my previous reports remain unchanged.

MALARIA PRACTICALLY EXTINCT IN GERMANY.

In order to arrange for a repetition in Germany of this New Guinea research which has proved so fruitful of result, Professor Frosch, a former member of the malaria expedition, has at my suggestion visited many parts of North Germany which appeared suitable for the purpose and made inquiries as to the presence of malaria. It has thus been shown that malaria everywhere is rapidly dying out. In many places previously known as foci of malaria the disease has well-nigh disappeared. In others, as, for example, in the marsh lands on the North Sea Coast, it occurs only in isolated cases, but nowhere could there be found a focus of malaria suitable for my purpose.

END OF THE EXPEDITION.

Under these circumstances there remains nothing else to be done but for the present to bring the malaria expedition to an end.

[1] Translations of the second, third, fourth, and fifth reports were published in the BRITISH MEDICAL JOURNAL of February 10th, p. 325; May 12th, p. 1183; June 30th, p. 1597; and September 1st, p. 606.

PROFESSOR CALMETTE ON THE PLAGUE.

THE last of the three Harben Lectures on bubonic plague was given on November 21st at the Examination Hall of the Royal Colleges of Physicians and Surgeons by Professor Calmette, Director of the Pasteur Institute of Lille.

In this concluding lecture of the series Professor Calmette discussed the defensive measures that should be taken for protection against plague, commented on the subject of vaccination in connection with the disease, and detailed the conclusions he had arrived at concerning individual and general prophylaxis. In his opinion it was incontestable that vaccination by heated cultures was capable of rendering great defensive service in times of epidemic. In the hope of elucidating the principal points urged against preceding methods of vaccination he had studied the question last year. In the preparation of his vaccine cultures Professor Calmette employed a plague virus which originated in Oporto, and had never passed through any kind of animal. The cultures were placed on gelose in large flat bottles, in which, after 48 hours, there was an enormous microbic development; 20 c.cm. of sterilised water was then added, the culture was scraped, and the emulsion obtained was poured upon a fine linen filter to separate out the fragments of gelose carried away. The filtrate was then poured on a paper filter, and the microbes left thereon were washed to clear them of adherent toxin. They were then heated in a small quantity of water for

one hour, and afterwards dried in a vacuum. In this manner were obtained bodies of dried plague bacilli free from traces of toxin. They were kept in sealed tubes, and when an animal had to be vaccinated, a quantity of the microbes apportioned by weight was suspended in a fixed amount of sterilised salt solution and injected under the skin or into the veins. Whilst injections of cultures in bouillon killed by heat almost always caused abscesses which took a long time to heal, the washed and dried microbes used by the lecturer never caused any abscess. The reasons advanced by Professor Calmette to justify his claim that he had "got the better" of most of the objections brought against Haffkinian vaccination were that he (Calmette) began with a fresh culture of unvarying virulence, as he always inoculated a fixed weight of microbes, that the microbic bodies in their dried state could be kept for a considerable time without losing any of their vaccine properties, and that his injection of vaccine thus prepared produced no grave local reaction. He further considered his method preferable to any which had been yet proposed because, by diluting these dried microbic bodies with a small quantity of sterilised hot water mixed with 2 c.cm. of antiplague serum, there was conferred at one and the same time an immediate passive immunity and an active immunity which took longer to set up, but which prolonged the period of resistance to the infection.

It was not claimed that this plan ought to be employed in all cases where antiplague vaccination was called for, and the Professor thought that antiplague serum was more to be recommended than any other method of active vaccination whenever it was required to stifle on the spot plague infection. Prophylaxis ought to be based entirely on the knowledge recently acquired concerning the mode in which the disease was propagated. The preponderating *rôle* played by rats in the spreading of plague made it necessary to seek the best methods of destroying the largest possible number of these animals wherever there occurred an outbreak of plague. Many methods of disposing of them had been suggested, but none had been completely successful. Poisons were generally of little use, especially in the case of sewers or grain shops. Suffocation by carbonic acid gas could be employed in ship holds or in well-closed premises, but was unsuitable for docks or subterranean canals. The contagious viruses studied by Drs. Loeffler and Danysz could be more conveniently used, and succeeded very well under certain circumstances; but it had to be confessed that in some cases they completely failed. The least that should be done was to try all these ways in combination, and municipal authorities should give pecuniary rewards for the destruction of rats. In conclusion, Dr. Calmette declared that in every case where direct contagion was to be feared, the use of antiplague serum for vaccination was to be recommended, but if it was only desired to confer immunity on a large number of persons grouped around a plague centre, but not in direct contact with it, active vaccination with cultures of plague bacilli killed by heat was to be advised.

THE MATRICULATION EXAMINATION OF THE UNIVERSITY OF LONDON.

[From a Correspondent.]

As it is understood that the new Senate of the reformed University of London will appoint an Advisory Committee, the chief duty of which will be to make suggestions as to matriculation, the moment seems opportune to state the result of some study of the present examination for matriculation, of the health of the candidates, and of the physical conditions under which the actual examination itself is carried on.

Age and Health of Matriculation Candidates.

It is perhaps inevitable that the candidate at examinations for university degrees should be "sicklied o'er with the pale cast of thought," but observations made at some examinations of the University of London raise the question whether reasonable care is taken to prevent injury to the health of candidates for the matriculation examination. The matriculation candidates are young, are only at the beginning of their career, and are a product of school training for several years. They serve as a gauge of our school methods, and the evident ill-health of a fair proportion of the candidates at the matriculation examinations of the University of London, more especially perhaps the girls, suggests the existence of serious defects either in the syllabus of the examination, in the schools which prepare candidates for it, or in both. Not a few of the candidates (more girls than boys in proportion) are anæmic, some stoop markedly, or sit at their desks in a crooked attitude; one girl at the last June examination displayed marked choreic movements, which increased with fatigue. At the last B.A. examination, at which the average age of the women candidates is about 23, out of 71 candidates, 17 were manifestly anæmic (25 per cent.); 15 wore spectacles, and some 20 stooped, or sat twisted and crooked. The women candidates for the M.B., in spite of their severe work and longer curriculum, looked on the whole in better health; none had to go out (they were in a better ventilated room), and only 2 out of 19 (10 per cent.) looked markedly out of health. The average age was about 26.

Examination.	Age.	Percentage Manifestly Ill.	Hours of Written Work.	No. of Subjects.
Matriculation ...	17	Quite 20-30	27	9*
B.A.	23	25	24	4†
M.B.	26	10	15	4

* General elementary science really includes physics, chemistry, heat, light, and electricity.
† Greek, Latin, two other subjects.

It will be seen that as the age of the candidates increases and their status in the University advances the percentage ill decreases. The hours of examination and the number of subjects likewise decrease.

One cause of the evil is that candidates for matriculation are too young. Youths do not proceed to Oxford or Cambridge till they are 18 as a rule; girls at least should not matriculate till 18. Another cause of the evil is the sedentary nature of the preparation. Apparently the girls who go up for the B.Sc. and M.B. Examinations are stronger than girl candidates for the B.A., whose course of study is entirely sedentary. No doubt women who select medicine are picked to begin with, and if any unfit enter they drop out long before the Final Examination.

The Syllabus of the Examination.

The syllabus for the matriculation examination has tended to become slightly more practical of late years: the subject of general elementary science is compulsory, and is treated more from the experimental point of view. It includes, however, some acquaintance with five subjects—mechanics, chemistry, heat, light, and electricity. This multiplication of subjects with a low standard of examination encourages cram. A tendency noticeable in elementary schools to give the scholar a smattering of everything is beneath the dignity of a university. If each year a separate science subject were given, and a proper rotation observed, a girl or a boy who was at school between 12 and 17 would have spent a year at each in succession, but would only have to learn the subject of the last year up to examination standard. This last subject taken in the matriculation class would have been so well learnt that it would need very little extra studying for students proceeding to the intermediate examination in science, while the groundwork of the other subjects of the intermediate examination would have been laid in the junior classes at school. The only person upon whom this would press hardly would be the candidate who failed. It might be found possible to allow him to take his old subject at the next examination if he renounced all claim to honours. A similar plan might be followed as regards English, the other subject which is notoriously "crammed" for matriculation. If the University divided English history and literature into, say, five periods, and set only one period at matriculation each year, it would provide a good five years' course for schools from the age of 12 to 17; the period would of course be treated differently in junior classes, but at 18 the boy would have a fair knowledge of his own literature and his country's history with a detailed knowledge of the period he had studied for matriculation. The questions might then be of a higher type; in June,

1899, only two called for any thinking power as distinguished from mere memory; in January, 1900, again, only two call for evidence of any appreciation of history, from either the literary or the political point of view, and the geography questions only were marked as compulsory.

The Conduct of the Examinations.

The question of the order of papers might well be considered. Mathematics should be put on the second day at every examination in which that subject is included. An easier subject is best on the first day, as candidates, especially at matriculation, often suffer from "stage fright." The present matriculation order is optional subject (a language other than Latin, or a science) Latin, English, mathematics, general science; a better order would be optional subject, mathematics, Latin, general science, and English.

In view of the present long strain of the 27 hours written work one paper should be enough in English and possibly in Latin. If the suggestion in a preceding paragraph on this subject were carried out there would be only one paper in general science, though in a different subject each year. The decrease in the number and range of some of the subjects would help to relieve the evident strain, a strain which is complained of among boys also, though it is more apparent among girls. It is, unfortunately, impossible to require from a candidate for matriculation with other certificates, one of fair health, but a schoolmistress who would urge a markedly anæmic or choreic girl to go up for examination has mistaken her vocation. Something is being done at good schools to train girls by outdoor games as well as by intellectual work. One of these boarding-schools at least and several high schools have a medical woman to inspect the girls and regulate the course of study and exercise for individuals as required. The Girls' Public Day School Company continues to be behindhand in the matter of physical exercise, and requires too much home preparation. With the help of a medical inspector or inspectress the markedly neurotic might be discouraged from undertaking the strain of examinations, and induced to take up a life of open air labour whenever possible.

Finally, it may be asked whether proper attention is given to the hygiene of the examination itself. At the examination last June, for instance, several girls became "faint," and had to be taken out by the invigilators (bulldogs) to recover in the cooler air of the corridor. This may have been due to the great heat, but it points to a very common defect of ventilation in most examination halls. The late move of the seat of the University to the Imperial Institute has not improved this matter of ventilation; the hall used for the women candidates for the B.A. last month had only two roof ventilators, and the air was very impure. Several candidates had to go outside for a short time. The room for the B.Sc. examination was better, as the authorities have just put in one or two windows. The large hall used for the M.B. examination was well supplied with windows, and the heavy atmosphere of the room even at 10 in the morning suggested that it had not been thoroughly aired in the interval. The fact that so many women candidates have to go out suggests that at all examinations where there are women candidates there should be a woman invigilator. This is not always the case; at a recent B.Sc. examination one girl retired from the examination because she was seized with diarrhœa (a common misfortune in nervous candidates whether male or female), and could not or would not explain matters to the male invigilator.

The Darwin Medal of the Royal Society has been awarded to Professor Ernst Haeckel, for his long-continued and highly-important work in zoology, all of which has been inspired by the spirit of Darwinism. This medal, together with the other medals of the Royal Society, will be presented at the anniversary meeting on St. Andrew's Day, November 30th.

Marriage of the Unfit.—According to the *New York Medical Record*, at the meeting of the Tri State Medical Society of Tennessee, Alabama, and Georgia, recently held at Chattanooga, Tenn., steps were taken to obtain medical legislation in these three States for the purpose of regulating or prohibiting the marriage of habitual criminals, persons afflicted with incurable diseases, drunkards, and victims of harmful drugs.

MIDLAND MEDICAL UNION.

The inaugural meeting of this Union was held at Nottingham on October 10th, Dr. Shea, of Chesterfield, in the chair. Members from Nottingham, Derby, Belper, Mansfield, Chesterfield, and other places attended. The Nottingham and District Medical Union were received *en bloc* as members, and now constitute the Nottingham Branch of the Midland Medical Union.

Inaugural Address.

Dr. Jepson, President of the Durham Medical Union, had kindly promised to deliver an address, but was prevented from being present. His address has since been printed and circulated amongst the members. Referring to the question of club practice, he points out that fifty years ago doctors consented to receive a few pence a week from members of clubs, so that the working man should pay something in acknowledgment for medical services rendered. Since that period the wages and conditions of the working classes have changed to the extent of 50 or 100 per cent. distinct advance. Are doctors lowering their dignity by saying that they wish to alter the scale of payment from the working classes? No alteration can be hoped for by the action of one individual; it must be made by a combination or union of doctors. Besides the payments from clubs there have also to be considered the fees from insurance societies, the badly-paid Poor-law system, hospital abuse, and the employment of unqualified assistants. Dr. Jepson urges that on many other grounds the profession should be organised; but chief of all they should keep before them the necessity of strengthening the General Medical Council. There is no desire to form a new medical association, but rather to improve and enlarge the existing British Medical Association. Dr. Jepson expresses the hope that the special Committee formed at Ipswich to inquire into its working will recommend the formation of an ethical department, and that many more Branches would be formed. His hope is that the different unions which are formed may merge into Branches of the Association, and that half of the business of each meeting of a Branch may be devoted to ethical subjects. The system of delegation must also be adopted, each union or Branch delegating one or more to express its views at a general meeting of the Association. The General Medical Council requires reconstruction if it is properly to represent the profession. Dr. Jepson does not believe in a Conciliation Board being arranged to adjust the differences between doctors and their clients.

Election of Officers and Council.

The following officers were elected: *President:* J. G. Shea, F.R.C.S.I., J.P., Chesterfield. *Vice President:* T. Geraty, L.R.C.P., M.R.C.S., Nottingham. *Treasurer:* F. R. Mutch, M.D., Nottingham. *Honorary Secretaries (pro tem.):* Dr. Houlton, Shirebrook; Mr. Palmer, Mansfield Woodhouse. A representative Council was also elected.

A code of rules was adopted. The objects of the Union as set forth therein are:

(*a*) To protect the interests of members of this Association in every respect, but more particularly from unfair competition, and from any attempts that may be made to induce or compel medical practitioners to accept insufficient remuneration for professional services.

(*b*) To establish and maintain minimum rates of payment for medical contract work in relation to miners and all classes of workmen, members of friendly societies, sick and other clubs, lodges, insurance and other companies and societies.

The Executive hope that medical men in Notts, Derbyshire, and the neighbourhood will become members so that something may be done to improve rates of contract work, and deal with other matters of medico-political interest.

The Honorary Secretaries will be glad to give any information respecting the Union, and to receive names of those wishing to become members.

Among the wounded reported by Lord Roberts in his despatch dated Johannesburg, November 10th, was Surgeon Hartley, of Lovat's Scouts. We regret to learn that the wound was severe.

Hospitals in the United States.—The *Clinical Review* of Chicago states that, according to official statistics, there are now about 2,500 hospitals and asylums proper in the United States, over 1,000 of these having been built during the past three years.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

SUBSCRIPTIONS to the Association for 1900 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, NOVEMBER 24TH, 1900.

THE TRAINING OF AN IMPERIAL RACE.

FOR some time past a good deal has been heard, from interested observers abroad and from candid friends at home, about the degeneracy of the British race. From Professor Mommsen and Professor Lombroso down to the scribblers of the gutter press of Paris, Continental opinion has been unanimous in declaring that the Briton of the present is not even as his forefathers, who made half the peoples of the earth our tributaries. And, indeed, the hysterical manifestations in which our patriotic feeling has more than once found expression might warrant a suspicion that the nation has become affected with a form of neurosis indicative of degeneracy, but for the splendid proof to the contrary given by our fighting men in South Africa. The war has shown that we are not degenerate; but there is some danger that it may induce a state of self-satisfaction which might easily lead to degeneration.

In his rectorial address at Glasgow last week Lord Rosebery uttered grave words of warning which it is to be hoped will find an echo in the breasts of our people throughout the whole of the Empire. He pointed that the ordinary Briton is far too much satisfied with what he has done in the past to take the trouble required for the preservation of the great Empire built up by his forefathers. This fatal complacency, he truly says, is so ingrained that some despair of a remedy until we are awakened from our sleep of vainglory by a national disaster. He urges it as a duty on the nation to ask itself if it is worthy of this prodigious inheritance, and if the race which holds it is capable of maintaining and developing it. If we can answer this affirmatively—and Lord Rosebery hopes we can—there are some further questions which he suggests we should ask ourselves. Are we going the right way about our work? And are our methods abreast of the time? These questions Lord Rosebery did not attempt to answer, but he said we might well, when we number the people, test their plight, and inquire if their condition were better or worse than it was ten years before, and as to the position of our education, and other departments of our national life. The nation confesses itself spasmodically from time to time through the newspapers; but this impulse is not sustained or business-like. It evaporates in a committee or in some new ecstasy. Yet whatever else the twentieth century may bear in its womb, it is certain, as Lord Rosebery says, that it will bring a period of keen, intelligent, almost fierce international competition. If we are to hold our own in the struggle, we must have an adequate supply of men, energetic and resourceful in mind and strong in body, ready to go anywhere at a moment's notice and do anything.

Lord Rosebery holds that it is the function of universities to produce the kind of man required for the maintenance and expansion of the Empire. But the older universities stand too much upon the ancient ways of Greece and Rome for the Lord Rector of Glasgow, who cannot believe that "from the imperial point of view, having regard to the changed conditions of the world, a purely classical training is necessary or adequate or wise." He quotes Heine, who said, "How fortunate were the Romans that they had not to learn the Latin grammar, for if so they would not have had time to conquer the world." Lord Rosebery passes the Latin grammar "with a gloomy respect;" but the Greek grammar, except in the learned professions, seems to him a heavy burden for our Empire, subject as it is to eager and intelligent competition. He thinks that for the purposes of the present age, especially for the merchant and the politician, there is required a more modern education, more especially as regards languages. His ideal of a place of training for men who are to carry on the work of the Empire seems to be the new University of Birmingham, and he declares that the training given in schools and colleges must daily become more and more the training for action for practical purposes.

Lord Rosebery expressly excludes "the learned professions" from the scope of his remarks on the practical inutility of a classical training. In regard to medicine, however, Sir John Williams has recently[1] given emphatic expression to an opinion virtually identical. In secondary education generally the most classical of living French writers, M. Anatole France, has lately given up the cause of the older training as hopeless. The signs of the times, therefore, would seem to portend that Greek, if not Latin, is doomed. We need not mourn its loss too much, for as far as the vast majority of educated men are concerned, though unquestionably a thing of beauty, it is far from being a joy for ever. To most schoolboys it is never more than a dreary task as unprofitable as that of Sisyphus. But we should be sorry to see Latin treated as, from the educational point of view, a mere elegant luxury. The Gradgrind principle of stuffing the mind with facts is not education. Boys intellectually fattened for the scholarship market by this method cannot, we are assured by high authorities, stand against those whose minds have been developed by the old traditional discipline when they come into competition with them. Moreover, looking at the matter with Lord Rosebery from a purely political point of view, we have to recognise the fact that, almost without exception, our first-rate statesmen for more than two hundred years have been trained on the old classical lines, and it may fairly be claimed that, on the whole, the result has not been unsuccessful. It might even be pleaded that we have done better than the Romans, whom Lord Rosebery holds up to us as an example, for we have girdled the earth with Empire notwithstanding the time lost in learning the

[1] Address at the opening of the Medical Faculty of the University of Wales, BRITISH MEDICAL JOURNAL, October 13th, p. 1065.

Latin grammar. And may it not well be that some part at least of our success is due to the fostering of the imperial race by the study of the history of the greatest Empire of antiquity?

But if the "weary Titan" is not to fall under the burden of Empire, his body as well as his mind must be adequately trained. As Lord Rosebery well says: "An Empire such as ours requires as its first condition an Imperial race—a race vigorous, and industrious, and intrepid." He asks "Are we rearing such a race?" In the rural districts he thinks we are; but in the rookeries and slums of our great cities an imperial race cannot be reared. Lord Rosebery appealed to those among his audience who were being trained for the medical profession to assist in mending this rift in the corner stone of our Empire. He called on them to remember that where they promoted health and arrested disease, where they converted an unhealthy citizen into a healthy one, where they exercised their authority to promote sanitary conditions and suppress those which were the reverse, they in doing their duty were working for the Empire. Let us hope, said he, that we may soon feel that the medical officer is abroad with sufficient power in his arm, power which he may derive from public opinion as well as from his municipal employers.

We congratulate the famous old University of Glasgow, which has sent forth so many men who have done good service to medicine and to mankind, on having a Lord Rector who has such a statesman-like grasp of the way to rear an Imperial race, and so true a conception of the vast importance of the medical profession to the State.

THE PARASITIC THEORY OF CANCER.

RESEARCHES recently published on the presence of specific parasites in malignant growths do not support the view, identified chiefly with certain Italian pathologists, that they arise as a result of the activity of an organism belonging to the yeast or blastomyces class. It seems to be now clear that the new formations experimentally produced by inoculation with blastomyces cultures are of connective tissue origin, and similar in nature to the granulomatous growths which may result from the action on tissues of irritants of very diverse kinds. Morphologically the yeasts have a superficial resemblance to the intracellular bodies found in carcinomata, but on comparing them with the organisms isolated from these tumours, and described by several observers it is noteworthy that they have points of similarity with only one form of these latter, and that the least characteristic. Schüller has recently published a description of the various forms of an organism which he has observed, first in a round-celled sarcoma and later in several carcinomata, and has successfully isolated by culture. The most characteristic forms are round or oval, highly refractile, of a golden yellow or brown colour, and possessed of a well-marked capsule fenestrated by numerous pores. Within are three or four small masses of protoplasm, which appear to escape through the pores of the capsule in the course of development, and when free are seen as clear or finely granular rounded cells with a fine capsule and a golden colour. It will be observed that these small forms have resemblances to the ordinary yeast cell; but between the more characteristic larger forms—three times the size of a red blood cell—and the ascospore forms of yeasts there are marked distinctions. Forms resembling those described by Schüller have been isolated by others; they in all probability represent the sporocyst stage of an organism belonging to the animal kingdom, and one which, if we may judge by the various descriptions of other observers, has a somewhat complicated cycle of development. Schüller is not able to bring forward any experimental evidence of a causal relationship between the organism and cancer; to a certain extent the constancy of his culture results gives support to the view, and the method he has used—that of incubating portions of the growth itself—seems to have been more uniformly successful than most others recommended.

More remarkable than these observations of Schüller, however, are the results obtained by Sjöbring in working on the same subject; they appear to have definitely advanced the solution of the problem one stage further. In a special medium he has cultivated an organism which is undoubtedly of animal nature and of three main types—amœbæ, rhizopod forms, and involution forms.

Among the amœboid and involution forms he describes types which may, it seems, be identified with several cultivated and described by others, the variety of which has given rise to so much confusion. This variety led Sjöbring to doubt at first whether he was dealing with one and the same organism throughout his researches, but by a careful study of cultures he has convinced himself that there is a connection and continuity between the different forms. He inoculated the organism into white mice; subcutaneously it gave rise in two cases to epitheliomatous new growth, and in a third to a tumour resembling an adenoma growing from the sweat glands. In a fourth case in which he obtained a culture from a colloid cystoma of the ovary, small colloid cysts lined by epithelium were produced by intraperitoneal inoculation.

This is the first series of experiments published in which true cancerous new growth has been produced by the inoculation of an isolated organism, although a single positive result has been recorded by Sanfelice and another by Bra. In the new growth forms resembling the "cancer bodies" of human carcinomata were found.

The importance of these researches is great, and at first sight they seem to clear up the confusion already mentioned, arising from the very various descriptions given by different workers of the morphological characters of the organisms isolated. From Sjöbring's description of the parasite, it would appear to have a greater resemblance to certain of the Coccidia than to any other members of the large class of Sporozoa hitherto discovered. This, it will be remembered, was the opinion given by Metchnikoff several years ago, but the question is one that can only be decided by biologists possessed of a special knowledge of these primitive members of the animal kingdom.

THE INCREASE IN THE NUMBER OF CERTIFIED INSANE.

As President of the Poor-Law Union Association, at a recent meeting Dr. Rhodes dealt with this subject in an interesting paper. His contribution to the study of the question

is valuable not only as giving his own well-considered opinion, but also because it reproduces and summarises in a convenient form arguments and statistics which, though well-known to experts, are practically inaccessible to all those who have neither time nor skill to wade through Blue Books and similar sources of information.

The fact that nowadays the ratepayers have far more lunatics to support in asylums and workhouses than formerly is common knowledge, and some whose attention has been arrested have been known to become quite impatient of any doubt expressed about the real increase of lunacy as a disease; but there is solid ground for doubt, and we are glad to note that Dr. Rhodes ranks himself with the Commissioners in Lunacy and some other experts as a doubter.

There are two questions involved which require to be kept as widely apart as possible—the question of accumulation and the question of disproportionate frequence of newly-acquired insanity.

With regard to the former, it must simply be a matter of admissions being equalled or not by discharges through death, recovery, or otherwise, and the discrepancy, if any, has to be compared with the natural increase of population. For some years past, so far from there being an equality, the balance at the end of each year has been rising far faster than is justified by the estimated increase of population, and the rise has been exaggerated each year till now. The Commissioners' report for 1899, issued since Dr. Rhodes read his paper, shows however that admissions last year had gone down, and discharges by death and recovery had gone up. As a result the net increase has been lower than in any year since 1892, while it has been just one-half only of that in the previous year. These facts suffice to show that increase, though it is bound to follow the population, need not necessarily be a constantly rising one.

The second question is one that probably can never be settled in any effective way; and more's the pity, for the allegation of an increase in any disease must always arouse scientific interest. To begin with, the terms "lunatic" and "insane" are, as we know, very indefinite from a medical point of view, while the more precise test of certification perforce applied by the Commissioners is obviously lacking in comprehensiveness. There is much evidence that that which used formerly to be regarded as aberration—to be borne with outside the asylum—is now from a variety of social causes finding its way in, and thereby comes under official recognition. It is a curious fact, well known to those who have recently had the responsibility of building asylums, that accommodation, provided after most careful consideration of previous increases in the district, is rapidly taken up out of all proportion to forecasts. Where do the extra cases come from? Some from the workhouse, but not nearly all. There is another consideration which has an important bearing—the numerous readmissions of relapsed patients. These tend persistently to increase, and proportionately reduce the number of fresh cases in the total admissions.

To those who seek to form conclusions by working out the proportion which fresh insanity bears to total population, we would give the warning that next year, as in 1891, the lessons may afford surprises. On the last occasion it was found that the increase in population had been overestimated, and consequently the proportion of lunacy had been understated. This naturally caused some uneasiness, but it could to some extent be discounted by the fact that, as the death-rate had decreased, the shortage naturally occurred in the earlier periods of life—just the periods in which occurs the greatest immunity from those forms of mental defect which find their way to the asylums and Blue Books. Thus the concentration of the gathering ground of the disease rendered the revised increase in proportion of lunacy *pro tanto* illusory.

These are some of the difficulties which attend the solution of the question by figures, and figures alone are the only possible basis, since personal impressions are in such a matter utterly valueless. We may, however, hope that when due allowances are made for the operation of constantly shifting conditions, it will be found that there is less cause for alarm than appears on the surface.

Dr. Rhodes tells the wholesome truth that the only way to meet the present state of affairs is to adopt the best methods of curing new cases, and thus preventing them being added to the dead weight placed on the shoulders of the ratepayers. Dr. Rhodes advocates the adoption for new asylums of the colony system such as is found in America and Germany. This means the housing of all patients in a collection of small villas each containing thirty or forty inmates. We are disposed to agree with him in regard to cases which present chances of recovery The principle of keeping such patients away from the chronic and incurable is fast gaining ground in England. while in Scotland several new asylums have detached buildings for the reception of new cases, and the sick and infirm among other classes of patients. But we cannot see any advantage in having small and proportionately expensive departments for those patients who cannot derive special benefit therefrom.

Dr. Rhodes also presses for the removal of all certified cases to the asylum. While there is no doubt that some senile and troublesome cases now retained in workhouses would be the better for the more efficient care of the asylum, the removal, as a matter of routine, of harmless, decently-behaved dements might sometimes involve hardship to their relatives, who would be debarred from visiting them by the time and expense involved in reaching the more remote county institution.

THE UNIVERSITY OF LONDON.

We learn that at a joint meeting of the Academic Council and the Council for External Students, it was agreed to recommend at once the appointment of some twenty-seven Boards of Studies—that is to say, nearly all those set out in the regulations made by the Statutory Commission. Various subcommittees have, we understand, been appointed to report as to the constitution of these numerous Boards after consultation with the Faculties and any other person or persons with whom they may think it well to communicate. Meanwhile, the most urgent question occupying the attention of the Reorganisation Committee which the Senate appointed at its first meeting is that of finance. In order to prepare for the usual estimates submitted to Parliament, the amount required by the University in the next financial year should in the ordinary way be sent in to the Treasury in the course of next month. With the exception

of the up-keep of the University building and various minor expenses, the fees have in recent years exceeded the expenditure; in the year 1898-99 they amounted to £18,446. It is scarcely possible, in view of the reconstitution of the University, that the amount required in the next twelve months can be far short of double this amount.

INTRAVENOUS INJECTIONS IN THE TREATMENT OF CONSUMPTION.

In the Harveian Lectures, which have recently been delivered by Dr. Robert Maguire, he has opened up new ground on the Prognosis and Treatment of Pulmonary Tuberculosis. The first two lectures dealt with the prognosis of the disease according to an analysis of cases seen, mostly at the Brompton Hospital; but in the third lecture Dr. Maguire dealt with the treatment of pulmonary tuberculosis, clinically and experimentally, on lines which he believed to be new. The experiments were made by Mr. Plimmer on rabbits for the purpose of ascertaining the safety of the methods employed. Afterwards the method was employed on Dr. Maguire himself and, later, upon patients. A fuller account will appear subsequently, but it may be stated shortly that Dr. Maguire mentioned that neither by subcutaneous injection, by administration through the mouth, nor by inhalation, nor even by direct injection into the lung tissue, could any effect be produced upon the tubercle bacillus or its congeners, the staphylococcus pyogenes and the pneumococcus. An antitoxin for these had not yet been discovered, though it might be expected in times to come. In the meantime, Dr. Maguire has suggested that the circulation through the lungs lent itself to the treatment of diseases of those organs. Anything injected into the veins must, as he showed, go directly through the lungs by way of the right heart, and thereby wash them out. He tried cyanide of mercury and potassic-iodide of mercury on rabbits, but found them to be too dangerous for use in human subjects. Diastase in solution, after many trials to make it effective, he discarded, and the same happened with cytase and with nucleinic acid, both of which were used; all these three had some effect, but not such as to encourage further efforts, and all three caused marked febrile reaction. At last Dr. Maguire tried a pure solution of formic aldehyde, which by means of a special apparatus he succeeded in injecting into the veins in a strength of 1 in 2,000 in normal saline solution, to the amount of 50 c.cm. (after trials of weaker and stronger solutions). The results appear to have been excellent. Dr. Maguire has himself treated some 50 advanced cases of pulmonary tuberculosis by this method; all of them showed improvement in the physical signs, diminution of the amount of expectoration, and decrease of fever, while even now a few have demonstrated the disappearance of tubercle bacilli from the sputum. One such case was shown apparently quite cured at the last lecture. The patient originally suffered from a multiple pleuritic outbreak of the disorder, a form which, in a previous lecture, Dr. Maguire had shown to have one of a most unfavourable prognosis. In this patient all physical signs had gone, and with them the pyrexia and the tubercle bacilli formerly found in the lung excreta. Other cases had been treated by Dr. Reid and by Dr. Findlater, under Dr. Maguire's supervision, in their own homes, with town and country surroundings respectively. The profession will doubtless have an opportunity eventually of discussing this new method of treatment before one or other of the societies.

EPIDEMIC PERIPHERAL NEURITIS.

The story which Dr. Ernest Reynolds tells in another column is a very remarkable one. It appears that during the last three months an unusual number of patients have presented themselves at the out-patient department of the Manchester Royal Infirmary suffering from symptoms of peripheral neuritis, and that a very large number of similar cases were under treatment in the medical wards of the Manchester Workhouse Infirmary during the same period. Other practitioners met with the same unusual prevalence of peripheral neuritis. Dr. Williamson found that nearly half of the out-patients at the Ancoats Hospital showed signs of the disease. Dr. Dreschfeld had also noticed the unusual prevalence, and medical men practising not only in Manchester, but in Salford and the surrounding districts, had recently seen many cases of this type. Dr. Brooke, Lecturer on Dermatology at Owens College, had been struck with the great number of cases which during the last three months had presented a peculiar skin eruption characterised by marked pigmentation either diffused or in spots. Dr. Reynolds satisfied himself that the cases occurred only among beer drinkers, and that alcohol could not be the only factor in the production of neuritis, and certainly not in the production of the pigment. He now states that he has found arsenic in samples of beer, and his analysis has been confirmed by Professor Dixon Mann. We have received from Dr. Reynolds some of the slips of copper, showing a deposit obtained by Reinsch's method, but the analyst to whom we have submitted these is unable to confirm the deduction that the deposit is arsenical. As the amount was very minute, however, this negative result must be received with reserve. As to how arsenic could have got into the beer, Dr. Reynolds suggests that it might be derived from arsenic in the sulphur used in the hop industry, for the beer had not come from one brewery but from several. We learn that in Salford no fewer than 40 deaths have been certified as due to peripheral neuritis since June 1st, 1900, whereas in the whole year 1899 only 30 deaths were attributed to this cause; so that it appears clear that there is some unusual factor at work, although it is necessary to reserve a final opinion until the results of the complete investigation which is now being carried on by the medical officers of health, in conjunction with the staff of Owens College, are made known.

RINGWORM IN BOARD SCHOOL CHILDREN.

In another column we publish an interesting letter from Dr. Stilwell of Beckenham relating to the occurrence of minor infectious disease among Board School children. He points out that at present there is no compulsory notification of such contagious conditions as measles, whooping-cough, mumps, chicken-pox, and ringworm, and he states that the Beckenham School Board has arranged with the medical men in the district for the notification of all diseases which, in their opinion, would make it advisable for the general health of the school that the children affected should not mix with others. The certificate required must state whether children resident in the same house should also be kept from school. Of all these minor diseases specified, perhaps the greatest culprit from the educational, is the least important from the medical standpoint. It is not too much to say that before to-day otherwise perfectly healthy children have been robbed of even years of their school life by ringworm of the scalp. The dilemma at present is that a child quite fitted from a health point of view for school training must be debarred from it, or the tricophyton must be sown broadcast among the children compelled to go to school. At the seventh International Congress of Hygiene and Demography, held in 1891 in London, Mr. Malcolm Morris read a paper on Ringworm in Elementary Schools, suggesting that special schools should be established for children suffering from the disease, in which they could be educated and at the same time medically treated. He also urged the systematic weekly inspection of the children in the Board Schools by those capable of recognising the naked-eye appearances of ringworm. Dr. Colcott Fox, who discussed the paper, also

urged a similar systematic inspection, and that it should take place at the beginning of term and at stated intervals subsequently. He recommended that the infected children should be sent to a convenient hospital or dispensary for medical treatment, and that they might be allowed to attend school if their scalps were isolated by india-rubber caps under which were antiseptic medicaments, and if, moreover, they were dismissed before the other children, so that mixing of the diseased and healthy might be avoided. Mr. Morris's plan would probably be more acceptable to the children themselves, because of their extreme sensitiveness to remarks made on such subjects as personal attire. In Paris, at the large St. Louis Hospital, and also in other French towns, there is a school for children suffering from ringworm. The same plan is in successful operation in Rome and in certain Belgian cities. The great hindrance to the stamping-out of ringworm is of course the fact that a case apparently cured to the ordinary observer is often found to be still potentially active for harm on microscopic examination; and, much as the move made by the School Board authorities of Beckenham is to be welcomed, it will appear to many that the sum of one shilling is a very inadequate return for a certificate of freedom from contagion which involves expert microscopic examination.

THE NEED FOR THE ENDOWMENT OF PATHOLOGY.

Professor W. H. Thompson, of Belfast, in his address on Physiology and the Healing Art, published at page 1485, raises once more the question of the urgent need in Ireland for well-equipped laboratories in which pathological and physiological research can be prosecuted. It is only a fortnight ago that we published observations of a similar type by Professor Yelverton Pearson, of Queen's College, Cork. Not only did he point out that substantial advantages would accrue to a community in regard to health and even safety from having a well-equipped laboratory superintended by a qualified pathologist in its midst, but he strongly protested against what he considered to be the neglect of successive Governments in leaving the teaching of pathology in the Queen's Colleges in Ireland solely to their respective governing bodies. While praising the disinterestedness of those scientists of recognised ability and careful training who had come forward to fill the gap in medical education, for a remuneration wholly inadequate, he characterised the non-endowment of pathology in the Cork Medical School as a national disgrace. We learn that in one of the Irish Colleges which may be taken as a type, the income enjoyed by the holder of the lectureship—a man of the highest scientific ability—never exceeds £220 per annum for the performance of the most important duties. It is difficult to imagine how leisure for original research could be obtained under such conditions. While the establishment of post-graduate research scholarships, for which Professor Thompson pleads, would be a generosity, the adequate remuneration, meaning by that something beyond a living wage, for those important servants of the State, its teachers of pathology, is nothing more than an act of justice. We can at present go no further than emphasise Professor Thompson's view that the establishment of such laboratories should not be absolutely left to such men as Lord Iveagh, Mr. Thompson-Yates, and Mr. R. G. Dunville, but that the Government of our great Empire should recognise its duties in doing all the little it can to advance "a great, noble, and humane science."

SANITARY PRECAUTIONS AGAINST THE BUBONIC PLAGUE AT BUENOS AIRES.

Our correspondent at Buenos Aires, commenting on the severe criticisms about quarantine in the River Plate which appeared in an article of the *Times* dated September 21st, writes as follows: Doubtless serious loss to commerce and considerable inconvenience to travellers have resulted from the extremely rigorous sanitary measures adopted by the Argentine and Uruguayan Governments of late against the importation of bubonic plague from the Brazils, but the fact remains that Buenos Aires, Rosario, and Monte Video have been free from plague for many months, while the pest still drags its weary length along at Rio de Janeiro. The *Times* information of the date referred to was sufficiently accurate, but the ten days' quarantine amid the horrors (?) of Flores Island and Martin Garcia are but temporary and necessary precautions, and within a fortnight of the article being written the ten days' detention was taken off at Buenos Aires and Rosario, and what takes place now is simply twenty-four hours' sanitary observation of steamer and passengers, followed by thorough disinfection of passengers and luggage, the ship being docked within thirty-six hours of arrival. Certain regulations, however, have to be observed before this is allowed, the most important being the receiving of an Argentine sanitary travelling inspector at Rio, who comes along in the steamer, and if he reports "all well on board" during the trip, then the disinfection takes place on arrival here. This is doubtless annoying, and a great expense to the big liners, but the measure had to be enacted, as it was found that occasionally unscrupulous authorities denied the existence of infectious diseases on board, although one or more had died from yellow fever or other disease between Rio and Buenos Aires. First-class passengers are slow to understand that disease is no respecter of persons, and that practically the same sanitary measures have to be taken with them as with the steerage. Not many years ago some English passengers went ashore for a visit at Rio, brought yellow fever back with them, and there were several deaths on board a Royal mail steamer, while the steerage people, who could not afford the luxury of a run ashore, escaped. That it has been possible in Rosario and Buenos Aires to stamp out completely the pest in a few weeks justifies what to European eyes may appear to be absurdly rigorous regulations.

THE PLAGUE IN SOUTH AFRICA.

Telegrams from the Cape state that four cases of plague have occurred at King William's Town. The town is situated in the south-eastern district of Cape Colony, close to the seaport town of East London. The source of infection is not known, but the diagnosis is certain. At first it was stated that the patients had travelled from the neighbourhood of the Modder River, but there seems to be no confirmation of this statement. We have from time to time been made acquainted with plague cases reaching South African ports, chiefly Capetown and Durban, but fortunately so far there has been no sign of the disease gaining a footing in the Cape. The Durban cases were in some instances immigrants from Tamatave in Madagascar, where plague has existed for some time. The traffic, however, between Madagascar and South Africa is infinitesimal, and if any port is touched at it is almost invariably Durban. The telegrams are, however, not explicit as regards the outbreak. We are informed that the patients are at Jzeli, and that they have been inspected by two plague experts, Drs. Gregory and Mitchell. One of the 4 patients succumbed to the disease, but curiously enough the telegram states that "the first of the 4 deaths from plague occurred months ago." This would seem to imply that 4 deaths from plague had occurred, whereas in the next sentence it is stated "only 3 cases are under treatment now, one of which is expected to prove fatal." We are at a loss to understand whether one of the 4 reported merely is dead, or if the one death referred to was the last of 4 fatal cases not previously reported. It would seem, however, that plague does exist at or near King William's Town, and that one fresh case was reported on November 20th. The signs and symptoms have been mild, and it is reported that there "has been an ab-

sence of the rapid development and high contagion usually associated with bubonic plague." Considering the condition of South Africa at present, and the number of troops there, the appearance of plague must naturally cause some anxiety, although it is reassuring to know that every precaution is being taken.

CENSUS TAKING.

MEDICAL officers of health and many others are already awaiting the next census with some impatience. The paper which Dr. R. Dudfield read before the Institute of Actuaries in April last adds to our regret that this paper, like the recommendations previously made by the Institute before which it was read, were too late to have any practical effect. The unexpected promptitude of the Local Government Board in making its final recommendations shows that on future occasions it will be necessary to look ahead and act earlier than in the past. One among the many useful points on which stress was laid by Dr. Dudfield was the great advantage of the card system. It would be interesting to know what increase in expenditure —probably a very great one—would be involved in the adoption of this excellent system. Be this as it may, Great Britain cannot complain of unnecessary expenditure on its last census, the amount expended having been only £168,000, while in the United States the cost amounted to nearly £1,500,000. In the discussion which followed Dr. Dudfield's paper much light was thrown on the actuarial requirements of a census and census report. The most important are, first, the more exact enumeration of the ages of the persons living; and, secondly, the publication of the numbers living at each age. For the making of life-tables the latter is most desirable, and actuaries not infrequently express their unwillingness to accept to the full extent the data contained in the life-tables issued from the General Register Office, because of the incompleteness of the information which is published as to their construction. Many actuarial problems as to family annuities can only be solved by more complete information as to the proportion of men of a given age who are married or widowers, and as to the average number of children a man dying at a certain age may be expected to leave behind him. For data on these points, in recent investigations, it was necessary to refer to the statistics of New Zealand. But of all difficulties, that of occupation is perhaps the greatest. In returns of occupations the period of exposure in any particular trade is not known. Furthermore in death returns the past history of a man who may die and be described in general returns as a "gentleman" is unknown. He may have been a publican or a mariner, the significance of the fact in each instance being lost. The comparative mortality figures for "gentlemen," "publicans," and "mariners" are thus vitiated. The instances already given indicate the great difficulties of the problem. It is possible, however, by attempting too much to diminish the total value of the statistics, and the only safe plan is to proceed slowly and cautiously. It is not unlikely that the efforts made by the Royal Statistical Society, the Incorporated Society of Medical Officers of Health, and other bodies will prepare the way for an intermediate census in 1906; and the chief lesson from recent experience is that representations in this direction should be commenced at an early date after the next enumeration and be kept persistently before the public and the responsible departments of the Government.

THE HOUSING PROBLEM.

IT is appropriate that the Howard Association should concern itself with the housing problem—as one nearly affecting the expressed objects of the Association, that is, the prevention of crime and pauperism. Two pamphlets recently issued by it deal with the subject in a very lucid and instructive manner. The Prince of Wales's words: "I hope that the Legislature may be able to deal with the case of those who are responsible for insanitary property," are fittingly alluded to as indicating the root of a great evil. The scale of compensation which can now be demanded by owners of condemned areas is doubtless one of the main difficulties in the way of rehousing the poor upon such areas at a sufficiently low rental; and the community is thus compelled to pay extravagantly for removing an evil for which the owners of slum property should properly be made responsible. Failing the enforcement of responsibility against the slum owner, the local authority should have the power to compel the sale of such property at the rateable value of the land and the materials. What is desirable is a reform in the existing law which will make it unprofitable to own hopelessly insanitary property. At present the cost incurred for "compensation" and construction leads to the substitution of dwellings which can only be let at a rental which is too high for the bulk of those evicted, who therefore increase the overcrowding in the adjacent slums. It is pointed out that slums encourage drunkenness, and, on the other hand, a drunken, thriftless class will produce slums; and if drunkenness, vagrancy, and culpable pauperism could be effectually diminished, one result would be a largely-increased proportion of persons able to pay rent for improved and suitable dwellings. Reference is made to the example which Denmark has set: by the granting of State subsidies for land reclamation and forestry, and by the encouragement of many private undertakings, including co-operative dairy farming, the Danish agricultural classes have not only been retained upon the land, but an urban exodus into the country has been set up. An immense pecuniary advantage to the country has thus been secured, and the evils of urban overcrowding have been materially diminished.

ZINC CHLORIDE IN CLOTH.

IN September, 1899, we drew attention to the dishonest practice adopted by some worsted manufacturers of adulterating cloths with zinc chloride, magnesium sulphate, size, and glycerine. The wearing of garments supplied to the Birmingham police about this period had been followed by an irritable skin eruption, which was traced to their clothing having been weighted with zinc chloride. In this instance injurious effects followed the wearing of the adulterated goods; but in others in which magnesium sulphate had also been added it was ascertained that on washing the clothes they lost from 7 to 11.5 per cent. of their weight. It is to the credit of the merchant manufacturers and dyers engaged in the coating trade in Bradford and the West Riding that they have taken up this matter and are determined to put a stop to the practice. It seems that the adulteration of fabrics or of filling in and weighting of worsted coatings with foreign material has been on the increase of late. Facts were laid before the meeting at Bradford which showed that some worsted goods had been weighted so heavily with zinc chloride that an 18-oz. coating might be found to contain 2 to 3 oz. of the harmful filling. It is a dishonest act to make the consumer pay for what he does not receive; but more than that, the adulteration of wearing apparel may be productive of serious symptoms in those who wear the cloths. It is an open secret in the worsted and allied trades that since dress goods have been occasionally similarly tampered with, it is now becoming impossible for Bradford dress goods to compete against French-made goods on the London market. If the cheapening of wearing clothes is only to be obtained by adulterating them in the manner we have mentioned, then the sooner things cheap and nasty are replaced by things moderate and enduring the better for all. The one circumstance above all others that has

made Sheffield cutlery so world-renowned compared with the cheaper products that come from Germany is that they are good, and that purchasers, although they pay a larger price, secure reliable articles. It is gratifying to know that the Bradford merchants have pledged themselves to sell unadulterated goods and to employ only those dyers who promise not to indulge in the practice of filling.

PROFESSOR KOCH ON MALARIA.

We publish elsewhere a translation of Professor Koch's final report to the German Foreign Office of his researches on malaria in various parts of the world. Our readers have had an opportunity of studying the facts collected by the distinguished German pathologist, and the views expressed by him on this most important subject. He himself has since his return to Berlin given a summary of them in a public lecture delivered on November 15th at a meeting of the Berlin-Charlottenburg Section of the German Colonial Society. This may be taken as representing Professor Koch's present attitude on the malaria question; we therefore think it will be useful to give (from the *Times*) an abstract of the lecture. After describing the investigations which he and his colleagues had made in Italy, in Java, and in New Guinea, he went on to say that as the result of these investigations he had come to the conclusion that though the developed parasite, the cause of the fever, was introduced into the human body by gnat bites, yet the permanent home of the parasite germ was in the human body itself. The germs were passed by the gnat from one person to another and were developed in the body of the gnat during the passage. In combating the disease it was therefore necessary to begin with the persons affected and not with the gnats. Children were especially liable to the disease. Professor Koch stated that in New Guinea, in all the places where the disease was prevalent, all the younger children suffered more or less seriously from it. At a village called Stephansort, where 137 inhabitants out of 700 were affected by the fever, they had all been cured by the use of quinine. The newborn infants were made the subject of special attention, and it was found possible to keep them in good health, although it had hitherto been impossible to rear children at Stephansort. Discussing the methods which had been suggested for combating the disease, Professor Koch said that he regarded the proposal to exterminate gnats as impracticable. Mosquito nets were useful, but not absolutely to be relied upon. All attempts to secure immunity from malarial fever by means of inoculation had hitherto failed. Preventive treatment by quinine had great value, but was not always practicable. He urged that the colonial authorities should supply quinine free of charge and that doctors trained in microscopic work should be sent to New Guinea and to German South West Africa. At the conclusion of Professor Koch's address, which was received with hearty applause, a short speech was made by Professor Gerhardt in which he referred appreciatively to the work done by the expedition.

VOLUNTEER SURGEONS.

A correspondent writes: From various letters in the columns of the British Medical Journal, and from the opinions expressed at the Naval and Military Section of the annual meeting of the British Medical Association at Ipswich, there would seem to be considerable discontent prevalent amongst volunteer surgeons. The new army regulations are so framed that before undertaking the the duties of a volunteer surgeon it would be well to consider carefully the extent of the pledges given. As one contributor points out, the present war has pressed very severely upon militia medical officers. Several of the militia surgeons were called up for service with their regiments and sent on active service to the front, their practices being meantime looked after by their neighbours. That means, of course, great loss, and in some cases ruin, as practice will practically disappear during a prolonged absence. Moreover, the pay is altogether inadequate to provide for a family while at the same time maintaining themselves at the front. It may be argued, and fairly argued, that the medical men who take up service with the militia knew that in the event of a national emergency such a state of things might arise and that they were liable to be called out as they have now been. The new Army Act, however, when closely read, would seem to place the volunteer surgeon in a similar position to the militia surgeon without any of his privileges during the time of peace. The officers commanding regiments have been sending round circulars asking volunteer surgeons to state whether they are willing to take up duty with the regiment if ordered on service or if they are willing to do duty at a military depôt. This may mean anything: it may mean service in or out of the country, or duty at a distance from their homes where their practice lies. In the present state of European affairs it may mean a call to arms at any moment, and the volunteer surgeon may find himself pledged to give up his practice and take up duty elsewhere. In many instances this would mean ruin, and, although in times of peace the possibility of such a contingency arising may seem remote, the history of the past twelve months places a different complexion upon the happy-go-lucky existence of most volunteer surgeons at present. The expenses of the volunteer surgeon at present are heavy enough. It must be remembered that when a medical man gives his services to a regiment, he is rendering professional and no amateur service. Combatant officers in the volunteer ranks are not in the same category; they may be merchants or clerks, and their military duties are a change and relaxation for them, even if they do imply hard work, but they are not professional soldiers. This difference in the work of a surgeon and a combatant officer is not fully appreciated. The surgeon should have no expenses in connection with volunteer work in times of peace; but when it comes about that he may in a "national emergency" be suddenly called upon to give up his practice, for it may be months or years, it behoves all young surgeons to weigh all the *pros* and *cons* before taking up duty with a regiment. The new regulations will have the effect of causing all surgeons now with the force to reconsider their position.

FEMALE SANITARY INSPECTORS AS HEALTH MISSIONERS.

The London County Council on November 20th decided to express to the Local Government Board its willingness to pay half the salaries of female sanitary inspectors in London who, in addition to their other duties, would take opportunities of inculcating habits of cleanliness and the best methods of utilising food. Doubtless much valuable work can be done in the homes of the poor by tactful educated women possessing the needful knowledge and experience. It is possible that inspectorial duties which may result in prosecutions being instituted may sometimes conflict with the voluntary educational duties with which it is proposed to combine them; but no one who has witnessed the veritable revolution often worked in the homes of labourers and artisans by the precept and example of a capable health missioner can doubt the wisdom and value of the Council's decision.

VENEREAL DISEASE IN WORKHOUSE INFIRMARIES.

We have on several occasions recently called attention to the defective arrangements at many workhouses and workhouse infirmaries for dealing adequately with cases of gonorrhœa or primary syphilis in women who drift into these institutions. In another column will be found a letter from a correspondent of experience, which appears to reveal a serious defect in the administration of at least

one infirmary. It is inevitable that guardians—and particularly, perhaps, lady guardians—should not look on women suffering from venereal disease recently contracted with quite the same compassion that they would show towards women acutely ill with other diseases. We venture to think that this is very unfortunate. But even if we accept the inevitable without further protest, it is clearly the duty of the guardians to see that proper precautions for the disinfection—to say nothing of the cleansing—of infected linen and clothes should be taken as soon as the patient is received. No doubt many of the women admitted for these diseases are disposed to be unruly, but many of them are young, and some are more sinned against than sinning. But if we grant that they are unruly and depraved this admission would only make it the more necessary that the wards in which they are treated should be thoroughly well managed, and that the nurses in charge should be well-trained, sensible women. We are assured that this is often not the case, and it is no doubt true that work in such wards is likely to be very distasteful to most nurses, especially under the depressing conditions which appear to exist in many Poor-law infirmaries.

THE REGENT'S PARK CANAL.

At the last meeting of the London County Council a long report was brought up by the Public Health Committee dealing with the insanitary condition of the Regent's Canal, which in the month of August last appears to have surpassed anything previously experienced in the way of offensive effluvia and foul condition of the water. It appears that the canal water is stagnant and becomes contamined with sewage. During dry weather evaporation concentrates the pent-up abomination and gives the residents on the banks of "London's piece of Venice" occasion to blaspheme. The Public Health Committee incline to the view that if the Canal Company were less prodigal in selling their water from the higher reaches, and less disposed to replenish the lower locks by pumping back the foul water which has come down, the liability to nuisance would be materially abated and some degree of flushing the bed of the canal adequately secured. Meanwhile the Council has caused a letter to be addressed to the new Metropolitan Boroughs situated on the Regent's Canal littoral asking them to "keep the canal under careful observation."

THE HUMPHRY MUSEUM AT CAMBRIDGE.

It has been recommended by the Medical School Buildings Syndicate to the Senate of the University of Cambridge that the existing museum and the adjoining buildings on the site of the projected Humphry Museum should be demolished, and that the building of the Humphry Museum should be proceeded with at the same time as the Downing Street front is being built. The chief reason for this proposal is that the old museum is extensively affected with dry rot, and it is feared it might infect any buildings made to abut on it. It is hoped, moreover, that further contributions to the Humphry Museum will be forthcoming when it is known that the work of construction is actually in hand. The departments of medicine and surgery, which are at present located in the old buildings, will receive temporary accommodation in the Anatomy School and elsewhere.

MEMORIAL TO THE LATE PROFESSOR COATS.

The Committee that was formed to promote a memorial of the late Dr. Joseph Coats, who was the first occupant of the Chair of Pathology in the University of Glasgow, has now concluded arrangements with the University Court for the establishment of a scholarship to be known as the "Joseph Coats Memorial Scholarship in Pathology." This scholarship will be for the encouragement of original research in pathology, and will be tenable for one year. It will be awarded biennially, and will be of the value of the free income for the preceding years of the sum of £1,200, which has been handed over to the Court. Candidates must be graduates of medicine in Glasgow University of not more than three years' standing, and the holder of the scholarship must for not less than six months pursue research in pathology in the Pathological Institute at the Western Infirmary, or in a laboratory elsewhere approved of by the Faculty of Medicine, while he will during that time be precluded from engaging in medicine or surgical practice. The total receipts of the Committee in connection with this memorial were £1,243, and the small balance left in the treasurer's hands is to be expended in the purchase of a brass memorial tablet, which will be placed in the Pathological Institute at the Western Infirmary.

THE NOBEL ENDOWMENT.

By his will, dated November 27th, 1895, Dr. Alfred Bernhard Nobel, engineer, left a sufficient sum of money to form an endowment which provides an income for the foundation of prizes and the establishment of one or more institutes. The prizes are to be given to the person who, in the opinion of the adjudicators appointed in the will, has most advanced the cause of, or made the most brilliant or serviceable discovery in, either of the five following branches of knowledge or art—physical sciences, chemistry, physiology or medicine, literature (more particularly in the domain of the ideal), and furtherance of international amity and peace. These prizes are open to the world without distinction of class or tongue, with certain statutory restrictions in the disposition of the money. Each prize will be awarded at least once in five years, and will only be awarded on published works. The Nobel Institutes are primarily founded to assist the adjudicators in arriving at their decisions, it being provided that experiments described are to be tested, and translations made, while there is to be at the disposal of the judges an ample library, stored with all modern works on the subject of each prize; but these institutes are not in the meanwhile to be idle—they are also to encourage experimental investigation and other research work in the various branches of knowledge mentioned in the will. It is proposed forthwith to erect a building suitable for the pursuit of advanced knowledge in physics and chemistry. This institute will be under the supervision of the Swedish Academy of Sciences, and will presumably be in the vicinity of Stockholm. Each of the five sections has at its disposal an annual income of 500,000 crowns derived from the capital left by Dr. Nobel, and this income is to be applied to the organisation of the institutes. Over and above this are other funds which can be drawn upon for the expenses of meetings. After the foundation of the Nobel Institute for Physics and Chemistry an institute for the furtherance of medical research will be built. The first distribution of prizes in all sections will be made in 1901. The entire endowment is under the supervision of the King of Norway and Sweden, and the administration of the funds is in the hands of men of high position in that kingdom.

THE SOUTH AFRICAN HOSPITALS COMMISSION

The report of the South African Hospitals Commission is in active preparation, and the Chairman, Lord Justice Romer, has not sat in court this week in order that the report may be got ready as rapidly as possible in view of the meeting of Parliament on December 3rd. There is a general expectation that the report, while stating that some regrettable incidents occurred, will as a whole vindicate the administration of the military hospitals from the sweeping charges made by various more or less irresponsible persons, many of whom broke down when examined by the Commission. The report will inevitably raise the

question of the undermanning of the Royal Army Medical Corps, although this was not one of the questions directly referred to the Commissioners. In another column we print an article pointing out as briefly as possible the disadvantages under which the corps at present has to work, and the remedies which, after a prolonged study of the subject and of the opinions of numerous military correspondents, suggest themselves as necessary.

COLONIAL AND INDIAN BRANCHES OF THE BRITISH MEDICAL ASSOCIATION.

A special meeting of the Subcommittee of the Constitution Committee representing India and the Colonies was held at the offices of the British Medical Association on November 20th; Surgeon-General Hamilton was in the chair, and the other members present were Mr. Cantlie, Hong Kong; Dr. Gooding, West Indies; Dr. Morier, Australasia; and Mr. Edmund Owen, Canada. The conditions of Indian and Colonial representation on the Council were discussed, and several recommendations were sent up for the consideration of the Constitution Committee at its next meeting on December 7th.

LINCOLN SMOKE.

A letter signed "Common Sense" in the *Lincolnshire Chronicle* of November 10th sets forth that the Lincoln Corporation has passed a resolution to give notice to Messrs. Robey and Co. to stop smoke issuing from three of their chimney shafts. The writer points out that the works in question are situated on the outskirts of the town, that in them are employed some 1,500 hands, that there are only two or three houses to the south and none to the east for miles, and that the prevailing wind is from the west. He goes on to ask if the Sanitary Committee is unable to detect smoking chimneys in more thickly populated parts of the town—for example, that belonging to its own electric lighting station, which he has often heard stated to be the greatest smoke nuisance in Lincoln. Because of certain alleged shortcomings on the part of the Committee in regard to drainage he implies that it should not object to Messrs. Robey's smoke "especially as smoke in crowded cities is admittedly not injurious to health, but, on the contrary, a really valuable antiseptic and preventive of zymotic disease." "As evidence that the alleged smoke nuisance is imaginary," he offers the statement that a petition of complaint has not been generally signed by the inhabitants, on the ground that they had not noticed anything to complain about. The inwardness of this he explains in a concluding sentence, which states that "to put the matter plainly, if smoke were to cease coming from the chimneys" of the works of Messrs. Robey and of two other large manufacturers, "the three large works upon which the city lives and thrives, there would be thousands of unoccupied houses, and Lincoln would be bankrupt." We hardly feel able to make any appropriate comment on this extraordinary letter. "Common Sense" appears to assert that Messrs. Robey's smoke and that of two other large firms is no nuisance (while that of the Corporation is). Further that it is positively beneficial to have smoking chimneys in the middle of large towns (if they do not belong to the Corporation), as the smoke wards off zymotic disease. And, lastly, that the smoke in question (excluding, of course, that of the Corporation) cannot be a nuisance because, if it were stopped, three times 1,500 men would be thrown out of work, and the city of Lincoln would become bankrupt. We really are not sufficient for these things; but in our concern for the financial stability of Lincoln we would urge that the three manufacturers should be petitioned to avoid using anthracite coal or any means by which they could burn their own smoke; and in our concern for the public health of Lincoln, that the Corporation should be compelled to reduce their smoke, but that Messrs. Robey should be invited to bring their smoking chimneys nearer the centre of the town. This is for the town in which "Common Sense" lives, but for every other town we would say the sooner smokiness is abolished the better. The writer of the letter may have a valid claim to the title "Common Sense," but the letter itself is uncommon nonsense.

The Morison Lecturer of the Royal College of Physicians of Edinburgh for this year is G. W. Balfour, M.D., LL.D. F.R.C.P.E. The subject selected is On the Borderland, and the lectures will be given in the College Hall on Tuesdays, December 4th and 11th, at 5 P.M.

Dr. Thomas Buzzard has been appointed one of the representatives of King's College, London, upon the Senate of the University of London, in succession to Lord Lister, F.R.S., resigned.

Dr. Robert John Garden has resigned the post of Senior-Surgeon at the Aberdeen Royal Infirmary. His resignation having been accepted by the directors, Dr. John Marnoch, who has held the post of Assistant Surgeon, has been appointed one of the surgeons to the institution.

We have received the following notice dated November 20th from the office of the General Medical Council: The usual autumn session of the General Medical Council will commence at these offices on Tuesday, 27th instant, at 2 P.M., under the presidency of Sir William Turner.

We understand that on November 17th the Faculty of Medicine of Paris unanimously came to the decision that provision should be made for the teaching of tropical medicine. A chair of parasitology and another of bacteriology will be established. An appeal is to be made to the public for funds to carry the scheme into effect. If sufficient money is forthcoming the programme will be extended.

The following are the arrangements for the Lectures at the Royal College of Physicians of London for 1901: The Milroy Lectures on Public Health will be given by Dr. J. F. Sykes, Medical Officer of Health for St. Pancras, on February 28th, March 5th and 7th; the Goulstonian Lectures, by Dr. Henry Head, F.R.S., on March 12th, 14th, and 19th; the Lumleian Lectures, by Dr. Frank Payne, on March 21st, 26th, and 28th; and the Croonian Lectures by Professor Halliburton, F.R.S., in June.

At the recent general election in Canada, which resulted in the return of a large majority of members of the Liberal party, Dr. Roddick, who was President of the British Medical Association in 1897-98, the year in which it met at Montreal, was re-elected one of the members of the Dominion Parliament. He was the only Conservative returned in Montreal. His success was therefore the more satisfactory, and will, we hope, encourage him to introduce his contemplated Bill for Dominion Medical Registration in the next session.

At the annual students' dinner of the National Dental Hospital, Great Portland Street, London, held at the Holborn Restaurant on November 16th, under the chairmanship of Mr. Henry Rose, L.D.S., Dr. Allchin referred to the progress that has taken place recently in the position held by dentists, and on the recognition by the new University of London as well as by the metropolitan medical schools of the claims that dentistry now has to take its place among the educational requirements of teaching bodies. He added that the members of the Senate of the reformed University would look forward with much interest to the aid which is sure to be afforded by their dental brethren.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

A GENERAL meeting of this Association was held at 11, Chandos Street, on Wednesday, November 21st, 1900, when the chair was taken by Dr. FLETCHER BEACH, the President.

MENTAL DISORDERS DEPENDENT ON TOXÆMIA.

Sir DYCE DUCKWORTH read a paper on this subject, in the course of which he said that the phases of mental disorders depending on toxæmic states had only recently been scientifically explained. Their origin was threefold: by autointoxication, by invasion from without, and through habits such as chloralism. It would be conceded, he supposed, that in the majority of cases of insanity there was a hereditary predisposition to the disorder, but in some cases a previously normal brain might be so damaged by toxic influences as to manifest aberration. With respect, however, to pneumonia and the various fevers, he had noticed that in cases in which grave nervous or mental symptoms had supervened careful inquiry had almost always revealed the existence of personal or family neuropathic taint. Puerperal insanity occupied precisely the same position. He considered that post-operative insanity due to infective influence, with shock or exhaustion, might be similarly classified. There was no clearer evidence of the influence of autointoxication than that afforded by aberrant cerebration in some cases of gout. In enteric fever various grades of mental aberration might arise, and he mentioned the peculiar loss of speech seen in some cases. A degree of this might be noticed in the active stage of chorea, which he regarded as due in the majority of instances to rheumatic toxæmia. Of toxæmic states due to impregnation of the system by metallic poisons, that produced by lead was certainly the most frequent and important. It must be supposed that a saturation was by degrees produced, and that chemical changes proceeded in the brain and ganglionic cells whereby new compounds were formed within them. Interference with normal metabolism in the cellular plasm either by direct poisoning, or by the production of molecular chemical compounds of a fixed character which interfered with function, might well lead to secondary changes in the neurons. The frequency of cases of mental aberration due to the vicious use of agents such as morphine, chloral, and cocaine increased in frequency with what was called the advance of knowledge and civilisation. He felt little doubt that the medical profession was in part to blame for some of this mischief. The average patient clamoured for relief of pain at any cost, and the resort to anodynes prevailed too largely. The various toxic agents which gained admission to the circulation exercised their specific actions upon the several tissues of the body, and manifested elective affinities for particular systems of neurons. In brain diseases the symptoms were the result not seldom of mixed infections, and were not always to be ascribed to any one toxin.

Dr. F. W. MOTT said it seemed to him that in nearly all cases of mental affection there were three factors at work, namely, poison, stress, and inherited tendency.

Dr. G. H. SAVAGE said that in general paralysis of the insane they had to deal with a something which began by affecting the most specialised part of the nervous system, and they had therefore the opportunity of searching out what the special toxin might be. Referring to the general question, he said that anything that might or would produce delirium in an ordinary person might or would produce insanity in a neurotic person.

Dr. EDWIN GOODALL referred to the remission that might occur in mental disorders on the occurrence of malaria, and spoke on the bacteriological aspect of the question.

Dr. CHARLES MERCIER said that toxæmia was the only cause that was certainly known to be capable of producing insanity.

Dr. J. F. BRISCOE said that hospital teachers ought to pay more attention to giving instruction concerning the condition that part of the economy where it was said toxins arose.

Sir DYCE DUCKWORTH said that heredity was a matter of importance, and it was safest to speak of inborn traits.

TRAVEL: ITS USE AND ABUSE IN THE TREATMENT OF MENTAL DISEASES.

Dr. G. H. SAVAGE said that as travel was ordered for nearly every form of mental disorder, it seemed time to consider whether this was wise or not. Many persons of unsound mind were sent away for voyages simply to get rid of them; many others were sent away to avoid certification, and some were sent away as a part of real medical treatment. These cases could be divided into groups—(1) those who could not winter in our climate and who had in addition become deranged, and (2) those who were sent away to distract them from their morbid mental ideas. For slight disorders of mind following some local cause, such as love, disappointment, or domestic grief, travel was good, but for the confirmed hypochondriac it was of no use. The cause of the disorder must lead to modification of the treatment. Melancholia was not benefited in many cases by travel; the danger of suicide was increased; and the forcing of varying fresh sensory impressions on such cases was not for their benefit. Travel was useful in many convalescent cases; but here, too, the danger of suicide had to be faced. Sufferers from delusional insanity had better not be sent on voyages, as every fresh impression gave rise to fresh suspicion. Conditions of apathy and partial dementia, such as followed toxic and similar conditions—taking influenza as a type—were often cured by travel. Probably the most difficult cases to advise upon were those of general paralysis, particularly in the earlier stages, for the friends did not then believe that one so vigorous and buoyant could be on the road to a fatal malady; they thought removal from causes of excitement must do good. Travel could be strongly advised only when emotional causes had set up emotional disorders of slight degree; when patients were apathetic or neurasthenic. Such treatment was to be strongly opposed in cases of active melancholia and of general paralysis of the insane. Dr. Savage concluded his paper by discussing the kind of travel to be recommended, and said that sea voyages were only suitable to a small number of persons, while long railway journeys were good neither for the sound nor the ailing.

Sir HERMANN WEBER related three cases of melancholia sent on voyages; two committed suicide, and the other was only prevented by numerous attendants.

Dr. SYMES THOMPSON said he regarded travel in Egypt as of great value for people in whom the danger of degeneration was due to over-concentration or work.

Dr. ROBERT JONES asked Dr. Savage his views on the treatment of monomania.

Dr. L. A. WEATHERLY (Bath) suggested the open-air treatment for the insane.

Dr. G. A. SAVAGE, in rep'y, said that in monomania a voyage might be useful in certain forms of obsession.

THE APPLICATION OF ELECTRICITY IN CERTAIN FORMS OF MENTAL DISEASE.

Dr. LEWIS JONES said that the most important development of electricity during the last ten years had been in the direction of general electrification for general effects, a line of treatment which had been very carefully worked out by a physiologist, who was not a medical man, Professor D'Arsonval, who had shown what a profound effect could be produced upon the general nutrition of the body in that way, and had established by measurements the increase of carbonic acid, of body heat, and of urea in animals and in people who had been submitted to general electrification. Clinical experience also demonstrated the immediate effect which followed general electrification in the various forms of debility, and from a consideration of these points Dr. Lewis Jones had for a long time felt that certain forms of mental failure ought to be found eminently suitable for treatment in this way. He then exhibited and demonstrated the simplest modes of setting up general electrification in the electric bath treatment.

Dr. ROBERT JONES read notes on cases, mostly in adults, in which he had tried electrical bath treatment with success.

Dr. EDWIN GOODALL said his experience of three months was in favour of the treatment.

After several members had asked for details, Dr. LEWIS JONES replied, and the CHAIRMAN said he hoped the members of the Association would give the treatment a trial.

THE German Balneological Society will hold its twenty-second annual Congress in Berlin from March 7th to 12th, 1901.

THE WAR IN SOUTH AFRICA.

THE IMPERIAL YEOMANRY FIELD HOSPITAL.

We have received from Mr. Charles Stonham, Officer Commanding and Chief Surgeon Imperial Yeomanry Field Hospital, a further letter, dated Pretoria, October 23rd, 1900, in the course of which he gives the following details with regard to further wanderings of the hospital:

III.

THE MARCH TO BARBERTON.

On reaching Pretoria on August 28th we sent our ambulances on to the Irish Hospital established in the Palace of Justice and camped near the racecourse. We had lost many transport animals, and those still alive were worn out with long marches and scanty rations. The Field Hospital and Bearer Company combined had to requisition for seventy fresh animals, but were only able to draw ten, sixty being the total number allowed for the whole brigade. All units were in this respect as badly off.

The day after our arrival in Pretoria Major Hale and I went to No. 3 Model School Hospital (commanded by Major Ford, R.A.M.C.), to which we had lent our detachment for the time being, and made all arrangements for the detachment, exchanging one or two sick men and providing for the sending home of most of the St. John Ambulance men who were time-expired. We drew a few stores and changed a couple of carts, so that we should be ready to march at once when orders arrived. For these we had not long to wait, as we received marching orders for the following day.

On August 30th we struck camp at 7 A.M., marched through Pretoria at 9 A.M., passing the recently established Yeomanry Branch Hospital in the grounds of Beckett's House at Sunnyside. It looked most business-like with everything in full swing, orderlies and nurses coming to the railings to see us pass. On the opposite side of the road was the Langman's Hospital.

On September 1st we arrived at Balmoral, having camped the night before two miles south of Bronkhurst Spruit. We had to pass along the road where our animals had perished in such numbers during the storm of July 25th-26th. The stench was abominable and nauseating. We passed through Middelburg on September 3rd, and sent our sick to the hospital there. We camped at Wonderfontein on September 4th. Next day as we were inspanning we heard heavy gun fire to the north-west of us, and after marching about three miles our artillery and mounted troops, with two ambulances under Major Hale, were ordered back. The Boers under Commandant Trichardt had attacked a party of Canadians guarding the railway but had been beaten off. Our ambulances took five wounded men from the Canadian camp to Wonderfontein railway station to await a train for Middelburg.

On September 6th we joined General French's division at Carolina, and rested here till September 9th, when the division marched into the hills in the direction of Barberton. Major Hale and Mr. Green with two ambulances followed Mahon's cavalry, the rest going with the main convoy. About 10.30 A.M. our advanced guns engaged the enemy, and the convoy parked at the foot of a hill on which two of our guns were placed. The guns soon drove the enemy from the opposite hill; the action was most exciting, especially at the finish, when the mounted Boers broke cover and made up the hill we had been shelling as hard as they could go, under a perfect hail of shell from the battery. The division now advanced, crossed the hill we had been shelling, and camped about 8 o'clock in the valley. Our casualties in this action were 5 wounded; one man shot through the head died in our hospital on September 12th. The next morning we were fairly in the mountains; the roads were very bad, broken by numerous drifts over the winding Komati River. On September 12th we camped at the foot of Roodehoogte, an exceedingly steep pass about half a mile long, and the remainder of that day and the two next following were taken up in getting the troops and convoy over the pass. Our turn to ascend came on September 14th, and the next day we marched to the top of the Devil's Chute, about 7,500 or 8,000 feet above sea level, from which there is an extensive and beautiful view, with Barberton about 20 miles distant. The Chute is a winding road about 3 miles long, descending about 2,500 or 3,000 feet to the lower but still hilly and broken ground. Many waggons and animals which had come to grief in the descent bore witness to its difficulties. Our mules were now thoroughly done up; we had lost so many that, even after inspanning our horses, our teams were reduced to six animals, and we only just managed to creep into Barberton on September 17th, when we sent our sick to the Boer hospital. This march to Barberton will certainly rank as one of the great marches of the campaign; and the Boers, and indeed the English residents there, thought it impossible for us to enter Barberton with our heavy guns and convoy. But French pushing on and arriving two days before he was expected, caused the Boers to beat a hasty retreat, leaving large quantities of stores and over forty engines. At Barberton we were detained for lack of transport till October 2nd.

AT BARBERTON.

We obtained supplies and a few fresh vegetables, which were very welcome, as we began to feel the absence of the latter severely, indeed, this is one of the chief drawbacks to long marches through absolutely barren country.

Unfortunately, there was absolutely no forage to be obtained, and our transport animals had to pick up a living as best they could on the veld. Needless to say, they died daily. A few days before we left a small quantity of forage was issued; had it not been for this, most of the poor animals would have died.

FROM BARBERTON TO MACHADODORP.

On October 1st we received orders to march the following morning, as we were to proceed by the Devil's Kantoor. We were only to take such waggons as we could find full teams for. We left 2 officers and 35 men with 7 waggons, who camped near the station. These were sent on by train, and we found them waiting when we got to Machadodorp. On October 2nd, Major Hale, Dr. Green, and I, with 28 men, moved off with 10 carts, after passing a most disagreeable night in consequence of the very high wind and perpetual dust storms, marched 18 miles, and camped at the North De Kaap River. The rest of the column going 4 miles further on. During the night a series of heavy thunderstorms commenced, and lasted practically without intermission for eighteen hours. Two men in the ammunition column were killed by lightning, and others injured. Some mules were killed. On October 3rd we commenced the ascent of the Kantoor by a very bad road, in parts excessively steep, winding up the mountain for about seven miles. This day we did about four miles in pouring rain, accompanied by heavy thunder and lightning. The next two days were occupied in getting the waggons up. From the top of the Kantoor a magnificent view of the mountains surrounding the low ground in which Barberton lies was obtained. On October 6th we reached Godwan River Station, and had again to cut down our convoy, as there was another hill to be ascended at Waterval Onder which, according to accounts we received, was worse than anything we had yet done. We left Mr. Green with all the baggage, and what little stores we had—two carts, and all the men but eight, to go on to Machadodorp by train. Major Hale and I with eight men and the rest of the waggons, empty except for kits, marched to Nooitgedacht through a beautiful valley, which had it not been for the wind and heavy dust storms would have been most enjoyable. On arriving at Waterval Onder about midday on October 8th, we saw the hill of which we had received such terrible accounts, and were agreeably surprised to find that there was really nothing formidable about it—indeed in the afternoon we marched up it without difficulty with our usual ten span of mules. The following day we reached Machadodorp, where we found the rest of our men and waggons who had preceded us by train.

French's division and some of Buller's troops were at Machadodorp, making a very big camp. On October 11th we received orders to cross to the north of the line at daybreak and take over the sick from the field hospital which was to replace us in Mahon's brigade. This, in view of the fact that the yeomanry, volunteers, colonials, and reservists were being sent down, looked like an early return home, and, although we were sorry not to accompany General Mahon, as

we had been with him for three months, yet we were all delighted at the prospect before us. We remained at Machadodorp until October 21st, when we entrained for Pretoria, arriving there on the 22nd. During our stay at Pretoria we admitted nearly 100 patients, sending them down by sick convoy as opportunity offered.

[Major Stonham concludes his letter by stating that he hopes to give details of the medical and surgical work done when the Field Hospital and Bearer Company are finally relieved of their duties.]

RETURN OF THE IRISH HOSPITAL.

The Irish Hospital Corps arrived at Southampton from South Africa on Tuesday, November 20th, and proceeded to Dublin. They left Pretoria on October 15th and reached Cape Town on October 20th. The train was "hung up" for three nights owing to the danger of travelling after dark until Norval's Pont was reached. At Cape Town they were received by the Mayor (Alderman O'Reilly), the Rev. Dr. Walsh, Vice-President, and several members of the Irish Association. The Mayor congratulated Sir William Thomson on the work which the hospital had done, and Dr. Walsh invited the officers to luncheon in the name of the Association. The voyage home in the *Dilwara* was prolonged to twenty-six days, owing to the weather.

Field-Marshal Lord Roberts, the Commander-in-Chief; General Tucker, commanding the Seventh Division, and several other officers saw the company off from Pretoria, and Lord Roberts made a short address to the men, in which he thanked them for their services.

The total number of patients treated in the wards at Bloemfontein and a Pretoria was 2,748, while there were over 2,500 "externs." The death-rate of 2,748 patients was 3.7, and of the wounded 6.1.

The enteric cases numbered 671, of which 501 were treated in Pretoria. The death-rate at Bloemfontein was 12.6, and at Pretoria 11.9, or on the gross number treated 11.7. Eight of these cases died within 48 hours of admission, and 4 within 72 hours. Some were moribund when received.

Of the company, Dr. Counihan, Dr. Pounden, and Mr. Percy Stewart, and six men were attacked by enteric, and two by dysentery. Drivers P. J. Murphy and P. Lalor unhappily died, to the great regret of their comrades.

The Palace of Justice at Pretoria will no longer be used as a hospital, but has been handed over to General Baden-Powell as a barrack for the headquarters of the South African Police. Number 2 General Hospital has had its tents increased in number, and as it is very well equipped, it will be sufficient to meet any probable demands upon it.

The officers who have returned are Sir William Thomson, Dr. George Stoker, Dr. J. B. Coleman, Dr. Pounden, Mr. J. MacIlwaine, Mr. Percy Stewart, Mr. Douglas Thomson, Mr. Edwards, Colonel Nixon, R.E., and Hon. Rupert Guinness, financial commissioners representing Lord Iveagh, have also returned to England. Dr. Counihan, Mr. Lurring, and Mr. Hogan remain in South Africa in official employment.

RETURN OF THE EDINBURGH AND EAST OF SCOTLAND HOSPITAL.

The troopship *Dilwara* arrived at Southampton at midnight on November 19th. Through delay caused by the disembarking of 160 invalids, the staff of the Edinburgh and East of Scotland South African Hospital did not reach London until November 20th. Mr. A. H. Gordon Joint Secretary to the Hospital, met the travellers at Southampton, and accompanied them to Edinburgh on Wednesday morning. The party consisted of Dr. Francis Darby Boyd (Physician to the Hospital), Messrs. Andrew Watt, George L. Chiene, W. J. McFarlane (Surgeons), Dr. James Miller (Bacteriologist), seven nursing sisters, five dressers, sixteen men of the Army Medical Corps (students who specially enlisted for the work), twelve second-class orderlies, and six of the staff.

This did not represent all who went out. Professor Chiene, who on his arrival in South Africa was appointed Consulting Surgeon with the Forces, returned home some time ago. Mr. Wallace, who then became the head of the hospital, suffered from enteric fever and a veld sore in one of his eyes, and was invalided home. So also was Mr. Cooper, another of the surgeons. Nurse Boyd, the sister of Dr. Francis D. Boyd, died of dysentery, and one of the men—W. Dick—died of enteric fever. The rest of the staff appear to have had good health. The hospital, as already reported in the Journal, has been handed over to the charge of the military authorities, and Dr. Yule and Sister Kemp, also members of the original staff, have remained, having volunteered to do further duty in connection with the hospital. Three men have chosen to take their discharge in South Africa, meaning to remain in that country. At 12.30 on Wednesday, the members of the hospital staff paraded in uniform in the quadrangle of the old University, and were inspected by General Chapman, the officer commanding the North British District. Among those present were Sir Mitchell and Lady Thomson, Colonel Gerrard, A.A.G.; Colonel Rooney, P.M.O.; Colonel Telfer Smollett, D.A.A.G.; Sir William Turner; Dr. Andrew, the President of the Royal College of Physicians of Edinburgh; Colonel Warburton, the Medical Superintendent of the Edinburgh Royal Infirmary; Professor Chiene, Dr. Joseph Bell, the Provost of Leith, the Master of the Merchant Company, and others. After the inspection they were briefly addressed and complimented by Sir Mitchell Thomson, who was Lord Provost and President of the Committee at the time the hospital was launched.

The party then drove to the Balmoral Hotel, Princes Street, for luncheon. Sir Mitchell Thomson presided at the luncheon, and the Lord Provost of Edinburgh was on his right. The President of the Royal College of Physicians (Dr. Andrew) and Professor Chiene were croupiers. Some sixty were present. After the loyal toasts, Dr. Andrew gave "The Imperial Forces," and Colonel Gerrard replied. Sir Mitchell Thomson gave "The Edinburgh and East of Scotland South African Hospital," and Mr. Wallace replied. Professor Chiene gave "The Lord Provost of Edinburgh"; and Provost Mackie (Leith) gave "Sir Mitchell Thomson."

Those units of the V.M.S.C. forming part of the *personnel* of the hospital, who were enlisted for one year's service with the R.A.M.C., have the option of taking their discharge or completing their year's service at home in accordance with Paragraph 177 (1) and (2) of the regulations for demobilisation of the mobilised service in South Africa. After luncheon they reported themselves to O.C., 13 Company, R.A.M.C., and to the P.M.O. Scottish District, who arranged in accordance with the desires of the men, and also adjusted their accounts.

A dinner to celebrate the return of the Edinburgh Company Volunteer Medical Staff Corps, who served in South Africa with the Edinburgh Hospital, is to be held in the Imperial Hotel on November 23rd at 7.30 P.M., when it is hoped that all members of the corps will make an effort to be present.

The total amount collected for the purposes of this hospital was £21,500.

THE WELSH HOSPITAL.

At the last executive meeting of the Cardiff Infirmary, notice was given on behalf of the Mayor to call a special meeting to consider the following resolution:

That, in consideration of the valuable services rendered by Dr. Lynn Thomas in particular, and for the honour bestowed upon Wales in general by his services to the Welsh Hospital in South Africa, of which for some time he was the recognised head, Rule 32 be altered by the substitution of the word "four" for "three" in the third line, and that Dr. Thomas be requested to accept the full position of honorary surgeon of the institution.

THE PREVENTION OF CONSUMPTION.

Dublin.

The Dublin Branch of the National Association for the Prevention of Consumption, at a recent meeting, passed a resolution calling the attention of the Corporation of Dublin to the necessity which exists for homes for advanced cases of consumption amongst the poor, as it is in the advanced stages that they are most infective to their families. The attention of the Local Government Board is also directed to the infectious nature of consumption and the necessity of isolating those afflicted with this disease in unions throughout Ireland from the other inmates. The Committee also recorded its

opinion that the sanitary authority in Dublin should establish small sanatoria for the open-air treatment of the consumptive poor. The question of the control of the milk supplies was postponed to the next meeting.

Leicester.

In connection with the Sunday morning adult school at Enderby, Leicestershire, Dr. Sylvester, of Leicester, gave on November 4th a lecture on the Prevention of Consumption. Dr. Pratt, of Leicester, also gave a short address on the subject. The lecture, which was well attended, was given under the auspices of the Leicester and Leicestershire Branch of the National Association for the Prevention of Consumption.

Sheffield.

The Sheffield Board of Guardians will shortly consider a resolution to appoint a committee to endeavour to bring about a conference with other public bodies in Sheffield, with a view to combined action in providing for the better treatment of consumption.

West of England.

The counties of Wilts, Somerset, and Gloucester propose to erect a joint sanatorium for consumptives in a healthy situation close to Winsley Common, near Bradford-on-Avon, on the borders of Wiltshire and Somersetshire. The sanatorium, which will accommodate from 50 to 60 patients, will be under the care of the local branch of the National Association for the Prevention of Consumption, and is to be supported by voluntary contributions. An appeal will shortly be made throughout the three counties concerned.

Manchester.

Mr. W. J. Crossley, of Manchester, is about to erect a sanatorium for consumptives in North Wales at a cost of £100,000. The site selected is near Halkin, in Flintshire, on the south-west slope of the Moel Gaer mountain.

Leeds.

The past and present students of the Leeds College of Music are giving weekly concerts at the Alexandra Hall in aid of the Leeds Hospital for Consumption at Farsley. It is hoped in this way not only to give substantial aid to the Farsley Home, but to render financial aid to poor convalescent patients.

Durham.

The first annual report of the Society for the Prevention and Cure of Consumption in the County of Durham covers a period from its inception in 1898 down to April 30th, 1900, and contains a record of useful work accomplished during that time. The objects of the Society, as explained on its formation, are:

1. To teach the public that consumption is an infectious disease, and how to prevent its spread.
2. To urge upon sanitary authorities in the county the necessity of taking steps to stop its ravages.
3. To provide a properly-equipped open-air sanatorium for the treatment of suitable cases.

To carry out the first part of the programme the Society has distributed throughout the county several thousand circulars containing information about consumption and its prevention. The measures recommended to sanitary authorities are exemplified by the steps already taken by the Sunderland Corporation, on the advice of Dr. Scurfield, a Vice-Chairman of the Committee of the Society. These comprise the granting of certificates to dairy farmers who sell milk only from cows which pass the tuberculin test; examination of sputa for medical practitioners, if the name and address of the patient be sent and the case thus notified to the authorities; and disinfection on request of rooms used by consumptives. The third aim has been accomplished by the taking, on a lease of twenty-one years, of Horn Hall, Stanhope, which was opened on May 15th last, with accommodation for 12 male patients. The beds have since then been continuously occupied. It is proposed to add at once 8 beds for females, and eventually to bring the total number of patients up to 40.

The balance sheet of the Society shows a credit balance of over £2,000 on the capital account and of £65 on the current account. The satisfactory amount of work accomplished by the Society is evidence of the interest and energy of the honorary officers and members of the Committee.

Dr. John Gray, the Medical Superintendent of the Durham County Sanatorium, has issued a report in tabular form on all the patients, 15 in number, who have been treated in Horn Hall Sanatorium, Stanhope, during the nineteen weeks since the institution was opened. Of the 15 patients 6 had consolidation of the lung only, and of these three have already gone back to work "cured," "practically cured," and "very greatly improved" respectively. The other three are still under treatment, and are rapidly improving. Nine patients had cavities in the lungs, and of these three have already returned to work "very greatly improved," two left "improved," though one of these was too advanced for hope of cure. One case left "worse," and three others remain under treatment.

All the patients gained weight during their stay, with the exception of one of the cases of consolidation who in other respects was greatly improved.

The shortest stay in the sanatorium was four weeks, in two of the early cases who left much improved. One patient was discharged as incurable after five weeks. The other patients already discharged stayed from ten to sixteen weeks, and those still remaining have been in the sanatorium from eleven to nineteen weeks.

Tubercle bacilli were found in the sputa on admission in all but two cases; the absence of bacilli on discharge is, however, only noted in one of the cases in which they had previously been detected.

Almost all the patients remained out of doors the maximum amount of $11\frac{1}{2}$ hours each day, and slept with their French windows wide open all night.

The number of patients treated, and the time over which the report extends, are too restricted for the report to have any medical value. Such a report may, however, be useful in giving encouragement to the friends of present or prospective patients, and in satisfying those to whom the sanatorium owes its foundation that their work is likely to lead to good results.

CONTRACT MEDICAL PRACTICE.

A Local Medical Society and Local Lodges.

We are informed that the Medical Society of Springburn, Glasgow, has communicated the following memorandum to the friendly societies with lodges in the district:

The Springburn Medical Society has adopted the following rule for guidance in applying for lodge surgeonships of friendly societies:

No member of the Society shall undertake to become a candidate for the medical officership of a friendly society where one of our number is already medical officer, unless at a summoned meeting of the said friendly society one-half of the members present have indicated by vote that they wish candidates for said position.

Let it be clearly understood that this rule has not been adopted to prevent friendly societies changing their medical officers if they wish to, but simply to avoid unnecessary competition, perhaps forced on a friendly society by a few thoughtless or discontented members, which at the same time is against the wishes of a majority of the members of the said friendly society, and, further, is a cause of avoidable irritation to the doctors who have been canvassed and persuaded to become candidates for a lodge in which there is no real desire for a change of medical officer.

The members of the Medical Society will esteem it a kindness if the friendly societies will, at a summoned meeting, take a preliminary test vote to get the actual mind of the lodge before calling on the doctors, and so be able to give each the necessary information when asking them to become candidates.

The Australian Natives' Association.

The *Bulletin*, a well-known Australian newspaper, contains in a recent issue an article signed "An Australian-born Doctor," which, under the title "Bogus Patriotism and Real Swearing," discusses that curious organisation, the Australian Natives' Association. The schemes of this body were explained by our special correspondent in Sydney in the British Medical Journal of October 13th, 1900, p. 1136. As will be remembered, our correspondent reported that the Australian Natives' Association had been declared by the Council of the Sydney and New South Wales Branch of the British Medical Association to be "a Society prejudicial to the interests of the profession;" and that at a meeting of the profession held in Sydney, under the presidency of Dr. Sydney Jones, a series of resolutions were adopted approving of the course taken by

the Council of the Branch, and appealing to members of the profession to refrain from meeting in consultation medical officers of associations which have been declared prejudicial to the interests of the medical profession. The writer in the *Bulletin* complains that the Australian Natives' Association in its appeal to Australians to join its ranks for "the furtherance of patriotism and the love of fatherland" has "merely degraded noble watchwords to cheap and nasty uses." He points out that "while insisting upon an eight hours' working day for workers in general, with a due proportion of holidays and adequate pay, it works the unlucky medico all round the clock, week in and week out, at a rate which can only be called a sweating rate, though the medico is often as good an Australian native as the Australian Natives' Association President himself;" and he charges the Association with "using its power and popularity to further cut down the miserable fees of its doctors." The cause of this state of affairs he ascribes to "the absolute lack of unity, the petty professional jealousies, and utter want of *esprit de corps* amongst the majority of general practitioners." The solution of the difficulty, he says, "is to make lodges in general, and the Australian Natives' Association in particular, debar from medical benefits all persons with an income of more than £200 per annum." It would appear that the state of the profession in Australia is not very different to that which exists at home, and similar remedies are required in each case.

DEATHS OF LUNATICS IN POOR-LAW INSTITUTIONS.

THE following General Order dated November 3rd, and issued by the Local Government Board in England, was published in the *London Gazette* of November 13th, 1900:

TO THE GUARDIANS OF THE POOR of the several Poor Law Unions in ENGLAND AND WALES:—

To the Boards of Management of the several Asylum Districts formed under the Metropolitan Poor Act, 1867;—

And to all others whom it may concern.

WHEREAS it is expedient to provide for the notification of the death of every poor person of unsound mind in any Workhouse or in any other building subject to the government of a Board of Guardians or Joint Committee of two or more Boards of Guardians, or Board of Management, to the Coroner of the District in which such Workhouse or other building is situated:

NOW THEREFORE, We, the Local Government Board, in pursuance of the powers given to us by the Statutes in that behalf, hereby Order as follows:—

ARTICLE I.—In this Order:—

The expression "Poor Law Institution" means a Workhouse, a Workhouse Infirmary, or other Building subject to the government of a Board of Guardians or Joint Committee of two or more Boards of Guardians, or a District Asylum subject to the government of the Board of Management of an Asylum District.

The expression "Superintending Officer" means in the case of a Workhouse, the Master; in the case of a Workhouse Infirmary, the Superintendent, or where there is no Superintendent, the Steward; in the case of an Asylum subject to the government of the Board of Management of an Asylum District, the Medical Superintendent or other Head Officer; and in default of any such persons includes any other Officer whose duties comprise the notifications to the pauper's relatives of the death of any pauper in a Poor Law Institution.

The expression "Lunatic" means an idiot or person of unsound mind.

ARTICLE II.—Within forty-eight hours after the death of a Lunatic in a Poor Law Institution notice of such death shall be sent by the Superintending Officer of such Institution to the Coroner of the District in which the Institution is situated, and such notice shall be accompanied by a statement signed by the Medical Officer or the Medical Superintendent or the Medical man who attended the lunatic in his last illness and containing the following particulars:—

(1.) The name, sex, and age of the lunatic.
(2.) Whether married, single, or widowed.
(3.) The apparent cause of death.
(4.) The time of, and any unusual circumstances attending, the death; also a description of any injuries known to exist at the time of death or found subsequently on the body of the deceased.
(5.) The duration of the disease of which the lunatic died.
(6.) The names and descriptions of any persons present at the death.
(7.) Whether or not mechanical restraint was applied to the deceased within seven days previously to death, with its character and duration if so applied.

ARTICLE III.—This Order shall come into operation from and after the First day of December, One thousand nine hundred.

Given under the Seal of Office of the Local Government Board, this Third day of November, in the year One thousand nine hundred.

[Seal] HENRY CHAPLIN, *President.*

S. B. PROVIS, *Secretary.*

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

Bombay City.—The plague deaths during the week ending October 28th numbered 85, being 13 more than during the previous week. Practically, however, plague is nearly stationary as regards the mortality. Mandvi, the first infected district, still holds pre-eminence as a centre of the epidemic, more than twice as many having died during the week ending October 28th than in any other part of the city. The disease, although not amounting to an epidemic in Bombay at present, continues to be widely diffused, eight only of the thirty-three districts into which the municipality of Bombay is divided being free from plague. Respiratory disorders claim an undue prominence at present in the death returns in Bombay, and as pneumonic plague has played so important a part there lately, it is possible that a number of the so-called respiratory disorders are caused by plague.

Poona.—The latest returns from Poona show a slight decrease in the plague mortality; on October 26th and 27th respectively the numbers were 63 and 70 fresh cases and 41 and 70 deaths. On October 29th and 30th the fresh cases were 59 and 56, and the deaths 55 and 54 respectively. No case of plague has occurred amongst those inoculated this year.

Calcutta.—There would seem a fair hope of the disappearance of plague from Calcutta, for during five successive days, ending November 2nd, no case of plague was reported.

Mysore.—In the city of Mysore the mortality is still heavy and the Government is adopting measures to enable the people to build huts and camp out. Already 2,000 people have moved into these temporary huts.

Bangalore.—There is a diminution in the epidemic in Bangalore, but many plague corpses are found in the streets, having been thrown there after death by their friends. The Middlesex Regiment, stationed at Mysore, are being sent to Secunderabad.

Punjab.—Plague is disappearing from the Punjab. The people are flocking to be inoculated, and if the disease which threatened keeps off, the virtue of the plague prophylactic will be established in the opinion of the natives—a most desirable circumstance.

Rangoon.—On the ss. *Ethiopia*, which arrived at Rangoon with the mails on November 1st, thirty hours' quarantine was imposed, owing to there being a case of plague on board.

MAURITIUS.

For the week ending November 15th 38 fresh cases of plague occurred in Mauritius and 29 deaths from the disease.

CAPE COLONY.

King William's Town.—Four cases of plague are reported at King William's Town; one is already dead, and on November 17th another was expected to die. The acting Health Officer telegraphed on November 20th that there had been one fresh case.

EXTINCTION OF PLAGUE IN GLASGOW.

The Lord Provost of Glasgow has received the following letter from Lord Balfour, the Secretary for Scotland:

"The operations against the plague were skilfully conceived and vigorously carried out. The outbreak called for special measures and new methods. These were adopted without stint of expenditure or restraint of routine. The gratifying result has been that not only has the disease been speedily stamped out with comparatively a small number of cases and with little loss of life, but the area of infection has been restricted practically to the limited district of the city in which it originally appeared, and the country has been protected. The high repute of the local authority, the manifest vigour, and the fulness of their resources have amply justified the calmness and confidence with which not only your own citizens, but the country at large, watched the struggle going on in Glasgow. The Local Government Board have closely and anxiously observed the progress of events in the west during these critical weeks."

THE DISTRICT MESSENGER SERVICE.—It would be an interesting mathematical problem, suggested by the present rather one-sided controversy between the District Messenger Service and the Postmaster-General to determine what is the equivalent, in pounds, shillings, and pence of the all night and day service of the limited company as compared with the day service alone of the State. The nightwork of the country or town practitioner is hardly a parallel case, but it is a well-recognised fact that night duty for the average nurse is more taxing than day duty. Equally well established, but with more scientific precision, is the fact, demonstrated by the diurnal variations in the temperature curve and pulse-rate, that the vital powers are at their lowest in the early morning hours. It is all the more creditable therefore to the District Messenger Service that the work is on the whole so excellently done, and we may be allowed to express the hope that Parliament will interfere to prevent the Post Office from crushing out by oppressive methods a service so useful to the public.

ASSOCIATION INTELLIGENCE.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1901.

MEETINGS of the Council will be held on January 16th, April 17th, July 10th, and October 23rd, 1901. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before each meeting—namely, December 26th, 1900; March 28th, June 20th, and October 2nd, 1901.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

FRANCIS FOWKE, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

BATH AND BRISTOL BRANCH.—The second ordinary meeting of the session will be held at Bath on Wednesday evening, November 28th, at 7.30, Mr. A. W. Prichard, President, in the chair. The following communications are expected: Mr. W. R. Ackland will demonstrate the use of his new instruments for the treatment of Antral Empyema. Dr. W. S. Melsome: Simultaneous Obstruction of the Ileum and Jejunum following Perforating Gastric Ulcer. Dr. E. J. Cave: Two cases of Pneumococcal Infection—(1) Arthritis, (2) Peritonitis. Dr. Preston King: Some Causes of Gout Dr. J. Wigmore: Treatment of Severe Albuminuria associated with Pregnancy.—W. M. BEAUMONT, Bath, and J. MICHELL CLARKE, Clifton, Honorary Secretaries.

METROPOLITAN COUNTIES BRANCH: SOUTH LONDON DISTRICT.—The next meeting of this District will be held in the Committee Room at St. Thomas's Hospital on Thursday, November 29th, at 4 P.M. Dr. Turney will read a paper on Lesions of the Brachial Plexus and their Causation. Cases of clinical interest from the wards of the hospital will be shown by members of the staff.—MAURICE CRAIG, Bethlem Royal Hospital, S.E., Honorary District Secretary.

SOUTH-EASTERN BRANCH: EAST KENT DISTRICT.—The next meeting of this District will be held at the Kent and Canterbury Hospital on November 29th, at 3 P.M., Dr. Halstead of Ramsgate in the chair. The Chairman kindly invites members to luncheon at the County Hotel, Canterbury, from 1.30 to 2 P.M. Members intending to avail themselves of Dr. Halstead's hospitality are requested to send acceptances by Tuesday, November 27th, or they will not be expected. Agenda:—Dr. Robinson: Notes on Plague, and its Recognition. Dr. Whitehead Reid: Two Rare Cases. The Chairman: Neuroses. All members of the South-Eastern Branch are entitled to attend these meetings, and to introduce professional friends.—THOS. F. RAVEN, Barfield House, Broadstairs, Honorary District Secretary.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.—The next meeting of this District will be held at the Calverley Hotel, Tunbridge Wells, on Tuesday, December 4th, at 5 P.M. The chair will be taken by Dr. Adeney, J.P. Dinner at 7 P.M., charge 6s., exclusive of wine. The following papers have been promised.—Mr. C. H. Golding-Bird: Nodal Points of Pain. Mr. J. B. Footner: Some Notes on the Treatment of Hallux Valgus, with cases exhibited. Dr. Ranking: The Management of the Menstrual Irregularities of Early Life.—J. W. BATTERHAM, M.B., Grand Parade, St. Leonards, Honorary District Secretary.

SHROPSHIRE AND MID-WALES BRANCH.—The next meeting of the Clinical and Pathological Section of this Branch will be held at 5.30 P.M. on Tuesday, November 27th, at the Salop Infirmary. It is hoped that every member will endeavour to attend this meeting.—HAROLD H. B. MACLEOD, LEONARD J. GODSON, Shrewsbury, Honorary Secretaries.

SHROPSHIRE AND MID-WALES BRANCH.

THE annual general meeting of this Branch was held at the Salop Infirmary on October 23rd, thirty-seven members being present.

Introduction of New President.—The retiring PRESIDENT (Mr. Arthur Jackson) introduced his successor, Mr. ERNEST TREDINNICK, who then took the chair, and proposed a hearty vote of thanks to the retiring President.

Confirmation of Minutes.—The minutes of the last meeting were read and signed as correct.

Report and Financial Statement.—The report and financial statement presented by the Branch Council was read and confirmed.

The late Dr. Thursfield.—A letter was read from Mr. Thomas Thursfield, thanking the Branch for the vote of condolence passed with him on the loss of his brother, Dr. William Nealor Thursfield.

Election of Officers.—The officers for the ensuing year were unanimously elected as follows:—*President:* Ernest Tredinnick. *Vice-President:* Arthur Jackson, F.R.C.S. *President-Elect:* George Graves Whitwell, M.B. *Honorary Secretary and Treasurer:* H. H. B. MacLeod. *Assistant Honorary Secretary:* Leonard J. Godson. *Branch Representative on the Council of the Association and Branch Representative on the Parliamentary Bills Committee:* J. D. Harries. *Chairman of Clinical and Pathological Section:* T. Law Webb. *Branch Council:* E. Burd, M.D., E. Cureton, M.D. (Auditor), W. B. Davies, W. Eddowes, H. Nelson Edwards, S. T. Gwynne, M.D., J. D. Harries, G. H. Keyworth, M.B., J. McCarthy, M.D., W. H. Packer, M.D., R. W. O. Withers, and T. Law Webb.

Ethical Committee.—The members of the Ethical Committee were unanimously re-elected as follows: Messrs. E. Cureton, S. T. Gwynne, J. D. Harries, G. H. Keyworth, J. D. Lloyd, J. McCarthy, and the President (*ex-officio*).

New Members.—The following gentlemen were elected members of the Branch: G. Wedd, M.B. (Wellington), J. H. Power (Shrewsbury), J. M'Clintock (Church Stretton), D. Massey (Berriew), S. E. Rigg (Shrewsbury), R. V. Lloyd-Williams (Craven Arms), C. G. Russ Wood (Shrewsbury).

The late Dr. Charnley.—The CHAIRMAN proposed a vote of condolence with the relatives of the late Dr. Charnley; this was seconded by Dr. CURETON, and carried unanimously.

Decay of Teeth Committee.—The SECRETARY read a resolution passed by the Committee of the Council of the Association on the early decay of teeth, and presented several copies of its report.

President's Address.—The PRESIDENT expressed his thanks to the Branch for the honour done him by his election as President. He went on to say that, considering the Branch was in its twenty-fifth year, it was useful to take a slight retrospect of its life-history. In 1832 Mr. Hastings (afterwards Sir Charles Hastings), of Worcester, with the co-operation of five other gentlemen, conducted a journal called the *Midland Medical and Surgical Reporter*, the papers being contributed to by many men in the neighbourhood. This led to the formation of an association called the Provincial Medical and Surgical Association, which grew into such repute that in 1856 it was considered better to assume the name of the British Medical Association, which was held at Worcester for a short time, and became incorporated under the Joint Stock Companies Act in 1874, giving it a legal position. In 1835 Branches were formed, 68 now being in existence. The Seventies men were very prolific in forming Branches, and according to the minute book of the Branch it was in 1875 that Drs. Tayleur Gwynne, Johnson, Eddowes, Humphreys, Nealor Thursfield, Barrett, Sides Davis, Withers, Roe, and McClintock, with Drs. Andrews and H. N. Edwards for Secretaries, formed their Association, dissolving the Scientific and Ethical Societies, and amalgamating the original Societies which were started in 1860. Thence onwards they had steadily increased in number, a difficult matter in a large county like Shropshire owing to the distance of the provincial towns from the centre. That the Branch had always held its own was due, he thought, after carefully reading the minute book through more than once, to the way the Secretary had invariably, each in his turn, had the welfare of the Association at heart, and at present they were in as safe and as ardent hands as ever. The constantly recurring names of men of position in Shrewsbury, and the sadly too infrequent repetition of those in the county, showed the great difficulty in keeping a Branch Association alive; not that the country members were few, but that they were handicapped by the fact of living in the country. He thought as this was such an interesting occasion he needed no excuse for reading over the list of past Presidents, many, alas, no longer with us:—*List of Presidents:* 1875, Dr. Tayleur Gwynne; 1876, Dr. Tayleur Gwynne; 1877, Dr. Tayleur Gwynne; 1878, J. Ryder; 1879, A. Mathias; 1880, T. Bratton; 1881, J. R. Humphreys; 1882, C. H. B. Soame; 1883, E. Burd (declined election); 1884, E. Andrew; 1885, W. Bowen Davies; 1886, J. D. Harries; 1887, W. H. O. Sankey; 1888, W. Eddowes; 1889, T. Morgan; 1890, H. J. Rope; 1891, W. Brookes; 1892, W. R. O. Withers; 1893, H. Nelson Edwards; 1894, W. H. Packer; 1894, J. McCarthy; 1895, E. Cureton; 1896, J. Lloyd; 1897, W. Charnley; 1898, T. Law Webb; 1899, A. Jackson; 1900, E. Tredinnick. He (the

speaker) had been a member since 1878, and he knew the difficulty in attending even occasionally. The Branch was flourishing, and he felt sure would flourish as it had done in the past, age and youth being equally keen in keeping up its reputation.

[The PRESIDENT then delivered the address on Some of the Sequelæ of Cerebral Injuries, which is printed at page 1489].

Malaria.—Dr. GARDNER read a short paper on malaria, illustrated by specimens of the parasite and its mosquito host which had been kindly lent by Dr. Patrick Manson and by Dr. Ross. He pointed out the vast importance of the subject to the British Empire, gave a short history of the progress of our knowledge of it, dwelling especially on the work of Laveran, Manson, and Ross, and relating the experiments of the last few months. Having pointed out the importance of a knowledge of the subject to general practitioners, he proceeded to describe the symptoms of the disease, the parasite which caused it, and the mosquito which acted as host for that parasite during one cycle of its existence, and to discuss the diagnosis, treatment, and prevention of the disease. He dwelt especially on the importance of microscopical examination of the blood for the accurate diagnosis of the disease. Discussing its prevention, he pointed out that the struggle had now been narrowed to one between man and the *Anopheles* mosquito, and, since the habits, haunts, and life-history of the latter are now so fully known, he predicted the final victory of man and the extermination of the *Anopheles*.—A discussion followed in which several members joined.

Cases and Specimens.—Dr. PACKER read notes of a series of cases of ptomaine poisoning, a full account of which appeared in the BRITISH MEDICAL JOURNAL of November 10th.—Dr. PORTER showed certain parts, including the trachea, œsophagus, and stomach, of a rabid dog, and read notes bearing upon the case.—Dr. EDGE showed a large fibroma of the broad ligament enucleated after abdominal section.—Dr. PIGOTT showed some wounded soldiers lately returned from South Africa, and demonstrated the nature of their injuries.

Dinner.—After the meeting the annual dinner of the Branch was held at the Music Hall, 57 members and their friends being present.

METROPOLITAN COUNTIES BRANCH: EAST LONDON AND SOUTH ESSEX DISTRICT.

A MEETING of this District was held at the London Hospital on October 15th. The chair was taken by Dr. F. J. SMITH, Vice President of the District.

Light Treatment of Lupus.—Dr. J. H. SEQUEIRA gave a demonstration of the new "light" method in the treatment of lupus. The members were conducted over the rooms recently erected where patients were seen undergoing the treatment, and the apparatus and its application fully explained. Dr. Sequeira afterwards gave a summary of the history and objects of the treatment. Numerous cases in various stages of the disease, and some of long duration were shown, and in all there was marked improvement. In the cases cured by the treatment there had been so far no recurrence of the disease. Three cases of rodent ulcer, under treatment by *x*-rays, were also shown.—A hearty vote of thanks was accorded to Dr. Sequeira on the motion of Dr. PICKETT TURNER, seconded by Mr. F. WALLACE.

METROPOLITAN COUNTIES BRANCH: NORTH LONDON DISTRICT.

THE first meeting of the session was held at the Tottenham Hospital on November 14th, Dr. HOOPER MAY in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Surgery of the Vermiform Appendix.—Mr. STANSFIELD COLLIER read a paper upon some mistakes and difficulties in the surgery of the vermiform appendix, illustrating them by his own experiences. Speaking from the point of view of a casuist, he endeavoured to show that the chief anxieties and sources of self-reproach centred round the question of operative interference, and laid stress upon the dangers of irresolute and of over-confident generalship, and of a want of foresight. He spoke of misinterpretation of book statements, and of the necessity in so rapidly advancing a subject of frequently reviewing ideas, and especially in regard to the indications for operations. He expressed his preference for removal of the appendix in most cases of localised abscess, and illustrated his reasons by examples of relapse after incision for suppuration. In conclusion, he discussed the technique of removal of the appendix in the cold stage.—The paper was discussed by the CHAIRMAN and other members.

Specimens.—Dr. HOOPER MAY showed a specimen of a gangrenous appendix cæci, which had caused general suppurative peritonitis in a young man, aged 22. His condition resembled typhoid fever very strongly.—Dr. G. NORMAN MEACHEN showed a recent specimen of a fracture through the second lumbar vertebra from a woman, aged 53, who had also a ruptured liver and contused kidney. She lived two days and sixteen hours after the accident, which was caused by a cartwheel passing over the back.

Cases.—Dr. GEORGE P. CHAPPEL showed a case of pulmonary stenosis in a girl, aged 23. No cyanosis. Some slight clubbing of the fingers. No dyspnœa, except on exertion. Dr. Chappel also showed a case of retraction of the chest due to chronic fibroid phthisis in a boy, aged 15. No active mischief going on in the lung now.

Votes of Thanks.—A cordial vote of thanks was passed to Mr. Stansfield Collier for his address and to the hospital authorities for their kind hospitality.

SOUTH EASTERN BRANCH: WEST SUSSEX DIVISION.

THE autumn half-yearly meeting was held at Chichester on November 6th, Dr. ERNEST BUCKELL (Chichester) in the chair. Nine members and seven visitors were present.

Confirmation of Minutes.—The minutes of the previous (Worthing) meeting were read and confirmed.

Next Meeting.—It was decided that the next meeting should be held at Worthing. On the proposition of Dr. MORRIS, Dr. Hinds was asked to take the chair thereat.

Case.—Dr. HINDS showed a case of hyper-extension of the first phalanx of the big toe, the result of infantile paralysis.

Papers.—Mr. J. STANSFIELD COLLIER read a paper on certain precautions to be taken in the surgical treatment of appendicitis. After dwelling on the danger of delay, Mr. Collier related a case in which after operation a small abscess formed between the spleen and diaphragm, and the patient subsequently coughed up pus from an empyema, showing the importance of repeated examination of the abdomen and thorax after section for acute appendicular disease. Cases were also related which illustrated the importance of making a rectal examination before the operation, and of removing the appendix when operating for localised suppuration.—Dr. HINDS read a paper on two cases of abortion induced to terminate pregnancy on account of the mental state of the patient. In both cases there was a sudden rise of temperature following dilatation after a catheter had been inserted. It fell rapidly to normal when the uterus was emptied. Dr. Hinds was inclined to ascribe the rise of temperature to a nervous irritation, and not to septic infection, the condition being analogous to the rigors often following catheterisation of the urethra. He laid special stress on the inutility of passing a clean catheter to the fundus uteri, and suggested it would be far better to dilate the os and empty the uterus at once.—Mr. RAWLINSON read notes of two cases of hernia.

The first was one in which it was found that a piece of the omentum had become strangulated through passing through a hole in another adherent piece. In the second case the patient, after operation for umbilical hernia, progressed favourably until the sixteenth day, when he suddenly vomited and coughed up a pint and a half of blood, and died.

After the meeting, Dr. KIDD shewed a number of interesting mental cases in the asylum.

Dinner.—Seven members and five visitors dined together at the Dolphin Hotel.

SPECIAL CORRESPONDENCE.

PARIS.

Société de Biologie: The Plague Bacillus a Variety of the B. Coli Communis; Biological Equivalence between the Bacillus Coli Communis and the Bacillus of Plague.—The Struggle against Alcoholism.—The Military Service of Medical Students.—The Prevalence of Small pox: Statistics of Typhoid Fever and Small-pox.

AT a recent meeting of the Société de Biologie Dr. Caldas (Brazil) read a paper on his experiments with the bacillus coli communis of the rat, from which he concludes that there

exists a veritable biological equivalence between this bacillus and the bacillus pestis of Yersin and Kitasato. In his researches on yellow fever Dr. Caldas proved experimentally that the bacillus icteroides was one of the numerous varieties of bacillus coli, which, to attain its maximum of specific virulence, required a medium containing a pyogenic microbe and the presence of a mould (aspergillus niger). Encouraged by these results, he undertook similar experiments with regard to plague, studying the bacillus coli of the rat. He first produced an intestinal occlusion in a common rat by means of a suture of the rectum; on the death of the animal the peritoneal exudation was carefully collected and proved to contain a pure culture of bacillus coli communis. This B. coli was cultivated in bouillon containing peptone and glycerine, to which was added a mould found in Rangoon rice (aspergillus orizæ). The injection of 1 c.cm. of this culture into the peritoneum of a rat caused convulsions followed by death in forty-two hours. The spleen, the liver, the blood, and the peritoneal exudation were found *post mortem* to be filled with this bacillus. By successive passages from rat to rat, the bacillus being always grown in the same bouillon, the injection of a single drop inoculated in the groin killed the sixth rat in fifty-two hours. On *post-mortem* examination there was found great congestion of the inguinal glands, spleen, stomach, and intestines, all those organs containing in great numbers a very short bacillus, which was stained with basic aniline colours, but not taking Gram's reagent; the extremities of the bacillus took a deeper stain than the centre, giving the appearance of a vacuole in the centre. This bacillus is aërobic, and grows very well at a temperature of 35° to 37° C. in glycerine and peptone bouillon, in agar-agar, or in serum with agar-agar. In bouillon the culture resembles that of the streptococcus, and contains flakes adhering to the walls of the flask, the liquid remaining clear. When injected into a rat the culture of this bacillus is always fatal, and gives rise to the same symptoms. Dr. Caldas then attenuated these cultures by adding carbonate of soda (1 per cent.) to dissolve the nucleo-proteins, the cultures being kept at a temperature of 58° C. for one hour. He then rendered immune a horse by intravenous injections of this attenuated culture in increasing doses; after a maximum injection of 160 c.cm. of attenuated culture, a second series of injections was carried out with very virulent cultures, the maximum dose being 200 c.cm. On the thirty-sixth day after the last injection the horse was bled and the serum collected. Dr. Caldas then injected 8 c.cm. of this serum into rats which had previously been inoculated with virulent cultures of the plague bacillus. When this serum was injected within twelve hours after the plague inoculation the animals survived. Dr. Caldas concludes that the bubonic plague in its original foci is a coli bacillosis of the rat caused by the ingestion of rice containing a mould (aspergillus orizæ), and that this B. coli changes its character by successive passages from rat to rat, becoming eventually a terrible infective agent, and pathogenic to man.

Thanks to the initiative of M. Leygues, Minister of Public Instruction, the struggle against alcoholism has entered on a new phase, and the campaign is to be conducted methodically and vigorously. The Minister has just addressed a circular to the rectors of primary and secondary schools, calling on them to develop and organise a course of instruction against alcohol, which will occupy in the future an official place in the programme of work and examinations, like grammar or mathematics. Moreover, additional lectures will be given in all the establishments for public instruction on the evil effects of alcoholism, and it is to be hoped by this preventive treatment there will in time be a diminution in the amount of alcoholism in France as the younger generation grows to manhood.

The Minister of War, General André, has recently addressed a circular to the commandants of army corps with regard to the military service of such conscripts as are medical students. After joining the colours in future medical students will receive the usual military instruction for six weeks only: they will then be placed at the disposal of the army medical service, and the surgeons in charge will give them technical instruction according to a prescribed programme. Students who at the time of their conscription have already had some hospital experience may even be called on to do emergency work, more especially in forts or in detachments not provided with a military surgeon, or in the Alpine districts.

The number of cases of typhoid fever has been decreasing during the last five weeks. On the other hand, the number of cases of small-pox has gradually increased. Consequently M. Lépine, the Prefect of Police, has had a notice posted in Paris calling attention to the fact, and reminding the public that vaccination and revaccination are the only means of stopping the spread of the disease. All persons who were vaccinated or revaccinated more than six years ago should not hesitate to have the operation performed again. Then follows a list of the places and times when citizens can present themselves for gratuitous vaccination. The following table gives the number of fresh cases and deaths from typhoid fever and small-pox respectively during the last five weeks:

Week.	Typhoid Fever.		Small-pox.	
	Cases.	Deaths.	Cases.	Deaths.
41st	88	18	60	6
42nd	84	7	57	11
43rd	71	7	60	9
44th	83	12	90	14
45th	67	7	75	11

BERLIN.

Professor Pflüger's Charge against Professor Israel.—Professor Israel's Reply.

Professor Pflüger, of Bonn (the editor of the well-known physiological journal, *Pflüger's Archiv*) has made against the eminent Berlin surgeon, Professor Israel, and against Professor Immanuel Munk, the physiologist, the accusation that they have "undertaken physiological vivisection on a human being." The indictment is as follows: In the year 1889 a girl suffering from elephantiasis of the left leg was an inmate of the Berlin Jewish Hospital, of which Professor Israel is Director and Chief Surgeon. On her leg was an opening from which lymph flowed spontaneously. It seemed of interest to Professor Munk and to Dr. A. Rosenstein (at that time Israel's assistant) to examine the influence of different kinds of food on the composition of the lymph. Professor Israel gave permission for these researches to be made, and they were undertaken at the time when Israel was occupied in working out his own plan of operation for healing the fistula. "Thus, Professor Israel," writes Pflüger, "abandoned the poor girl to Messrs. I. Munk and Rosenstein for purposes of research." And he goes on to detail his charges as follows: "Although the patient could be laid in such a position that the discharge and loss of fluid ceased, or was greatly diminished, chyle was drawn off from her by the litre, and blood taken, after she had been induced either to swallow disgusting chemical preparations, or else to fast for some length of time."

In a recent issue of the *Berliner klinische Wochenschrift*, Professor Israel publishes his answer to Pflüger's charge. He says: I repudiate with the fullest energy Professor Pflüger's characterisation of the examinations as "vivisection," and his unheard-of accusation, that the patient had been abused "like a dog for physiological purposes." Pflüger's charges bear on four points: (1) Drawing off chyle by the litre; (2) exhibition of disgusting chemical preparations; (3) the long fasts; (4) drawing off blood for analysis. As regards charge 1, the truth is, that no chyle at all was drawn off, but during the period of the researches the chyle that usually flowed into the bandages was collected. Professor Pflüger's remark that the loss of chyle could be minimised or even prevented by keeping the leg in a perpendicular position is correct, but it is just as true that this uncomfortable position which, as a matter of fact, was maintained for many weeks, had not (nor could have) the slightest influence on the healing of the fistula, and likewise that it could not be continued *ad infinitum* without injury to the patient's health. It was neces-

sary to allow the patient to get up and take exercise, and the lymph that flowed during these periods was used for purposes of analysis. The patient was exceptionally well nourished and very robust, and suffered so little from the loss of fluid that she looked healthier during the period of exercise with flowing fistula than while kept in bed and the fistula dry. Just as little substantiated is the second charge. The preparations given the patient were chiefly medicaments, for instance lipanine (a substitute for cod-liver oil), and similar oils and fats, charcoal, etc. With regard to the third charge, the fasts for experimental purposes, it is true that during the period of research (which lasted several weeks) the patient twice fasted nine hours, once eighteen hours, and once a whole day, the effects being counteracted by exceptionally nourishing food. The "drawing off" of blood (the fourth charge) consisted in four applications of a cupping glass at intervals. Professor Israel winds up with the words: "Without expressing an opinion on the repeated abstinence from food, and applications of the cupping glass, which occurred without my knowledge, I can only testify that they did not in any way affect the patient's health, but that, on the contrary, she was afterwards dismissed from the hospital in florid health, with the fistula cured." In the medical world, where Professor Israel's humanity and kindness of heart are as well known as his great surgical skill, no one will doubt the truth of this explanatory statement and repudiation of Professor Pflüger's charges.

LIVERPOOL.

Election of Dr. Permewan to the City Council.—The School of Tropical Medicine.—The Mary Kingsley Hospital.

AT the last annual election of members to serve on the City Council Dr. Permewan was returned as one of the members of the Brunswick Ward. Dr. Permewan is M.D.Lond., F.R.C.S.Eng., and D.P.H.Camb., and is well known as a laryngologist, and has for some years taken an active interest in matters affecting the health and well-being of the people, more especially with regard to the housing of the working classes. It is fortunate for the city that men of his ability are willing to devote their time to municipal affairs, and as a member of the Housing Committee he will have every opportunity of advocating his views.

At a recent meeting of the Committee of the School of Tropical Medicine it was unanimously resolved to invite Dr. R. Fielding-Ould, Dr. Balfour Stewart and Dr. A. E. Grünbaum to give to the School the benefit of their services as Assistant Lecturers. These gentlemen have already assisted in the work of the School in many ways, and it was felt that it would be of great advantage to have their co-operation as official members of the teaching staff. The attention of the Committee was called to the fact that the second malarial expedition, under Dr. H. E Annett, has now returned from West Africa after a prolonged stay, having visited many important centres in Southern and Northern Nigeria. On the motion of Mr. A. L. Jones, seconded by Mr. William Adamson, it was resolved:

That the best thanks of the Liverpool School of Tropical Medicine are due to Dr. Annett, Dr. Dutton, and Dr. Elliot for their very valuable services in West Africa whilst members of the second malarial expedition of the School; and, further, that the Committee of the School desire to congratulate the expedition on its safe return from its labours.

A resolution was also passed thanking His Excellency Dr. J. Paes Carvalho, the Governor of the State of Para, for the magnificent reception that he extended to the Yellow Fever Expedition of the School on their arrival from Cuba, and for the public-spirited manner in which he interested himself in the success of the expedition.

In addition to the donation offered by Mr. A. L. Jones, the sum of £2 350 has already been subscribed towards the Mary Kingsley Hospital for cases of tropical disease.

THE severe epidemic of enteric fever which has been for some time raging at Messina is now abating. According to the last report of the sanitary officer there had been only 6 new cases reported and no death. The sanitary service in Italy is in very competent hands; but in many places the drainage arrangements leave much to be desired.

CORRESPONDENCE.

DEATHS OF LUNATICS IN POOR-LAW INSTITUTIONS.

SIR,—Some years ago I drew the attention of the Lunacy Commission to the fact that no provision was made for notifying to the coroner the death of any lunatic as above, and in December, 1899, I again called attention to the matter.

In reply I was informed that a workhouse, hospital, or infirmary of a union under the management of the guardians did not come within the definition of "an institution for lunatics" under the Lunacy Acts. In consequence, I brought the matter before the Coroners' Society, and by direction communicated with the Home Office pointing out the desirability of such deaths being reported to the coroner, as is done in all asylums and houses licensed for the reception of lunatics.

In consequence the Local Government Board have now issued a General Order, of which I enclose copy.[1] By it you will see that the death of any person of unsound mind under the care of any Poor-law Board must be reported to the coroner in like manner as lunatic, and that the word "lunatic" means "an idiot or person of unsound mind." The particulars to be furnished to the coroner are similar to those given by the authorities of asylums or licensed houses.

This consummation of our efforts is highly satisfactory to the coroners themselves, and I should think to the medical profession and the public generally. At times rumours are heard of ill-treatment of lunatics in Poor-law institutions, but formerly, as the coroner had no notice of deaths, he knew nothing as to particulars until too late for him to interfere. Now, however, coroners will be cognisant of all such deaths if the order is properly carried out, and he can make further inquiry and order inquest if necessary before the body is buried.

By the operation of this order, the Poor-law institutions which retain lunatics even temporarily will have to fall in line with those admirable institutions for the reception of lunatics under the county or borough authorities, and in private licensed houses where strict supervision is given.

Another public advantage is that friends or relations having an alleged grievance can ask the coroner to hold an inquest, and, though this may throw additional work on the coroner, I cannot think that any one of us will shirk responsibility, for if the charge is unfounded the credit of the institutions will be established, and if founded a remedy may be suggested.

As this is a matter of interest to the medical profession, I venture to ask space for the publication of this letter and of the order (or so much as you may think necessary).—I am, etc.,

A. BRAXTON HICKS,
Honorary Secretary, etc., the Coroners' Society of England and Wales.

Lupus Street, S.W., Nov. 19th.

HOLIDAYS FOR ENGLISH POOR-LAW MEDICAL OFFICERS.

SIR,—I enclose the answer from the Local Government Board to the question whether Boards of Guardians in England and Wales can lawfully pay a substitute during an annual holiday of the district medical officer. If Poor-law medical officers are entitled to a holiday during the year, it is not equitable that it should be at their own expense. In the case of indoor officers, a substitute is often found by the guardians, and such officers are never required to take steps to see that their work is done during absence. So it would only be just that in the case of outdoor officers some allowance should be made to help to pay the expense of a *locum tenens*, especially as the cost of providing one has risen so greatly during the last few years.—I am, etc.,

MAJOR GREENWOOD,
Honorary Secretary, Poor-law Medical Officers' Association.

Copthall Avenue, E.C., Nov. 20th.

Local Government Board, Whitehall, S.W.
November 16th, 1900.

Sir,—I am directed by the Local Government Board to advert to your letter of the 31st ultimo, and in reply to the inquiries therein contained, to inform you that in cases in which Boards of Guardians duly appoint temporary substitutes during leave of absence granted to Medical Officers, Article 193 of the General Order of the 24th of July, 1847, applies, viz.:

[1] The Order is printed at page 1530.

"If any officer, or assistant, appointed to or holding any office or employment under this Order, be at any time prevented by sickness or accident, or other sufficient reason, from the performance of his duties, the Guardians may appoint a fit person to act as his temporary substitute, and may pay him a reasonable compensation for his services.

"No approval on the part of the Board is required to the appointment of the temporary substitute, or to his remuneration.

"I am, Sir, your obedient servant,

Major Greenwood, M.D., Esq., Hon. Secretary to the Poor-law Medical Officers' Association.

W. E. Knollys, Assistant Secretary.

LONDON DIPLOMATES AND THE REFORMED UNIVERSITY.

Sir,—In answer to Dr. A. Greenwood's letter in the British Medical Journal of November 17th, I would venture to say nothing will be done to remove the disability from which London licentiates suffer until there is a combination amongst those who desire a reform.

When I entered a London hospital nearly ten years ago there was the Gresham scheme, which gave hopes to every London student of a degree, and this feeling was shared by many of my fellow students. With the reconstruction of the London University such a scheme is dead, and the opportunity of obtaining a degree appears to be gone for the present.

There are very few of us who have the courage to go back to school books to matriculate, but I know a good many Conjoint men who would hail with delight the opportunity of working for a degree, however high the standard was, provided the subjects were those bearing upon our work.

Could not a petition be presented to the Senate of the London University setting forth these disadvantages and urging upon them the desirability of making some concessions to London men?—I am, etc.,

November 20th. L.R.C.P., M.R.C.S., L.S.A.

Sir,—The letter by Dr. A. Greenwood is, I am quite sure teeming with matters sufficient to set in motion any stagnant faculty possessed by the London University authorities. We, who as students were led to believe that in the near future there would be a London degree for its students, have grown weary with waiting and watching. Hoping on that a loophole would be forthcoming, we have denied ourselves the degrees we might have had from other sources. In the early Eighties we had the power to assimilate any material set for examination; but in the twentieth century the presbyopic vision, iron-grey locks, less elastic step, and other signs of decadence reveal the sad story that youth is not perpetual, and that our mental faculties, though well developed, have lost to a great extent the capacity for passing severe examinations in old subjects, while the worries of general practice have seared and weakened our inclination for so doing. It is certainly beside the mark for the diplomate to wish to place himself on an equal footing with the present graduate, but there surely must be a method of differentiating the M.D.Lond. from the M.D. (for practitioners). I notice the Birmingham University is about to grant degrees to past students who are qualified, and who have taken out their whole course therein, on passing a final examination. Cannot something be done for the old London student who was unfortunately "born too soon?"—I am, etc.,

Liskeard, Nov. 20th. Jos. Wm. Gill, D.P.H.Lond.

MINOR INFECTIOUS DISEASES AMONG BOARD SCHOOL CHILDREN.

Sir,—All schools, especially Board Schools, must be visited periodically by outbreaks of infectious diseases. Therefore, any means of restricting these epidemics must be of interest to School Boards and to the medical profession. The compulsory notification of scarlet fever and diphtheria, etc., has certainly reduced the outbreaks of these diseases by calling the attention of the school authorities to infected families, the members of which can then be kept out of the schools for a sufficient time to prevent any of them going to school during the incubation period.

There is no such notification for measles, whooping-cough, mumps, chicken-pox, ringworm, and other minor infectious diseases, and therefore the school authority has not the means of knowing whereto look for the danger and of keeping infected families out of school, the result being epidemics of enormous proportions.

The school managers depend on the discretion of parents to protect the schools, and this is quite unreliable, as either the mother gets tired of the noisy children, or the attendance officer hunts up the absentees, sees them running about quite well, and has them sent back to school, probably unaware of the risk, or unable to judge the value of the mother's plea.

It will probably interest many of your readers to hear that the Beckenham School Board has just arranged with the local medical practitioners for the notification to them of all infectious or contagious diseases occurring among their school children.

The procedure is as follows: The Board furnishes forms to each medical practitioner, and on the occurrence of any infectious disorder (not notifiable under the Act) among Board School children on which he is attending, the practitioner may fill up a form and send it the school attendance officer. The form states the child's name, residence, the disease from which it is suffering, the period for which it should be kept out of school, and whether it is desirable that other children from the same house should be also kept out of school, and if so for how long. The Board undertake to pay 1s. each for these certificates.—I am, etc.,

George R. Stilwell, M.B.Lond.

Beckenham, Nov. 14th.

NO. 8 GENERAL HOSPITAL.

Sir,—In the British Medical Journal of September 29th I observe that at Mooi River the Rev. O. Mullineux volunteered some evidence before the South African Hospitals Commission, and in his condemnation of No. 9 General Hospital he is shown as having also levelled certain shafts and strictures at No. 8. I had not intended at present to discuss statements of this sort and others made by irresponsible men, but I do not hesitate to say that if Mr. Mullineux gave evidence to the effect that the sanitary condition of my hospital was at any time bad, he stated what was absolutely and emphatically untrue.

A great many rash and foolish things have been said before the Commission which everybody here knows would not have been indulged in so lightly under oath, and all who have perused the accounts of the transactions in the press, cannot fail to see that witnesses of a certain type, or indeed of every type, should have been sworn. Then the many absurd and extraordinary views, opinions, and allegations heard of would not have been so recklessly placed before the public in order to gratify a contemptible sense of grievance, jealousy, or spite. At the opening of the hospital in April last a medical officer possessing the diploma in public health was appointed by me for sanitary duties, under my own direct supervision, and this officer has furnished a written report to me daily concerning the condition of the hospital itself and the neighbouring country. Neither has there been a single day that I myself have not gone round to inspect places liable to untidiness, and to test and verify the reports of the special sanitary officer. I cannot help feeling amazed and even annoyed at the impertinence of such a reflection upon my charge, seeing that Mr. Mullineux was never attached to my command, and only galloped into the hospital a couple of times on duty in lieu of the regular chaplain, who was ill for a few days. The Rev. Mr. Mullineux appears to have secured some reputation at football, and feather-weight pugilism, etc., but he cannot expect to be a judge of the application of sanitary science, or a devout follower of Hygeia, and here his opinion is out of court, and worthless. Nor will his reputation as a "sporting man" be enhanced amongst good and true men, for all who know and understand will say that he behaved in a most unsportsmanlike fashion. Even if there were insanitary conditions he certainly did not take the trouble or opportunity of looking for them, and I would ask: Is it likely or probable that we whose first duty and care are to preserve most jealously the perfect cleanliness and sanitation of our environment in camps and barracks, should overlook such a vital point and one so easily observed by every general, inspecting officer, and chief?

The three chaplains of the Church of England and of the Catholic Church who have been appointed and lived here

through the period referred to, and who have seen and experienced the working of this vast institution, would be able to give some more reliable and becoming information.

Not an atom of anything foreign or insanitary has ever been permitted to remain in or near the vicinity of my camp, and no tennis ground has ever been more spotless than the great extent of veld covered by this hospital. Indeed, it would have been practically impossible to have it otherwise, as the beautiful, open, and boundless position lends itself at once to easy and perfect sanitation, as is obvious to all who have ever visited here, and which is proved by the files of daily sanitary reports down to the present day.

In all my service I have never seen any barrack, hospital, or camp which could compare in healthiness and smartness with this admirably maintained hospital; and I have never yet seen any hospital in England or in India which in my opinion could afford so fair a hope and prospect of recovery from wounds or from disease.

The following results should be sufficiently convincing to reasonable minds—namely, that up to the end of September, out of a total of 5,990 patients, including upwards of 2,500 cases of enteric fever and dysentery, the death-rate was only 3.66 per cent., whilst 353 wounded were under treatment without a single death; and I think this record will compare favourably with that of any hospital in Europe or the world.

Finally, one word respecting the constitution of the medical staff on field service. In future campaigns it would, I consider, be above all desirable that if civil surgeons be employed, they should be most carefully selected as to character, conduct, sobriety, and general ability. It would be well if they were previously enrolled after the manner of volunteer officers, and have done duty periodically with volunteers, or at a station hospital; and they should wear the uniform and badges of rank of a captain of the R.A.M.C. This would give them a more satisfactory position, would increase their interest in the service, and would undoubtedly tend to render them more amenable to good order and military discipline than a few of them have exhibited in South Africa.

At the same time the pruning knife should be applied to the R.A.M.C. itself, and every officer who has proved himself obstructive, insubordinate, ignorant of his profession, and detrimental generally, should be retired at once, and not handed on from one sphere of duty to another for discipline, in each of which he invariably becomes the instigator of further mischief and difficulty. *Raro antecedentem scelestum, deseruit pede pœna claudo.*—I am, etc.,

R. T. BEAMISH,
Lieutenant-Colonel, R.A.M.C., P.M.O., No. 8 General Hospital.
Bloemfontein, Oct. 27th.

THE MANAGEMENT OF THE SOFT PARTS IN THE MASTOID OPERATION.

SIR,—In the brief note on the above subject which appears in the BRITISH MEDICAL JOURNAL of November 17th, p. 1436, it seems to me that Dr. Love has permitted some inaccuracies to occur—inaccuracies which, if allowed to pass unnoticed, might lead your readers to mistaken conclusions as to recent work and methods in otology.

In the first place, the description of Schwartze's operation is misleading. This authority in his own operation proceeds to open the antrum at some distance from the meatus and does not remove the posterior wall of the osseous portion. I have written "in his own operation," because no doubt many "radical operations" are now performed in the clinic at Halle. The radical operation, which consists in throwing middle ear, attic, and antrum into one cavity owes its inception to Küster, the well-known Berlin surgeon, but for improved methods of carrying it out we are indebted to Zaufal and Stacke. Both of these operators carefully considered the question of dealing with the soft parts, but the former eventually admitted that the method suggested by the latter was the more satisfactory.

Stacke now makes a rectangular flap from the soft parts of the meatus, but in his early operations he adopted the method proposed by Dr. Love—to quote, "the simplest method which I adopted in my very first cases was merely splitting the funnel formed by the soft parts of the meatus, etc."[1] This author, however, does not stitch the mastoid skin wound, but Pause and Körner have advised this proceeding after turning back a flap taken from the walls of the membranous and cartilaginous meatus.

With regard to Mr. Ballance's operation, I would also point out that while the technique is original and ingenious, the suggestion of skin grafting is not new, as it has been employed by Siebenmann for a long time past.

I trust Dr. Love will pardon me for calling attention to the above facts, as I am certain he does not desire to claim for himself priority which rightly belongs, and has for years belonged, to the German school of otology. He will, I feel sure, admit that one or two expressions in his paper were calculated, although of course not intended, to mislead—for example, "But it is a curious fact that to the soft parts—so much more easily dealt with—the same principle has not been, and is not yet often applied."....."This is the operation.....and which I should like to name the single channel operation," etc.—I am, etc..

Edinburgh, Nov. 17th. P. MCBRIDE.

[1] *Die operative Freilegung der Mittelohrräume*, von Dr. Ludwig Stacke, 1897.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

SIR,—The conduct of insurance companies towards medical men, which has been the subject of several letters in your recent numbers, may be further illustrated by the following occurrence: A patient of mine, who died a short time ago, was insured. This week I received from the office a paper marked "Confidential," containing a string of questions relating to the state of health and illnesses of the deceased during the period I had known him; two of the questions expressly asked for opinions as to certain doubtful points. On the flyleaf attached to the sheet of questions was a printed paragraph intimating that the information was sought at the request of the executors, but the paper when filled up was to be forwarded direct to the office. On applying for a fee for this report the office referred me to the solicitors who are acting for the executors, as the report is stated to have been obtained at their request.

It is plain that the solicitors have no need for any such report, as the proof and cause of death are obtainable in the usual way, and there were no doubtful circumstances attending the death. The report is obviously to satisfy the unceasing inquisitiveness of the insurance office as to the exact nature of the illness and cause of death; and if such evidence, which is entirely professional, is required, beyond that supplied by the usual certificate of death, the office ought to pay for it and not endeavour to escape doing so by means of what looks very like a subterfuge.

I trust that the medical men who may meet with similar documents will be on their guard, and not fill them up until they have obtained their fee.

As regards the action of insurance offices in their treatment of medical "friends" of applicants for insurance, I am bound to say that I have never had any difficulty with offices of good standing and repute; the fee has always been sent with the paper of questions, or else the request to fill it up has been accompanied by the statement that the fee will be forwarded on receipt of the report, and it has followed in due course.—I am, etc.,

November 18th. M.D., F.R.C.S.

LECTURES ON MIDWIFERY TO MIDWIVES.

SIR,—I am sorry I cannot accede to Dr. John Scott's suggestion to get the resolution of the Council of the Medical Guild condemning unauthorised lectures on midwifery to women rescinded, as the suggestion is based upon a fallacious assumption, for there is nothing in my letter to indicate that the "diploma" in the bay window of No. 12, Brunswick Street, Ardwick Green, was mentioned when the resolution was passed.

It certainly does appear strange that Dr. Scott should allow the statement to go forth to all the medical world that this "diploma" with his name attached is exposed in a window near his house, and yet should not have taken the opportunity in his reply to me of approving or condemning its exhibition, at the same time that he confesses knowledge of its existence and also the date of its issue.

It is unfortunate that whatever good intentions lecturers

may have in educating, examining and certifying these women, both the women themselves and the public generally should regard them as independent practitioners of midwifery, and that they should undertake and complete in some manner cases of labour without the intervention or supervision of a legally registered practitioner. Not only are they independent practitioners on their own account but they are unqualified assistants to medical men, for it is well known not only that they "follow" doctors but doctors "follow" them.

There are instances where a midwife has lived in the same house as a doctor, not perhaps at the same time, but when the doctor has removed to another residence she has entered into possession of the house and remained there months or years with the notice on the door during the whole period of her tenancy, indicating that the doctor has removed to a certain address. Further than this, the doctor's partners or assistants have resumed the tenancy of the same house and the midwives have removed across the street in close proximity.

If doctors have made a practice of sending midwives to their cases is this not employing unqualified assistants? It would be well to have the opinion of the General Medical Council on this point. Medical men may undertake the education of midwives innocently enough, even if the fees be inadequate, but what all this may result in in course of time when the women become certified it is difficult to foresee, but ending in all manner of unpleasant complications detrimental and undignified to the profession and dangerous to the public.

Dr. Scott states that Dr. Sinclair was his predecessor as lecturer to midwives. Dr. A. W. W. Lea is assistant to Dr. Sinclair, so that it is very easy to understand why the former resigned the position of Honorary Secretary to the Medical Guild when he had the uncongenial duty of forwarding to the British Medical Journal the resolution of the Guild Council. So much in reply to Dr. Scott's first paragraph referring to Dr. Lea's resignation.—I am, etc.,

Manchester, Nov. 18th. G. H. Broadbent.

Sir,—In the last paragraph of my letter in the British Medical Journal of November 17th, for "General Medical Council" read "Council of British Medical Association."

I have no intention of continuing this controversy on any lines which do not touch the principle of my action, and thank you for the space which you have afforded me.—I am, etc.,

Manchester, Nov. 17th. John Scott.

TREATMENT IN INFIRMARY LOCK WARDS.

Sir,—May I be allowed through the British Medical Journal to call attention to a serious omission on the part of workhouse authorities which is likely to spread the contagion of venereal disease? A patient came under my care last week who had just been discharged as cured from a metropolitan infirmary lock ward. She had evidently had a labial abscess, though she insisted that the nurse had called it a bubo. This abscess had been lanced at a hospital just before she went into the infirmary. She came to me two weeks later in the underlinen she had worn when this operation was performed. I found the linen covered with dry blood and pus. She says that she was given a bath at the infirmary and put into the ward clothes; her own, both out-door and in-door, were bundled together into a bag, and on her discharge this bag was given her by the nurse, the clothes being exactly as she had left them, only the worse for crushing.

I saw the girl immediately after her discharge: the labium was still red and swollen, and the scar of the incision was not healed; it has since ulcerated and given rise to slight swelling of an inguinal gland. I look upon it as a case of reinfection from the contact of the soiled linen. Some attempt might surely have been made to persuade the girl to stay till the labium was normal—apparently none such was made, and the reason assigned by the girl for leaving was that the food was scanty and she "felt getting weaker." I may mention that she had been in a hospital with pleurisy a few weeks before, and has developed articular rheumatism while under my care. She left the infirmary pale, thin, and constipated.

I submit that such an incident shows a want of intelligent administration. I have myself had charge of a Poor-law lock ward, and I know that such incidents are apt to occur owing to the fact that the nurses are insufficiently trained in their special duties. At any rate, it will surely be admitted that it should be made impossible for a patient to be sent out wearing the same foul and specifically infected linen with which she was admitted.—I am, etc.,

November 19th. M.D.Lond., D.P.H.Cantab.

HOSPITAL ABUSE.

Sir,—The general question of hospital abuse may receive illustration from the following cases, which have recently occurred within my personal experience:

1. A child of a well-to-do publican, under successful treatment for congenital syphilis, is received at the out-patient department of the Middlesex Hospital.

2. A cellarman, earning £2 a week, the subject of dyspepsia, hearing that at the same institution he can obtain advice and medicine gratis, tells his medical attendant that he intends going to the hospital; puts his intention into practice, and finds that he is treated as he expected to be.

Are such cases fit subjects for charity? And are general practitioners to count hospital physicians and surgeons as rivals in the art of cutting prices? If these questions are answered in the negative, the above facts will need someone to "explain them away."—I am, etc.,

Albany Street, N.W., Nov. 19th. Alfred Cumming Grant.

OBITUARY.

RICHARD BENJAMIN ANDERSON, F.R.C.S.Eng.

Honorary Secretary Corporate and Medical Reform Association.

The announcement of the sudden and unexpected death of Mr. R. B. Anderson, which took place at his residence, 32, Montague Place, Russell Square, on November 8th, will come as a surprise and shock to many members of the profession. Cut off suddenly in the prime of life and in the midst of his active work as an able and earnest medical reformer, his place will not easily be filled, if at all, and even his enemies—and it is well known that, like all reformers, he had some—may lament the loss of a foeman worthy of their steel.

Mr. Anderson was a man of no ordinary type. He was a distinguished student and prizeman at St. Mary's Hospital Medical School, which he entered in 1866, and in which he became Prosector of Anatomy in 1867. After obtaining the double qualification of College and Hall in 1869, and taking the Fellowship of the Royal College of Surgeons of England in 1873, he proceeded to the West Indies, where he practised until 1891, holding several Government appointments and being a Justice of the Peace for the Islands. He then returned to England to seek redress from the Law Courts for what he considered a great injustice to himself and through him to the profession to which he belonged. Briefly, he complained that he had been prosecuted, condemned, and imprisoned for fourteen days by order of a West Indian Court for ceasing to attend professionally upon a private female patient whose husband insulted him, although it was proved at the trial that the woman sustained no injury by the cessation of Mr. Anderson's attendance, there being other medical men in the town to call in if necessary. An English jury returned a verdict in his favour, awarding him £500 damages against the West Indian judge who had imprisoned him, but the Appeal Judge, Lord Esher, although confirming the verdict, declined to give damages against his brother judge. Thus commenced Mr. Anderson's campaign as a reformer against wrong and injustice to the medical profession, which he was conducting with great energy and ability up to the last day of his life.

For some time after his return to England he had the sympathy and support of most of the medical societies and corporations. The Civil Rights Defence Committee, presided over by Lord Stamford, did much to arouse public interest in the facts and principles of his case, but the funds raised proved insufficient, interest waned, and Mr. Anderson's courageous intention of carrying his case to the House of Lords was never realised.

Of late years Mr. Anderson has been well known as an active and energetic Honorary Secretary of the Corporate and Medical Reform Association, devoting his whole time and talents to the advancement of medical reform, and there can

be little doubt that his sudden death from heart disease, as verified by *post-mortem* examination, was accelerated, if not caused, by the worry, anxiety, and disappointments attendant upon his labours as an ardent reformer under very trying and difficult circumstances. On November 7th he was attacked with symptoms of angina pectoris, and although relieved by treatment he succumbed to a later attack early on the morning of the 8th instant, dying, in the opinion of the writer (who attended him professionally), and of many others who knew him well, truly a martyr for the cause of medical reform. The funeral took place on November 14th at Lambeth Cemetery, near Balham. *Requiescat in pace.* J. H. H.

Dr. Alfred Cox (Gateshead) writes: I notice with great regret the death of my friend, R. B. Anderson, and I trust you will allow me a little space to perform the duty of a friend to his memory. Every member of the profession has a more or less vague knowledge of him as the man who somehow or other, and in some foreign place or other, acquired a grievance. This seems to be the general hazy idea of the profession nowadays of the man who a few short years ago filled the columns of our journals. Those whose memory is more retentive will remember the grievances which ruined the career of Mr. Anderson. His crime was to have possibly an exaggerated conception of the dignity of his profession and of his rights as an Englishman. This is not the place to recount the details of the grievous wrongs inflicted on Anderson in the name of justice, but it does seem to be the place to say that what hurt the indomitable spirit of the man far more than the insults of judges was his treatment by his own profession. When he came back to England with the tale of the injustice done him as a man and as a doctor, the profession and its journals lavished on him a sympathy which was as short-lived as it was deserved. When it was seen that the exaction of justice for Anderson meant fighting the usurped and illegal privileges of the bench of judges the sympathy cooled off rapidly, and, as is usually the case, the victim was felt to be a nuisance. It is a melancholy story which reflects no credit on the profession. Were everything told—the innuendos, the slanders, the shrugs of the shoulder—it would but increase one's wonder at the courage and spirit of the man who would stand even this—which cut him most—rather than abandon what he believed to be a sacred duty.

But I must not dwell on this painful aspect of his case. Anderson himself was the last man to complain of merely personal slights or even wrongs. He was imbued with the conviction that never would the wrongs done to the profession in his person be righted until he could appeal to the House of Lords (the only court open to him) with the whole strength of the profession behind him. This explains his work for general medical reform, and he made no secret of his belief that in this work lay his only method, a very roundabout one alas, of getting his own case fairly heard. For this, then, he worked strenuously under conditions, financial and otherwise, which would have utterly discouraged most men. His circumstances were very straitened, and most men in his position would have been glad to take the hint he received that if he went back to Tobago all would be forgotten and no attempt would be made to enforce the judgments against him. It was no temptation to him. "I'll die first," he said to me. It was his fixed resolve never to return to the bosom of his family until he could do so with his name absolutely cleared and the justice of his contentions admitted. We may think him foolish in thus kicking against the pricks, but knowing as we do that he had right on his side which of us can refuse him our admiration for his pluck?

But those who only knew him as a man with a grievance knew little of the real man. His wrongs never soured his disposition. He was a confirmed optimist, and his optimism kept him going. His unfailing good temper, his magnanimity towards those who liked him least and showed it, but who were, he considered, doing good work in the cause he had at heart, and his great, nay almost exaggerated idea of the dignity and importance of his profession, were the characteristics which struck me most. I never heard him complain of his circumstances, although I know he often had ample cause; but he could grow most righteously and eloquently indignant over the apathy of the profession concerning those things which he thought were so important. He could be on occasion a most eloquent speaker and a clear and trenchant writer, but he spoiled many of his speeches and most of his writing by attempting to work in all the small details which he saw clearly enough himself, but which only bored his hearers and readers. His style, both in speaking and writing, was spoiled by the fact that through force of circumstances he had become "legally minded." But no one could express himself more clearly when he could be induced to leave detail on one side. Those who knew him well will agree with me that no man in the profession had a greater grasp of medical politics, and no one was so willing to put his great knowledge to practical use.

Many of your readers disagreed with his methods, but all may do justice to the man's absolute honesty of purpose and his desire to serve his profession according to his lights. When I think of him on that last night, with no loving presence to cheer his last moments as he lay down to die in that small room of his high up in a London boarding house, it seems to me that we may all agree that he proved his sincerity in the cause by giving up to it all he held dear—even his life.

ALEXANDER GEORGE DAVEY, M.D.St. And., L.R.C.P., M.R.C.S. and L.M., L.S.A.

The sudden death of Dr. Davey, of Ryde, has removed from the profession in the Isle of Wight one of its most prominent members, and from the community of which he formed part one of its most energetic citizens.

Born 63 years ago, Dr. Davey studied at St. Bartholomew's Hospital, where he held the position of Resident Accoucheur. He was subsequently House Surgeon at the Hospital for Sick Children in Great Ormond Street, and in 1861 joined for a time in practice Mr. Benjamin Barrow, F.R.C.S., of Ryde (President of the British Medical Association in 1881). In 1862 he took the degree of M.D. at St. Andrews University. He practised independently many years, but for some time past had been in partnership with his son-in-law, Mr. A. Banks, F.R.C.S. He was a Justice of the Peace, and entered fully into the public life of the place of his adoption. He was for a time a county alderman, and was chairman of the Ryde Pier Company, and director of other companies. He was President and Chairman also of societies and associations which had for their objects the benefit and advancement of the general well-being.

But it is in connection with the Royal Isle of Wight Infirmary and County Hospital, of which Princess Henry of Battenberg is President, and of which he was Senior Medical Officer, that Dr. Davey's work will be best remembered. When it was resolved to build a children's ward or annexe to the hospital to commemorate in the Isle of Wight the Queen's long reign, he was appointed Treasurer of the fund to be raised, and devoted himself to the duties of the post with characteristic energy. Popular with his patients and friends, he was able to inspire them with some of his enthusiasm, and was the means of collecting considerable sums of money for the building. Not content with this, he obtained endowments for the cots, one of which is named after him, his friends having endowed it to the extent of £1,000 as a mark of their esteem and affection.

The last meeting of the Committee responsible for the work was held during the afternoon of November 5th, and Dr. Davey, amidst the congratulations of those present, read his balance sheet, which showed that nearly £10,000 had been raised in large measure by his efforts. He returned home and went to bed early, as he felt tired. At 9 P.M. it was found he was sleeping his last sleep. He had finished his work.

JOHN COCKLE, M.D., F.R.C.P., F.R.C.S.

Dr. Cockle died at his residence at West Molesey on November 14th, aged 87. A Member of the Royal College of Surgeons of 1835, he became a Fellow by examination in 1847, and was one of the few physicians who enjoyed that honour. Dr. Cockle took the M.D. degree at the University of Aberdeen in 1846, and practised as a physician in Brook Street. He early became attached to the Royal Free Hospital, at which there was then no medical school, and he therefore joined the Grosvenor School of Medicine, where for some years he held

the Chair of Medicine, being a colleague of Richardson, Spencer Wells, and Adams. Turning his attention specially to diseases of the chest he became Physician to the Margaret Street Infirmary, and was also Physician to the City Dispensary.

Dr. Cockle laboured assiduously at his public appointments, and also enjoyed considerable private practice. At the Royal Free Hospital he had many valuable drawings made of patients suffering from aneurysm of the root of the neck, and in his researches found the record of two cases of apparent cure of aneurysm of the arch due to obliteration of the left carotid. When Mr. Christopher Heath practically revived the use of the distal ligature in 1865, Dr. Cockle became still more convinced that that method offered relief in aortic aneurysm, and in 1872 a suitable case presenting itself in his practice he induced Mr. Heath to tie the left carotid in the neck. The patient made a complete recovery and lived for four years, and probably would have lived longer but for his laborious employment. The specimen is in the College of Surgeons Museum.

Dr. Cockle was for many years Senior Physician of the Royal Free Hospital, but retired some ten years ago. Latterly he practised in Suffolk Place, coming up daily from his country house, but a few years back his increasing deafness led him to retire from practice, and he lived quietly at Molesey with his daughter, visited occasionally by old friends.

JAMES PATERSON, M.D.,
Partick, Glasgow.

We regret to learn of the death on November 16th of Dr. James Paterson, the medical officer and police surgeon for the burgh of Partick. Dr. Paterson, who was born in Paisley in 1827, has been medical officer of health for Partick since 1852, when the burgh was formed, and was the oldest and best known practitioner in that district of Glasgow. He graduated M.D. at the University of Glasgow in 1849, having taken a high place in his classes. On leaving college he worked in the Royal Infirmary, and later he had charge of one of the fever hospitals. However, he soon settled down to private practice, in which he had been engaged at the time of his death for the long period of almost exactly fifty years. Much sympathy is felt for his widow and grown up family, one of whom has entered the medical profession and has latterly been assisting his father.

Dr. Karl George Gaedeken, Professor of State Medicine in the University of Copenhagen, who died recently at the age of 68, obtained his licence to practise in 1856, and graduated Doctor of Medicine at Copenhagen in 1863. He was appointed to the Chair of Forensic Medicine, Hygiene, and Psychiatry at Copenhagen in 1869. In 1873 he was appointed Medical Director of the Department of Nervous Diseases in the Copenhagen City Hospital. Professor Gaedeken contributed to the literature of each of the three fields of medical sciences which he cultivated.

UNIVERSITIES AND COLLEGES.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The annual meeting of Fellows and Members took place at the College on November 15th. Sir William Mac Cormac, the President, was in the chair, and six other members of Council, ten Fellows, and fifty-nine Members were present.

Report of the Council.

The President placed before the meeting the report of the Council for the period from July 13th, 1899, to August 1st, 1900.[1]

Surgeon-Major Ince proposed that a vote of thanks be accorded to the Council for their report; this was seconded by Mr. W. C. Cass, and carried *nem. con.*

Constitution of the Council.

Dr. Herbert Snow moved the following resolution:

That this meeting respectfully urges the Council not to carry into the new century the unfortunate controversy which has existed so many years with disastrous results; but, by taking steps to confer representation on the Members, to bring the institution into harmony with universal modern usage, and with the obvious needs of the entire medical profession.

He remarked that amongst the festivities of the jubilee of the College there was a jarring note, occasioned by the fact that the President represented fewer than 1,300 Fellows, and none of the 17,500 Members. Further, the examination fees for the Fellowship resulted in a profit that only just exceeded £100; whereas those for the Membership brought to the College a profit of over £4,600. The Members were in the position of third-class passengers while the Fellows were first-class; but when the former brought in a very much greater income than the latter the directors generally paid some attention to their wants, or at least did not treat them as a negligible quantity. During the last twenty years or so the general practitioner's prosperity was decreasing, and he suffered many hardships in regard to such things as the recovery of fees. But the Council, not being in touch with the Members, could not appreciate the hardships they suffered. Were the institution placed on a truly representative basis, it would long ago have made its voice felt in the councils of the nation, and have altered several things which were now sapping the life blood of some ranks of the profession. He appealed to the Council to remove the mediæval taint still clinging to it, and to make itself worthy of the medical profession and of the Federated British Empire now on the point of being formed.

Mr. Joseph Smith, in seconding the resolution, said that the subject had been so well threshed out at former meetings that it needed no further discussion. He trusted that the Council would give the subject its best consideration.

Mr. Atkinson said that the resolution was very harmless. It merely meant representation, which was such a reasonable concession in the present day that the Council should grant it. The profession was undergoing a process of levelling up. Some Members undertook the very largest operations; why should they be denied any degree of representation on the Council?

Mr. F. W. Collingwood said that the dissatisfaction of the Members was extreme; two-thirds of them regretted the day on which they took the Membership, for, after passing a severe examination, they found themselves cut off from all interest in their College. As Diplomates of the Conjoint Colleges they were prevented from applying for posts in provincial hospitals. In fact, the original rights of the Members of the College were being eaten away. The motion was carried unanimously.

Amendment of the Medical Acts.

Mr. George Brown moved:

That in view of the disabilities which affect the medical profession, this meeting requests the Council to take any steps in its power towards obtaining a Parliamentary inquiry into the working of the Medical Acts with a view to their amendment.

He remarked that it was the business of the General Medical Council to carry out the law that existed; other bodies, such as that College, should take up such questions as that of medical legislation. It would be useless to ask the General Medical Council to take up a Medical Reform Bill; it had no funds that it could use for the purpose. But it was the proper function of the College of Surgeons to undertake such work. The diploma of the College was supposed to confer many privileges on the Members, but it failed to do so. As an instance, he referred to a case in which the General Medical Council had removed a name from its *Register* two years since, yet its owner had apparently suffered no disabilities; on the contrary, his privileges now appeared to be greater than ever, and he was carrying on unchecked a much larger practice than he did when his name was on the *Register*. The General Medical Council was powerless; it was the duty of the Council of the College to prevent these things being done, and to take up such questions in the interests of its members and in the greater interests of the public. The British Medical Association had been engaged in framing a Medical Reform Bill, but it was far more the business of the College and of its sister corporation, the College of Physicians, than of the Association to initiate reforms. Members of the College also suffered from the fact that they received no title; every diplomate should have the right to use the

[1] British Medical Journal, Oct. 27th, 1900, p. 1289.

prefix "Dr.," and he felt sure the Legislature would grant that privilege if the point were pressed by the two Colleges.

The President thought Mr. Brown was over-sanguine. In 1888 the joint Colleges made formal application to the Secretary of State for permission for diplomates to use the appellation "Dr." but it was refused.

Dr. Danford Thomas seconded the motion. He thought the general question was one of great importance to the profession, and the law was defective. As to its intention there was no doubt, but as interpreted by the judges it failed. A man removed from the *Register* and from membership of the College could continue to practise with impunity so long as he took care to avoid a few little pitfalls. He might even make a large income—a larger one, in fact, than he could whilst his name was yet on the *Register*. It was, therefore, a reasonable request to ask the Council to assist in obtaining an amendment of the law. If the corporate bodies would take up the subject it would come with far greater force before Parliament. One of these offenders had been twice prosecuted for practising after the erasure of his name from the *Register*, but had escaped punishment because he carefully stated that he was not registered.

Mr. W. H. Day observed that another grievance was the fact that practitioners were compelled to furnish certificates of the cause of death for nothing, and that if copies were subsequently required for any purpose the registrar was now paid 2s. 7d. for each copy. This was not formerly the case when medical men themselves furnished copies.

The resolution was carried unanimously.

Members of the College and the Report of the Council.

Dr. Thomas Morton moved the following resolution:

That in the opinion of this meeting every Member of the College is entitled to receive a copy of the annual "Report from the Council" without application.

He said that a similar resolution had been carried at the previous annual meeting. He rested his case on the absolute claim of right; the Members were entitled to this privilege. The good which the Council did by publishing the report was partly undone by its scant circulation. It was posted to the Fellows; why, in the name of common sense, was it not sent to the Members as well? It was objected that the cost would be considerable—namely, about £160 a year, but such a sum was not excessive considering the objects in view.

Mr. Brindley James seconded the resolution. It was a small concession, which he hoped the Council would grant. One result thereof would be that the date of the annual meeting would be better known and the meeting itself better attended.

Mr. Vinrace supported the proposal, which was reasonable.

Surgeon-Major Ince opposed the motion, which if carried would involve increased and unnecessary expenditure. By applying to the Secretary every member could obtain a copy of the report.

Mr. Joseph Smith thought it a slur upon the Members that the report was not sent to them when it was posted to the Fellows. It was another argument for the representation of the Members upon the Council.

Mr. W. H. Day thought the report might be sent, at any rate, to all Members in the British Isles.

The President thought it could hardly be sent to one set of Members: it must go to all or none. The Council had no desire whatever to cast a slur upon the Members by not sending them copies of the report, although it was sent to Fellows. It was a mere matter of economy. To send the report to all Members would cause considerable expense. Any Member by sending a postal card—not a very troublesome thing to do—could always have a copy of the report. But only six or seven Members did so ask for it.

Dr. Walter Smith proposed as an amendment:

That any Fellows and Members notifying their desire to have the report should in future receive it until the request was countermanded.

The amendment was seconded, but defeated on a show of hands.

Mr. G. Brown moved, as another amendment:

That a copy of this year's report be sent to every Member.

He said that this was a very valuable report, containing, as it did, the proceedings of the Jubilee celebration in July last, and the alteration in the by-laws of the College.

The amendment was ruled out of order by the President.

The original proposal was carried by a majority,

The College and the General Medical Council.

Dr. W. G. Dickinson proposed the following resolution:

That this meeting considers that the Council would promote the wider interests of the profession, and would not injure those of this College, by agreeing to the recent recommendations of the General Medical Council with regard to (*a*) the combination with the Apothecaries' Society, and (*b*) the question of the commencement of scientific studies.

With regard to the suggested combination with the Society of Apothecaries, he thought there should be a one-portal system, and no competition between the College and the Society. The Hall was apparently willing to come to an agreement; the difficulty, therefore, would seem to rest with the College. As to the question of the commencement of scientific studies, the action of the College seemed to him a case of downright rebellion to the General Medical Council, which was the chief authority on all questions of qualification in general scientific subjects. A leading corporation such as the College of Surgeons should give its loyal adhesion to the General Medical Council, and fall into line with other Colleges in this matter.

Mr. W. G. Bott seconded the resolution, and considered that if adopted it would assist in the levelling up of the profession.

Sir Robert Craven opposed the resolution. The Society of Apothecaries was essentially a trading company.

Mr. Bryant said that as the representative of the College on the General Medical Council he might explain that he had at that Council voted for the combination with the Apothecaries' Society; and that with respect to the second half of the resolution the question was still *sub judice*, and had been badly placed before the profession. Under these circumstances it would be wiser if the proposer would withdraw his resolution.

Dr. Dickinson declined to withdraw, and the resolution was carried by 13 votes to 9.

A vote of thanks to the President for his impartial conduct in the chair closed the proceedings.

Apothecaries' Hall of Ireland.

The following candidates have passed the Final Examinations in Medicine, Surgery, and Midwifery, and have been registered: D'A. I. Hamilton, J. Thompson, S. A. Curran.

Royal College of Surgeons in Ireland.

Dental Examination.—Mr. John Isidore Potter having passed the necessary examination has been admitted a Licentiate in Dental Surgery of the College. The following candidates have passed the primary part of the examination: Mr. T. Beaumont, Mr. G. Friel, and Mr. L. Goldfoot.

University of Brussels.

The following practitioners satisfied the Examiners at the November Examination, and obtained the M.D. degree: H. M. W. Bridgman, A. V. Johnson, E. Winckler King, W. M. Permien, J. R. O'Brien, A. J. Treasuryvala. Nine candidates entered.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

Royal Navy Medical Service.

The following appointments have been made at the Admiralty: Richard L. Price, M.B., Surgeon, to the *Vivid*, November 14th; John H. Thomas, Staff-Surgeon, to the *Cormorant*, for Gibraltar Hospital, November 15th; Edwin Folliott, Surgeon, to the *Assaye*, November 16th; Reginald St. G. S. Bond, Surgeon, to the *Highflyer*, November 16th; George T. Broatch, Staff-Surgeon, to the *Devastation*, November 15th; James M. G. Swainson, Surgeon, to the *Terrible*, November 16th; A. J. Hewitt, Surgeon, to the *Trafalgar*, November 16th; Archibald McKinlay, Fleet-Surgeon, to the *Camperdown*, undated; Robert F. Bowie, Staff-Surgeon, to the *Howe*, undated.

Royal Army Medical Corps.

Lieutenant-Colonel R. W. Barnes retires on retired pay, November 17th. He was appointed Surgeon, March 6th, 1880; Surgeon-Major, March 6th, 1892; and Lieutenant Colonel, March 6th, 1900. He served in the Soudan under Sir Herbert Kitchener in 1898, and was present at the battle of Khartoum; he was mentioned in despatches, and has the British and Khedive's medals, with a clasp to the latter.

Lieutenant-Colonel J. J. Falvey also retires on retired pay, November 21st. His commissions are dated: Surgeon, August 4th, 1878; Surgeon-Major, August 4th, 1890; and Lieutenant-Colonel, August 4th, 1898. He served in the Zulu war in 1879, and in the subsequent operations against Sekukuni in medical charge of a section of movable field hospital (medal with

clasp); in the Boer war of 1881 in medical charge of the garrison at Lydenburg during the investment of that place (mentioned in despatches); in the Egyptian war of 1882 as Assistant Medical Officer Base and Lines of Communication and Medical Superintendent of the transport of the sick and wounded (medal, and Khedive's star); and in the Nile expedition in 1884-85 as Surgeon to the Heavy Camel Regiment, and was present at the action at Abu Klea; established the hospital at Abu Klea Wells, where he acted as Senior Medical Officer (two clasps). He went to South Africa in December last, and has been serving there up to the time of his retirement.

The undermentioned officers are returning from South Africa; Civil Surgeons R. Ward, A. Breslin, C. Gibbs, H. J. Scharlieb, and W. W. Woolliscroft.

The following have left for England invalided: Major T. Archer, Lieutenant F. S. Walker, Civil Surgeon D. V. M. Adams. For duty on the voyage: Lieutenant W. Jagger, Civil Surgeons W. L. Wainwright, L. V. Cargill, W. C. Allan.

Lieutenant E. B. Knox was among those reported as dangerously ill at Pretoria on the 11th instant, of enteric fever.

The following have been discharged from hospital in South Africa to duty: Civil Surgeons N. B. Harman, L. H. Y. Stephen, P. C. Ingram, L. Corfl, and Hamilton.

Surgeon Hartley, of Lord Lovat's Corps, who was reported as slightly wounded at Philoppolis on the 8th instant, is now stated to have been severely wounded.

Among the officers who have returned to England invalided are the following: Civil Surgeons F. D. Boyd, A. H. Watt, G. L. Chiene, J. Miller, J. McFarlane, G. S. Stoker, Coleman, and J. C. Pounder; and Civil Surgeons Enrys and Roberts, of the Welsh Hospital.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel P. F. O'Connor, Bengal Establishment, is gazetted Principal Medical Officer to the British Contingent, China Expeditionary Force, at Shanghai.

Lieutenant-Colonel J. S. Wilkins, D.S.O., Bombay Establishment, is promoted to be Colonel, from October 2nd. He was appointed Surgeon, March 31st, 1874, and became Brigade-Surgeon-Lieutenant-Colonel, August 16th, 1897. He was in the Afghan war in 1880, including the march to Kandahar under General Phayre (medal), and in the Burmese campaign in 1886-7 (mentioned in despatches, medal with two clasps).

THE INDIAN MEDICAL SERVICE.

The Governor-General in Council is pleased to direct the substitution of the following for Paragraphs 2, 3, and 4 of Home Department Medical Notification No. 361, dated July 30th, 1886, regarding the Administrative Staff of the Indian Medical Service in the several provinces in India.

2. The administrative appointments are the following:

	Monthly Salary. Rs.
1 Director-General of the Indian Medical Service and Sanitary Commissioner with the Government of India	2,700
1 Secretary to the Director General of the Indian Medical Service and Sanitary Commissioner with the Government of India, Rs.1,200, rising to	1,400
1 Surgeon-General with the Government of Madras	2,500
1 Personal Assistant to Surgeon-General with the Government of Madras (consolidated)	600
1 Surgeon General with the Government of Bombay	2,500
1 Personal Assistant to Surgeon-General with the Government of Bombay (consolidated)	600
1 Colonel with title of Inspector-General of Civil Hospitals, Bengal...	2,250
1 Colonel with title of Inspector-General of Civil Hospitals for the North-Western Provinces and Oude	2,250
1 Colonel with title of Inspector-General of Civil Hospitals for the Punjab...	2,000
1 Colonel with title of Inspector-General of Civil Hospitals and Sanitary Commissioner for Burma	2,000
1 Colonel for Civil Medical Administration in the Central Provinces	1,800

3. The Director-General of the Indian Medical Service will be the head of the amalgamated Indian Medical Services in India. It will be his duty, among other matters, to propose transfers between the military and civil departments, to recommend for promotion to the administrative grades, and to advise the Government on all questions relating to the admission of officers and subordinates to the Indian Medical Service, to the conduct and services of Indian medical officers of all grades, and to the supply of medical and surgical stores. The Director-General of the Indian Medical Service and Sanitary Commissioner with the Government of India will be entitled to receive any information he desires from the surgeon-generals of civil hospitals, administrative medical officers and sanitary commissioners attached to the local governments and administrations, and to communicate with these officers in regard to the operation of departmental rules and orders, but he will exercise no direct authority over these officers, who will be solely under the orders of the local government or administration to which each belongs.

4. Officers will be selected for the above-named administrative offices by the Government in India for the Bengal Presidency and by the Governments of Madras and Bombay for those Presidencies respectively. Selections will be made in each Presidency from the whole Indian Medical Service of that Presidency, and the principles of selection hitherto followed in all other respects in making such appointments will be observed. The nominations by the Governments of Madras and Bombay respectively will, however, be subject to the approval of the Government of India.

The surgeon-generals with the Governments of Madras and Bombay will be restricted to the exercise of the functions of administrative medical officers and civil inspector-generals of hospitals in respect to the civil medical staff and civil medical institutions in their respective presidencies. They will exercise no control over those sections of the existing medical establishments of Madras and Bombay which are composed of officers employed with the army or over the reserve of 25 per cent. for leave and casualties, the administration of which will be conducted directly under the orders of the Government of India.

SCARCITY OF CANDIDATES R.A.M.C.

In Arduis Fidelis writes: Increase pay and pension, diminish ruinously long terms of service abroad, and the rehabilitation of the R.A.M.C. may be expected to follow. A five years' arduous and expensive medical education should extract good pay in any branch of the public services; not alone the War Office, but the Admiralty, Crown, and Colonial offices are beginning to find this out. The number of medical students is also diminishing.

EMPLOYMENT OF RETIRED INDIAN MEDICAL OFFICERS.

I.M.S. (retired) writes: The above question I think is not one of right or claim but of fitness only. Surely men who have had a regular military training and have been used to military discipline are better fitted for such work than civil practitioners who have had no such experience. I cannot think your suggestion that retired officers of the I.M.S. should, as to eligibility for employment, hold a place midway between civil practitioners who hold commissions in the reserve or auxiliary forces—which commissions are merely nominal and imply no executive duties—and civil practitioners who have none, would be received with favour. No retired Indian medical officer would, I believe, care to be employed under such conditions.

*** Apart from all question as to the use or qualifications of the Reserve, the warrant embodying it gave its members a "prior claim" to employment in national emergency, which we said could not be set aside if duly asserted. After that, although Indian medical officers had no claim specifically we thought they should naturally be preferred to civilians. We are not aware of the terms upon which retired Indian medical officers are employed (there are two employed); whether, in fact, they receive special or contract rates, or are held to come under the articles in the Pay Warrant, which allocates to retired army medical officers £150 a year plus pension.

MEDICO-LEGAL AND MEDICO-ETHICAL.

UNQUALIFIED PRACTICE.

An unqualified practitioner named Rawlings, of Willow Grove House, Reddish, Stockport, was formally committed for trial on November 12th on the warrant of the coroner for manslaughter. The inquest was opened on October 29th, and was adjourned until November 12th, in order that an ointment and certain lotions might be analysed. According to the reports in the *Sheffield Independent* a woman named Ellen Dransfield, the wife of Jonathan Dransfield, was attended by Rawlings for cancer. She had been previously attended by Dr. Eskridge, who advised her to go to the Leeds Infirmary, instead of which she consulted Rawlings.

Dr. Eskridge saw her about eight weeks previous to her death, when she said she was doing well under Rawlings's treatment. She showed him her breast. He found a large open wound about the diameter of a saucer, and was of opinion that she was "going down the hill" very fast. The husband of the deceased said that Rawlings's treatment consisted of the application to the cancer of two dark-coloured lotions, one in the morning and the other at night. That at first the skin came off, and about eight weeks later a lot of "cancer matter" came out, leaving a large open wound. Later on the woman died, and a *post-mortem* examination was ordered by the coroner.

Dr. Blackburn, who made this examination, stated in evidence that the cause of death was exhaustion following upon the wound; that the wound was the result of some caustic application, and he was of opinion that death was accelerated by the said treatment.

Mr. A. H. Allen, Public Analyst for Sheffield, to whom the ointment and lotion had been given for analysis, stated in his evidence that the ointment was of a simple character, and did not contain arsenic, mercury, bismuth, zinc, or benzoic acid. The bottle containing the lotion was labelled "cancer and fungus lotion," and the preparation consisted largely of water. A considerable quantity of wood tar was also present, together with starchy and other vegetable matter not identified, but free from alkaloids and other active ingredients. The two other bottles forwarded him bore printed labels "cancer and tumour lotion," and the contents were practically identical in each case, except that one smelt more strongly of cloves than the other. Both samples consisted of a dark aqueous liquid, containing a deposit of highly-burnt bread crumbs. The odour of the liquid was due to the presence of the oil of cloves and eucalyptus, but these ingredients were not present to the extent of more than 2 or 3 per cent. The remainder of the liquid was water. Neither sample contained any trace of arsenic, mercury, or other poisonous metal, nor was any vegetable alkaloid or any other ingredient of an active nature detected. Such medicinal activity as might have been possessed by these samples must have been due to the oils, cloves, and eucalyptus present.

Mr. Rawlings, who is a member of the Board of Guardians and Vice-Chairman of the Stockport Urban District Council, stated in evidence that he was occupied treating cancers, tumours, and fungi in human beings and horses. He agreed with the analyst's report, except as to the presence of bread crumbs, which he denied. He accounted for the irritation by the cancer itself being natural in accordance with the disease. He declined to state what were the ingredients or contents of the bottles and ointments he supplied. In early youth his father instructed him in the growth of herbs and in chemistry, and he had studied at Owens College, Manchester. There was little variance in his treatment. He used more of the contents containing wood tar at first, because the cancer was hard. He used the same treatment in internal tumours. He did say he could cure deceased, without a doubt.

The Coroner, in summing up, commented upon the very serious amount

of quackery which existed in the country, which was of grave danger to the public, especially to the poor and ignorant.

The jury found that an irritant was used by Rawlings, that he did not tell deceased or her husband of its danger, and that the deceased's "death had been accelerated by the treatment of Frederick Rawlings, who was an unqualified practitioner."

We refrain, of course, from commenting upon this case until after the trial.

AN inquiry was concluded by the city coroner for Belfast on November 16th as to the death of Anne Gordon of that city. The husband of the deceased, according to the *Belfast Evening Telegraph*, stated that she was 35 years of age, and was healthy till about a year ago. Her nose then became diseased, and she underwent an operation in the Royal Hospital for what the doctors told him was lupus. The nose never healed, and she dressed it with carbolic lotion. For three or four months she had been delicate, weak, and vomiting. He saw Allan M'Donald at his house, and M'Donald told him that he was going to put a plaster on his wife's nose which would cause a good deal of pain for about eight days but that there would be no danger. M'Donald told him that it was a cancer, and that the roots were in the flesh but the treatment would draw them out, and also that the plaster was composed of herbs, and that the secret had been handed down from father to son for generations. He first saw the plaster on his wife's nose on October 25th, and she died on the morning of November 2nd.

Dr. Baillie, who had been called to the deceased after death, stated in evidence that there was a plaster on the nose covering it entirely up to the eyes; the disease was lupus. He had made a *post-mortem* examination; there was advanced disease of the nose, which was in a state of acute inflammation; the heart was fatty, the chambers dilated, and there was valvular disease; the stomach was congested, the liver enlarged, and the kidneys congested; the intestines were slightly congested. He considered that the cause of death was heart failure accelerated by the arsenical plaster.

Mr. Robert Barklie, City Analyst, said that he found no trace of mineral or vegetable poisons in the organs, but in a portion of plaster taken from the nose he found arsenic, comparatively in abundance.

The Coroner called M'Donald, who said that he had no statement to make beyond that the woman sent for him to see her nose, and that he had applied a plaster, which had not succeeded.

The Coroner, having summed up, the jury found a verdict in accordance with the medical evidence, and added that death was accelerated by the plaster put on by M'Donald. The Coroner said he agreed with the verdict, and would send the depositions to the Attorney-General.

CONVICTION OF A MIDWIFE.

ON November 20th, at the Central Criminal Court, before Mr. Justice Darling, Ernestine Katz, 48, described as a midwife, was indicted for and charged on the coroner's inquisition with the wilful murder of Kate Kennedy.

The case for the prosecution—according to the report in the *Times*—was that Katz on June 30th performed an illegal operation on Kennedy, who became very ill, and was removed to a hospital, where she ultimately died.

The jury found the prisoner not guilty of murder, but guilty of manslaughter.

Mr. Muir, who, with Mr. Matthews, appeared for the prosecution, stated that when the prisoner was arrested a number of documents were found upon her which showed that in 1897 at Berlin she was charged with an offence of the same nature, and that she absconded from bail to this country.

Mr. Justice Darling sentenced the prisoner to ten years' penal servitude.

MEDICAL ADVERTISING.

A CORRESPONDENT sends us a threepenny booklet published by a medical practitioner who advocates the establishment of sanatoria containing arrangements for the application of certain modern methods of treatment, such as heat, light, electricity, *x* rays, hypnotism, and music, some good, others doubtful, and others again bad. The substance of the pamphlet appears to have been published in a weekly newspaper from which it is reprinted. Undoubtedly the publication and sale of low-priced pamphlets by medical practitioners is open to abuse, as they may be written and circulated mainly for purposes of advertisement, but it would be very unfair to suggest that this is always the case, and while recognising the possibilities of evil we do not feel able to lay down any general rule. Examples to which objection is taken should be referred to the local ethical committee or to the licensing body whose diploma is held by the writer.

SEVERAL correspondents have drawn our attention to a paragraph in the *Dorset County Chronicle* in which reference is made to an article which appeared in the BRITISH MEDICAL JOURNAL of October 20th by Mr. H. J. Clark, of Swanage. Such paragraphs are rightly objected to, but we trust that Mr. Clark had nothing to do with this publication. Complaint has also been made to us of a report of a speech by the Mayor of Smethwick, in which he referred to a case which had been cured by a local physician. In this instance there does not seem to be any reason for suggesting that the person named is responsible for the remarks made, which were doubtless well meant, although they appear objectionable to the medical profession. We have also had sent to us a card of admission to a lecture on "Personal Purity" by a medical practitioner which our correspondent says was given to his son in the street. The lecture was to be delivered under the auspices of the local branch of the Young Men's Christian Association. We suppose that the tickets were mainly distributed to members of the local branch, and that the act of giving one away in the street was accidental and unauthorised. The wording of the ticket is not in very good taste, and we think that medical practitioners who undertake to give popular lectures should for their own sake insist upon certain conditions being observed as to advertisements, the printing of the tickets, and their distribution, so as to remove the grounds of the complaint we so frequently receive that such lectures, which may no doubt be delivered from the best motives, are used as opportunities for personal advertisement.

THE REMUNERATIVE ART OF PUFFING.

We have recently drawn attention to the insidious form of puff in which an advertisement is concealed in what professes to be a *bonâ-fide* article, pamphlet, or book, but we have never seen the *modus operandi* better exposed than in a letter and prospectus received from that enterprising writer, Dr. Gordon Stables, M.D., R.N. In the letter, after stating that he encloses an advertisement prospectus, this gentleman says: "Instead, however, of having a page advertisement at £10 10s., I should advise you to let me give you a page notice in the body of the work itself. This I would only charge £5 5s. for." In the enclosed prospectus we are told that "a testimonial will, as usual, be appended to each advertisement, and the doctor will make a point of frequently alluding to these in print, and in many other ways. If desired he will send an excellent brief recommendatory letter on your speciality." That is to say, Dr. Gordon Stables promises, in return for an advertisement for his book, to give a testimonial and to allude to the matters advertised in print, and if desired, to give a recommendatory letter. After this no one can doubt that the practice of giving medical testimonials is grossly abused. It is to be regretted that a man who seeks to make money by such means should be able to append the letters "M.D., R.N." to his name.

THE PUFFING OF NEW REMEDIES.

APROPOS of our recent article upon this subject, a correspondent sends us a letter received by him from a firm of transatlantic chemists, asking him whether he would be prepared to test a sample of quinine, and, if satisfied of its merits, to write an article in its favour, for which they offer any equitable remuneration. As he occupies a position in connection with a hospital where there is every opportunity for properly testing the remedy in question, this might at first sight appear to be the kind of investigation which we spoke of as legitimate; but the drug in question is not new or one which, in this country at any rate, it is difficult to obtain pure. The claim made by the manufacturers is that in America it is difficult to get such drugs honestly dispensed, and therefore it is necessary to put them up in original packages protected by a trade mark. Whatever may be the case in the United States, it cannot be said that the same necessity exists here, and such an article as that suggested could not be approved.

CANVASSING FOR HOSPITAL APPOINTMENTS.

A CORRESPONDENT complains that he has been the victim of the canvassing system, as a short time ago a post on the senior staff of the hospital, to which he had for many years been assistant-surgeon, became vacant, and he was beaten in his application by a much younger man, and a newcomer to the town; who canvassed energetically, while our correspondent, considering this unprofessional and undignified, did not do so. We are very sorry for our correspondent, and deplore the need for canvassing, and we strongly urge all who have the necessary influence to alter the laws of the hospital with which they may be connected, so as to make it illegal or unnecessary; but so long as appointments are obtained by the votes of a large number of governors applicants must canvass, or they lay themselves open to being misunderstood. A voter likes to be canvassed; he resents being neglected, and thinks that the candidate who will not take the trouble to ask his support does not care for it or deserve it.

GIVING ANÆSTHETICS FOR DENTIST WITH UNREGISTERED PARTNER.

NITROUS OXIDE writes: A., an unqualified dentist, takes a partner, B., qualified. C. gives anæsthetics for the firm, after agreeing with other medical men not to do so when A. was single-handed. Is this unprofessional conduct of C., and if so, what would you advise?

*** The position described is somewhat complicated. Assuming that by "unqualified" our correspondent means "unregistered," C. is doubtless at liberty to give anæsthetics for the qualified dentist B., though after his previous agreement with brother practitioners not to do so for the unqualified A., he would have done well to have consulted with them as to his course when A. and B. became partners. A. does not become by his association with B. anything more than he was before, that is, an unqualified person, and stands somewhat in the position of B.'s unqualified assistant, and should be regarded as such by C., that is to say, C. should only administer anæsthetics for A. when A. is acting within the legitimate limitations of an unqualified assistant, that is, operating under the immediate personal supervision of B. If C. goes beyond this, he is associating himself with B. in covering unqualified practice, and his attention should be called to this; should he not regard the suggestion, the attention of the General Medical Council should be drawn to the matter.

UNQUALIFIED HOUSE-SURGEONS.

ONE OF THE STAFF.—The appointment of an unqualified person to such a post as assistant house-surgeon, by which he receives the *imprimatur* of the institution as its responsible official, is exceedingly undesirable. Twenty or thirty years ago it was not unusual, even in the larger London hospitals, to appoint a student known to the staff as competent who was about to qualify, but had not yet actually done so, and later on, such appointments were sometimes made subject to the student becoming qualified within a few weeks. But so far as we are aware, it is no longer done, and now that the day of the unqualified assistant is over, it behoves all public institutions to set an irreproachable example in this respect. It is clear that the duties of this assistant house-surgeon, leaving out of consideration his title, go far beyond those of a

dresser, and also go far beyond the scope within which the General Medical Council has laid down that a private practitioner may employ an unqualified person legitimately; we need only specify the visiting of out-patients at their own homes when too ill to come to the hospital (which implies that they are more or less serious cases), the administration of anæsthetics, and presumably the entire duties of the senior house surgeon during temporary absence of the latter from the hospital. We cannot undertake to say what course the General Medical Council would take were the matter brought to their notice, but it would seem likely that they might censure a staff which delegated duties of so much importance to an unqualified person.

PROFESSIONAL ETHICS.

A. and B. are practitioners in the same town, and a year ago, during B.'s absence, A. did his work. Recently a patient of B.'s has asked A. to attend him, giving as a reason that he knew A. when A. was doing B.'s work. A. asked the patient to explain to B., but failed to get him to do so, and eventually attended him. We are asked to express an opinion upon A.'s conduct.

*** Assuming the facts to be as stated, we think A. should not have attended the patient without B.'s permission. Where an introduction to a patient has been obtained by doing the work of a colleague, a special obligation of honour is incurred which must not be set aside, and it would have been better for A. to have lost the patient than to have struck a blow at the conventions by which, should he ever be placed in the same position as B., he will feel that he can entrust his patients to the care of a colleague without risk of injury to his practice.

THE MIDWIFE'S STATUS.

J. D. H. writes: In the British Medical Journal of November 17th, page 1478, under the above heading, it is stated, "but every medical practitioner is bound to render such assistance to a woman in labour as it may be in his power to afford, and the fact of a midwife being in attendance does not affect this obligation." J. D. H. would be glad to learn the Editor's authority for the first part of this statement, to which he demurs, being under the belief that as the law stands at present no medical practitioner is so bound. With regard to the latter part of the statement that "the fact of a midwife being in attendance does not affect this obligation," J. D. H. remarks that although he is of opinion no such obligation now exists, nevertheless the Midwives Bill once passed and in operation such an obligation will *ipso facto* come into existence, and then no medical practitioner will dare refuse the call of a midwife. If the midwife be bound under penalties to send for a medical practitioner under certain circumstances, it seems to him obvious that the medical practitioner so summoned will be equally, or even more, liable to penalty if he does not attend.

*** There is, of course, no legal obligation.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,208 births and 3,917 deaths were registered during the week ending Saturday last, November 17th. The annual rate of mortality in these towns, which had been 17.6 and 16.9 per 1,000 in the two preceding weeks, rose again to 17.6 last week. The rates in the several towns ranged from 9.5 in Norwich, 11.9 in Croydon, 12.1 in Cardiff, and 13.4 in West Ham, to 20.5 in Liverpool, 21.6 in Newcastle, 21.9 in Manchester, and 24.8 in Salford. In the thirty-two provincial towns the mean death-rate was 17.9 per 1,000, and exceeded by 0.8 the rate recorded in London, which was 17.1 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.6 per 1,000; in London this death-rate was equal to 1.2 per 1,000, while it averaged 1.8 in the thirty-two provincial towns, among which the highest zymotic death-rates were 2.9 in Brighton and in Wolverhampton, 3.0 in Nottingham, and 3.1 in Preston and in Sheffield. Measles caused a death-rate of 2.1 in Brighton; whooping-cough of 1.0 in Derby, 1.1 in Sheffield, and 1.3 in Nottingham and in Preston; "fever" of 1.0 in Derby, 1.1 in Sunderland, and 2.0 in Plymouth; and diarrhœa of 1.0 in Swansea and in Bolton, 1.3 in Nottingham, and 1.7 in Wolverhampton. The mortality from scarlet fever showed no marked excess in any of the large towns. The 70 deaths from diphtheria in the thirty-three towns included 32 in London, 7 in Leicester, 7 in Sheffield, 5 in Liverpool, and 4 in Portmouth. No fatal case of small-pox was registered either in London or in any of the thirty-two large provincial towns; and no small-pox patient was under treatment on Saturday last, November 17th, in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 1,703 to 2,702 at the end of the eleven preceding weeks, had further risen to 2,728 on Saturday last; 201 new cases were admitted during the week, against 320, 336, and 289 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, November 17th, 872 births and 611 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 19.6 and 19.2 per 1,000 in the two preceding weeks, rose again last week to 19.9, and was 2.7 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 14.9 in Dundee and 17.2 in Leith to 20.5 in Edinburgh and 21.2 in Glasgow. The zymotic death-rate in these towns averaged 2.4 per 1,000, the highest rates being recorded in Glasgow and Perth. The 304 deaths registered in Glasgow included 2 from small-pox, 2 from scarlet fever, 5 from diphtheria, 17 from whooping-cough, 6 from "fever," and 7 from diarrhœa. Eight fatal cases of measles, 3 of diphtheria, and 2 of diarrhœa were recorded in Edinburgh. Two deaths from whooping-cough and 4 from diarrhœa occurred in Dundee; 4 from measles and 3 from diarrhœa in Aberdeen; 2 from scarlet fever in Paisley; 2 from whooping-cough in Greenock; and 2 from diphtheria in Perth.

HEALTH OF IRISH TOWNS.

The average annual death-rate represented by the deaths registered in the week ending November 17th, in the Dublin registration area and the twenty-two principal provincial urban districts in Ireland (exclusive of deaths of persons admitted into public institutions from without the respective districts) was 20.4 per 1,000 of their aggregate population, which is estimated at 1,062,188.

In the Dublin registration area the rate was 26.0, in Belfast 17.7, in Cork 22.8, and in Limerick 15.4. The deaths (30) from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1.5 per 1,000; the rate for the Dublin registration area being 1.6, for Belfast 0.9, for Cork 2.1, and for Limerick 1.4.

A BOARD OF GUARDIANS AND THEIR LUNATICS.

The Caersws Board of Guardians having appointed two of their number to visit the county asylum at Bicton and report upon their patients detained there, the two gentlemen presented their report at a recent meeting of the Board. The following is an account of the report as given in the *Montgomeryshire Express*: "They had interviewed most of the pauper patients belonging to the Newtown and Llanidloes Union, which they classified under three heads—(1) slightly affected (if any), (2) those deranged, and (3) those in a worse condition. With regard to the first class there were several patients with whom they could detect nothing wrong. The Committee had entered four or five on the minute book inviting the attention of the Visiting Committee to them. The Committee questioned the girl Annie Swancott (of Llanwaog), but could find nothing the matter with her. There was little the matter with Margaret Elias (Llanidloes) or with Hannah Davies (Llanidloes). The Committee thought that Richard Owen (Newtown) should be earning his own living, as he was general haircutter in the asylum and liked the place very much. Mary Jane Morris (Llanllwchaiarn) should be out soon, as she seemed capable of looking after her children. The Committee were of opinion that David Evans (Llandinam) should never have been sent to the asylum, and should by some means be made to work. Neither could the Committee understand why the old man, William Newell Evans, should have been kept in the asylum for nearly forty years."

In the proceedings which followed the presentation of the report, Mr. John Lewis stated: "Mr. Bennett had made some inquiries with regard to the case of the late John Brown. Dr. Strange, who made a *post mortem* examination, found that Brown's brain weighed 57½ ounces, which he understood was 11½ ounces above the normal weight. It was extraordinary (Mr. Lewis continued) that a man with such a large brain should have been in an asylum."

A vote of thanks was proposed to the Committee for preparing such an exhaustive report, and Mr. Lewis, in the course of his reply, remarked: "The man William Newell Evans, of Newtown, has cost the Board over £800, and he did not know why he was in the asylum. He believed there was a slight tendency not to discharge patients from the asylum as soon as they had recovered."

*** Messrs. Bennett and Lewis deserve well of their constituents. They have boldly recorded their opinion with regard to several of the pauper lunatics in the asylum in a most ingenious manner, which will afford Dr. Strange an excellent opportunity of giving his reasons why these patients are in the asylum, and why pauper lunatics, which appear to the guardians to be only "slightly affected (if any)," or in whom "they could detect nothing wrong," or to have "little the matter" with them, "or "capable of earning their own living," or "of looking after her children," or "should never have been sent to the asylum, and should by some means be made to work," or "why William Newell Evans should have been kept in the asylum for nearly forty years." It is by frankly expressing their opinions and recording them openly that the want of knowledge displayed by the Committee of the guardians can be met, and the guardians educated to take a broader view of the duties and responsibilities of those who have the care of the insane poor of their district, and even eventually be made to "understand why a man with such a large brain should have been in the asylum."

THE SANITATION OF STROUD AND NAILSWORTH.

The defects in the systems of sewerage and sewage disposal in these two districts have formed so frequently and for so long a [illegible] complaint, that the case has come to be regarded as [illegible] hopeless and incurable. It is another instance of apathy [illegible] well-directed initiative, with a guiding force [illegible] in the teeth of local opposition. A representative [illegible] the Local Government Board, Dr. F. St. G. [illegible] to the sanitary conditions of the two areas [illegible] we gather that such systems of sewerage [illegible] that a very large proportion of the [illegible] of the sort. The entire neighbourhood [illegible] the majority of which are used as [illegible] use, and these springs, with few exceptions [illegible] mo. There are certain special difficulties owing to the manufactures of the district, which is famous for its cloth, for example, billiard cloth, and "hunting scarlet"; the factories discharge their surplus dyes into the Frome. But Dr. Mivart's report brings home in a forcible manner the callousness of the inhabitants of certain parts of England as to the disposal of refuse. It would appear that there is no systematic inspection in

the districts in question of slaughterhouses, dairies, or bakeries. The district councils both of Stroud and Nailsworth appear to deal promptly with certain minor nuisances, and the former council has under consideration a somewhat extensive system of drainage which, it is to be hoped, it will carry to completion.

VILLAGE SANITATION.

MENTOR asks: (1) Can a Local Board be compelled to apply any test to the drains of a house, or must the occupier do it at his own expense? (2) Can the Local Board be compelled to keep the public footpath through a village free from cow and other faeces, or what remedy have the inhabitants? (3) What remedy have the inhabitants of a village in which milk testing is practically non-existent?

*** (1) The answer to the first query is contained in Section XLI of the Public Health Act, 1875. The occupier should address a written complaint that the drain is a nuisance or injurious to health, when the local authority may cause it to be examined by their sanitary inspector. The authority cannot be compelled to direct such examination after the receipt of a written complaint, but whenever it comes to their knowledge that a nuisance actually exists which is due to the drain, then they are obliged to see that the nuisance is abated. If there is no nuisance the occupier must test the drain at his own expense to satisfy himself as to its soundness. (2) The answer to this query is in the negative. If the nuisance is held by them to be dangerous to health, the local authority would proceed against the offenders to prevent the recurrence of the nuisance, but they are under no obligation to scavenge the footpath. (3) The remedy is to take samples according to the provisions of the Food and Drugs Acts, and to forward a third part (duly sealed) of each such sample to any public analyst of a neighbouring authority. The fee of 10s. 6d. per sample will have to be paid by the private individual who takes such action, in respect of each sample, and the procedure of purchase, etc., laid down in the Food and Drugs Act of 1875 must be literally observed. The private purchaser may then legally proceed against an offending vendor, with the objects of getting him fined and of obtaining costs.

SUPERANNUATION DEDUCTIONS.

F. E. M. asks whether Boards of Guardians can make superannuation deductions from the extra fees allowed by the Local Government Board to their medical officers for the treatment of fractures, midwifery, and certifying for removal of pauper lunatics.

*** All salaries and extra fees for fractures, operations, and midwifery are properly taxed by deductions towards superannuation, but the fees paid for certifying pauper patients for removal to asylum are not liable to any deduction whatever.

ANTISEPTIC VACCINATION.

DR. HENRY RENNEY (Sunderland) writes: In reply to "Asepsis," I beg to say that I prefer S.V.R. simply because I do not like the odour of methylated spirit. Expense is no bar to S.V.R., as one uses so very little. May I make a correction *re* "Pro-Vac?" I am sorry I misquoted the price; it should have been 3s 3d. for *one* hundred sheets (not 3s. for 300).

PAYMENT OF PUBLIC VACCINATOR FOR VACCINATION FOR WELL-TO-DO FAMILIES.

J. F. F. writes: The question what cases the public vaccinator should enter in the Register in the Form O has been raised by the guardians of this district.

In the General Order to Public Vaccinators, dated October 18th, 1898, Article 9 says: "Every public vaccinator shall duly register all vaccinations performed by him in a register in the Form O set out in the Fifth Schedule hereto, and in manner directed in the 'Instructions to Vaccinators under Contract' in the Third Schedule hereto." Paragraph 8 of Third Schedule says: "The public vaccinator must enter all cases in his register on the day when he vaccinated them," etc. Acting in accordance with the above instructions I have entered in the Vaccination Register every case vaccinated by me whose name appears in the Form H sent me by the Vaccination Officer as being that of a child which had attained the age of 4 calendar months, and has not been vaccinated, etc. The guardians object to my entering in the Vaccination Register "those well able to pay," but I conceive it is no part of my duty to ask for payment privately from anyone. Moreover, some cases are other practitioners' patients, and here it would be impossible for me to accept a fee. Some patients, too, wish me to vaccinate their children because as public vaccinator I am supplied with calf lymph by the Local Government Board, and I have always supposed that it was my duty to enter every case so vaccinated in the Vaccination Register. I may say that the Clerk to this Board of Guardians (a lawyer) says: "In my opinion the charge for vaccinating every child performed by the public vaccinator is properly chargeable by him to the guardians."

*** The guardians have no right whatever to raise the question of ability to pay for vaccination in regard to any entry in the vaccinator's register. The public vaccinator must visit and offer to vaccinate all children whose names are included in the lists; if the offer is accepted, and the child is in good health, he is bound to vaccinate according to the instructions of the Local Government Board. Furthermore, he is bound to enter the case in his register, and if the operation is successful and the necessary certificate is sent in, the guardians are bound to pay him on the presentation of his quarterly account. By Section XXVI of the Act of 1867 neither vaccination nor any treatment incident to it is to be considered as parochial relief, and the liability of the guardians is the same, be the vaccinee a prince or a pauper.

CONSENT TO VACCINATION.

A PUBLIC VACCINATOR sends us the following story, which is of more than local interest on account of its revelation of antivaccination methods:

The Finance Committee of a Board of Guardians on the representation of one of their number—a rabid antivaccinationist and a member of the Antivaccination League—withheld payment of the public vaccinator's fees on the ground that he had vaccinated one child without the consent of the father. The vaccinator performed the operation after due notice from the vaccination officer and the giving of twenty-four hours' notice in writing to the father; the consent of the mother, who was in custody of the child, was obtained, and admitted by the objecting guardian, the father also being within 100 yards of the house and offering no objection at the time. The clerk to the guardians ruled that the public vaccinator had no right to vaccinate without the consent of the father as well as of the mother.

We believe the clerk to the guardians to be wrong in his ruling. Notice 1 is sent to the "parent or other person having custody of child." Section IV of the Act of 1871 defines the term "parent as including "any person having the custody of a child. We incline to the belief that the clerk has been misled by failing to see that Section XXXV of the Act of 1867 was modified, and the word "parent" extended in meaning, by the Act of 1871. As regards the public vaccinator, he is under any circumstances entitled to the visiting fee; by Clause (2) of his part of the contract he is bound to vaccinate the child if his offer is accepted, and by Clause (1) of the guardians' part of the contract they are bound to pay him for the vaccination if it is successful.

With respect to the "offer to vaccinate," seeing that "the parent *or* other person having the custody of the child" may request his visit for the purpose of vaccinating, we cannot imagine that the "other person having the custody of the child," in this case the mother, should not be in a position to accept or refuse the offer.

MEDICAL NEWS.

THE first annual dinner of the Otological Society of the United Kingdom will take place at the Café Monico on Monday, December 3rd.

PRESENTATION.—Dr. Sidney J. Stuck, on leaving the Whitechapel Infirmary in which he had been assistant medical officer for four years, was presented with a library chair and pedestal writing table with cabinet, which bore an inscription testifying to the esteem of the nursing and general staff of the infirmary.

POST-GRADUATE COURSE ON OPHTHALMOLOGY IN GLASGOW.—The first demonstration of this course dealing with phlyctenular conjunctivitis was given on November 6th, by Dr. Maitland Ramsay, at the Glasgow Ophthalmic Institution, which is under the management of the Glasgow Royal Infirmary. The demonstrations will be continued on Tuesday evenings up to Christmas.

IN recognition of the valuable services of Dr. John N. Nason to the Stratford-on-Avon Hospital during the forty years for which he acted as one of its honorary medical officers, it has been decided to ask him to sit for his portrait to be hung in the Board-room of the hospital, and to present him with a piece of plate.

INTERNATIONAL MORAL PROPHYLAXIS.—An International Society for Sanitary and Moral Prophylaxis is to be organised as the result of the Brussels Conference for the Prophylaxis of Syphilis, etc., held last year. The new society is to have its meeting place at Brussels, from which place a journal is to issue to the members of the Society. The next meeting of the Society will take place in 1902.

The trial of the man who shot Dr. Clarke, of Leicester, terminated by the jury finding a verdict of "Guilty" of feloniously shooting, but that the prisoner was insane at the time. The Judge ordered the prisoner to be detained during Her Majesty's pleasure. We are glad to notice that Dr. Clarke was sufficiently recovered to give evidence at the trial.

LONDON MISSION HOSPITAL, CHUNG-KING.—We have received from Dr. Wolfendale, the surgeon in charge of this hospital, the annual report for 1899. The hospital has just been rebuilt, and now accommodates 80 patients. There is a special ward for Europeans. The whole staff is Chinese with the exception of the surgeon in charge, and there are six native students. The London Missionary Society now requires all its Chinese hospitals to be self-supporting.

Presbyterian Mission Hospital.—The report of the work in 1898 and 1899 of the Mission Hospital Miraj of the Western Indian Mission and the Presbyterian Church, U.S.A., contains pictures of the operating room with aseptic fittings, and of a plague case showing the typical "anxious expression." On the outbreak of plague, Dr. Wanless, the surgeon in charge, made a sanitary inspection of the town, and offered the gratuitous aid of the hospital staff to the Miraj State. Dr. Wanless was made President of the Miraj Plague Committee. The attendance of out-patients at the hospital was as usual much decreased by the outbreak. Dr. Wanless notes the comparative rarity in members of the Christian community of blindness due to ophthalmia. The in-patients average some 350 in the year. There are four native Christian students.

Pan-American Medical Congress.—The third meeting of the Pan-American Medical Congress will be held at Havana on December 26th, 27th, 28th, 29th, of the present year. The President of the Executive Committee is Dr. Juan Santos Fernandez, and the Secretary Dr. Tomas V. Coronado. The official languages of the Congress will be Spanish, English, French, and Portuguese. The work of the Congress will be distributed among twenty-two Sections as follows: Medicine, General Surgery, Military Medicine and Surgery, Obstetrics, Gynæcology and Abdominal Surgery, Therapeutics, Anatomy, Physiology, Children's Diseases, Pathology, Ophthalmology, Laryngology and Rhinology, Otology, Dermatology and Syphiligraphy, General Hygiene and Demography, Marine Hygiene and Quarantine, Orthopædic Surgery, Diseases of the Mind and of the Nervous System, Dental and Buccal Surgery, Medical Pedagogy, Forensic Medicine, Railway Surgery. The constituent countries of the Congress are declared to be the Danish, French, Dutch, and British West Indies, Cuba, Puerto Rico, Argentine Republic, Bolivia, Brazil, Canada, Chili, Colombia, Costa Rica, Dominican Republic, Ecuador, United States, Guatemala, Hayti, the Hawaiian Islands, Honduras, Mexico, Nicaragua, Paraguay, Peru, Salvador, Uruguay, and Venezuela.

MEDICAL VACANCIES.

The following vacancies are announced

BIRMINGHAM: GENERAL HOSPITAL.—(1) Two Assistant House-Physicians. (2) Two House-Surgeons. Appointments for six months. No salary, but residence, board, and washing provided. Applications to the House Governor by December 1st.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, with apartments and board. Applications to the Chairman of the Medical Board by December 17th.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY Diseases.—Clinical Assistant. Applications to the Secretary of the Medical Committee, John Bright Street, Birmingham, by December 3rd.

BRENTFORD UNION.—Assistant Medical Officer, unmarried. Salary, £100 per annum, with furnished apartments, rations, washing, etc. Applications, on forms provided, to be sent to the Clerk to the Guardians, Union Offices, Isleworth, W., by November 27th.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House-Surgeon. Salary, £80 per annum, with board and lodging. Applications to the Honorary Secretary by December 1st.

BRIGHTON AND HOVE LYING-IN INSTITUTION.—House-Surgeon, unmarried, and under 30 years of age. Salary, £80 per annum, with furnished apartments, board, etc. Applications to the Clerk, 77, West Street, Brighton, by December 7th.

BRISTOL CITY HOSPITAL.—Resident Medical Officer at the Ham Green Fever Hospital. Salary, £100 per annum with board, lodging, and washing. Applications to Dr. S. Davies, 10, Prince Street, Bristol, by December 1st.

BRIXTON DISPENSARY.—Resident Medical Officer, unmarried. Salary, £150 per annum, with furnished apartments, etc. Applications to the Secretary, Water Lane, Brixton, S.W., by November 30th.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum, with board, residence, and attendance. Applications to the Honorary Secretary, Knowsley Street, Bury.

CARDIFF INFIRMARY.—Assistant House-Surgeon. Appointment for six months, but renewable. Salary, at the rate of £75 per annum, with board, washing, and apartments. Applications, endorsed "Assistant House-Surgeon," to the Secretary by November 28th.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House-Physician. Appointment for six months. Salary at the rate of £80 per annum, with board and residence. Applications to the Secretary by December 10th.

CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House-Surgeon, unmarried. Salary, £50 per annum, with board, lodging, and washing. Applications to the Honorary Secretary by November 27th.

CLINICAL RESEARCH ASSOCIATION.—Assistant Pathologist. Commencing salary, £125 per annum. Applications to the Secretary, 1, Southwark Street, S.E.

CROYDON GENERAL HOSPITAL.—House-Surgeon. Salary, £105 per annum, with board, laundry, and residence. Applications to the Secretary by December 6th.

DARLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon, unmarried. Salary, £150 per annum, with rooms. Applications to the Secretaries, 80, Houndgate, Darlington, by December 5th.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board, lodging, and washing. Applications to the Chairman of Medical Committee by December 6th.

DUBLIN: DR. STEEVEN'S HOSPITAL.—Assistant Physician and Pathologist. Applications to the Secretary.

DUBLIN: ROYAL HOSPITAL FOR INCURABLES, Donnybrook.—Resident Medical Officer. Salary, £100 per annum, with board and furnished apartments. Applications to the Registrar by December 8th.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary, £70 per annum with residence, board, and washing. Applications to the Secretary by December 13th.

DUNMOW UNION.—Medical Officer and Public Vaccinator for the Thaxted District. Salary, £90 per annum and fees. Applications to the Clerk by December 7th.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell.—House Physician. Board, residence provided, and honorarium of £25 on completion of six months' approved service. Applications to the Secretary by December 8th.

EDINBURGH: ROYAL COLLEGE OF SURGEONS.—Conservator of the Museum. Salary, £105 per annum. Applications to Mr. J. Robertson, Clerk to the College, 54, George Square, Edinburgh, by December 1st.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Resident Medical Superintendent. Salary, 100 guineas per annum with board and residence. Applications, on forms provided, to the Secretary by December 11th.

HUDDERSFIELD INFIRMARY.—Junior House-Surgeon. Salary, £60 per annum, with board, residence, and washing. Applications to the Secretary.

HULL ROYAL INFIRMARY.—Honorary Surgeon. Applications to the Chairman, Committee of Management, by December 12th.

HULL ROYAL INFIRMARY.—Assistant House-Surgeon. Salary, £60 per annum with board and furnished apartments. Applications to the Chairman, House Committee, by December 3rd.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House-Surgeon, unmarried. Salary, £140 per annum, increasing to £170, with rooms and attendance. Applications to the Secretary before November 26th.

KING'S COLLEGE, London.—Professor of Anatomy. Applications to the Secretary by December 11th.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary, £100 per annum, increasing £10 on reappointment, with board and lodging. Applications to the Secretary of the Faculty.

LEICESTER INFIRMARY.—Assistant House-Surgeon. Salary, £80 per annum, with board, apartments, and washing. Applications to the Secretary, 24, Friar Lane, Leicester, by December 8th.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrar. Salary, £100 per annum. Applications to the House Governor by December 7th

LONDON HOSPITAL MEDICAL COLLEGE.—Assistant Demonstrator of Anatomy. Salary, £90 per annum. Applications to the Warden by December 10th.

MANCHESTER CHILDREN'S HOSPITAL.—Assistant Surgeon, must be F.R.C.S.Eng. Honorarium, £50 per annum. Applications to the Secretary, Gartside Street, Manchester, by November 29th.

MANCHESTER: ROYAL INFIRMARY.—Resident Medical Officer of the Convalescent Home at Cheadle, unmarried and not under 25 years of age. Salary, £150 per annum, with board and residence. Applications to the Secretary by December 1st.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich Road, S.E.—Junior Resident Medical Officer. Appointment for six months, with prospect of election as Senior. Salary, £50 per annum, with board, attendance, and washing. Applications to the Secretary by December 4th.

NEWCASTLE-ON-TYNE NORTHERN COUNTIES HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Honorary Physician. Applications to the Secretary, 40, Mosley Street, Newcastle-on-Tyne.

NEW HOSPITAL FOR WOMEN, 144, Euston Road, N.W.—Medical Women as (1) House-Physician, (2) House-Surgeon, (3) Clinical Assistant for Out-patient Department. Applications to the Secretary by November 28th.

NORFOLK COUNTY ASYLUM, Thorpe, Norwich.—Junior Assistant Medical Officer. Salary, £120 per annum, rising to £150, with board, lodging, and washing. Applications to the Medical Superintendent.

NORTH LONDON HOSPITAL FOR CONSUMPTION, Hampstead.—(1) Junior Resident Medical Officer. Appointment for twelve months. Honorarium, £60 per annum. (2) Clinical Assistant at the Out-patients Department. Appointment for six months. Honorarium at the rate of £35 per annum. Applications to the Secretary by November 30th.

NOTTINGHAM CHILDREN'S HOSPITAL.—House-Surgeon, unmarried. Appointment for six months, but eligible for re-election. Salary at the rate of £100 per annum, with board and residence. Applications to the Secretary, Mr. A. F. Kirby, St. Peter's Church Walk, Nottingham, by November 27th.

PLAISTOW: ST. MARY'S HOSPITAL FOR SICK CHILDREN.—Assistant Resident Medical Officer. Appointment in the first place for six months. Salary at the rate of £80 per annum, with board, residence, etc. Applications to the Secretary by November 28th.

RAMSGATE AND ST. LAWRENCE ROYAL DISPENSARY.—Resident Medical Officer, unmarried. Salary, £100 per annum, with furnished apartments, board, and attendance, and £10 allowed for substitute during annual holiday. Applications to the Secretary by December 8th.

ROYAL ACADEMY OF ARTS.—Professorship of Anatomy. Fees, £128. Applications to the Secretary by November 28th.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Member of the Court of Examiners. Applications to the Secretary by December 5th.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge Road, S.E.—(1) Resident Medical Officer. Salary, £70 per annum, with rooms, board, and laundry. (2) Assistant Physician, must be F. or M.R.C.P Lond. Applications to the Secretary for (1) by November 30th and (2) by December 6th.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—Clinical Assistants. Applications to the Secretary by December 1st.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer in Chemistry and Physics. Salary, £150 per annum, and special fees for London University classes. Applications by November 30th.

ST. THOMAS'S HOSPITAL.—(1) Surgeon; (2) Resident Assistant Surgeon; must be F.R.C.S.Eng. Applications to Mr. E. M. Hardy, Treasurer's Clerk, by November 24th.

SALFORD UNION.—Assistant Resident Medical Officer at the Union Infirmary, Hope, near Eccles. Salary, £130 per annum, with furnished apartments and attendance. Applications, endorsed "Assistant Medical Officer," to the Clerk to the Guardians, Union Offices, Eccles New Road, Salford, by November 27th.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone Road, N.W.—Surgeon to the Out-Patient Department. Applications to the Secretary by December 5th.

SEAMEN'S HOSPITAL SOCIETY, Greenwich.—House-Physician for the "Dreadnought" Hospital. Salary, £75 per annum, with board and residence. Applications to the secretary by December 10th.

THROAT HOSPITAL, Golden Square, W.—Junior House-Surgeon. Salary, £100 per annum, with lunch daily. Applications to the Secretary by December 8th.

UNIVERSITY COLLEGE, London.—Assistant Surgeon to the Hospital. Applications to the Secretary by December 8th.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician, (2) House-Surgeon. Appointments for six months. Board and lodging provided in each case. Applications to the Secretary by December 26th.

MEDICAL APPOINTMENTS.

AUBREY, T., M.R.C.S., L.R.C.P.Lond., appointed District Medical Officer of the Newmarket Union, vice A. G. L. Campbell, M.B.Aberd., resigned.

BONNER, Thos. Irvine, M.A., M.B., C.M. Edin., appointed Medical Officer of Health to the Town Urban District Council, vice B. M. Bone, M.B., C.M., resigned.

BROWNE, Miss Ada M., L.S.A., appointed Assistant Anæsthetist to the Chelsea Hospital for Women.

FENN, Charles E., M.B.Durh., M.R.C.S., L.R.C.P., appointed House-Surgeon to the Worcester Infirmary.

HAYDEN, A. Falconer, M.R.C.S.Eng., L.R.C.P.Lond., appointed House-Surgeon to the County Hospital, Newport, Monmouthshire.

HUNT, J. S., M.R.C.S., appointed Medical Superintendent of the Dunwich Benevolent Asylum, and Medical Officer for the Care, Supervision, and Inspection of Lepers at Stradbroke Island, Queensland.

JONES, Herbert, L.R.C.S.I., L.S.A., D.P.H.Camb., appointed Medical Officer of Health for the Hereford Rural District Council, *vice* H. V. Sandford, L.R.C.P.Lond., L.F.P.S. Glasg., resigned.

NEILL, Channing, M.D., appointed Medical Officer for Eidsvold, Queensland.

O'MEARA, J. F., L.R.C.P., L.R.C.S. Edin., appointed District Medical Officer of the Walsall Union *vice* F. W. Sydenham, M.D. Edin., resigned.

OYSTON, W. F., M.R., Ch.B.Vict., appointed Certifying Factory Surgeon for the Osmotherly District.

POLLOCK, R. G., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Northern District of the Godstone Union, *vice* H. R. Todd, L.R.C.P., L.R.C.S.I., resigned.

SHAW-MACKENZIE, John A., M.D.Lond., appointed Physician to Out-patients at the Samaritan Free Hospital for Women and Children.

STRED, John, M.D. Edin., appointed Medical Officer to Jarvis's Charity, Staunton-on-Wye, *vice* W. E. Barton, M.R.C.S., L.R.C.P., resigned.

TERNAU, P. J. W., L.R.C.P., L.R.C.S.I., appointed District Medical Officer of the Smailburgh Union, *vice* A. Crisp, M.R.C.S.Eng.

WALKER, Edwin Thomas, L.R.C.P. & S.Edin., L.F.P. & S.Glasg., appointed Medical Officer of Health for the Middley Urban District, *vice* Thomas Crowther, M.B.Aberd., resigned.

WARD, J. A., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer to the Training Ship "Shaftesbury," Grays, *vice* Dr. Robertson, resigned.

WILD, G. S., M.D. Durh., M.R.C.S.Eng., appointed Honorary Physician to the Bootle Borough Hospital.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 8.30 P.M.—Dr. F. de Havilland Hall: The Diagnosis and Treatment of Thoracic Aneurysm. The following gentlemen are expected to take part in the discussion: Dr. Barlow, Dr. Beauchamp, Dr. Oswald Browne, Dr. Kingston Fowler, Dr. Vincent Harris, Dr. Norman Moore, Mr. Sanderson (Brighton), Dr. Gilbart Smith, and Dr. Hugh Walsham.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Ball: The Examination of the Throat, Nose, and Ear.

Odontological Society of Great Britain, 20, Hanover Square, W., 8 P.M.—Mr. T. E. Constant: On the Etiology of Superior Protrusion. Casual communications by Mr. C. Vincent Cotterell, Mr. J. G. Turner, Mr. Perry, and Mr. Douglas Gabell.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Radcliffe Crocker: Consultation. (Skin.)

TUESDAY.

Royal Medical and Chirurgical Society, 8.30 P.M.—Sir Thomas Smith, Bart.: Suggestions for a Possible Improvement in the Method of Removing Stones and Morbid Growths from the Interior of the Bladder. Mr. Walter G. Spencer: Median Perineal Urethrotomy and Cystotomy through a Suprapubic Transverse Incision, after Cases. Dr. Thomas R. Bradshaw (Liverpool) will demonstrate an Undescribed Crystalline Urinary Deposit.

Hospital for Diseases of the Skin, 59, Stamford Street, Blackfriars, S.E., 5 P.M.—Dr. Phineas S. Abraham: Vegetable Parasitic Diseases.

London Temperance Hospital, Hampstead Road, 3.30 P.M.—Dr. Addinsell: On some Cases of Gynecological Interest.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Seymour Taylor: Consultation. (Medical.)

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. W. B. Cheadle: Consultation. (Pediatrics.)

Hunterian Society, London Institution, Finsbury Circus, E.C., 8.30 P.M.—Pathological evening.

London Throat Hospital, 204, Great Portland Street, W., 5 P.M.—Mr. E. B. Waggett: Diseases of Accessory Sinuses.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W., 4 P.M.—Dr. Wethered: Cardiac Dilatation.

Dermatological Society of Great Britain and Ireland, 20, Hanover Square, 5 P.M.—Exhibition of cases at 4.30 P.M.

THURSDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Abraham: Some Skin Affections.

Charing Cross Hospital Post-Graduate Course, 4 P.M.—Mr. Wallis: Surgical Cases.

Central London Throat, Nose, and Ear Hospital, 8 P.M.—Dr. Holloway: Diagnosis and Treatment of Some Diseases of the External Meatus.

Neurological Society of London, Examination Hall, Victoria Embankment, W.C., 9 P.M.—The Hughlings Jackson Lecture: Professor Hitzig of Halle on Hughlings Jackson and the Cortical Motor Centres in the Light of Physiological Research.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Voelcker: Diphtheria.

FRIDAY.

London Temperance Hospital, Hampstead Road, 2 P.M.—Dr. Parkinson: Some Diseases of the Stomach and other Cases of Interest in the Wards.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. St. Clair Thomson: Consultation. (Throat.) 5 to 7 P.M.—Mr. J. Griffith. Class: Practical Ophthalmology.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

BONAR.—At 113, Via del Babuino, Piazza di Spagna, Rome, on the 10th inst., the wife of Thomson Bonar, M.D., of a son.

MARRIAGES.

ANDERTON–JONES.—On November 14th, at the Parish Church, Ormskirk, by the Rev. J. E. Woods, M.A., Vicar, Edmund Palmer Anderton, M.B., C.M., eldest son of William Anderton, F.R.C.S., M.R.C.P.Ed., The Mansion House, Ormskirk, to Annie Gertrude, second daughter of the late Henry Jones, J.P., Claremont, Ormskirk.

CROCKER–BLEARS.—On November 10th, at the Parish Church, Wimbledon, London, S.W., by the Rev. J. Wallace, John Hedley Crocker, M.D., B.Ch., D.P.H., M.R.C.S. Eng., etc., of Monk's Hall, Eccles, to Annie, widow of the late W. H. Blears, solicitor, of Manchester.

DEATHS.

BALDING.—On the 15th inst., at 41, The Avenue, Bedford Park, London, W., Ellen, widow of C. C. Balding, M.R.C.S., and youngest daughter of the late James Miller Lawman, surgeon, of Sheffford, Beds, aged 63 years.

BROWN.—On the 14th inst., at 28, Lavender Gardens, S.W., Anne Robert Brown, wife of John Brown, Esq., L.R.C.P. & S.I., late Surgeon, R.N.

SEATON.—At Madras, on September 30th, Joscelyn J. Seaton, M.D., M.R.C.S., of Greenwood Park, Natal, eldest son of the late Dr. Joseph Seaton, of Halliford House, Sunbury-on-Thames.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1 p., Tu., 2.30; o.p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Rontgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, 1.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.-p., daily, 1.30; o.-p., M., W. Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, 1.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, 1.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 2; W., 10; Obstetric, W., 3; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; 1.-p., Tu. Th., 2.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9; Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; 1.p., 1; o.p., 12; Obstetric, 1.p., Tu. F. 1.45; o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females, W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynecological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Juvenis would be glad to know what would be a usual salary for a female dispenser (indoors) in a country practice where the work is generally light.

Health Lectures.

M. D. asks what would be the most useful literature to read for the preparation of a course of health lectures.

The Icebag in Concussion.

A. M. L. asks for experiences as to the value of the icebag in the treatment of concussion of the brain—whether it is of material service, and, if so, how it acts?

Post-Scarlatinal Diphtheria.

Brigade-Surgeon-Lieutenant Colonel A. B. M. Myers (Gloucester Street, S.W.) writes: Would any medical men who have had much experience in scarlet fever kindly inform me what they consider had been the ratio per 100 of post-scarlatinal diphtheria under their personal observation, excluding hospital cases?

Wanted, a Bracing Climate and Good Roads in Wales.

E. desires to hear of a district in Mid or South Wales where the roads are fairly good for walking or cycling in winter, and the climate fairly bracing, pretty dry, and not continually changeable, and preferably where the small farmers are not in a majority on the parish councils, etc., to control the road expenditure.

Weir-Mitchell Treatment.

Blackpudlian would be glad if any correspondent could tell him of any institution where a patient who has lost all her money, and who suffers from marked neurasthenia, without any intercurrent disease, could obtain the above treatment free of cost, or on such terms as to make it worth while to attempt to raise the money among a few friends.

The Prevention of Secondary Infection after Vaccination.

D. asks for information as to what method of protection against extraneous infection after vaccination meets with most approval amongst public vaccinators, the desideratum being something that can be quickly applied, which is inexpensive, efficient, and has the sanction of the Local Government Board.

Lady Dispensers.

Oxonian asks what prospects of getting employment as a dispenser a lady aged 26 would have.

*** The openings for employment of lady dispensers appear to be at the present time with medical men and dispensaries. It would be necessary to obtain a qualification in dispensing. The Apothecaries' Hall certificate is the one usually taken. There is no great demand for lady dispensers, but the number employed is certainly increasing.

Warmth in Narcotic Poisoning and Surgical Shock.

Dr. Alexander Duke (Cheltenham) writes: Having read with much interest the annotation on the above subject (published in the British Medical Journal of November 17th, p. 1460), more particularly with regard to the value of "hot water tanks forming a part of the best appointed operating tables," may I venture to state my impression that I was the first to suggest that idea (now, I am glad to say, generally adopted) as a preventive of shock in surgical operations, more especially abdominal? Unless claimed by some other, I consider I am entitled to the priority. In Dr. Neale's valuable *Medical Digest*, paragraph 1620-2, my name appears under the heading "Operating Table: Hot Water," and the date in which my suggestion appeared in the *Medical Press and Circular*, 1889, vol. ii, page 475. So far as I can discover, the "hot water operation table" was first used in the St. Joseph's Hospital for Children, Temple Street, Dublin, and the operative results were immensely improved by its use.

Income Tax.

New Chum entered into a partnership last May, and returned his profits for income tax as *nil*. He has been assessed at £300. He has only received about £100 in cash up to the present. He has a house and servants purely for the practice, and pays insurance money nearly £30 per annum.

*** Our correspondent's *nom de plume* is evidently appropriate, otherwise he would not have expected the surveyor to accept a statement that he was making absolutely no income at all. The house rent and servants' wages are not expenses wholly and exclusively incurred in the exercise of his profession, and though he has received only £100 in cash there are doubtless book debts. It would probably be worth "New Chum's" while to pay the fee of the Income-Tax Repayment Agency, 6, Chichester Road, W., for assisting him to get a correct if not a reduced assessment.

ANSWERS.

We would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided.

Devon should charge half a guinea for the services rendered.

Gastro-intestinal Catarrh.

Dr. Albert Rosenau (Monte Carlo) writes: I would strongly recommend to "agoraphobia" to see whether the symptoms in his case may not be due to gastroptosis or enteroptosis, when a tight bandage will very much relieve his patient. If this is not the case, nitrate of silver may be worth trying.

Dr. Henry W. Spaight (Ramsgate) writes: I would suggest to "Agoraphobia" the following treatment: Regulated diet, abstinence from vegetables, sweets, tea, and fatty foods. Systematic and moderate exercise, and, if possible, a change of scene and occupation. In conjunction with bismuth and soda before meals, I should give creosote immediately after in mij doses in pill form; I think he will find it answer better than salol.

Treatment of Flatulent Dyspepsia.

Dr. Thomas Dutton (Holland Park Avenue, W.) writes: No drug treatment is of the slightest use in severe cases until the patient is placed under a proper diet treatment suitable to the case. Under diet treatment 1 minim of creosote with meals or 10 grains of sodium salicylate (pure) in a mixture twice a day, between meals, will generally bring about a complete cure. Washing out the stomach makes the cure more rapid.

The Form of Gall Stones.

Dr. John M. Longford (Resident Medical Officer, Aston Union Infirmary, Birmingham) writes: In reference to Dr. J. W. Duncan's interesting speculations in the British Medical Journal of November 17th on the form of gall stones, might I offer the suggestion that such is dependent on the presence or absence of bile in the gall bladder? Gall stones found in a bladder, the liquid contents of which have been absorbed, are in my limited experience always facetted.

The Scilly Isles.

Dr. T. Thornton Macklin (Isles of Scilly) writes: In reply to "J. K. C.'s" query in the British Medical Journal of November 17th concerning accommodation for patients in the Scilly Isles, I beg to state that there are no public or private institutions of any kind for the reception of patients in these islands. Boarding-house and hotel accommodation can be had ranging from 21s. per week in the winter to 63s. per week in the summer. Doubtless, board and lodging could be obtained for 15s. per week but under circumstances and conditions hardly suitable to a patient of any kind. There is in contemplation the erection of a small sanatorium for the "open air treatment of consumption," but as it is a purely private concern the fees are likely to be considerably over the sum mentioned by "J. K. C." If "J. K. C." wishes for more or further information I shall be happy to furnish it.

Medical Practice in Switzerland.

Dr. George N. Worthington.—The following memorandum, printed among Communications with Regard to Medical Practice in Specified Foreign Countries received by the General Medical Council through the Privy Council and Foreign Office and published in the *Minutes of the General Medical Council*, vol. xxxvii. page 218, supplies the information asked for by our correspondent: "British medical men who are in possession of a medical diploma authorising them to practise in their own country, and who are desirous of pursuing their calling in Switzerland, must first obtain the Federal diploma by passing the regular medical examination. Application for permission to present oneself for this examination has to be made to the Federal Medical Board. The examination is divided into two parts, practical and oral. The first comprises such subjects as autopsy, microscopic specimens, pathology, therapeutics, surgery, anatomy, obstetrics, ophthalmology and medical jurisprudence. The second, physiology, pathology, surgery, obstetrics, including gynæcology, hygiene, medicine, and therapeutics. The examination fee is 240 frs. (about £9 12s.), and the fee for the grant of the Federal diploma 20 frs. (about 16s.). In the case of distinguished foreigners who enjoy a high scientific reputation, and who have been in practice for a term of at least ten years, the Medical Board is empowered, if it sees fit, to dispense with the examination altogether, or to substitute for it a summary oral examination in pathological anatomy, therapeutics, surgery, and obstetrics. British doctors desirous of practising temporarily in any particular locality must address an application to this effect to the Federal Medical Board. In the event of no objection being raised by that body, the authorities of the Canton in which the locality is situated are competent to grant or to refuse the necessary permission. With the exception, however, of the Canton of Tessin, where permission is occasionally granted to British medical men to practise among their own countrymen, the cantonal authorities decline, as a rule, to allow any doctor to practise who has not qualified himself to do so by obtaining the Federal diploma."

NOTES, LETTERS, Etc.

Quack Doctors in Australia.

The Sydney *Bulletin* publishes in its issue of September 22nd, in a column headed "Plain English," some remarks on quack doctors which justify the title of the column. They should be studied by those who preach free trade in medicine. They deal with a Bill now before the Queensland Parliament to put down unqualified practice, and the writer says:

> It is not suggested that the quack should be merely prohibited from calling himself a doctor, but that he should be prohibited from existing at all and utterly blotted out. There is much to be said for the proposition. The qualified practitioner is sometimes an incapable fool, but the very worst of him must know a good deal of his trade, or he could not have passed his examination. The unqualified man may sometimes know a good deal, but as a rule the best of him remains unexamined because he does not know enough to be the worst kind of a qualified man. All the same the unqualified man is sometimes better than nobody at all, though very often he is worse than nobody, and kills his

patients faster than they would have died if left alone; but on the strength of the fact that he is sometimes better than nobody, a section of the press denounce the Medical Bill in the alleged interest of very far back residents, and asks if it is humane in places where there is no doctor to prevent the bush quack doing his best, or to prohibit the chemist, who probably knows a little medicine, from prescribing. This looks plausible on the surface, but there is not much underneath it. A place that can support a chemist generally has a doctor; also there is no reason why a combined order of doctor and chemist should not exist. As for the quack, who is not a chemist, he eats and drinks as much, and wears as many boots as the qualified man, so a place which cannot support a doctor cannot support a quack. Where there is a quack and no qualified doctor, the reason generally is that the place cannot support both of them, and the quack gets there first; if he were shifted, a qualified man would take his place. As for the very poor and unpopulous places, where there is neither doctor, nor quack, nor chemist, and a little precarious botching at the human frame is done by the storekeeper, or the blacksmith, they are merely a proof that the State has failed in its duty. Even in the poorest and emptiest regions the State sees that appliances for arresting, and imprisoning, and hanging the public are not wanting. It is equally essential that appliances for healing them are not wanting. In every settled district the State should see that a doctor is supplied, and where the population is below a certain figure—the figure which careful inquiry shows to be a minimum that can support a medical man—a sober, capable medico should be supplied, and subsidised in proportion to the deficiency in population. It is as essential to have a doctor to so many square miles, in order that no single inhabitant shall be absolutely out of reach of medical aid, as to have a policeman so that no inhabitant shall be denied the privilege of imprisonment. It is quite as cheap to preserve the existing population in this way as to import new population under an assisted emigration policy—cheaper, perhaps, when the saving in tombstones and gravediggings is considered.

*** Much of this is good common sense, if somewhat quaintly expressed, and the duty of the State to put medical aid within the reach of all its subjects is not as fully recognised in Great Britain as it should be. We believe that Fair Isle, with some 200 inhabitants and two lighthouses and staff, has no resident doctor, although situated more than twenty-five miles from the mainland, from which it is separated by a stretch of sea often unnavigable for weeks at a time.

THE APPEAL ON BEHALF OF THE WIDOW AND FAMILY OF THE LATE DR. QUINLIVAN.

THE following additional subscriptions have been received towards this fund, the objects of which were fully stated in the BRITISH MEDICAL JOURNAL of November 17th, 1900, p. 1450:

	£	s.	d.
Dr. O'Regan, 298, Hackney Road...	1	1	0
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Dr. A. Holdsworth Davies, 34, North Bridge Street, Sunderland	0	10	0
Dr. M. Poignard, Rowhedge	1	1	0
Dr. F. G. Evans, Llwynarthan, Near Cardiff...	1	1	0
Dr. H. Greenwood, St. Just, R.S.O., Cornwall	0	10	6
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Dr. O'Malley, 26, Calvert Avenue, Shoreditch	2	2	0
Dr. J. Kennedy, 2, Grosvenor Terrace, Camberwell ...	1	1	0
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Dr. E. V. Eames, Heanor, Nottingham	1	1	0
Dr. C. Palmer, Barton-under-Needwood	0	5	0
Dr. J. Sheehan, Bethnal Green Road	1	0	0
Dr. Arthur, Bethnal Green Road	1	0	0
Dr. Smyth, 46, Cantall Road, Leytonstone	1	0	0
Dr. A. Ryan, Romford, Essex	1	1	0
Dr. J. Nolan, 126, Barking Road	0	10	0
Dr. E. J. O'Sullivan, Shaw Street, Liverpool...	0	10	0
Anonymous	0	10	0
	£32	0	6

AMERICAN "HONORARY" DEGREES.

AN interesting letter has been published in the "*Dryck*," the organ of the Welsh people in the United States, which throws a sidelight upon the honorary degree business, not perhaps intended for the illumination of the public at large. The letter purports to be written by the Principal of the Gale University College, U.S.A., to a friend in the country, a Congregational Minister. In this letter the Principal urges his friend to take the degrees of the College in question before the "day of grace is over." He writes: "The graduate work is to close this year. Wooster has already closed it; Marietta did years ago. None but the great universities will offer such inducements to special study after the year. I have the course and examination in my own charge.....The fees are beyond my control—75 dollars—but they are not excessive. The 'Ph.D' would help you much in your work." In a P.S. the worthy Principal points out that his College includes the "M.A." with the "Ph.D" and "does not grant the higher before the lower." Seventy-five dollars is not an excessive charge for two degrees, but probably the College has accurately estimated the pecuniary value of its academic distinctions.

INSURANCE COMPANIES AND THE PAYMENT OF MEDICAL REFEREES.

"DUPED" writes that he was induced to insure in an office by being appointed a medical examiner, and although he has held the appointment for over a year he has not had a case to examine, although one was sent to him prior to his effecting his insurance. For this case he received a fee of 7s. 6d., although 10s. 6d. was the fee according to the company's scale.

*** We can only say, as we have said before, that we would strongly advise all members of the medical profession to keep the two things—the insurance of their own life and the post of medical referee—apart. To mix them up is not good business.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Professor T. Annandale, Edinburgh; Aqua; Mr. A. R. Anderson, Nottingham. B Mr. W. H. Bennett, London; Mr. B. Beamish, Newry; Dr. J. W. Ballantyne, Edinburgh; Dr. E. R. Bowen, Barry Dock; Mr. W. M. Beaumont, Bath; Mr. G. H. Broadbent, Manchester; Mr. L. A. Bidwell, London; Dr. C. E. Baddeley, Stafford; Blackpudlian; Bournemouth Medical Society, Secretary of, Bournemouth; Mr. W. W. Beaumont, London; Sir T. Lauder Brunton, London; Mr. J. P. Bush, Clifton. C A. Carless, M.B., London; J. J. Clark, M.B., London; Dr. H. Campbell, London; C.; Mr. A. Cuttfield, Ross; Dr. M. Craig, London; Dr. F. J. H. Coutts, Manchester; Dr. G. Crichton, London. D Mr. S. Dusselsma, London; A. F. Dixon, M.B., Cardiff; Dr. A. Duke, Cheltenham; Director-General of the Medical Department of the Admiralty, London; Disgusted Practitioner; Dr. T. Dutton, London; Devon; Duped; Dr. D. Drummond, Newcastle-on-Tyne; Dr. T. Dilworth, Fermoy. E J. W. Edwards, M.B., Middlesbrough. Enquirer. F Dr. P. J. Freyer, London; Forfarshire Medical Association, Secretary of, Dundee; Mr. J. Fitzgerald, London; F. E. M.; Mr. L. A. Francis, Uxbridge. G G. W.; A. C. Grant, M.B., London; Mr. J. W. Gill, Eskeard. H Mr. H. Hemsted, Winchester; Dr. H. Handford, Nottingham; Dr. R. Hamilton, Johannesburg; Mr. C. Heath, London; Dr. J. H. Hill, London; Dr. Herz, Prague; Mr. T. H. Hills, Cambridge. I I.M.S. (retired). J J. R. J.; Juvenis; Mr. G. P. Johnston, Edinburgh; Mr. H. H. Jennings, London; J. B. C.; J. K. C.; J. D. H. K Dr. W. Kirby, Chiswick. L J. R. Lambert, M.B., Farsley; Liverpool Medical Institution, Secretary of, Liverpool; Mr. R. J. Leeper, Market Rosworth; Mr. P. G. Looge, Bradford; Dr. D. B. Lees, London; S. H. Long, M.B., Norwich; Mr. J. M. Longford, Birmingham; H. Low, M.B., London; L.R.C.P., M.R.C.S., L.S.A.; L.S.A. (retired). Dr. T. G. Lyon, London; Dr. H. L. G. Leask, Glasgow; Dr. E. G. Little, London; Dr. E. Liveing, London. M Mr. W. J. Midelton, Bournemouth; Mr. J. H. Mummery, London; Member; Mr. J. C. McWalter, Dublin; D.G. M. Munro, M.B., Cheltenham; Member; G. V. Miller, M.B., Stockton-on-Tees; H. H. Mills, M.B., London; Manchester Pathological Society, Secretary of, Manchester; M.D., F.R.C.S.; M.D Lond., D.P.H Cantab; Dr. P. McBride, Edinburgh; M.R.C.S. & L.S.A.; Dr. H. C. L. Morris, Bognor; Messrs. Mayer and Meltzer, London; J. T. J. Morrison, M.B., Birmingham; Mr. A. B. M. Menzies, London. N Dr. J. B. Neal, Obefoo; Nitrous Oxide; Dr. E. F. Neve, Srinagar; Sir C. J. Nixon, Dublin; Nottingham Medico-Chirurgical Society, Secretary of, Nottingham; Dr. D. Newman, Glasgow; J. H. Nicoll, M.B., Glasgow. O Dr. H. O'Neill, Belfast; Oliver Snitch; One of the Staff. P Mr. F. T. Paul, Liverpool; Public Vaccinator; Dr. F. W. Pavy, London; Mr. R. Peters, Tyldesley; Dr. J. P. Parkinson, London; Mr. C. J. Palmer, Mansfield Woodh use. R Mr. A. K. Reede, Honiton; Mr. G. A. Richardson, London; Dr. E. S. Reynolds, Manchester; Dr. F. Radcliffe, Oldham; Dr. A. Rosenau, Monte Carlo; Dr. W. Reeve, London; Mr. R. D. Rider, Mirfield. S G. R. Stilwell, M.B., Beckenham; Dr. F. H. Spencer, Exeter; Dr. D. W. Samways, Mentone; Mr. C. Stonham, Pretoria; Mr. H. W. Spaight, Ramsgate; Dr. J. Scott, Manchester; Staff-Surgeon, R.N.; Messrs. W. B. Saunders and Co., London. T Mr. J. L. Thomas, Cardiff; Mr. B. Thomson, Northampton. W Dr. F. J. Waldo, London; Dr. J. A. Wilson, Glasgow; Dr. T. J. Walker, Peterborough; Dr. H. B. Williams, London; Mr. G. W. Whiteley, Salisbury; Dr. W. G. Walford, London; Dr. A. G. Welsford, Johannesburg; J. R. Whitwell, M.B., Melton; Dr. A. Wylie, London; Dr. F. Willcocks, London; C. P. White, M.B., Leeds; Mr. C. H. Whiteford, Plymouth; G. J. Williams, M.B., Fishguard; Mr. A. Wiglesworth, Liverpool; Mr. R. H. Wolstenholme, Salford; Dr. T. M. Watt, Hull. X X Rays. Y Y; etc.

BOOKS, ETC., RECEIVED.

The Microscopy of the more Commonly-occurring Starches. By H. Galt, M.B., C.M., D.P.H. London: Baillière, Tindall, and Cox. 1900. 3s. 6d.

Defects in Plumbing and Drainage Work. By Francis Vacher. London and Manchester: John Heywood. 1s.

A Manual of Personal Hygiene. Edited by W. L. Pyle, A.M., M.D. London and Philadelphia: W. B. Saunders and Co. 1900. 6s.

The Hygiene of Transmissible Disease. By A. C. Abbott, M.D. London and Philadelphia: W. B. Saunders and Co. 1900. 9s.

A Manual of Medicine. Edited by W. H. Allchin, M.D., F.R.C.P., F.R.S.E. Vol. ii. London: Macmillan and Co. 1900. 7s. 6d.

Chirurgie Oculaire. Par Dr. A. Terson. Paris: J. B. Baillière et Fils. 1901. Fr. 7.50.

Atlas der Anatomie der Stirnhohle der vorderen Siebbeinzellen und des Ductus-Nasofrontalis. Von Dr. A. Hartmann. Glasgow: F. Bauermeister. 1900. 16s.

Das Experiment als zeitgemässe und einheitliche Methode medizinischer Forschung. Von Professor J. P. Pawlow. Übersetzt von Dr. A. Walther. Glasgow: F. Bauermeister. 1900. 2s.

*** In forwarding books the publishers are requested to state the selling price

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Eight lines and under	0	4	0
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An average line contains six words.

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Post-Office Orders should be made payable to the British Medical Association at the General Post-Office, London. Small amounts may be paid in postage-stamps.

N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

SIXTY-NINTH ANNUAL MEETING, 1901.

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General Secretary—FRANCIS FOWKE, Esq. *Editor of the Journal* DAWSON WILLIAMS, M.D.

The SIXTY-NINTH ANNUAL MEETING will be held at CHELTENHAM,

On Tuesday, Wednesday, Thursday, and Friday, July 30th, 31st, August 1st and 2nd, 1901.

The **PRESIDENTIAL ADDRESS** will be delivered by GEORGE BAGOT FERGUSON, M.D.

The **ADDRESS IN MEDICINE** by JAMES F. GOODHART, M.D., LL.D., Consulting Physician, Guy's Hospital.

The **ADDRESS IN SURGERY** by Sir WILLIAM THOMSON, M.D., Surgeon to the Richmond Surgical Hospital, Dublin, and Surgeon in Ordinary to Her Majesty the Queen in Ireland.

The Scientific Business of the Meeting will be conducted in Thirteen Sections. The names of the Sections are as follows:—

A.—MEDICINE.
B.—SURGERY.
C.—OBSTETRICS AND GYNÆCOLOGY.
D.—STATE MEDICINE.
E.—PSYCHOLOGICAL MEDICINE.
F.—ANATOMY AND PHYSIOLOGY.
G.—PATHOLOGY AND BACTERIOLOGY.
H.—OPHTHALMOLOGY.
I.—DISEASES OF CHILDREN.
J.—LARYNGOLOGY AND OTOLOGY.
K.—TROPICAL DISEASES.
L.—NAVY, ARMY AND AMBULANCE.
M.—DERMATOLOGY.

The objects of the Association are—the promotion of Medical Science and the maintenance of the honour and interests of the Medical Profession. The Subscription to the Association is One Guinea annually; and each member on paying his Subscription is entitled, in addition to the other advantages of the Association, to receive weekly, post free, the "BRITISH MEDICAL JOURNAL: THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION." The Subscription is payable in advance on January 1st in each year.

Members of the Profession desirous of becoming Members of the Association should communicate their wish to the HONORARY LOCAL SECRETARIES, or to the General Secretary, 429, Strand, London, W.C., in order that the proper steps may be taken for their election.

For the Annual Subscription of One Guinea, paid in advance, the BRITISH MEDICAL JOURNAL is forwarded weekly to Members, free by post. For persons not Members of the Association the Annual Subscription to the Journal is 28s. post free.

GRANTS IN AID OF ORIGINAL RESEARCHES IN MEDICINE AND THE ALLIED SCIENCES.

Annual Grants of the total value of £350 are made in aid of Scientific Researches, in Medicine and the Allied Sciences. Applications, stating the nature and objects of the intended research, should be sent to the General Secretary at the office of the Association, 429, Strand, London, W.C.

In addition to the Grants above mentioned three Scholarships each of the yearly value of £150, together with the "Ernest Hart Memorial Scholarship" in State Medicine, of the yearly value of £200, are awarded.

The BRITISH MEDICAL JOURNAL for 1901.

WITH A WEEKLY SUPPLEMENT ENTITLED "EPITOME OF CURRENT MEDICAL LITERATURE."

The BRITISH MEDICAL JOURNAL is the Journal of the British Medical Association; it is published weekly, and is sent to all members by post. Each issue contains as much printed matter as a goodly octavo volume, and it forms annually two quarto volumes, each containing from 1600 to 1800 pages. In addition to this an abstract and digest of all that is most practically important in the current medical literature of the world is published as a supplement to each number of the JOURNAL. This EPITOME is included in the ordinary pages of the JOURNAL, but can be detached and bound separately if desired.

During 1901 there will appear in the BRITISH MEDICAL JOURNAL original articles and clinical lectures by leading teachers and investigators in Clinical Medicine, Surgery, Obstetrics and Gynæcology, and in Pathology and Bacteriology, as well as short papers by various writers, Memoranda from general practice, and Reports from the Hospitals and Asylums in the United Kingdom, its Colonies and Dependencies.

Among the courses of Lectures which will be published in full or in abstract during the coming year are the **Milroy Lectures** by Dr. J. F. G. SYKES, the **Goulstonian Lectures** by Dr. H. HEAD, the **Lumleian Lectures** by Dr. J. F. PAYNE and the **Croonian Lectures** by Professor W. D. HALLIBURTON—all delivered at the Royal College of Physicians; the **Lettsomian Lectures** delivered by Dr. MITCHELL BRUCE before the Medical Society of London, the **Cavendish Lecture** delivered by Sir R. DOUGLAS POWELL, at the West London Medico-Chirurgical Society, together with some of the Lectures delivered at the Royal College of Surgeons.

Among the Clinical Lectures arrangements for which have already been made may be mentioned lectures by Sir WILLIAM BROADBENT, Sir R. DOUGLAS POWELL, Sir T. LAUDER BRUNTON, Professor MCCALL ANDERSON, Professor WATSON CHEYNE, Professor FINLAY, Mr. MAYO ROBSON, Professor R. STOCKMAN, Mr. F. T. PAUL, Dr. W. S. A. GRIFFITH, Dr. ALEXANDER BRUCE, Dr. HALE WHITE, Dr. G. T. BEATSON, Mr. HERBERT PAGE, and also a surgical lecture to be delivered before the Hunterian Society by Sir WILLIAM MITCHELL BANKS.

At an early date after the Annual Meeting of the British Medical Association the general Addresses, and full Reports of the proceedings of the Sections and of the Business of the General Meeting, will be published.

The proceedings of the Branches of the British Medical Association are regularly reported, as are also those of the principal Medical Societies of England and Wales, Scotland and Ireland.

The JOURNAL has special correspondents in the principal cities of the United Kingdom, India, the Colonies, the Continent of Europe, and the United States of America. In addition, news of medical interest is gathered from the medical papers of all countries. Every effort is made to secure the early publication of pass lists and other university and collegiate intelligence, and the prompt announcement of vacant appointments.

In the Editorial columns of the JOURNAL all matters affecting the interests of the Medical Profession, whether scientific, political, or social, are freely discussed and elucidated with the co-operation of a large staff of writers specially competent to deal with various topics.

Attention will as heretofore, be given to questions affecting the material interests of the profession, including the abuse of hospitals, the oppressive conditions of contract medical practice, the prevalence of unqualified practice and the means of checking it, and the improvement of the position of Poor-Law medical officers in the three parts of the United Kingdom. In the correspondence columns of the JOURNAL opportunity is afforded for the discussion of such questions and for concerting measures for their satisfactory settlement.

Special departments are devoted to the interests of the Medical Services of the Royal Navy, the Army, and of India, to those of the Public Health and Medical Poor-Law Services of the United Kingdom, and to the Colonies.

Medico-Legal Questions and other Queries arising out of scientific or professional difficulties in the daily life of medical practitioners are referred to competent and carefully selected authorities—legal, medical, and official—and answered with care in columns devoted to this purpose.

Special articles dealing with archæological, historical, and literary subjects connected with medicine will be published from time to time. Horace expressed a sound principle of intellectual hygiene when he said *Dulce est desipere in loco;* and it is hoped that the addition of such lighter ingredients may in some measure leaven the solid mass of serious reading.

CLINICAL LECTURES
ON THE
CAUSES AND CURE OF INSOMNIA.

Delivered at the Queen's Hospital, Birmingham.

By Sir JAMES SAWYER, M.D.Lond., F.R.C.P., F.R.S.Edin.,
Consulting Physician to the Hospital.

Lecture I.

The Appetite of Sleep.

Favoured by your kind attention, I purpose to offer you some considerations upon the vital function of sleep, and upon the conditions, causes, and cure of insomnia, based upon a somewhat long and successful experience of those subjects in practice as a physician. These subjects are certainly of first-rate importance in relation to our knowledge of the science and our practice of the art of medicine. Possibly you may scarcely be able to appreciate their relative importance while you are hospital students. Later in your careers, when you become engaged in actual practice among the sick, and especially when you take part in what is called private practice, often will you be confronted by the perplexities of insomnia, and often will your pleasant duty lie in successfully unravelling the causes of sleeplessness, on that soundest principle of causation and of therapeutics, *cessante causâ cessat et effectus*, and in curing insomnia by counteracting those causes, and in making their tiresome and diresome effects to cease. I hope to be able to show you that in such happy results the science and art of the physician may play a successful part. Like thirst and like hunger sleep is an appetite. We may define an appetite, in the words of the philosopher Bain, to be a craving produced by the recurring wants and necessities of our bodily or organic life.[1] An appetite, strictly so-called, has two characteristic marks, and these marks are strikingly characteristic of sleep; these marks are two conditions which are true to sleep—namely, its periodic recurrence and its organic necessity. We know that the natural course of a human life brings on sleep without the volition of the individual willing the event. The true character of sleep as a veritable appetite appears when it is resisted. Under such resistance the individual person experiences what is called, in metaphysical parlance, a "massive" form of uneasiness, discomfort, and pain. The will of the individual, in the presence of this uneasiness, is energetically urged to remove such discomfort and unrest, and is urged from pain towards pleasure, is urged to obtain the gratification of relief in what Bain called "the corresponding voluminous pleasure of falling asleep."[2] In this imperatively urgent volitional impulse is the appetite of sleep.

The Physiology of Sleep.

The intimate physiology of sleep is a difficult subject, and the difficulties of its explanations have been the topics of much controversy, and such controversy appears to have issued from various combinations of the teachings of observation, and of experiment and of analogical and other reasoning, upon the phenomena of sleep. I do not propose to follow at length the details of this part of our subject. As a clinical teacher I must not overload your memories, but rather must I try to make easy your mental digestion. For our practical purposes I think we may understand that two distinct but associated and related vital changes occur in sleep. The one is some intrinsic change in those ultimate tissue elements of the brain which are concerned in consciousness; the other and "coarser" change is a diminished supply of blood to the brain, and especially to the blood vessels of the cortex of that organ. The former change is at present undemonstrable excepting by inferential reasoning. Perhaps there is some essential and intrinsic change in the brain, and perhaps there is some such change in the spinal cord and ganglionic nervous system, of rhythmic occurrence, which is a condition of healthy sleep. Perhaps there is a functional depression of these parts in sleep, and especially of the cerebral cells, arising from "an accumulation in and around them," as Sir Thomas Lauder Brunton puts the matter as to the cerebral cells in sleep, of some of the products of normal tissue waste. Perhaps for normal sleep there must arise both these processes. I think it likely that there is in sleep a rhythmic change such as has been indicated, and that this change is sustained by the physiological effects of some of the issuants of those tissue changes, muscular and nervous, which especially occur in the active waking state of the body.

Perhaps for our sleep we must drown our cerebral cells in a kind of auto-intoxication with the ashes of our waking fires. We may usefully recall this view of the subject when we use exercise and fatigue as remedies for insomnia. The proof of the other broad change in sleep—namely, diminished blood supply to the brain, and especially to its cortex, rests on inference from physiological analogies, on various observations, and on the solid basis of direct experimental evidence. We must note, however, that the human brain, in its perceptive, cogitative, and volitional functions, in these great divisions of consciousness, is not the only part which sleeps. The whole living body sleeps. The changes which the event of sleep declares certainly extend beyond mere loss of consciousness; they extend to secretion, to the action of the heart and blood vessels in the general circulation of the blood, to respiration, to "reflexes," and so extend to all the tissue modifications, and to all the other vital activities upon which such manifold transitions depend. In order to complete your precognitions of the physiology of sleep, before we pass on to consider the several conditions of insomnia and their appropriate therapeutics, I may refer your attention to the admirable accounts of these subjects to be found in the textbooks of Dr. Augustus Waller[3] and of Sir Michael Foster.[4] On that part of his subject which is so important from a therapeutical standpoint—namely, the state of the cerebral circulation during sleep, Dr. Waller says:

> Although there is no doubt that in coma—a pathological state similar in some respects to physiological sleep—the cerebral vessels are congested, the observations of Durham on the exposed cerebrum of sleeping dogs, and of Jackson on the retinal vessels of sleeping infants, are to the effect that vessels shrink in sleep, and we may therefore feel reasonably assured that the sleeping brain, in common with other resting organs, receives less blood than in its state of activity. Moreover, Mosso's investigations on exposed human brains afford evidence that the organ becomes more vascular during mental activity.....

That sleep concerns the whole body, and not the brain alone, is well put by Sir Michael Foster. He says:

> Though the phenomena of sleep are largely confined to the central nervous system, and especially to the cerebral hemispheres, the whole body shares in the condition. The pulse and breathing are slower; the intestine, the bladder, and other internal muscular mechanisms are more or less at rest, and the secreting organs are less active, some apparently being wholly quiescent; the secretion of mucus attending a nasal catarrh is largely diminished during slumber, and the sleeper on waking rubs his eyes to bring back to his conjunctiva the needed moisture. The output of carbonic acid, and the intake of oxygen, especially the former, is lessened; the urine is less abundant, and the urea falls. Indeed, the whole metabolism and the dependent temperature of the body are lowered; but we cannot say at present how far these are the indirect results of the condition of the nervous system, or how far they indicate a partial slumbering of the several tissues.

You may find an interesting and instructive employment if you follow Sir Michael Foster through his discussion of the exact state of the body, and especially of the brain, in sleep. He points out, what is now generally accepted, that an alteration of the cerebral circulation is not the whole of sleep. He judges that "the essence of the condition is rather to be sought in purely molecular changes," and then he goes on to suggest a resemblance between the systole and diastole of the heart and the sleeping and waking of the brain; and then he dwells on the various periodicities which may be observed in the activities of the human body, and even suggests that the fundamental rhythm of the heart may be a reflection of the mysterious cycles of the universe, while it may yet be only the result of the inherent vibrations of the molecules of its own proper structure.

Etiology of Insomnia.

Let me now offer to you some practical observations, arising from my experience in practice as a physician, concerning the etiology and management of the malady insomnia. Absent or imperfect sleep, inability to sleep at all, or at a convenient time, or long enough, without the aid of drugs, is a frequent consequence or complication of numerous and varied conditions of disease.

"*Secondary*" *Insomnia.*

Pain, if severe enough, and from whatever cause arising; pyrexial elevation of temperature; frequent coughing, such

as often occurs in pulmonary consumption; dyspnœa, such, for instance, as results from obstructive dilatation of the cardiac cavities, and appears to require an extraordinary vigilance of the nervous centres for the maintenance of the vital processes of respiration and circulation—are clinical conditions of body which may prevent, shorten, or break-up sleep. Such conditions are frequently met with in medical practice, as single causes of insomnia, or as conjoint causes of it in various combinations. In such and in similar instances the cause of the sleeplessness is obvious, and the consequential character of the insomnia—that is, its dependence upon a distinct and sufficient cause—is clear. For the therapeutic control of this kind of insomnia we may employ with success one or two curative methods, or we may employ a judicious combination of these methods, such combination being founded upon a skilled appreciation of the especial needs of each individual case. We may control sleeplessness of the kind in question either by the exhibition of remedies which directly cause sleep, that is to say, by the administration of some of the drugs which we know as hypnotics or soporifics, or we may control it by the employment of measures which combat the cause of the insomnia, by removing pain, by reducing the heat of fever, by quelling cough, by relieving cardiac disturbance and dyspnœal discomfort, and so on; or by using in conjunction hypnotics and remedies addressed to the removal of the cause of the sleeplessness. It is not my present purpose to speak more fully of sleeplessness of this obviously secondary kind.

"Intrinsic" Insomnia.

There is a simple inability to sleep, which you will often be required to cure—a kind of insomnia which may be called for the sake of simplicity, but perhaps scarcely with strict truth, *insomnia per se*. This is a kind of wakefulness for which we cannot discover an objective or obvious physical cause; it is a kind of wakefulness which seems to depend upon an inability of the brain and nervous system generally to adapt themselves to the conditions which are necessary for sleep. We meet with this disorder more in private than in hospital practice. It occurs mostly in persons who are members of what are known as the upper and upper middle classes. It occurs mostly in persons of high mental endowment and of neurotic temperament. The malady is of extreme importance, and, happily, if its causes be understood and judiciously corrected and controlled, there are few affections which are more within the sphere of curative therapeutics. I think I can show you how to unravel the complex causes and discover the successful treatment of this kind of insomnia.

Classification of "Intrinsic" Insomnia.

The causes and the course of particular instances of insomnia present some striking differences. You must know these differences, and be ready to recognise them, for the knowledge of them clears up alike the therapeutics and the prognosis of individual cases of the malady. I have found it to be convenient in practice to arrange the different clinical varieties of insomnia into groups, in which the cause of the affection is the principle of division. These groups I call respectively the *psychic*, the *toxic*, and the *senile*. Let us see how these divisions work out in detail.

The brain in natural sleep is, as we have seen, relatively anæmic. The cerebral arteries are more filled with blood than during sleep, when the brain is in full waking and working activity. When thought is active the cells of the brain concerned are living relatively rapidly; they are actively receiving nourishment from the blood, and they are returning to the blood in exchange the waste products of their vitality. In sound natural sleep the brain is inactive—at least, all except those parts of it which are concerned in the processes of organic life. In sleep the blood flows to and through the brain in streams which are smaller and gentler than in the waking state. The cells concerned in thought, volition, and feeling are not expending energy, they are renewing it and storing it—they are resting. Any cause, however mysterious its operation, which directly prevents a repose duly deep of a sufficient number of those brain cells which are the organs of conscious thought, will render sleep impossible; relative cerebral hyperæmia is an inseparable consequence of such activity, and such relative cerebral hyperæmia becomes a concurrent but subordinate cause of insomnia. Here there is progression through a vicious circle of two terms, in which the impulse of the morbid movement springs from the cerebral cells. So we see that there are causes of insomnia which we may fairly regard as acting primarily in sustaining cerebral activity, and with it, and in consequence of it, relative cerebral hyperæmia, which hyperæmia becomes a contributory cause of the cells keeping awake.

In some other cases of insomnia I think we may regard the malady as arising primarily in a perversion of the cerebral blood supply. Any cause which prevents the brain from becoming sufficiently relatively anæmic for sleep will produce sleeplessness. Any ingested agent which sustains cerebral hyperæmia, or any pathological change which impairs sufficiently the contractility of the smaller cerebral arteries, may prevent wholly, or in part, the occurrence of such a degree and extent of cerebral anæmia as is required for the production of sleep, and without which sleep cannot be.

So there are causes of insomnia which act primarily in exciting and in sustaining a relative cerebral hyperæmia, and with it, and in consequence of it, a cerebral activity which is wakeful. Here there is again a progression through a vicious circle of two terms, but one in which the impulse of the morbid movement springs from the cerebral blood vessels. In conscious cerebral activity, which is a complex condition of at least dual causation, in which thought implies increased blood flow, and increased blood flow implies thought; perhaps it may be considered that we cannot, with strict accuracy, allow precedence to either of the causes which are essential to the common result. In medical reasoning there is little which is so difficult as tracing effects up to their causes, and there is little so easy as the invention of causes for effects. Let this caution make you wary. Take due pains in practice to analyse the causation of each particular case of insomnia. When you make such analysis you will find that in some cases of sleeplessness, as in the psychic group, undue and protracted cerebral activity is the primary vice, and that in others, as in the toxic and senile varieties, relative cerebral hyperæmia is the initial error, and wakeful cerebral action its direct consequence.

Psychic Insomnia.

In my experience the subjects of the psychic variety of insomnia are mostly men, and almost invariably men of the temperament which is known as the nervous temperament. I advise you to study temperaments. Their recognition is of much value in diagnosis, in prognosis, and in therapeutics. A temperament may be defined as "that individual peculiarity of physical organisation by which the manner of acting, feeling, and thinking of every person is permanently affected," and the nervous temperament is marked by great sensitiveness and activity of the nervous system.[5] In psychic insomnia a depressing emotional shock, as great grief at the death of a beloved friend, will sometimes produce the malady suddenly; so produced, the sleeplessness may become a persistent trouble, which yields only to judicious therapeutic procedures. In other cases, and more commonly, the insomnia has only arisen after prolonged mental strain, as that which a student may undergo in over-reading for an examination, as that of continued financial anxiety, or that of arduous and sustained literary composition. Where the shock has been sudden and severe, it would appear to have been sufficient to rouse a given group of cerebral cells into persistent activity. Where the strain has been less intense, but kept up long, a monotonous group of ideas has been maintained in exhausting recurrence. In either case it would appear that sleeplessness did not occur until there arose from exhaustion partial or complete vasomotor paralysis of the intracranial blood vessels; it arose when the arterioles of the brain had no longer that contractility without which sleep is impossible. In these forms of insomnia unnatural excitation of the cerebral cells is probably the initial fault. This point of view gives the best working hypothesis for our treatment.

Toxic Insomnia.

In the toxic variety of insomnia the cause of the sleeplessness acts primarily upon the blood vessels of the brain, giving rise to some degree of arterial hyperæmia. Cerebral vascularity, especially the arterial supply of the cortex of the brain, is maintained at such a height and so long by some

poisonous agent that conscious cerebral activity—that is, wakefulness—is an inevitable consequence. The poisons, with with we have here to do are not lethal poisons, but milder noxious agents which produce abnormal manifestations in the living body. Tobacco, alcohol, tea and coffee are the external poisons which most frequently cause sleeplessness, while the internal or autogenetic poisons are certain waste products of tissue metamorphosis which accumulate in the bodies of gouty persons or of those whose kidneys are inadequate.

Possibly some other forms of auto-intoxication may be found to cause insomnia. Perhaps insomnia may sometimes be a neurosis having its origin in toxic absorptions by the gastro-intestinal tract. Insomnia may come and go with constipation, and the explanation of this association may be a toxic one.

Tobacco.—With regard to the smoking of tobacco, many a man cannot sleep either sufficiently or soundly because he smokes excessively. Smokers often find by their own experience that they sleep badly if they smoke more than their usual quantity of tobacco, or if they smoke tobacco of a stronger kind than that to which they are accustomed. So a smoker who suffers from insomnia may find the cure of his sleeplessness in the restriction of his smoking. He need not give up, nor shorten, nor change his work, nor need he change his "surroundings"; if he restrict his smoking he soon sleeps well.

Similarly, it is true of snuff-taking in relation to insomnia. Men of nervous temperament, or men into whose temperament there enters a distinct and considerable blending of the nervous element often smoke tobacco or take snuff largely. The consumption of tobacco by smoking or snuff-taking stimulates the cerebral circulation. This stimulation, if pushed to undue limits, induces cerebral vasomotor debility or paralysis, with a consequent tendency to persistent conscious thought, and so to wakefulness.

Alcohol.—Similarly, too, alcohol causes insomnia. Short, by far, of what is usually called alcoholism, we often meet with cases of insomnia in which alcohol alone is the cause of shortened and disturbed sleep.

Tea and Coffee.—Again, the effects of the consumption of tea and coffee in causing sleeplessness are well known. This effect is so obvious that patients usually remedy it for themselves. As you well know, tea in the form of an infusion and coffee in the form of an infusion or of a decoction are generally used in civilised countries as the daily beverages of the people. Tea leaves contain an alkaloid which has been called theine, and coffee seeds contain an alkaloid which has been called caffeine, and theine and caffeine have been shown to be identical, and both these leaves and these seeds contain oily principles. With regard to tea, what may be called its physiological action appears to depend on the joint action of its theine and of the volatile oil which tea leaves contain. What is called green tea is produced by drying the fresh leaves on a heated iron plate until they become shrivelled; while black tea is manufactured by placing the leaves in heaps and allowing them so to lie while they undergo a kind of fermentation, after which they are dried. Green tea and black tea are powerful cerebral stimulants, exciting the mental faculties and the cerebral circulation, and tending to prevent sleep. Coffee, too, is a cerebral stimulant and antisoporific. It is sometimes used in medicine for these properties, to counteract the effects of opium and its derivatives and of other narcotic poisons. Some people are extremely susceptible to the sleep-preventing effects of tea and coffee; others, by use, do not feel such effects, even when considerable quantities of the beverages are consumed. In all cases of bad sleeping you should make sure that tea or coffee is not taken to excess or near bedtime.

Gout.—In gouty persons, quite apart from their gouty pains, there may be some insomnia, of a kind which is probably toxic in its causation. So, also, in a patient whose kidneys are failing, who has renal inadequacy. In such cases it would seem to appear that the accumulation in the blood, in consequence of deficient excretion of the products of tissue-metamorphosis causes a general restlessness which disposes to insomnia. Insomnia so caused is not severe and it is rarely complete. There is slumber rather than sleep. There is restlessness, perhaps some excessive irritability to certain external impressions, short and broken sleep, and what may be called superficial sleep, rather than prolonged wakefulness. In this connection I may remind you that you should observe the tension of your patient's pulse. A patient may complain that he sleeps very badly, that he lies in bed awake for some hours and has great difficulty in "getting off" to sleep, that he sleeps lightly, awakens often, and dreams much. You may find he has a pulse of increased and high tension, with accentuation of the aortic second sound, and with the cardiac first sound lengthened and muffled, perhaps reduplicated, at the apex of the heart. In a case of chronic kidney disease there may be also the physical signs which mark the characteristic cardiac hypertrophy which accompanies chronic contracting nephritis, and is an effect of it or a concurrent effect of a remoter pathological cause. Insomnia in such cases is likely to be due to the maintenance of a state of high tension in the cerebral arteries, the tension in them not falling sufficiently for prolonged, deep, and dreamless sleep. In practice you will find the causation of many of these cases of insomnia, and you will find sound therapeutic indications too, in the signs of the gouty diathesis or in the discovery of albuminuria. Here I must give you a caution, which you may usefully remember in practice, namely, never accept a patient's statement that he is gouty without the establishment by your own observation of facts sufficient for such a diagnosis. Insomnia which is purely nervous may be wrongly attributed to gout, and depletory measures may be adopted when corroborants are really indicated. The diagnosis of gout is a diagnosis for which patients often have a tender affection, and I am afraid it is a diagnosis which is often erroneously made, and wrongly handed on through a succession of credulous advisers. Do not fall into the frequent error of making a diagnosis of gout because a specimen of your patient's urine which is brought to you shows a deposit which to the naked eye is like unto grains of cayenne pepper, and which deposit is made up of aggregated crystals of uric acid. Such a sediment may be only an innocent result of an acid fermentation such as frequently arises in urine after its voidance.

Senile Insomnia.

As I have already told you, there is a senile form of insomnia. Remember that senility is a relative term. Some persons are senile early, others only later. With much truth it may be said that a person is not as old as his years, but as old as his arteries. You may perhaps have observed amongst your friends that an exaggerated appreciation of the merits and value of early rising often increases as age advances. The broken and short sleep of many old persons is mainly, if not entirely, the result of senile degeneration of the smaller cerebral arteries. Those vessels are less elastic and less contractile than in health, and their weakened walls often lead to their permanent dilatation; the smaller cerebral arteries are physically unable, by reason of a degenerative diminution of their resilience and of their contractility, to adapt themselves completely to that condition of relative arterial anæmia which is of the essence of healthy sleep. The tendency of this condition of the blood vessels of the brain to prevent, to lessen, or to interrupt sleep is probably to a great extent counteracted by the cardiac feebleness which so frequently, and which, within certain limits, it may be said fortunately, coexists with senile vascular changes. When arteries are brittle, cardiac failure, within certain limits, is a conservative lesion.

References.
1 *The Senses and the Intellect.* 2 *Mental and Moral Science.* 3 *An Introduction to Human Physiology*, 2nd edition, 1893. 4 *A Textbook of Physiology*, 5th edition, 1891. 5 New Sydenham Society's *Medical Lexicon*

The estate left by the late George Viner Ellis, F.R.C.S., of Severn Bank, Ministerworth, Gloucester, some time Professor of Anatomy in University College, London, is valued at £51,299 17s. 1d.

Presentation.—On November 9th Dr. W. J. E. Davies, who has been a member of the medical staff of the Chelsea Infirmary for nearly three years, was presented with some silver plate and articles for table use, as an expression of the esteem both of the staff and the patients, and as an evidence that he carries with him on entering into general practice the best wishes of all with whom he has been associated in the infirmary.

PRESIDENTIAL ADDRESS

ON

THE RELATION OF VETERINARY SCIENCE TO HUMAN MEDICINE.

Delivered before the Section of Medicine of the Royal Academy of Medicine in Ireland.

By Sir CHRISTOPHER J. NIXON, M.D., LL.D.,

President of the Section; President of the Royal College of Physicians of Ireland; Senior Physician to the Mater Misericordiæ Hospital; First President of the Royal Veterinary College of Ireland.

In considering the question of delivering a formal address upon the opening of the session, I had decided upon not exercising the privilege which my position as President of the Section of Medicine confers on me. The time at my disposal was too short, and the pressure of other work did not permit of my dealing with any subject in a way worthy of its being presented before this distinguished Society. On reflection, however, I thought I might utilise the occasion to refer to a matter which, though it has more or less a personal bearing, still, in my judgment, is worth more than a passing note in connection with the future of medicine in Ireland. As most of those present know, I occupy the position of President of the Royal Veterinary College of Ireland, and it has, I understand, been more than once made the subject of inquiry, as to what connection a physician—what connection the President of the Royal College of Physicians in which we meet—can have with a school of veterinary medicine. I purpose in the few remarks which I shall make to answer this question.

The Foundation of the Royal Veterinary College of Ireland.

The Presidency of the Veterinary College fell to my lot rather by accident. The late Rev. Dr. Haughton, one of the most distinguished amongst the distinguished men who were Fellows of the Royal College of Physicians of Ireland, was one of those who, with Professor Cunningham, Professor Fitzgerald, the late Right Hon. Christopher Redington, Professor Carroll, and myself, took the keenest interest in the establishment of the Veterinary College in Dublin; and when the charter of incorporation was granted, it was the desire of most of us that Haughton, *clarum et venerabile nomen*, should be its first president. He, however, wished otherwise, and suggested that I should fill the post, and so the position devolved upon me. I do not desire to enter here upon a discussion of the advantages, enormous and far-reaching as they are, which a school of veterinary medicine is certain to bring to the agricultural industry of the country, nor to dwell upon its usefulness in reference to the veterinary profession. I may merely observe, what I am sure is the feeling of most of us, that it was singularly anomalous that until the present year Irish veterinary students were obliged to seek training in England and Scotland.

These are all matters more or less foreign to the aim and object of the Section of Medicine of the Royal Academy of Medicine, but what may legitimately claim its attention is the consideration of the question as to what influence a school of veterinary medicine is likely to exercise upon human medicine, and in what way that influence may be utilised for the benefit of the Dublin Medical School.

The French School of Veterinary Medicine.

Whilst a very close connection existed from the earliest times between animal and human medicine—a connection as old as the time of Hippocrates, who made several investigations in subjects of comparative pathology, and Galen, who drew largely for his facts and comments from works published on veterinary medicine—the starting-point of veterinary medicine as a science may be said to date from the establishment by Bourgelat, at Alfort, in 1766, of a school which has become the nursery of veterinary science, and one from which most similar institutions obtained their teachers.

Shortly afterwards the celebrated Vicq. d'Azyr, one of the Professors of the Alfort School, realising the advantages to be gained from the association of the two branches of medicine, wrote a pamphlet styled *Nouveau Plan de la Constitution de la Médecine en France*, published in 1790. His idea was that veterinary teaching should be made preliminary to teaching in human medicine, and should form the principle of instruction in human medicine, and to this course he proposed to give the name of Le Premier Degré. He urged that a veterinary school should be annexed to every medical college established in France. This suggestion received at the time such a degree of attention that Talleyrand urged its adoption in the Rapport sur l'Instruction Publique, read before the National Assembly in 1790, and a proposal was made that veterinary teaching should form part of the National Institution at Paris. The idea was that as the suffering animal always appears as it is, without the disturbing influence of mind, the symptoms being the rigorous expression of diseased conditions, it would be of great advantage to medical students to be initiated in the study of disease generally by observing diseases of animals. It was a question of the advantages of testing rigidly the powers of observation, of noting strictly objective phenomena, conditions as regards animals offering the same difficulties in diagnosis as does the ailing infant or the comatose adult.

Establishment of a Veterinary College in London.

At the time that these proposals were being considered in France, St. Bell, a pupil of the Alfort School, may be said to have founded the Veterinary College of London. Upon the death of St. Bell in 1793 great difficulty was found in supplying his place, but on the recommendation of John Hunter and Cline two medical men were appointed—Coleman, who taught anatomy and physiology, and Morecraft, who, after some training in the French school, taught the practical details of the veterinary art; and it is a curious historical fact that Coleman, who was a fellow student of Sir Astley Cooper, performed many experiments upon animals in the College under the direction of Cline. Coleman, by his great energy and by his scientific researches, raised the College to a high standard of usefulness, and its students became qualified to hold commissions in the army after passing an examination conducted by eminent members of the medical profession.

Passing now from what may be regarded as an aspect to some extent academic in its nature, let us for a moment consider what have been the results attained from observing processes of diseases occurring in animals. The mere mention of the diseases that are communicated from animals to man would alone establish a close connection between animal and human medicine—anthrax and its varieties malignant pustule and malignant œdema, tuberculosis, glanders and farcy, rabies, cowpox, foot and mouth disease, rinderpest, trembles, or milk fever; bubonic plague; various forms of tineæ; various species of worms, mange, scabies, actinomycosis, and diphtheria.

Application of Animal to Human Pathology.

The wideness of range of these different affections, as well as the importance of their recognition in man and their treatment, led the General Medical Council to formulate a recommendation to the various licensing bodies that candidates far a dipoma in Public Health should produce evidence of having attended an institution where instruction was given on diseases of animals transmissible to man. But the diseases which I have mentioned represent but a fraction of the knowledge gained by the study of conditions of life and diseases in animals. Am I overstating the case when I say that most of what we know of the problems in physiology and in pathology is derived from experiments carefully conducted upon animals. The functions of the brain and spinal cord, the relations of the nervous system to the action of the heart and conditions of blood pressure, the various problems in connection with digestion, and in reference to the various secretions, all have been determined by the results of such experiments, whilst to the same source we owe most of our knowledge of such diseases as tuberculosis, rabies, cholera, tetanus, septicæmia, Jacksonian epilepsy, myxœdema, etc. No investigation could be carried out in a more genuine spirit of scientific accuracy than the experiments of Horsley in producing myxœdema in the monkey, resulting in the effective method of treatment of the affection suggested by Dr.

Murray. But it is especially in reference to bacteriology that I would point to the link between animal and human medicine. The discoveries of a chemist, a physicist, and a physician—Pasteur, Tyndall, and Koch—may well be said to have created an epoch in medicine, and their labours have placed bacteriology upon such a solid basis that for the first time laws of public health and preventive medicine can be formulated with absolute scientific accuracy. Since Davaine, 35 years ago, showed that anthrax was due to the presence of certain rod-like bacilli in the blood, the advance made in this branch of human science may be regarded as monumental. And we must not forget that the results were obtained from carefully observed conditions of disease in animals. The discoveries of Koch culminated in the discovery of the bacillus of tubercle, and the introduction of tuberculin as an infallible test for the existence of tuberculosis in cattle. Diphtheria is no longer the dread scourge it was since the discovery of its special micro-organism by Klebs and Loeffler; whilst Roux in France and Behring in Germany have utilised the discovery by introducing the antitoxin which has been so valuable in the treatment of the disease.

The micro-organisms of pneumonia, of tetanus, erysipelas, septicæmia, and bubonic plague have been demonstrated, and methods of treatment, based upon the action of their several antitoxins, are now being employed. We know what causes typhoid fever, and though we seem to have been powerless in arresting its progress in South Africa, can anyone doubt but that in time, taking precautions to have a supply of pure drinking water, and methods employed for its routine bacteriological analysis, typhoid will cause as little dread, and be as little likely to cause panic or loss of life as the plague under the conditions of modern civilised life? The great plague of London, so graphically described by De Foe, killed 68,526 persons. Since the discovery of its special bacillus by Kitasato, and the knowledge we have gained of its mode of transmission and propagation, we may feel certain that the hygienic methods at our disposal will either avert its introduction or strictly limit its spread. In a way as interesting almost as a fairy tale is the account given by Koch in his *Reise-Berichte* of his travels in South Africa for the purpose of studying various diseases of men and animals, a summary of which is published in the *Journal of State Medicine* by Professor McWeeney. Koch's investigations in South Africa embraced the study of rinderpest, endemic plague, tropical malaria, Texas fever, and the tsetse fly disease. Not being able to discover the bacillus of rinderpest he adopted the method followed by Pasteur in the case of rabies of trying to find a remedy, with the result that Turner and Kolle, to whom he handed over his work, found that the antimicrobic power of the serum used was most effectual in stamping out the disease. The researches made on tropical malaria correspond closely with those of Manson, Ross, and Annett, whilst Texas fever was shown to be produced by the parasite passing from the mother tick into her ova, with the result that the young ticks springing from these ova convey the infection.

In veterinary schools upon the Continent distinguished workers in the field of bacteriological science have kept pace with what was being done by those who were making investigations into diseases of both animals and man. Bouley, a veterinarian who eventually became President of the French Academy; Colin and Flourent, distinguished physiologists; Arloing, Nocard, who worked with Pasteur, and Leclainche, bacteriologists—are all men who have attained the highest scientific position in France. Whilst in Germany, Schutz has been a collaborateur with Loeffler, and Munk, the distinguished physiologist, is a professor of the Berlin Veterinary School. Johne, the veterinary professor of Dresden, may be said to have supplied us with most of our knowledge of actinomycosis, whilst another veterinarian, Thomassen, of Utrecht, suggested the use of a specific in the treatment of the disease, namely, potassium iodide. Perroncito, in Italy; Hess and Guillebeau, in Switzerland; Semmer, in St. Petersburg; Vennerholm, in Sweden; Degine, in Brussels are veterinary professors who have all distinguished themselves by their researches in disease of animals communicable to man. Bang, in Copenhagen, has the great distinction of having almost completely eradicated tuberculosis from the whole of Denmark.

The Jenner Institute of Preventive Medicine.

The progress made in the subject of bacteriological science and the discoveries that followed the observation of diseased processes in animals at last stimulated the profession in England into taking some action, with the result that the British Institute of Preventive Medicine was established in London upon the same lines as the Pasteur Institute in Paris, and that built by the German Government for Professor Koch.

A sum of £56,000 was at once raised by public subscription, and a place was thus provided where researches could be made in connection with infectious diseases occurring in man and animals and the methods of their prevention, whilst facilities were afforded for providing the material for inoculation against such diseases as tuberculosis, rabies, anthrax, tetanus, cholera, quarter evil, etc., so that those interested in this special line of study would no longer have to go to Berlin, Munich, Breslau, or the Pasteur Institute in Paris.

It is in reference to this institution that an event of far-reaching importance helped to put it in the foremost rank as an institute of practical usefulness and research. An Irish nobleman, Lord Iveagh, suddenly announced that he proposed devoting £250,000 in furtherance of the objects for which the Institute of Preventive Medicine was founded. It is sufficient to say in reference to this princely gift that the noble donor will have, I believe, a more than adequate reward in the relief which he brings to suffering humanity. As an Irishman I cannot avoid feeling a more than passing regret that we had not some similar institution in Dublin to that of the British Institute of Preventive Medicine which would have been in a position to claim a share of this generous donation. I need scarcely remind my auditors that the British Institute of Preventive Medicine has now become the Jenner Institute of Preventive Medicine, the national home for bacteriological work and research. The prospectus of the Institute defines its object: "To establish an institution for the study and investigation of the best means for preventing and curing infective diseases of men and animals, and to provide a place where research can be carried on for that purpose; to provide instruction and education in preventive medicine for medical officers of health, medical practitioners, veterinary surgeons, and advanced students; to prepare and supply to those requiring them such curative materials as have been already found, or shall in future be found, of value in the protection of infectious diseases. The work of the institution is divided into three departments:

1. *Bacteriological Department.*—The work includes the following:
   (1) Bacteriology in relation to medicine and pathology.
   (2) Bacteriology in relation to hygiene.
   (3) Bacteriological chemistry.
   (4) Photomicrography.
   (5) Original research work.

(2) *Hygienic Department.*—Where a complete course is given to include all the instruction necessary for the diploma in Public Health.

(3) *Hansen Laboratory.*—This is devoted to instruction and investigation in technical bacteriology for the benefit of agriculturists, chemists brewers, etc.

Need for a Jenner Institute in Ireland.

Where, may I ask, could we find a more appropriate place upon which to graft an institute similar to that of the Jenner Institute of London than upon the Royal Veterinary College of Ireland. Few will be disposed to deny the assertion that it is to bacteriology we must look in the future for progress, not alone of preventive but also of curative medicine, especially as regards the rational treatment of infective diseases.

To me, speaking from an experience of a quarter of a century as a hospital physician, nothing is more unsatisfactory than our method of modern therapeutics—system it can hardly be called. One might be tempted to say that a belief in the efficacy of the drugs prescribed in the ordinary routine of practice was in direct ratio to the prescriber's mental weakness, and that a little leaven of healthy scepticism would help both the physician and his patient. Might we not apply to the modern therapeutist Cato's description of Portius:

> Thy steady temper, Portius,
> Can look on guilt, rebellion, fraud and Cæsar
> In the calm lights of mild philosophy.

Take the list, supplied by a fashionable chemist, of the animal substances mainly available for the purpose of making an income for the manufacturer. Tabloids of cerebrine, spinal cord, pineal gland, pituitary gland, thyroid gland, uterine substance, ovarian substance, salivary gland, spleen substance, suprarenal substance, didymin, prostate gland substance, etc.

It is said that the use of the organs and parts of the body dates back to the earliest ages of medical practice; but we now seem to be pushing the doctrine of *similia similibus curantur* with a vengeance.

By an extension of the principle you might hope to tame a shrew by injecting her with the serum of a carefully-selected Mark Tapley, or cure a dipsomaniac by using that of an individual who demands that Parliament should prevent the manufacture of all forms of alcoholic drink. What we sadly want in Dublin is some strong stimulus for the development of scientic teaching and research work. Clinical medicine continues to hold the high position which it has always held, and the traditions inseparately bound up with the names of Graves, Stokes, Corrigan, and Robert Smith are fully maintained by the clinical teachers of the present day. Owing to many circumstances, the consideration of which it is unnecessary to enter upon here, we cannot claim that in scientific medicine we have reached the level of the German or French schools, and we have had to regard ourselves in physiology, pathology, and chemistry as largely their debtors, not alone in research work, but in the ordinary material for teaching. This is to some extent a humiliating admission, but it is one that is perfectly intelligible when one considers the apathy and indifference of the State to scientific progress here and in the sister country.

It seems to me that we are entering upon a new era, and that the establishment of a veterinary college in Dublin, supported by State funds, will supply the stimulus which is so desirable and so opportune. It will shortly, I believe, commence, under the direction of the Department of Agriculture and Technical Education in Ireland, research work in connection with rabies and the development of bovine tuberculosis.

If, as I hope and believe, we shall have established in connection with the Veterinary College a Jenner Institute for Dublin, may we not look forward to a great and flourishing centre of human and veterinary science which will redound to the credit of our country? In any movement which may be inaugurated to bring about this most desirable result, I sincerely trust the Royal Academy of Medicine will take an active, sympathetic, and a patriotic part.

ON THE OPERATIONS FOR CONGENITALLY MISPLACED AND UNDESCENDED TESTICLE,

WITH NOTES OF CASES OF CONGENITAL DEFICIENCY OF THE TESTICLE.*

By THOMAS ANNANDALE, F.R.C.S.,
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Misplaced Testicle.

The condition of congenitally misplaced testicle, the result of some abnormal or faulty arrangement of one or more of the attachments of the gubernaculum, is not common. The situations in which such a misplaced testicle have been met with are; on one side of the perineum (most common), and in the region of the saphenous opening in the upper part of the thigh. A third and rare variety has also been described in which the testicle lay in front of the pubes at the root of the penis. When the testicle lies in one of these abnormal situations its presence may give rise to inconvenience, and should it be attacked with inflammation or other diseased conditions, or be complicated with a hernia, still more trouble may be caused.

In connection with operative interference one other fact is of great importance, that when a testicle remains out of its natural position in the scrotum it degenerates, and its structure alters, so that its functions as a secreter of spermatic fluid are in time quite destroyed. This remark applies not only to the condition of misplaced testicle, but also to that in which a testicle is retained in the inguinal canal or abdomen. The very interesting experiments of Mr. Joseph Griffiths,[1] of Cambridge, on dogs, strongly confirms this fact, for he found that when he returned their testicles into the abdominal cavity they quickly degenerated, and soon no trace of the formation or presence of spermatozoa could be found when the animals had been killed.

I have met with two examples of misplaced testicle, both of which were perineal. The first case was one of a child, aged 3 years, which I recorded and figured in the British Medical Journal for January 4th, 1879, and was, I believe, the first case in which such a testicle had been successfully replaced and permanently retained in the scrotum. The late Mr. Curling, the author of the important work on *Diseases of the Testicle*, had previously operated on a similar case, but the organ slipped back into its abnormal position, and the operation therefore was not successful. As the successful result in my case depended upon certain details being carried out in the procedure, details which ever since I have successfully employed in operating also on undescended testicle, I desire to direct attention to them. They are as follows:

1. An incision is made so as to expose the spermatic cord and its junction with the testicle.
2. The cord and testicle are then drawn out and all attachments fixing the latter in its abnormal position are carefully divided.
3. The corresponding side of the scrotum is opened up with the finger and the testicle placed in it.
4. Two catgut or silk stitches are passed through those portions of the gubernaculum still attached to the testicle where they had been divided, and these same stitches are also passed through the base of the scrotum so as to fix the testicle in its proper position.
5. The opening through which the testicle had passed into the perineum is carefully stitched up by means of subcutaneous catgut sutures.

In this way the testicle is permanently fixed in the scrotum, and I had an opportunity of examining the patient several years after the operation, and found that the testicle had remained in its proper position. In this case the cord was long enough to permit the testicle to be placed in the scrotum, but if in operating in any case of this abnormality, or in the case of an undescended testicle, the cord be found too short, it may be considerably lengthened by a little traction and careful division of cremaster fibres and fascia surrounding the cord, care being taken not to injure the vas deferens or principal blood vessels.

The second case was similar to the first, but in a patient aged 18. He was not under my care.

The operation for replacing a misplaced testicle is therefore in my opinion to be urged and carried out in early childhood for a successful procedure such as has been described certainly gives the testicle a chance of developing properly.

Undescended Testicle.

When a testicle shows itself outside the abdominal cavity, not having passed properly down into the scrotum, it also is an inconvenience, and may give rise to much trouble should the organ be injured or become diseased. The complication of hernia in such cases is another cause of trouble, and may be attended with risks. When the condition is met with in childhood, an attempt to bring down the organ by operation should, I think, be made, as the testicle will not develop properly unless it is placed and retained in the scrotum. It is true that such undescended testicles are usually small, and more or less atrophied, but I say give them their only chance of developing by putting them in their proper place. Should one testicle be properly developed and situated in the scrotum, the operation upon an undescended neighbour need not be so strongly advocated; but when both testicles have not thoroughly descended, or when one is retained in the abdomen and the other has not reached the scrotum, by all means operate at an early period of life.

The complication of hernia with undescended testicle also usually calls for operation, as it is difficult to apply a truss, and such application may still further interfere with the

* Read before the Edinburgh Medico-Chirurgical Society.

natural descent of the testicle. In the case of an adult I always excise the undescended testicle when operating on the hernia, for the former is of no use as a testicle, and its removal allows the external ring and inguinal canal to be more thoroughly closed by a "radical" operation on the hernia. In young people I endeavour if possible to bring down the testicle and fix it in the scrotum, and at the same time perform a "radical" operation on the hernia, but if one good and properly-placed testicle were present, I should not be so anxious to preserve the undescended organ.

In operating on cases of undescended testicle I have for many years carried out the details already described, and in my last four cases I have added another detail, and this is to pass the stitches not only through the remains of the gubernaculum and scrotum, but also through the skin on the inner side of the thigh, so as to have a steady traction on the testicle and corresponding side of the scrotum. In one of these cases the patient was a fine lad of 15, whose right testicle was retained in the abdomen, and the left one lay in the inguinal canal close to the external ring. The operation carried out in this case, and in the other two, was most successful, and the first patient is now at a public school playing football and other games.

Cases of Congenitally Deficient Testicle.

Congenital deficiency of the testicle is a comparatively rare condition, and I am glad, therefore, to be able to offer brief notes of two cases recently under my care, more particularly as I have by operation obtained the preparations from them, and so have verified their exact condition.

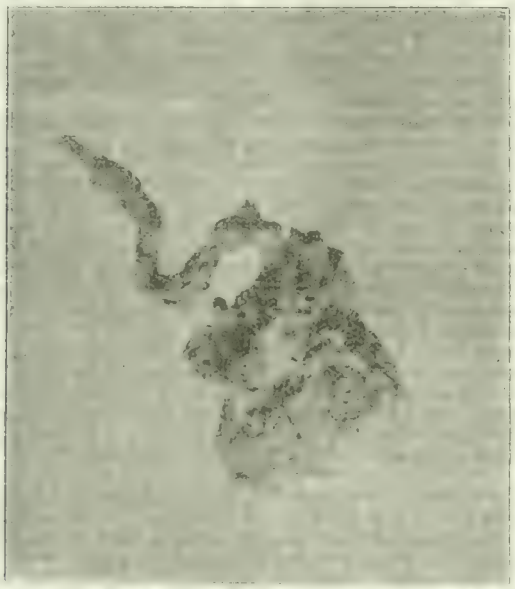


Fig. 1 illustrates the condition in Case 1, with a portion of the tunica vaginalis still attached to the convolutions of the vas deferens.

Case I.—M. J., aged 18, was brought to me by his father in order to have my opinion as to some abnormal condition of his left testicle. This condition had existed since birth, and was giving rise to some uneasiness. There was no history of any accident or other trouble, and the patient was a strong and well-developed young gentleman. On examination the left side of the scrotum was seen to be small; at its upper part there could be felt a body much smaller than a natural testicle, soft to the touch, and having an absence of the ordinary testicle sensation when pressed. The corresponding cord felt natural, and the right testicle was placed properly in the scrotum and was well developed. It was decided to explore the body in the scrotum, which felt somewhat like an atrophied testicle which had not passed sufficiently down. An incision exposing the cord and upper part of the scrotum having been made, the following condition was found. The cord was natural in structure, passed out through the external ring, and ended in the body already referred to, which on examination was not a testicle. The cord was then divided just outside the external ring, its vessels secured, and it, together with the body (the latter of which was firmly attached to the scrotum), was removed. The margins of the external ring were then brought together by two or three catgut sutures. The wound healed rapidly, and this month I had an opportunity of examining the patient, and found the parts operated upon quite sound.

Case II.—J. M., aged 26, admitted into my wards on October 19th of this year, for a condition almost identical with the first case. He was a strong, well-developed young man, and had no history of any accident or trouble, but stated that the left side of the scrotum, and its contents had been present from birth. The right testicle was sound, and in proper position. As in the former case the left side of the scrotum was contracted and small, and contained at its upper part a body somewhat more elongated, but much less in size than an ordinary testicle, and having no proper testicular sensibility. The cord felt natural, and passed out through the external ring, ending in the elongated body, which was fixed to the scrotum. As the condition was causing anxiety to the patient I explored the cord and body, and finding no



Fig. 2 is taken from Case 2, the tunica vaginalis having been dissected off.

testicle I excised both, as in the first case. The wound healed quickly, and the patient was going about again on the 8th of this month quite well and with his mind relieved. As the parts removed by operation in both these cases were similar one description of their exact condition will suffice. For this description I am indebted to Dr. Dowden, who was good enough to dissect them for me. The vas deferens was well developed, and could be traced down to the lower part of the body situated in the scrotum. When approaching the body it assumed a series of tortuous curves which terminated in a closed end. There was no trace of any testicle or testicle substance. Around the body, and closely adherent to it, and to the different convolutions of the vas, was a dense firm membrane, the inner surface of which was vascular. The body in the scrotum then in both cases consisted of convolutions of the vas deferens bound together with the same fibrous bands, and surrounded by a dense membrane which in all probability represented the tunica vaginalis, which was quite shut off from the general peritoneal cavity.



Fig. 3 is taken from a photograph of Case 3 before operation.

Both these cases must, I think, be considered examples of the rare congenital condition of "absence of the testicle only," this condition being explained by the fact that the testicle and epididymis are independently developed.

Mr. Jacobson, in his valuable work on *Diseases of the Male Organs of Generation*, states that only four or five of such cases have been recorded. Godard, in his *Recherches sur la Substitution Graisseuse du Rein*, records and figures a case not unlike mine, but in his case an open process or sac of peritoneum passed down along the vas deferens. Mr. Jacobson, in his

work already referred to, mentions that the following different deficiencies have been met with :

1. Absence of the testicle only (left one most frequently absent), and this may be unilateral or bilateral.
2. Absence of the testicle, epididymis, and more or less of the vas deferens (most common).
3. Absence of the whole apparatus.
4. Absence of all or part of the excretory apparatus, the testicle being present.

When such deficiencies are unilateral, and the other testicle and its apparatus are natural, the sexual functions and the bodily and mental power are not necessarily interfered with, as exemplified in my two cases, but if bilateral the patients are sterile, and in addition the other genital organs are usually so feebly developed that they are also impotent.

ANOTHER CASE OF CONGENITALLY MISPLACED TESTICLE.

Since reading this paper before the Society I have operated upon another interesting case of congenitally misplaced testicle.

CASE III.—The patient was a well-developed boy, aged 16, who applied to me in connection with trouble in his right testicle. On examination the right side of the scrotum was small and much contracted; it contained no testicle or cord, and was quite empty and closed. A small testicle was present at the side of the upper part of the perineum and its cord could also be felt passing out through the external ring. At times the testicle and cord disappeared and passed up into the inguinal canal, just below the internal ring. The left testicle was normal and in its proper position. As the right testicle, meanwhile, was giving rise to inconvenience, the boy's father asked me to operate. An incision was therefore made from a point opposite the external ring down to the upper part of the scrotum. At this time the cord and testicle were drawn up into the inguinal canal and so were not exposed by the incision. After a little dissection a sac, much resembling the sac of a hernia, was disclosed, and was carefully separated from surrounding tissues. This sac was opened, and was found to be the tunica vaginalis, which was patent for some distance up the inguinal canal but did not communicate with the general peritoneal cavity. Below the tunica vaginalis ended at the upper part of the scrotum, where it was firmly attached but quite closed. Coming off from this portion of the sac was a diverticulum, which admitted the finger readily and passed down towards the perineum for an inch and a-half. It was into this diverticulum that the cord and testicle passed when they descended from the inguinal canal. Having introduced a finger into the inguinal canal and made some traction upon the upper part of the tunica vaginalis, the testicle was easily drawn down, and, its attachments being carefully divided, it was placed in the scrotum and secured there in the method already described. The greater part of the tunica vaginalis and its diverticulum were then excised, a ligature having first been applied above the point of their excision.

The testicle in this case was small but apparently fairly well developed, but the epididymis was not properly developed, the vas deferens ending in a few convolutions at the point of its junction with the testicle.

In this case I passed the stitch securing the testicle to the bottom of the scrotum, through the skin on the inside of the opposite thigh, as I found that this gave traction more directly in the natural line of the cord than when the traction was made from the same side.

In conclusion, operative interference cannot, of course, be of service in such cases of deficiency, but it may, I think, be justifiable in order to remove a condition giving rise to local or mental irritation. If complicated with hernia, an operation may be necessary in order to relieve the hernia.

REFERENCE.

1 *Journal of Anatomy and Physiology*, vol. xxvii.

FUNDAMENTAL POINTS CONNECTED WITH THE PATHOLOGY OF DIABETES MELLITUS.*

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THE primary point to be dealt with in connection with diabetes mellitus is that carbohydrate, in the form of sugar, is eliminated with the urine in a manner that does not occur in health. From this it follows that in diabetes an inaptitude exists within the system for the proper application of carbohydrate matter to the purposes of life. Thus, briefly stated, diabetes consists fundamentally in a mal-application of carbohydrate through an error existing somewhere or other within the system.

The amount of carbohydrate reaching the system from the food is exceedingly variable, but under natural circumstances no matter what amount, within ordinary limits, is ingested, it does not afterwards become visible to us. All that is observable is that it disappears from view, and that the system derives benefit from it. Exactly the reverse is met with in diabetes. Instead of disappearing from view, the carbohydrate reaching the system from the food is afterwards discoverable in the urine as sugar. Proportionately to the amount of carbohydrate ingested is sugar discoverable in the urine.

Penetrating further, the blood of the general circulation is found to stand in a similar position to the urine. Normally, there is in the urine a certain small proportion of sugar which is not to any sensible extent influenced by the character of the food. Normally, also, in the blood, there is a certain standard amount of sugar present irrespective of the nature of the food. There is no difficulty in definitely expressing its quantity, which may be said to stand at somewhere about 1 per 1,000. It seems to be a standard component of the blood just as we find sugar entering as a constituent into the various tissues of the body; and, moreover, it is susceptible of being shown[1] that, as in the tissues, the sugar is not solely dextrose, but dextrose associated with other cupric-oxide reducing carbohydrate so as to give rise to a product possessing a cupric-oxide reducing power considerably below that of dextrose. Such is a representation of the normal state, and the small amount of sugar present in the urine corresponds, it may be considered, with that existing in the blood.[2]

Concurrently with the outflow of sugar in diabetes there is an increased amount recognisable in the blood. The sugar eliminated has pre-existed in the blood, and the fault lies in its having been there. Carbohydrate food now leads to the undue presence of sugar in the contents of the circulation, and it is by virtue of this that it appears in the urine. The sugar escaping may be taken as an index of the sugar that has wrongly been present in the blood.

The point is thus reached that diabetes is fundamentally connected with the wrong presence of sugar in the blood, and the question that next presents itself is, To what cause is the wrong presence attributable? Can it be that the carbohydrate of our food naturally reaches the general circulation as sugar, and through failing to disappear accumulates and thence passes into the urine, or is it that the carbohydrate ought not in reality to reach the general circulation, and by wrongly doing so renders itself evident in the manner that is observed?

The amount of sugar that escapes in diabetes gives a measure of the amount of sugar that would reach the circulation from the food and have here to disappear if this constituted the natural course of events. Everything conspires to show that it is quite impossible that such an amount of sugar could enter the circulation and not be revealed in an unmistakeable manner by the urine. Indeed, in proportion as sugar in any way reaches the circulation so is an effect produced upon the urine.

For sugar to reach the circulation and not influence the urine there ought to be the capacity in the blood of immediately effecting its disappearance, inasmuch as a part of the blood goes direct to the kidney where elimination would occur of a portion of the sugar. No such capacity, however, has been shown to exist, and this affords an insuperable objection to the destiny of carbohydrate matter being its transit as sugar through the general circulation. Reliance has been placed upon old experiments which represent a marked loss of sugar during the passage of the blood through the capillaries from the arteries to the veins. I confidently assert that the results given will not stand the test of examination. The figures are altogether discordant with those definitely known to belong to the normal state. As I have pointed out in my *Physiology of the Carbohydrates* published in 1894, the experimental procedure is exceedingly open to fallacy in various directions. In my own experiments, where the utmost precaution was taken to escape from fallacy, no practical difference was discoverable in the amount of sugar in arterial and venous blood and my results have been confirmed by many authors. Bing has recently published[3] experiments dealing exhaustively with the whole question of the presence of sugar in blood and concludes from his observations that if any difference exists in the amount of sugar present in the various parts of the circulation it must be so small as to lie within the limits of error of observation as he is unable to find any.

* Read at the thirteenth International Medical Congress held in Paris.

By approaching the subject in another way it is susceptible of being made to show that sugar does not disappear on undergoing transit through the circulation in the manner that has been represented. It can be experimentally introduced into the circulation by intravenous injection, and although only an exceedingly small quantity may be employed, the results show that considerable time is taken for its removal to be effected, and, further, that its presence in the blood is revealed by the urine. In a series of experiments, recorded in the *Journal of Physiology* for 1899, I introduced definite quantities of various kinds of sugar into a superficial vein of a rabbit's ear, and noted the condition of the blood and the urine at different times after. The operation is performed like an ordinary subcutaneous injection, and no disturbing effect is produced upon the animal. After a specified time the animal was killed and its blood collected in a manner to obtain it free from the influence of *post-mortem* change. After the injection of 0.25 gram of dextrose per kilo body weight—that is, only one four-thousandth of the weight of the animal—the blood at the end of a quarter of an hour showed that only a trifling disappearance of the injected sugar had occurred during this time. In experiments where, with the same quantity of sugar injected, an hour was allowed to elapse, the urine secreted during that period gave distinct evidence of the passage of sugar into it, from which the inference is to be drawn that whatever sugar reaches the circulation manifests itself by the production of an effect upon the urine.

Insuperable difficulties attend the view that the carbohydrate matter of our food passes in the form of sugar through the circulation to the tissues for destruction. The facts of modern science give it no support—indeed, they stand opposed to it. The transit could not occur without being brought to our knowledge by the state of the urine, and no possibility of disappearance exists of a nature to satisfy the requirements of the case. It may be truly considered that if such a transit took place we should all be glycosuric in proportion to the amount of carbohydrate ingested. The sugar assumed to pass to the tissues for destruction would also pass to the kidney for elimination. It is the same stream of blood that would administer to both purposes, and for there to be no glycosuria we are forced into the position that destruction can proceed while elimination remains in abeyance. To provide for freedom from glycosuria the carbohydrate of our food must be prevented reaching the general circulation as sugar; and this point brings us to the consideration of the broad question of the mode of utilisation of carbohydrate in the animal economy.

The problem now before us is: In what way does the carbohydrate matter of our food become disposed of so as to be prevented reaching the general circulation as sugar? Any solution that is offered of this problem to be satisfactory must locate the disposal somewhere between the seat of absorption and the point where the general circulation is reached; that is somewhere before the hepatic veins are arrived at.

If we look broadly at carbohydrate matter in relation to the operations of life, we find that by one kind of influence small molecular-sized carbohydrates become built up with concurrent dehydration into large-sized molecules, and that by another kind of influence the carbohydrates of large molecular size are broken down and hydrated into the forms of small molecules. The building up with dehydration is effected by protoplasmic action, or the agency of living matter, whilst the breaking down and hydration are effected by the agency of ferments. Throughout living nature these two processes are carried on. By ferment action the carbohydrate is placed in a suitable state for absorption, which is the first operation required to be carried out. After absorption has taken place the carbohydrate falls within the influence of living matter, and by protoplasmic action is placed in a position to proceed towards fulfilling its purpose in the economy of life. The changes induced by protoplasmic action are designated as assimilation.

It is the change wrought upon absorbed carbohydrate that places it in a position to pass in the direction of utilisation, and evidence goes to show that if this change is not brought about it remains as sugar, and in this state is carried to the general circulation, whence it flows off as waste material with the urine. Thus, what is wanted to avert the outflow as sugar is that by the proper performance of assimilation the carbohydrate should be disposed of without sugar being permitted to reach the general circulation.

To this question of assimilation I will now direct attention. I have entered into it fully in my work on *The Physiology of the Carbohydrates*, published in London in 1894. A German translation by Karl Grube was published in the following year by Deuticke, of Vienna. As a result of experimental inquiry I have been led to consider that by the following three processes the carbohydrate of our food is disposed of in the villi and in the liver, and thus prevented reaching the general circulation as sugar:

1. Transformation into fat.
2. Synthesis into proteid.
3. Transmutation into glycogen.

1.—Transformation into Fat.

The production of fat by animals from carbohydrate was at a former time the subject of keen controversy. No doubt now exists with regard to its occurrence, and from what is observable around us it is carried out upon an extensive scale. Although the question of fat production is no longer a matter of dispute, the localisation of its production has not engaged the consideration it deserves. We all know that when ready-formed fat is ingested it finds its way into the villi, and thence into the lacteals, to the contents of which it gives a milky character. Milky chyle, even, it may be, as pronounced as after fatty food, is discernible in the lacteals of the vegetable feeder after starchy food in which the amount of fat present must be regarded as altogether insufficient to account for what is observed. I look upon it that it is by protoplasmic action exerted by the cells belonging to the villi that fat is produced from carbohydrate. The cells can be seen to become loaded with fat just as is noticeable after fatty food, and the fat thus produced passes in identically the same manner into the system as that introduced ready formed from without.

Analogy from the operations of life in the vegetable kingdom suggests that the carbohydrate becomes incorporated with nitrogenous matter into a complex molecule, and that by a rearrangement within fat is cleaved off. This brings the genesis of fat as an act of assimilation into a parallel position with its genesis from the proteid constituents of the tissues, which is so conspicuously made manifest to us in the condition known as fatty degeneration.

2.—Synthesis into Proteid.

The entry of carbohydrate matter into the constitution of proteid received a large share of attention in my published work to which I have referred. Recognising that carbohydrate was obtainable as a cleavage product from proteid, consideration was carried to the synthetic production of proteid by the agency of living nature, and the whole was found to stand in harmony. There is no need for entering into the matter here, as I consider it may be said that the glucoside nature of many proteids is now regarded as established. "Glucoproteids," indeed, is a term which has now found its way into common use as a classifying expression.

The proposition advanced by me is that the carbohydrate of food reaching the villi as sugar, and falling within the influence of the cell protoplasm encountered becomes incorporated into proteid, which probably reaches the system through the lacteal stream. It is known that an animal constructs its own proteid instead of taking it in ready formed from without. In the combined state the carbohydrate can be transmitted through the circulation without running off through the kidney on account of the molecule containing it being too large to pass by diffusion through the limiting membrane of the vessels. In the free state, on the other hand, in consequence of the smallness of the sugar molecules, incompatibility exists for retention in the circulation.

By synthesis into proteid the conditions harmonise with what is wanted. The carbohydrate can be conveyed to the tissues, without risk of escaping as waste material, and there applied to the purposes of life. It is not for me to speak here of the manner in which it is applied, but it is now recognised that it exists in a locked-up state in the tissues, and thus circumstanced it is located so as to be at all times ready to contribute as needed to meeting the wants engendered by the chemistry of life. It is not improbable that metabolism may deal with it while actually within the molecule, and that a

succession of changes may occur before it is finally resolved into carbon dioxide and water. Observation in experimentally induced diabetes has disclosed that under the absence of food and, when the store of glycogen has been exhausted and the only possible source for the sugar is the tissues of the body, the relation between nitrogen and sugar in the urine shows that as much as 45 to 60 per cent. of the proteid molecule may be eliminated as carbohydrate. This forcibly points to the extent to which the synthesis of carbohydrate into proteid must be carried on in connection with its assimilation as a subsequent step to absorption from the food.

3. Transmutation into Glycogen.

This kind of operation is carried out upon a very extensive scale in the vegetable kingdom. Through it the enormous amounts of cellulose, starch, etc., existing take their origin. The process consists of a building of small molecules into large ones, with a certain amount of associated dehydration, and its accomplishment is effected by the agency of living protoplasm. The sugar, absorbed from the alimentary canal, that may happen to escape transformation into fat and synthesis into proteid in the villi, is carried by the portal vein to the liver, and here becomes transmuted into glycogen. In this way the liver exerts a supplementary action in checking the passage of sugar into the general circulation; and when—as under natural circumstances—this is complete, the general circulation and, thence, the urine is protected from becoming charged with sugar. The glycogen may be looked upon as simply a convenient temporary halt in the application of carbohydrate matter. There are grounds for the view that it passes into fat, and in the bird, where the villi and lacteal system are in a very imperfectly developed state, the liver, it is permissible to consider, occupies a position of cardinal importance in the economy in relation to the production of fat.

Presumably it is not exclusively in the liver that this process of transmutation in the direction towards glycogen is carried on. Glycogen is met with elsewhere, and it seems to be one of the properties of protoplasmic matter to form it when the suitable conditions exist. It is a notable circumstance, which I have dwelt upon in my writings, that dextrose introduced into the system by intravenous and subcutaneous injection is afterwards found to have been converted to some extent into a substance of lower cupric-oxide reducing power and therefore transmuted, with dehydration, in the direction of glycogen.

The proposition springing from what has preceded is that by assimilation in the manner pointed out the carbohydrate of our food is prevented reaching the general circulation as sugar, and it follows that if it does not reach the general circulation as sugar the opportunity is not afforded for it to escape as sugar with the urine.

If assimilation should fail to be fully carried out the non-assimilated carbohydrate must follow some other course, and observation tells us that it reaches the general circulation as sugar, and flows away as waste material with the urine. It may be said that the assimilative power is not found in any one to be of unlimited capacity, and thus in the healthy subject sugar may be made to appear in the urine by an excessive ingestion of carbohydrate matter.

When the assimilative power falls short of what is natural, carbohydrate that can be taken by a normal person without producing glycosuria can no longer escape doing so, and in proportion as the power is reduced so is the curtailment of the amount of carbohydrate that can be taken without throwing sugar into the urine. Very varying degrees of impairment of the power are found to exist in different cases producing varying degrees of severity of the condition to be dealt with, and this requires to be taken into account in treatment in order that a properly-adjusted dietetic management may be adopted.

By a test diet information is readily obtained regarding the extent to which the assimilative power is deficient. It may happen that the loss of assimilative power is such that even with a properly constructed fully restricted diet the carbohydrate contained in it (it is not possible to construct an existence diet entirely free from carbohydrate) suffices to throw a certain amount of sugar into the urine. Ordinarily the loss does not amount to this, and hence by the restricted diet a sugar-free state of urine may be induced. With a less extent of loss a certain amount of food of a carbohydrate nature will be found to be susceptible of being taken without leading to the passage of sugar; and thus it is observed to run on, more and more carbohydrate being tolerated in proportion as there is less and less loss of assimilative power.

The effect of adjusting the supply of carbohydrate to the assimilative power existing to dispose of it is intrinsically to place the system in a natural state. It is not the mere fact of the waste of food attending the elimination of sugar that constitutes the source of trouble in diabetes; this is but a minor part of the question. The source of the various symptoms is the presence in the system of the sugar which has preceded the elimination. The blood of the general circulation stands in a position antecedent to the urine. The sugar found in the urine has previously existed in the blood, and has thus created in this fluid a deviation from the natural state which tells injuriously upon the entire system. It is not natural for the blood of the general circulation to contain more than a certain small amount of sugar which, under normal circumstances, is not influenced by the presence of carbohydrate matter in the food. When an increased quantity of sugar is present as the result of faulty assimilative action, the blood becomes thrown into an unnatural state by which its fitness for administering to the nutritive and other operations of life is interfered with. The various symptoms encountered in diabetes depend upon the abnormal presence of sugar in the blood, and immediately this condition is altered by excluding from the food the carbohydrate that fails to be assimilated the symptoms subside. The speediness of the alteration in the condition of a patient is often wonderfully marked.

The transit of sugar through the system that can be controlled by the reduction of ingested carbohydrate means the infliction of unnecessary harm, and the harm inflicted stands proportionate to the amount of sugar that is allowed to reach the system and thence escape with the urine. The fact of the voidance of sugar affords evidence that the system is already overburdened with carbohydrate, and anything which conduces to its increase will have the effect of adding to the troubled state existing.

What is wanted for rectifying matters is restoration of the assimilative power. This, according to my experience, is not attainable unless the system is brought into a natural state by controlling the transit of sugar through it from the food. This is indicated by the removal of sugar from the urine, and with this removal steadily maintained cases present themselves in which first of all a little carbohydrate food is found to be tolerated without leading to the voidance of sugar, and then more and more until it may possibly happen that an ordinary diet can be resumed without occasioning a reappearance of sugar in the urine. The class of case in which this favourable issue may be met with is that occurring amongst persons above the middle period of life, and in this class, instead of being a rare event it is not uncommon to find that the assimilative power may be restored to a certain point, and at this point, more or less short of what is natural, remain. Under such circumstances, as long as the carbohydrate taken is within the limit representing the assimilative power existing there is no sugar voided, whilst, when the limit is overstepped, sugar appears in the urine in proportion to the extent to which the excess has reached.

It is the "alimentary" form of diabetes to which I have been referring, and in this form the elimination of sugar is not only controllable by regulation of the food, but there is an absence of abnormal tissue disintegration.

In the other and more grave form of diabetes to which I have suggested[4] that the term "composite" should be applied, the eliminated sugar is in part derived from the tissues of the body as well as from the food. By morbid tissue breaking down the carbohydrate contained in the proteid molecule becomes cleaved off and, passing into the blood, reaches the urine. Other products also arise from this abnormal tissue disintegration, and through these likewise passing into the urine an indication is afforded of the action going on. β-oxybutyric and diacetic acids accompany the sugar and distinguish the "composite" from the "alimentary" form of the disease. In the latter the pathological condition is confined to a mal-assimilation of the carbohydrate matter of food, whilst in the former there is this and in addition an abnormal setting

free of carbohydrate, in the form of sugar, from a previously combined state.

If, now, we give a comprehensive glance at the position of our knowledge of the conditions standing at the foundation of diabetes, it may be said that the effect of modern research is to carry us away from the view that there is a functional transit of the carbohydrate matter of our food as sugar through the general circulation to the tissues. Under such a view we are faced with insuperable difficulties in relation to the information we possess with regard to both health and diabetes, whilst under the view contended for in this communication everything satisfactorily fits in, and a rational working basis for the treatment of diabetes is supplied.

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THE FACE AND PUPIL IN ALCOHOLIC NEURITIS.

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Alcoholic neuritis is so common, and the literature about it so extensive, that the signs I am about to mention have probably already been described before, yet I have not come across a description of them, and should be glad to learn if such a description has appeared.

The loss of knee-jerk and extreme hyperæsthesia of the skin in advanced cases are of course known to everyone, but before these occur, and while the knee-jerk may be only sluggish or may even be unaltered, a peculiar expression of the face is sometimes noticeable. The face becomes mask-like and expressionless, the lips appear to move apart from the cheeks, but what is sometimes still more extraordinary the lips themselves may seem very mobile. The eyebrows and eyes may move in accordance with the lips, but a fixed and unexpressionless band stretches across the nose and cheeks between the eyes and lips, the skin upon the cheeks remaining motionless and unwrinkled, while the lips, eyebrows, and forehead may be moving freely. I was much struck by this condition on seeing it one morning in two patients successively. In the first patient I had no difficulty in obtaining a history of alcoholism. As the second one entered the room I was struck by the similarity between the appearance of his face and that of his predecessor, but I could only elicit a history of excessive smoking both from himself and his wife; they both assured me that while the patient smoked excessively he was exceedingly temperate in regard to alcohol. A few days afterwards, however, I had a letter from the patient's partner saying, "I suppose So-and-so told you that he had been taking a great deal more spirit than was good for him?"

Another point is the condition of the pupil reflex, which is just the converse of the Argyll-Robertson phenomenon. In a number of cases of alcoholic neuritis I have noticed that the reflex of the pupil to light is rapid and extensive, whereas the contraction of the pupil on accommodation to a near object is slight and sluggish or entirely wanting. Indeed in one or two cases I have observed a dilatation instead of contraction on accommodation.

Explosion of Acetylene Gas.—An accident that might have been attended by much more serious consequences occurred a few days ago at Chapel-en-le-Frith, Derbyshire. One of the hotels in the town had been fitted up with acetylene gas. A representative of Husson's Acetylene Syndicate happening to call at the hotel he was asked to inspect the generator, which was supposed to be leaking. He must have known that acetylene is more explosive than coal gas. If so familiarity had bred contempt. On lighting a match a loud explosion occurred, during which the representative of the syndicate was injured in the face and hands. At first it was thought his eyesight was destroyed. Fortunately none of the injuries were of such a nature as to prevent the traveller leaving the district two days afterwards. It should be remembered that while acetylene is an excellent illuminant it is a highly explosive gas.

ON THE CAUSATION OF THE CONGENITAL STRIDOR OF INFANTS.*

(With Illustrations on Special Plate.)

By
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The clinical features of a typical and simple case of congenital stridor may be summarised as follows:

The infant, who appears normal in other respects, is noticed shortly after birth to have noisy breathing. The noise consists of a croaking sound accompanying inspiration, which rises to a high-pitched crow when a longer or more vigorous breath is taken; expiration may be accompanied by a short croak when the stridor is loud, but at other times it is noiseless. Even in the most severe cases there are occasional brief intervals during which there is no sound audible; but, with this exception, the stridor goes on constantly while the child is awake, and sometimes even when he is asleep. Any emotional excitement or any physical cause of deeper breathing, such as exposure to colder air or to the exertion of sucking, is apt to intensify the sound. The child's power of crying and coughing is unaffected. The breathing, although noisy, is not accompanied by the slightest distress, and there is no cyanosis. There is, however, always marked inspiratory indrawing of the thoracic and abdominal walls, except in the mildest cases.

The stridor increases in loudness during the first few months, and, after remaining about the same for a few more months, gradually lessens and disappears during the course of the second year. Long after it ceases to occur habitually, however, it is occasionally set up by emotional causes.

Considerable difference of opinion has been expressed as to the causation of these cases. The symptoms have been attributed to posticus paralysis (Robertson) or to abductor spasm, due to adenoids or to some other source of irritation (E. Smith, Löri). Some again have blamed an enlarged thymus (Avellis), and others a congenital malformation of the upper aperture of the larynx (Lees, Sutherland and Lack, Variot, Refslund). Attention has also been drawn to the soft collapsible character of the laryngeal structures in the infant (Goodhart, etc.), and one of us (Thomson) has already suggested the view which we confirm and further elaborate in this paper. This view is that the primary cause of the obstruction is probably an ill-co-ordinated spasmodic action of the muscles of respiration—a choreiform respiratory spasm—analogous to stammering—as distinguished from a laryngeal spasm.

The site of the obstruction which causes the noise has variously been thought to be in the pharynx, at the upper aperture of the larynx, at the cords, and in the trachea at the level of the thymus. In the presence of so much difference of opinion it seemed to us worth while to make a further attempt to ascertain what facts can be established with regard to these cases, and to what extent the various theories of causation are in keeping with them.

As the condition is entirely confined to young infants, it will be well to begin by referring to the peculiarities of the larynx and of the breathing at this time of life.

The Larynx in the Young Infant.

Our observations upon the anatomy of the larynx in infants and young children have been based upon the examination of fifty specimens removed from subjects in whom no obstruction of the upper respiratory passages existed. For the majority of these we are indebted to the kindness of Dr. Theodore Shennan, pathologist to the Royal Hospital for Sick Children and to the staff of the Royal Maternity Hospital. The larynges of the stillborn infants were in many cases examined *in situ* by means of a dissection which exposed them from behind; the remainder, taken from children up to the tenth year of life, were examined after removal from the body by the ordinary *post-mortem* method. Our attention was directed mainly to the upper aperture of the larynx. This

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opening may be defined anatomically as the space bounded in front by the epiglottis, behind by the summits of the arytenoid cartilages with the intervening fold of mucous membrane, and laterally by the two ary-epiglottic ligaments. When the term "upper aperture" is employed in this paper, the space enclosed by these structures is signified.

In the infant the structures bounding this opening are much softer and more collapsible than they are in the adult; further, the aperture is relatively narrower from side to side, owing to the folding backwards and inwards of the epiglottis with the consequent drawing together of the ary-epiglottic folds. This infantile type, which has been described by Merkel, Luschka, and other anatomists is represented in Figs. 1, 2, and 3 (special plate), reproduced from the most typical of our own preparations. In them, the epiglottis is seen to be distinctly gutter-shaped on its posterior aspect, while the soft and yielding ary-epiglottic ligaments are approximated so as to narrow the upper aperture. As the child grows, a change takes place in the form of these parts; the epiglottis becomes more expanded, the ary-epiglottic folds separated, and the aperture in this way broadened. Fig. 4 (special plate) represents the larynx of a child aged 3½ years; in it the opening is wider; while in Fig. 5 (special plate) is depicted the larynx of a boy, 9 years of age, in which the infantile type has almost entirely disappeared. Fig. 6 (special plate) shows the adult type of the same region, which demonstrates the more expanded leaf-like form of the epiglottis, the greater separation of the ary-epiglottic folds, and the consequently increased breadth of the intervening aperture.

While varieties are met with in different infantile larynges at the same period of life, all of them possess in a more or less marked degree the characteristics above described. These peculiarities combine to make the upper aperture of the larynx liable to constant changes in form under the action of influences which have no corresponding effect on the adult organ. The most important influence of this kind is the sudden drawing of air into the larynx. In the larynges of newborn children and very young infants, the effect of this can be easily demonstrated after death by the following simple experiment. A bent metal tube, 18 inches in length, is introduced into the trachea, and, in order to keep the chink of the glottis open, a small piece of rubber tubing is at the same time placed between the vocal cords. Forcible inspirations are then made through the tube, and it is found that with each a very striking alteration in the form of the upper aperture of the larynx occurs. The exact change, however, varies in different cases; we have noticed three main types:

1. In some cases the sides of the opening were sucked together so as to form a narrow mesial slit.
2. In others the epiglottis was drawn backwards and downwards so as to act as a lid.
3. In others, again, the arytenoid cartilages met in the middle line, while the margins of the anterior portion of the aperture remained unaffected.

Figs. 7 and 8 (special plate) show the upper aperture of the larynx of a stillborn infant before and during the carrying out of such an experiment. In Fig. 7 the open aperture is seen before the experiment, while in Fig. 8 the epiglottis is markedly folded backwards, and the ary-epiglottic ligaments are in contact mesially.

In two of our experiments the upper aperture assumed a form almost exactly similar to that figured by Refslund (Fig. 10, special plate), but unfortunately we have not succeeded in securing a photograph of this result.

When this experiment is repeated several times with the same larynx, we find that its upper aperture retains to a very considerable degree the deformity which the suction has produced. Thus, when the upper aperture collapses on suction so as to form a vertical slit, the ary-epiglottic folds will be found after a few experiments to lie permanently nearer one another.

The objection will doubtless be raised by some that such experiments conducted upon the cadaver cannot be regarded as entirely trustworthy, because the exact conditions which exist during life are not present. We would point out, however, that the ary-epiglottic folds, which are mainly concerned in the production of the deformity, contain only a few muscular fibres, and are thin, lax folds of mucous membrane which are readily acted upon by such a mechanical force as the sucking in of air between them. Further, it must be sufficiently well-known to all who have attempted to examine during life the larynx of healthy infants and young children that the ary-epiglottic folds tend to become approximated when the child forcibly inspires during the examination; that is to say that these structures are capable of assuming in the living body the same position that they can be made to take up in the cadaver, and as a result of a similar cause.

Respiration in the Young Infant.

The respiration under normal conditions in very young children is peculiar in being irregular in rhythm and in force, as if the co-ordination involved in its movements were not as yet under full control. There often occur, therefore, relatively sudden respiratory efforts. When a young baby is excited, it is no uncommon thing for it to develop a temporary crowing noise with inspiration, although it has none at other times. A similar, but louder and more persistent crowing, which indeed exactly resembles that in a case of infantile stridor, is not infrequently observed in young infants while they are beginning to come out of chloroform narcosis; and a very loud crowing is a common accompaniment of operations on the genital organs, owing to the sudden forcible inspiration which the stimulation of the nerves of these parts is apt to occasion. Along with crowing, there is always a degree of indrawing of the lower chest wall proportionate to the loudness of the sound.

We must now turn to consider the conformation of the larynx and the character of the respiration in children who are the subjects of congenital stridor.

The Larynx in Stridor Cases.

A peculiarity of form of the upper aperture of the larynx, which differs in degree, but is always essentially the same in nature, has been described and figured by various writers (Figs. 9 and 10). We believe that some degree of this is always present in cases of congenital stridor. It may be said to consist in an exaggeration of the normal infantile type, and it is practically the same as that which can be induced *post-mortem* in the larynges of many newborn children by suction through a tube. In two of the published cases the upper aperture was found to be reduced to a mere slit. In both of these the patient died from respiratory disease, and presumably had severe dyspnœa immediately prior to death.

Fig. 9 (special plate) shows the larynx in the fatal case of congenital stridor described by Dr. Lees, and we are indebted to him for kind permission to reproduce it here. The patient, an infant of a year old, had suffered from stridor since birth, and died of laryngeal diphtheria.

Refslund's patient (Fig. 10) was an infant aged 2½ months who had been the subject of persistent crowing from birth. Death took place from pneumonia, and an examination of the larynx showed the upper laryngeal aperture reduced to a mesial slit. Variot's patient was a boy aged 1 year and 10 months who began to suffer from inspiratory stridor shortly after birth. He died from scarlet fever, and the upper aperture of the larynx showed a lesser degree of the same deformity.

The peculiar conformation may continue long after the breathing ceases to be noisy. We have examined five children between 7 and 9 years of age whom we had previously seen with congenital stridor, and in all of them the deformity still persisted to some extent.

Peculiarity of Respiration in Stridor Cases.

The respiration in these cases differs from that in normal babies in being accompanied by inspiratory croaking and crowing sounds, which vary in loudness according to the vigour of the inspiration, and by the occurrence of a corresponding amount of thoracic indrawing. The stridor is nearly constant in well-marked cases, but never entirely so, there always being occasional free intervals. When the inspiratory crow has lasted some time, and is loud, there is apt to be expiratory croaking also. We have thus in these cases the habitual presence of a condition of stridulous breathing, the same as occurs temporarily during recovery from chloroform narcosis.

Conclusions.

Our most important conclusions may be stated as follows:

1. That the primary element in the causation of this condi-

tion is a disturbance of the co-ordination of the respiratory movements, probably due to some developmental backwardness of the cortical structures which control them.

2. That the change of form found is merely an exaggeration of the normal infantile type, and is mainly if not entirely the result of a constantly recurring sucking-in of the upper aperture of the soft larynx, which is induced by the ill co-ordinated and spasmodic nature of the breathing. That it is, in fact, an acquired deformity strictly analogous to pigeon breast.

3. That there is no proof that any congenital malformation of the upper laryngeal aperture exists in these cases.

4. That the supposition of a congenital deformity is not essential to account for the symptoms, inasmuch as normal babies crow in a very similar manner when they are coming out of chloroform.

5. That the sounds are not produced in the pharynx. This is proved by the high-pitched phonic character of the crow, and also by the fact that the stridor persists, not only when the nostrils are closed, but equally when the mouth is occluded by the nipple, when the tongue is depressed by a spatula, and during yawning. That they are not produced in the trachea by compression exerted by a large thymus or enlarged lymphatic glands, we conclude on two grounds. First, because in none of the fatal cases of congenital stridor recorded have we seen enlargement of the thymus or lymphatic glands noted; and, secondly, because in two cases which we have examined, in which compression of the trachea by enlarged bronchial glands was found after death, the symptoms were of a very different type. In these cases the stridor was mainly expiratory, the larynx did not move up and down with respiration, as it does in cases of intra-laryngeal obstruction, and there was much greater respiratory distress. The stridor is probably produced partly in the larynx proper, and partly at the abnormally approximated ary-epiglottic folds.

6. That the neurosis causing the symptoms has not in our experience seemed to depend on the presence of adenoid growths or other obvious causes of reflex irritation.

It may be well that we should add a few words to define as clearly as possible how our position differs from that held by Drs. Sutherland and Lack in their paper already referred to, which seems to us by far the most important contribution made to the subject. We are cordially at one with them when they say "that the affection depends on a valvular action of the upper aperture of the larynx, a falling inwards of its lateral walls during inspiration," and that this is due partly to "the flaccidity of the parts in infants." We join issue with them altogether, however, when they ascribe primary etiological importance to the peculiar conformation of the upper aperture found in these cases, and regard it as a congenital malformation. We consider it an acquired deformity, and hold that it, as well as the stridor, are the result of the ill co-ordinated stammering breathing.

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AN INFANT POISONED BY ITS MOTHER'S MEDICINE.—As reported in the *Essex Weekly News*, an inquest was held recently at Southminster, on the infant child of a labourer who had died, presumably as the result of opium poisoning, on the day after its birth. The child had screamed very much during the early hours of its life, and was given a few drops of its mother's medicine by a friendly neighbour. The medicine contained opium, and it was probable that an enormous dose had been given for so young a child. From the evidence it appeared that it was no uncommon thing for nurses and midwives in that district to administer to infants doses of the mixtures prescribed for their mothers. The jury added a rider to their verdict calling attention to the practice.

CASES OF ACROMEGALY AND INFANTILE MYXŒDEMA OCCURRING RESPECTIVELY IN FATHER AND DAUGHTER.*

(With Illustrations on Special Plate.)

BY

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and

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As far as we can ascertain no case of direct hereditary connection between acromegaly and myxœdema has yet been reported. The following cases are at present under observation at the Leicester Infirmary:—

CASE I.—G. D., aged 38, married and with family, was sent to one of us by Dr. Hewlings.

Family History.—Good. No history of constitutional disease. The eldest child, a girl, is Case II.

Personal History.—Generally healthy; has had a hydatid cyst (?) opened in the abdomen 9 years ago, and recently had an abscess in the right lumbar region; no evidence of hydatid present. He sought advice in December, 1899, for weakness, rheumatic pains, stiffness of the hands and inability to clench the fists, dating from four years earlier and getting worse. He complained of some headache; he had had no sickness and there was no history of any chronic chest trouble.

Condition on Examination.—The hands are broad, massive, with rather lengthened fingers, the fists cannot be clenched, the palms and flexor surfaces of the fingers are thickly padded by tough skin and increased subcutaneous tissue. The sausage-shape of the fingers makes them appear relatively shorter than they are. The ends of the fingers are bulbous. He is subject to "dead fingers." The wrists are enlarged and the lower parts of the radius and ulna are massive. These conditions are symmetrical. The feet are large. He has noticed that he has had to get larger boots lately. The face (Fig. 1, Special Plate) is somewhat elongated; the superciliary ridges are prominent, and the lower jaw slightly elongated. This is most noticeable when comparison is made with a photograph taken sixteen years ago. The alveolar processes not thickened. There was no marked increase in size of any other bones; no joints were enlarged. The tongue is larger than normal. The thyroid gland apparently normal. The chest shows no abnormal physical signs either cardiac or pulmonary. The attitude in the erect position shows shoulders rounded (a slight cervico-dorsal curve). As to the special senses there is bitemporal hemianopsia. The field of vision more contracted in left eye. Hearing, smell, and taste are normal. The skin presents no warts; he sweats profusely on slightest exertion. The hair is thin on the head, and he is slightly bald; the beard is lanky. Under treatment with thyroid extract the patient has considerably improved in certain details: the pains are less, the fingers can be flexed firmly into the palms, the general appearance is more healthy, the weakness less prominent.

The diagnosis of acromegaly rests on the presence of the following phenomena: The occurrence of a localised symmetrical hyperplasia of both bones and soft parts of the forearms, wrists, hands, and feet; the bitemporal hemianopsia, the lassitude and the rheumatic pains of long duration, the absence of vomiting, optic neuritis, and giddiness; the gradually progressive nature of the first set of these symptoms.

The club-shaped extremities of the fingers—well shown in the photograph—are rather against acromegaly, but then there are no signs or symptoms of any chronic chest trouble, which makes a diagnosis of hypertrophic osteo-arthropathy untenable.

CASE II.—A. D., aged 20, a girl, the eldest child of Case I, has been under observation of one of us since October, 1896.

Personal History.—The only illness has been pertussis. She was apparently healthy until 5 years of age, when the parents noticed that she did not seem to be developing properly either physically or mentally. She came for treatment at the age of 16. She was then 3 feet 4½ inches high; weight 43 lbs. Her intelligence was about equal to a child of 4 or 5 years old. She had a heavy expression and malar flush, the lips were thick, the nose flat, and the skin dry. The hands were spade-like, and there were well marked pads of fat above the clavicles. The usual solid œdema was present about the body. The thyroid gland could not be felt. The temperature was often 96.4°; the pulse about 60. The photograph (Fig. 4, Special Plate) shows the patient shortly after the treatment began. Thyroid treatment was carried out for some time, but any improvement which was at first noticed was not permanent, perhaps because the parents would not persevere with the treatment.

It will be seen that Case II is probably one of infantile myxœdema; it can hardly be termed cretinism, as the symptoms did not come on till the patient was nearly 5 years old. The clinical symptoms do not in any way correspond with those of acromegaly.

That there may be an hereditary predisposition to either of these diseases is shown by the fact mentioned by many observers that cases of each have occurred in more than one member of the same family. Instances of this nature have naturally—owing to the greater rarity of the disease—been less common with regard to acromegaly than to myxœdema.

* Read before the Midland Branch of the British Medical Association

Two cases are mentioned by Byrom Bramwell, and two probable cases by Sternberg.

As far as we can ascertain there has been no previous record of a common family predisposition to both diseases. Their occurrence in parent and child may be regarded as either accidental or otherwise. The fact that the father only developed symptoms of acromegaly fourteen years after the birth of the child puts out of the question the possibility that a specific poison which produced acromegaly in him was transmitted to his offspring, and in her produced myxœdema.

It is more probable that there was a weakness of resistance common to both father and daughter, and that the former was unable to resist the factors producing acromegaly, while the latter succumbed to those of myxœdema.

Now as the latter disease is universally allowed to be the outcome of diminished or abolished thyroidal activity, the inference is unavoidable that if we suppose a common predisposing cause for the two conditions, we thereby admit that some disturbance of the thyroidal functions is also one of the factors in the production of acromegaly.

That this may be the case is suggested also by other facts. Most writers on the subject have referred to the many points of similarity between the two diseases. For instance, as stated by Sternberg:

"The tongue of cretins is often large, the lips puffy, thick, the nose thick and snubbed.

"The long bones of cretins often appear very thick and coarse, owing to deficiency in growth and length.

'The skull of cretins is, as in acromegaly, a cranium progeneum.

"Enlarged sella turcica is present in such skulls, and the hypophysis is frequently diseased, not seldom it is enlarged.

"On the other hand, symptoms in acromegaly frequently exist which recall myxœdema. Indolence is marked, but not so marked as in the latter disease, and the skin in parts of the body—for example, the back of the hands—resembles myxœdematous skin closely.

"Finally, in acromegaly, the thyroid gland is seldom found normal when examined histologically."

In our own case of the father there is some loss of hair, and the face has somewhat the flushed appearance of myxœdema. The hands were thickly padded, and these symptoms were relieved by the exhibition of thyroid extract.

Finally, if we consider with some, that the overgrowth of the hypophysis is compensatory for the loss of thyroid function, we shall have less difficulty in seeing how a common predisposing condition to the two diseases may exist. We do not consider, however, that the facts we have presented warrant us in drawing more definite conclusions, but we think it desirable to place these cases on record.

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HUGHLINGS JACKSON AND THE CORTICAL MOTOR CENTRES IN THE LIGHT OF PHYSIOLOGICAL RESEARCH.

Being the Second Hughlings Jackson Lecture delivered before the Neurological Society of London.

By Professor EDUARD HITZIG, M.D.,

Halle.

[Abstract.]

After some introductory remarks on the foundation of the Hughlings Jackson Lectureship and the fundamental contributions of Dr. Hughlings Jackson to the science of neurology, Professor Hitzig gave an account of Dr. Jackson's earlier epoch-making work as expressed in his *Study of Convulsions*, which he had selected for special treatment, and then proceeded to discuss in historical sequence the stages in the development which Dr. Jackson's doctrine of the cortical motor centres had since undergone as the result of physiological investigations.

The Significance of the Cerebral Cortex.

Proceeding from the accepted facts that the grey matter of the brain had alone the power of originating movement, and that paralysis resulted either from destruction of the grey matter or of the nerve fibres leading from it to the muscles, there followed Dr. Jackson's view that the cerebral cortex, as a whole, was an organ in which motions and sensations were represented with a definite type of localisation, and that every movement of the body was represented in every portion of the so-called motor cortex, any particular segment of the body having its maximum representation in some particular part of the cortex. Reference was then made to the evidence gained by electrical stimulation of the cortex—showing that particular parts of it were associated with particular movements, and that removal of these parts abolished the movements in question; also that Dr. Jackson's theory of the natural charging of the cortex with nerve energy and its discharge in local and general convulsions had experimental confirmation in the discovery that it was possible to charge the cortex electrically.

The Existence of Special Centres in the Cerebral Cortex.

The lecturer next proceeded to discuss the questions whether the knowledge subsequently obtained from different sources really justified the assumption of centres in the brain cortex, and in what way such centres might be supposed to act. He pointed out that the essential point of the validity of the localisation was denied by some, for example, by Goltz and Schiff, and he brought forward the arguments which in his opinion disposed of their objections. Particularly in setting aside Goltz's objections to stimulation experiments, based on the ground of the possible effect of the diffusion of electrical currents from the cortex to deeper-seated structures; he quoted the experiments which showed that the grey and white matter had a different kind of electrical reaction; that, as shown by Horsley and Gotch, a negative variation occurred in the pyramidal fibres of the spinal cord only when the corresponding part of the cortex was stimulated; and conversely, as shown during the last few months by Larionow, that a negative variation occurred in a restricted area of the cortex after stimuli were applied to the periphery of the body. Confirming all these discoveries was adduced the evidence derived from the results of localised extirpation of the cortex. The lecturer criticised adversely Luciani's view, reaching the opposite extreme to that of Goltz, that there was "a centre of centres" near the face area in which a maximum of overlapping occurred, and by the stimulation of which the greatest spread of effect was produced. Summarising the evidence derived both from paralysing and excitation experiments, he maintained that it all went to prove the existence of centres in the cortex, and any evidence which was apparently adverse depended on the neglect of certain necessary precautions of experiment.

The Function of the Cortical Centres.

The second point—the precise function of these centres—was next discussed. He pointed out that extirpation of small areas of the cortex in dogs did not produce actual paralysis, as in man, but only a condition in which the animals used their limbs in unsuitable ways, and did not correct unsuitable positions into which the limbs were passively placed, showing that they had lost the complete consciousness of the condition of their limbs.

Are the Cortical Centres Motor or Sensory or both?

Subsequent knowledge had led to the formation of two main theories in explanation of these results, the motor theory and the sensory theory. While Ferrier had maintained that in apes the results of extirpation of the central convolutions of the cortex were purely motor, in which view he had more recently been supported by Schäfer, who found that the animals "still felt the slightest touch of a straw," Munk, Mott, and Bechterew had maintained that sensory changes were also present.

In regard to the dog to which Ferrier had extended the observation made on the ape, Professor Hitzig said that in his opinion it could not be doubted that any lesion of the motor cortex was "always and without exception combined with disturbances which affect the sensibility of the whole limb—that is to say, of the skin, of the muscles, of the joints, etc.," and he himself would extend the same observation from a mere process of reasoning apart from experiment to the ape.

On the other hand, he accepted Schäfer's conclusion that "the motor paralysis could not possibly be based on a totally imperceptible sensory disturbance."

He next adversely criticised Schiff's views that the motor paralysis was due to cutting off of sensation from the skin, and Munk's view that the cortical centres were purely motor. Professor Hitzig himself attributed the paralysis to defects in the cortical centres induced by "disturbances of the consciousness of the limbs," or, as he enunciated his doctrine in regard to the dog, "that in the extremity regions only the conscious working over of all the feelings that arise subcortically to more or less well localised conceptions of feeling takes place." But he attributed the cause of the so-called voluntary movements in only a small proportion of cases to those conceptions of motions alone; in the majority of cases there was in addition as a factor in producing the movement the intervention of an excitement of the senses, as of sight, or of an "intellectual occurrence in order to disengage the conception of movement, and therewith the act of motion."

Whence the Contradiction in Regard to the Function of the Cortex?

The differences in opinion in respect of the functions of the cortex depended, Professor Hitzig believed, on two facts that different investigators had extended their conclusions too widely, without sufficiently regarding the anatomical and physiological differences of the brains of different species, and the difficulty arising from the fact that functions lost after lesions really or apparently returned. In attempting to dispose of these difficulties he pointed out that the motor disturbances produced in the dog by lesions of the cortex might be divided into three groups—the taking up of abnormal positions by the limbs; the behaviour of the dog in stepping with its affected forepaw blindly into the air, for example from a table, even although sight was unaffected; and the paralysis of isolated intentional motion. He accepted as a valuable term the kinæsthesis of Bastian, or the storing up of the sensory impressions associated with movement, but he held a still wider view in that the conceptions of feeling obtained from the painless handling of the skin came into play, and these he considered did not directly belong to the kinæsthetic impressions or sensations of movement, although closely related to them. In referring to the paralysis of isolated intentional motion, such as that of an ape, in which what was known as the hand centre had been excised, although it could run and climb, it could not purposely grasp a fig with the paralysed hand and put it to its mouth, or, as described by Goltz, dogs who had learned tricks lost after the operation the power to give the paw. The lecturer summarised his conclusions as follows: "In all these cases we see that the further conceptions of the animal, the total of which we are accustomed to call his will, in whatever field of the senses they may have arisen, are no longer in a position to excite the motions that are necessary to the carrying out of the will, the moment that the centre I have named is extirpated for the fore-limb."

Relation of Motor Centres to other Cortical Centres.

The lecturer then proceeded to discuss the relation of the motor region of the cortex to the faculty of sight, criticising Goltz's view that it was as much represented in the anterior part of the brain as in the posterior or occipital part; whether, in fact, there were two centres for sight, or one alone. He adduced evidence to show that the disturbance of vision which arose after lesions in the motor zone were only indirectly dependent upon this zone, that the latter did not serve for vision, and that, in consequence, the disturbance of vision could only be based upon a process of inhibition that was passed on into the centres of vision.

The Differences in the Brain Cortex of Different Species.

He explained the differences in the effect of lesions of the cortex in the dog as compared with the apes and man on the ground that with the progressive development of the individual what were originally subcortical centres became pushed up into the cortical sphere of consciousness, and as consciousness was developed these centres became more widely separated, and took up more complex associations.

The Difficulty of the Restitution of Function.

In explanation of the second difficulty, that of the apparent restoration of functions which had been apparently lost, he distinguished between two sets of motor centres, a lower subcortical or reflex set and a higher or cortical set concerned with "conscious arbitrary motion." The experiments of Schäfer, Munk, and others had taught "in what way motor impulses from other than the motor regions of the brain cortex of the animal can become effectual; they have shown that conjugated eye and head motions occur upon excitation of the occipital lobe—that is to say, motions that are to be paralleled with the locomotor associated motions of the animals. From this alone it was then to be concluded that such associated motions were not started merely by the motor region, but also from large districts of the brain cortex."

Other experiments had shown that these subcortical centres and the courses of communication that radiate from them were dominated by the cortical centres, and the restoration of function corresponded with an accommodation to the new conditions, and "at the same time a breaking up of the way upon still existing courses of communication."

Some Personal Considerations.

The lecturer, in concluding, spoke as follows: "If we now, according to the task set us, compare the standpoint of science to-day with the theories that Hughlings Jackson set up thirty years ago, we find, as must be expected from the defects attaching to human research, that some of his views have as a whole or in single parts needed to be corrected, while doubt to-day still reigns as to others, but that the most essential of them have found a brilliant confirmation at the hands of physiological research, to say nothing of clinical and anatomical research. If we turn our eyes from that which will gradually pass into forgetfulness, we must in the first place emphasise, as an indelible leaf in the history of medicine, Jackson's doctrine of the cortical convulsions, both the general principle of the charging and of the discharge that makes inroads on the neighbouring domains, and the numerous details by which this principle was explained and firmly grounded; in it especially the part determining the muscles in which the cortical fit begins and the sequence in which they are affected by the fits after different beginnings.....Taking it all in all, we see, even in the part of Dr. Jackson's scientific work that I have described, the work of a man of whom any nation may rightly be proud.....We, too, we labourers in the realm of the natural sciences, to whatever nation we belong, are soldiers and form an army, but an army that knows of no separation into different camps as a result of national or other interests, an army that is united in the one interest, in the search after truth, in the battle against ignorance and against all the hindrances which some men would like to oppose to our endeavour to reach our ideal aims. It may count as an expression of the mutual character of our cause, that I as a foreigner was called to-day to do honour to a scholar of this country, and for this reason also I have discharged this flattering task with joy and pride."

Tuberculosis and Quarantine.—The United States Commissioner of Immigration has decided that tuberculosis is a disease which may subject the patient to quarantine. A Japanese with tuberculosis arrived at San Francisco, and it was decided that the patient could not land, and must return to the port from which he sailed.

The Hancox Home for Male Inebriates.—The Committee of the Church of England Temperance Society having appointed a superintendent who took charge of this home on November 5th, the first patients were received on November 8th. It is stated that the Committee still need about £300 to place the home in a satisfactory financial condition.

Notification of Phthisis in Germany.—Cases of pulmonary and laryngeal tuberculosis which have reached the stage of cachexia are made notifiable by a recent decree of the Minister of the Interior in Saxony. The notification is compulsory only if the patient moves from one place to another, or has become dangerous to those about him. Cases of the kind treated in private institutions or lodged in hotels or boarding houses must also be notified.

THE HARVEIAN LECTURES
ON
PROGNOSIS AND TREATMENT IN PULMONARY TUBERCULOSIS.

Delivered before the Harveian Society of London, November, 1900.

By ROBERT MAGUIRE, M.D., F.R.C.P.Lond.,

Physician to the Brompton Hospital for Consumption and Diseases of the Chest; Physician to Out-patients, St. Mary's Hospital, Paddington.

[Abstract.]

Lecture I.

In choosing a subject for these lectures one cannot but be influenced by the name and work of Harvey. He employed a combination of the methods of Bacon and Newton, and essentially insisted upon observance of facts, making his theories subservient to them. His method I intend to follow in these lectures, and while in the earlier parts giving you facts and such conclusions as I can make from those facts, I wish in the last lecture to take advantage of Harvey's great discovery, the circulation of the blood, and to show how it may be used for the practical purposes of life. I will give you facts, from experience of some 22,000 cases at the Brompton Hospital, others elsewhere, from the *post-mortem* rooms of the Brompton and St. Mary's Hospitals and the Manchester Royal Infirmary, in which institutions I was pathologist, and finally I will tell of results I have obtained by experiment upon myself and (by the kindness of my colleague, Mr. Plimmer) upon animals, which bear upon the treatment of the disorder. I wish to not go beyond these facts and the reasonable conclusions from them.

For prognosis to be in any way accurate we must have a perfect diagnosis, not merely the naming of the disease, but a knowledge of its whole nature and course. This can only be obtained by perfect observation. In discussing the prognosis and treatment in pulmonary tuberculosis we must be careful in the first place to define the disease. We must not include many of the cases roughly designated "phthisis" or "consumption," though these terms may accidentally be employed, but we must clearly understand that we are dealing with a disease produced essentially by the presence of the tubercle bacillus. And yet this germ does not act alone, for after its first onset it is accompanied and aided by the staphylococcus pyogenes and the pneumococcus, the one causing suppuration and the other pneumonia. The condition preceding the presence of these germs—the so-called pre-bacillary stage of phthisis—is not to be considered in these lectures. When the tubercle bacillus has once got ground in the lung, we ought to think of the lung and general condition, not in the terms of physical signs, but in those of pathological processes. Therefore, I suggest that we should discuss our subject under the heads of (1) invasion, (2) progress, (3) result, and this classification, although aiming mostly at the action of the tubercle bacillus, also includes the progress of its congeners. The various stages may be combined in any individual case. Prognosis, however, must be influenced too by the power of the body to resist the invasion.

We must consider, too, how far prognosis can go. In the first stage we may, by good fortune, and possibly by art, obtain absolute cure, though further outbreaks, such as occurred in the past, are possible in the future. In the second stage, we may still get cure, but with some little damage to the lung tissue, which may, however, be of little consequence. But in the third stage there has been caused damage to the lung tissue which is irreparable. The damage may not be so great as to much inconvenience the patient in the ordinary processes of life, but it leaves him without a pulmonary reserve, and moreover conduces to complications—particularly pulmonary hæmorrhage, which may end the patient's life. All these points must be estimated, and with them, too, the prospect of duration of life, and comfort while the life lasts.

The prognosis will be discussed under the headings, in each stage, of (1) nature of physical signs, (2) localisation of the signs, (3) antecedent conditions, and (4) individual symptoms.

1. Lack of resonance, deficiency of breath sounds and movement, but without adventitious sounds—and all these limited to one apex—form the most favourable presentation. Probably they mean slight collapse of air vesicles from early catarrh. Further development of this condition is shown by a decrease in area of the apex on the affected side, as found best by auscultatory percussion. This is not so favourable. But the presence of adventitious sounds increases the gravity of the case. The finer the *râles* heard the better for the patient. Coarse bubbling *râles* are eminently unfavourable for him. The greater the lack of percussion resonance the worse is the prognosis, provided, however, that emphysema does not mislead the observer, and this may especially occur in one of the most unfavourable onsets, that of so-called emphysematous phthisis.

2. The localisation of the signs is of extreme importance. At the apex alone they carry the more favourable prognosis. Basic tuberculosis of primary origin is rare, and the results I have obtained at Brompton from 22,000 persons examined would show it to be still rarer than has been hitherto thought, for only 60 out of 19,000 tuberculous patients had the base of the lung as the probable initial lesion. The rarity is unfortunate, for the occurrence of such lesion is the more favourable. Of course one must here distinguish between primary tuberculosis and the same affection grafted upon a pre-existent and unresolved pneumonia. It is important, too, to make sure that the basic tuberculosis is not really secondary to a latent primary lesion of the apex, which may be only very slightly marked. Such a secondary lesion is usually found at the upper part of the lower lobe, while the true primary lesion is generally found in the lower part. The limits of the lobe can be determined accurately by auscultatory percussion, as I have elsewhere described. Such localisation is of importance also when the middle lobe of the right lung, and occasionally a misplaced middle lobe of the left lung, chance to be the seat of the primary lesion. This is always unfavourable for the patient, probably because of some peculiarity in the circulation of such lobes. The cases beginning in this way are frequently rapidly fatal, and, if not, are very resistant to treatment.

Multiple initial lesions have a still worse prognosis, though here, again, care must be taken to distinguish between primary and secondary lesions. Lesion of the apex must nearly always be primary, whether it follows a lesion of the opposite apex or not. Yet it may possibly be secondary to infection through the blood current. Multiple lesions are unfavourable for prognosis, because of the greater damage to the lung tissue, the probability of still further damage in the future, and the certainty that they indicate a greater intensity of the tuberculous poison and a greater vulnerability of the tissues.

Certain forms of multiple initial outbreak are of great importance as being the most serious methods in which the disease can present itself.

The first I would call the multiple pleuritic onset, which is characterised by previous ill-health and fever, while on examination slight pleuritic rubs can be heard on careful examination. These cases are most unfavourable for prognosis, for consolidation previously undetectable soon appears in many sites, and following it there are soon destruction of lung tissue, hectic fever, and collapse.

The second of these forms is that described previously by Dr. Mitchell Bruce as "emphysematous phthisis." The patient complains of only bronchitic symptoms, and none but bronchitic signs can be found in the chest. But he is much emaciated, has occasional fever, and ordinary remedies are of no avail. He wastes and his strength rapidly diminishes. After a time the disease further develops, consolidation and softening appear, and the patient rapidly dies.

The third form, for want of a better term, I would describe as "latent pulmonary tuberculosis." The tuberculosis is active enough, but its pulmonary characteristic is latent, thus differing from those of the preceding forms. Physical signs generally mean chemiotaxic reaction of the tissues, while symptoms show invasion of the poison. Hence this form of onset, in which the physical signs of any kind are latent for a long period, and in which the symptoms on the other hand are well pronounced, is one of the most serious we can meet with. The patient has fever, emaciation, general illness, loss of appetite and weakness, and yet nothing wrong can be found in the chest by the most competent observer. The

diagnoses most usually made are influenza, subacute rheumatism or neurotism, but the apparent quiescence after a time gives place to a furious outburst and an early death.

3 Antecedent conditions. Chlorosis is rarely a precedent of pulmonary tuberculosis, as I have found from my statistics. But most tuberculous patients are pale, and yet some are not. Tuberculosis certainly attacks the apparently full-blooded, and then I find that on the whole, it must receive an unfavourable prognosis. I mean by full-blooded, not those who have the flushed cheeks and delicate skin ordinarily associated with "consumption," and who behind this appearance have, nevertheless, a condition of anæmia, but those who are stout and very florid. I find such persons do badly. They are more prone to repeated hæmoptyses and recurrent destructive pneumonias with high fever.

Deformity of the chest causes our prognosis of tuberculosis of the lungs to be the more unfavourable, not only because it hampers respiratory movement, but also because it is most frequently due to a previous tuberculous affection of the vertebræ.

But on the other hand I find that tuberculosis of the lungs attacking those who are the subjects of tuberculous glands is generally very slow in its progress and favourable to treatment. It is again the more favourable, because the glands can now in most cases be removed by the surgeon, and so one source of infection removed. I strongly discountenance any attempt at their dispersion by means of iodine applications, though, when the surgeon cannot deal with them, I have found nuclein, given orally, to act marvellously. The glands are reservoirs of tuberculous poison, but reservoirs which are most often shut off from the general system by hard inflammatory tissue.

The presence of lymphadenomatous or carcinomatous lesions with pulmonary tuberculosis is rare, but very interesting. The prognosis of the tuberculosis is not thereby affected. Pleurisy with serous effusion, as preceding an attack of tuberculosis, would seem, from my experience, to not increase the gravity of the tuberculosis. Naturally, I do not here refer to the pleuritic outbreak already mentioned. Again, too, we know at Brompton that a pleural effusion occurring during a tuberculosis is best left alone, if only it does not unduly hamper the lung movements. Empyema, on the other hand, when followed by tuberculosis—and this is surprisingly rare—increases very greatly the gravity of the tuberculosis.

I do not consider a precedent pneumonia to have at all an unfavourable influence on an engrafted tuberculosis. The tuberculosis, or its possible incidence, is a danger to the patient who has pneumonia, but the primary pneumonia carries with it no further risk for its consequent tuberculosis.

Similarly, tuberculosis of the lungs following that of the urinary organs is not increased in gravity by the infection of the latter. Rather the contrary, for it has seemed to me to pursue a slow course. It is strange how seldom the tuberculosis of the urinary organs is followed by that of the lungs, and probably this fact is due to difference of developmental membranes. Unfortunately the patient is generally in a hopeless condition before the lung trouble develops.

My statistics would show that family history of tuberculosis could comparatively rarely be obtained, but its coincidence increased the gravity of the case.

I found, too, that those patients who led open-air lives seemed to do better than those with sedentary occupations. Yet it must be remembered that the same persons were probably also originally the more robust.

Mrs. Willcock has given a donation of £1,000 towards the sum of £34,500 required for the enlargement of the North-Eastern Hospital for Children, Hackney Road.

The annual *conversazione* of the Royal British Nurses Association will be held at the Westminster Town Hall on Tuesday next at 8 P.M.

To mark their esteem and personal appreciation of the late Mr. Thomas Cooke, some of his friends and past pupils have recently presented to Mrs. Cooke a portrait of her late husband, together with a piece of plate. Dr. Dundas Grant was chairman of the Committee; Dr. David Walsh acted as honorary treasurer, and Dr. Wyatt Wingrave as honorary secretary.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

THE HYDROSTATIC TEST OF STILLBIRTH.

The following case may be of interest as illustrating one of the fallacies to which the hydrostatic test is liable as applied to newborn infants.

Owing to some unfounded rumours an inquest was held recently here on the body of a female illegitimate child, which was exhumed after being buried ten days. The evidence at the inquest went to show that the child was born rather precipitately, but the woman was attended by some neighbouring woman first, then by a medical man, and finally by the parish nurse, who all saw the baby alive, though weakly. The child lived about five hours.

At the *post-mortem* examination, which was done by myself assisted by the medical man who attended the mother, we found that the body presented the appearance of a child born at full term, and fairly well developed. On opening the chest the lungs were found collapsed, not filling the chest cavity, and in a state of complete "atelectasis." We resorted to the hydrostatic test, and found the lungs sank when both were immersed together, when immersed separately, or even when small portions were thrown in—in fact, presenting all the appearances of a stillborn child.

I was obliged to confess to the coroner that had I not the indisputable evidence of five different people on oath that the child lived five hours, I should be compelled to swear that the child was stillborn, and had never breathed.

The only explanation, I suppose, is that the infant kept its feeble hold of life by whatever aëration the blood received through the trachea and the larger bronchi.

Fermoy. T. Dilworth, M.D.

A CASE OF RODENT ULCER TREATED WITH PURE RESORCIN.

Mrs. S., aged 70, had been suffering from rodent ulcer on the left side of the nose for twelve years. The ulcer recently presented an irregular surface discharging pus, with indurated and thickened edges. It was about an inch and a-half in diameter, and nearly a quarter of an inch deep. It had involved the inner canthus of the eye, and the lower eyelid was everted.

I had previously tried resorcin in an ointment with perhaps some slight retardation of the rate of growth, but lately had simply contented myself with protecting the surface of the ulcer with lint, using boracic lotion, as nothing else seemed to do any good.

Having, however, heard of a case in which pure resorcin had been used with benefit in rodent ulcer, I determined to give it a trial. The powdered resorcin was first applied daily, but, as this became painful, on alternate days. Soon an improvement took place. The sore gradually became more healthy-looking; portions of it sloughed; it became smaller and shallower; its shape from being irregular became circular; and finally it healed up entirely. This took place after the application had been in use for two months. It has now been apparently soundly healed for over a month, with, of course, some contraction of the tissues.

H. Bowen Williams, M.D.Brux., M.R.C.S., L.R.C.P.
Lewisham High Road, S.E.

DEVELOPMENT OF RODENT ULCER FROM SEBACEOUS CYST.

The accompanying illustration is taken from a photograph of a patient suffering from rodent ulcer. About five years ago I first attended the man in the out-patient department of the Clapham General Dispensary for chronic bronchitis. At that time he had an oval tumour about ½ inch long, which had the usual characteristics of a sebaceous cyst, on the right side of his forehead. I saw him at frequent intervals during the next two years, but the tumour showed no special alteration. About three years ago it became red, and presented indications of softening. I endeavoured on several occasions to get his consent to an operation, but on account of his age—then about 70—and his general feeble condition, he refused to

undergo any operation; and as I did not anticipate the present result, I did not press the matter, as I should otherwise have done.

I have no exact dates for reference, but it must be rather less than three years since the abscess thus formed burst spontaneously, leaving a very foul cavity, which I scraped out and dressed with iodoform and boric lint.



From time to time it became necessary to remove the undermined and sloughing edges, but in spite of treatment the ulcer has gradually spread. The photograph shows bone exposed in several places, and during the six weeks which elapsed after the photograph was taken, the ulcer continued to spread towards the left eye and round the right ear. His general condition was then such that he was not likely to live many weeks. I report this case as I have not found any other reports showing the possible termination of a sebaceous cyst in rodent ulcer.

Clapham. J. BUSFIELD, M.R.C.S., L.R.C.P., F.I.C.

SEVERE ANGINA PECTORIS RELIEVED BY OXYGEN INHALATIONS.

MR. V., aged 50, hotel proprietor, had lately come under my son's care, and since my return under my own, suffering very severely from spasmodic attacks of dyspnœa, which caused great anxiety to himself and relatives. The attacks had commenced four months ago, and steadily increased in frequency and severity. His general condition was unsatisfactory, fatty deposit on the heart, also inside and outside the abdominal cavity; the stomach and intestines were much distended, and the lips cyanosed. Without being intemperate, he was in the habit of taking several glasses of beer daily. He stated that brandy was the only thing which relieved the attacks.

Careful dieting to reduce the fat and relieve digestive oppression was prescribed, and he was urged to become a total abstainer; this he gradually arrived at, and he has remained so since. The attacks became more frequent for a time, shorter in duration, and displaying the characteristic features of very severe angina pectoris. The urine was at first albuminous, but now is not so.

Relatives and friends who were with him night and day gave strong evidence that each attack was of great immediate danger. He had been unable to take walking exercise, but now is able to take a long walk daily with fair and increasing comfort.

When his digestive difficulties had been relieved, I prescribed a mixture containing sp. eth. sulph. co. ℿxx, tr. digitalis ℿx, bismuth subnit. gr.x, mucilag. trag. ʒj, aq. menth. pip. to the ounce, thrice daily after food; and for the attacks, sp. amm. arom. ʒj in an ounce of water, together with inhalations of oxygen. He procured the cylinder and tube for inhalation, and each attack which has been treated by these two remedies has been immediately cut short, the severe cyanosis, dyspnœa, gasping and horror, and also the chest pains have been promptly arrested, and he goes to bed without any apprehension. For six weeks he has had no attack.

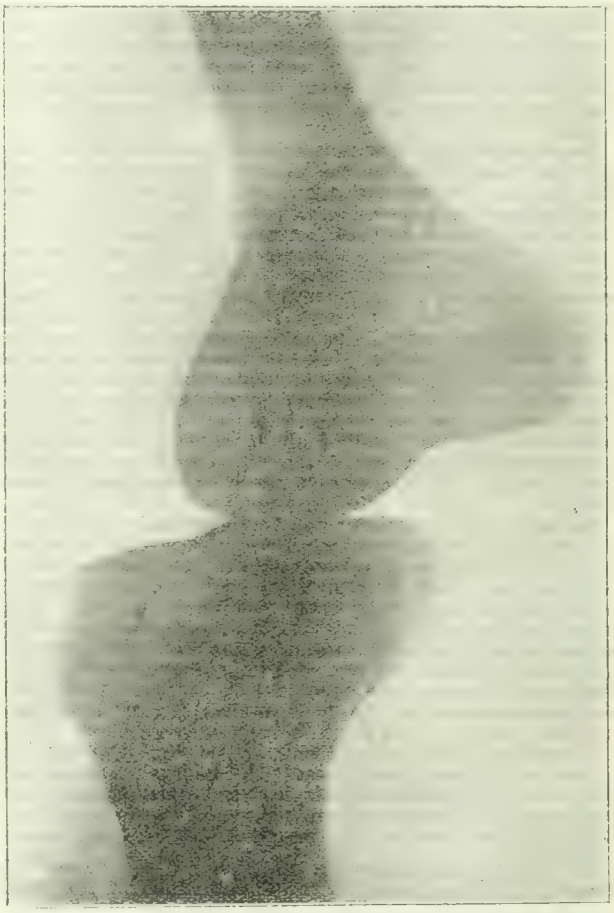
I give these simple and brief notes to show of what extreme value the inhalation of oxygen is in such severe cases.

Clifton. CHARLES STEELE, M.D., F.R.C.S.Eng.

CASE OF LATERAL DISLOCATION OF THE KNEE, CAUSED BY DIRECT VIOLENCE.

(By permission of MAJOR DODD, R.A.M.C.)

A. B., aged 30, was admitted to the Royal Arsenal, Woolwich, on July 31st, with the following injury: He had been unloading sacks of cement at the Royal Dockyard, when some fell upon him. The dislocation was directly caused by a sack striking the inner side of the leg, the thigh being fixed on the outside by others. The skiagraph was taken a few minutes before reduction, which was performed under an anæsthetic.



The after-treatment consisted in putting the limb up in a McIntyre splint, with applications of ice, etc. Passive movements were allowed after three weeks, the man being discharged on September 20th. He was ordered to wear a knee-cap or elastic bandage for several months.

Lateral dislocations of the knee-joint are somewhat rare, according to textbooks; and as in this case there is the additional interest of an *x*-ray photograph having been taken, I have been induced to publish the case.

THOMAS B. CARLYON, M.R.C.S., L.S.A.,
Civil Surgeon, Royal Arsenal, Woolwich.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

F. W. Pavy, M.D., F.R.C.P., F.R.S., President, in the Chair.

Tuesday, November 27th, 1900.

An Undescribed Crystalline Urinary Deposit.

Dr. T. R. Bradshaw (Liverpool) described the case of a man suffering from dilatation of the stomach who had taken large quantities of carbonate of magnesia. The urine showed an abundant deposit of sheaf-like bundles of very fine acicular crystals which were found to consist of monohydric magnesium phosphate.

Suggestions for a Possible Improvement in the Method of Removing Stones and Morbid Growths from the Interior of the Bladder.

Sir Thomas Smith stated that the object of his paper was to raise the question whether in the operation of suprapubic cystotomy for the removal of stones or morbid growths from the bladder it was possible to improve the present method of proceeding. In view of the greatly diminished risk of interference with the peritoneal cavity, the author suggested that in cases where it was desirable to obtain immediate union of the bladder wound, it might be worth consideration whether the operation should be intraperitoneal, so as to take advantage of the facility with which opposed surfaces of peritoneum united after suture. A short statement was made of the precautions which would have to be adopted suited to the requirements of an intraperitoneal operation, and of certain modifications in the routine method of performing suprapubic cystotomy.

Mr. Clement Lucas could not see that there was any advantage in the intraperitoneal method. The risk of the original operation was that the bladder might become septic, and the peritoneum was more likely to suffer from septic infection than were the fibrous and muscular tissues.

Mr. Bruce Clarke pointed out that suprapubic cystotomy was generally employed in septic conditions of the bladder, and which contraindicated the intraperitoneal method. The deliberate opening of the peritoneum and allowing septic urine to drain into it would not appeal to him, unless absolutely driven to it, which he could hardly imagine.

Mr. Freyer observed that the ease and simplicity of the suprapubic operation were its great danger; its mortality at the present time was terribly high. He referred to a paper by Mr. Gilbert Barling in the British Medical Journal, showing that, in 160 cases, suprapubic lithotomy had a mortality of 20 per cent., while lateral lithotomy and litholapaxy each had 5 per cent. In certain cases the suprapubic operation was essential, as for a large stone or tumour of the bladder, but he deprecated it as a routine practice. The suggestions contained in the paper were dangerous. That of injecting air for distending the bladder had been suggested before, but it was impracticable; a bladder filled with air collapsed immediately it was incised. During the removal of a vesical tumour or of a large stone, several quarts of water needed to be injected to make this possible. It would be a serious matter if the septic contents of the bladder were washed by this large amount of fluid into the general peritoneal cavity.

Mr. Christopher Heath saw no reason for opening the peritoneum, as he preferred not to close the bladder; thereby the bladder was given complete rest, and remedial agents could be applied to the bladder through the wound. By it alone could one make quite sure that the bladder had been absolutely cleared of all calculus.

Mr. Arthur Barker considered the suggestion of the paper a valuable one. The risks of sepsis must not be made too much of. The bladder could be well irrigated previously, it would be distended with air, and if it were held up to the surface by stitches there would be no fluid to run out, and the risk of sepsis would be slight. An advantage which would counteract this slight risk was the ready union of the peritoneal wounds and rapid recovery from the operation. Comparison of the bladder with the stomach indicated that the transperitoneal operations might be done with only very slight risk of sepsis.

Mr. W. G. Spencer thought the operation should be considered not an extension of suprapubic cystotomy, but as a new abdominal operation. Mr. Milton, of Cairo, in removing a very large stone intentionally opened the peritoneum, and on death of the patient some time afterwards from some other disease there was no evidence of peritoneal adhesion. As an abdominal operation he thought it would ultimately commend itself to the Society.

Sir Thomas Smith, in reply, said he had brought forward the operation for discussion without actually recommending it. As regards mortality, suprapubic lithotomy was much less successful than the lateral operation. The removal of the *débris* from the bladder should be done before the bladder was opened.

Perineal Urethrotomy and Cystotomy through a Transverse Superficial Incision after Celsus.

Mr. W. G. Spencer in this paper described how an operation, very similar to that described by Celsus, had proved of advantage in certain selected cases. The operation consisted in making an incision superficially across the perineum through its central point, with the ends curving backwards towards the ischial tuberosities on either side of the anus. The perineal and bulbar arteries on each side were then clamped and the external sphincter detached from the central point, and with the lower end of rectum retracted well backwards. The urethra was next opened exactly along the middle line backwards to the prostate, so that the neck of the bladder was reached without any tearing. A rapid healing followed this exactly median division of the urethra, so that the patient passed urine through the penis within a day or two, and after a week or ten days no more urine escaped by the perineum. Moreover, when the patient's legs were brought down from the lithotomy position the edges of the skin wound naturally came together in the fold. (1) One group of cases suffered from chronic urethral stricture, with false passages. The operation allowed of a complete median division of the stricture throughout its length, and the laying open of all false passages, so that the patients recovered without any fistula, and were able themselves to pass a large-sized bougie. (2) Exceptional cases of stone, where lithotrity or suprapubic lithotomy was unsuitable, the bladder being sacculated and contracted, were treated by this operation, which proved much superior to lateral lithotomy, owing to the preliminary arrest of hæmorrhage and the median urethral incision avoiding any tearing. (3) In some cases of prostatic obstruction, where the bladder was small, and the obstruction mainly consisting of an enlargement of the lateral lobes forming a collar at the neck of the bladder, the obstruction was easily plucked away or burnt by a cautery used through a rectal speculum. All manipulations were well in view, hæmorrhage was prevented, and the post-prostatic pouch drained by making a deep groove in the enlarged prostate, whilst injury to the rectum was prevented by the preliminary retraction.

Mr. Clement Lucas considered that the cases of stricture were perhaps those that least called for this operation, as there were other good methods. For cases of prostatic hypertrophy the suggestion seemed a most valuable one.

Mr. Freyer thought the operation was especially indicated in enlargement of one or both of the lateral lobes of the prostate.

Mr. Christopher Heath held that the incision should, before all things, be sufficiently free. In some respects there had not been much advance on the old median perineal operation. The chief point was to open the membranous urethra carefully so as not to wound its roof.

Mr. Spencer replied.

CLINICAL SOCIETY OF LONDON.

William Cayley, M.D., F.R.C.P., in the Chair.

Friday, November 23rd, 1900.

Thrombosis of Inferior Vena Cava and of the Left Iliac and Femoral Veins simulating Perforating Gastric Ulcer.

Dr. Sidney Phillips read notes of this case.

A maidservant, aged 19, after suffering from indigestion, was seized with symptoms of perforated gastric ulcer, and sent to St. Mary's Hospital. She improved for a few days, but had on December 5th, 1899, signs of throm

bosis of the deep veins of the left calf, succeeded by œdema of the whole lower limb; on December 18th a rigor occurred, with death by coma. The necropsy showed all the internal organs were absolutely healthy, but there was a recent soft thrombus in the inferior vena cava and in the left common and external iliac veins and in the veins of the left lower limb. Death had resulted from extension of thrombosis into the heart.

Dr. Phillips pointed out that the thrombosis began apparently in the upper part of the inferior vena cava, and spread upwards and downwards with a fatal result. The case appeared to be one of "primary infective thrombosis." The chief point of clinical interest in the case was in the resemblance it bore to a case of perforating gastric ulcer; but it was decided during life that there was no such perforation on the evidence of the physical signs: one of these was the evidence of distension of the stomach. Dr. Phillips suggested that in cases of suspected perforating gastric ulcer the state of distension of the stomach should be taken into consideration in deciding on the advisability of immediate operation.

In reply to the Chairman, Dr. Phillips stated that the clot had not been microscopically examined.

Dr. S. West gave details of a somewhat similar case which he had reported several years ago.

Late Syphilitic Pyrexia (Intermittent Essential Fever of Syphilis).

Mr. Campbell Williams reported this case:

The patient was a man, aged 43, who contracted syphilis in December, 1896. When seen on January 10th, 1897, he had the usual sore glands and secondary symptoms. He was treated with mercury mainly, alternately with iodides, and was free from all symptoms for eighteen months before ceasing attendance. In January, 1900, he had influenza. Mr. Williams heard on April 14th that he was very ill from post-influenzal intermittent fever, and was being treated with quinine and arsenic. He was seen on April 18th, and had periostitis of the right clavicle, and was still pyrexic. His temperature rose every afternoon, crisis came in small hours of the morning. Syphilitic fever was diagnosed; he was put on mercury, and on April 25th his temperature was normal, and had so remained ever since. He was now quite well, and fat.

Dr. S. Phillips remarked that pyrexia in syphilis was not rare, and was known to John Hunter. He himself had described a case in 1888 before the Medical Society. He had seen 4 other cases at the Lock Hospital and 2 at St. Mary's Hospital. The late Dr. Bristowe had exhibited a case at the Society.

Dr. Savill referred to a case at Croydon, that of a boy, aged 15, with high temperature, who died after nine months. At the necropsy extensive endarteritis was found, and large gummatous masses in the skull, eyes, and clavicle.

Mr. Charters Symonds suggested that in all these cases there was probably a gummatous mass which had not been discovered.

After remarks by Dr. Cyril Ogle,

Mr. Campbell Williams, in reply, said that fever might be termed intermittent, continuous, or irregular, and he used the term "essential" for that reason.

Splenectomy for Wandering Spleen.

Mr. Bland-Sutton reported details of a case in which he had performed splenectomy for an enlarged and wandering spleen in a woman aged 34.

The patient, already the mother of seven children, was two months pregnant at the time of the operation. The operation was carried through without difficulty, and the patient left the hospital eighteen days after it. Her subsequent health had been very good.

Mr. Bland-Sutton had 7 patients living from whom he had removed the spleen, and from inquiries which he had made it appeared that there was nothing in the condition of any of them which would suggest that they were spleenless.

Dr. Percy Kidd inquired if there was much hæmorrhage from the patient who suffered from leucocythæmia. He had a patient suffering from that condition who had very little hæmorrhage after nephrectomy, which the speaker thought remarkable.

Dr. Voelcker asked if there was an accessory spleen in either of Mr. Bland-Sutton's cases. He had inspected one case eighteen months after splenectomy without meeting any sign whatever of accessory spleen, and yet the blood after the operation had shown no sign at all of any change.

Mr. Bland Sutton, in reply, said he was always careful if possible not to operate on a case of leucocythæmia. The fatal case was of a lady, aged 26, whose white corpuscles were as 20 to 1,000 red. She did well for forty-eight hours, when she developed nervous symptoms, and had acute dilatation of the abdomen. Nothing in that case pointed to internal hæmorrhage. Since then he had refused to remove the spleen if the white corpuscles were twice the normal proportion. He had never found a spleniculus, though constantly on the look out for one. In the case at the Middlesex Hospital that died eighteen months after splenectomy, the spleen and liver were syphilitic at the time of the operation. In a case operated upon by Sir Spencer Wells, the patient (a lady) was still in excellent health, though very thin.

Nephritis without Albuminuria.

Dr. W. P. Herringham communicated this case.

A boy, aged nearly four years, was admitted into the Children's Hospital, Paddington Green, for diarrhœa and vomiting, on March 29th, 1899, and was cured and sent to the hospital's convalescent home on May 5th. While in the ward the urine was twice examined and was found natural. There was no previous history of scarlatina. From May 5th to July 14th he was in good health at the convalescent home, where there was no case of scarlatina. On July 14th dropsy began in the feet, and spread to the legs and face. The urine was not albuminous. He was sent back to the hospital, and for the next six weeks formed a typical picture of subacute nephritis, but without ever showing any albumen in the urine, which was exceedingly scanty in amount. No formed elements were ever visible under the microscope. On August 29th he died. At the *post-mortem* examination (made by Dr. Guthrie) the viscera, including the kidneys, appeared natural. Microscopical preparations (made by Mr. Turner) showed cloudy swelling in a few of the convoluted tubes, and albuminous plugs in a great many, in a few of the collecting tubes similar plugs. An exudation, apparently of serum or albumen, was found in almost all the glomeruli, and there might have been some cellular increase in the capillary tuft.

As the child was under hospital observation for 6½ months before the onset, scarlatina might be excluded. Several cases had been recorded of nephritis without albuminuria, following scarlatina, but though it had been suspected to occur without scarlatina, this had never been proved by *post-mortem* examination. Why the anuria should be so extreme he did not understand.

In repy to Dr. Ewart,

Dr. Herringham added that the urine was very acid, containing no albumen or casts, and the patient passed only about 2 fluid ounces per diem. The bowels were regular, but there was diarrhœa during the last week. The food was milk.

The case was further discussed by Dr. Batten and Dr. S. West; and Dr. Herringham replied.

GLASGOW SOUTHERN MEDICAL SOCIETY.

William Watson, M.D., President, in the Chair.

Thursday, November 15th, 1900.

Plague.

Dr. Charles Workman resumed the discussion on plague,[1] and gave a description of the *post-mortem* appearances of one of the fatal cases of the recent epidemic. The patient, a boy aged 9 years, took suddenly ill with headache and vomiting when in bed during the early hours of the morning. In the evening a swelling appeared in the right axilla, and death took place on the third day. External examination *post mortem* revealed nothing abnormal except the swelling in the axilla. On opening the axilla the tissues were found to be much swollen and œdematous. A clear fluid escaped from the wound, and the parts immediately around the enlarged glands were infiltrated with a bloody fluid, hæmorrhage by diapedesis having presumably taken place. On opening the abdomen the spleen and mesenteric lymphatic glands were found enlarged and congested. The brain and meninges were found quite normal, and as no symptoms during life pointed to any pulmonary complications the thoracic cavity was left unopened. From the glands and spleen cultures were made on agar, and inoculations upon mice proved fatal in a few days. As an explanation of the fact that none of the other inmates of the house caught the infection Dr. Workman suggested that the very virulence of the disease and the early death prevented the distribution of the virus. From his knowledge of infectious disease he was strongly of opinion that almost all were spread by the contamination of food and drink, and comparatively few by direct contact. In combating plague, therefore, great care should be taken to preserve food supplies from contamination. Food should be eaten as soon as possible after having been cooked. All uncooked fruit and vegetables should be avoided, for in large towns these were liable to contamination by such vermin as

[1] British Medical Journal, November 10th, p. 1379.

rats and mice. The fact that in the case described the mesenteric lymphatic glands were enlarged and congested pointed to the bowel as the probable medium through which the virus had gained an entrance. Reverting to the case he had already described in which he discovered a peculiar feature, Dr. Workman said that sections of the spleen and glands, when stained by Gram's method, showed scattered colonies of diplococci, probably Fraenkel's pneumococcus. This discovery demonstrated that there had been a mixed infection, and though no pulmonary symptoms were observed during life, the double infection he thought a possible cause for the rapidly fatal course of the disease. He showed the cover-glass preparations from the axillary glands of the boy stained with thionin in which the plague bacilli were seen in enormous numbers.

Dr. R. M. Buchanan stated, as a result of his experience of the recent epidemic, that all the cases presented in one or more regions of the body glandular enlargements constituting the characteristic bubo. The enlargement was in the inguinal region in 5 cases, in the axilla in 1, and in the neck in 1. Of the inguinal cases, 2 died in the acute stage without suppuration of the bubo, in 1 the bubo consisted of several glands in the condition of distinct abscesses, and in 2 the necrotic and suppurative process resulted in gangrenous openings discharging pus, and connected with extensive suppurative infiltration of the tissues of the thigh and pelvis. In none of these cases was any solution of continuity found on the surface of the leg or foot which might have admitted the infection. The cervical case presented points of great interest. The body was that of an infant 10 days old, born somewhat prematurely of a plague infected mother. It sickened on the seventh day and died on the tenth. A chain of characteristic buboes was found on each side of the neck, involving the deep cervical glands, and both lungs were studded with small pneumonic foci sharply defined with zone hæmorrhage, while fibrinous exudation appeared on both pleural surfaces. The skin in one case showed a faint, typhus-like rash, and some petechiæ, but in none were there found any of the grosser hæmorrhagic skin lesions such as were found in virulent epidemics, and which in olden times gave to the disease the name of "black death." The general effect of the disease on the parenchymatous organs was seen in a cloudy swelling of the liver, kidneys, and suprarenals. Death resulted from the action of the toxin of the heart. In regard to the mode of distribution of the infection, he said the pneumonic form was the most dangerous of all, as the sputum—rich in plague bacilli—might undergo drying without diminishing the virulence of the contained germs. Inspiration of dried particles of such sputum was almost certain to cause infection by way of the cervical glands, the lungs, or intestines. The discharge of pus from suppurating buboes did not appear to be attended with danger, as the virus was rendered inert in the process of suppuration. The urine and fæces might be the means of spreading the virus, but no well-authenticated case was on record, and he had examined the dejecta in a number of cases with negative results.

Dr. J. Brownlee said that from his experience in Belvidere he had arrived at the conclusion that the injection of serum had a prophylactic power except in cases where there existed a mixed or purulent infection. He advocated the intravenous method, when it could be carried out, in preference to that of the subcutaneous.

The President, in conclusion, shortly reviewed the discussion.

MEDICAL SOCIETY OF LONDON.

John H. Morgan, F.R.C.S., President, in the Chair.

Monday, November 26th, 1900.

The Diagnosis and Treatment of Thoracic Aneurysm.

Dr. de Havilland Hall, opening a discussion on the subject, read the notes of the following case of aneurysm of the transverse and descending aorta:

A man, aged 55, who had had syphilis in early life, was gouty, and had atheromatous vessels. On the day after a strain he complained of a harsh cough, which had a peculiar clanging character with hardly any expectoration. At first there were no physical signs of aneurysm, but later dulness was noticed at the left apex, this was followed by pulsation in the second left interspace. There was some fulness of the veins of the neck and marked bronchial breathing in the left interscapular region. At no time was there any inequality of the radial pulses or of the pupils. Abductor paralysis of the left vocal cord occurred only four days before death. During the last six months of life he had dysphagia and constant coughing up of a glairy viscid mucus. At an early period of the case Tufnell's treatment was tried for seven weeks, but the patient was so intolerant of confinement to bed that it had to be discontinued. The end was preceded by very severe attacks of paroxysmal dyspnœa like laryngismus stridulus, with a cough like whooping cough. Death occurred in one of these attacks four and a-half years after the commencement of symptoms. At the necropsy a tumour about the size of a fœtal head was found lying immediately above the sac of the pericardium. The whole of the transverse and descending arch of the aorta was apparently included in the aneurysm. There were evidences of pressure on the trachea and both bronchi, but especially the left, and on the œsophagus. The left lung was collapsed to about two-thirds.

Dr. Hall said a harsh, clanging cough in a middle-aged man with atheromatous vessels a history of syphilis was very suggestive of aneurysm. In view of the frequency of implication of the recurrent laryngeal nerve laryngoscopic examination was indicated in all cases of obscure intrathoracic disease. Unilateral abductor paralysis was compatible with a practically unaltered voice. For the paroxysmal dyspnœa, and not infrequent attacks of laryngeal spasm, tracheotomy was usually useless, as the main cause was direct pressure on the trachea. The diastolic shock or thud was the most reliable ausculatory sign of aneurysm; the presence of a murmur was of comparatively small importance. He had not found tracheal tugging of assistance in diagnosis. Loud tracheal breathing and dysphagia, pointing to pressure both on the trachea and œsophagus, was very suggestive of aneurysm. The Roentgen rays promised to be of the greatest assistance. In regard to the treatment of aneurysm, the cases subjected to the Tufnell method required careful selection, and restriction of the diet to the extent recommended by Tufnell was not advisable. With this plan drugs should as far as possible be avoided. His experience of the treatment of aneurysm by the subcutaneous injection of gelatine, limited to one case, was not favourable. Points for discussion were: (1) The diagnostic value of the diastolic thud (2) Was tracheal tugging a sign of great importance? (3) The range of the Roentgen rays in the diagnosis. (4) If the Tufnell plan of treatment were adopted, how long should it last, and should it be continuous or intermittent? (5) What amount of solids and fluids had been found to answer best? (6). Should potassium iodide be given during the course of Tufnell's treatment? (7) Was there any evidence of the utility of calcium chloride in the treatment of aneurysm? (8) Was Lancereaux's method of treatment by the subcutaneous injection of gelatine safe and reliable? (9) For what conditions should tracheotomy be advised?

Sir William Broadbent said the main points indicating that consolidation of the sac was taking place were diminution in the diastolic shock and modification of the ringing second sound. Murmurs were of no significance as a general principle. When the diastolic shock was present it was absolutely diagnostic, but its absence was not good negative evidence. Tracheal tugging, for which he always looked, although not diagnostic, was of much interest. The use of the Roentgen rays was obviously of much importance, particularly in seeing the pulsation on the screen. They might be of especial use in cases absolutely inaccessible to physical diagnosis. Potassium iodide served every purpose in treatment. The Tufnell treatment in its extreme degree was not indicated. The great opportunity for successful treatment was when the sac had enlarged, and the mouth was relatively narrow. No general rule could be laid down for individual patients. Very rarely was tracheotomy at all promising, but free bleeding often gave much relief to the dyspnœa and pain.

Dr. Hugh Walsham described the skiagraphs of the case which had been exhibited. The Roentgen rays would probably be of immense use in aneurysms of the transverse and descending arch. A case was described that had been diagnosed as aortic regurgitation some years before, in which aneurysm had been found by means of the screen only a few weeks ago.

Dr. Maguire had often asked if a working man had ever been cured of aneurysm by Tufnell's treatment with recumbency for a year in the sense that he could return to his laborious work, and had never had a satisfactory answer. He had thought there was a greater tendency to increased pressure on the trachea and œsophagus with rupture into these

tubes from this method. He had used Lancereaux's method in 4 cases, and, speaking generally, with good results. About 3 ounces of a 2 per cent. sterilised warm solution of gelatine in normal salt solution were injected into the intermuscular tissue, preferably of the buttock. He believed the good results described by Lancereaux were real, and that, as he stated, the method had not given so good results in hands other than his own. In the 4 cases there was evidence of consolidation in the sac. In one, after the fourth injection, the aortic diastolic murmur disappeared, also a systolic murmur at the apex of the heart, and there were signs that the aneurysm had diminished in area. In 2 cases there was a little improvement of voice; in a third case the dulness had diminished. The treatment was perfectly safe if care were exercised in carrying it out.

DR. SANDERSON (Brighton) thought a neurotic patient was not suitable for the Tufnell treatment. There was a too great tendency to introspection.

DR. OSWALD BROWNE remarked on the frequency in which the aneurysms of the transverse part of the arch began from the posterior surface. Hence physical signs being absent pressure symptoms were of paramount importance. Implication of the recurrent laryngeal nerve was not absolutely common. These aneurysms passed directly backwards, and came to lie in the left interscapular region; those which produced pressure on the œsophagus had extended to the descending part of the arch. A case was described in which recovery took place under calcium chloride and rest; the man had returned to heavy work, and continued in it for two years.

The discussion was adjourned.

EPIDEMIOLOGICAL SOCIETY.

PATRICK MANSON, C.M.G., M.D., LL.D., F.R.S., President, in the Chair.

Friday, November 16th, 1900.

SOME PROBLEMS IN TROPICAL EPIDEMIOLOGY.

THE PRESIDENT delivered an address on tropical epidemiology. He said that tropical and comparative pathology had exerted a powerful influence on general pathology by showing that there was much in common between the diseases of man and beast; that insects, nematodes, and protozoa were active agents in the diffusion of diseases; that there were disease germs other than bacteria, and other means of infection than personal contact and food and drink. One of the most striking illustrations of these new aspects of diseases was the discovery of the part played by various species of gnats or mosquitos in the causation of filariasis and of so called malarial fevers, the insects acting as intermediary hosts of blood parasites, nematodes, and hæmatozoa respectively, which they in their turn inoculated into man. The possibilities arising from Ross's discovery were vast. The fact, as so often happened, discovered almost as it were by accident, had been verified and placed beyond doubt; but the questions involved grew in extent and complexity till the time had arrived when what he might call promiscuous work would be of little avail, and further progress was possible only by a wide division of labour among a number of investigators, each confining his attention to one aspect or section of the field of work. It was known that certain species of mosquito were efficient definitive hosts of the malarial parasite and that others were not. It was known that one species stood in this relation to the filaria nocturna, but there were at least four species of bloodworm, and at the very least 300 of mosquitos, and so with the *Anopheles* and the several plasmodia of malaria. Assuming that the deadly blackwater fever of Africa was produced by the same parasite as the malarial fever, though this was not proved, did it owe its virulence to its passage through the *A. funestus*, which was widely diffused in malarial Africa, and said to be most prevalent in the homes of blackwater fever? There were countries in which under apparently identical conditions filariasis and malaria existed together or separately, and again malaria was unknown in many localities where the conditions of temperature, moisture, vegetation, and all that they were accustomed to associate with it, were found; nay more, in some places, as Mauritius, where it had formerly been absent, the date of its introduction was known. The questions suggested by these observations were, Did these differences depend on the presence and absence of the particular species of mosquito serving as hosts for the several parasites of filariasis or malaria respectively, and this being so, was their absence, when not due, as in the case of many South Sea Islands, to their not having been introduced, to be explained by the absence of some condition essential to the life of the particular mosquito, or by the presence of something inimical thereto, the discovery of which might assist in their extermination elsewhere? He was rather inclined to the latter view, and that it was most probably one of the internal parasites, protozoic or fungoid, to which all insects were extremely liable, though it might possibly be something external. He would propose that an expedition should be sent to carry out a series of observations and experiments on the malarial *Anopheles* and the filarial *Culices* of the Pacific Islands extending over two or three years. The members should determine the several species of mosquito indigenous in an island, as Samoa, where malaria was unknown but filariasis was endemic, and of another where the reverse obtained. Then, importing from the latter a stock of malarial *Anopheles*, they should study them along with the filarial *Culices* in Samoa first in aquaria, and then under normal conditions in natural or artificial ponds and puddles, pursuing the same methods in the malarious island free from filariasis with the local *Anopheles* and filarial *Culices* from Samoa. It would thus be shown whether the absence of *Anopheles* from the one and of the particular *Culices* from the other were due to chance or to the presence in the waters of either island of something inimical to the prosperity of *Anopheles* and *Culices* respectively, which, if discovered, might be introduced into the other. Exotic mosquitos might be, and had been, naturalised in a country as the *Culex ciliaris* appeared to have been in Australia, and the *Anopheles* in Mauritius, where, prior to 1867, though many immigrants suffered from malarial fevers acquired elsewhere, the disease did not spread until the *Anopheles* were introduced. Many such persons must have settled in Samoa, and as the *Culex ciliaris* had been introduced into Australia from some of the South Sea Islands, the *Anopheles* might be carried to Samoa in the holds of vessels from Queensland, and with the same disastrous results as in Mauritius. Filariasis and elephantiasis arabum were both extremely rife in the Pacific Islands, as many as 30 to 60 per cent. of the population suffering from each; in some small islands indeed there was no elephantiasis, but in others hardly anyone, including Europeans, was exempt. Yet it seemed to confer a degree of immunity to filariasis, the two diseases coexisting in comparatively few individuals. Their geographical distribution was the same, and elephantiasis often supervened on filariasis, but their relation was obscure, and he believed, if he might so express it, a negative one. Elephantiasis, like filariasis, was an affection of the lymphatic system; it was preceded and accompanied by acute lymphangitis, commencing in areas of lymph stasis. He believed the essential cause of the lymphangitis to be a bacterial infection occurring in the areas of the stasis, which stasis was, at any rate in most cases, caused by filariasis, an antecedent condition though not the true cause of the lymphangitis that led to the production of elephantiasis. Considering the bearing of these problems on the health and even the lives of our countrymen in so many parts of the empire, Dr. Manson hoped that if the Government would not undertake the investigations he had indicated, some wealthy individuals might be found to do so, as they had been to organise expeditions to explore the polar regions, or to determine the mode of formation of coral reefs and islands.

SOCIETY OF ANÆSTHETISTS.

DR. GEORGE FLUX writes: I shall be much obliged if you will correct an inaccuracy in your report of the meeting of the Society of Anæsthetists on November 2nd. In a description of the open valveless stopcock invented by me for nitrous oxide gas administration you say, "the weight of the gas is relied upon to *prevent* undue admixture with air." The exact contrary is the fact, the particular function of the stopcock being to *allow* the air to mix freely with the gas.

A MEDICAL golf tournament at Trafford Park, which terminated recently, drew 68 competitors. In the final round, Dr. W. J. Baird of Bury (7) met Dr. Philip Worley of Pendleton (9), and proved the winner by 3 up and 2 to play. This is the first meeting, but it is hoped that a cup will be provided for annual competition.

REVIEWS.

Some Books of the Season.

One of the prettiest books of the season is Mr. Treves's *Tale of a Field Hospital* (London, Melbourne, and New York: Cassell and Co.) with its soft green leather cover and rubricated pages. The story told is already in its main features familiar to the readers of the British Medical Journal, for it was told, in outline at least, in the letters which Mr. Treves sent home from Natal while yet working with the hospital, the full tale of which he now tells at more leisure and with greater detail. Mr. Treves loves a good story whether pathetic or humorous, and tells either well, and he can draw a pen-picture with a few rapid touches until the scene lives again. The chapter entitled "The Hospital under the Ridge" (Colenso) is an instance; but there many others, as for example, that which describes the start from Spearman's when the Volunteer Ambulance Corps, organised by Colonel Gallwey, C.B., R.A.M.C., irreverently called the Body Snatchers by the men, carried 150 badly wounded men twenty-five miles to the railway at Frere. There were twelve men to each stretcher, and they got all their burdens safely to the station, and some of them were delirious, with one exception, a man who died just as the goal was in sight. The book is illustrated by photographs taken by the author. It is short, it is well written, and there are some chapters which we are inclined to think will live as pictures of war as it really is, war as the surgeon sees it when the excitement is passed, and the harsh realities remain.

The Rev. W. Tuckwell's *Reminiscences of Oxford* are concerned chiefly with the middle third of the nineteenth century. This is, perhaps, the most interesting period of the history of the University, for it was then rocked to its foundation by two forces which were divergent, if not antagonistic. The one was the movement of which Pusey and Newman were the protagonists, the other was the great scientific awakening in which Sir Henry Acland was the predominant influence. There were great men before Agamemnon, and Mr. Tuckwell gives a sympathetic picture of the discouragement under which Dr. Daubeney did much good pioneer work. Of Acland's work he writes with admiration, of his character with reverence. Mr. Tuckwell gives an account of the inveterate opposition of the proposal to erect the new museum, as it was vehemently denounced by economists on the ground of cost, by the old fashioned classicists as intrusive, and by theologians as subtly ministering to false doctrines, heresy, and schism. He tells, also, how the victory was won, and gives an amusing account of the meeting of the British Association in Oxford in 1860, when Huxley encountered Bishop Wilberforce, not with complete success. Mr. Tuckwell gives also a sketch of the leading medical practitioners in Oxford in the Thirties, and a most engaging portrait of Mr. Tuckwell, who was then the leading surgeon. Of the other great movement to which we have referred he deals chiefly by way of anecdote and biography. The book is never dull, is full of good stories, and is illustrated by some excellent portraits.

The lady who writes under the name of "Ouida," we believe, lives or lived in Italy, and, like many others who have dwelt long enough in that fair country to learn something of the life of the peasantry, she has become penetrated by a deep compassion for their unhappy lot. Professor Celli, in the remarkable study of the cause and prevention of malaria which we recently had the opportunity of printing, gave incidentally a picture of their hard lives of unremitting toil for rewards which barely keep body and soul together; and we therefore welcome a new edition of *The Waters of Edera* (London: Chatto and Windus. 3s. 6d.), a romance which gives a vivid impression of the terrible burden that lies upon a people which for fifteen hundred years has suffered many things of many tyrants and does not now appear to be in much happier case under a constitutional monarchy. It may be difficult to find a remedy, but at least science seems to be pointing a way by which some of the suffering may be lessened.

Mr. W. Clark Russell appears to have an inexhaustible supply of stories of the sea, and his last, *The Pretty Polly* (London: Chatto and Windus. 5s.) is described in its sub-title as "a voyage of incident." The incidents are of the usual order, winding up with a kind of double shipwreck, and the matter is eked out by cheap sneers at doctors and their fees. Why a doctor should be expected to work without fees while the storyteller sells the books he writes we do not profess to explain.

In *Queen Victoria: a Personal Sketch* (London, Melbourne, and New York: Cassell and Co. 3s. 6d.) Mrs. Oliphant has written a sympathetic history of the Queen's life—not of the Queen's "life and times," but of the gracious lady herself, whose influence has had so large a part in moulding the manners and raising the social standard in the United Kingdom during the second half of the century which is now fast drawing to a close. The volume is very fully illustrated, and the text is far from being a mere compilation, for the accomplished authoress has thrown her heart into the task.

In *Tommy and Grizel* (London: Cassell and Co.) Mr. J. M. Barrie has written a kind of continuation of *Sentimental Tommy*, carrying on the life of that extraordinary youth through a period of great splendour in London to a sad eclipse. It is a study of the artistic temperament, and sometimes makes the reader sigh for a stronger nature—for Grizel is not given that name without reason—and Tommy's end, though so gruesome as to be almost grotesque, seems not undeserved. It is a powerful book, if not exactly cheerful reading.

Mr. G. A. Henty has lost no time in taking advantage of the stirring events of the last year in South Africa as the theme of one of those romances of war which he knows so well how to adapt to the youthful taste. *With Buller in Natal* (London: Blackie and Son) is the story of a young man who lived in Johannesburg, and its opening pages contain an account of the brutalities which the refugees suffered on their way to Natal even before the war commenced. The hero joins a company of scouts, of which he is chosen leader; he takes part in the battles of Dundee and Elandslaagte, shares Yule's retreat to Ladysmith, is wounded and taken prisoner, escapes in time to witness Spion Kop, and finally enters Ladysmith with the relieving army. The scouts pass through many adventures and hairbreadth escapes, and altogether the story is interesting and exciting.

The photographs of birds and their nests, taken by Mr. Kearton and his brother are well known, and the skill, perseverance, and woodcraft expended in obtaining them has always excited the admiration of everyone who has seen the results. Mr. Richard Kearton has, therefore, done well to bring together a series of 100 taken by Mr. C. Kearton, and to issue them in a book for children, *Our Bird Friends* (London, Melbourne, and New York: Cassell and Co). If some of the boys who now wander aimlessly about with a snapshot camera in search of subjects would set to work to emulate Mr. Kearton in the field—and attention need not be confined to birds—they would probably derive more pleasure themselves, and would certainly give more pleasure to others, than by producing hideous groups of grinning friends.

The historian of the future who wants to learn what the domestic manners and customs of the great middle class of the last quarter of the nineteenth century were like will hardly do better than consult the stories which Mrs. Molesworth writes for children. She catches the atmosphere of the quiet home life better than many writers of greater pretensions, and all her well-known quality is to be found in her new book, *The House that Grew* (London: Macmillan and Co. 4s. 6d.), the story of the simple adventures of a family of four children.

Of the toy books of the year, one of the most original is the *Tale of the Little Twin Dragons* (London: Macmillan and Co., 6s.), by S. Rosamond Praeger, a droll fairy story, with droller pictures in colours. The dragons look and act rather like Scotch terriers, but authentic information as to dragons is so limited that the artistic imagination is justified in claiming full play.

Another toy book which appeals to younger children is *Droll Doings* (London: Blackie and Son) which has some very humorous drawings in colours by Harry B. Neilson, showing various animals in human guise.

In *Old Fires and Profitable Ghosts* (Cassell and Co.) we have a book of ghost stories by Mr. A. T. Quiller Couch. The tales are of "persons who either in spirit or in body revisit old

scenes, return upon old selves or old emotions, or relate a message from a world beyond perception." Some of them are said to be records of actual adventures, while others "have, if not their originals, at least their suggestions, in fact." The stories are good of their kind, though they do not produce on our "fell of hair" the rousing and stirring phenomena which, according to Macbeth, are the physiological effects of a "dismal treatise." Perhaps, however, this may be due to the fact that our *arrectores pilorum* have long since, in a figurative sense, "sheathed their swords for lack of argument." It is needless to say that the tales are well told, and the slightest of them bears the hall mark of the fine literary workmanship of "Q."

With Rifle and Bayonet (Blackie and Son, Limited), by Captain F. S. Brereton, R.A.M.C., is a story of the Boer War which is certain to find many readers on account of its subject. But it also deserves to be widely read for its own merits. Captain Brereton has already shown that he can tell a story with military verve in his book entitled *With Shield and Assegai*, which was favourably noticed last year. In that work the hero went though the Zulu War. In the present story he fights against the Boers. *With Rifle and Bayonet* has in it enough of varied adventure and of the alarms and excursions of war to please boys in the hot stage of khaki fever. The author bears testimony to the courage and devotion of the officers and bearers of his own corps, who are described as "picking up the wounded, applying dressings, and carrying the poor fellows away with the coolness and bravery which matched that of the other soldiers." We could have wished that the noble lord who figures in the tale had been given a less grotesque title than O'Farnel, which sounds like one of Victor Hugo's remarkable inventions. The illustrations are clever and spirited, but we feel it our duty to protest against the one in which a huge Highlander is represented as "burying his bayonet" in the body of a fugitive Boer. There has for many months past been far too much of this kind of artistic hooliganism in our illustrated periodicals. It is scarcely too much to say that such pictures together with the truculent descriptions of war correspondents tend to inflame the minds of the young with a false patriotism which may have evil effects of a far reaching kind. The tone of Captain Brereton's book is, however, throughly healthy.

In *Philip Winwood* (Chatto and Windus, 6s.) Mr. Robert Neilson Stephens presents us with a sketch of the domestic history of an American captain in the War of Independence. The narrative, which embraces events that occurred between and during the years 1763 and 1786 in New York and London, is supposed to be written by the captain's "enemy in war, Herbert Russell, lieutenant in the loyalist forces." Sydney Smith says that the signs by which a good novel is to be known are that it keeps the reader aloof from the society of his fellows, except at meal times, when he comes to table in so misanthropic a temper that he insults his host and even contradicts a bishop. Mr. Stephens's book does not exactly fulfil those conditions, but it is well written and thoroughly readable, which is equivalent to saying that it is better than the average of novels.

In a Cathedral City, by Bertha Thomas (price, 6s.; Chatto and Windus) is described on the title page as "a new edition." One might say of it, as Dr. Johnson said of Richardson's novels, that a man would be tempted to hang himself if he read it for the story. The effect is decidedly soporific, but that may be perhaps counted as a proof of the fidelity with which the artist has rendered the atmosphere of a cathedral city. The work has considerable literary merit, and the author has a delicate touch in the pourtrayal of character.

Among books for children intended to combine instruction with amusement, we are inclined to give the first place to *Our Darlings' First Book* (Blackie and Son, Limited), which is described with perfect truth on its title page as consisting of bright pictures and easy lessons for little folk. It is impossible, in looking at this beautifully illustrated book, to refrain from feeling something like envy of the children of the present day, to whom the path of learning—which to so many of us, alas! was so rough and weary—is made smooth and pleasant. It has been truly said that there is no royal road to learning; but we venture to think that a tolerably near approach to it has been made by Messrs. Blackie in this charming introduction to the mysteries of the alphabet. It will save children many a tear and teachers much disturbance of temper.

A Noah's Ark Geography (Macmillan and Co., Limited) by Mabel Dearmer, recites the wonderful travels and adventures of Kit, Jum-Jum, and the Cockyolly Bird. As Dr. Syntax travelled in search of the picturesque, so Kit travels in search of geographical knowledge—though, fortunately, he does not know this. His travelling companions cannot bore him too much, nor can they annoy him by their superior intelligence, for they are of that stolid race of creatures who live in Noah's Arks, and do not trouble themselves about the riddle of the universe or the relativity of knowledge. So they are carried about in their ark, and, like Ulysses, see the manners and the cities of many men. The book is, in fact, a geographical powder, skilfully hidden in a literary jam, that will be taken unsuspectingly by the little ones; and, we doubt not, with the intended effect.

The April Baby's Book of Tunes with the Story of How they came to be Written, by the author of *Elizabeth and her German Garden* (Macmillan and Co., Limited), provides a thread of narrative on which the dear old rhymes that have been favourites in nurseries for many generations are strung. They are set to music which can easily be sung by young children, and many of them are charmingly illustrated by Miss Kate Greenaway. We have seldom, even among the work of that delightful artist, seen a daintier picture than that of the three little girls in red tipped with fur which forms the frontispiece.

The City Press C.I.V. Souvenir, which appears in an appropriate khaki cover with a Red Cross on one side, is an illustrated account of the City of London Imperial Volunteers. It contains a history of the regiment, an official list of the members with their regimental numbers, with portraits of the men "who have fallen, received commissions in the army, or achieved distinction." There is also a list of the killed and wounded, with a description of the return of the C.I.V.'s to London. The book is copiously illustrated with numerous portrait groups, and nearly 650 portraits of individual members of the regiment. There are also a number of "general illustrations," among which we note one of some C.I.V. men being inoculated against typhoid fever on board the *Garth Castle*. Altogether the book is an interesting record of an interesting episode in the war.

Messrs. W. H. and L. Collingridge, of the City Press Offices, issue a *War Souvenir of the Imperial Yeomanry* (price 6d.), of which the first number is before us. It contains a number of portraits of officers, group photographs of members of various yeomanry companies, and of some of the parades. There is also a roll of each company and particulars of the circumstances under which it was raised. When complete the work promises to be an interesting record of a striking episode. We think, however, that the publishers might have avoided putting advertisements on the back of some of the pictures.

Pears' Annual, 1900, contains a "Comedy Story" by Max Pemberton, with illustrations by Frank Dadd, R.I., and three large coloured pictures, one of them a reproduction of an oil painting by Vastagh Gezah of the British lion, who is, however, accompanied by a lioness, both animals appearing to be in a somewhat evil temper.

Among Christmas publications must be numbered volumes of *Cassell's Magazine*, the *Quiver*, and *Chums*, all published by Messrs. Cassell and Co. (Limited), and all too hardy and thriving annuals to need any watering of praise from us. The contents in each of them are as varied and interesting as usual, and the illustrations are abundant and well executed. These annual volumes, if we may be allowed to parody the legendary Scot's panegyric of sheepshead, provide a fine lot of miscellaneous reading, and as such are particularly suitable for presents to intelligent children. They will also be greatly appreciated in hospital wards, where they would serve to while away many a weary hour of convalescence. The *Magazine of Art*, published by the same firm, is a publication of different order, and appeals to persons of cultivated artistic taste. Messrs. Cassell and Co. deserve the thanks of the public for placing within the reach of those who cannot buy good pictures such a collection of masterpieces. Special attention may be called to the magnificent "Rembrandt" photogravures of pictures of Mr.

Napier Hemy, A.R.A., "Pilchards;" Mr. Graham Robertson, "The Queen of Samothrace;" M. Gustave Moreau, "Hesiod and the Muses;" M. Gari Melchers, "The Supper at Emmaus;" Mr. Thomas Brock, R.A., "Eve;" M. Léon Frédéric, and others. Among the other plates are reproductions of several drawings by Ruskin, with some by Burn Jones and J. Macwhirter, R.A. It is impossible to do more than refer to the wealth of other illustrations of various kinds which are reproduced in a style most creditable to English art printing. The *Magazine of Art* cannot fail to delight all lovers of pictures, and it is equally suited for the drawing room or the doctor's waiting room.

From Messrs. Raphael Tuck and Sons we have received the new issue, edited by Edric Vredenburg, and illustrated by Louis Wain and others, of *Father Tuck's Annual* (3s. 6d.). It is pronounced by an expert to be better than previous annuals, which have always been much appreciated by young children. The same firm issues also various nursery books and a flower painting book which might be useful in educating the infant eye to an appreciation of colour.

Khaki in South Africa (George Newnes, Limited, price 5s.) is an album of pictures and photographs illustrating the chief events of the war. It is one of the best collections of the kind that we have yet seen, and it is made more useful by a chronological history of the war.

China of To-day: The Yellow Peril, issued by the same enterprising firm, is an album of pictures and photographs illustrating the principal places, incidents, and persons connected with the crisis in China. The pictures will serve to give stay-at-home folk a vivid idea of life in China, and of the conditions that our countrymen have to encounter in that antique land in which De Quincey said it would have driven him mad to dwell. Of special interest to us are the illustrations showing the out-patients at the London Mission Hospital, Tientsin. Chinese patients are said to take their medicine as a rule with childlike confidence, but they object to milk and to beef tea, which they think increases the heat in the system, to which they attribute their sufferings. Fads of a similar kind, however, are not altogether unknown among European patients even of the enlightened classes. Another illustration shows the Chinese doctor and his method of practice. He knows nothing of the structure of the human body, though some of the more progressive spirits study anatomy in a work 2,000 years old; but on the other hand he has any number of medicines. If the patient dies he comforts himself, if not the afflicted relatives, by the aphorism "There is medicine for sickness, but none for fate," a piece of proverbial philosophy which finds an application even in the medical practice of "Western Devils."

Christmas Numbers.

The Christmas numbers are perhaps naturally warlike to a degree that is out of harmony with the season of peace to men. The *Army and Navy Illustrated*, edited by Commander Charles N. Robinson, R.N., of the *Army and Navy Gazette*, contains a history of British commanders-in-chief from 1674 to 1900, with a gallery of portraits of famous British generals from Marlborough to Lord Roberts. Another interesting series of illustrations depicts the daily life and surroundings of the veterans who have found shelter from the war-are of life in Chelsea Hospital. The rest of the number is a pleasant mixture of stories and sketches which will appeal to different classes of readers.

The Christmas number of the *Wide World Magazine* (George Newnes Limited) is full of interesting matter. Mrs. L. N. Terry of Mexico describes the Christmas festivities customary in that city. M. Victor Goedorp gives an account of an audience he had with the Negus, with a photograph of the Empress Taitou, who it is said will not allow a European to see her. Her Majesty's dimensions could hardly be described in Falstaff's phrase, as "to any thick sight invisible," for she measures 6 feet round the waist. Mr. E. Tebbutt tells how one of the sacred white elephants of Siam was kidnapped. Topical interest is supplied by an article on Pekin by Mr. J. Thomson. Dr. Bullock Workman and Mrs. Fanny Bullock Workman, who holds the world's record as a lady mountaineer, describe their climbs in the Himalayas. Another lady mountaineer, Mrs. Forrest Ross of Wellington, relates her adventures in the New Zealand Alps.

The Christmas double number of the *Girls' Realm* (S. H. Bousfield and Co., Limited) also contains an agreeable blend of prose and verse. Among them is one on Song Writers dear to Girls, with portraits of Miss Valerie White, Miss Florence Gilbert (sister of Mr. W. S. Gilbert), and others. There is an interview with A Famous Dog Artist, Miss Maud Earl, with reproductions of several of her clever pictures. There are stories for the frivolous and solid articles for the serious. Of the latter, the most interesting is one on Medicine as a Career for Girls, by Miss Margaret M. Traill Christie, M.D.Lond., who deals with her subject in a thoroughly practical manner. The paper is illustrated by photographs of women medical students in the operating theatre of the Royal Free Hospital, of an English woman doctor in India surrounded by native women patients, and others. One of the illustrations strikes us as "significant of much," to use a favourite phrase of Carlyle's. It is entitled Dressing a Little Patient's Wounds, and represents two of the women students at work in the wards, while a mere male creature—who obviously feels himself to be a superfluous accessory detail in the picture—is standing in the background with a gloomy expression of countenance, as though brooding over the wrongs of his sex.

The Christmas number of *The Captain* (George Newnes Limited) contains stories by E. E. Bradford and others, with accounts of some of the less-known English schools, and other miscellaneous information and entertainment. The gem of the number is an essay on natural history contributed by a High School Girl, to show that the reputation of the high school girl for ignorance of natural history is undeserved. The sloth is described as an invertebrate animal, "which means that it walks on its back." Perhaps by an unconscious association of ideas it is added that "the sloth is distantly related to a bishop." The camel is said to have on its back a "spontaneous saddle"; and the "bacterian camel," we learn, "is especially made to ride double." Altogether the essay is a piece of excellent fooling.

The Christmas double number of the *English Illustrated Magazine* (price 1s.) contains a very good article on literary forgers (Chatterton, Balmanazar, Ireland) by Edward Almack, F.S.A., and one entitled What the Blind See, which should be of interest to medical practitioners. A number of stories, some of which are amusing and others gently blood-curdling, with a considerable variety of pictures, make up an excellent number.

The Christmas number of the *Gentleman's Annual* (price 1s.) contains a novel entitled The Strange Experiences of Mr. Verschoyle, by Mr. T. W. Speight. The story has in it all the elements of sensation without morbidity that one looks for in a Christmas book.

Diaries and Visiting Lists.

We have received some specimens of the pocket diaries of Messrs. John Walker and Co., Farringdon House, Warwick Lane, E.C., which we have praised in previous years. They are of convenient size for the pocket, and their special features are the clearness of the printing, the dates being in large figures, and the back loop for the pencil. A new pocket diary which this firm has prepared this year is of very diminutive size, so that it will go into the waistcoat pocket; it is kept within a small compass by having a loose case, and supplying the diaries in four quarterly parts. The same firm makes convenient tablet diaries for the writing desk, and memorandum blocks.

Wright's Improved Physician's, Surgeon's, and Consultant's Visiting List for 1901 (Bristol: J. Wright and Co.; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 5s. 6d.) is again published in two forms (A and B); the former is dated for use in 1901; the latter having no fixed dates is suitable for any year, and for persons who wish to begin the list at any other time than January. Each is preceded by a calendar, lists of drugs and doses, poisons and antidotes, and other important subjects. In the form A (that for 1901) the visiting list suffices for 100 patients' names and addresses in each month, and for double that number of names without addresses; and the names need not be written oftener than once each month. The end of the list is devoted to a consultant's record, obstetric and vaccination engagements, a cash account, addresses, and other memoranda. The paper and binding are good. The List has for years proved itself to be a

great boon to numbers of practitioners, and the edition for 1901 is as good as any that have preceded it. The price of each form (A or B) is 5s. 6d.

Christmas Cards and Calendars.

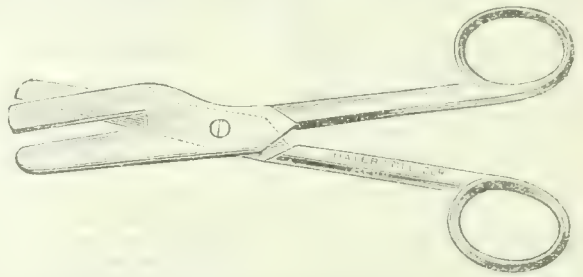
That the habit of sending Christmas and New Year cards has not greatly declined, as some years ago seemed likely to occur, but has, on the contrary, rather increased, is probably due to the greater artistic merit of even the cheaper sorts of cards which can now be obtained. In this renaissance Messrs. Raphael Tuck and Sons (Raphael House, Moorfields, E.C.) have played the chief part, and we have again to call attention to the great excellence of their work. Among the calendars for the table, for the writing desk and for hanging, special mention may be made of a wall calendar exhibiting reproductions in sepia tint of pictures by Landseer, with appropriate quotations from Shakespeare. There are also flower wall calendars with quotations for each quarter, in one case from Shakespeare, in the other from Ruskin. Among the most artistic cards are the so-called platino-panel reproductions in black and white, resembling platinum photographic prints, of pictures, sporting pictures, landscape, or religious subjects. The cards in imitation of blue-and-white Wedgwood plaques, which we saw for the first time last year, reappear this year, and are among the most graceful and charming to be obtained. In the more brightly-coloured Christmas and New Year cards, the kind of card which a few years ago was practically the only one to be obtained, the patriotic and warlike spirit of the epoch is fully reflected, and one set of coloured drawings of the men of various regiments is appropriately printed on khaki-coloured paper.

Mr. Ernest Nister (24, St. Bride Street, London, E.C.) appears to make a speciality of calendars to hang on the wall, and we have received from him a number of specimens of his production which are worthy of all praise. Of those which we have seen the best is a rather large calendar showing two months on each card, and having on each a reproduction in colours of well-known works of representatives of the British school at the beginning of this century—Webster, Wilkie, Collins, Morland, and Landseer. In another calendar the cards bear sepia reproductions of examples of old masters, among others Correggio, Andrea del Sarto, and Murillo. Another calendar of the same form bears reproductions of six landscapes in water colours by Mr. Wilfrid Ball, who has chosen subjects appropriate to the several seasons. There are other excellent wall calendars which will appeal more directly to the young. Mr. Nister also sends us some block calendars for the wall mounted on pictorial cards, and with an appropriate quotation for each day.

The Pan-American Exposition.—A Pan-American Exposition is to be held at Buffalo, New York, from May 1st to November 1st, 1901. One of the features is to be a model dairy, showing the latest processes used in dealing with milk and its products. The dairy is to be composed of four or five representatives of each of the breeds of milch cows laying any claim to merit along "dairy lines." Nearly all the Live Stock Associations in the United States are said to have given assurance of their co-operation. The stable in which the cattle will be kept will be equipped with up-to-date appliances, particularly with regard to hygienic and sanitary conditions. It is not the plan to force these cows unduly to see how much can be produced during the time, but to see what they will do under absolutely uniform conditions. The work will be conducted by men of much experience in feeding and handling dairy animals, under rules to be formulated for the government of the dairy. Only such changes will be made during the six months the experiment is to last as shall be especially calculated to prove the superiority of some particular breed, and when these changes are made with a view to establishing some characteristic of a breed, all other animals in the dairy will be placed under the same conditions, and careful record kept of their performance under these conditions. Accurate records will be likewise kept as to the amount of food consumed, its cost, its nutritive value, and also the milk product as to the amount and quality. It is hoped that valuable data may be gained from this experiment.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS AND THE ALLIED SCIENCES.

New Frænum Scissors.—Mr. E. R. Haines Cory, M.R.C.S., L.R.C.P.Lond., Tower House, Bournemouth, writes: These scissors which I have designed, and which Messrs. Mayer and Meltzer have made for me, consist of upper and lower blades. The upper one is fashioned in the ordinary way; the lower blade is much broader, and is divided nearly up to the pivot point into two portions, with a slight interval between.



The left portion together with the right form a director and guide, whilst the right portion alone opposes the upper blade and forms the cutting surface. By this means the operation of severing the frænum linguæ can be performed with one hand, whilst there is no danger of wounding the lingual vessels.

An Infant Urinal.—Dr. Alexander Duke (Cheltenham) writes: The trouble and discomfort entailed on mother or nurse by the constant change of towelette necessary for the proper care of an infant up to 4 months old can, I think, be avoided by the use of the appliance depicted in the accompanying illustration. Attached to a soft band round the waist, and applied closely so as to cover both genitals and anus, the receptacle will contain both urine and fæces, and keep the infant from contact with either; no matter what position it is placed in, the contents cannot escape or flow upwards. There is no necessity to remove the appliance when full; the child can be lifted from the cot and the cap at the base of the receptacle unscrewed allowing the contents to escape. The makers are Messrs. Arnold and Sons, London.



The Dental Hospital of London.—Mr. F. A. Bevan, Vice-President of the Dental Hospital of London, at the annual dinner of the staff and past and present friends of that institution, held at the Hôtel Métropole on November 24th, mentioned with pride that twelve of the City Imperial Volunteers were students of that hospital. It was a matter of congratulation that a greater number of men had entered last term than had ever been inscribed before. Referring to the fact that the new hospital would soon be opened Mr. Bevan said that it struck him that the hospital might possibly do as others had done—namely, admit a few ladies, if only a very few. Mr. C. S. Tomes, F.R.S., said that he had been engaged all day at the General Medical Council hearing about the black sheep of the profession, and it was very comforting to meet so many white sheep that evening. He reminded his hearers of the difficulty experienced in introducing practical histology at the hospital, and he was glad to assure them that the new hospital would be efficiently equipped.

NOVA ET VETERA.

NATIVE BELIEFS REGARDING LEPROSY.

So little is known about the manner in which leprosy is communicated that the superstitions of natives among whom the disease is endemic are full of interest.

Leprosy in Tropical and Subtropical Countries.

Though lepers, as Dr. Manson points out, are found in Norway, in Iceland, in the Aleutian Peninsula, and in Kamschatka, leprosy may be said to be a disease of tropical and subtropical countries. With the exception of a few insignificant islands, no country in the tropic zone can be said to be entirely free from it. In India—the only large country in which accurate statistics have been taken—the proportion of lepers to the total population is estimated at 5 in 10,000: and in China, where there are leper villages and where lepers swarm in all the Treaty Ports, the proportion is probably higher, though both fall far short of the Hawaiian figure of 1 in 30 and the Fijian of 1 in 100.



Scene near Waki, on the Singatoka River, Fiji. To the left is shown the Sakuka leper stone.

Contagiousness of Leprosy.

Despite the exhaustive researches of the Indian Commission on Leprosy, and the enormous advance in every branch of medical science, the manner in which leprosy is communicated is still uncertain. Nothing was known of its specific cause until 1874, when Armauer Hansen isolated the bacillus leprae, and heaped fresh fuel on the fire of controversy between the rival theories of heredity and contagion. It is, of course, impossible for any organism, however small, to arise *de novo*. It must spring from some pre-existing germ whose habitat may be earth, air, water, beast, or man; and since leprosy has never been found in any animal except man, nor in any virgin country to which a human leper has not had access; and since the arrival of a leper in such a country is followed by an outbreak of leprosy among those that have associated with him, there is little room for doubt that man acquires the germ of the bacillus leprae from man, and not from other animals, or from local or climatic conditions. The most ancient, and, as it now seems probable, the most correct belief was that leprosy is contagious. The theory that it was hereditary is quite modern; and, though the Indian Commission did not absolutely disprove it, it is already on the wane. For how, if the disease is hereditary, can the striking facts that of the numerous offspring of 160 Norwegian lepers who emigrated to America none have developed the disease, and that children sometimes become lepers first and their parents afterwards, be explained? Moreover, since lepers become sterile at an early stage of the disease, leprosy would inevitably die out in one or two generations unless it found recruits in some other way than by heredity. It is often developed late in life, and if the germ had been received into the system at birth one would have to suppose that it remained latent for thirty, forty, or even seventy years, a circumstance without parallel in pathology. In one respect leprosy, like tubercle, is hereditary; it often shows a preference for the members of a single family whose constitutions have the same family characteristics, and who live together, breathing the same air, and eating the same food.

The opinion of students of the disease is now almost universal that leprosy is communicated by contagion, and by contagion alone, but they are very far from knowing how the contagion is communicated. Very few of the nurses and doctors in leper hospitals acquire the disease, and, except in one doubtful instance, every attempt to inoculate man and the lower animals with the bacillus leprae has failed. It may be that the leper germ is sterile except in certain phases of the disease, and that only in favourable conditions in the health of the recipient, combined with intimate contact with the leper can it take hold.

The History of Leprosy in New Zealand.

Its behaviour when newly introduced into virgin countries can best be studied in the isolated island groups of the Pacific. The Maoris brought it with them to New Zealand, certainly not less than four centuries ago. Their traditions relate that among the immigrants who sailed from "Hawaiki" in the canoe *Tuwhenua* there was a leper who infected all his companions. Landing at Te Waka Tuwhenua (Cape Rodney) they scattered among the immigrants of the Tainui and Ngapuhi parties, among whom leprosy is still called *Tuwhenua*, though whether the disease was called after the canoe or the canoe after the disease it is impossible to say. Though it was common enough among them at the time of the European colonisation of New Zealand it has now quite died out.

Leprosy in Fiji.

In Fiji, on the other hand, leprosy is certainly not less common now than in those far off days when lepers were elevated to a place in the tribal mythology. Native traditions agree that the disease has neither waxed nor waned, though the proportion of the infected to the healthy reaches the terrible figure of 1 in 100. Of some of the important groups of islands it is impossible to speak with certainty, because the first Europeans who visited them had little medical knowledge, and were prone to mistake the disfigurements of scrofula and syphilis for the symptoms of leprosy. But if native tradition may be relied

upon (and natives are so ready to ascribe new diseases to the visits of foreigners, that in this instance there is no reason to doubt it), leprosy was endemic in all the Polynesian groups except Hawaii long before the arrival of Europeans. It is a sure sign of the antiquity of an institution among the South Sea Islanders if it has a place in their mythology. In the Pantheon of Fiji and Tonga, if not in that of Tahiti, there are leper gods—that is, deified chiefs who were lepers—and in none of those groups has there been any material increase of the disease. It is, in fact, safe to assume that in islands where the disease has been stationary during the last half-century, and especially in those where there is an allusion to it in mythology, leprosy has been endemic for many generations. The very presence of it is another proof, if any were needed, that the islands were peopled from the west, for we may infer from the silence of the Spanish historians that leprosy was unknown among the aborigines of the American continent.

Leprosy in New Caledonia.

Far different is the behaviour of leprosy when planted in a virgin soil. In New Caledonia leprosy was unknown until 1865. In that year a Chinese leper drifted to Noumea, and settled down among the natives. The disease at once began to spread. The medical officers attached to the French garrison and convict station were able to trace it step by step until in the short space of twenty-three years they counted 4,000 lepers. From New Caledonia in 1878 it was carried across the strait to the Isle of Pines, where it spread with equal rapidity. But a more striking proof of its contagious nature is the example of the island of Maré in the Loyalty Group. There the first case of leprosy was an immigrant, who arrived in 1882, and six years later the lepers numbered seventy. How are these facts to be reconciled with any theory but that of contagion?

Perhaps we shall never know what are the mysterious conditions that make the contagion fertile in one individual and sterile in another. In crowded communities such as India and China one would say that the leper germ must have uncleanliness and squalor to feed upon, but the natives of Maré, who fall such ready victims, though a primitive race, are no more squalid, nor poor, nor dirty than the nurses of the leper hospitals in Hawaii. The caprice of a disease that flourishes indifferently on the mountains and in the plains, in Iceland and in Southern India, on arid plateaus and on malarial swamps, baffles all speculation at the outset. Knowing neither why it strikes its victims, nor how, once stricken, they can be cured, we are less logical in our ignorance than the natives of leper islands who have at least a working theory to account for the mystery. Until we can find them a better hypothesis we may leave them their leper stones.

South Sea Medicine Men.

Among the South Sea islanders no man falls sick or dies from natural causes. They would argue—if they were called upon to analyse their belief—that health is the natural condition, and that every departure from it must be caused by supernatural agency; and since disease is an evil, you must look for its agent among those who wish you evil. Thus far they are at one with many good people in Europe who take comfort in the thought that every visitation of sickness is a divine judgment for their sins; but savages push their logic further. Their gods do no mischief for mischief's sake, and since all men have enemies, and are all free alike to invoke the unseen powers for either good or evil, the sick man has only to make his choice among the number of his ill-wishers, and charge his heirs to avenge him. Every skilled craft tends to specialisation. A few successes in causing illness by spells gave a man a reputation as an expert. The unsuccessful found him ready to remove their enemies for a consideration; he took to the business as a profession, handing his secret down to his son, and his son's son, until the trade became hereditary. A family that had once acquired it took good care not to lose it by bungling as the "wise women" sometimes did, for the art of killing by witchcraft had this decided advantage over the art of healing, that if the spell failed there were other ways—a dose of something in the kava cup, a club stroke on a dark night. Thus among some of the Melanesian tribes it is not too much to say that the population is divided between the companies of them that caused disease and them that healed it.

In Fiji leprosy was a special branch of the black art. No common wizard has the hardihood to pretend that he can compass it by the ordinary means of burying a lock of the victim's hair in a bamboo with incantations, and this is well; for even the cunningest healers admit that leprosy is incurable. The power of infecting with leprosy is hereditary in certain leper families alone. Their deified ancestors have become, as it were, leper gods whose priests are the eldest living representatives of their stock. The evolution of the idea may easily be traced. Leprosy prevails in certain families; therefore, the spirit of leprosy, which is the Fijian equivalent for contagion, is a sort of family retainer, obsequious to the commands of his hereditary masters. And, since a living spirit must have a place to live in, certain stones are pointed out as his shrines, and these are hedged about with a tabu that is never in danger of being broken, since to touch them is to meet the fate of Gehazi.

Leper Stones.

These stones were discovered by Dr. Bolton Glanvill Corney, the Chief Medical Officer of Fiji, who is not only the principal authority on leprosy, and indeed all medical questions in the Pacific Islands, but has a very accurate knowledge of the Fijian language and character.

Until lately there were three leper stones on an island in the Rewa river. One of these, known as Ratu, was missing from his place, the cleft between two buttresses of a Ndawa tree, and although Dr. Corney, to the consternation of the native bystanders, was bold enough to dig up the ground in the hope of unearthing him, he was not to be found. This is the less to be regretted, since Ratu was a very potent little stone. When the Notho warriors were storming the village that once flourished on this deserted spot, one of them unwittingly dropped his loin-cloth on Ratu, and developed leprosy, it is said, in consequence. The leper woman, Mereani, is also said to have acquired the disease by planting yams within a few yards of Ratu.

The more famous stone, Katalewe, has also disappeared. He was described to Dr. Corney as having been "about the size of a large orange, ash-coloured, very round and smooth, and unlike any other stones in that neighbourhood." So potent was he, that the creeping stems of plants withered or turned aside as soon as they came within the radius of his poison, and there was always a patch of bare earth about him. None knew whence he came. As far back as tradition ran he had been vested in the Navokai family, extinct but for Karolaini, a woman of 50, who told Dr. Corney that she had been a leper from childhood, and her father before her, though of late years the disease had made no advance, and both her children were healthy. Katalewe was a tremendous engine in the hands of his owner, who could use him against his own enemies, or those of anyone else who could afford to pay for his services. It was not necessary that the doomed person should himself touch the stone; it was enough if his clothes or a lock of his hair were laid upon it with the proper incantations, though this was not the case with all the leper stones. But Katalewe is beyond the reach of incantations now. There came to the village a pious iconoclast, a light of the Wesleyan mission, one Sayasi. *Hors de l'église point de salut* was his motto, and hearing that Katalewe's natural protectors had died out in the male line, he laid violent hands upon him and carried him home to his wife to use like a paper weight when she plaited her mats. With his fellow weights he was thrown into the fire-hearth, where he got red hot, and crumbled to powder among the yam pots. He did not leave his executioner unpunished. Not long afterwards poor Sayasi, his mind racked by the indiscretions of his wife, divorced her, and found himself ostracised by his fellow-pastors in consequence. A broken man, he relinquished his cure and went back to his native village, where death put an end to his sufferings. From this tragic story it is evident that Katalewe was made of limestone washed down from the dolomite cliffs at the head waters of the Rewa, and polished smooth by the water. A stone so unusual in the delta may have been taken to decorate the grave of a dead leper, and, when time had obliterated all other traces of the grave, tradition would still cling about the stone. As the graves of ancestors are vested

in their descendants, so the leper stone, together with the Djinn that was believed to inhabit it, would be the property of the descendants of the buried leper for ever.

Near the village of Korolevu, which lies in the very centre of the great island of Vitilevu, Dr. Corney found another leper stone, called simply Na Vatu ni Sakuka (The Leper Stone), a large basaltic rock marked with blotches, in which the natives see a resemblance to the leprous maculæ on the human skin. It belongs to the Nakavindi family, whose chief has the power of conferring leprosy on whom he wishes. His dread offices are invoked in secret; the offended person brings him a root of kava, a whale's tooth, or a mat, and the leper priest lays them against the stone with incantation (*veiva tonaki*), praying for a successful issue. Then, returning home, he drinks kava, and in blowing the dregs from his moustache cries as his toast, "Phya! Uthu-i-au!" which, being interpreted, is, "Phya! May his face be as mine is!" (that is, leprous); and speculation would run high among the company as to who was the object of the curse. If the curse failed, there was an easy way out. Perhaps Elijah slew the priests of Baal because he knew that in five minutes they would have been ready with a plausible excuse for their failure to bring down fire from Heaven. The leper-priest could always plead the inadequacy of the offering, and ask for more, or decline to make a second trial. He and all the leading members of his family have leprosy in its most terrible form.

Near Walá, a few miles lower down the Singatoka river, is a miniature cairn of red stone resembling jade (see illustration, p. 1577). As it stands within the burial ground of the village it may actually mark a grave. The natives are so reticent about it that I lived for more than a year in daily intercourse with the Walá people without hearing of it, and even Dr. Corney, who had come expressly to visit it, was adroitly put off the scent by his native guides. He learned its history under dramatic circumstances. Being called one day to the gaol in Suva to examine a number of native prisoners, he found that one of four lepers just admitted gave Walá as his native village. Obtaining leave to take the young man to the hospital, he questioned him at leisure, and there, with the unknown terrors of prison discipline at his back, he broke through the prisoner's reserve. The gist of his statement, dragged from him piecemeal by searching questions, was written down at the time.

My name is Namannga. I come from Walá, but my family really belongs to Talatala, in Vaturu. They left Vaturu when it was burned out by the enemy, and fled to Walá, where they have remained ever since. I have one brother older than myself, and he, my father, and my mother are all lepers. There are no other lepers in our family. They say that it was unknown at Vaturu. My father died of it a few months ago at Kevasi, whither he had gone for treatment by a native doctor. His hands were withered, he had lost his fingers and his toes, and there were patches on him that had lost all feeling. He was the first of us to become a leper. This was the way of it. On a certain day, several years ago, we all went into our plantation, leaving the house empty; not even a child was left at home to mind the house. I was a little boy at the time, but I went with my parents to the yam-planting. When we came home in the evening we saw that the Sakuka (the leprosy) had crossed our threshold. How do I know this? By his footprints. He had entered by the end door, and had crawled to the hearth, and there in the ashes on the hearth we saw the prints of his hands and his feet, the print of leper hands (*mains-en-griffe*) and toeless feet-like hoofs. We knew at once that the Sakuka had put his mark upon our house, and wondered which of us was to be the first. We knew that we would be lepers, being thus marked for it by the Sakuka, and so it was. My father was the first, my mother next, and I last of all. The Sakuka is a stone, red like a patch of leprosy, red like paint. It is in five or six pieces heaped together. Sometimes a piece is missing from its place: I have been at the burying ground myself when a piece was missing and have seen that it was so. The stone belongs to Vasukevasi, who is priest of the stone, and can move it to infect a person with leprosy, and so compass his death. I do not know what ceremonies he uses when he would this, but it is a sort of Kaitha (witchcraft). He is not himself a leper, but his brother, Kaitova, is. When I said that the Sakuka marked our hearth, I meant the Spirit of the stone which is obedient to Vasukevasi. I do not know the origin of the stone: it is an ancient institution, but the thing is true. There is no doubt about it. I have told you all that I know.

In this grisly story we have the essence of the belief in leper stones. The red cairn set up in a burial ground can be none other than a tomb, probably the tomb of a leper. The spirit of the dead man haunts his grave, and his eldest descendant is his priest, who can conjure him forth to crawl into the house of the person he has foredoomed to leprosy. This is no explanation of the *main-en griffe* in the ashes of the hearth. That episode may have been a coincidence, the visit of a human leper, or it may have been a lie; but that a family of healthy aliens came to live in the neighbourhood of a leper stone, and were infected one after the other by means which every native believed to be the malignant power of the leper-priest is indubitable fact. And if we smile at the Fijian theory of infection, let us reflect that in his eyes it is logical reasoning as compared with our own, and that he can point to more lepers in support of his plan of infection by incantation than we can adduce as the result of inoculation by the bacillus lepræ.

Basil Thomson,
Lately H.M.'s Special Commissioner for Tonga.

DEATH CERTIFICATION:

DEFECTS OF THE PRESENT SYSTEM AND SUGGESTIONS FOR THEIR REMEDY.

II.

In the first article on this subject published last week, page 1509, a short account was given of the action of the Cremation Society, which had much to do with the appointment, in 1893, of the Select Committee over which Sir Walter Foster presided, and the facts with regard to the representations which the General Medical Council had made to the Registrar-General and of that official's attitude with regard to the matter, were recalled. We now propose to consider the recommendations of the Select Committee *seriatim*.

The Recommendations of the Select Committee.

The Report of the Select Committee of 1893, from which we have quoted (p. 1512), is not as well known as it deserves to be. To most of the younger generation of medical men it is probably very little known indeed. Yet its importance in relation to future legislation cannot be overrated. It must form the basis of all legislation, even though some of its boldest proposals may be open to criticism. We have seen that the President of the General Medical Council, in his letter to the Registrar General (see p. 1510), asks for legislation on the lines of the recommendations of this Committee. We cannot hope that busy practitioners will have much chance of getting hold of the original report, or the leisure to study it if they could get it, but we shall endeavour to give them here as full and readable an account of its most important portions as we can in the short space at our disposal.

The Committee consisted of Sir Walter Foster (Chairman), Sir Charles Cameron, Sir Stafford Northcote, Dr. Farquharson, Sir Henry Roscoe, Sir Thomas Lea, Mr. MacNeill, Mr. Arch, Mr. Brookfield, and Mr. Hozier. The Chairman was a medical man, and the Committee included two other medical members of Parliament, so that it is safe to assume that the medical aspects of every recommendation were fully considered. They took the evidence of over thirty witnesses, including the Registrars-General of England and Ireland, several metropolitan coroners, medical practitioners, etc. Their report was unanimously agreed to, and was summarised in the form of ten definite recommendations, which were as follows:

Summary of Principal Recommendations of the Select Committee on Death Certification (1893).

1. That in no case should a death be registered without production of a certificate of the cause of death signed by a registered medical practitioner, or by a coroner after inquest, or in Scotland by a procurator-fiscal.

2. That in each sanitary district a registered medical practitioner should be appointed as public medical certifier of the cause of death in cases in which a certificate from a medical practitioner in attendance is not forthcoming.

3. That a medical practitioner in attendance should be required, before giving a certificate of death, to personally inspect the body, but if, on the ground of distance or for other sufficient reason, he is unable to make this inspection himself he should obtain and attach to the certificate of the cause of death a certificate signed by two persons, neighbours of the deceased, verifying the fact of death.

4. That medical practitioners should be required to send certificates of death to the registrar, instead of handing them to the representatives of the deceased.

5. That a form of certificate of death should be prescribed, and that in giving a certificate medical practitioners should be required to use such form.

6. That it should be made a penal offence to bury or otherwise dispose of a body, except in time of epidemic, without an

order from the registrar stating the place and mode of disposal, which order, after it has been acted upon, should be returned to the registrar who issued it.

7. That it should be made an offence to retain a dead body unburied or otherwise legally disposed of beyond a period not exceeding eight days, except by permission of a magistrate.

8. That the practice of burial in pits or common graves should be discontinued.

9 That stillbirths which have reached the stage of development of 7 months should be registered upon the certificate of a registered medical practitioner, and that it should not be permitted to bury or otherwise dispose of the stillbirth until an order for burial has been issued by the registrar.

10. That, subject always to the discretion of the Crown Office, the result of precognitions taken by the Procurators Fiscal in Scotland, or the precognitions themselves, should be communicated to the representatives of the deceased when application is made for the same.

Burial without Medical Evidence of the Cause of Death.

It will be seen at once that of these Recommendations the first, second, and ninth are the most far reaching. They have been described as drastic and even revolutionary. Their importance not only to the medical profession, but to the community, for whose benefit the Committee was appointed, is obvious; but it is not so easy to foresee the ultimate outcome of all their indirect effects.

The necessity for the first recommendation arises from the fact that so large a number of persons are still registered and buried without any *medical* evidence as to the cause of death. The number indeed is, as has already been said, slowly but continuously diminishing year by year. Yet in the last Registrar General's return (for 1898) the number, though smaller than ever before, still reached the very considerable total of 10 441, being 1.89 per 100 total deaths compared with 2.52 the year the Select Committee made their report.

Informal Inquiry by Coroners.

If, however, we look a little more closely into what takes place we shall see that matters are not quite so bad as might be supposed at first sight. These 10,441 deaths have not all been let pass without independent scrutiny of some sort. On the contrary the great majority of them (7 940) were formally reported to coroners, on whom then devolved the duty and responsibility of deciding, after investigation, whether there was any reasonable ground for suspecting death to be due to violence or foul play of any sort, or even to a sudden unknown cause. These 7,940 are cases rejected by the coroners of England and Wales out of the unknown total (reported to them from all sources) of deaths in which there was no medical practitioner in attendance—rejected, that is, in the sense that they considered the cause of death proved with reasonable certainty to have been a natural and known cause not involving any suspicion of foul play or violence of any sort, and therefore not requiring an inquest to be held. These deaths are classed as 'uncertified," because there is no *medical* certificate, although there has been some informal investigation by the coroner. No doubt a very much larger number than 7 940 have been rejected (in the same sense) by coroners; because a considerable number of cases, ultimately certified, have been previously referred to the coroner, the medical man, though willing to certify, not caring to run the risk, in a doubtful case, of having his certificate forwarded to the coroner, an inquest held after all possibly, and his action in the matter criticised by the coroner or jury in public. The coroner, having satisfied himself, leaves the medical attendant free to act as he thinks fit, and the case is generally certified in the usual way.

Uncertified Deaths not referred to Coroners.

There remain 2,501 uncertified deaths which were not reported to coroners, and were, in fact, let pass without any investigation at all. These, the Registrar-General states, include:

(*a*) Cases attended by qualified though unregistered medical practitioners.

(*b*) Cases informally attested (including cases in which an informal statement of the probable cause of death had been made by a registered medical practitioner who had attended deceased in a previous illness, or had been called in only when the patient was moribund).

(*c*) Cases attended by midwives.

(*d*) Cases that had received no skilled attendance in their last illness.

These were simply registered on such information as the registrar could get from the so-called "qualified informant," and it is here that the facilities for crime arise. When information of a death is brought to the registrar by the proper relative or witness, the registrar has no power to demand a medical certificate if no medical man was in attendance during the last illness. He must either register the death making the best guess he can as to its cause, or he can communicate with the coroner and postpone the registration until the coroner has inquired into the case. There is no one else—no one but the coroner—who can undertake any investigation in regard to an uncertified death, and of course the coroner can do nothing until he receives information of the death, and of the fact that it is uncertified. It would seem that in the last year for which the returns are available (1898) registration took place in 2,501 cases in which the registrars satisfied themselves without reference to the coroner that there was no need to make any inquiry. It is a suspicious fact noted by the Registrar-General that more than one half of these uncertified deaths not reported to coroners were deaths under three months of age, whereas of the uncertified deaths reported only one quarter were deaths at that age. These 2,501 cases formed about one-fourth of all deaths classed as "uncertified." The remaining three-fourths have really been inquired into more or less efficiently by the coroner.

Insufficiency of Coroner's Power to make Preliminary Investigation.

But unfortunately the coroner has no power to order or pay for a *post-mortem* examination or even inspection by a medical man unless he holds an inquest. Consequently this preliminary inquiry must sometimes be unsatisfactory. But a very simple amendment of the law could give the coroner this power, and then his preliminary inquiry could be made as searching as need be, and would result in a medical certificate if no inquest were held.

In the absence of any statutory authority to order an examination of the body without holding an inquest, some coroners appear to have an arrangement with the local authority by which they are allowed to pay a fee to a medical man for inspecting the body and giving an opinion as to the cause of death without making a *post-mortem* examination. We have before us a letter from a medical man, questioning "the legality and morality" of such a system. We are not prepared to say there is anything illegal in this proceeding, and in some cases where there is just a shadow of a doubt it may be quite the most common-sense course to take. But if adopted as a frequent practice, it is open to this very grave objection that it encourages medical men to rest content with a mere external inspection, more or less casual, from which nothing positive can be ascertained as to the cause of death, instead of insisting on the necessity of a thorough *post-mortem* examination of the viscera, etc. If the medical examiner is not allowed to make a proper *post-mortem* examination when he is unable to satisfy himself as to the cause of death without one, his opinion must be worthless, his certificate would be misleading, and it is his clear duty to tell the coroner that he cannot certify. He is only making a guess, and he ought to say so. The coroner would be acting very improperly in putting any pressure on him to hazard such a guess, or in sanctioning the substitution of this guess for a proper certificate founded on the only trustworthy evidence the case permits of—a necropsy.

We shall have something more to say on this subject later on, when it will be seen that the practice we are now condemning is really an attempt to carry out in an irregular way a suggestion which has been made as an alternative to the appointment of "public medical certifiers." Only there is the one great difference—that the coroner at present does not possess the power which is absolutely necessary for him to have—the power to order and pay for a *bonâ-fide post-mortem* examination, whenever it is necessary, without ordering an inquest also.

Proposed Appointment of "Medical Certifiers."

Having laid down in Recommendation (1) the broad principle that no death should be registered without a medical certificate granted under conditions to be presently considered, or a coroner's certificate granted after inquest, the Select Committee had to face the problem:

How is a medical certificate to be procured when there has been no medical attendance during the last illness?

The solution, embodied in the second Recommendation, is that there shall be appointed for each sanitary district a Public Medical Certifier of the cause of death, whose duty it would be to attend at the place where the body is lying in every case in which he is apprised of a death as to which a certificate from a medical man in attendance is not forthcoming,

"and make such inquiries and such an examination of the "body, including, if necessary, a *post-mortem* examination as "he may think necessary to enable him to form an opinion "as to the cause of death. If he is satisfied that the death "is due to natural causes, he should forthwith forward a cer- "tificate to the registrar. If, however, he is of opinion that "the death is due to accident, violence, poison, or neglect, or "that the circumstances are in any respect indicative of foul "play, he should be required to report the case to the coroner "or to the Procurator Fiscal as the case may be."

This is the most novel and the most radical of all the suggestions of the Select Committee and it is one which requires the most careful consideration.

Relations of Public Certifier with Private Practitioner.

It might be thought at first sight that there is nothing in these duties which could bring a Public Medical Certifier into collision with the private practitioner because there would be no private practitioner in the case. But, as a matter of fact, there would be a private practitioner somewhere in the background in a great many such cases, for example, when the medical attendant has been called in too late, as in cases of sudden death, or has not seen the patient quite recently. The latter would be a frequent occurrence under the definition of "attendance during last illness" suggested by the Committee, namely, within eight days of death. Now this private practitioner would, under the present system, in all probability be called on to do under the coroner's orders very much what the Public Certifier would do under the proposed law. The latter would take the place of the medical man who was called in by the friends and saw the deceased shortly before or just after death, and who, as things now are, is generally summoned as medical witness by the coroner if an inquest is held. This might be looked upon as a relief from a disagreeable task, and an embarrassing position by medical practitioners whose patients are among the well-to-do But when a man's practice is amongst the poor, who are reluctant to send for medical assistance until the last moment, the loss of income might be something considerable. We mention this as a fact which in fairness to the practitioners amongst the very poor ought not to be forgotten. For them the fees from inquests are often an important element in their slender earnings. The country medical man summoned from a distance, or roused out of bed in an emergency to see a dying or dead person, would think it a hardship to be deprived of the inquest fee, the only remuneration he could in many such instances expect for his trouble. True, in the worst of these cases, those in which the police send for the doctor, a scale of fees to be paid by the police might be, and certainly ought to be laid down by Parliament, since when it is left to the consciences of county or parish authorities, cheeseparing often leads to practical injustice. But in addition to the police cases there are a still larger number in which the poverty of the patients coupled with the strain of the funeral expenses, and perhaps the loss of the chief breadwinner of the family, makes it hopeless for the doctor to expect anything even if he could bring himself to demand it. In such cases the inquest fee is an indirect compensation for his loss of time and trouble.

Would these "Medical Certifiers" be themselves general practitioners in the locality? The Committee stated that on this question there was some diversity of opinion among the witnesses, but it appeared to be held that in any case a medical man should not be allowed to give a certificate in his capacity as Public Medical Certifier in respect of the death of a person whom he may have attended as a patient in his private practice. The principle here laid down is, it will be observed, in direct contradiction with the present practice of coroners, founded on the Coroners' Act, Section xxi (1). If the Public Medical Certifiers were themselves in practice in the locality a clashing of interests could hardly be avoided, and they would have considerable opportunities, if they chose, of making themselves disagreeable to other medical men, their rivals, and undermining their professional reputation. The danger would be slight in large towns, but in country districts, where the patient's choice is very limited, it might prove a strong temptation to officials who were not scrupulously conscientious. Even if proof against the temptation they would hardly escape the suspicion and jealousy of their rivals. The Committee suggested that the office of Medical Certifier of deaths might be combined with that of Medical Officer of Health, who might, if necessary, appoint a deputy. They lean strongly to the principle of requiring the whole time of the appointee to be given to the duties of his double office.

Relations of Public Certifier with Coroners and the Public.

But the Public Medical Certifier would be brought into very delicate relations with the coroner and the public as well as with medical practitioners. The coroner's initiative would apparently be taken away in all ordinary cases, and his jurisdiction ousted in every case in which the certifier's investigation satisfied him—the certifier—that death was due to natural causes.

It is a question whether this transfer of duties from the coroner's jury sitting in public to an official working in his private study would be quite satisfactory when "the neighbours are talking." Moreover, there is a very important class of cases on which inquests are now constantly held—those in which death is due to disease, and to that extent natural, but accelerated and perhaps really caused by neglect or ill-treatment. The Medical Certifier will be told very little about it. He can never go about and pick up information among the neighbours in the way the coroner's officer does, and even a necropsy may not suggest such neglect, the evidence of which must generally be extracted with more or less difficulty from witnesses under compulsory examination in public. There is, we think, a real danger that unless the Medical Certifier is something of a detective as well as a "skilled pathologist," cases of the kind we are speaking of will often pass without public inquiry.

The coroner's court has been very aptly called the poor man's court, and the publicity of its proceedings acts as a strong deterrent to parents and others (a very numerous class) whose conduct borders on "criminal neglect." For these reasons the substitution of the certifier's secret report for the coroner's open inquiry in cases where there is "talk among the neighbours," would not be an unmixed good.

Another and perhaps more serious objection which has been urged is that the intervention, between the coroner and the friends of the deceased of a third party (the Medical Certifier) through whose hands the whole business must pass, and by whom an investigation, including generally a *post mortem* examination, would be made before any notice of the occurrence could be given to the coroner, must lead to such delay in holding an inquest as would be inconvenient everywhere, and intolerable in country districts where distances are long and means of communication infrequent.

The proposed system of Medical Certifiers would be a modification of the French plan, which, however, is only enforced in the great towns, and not in the country. Under the French plan all deaths in Paris and some large towns are verified by the public official, whether the deceased was or was not attended by a medical practitioner. We English would certainly resent what Sir Walter Foster called "the piling up of the terrors of dying" by making so much fuss about it in ordinary cases, and therefore it is not proposed that the Medical Certifier should have any jurisdiction in regard to deaths certified by "a medical practitioner in attendance."

It is not clear whether he would be called in in cases where there is a medical attendant who is quite competent to give

a certificate, and is only precluded from doing so by the knowledge that an inquest must be held, as, for example, when death was due to an accident.

In the next article we propose to consider an alternative proposal which appears to present many advantages.

(To be continued.)

LITERARY NOTES.

Professor Corfield's *Harveian Lectures* on Disease and Defective House Sanitation, of which translations into French and Hungarian have already been published by the Royal Society of Public Health of Belgium and the Hungarian Society of Public Health respectively, have now been translated into Italian by Dr. Soffiantini, of Milan, and are being published, with the illustrations, in *Il Monitore Tecnico*.

At a meeting of the Paris Académie de Médecine on November 13th, Professor Deneffe, of Ghent, presented a monograph on hernia trusses in antiquity. He claims to have proved that up to the fifth or sixth century of the Christian era ruptures were kept up only by bandages or leathern belts. After that date a true hernia truss, consisting of a pad attached to a more or less elastic iron hoop, came into use. Specimens of such trusses have been found in tombs of the Merovingian period. One of these still encircled the pelvis of a skeleton.

"Lady Pippinworth" writes: "I have just lately been reading Mr. J. M. Barrie's delightful book, *Tommy and Grisel*, and from a purely medico-legal point of view would like to know if the account of Tommy's untimely end can be accepted. Here it is:

> He (Tommy) climbed the wall, but as he was descending one of the iron spikes on the top of it pierced his coat, which was buttoned to the throat, and he hung there by the neck. He struggled as he choked, but he could not help himself. He was unable to cry out. The collar of the old doctor's coat held him fast.

We are not told what particular part of his coat was pierced by 'one of the iron spikes,' but the special garment mentioned leaves little room for choice as to the mode and manner of death. The coat was buttoned to the throat, and Tommy hung there by the neck till he was dead, dead, dead. We are, indeed, informed that he struggled as he choked, but that he could not help himself. He was unable to cry out; the collar of the old doctor's coat held him fast. Now, one naturally wants to know why it was that poor Tommy could not help himself, and feels inclined to ask, Where were his hands that they did not do a little unbuttoning of the old doctor's coat to relieve the pressure which brought about the choking? I wish in all seriousness to ask—as I have said, from a medico-legal point of view—will Mr. Barrie's account of Tommy's death hold as well, say, as did the old doctor's collar?"

In the *Journal of Anatomy and Physiology* for October there is an interesting note on the parotid. The writer, whose identity is sufficiently revealed to the initiated by the initials "A. M.," says that the word "parotid" was used by the classic medical writers long before the structure to which that name is now applied was recognised as a special organ. Hippocrates knew of glands in the neck, but it is not clear that he regarded any of them as having anything to do with the secretion of saliva. He frequently refers to swellings in the vicinity of the ear (*παρ' ὦτα*), and this descriptive phrase later crystallised into the name of a disease (*parotides*). The word is used in this sense by Pliny, Galen, and others among the ancients. The same usage appears in the earlier writers of the revival of learning. Casserius, in his *Anatomy of the Organ of Hearing*, figures what is now called the parotid under the name of *adenes aurium*, which he explains to be *glandulæ quæ in febribus malignis parotidibus afficiuntur*. Coiter, however, speaks of *parotides* as a structure Columbus recognises no other gland in the cervical region except the *paristhmiæ*, or the tonsils, which he says absorb the humidity of the brain. Bauhin distinguishes the *paristhmiæ* from the *parotides*, and assigns to the latter the function of moistening the adjacent parts. His view seems to have been that they obtained the means of doing this by receiving the drainage of the brain (*cerebri excrementa suscipiunt*). For this reason, as we learn from Laurentius of Montpellier, the parotid was called *emunctoria cerebri*. Vesalius ignores the name "parotid" altogether, referring only to "the numerous glands beside the ears," which he says have no special name. In another place, however, he states that the Greeks called those glands *paristhmiæ*. Etienne, writing about the same time (1545), applies the name "parotid" to these glands. The Cambridge anatomist, Wharton, who described the submaxillary duct, notes the existence of a gland which he calls "parotid," to which he attributed the function of collecting and carrying into the veins "certain superfluities" of the harder part of the fifth pair of nerves, acting as a kind of warming pan to the ear, and filling up the hollow in front of that organ. He seems to have had no idea that it was a salivary gland. The discovery of its duct, which was made more by chance than design, was announced in 1661 by Stenon in his *Obs. Anat. de Glandulis Oris*.

In the same number of the *Journal of Anatomy and Physiology*, under the heading "Anatomical Notes and Queries," there is an interesting note on perforate humeri in ancient Egyptian skeletons. The writer, whom we may without impertinence guess to be Professor MacAlister, states that in sorting out the Cambridge collection of Egyptian bones he noted the frequency of supra-articular perforation of the humerus, especially in the bones from Libyan graves. Of 682 humeri 390, or 57.2, were perforate. This exceeds anything hitherto published. Of ancient North Americans the percentage of perforate bones out of 300 specimens is only 40 per cent. In the Cambridge dissecting room there were only 3 instances out of the last 100 bodies examined. The perforation, which is believed to be an acquired character, traverses the shaft of the humerus well above the epiphysial junction line. It is always in the intra-articular part of the olecranon fossa, below the line of reflexion of the synovial membrane that crosses the middle of the fossa. It is therefore, says the writer, quite distinct from the vascular holes with which Topinard associates it, as these are always extra-articular.

Several inquiries having from time to time been addressed to us as to some verses giving a humorous account of the sorrows of the general practitioner, we take this opportunity of stating that they are by Dr. James Johnston, of Bolton, and were sung by him at the annual dinner of the Bolton and District Medical Society on October 4th, 1894. They have since been published by Dr. Johnston in a volume of verse, entitled *Musa Medica* (Savoy Press, Limited; price 2s. 6d.). Among the most effective lines are the following:

> He must not walk his rounds for fear his patients think him poor;
> And dearly do they love to see a carriage at their door:
> If his horse is fat, they say: "he must have little work to do,"
> And if it's lean, the reason is: "he starves the poor old screw."
>
> If he often goes to church, folks say: "it's all hypocrisy,"
> And if he doesn't go at all: "an Atheist he must be;"
> And when he is called out, as down the aisle he passes by,
> The knowing ones exchange a look and wink the other eye.
>
> About money he must always seem indifferent to be,
> And folks may think he practises from pure philanthropy;
> When we hear about him boasting of the guineas that he earns,
> We wonder if they all appear in his income-tax returns.
>
> He must work all day and half the night, and never say he's tired;
> For the public look upon him simply as a servant hired;
> And should he take a holiday, he'll find, when he comes back,
> Some patients have resented it by giving him "the sack."
>
> Should he call upon his patients every day when they are ill,
> His motive plainly is "to make a great big doctor's bill:"
> If he visits them less frequently—this lessening their expense—
> The chances are he'll be accused of wilful negligence.
>
> The most grateful creature on the earth is a patient—while he's ill;
> But his feelings sometimes alter when he get's the doctor's bill;
> And the doctor thus can judge how much the gratitude is worth
> When he sees it taking flight with the disease that gave it birth.

The first regular meeting of the Röntgen Society of the United States will be held in the Academy of Medicine, New York City, on December 13th and 14th. The President of the Society is Dr. Heber Robarts, of St. Louis, Mo.

A Sanatorium for Consumptives at Toronto.—The Canadian National Sanatorium Association has agreed to give £4,000 towards the erection and equipment of a free sanatorium for the treatment of tuberculosis in Toronto provided the city gives an equal amount.

Presentation.—Dr. Neech has been presented by his patients and friends at Tyldesley with a handsome dinner gong on his leaving the district for Halifax.

THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, CHELTENHAM, 1901.

The sixty-ninth annual meeting of the British Medical Association and its first meeting in the twentieth century, will be held at Cheltenham on July 30th and 31st, and August 1st and 2nd, 1901. The invitation to meet at Cheltenham was offered by a deputation of the Gloucestershire Branch representing Cheltenham, Gloucester, and other parts of the county at the annual meeting at Ipswich, and was unanimously and cordially accepted. The invitation to meet next year at Cheltenham has the warm support of members of the Association residing in Gloucester, and we know that no pains will be spared in either city to make the meeting successful and agreeable.

CHELTENHAM.

By G. B. Ferguson, M.D., President-Elect.

Beautiful for situation is Cheltenham, lying in its hemi-amphi-theatre of hills, on a soil sandy, gravelly, or marly, and yielding mineral waters, containing sulphates, chlorides, sulphides, and iron. Indeed, it is by no means easy to sink a well in some parts of the district without striking a mineral spring. It follows that the mineral springs of the neighbourhood may be reckoned by hundreds, most of them running to waste. There can be no doubt that a district like that of Cheltenham, if only it existed somewhere in Germany, would be exploited and utilised to a far greater extent than it is. How comes it, that whereas Cheltenham water drinking was the fashion with every rank, from Royalty downwards, 85 years ago, one hears and sees so little, comparatively, of it now? The opening up of the Continent, after the final fall of Napoleon, is one great reason, and another is that bottled Hunyadi and Æsculap and Sprudel salts fulfil somewhat similar functions, though in a much coarser and more trying fashion. Yet there cannot be the slightest doubt that the natural saline and sulphated waters of Cheltenham, taken in repeated small doses, fasting, in the morning, are as useful as ever they were—that is to say, as useful as any waters can be—in chronic catarrhal conditions of the stomach and duodenum. There is no special reason why fashion should not again return to Cheltenham, as it has done to Bath, and as it probably would do so if for any reason the Continent were closed again to our invalids. In such a case—which no one in Cheltenham is so unpatriotic as to desire—its waters would not be found wanting either in quantity or in efficacy. But it is not enough to possess mineral springs. Covered walks and news-rooms and conversation-halls, with bands of music playing at 6 A.M. and later, are needed, and all these are what Cheltenham very nearly secured a few years ago, but did not, because this person and that thought it would cost too much, and might not, perhaps, pay 3 per cent. on the outlay! The real truth is that Cheltenham is so comfortable and prosperous, with its large class of retired military, civilian, and ex-Colonial residents, its unpretentious and hospitable society, its great and ever-increasing number of schools and colleges, that it affects to disdain the wealth and profusion of its mineral springs. "That sort of thing was all very well once upon a time," it seems to say, "but what has Cheltenham College, that almost stocks Woolwich, to do with saline springs, or the Ladies' College and its thousand pupils with a *Kursaal*?" And so, although when the British Medical Association comes to Cheltenham for its next annual meeting, its members will find plenty of mineral waters if they look for them; they will find that its hospitality is more conspicuous than its *Brunnen*, and that its palatial colleges are its leading feature. It is thought probable that the Ladies' College alone will afford accommodation for the whole Association, Museum and all, without the smallest effort, and that the Boys' College will come into requisition for the annual dinner and *soirée* only.

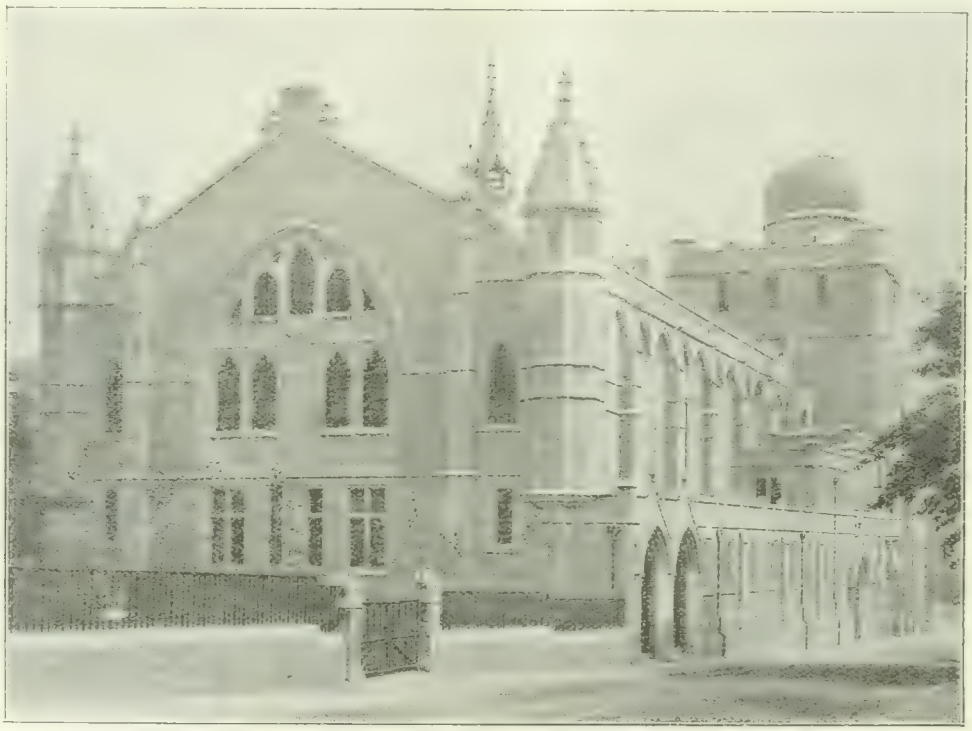


Ladies' College, Cheltenham. (From a photograph by Messrs. G. H. Martyn and Sons).

The two chief medical institutions of Cheltenham are the General Hospital and the Delancey Fever Hospital. The former, which has accommodation for 100 beds (80 only are at present in use), was erected in 1848, and has well supplied a great want of the neighbourhood. This hospital was among the first, if not the very first, of English hospitals to adopt the antiseptic principles of Lord Lister. These were certainly practised there in their primitive form as early as 1873, and soon afterwards the spray and carbolic gauze dressings and lotion were employed by all its surgeons, to the immediate and total abolition of the septic accidents common before their use. It was also among the earliest of hospitals to establish a Roentgen room; and now the attention of the House Committee is being directed to the modernising of the operating theatre. The Delancey Fever Hospital, which dates from 1878, will well repay a visit. It is built on the pavilion system, with separate blocks for small-pox, scarlet fever, typhoid, and diphtheria, and has been of the greatest service over and over again in limiting epidemics. Quite a model, as indeed it was a pioneer establishment of the kind, it owes its erection almost entirely to bequest and to private munificence.

Charming as the Garden Town itself is, with its bosky avenues, its surrounding country makes its greatest attraction: the breezy downs of Cleeve Cloud, the soil of which teems with fossils, 1,100 feet above the sea level; the hill and dale and stream and woods of Hillcote; the glories of Gloucester and Tewkesbury near at hand; and within easy reach Raglan and Tintern, Cirencester and Broadway. If the members will find comparatively little of architectural merit in Cheltenham itself, they will find therein some of the shadiest streets of Europe; at Pittville, one of the most beautiful of parks, and round about, in every direction one of the most rural and diversified champaigns of England. They will find a hearty welcome from every class; what they will not find are manufactories and smoky chimneys.

It is hoped by all in Cheltenham that the meeting will be rich in results, scientific and practical. Be that as it may, we cannot but believe that even the severest medical devotees will feel themselves wiser and better after they have gone round Gloucester with Dean Spence and Mr. Bellows; and interested and tranquillised after they have attended one of those charming *al fresco* nocturnal *fêtes* to which the Corporation of Cheltenham has devoted so much and such successful attention.



Princess Hall, Ladies College, Cheltenham. (From a photograph by Messrs. C. H. Martyn and Sons).

Access to Cheltenham.

Cheltenham is accessible in 1 hour from Birmingham and Bristol; 2 hours from Cardiff; 3 hours from London, Nottingham, and Sheffield; 4 hours from Manchester; 5 from Bradford, Leeds, and Liverpool; 6 from Portsmouth; and 11 hours from Dublin and Edinburgh.

GLOUCESTER.

By Rayner W. Batten, M.D.

Amongst those who will attend the meetings of the Association in 1901 probably not a few will be ready to forego some of the pleasures even of the bright and charming town of Cheltenham for the quieter attractions of the neighbouring city of Gloucester. How different the two places are, and needs must be! Not more than one hundred years ago the former was a town of one long street of thatched houses; across that street, near the Old Swan Inn, ran the river Chelt, with stepping stones for foot passengers, but for nearly 1,900 years the city of Gloucester has had a written history, and an uncertain record beyond. The year 45 saw it become the Colonia Glevensis, the most important station on the western frontier of the Roman Empire. To-day, of its central streets, there is scarcely one that is not the direct successor of the Lines of Vespasian. The "Via Principalis" is still the chief street. The municipal buildings for long years occupied the site of the Roman Forum, and the centre of civic life to day is the same as that of the military authority in the first four centuries, the foundations of the one replacing the carefully preserved tesselated pavements of the Prætorium. Some of the city's public buildings can still show portions of the wall which Vespasian built about the year 50. That city wall, which, used by Dane and Saxon and Norman, was even in the seventeenth century strong enough to turn the tide of war against Charles I; and which would have been standing now had not Charles II, looking upon it and its gates with the inscription over them, "A city assaulted by man, but saved by God," felt that it was an unpleasant memory to a Stuart king.

The South Wales railway bridge across the Severn is but the modern adaptation of the bridge built by Vespasian, across which came into Glevum the wealth of the Forest of Dean, and over which marched the Roman Legionaries by the "Via Julia" to the outlying stations of Caerleon and Caerwent. In the 400 years of the Roman occupation, the great roads were made, and temples and villas were built; and there is scarcely a part of the city where, at some 8 or 10 feet below its present level, Roman remains may not be found.

Of these temples, one dedicated to Æsculapius stood near the North Gate, probably over one of the many saline springs of the county, springs which differ from their fashionable modern rivals rather in the strength of their advertisements than in that of their ingredients. It will to some little extent comfort the profession to learn that one of the "crying evils" of to-day was certainly known to the hierarchy of this health temple; for medicine stamps with directions for "bleared eyes"—patent medicines of that time—are dug up along the lines of the Roman troops between Gloucester and Chester. When we note that these stamps are found more frequently here than anywhere else, and that this was the line on which the Frisian, that is the Dutch and German auxiliaries were stationed, fruitful subjects for discussion are opened up in reference to the sight of Germans and English and Boers.

On the site of yet another temple stands now the Norman Church of St. Mary de Lode. Tradition points to that temple as the first Christian Church in Britain; as the burial place of Lucius, the first Christian British King; and as in some probability a preaching station for the great Apostle to the Gentiles.

On the withdrawal of the Roman Legions in the year 410, there came for Gloucester a very dark period, of which there



Gloucester from Robinswood Hill.

is but little record. Then later, Dane and Saxon and Norman strove for its possession. Saxon Kings reigned in Britain, and there came the development of the power of the Church; and in the seventh century Osric was authorised by Ethelred to build the Abbey of St. Peter. In the eleventh century this Abbey was burnt down, but by the end of the same century the great Norman Abbey of Abbot Serlo took its place. From this time onwards the Abbey Church—since the time of Henry VIII the Cathedral Church—is a history of England written in stone; whilst the old city is associated with all the great events down to the close of the Civil war. In its Chapter-room was given by the Norman William the order for the "Domesday Survey;" within the church lies, with its monument of bog-oak, the body of Robert Curthose, the Conqueror's eldest son, the one whom we remember, as schoolboys, as the subject of a practical joke, who died after 26 years of imprisonment in the Castle of Cardiff.

In Gloucester, too, Henry I gained his fatal love for lampreys. Perhaps it may be forgiven to a medical man who by sight is very familiar with those Severn products, the lamprey and the lampern, if he holds that it was this love rather than another which brought about the "smilelessness" of that king. Here, too, Henry III was crowned; and king after king held their parliaments. From Gloucester, too, went forth that order of Richard III for the murder of his nephews. But it is to the death of Edward II, and to the far-seeing wisdom of Abbot Thokey, in bringing to Gloucester from Berkeley Castle the body of the murdered king, that the cathedral owes very much of its exceeding beauty. To the shrine of the murdered monarch flocked pilgrims, and to the coffers of the Abbey flowed the wealth which gave the power to work out all the wondrous beauty of the Early Perpendicular. How one longs that to-day there were the enthusiasms which could make possible for us such glories as those of the Choir, the Lady Chapel, the fan-traced cloisters, and the tower of this Cathedral Church. In the city there were, moreover, the taverns, beloved of pilgrims; and one of these still remains to refresh the bodies of members of the Association when they come, and to cheer their hearts with the sight of its open court-yard and outdoor galleries and carved oak. Of the other old taverns there are but traces. Of timbered houses some few remain, but they are fast disappearing, with their beams of oak and Spanish chestnut, wood that the years have made so hard that only the centre-bit can touch it.

Oh, the tyranny of committees of improvement, and of sanitary authorities; the inconceivable wilfulness and thoughtlessness of those who design, and the invincible ignorance of those who build and pay. May the day never come when the once "Fair City" shall forget all the traditions and responsibilities of 2 000 years, or become blind to all the beauties which those years have stored up. But there is the danger—and a very real one too—that she may learn to know no higher joy than that of imported corn and timber, or of the sight of factories and smoking chimneys, or of streets and houses which have no character, no individuality, and which leave upon the mind no satisfied sense of harmony and grace.

While passing through Constantinople lately the Shah gave orders for the erection of a hospital in which Persian subjects residing in the Turkish capital should be treated gratuitously.

Medical Celebrations in Honour of the Sultan's Jubilee.—The new buildings of the Imperial University of Constantinople were recently opened in the presence of Marshal Chaekir Pasha and the Minister Ahmed Zudhi Pasha. The latter delivered an address, and according to custom, the ceremony was brought to a close by the ritual sacrifice of several sheep. The first stone of the surgical section of a new hospital for the Greek community has also lately been laid. A new bacteriological institute is being built at Chichli and a new Jewish hospital has been opened at Balata. All these events were by way of celebrating the twenty-fifth anniversary of the accession to the throne of the present Sultan. In honour of the same occasion the Imperial Medical Society held a special meeting, at which its Secretary, Dr. Rizzio, gave a historical review of medical and hygienic progress in Turkey during the reign of the present Sultan (1876–1900).

THE WAR IN SOUTH AFRICA.

SPECIAL HOSPITALS IN SOUTH AFRICA.

THE WELSH HOSPITAL.

A letter has been sent to the Committee of the Welsh Hospital from the War Office, expressing Lord Lansdowne's thanks on behalf of the Government for their generosity in permitting the hospital to remain in South Africa for a further period of three months, as requested by Lord Roberts. The Secretary of State for War has forwarded to the Secretary of the hospital the following telegram, dated November 6th, which was received by the Director-General of the Army Medical Service: "Please convey to the Committee of Welsh Hospital my condolence, and Surgeon-General Wilson's, on the death of Professor Hughes, and express sympathy with his family on their loss.—Roberts."

THE PORTLAND HOSPITAL.

At a recent meeting of the Committee of the Portland Hospital, Major-General the Hon. H. F. Eaton stated that, after all payments had been made, £2 500 would still remain in the hands of the Honorary Treasurer. The Committee, in expressing their sympathy with the relatives of one of the ward orderlies, Henry James Borer, who had died, resolved to contribute towards the establishment of an ambulance station to be erected near his home at Caterham.

THE LANGMAN HOSPITAL.

It is stated that the staff of the Langman Hospital was to leave Durban on November 10th in the *Yorkshire*, having in charge 100 sick and invalided men. Mr. Langman, who has maintained this hospital for nine months in Bloemfontein and Pretoria, during which time over 1,200 sick and wounded have been treated, has presented the tents and the whole equipment to the Government.

THE PLAGUE.

Prevalence of the Disease.

India.

During the week ending November 3rd, the deaths from plague in all India amounted to 2,148 against 2,174 in the previous week.

Bombay.—In the City of Bombay the weekly plague deaths continue between 80 and 90. During the week ending November 6th, the total mortality touched the lowest point recorded for nearly a year. Although the actual number of plague deaths continue, it is satisfactory to note that several of the populous districts of Bombay recently affected are now free of the disease. In the Bombay Presidency the mortality from plague, including the city, amounted to 1,023. Within the Presidency Poona continues to be the city most seriously affected, but even here a slight decrease is observable. In Poona on November 2nd, 3rd, 4th, 5th, 6th, and 7th, the deaths from plague numbered 33, 33, 34, 32, 30, and 24 respectively. In the City of Poona, whilst the numbers show a slight decrease, the returns from the Cantonment show a slight increase; some 40,000 people have left the City and taken up their quarters outside.

In Bengal 278 deaths from plague were recorded during the week ending November 3d. For 11 days Calcutta was free from plague, but on November 6th another fatal case was reported. Reviewing the situation, during this the first real break in the plague epidemic, we find that the first known case of plague occurred in Calcutta in April, 1898. Up to June 30th, 1900, according to official returns 10,887 persons died of the disease. Were, however, suspicious cases included, the total may be fixed at 13 000, in round numbers. The chief preventive measure adopted was disinfection; and considering the density of the population in Calcutta, and the squalor in which the majority live, Calcutta must be congratulated upon a fortunate escape so far as actual deaths from the disease are concerned. We are by no means confident, however, that the city has seen the last of the disease.

In the *Mysore* district, 737 deaths from plague occurred during the week ending November 3rd. This is a heavy death-rate considering the population affected. It would appear, however, that plague reached its maximum spread in Mysore during the third week in October, when 1,109 persons died of the disease. Since then, however, the total death rate from plague has steadily, although slowly, declined. On November 6th, the last returns to hand, 45 deaths occurred in Bangalore from plague: in Mysore city 27 deaths; and at the Kolar goldfields 2 deaths. All schools in Mysore have been closed owing to plague, and numerous villages in the country around Mysore and Seringapatam have been declared affected.

Mauritius

For the week ending November 22nd 29 fresh cases of plague occurred in Mauritius and 33 deaths from the disease.

Cape Colony.

King William's Town.—No death from plague has been reported from Izeli during the past week. Dr. Hornabrook, who had experience of plague in India, has been sent to report upon the suspected cases. Up to November 22nd a final bacteriological decision had not been announced publicly, but the action of the Government in declaring all ports on the East Coast of Africa between the 10th and 40th parallels infected would seem to imply that the Government have positive information on the subject, and that they are dealing promptly with the situation.

INDIA.

After the Famine.

"The year 1898, in marked contrast to the two preceding ones, was the healthiest which the province has known during the past quarter of a century. There was no epidemic of any kind; the death-rate fell from 69.34 to 24.30, and the birth-rate rose from 26.83 to 29.91." These are the terms in which the Government of the Central Provinces commences its review of the report for 1898, submitted by the Sanitary Commissioner, Colonel G. Hutcheson, M.D., I.M.S.

In the British Medical Journal for April 1st, 1899, p. 822, under the title, *Echoes of the Indian Famine* summaries were given of the reports submitted by the same officer concerning the disastrous sanitary events of the years 1896 and 1897. The report under notice completes the record of a period during which these provinces suffered to a greater degree than any other part of India from the effects of drought, causing failure of crops, and of severe visitations of epidemic disease. These circumstances have caused a loss of about 7 per cent. of the population of the ravaged area.

The present report tells a tale of striking contrast and marvellous recuperation under restored prosperity. The death-rate resumed its normal level in February, and during the remainder of the year remained far below the height attained in 1897, and considerably below the mean of the ten years, 1881-90. The birth-rate, which had been greatly depressed, did not rise to the decennial level till September, but during the last three months of the year presented an unusual exaltation. It is thus seen that the death-rate, previously abnormally raised, soon became unusually depressed; and the birth-rate, previously depressed, became more tardily unusually raised—as if the weaklings had been removed by the famine and pestilence of the two preceding years and the suspended fecundity of the people had been more than regained. Perhaps also marriages, postponed during the famine, were contracted when it was over.

The fall in infant mortality was very great; the death-rate of infants under 1 year of age was 210, against 400 in 1897. Cholera caused only 7 deaths; the mortality due to small-pox was about one-fourth of the average; the fever death-rate was 16.40, against 41 in 1827 and a decennial mean of 19; bowel complaints caused only 1.23 death per 1,000, against 8 53 and 2.66, and the number of suicides was greatly less than in any of the three preceding years. The only blot in the page of sanitary well-being is the plague, which effected an entry and lodgment in the province in October, and caused 125 deaths, most of which occurred in the towns of Hinganghat and Wardha.

The report is exceedingly able and instructive, and enters fully into many details and questions of sanitary administration which are of more local than general interest. Read in relation to the two preceding reports, it presents a very striking illustration of the dependence of Indian populations on climatic and seasonal conditions, and of the rapidity with which they are prostrated by unfavourable and revived by favourable circumstances. These facts offer a strong incentive and encouragement to sanitary effort.

Glasgow University Club, London.—The winter dinner of this club will be held at the Café Royal on Wednesday, December 5th, at 7.30 P.M. Professor Sir Hector C. Cameron, M.D., will occupy the chair, and will be supported by Lord Lister, Surgeon-General Jameson (Director-General of the Army Medical Department) and other distinguished members of the club. Among the guests who have promised to attend is Major Babtie, R.A.M.C., V.C., who has just returned from South Africa. Major Babtie is a Glasgow graduate, and is certain to receive a warm welcome from his friends in London, who are proud of the gallantry which has earned for him the coveted Victoria Cross. Members desirous to attend the dinner should communicate at once with the Honorary Secretary, Mr. N. M. MacLehose, 13, Queen Anne Street, Cavendish Square, W.

THE EPIDEMIC OF PERIPHERAL NEURITIS TRACED TO ARSENICAL CONTAMINATION OF BEER-MAKING MATERIALS.

The unprecedented epidemic of peripheral neuritis, accompanied in many instances by pigmentations and other lesions of the skin suggestive of chronic arsenical poisoning, to the prevalence of which in Manchester attention was first called in the British Medical Journal of November 24th by Dr. Ernest S. Reynolds, has, as might have been expected, excited considerable public interest. This is largely owing to the fact that the evidence appears clearly to prove that the symptoms are really due to arsenic which has found its way into the beer, probably with the glucose. In the manufacture of glucose, sulphuric acid is employed, and, as is well known, crude sulphuric acid is apt to contain arsenic as an impurity.

We publish below a series of articles from correspondents which show that cases of peripheral neuritis with skin lesions have occurred in various other parts of Lancashire and the Midland Counties.

The Manchester Brewers' Association have appointed a Committee, consisting of Sir Thomas Lauder Brunton, selected as a pharmacologist; Dr. Stevenson and Dr. Luff, selected as analysts; Mr. Gordon Salamon, as a brewing chemist, with Mr. Fletcher Moulton, Q.C., M.P., to investigate the allegation that the poisoning is due to beer. Meanwhile, steps have been taken by brewers in Manchester to withdraw supplies of liquors which might possibly be contaminated, and to test thoroughly further supplies before they are placed on the market.

SALFORD.

Demonstration of Arsenic in Beer and its Source.

BY

Sheridan Delépine, M.D., Procter Professor of Pathology, Owens College, Manchester.

and

C. H. Tattersall, L.R.C.P., M.R.C.S., Medical Officer of Health, Salford.

On November 9th, Dr. Cran, the Poor-law Medical Officer for the Regent District of Salford, reported a large amount of illness of a paralytic nature in his practice which he had concluded was due to beer drinking. On that day five samples of beer were obtained and forwarded to the Public Analyst, and a further ten samples a few days later. He, however, failed to find anything to account for the illness. It had been noticed for some time that deaths from "peripheral neuritis," "multiple neuritis," and "alcoholic neuritis" were more numerous than usual, and inquiries had been made among a few friends who had not noticed any excess in illness of this character in their practices.

The increase in deaths from this cause commenced in the third week in July, from which time to the present the weekly figures have been:

3 0 1 1 1 2 2 1 2 4 2 1 2 3 3 4 5 2 and 2
making a total of 41.

In addition, during the same period there were 25 deaths certified to be due to "alcoholism," or a total of 66 in the past four months as compared with 22 in the first seven months of the year; 39 in 1899, 31 in 1898, and 27 in 1897.

Immediately following Dr. Cran's notification an inquiry was commenced into the circumstances of all the cases that could be heard of, and it was soon abundantly clear that the one thing common to all was beer drinking, not necessarily to excess; and it was further ascertained that the cases were not confined to the drinkers of beer from one particular brewery.

On November 16th we consulted together and concluded that the only probable causes of the peculiar sickness were:

1. Metallic poisoning (lead or arsenic).
2. Poisoning by higher alcohols accidentally present in the beer.
3. Poisoning by some unknown bacterial product.

Samples of beer were obtained on November 19th from a shop to which one case of illness could be clearly traced for purposes of experimental investigation.

On November 20th we heard that Dr. Reynolds had found arsenic in a sample of beer, and that his observation had been confirmed by Professor Dixon Mann, and we had no difficulty in satisfying ourselves of the presence of arsenic in our samples.

Specimens of every article used in the brewery concerned were obtained and examined, arsenic being found in one sample of glucose (out of three), and in a sample of inverted sugar on November 22nd. It was ascertained that both these substances were purchased from the same firm of sugar manufacturers. Their works were visited on November 23rd, and samples of everything used examined, and it was found that the only sulphuric acid used was loaded with arsenic.

The sulphuric acid works were visited on November 24th, and it was ascertained that the sulphuric acid was the ordinary commercial sulphuric acid prepared from arsenical pyrites.

In all, 62 samples of various kinds were examined for the presence of arsenic, and the particulars of these analyses are given in the table on p. 1588. The results show that there is no arsenic present in any substance which cannot be traced to the use of this impure sulphuric acid.

Professor Harold Dixon, F.R.S., of the Owens College, has made an examination of the sulphuric acid, glucose, and beer, and he reports as follows:

"The sulphuric acid was found to be highly contaminated with arsenic. I can say with certainty that it contains more than 1.4 per cent. by weight of arsenious acid. The glucose contains a very considerable quantity of arsenic. Owing to the limited time at my disposal I am not prepared to speak with the same certainty as to the exact percentage of arsenic present, but there is strong evidence that this glucose contains fully 0.05 per cent. by weight of arsenious acid. The quantity of arsenic in the beer is small, and it would require a considerable time to make a quantitative analysis. About the presence of arsenic in appreciable quantity there can be no doubt."

From these results it is evident that arsenic is contained in the beer in sufficient quantities to account for chronic arsenical poisoning.

The symptoms of the cases inquired into are also quite consistent with this view—namely:

Running of eyes and nose.
Pigmentation of skin.
Various rashes, including peeling of hands and feet.
Paralysis, analgesia, myalgia.
Pins and needles in hands and feet.
Diarrhœa (in one case).

Other cases have been heard of where the individual has suffered from vomiting and diarrhœa, and has at once ceased drinking the offending beer, no further symptoms have occurred. Further, every case we have followed up (about 100) can be traced to beer, in the brewing of which glucose or sugar from this one manufactory were used. As this firm supplies about 200 breweries, to a greater or less extent, in the North of England and the Midlands, it is not surprising to find that similar cases of illness are occurring in other districts.

It is due to the sugar manufacturers to say that we understand they have issued a circular to their customers advising them of the facts, and requesting them not to use any of the materials already supplied.

Our thanks are due to the brewers for the facilities they have given for the prosecution of our inquiry, and there cannot be the slightest doubt that they are entirely innocent of any negligence.

We cannot conclude without referring to the very great assistance which we have received from Dr. Coutts, F.I.C., who has carried out the great bulk of the analyses.

In conclusion, we think that we have proved the correctness of Dr. Reynolds's opinion that this outbreak of disease is due to arsenical poisoning from beer drinking; that the presence of arsenic in the beer is due to the use of contaminated glucose and inverted sugar by the brewers; and that this contamination of sugar is caused by the use of very impure sulphuric acid by the sugar manufacturers, prepared from arsenical pyrites.

It seems to us very necessary that the use of sulphuric acid in the preparation of articles for consumption should be placed under strict supervision.

Table of Analyses.

Firm A.

No.	Material.	Arsenic.
α	Beer	+
β	Do.	+
γ	Do.	+
8	Hops	—
9	Do.	—
10	Do.	—
11	Do.	—
12	Do.	—
21	Glucose	—
22	Do.	—
23	Do.	+
24	Invert sugar	+
28	Malt	—
29	Do.	—
30	Do.	—
31	Do.	—
32	Do.	—
33	Do.	—
34	Do.	—
36	Preservative	—
35	Gypsum	—
27	Water	—

Firm B.

13	Hops	—
14		—
15		—
16		—
17		—
18		—
19		—
20		+
38	Glucose	—
39	Do.	—

Firm C.

1	Hops	—
37	Glucose	—

Firm D.

2	Hops	—
3	Do.	—
24	Glucose	—
25	Invert sugar	—

Firm E.

4	Hops	—
5	Do.	—
6	Do.	—
7	Do.	—
40	Invert sugar	+
41	Do.	—

Various other Beers.

I	—	
II	—	—
III	—	—

Firm F.—Brewers' Sugar Manufacturers from whom Sugars used by Firms A and E are obtained.

44	Glucose	+
45	Do.	+
46	Do.	+
47	Do.	+
48	Do.	+
49	Do.	+
50	Invert sugar	+
51	Do.	+
42	Sulphuric acid	+++
43	Sulphurous acid	—
56	Whiting	—
52	Maize meal	—
53	Sago flour	—
54	Tapioca flour	—
55	Cane sugar	—

In the table of results we have recorded as negative all the cases in which it was impossible to obtain a distinct sublimate of crystallised arsenious acid, and where control reactions were not obtained. By the Reinsch's test copper was more or less blackened by a few hops, some malts, and a few sugars, but this was apparently not due to the presence of arsenic. A large number of substances in which we did not suspect the presence of arsenic were examined, in order to avoid fallacious statements based on incomplete evidence. All the materials used in one brewery, and practically all employed in the sugar factory, were thus examined.

MANCHESTER.

Beers and Brewing Sugars.

We have received from Mr. William Kirkby, F.L.S., F.R.M.S., Lecturer in Pharmacognosy in the Owens College, the following note on Beers and Brewing Sugars in Manchester and Salford:

Dr. Kelynack obtained for me samples of beer which was habitually drunk by five patients under observation. Samples were brought by the patients themselves or by their relatives under the direction of a medical man. There was no difficulty in detecting arsenic in those samples. Through the kindness of Dr. Forsyth, and of one of the largest and most influential brewers in the district, Dr. Kelynack obtained three samples of beer bottled in August, October, and November. In these also arsenic was found in varying proportions. Having ascertained (*a*) that the people under treatment were drinking beer contaminated with arsenic, and (*b*) that the beer was actually leaving the brewery with the arsenic in it, it was clear that all possible sources of contamination between the brewery and the consumer could be safely ignored.

A brief review of the known constituents of this beverage indicated that the most probable source of the poison would be found in some article in the production of which sulphuric acid is used, as this frequently contains arsenic as an impurity. I accordingly asked for, and was most courteously supplied with, samples of calcium sulphate (used for water hardening) and "invert sugar." The first of these was quite pure, but the second was charged with considerable quantities of arsenic. Immediately upon ascertaining this (the morning of Friday, November 23rd) Dr. Kelynack was informed, and he at once communicated the intelligence to the medical officers of health for Manchester and Salford, and to the brewers concerned.

Immediately upon the fact becoming known another very prominent firm of brewers came to my assistance, and with the combined help of them, Dr. Forsyth, Dr. Harold Bailey, Dr. Crawshaw, and others, Dr. Kelynack and I are now able to publish the subjoined lists of figures, which at present require no comment from a chemical point of view. It should of course be distinctly understood that in determining such minute quantities of arsenic the figures can at the best be approximations to the truth. Every figure, however, is the outcome of at least three experiments, and in many cases of six experiments. The quantities are given in terms of arsenious acid (As_4O_6), because the dose of this is probably the most familiar to practitioners.

Beers and Porter.

1	Beer	From patient	0.14 gr. per gallon.
2	Beer	Do.	0.14 gr. per gallon.
3	Beer	Do.	0.07 gr. per gallon.
4	Beer	Do.	0.07 gr. per gallon.
5	Beer	Do.	0.02 gr. per gallon.
6	Porter	Do.	0.08 gr. per gallon.
7	Beer	From brewery	0.28 gr. per gallon.
8	Beer	Do.	0.18 gr. per gallon.
9	Beer	Do.	Faintest trace.
10	Beer	Do.	0.01 gr. per gallon.
11	Beer	Do.	0.04 gr. per gallon.
12	Beer	Do.	0.09 gr. per gallon.
13	Beer	Do.	0.09 gr. per gallon.
14	Beer	Do.	0.14 gr. per gallon.
15	Beer	Do.	0.14 gr. per gallon.
16	Beer	Do.	0.10 gr. per gallon.
17	Beer	Do.	0.20 gr. per gallon.

Brewing Sugars.

1	Invert sugar	3 parts in 10,000 parts.
2	Invert sugar	3 parts in 10,000 parts.
3	Invert sugar	*Nil.*
4	Glucose	4 parts in 10,000 parts.
5	Glucose	Faintest trace.
6	Glucose	Faintest trace.

That arsenical impurity should result from the employment of sulphuric acid in the manufacture of these sugars is not greatly to be wondered at when it is remembered that the greater proportion of the acid is obtained from iron pyrites. But the recurrence of such a sad state of things as now exists in this district must be obviated in the future by the establishment of a test for arsenic to which all sulphuric acid that is to be used for the manufacture of food and drinks, must conform, just as in the case of that which is to be used in medicine.

I must tender my thanks to Mr. Ray for his assistance, and to Messrs. Jewsbury and Brown for the use of their laboratories, and for other facilities afforded me in prosecuting these investigations.

By J. W. Crawshaw, M.B., Ch.B.Vict.

As the following well-marked case of arsenical poisoning from beer drinking may be of some service in elucidating the wide-spread epidemic which has been so prevalent in this district, I venture to place the more important features of the case before the readers of the British Medical Journal.

Dr. Kelynack, to whom, along with Mr. Kirkby of Owens College, is due the credit of having been the first to trace the source of the arsenic to the inert sugar used in the production of the cheaper forms of beer, saw the case with me on Monday, November 12th, and has no hesitation in declaring it to be one of the cases now so prevalent in and around Manchester.

History of Present Illness.

M. H. B., a woman aged 39 years, had a holiday in the Isle of Man from June 1st to June 9th, 1900. For some time before she went away she had noticed a troublesome watery discharge from the eyes and nose. In the third week of June, after she returned home, she became aware of a brown discoloration on the left side of the neck and the adjacent part of the top of the left shoulder. The point of the right elbow also was discoloured. Pigmentation occurred next on the anterior and external aspects of the knees just above the patellæ. In a few weeks the discoloration had appeared practically over the whole body. She does not remember any redness, but says that at first the right elbow, which was one of the regions first noticed to be pigmented, was painful and tender. She has also noticed that the skin has peeled off the forearms and hands and the soles of the feet.

About the middle of August she first felt tenderness and pain in the soles of the feet. At first this was noticed on rising in the morning and on getting warm in bed at night, at which time there was much burning and tingling. The pain was also described as like "pins and needles." These symptoms gradually increased in severity, and walking became very painful. The toes became stiff and the legs very soon tired on walking. She also noticed a general and gradually-increasing feeling of weakness on exertion.

Coincident with the onset of pain in the feet she began to have "pins and needles" in both hands and she noticed the peeling of the skin. At this time, also, gastric symptoms began to be developed. The most prominent of these was vomiting, at first only in the morning, but in a week or two it occurred during the day as well, but did not suffer any pain. She says that a drink of beer was vomited in a few minutes, and seemed also to produce an attack of diarrhœa. For some weeks the bowels were very loose.

Chest and throat symptoms also appeared. There was very marked hoarseness of voice and a persistent troublesome cough, unaccompanied by any expectoration. All this time since the onset of the illness there had been marked running from the eyes and nose, and the general weakness slowly increased. She became unable to get out of bed in the last week of October.

Social History.

She has been in the habit of drinking at least four gills of beer a day; one in the morning, one at dinner, and one at supper; one was generally taken early in the evening. One or two days a week more would be taken, but on very few occasions was more than eight gills taken in a day. This amount has been taken regularly for a year or two before the onset of the illness, and during the course of the illness also. The amount taken has been most carefully inquired into, and, as the patient fully understands the importance of the inquiry, her answers may be relied upon.

The amount of ordinary food taken during the illness has been but little, the appetite for solid food having been very poor. No other single article of diet likely to be the cause of the illness has been taken regularly. The beer taken was always a "sixpenny" beer obtained from the same firm. She never drank any stout or spirits. She had no medical treatment previous to my attendance on her, and has taken no medicine containing arsenic.

Present State

The face appears flushed and dusky. The eyes are congested and watery, and a slight watery discharge is seen exuding from the nostrils.

Pigmentation.—The most noticeable feature is a brown pigmentation of the skin, which is present over the whole body with the exception of the soles of the feet, palmar surfaces of the hands, and a small extent of the legs for three inches or so above the ankles. It is intensely marked round the neck, gradually fading off towards the chest and back and the shoulders; also over both knees, on the upper and outer aspects; in the axillæ, around the nipples and umbilicus, and the skin about the genitals. There is a distinct band round the waist, where her clothing would press, and also round the upper part of the legs where the garters were tied. One or two prominent vertebræ spines in the lower dorsal region are also extremely pigmented. The backs of the hands and forearms are also deeply coloured, but not quite so much as the other regions mentioned. In all these situations, which it will be noticed are exposed either to the influence of the weather or to pressure or friction, the colour is a deep brown. Over the rest of the body, with the exception of the palms, soles, and ankles, the coloration is very noticeable, but is much paler in tint. The tint of the deeper-coloured regions gradually fades into that of the lighter-coloured parts everywhere except, as will be described later, in the hands and feet. On close inspection the pigment is seen to be unevenly deposited in most of the regions. This is perhaps most noticeable on the backs of the hands and forearms, and also on the front of the chest. The ground work of the skin is deeply pigmented, but small areas varying in size from one-sixteenth to one eighth of an inch, are considerably lighter in tint than the adjacent portion of skin, and some of them seem to be quite free from pigment. The appearance presented conveys the idea that the pigment having first been deposited evenly, had been washed out by small drops of water. In the neck the hair follicles are much lighter in colour than the rest of the skin. The pigmentation can be seen in the mucous membrane of the mouth.

Desquamation and Thickening of Skin.—Over the greater portion of the skin, but particularly the back, a branny desquamation is noticeable. The skin of the palms of the hands and soles of the feet is rough and thickened, and is seen to be peeling, especially in the furrows of the palms and fingers. The skin over the joints of the fingers on the dorsal surface is markedly thickened, particularly over the joint between the first and second phalanges of the left index and middle fingers when pressure would occur on supporting the body in such a position as is assumed while scrubbing the floor. On the dorsum of the feet the pigmentation is well marked though not so evenly distributed as over the rest of the body. The pigment stops abruptly at a line running round the foot at a level of about 1½ inch from the ground, at the heel, and approaching nearer to the ground towards the toes. Just above this line the pigment seems to be heaped up, and is more intense in tint than the colour of the dorsum, towards which it rapidly pales. Below this line the skin of the soles and sides of the foot is dusky bluish red (cyanosed). This is most marked at the sides of the foot where the skin is thinnish, and the abrupt change from pigmented skin to cyanosed skin is extremely noticeable. On pressure, which is very painful, the area becomes pale, and slowly assumes its former colour on removal of pressure. There is a marked increase in the perspiration of the soles and sides of the feet below the line of pigmentation. In the upper extremities the pigmentation also stops abruptly just above the thenar and hypothenar eminences and at the borders of the hands, but the heaping up of pigments is not present here in the way that is noticed in the feet. The nails of the hands seem hardened and brittle, but otherwise normal. The toenails are somewhat thickened, and those of the smaller toes show a tendency to separate from their matrices. The surface of the nails is smooth. No erythematous or papular eruption is noticed on any part of the body. There has been no complaint of any itching.

Nervous System.—No complaint of spasm or cramp of the muscles of the legs or elsewhere is made. There was much tremor of the hands when first she went to bed, but that has passed off to a great extent. There is no paralysis of any muscle, but the muscular power seems diminished in the legs. The soles of the feet are markedly hyperæsthetic. There does not seem to be any anæsthesia of the legs or hands. The muscles of the calves are extremely tender on pressure. The superficial reflexes are present. The knee-jerks are present, but very feeble. There is no alteration in the mental condition, which is perfectly clear.

Circulatory System.—The heart is not enlarged, but the sounds are weak, particularly the first sounds at the apex. The pulse is soft and regular.

Digestive System.—The tongue is coated with white fur. Much complaint is made of thirst. The appetite is very poor. There is no abdominal pain or discomfort. For several weeks vomiting has been very frequent, most of the food taken being rejected. The bowels have been very loose during the same time. Since she has been confined to bed and beer has not been taken both the vomiting and diarrhœa have ceased, and light milk food digested without any difficulty.

Respiratory System.—A troublesome cough is present without expectoration. The voice was very hoarse, but is now quite clear, having improved along with the vomiting and diarrhœa. There is little evidence of bronchitis.

The most marked features of this case are the intense pigmentation and the condition of the feet. The combination of symptoms in the feet is indistinguishable from the condition known as "erythromelalgia," and, until the true significance of the pigmentation was appreciated, was looked upon as a separate affection. There is now, however, no doubt that both conditions are due to the same cause—arsenic. Most of the cases in this "epidemic" have had well-marked paralytic symptoms, with anæsthesia. In these cases a larger quantity of beer has generally been taken than is the case with the patients here described. May not these symptoms be due to the alcohol and the erythromelalgic symptoms be due to the arsenic?

A Suggestion.

By R. T. Williamson, M.D.Lond.,

Physician to the Ancoats Hospital, Manchester.

Like Dr. Reynolds and several other medical men in Manchester, I had been struck by the frequency of peripheral neuritis amongst hospital patients, and for some time had been of opinion that either the Manchester beer contained some toxic substance, or that the percentage of alcohol was greater than formerly, or intemperance more prevalent.

Case of Peripheral Neuritis.

I have at present a hospital patient, aged 30, suffering from peripheral neuritis, for which I can find no cause except beer drinking. All four limbs are affected, and the patient was unable to stand when first seen. The case was very suitable for investigation, because for five years she had taken only one form of alcoholic drink, a certain kind of stout which she always obtained from a small beerhouse close to her residence. Very rarely had she taken any other form of alcoholic drink. She maintains that she had never taken more than three glasses of this stout daily; but

of course I am unable to prove this. Her illness commenced eight weeks ago with "inflammation of the eyes," which became red and painful as if they contained sand. She also noticed at this time that the stout produced diarrhœa. A few days after the eyes were affected the limbs became painful and numb; cramps occurred and the limbs became weak. In the course of five weeks she was unable to walk. Her skin was not pigmented. There was no vomiting.

The only point in which the case differed from ordinary cases of peripheral alcoholic neuritis was by the onset with conjunctivitis. I obtained two samples of the stout, which had been almost her only alcoholic drink. On examination I found distinct evidence of arsenic in both specimens. I have also obtained a specimen of ale from the same brewery. I found that this also contained arsenic.

Much investigation will be necessary before the epidemic of peripheral neuritis can be satisfactorily explained, and before it will be possible to say exactly how much of the neuritis is due to alcohol and how much to arsenic. But it will be admitted by all that arsenic is an impurity which ought not to be present in beer. As to its source there is still much doubt, but I am inclined to think that the amount present will be found too large to be accounted for by the presence of arsenic as an impurity in glucose used in the preparation of the beer. I would offer one suggestion, which I am not aware has been hitherto made. It will be most important for the experts who have been elected to investigate the subject, to ascertain if the beer contains any of the arsenio-bacteria such as the penicillium brevicaule. This organism has been shown to have the most extraordinary power of extracting traces of arsenic from substances with which it comes in contact. If this organism has found its way into the beer, it is easy to understand how it might be able to extract traces of arsenic, which are present as impurities in the vessels, receivers, vats, taps, etc, with which the beer comes in contact. Many metals and substances contain trace of arsenic, and if these were extracted by the action of the organism, the presence of arsenic in the beer would be explained.

Treatment.

We have received from Dr. Kelynack (Manchester) a paper dealing with the outbreak which recapitulates many of the facts appearing elsewhere in our columns. The following observations on treatment, however, are likely to be interesting and useful. He writes:

A word or two of caution and suggestion may be added in regard to the treatment of the sufferers. Now that the nature and source of the irritant have been ascertained, it may be hoped that all necessary steps will be taken to arrest the "malady." Affected cases will however, for some time to come, call for careful management. In every case it will of course be found necessary absolutely to forbid the use of all drinks which may be suspected to contain arsenic. I also believe it will be found best to withhold every form of "spirit." Rest must at once be enforced, and severe cases sent to bed. I know from what I have myself seen that many are now aggravating their sufferings and lengthening their illness by neglecting to ensure rest for the affected tissues. Immediate steps should be taken to provide for the sufferers an adequate number of nurses in towns where these cases have occurred, and especially in those places where unfortunately no hospital is at present available. For many of the cases it will eventually be desirable to arrange for a long course of massage

A recently published treatise on medical treatment states that for "alcoholic neuritis" "preparations of arsenic are sometimes valuable." It is to be hoped that this suggestion is not being acted upon with regard to any of the cases now under consideration.

Dr. Ernest S. Reynolds writes: As two of my cases showing signs of peripheral neuritis possibly due to arsenic have died since sending you my article, I do not think it advisable for me to say anything more on the subject at present as the matter is now *sub judice*. In fairness to the hop farmers, I should take this opportunity of stating that neither the hops nor the sulphur with which they are treated seem to be the source of the poison.

LIVERPOOL.

By Nathan Raw, M.D.,

Medical Superintendent, Mill Road Infirmary.

The paper by Dr. Reynolds, of Manchester, in the British Medical Journal has thrown an entirely new light upon an unprecedented existence of peripheral neuritis in this large union infirmary. During the last three years the average number of cases of alcoholic peripheral neuritis in the hospital at any one time was 13, whilst at the present time there are no fewer than 52 cases in the wards. During the last six months I have been particularly struck with the fact that in almost every case beer or porter was the favoured beverage, and in many cases, chiefly amongst women, only a small quantity had been taken daily, quite unable to account for the serious toxic symptoms. Taking these facts into consideration, I was convinced that there must be some impurity in the beer or porter, but until reading the paper by Dr. Reynolds was quite at a loss to determine the cause.

Amongst the cases at present in the wards a large number show various skin eruptions with considerable pigmentation, in fact 7 cases of peripheral neuritis were thought to be suffering from Addison's disease. Of these 7 cases 3 died, but at the *post-mortem* examinations nothing suggestive of Addison's disease was found.

During the present year 88 cases of alcoholic peripheral neuritis have been admitted and 18 patients have died—surely a very large number, and certainly suggestive of some poisonous agent either in the food or drink of the poorer classes.

A complete detailed report of the whole of the cases will be published later.

EARLESTOWN, LANCASHIRE (S.W.).

By Chas. J. Mouncey, M.B., C.M.

In considering the cause of this strange epidemic the more information that is obtained the more likely are we to come to a correct conclusion as to its causation and prevention. I therefore send a short account of my experience in this neighbourhood (South-west Lancashire).

During the past two months I have had under my care an unusually large number of cases of follicular tonsillitis of all degrees of severity, many of which have been followed by peripheral neuritis. Most of them have been amongst men, and most have been heavy drinkers, but the severity of the case has not been in proportion to the amount of beer acknowledged to have been consumed, and so far I have not had a case of neuritis without a previous history of sore throat and catarrhal cold. In most cases I have actually seen the follicular tonsillitis; in a few it has been so slight that the patient has said that the throat was not sore, and yet on examination I have seen several follicles suppurating. There have been two distinct types, one in which there has been a more or less severe dermatitis, and the other in which there has been no skin affection, but considerable disorder of stomach and bowels. As examples of the two types I give a short account of two cases.

Case I.—T. M., aged 49, agricultural labourer, heavy beer drinker, sent for me on September 22nd complaining of sore throat. Both tonsils were covered by suppurating follicles. The temperature was 104° F. He was off work six days. On October 27th he came to me complaining of sore feet and hands, and that when he walked he felt as if he were walking barefoot on cinders. The feet had a few blisters on them, especially about the heels and the wrists, and back of the hands were covered with a severe dermatitis of an eczematous character; there was some peripheral neuritis, and the knee-jerks were absent. Since then he has developed very severe neuritis with much pain, his appetite has remained good throughout; the bowels are inclined to be costive. The skin affections rapidly subsided, but there is now both a "drop-wrist" and "drop-foot."

Case II.—J. M., aged 41, a moderate beer drinker, average a pint a day. On September 19th she had mild follicular tonsillitis, with pains and aches all over the body, and cough. She was sick and vomited nearly all her food, and was suffering from a straining diarrhœa and pains in the bowels. The tonsillitis quickly passed away but recurred on two occasions; the sickness, pain, and purging remained on and off till October 13th, when she developed puffiness of the face and hands, and began to complain of numbness of hands and feet, which always felt cold and were never comfortable unless she was toasting them at the fire. Since then the neuritis has steadily advanced, but so far there has been no skin affection or any albuminuria.

I have also had many cases in heavy drinkers who complain first of the sore throat, and then about two or three weeks afterwards have come with numbness of the hands and feet,

and more or less dermatitis. Many of these have rapidly recovered without having to cease work; and in some cases, in spite of warnings, have continued drinking beer freely. On the other hand, there have been several cases of varying severity, but always of the type of the second case, amongst both men and women who have consumed only very moderate quantities of beer or stout.

A fortnight ago, on my advice, a brewer who supplies largely in this neighbourhood sent specimens of various brews, and also of various accessory articles used, to Mr. Norman Tate, of Liverpool, who reported them as free from improper ingredients, lead, arsenic, and antimony being specially looked for. Two more samples of beer obtained in the district I sent to the Clinical Research Association; one has been found to contain arsenic in appreciable quantity, but I have not received the report of the second.

SEAFORTH, LANCASHIRE.

By Joseph Walker, M.R.C.S.Eng.

In the last half of August and the first week in September I saw in the practice of Dr. Rowland Owen of Seaforth, during his absence from home, several cases with identically the same symptoms as those described by Dr. Reynolds in the British Medical Journal of November 24th. Dr. Owen had informed me that he had observed quite a local epidemic of a form of illness amongst women characterised by a sensation of pricking, burning, and numbness in the hands and feet, and decided loss of power in both arms and legs, but had been unable to account satisfactorily for their occurrence.

During the time that I acted for him (about three weeks) I saw four cases of the same kind, three being women and one a man. The women were all confined to bed on account of the severity of the symptoms. All complained of the pricking sensation and numbness in the hands and feet, and also—as mentioned by Dr. Reynolds—remarked that they had to keep their feet out of bed on account of the intense burning in them. In all the cases there was loss of muscular power in both arms and legs, and more or less pigmentation of the skin, followed by desquamation. These patients were all of a poor class, lived within a circumscribed area, and were all, I believe, beer drinkers. They appeared to realise that their illness was of an epidemic character, as they knew of other similar cases in the neighbourhood.

I had not previously seen epidemic disease presenting the grouping of symptoms of these cases, and although the possibility that a poison might be the exciting cause did occur to my mind, I could not reconcile all the symptoms with the described effects of any well-known poison, and was unable to make a satisfactory diagnosis. The pigmentation of the skin and the progressive weakness were certainly suggestive of Addison's disease, but the decidedly epidemic character of the sickness, and the fact that most of the patients were women negatived the idea.

Dr. Reynolds's investigations throw new light on the subject, and appear to prove that there is a connection of cause and effect between the consumption of poisonous beer and these attacks.

PADGATE, WARRINGTON, LANCASHIRE.

By James Bennett, M.R.C.S., L.R.C.P.

It may be of interest to other members of the profession in rural districts to know that I have been able to detect symptoms which are undoubtedly those of arsenical poisoning in several instances. Among my patients, in cases under my care, the drinks partaken of were a cheap beer and stout.

One of the cases was that of a lady of about 52 years, who up to a few months ago was almost a teetotaller, having only had a bottle of beer occasionally during the first six or seven months of this year, but I have ascertained that during the autumn she has been in the habit of taking about a half pint of beer daily, and also that the husband (who is affected in a much less severe degree) had also been taking more than usual for him during recent months, but not a daily half pint.

In order to confirm my diagnosis I asked Dr Kelynack of Manchester to see the above cases with me. Dr. Kelynack was fully convinced that my diagnosis was correct. The symptoms only developed with an increased intake of beer and stout, which was always of the same brand, no other alcoholic drink being taken, and this increased quantity amounting only to half a pint a day could not have produced the symptoms had the liquid been free from impurity, as it never produced any feeling of intoxication in either patient.

ILKLEY.

By Augustus H. Bampton, M.D.

I was collecting material for a paper on an outbreak of peripheral neuritis here when I saw the notice of a similar occurrence in Manchester, and now hear that both at Skipton and Hull similar cases have been prevalent. And here and elsewhere the cause of the complaint has been attributed to beer. Those patients who have drunk the most have suffered the most, the worst cases occurring in those persons whose calling renders access to beer the most easy.

Symptoms.

The unusual number of severe cases of peripheral neuritis have been observed during the last four months, and have presented the following symptoms and features: The hands and feet have been mostly attacked with numbness, loss of power, and swelling. The skin of the hands looks thickened and hornified, the feet often covered with large blisters, the skin being also red, painful, and swollen. This is followed by desquamation. The numbness has extended nearly to the knees in a few cases. The feet were more often attacked than the hands, and gave great distress. The conjunctivæ were suffused, but I have not seen any cases of œdema of the lids. Pharyngitis was present, with symptoms of coryza Obstinate constipation was a marked feature. The tongue was obstinately furred, and the breath offensive. The blisters would come quite suddenly on the feet, attended by heat and burning. I have seen no cases in women. The men generally sweated a good deal about the feet. Ephemeral rashes, general in distribution, simulating a syphilitic character, have been observed.

Causation.

The opinion as to the cause was in the early cases of a tentative character. As some of the cases were associated with influenza, or influenzal symptoms, the peripheral neuritis was reasonably designated post-influenzal. But the trophic disturbances of the skin were not so easily explained; and when cases occurred in men with no history of influenza, the opinion gained ground that these attacks were of dietetic origin, and popular suspicion pointed to beer as the possible cause. Of the chemical substances used in brewing, boric and salicylic acid may be dismissed. Formalin is used in many breweries to cleanse the vats, barrels, and bottles, and also to check further fermentative changes in certain classes of beer. The internal action of formalin is not so well known as its action on the skin. But at my suggestion chemical inquiries are being made on this point. But as all breweries do not use formalin, it follows that the offending substance must be present in something that all the breweries in the North of England use in common; and it seems probable that it would be found either in the malt, hops, or sugar. Dr. Reynolds's suggestion that arsenic is the probable cause of the disease fits in with most of the symptoms observed. But as far as I have seen, burning pain at the pit of the epigastrium and signs of intestinal irritation and œdema of the eyelids have been absent.

CHESTER.

Symptoms Resembling those of Beri-Beri.

by

William A. Newall, M.D., Ch.B.Vict., District Visiting Surgeon (late Senior House Surgeon), Chester Infirmary.

and

John R. Prytherch, M.B., Ch.B.Edin., etc., Assistant Resident Medical Officer, Chester Infirmary.

Incidence.

Having been struck with the large number of cases of peripheral neuritis occurring in the home and out-patient departments of the Chester Infirmary, and as many of them were certainly not due either to alcohol or lead, we were induced to carefully investigate the cases, so as if possible to explain the prevalence of a disease which, though comparatively rare, may now almost be termed epidemic. Since the end of September last at least 25 cases have come under our observation; this is equal to a high percentage of all the adult cases coming under treatment, and the proportion is rapidly increasing, inasmuch as out of 25 adult home-patients attended during the past seven days, 5 have been suffering from peripheral neuritis. The cases are not confined to any particular

locality of the city, but they have all arisen in the poorest and most densely populated districts, and it may be worthy of note that two of the worst cases lived in the same house, another just opposite, and four others within 100 yards. The disease has affected otherwise healthy persons of between the ages of 25 and 50 years, and the proportion of females suffering has been 75 per cent. Early in the epidemic we suspected that the condition might be due to the metallic contamination of beer, but there was very little or no evidence to support this view, and within two days we, both working quite independently, were impressed with the marked resemblance which the cases presented to the descriptions of beri-beri.

Symptoms.[1]

In every case one of the earliest complaints has been pain and excessive tenderness of the soles of the feet, especially at night, and in a large proportion of cases this has come on comparatively suddenly, in others it has developed gradually. Numbness of the hands without pain was present in 75 per cent. of the cases. Paralysis of variable degree, but never extending above the elbow, has been present in 20 per cent. A few patients complained of weariness of the legs with occasional cramp as early symptoms. We have no evidence of the attacks being ushered in by a rise of temperature, and, after coming under observation, feverish symptoms have been entirely absent. In all cases there have been excessive tenderness of the calves to pressure and most marked hyperæsthesia of the soles of the feet. There have been irregularly-distributed areas of anæsthesia and hyperæsthesia of the legs and feet, and the anæsthetic patches have usually been surrounded by narrow zones of hyperæsthesia. We have noted that the position of these areas may vary at different times, even within twenty-four hours. Painful formication has been a common symptom. In some cases sensations of touch and pain were markedly delayed, and there was often an inability to distinguish between heat and cold. Some showed tenderness of the thigh muscles to pressure. Atrophy has at some period of the disease been a constant symptom. In some cases it has been extreme, in others not so marked. It has affected the muscles of the legs and soles of the feet. We have noticed in patients whose muscles have not shown much wasting that they were peculiarly resistant to pressure. No irregularities in the muscular tissues have been met with. Some degree of paralysis has been present in every case, and several have shown complete drop-foot. The flail-like ankle has been well marked in many.

Since our suspicions of the nature of the disease were aroused we have found œdema in every case examined, and amongst the earlier ones several of the patients have volunteered the information that their legs had been swollen at first. The œdema is peculiar both as to site and character. In degree it is variable and sometimes transitory. Sometimes it is confined to the pretibial regions, in others to the ankles, and in others it is present in both these regions. Twice there has been slight swelling of the forearms, and puffiness of the face has been present in at least 3 cases. In several cases œdema has been noticed over the sternum. Neither hydrothorax, hydropericardium, nor ascites have been found. In character it is unlike the œdema of either anasarca or myxœdema. It is markedly resistant and does not pit easily. To elicit this sign pressure must be sustained. We can best describe its character as being that presented by a half-ripe pear. It is sometimes so slight as to be easily overlooked unless specially sought for. Cardiac symptoms have been variable. In all there has been tachycardia, the pulse at rest varying from 100 to 130, in many cases there has been marked irritability of the heart, but we have not observed the condition of non-comformability. In three cases palpitation coming on without any apparent cause and lasting from 15 to 30 minutes was a very distressing symptom.

Appreciable dilatation of the heart and murmurs have been observed in a few cases. The appetite and digestion were not affected and in most cases the bowels were quite regular. There have been no abdominal cramps. The mental condition was quite normal in all cases, as were also the organs of special sense. In two cases only was there any albuminuria, and in these the amount was small. In a few cases we have observed some bronzing of the skin and an increase of the normal pigmentation. Keratosis of the feet and hands has been present in a considerable number of the cases. There has been no tendency to the formation of bedsores.

Comments.

We have noticed that cases, even those living in the cleaner better houses, and with facilities of being fairly well attended to, have shown a tendency to very slow recovery if treated at home. On the other hand, in those which have been removed to hospital, there has been a general improvement in a few days. We have carefully investigated each case in the hope of finding some common cause for the excessive numbers of the disease which have come under observation. In none was there any evidence of plumbism, in 2 or 3 there was a history of alcoholism, but in the rest unless our suspicions we are quite at a loss to account for their causation. Low-lying districts in close proximity to rivers are the favourite homes of the disease. Chester fulfils these conditions, and is also to a small extent a shipping town. We are quite cognisant of the extreme rarity of the disease in northern latitudes, and for some time hesitated to give our opinions publicity, but the sudden incidence of such a large number of cases, the inability to account for them in any other way, their continued occurrence, and the apparently ample confirmation of our early suspicions all strengthen our opinion that we have to do with some form of beri-beric peripheral neuritis.

ADDENDUM (November 24th, 1900).—Since completing the above notes we have read with interest the accounts of the epidemic of beer poisoning in Manchester. Whilst suspecting metallic poisoning from the first, as our notes show, we cannot reconcile the symptoms presented by our cases with those of arsenical poisoning.

[1] Pressure of space compels us to omit 5 illustrative cases reported by Drs. Newall and Prytherch.—Ed. BRITISH MEDICAL JOURNAL.

LEICESTER.

By R. MILBOURNE WEST, M.R.C.S., L.R.C.P.

I HAVE read with interest Dr. Reynolds's article on Epidemic Peripheral Neuritis in Manchester, for I have had a number of cases lately in this town presenting symptoms similar to those described by him. This epidemic has lasted for the last three or four months, and seems to be on the increase. The chief trouble complained of by the patient is the intense skin irritation and the pain and loss of power in the legs. Most of the cases have occurred among women, the large majority being beer or porter drinkers to excess, some few partaking of these beverages in moderation. Many of them, in addition, exhibit symptoms of chronic alcoholism. Thanks to the numerous so-called working men's clubs in this town, of which women may be members—clubs entirely outside police control, clubs which remain open to any hour of the night, week-day or Sunday, clubs to which apparently, as shown in a case recently tried here before Justice Channell, anyone may be admitted on payment of a penny—the drinking of beer and porter is indulged in to excess by a large number of the lower class working women of this town. It is chiefly among women that cases of this epidemic have come to my notice.

Symptoms.

The face is puffy, almost as in urticaria, the swelling being greatest over the malar and frontal eminences. The skin over the face is of a dusky brick-red, and desquamates freely later. The eyes are suffused, bloodshot, and watery. There is intense cutaneous irritation, increased by warmth, and marks made by the nails in scratching are usually to be seen. In some cases papular, vesicular, or bullous eruptions have appeared; the bullæ in the latter case being filled with a dark brown bloody fluid. In other cases a peculiar eruption, resembling the "raw ham" pigmentation of syphilis, is present, chiefly over the thorax and abdomen. Frequently there is loss of voice or huskiness. The patient complains of vertigo, palpitation, anorexia, vomiting, and diarrhœa; pins and needles or numbness in the extremities; often intense tenderness on grasping the calf or upper arm muscles. The knee-jerk is often absent. Some cases exhibit complete inability to stand, even with help, the legs doubling up.

Possible Presence of Arsenic in Sugar.

Dr. Reynolds thinks that the cause may be arsenical poisoning. "Saccharine," used for sweetening some of the cheaper

beers and porters, is prepared with sulphuric acid, and this, in a crude form, has been found to contain arsenic in appreciable quantities. In support of the theory that the symptoms are due to arsenical poisoning, I may mention another circumstance. Although November is not usually a season for the prevalence of diarrhœa I have noticed quite a remarkable number of cases lately, chiefly among the same class of patients. The symptoms came on suddenly, with griping abdominal pain, vomiting, profuse diarrhœa, cramps in the calves of the legs, and collapse—all agreeing with the symptoms of arsenic poisoning. Some of these patients were abstemious people chiefly drinking tea or cocoa. At least two of the families affected with the above symptoms complained of a peculiar soapy taste in the sugar used for sweetening their tea and cocoa, after partaking of which one and all were seized with the above abdominal symptoms. In addition, in one case, a girl employed at a mill took her tea, milk, and sugar with her to work, made her tea, gave some to a friend working with her, and partook of some herself; both were shortly after taken with pain, diarrhœa, and vomiting. The sugar used was described as "crystallised," and it was said to be of a peculiar dirty colour. I have not yet been able to obtain a sample of the sugar, but hope to do so shortly, when an analysis may clear up the mystery.

In a family of eight seven were taken ill, the eighth, a small boy who did "not take sugar in his tea," showing no symptoms.

STOURBRIDGE, WORCESTERSHIRE.

BY

Edgar L. Collis, M.B., Honorary Surgeon, Corbett Hospital, Stourbridge. and J. R. Charles, M.B., M.R.C.S., House Physician, General Hospital, Birmingham.

The publication in the British Medical Journal of November 24th of Dr. Reynolds's interesting account of arsenic poisoning in Manchester due to the drinking of beer induces us to hurry forward the publication of some notes on a similar small epidemic which has occurred in Stourbridge, which we have been carefully watching during the last two months.

Here the outbreak first came under notice during September, but investigation showed that cases had occurred at least two months before, but the symptoms had not been sufficiently serious to compel the sufferers to seek medical advice until September.

First one or two isolated cases of what was apparently alcoholic neuritis were seen, then a few were taken into hospital, four into the Corbett Hospital, Stourbridge, two into the General Hospital, Birmingham, under Dr. Simon. Observation now showed that the symptoms did not closely follow those of ordinary alcoholic neuritis. More cases were heard of, and we joined in efforts to account for the outbreak. During September and October 30 cases were visited and examined, and it was soon noted that they could be arranged geographically into groups in four parts of the district. On closely questioning the patients only one common bond was found to exist—namely, they were all beer drinkers, and not only so, but they all took their beer in whole or in part from one of five public-houses in the district, which five houses belonged to one large brewery The localities of the public-houses coincided with the distribution of the cases. It remained to find the poison, and here we have been forestalled by Manchester. To a certain extent we have been at a disadvantage here, for no new case has developed since the last week in August, while our investigation did not commence till later in September, and we had not had an opportunity of analysing a specimen of suspected beer up till the present time. The association of a marked erythematous condition with symptoms of peripheral neuritis suggested to us the possibility of a condition analogous to pellagra, but the synchronous outbreak at Manchester as described by Dr. Reynolds so closely corresponds with what we have seen that we feel certain that our cases have the same origin. A general description of the course run in a typical case may be of value.

Early Symptoms.

The onset was marked by swelling and œdema of the scrotum, penis, of the vulva and of the face, especially affecting the eyelids, so that the patients could not see; though in addition to the closing of the eyelids there was a definite blurring, a dimness of sight which cleared off in about a week; no optic neuritis had been observed. At the same time the skin of the face and hands and feet also (where noted) were covered with a red rash, sometimes measly, sometimes erythematous, and in other cases superficially ulcerated. With these initial symptoms there does not appear to have been any considerable disturbance of the general health, and no sickness or diarrhœa except in one household has been noted. The appetite has almost invariably been good; indeed the disorders of the digestive tract, so generally ascribed as due to arsenic, have been conspicuously absent.

Skin Lesions.

The rash on the hands and feet was accompanied with great itching. Besides the dimness of the eyesight already mentioned, there was definite slight deafness in some of the cases. This has not entirely passed off yet in several.

Nervous System.

Questions as to the senses of smell and taste disclosed the fact that these senses also were affected "Food has tasted bad for the last two months;" "things have smelled liked a putrefied corpse," etc., were answers received. In every case, however, the special senses are steadily improving.

As the rash faded from the skin the extremities became painful; tingling and numbness were experienced in them, while the muscles rapidly wasted and their power became lost; locomotion was difficult or impossible, and help had to be obtained even for feeding. It was at this stage that the majority of cases first came under observation. As one case after another was seen, it became quite easy when walking along the roads of Stourbridge to pick out the patients stumbling about the road, holding and stroking their hands, and apparently in much discomfort.

Closer examination disclosed a great loss of power; a previously strong iron puddler feebly dropped one's outstretched hand, and complained of the pain the grasp gave him. The hands, feet, and face were found peeling freely, great crusts of skin often coming away (keratosis); beneath, the skin was left tender and supple as a child's; perspiration was then very free, and with it there was much pain; the cold was much complained of, and the patients were only comfortable when their feet were wrapped in blankets The knee-jerks were nearly invariably absent, but eye reflexes were present; sexual power was lost; there was no sphincter trouble. The reaction of degeneration was found on electrical examination; general patchy anæsthesia of the extremities was the rule, though in one or two cases complete radial anæsthesia, with tenderness along the radial nerve, was found, while ulnar sensation was only partially disturbed. The pulse was weak and regular, but inclined to be faster than usual.

Only one case has shown any pigmentation, and in this case it was overlooked as possibly being his natural colour, as no other case showed any discoloration of the skin.

One symptom was very distinctive: on holding out both hands with the fingers fully extended the fingers drooped down like a closing umbrella; it was found of value in estimating the improvement and gradual return of muscular power.

The steppage gait and drooping of the toes exactly resemble ordinary alcoholic neuritis. The memory in all the cases was not impaired.

LICHFIELD AND DISTRICT (STAFFORDSHIRE).

By J. S. Fraser, M.B.Edin.

About four months ago I noticed that patients frequently came to the surgery complaining of "sore eyes and feet." Little was thought of it for a few days, and the patients were treated for conjunctivitis and eczema of the feet, probably of gouty origin, but little improvement resulted. As the number of patients presenting themselves with this trouble rapidly increased, I began to look about for some special cause for the epidemic.

Three remarkable facts presented themselves;

1. Almost all the patients were men between the ages of 25 and 60
2. They practically all belonged to the labouring class.
3. The large majority of them were employed as draymen at the breweries here.

These three facts certainly seemed to point to beer as the cause of the trouble, but the epidemic nature was difficult to understand. Few women were affected and no children, so that one put aside infection as a possible cause.

As the outbreak in Lichfield varied somewhat from that described by Dr. Reynolds, of Manchester, in the British Medical Journal of November 24th, perhaps I may be permitted to give a short account of the symptoms and physical signs as I found them.

Most of the patients here have in the first place complained about their eyes. The eyelids are swollen and puffy, the conjunctivæ are red and sometimes show hæmorrhages, and there is a profuse watery discharge from the eyes. Many complain also of a feeling of cold in the head, with running at the nose. There is a good deal of smarting of the eyes and headache increased by making the effort to read or use the eyes at work.

The condition of the feet varies very much. In most cases the feet are swollen, red, and painful, with a large amount of discharge, which though offensive is not quite so obnoxious as in ordinary osmidrosis. In other cases red papules are first seen. These become vesicles and then pustules; finally bursting and discharging. Often several run together, and sometimes a large bulla is formed. Subjectively patients complain of burning

and tingling pains and numbness in the feet. These sensations are specially severe in bed at night, and in many cases walking is so painful as to be almost impossible.

In about 30 per cent. of the cases I have seen the hands have been affected also; in them the condition is usually one of keratosis, and in these cases the feet also are in a horny condition; in others there has been a desquamation of both hands and feet resembling that after scarlatina, the skin of the palms of the hands in a few instances coming off in one piece.

Many show marked loss of motor power, being unable to button their clothes, or to do any manual labour. So far I have met with no case of foot drop, and the gait, though halting, is not of the "steppage" variety characteristic of severe cases of peripheral neuritis. No case has been noted as showing loss of knee-jerk or marked tenderness on squeezing the calf muscles; nor have I seen any of the more severe cases with paralysis of the diaphragm, etc. Dr. Rowland, however, tells me of two cases, one showing characteristic symptoms of musculo-spinal paralysis, and the other a markedly "stepping" gait.

Loss of appetite, furred tongue, pain in the stomach have been very common, but few have complained of vomiting, and fewer still of diarrhœa.

Bronchitis, as mentioned by Dr. Reynolds, has also occurred among these patients, but in such a small proportion of the cases that I hesitate to put it down to the same cause.

On the whole the epidemic in this district has been of a milder type than that described by Dr. Reynolds. I have never found any rise of temperature nor marked general enfeeblement—in fact, a large number of my patients said they felt "well in themselves," and only complained of their "eyes and feet."

Dr. Rowland tells me he had one case which commenced with loss of memory and mental dulness, and subsequently developed the tingling and numbness of the extremities so characteristic of the complaint as we see it here.

Large quantities of the beer manufactured in Lichfield is consumed by the miners of Cannock Chase; and Dr. Gettings of Chasetown, when consulted on the subject, stated that he had a large number of cases suffering from the same disease, and that some of them were of a very severe type, with temperatures of 103° F., horribly foul tongues, and great general prostration.

The pigmentation mentioned by Dr. Reynolds has not been common here. I have seen one case showing small patches of a brownish colour, which were intensely irritable; but Dr. Tomkys tells me of a case, occurring in an old woman who is a heavy beer drinker, which closely resembles Addison's disease.

We have also had a considerable number of cases of herpes zoster and other forms; urticaria has been very common among these patients, as also eczematous patches along the course of cutaneous nerves in the forearm, head, and neck. On November 27th, for the first time, I saw a case in which the condition resembled that in carbuncle, the back of the neck being chiefly affected, but multiple points of suppuration were present on the shoulders and chest.

So far I have heard of no case among the employees at a brewery where only malt and hops are used, and in this connection I may mention that I have been informed that very few cases of this complaint have occurred among the troops in barracks here, who drink the canteen beer which comes from Burton, while the reservists (Section D) who were called up from the surrounding district suffered from it to such an extent as to be almost incapable of duty.

ASSOCIATION INTELLIGENCE.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1901.

MEETINGS of the Council will be held on January 16th, April 17th, July 10th, and October 23rd, 1901. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before each meeting—namely, December 26th, 1900; March 28th, June 20th, and October 2nd, 1901.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

THE LIBRARY.

THE Council Room will be required for the purpose of meetings of Committees of the Association on Friday next, December 7th, and therefore the Library will be closed on that day.

BRANCH MEETINGS TO BE HELD.

LANCASHIRE AND CHESHIRE BRANCH.—A meeting of this Branch will be held in Liverpool in the second or third week of December. Members who wish to bring forward communications, read papers, or propose new members, are requested to communicate at once with the Honorary Secretary, T. ARTHUR HELME, M.D., 3, St. Peter's Square, Manchester.

METROPOLITAN COUNTIES BRANCH: WEST LONDON DISTRICT.—A meeting of this District will be held at the Western General Dispensary, Marylebone Road, W., on Thursday, December 6th, at 4.45 P.M., J. Pickett, M.D., Vice-President, in the chair. Agenda: (1) Dr. H. F. Winslow will read a paper on the Alleged Increase of Insanity. (2) The Staff will show a number of Clinical Cases. Tea and coffee at 4.30 P.M.—THOMAS DUTTON, M.D., 76, Clarendon Road, W., Honorary Secretary.

SOUTHERN BRANCH: SOUTH-EAST HANTS DISTRICT.—The next meeting of this District will be held at 5, Pembroke Road, Portsmouth, on Tuesday, December 11th, at 9 P.M., when a Bacterial Demonstration will be given by Dr. A. M. Fraser.—J. G. BLACKMAN, Poplar House, Kingston Crescent, Portsmouth, Honorary Secretary.

BORDER COUNTIES BRANCH.—The next meeting of this Branch will be held at the Railway Hotel, St. Boswells, N.B., on the afternoon of Friday, December 21st. Members intending to read papers, show cases, etc., and gentlemen desirous of joining the Branch, should kindly communicate as soon as possible with the Honorary Secretary, W. F. FARQUHARSON, M.D., Garlands, Carlisle.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.—The next meeting of this District will be held at the Calverley Hotel, Tunbridge Wells, on Tuesday, December 4th, at 5 P.M. The chair will be taken by Dr. Adeney, J.P. Dinner at 7 P.M., charge 6s., exclusive of wine. The following papers have been promised.—Mr. C. H. Golding-Bird: Nodal Points of Pain. Mr. J. B. Footner: Some Notes on the Treatment of Hallux Valgus, with cases exhibited. Dr. Ranking: The Management of the Menstrual Irregularities of Early Life.—J. W. BATTERHAM, M.B., Grand Parade, St. Leonards, Honorary District Secretary

SYDNEY AND NEW SOUTH WALES BRANCH.

THE regular monthly meeting of this Branch was held at the Royal Society's Room, Sydney, on September 28th. Dr. FOREMAN, Vice-President, in the Chair. There were fifty-two members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Communications.—Dr. SINCLAIR GILLIES exhibited: (1) Case of tremor in a man of 76 years; (2) case of congenital deformity of the hands.—Dr. NEILL exhibited a piece of rib excised, showing bullet lodged in rib, longitudinal fracture, and imbedded in piece of cloth.—Dr. CAMAC WILKINSON exhibited two patients—cases of radical operation on mastoid: (1) For tuberculosis of osseous wall of meatus; (2) for cholesteatoma. —A discussion ensued in which Drs. KIRKLAND and HANKINS took part.—Dr. WILKINSON replied.—Dr. FOREMAN read some notes on two cases of Cæsarean section. Drs. HINDER, WORRALL, TAYLOR, YOUNG, THRING, BARRINGTON, CORLETTE, and JAMIESON took part in the discussion. Dr. FOREMAN replied.—Dr. W. CAMAC WILKINSON gave a demonstration by means of microscopic preparations of the bacteriology of two cases of meningitis, first due to influenza and the second due to cerebro-spinal fever. Also the parasite of tertian ague.

PRESENTATION.—Dr. E. Magennis, J.P., of Dublin, was the recipient of an address and presentation from the doctors resident in the Lurgan Union. The presentation consisted of a Harvard chair for his consulting room, and bore on it a silver plate with the following inscription:—"Presented to Edward Magennis, Esq., M.D., J.P., by his fellow practitioners in and around Lurgan and Portadown on the occasion of his leaving for Dublin as a token of their good fellowship and esteem. September, 1900." The address was signed by every medical man residing in the district.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, DECEMBER 1st, 1900.

THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, 1901.

The next annual general meeting of the British Medical Association will take place at Cheltenham, and we are enabled to publish elsewhere in this issue of the Journal some preliminary particulars with regard to the arrangements already made. The invitation to meet at Cheltenham comes from the Gloucestershire Branch. No meeting of the Association has taken place within the borders of that Branch since the meeting held at Cheltenham in 1837, and the annual meeting of the Association has not been held in the West of England since the meeting at Bristol in 1894. It will be seen that the scientific business of the meeting is to be conducted in thirteen Sections, and we understand that the Ladies' College alone will afford ample accommodation for all the business proceedings of the meeting, including not only the general meetings, but also those of the Sections.

Dr. George Bagot Ferguson, Surgeon to the Cheltenham General Hospital, has been chosen President-elect, and will preside over the meeting. He will deliver his Presidential address on July 30th. The Address in Medicine will be delivered by Dr. James F. Goodhart, Consulting Physician to Guy's Hospital, and the Address in Surgery by Sir William Thomson, Surgeon-in-Ordinary to the Queen in Ireland, Surgeon to the Richmond Surgical Hospital, and recently Surgeon-in-Chief of the Irish Hospital in South Africa. The Sections will meet on July 31st and August 1st and 2nd, and a full programme of their arrangements will be published in due course.

It is certain that the Association will receive a cordial welcome from the Gloucestershire Branch, and no pains will be spared by the members of the Association resident not only in Cheltenham, but throughout Gloucestershire, to ensure that the meeting shall be successful both on the scientific and on the social side. Cheltenham itself is the centre of a beautiful country which will afford many opportunities for interesting excursions, and the historic city of Gloucester, which is within easy reach, proposes to issue a special invitation to members attending the annual meeting to pay it a visit on the afternoon of Friday, August 2nd, after the business of the Sections has concluded. We venture to express the hope that these combined inducements, the prospect of an interesting scientific meeting, the hospitality offered by Cheltenham and Gloucester, and the beauty and interest of the surrounding country may induce a large number of the members of the Association to attend the next annual meeting.

It appears certain, moreover, that business of the most important character will come before the general meeting at Cheltenham, in addition to the ordinary business of such meetings. The Committee appointed by the annual meeting this year to consider and report upon the best means of reorganising the constitution of the British Medical Association has already held two sittings, and will meet again next week. It is instructed to furnish a provisional report to the Branches by February 1st, 1901, and it may therefore be assumed that its recommendations will come before the annual meeting in 1901. The constitution of the British Medical Association is essentially democratic, but many members entertain the opinion that the constitution can be so modified as to increase the ease and rapidity with which the opinions of members of the Association can be gathered, and made to determine the policy of the Association in matters affecting the honour and the interests of the medical profession. That the result of the work of the Constitution Committee may be to strengthen the influence and increase the usefulness of the Association will be the desire of all.

THE EPIDEMIC OF PERIPHERAL NEURITIS.

The publication of the paper on an epidemic of peripheral neuritis amongst beer drinkers in Manchester and district by Dr. Ernest S. Reynolds in the British Medical Journal of November 24th has been the means of calling general attention to a matter of the gravest import to the public health. During the last few months Dr. Reynolds, Dr. Dreschfeld, Dr. Williamson, Dr. Brooke, and many other medical men of the Manchester district have noticed that an extraordinary number of patients suffering from peripheral neuritis were presenting themselves for advice and treatment. The cases were, with some misgiving, diagnosed as alcoholic neuritis until Dr. Reynolds recognised that certain symptoms were prominent which in alcoholic neuritis were either absent or comparatively inconspicuous. Among others were early and extreme cutaneous and muscular tenderness, sensations of numbness and tingling, with various herpetic and erythematous rashes, bronzing of the skin, and coryza, a combination which is no part of the symptomatology of the toxic effects of alcohol, but is more or less characteristic of chronic poisoning with arsenic. On inquiring into the habits and surroundings of the affected persons it was found that they had one point in common—they were habitual beer drinkers, though not by any means invariably intemperate. The question then arose, Could the beer have become at any time contaminated with arsenic? This was settled by Dr. Reynolds, and Professor Dixon Mann, finding arsenic on chemical analysis of different samples of beer.

Pure beer brewed from malt and hops is, it appears, not within the reach of the classes who mostly drink that beverage, because the malt sugar is costly. To make the drink cheaper, two other kinds of brewing-sugar are used: one obtained by the action of sulphuric acid on inferior grades of cane sugar, called in the trade glucose; and the other by the action of the same acid on starch, usually obtained from

maize, sago, or tapioca, and called in the trade invert sugar. The brewing-sugar so produced is in itself wholesome. But, no doubt from similar considerations of cheapness, "commercial" sulphuric acid is used in the process, and certain specimens of this have recently been shown by Dr. Harold Dixon, F.R.S., Professor of Chemistry in the Owens College, to be highly contaminated with arsenic. In his report quoted in the paper by Professor Delépine and Dr. Tattersall, M.O.H. for Salford, printed in another column, he writes: "I can say that it contains more than 1.4 per cent. by weight of arsenious acid"; also that "there is strong evidence that this glucose contains fully 0.05 per cent. by weight of arsenious acid." The means by which the arsenic gets into the sulphuric acid is comparatively obvious. The chief source of sulphuric acid in commerce is the roasting of iron pyrites, which, besides containing the essential sulpbur, contains also arsenic, and both are passed over in the form of vapour into the condensing chambers, to appear later as "commercial acid.

Therefore, because sulphur and arsenic occur together in Nature in a substance suitable for the purposes of manufacturers of sulphuric acid, beer-drinkers have, it is believed, contracted arsenical neuritis. The amount of arsenic which actually gets over into the beer may be approximately gauged from the table of analyses of 17 samples by Mr. William Kirkby, which we print at p. 1588. The amount varies from 0.01 grain to 0.28 grain per gallon, and it has been estimated that 1 grain in three gallons of beer would be a very dangerous amount.

The wide distribution of this unprecedented outbreak is explicable by the following considerations. The statements of Professor Delépine and Mr. Tattersall lead to the conclusion that almost all the cases are traceable to one manufactory of brewing sugar which supplies about 200 breweries in the north of England and the Midlands. One specimen at least of invert sugar obtained from London was proved by analysis to be free from arsenic. The proportion of invert to malt sugar used in different breweries varies from about 5 per cent. to about 40 per cent. From these facts it can be understood how cases may be limited to particular counties, and how some of the cases are more rapid in their course than others. Groups of cases similar to those in Manchester are recorded in the present issue from Ilkley in Yorkshire, from Padgate, Earlestown, Seaforth, and Liverpool, in Lancashire; from Stourbridge in Worcestershire, from Lichfield, and from Leicester, and in Chester. In the latter place the symptoms, it is true, are said to be more like those of beri-beri, but there is no history of the introduction of such a disease; while œdema is a not infrequent concomitant of arsenical neuritis, and pigmentation of the skin is no part of beri-beri.

This extraordinary outbreak of diet disease will doubtless add much to our knowledge in regard to the toxic effects of arsenic by revealing symptoms not hitherto recognised as characteristics of arsenic poisoning. The particular cast of the symptoms in the cases so far recorded has not improbably, however, been modified by the alcoholic menstruum in which the drug has been taken, and indeed quite possibly by some other impurity of the "commercial" sulphuric acid.

As against the theory of the arsenical origin of the epidemic, it is only fair to state that some of the patients did not drink beer to excess, and no particular change in the processes of manufacture concerned has been made for years. As bearing on the first position, it is said that profuse sweating of the extremities is not a symptom of arsenic poisoning, nor is it, but it is a common result of peripheral neuritis *per se*. As bearing on the second position it should be pointed out that several of the cases now ascribed to arsenic poisoning in Leicester occurred among people who chiefly drank tea and cocoa, and it is suggested that the sugar used to sweeten these was possibly the cause of the symptoms, and we believe that Dr. Niven, the Medical Officer of Health for Manchester, has recently found arsenic in sweetmeats.

In any case the proved contamination of invert sugar raises the question of the risk from using this substance as a cheap substitute for cane sugar in the manufacture of such substances as jam, ice cream, and sweetmeats generally, and such drinks as lemonade and ginger-beer. It is even possible that certain outbreaks, on board ship as well as no land, considered to have been beri-beri, may have had a causation similar to that at present under investigation.

It is only right to recognise that the traders now concerned have shown a most proper spirit in offering every facility for the investigation, and in promptly incurring great pecuniary loss both from the stopping of the sale of products open to suspicion and from warning brewers against the use of their own glucose.

This investigation, particularly in its earlier stages, working from clinical symptoms to a scientific position which affects the very food and drink of all, but especially of the poor, is a practical triumph for abstract science and in particular for scientific medicine, that is both a shining example of scientific method and an index of how preventive medicine will work in the future.

THE GENERAL MEDICAL COUNCIL.

THE General Council of Medical Education and Registration of the United Kingdom, to give it its full statutory title, met once more on Tuesday last, listened to the introductory address of its President, devoted the whole of the next day's session to a report from the Public Health Committee, and as we go to press on Thursday is engaged in the consideration of the affairs of the Birmingham Consultative Medical and Surgical Institution. The amount of work which the Council still has to do before it rises is very considerable, and it appears doubtful whether the confident prophecy that the session will be shorter than usual will be fulfilled if all the subjects are fully discussed.

The discussion on the report of the Public Health Committee illustrates very well some of the defects in the way in which the business of the Council is conducted, to which we took occasion to draw attention a fortnight ago. The protests of Sir John Batty Tuke, Sir Christopher Nixon, Dr. McVail, and Mr. George Brown, against being asked to discuss a report which had only been in their hands two or three hours before the meeting showed that we were more than justified, even from the point of view of members of the Council themselves, in pointing out the disadvantages which attend the system of drafting reports

and consequently of issuing them, so late that members have had no time to study them properly.

Many of the points raised important practical questions, and most of them had been postponed session after session. A report received from the Public Health Committee in December, 1899, on the interpretation given by different licensing bodies to the regulations of the Council as regards the course of study for the diploma in Public Health was circulated among the bodies which conferred these diplomas, inviting observations on the recommendations of the Committee. An example of the observations made is the following: "The suggested modifications.... seem... to reduce the certificate to the level of mere shams." The report of the Public Health Committee contained these observations, together with a set of new draft rules for the diploma in Public Health. This report was only issued to members of the Council on the morning of the day on which the subject was set down for discussion. Our contention is, and we believe that it will be supported by everyone acquainted with public business, whether parliamentary or municipal, that this report ought not only to have been in the hands of members of the Council a month or two ago, and there was no reason why in this case it should not, but also that it should have been placed on sale and the fact duly notified by advertisement or other communication to the press. As a matter of fact, it gradually became apparent, as the members of the Council slowly felt their way during the discussion, that the report raised a most important principle, which has an application far beyond the particular diploma to which it referred, and so strongly was Sir John Batty Tuke impressed with the objectionable character of the precedent which might thus have been established, that he took the strong course of moving that the report should be recommitted.

During the discussion the Council heard for the first time, to quote the words of Dr. MacAlister, "What was at the back of the whole matter." This was that applications had been received from the Colonial Office, the War Office, and the India Office for the relaxation of the requirements as to the course of study for the D.P.H. in the case of candidates belonging to the medical services of the army, of India, and of the Crown Colonies. Eventually the Council practically redrafted the Committee's recommendations, swept away all the provisions for any separation of the candidates into two classes, and decided that men going up for the Diploma of Public Health should be required to do six months' bacteriological work and six months' practical sanitary work, of which three months was to be allowed to run concurrently. It can hardly be doubted that the Council in so deciding acted wisely, for to have accepted the principle embodied in the draft would undoubtedly have ultimately influenced the requirements from candidates under other conditions, and for other examinations.

THE UNIVERSITY OF LONDON.

At the first meeting of the newly constituted Faculty of Medicine of the University of London Mr. H. T. Butlin, surgeon to St. Bartholomew's Hospital, was, on the motion of Dr. Isambard Owen, seconded by Dr. Norman Moore, unanimously elected Dean of the Faculty. A meeting of the Faculty will be held next week, when further steps will be taken for its organisation. The Senate met again last Wednesday to consider further the reorganisation of the University in accordance with the statutes framed by the Royal Commission. We understand the Government, who have made themselves responsible by legislation for the enlarged duties of the University, will be at once approached with a view to ascertain the sum which it is proposed by the Treasury to allot to university work in London. Meanwhile the formation of the Boards of Studies is being proceeded with, and it is understood that the Faculty of Medicine will be asked to make suggestions to the Joint Committee of the Academic Council and the Council for External Students as to the names of those who will constitute the Boards of Studies for preliminary, intermediate, and advanced medical subjects, and for the Boards in Dentistry and Hygiene respectively. The Faculty of Medicine is a disproportionately large body compared with the other faculties, and the selection of names to form the Boards of Studies is naturally a difficult and delicate task, while the intention no doubt will be to represent the best teaching talent irrespective of the *locus in quo;* and while the claims, and perhaps the natural jealousies, of the several medical schools need to be borne in mind.

PROPOSED JENNER INSTITUTE FOR IRELAND.

The address by Sir Christopher Nixon, the President of the Royal College of Physicians of Ireland, which is published in another column, will be read in England and Scotland with particular sympathy. Ireland, as we all know, is a distressful country, and an Irishman without a grievance must be almost as rare as an Englishman without a grumble, but Sir Christopher Nixon can barely be said to have a grievance, or if he has one he has a remedy which could be supplied out of the resources of Ireland itself. In addition to the office which he holds as President of the Royal College of Physicians of Ireland, he is also the President of the Royal Veterinary College of Ireland, an institution of comparatively recent foundation, which is already beginning to exercise a considerable influence not only upon veterinary education, but also upon medical and indeed upon public opinion. Upon his main thesis, the important bearing which the results of observations and experiments upon animals have upon human physiology and medicine, there can be within the profession no two opinions, and the extraordinary progress which has been made by the department of bacteriology in recent years only serves to emphasise a conclusion which was in fact to be deduced from previous knowledge. Sir Christopher Nixon expresses in his address a view which we have frequently ventured to state—namely, that it is not fitting that the United Kingdom should be content to assimilate and to utilise the results of researches in bacteriology and preventive medicine which are carried out in Germany, in France, in America, and in other countries. It is the bounden duty of the English, the Scottish, and the Irish peoples not only to utilise information acquired elsewhere, but also to contribute their fair share to the advance of knowledge. Sir Christopher Nixon asks that a sister institution to the Jenner Institute of Preventive Medicine in London should be established in Ireland, and it seems to us that his claim is irresistible. Ireland is nothing if not an agricultural and pastoral country, and it is now generally admitted, even by the most conservative agriculturalists, that science must have an increasing share in determining improvements which are necessary in the cultivation of the soil, in the raising of stock, and the production of milk and butter. He tells us that the Royal Veterinary College in Ireland will shortly, with the cooperation of the Department of Agriculture and Technical Education in Ireland, commence research work in connection with rabies and the development of bovine tuberculosis. But there are many other similar subjects which, for the welfare of Ireland, demand investigation, and it

such investigations are to be carried out in a satisfactory manner, there must be an adequate staff working in properly-equipped laboratories. We believe that the Department of Agriculture and Technical Education in Ireland could not better expend some of the funds at its disposal than by establishing and subsidising a Jenner Institute in Ireland, which would be connected with the Royal Veterinary College in that country, but which would be open to workers drawn from the veterinary and from the medical profession alike.

WELCOME HOME TO THE STAFF OF THE IRISH HOSPITAL.

AT the Royal College of Surgeons in Ireland on November 24th, the President and Fellows entertained at dinner Sir William Thomson and the other members of the staff of the Irish Hospital who had returned from South Africa a few days previously. Mr. T. Myles, the President, occupied the chair. His Excellency the Lord Lieutenant, who is still crippled from his recent accident in Scotland, in responding to the toast of his health, expressed his great sense of gratitude "for the science, the care, and the skill of those who attended my wounds when I was in Scotland." He further read a telegraphic message from Her Majesty the Queen, asking him to convey to Sir William Thomson and the other members of the staff her welcome and her grateful appreciation of the admirable services they had rendered to the sick and wounded. The President, in proposing the toast of "The Irish Hospital, its Founder and its Staff," referred in suitable terms to the generosity and public spirit of Lord Iveagh, to the brilliant powers displayed by Sir Wm. Thomson as an organiser and administrator, to Dr. George Stoker as a veteran in ambulance detail, to Dr. Coleman's experience and skill in the treatment of enteric fever, and finally to the physical prowess of the junior members of the staff. Lord Iveagh, in response, said it was a great gratification to him to be present on such an occasion, and, having referred to the valour of the Irish soldiers, observed that, as soon as the public learned that Sir William Thomson had consented to go out to South Africa at the head of the Irish Hospital, everyone felt certain of its success. Sir William Thomson, in an interesting speech, spoke of the difficulties of transport, and made a strong point of the fact that the Irish Hospital was the only civil hospital in South Africa that was able to move independently. All the other civil hospitals had to depend on the possibility of railway accommodation. He paid a tribute to the spendid marching powers and good temper of the British soldier; his experience was that in the field the British soldier was a gentleman. Dr. George Stoker alluded to the fact that when he had in the first instance suggested to Lord Iveagh the formation of the Irish Hospital, he presented the scheme of organisation which was afterwards carried out, and his advice was that it should be "a self-contained independent unit with its own *personnel*, material, and transport," and to the possession of these characteristics its success might justly be attributed. In responding for "The Navy and Army" Surgeon-General Preston, P.M.O., expressed the opinion that the disparaging statements made by irresponsible persons against the Royal Army Medical Corps were a gross perversion of the truth. The Lord Chancellor and Mr. Wyndham, M.P., Chief Secretary for Ireland, responded to the toast of the guests, which was proposed by Mr. Ormsby, V.P. The gathering was large and representative, and the speeches were of a high order.

THE WEST INDIAN MEDICAL SERVICE.

IN the BRITISH MEDICAL JOURNAL of October 6th we drew attention to the changes which have recently been made by new laws passed in the Colony of Jamaica, altering the position of the district medical officers, and we particularly objected to the Witnesses' Expenses Law, passed on June 30th, 1899, by which all medical officers appointed after that date receive no remuneration beyond their salaries for giving evidence in court and for making *post-mortem* examinations. We stated that these medical officers receive only £200 or £250 a year from the Government, and have to make the greater part of their income from private practice, so that duties such as the above which may necessitate several days' absence from home are especially burdensome, and should be paid extra. A Jamaica correspondent who has read our article, writes to point out that for the future, instead of the official income being £200 or £250, it has been reduced to £100 per annum. This accentuates all that we have said, and we can only repeat our warning to those who may be thinking of applying for posts in the Jamaica Service. We have been informed that in the opinion of the West Indian Governments there is much less difficulty than formerly in filling up these posts, as at the present time many persons born in the islands return after having received a medical education, desirous of settling in their native place and remaining there for the rest of their lives. Such persons, we are told, are content with more moderate prospects than those which were formerly necessary to tempt Englishmen to expatriate themselves for a considerable term of years. A Committee of the Council of the Association has recently been appointed to inquire into the complaints of the Colonial Medical Service, and to suggest remedies. There can be no doubt of the willingness of the Association to support cordially any proposals which may afford a reasonable prospect of removing the present sources of dissatisfaction.

THE SKIN LESIONS PRODUCED BY THE ROENTGEN RAYS.

IN the production of skin lesions by exposure to the *x* rays several factors have to be considered. In the first place, the strength of the current employed is of course of primary importance. The distance of the tube from the patient, as also the duration and number of the exposures, together with the length of the intervals between the sittings, must be taken into account. On the other hand, the condition of the skin, and possibly too an idiosyncrasy analogous to the individual variations observed in the reaction to sunburn, may play a part. The fact remains, however, that young and apparently healthy subjects may develop an acute inflammation of the skin when a strong current is used at short range. The cutaneous phenomena observed vary greatly. An evanescent hyperæmia or erythema may be induced, and this is the most usual experience. At other times a dermatitis is produced, with much redness, swelling, vesicles, and bullæ, according to its degree, followed by excoriations. Or the process may be a deeper one, leading to severe ulcerations. Several cases are on record in which the destructive process has gone on to necrosis of the parts exposed as a result of prolonged exposure, as, for instance, in taking a skiagraph of the spine. In such cases healing is exceedingly tedious, the sloughing sore persisting for months in some cases, and giving rise to much pain. Microscopically, when there is only superficial dermatitis, little or no change in the tissues has been observed. In the more severe degrees, when ulceration occurs, necrosis of the elements, disintegration of the connective tissue, degeneration of the elastin, obliteration of the capillary blood vessels, and atrophy of the skin appendages have been recorded. The hair and nails are affected, the former falling out. Those who employ the *x* rays frequently are liable to a dermatitis of the hands, which may be obstinate, associated with changes in the nails. And although it is stated that the nails grow again, they may remain apparently permanently deformed. Shedding

of the hair and nails has also occurred without antecedent inflammation. Pigmentation of the skin, more or less marked, is of frequent occurrence. It has been stated that histologically the increased pigment is present, not only in the Malpighian cells, but also in the superficial layers of the cutis. Where ulceration has occurred, a pigmented zone appears at the periphery of the cicatrix. An interesting and important feature in connection with the inflammatory and necrotic changes in the skin brought about by the *x* rays is the fact that these manifestations may be delayed, and only reveal themselves some days, or even a few weeks (two to three) after one or more exposures. Another point is the apparent cumulative effect of the rays. Here, again, the strength of the current, the length and number of the exposures, and so forth, are factors to be considered. It is not known how the Roentgen rays bring about the above changes, although various hypotheses have been put forward. Long exposures should be avoided, and when necessary the parts beyond the seat of operation should be protected by some such substance as tinfoil. An interesting case of severe dermatitis from Roentgen rays was recorded in the British Medical Journal of January 2nd, 1897, with a coloured plate, by Dr. Radcliffe Crocker. The patient was a youth of 16, apprenticed to an instrument maker, who had been subjected to an exposure of one hour to obtain a radiograph of the spine. The tube was five inches from the abdomen, a flannelette shirt intervening, whilst the trousers were turned down on each side. The latter detail was well brought out, for the area of inflammation terminated at its lower border in a distinct angle with the apex downwards and had well-defined sides. Improvements in the apparatus have rendered it possible to use shorter exposures than were formerly necessary to obtain good skiagraphs.

FORGING A PRESCRIPTION.

An incident which recently befel a correspondent brings to notice what appears to be a defect in the law with regard to poisons. A patient of our correspondent, a woman addicted to the use of morphine, wrote a prescription for the drug, and signed it with our correspondent's name. It is somewhat remarkable, having regard to the special nature of the provisions of the Pharmacy Act relative to the sale of poisons, that no express punishment was enacted in the case of poisons being obtained by the obviously easy means of a forged medical prescription. It would be next to an impossibility for any chemist to detect any such forgery, and it is not very clear that the forgery of a prescription would come under any statutory definition, although it might be a misdemeanour at common law. With such an illustration as that afforded by our correspondent of the evil which might have resulted in the case in point, it would seem that legislative provision should be made expressly subjecting to punishment any person who obtains by purchase or otherwise any of the scheduled poisons by means of a forged prescription.

HOLIDAYS FOR POOR-LAW MEDICAL OFFICERS IN ENGLAND.

The movement in favour of obtaining for Poor-law medical officers in England and Wales an annual holiday, during which the guardians should pay the cost of a substitute, has been advanced a step by the letter addressed by the Local Government Board to the Poor-law Medical Officers' Association. The Association inquired whether the Local Government Board would sanction the payment of the expense of a substitute during an annual holiday for district medical officers, either wholly or in part by the guardians, when proper application had been made to them. It appears from the reply of the Local Government Board, which was printed in the British Medical Journal of November 24th, p. 1534, that throughout England and Wales this question rests solely with the local Boards, who have power to decide, first, whether any holiday should be granted, and if so, for what length of time; secondly, whether the expense should be borne by the guardians or by the applicant. It would seem, therefore, that uniformity can hardly be expected under present law and regulations. Some guardians will doubtless be ready to sanction an annual holiday for a reasonable length of time for any of their medical officers, and to contribute towards the expense thereby incurred. Others, it is to be feared, will be more or less reluctant to grant a holiday and will refuse any pecuniary aid. It is, of course, impossible to foretell in what percentages applications for holidays will be favourably met, but the reply of the Local Government Board appears to indicate that no opposition is likely to emanate from Whitehall when any Board of Guardians in England or Wales thinks proper to grant a holiday to any medical officer, even if this is done at the expense of the guardians. The question, therefore, lies between Poor-law medical officers and their respective local Boards.

THE PERSIAN DWELLING-HOUSE

There is still probably in the minds of most people who have not been in the East a glamour of poetry about the very name of Persia doubtless traceable to the *Arabian Nights*. But, alas, medical science is terribly realistic, and not all the fabled perfumes of Araby can make a Persian town sweet to a sanitarian nose. According to Dr. M. G. H. Paschayan, of Tauris, the ordinary Persian dwelling-house is the very negation of comfort as well as hygiene. Hidden away behind high mud walls the houses themselves are low and narrow, and have but one opening, to wit, the door. They are caves or holes rather than houses. They are usually some steps below the level of the ground, and the mud roof, which is flat, forms a terrace where the people sleep in summer. The latrines are in a court-yard just outside the dwelling. The typical room is small with a narrow window or rather hole without glass and a low door which often does not shut. Air and light penetrate with difficulty, consequently the houses are always damp. There is scarcely any furniture, except a bed, which is on the ground, and is large enough to hold the whole family. In the houses of the wealthy the floor is covered with the large soft carpets for which Persia is famous, but in the ordinary houses the floor is formed by the earth, which is bare, or covered only with coarse matting. Along the walls, which are of plain mud, not whitewashed, are cushions, but there are no chairs, tables, or curtains. The people sit on the ground on their hams, or with their legs crossed in the Turkish manner, and at meals the cloth is laid on the floor. The fire is in the middle of the room. The *tandour*, which takes the place of a stove, consists of a brazier, into which are put small pieces of charcoal, and a square wooden table standing over the brazier, and covered with a large cloth, which hangs down over the sides. Under this adults and children huddle together and sleep during the winter nights. It is not surprising to learn that children are often asphyxiated by the carbonic acid and carbonic oxide from the smouldering charcoal. These *tandours* are a common cause of rheumatism, owing to the great difference of temperature in them and the rest of the room. Within the *tandour* it is from 40° to 60° C., whilst in that of the apartment it may be as low as 10° to 15°. Only the wealthier Persians have a stove and a chimney. There is another *tandour* underground where baking and cooking are carried on. The smoke escapes how it can. The poorer Persians have but little in the way of kitchen utensils, while the rich, who possess them in plenty, are utterly indifferent as to their cleanliness. By reason of the extreme filthiness of the dwelling and its furniture, the want of light and air, and the confined space, Persians suffer much from anæmia, phthisis, and other diseases depending on insanitary conditions.

THE DIET OF ATHLETES.

NOT the least interesting of the long series of dietary studies by Professor Atwater and his fellow workers are those of University boat crews[1] They are studies of men in good athletic training, brought into that condition by carefully and skilfully regulated exercise, and proper dieting, and who at the time of the studies were doing severe athletic work. It is a matter not only of interest but of practical importance to understand the food requirements of such individuals, and the work done by Atwater and Bryant goes far towards supplying that knowledge. Athletic work essentially differs from labourer's work in that it is very severe but of short duration. The labourer is adapted for a sustained exertion, the athlete for short but severe exertion. It may be taken that the essential for an athlete is to have a very ample energy-liberating mechanism—muscle—capable of rapidly converting all available energy-producing material (nutriment) into work, while on the other hand the essential for the actively worked labourer is not so much a highly developed liberating mechanism as a large store of energy-producing material. It is common knowledge that labourers are not good athletes, and that athletes are not good labourers. The training of the two classes is essentially different. To what extent the food requirements of the two classes differ is well shown by the investigations of Atwater and Bryant. Seven studies were made, four on Harvard University crews, two on Yale University crews, and one on the captain of one of the Harvard crews. The observations were made under somewhat unfavourable conditions, but the authors, with the assistance of fellow workers, seem to have overcome all difficulties, and have recorded thoroughly trustworthy results. The investigation entailed an unusually large amount of chemical analysis. The results of these seven studies show that the food consumed by these athletes contained a daily average of 155 grams of proteid, 177 of fat, and 440 of carbohydrate, and had an average daily energy value of 4,085 calories. The prominent characteristic of such a dietary is the large amount of proteid. The energy value is equal to that of a diet for fairly severe labour, the proteid is sufficient for more severe labour than that energy. That this is a normal feature of an athlete's diet is shown in the bulletin by comparison with the few trustworthy studies of athletes' dietaries previously published. Sandow in training has been found to eat 244 grams of proteid daily, a prize-fighter was found to eat 278 grams, and the members of two football teams were found to eat on an average 181 and 270 grams daily. The energy value of the diets of the boat crews is in excess of that of the average dietaries of similar young men, but is not so largely in excess as the proteid is. Students residing in college clubs have been found to eat a diet with an energy value of 3,690 calories, and a proteid value of 107 grams. The energy value of the athletes' diets is only 10 per cent. more than the student's diet, but the proteid value of the athlete's diet is 45 per cent. more than the student's diet. Atwater by a careful argument shows that this large use of proteid is not a mere coincidence, but is to satisfy an actual physiological need, though he is not able fully to explain this special need for proteid by athletes. It may be to an excessive call for repair and development of muscle, or it may be to satisfy the special wants of the nervous system to compensate for the great "nervous strain." Atwater suggests that the latter is of importance, and quotes Zuntz's views in support of this contention. The *Bulletin of the United States Department of Agriculture*, in which this research is reported, is, as has been said, not the least interesting of a long and elaborate series, and, like its predecessors, it does great credit not only to the authors, but to the United States Government—to the authors for their thorough and scientific work, to the United States Government for enabling them to carry out important researches in scientific dietetics. These American studies have gone far towards putting the subject of dietetics on a sound physiological basis, and each as it appears is welcomed by all students of that special branch of the medical sciences

[1] *Dietary Studies of University Boat Crews.* By W. O. Atwater and A. P. Bryant, United States Department of Agriculture, Office of Experimental Stations. Bulletin No. 75.

FORMALIN DISINFECTION.

PROBABLY no disinfecting agent has had to face a greater ordeal of experiment than formic aldehyde. From almost every European country, and from America, India, and Australia, the records of experimental data have arrived at short intervals for the past few years. If an attempt is made to sum up the evidence of the mass of facts now accumulated, the verdict would be that the gas is a powerful disinfectant, superior to sulphurous acid, but that its penetrating powers are confined within narrow limits. Doubtless a good deal too much has been claimed by those who contend that the gas possesses considerable penetrating power, and it may safely be said that much valuable time has been wasted by some experimentalists in demonstrating that such claims are exaggerated. As Dr. Kenwood has pointed out, the specific gravity of formic aldehyde is about that of the atmosphere; it therefore diffuses much better than sulphurous acid or chlorine; but to expect it to penetrate through several thicknesses of closely-folded blankets, at the current temperature and pressure of the room, is to expect a physical impossibility. No gas under those conditions can ever effect much more than surface disinfection, and the hundreds of bacteriological experiments which have now been performed to see if the gas possesses considerable powers of penetration were unnecessary. Recently Dr. M. J. Rosenau, the Director of the Hygienic Laboratories of the United States Marine Hospital Service, has undertaken a long and carefully executed series of experiments, which were designed to test the value of a method of formalin disinfection of baggage, which is largely practised in America. The method is to sprinkle the formalin (a 40 per cent. solution of formic aldehyde) upon the upper layers of the clothing in trunks, or to pour it on to absorbent material placed in the corner or corners of a trunk. One is not surprised to learn that Dr. Rosenau finds that the method does not succeed in its objects. He employed young bouillon cultures of typhoid and diphtheria bacilli, one to two days old, and older cultures of anthrax bacilli, containing spores, to impregnate slips of filter paper, which were placed between folds of sterile blankets or sheets. The formalin was applied by sprinkling the top and bottom layers of several folds of blanket, etc.; by pouring the solution on to one spot; and by soaking absorbent cotton wool in some of the solution, and placing this in a corner of the box. The period of exposure varied from 24 hours to 5 days. After removal from the box the slips of paper were subsequently inoculated into bouillon in large test tubes, two-thirds full of bouillon—so as to dilute considerably the trace of formic aldehyde which remained on the material. In some instances the aldehyde was neutralised with ammonia before the slips of paper were placed in the bouillon. It is a pity that this latter precaution was not adopted in every case, because it is now well known that any unneutralised aldehyde may inhibit growth, and thus lead to the recording of negative results; and it is therefore difficult to be certain of the real value of some of the results chronicled in Dr. Rosenau's experiments. Sprinkling formalin on baggage in a trunk is found to be the most efficient of the three methods, and may be depended on to kill non-spore-bearing organisms, such as B. typhosus and diphtheriæ, through three layers of blankets. Increasing the time of exposure beyond 24 hours does not increase the penetrating power of the disinfectant. But neither method is recommended as an

invariably safe means of disinfection, and it is found that the evaporation of the solution in a closed container is slow and uncertain—a fact which depends upon the well-known circumstance that formic aldehyde is given off from its aqueous solution in very small amounts at ordinary temperatures.

HOUSING OF THE WORKING CLASSES IN LONDON.

A discussion took place last Tuesday at the London County Council on the presentation by the Housing Committee of its annual return of receipts and expenditure. From this we learn that the volume of work undertaken by this Committee, of which Mr. Waterlow is Chairman, is rapidly expanding, and that, so far as municipal activity in the matter is concerned, London has no reason to complain. The accounts of last year, though showing an excess of expenditure over receipts from the Council's buildings of £1,157 compared favourably with the return of the previous year, when the deficiency was more than double that amount; even this deficiency wholly arises from areas on which the Council has been compelled to build, sometimes on not very suitable sites, in connection with public improvements involving displacements. It appears the working classes do not appreciate the advantages of a large common laundry over the domestic copper, and the Bethnal Green experience in this matter is not likely to be repeated elsewhere. It appears that some 10,600 persons are now housed in 54 blocks belonging to the County Council, erected at a cost of £653,000. Schemes are moreover in contemplation, or in progress, for housing 20,000 more, at an estimated capital expenditure of a little over a million. We observe that Berlin, though relatively a modern city, is now concerning itself with housing questions, and reluctance is shown by the municipal authorities to compete with private ownership and individual enterprise.

THE STRANGE ADVENTURES OF AN ANATOMIST'S HEAD.

Xavier Bichat passed a considerable part of his short life in the dead-house, but his own mortal remains appear to have had a more singular fate than usually befalls the fragments of humanity in which he sought so eagerly to discover the secret of life. Writing recently in the *Temps*, M G Claretie says it is well known that when Cuvier was put into his coffin an iron cage was placed over his head so that it might not be stolen as Bichat's had been. A writer in the *Chronique Médicale*, commenting on this statement, says that in 1808 there came in a curious fashion of doing honour to "masters of medicine" by keeping their heads in the condition of anatomical preparations for 40 years. Bichat was buried in the St Catherine Cemetery, in a small corner bought by one of his colleagues at the Hôtel Dieu, and might never have been found if the pious care of friends had not from time to time renewed the marks by which the grave was identified. The cemetery having been closed, Bichat's remains were removed to Père Lachaise. On November 16th, 1845, the body was exhumed under the direction of Dr. Denonvilliers, and in the presence of four members of Bichat's family, one of whom was Dr. Adet de Roseville, assistant physician of Saint Lazare, husband of Bichat's niece. The report of the exhumation states that, under a gravestone bearing the inscription "À Xavier Bichat, par les Membres de la Société d'Instruction Médicale," there was discovered, at a depth of 1 m. 70 cm., in a soil of remarkable dryness, an excellently-preserved skeleton. The cervical vertebræ were perfect, but the head was missing. Further digging failed to bring the head to light. Professor Roux, who was present, came forward and stated that the head of Bichat had "come into his hands" three years after the death of the great anatomist. He described the head, calling attention to the following points: (1) The existence of a fracture of the occipital bone, which he himself had made at the *post-mortem* examination; (2) the obliteration of the alveoli of the first upper molar of the left side and of the corresponding one on the right, which Bichat had had extracted towards the end of his life, after having suffered much from those teeth, as he says himself in his article on the teeth in his *Anatomie Générale*; (3) the perfect correspondence of the articular surfaces of the atlas found in the grave with those on the skull. M. Malgaigne had previously arranged in an oak coffin all the bones as they were taken up, and M. Roux completed them by restoring with his own hands the skull which had been so long separated from the skeleton. It may be mentioned that the ceremony of the translation of the relics to Père Lachaise was attended by some 4,000 members of the medical profession.

THE PUBLIC HEALTH DEPARTMENT OF THE CITY OF DUBLIN.

The extension of the boundaries of the City of Dublin, which will come into effect at the New Year when the townships of Clontarf, Drumcondra, and Kilmainham with portion of the county will be embraced within the city area, must lead to considerable changes as regards the *personnel* and duties of the Corporate staff. The Boundaries Committee appointed to consider these among other matters have agreed to recommend that in view of the increased duties of Sir C. Cameron, the Superintendent Medical Officer of Health, a horse and brougham shall be provided by the Corporation for his official use. An Assistant is also recommended whose salary is to commence at £300 a year, rising by yearly increments of £25 to £400. This it should be noted is one of the recommendations made by the recent Commission which inquired into the public health of the City, and its adoption is a matter which will meet with the approval of the citizen in general. The work of the Superintendent Medical Officer of Health is at the present time more than any one individual, no matter how energetic or efficient he may be, can properly accomplish, and that he is to be given assistance is a matter on which he may be congratulated. It would be well, however, that such assistant should be debarred from doing any work outside of his official duties. The custom of public health officials being allowed to give laudatory testimonials to proprietary articles is one which must be entirely deprecated. Among the other recommendations made by the Committee are the appointments of Mr. E. S. Cameron as County Analyst; a chief inspector of the sanitary inspectors and outdoor staff, an additional sanitary tradesman, a superintendent of the disinfection of dwellings, and several additional subsanitary officers. Meanwhile the townships of Rathmines and Pembroke, which recently escaped inclusion within the city boundaries, are considering the question of establishing an infectious diseases hospital, which will be common to both, and will save them from the present necessity of sending infectious cases from the suburbs into the city.

CLOSURE OF SOUTH AFRICAN PORTS IN CONSEQUENCE OF PLAGUE.

A Reuter's telegram from the Cape, dated November 20th, states that, according to a proclamation issued by Sir Alfred Milner, the seaports on the East Coast of South Africa, between the 10th and 40th parallels of latitude, are declared closed on account of plague. The announcement is calculated to excite comment in one or two directions. In the first place we have had no information that plague exists anywhere in South Africa than at King William's Town, or rather at Izeli, near that town. The latest information concerning the precise nature of the disease said to exist there, is dated November 22nd, when the existence of plague had not as yet been confirmed by bacteriological

examination. Suddenly we are confronted with the announcement that the ports of a long strip of coast are declared infected, and are to be submitted to all the discomforts, inconvenience, and financial loss which the declaration that a port is infected entails. There may be ample justification for this vigorous measure, but no information which lead us to expect it has been forthcoming. And the point which calls for remark, if Reuter's telegram be correct, is that the East Coast of South Africa is closed between the 10th and 40th parallels. This represents over 2,000 miles of coast, and includes the coast of the whole of Portuguese East Africa, as well as Cape Colony, from Cape Agulhas to near Delagoa Bay. It may be that the Cape Government have heard that the Portuguese ports are infected, and have issued a warning to that effect. The Portuguese Government must evidently concur in the announcement if the facts are as Reuter states, or we must assume that the figures sent us are erroneous. There seems no doubt, however, from this and other circumstances we are acquainted with, that the Cape Government is in possession of information which justifies it in the severe precautions it is reported to be taking.

MILK SUPPLY AND SCIENTIFIC METHOD.

The Report of the Milk Commission of the Philadelphia Pediatric Society, appointed on January 10th, 1899, was presented to the Society on October 9th last.[1] During last year the Commission was engaged in investigating the literature of the subject, in taking legal advice as to their powers and conditions, and in conferences with dairymen of standing. In the spring of this year it offered opportunities to the dairymen of the district for the expert examination of milk and cream. The principal articles of agreement with dairymen are that the Society will appoint experts to examine the dairies as to the health of the cows, the cleanliness of the stables, offices, and apparatus, the health of the employees, the chemical composition of the milk, and the number and kind of bacteria it contains. Certificates are given or withheld according to the results. The dairymen agree to abide by the decision of the Commission and to pay for examinations. So far the necessary contracts have been signed by the owners of three dairies. The standard of quality of milk required by the Commission is as follows: It must be free from pus and injurious germs, and it must not contain more than 10,000 germs of any kind in 1 c.cm. Its specific gravity must be between 1029 and 1034, its reaction neutral or faintly acid, it must not contain less than 3.5 per cent. of proteid, 4 per cent. of sugar, and 3.5 per cent. of fat. It must be free from all foreign matter, including chemical substances and colouring agents.

THE BRITISH CONGRESS OF TUBERCULOSIS.

The British Congress of Tuberculosis will be opened in London by the Prince of Wales on Monday, July 22nd, 1901. It will be remembered that a German Congress on Tuberculosis was held in Berlin in May, 1899, under the patronage of the German Empress, and under the presidency of the Duke of Ratibor and Professor von Leyden. It was attended by some 2,000 persons, of whom 112 were delegates from foreign countries. The success of this Congress and the value of its results induced the National Association for the Prevention of Consumption to believe that a British Congress to be held after an interval of two years would serve a useful purpose. The proposition received much support from the medical and the veterinary professions in the United Kingdom, as also from leading agricultural authorities, and a strong executive committee was formed with Dr. Clifford Allbutt, Regius Professor of Physic in the University of Cambridge, as Chairman, and Mr. Malcolm Morris as Honorary General Secretary. Invitations will be issued to foreign Governments and Universities, as well as to municipalities, to nominate delegates. The Congress, as already stated, will transact its business in four sections, State Medicine, Pathology, Veterinary Medicine, and Human Medicine, which, as at present arranged, will meet on the mornings of July 23rd, 24th, 25th, and 26th. It is proposed that there should be in the afternoons general meetings of the whole Congress to be addressed by distinguished representatives of pathology, medicine, and veterinary medicine. Saturday, July 27th, will be reserved for excursions to places of interest. The fee to be paid by members of the Congress will be £1, which will entitle them to attend all the meetings of the Congress and its sections, and to a copy of the *Transactions*, but subscriptions are invited to a fund to defray the expenses, which cannot fall far short of £4,000. Towards this amount about £800, including a donation of £100 from the British Medical Association, has been received or promised. Further particulars can be obtained from the Honorary General Secretary, 20, Hanover Square, London, W.

[1] *Philadelphia Med. Journ.*, October 20th, 1900.

SMALL-POX IN PARIS.

One result of the Paris Exhibition is, according to the *Semaine Médicale*, a threatened epidemic of small-pox in Paris. The disease, which caused only 4 deaths in that city in 1899, and 15 from January 1st to the end of May of the present year, began to increase in prevalence in June. The number of cases and deaths has since that time increased week by week to such an extent that in the week October 28th to November 3rd there were 14 deaths from small-pox. The total mortality from this cause during the period of the Exhibition from June to November was just 100 as against 15 in the first five months of the year. The Prefect of Police has ordered notices to be placed on the walls of Paris calling public attention to the danger, and pointing out the measures taken by the administration for the check of the epidemic, namely, gratuitous vaccination or revaccination.

A medical automobile society is in course of formation in Belgium. It is constituted on the co-operative principle, the purpose being to enable members to procure an automotor car at greatly reduced prices. Since the beginning of January some 1,500 licences for motor cars have been delivered in Belgium.

Dr. G. V. Poore will deliver the Purvis Oration before the West Kent Medico-Chirurgical Society at the Royal Kent Dispensary, Greenwich Road, on Friday next at 9 P.M. The subject of the lecture will be Dietetic Problems.

The Queen has granted unto Sir William MacCormac, Bart., President of the Royal College of Surgeons of England, authority to wear the Cross of Commander of the Legion of Honour, conferred upon him by the President of the French Republic, in recognition of services which he rendered to the French wounded during the war of 1870-71, as well as to the International Medical Congress held during the recent Paris Exhibition.

The first annual dinner of the Otological Society of the United Kingdom will take place on Monday, December 3rd, at 7.30 P.M., at the Café Monico, the President, Sir William Dalby, in the chair. The Presidents of the Royal Medical and Chirurgical, Clinical, Pathological, Medical, and Laryngological Societies have accepted invitations to be present; and Sir Thomas Smith, Mr. Bryant, Mr. Pridgin Teale, Dr. Barlow, Mr. Barker, Mr. Butlin, and other distinguished men will be numbered amongst the guests.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1900.

NOTES.

The Winter Session of the General Council of Medical Education and Registration began on Tuesday, November 27th.

A graceful tribute to the memory of Sir Henry Acland, one of his predecessors in the presidential chair, and an acknowledgment of the very great services of the late Dr. Leech, as Chairman of the Pharmacopœia Committee, formed the opening of the President's address. Dr. Leech has bequeathed to the Council a valuable collection of books on pharmacology, some of them of great rarity, and it is proposed to form, for the use of the Pharmacopœia Committee, a collection of materia medica, for which specimens sent home for the purposes of the Indian and Colonial supplements to the *Pharmacopœia* form a nucleus. After a few words of welcome to the three new members, Dr. Charles Ball, who succeeds Sir Philip Smyly as representative of the Royal College of Surgeons of Ireland; Mr Alfred Young, who represents the Victoria University; and Dr. Bertram C. A. Windle, who takes his seat for the new University of Birmingham, and adds another to the numbers of the Council, the President foreshadowed the business of the Council during the present session. We are told that the Disciplinary Bill, introduced and read for the first time in the House of Commons last session, is to be introduced again, but nothing was said as to the causes which led to its having been brought in so late last session that there was practically no chance of its obtaining a hearing. The Bill had been so long talked about that it might have been expected that it would have been ready in good time, especially as it is quite a short measure, and a few words explanatory of the delay would have been welcome. Next, the fact that the clause prohibiting the practice of medicine by companies was dropped out of the Companies Act in the House of Commons at the last moment was alluded to, but nothing was said about the circumstances under which it was dropped without even being discussed. These circumstances, which we have already described, were so peculiar that here again a little more information would have been acceptable. Nor was anything said as to the prospects of the reintroduction of the provision in a new Bill, or as to its coming before the Council during the session in any form. What may lie behind this reticence it is not possible to surmise; it is hardly conceivable that the proposal is to be dropped quietly. If it is not, reticence upon the subject partakes of that secrecy as to the doings of the Council of which we have been compelled to complain. As the next few days may throw some light upon the subject, we postpone further comment until more information is available.

The revolt of the Conjoint Board in England against the jurisdiction of the Council was treated in a non-committal manner. The Council were informed that a legal opinion had been obtained which would be submitted to them, but the tenour of the President's utterances appeared to be directed towards advising a sort of compromise, and so apparently foreshadowed that the legal opinion was not wholly satisfactory. In effect the President seemed to advocate that the Council should abandon any claim to determine, as of right, the details of the earlier years of medical education, and should confine itself to some sort of remonstrance when it thought it desirable. It is possible that this may be all that can be done, but surely the legal opinion, which we hear that the members of the Council are to receive, might have been placed in their hands somewhat earlier, so that they might have had the opportunity of considering it at their leisure, and of familiarising themselves with its nature before coming to the discussion, which will be awaited with much interest. Some fear was expressed that injury might result to students' registration, which, we may remind our readers, is not made compulsory by any Act of Parliament, but is due to the fact that the various licensing bodies have hitherto been unanimous in requiring it of students who present themselves for their examinations. The final dissolution of the association between the Irish College of Surgeons and the Apothecaries' Hall of Dublin was alluded to, and this came before the Council subsequently in the form of a letter to be received and entered upon the minutes; it did not, however, give rise to any discussion of interest, as the Council was not asked to express any opinion upon the subject. With a reference to the forthcoming series of inspections of Final Examinations, and a promise that the belated reports of Committees would afford material for debate, the address came to an end; like the Queen's speech at the opening of Parliament, it does not tell much, and so is not a very fertile text for discussion.

The inspection of examinations led to a brief discussion. It is conducted by an inspector, who is appointed specially, is not a member of the Council, and in this series is to be Sir George Duffey. With the inspector are associated "Visitors," who are members of the Council. These visitors are appointed in a curious manner; they are volunteers, and members of the Council are asked to give in their names, stating which examinations they are willing to attend. In such a matter we may have confidence in the general good sense of the members, yet it is very possible that an individual's estimate of his qualifications for this work may not be that entertained by his colleagues, and in any case it does not seem to be the best way to ensure securing the services of those most suited to the task. While it is fully understood, and universally admitted to be proper, that no one should visit an examination of any body with which he has any official connection, some discussion was raised as to the propriety of the custom that the visitors should not be drawn from the same country as that in which the examination is held, and it was contended that there would be no harm in, for example, a Scotchman visiting Scotch examinations, an Englishman visiting examinations in England, or an Irishman those in Ireland. A hint was thrown out that the attitude of the visitor should not even appear to be influenced by any sense of rivalry or hostility to the body inspected, but the general feeling appeared to be that the custom which had grown up in this matter was good, and so it stands unaltered.

The tables showing results of competitions for commissions in the medical staffs of the army and navy were, on the motion of Mr. George Brown, referred to the Examination Committee for report. Sir Dyce Duckworth argued that as the candidates were rejected not on professional subjects but on matters relating to general culture, no inquiry by the Committee could give any useful information, but Dr. M'Vail contended that to reject five out of fourteen men showed that those five were sadly incompetent, and the reason should be investigated by the Examination Committee, and the resolution was carried by 11 votes to 10. Mr. Brown is therefore rewarded for his perseverance.

"The Back-door Admission to the Final Examinations" was the term which Sir William Thomson applied to the case of candidates exempted from examination in certain subjects by the different licensing bodies. His motion for an inquiry into the subject was lost by the casting vote of the Chairman, but it will no doubt come forward again in subsequent sessions, for the present regulations under which gentlemen who belong to universities which the General Medical Council may not recognise at all can come to this country and succeed in getting their names placed on the *Medical Register* are clearly open to abuse.

REPORT OF PROCEEDINGS.

Sir William Turner, President, in the Chair.

Tuesday, November 27th.

The seventieth session of the General Medical Council commenced at the Council Chamber, Oxford Street, at 2 P.M. on November 22nd.

Dr. MacAlister introduced to the Council Dr. Bertram Coghill Alan Windle as the representative of the University

of Birmingham for the term of five years, from October 1st, 1900.

Dr. BENNETT introduced to the Council Dr. Charles Bent Ball, appointed by the Royal College of Surgeons in Ireland as their representative on the Council from October 18th, 1900, till February, 1901.

Sir DYCE DUCKWORTH introduced to the Council Mr. Alfred Harry Young, M.B., as the representative of the Victoria University for the term of five years from October 25th, 1900.

PRESIDENT'S ADDRESS.

Sir WILLIAM TURNER (who upon rising was received with applause) said:

The late Sir Henry Acland.

I should be wanting in respect to the memory of one of the most eminent of my predecessors in the office which I have now the honour to fill if I were to open the present session without referring to the death, a little more than a month ago, of one who for thirteen years occupied the Presidential Chair of this Council. Sir Henry W. Acland was chosen by the University of Oxford as its representative when the Council was formed in 1858, and he and Dr. Dennis Embleton, whose death was announced a few days ago, were the last of the band of leaders in our profession who constituted the first Council of Medical Education and Registration. I do not propose to dwell on Sir Henry Acland's services to his University, though the material is ample to enable one to dilate on the part which he took in the establishment of the Museum as a great centre of scientific training in the extension of the professoriate, and in the encouragement of scientific studies as avenues to obtaining degrees in arts and medicine. I cannot, however, refrain from alluding to the place which he had held in this Council during the twenty-nine years in which he sat as one of its members. Dignified in presence, courteous in manner, graceful in speech, he brought to bear on the consideration of our business a cultivated and reflective mind. His life and environment led him fully to appreciate the position of medicine as one of the learned professions, and that the special technical training, necessary for its efficient practice, should be based on a sound general and scientific education. He regarded our profession as comprising more than the personal relations between practitioner and patient, confidential and honourable though these undoubtedly are, and he ever kept in view that we have important duties to discharge to the community and the State. His academic and social position, and the innate nobility of his nature had from an early period of his life gained for him the friendship and confidence of the leaders of the medical profession, of statesmen of both parties, and others eminent in public life, and contributed, I believe, in no small measure, to ensure the Council's harmonious relations with the departments of Government with which we are officially brought into communication. Those of us who sat under his presidency in this chamber will treasure the memory of his urbanity and friendship.

The late Dr. Leech.

Death has removed from us during the summer a highly valued colleague, Dr. Leech, to whom the Council is greatly indebted for skilful guidance in the preparation of the last edition of the *Pharmacopœia*, and of the *Indian and Colonial Supplement*, with the latter of which he was engaged almost to the end. As enduring evidence of the interest which he took in this branch of our work, Dr Leech has bequeathed to the Council for its Library a valuable collection of Pharmacopœias and other volumes bearing on this branch of our statutory duties. The Victoria University has chosen as his successor Professor A. H Young, M.B., of The Owens College, to whom, as a former pupil, I wish to give a hearty welcome.

New Members.

Sir Philip Smyly has resigned his seat as the representative of the Royal College of Surgeons in Ireland. His genial presence and perfect courtesy, even when our discussions were most animated made him a *persona grata* to his colleagues in the Council. The College has elected as his successor another of its Fellows, Dr Charles Bent Ball, to whom we look for assistance in our debates.

On May 25th of this year an Act passed the Legislature granting to the University of Birmingham, which had been established by Royal Charter on March 24th, the power to hold qualifying examinations in medicine, surgery and midwifery, for the purpose of registration under the Medical Acts, as if it had been a university in the United Kingdom legally qualified at the date of the Medical Act, 1886 to grant diplomas in medicine and surgery. The Council of the University also became entitled to choose one representative to be a member of the General Medical Council, as if that University had been included in Section VII of the Medical Act, 1886. On June 20th of this year I received official intimation of the passing of the Act, and requested the Registrar, as soon as copies could be obtained, to forward one to each member of Council. Section II provided that the Act was to come into operation on October 1st, and on October 4th the Vice-Chancellor intimated that Dr. Bertram C. A. Windle had been chosen as the representative of the University of Birmingham. This Act of the Legislature has given an additional member to the Council, and in choosing Dr. Windle the University has selected a member who has long been engaged in medical education, on the details of which he can speak from personal knowledge and experience.

Members of Council are, I am sure, pleased to see Sir William Thomson home again from South Africa. They will join with me in expressing gratification at the excellent work which he and his colleagues in the Irish Hospital have done during the most trying periods of the war, and in congratulating them on their safe return.

Bills in Parliament.

During the last session of Parliament three Bills were before the House of Commons on subjects in which the Council was interested. A Bill for obtaining additional penal and disciplinary powers over registered medical practitioners was read a first time, but as it was introduced late in the session it made no progress. I propose to make arrangements for the introduction of the Bill as soon as Parliament meets for the transaction of general business. In the Companies Acts Amendment Bill, Clause 3 made it unlawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife. The Bill passed the second reading and subsequent stages, but the clause appertaining to the medical profession was struck out in the Committee of the House of Commons. The Midwives Bill, to the consideration of which the Council had devoted much attention, and which was partially debated in the Commons, became a dropped measure.

The Conjoint Board in England.

On the last day of the May session I undertook to obtain the opinion of our legal advisers on the legal questions raised in the report of the Education Committee on the subject in dispute between the Council and the Royal Colleges of Physicians and Surgeons in London, and the representative of those Colleges promised to endeavour to obtain certain additional information bearing on the question. Through these gentlemen and the courtesy of the President of the Royal College of Physicians the opportunity was given to me to bring the case, drawn on behalf of that College, and the opinion of their Counsel thereon, before Mr Muir Mackenzie, along with the resolutions of the Council and the reports of the Education Committee. These papers have been considered by our Counsel during the recess, and he has written his opinion, which, as a confidential document, will be placed in the hands of members of Council.

I do not desire to anticipate the discussion which will naturally take place on the points raised in this opinion, but will express the earnest hope that the Council and the Colleges, which have by their respective regulations the sole object of securing a sound system of medical education, may be able to agree on a *modus vivendi*, and that the amicable relations which have for so many years existed between the Council and the several medical authorities in regard to the registration of students of medicine may be preserved.

I would venture to suggest that the Colleges should be asked to continue to submit to the Council a list of the teaching institutions from which they receive certificates in the fundamental sciences, and that they should state the means they have adopted to satisfy themselves of their competency. That the Council, without insisting on its approval as a necessary step towards the acceptance of the certificates by the Colleges

—for approval would impose on the Council the responsibility of ascertaining by inspection or other means of independent inquiry that the institutions were competent to supply the requisite training—the Council should exercise its right to take exception to any institution in the list which did not seem to reach the standard demanded by the Council, and to call the attention of the Colleges to its defects with a view to its removal from their list.

I should regard it as most deplorable if the registration of students and the conditions attached thereto, which have played so important a part in elevating the standard of preliminary education throughout the profession, and in ensuring that the full period of study prior to the conferring of a professional qualification has been complied with, were in any form to be weakened or injuriously affected.

Death Registration.

The recent changes in the Ministry have removed from the Local Government Board the former President and the Parliamentary Secretary, and new Ministers have been appointed. As the Board is the department which takes cognisance of the registration of death certificates, arrangements should be made for bringing the question of amendments in the law regarding these certificates before the new President.

The Apothecaries Hall of Dublin.

Intimation has been given to the Council that the Examining Board in Ireland, formed by the combination of the Royal College of Surgeons and the Apothecaries' Hall, has been dissolved. The Examination Committee will report on inspections of the Third and Final Professional Examinations of the Apothecaries' Hall, Dublin. Dr. G. A. Gibson, who has acted as the Council's Inspector of the Examinations of this body for two years, has intimated to me his resignation. As he has discharged his duties with great care and judgment, the Council will, I hope, give me authority to express our thanks to him for his services.

Reports of Committees.

The Executive Committee will report to the Council the arrangements which it proposes for a renewal of the inspection of examinations.

The Standing Committees on Education, Public Health, and the *Pharmacopœia* will also have to report on their respective subjects, and the Medical Aid Associations Committee will doubtless tell us of the present position of that question.

A report by the Special Finance Committee on the condition of the finances of the General and Branch Councils is in preparation, and will be brought forward in the course of the session.

In conclusion, the Council will have to devote some time to the consideration of cases of discipline affecting medical practitioners, so that we shall require, along with other business, to continue the sitting into next week.

Dr. MacAlister moved:

That the Council offers its thanks to the President for his valuable address, and requests that he will allow the same to be entered on the minutes.

He (Dr. MacAlister) entirely agreed with what the President had said as to Dr. Leech, and he would have an opportunity of referring to the matter later in the session.

Mr. Bryant seconded the resolution, which was carried.

Competitive Examinations.

Dr. Heron Watson moved, and Sir Dyce Duckworth seconded:

That the tables as to Competitive Examinations in 1900 be received and entered on the Minutes:

(*a*) Table showing results of competition held on July 27th, 1900, for commissions in the medical staff of the Royal Navy.

(*b*) Table showing results of competition held in August, 1900, for commissions in the medical staff of the Army.

The resolution was carried.

Dr. Heron Watson moved, Sir Dyce Duckworth seconded:

That the thanks of the Council be conveyed to the Director-General of the Medical Department of the Royal Navy, and to the Director-General of the Army Medical Service, for the returns which they have respectively again furnished to the Council, with the request that these returns may in the future continue to be furnished to the General Medical Council.

The resolution was carried.

Dr. Bruce moved that the tables be referred to the Examination Committee for their consideration. He thought the tables raised important matters which were brought forward but not sufficiently considered, and the proper quorum to send them to was the Examination Committee.

Mr. George Brown, in seconding the motion, called attention to the fact that the number of rejections were rather large.

Sir Dyce Duckworth, as Chairman of the Examination Committee, thought it would be within the memory of the members of the Council that this subject was brought up in May last, and the matter was thoroughly discussed, and he then tried to show (though he supposed he did not succeed) that the suggestion that these tables should be referred to the Examination Committee was putting upon that Committee an impossible task. Anybody who studied the tables carefully would see that they spoke for themselves, and that there was nothing to be made out of them. Most of them were aware of the difficulty that there was in securing candidates for the Army at that moment; that was a matter to be further looked into. As regards the Navy the conditions of the service were most satisfactory with regard to the quantity and high standing of the men who applied and were appointed to it. He must decline, as Chairman of the Committee, to undertake the task which had been suggested.

Dr. McVail, as a member of the Examination Committee, thought the tables should be [referred to that Committee. If there was nothing to be made out of the tables, he could not see what the good was of having them. It was well known that the army could not get the necessary supply of surgeons, and he thought that that and other matters called for the consideration of the Council, and that could only be done through the Examination Committee.

The motion was put to the Council, when 11 voted in favour of it, and 10 against.

The President declared the motion carried.

Dental Penal Procedure.

Dr. MacAlister moved, and Mr. Tomes seconded, that the Standing Orders, Chap. XV, Sec. 11, as amended by the Executive Council, be adopted.

6. Consideration of the following Amended Standing Orders relating to Dental Penal Procedure recommended for adoption by the Executive Committee, pursuant to the following resolution adopted by the General Council on May 24th, 1900:

> "That Chapter XV, Section 11, of the Standing Orders be remitted to the Executive Committee for consideration."

"Revised Standing Order XV, 11.

"11. The Council shall deliberate on the Report in private, and at the conclusion of the deliberation if the matter is, in the opinion of the Council, ripe for decision, the President shall call upon the Council to vote on the following Resolution to be put from the Chair:

"(i) In the case of a practitioner who has been convicted of a felony (or misdemeanour, or crime, or offence):

"That having been proved to have been convicted of a felony (or misdemeanour, or crime, or offence), the Registrar be directed to erase his name from the *Dentists' Register*.

"(ii) In the case of a practitioner charged with infamous or disgraceful conduct in a professional respect:

"*a*) That the further consideration of the charge against be postponed until the next session of the Council (or until the session of the Council to be held in the month of).

"If this resolution is carried, the further hearing of the case will stand adjourned till the next or a subsequent Session of the Council, and the hearing thereof will be taken at such session as an adjourned case.

"If this resolution is not carried, the Council shall be called upon to vote on the following resolution, to be put from the Chair:

"(*b*) That on the facts found in the Report of the Dental Committee it has been proved that has been guilty of conduct which is infamous or disgraceful in a professional respect, and the Council directs the Registrar to erase from the *Dentists' Register* the name of

"12. In the event of a resolution for the postponement of the further consideration of the charge being carried, the accused practitioner and the complainant (if any) may submit further facts and evidence in relation to the charge, and in relation to the conduct of the accused practitioner subsequent to the hearing of the charge by the Council, which further facts and evidence shall be considered and dealt with by the Dental Committee, who shall make a supplementary report thereon to the Council.

"Notice shall be given by the Solicitor of the Council to the accused practitioner, and to the complainant (if any), of the time and place fixed

by the Dental Committee for the further consideration of the case, which time shall be as near to the commencement of the session of the Council to which the consideration of the case has been postponed as can be conveniently arranged by the President or Chairman of the Dental Committee; and the accused practitioner and the complainant shall each be requested to furnish to the Solicitor, in writing, not less than four days before the time so fixed, a statement in writing of any further facts or evidence which he may desire to lay before the Dental Committee. Notice of the time and place fixed by the Dental Committee for the further consideration of the case shall be given so as to allow at least ten days between the day on which the notice is given and the time so fixed by the Dental Committee. No facts or evidence shall be received or considered by the Dental Committee unless a statement thereof has been previously furnished pursuant to this Order.

[NOTE.—The object of fixing the time in this way is to enable the Dental Committee to have before them the practitioner's subsequent conduct for as long a period as possible.]

"13. On the case coming on before the Council for further consideration the original Report and the Supplementary Report of the Dental Committee shall both be read by the Registrar to the Council, and the accused practitioner and the complainant (if any) may be heard by the Council upon the Reports, but may not adduce any further evidence.

"At the conclusion of the further hearing the Council shall deliberate on the case in private, and on the conclusion of the deliberation the President shall call on the Council to vote on the following resolution, to be put from the chair:

"(a) That the Council, having further considered the charge against , and the Reports of the Dental Committee thereon, does not judge him guilty of infamous (or disgraceful) conduct in a professional respect."

VACANCIES ON COMMITTEES.

The PRESIDENT stated that Sir Philip Smyly had resigned his seat on the Executive Committee, and under the Standing Orders when a resignation of a member of the Executive Committee took place at the time when the Council was to meet, the Council had to elect the new member in place of the one who had resigned. Therefore it fell to the Council to elect a member from the Irish Branch.

Sir Christopher Nixon was declared elected.

The PRESIDENT said that there were vacancies also on the Examination Committee, the Public Health Committee, and the Dental Education Committee. He had received a letter from Dr. Atthill, in which he was informed that the Irish Branch had recommended that Professor Ball should be Sir Philip Smyly's successor as their representative on these three Committees. He therefore put it from the Chair that the recommendation be adopted, and it was agreed to. The President further stated that it was desirable that the member of the Dental Committee representing the Irish Branch Council should also be a member of the Executive Committee, and he asked the Council to proceed to fill up that vacancy. On being put from the Chair, Dr. Atthill was elected a member of the Dental Committee.

REPORT OF THE PHARMACOPŒIA COMMITTEE.

Dr. MACALISTER moved that the report of the Pharmacopœia Committee be received and entered on the Minutes:

The Pharmacopœia Committee, in common with the whole Council, have to lament the loss they have sustained by the untimely death of Dr. Leech. As an active member of the Committee since 1892, and as Chairman since 1898, Dr. Leech rendered zealous and valuable service in the preparation of the *British Pharmacopœia, 1898*, and of the *Indian and Colonial Addendum*. A special record of the Committee's indebtedness to him was made in their report to the Council of May 31st, 1898 (Minutes, Vol. xxxv, p. 436). He also brought about the establishment of a regular conference between representatives of the Committee and of the Pharmaceutical Societies of Great Britain and Ireland for the investigation of questions bearing on the revision of the *Pharmacopœia*. At the suggestion of this conference a number of important researches have been begun, and some, notably those of Professor H. G. Greenish on the solubilities of official drugs, have in part been published. Such researches will be of material assistance to the Committee in the task of revising the *Pharmacopœia*, and will serve to carry forward the work in which Dr. Leech took so deep and effective an interest. His portrait, presented by a member of the Committee, has been placed in the Committee Room.

The Committee have elected Dr. MacAlister to be Chairman in the place of Dr. Leech.

Up to thepresent the number of copies of the *British Pharmacopœia, 1898*, printed for the Council has been 31,500. Of these, 29,840 have been disposed of, leaving a balance of 1,660 copies in hand. The number sold in the present year up to now (November 24th) was 2,008. As the publication of the *Addendum* will probably increase the demand for copies of the *Pharmacopœia* to bind with it, the Committee recommend that the President be authorised to direct the printing of an additional issue of 1,500 copies, should this appear to be necessary before the next meeting of the Council.

The Committee have met repeatedly during the recess for the purpose of completing the draft of the *Indian and Colonial Addendum, 1900*, which forms the subject of a separate report.

During this work the need of a reference collection of medicinal plants and other articles of materia medica has more than once been felt, when questions of description or identification were under discussion. The nucleus of such a collection already exists in the specimens forwarded by some of the Colonial authorities. The Committee ask power to make the collection complete, and to furnish the Committee Room with proper cases for its reception.

Donations of books for the reference library have been made by Mrs. Leech and Dr. Attfield, to whom the thanks of the Council are due. Dr. Payne has undertaken the duty of supervising the arrangement and cataloguing of the library, which now contains a number of rare and interesting works.

Dr. MCVAIL seconded the motion and endorsed all that had been said regarding the loss which they had sustained by the death of Dr. Leech. He hoped that the power asked for by the Committee to form a small museum for the reception of the chief specimens would be granted, as it would not be very costly.

This was agreed to.

INSPECTION OF EXAMINATIONS.

The Council then received the following report of the Executive Committee on the inspection of examinations pursuant to the following resolution adopted by the Council on May 30th, 1900:

That in accordance with the recommendation of the Examination Committee arrangements be forthwith made by the Executive Committee, under Chapter xxiii of the Standing Orders, for a systematic inspection and visitation of the final examinations of the several licensing bodies. (Minutes, vol. xxxvii, p. 74.)

Report.

Pursuant to Standing Order, cap. xxiii, 13, the Executive Committee think it well to report to the General Medical Council what steps they have taken consequent to the resolution passed by the General Medical Council on May 30th, 1900, desiring them to forthwith make arrangements for a systematic inspection and visitation of the Final Examinations of the several licensing bodies.

Time has not yet allowed for the completion of these arrangements, but the Executive Committee have decided that, following the precedent adopted in 1892, it will be well to spread the inspection over three years, and to inspect the examinations in the following order:

First Year ... Scottish Corporations, Irish Universities.
Second Year ... Irish Corporations, English Universities.
Third Year ... English Corporations, Scottish Universities.

From information already obtained by the Office, a calendar will be prepared showing the dates when these respective examinations take place in each year, and members of Council will be requested to state at the close of each year the examinations which they would be prepared to visit along with the inspector, it being understood that it is not the custom for a member to visit the examinations of those bodies with which he is officially connected, or in his own division of the kingdom.

The Committee agreed to invite Sir George Duffey to undertake the duties of Inspector for the year 1901.

Dr. MACALISTER said, in reply to Dr. MCVAIL, that there was not the slightest feeling in the mind of the Council that they could not trust its own members to inspect or visit any examination. He thought it desirable to keep in mind the susceptibilities of the body visited, and it was quite possible if a visitor from Ireland were to be appointed to visit the examinations of those bodies they might object to that person.

The report was agreed to.

The PRESIDENT, in order to facilitate the work of the Council, said that it had been the custom for the President to appoint a particular visitor to visit the corporate bodies, another visitor to visit the universities. If this arrangement were followed three visitors would be required—one for Trinity College, Dublin, another for the Royal University, and a third for the Scottish Conjoint Board. He should be glad to receive names before the Council rose as to who would be prepared to visit these bodies.

THE COLLEGE OF SURGEONS AND APOTHECARIES' HALL, IRELAND.

On the motion of Dr. GLOVER, seconded by Mr. TICHBORNE, the following communication from the Royal College of Surgeons in Ireland as to the severance of its connection with the Apothecaries' Hall, Dublin, was received and entered on the Minutes:

Royal College of Surgeons in Ireland, Dublin, July 20th, 1900

Sir,—I am directed by the President and Council to inform you all connection between this College and the Apothecaries' Hall for the holding of conjoint examinations ceased on the 1st of the present month.—Yours truly,

JOHN BARTON, F.R.C.S.,
Secretary of Council.

H. E. Allen, Esq., Registrar.

Mr. GEORGE BROWN expressed his regret that these representative corporations in Ireland had not seen their way to join hands.

The PRESIDENT said that that matter was not relevant to the motion before the Council.

SALE OF FALSE DIPLOMAS.

On the motion of Dr. GLOVER, seconded by Dr. ATTHILL, the following communication, remitted to the General Medical Council by the Executive Committee from the Foreign Office in regard to the sale of false American diplomas, was received and entered on the Minutes:

Foreign Office, September 24th, 1900.

Sir,—I am directed by the Secretary of State for Foreign Affairs to transmit to you, for the information of the General Council of Medical Education, the accompanying copy of despatches from Her Majesty's Consul at Chicago respecting the sale of false American diplomas.—I am, Sir, your most obedient humble servant, F. H. VILLIERS.

The Registrar of the General Medical Council.

British Consulate, Chicago, July 3rd, 1900.

My Lord,—I beg to report for your lordship's information that the Postal Inspector of Chicago has at last been able to arrest and to have held in heavy bail for trial Dr. Armstrong and his associates of the People's Institute, Van Buren Street, Chicago.

Armstrong and his partners, under various names, have been doing a very lucrative business in selling diplomas to persons in England, and their agent, Z Whightman Van Appin, disposed of large numbers of useless diplomas in British India. I hope to obtain a list of the persons who purchased these diplomas in India from Mr. Van Appin, and will at once forward it to your lordship.

From a postcard that has been held by the postal authorities, who have been so good as to communicate it to me, I see that Mr. Allan Fisher, who styles himself M.D and Ph.D., writing on the 15th ultimo from "Mere," "Wiltshire," to Dr. Armstrong, People's Institute, Van Buren Street, Chicago, states that he has delivered a Diploma of D.D. to a Mr Johnson (no address given), who is very much pleased with it; and that he had hopes of selling two M.D. diplomas, for the sale of which he was in treaty with persons whose names are not mentioned.

The postal authorities also hold return postcards showing that Dr. Armstrong and company are in treaty with the following parties, either to sell diplomas or have already sold them diplomas:

1. Rai Tharoda Kanto Lahiri, M.D., 6,612, Simla Street, Calcutta; and is corresponding with:
2. Dr. Hassall, 76 and 80, Paul Street, Manchester, England
3. J. M. Lethera, M.D., House No. 3, Zier Thost Bang (?), Girgaum, Bombay, India;

(This address is very indistinctly written.)

4. Z. Wightman Van Appin, care of Dr. J. Murdoch, 714, Shelby Street, Louisville, Kentucky.

I think the police will probably be able to find out some useful details of the business of bogus diploma selling by Dr. Armstrong in Great Britain from Mr. Allan Fisher, who is now acting as selling agent for the diplomas of the Independent Medical College and the Metropolitan Medical College of Chicago, Illinois. These so called colleges have charters issued by the State of Illinois, the laws of the State being very lax in the matter of granting such charters, but their diplomas are being sold all over Great Britain and British India, and probably in the Colonies, to anyone who may be willing to buy them.

It is possible that Mr. Allan Fisher has been duped by Armstrong and company, but he is now evidently acting as their agent, and sells D.D. diplomas as well as M.D., signed by the same people, or rather by the same person, as it has been found out that all the signatures are made by a girl in different handwritings.

Armstrong and his associates have been held in heavy bail for trial for making use of the mails to defraud, and for the moment the diploma mill is said to be closed.

Her Majesty's Government of India may also be able to find out through the addresses I have given above if there has been anyone appointed in India to sell the diplomas.

Mr. Z. Wightman Van Appin himself bought a Ph D. and M.D. diploma for one hundred and forty-four dollars, and then was sent to India with a quantity of blank diplomas of all kinds to fill in.

I will inform your lordship later on of the result of the trial of Armstrong and company.

I have, etc.,
(Signed) WM. WYNDHAM,
Her Majesty's Consul.

Her Majesty's Principal Secretary of State for Foreign Affairs.

British Consulate, Chicago:
August 31st, 1900.

My Lord,—With reference to my despatch, No. 25 of the 3rd July last, I have now the honour to forward a list of persons who are residents in Great Britain, India, and the Colonies, who appear to have been duped by the diploma mill of Armstrong and company, of Chicago:

PECTELLS, WM. E., Melbourne, Australia.
FISHER, M.D., ALLAN, Bristol, England.
THOMSON, D.D.S., BENJ., Sydney, Australia.
CHAND, M.D., TATCH, Ludhiana, India.
KENNEDY, M.D., E. M., Bristol, England.
SECRETARY, BANK OF BENGAL, India.
LEAR, W. E., Brighton, Canada.
ALLAHABAD BANK, Allahabad, India.
FISHER, A., Leigh, England.
NEWTON, Ph.D., F. H., Melbourne, Australia.
HOVERDAN, M.D., N. DESAR, Baroda, India.
NAGARATLY, M.D., B. H., Ahmedabad, India.
SARYANA, D. F., Bombay, India.
KAPEN, M.D., R. D., Baroda, India.
TRILLI, RODLEY MORT, Jamaica, W.I.

There are doubtless many others who have purchased bogus diplomas, but I have as yet only found out the above cases.

I have, etc.,
(Signed) WM. WYNDHAM,
Her Majesty's Consul.

The Secretary of State,
Foreign Office.

"*" None of the persons whose names are given above are registered practitioners.

Dr. MACALISTER thought it desirable that the fullest publicity should be given to these communications, so that persons corresponding to the names contained therein should be made aware of the Council's action in the matter.

Mr. TOMES reminded the Council that the institution referred to was under a *mandamus* which was obtained by the Attorney-General of the State of Illinois to prevent their issuing these so-called diplomas, but the case had not yet been tried.

The motion was carried.

Dr. GLOVER, in moving—

That the President be requested to thank the Secretary for Foreign Affairs for transmitting to the Council the foregoing communication regarding the sale at Chicago of false American diplomas, and to ask that the Council may be informed as to the result of the proceedings against "Dr. Armstrong" and his associates,

said he thought great credit was due to the doctors of Chicago and the United States that by their vigilance they had exposed a fraud with which the Council was not unacquainted in this country, and with which it had found great difficulty in dealing.

Dr. ATTHILL seconded the motion, which was agreed to.

EXEMPTION OF CANDIDATES FROM SUBJECTS OF EXAMINATION.

Dr. MACALISTER moved:

That the report by the Registrar in regard to the following resolution passed by the General Medical Council on May 30th, 1900:

"That the Registrar be instructed to inquire of the various Examining Boards what evidence they require to be produced by candidates who claim to be exempted from examination in particular subjects on the ground that they have already passed in these subjects before other licensing bodies,"

be received and entered as an appendix to the Minutes.

Mr. BRYANT seconded the motion.

Mr. VICTOR HORSLEY thought the information which the Education Committee had collected exhibited a dreadful state of affairs in relation to medical examination in this country. He directed attention to the statement in the report with regard to the Conjoint Board of the Royal Colleges of Physicians and Surgeons of England, that the foreign "degree itself is accepted as evidence that the earlier examinations have been passed." In Germany the degree did not entitle the holder to practise, and if it was not good enough for Germany, he was of opinion it was not good enough for Great Britain. The whole question of exemption should be gone into by the Council. He could not see why there should be permission to any licensing body to accept persons who came with the diplomas unless the exemption was to be universal.

Sir DYCE DUCKWORTH thought it was only fair to the Conjoint Board to say that great care was exercised as to the curriculum of study, and in all cases the candidate had to pass the final examination. It was only in the preliminary subjects that he was exempted.

Mr. BRYANT said that it was not a question of a degree; it was a question whether the curriculum which led up to the degree at all answered the requirements of the Board. If it did it was accepted, and if not it was not.

Sir JOHN TUKE fully endorsed the remarks of Sir Dyce Duckworth.

Dr. MACALISTER said that in Germany a man who had got his M.D. from his university had to go through a Final or State Examination before he was allowed to practise.

Sir WILLIAM THOMSON wished to know whether the subjects were identical with those required by the Conjoint Board, or whether they came into a sort of general estimate by saying: That is a very good examination, and the man who has passed it ought to be accepted?

Mr. BRYANT replied that they were equivalent. As a rule it was not enough for students to say they had passed in certain subjects, but the curriculum which they had passed through and the practical work which they had done were actually ascertained, and the receipt, as it were, taken of the attendances at the course of lectures.

After some further discussion, in which Dr. MCVAIL, Dr. ATTHILL, Dr. BENNETT, and Dr. MACALISTER took part, the resolution was carried.

Mr VICTOR HORSLEY moved:

That a schedule of the universities or licensing bodies recognised for purposes of exemption from examination be obtained from each licensing body.

He thought information should be obtained as to what universities abroad any licensing body recognised. He hoped that when the report came up the representatives of those bodies which did grant exemption would be in a position to inform the Council what was the nature of the inquiries by

which they had satisfied themselves that the foreign bodies ought to be accepted by the Council. That was the point. It was not merely a question of the licensing bodies accepting these foreign certificates; but the question was, Was the Council going to accept them? At present it was made indirectly to accept them by the action of the licensing bodies.

Sir DYCE DUCKWORTH considered that these were matters for the local bodies, and not for the Council.

Sir W. THOMSON thought the motion was an extremely fair one. The matter affected the Council largely, and it also affected the *Register* largely. At present it was perfectly possible, by a process of which they knew nothing, that gentlemen who belonged to universities which perhaps the Council might not recognise at all, could come through licensing bodies in this country, and get on the *Register*. If certain graduates were to be admitted from bodies throughout the country to degrees or diplomas, they might come in through what he ventured to call the back door, for which the licensing bodies were responsible, and over which the Council, who were the custodians of the *Register*, had no control. Having regard to the duties of the Council, he thought it was only reasonable for them to ask for particulars as to the way in which these matters were conducted, so that they might be able to judge whether they were done properly.

Sir JOHN BATTY TUKE was of opinion that it was useless asking a body "What foreign bodies would you accept?" because that was what it came to. The fact was there were none accepted except upon individual inquiries made as to the particular body. He thought it would be perfectly fair for the Council to ask the various bodies what foreign universities or bodies they had accepted within the last five or ten years, and that he thought would meet what was required.

In reply to Dr. ATTHILL, Sir JOHN TUKE said he thought that might be done in respect of any examination for which they were in any way responsible.

The motion was then put to the meeting; 12 voted for it and 12 against.

The PRESIDENT stated that as the casting vote lay with him he should carry out his rule, which was the rule in all properly conducted public meetings—namely, to give his vote for things remaining as they were.

Mr. GEORGE BROWN asked that the names might be taken, when 12 voted for, 12 against, and 6 did not vote.

Mr. VICTOR HORSLEY wished to ask the representatives of the Conjoint Board in England whether it was true, as stated in the tables they had previously had before them, that in the years 1897 and 1898 there were no exemptions whatever granted to candidates who came up for qualification before the Conjoint Board in England.

Sir DYCE DUCKWORTH asked that notice might be given of the question.

DENTAL BUSINESS.

Dr. MACALISTER moved:

That the report from the Executive Committee on Dental Business transacted by it since the last session of the Council, as printed in the programme of business, be received and entered on the Minutes.

Mr. TOMES seconded, and the resolution was carried.

The Council rose at 4 o'clock to enable the various Committees to complete their reports.

Sir WILLIAM THOMSON in the Chair.

Wednesday, November 28th.

THE Minutes of the proceedings of the previous day were read and confirmed.

CURRICULUM FOR THE D.P.H.

The first business was to receive a Report from the Public Health Committee arising out of the Report presented to the Council on December 5th, 1899, on the apparent diversities of interpretation given to the regulations of the Council as regards the course of study for a Diploma in Public Health, which, by the direction of the General Medical Council, was transmitted to the licensing bodies for their observations.

Mr. TEALE, in moving that the Report be received and entered on the Minutes, said that the position of the Public Health diploma was that by the Act of 1858, only certain diplomas or licences in Schedule A of that Act could be entered on the *Register*. By the Act of 1886 this was altered, and the words were substituted in Section LXXI "if such diploma appears to the Privy Council or to the General Medical Council to deserve recognition in the *Medical Register*." That had been deemed to be, and had been acted on as being, a power given to the General Medical Council for the regulations which it had not deemed itself to possess in reference to diplomas under the Act of 1858. This new condition to register certain diplomas had been made a matter of great importance, and the diplomas had been of greater value to the recipients by the rule of the Local Government Board, which he presumed was in force now, that no medical officer of health should be appointed to a district of 50,000 population unless he held such a diploma. On looking through the Minutes sanitary science was spoken of and then State medicine. Then in 1895 a Public Health Committee was appointed, and in 1896 rules were adopted which were now in force. In May, 1890, Sir William Gairdner called attention to the apparent diversities of interpretation in different places which were given to the regulations of the Council as regards the course of study or diplomas in Public Health, and it was then agreed that the consideration of the subject should be remitted to the Public Health Committee. In November of that same year an interim report was presented to the Council, with the replies of the various licensing bodies, and a further report was made, and Sir Richard Thorne—whose absence and loss they all very deeply deplored, as he had this matter so thoroughly in hand and guided them to so great an extent—presented a report to the Public Health Committee. In that report there was incidentally raised a matter which was rather more fully gone into in the present report—namely, the case of candidates who held official positions under the Secretaries of State for War, for India, and the Colonies. It appeared there were three points which had to be very much considered. Should the laboratory work and practical work overlap? Were the opportunities of teaching by medical officers of health adequate? Should any relaxation of rules be made to meet the cases of Indian and Colonial medical men? The Committee, in considering these various reports and the possibility of an adequate practical teaching, and also the question of whether anything could be done to meet the needs of Colonial practitioners and those employed by State departments, without reducing either the education or the value of the diploma, had come to the conclusion that it might be done by dividing the candidates into two classes—namely, seniors and juniors; that from the the juniors they should require everything such a diploma demanded, and that the seniors should be men of over ten years' qualification. It might be said that they were letting down the diploma. To his mind, that was not so. There was a great difference between men of ten years' experience in practice and with their experience of the world, and men without that experience. He felt, and his colleagues also felt, that it was a great question whether it was desirable by their action to restrict too much the sanitary part of the profession to men who were at once specialists in the matter; that was to say, to divorce from it too much men who had had to deal and come in contact with such things in private practice, and who had gained experience which would be useful to them in taking up their diploma.

Dr. BRUCE seconded the resolution.

Sir JOHN TUKE moved that the report of the Public Health Committee be recommitted. He thought it right to say that in doing this he was acting as a member of the Council who perhaps had had more to do with this question and the form of the regulations than anyone then present. He acted eleven years ago with Sir John Simon and Sir John Struthers, and the general results of their deliberations had been settled by the Council through the various reports which had been submitted to it. The proposal now made would lower the general tone of education and of examination. He was very sorry that this report had only been in his hands and in the hands of the Council within the last two or three hours, for it had not given them the opportunity of examining the considerable mass of literature which was contained in the various reports submitted to the Council during the last eleven years. He should like to have had the opportunity of looking over those provisions, and extracting from them certain statements and

expressions which he thought might have had considerable weight with the Council. Mr. Teale had alluded to the clauses in the Acts which had given exceptional powers to this Council over Public Health diplomas which differed very materially from those which they exercised over professional education, examination, and registration. Reading the clauses of the Medical Act and the clauses of the Local Government Act together, he regarded the Council's responsibility in respect of the Public Health diplomas as peculiarly important, and the Council had always kept that in view in the regulations that it had sent out. The present rules laid down that the kind of education or examination was to be such as to ensure, in the judgment of the Council, the possession of a distinctly high proficiency, scientific and practical, in all the branches of study concerning public health. In point of fact, the expression that had been often used with regard to this examination was that it should be conducted on an honours level. One question he should like to ask was, Who asked for any change in the rules? They were told that the request came from the departments of the Government in order to allow officers abroad to obtain these diplomas. If the Government were desirous of bringing that about, the simple way would be for them to grant the men study leave. They all knew with respect to medical officers that one of the great grievances of the service was that study leave was not granted. He would point out that the various licensing bodies had not asked for this, and when the question had been submitted to them by their Committee they had not agreed to any serious change in the method of examination or of instruction; in fact, all the bodies were opposed to it, and he certainly thought it was a singularly new feature in the deliberations of this Council when they found that the bodies were asking for the maintenance of a high certificate of education, and their Council were endeavouring to lower it. This was simply a desire that Colonial and military officers should be enabled to take these qualifications, and therefore they were asked to reduce the qualifications which had been required for medical officers of health to suit such a purpose. There certainly was no call for it, because, according to last year's *Register*, 150 men had been granted their diplomas, which was five times more than was necessary for the necessities of Great Britain and Ireland. He thought the original desire of the Legislature was that this examination should be of a very high order. The Council had endeavoured to meet that wish, and he thought it would be a sad thing, for the reasons which he had assigned, that they should break down the work which had been done during the last ten years.

Dr. Glover seconded.

Sir Christopher Nixon thought it was a very unfortunate thing that such a report as this should not have been in the hands of members of the Council for some time longer than it had been, so as to have enabled them to consider it fully. He ventured to throw out the suggestion that, with regard to important reports such as the present, it would be very desirable that the members had a longer opportunity of considering them than had been afforded them on this occasion. He thought that any conclusion as to the Public Health regulations and requirements should be final; time should be taken thoroughly to consider the matter. When the regulations were sent to the Royal University considerable difficulty was expressed in interpreting what were the wishes of the Council with regard to these regulations, and it was only after some correspondence that they ascertained what the regulations really meant. There ought to be a very high standard of curriculum and a high standard of examination. He was amazed when he read the earlier pages of the present report at the idea suggested by the questions that were sent to the various examining bodies with regard to the reduction of the curriculum and the reduction of the examination, but he was proportionately pleased when he saw by the final part of the report that after all the standard was fairly maintained. He was not prepared to take so extreme a step as to refer the report back to the Committee, because he thought the Council were in a position to suggest amendments which would be desirable. The Council would be able to deal with such amendments as were thought necessary.

Dr. McVail thought the proper course to adopt was to enter the report on the minutes and then discuss it in detail. If it were then sent back the Committee would have the advantage of hearing what the members had to say on the subject; but to send it back in the brusque way which was proposed without any indication whatever on the point in which it was deficient, he thought was an extraordinary proposal. The report did not suggest a different examination for candidates of under ten years' standing to those of over ten years. It was only the curriculum which was to be somewhat different. They had not lowered but had lifted and had elevated the course, and he held that the report was in every way worthy to be received by the Council and entered on the minutes.

Sir William Gairdner said that the representation on which he proceeded in bringing the matter before the Council in the first instance came from Dr. Russell, who was the excellent Medical Officer of Glasgow, and who was now the Medical Officer of the Local Government Board in Edinburgh. The representation mainly bore on the part of the report which referred to the study under the medical officer of health. Dr. Russell pointed out that there was really nothing like a uniform practice, and that the differences were so great, in reference to the somewhat rigid methods followed in Glasgow, that the practice in other quarters was nothing less than a perfect sham. He did not use those exact words, but that was what was meant. He further said that it was impossible in the administration of a public health department to give efficient instruction in public health unless the men were free to be able to come to him from day to day, and practically to put the whole of their time at his disposal. Under the present system, or rather no system, the temptation in regard to persons coming from India and wanting to acquire a Public Health diploma, was to scamp the work in various ways, and unless the General Medical Council dealt with the matter with a firm hand the result would be no continuity, no system, no instruction at all. He (Dr. Russell) only spoke of his own department. It was on this representation to the General Medical Council that the Committee took it in hand, and he thought he was free to say, now that his own mouth was no longer able to testify to it, that he did so in the face of a very strong feeling on the part of Sir Richard Thorne that the subject was a most difficult one, and one that he would much rather be excused from touching. At the same time, after looking into the matter carefully, he confessed that the need of it was very great. Their first report was made in 1898, and was to be found in Volume xxxv, and in that report it was agreed that it was not necessary that the whole of a full period of six months should be given to the study of outdoor sanitary work. The Committee had gone into more than was contemplated in the original proposal, but he was not prepared to say that they had not been necessarily led there. He must support Sir John Tuke's amendment, because the more he looked at the matter the more unsatisfactory appeared to him the state in which the Committee had left it. Of course the whole thing was a matter of very considerable difficulty. They had first to determine what constituted laboratory instruction, who was to take it, and for what times and with what amount of attention, and whether it was to be conducted continuously or not. The University of Glasgow had given the greatest attention to try and avoid all the difficulties that Sir Richard Thorne had anticipated, and to see if they could not at the same time give something like form and continuity to the instructions of the General Medical Council. In the first place, they recognised that under certain circumstances a portion of the laboratory instruction might be taken during the earlier period of the medical man's training, provided he was training for a degree in science and was under a person who had obtained a diploma. They thought under those circumstances a portion of laboratory instruction might be accepted *pro tanto*, provided it was properly conducted in a proper laboratory. In the second place, they thought that three months of tutelage under medical officers of health would be sufficient, provided that three months was given continuously from day to day unencumbered with other work, but in the event of its being encumbered with laboratory work they would then stipulate for six months. Then they had a further recommendation, that a medical officer who was prepared to take pupils in the way prescribed should send in a sort of

synopsis of the instruction given. He did not think that these things had been properly attended to by the present Committee, and he therefore supported the suggestion that that the report should be remitted to them.

Dr. BRUCE thought that Sir John Tuke should have allowed the report to go on the Minutes and then discuss it. He distinctly repudiated any imputation of reducing the instruction. The report did not reduce, but, on the contrary, rather increased the restrictions.

Dr. GLOVER, as the seconder of the motion, felt very strongly with Sir Christopher Nixon that the constant occurrence of discussions on important questions like the present were most unsatisfactory, and he saw no sufficient justification, after the discussion that had taken place, for the revival or resuscitation of the question after the immense labour and pains which had been spent upon it by the Council. He thought, in the face of the experience and the calamities from enteric and other diseases in South Africa, that the present was an unfortunate moment for the Council to reduce the character of the examinations in the case of Colonial candidates. He thought also it was an unusual course for the Council to divide candidates into two classes. Further, the supply was ample to meet the demand. Therefore he, with no disrespect to the Committee, had seconded Sir John Tuke's proposal.

Mr. GEORGE BROWN said that at first he was inclined to support Sir John Tuke that the report should be referred back, because it was very undesirable that any relaxation should be made in their regulations for the attainment of a scientific qualification; but, after the speech of Dr. McVail, he had changed his view.

Dr. MACALISTER was anxious before the report was entered as a permanent record on their Minutes to correct what he regarded as a great oversight in it, and for that reason he would support Sir John Tuke's motion. They had heard for the first time from Mr. Teale the reason at the back of all this, namely, that there had been certain applications from the Colonial Office, the War Office, and the India Office for special exemptions to be made with regard to their candidates, but in the report there was only a meagre reference to an old volume of Minutes, and at the conclusion of the report there was absolutely nothing limiting such relaxation to the Colonial and army candidates. He thought it was most desirable that the Committee should have an opportunity of expanding their report on those two particular subjects.

The PRESIDENT would like to call the attention of the Council to the fact, although he wished Sir George Philipson would correct him if he was wrong, that originally the University of Durham established two classes of certificates in Public Health. The retention of this was most strongly objected to by the Council. The University of Durham very properly recognised the importance of the objection, and it unified its system so that it had no longer two classes of certificates. He wanted to point out to the Council that the Council had on former occasions objected to two grades or classes in the same institution.

Dr. MCVAIL hoped that that did not amount to an expression of opinion on the part of the President that the present report suggested two grades. It did not, because the examinations were the same.

The PRESIDENT replied that it was the curriculum of study.

Dr. MCVAIL agreed, but said the Committee gave their reasons for it. The Council did not contemplate any difference in stringency or any difference in the value of the diplomas.

Mr. YOUNG asked whether the Health Committee had with full deliberation and with full appreciation of the meaning of it removed the instruction in infectious diseases from the study required by the senior candidates, because if it were so, senior candidates might become officers of health who had never receive instruction or acquired any experience in infectious diseases.

Mr. TEALE replied that Clause 3 was an addition to their old rules, but he was quite willing to add what had been suggested to their requirements.

Dr. PYE-SMITH suggested that it would be better to come to some decision before they had the general question put before them. If they came to a decision as to Sir John Tuke's resolution they could either dispose of the thing altogether or proceed with the report and amend it if necessary.

The PRESIDENT, having put the amendment to the meeting, declared that it was lost.

On the motion of Mr. TEALE, seconded by Dr. MCVAIL, the Council went into Committee for consideration of the draft rules.

On the motion of Mr. TEALE, seconded by Dr. MCVAIL, draft Rule I was approved.

Rule I.—A period of not less than twelve months shall elapse between attainment of a registrable qualification in Medicine, Surgery, and Midwifery and the admission of the candidate to any examination, or any part thereof, for a diploma in Sanitary Science, Public Health, or State Medicine.

Mr. TEALE moved that Rule II be approved as follows:

Rule II. Candidates shall be separated into two classes—Juniors and Seniors.

Juniors to be candidates in regard to whom ten years have not elapsed since attainment of their registrable qualification.

Seniors to be candidates who have possessed a registrable qualification for ten years.

The PRESIDENT inquired whether better words than "senior and junior" could not be found.

Dr. MCVAIL, speaking on behalf of the Committee, would not make any suggestions at that moment; he simply seconded the motion.

Sir WILLIAM THOMSON thought the Council had no right to set up a new principle to govern its action and to establish different curricula in a particular qualifying examination; it was not right for the Council to give differentiating qualifications in this important branch of medical study. He had had recently the opportunity of seeing the importance of a sufficient knowledge of Public Health, and he for one objected to giving any gentleman who happened to have been in practice for ten years a different curriculum to a man who was going to obtain his qualification in Public Health practically immediately after he was qualified in medicine. What proof had the Council that during the ten years spent in practice the candidate had given any attention to the public health? He had seen that principle in operation, and he knew where it had led; therefore, having that personal knowledge, he was certainly not going to vote for any proposal that would establish as an act of the Council that there was to be any difference in the curriculum or in the standard.

Mr. TEALE expressed his willingness to withdraw his resolution for the time being.

Dr. MCVAIL agreed, and it was by leave withdrawn.

Dr. MACALISTER, replying to the PRESIDENT, said he thought it would be important at once to decide whether there was to be any difference in the course of study required of the student, and he therefore moved:

That a difference be made in the course of study of practitioners under and practitioners over ten years' standing.

Dr. PETTIGREW seconded.

Dr. MCVAIL, as a way out of the difficulty, then moved that the words "junior candidates" be omitted.

Dr. BRUCE seconded the amendment.

Dr. MACALISTER pointed out that if the Council passed all the regulations without the word "junior," and afterwards decided to make no difference in regard to the senior, the requirements of the senior would be a great deal harder than they were at present, and the intention of the Council would be frustrated.

Dr. MCVAIL having pointed out that the question of the senior candidates would come up in due course, Dr. MACALISTER withdrew his motion in favour of the amendment, which was then put and carried.

Mr. TEALE then moved:

Rule III (1).—Every candidate shall have produced evidence of having, after obtaining a registrable qualification, attended during six months practical instruction in a laboratory or laboratories, British or foreign, approved by the body granting the diploma, in which Chemistry, Bacteriology, and the Pathology of Diseases of Animals transmissible to Man are taught.

Dr. MCVAIL seconded.

Sir CHRISTOPHER NIXON asked what was meant by practical instruction in "Diseases of Animals transmissible to Man." Did it mean a mere set course of lectures, or did it mean practical demonstration in the laboratory? The regulations ought to be perfectly clear and definite in order to secure uniformity of teaching.

Dr. Atthill thought that the regulation looked very nice on paper, but that it was impossible to carry it out.

Dr. Bruce thought there was no such difficulty as had been suggested; the pathology of these diseases could easily be taught in the laboratory.

The motion was then agreed to.

Mr. Teale then moved:

Rule III (2). Every candidate shall have produced evidence that after obtaining a registrable qualification he has during six months, other and separate from the like period employed in laboratory work as required under (1), been associated day by day in the duty, routine and special, of Public Health administration such as is exercised.

In reply to the President, he proposed, consequent upon the express wish of the Council with regard to the senior requirements, to deal with the preamble first, and incorporate and modify it in order to meet the suggestions which have been made. The principal alteration was in making it compulsory that the six months' laboratory work should be distinct from the six months with a medical officer of health; the Committee, after inquiry, had come to the conclusion that the Council would be justified in requiring two distinct periods for these candidates.

Sir John Tuke seconded the original form in the draft of the regulation, which Mr. Teale said he would adhere to.

The President suggested that the word "every" should be struck out, and that the word "candidate" should be in the plural, which he thought would get over the difficulty.

Sir William Thomson thought that this would not alter the preamble in any way.

Dr. MacAlister did not see the advantage of requiring the two courses to be separate. He thought the Committee was little doctrinaire on the subject; in his opinion the two branches of study might well be concurrent. He did not see why they should artificially separate them and say one should be taken in the morning of the first six months and the other in the afternoon of the last six months of the year.

Dr. Atthill said he would be prepared to second an amendment to that effect, because it would induce a larger number of men to take this qualification. He entirely agreed with Dr. MacAlister that to insist on the courses being taken separately would be foolish.

Sir William Gairdner said that Dr. Russell held that the medical officer of health should have the whole time of his pupil. That was the view of a practical man, and therefore it had suggested an alternative of three months' sanitary administration work, provided the whole time was given to it, or six months if it was not taken separately.

Mr. George Brown thought it was desirable to make a compromise, and that three months of the course might run concurrently, and the other three months not concurrently.

Mr. Victor Horsley supported the suggestion that the three months' work in the laboratory might be taken first, and the rest of the three months concurrently with the other work.

Mr. W. H. Power thought that plan would answer the purpose, but it was necessary that the candidates should be there day by day, morning, noon, and night, through the whole course. Six months would be better if it could be insisted upon.

Dr. MacAlister moved to insert after the word "qualification":

That they have, during six months of which at least three months shall be distinct and separate from the period devoted to laboratory work under Regulation 1, been associated day by day in the duty, routine, and special, of Public Health administration, such as is exercised.

Replying to Sir Christopher Nixon, he said that three months' laboratory course should be separate from the outdoor course which should be the second three months.

Mr. Victor Horsley thought it desirable that a man should be at liberty to commence his outdoor work concurrently with the last part of his laboratory period.

Mr. Teale said he would accept Dr. MacAlister's amendment in place of his resolution, because he thought it an improvement on it. Permission was then given by the Council to substitute the amendment for the motion.

Dr. MacAlister suggested the substitution of the words "under the supervision of" in place of the words "such as is exercised."

Mr. Teale having adopted the suggestion, the resolution was put as modified, and carried.

Mr. Teale moved and Dr. Bruce seconded:

Rule III (2).—(A) In England and Wales the medical officer of health of a county or of a single sanitary district having a population of 50,000, or a medical officer of health giving his whole time to public work,

which was carried, as was also Rule III (2) (B), modified as follows:

(B) In Scotland a medical officer of health of a county or counties, or of one or more sanitary districts having a population of 30,000.

Mr. Teale then moved and Dr. Bruce seconded:

Rule III (2).—(C) In Ireland by a medical superintendent officer of health of a district or districts having a population of 30,000.

Sir Christopher Nixon observed that the regulations with regard to the medical officer of health in Ireland were not the same as they were in England and Scotland. There were not many men in Ireland having control of a population of 30,000, and it might happen that an efficient and distinguished medical officer, having a population under that number, although he might be a suitable man to give instruction in this department, would not be able to do so. He thought the Council might safely give to the College of Physicians in Ireland the privilege of determining what officers should be competent to give instruction. He moved that after the word "or" there be inserted "such persons as are recommended by the licensing body."

Dr. MacAlister did not see why this should be given to Ireland and not to Scotland.

Sir John Tuke pointed out that there were at least three districts in Ireland with a population of 30,000 and upwards, which was quite sufficient for the fourteen men who were passed in that subject by the College.

Dr. Atthill seconded the amendment. The standard of population would seriously limit the possibility of obtaining proper instruction in Ireland. Actual numbers did not necessarily test the skill of the teacher or the amount of work actually done. There were places of very large population where there was little or no sanitary work going on, and at the present time in Ireland there were several towns having a population of less than 30,000, in which the necessary sanitary works were being carried on.

Dr. Pettigrew stated that the Committee had found on inquiry that there were not many men in Ireland who could give the necessary instruction, but at any time there might be more when districts were formed which had medical officers.

The President thought, as the amendment was really an addition to the original motion, that it had better be put first, and Sir Christopher Nixon's amendment afterwards. The motion was then put and carried. The amendment was then put and was lost.

On the motion of Mr. Teale, seconded by Dr. Bruce, the following subclauses were adopted:

Rule III (2).—(*d*) By a medical officer of health who is also a teacher in the department of Public Health of a recognised medical school.

Rule III (2).—(*e*) The certificate of an assistant medical officer of health of a county or of a sanitary district of 50,000 population may be accepted, provided the medical officer of health of the county or district permits the assistant officer to give such instruction.

At this point, on the motion of Dr. MacAlister, seconded by Mr. Bryant, the Standing Orders were suspended until the subject under discussion was disposed of.

Mr. Teale moved:

Rule III (3).—(3) Every candidate shall produce evidence that, after obtaining a registrable qualification, he has, during three months, practically observed and studied the clinical and administrative work pertaining to the medical superintendence of a hospital for infectious diseases. The three months devoted to study in this sense may be concurrent with the administrative work referred to under Section (2), but not with the laboratory work of Section (1).

The rule would ensure that everyone who was going to be a medical officer of health should have the necessary training to practise—a knowledge of the diagnosis of infectious diseases and the knowledge of the administrative work of a medical officer of health in connection with the working of an infectious diseases hospital.

Dr. McVail seconded the motion, as it was a great advantage that every medical officer of health should be in a position to take charge at once of an infectious disease hospital.

Dr. Atthill moved and Sir Christopher Nixon seconded that the words "administrative" be omitted.

Sir WILLIAM THOMSON thought the rule was absolutely unworkable.

Dr. MACALISTER was of opinion that the Council would do better to go back to the original rule, and, after a long discussion, he moved as an amendment:

Every candidate shall produce evidence that, after obtaining a registrable qualification, he has attended during three months the practice of a hospital for infectious diseases at which opportunities were afforded for the study of methods of administration.

This was seconded by Mr. YOUNG, and carried by 17 to 6.

At the request of Dr. MCVAIL the names and numbers were taken down.

The amendment was then put as a substantive resolution and agreed to.

Mr. TEALE then by leave of the Council withdrew the proposals of the Public Health Committee in regard to senior students.

The Council then adjourned.

SPECIAL CORRESPONDENCE.

BRISTOL.

Annual Dinner of the Medical School.—Marine Ambulance Corps.

THE annual dinner of the Medical School was held at the Royal Hotel on November 21st. The chair was taken by Dr. Shingleton Smith, and the guest of the evening was Sir William Broadbent. There was a very full gathering of past and present students, and a large number of medical men interested in the welfare of the school were also present. The proceedings passed off in the most pleasant manner, and were accompanied with less noise than has been heard in former years. The speeches were up to, the singing perhaps a little above, the average, while certain remarks of the chairman were worth repeating—namely, that with the wealth of clinical material at the service of the Bristol medical student he should be able to gather more practical experience and knowledge than those who studied in hospitals of fewer beds and smaller out-patient connection than the Royal Infirmary, General Hospital, Eye Hospital, and Children's Hospital. Sir William Broadbent, in proposing the toast of "The Bristol Medical School," said that he felt much sympathy with it and wished well to the school. Its incorporation into University College was but a stepping-stone to a Bristol University. Dr. Markham Skerritt, who replied for the Medical School, said that he hoped that Bristol would follow in the steps of Birmingham, which had taken time by the forelock and had constituted its University at a time when a race had not yet arisen which knew not Joseph. He thanked Sir William Broadbent for coming among them and speaking in such kind terms of University College. Dr. Ogilvy then proposed the toast of "The Past and Present Students," Dr. Weatherly and Mr. Corfield responding. This was followed by the toast of "The President," which was proposed by Dr. Doyne, and to which Dr. Shingleton Smith replied. A warm welcome was given to the returned members of the Princess Christian Hospital, which, it will be remembered, was given by a native of Bristol, and largely manned—and partly "womaned"—by citizens of Bristol. Sir William Broadbent, before the dinner, made a tour of the Medical School and some of the medical charitable institutions.

To render first aid in the numberless small and at times big accidents that occur about the docks and riverside, a Marine Ambulance Corps has been formed, and the members have already found abundant opportunities for a practical application of their knowledge. The corps consists of about thirty men all employed in riverside work, and thus constantly on the spot where accidents of all kinds may happen. One of the rules is that only holders of the St. John Ambulance first aid certificates are admitted as members, while to retain membership every individual must offer himself and pass the examination every year. In order to have appliances for stretchers, splints, etc., large boxes, painted a conspicuous red colour, are being placed by permission of the Docks Committee at various stations on the harbour side, but as yet the funds have not allowed of more than three being erected. It is hoped finally to have as many as nine or ten. As well as attending the first aid lectures, the men are drilled regularly once a week by a naval instructor late of H.M.S. *Dædalus* in stretcher and other drill under the supervision of the medical officer. Since the formation of the corps over 100 accidents have been attended to by the men. A neat serviceable uniform of a naval character has been adopted, the men, as far as their means allow, assisting in paying for it. By the summer it is expected that the corps will number nearly 100 men. This is the first marine ambulance corps started in the kingdom, and the example may well be copied by other seaport towns.

BELFAST.

Annual Dinner of the Ulster Medical Society.—Belfast Board of Guardians: New Buildings.—Dr. O'Neill's Report on the Housing of the Working Class.

AT the annual dinner of the Ulster Medical Society on November 24th, the President, Dr. Thompson, Dunville Professor of Physiology, occupied the chair. The loyal toast of "The Queen" was felicitously proposed by the President. Dr. J. Walton Browne proposed "The Navy, Army, and Reserve Forces," which was acknowledged by Lieutenant-Colonel Thomsett, R.A.M.C. Professor Symington proposed "The City and Trade of Belfast," and referred to the duty of city authorities to support original research, especially when the results were applicable to hygiene; he gave as an illustration the inestimable value bacteriology had been proved to be in the recent threatened spread of plague in Glasgow. The Lord Mayor responded, and said that 7 of the 16 members of the Health Committee were medical men, so that a large amount of the responsibility as to the health of Belfast rested directly and indirectly with the profession. Professor Rubert Boyce proposed "The Queen's College and Belfast Medical Schools." Referring to the inadequate endowments and to the scanty private support received by the College, he said that civic authorities and philanthropists were recognising the value of bacteriology, and mentioned the support he received in Liverpool. The Rev. Dr. Hamilton (President of Queen's College) and Professor Sinclair responded, dwelling upon the number of junior posts which were being created in both College and Hospital to give every opportunity to the most successful graduates to fall into work at once after receiving their degrees. "The British Medical Association" was proposed by Dr. McKeown, who emphasised the importance of adhering to broad principles in dealing with education. Professor Byers, President of the North of Ireland Branch, responded, and said that no effort was being spared to make the British Medical Association as representative of the profession as possible, and to meet in every possible way the justifiable demands made on it. Dr. Calwell proposed "The Ulster Medical Society and its President," and expressed the great pleasure it gave the profession in Belfast to do honour to one who was distinguished as a physiologist, a teacher, and a friend. Dr. Thompson replied. Dr. Colville proposed "The Honorary Secretary, Dr. Robert Campbell."

On the recommendation of the Infirmary Committee the Belfast Board of Guardians have resolved to construct a new nurses' home to accommodate 150 nurses. The present home, when no longer required as such, will be converted into a children's hospital. A new laundry is to be built, and the proposed addition to the infirmary is to be proceeded with at once. From Mr. Agnew's last report it is evident that numerous and important alterations in the building are required; whether those now proposed will prove the most economical and satisfactory in view of all circumstances only the future can decide.

Dr. O'Neill presented his report to the Public Health Committee on the Housing of the Working or Weekly Wage-earning Classes. The report gives a short account of some of the debates and resolutions in the conferences held in London at the end of July, and of the Congress of Hygiene and Demography held in Paris in August. There is much valuable information in this report, and valuable recommendations are made, but in face of the present state of the city finances and of the apathy that exists, not merely amongst a large number of the citizens, but even in the City Council, it

is feared they constitute a counsel of perfection. As regards public hygiene based on scientific principles, the motto of most urban authorities seems to be *Festina lente*, with the emphasis on the second word.

CORRESPONDENCE.

OUR WIDOWS AND ORPHANS.

Sir,—I was glad to see, in the British Medical Journal for November 17th, a letter from Mr. Christopher Heath, pointing out the advantages of joining, early in life, the Society for the Relief of Widows and Orphans of Medical Men.

Will you allow me, as one of the directors, and therefore as being acquainted with the working of the Society, to echo the President's appeal, and to urge those of my younger brethren who are still at one of the London hospitals, or who have recently commenced the practice of their profession within the prescribed radius of 20 miles from Charing Cross, to become members? With this object I should like to mention but one out of many cases that might be quoted. I will select the case to which Mr. Heath happened to allude in his letter. It occurred only the other day, and will answer my purpose as well as any other.

A medical practitioner who joined the Society in 1891 died in March of the present year in Australia from the effects of an accident. His widow, who, after paying all the debts, found that the only provision for herself and her seven children was an insurance of £500, came home to this country not knowing what she was to do, or which way to turn. The ages of the children ranged from a few months to 12 years. Knowing that her husband had subscribed to this Society, she made inquiries, and was advised to lay her case before the directors. The facts of the case were investigated, and, to her surprise and joy, she had allotted to her a grant for herself at the rate of £50 per annum, and a grant at the rate of £10 per annum for each of the five eldest children, making a total of £100 per annum. In addition to this, she will receive from the Society a Christmas present of £25. The total amount her husband had paid in subscriptions was 19 guineas. Could there be a more striking illustration of the benefits that may accrue from belonging to this Society?

The two-guinea subscription is an investment to which it would be difficult to find a rival. It ensures—and only think what a comfortable reflection this is for a beginner!—substantial help for the widow and children in case of premature decease, and, in the event of the subscriber being able to leave his family sufficiently well off not to need help from outside, the money goes to the relief of others less fortunately situated, and the annual subscription becomes one of the most admirable and deserving forms of charity to which a medical man can be called upon to contribute—a charity in the benefits of which only the thrifty can participate.

The Society is worked at an almost absurdly small expense (most of its officers, including its solicitor, being unpaid), and its invested capital amounted on May 1st, 1900, to £97,687. Its financial soundness is therefore beyond question. Last year its total receipts available for payments were £3,353, and as its expenses were considerably below £250, it was able to make grants during the year to the extent of over £3,000.

Anyone who is sufficiently interested to desire further information may obtain it by writing to the Secretary, Mr. J. B. Blackett, 11, Chandos Street, Cavendish Square, W., who will also be glad to furnish forms of application.—I am, etc.,

Charles J. Cullingworth.

Manchester Square, W., Nov. 26th.

THE SEX OF PATIENTS SUFFERING FROM GASTRIC ULCER.

Sir,—In the discussion On the Problems of Gastric Ulcer which took place at Ipswich during the last annual meeting, Dr. Pye-Smith stated that the *post-mortem* records of Guy's Hospital show a much more equal distribution between the two sexes at different ages than is generally believed to be the case. I ventured to express doubt as to the correctness of this conclusion, and Dr. Pye-Smith most courteously admitted that the larger statistics published by Welch did not support his view. I notice that in the *Lancet* of November 10th, Mr. Hume, of Newcastle-on-Tyne, reports 11 operations of perforated gastric ulcer all of which occurred in women. During the last six years 15 cases of gastric ulcer have been sent to the *post-mortem* room at the General Hospital; of these 11 were males and 4 females, a proportion of nearly 3 to 1.

I do not know that it is worth while going further to disprove a statement which is entirely opposed to the accepted statistics and the statements of all recognised authorities. It owed its sole importance to emanating from a physician whom every one admires and respects. At the time I pledged myself to look up my own figures, and it is in order to redeem this pledge that I trouble you with these few lines.—I am, etc.,

Birmingham, Nov. 15th. Robert Saundby.

THE NEED FOR THE ENDOWMENT OF PATHOLOGY IN IRELAND.

Sir,—In the British Medical Journal of November 24th, you were kind enough to draw attention to the need of an endowment of Pathology in the Queen's Colleges in Ireland. There is one statement contained in your observations which is calculated to mislead, and which I hasten to correct—namely, you state that "in one of the Irish Colleges, which may be taken as a type, the income enjoyed by the holder of the lectureship never exceeds £220 per annum." I do not know what College is here alluded to, nor where you obtained the information, but I can assure you that the amount mentioned is much greater than I have any knowledge of.

The Lecturer on Pathology and Bacteriology in Queen's College, Cork, is appointed by the College Council, but receives no remuneration except the students' fees, which do not amount to £100 per annum; and there is no fund available from which any lecturer can be paid. I believe the condition of things in the other Queen's Colleges is practically the same. The fees in Belfast are greater, owing to the larger number of students.

In Belfast and Cork the Council of the respective Colleges have secured the services of men of high training and ability who devote their time exclusively to the study and teaching of Pathology. I have no personal knowledge of the arrangements in Galway. I need not say that as at present circumstanced they do so purely from scientific motives, as the amount of remuneration they receive is less than that of an ordinary medical assistant in England.

What we seek for is an endowment of a Chair in Pathology which will carry with it such a salary as will make it reasonably worth while for the occupant to be independent of other sources of income, as, of course, no one who devotes himself to pathology at the present day can undertake medical practice.—I am, etc.,

Cork, Nov. 27th. C. Yelverton Pearson.

THE COUNCIL OF THE MANCHESTER MEDICAL GUILD AND LECTURES TO MIDWIVES.

Sir,—In the last instalment of this discussion I see that Dr. G. H. Broadbent informs your readers that Dr. A. W. W. Lea is my "assistant." The statement, even if true, without qualification, could not serve any public object; it is evidently meant to hurt, and to imply that Dr. Lea has acted under undue influence and is practically not a free agent.

Dr. Lea's position is that of Assistant to the Professor of Obstetrics and Gynæcology in the Owens College Department of Medicine. The appointment to the office he holds is made by the Council of the College on the recommendation of the Senate. He is not dependent upon the Professor for appointment, emolument, or tenure of office. Outside the College Dr. Lea and I have no settled professional relationship whatever, except friendliness, and as everybody knows who cares to know, Dr. Lea is as independent in his private practice as any member of the Medical Guild can be.

It seemed to me that this explanation should be given, and that it would best come from me, and so I intervene most reluctantly in this discussion. Being in it, I should just like with your permission to say, if Dr. Broadbent and his colleagues in the Council of the Medical Guild would turn their intellectual faculties towards a little introspection; if they would try to see themselves as others see them; if they could

imagine the unconcern with which their impotent "resolutions" are received by men who have no respect for the judgment which dictates them; if they could then summon up a sense of human dignity, however elementary, or even a sense of humour, and influenced thereby suspend for a time their practice of stirring up strife, they might put a stop to the leakage in the membership of their society.

It has required no extraneous personal influence with members to ruin the promising career of the Medical Guild.—I am, etc.,

Manchester, Nov. 26th. W. J. SINCLAIR.

LECTURES ON MIDWIFERY TO MIDWIVES.

SIR,—The resolution of the Council of the Medical Guild on this matter has led to an interesting correspondence in your columns, but no attempt has been made to justify it. Perhaps as the proposer of the resolution I may be allowed to do so. The lectures on midwifery by registered medical practitioners to midwives ought to be discountenanced, in my opinion, for the following reasons:

1. Because they tend to the continuance of a class of midwifery practitioner, often illiterate, never instructed in the anatomy and physiology of the human body, ignorant of the principles of medicine and surgery, and consequently unable ever to become scientific practitioners of the art of midwifery.

2. Because these lectures and the inevitable certificates give a sense of safety to the general public which is absolutely misleading.

3. Because the extension of the present midwife system to its ultimate possibilities would take away from the family medical practitioners of the future the opportunity to acquire both skill and confidence in the practice of midwifery, whilst at the same time requiring them to be able and willing to undertake all those cases which the midwife might not be able to manage.

4. Because, if one or two members of the profession are to be allowed to give courses of lectures and to sign certificates of proficiency in midwifery, the same right must be conceded to all, and not only in midwifery but also in medicine and surgery.

5. Because what is wanted is not the continuance of an antiquated system of partially-equipped "midwives" acting independently, but a system of thoroughly-trained—not only lectured—midwifery nurses acting always under the more or less direct supervision of a fully-qualified medical practitioner.—I am, etc.,

Salford, Nov. 24th. R. HANSON WOLSTENHOLME.

SIR,—The principles which should actuate a medical man in the whole of his professional life ought to be of the highest. This to some may sound idealistic, but I contend that such principles ought to be inculcated more at our centres of medical education and be kept more before the eyes of practitioners. And what should be the chief aim in carrying them out but the maintenance of the honour, dignity, and interests of the profession at large?

Is it a sound ethical principle for a man to put himself forth as an unauthorised lecturer to women, to invite them to attend by advertisements in the lay press and to certify them at the finish, and to encourage them to go forth to practise on their own account independently of the supervision of legally-registered practitioners? Is it a sound principle to be manufacturing partially-educated unqualified practitioners in midwifery, when the General Medical Council has just swept away thousands of unqualified, but far and away better educated, practitioners? These are the principles which are at stake. Will Dr. John Scott deal with them?—I am, etc.,

Manchester, Nov. 24th. G. H. BROADBENT.

SIR,—With reference to Notice B. of the General Medical Council appearing in the BRITISH MEDICAL JOURNAL of November 24th:

Further, in regard to the practice known as "covering," the Council gives notice that any registered medical practitioner who by his presence, countenance, advice, assistance, or co-operation knowingly enables an unqualified or unregistered person (whether described as an assistant or otherwise) to attend or treat a patient ..... or otherwise to engage in medical practice as if the said person were duly qualified and registered, is liable .....

I ask whether this clause does not include registered medical practitioners who lecture to, examine and give diplomas to unregistered students in midwifery and massage, etc.?—I am, etc.,

Hatfield, Herts, Nov. 25th. LOVELL DRAGE.

INSURANCE COMPANIES AND FEES.

SIR,—In the numerous letters lately inserted in the BRITISH MEDICAL JOURNAL regarding the fees paid to medical men by insurance companies, I am surprised to find no mention of the preposterous regulations that one or two of the companies have of presenting a long form to be filled up by the doctor on the death of their clients. No fee is tendered for this, and unless the deceased relatives are charged (which they resent) the medical man is robbed of a fee which the companies ought to pay. The public also are deceived by such a rule. If certain companies require extra proof of death, etc., let them pay for it. I now refuse to fill up such forms.—I am, etc.,

November 27th. M.D.

OUTBREAK OF DIPHTHERIA AMONG SCHOOL CHILDREN.

SIR,—I notice your report of the recent outbreak of diphtheria in Cambridge in last week's issue. The medical officer of health and Dr. Cobbett will, no doubt, in due time give full reports on the subject. Meantime, I should like to be allowed to draw attention to certain lessons to be derived from your report.

1. The importance of having a bacteriological department for every sufficiently large sanitary area.

2. The importance not only of rendering more certain by bacteriological examination the diagnosis of suspected cases, but also by the examination of all persons who have come in contact with the sick; of the discovery and subsequent protection with antitoxin of those who have already acquired the germs of the disease; and, above all, the importance of discovering by bacteriological examination mild cases of the disease which would otherwise continue to mix unrestrictedly with the healthy, and be a greater source of danger than those more severely affected.

3. The possibility of getting the consent of parents to prophylactic injections, and the isolation of those children with suspicious bacilli.

4. The readiness with which the precautions adopted by the sanitary authority were received; (*a*) by medical men; (*b*) by the parents of children; (*c*) by the school authorities.

5. Over 1,000 prophylactic infections given by the sanitary authority alone caused no complaints to be heard of as resulting from this action.

6. The marked effect of the measures adopted in cutting short what threatened to become a very serious epidemic.—I am, etc.,

T. HYDE HILLS,
Chairman of the Public Health Committee,
Cambridge, Nov. 27th. Cambridge.

LONDON UNIVERSITY MATRICULATION EXAMINATION.

SIR,—We, the undersigned, beg to draw attention to some unjustifiable remarks made by a correspondent writing on the subject of the London University Matriculation Examination in the issue of November 24th.

We wish to protest against the singling out for special attack of the Girls' Public Day School Company from amongst all the schools and colleges of the United Kingdom. It looks as though your correspondent was inspired by some personal animosity against the company, for it is not probable that he can have a personal knowledge of the work done in all the schools of the company. We personally are able to testify that so far as the Clapham High School is concerned his statement is certainly incorrect. In that school the physical well-being of the children is of first consideration. It is carefully supervised by a lady M.D.Lond. with such care that we, in common with other practitioners in the district, are frequently consulted by parents whose attention has been drawn by the school authorities to physical defects previously unnoticed in their children. Special attention is given to the subjects of gymnastic training, out-door exercise, and games, and each girl's work is so regulated to her health and capacity that the

educational results obtained are of the highest and most gratifying character.—We are, etc.,

Nathl. W. Allt, L.R.C.P.I.
James Busfield, M.R.C.S., F.I.C.
Maurice S. Duke, M.R.C.S., L.S.A.
Ralph W. Leftwich, M.D.
J. J. Macwhirter Dunbar, M.D.Lond.
W. P. Bothamley, M.R.C.S., L.S.A.
Lewis Evans, L.R.C.P.L.
Benjamin Duke, M.D.

Clapham, Nov. 27th.

Sir,—In the British Medical Journal of November 24th a writer upon the subject of the Matriculation Examination of the University of London, says: "The Girls' Public Day School Company continues to be behindhand in the matter of physical exercise, and requires too much home preparation."

I do not know whence the writer derived this impression, but the facts are these: Nearly every school of the company has both a playground and a playing field where hockey, lawn tennis, fives, basket ball, and other suitable games are played. Inter-school matches are frequent, and the games club (which often includes a swimming club) takes an important place in the school life. Most of the schools have well-equipped gymnasia, and a qualified teacher in each has charge of the gymnastic training. A lady inspector advises and reports on the gymnastic exercises and games in the several school.

In addition, a scheme for physical health reports on individual girls, with a record book, in charge of a lady doctor, has been for some years in use in a number of the schools; and special reports on eyesight, the lighting of rooms, and the construction of desks were long since obtained from Miss Ellaby, M.D.

As to the school work, exceptions are always granted where health requires it. The hours are short, the work varied, and the intervals frequent. The possibility of an eager girl working too long at home is always before the Council and the head mistresses, and every precaution is taken to prevent it. A time table of home work is drawn up for each girl by her teachers and revised by the head mistress. The time to be spent, which is always moderate, is stated, and the parent sees and signs the form, and is requested to inform the head mistress if the time is exceeded; so that overwork is practically impossible where parents are vigilant and co-operate with the head mistress.

I enclose a copy of one of these forms and also of a booklet on the high schools, which deals with most of the points referred to.—I am, etc.,

Queen Anne's Gate, S.W., Nov. 27th. A. McDowall,
Secretary Girls' Public Day School, Limited.

STOCKPORT AND DISTRICT MEDICAL SOCIETY.

Sir,—I am instructed to send you copy of the enclosed resolution which was unanimously passed at a meeting of the above held on November 22nd.—I am, etc.,

E. A. Goulden,
Stockport, Nov. 24th. Honorary Secretary.

That this meeting of medical practitioners of Stockport and neighbourhood indignantly protest against the ignorant and insulting paragraph contained in the *Cheshire County News* of November 16th, in which invidious comparison is made between a notorious quack and registered medical practitioners.

SOCIETY OF APOTHECARIES, LONDON.

Sir,—Referring to our announcement in the British Medical Journal of November 17th with regard to the abbreviated title which may now be used, we wish to remind holders of the licence of the Apothecaries Society of London that they are still required to sign death certificates with the letters L.S.A. as formerly.—I am, etc.,

Gerald Dalton,
Honorary Secretary, Association of Physicians and Surgeons
November 27th. (Society of Apothecaries).

SUPRARENAL GLAND EXTRACT AS A HÆMOSTATIC

Sir,—Professor Schäfer has drawn my attention to the fact that Dr. G. Oliver was the first, in Europe, to publish the results of his observations on the constricting effects of extract of suprarenal gland applied locally to blood vessels.[1] I regret that his name was omitted from my paper published in the British Medical Journal of November 10th.—I am, etc.,

West London Hospital, Nov. 26th. O. F. F. Grünbaum.

[1] *Proc. Soc. Physiol.*, March 20th, 1897.

THE NOTIFICATION OF PHTHISIS.

Sir,—The following incident may show that the educated public is becoming alive to the danger of infection arising from phthisical subjects:

A well-known clergyman recently called upon me "to use my authority" to prevent a member of his congregation, recognised to be suffering from phthisis, from coming to church and there partaking of the sacrament with the other communicants. It appeared that she annoyed the congregation, not only by coughing and expectorating, but also excited their disgust by partaking of the sacred chalice with others. I advised that he should administer to her last or apart, and carefully cleanse the cup after she had partaken, but that I had no power to prevent her coming to church. I would, however, visit her and give her a caution on the subject.

The question has been addressed to me whether a medical practitioner voluntarily notifying phthisis can legally do so without the sanction of the patient or of the head of the house. The point may be doubtful, and even an action might lie. He could, perhaps, report the phthisical person to the medical officer of health as "causing a nuisance injurious or dangerous to health."—I am, etc.,

November 24th. Edmund Gwynn, M.O.H. Hampstead.

MEDICO-LEGAL AND MEDICO-ETHICAL.

UNQUALIFIED PRACTICE.

At an inquest held last week at the Mirfield Memorial Hospital a story was unfolded which, to quote the words of a leading article in the *Leeds Mercury*, "reads more like a tale of the Middle Ages, when ignorance and credulity went hand in hand, than a sober account of events which have taken place within a few weeks of the opening of the twentieth century." That this comment is by no means too severe will be seen on reading the report of the inquiry published in the same newspaper.

Mr. Maitland opened an inquest on the body of Annie Taylor, aged 27, the wife of Walter Taylor, the landlord of the Volunteer Hotel, who died from cancer. It appeared that she had been treated by an unqualified practitioner named Benjamin Balme of Ravensthorpe, who described himself as a medical herbalist.

Mr. Balme was called by the coroner, and elected to give evidence. He stated that Mrs. Taylor consulted him and his wife. Neither he nor his wife examined her, but Mrs. Balme when in a hypnotic sleep diagnosed what the patient was suffering from and wrote out a prescription. This was made up and given to the patient. Mrs. Balme while asleep said that Mrs. Taylor was suffering from a cancerous tumour, and that it was possible to "scale" it away. They gave her medicine and also an ointment to rub the breast where the cancer was located. Mrs. Taylor visited the house weekly and Mrs. Balme was hypnotised. While under the influence she stated whether it was necessary or not to vary the treatment Mr. Balme further stated that he had recommended the patient to get further advice as it was a very bad case.

Dr. Milne and Dr. Sproule, who had made a *post-mortem* examination, gave evidence to show that death was due to cancer of the breast and secondary deposits in other organs. In answer to the Coroner, Dr. Milne said that, in his opinion, had the woman been surgically treated in the earlier stages she would have been living now, and have had a good chance of a perfect cure. The treatment she had undergone was simply negative, so far as he knew of the drugs employed.

The Coroner, in commenting upon the evidence to the jury, remarked that it was a most extraordinary thing that at this time in the history of the world such dark ignorance should exist. If he had been told before that morning that there was anyone in Yorkshire who would have believed it possible for a dangerous disease like cancer to be cured through the agency of a person hypnotised, and that person totally ignorant of the treatment of cancer, he would have absolutely denied it with scorn. The jury, he added, had to decide whether the death was accelerated by the treatment which she had received, and whether by the treatment the deceased had been prevented from attending elsewhere. If so, it amounted to manslaughter.

After consulting for half an hour the jury returned a verdict that deceased died from cancer, and they were of opinion that no blame attached to anyone.

It seems clear by this verdict that there are others in Leeds besides the deceased whose minds are not as enlightened as might be expected in the nineteenth century with all its educational advantages. The treatment may not in itself have caused death, but the neglect of proper treatment, both surgical and medical, must have accelerated the decease of the poor woman, whereas proper attention would in all human probability have the contrary effect. If uneducated persons undertake responsibilities for which they are not fitted and cannot carry out, upon them must be laid the blame with all its consequences, especially in matters of life and death.

AN ADVERTISEMENT A WARRANTY

A decision in a county court is not binding upon other tribunals, and cannot therefore establish a precedent. This is fortunate for vendors of

remedies and appliances which are advertised as "cure-alls," for a case reported in *The Times* of November 21st might be very inconvenient to them. An action was brought in the Westminster County Court before Judge Lumley Smith, in which Messrs. Pulvermacher, Limited, of Regent Street, electric belt manufacturers, sought to obtain from Mr. H. Mo[illegible], of Oxford, the sum of 4 guineas, being the balance of the purchase money for an electric belt supplied. The defendant had got into communication with the company through an advertisement, and paid 1 guinea on account of a "double concentrated belt." At the time he ordered it he was low-spirited, irritable, and suffered from headache. The belt in his opinion made him worse, and he returned it. He maintained that the belt was of no use for the purpose for which it was sent to him. Mr. Mitchell, the managing director of the company, said these belts were useful for everything except fever. His Honour came to the conclusion that the advertisement was a warranty to cure "all the ills that flesh is heir to." The defendant was not benefited by the belt, and he found in his favour, without costs, however. Apparently, from the report, no appeal was to be raised, nor was the judge asked to state a case for the higher Court.

MEDICAL ADVERTISING.

Mr. H. J. Clark (Swanage) writes: With reference to the paragraph which appeared recently in the *Dorset County Chronicle*, I beg to state I had nothing whatever to do with its publication. I am glad you have taken notice of the matter, because it gives me the opportunity of saying how much I dislike anything having even the appearance of advertising.

ACCIDENTS INSURANCE AND THE WORKMEN'S COMPENSATION ACT.

E. R. F. writes: In a district some six or more miles from a hospital two mines have been opened. The managers desire to have a medical club for men employed there. The rate for medical attendance can be arranged; but the question of accidents, operations, etc., comes up. The men are not, obviously, in the position to pay big accounts on this head. The doctors can hardly be expected to stand to lose by engaging at practically charity rates. Then the question of the Compensation Act came up. The company are insured against the liability of this Act, so if a man puts in a claim for injury the insurance company pay it through the mine company, I suppose.

A. The question is, Does this claim cover the man's expenses for doctor, and is he allowed to add this item on to his account? Say he gets a crushed finger, can he claim against the mine company; and can they (since they are relieved of all liability under the Compensation Act) claim on insurance company; and can this claim include doctors' fees? If it can, the way out of our difficulty is obvious, for the company can instruct the men to claim on them; and they in turn will claim on insurance company. I may say the premium on the policy is based on the wages of the men and their number, not seemingly on the risks of the work they do. Then, that being so, if a man gets, say, a crushed finger and loses a week's wages, he gets paid by insurance company a week's wages (?). If out of this he has to pay the doctor, it means he loses financially on the accident, which may have been no fault of his.

B. If the above is true, could you suggest a scheme through insuring or otherwise to meet the case; and relieve (1) man, (2) mine company, (3) doctor?

*** A. The first question is, Does the claim cover the man's expenses for doctor, and is he allowed to add this item to his account? The answer is No; under the Workmen's Compensation Act the claimant is not entitled to recover his medical fees except in injuries proving fatal where under some conditions a small amount for medical expenses may be added to the total amount claimed for. A man cannot claim any pay for the first two weeks after the accident, so that if a man gets a crushed finger and loses a week's wages he would not be entitled to any pay. If the company insures itself against claims this insurance does not cover the cost of surgical attendance.

B. In many mines the men elect not to avail themselves of the provisions of the Workmen's Compensation Act, but, together with the employers, they formulate a scheme of conjoint payments to a fund out of which accident pay is given to the injured person from the commencement of the accident and surgical attendance is provided for. A scheme drawn up by the Earl of Dudley is in working order at his collieries and has been freely adopted in the district.

PROFESSIONAL SECRECY.

Halfa.—The rule is that a doctor shall not reveal knowledge which he has acquired in the course of a professional interview without the permission of the patient; but, as our correspondent's letter indicates, there are circumstances under which this rule may be set aside in the higher interests of the patient or the public. It must be admitted that this rule is held in little esteem by the public when it interferes with their convenience. Most fathers or mothers or husbands would expect a doctor to tell them all that he knows respecting the ailment for which a son or daughter or wife may have consulted him, and would either attribute his silence to a vexatious adherence to professional etiquette, or to there being something discreditable which he felt bound to conceal.

MEDICAL ETIQUETTE.

Y. asks whether a medical practitioner may take over a case in the practice of another on being informed that the former attendant has been told not to call again. On his hesitating, he is told by the friends that if he does not accept the case some other than the previous attendant will be certainly called in; is he then justified in taking over the case, and should he not seek to meet the previous attendant first in consultation?

*** We have read the correspondence between the parties, and think that it reflects very creditably upon both, each seeming to be desirous to do what is right. Where this is the manifest intention there should be no misunderstanding. It is futile to deny the right of patients to change their medical attendant, and all that we can require is that certain forms should be complied with in order to prevent misunderstanding. When anyone is asked to supersede a colleague he should desire that a polite letter be written to the previous attendant to say that his services are no longer required. Special conditions may increase the difficulties always surrounding such incidents, and it is impossible to lay down rules to suit all circumstances; but the etiquette of the situation is fulfilled when the previous attendant has been duly informed that his services are no longer required. It is not necessary or usual that the two practitioners should meet in consultation.

MIDWIFERY ENGAGEMENTS.

With regard to the recovery of fees from patients who have engaged a doctor for their confinements, and then not sent for him, a correspondent writes: A common practice here is for a patient to engage both doctor and nurse. The nurse assures the patient that there is no need for a doctor, and if Nature fails to deliver the woman, then the doctor is brought in. If the nurse succeeds, the engaged doctor hears no more about it. Can the doctor recover?

*** If the patient engages a doctor to attend her in her confinement, and the doctor accepts the engagement for a stipulated fee; and if later on the patient when confined does not send for the doctor she has engaged, the latter can recover the fee at the county court. It is otherwise, however, where—as is the custom in many parts of the country—a patient intending if possible to avail herself only of the services of a nurse or midwife, engages a doctor to come in the event of his being sent for. That is a contract of quite another kind.

MEDICAL FEES.

A Disgusted Practitioner asks how long after a patient's death it is advisable to wait before enforcing payment for medical attendance from the executors, who since that event have consulted another practitioner.

*** This is simply a matter of policy. If the executors have proved the will an action could be commenced at any time. A reasonable time would be three months after the testator's death. Application for payment of the account should, of course, be made prior to any legal proceedings being taken.

FACTORY SURGEON.

Senex writes: In the event of a mill-master's bankruptcy, does the contract fee of a certifying factory surgeon rank as an ordinary or as a preferential claim?

*** We are advised that the fee is not a preferential claim within the meaning of the Preferential Payments in Bankruptcy Act, 1888. The Factory and Workshops Consolidation Act, 1878, provides that the fees of the certifying surgeon in respect of the examination and grant of a certificate of fitness for employment of children and young persons in factories and worshops are to be paid on the completion of the examination, or if any certificates are granted, at the time at which the surgeon signs the certificate, or at any time directed by an inspector. The same Act provides that the fee of the certifying surgeon in the case of an accident is to be paid as expenses incurred by a Secretary of State in the execution of the Act. We would suggest that our correspondent should refer the matter to the inspector.

MEDICAL EVIDENCE AT INQUESTS.

O. calls our attention to three cases of death in which inquests were held to which he was not called to give evidence, although he was sent for in each case at the time of the death.

*** It is usual for the coroner to call and for the jury to require the evidence of the medical man who last attended the deceased, or who was called at the time of the death, or on the discovery of the body; and if a *post-mortem* examination is required, it can be made by request of the jury, if not previously ordered by the coroner. There are some coroners who appear to ignore medical evidence, if they can possibly obtain a verdict without it; hence it is that in some cases the real cause of the death has not been ascertained, or stated in the verdict arrived at. Without medical evidence we do not consider that the result of the inquiry can be regarded as satisfactory, but it is not compulsory on the coroner to summon the medical attendant, and, if the jury fail to request it, such verdicts as "Died from the visitation of God," and others equally unsatisfactory, will still continue to appear. We do not think our correspondent can do anything further in the matter, except to expose any failure of justice that may come under his notice.

OBITUARY.

RICHARD NEALE, M.D.Lond.,

Author of the *Medical Digest*.

We regret to have to record the death of Dr. Richard Neale who laid the profession in this country under no small debt by compiling through some fifty years the *Medical Digest*.

Richard Neale was born at Highbury on September 29th, 1827, and received his early education under Dr. Jackson, who subsequently became Bishop of London. He studied medicine at University College, London, where he was a contemporary with Sir Henry Thompson and the late Sir J. Russell Reynolds, while among his teachers were Sir William Jenner and Dr. E. A. Parkes. He held the appointment of House-Physician, or, as it was then called, Physician's Assistant, at University College Hospital, and obtained the diploma of M.R.C.S. and L.S.A. in 1850. He graduated M.B. in the University of London in 1851, and in the following year settled in practice at Ombersley, near Droitwich. In 1853 he married, but three years later he had an attack of pleuro-pneumonia which led him to relinquish his practice at Ombersley and spend the winter at Ventnor. In the following year he took his doctor's degree and went to Java, where he practised very successfully until 1865, when he returned to London and settled at South Hampstead. Here he continued to practise until 1897, when he virtually retired and went to live at Sandgate, Kent, where he enjoyed the recreation of sea fishing, which he pursued with great zest. Early in June on one of these expeditions he very much over-exerted himself, and was in indifferent health subsequently. His death, which took place on November 22nd at his daughter's house in Hampstead, immediately followed on an attack of hemiplegia.



Dr. Neale was thus engaged actively in practice for a period of forty-five years, and was a thoroughly practical, resourceful, and therefore successful practitioner. He gave particular attention to the treatment of neuralgia by the *percuteur*, and invented what he called the "chemical lung," by the use of which he hoped that the smoky and sulphurous atmosphere of the Underground Railway might be purified. His chief claim to recognition and remembrance, however, is the extraordinary feat which he accomplished in carrying on for nearly fifty years the compilation which was first published by the New Sydenham Society in 1877 under the title of the *Medical Digest*. Dr. Neale commenced the work when a student, and as it grew under his hand he found it so useful to him in practice, that when in Java he decided to keep it up regularly, and some day to publish it for the use of the profession. As stated in the author's preface to the first edition, it was intended to afford a means of ready reference to such discoveries, new doctrines, and different methods of treatment in each department of medical science as are likely to be of interest to the practitioner. The work, while not professing to be a full index to the periodical selected, was, as its author claims, something more, in that it gave not merely details of the papers, but often twenty or thirty references to the text of a single lecture. The articles excluded were those which, in the judgment of the compiler, had no direct practical interest. Dr. Neale claimed that the *Digest* was calculated to be particularly of value to the practitioner in helping him to meet the difficulties of his daily work, for not only did it give references to the papers published in the periodicals which Dr. Neale was in the habit of reading, but in many, and perhaps the majority of cases, the entry was sufficient as a suggestion for treatment, if not indeed to recall to memory the arguments of a forgotten paper; this claim is briefly expressed in the full title of the book: *The Medical Digest, Being a Means of Ready Reference to the Principal Contributions to Medical Science During the Last Thirty Years*. The book has also been of great assistance to writers of papers by furnishing, to a certain extent, a bibliography of British medicine as represented by certain periodicals. The work at its first issue was very highly praised, and its advantages were at once perceived by a large number of workers. An appendix bringing down the references to 1885 was issued in 1886. Another edition, the third, was published in 1891, and included references to a longer list of periodicals than had been embraced in the original scheme. This was the last complete edition. The work had grown considerably in the interval. In the first edition the *Digest* proper occupied 578 pages and the alphabetical index to it 72 pages. In the third edition (1891) it occupied 794 pages and the index 132. It was, of course, an expensive work to print, and it is to be feared that the sales were not sufficiently extensive to do much more than defray the cost, and any less enthusiastic worker would undoubtedly have been discouraged. A second appendix was published in 1895 and in 1899 another appendix was issued incorporating that published in 1895. This last appendix thus included references from and including the year 1891 to March, 1899. It contained 261 pages of *Digest* proper and 31 of index. The labour involved in preparing the *Digest* was enormous, and it is not difficult to believe that it really cost on an average four hours a day for some fifty years.

The *Digest* was never remunerative. Probably no similar work was ever undertaken by a single hand, except the references to Bagster's well-known edition of the Bible, which were selected by the late Mr. Thomas Chevalier, a well-known practitioner of Hatton Garden, who gained the Jacksonian Prize of 1803 for an essay on gunshot wounds, and about a year ago a movement was set on foot to present to Dr. Neale a suitable testimonial as a recognition by his professional brethren of his long-continued and invaluable labours on their behalf. An appeal, signed by the Presidents of the Royal College of Physicians of London and of the General Medical Council, by the Senior Vice-President of the Royal College of Surgeons (in the absence in Africa of the

President), and by the Presidents of the leading medical societies in London, was printed in our columns on February 10th, 1900. The response to this has been sufficient to render it possible to obtain a portrait of Dr. Neale which was to have been presented to him this autumn had not his fatal illness intervened. It is very pleasant to remember that Dr. Neale knew of this intention, and that it was to him a source of great gratification.

We are indebted to Sir T. LAUDER BRUNTON for the following note:—The death of Dr. Richard Neale is a very great loss not only to his family and friends but to the whole medical profession. How great the loss is can only be understood by men who write on medical subjects, but it does not the less affect those who simply read. The mass of medical literature is so enormous that without a good classified index it is impossible for men who are writing on any subject to make themselves at all well acquainted with what has been written before, and thus instead of advancing knowledge they may even retard it, for there is a certain tendency to take the paper which has last appeared as being the fullest and best. No words can be too strong to express the obligation which I am personally under to Dr. Neale's *Digest*, Billings's *Index Catalogue*, and similar works; but, invaluable as the others are, Dr. Neale's *Medical Digest* has the great advantage, as its name implies, of being a digest and not merely a catalogue. With untiring industry he has not only collected references from the chief English journals of all sorts on medical subjects, but he has so classified them as to render the information at once valuable. More especially in regard to treatment is the *Digest* useful, because when one has exhausted all the usual remedies in the case of some patient and cannot think what else to do, a reference to the *Digest* will almost certainly suggest some other plan which may succeed when the others have failed.

Such a work as Dr. Neale's *Digest* would be sufficient to occupy the life of any ordinary man, but with him it was accomplished amid the course of a busy practice and one hardly knows which most to admire, the steady devotion to his purpose or the untiring energy which enabled him to effect it. It is sincerely to be hoped for the good of the profession at large that his work may not be allowed to cease with his death, but may be carried on, for although, as I have already said, it may apparently be of direct use only to the few, it is of indirect use to every member of the medical profession and to the patients whom they are called upon to treat.

DEPUTY-SURGEON-GENERAL GEORGE MACKAY, M.D., J.P.

By the death of Deputy-Surgeon-General George Mackay, M.D., J.P., at his residence, 2, Learmonth Terrace, Edinburgh, on November 20th, another of the veterans of the Honourable East India Company's service has passed over to the majority. He was the eldest son of the late Major Donald Mackay of H.M. 70th Foot and grandson of Colonel George Mackay of Bighouse, Sutherlandshire. He was born on September 23rd, 1820, at Aberdeen, where his father's regiment was then stationed. Taken with the regiment to Canada, he received his earliest education near the Falls of Niagara. He was afterwards sent to the Madras College, St. Andrews, and among his school fellows were the late Lord Playfair and Dr. Hugh Cleghorn. In 1841 he took the degree of M.D. at the University of Edinburgh, and became a Licentiate of the Royal College of Surgeons. Besides gaining several prizes, he was awarded by his fellow students the silver medal of the Hunterian Society as the best debater of his year. In 1842 he received a commission in the medical department of H.E.I.C. service, and at once proceeded to Madras, where he was gazetted to the 2nd European Light Infantry. He took part in the operations against the Mahrattas in 1844, and being sent to Burmah on active service in 1852 was present at the actions which culminated in the capture of Rangoon, and also at the occupation of Prome and Meaday. He received the medal and clasp for Pigu, and was specially thanked for his services during the campaign. Returning to Madras after the war, he officiated as Civil Surgeon, first at Coimbatore, and later at Ootacamund. When at home on leave he was closely associated with the late Sir James Young Simpson.

In 1864 he was promoted to the rank of Surgeon-Major, and was transferred to the Military Finance Department as Examiner of Medical Accounts, and subsequently became Secretary to the Madras Medical Fund and the Military Fund. He was one of the originators of the movement for the more efficient training of native medical subordinates which led up to the establishment of the Medical College of Madras; and in addition to his military duties undertook many offices in societies formed for the general benefit of the British residents in that Presidency. He initiated the public library at Ootacamund, and was made the recipient of several handsome presentations testifying to the regard in which he was held by his brother officers and friends in various stations.

He retired in 1875, and resided for some years at Inverness, but latterly in Edinburgh. His services were freely given to various philanthropic societies and institutions wherever he lived. Courteous and unostentatious in manner, a member of the British Medical Association who knew him well, writes: "His well-balanced mind and godly heart were a tower of strength to all who came in contact with him." Another describes him as "one of the few towards whom one's inner attitude never changed and one's feelings never grew less warm—an upright, able, catholic-hearted Christian gentleman."

In 1851 he married Ellen Rose, daughter of the late Arthur J. Robertson of Inches, Inverness-shire, and he is survived by his widow, three sons and three daughters.

His eldest son is Dr. George Mackay, Ophthalmic Surgeon to the Royal Infirmary, Edinburgh, and his eldest daughter the wife of Colonel R. D. Murray, I.M.S., Professor of Surgery in the Medical College, Calcutta.

JAMES FREDERICK BARNES, F.R.C.S.Edin., M.R.C.P.Edin., L.S.A., died recently at Rochester Road, Camden Road, N.W. He was the eldest son of Mr. F. K. Barnes, late Surveyor of Dockyards and Chief Constructor, Admiralty, Whitehall. He received his professional education at Westminster Hospital, and was admitted L.S.A. in 1878, M.R.C.P.Edin. in 1879, and F.R.C.S.Edin. in 1880. During his career he had been Assistant Medical Officer at several well-known asylums, and had a considerably extended experience of the care and treatment of the insane. He invented an ingenious instrument to prevent regurgitation during forcible feeding. He was a capital musician and a very amiable man.

MANY of the profession and public in the North of Ireland will regret to learn of the death of Dr. REUBEN BOLTON of Bangor, co. Down. Dr. Bolton had been ailing for some time, and knew himself that he was suffering from a serious affection of the heart, for which Dr. Bell had attended him from time to time. Shortly after noon on November 20th, he was found unconscious in the dispensary. During the morning he had been attending to his duties as usual, and he had gone to the dispensary to prepare some medicine for some patients who were to call for it. Drs. Bell and Darnell were summoned immediately, but on arrival found life extinct. Dr. Bolton was born in Dungannon in 1844. He was a brilliant scholar, and took his M.D. in the old Queen's University in 1865. In 1875 he settled in Bangor, and in 1878 he succeeded the late Dr. Thompson as Medical Officer for the Bangor district of the Newtownards Union, an appointment which he held till his death; he was also Sanitary Medical Officer to the Urban Council, and a magistrate for the county. His loss will be deeply deplored, and much sympathy is felt for his widow and four children.

DR. J. MORTIMER GRANVILLE died at his residence in Queen Anne Street, London, on November 23rd, at the age of 67. Dr. Granville obtained the diploma of M.R.C.S.Eng. in 1856, and of L.R.C.P.Lond. in 1861, and became M.D. St. Andrews in 1876. He was also a Member of the Royal College of Physicians of London. In his earlier years he was much engaged in journalism, and was, we believe, a frequent contributor to the editorial columns of the *Lancet*. He practised at one time in Bristol, but afterwards settled in London, and gave particular attention to the treatment of gout, upon which he wrote largely. He was also interested in the treatment of neuralgia and other nervous disorders by means of instruments vibrating rapidly, and invented an apparatus for this purpose, which he called the "*percuteur*." He devised also various other clinical instruments, including a sphygmograph and a differential thermometer.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

Medical Examinations.—The Special Board for Medicine publish a comprehensive scheme for the readjustment of the subjects of the Third Examination for the degree of M.B. The general plan is to place the more scientific subjects (pathology, pharmacology, and hygiene) before the practical and clinical subjects (medicine, surgery, and midwifery). The final or qualifying examination will have reference to the three latter subjects and their various branches.

Honorary Degrees.—Dr. Nuttall, University Lecturer in Bacteriology and Preventive Medicine, and Mr. T. Strangeways Pigg, M.R.C.S., L.R.C.P., are to be admitted to the complete degree of M.A. *honoris causâ*. Both have done distinguished service to the Pathological department.

Medical Degrees.—At the congregation on November 22nd, the following medical and surgical degrees were conferred:—*M.D.*: A. F. Shoyer, B.A., Trinity Hall. *M.B.*: R. E. Sedgwick, B.A., Caius. *M.B.* and *B.C.*: A. C. Hill, M.A., Trinity; F. J. Nicholls, St. John's.

UNIVERSITY OF LONDON.

M.B. EXAMINATION.—The following candidates have passed this Examination:

First Division.—S. H. L. Abbott, St. George's Hospital and Oxford; D. J. McGavin, Mason College, and Queen's and General Hospital, Birmingham; J. R. Morton, London Hospital; W. Payne, Westminster Hospital; W. H. Willcox, B.Sc., St. Mary's Hospital; Louisa Woodcock, London School of Medicine and Royal Free Hospital.

Second Division.—W. F. Addey, University College; R. A. Beaver, Liverpool Royal Infirmary; G. Black, St. Thomas's Hospital; S. H. Bowp, University College; P. F. Braithwaite, Owens College; C. H. Brodribb, St. Mary's Hospital; C. H. Bullon, Mason University College; J. A. Butler, Guy's Hospital; A. H. Bygott, St. Mary's Hospital; A. Caddy, St. George's Hospital; C. H. Caldicott, Mason College; J. Cameron, Royal Infirmary and University, Edinburgh, and London Hospital; W. H. Coltart, Mason College; J. B. Davey, Middlesex Hospital; F. S. Dawe, B.Sc., St. Mary's Hospital; A. Densham, Guy's Hospital; Margaret Bernard Dobson, London School of Medicine and Royal Free Hospital; Harriet Rosa Delo Ford, London School of Medicine and Royal Free Hospital; Sarah Louise Fraser, London School of Medicine and Royal Free Hospital; T. H. Gandy, St. Bartholomew's Hospital; E. A. Gates, St. Thomas's Hospital; J. S. Goodall, Middlesex Hospital; W. Gough, B.Sc., Yorkshire College; Louisa Hamilton, Royal Free Hospital; Mary Hannah Frances Ivens, London School of Medicine and Royal Free Hospital; L. C. Johnson, Owens College and University College, Liverpool; A. E. J. Lister, St. Bartholomew's Hospital; J. W. Little, St. Thomas's Hospital; Olive McDougall, London School of Medicine and Royal Free Hospital; W. H. McMullin, King's College; P. T. Manson, Guy's Hospital; Edith Neild, School of Medicine for Women and Royal Infirmary, Edinburgh; E. M. Niall, St. Bartholomew's Hospital; C. A. R. Nitch, St. Thomas's Hospital; W. P. Noall, Owens College and Manchester Royal Infirmary; Mabel Paine, London School of Medicine and Royal Free Hospital; T. M. Pearce, St. Bartholomew's Hospital; Mary Elizabeth Phillips, London School of Medicine and Royal Free Hospital; M. B. Phillips, University College and Royal Infirmary, Bristol; T. C. Savage, University College; Margaret Sophia Sharp, London School of Medicine and Royal Free Hospital; Amy Jane Guy Smith, London School of Medicine and Royal Free Hospital; W. Smith, Bristol Medical School and St. Bartholomew's Hospital; A. B. Soltau, London Hospital; H. Stuart, University College; Kathleen Olga Vaughan, London School of Medicine and Royal Free Hospital; R. Waterhouse, St. Bartholomew's Hospital; Florence Elizabeth Willey, B.Sc., London School of Medicine and Royal Free Hospital.

ROYAL COLLEGEE OF SURGEONS IN IRELAND.

FELLOWSHIP EXAMINATION.—The following gentlemen having passed the necessary examination have been admitted Fellows of the College:

M. A. Brennan, L.R.C.S.I., T. I. Considine, L.R.C.S.I., O'C. J. Delahoyde, L.R.C.S.I., W. R. G. Hamilton, L.R.C.S.I., R. J. Harvey, L.R.C.S.I., E. S. Hawthorne, L.R.C.S.I., C. A. Hayman, L.R.C.S.I., N. J. Keller, L.R.C.S.I., G. Q. Lennane, L.R.C.S.I., J. McGinn, L.R.C.S.Edin., M. J. C. Marmion, L.R.C.S.I., A. B. Mitchell, B.Ch. R.U.I., F. Nolans, L.R.C.S.I., E. M. J. O'Farrell, L.R.C.S.I., W. Pooley, L.R.C.S.I., D. Power, L.R.C.S.I., H. Ross-Todd, L.R.C.S.I., E. C. Ryall, L.R.C.P.Lond., J. Trant, L.R.C.S.I., R. S. Wayland, L.R.C.S.I., and A. E. Wynne, L.R.C.S.Edin.

The following gentleman passed the Primary part of the examination: M. Malone-Lee.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, November, 1900.—The following candidates passed in:

Surgery.—J. H. Beasley (Sections I and II), Birmingham; A. H. Brehaut (Section I), Cambridge and King's College Hospital; J. H. Clements, University College Hospital; M. E. Fendick (Sections I and II), Royal Free Hospital; J. I. Halstead (Section I), Manchester; D. J. Morgan (Sections I and II), St. Mary's Hospital; J. C. S. Rashleigh (Section II), St. George's Hospital; A. T. Spanton (Section II), Cambridge and George's Hospital; V. F. Wall (Section I), St. Mary's Hospital.

Medicine.—R. V. Cowey (Sections I and II), St. Mary's Hospital; E. N. de V. Dawson (Section I), St. Thomas's Hospital; R. A. Jones (Section I), St. Mary's Hospital; J. C. S. Rashleigh (Sections I and II), St. George's Hospital; A. T. Spanton (Sections I and II), Cambridge and St. George's Hospital.

Forensic Medicine.—A. H. Bell, Cork and Guy's Hospital; R. V. Cowey, St. Mary's Hospital; M. E. Fendick, Royal Free Hospital; R. A. Jones, St. Mary's Hospital; D. E. Lockwood, Royal Free Hospital; J. C. S. Rashleigh, St. George's Hospital; F. A. Segreda, Guy's Hospital; P. Southan, Birmingham.

Midwifery.—A. G. A. Anthonisz, University College Hospital; L. Bradstock, Birmingham; A. H. Brehaut, Cambridge and King's College Hospital; A. C. Clarke, Manchester; E. Courtauld, Royal Free Hospital; J. W. Elliott, St. Mary's Hospital; M. E. Fendick, Royal Free Hospital; R. Gillett, Royal Free Hospital; D. T. Jones, Middlesex Hospital; O. Millauro, Westminster Hospital; D. J. Morgan, St. Mary's Hospital; B. Rowlands, St. Bartholomew's Hospital.

The Diploma of the Society was granted to A. C. Clarke, R. V. Cowey, J. C. S. Rashleigh, and A. T. Spanton.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty:—FREDERICK J. LILLY, Fleet Surgeon to the *Doris*, October 21st; MORRIS C. LANGFORD, Surgeon to the *Defiance*, November 30th.

ROYAL ARMY MEDICAL CORPS.

COLONEL N. B. MAJOR is placed on temporary [illegible] on account of ill health, November 6th. He was appointed A[illegible]rgeon, October 2nd, 1866; Surgeon, March 1st, 1873; Surgeon-M[illegible]er 2nd, 1878; Brigade Surgeon, December 14th, 1892; and S[illegible]nel, November 30th, 1896.

Major C. J. ADDISON retires from the service receiving a gratuity, November 28th. He was appointed Surgeon February 1st, 1881, and Surgeon Major twelve years thereafter. He was in the Egyptian War of 1882 (medal and Khedive's bronze star), and in the campaign in the North West Frontier of India in 1897-8, being present at the operations on the

Samana Range and with the Tirah Expeditionary Force (medal with three clasps).

Sergeant-Major T. EXTON is appointed Quartermaster, with the honorary rank of Lieutenant, to complete the establishment, with precedence next below Quartermaster Glover, dated May 23rd, 1900, but without back pay prior to November 28th.

Civil Surgeon STEWART KIRKPATRICK, who has been on duty at the Station Hospital, York, and at Strensall, has been ordered for duty to South Africa in medical charge of troops on the *Tagus*.

The undermentioned officers have been discharged to duty from hospital in South Africa: Major C. E. FAUNCE, Captain F. J. WADE-BROWN, Lieutenant L. N. LLOYD, Civil Surgeons H. BAYLISS, N. B. HARMAN, H. B. MAUNSELL, A. E. ROBINSON, E. A. HAUSEMAN.

Civil Surgeons H. R. LANGMORE and W. H. SMITH are on passage home from South Africa. Colonel A. W. DUKE and Major J. W. JEROME are returning invalided.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL P. DE H. HAIG, Bengal Establishment, is appointed Principal Medical Officer Malakand Force, *vice* Lieutenant-Colonel P. F. O'CONNOR, appointed to the China Expeditionary Force.

Lieutenant-Colonel R. C. SANDERS, M.D., Bengal Establishment, has retired from the service, July 13th. He joined as Assistant Surgeon, April 1st, 1869.

Lieutenant-Colonel H. D. COOK, M.B., Madras Establishment, has also retired from the service, August 20th. His first appointment dates from April 1st, 1870.

Lieutenant E. LE FEVRE PAYNE, Madras Establishment, who was placed on half-pay, November 3rd, 1898, also now retires, from November 3rd.

THE VOLUNTEERS.

SURGEON-LIEUTENANT J. F. BLAKE CAMPBELL, 1st Cheshire Engineers, resigns his commission, November 21st.

Messrs. CHARLES M. ATKINSON and DOUGLAS L. THOMSON, are appointed Surgeon-Lieutenants in the 1st Volunteer Battalion the Buffs (East Kent Regiment) and the 1st Volunteer Battalion the Hampshire Regiment, respectively, November 21st.

VOLUNTEER MEDICAL STAFF CORPS.

SUPERNUMERARY SURGEON-LIEUTENANT J. W. SMITH, M.B., the Manchester Companies, is appointed Surgeon-Lieutenant on the Establishment, November 21st.

Quartermaster H. J. NORMAN, the Woolwich Companies, is granted the honorary rank of Captain, November 21st.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

THE staff and members of the School entertained Major R. Sleman, Captain E. W. St. Vincent Ryan, two of the medical officers of the C.I.V., at dinner at the Florence Restaurant on November 23rd. A large number assembled, under the presidency of Brigade Surgeon-Lieutenant-Colonel P. B. Giles, V.D., Senior Medical Officer. Two toasts only were given, "The Queen," and "Our Guests." In responding for the guests, Major Sleman bore testimony to the gallantry of the C.I.V. stretcher bearers in all the engagements in which the corps took part. At the action fought near Frederickstad on July 31st, Privates C. J. Day and W. Shrimpton rushed forward to help a wounded yeoman, in answer to an urgent message, but were both killed by explosive bullets. Private T. Cooper at once volunteered to take their place. At the battles of Zand River and Diamond Hill the C.I.V. bearers did good work with both British and Boer wounded, and in the hospitals at Orange River and Glen they materially helped the R.A.M.C. in coping with severe epidemics of enteric fever. Captain Ryan gave his experiences with the Mounted Infantry, and spoke of the chase after Cronje and his capture, describing also his visit to the laager to treat the Boer sick and wounded. The arrangements for the banquet were carried out by Surgeon-Captain Callender, and a very enjoyable evening was spent.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,323 births and 3,923 deaths were registered during the week ending Saturday last, November 24th. The annual rate of mortality in these towns, which had been 16.9 and 17.6 per 1,000 in the two preceding weeks, was again 17.6 last week. The rates in the several towns ranged from 10.8 in Norwich, 10.5 in Cardiff, 11.5 in Huddersfield, and 13.1 in Croydon to 21.0 in Manchester and in Preston, 21.9 in Liverpool, 23.2 in Bolton, and 24.3 in Salford. In the thirty-two provincial towns the mean death-rate was 17.9 per 1,000, and exceeded by 0.7 the rate recorded in London, which was 17.2 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.6 per 1,000; in London this death-rate was equal to 1.3 per 1,000, while it averaged 1.8 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.4 in Brighton, 3.8 in Sheffield, 4.6 in Blackburn, and 5.4 in Swansea. Measles caused a death-rate of 1.9 in Gateshead and 3.5 in Swansea; whooping-cough of 1.1 in Sheffield, 1.3 in Preston, and 1.9 in Derby; "fever" of 1.5 in Plymouth; and diarrhœa of 1.0 in Swansea and in Gateshead, and 1.5 in Blackburn. The death-rate from scarlet fever showed no marked excess in any of the large towns. The 70 deaths from diphtheria in the thirty-three towns included 22 in London, 12 in Sheffield, 8 in Leicester, 6 in Leeds, and 5 in Liverpool. No fatal case of small-pox was registered last week either in London or in any of the thirty-two large provincial towns; 2 cases of small-pox were admitted into the Metropolitan Asylum Hospitals during the week, and remained under treatment on Saturday last, November 24th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 1,703 to 2,728 at the end of the twelve preceding weeks, had decline again to 2,725 on Saturday last; 246 new cases were admitted during the week, against 336, 289, and 261 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, November 24th, 877 births and 628 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 19.2 and 19.9 per 1,000 in the two preceding weeks, further rose last week to 20.3, and was 2.7 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 11.9 in Leith and 16.9 in Edinburgh to 24.9 in Greenock and 25.2 in Paisley. The zymotic death-rate in these towns averaged 2.2 per 1,000, the highest rates being recorded in Aberdeen and Greenock. The 308 deaths registered in Glasgow included 1 from small-pox, 5 from scarlet fever, 17 from whooping-cough, 3 from "fever," and 7 from diarrhœa. Two fatal cases of measles and 3 of diarrhœa were recorded in Edinburgh. Four deaths from diarrhœa occurred in Dundee; 5 from measles, 2 from "fever," and 3 from diarrhœa in Aberdeen; and 5 from whooping-cough in Greenock.

NURSING IN WORKHOUSES.

AT the recent quarterly Manchester assizes, under Justice Darling, an attendant at the Crumpsall Workhouse was convicted of the manslaughter of a patient, and sentenced to seven years' penal servitude. The man himself admitted that he had lost his temper with the patient—a very troublesome general paralytic—that he had applied violent force to his neck, and that he had shortly thereafter died. Even taking into account the exceptionally irritating character of the patient, as the judge did, it cannot be considered that the sentence was unduly severe; but it will appear to most that the guardians cannot be exonerated from all blame. The attendant was presumably untrained, as that term is understood in asylums and hospitals; he was 26 years of age only; he had under his charge during the night over 100 lunatics and over 30 epileptics, among whom were doubtless several thought to require some physical restraint from time to time. The duty of providing sufficient attendants to meet this need for the control of violent patients without adopting mechanical means rests on the guardians. In most workhouses it appears to be the rule to have only one day and one night attendant to each ward, whatever the nature of the cases. Consequently resort is often had to padded rooms, while the use of restraining straps obtains to an extent which would not be tolerated in asylums.

LIVERPOOL CORPORATION BACTERIOLOGIST'S REPORT.

THE Report of the bacteriologist of the Liverpool Corporation (Professor Boyce) is published in the last part of the *Reports of the Thompson-Yates Laboratories* (Vol. iii, Part 1). Among other details it contains the following, which are of considerable interest. The injurious effect of boric acid (frequently used as a milk preservative) was shown by feeding kittens with milk containing 5 and 10 grs. to the pint. In each case diarrhœa, emaciation, and death were caused in a few weeks. Similar, though less violent results were produced with formalin (1 in 12,500 of milk). A large number of infants' feeding bottles were examined bacteriologically during prevalence of summer diarrhœa. Bottles and tubes were found to contain innumerable putrefying organisms, including the virulent B. enteritidis sporogenes. The same bacillus was found in 3 out of 5 persons who died of acute food poisoning after eating fish and pork from a certain stall of insanitary condition in the market. Three hundred and fifty-two samples of milk were examined for the B. tuberculosis. The bacillus was found in 15 out of 159 samples (11.3 per cent.) from the country, and 1 in 162 samples of town milk (0.7 per cent.); 5 samples of so-called "sterilised milk" were examined, and found to be not sterile.

A BOARD OF GUARDIANS AND THEIR LUNATICS.

DR. ARTHUR STRANGE, Medical Superintendent, Salop and Montgomery Asylum, writes: I am afraid I am unable to avail myself of the opportunity you suggest of giving my reasons why certain patients are in this asylum. The delegates from the Newtown and Llanidloes Board of Guardians visited this asylum, saw all the patients belonging to their union, and had every case they inquired about explained to them. They left a report very courteously written, in which they "pointed out three cases for the consideration of the Visiting Committee." This report was fully considered by the Visitors of the Asylum at their last meeting. The report which you quote from the local paper was apparently made by the delegates at a meeting of the guardians. It contains remarks on eight patients, only two of whom are mentioned in the report left at the asylum. As this newspaper report was not made or sent officially to the Asylum Visitors, and differs so widely from the one made at the time of the visit, I am precluded from making any comment upon it.

VACCINATION AND NATURAL THEOLOGY.

A PUBLIC VACCINATOR, who tells us that he receives a great many peculiar communications after the issue of the usual notice, has sent us a postcard which he has recently received. It is, he says, the most curious that has yet reached him:

"Dear Sir,—Needless your calling to vaccinate my child. I consider it a direct violation of the laws of natural theology; not only that, it is a diabolical practice of inoculating animal diseases into the human system.—Yours faithfully,

"Mr. ——, M.D. "J. C."

A BACTERIOLOGICAL STATION AT DAMASCUS.—At Damascus a new department of the Hamidie Hospital is in course of construction. It will comprise chemical and bacteriological laboratories and a vaccination station.

INDIA AND THE COLONIES.

Madras.

Hospitals and Dispensaries.—Surgeon-General Sibthorpe's report for the years 1896, 1897, and 1898 indicates that a decrease in the number of institutions took place from 486 to 472. The number of patients treated in 1898—4,067,111—was higher than in 1896, but lower than in 1897. The decrease is attributed to the plague scare. The accommodation for indoor patients was utilised to the extent of a little more than half. The mortality among this class was 7.11 per cent. of treated—lower than that of 1897, but above that of 1896. The same remark applies to the number of surgical operations. The cost of dieting patients was higher and the total expenditure amounted to about 10½ lakhs of rupees, of which Government contributed 8.56 per cent. The report includes all institutions—State, police, railway, mission, private—affording relief to the public in general or to special sections of it. There are 25 institutions for the treatment of women and children only, and 3 hospitals for lepers; 305 trained midwives were employed in the districts in 1898; they attended 22,574 cases of labour—an average of 74.01 each. The sale of quinine appears to be on the increase. Plague prevailed in the districts of Anantapur, North Arcot, Bellary, and Salem. Energetic means were taken by inspection, isolation, and inoculation to prevent its spread and stamp it out. Cholera was also very prevalent in the Presidency in 1898. Thirty-two cases of anthrax are reported to have occurred in the South Arcot district, of which 4 proved fatal; no particulars are given regarding the diagnosis and treatment of this very rare form of disease.

Western Australia.

Fremantle Lunatic Asylum.—The Acting Superintending Medical Officer's report for 1899 shows there were in the asylum on January 1st, 1899, 214 patients. Ninety-six were admitted during the year, 61 were discharged, and 30 died, leaving on the books on December 31st last 219. There were 310 patients under care during the twelve months at an average cost per head (gross) of 16s. 3d. The recovery-rate is given as 52.00 per cent. calculated upon the number of admissions; and the death-rate calculated upon the average number resident was 9.84 per cent. With the exception of an outbreak of influenza which played havoc with the organisation of the asylum, owing to the number of patients and attendants attacked, Dr. Hope reports the general health to have been good. With the exception of one patient admitted suffering from phthisis who was discharged recovered, there was no case of consumption in the asylum. It is stated that a "grill" has been erected in both the male and female sides, that more "cells" are wanted, the mention of the word "warder" is unpleasantly repeated, and that the use of mechanical restraint "is only applied to prevent patients injuring themselves or others!" All these statements seem to savour more of a prison for the detention of criminals than a hospital for the treatment of mental diseases.

New Zealand.

The Lunatic Asylums of the Colony.—The annual report of Dr. MacGregor, the Inspector-General of Asylums, which is addressed, curiously enough, to the "Minister of Education," states that the number of registered insane persons in the various asylums of the Colony on December 31st last was, males 1,512, females 1,045—total 2,557; 390 were admitted during the year. The percentage of those discharged recovered was 37.58 calculated on the number admitted, and the death-rate 6.30 calculated upon the average number resident. According to the figures supplied in Dr. MacGregor's report, there appears to be some deficiency of accommodation in several of the asylums. He mentions the erection of separate buildings for the isolation of cases of tuberculosis, and special institutions for epileptics, idiots, and imbeciles, as being an urgent necessity. The total average weekly cost of each patient is 10s. 6d. Embodied in Dr. MacGregor's report are the reports of Dr. R. M. Beattie, of the Auckland Asylum; Dr. G. Levinge, of the Christchurch Asylum; Dr. Gray Hassell, of the Porirua Asylum; and Dr. F. Truby King, of the Seacliff Asylum; together with "entries of visits to the different asylums" by the Inspector-General. All these documents fully bear out Dr. MacGregor's good opinion of the standing and character of the medical superintendents having charge of these institutions, which are stated to be in excellent order, while their management appears to be enlightened and well up to date.

MEDICAL NEWS.

Bequest.—The Treasurer of the British Medical Benevolent Fund has received the sum of £1,000, free of legacy duty, from the executors of the late Mr. Manwaring Shurlock, M.R.C.S., L.S.A., of Chertsey.

The Amsterdam Society for the Advancement of Medical and Natural Science has conferred its Swammerdam medal upon Professor Carl Gegenbauer of Heidelberg. The Committee states in its report: "He is one of the greatest figures in biological science of our days, a 'universal man' in the highest significance of that word, and at the same time one of the greatest morphologists of our generation."

On November 3rd the degree of Doctor of Medicine was conferred on Fraülein Steinberger by the University of Buda-Pesth. This is, we believe, the first time that University has granted that degree to a woman.

According to the *Archives Orientales de Médecine et de Chirurgie*, very strict orders have been issued by the Turkish Government for the repression throughout the Ottoman Empire of unqualified practice of medicine, dentistry, and pharmacy.

The members of the Practical Bacteriology class of King's College entertained the Demonstrator, Dr. J. T. C. Nash at dinner, as an acknowledgment of their appreciation of his professional and personal qualifications.

The Treatment of Yellow Fever.—Some years ago the Mexican Government offered a prize of 100,000 dollars for the discovery of a remedy for yellow fever. In consequence several prominent physicians of the Mexican port of Vera Cruz undertook scientific researches with the result that in the course of last summer some positive cures even in severe cases were obtained. For this work, according to the *Vossische Zeitung*, a part of the prize has been awarded to Dr. Angelio Bellinzaghi, who has further been promised the rest of the sum offered, provided the serum prepared by him justifies the claims made for it in the cases still under treatment. Dr. Bellinzaghi, who is an Italian by birth, studied at the Pasteur Institute in Paris, and in 1892 went to Montevideo, where he was appointed Professor in the Bacteriological Institute of that place. In 1895 he proceeded to Brazil, and in conjunction with Dr. Felipe Caldas founded a bacteriological institute at Rio Grande do Sul. There he made the researches on yellow fever for which he has lately been awarded a prize.

The Medical Provident League.—We have received from Dr. J. W. J. Oswald a long letter in print with regard to the establishment of the Medical Provident League, to which reference was made in the British Medical Journal of November 10th, p. 1401. Dr. Oswald states that he called a meeting of those who had agreed to join the League on November 23rd, when the League was established, and he was elected President.

MEDICAL VACANCIES.

The following vacancies are announced:

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, with apartments and board. Applications to the Chairman of the Medical Board by December 17th.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY Diseases.—Clinical Assistant. Applications to the Secretary of the Medical Committee, John Bright Street, Birmingham, by December 3rd.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House-Surgeon. Salary to commence at £80 per annum, with board, washing, etc. Applications to the Secretary, 15, Richmond Terrace, Blackburn, by December 12th.

BRIGHTON AND HOVE LYING-IN INSTITUTION.—House-Surgeon, unmarried, and under 30 years of age. Salary, £80 per annum, with furnished apartments, board, etc. Applications to the Clerk, 77, West Street, Brighton, by December 7th.

BURY DISPENSARY HOSPITAL.—Senior House-Surgeon. Salary, £110 per annum, with board, residence, and attendance. Applications to the Secretary, Knowsley Street, Bury.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £100 per annum, with board, apartments and laundress. Applications to the Secretary.

CEYLON MEDICAL COLLEGE.—Registrar, Curator of Museum, and Lecturer. Salary, Rs. 6,000 per annum, rising to Rs. 8,000. Applications to the Private Secretary to the Secretary of State, Colonial Office, S.W., by December 6th.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—Clinical Assistant for three months. Applications to the Secretary.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House-Physician. Appointment for six months. Salary at the rate of £30 per annum, with board and residence. Applications to the Secretary by December 10th.

CROYDON GENERAL HOSPITAL.—House-Surgeon. Salary, £105 per annum, with board, laundry, and residence. Applications to the Secretary by [illegible]

DARLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon, unmarried. Salary, £150 per annum, with rooms. Applications to the Secretaries, 80, Bondgate, Darlington, by December 5th.

DERBYSHIRE ROYAL INFIRMARY.—Resident House-Surgeon. Appointment for twelve months but eligible for re-election. Salary, £100 per annum, with apartments and board. Applications to the Secretary by December [illegible]

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant Resident Surgical Officer. Appointment for six months. Salary at the rate of £[illegible] per annum, with board, residence, and washing. Applications to the Chairman of the [illegible]

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon. Salary, £40 per annum, with board and residence. Applications to the Secretary by December 13th.

DOUGLAS: NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon: unmarried. Salary, £52 per annum, with board and washing. Applications to the Honorary Secretary, 25, Athol Street, Douglas, Isle of Man, by December 11th.

DUBLIN: ROYAL HOSPITAL FOR INCURABLES, Donnybrook.—Resident Medical Officer. Salary, £140 per annum, with board and furnished apartments. Applications to the Registrar by December 8th.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary, £40 per annum with residence, board, and washing. Applications to the Secretary by December 13th.

DUNDEE ROYAL INFIRMARY.—Resident Medical Assistant. Appointment for six months. Salary at the rate of £40 per annum, with board and washing. Applications to the Medical Superintendent by December 5th.

DUNMOW UNION.—Medical Officer and Public Vaccinator for the Thaxted District. Salary, £90 per annum and fees. Applications to the Clerk by December 7th.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell.—House Physician. Board, residence provided, and honorarium of £25 on completion of six months' approved service. Applications to the Secretary by December 6th.

FULHAM PARISH.—Second Assistant Medical Officer at the Infirmary, St. Dunstan's Road, Hammersmith. Appointment for six months. Salary at the rate of £60 per annum, with board, furnished apartments, and washing. Applications to the Medical Superintendent by December 8th.

GLASGOW UNIVERSITY.—Two additional Examiners for degrees in Medicine, to examine in Pathology and Physiology respectively. Salary, £30 per annum. Applications to the Secretary, Glasgow University Court, 91, West Regent Street, Glasgow, by December 1st.

GROVE HALL ASYLUM, E.—Junior Assistant Medical Officer. Salary, £120 per annum, with board, furnished apartments, etc. Applications to the Medical Superintendent.

HEMEL HEMPSTEAD: WEST HERTS INFIRMARY.—House-Surgeon and Dispenser: unmarried. Salary, £100 per annum, with furnished rooms, board, etc. Applications to the Honorary Secretary by December 12th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Resident Medical Superintendent. Salary, 100 guineas per annum with board and residence. Applications, on forms provided, to the Secretary by December 11th.

HUDDERSFIELD INFIRMARY.—Junior House-Surgeon. Salary, £60 per annum, with board, residence, and washing. Applications to the Secretary.

HULL ROYAL INFIRMARY.—(1) Assistant House-Surgeon. Salary, £60 per annum, with board and furnished apartments. (2) House-Surgeon; unmarried. Salary, 100 guineas per annum, with board and furnished apartments. (3) Junior Assistant House-Surgeon. Salary, £40 per annum, with board and lodging. (4) Honorary Surgeon. Applications for (1) by December 3rd, (2 and 3) by December 10th, and (4) by December 12th.

KENSINGTON DISPENSARY.—(1) Two Honorary Medical Officers. (2) Honorary Anæsthetist. Applications to the Secretary, 56, Bedford Gardens, Kensington, by December 5th.

KING'S COLLEGE, London.—Professor of Anatomy. Applications to the Secretary by December 4th.

LEEDS: HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Appointment for six months but eligible for renewal. Salary at the rate of £125 per annum. Applications to the Secretary of the Fund by by December 14th.

LEICESTER INFIRMARY.—Assistant House Surgeon. Salary, £80 per annum, with board, apartments, and washing. Applications to the Secretary, 24, Friar Lane, Leicester, by December 8th.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrar. Salary, £100 per annum. Applications to the House Governor by December 7th.

LONDON HOSPITAL MEDICAL COLLEGE.—Assistant Demonstrator of Anatomy. Salary, £90 per annum. Applications to the Warden by December 10th.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich Road, S.E.—Junior Resident Medical Officer. Appointment for six months, with prospect of election as Senior. Salary, £60 per annum with board, attendance, and washing. Applications to the Secretary by December 4th.

NORTHAMPTON GENERAL INFIRMARY.—House-Surgeon; unmarried, and not under 23 years of age. Salary, £125 per annum, with furnished apartments, board, etc. Applications to the Secretary by December 13th.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon; unmarried. Salary, £140 per annum, and all found except board. Applications to the Secretary.

RAMSGATE AND ST. LAWRENCE ROYAL DISPENSARY.—Resident Medical Officer, unmarried. Salary, £100 per annum, with furnished apartments, board, and attendance, and £10 allowed for substitute during annual holiday. Applications to the Secretary by December 8th.

RHONDDA URBAN DISTRICT.—Medical Officer of Health. Salary, £500 per annum. Applications, endorsed "Medical Officer of Health," to the Clerk, Public Offices, Pentre (Glam.), by December 12th.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Member of the Court of Examiners. Applications to the Secretary by December 5th.

ROYAL EAR HOSPITAL, Soho.—House-Surgeon, non-resident. Small honorarium given. Applications to the Honorary Secretary, Medical Board, before December 15th.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge Road, S.E.—(1) Resident Medical Officer. Salary, £70 per annum, with rooms, board, and laundry. (2) Assistant Physician, must be F. or M.R.C.P. Lond. Applications to the Secretary for (1) by November 30th and (2) by December 6th.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone Road, N.W.—Surgeon to the Out-Patient Department. Applications to the Secretary by December 5th.

SEAMEN'S HOSPITAL SOCIETY, Greenwich.—House-Physician for the "Dreadnought" Hospital. Salary, £75 per annum, with board and residence. Applications to the Secretary by December 10th.

SHOREDITCH: PARISH OF ST. LEONARD.—Second Assistant Medical Officer for the Infirmary, Hoxton Street. Appointment in the first place for six months. Salary at the rate of £100 per annum, with rations, washing, and furnished apartments. Applications to the Clerk to the Guardians, 213, Kingsland Road, N.E., by December 4th.

THROAT HOSPITAL, Golden Square, W.—Junior House-Surgeon. Salary, £100 per annum, with lunch daily. Applications to the Secretary by December 8th.

TRINIDAD GOVERNMENT LUNATIC ASYLUM.—Assistant Medical Superintendent. Salary, £250 and £50 allowance, rising by quinquennial increments of £50. Furnished quarters for unmarried man in asylum. Free passage provided. Applications, marked "Trinidad Asylum," to be addressed to the Private Secretary, Colonial Office, S.W.

UNIVERSITY COLLEGE, London.—Assistant Surgeon to the Hospital. Applications to the Secretary by December 8th.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician, (2) House-Surgeon. Appointments for six months. Board and lodging provided in each case. Applications to the Secretary by December 26th.

MEDICAL APPOINTMENTS.

EDWARDS, C. W., F.R.C.S.Edin., appointed Certifying Factory Surgeon for the Wincanton District of Somersetshire.

FULLERTON, Andrew, M.D., etc., appointed Surgical Registrar to the Royal Victoria Hospital, Belfast.

KENWOOD, Henry R., M.B., C.M.Edin., appointed Medical Officer of Health for the Borough of Stoke Newington.

MCGAVIN, Lawrie Hugh, F.R.C.S.Eng., appointed Assistant Surgeon to the North-West London Hospital.

MERRYWEATHER, S. H., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Pelhams Land District of the Boston Union, *vice* W. P. Simpson, M.B., C.M.Edin. resigned.

MUDGE, Z. B., L.R.C.P.Lond., M.R.C.S.Eng., appointed Certifying Factory Surgeon for the National Explosives Company, Upton Towans, Hayle.

RICHARDS, W. Jones, M.R.C.S.Eng., L.R.C.P.Lond., appointed Fourth Assistant Medical Officer to the Middlesex County Asylum, Tooting, S.W.

RICHARDSON, J. C. R., M.A.Camb., M.B., B.C., appointed Medical Officer of Health to the Saxmundham Urban District.

ROLL, G. W., M.B., B.C.Cantab., F.R.C.S.Eng., Assistant Surgeon to the Royal Westminster Ophthalmic Hospital.

SMITH, J. W., M.B., F.R.C.S., appointed Honorary Assistant Surgeon and Superintendent to the Cancer Pavilion and Home, Manchester.

STANFORD, W. B., L.R.C.P., M.R.C.S., appointed Medical Officer for the Sixth District of the Hollingbourn Union, *vice* E. S. Webber, M.B., B.A.Camb., resigned.

STARKEY, William, M.B., B.Ch.R.U.I., appointed Assistant Medical Officer to the Down District Asylum, Downpatrick.

WOODHOUSE, H. C., M.B., Ch.B.Vict., appointed Medical Officer for the Dawley District of the Madeley Union, *vice* G. L. Proctor, M.B., C.M.Edin., resigned.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. A. Whitfield: Consultation. (Skin.) 5 to 7 P.M.—Dr. Dundas Grant: Class—Practical Otology. 5.15 P.M.—Dr. StClair Thomson: The Surgical Anatomy of the Nose and Accessory Sinuses, including Nasal Suppuration.

Otological Society of the United Kingdom, 11, Chandos Street, Cavendish Square, W., 4.30 P.M.—Cases and Specimens will be shown and discussed.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. H. J. Davis: Some Medical Cases.

TUESDAY.

Pathological Society of London, 20, Hanover Square, W., 8.30 P.M.—Dr. Sidney Bonter: A case of Carcinoma of the Breast. Mr. A. G. R. Foulerton: A case of Hæmangio-sarcoma of the Breast. Dr. W. C. Bosanquet: Cystic Adenoma of the Suprarenal Body. Dr. Thursfield: Two cases of Congenital Morbus Cordis. And other cases.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Guthrie Rankin: Consultation. (Medical.)

Hospital for Diseases of the Skin, 53, Stamford Street, Blackfriars, S.E., 5 P.M.—Dr. C. F. Marshall: Secondary Syphilides.

WEDNESDAY.

Obstetrical Society of London, 8 P.M.—Specimens will be shown by Mr. Targett, Dr. Herbert Spencer, and others. Papers:—Dr. W. J. Sinclair: A Contribution to the Diagnosis and Treatment of Retroflexio-versio Uteri Gravidi. Dr. E. Rumley Dawson: The Essential Factor in the Causation of Sex—a new theory of Sex.

Royal London Ophthalmic Hospital, Moorfields, 1 P.M.—Mr. Nettleship: Clinical Lecture.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 5 P.M.—Sir Hector Cameron: Clinical Lecture.

London Throat Hospital, 204, Great Portland Street, W., 5 P.M.—Dr. H. J. Davis: Nasal Obstruction.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W., 4 P.M.—Dr. Maguire: Congenital Affections of the Heart.

THURSDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. Saunders: Some Inoculations for the Prevention and Cure of Disease.

Roentgen Society, 20, Hanover Square, W., 8 P.M.—Mr. J. Mackenzie Davidson will give an exhibition and description of his Stereoscopic Fluoroscope and its new Rotatory Mercury Break.

Central London Throat, Nose, and Ear Hospital 5 P.M.—Mr. St. George Reid: A Short Sketch of the Outgrowth of the Auditory Apparatus, with microscopical specimens.

Harveian Society of London, Stafford Rooms, Tichborne Street, Edgware Road, W., 8.30 P.M.—Clinical Evening.

Charing Cross Hospital, Post-Graduate Course, 4 P.M.—Dr. Murray: Medical Cases.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Batten: Myopathies.

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. R. Lake: Consultation. (Throat.)

West London Medico-Chirurgical Society, West London Hospital, Hammersmith Road, W., 8.30 P.M.—Clinical Evening. Cases will be shown by Dr. Leonard Dobson, Dr. Seymour Taylor, Dr. Ross Sinclair, Mr. C. B. Keetley, Mr. H. Cane-Smith, and Mr. Dunstan Brewer.

Society of Anæsthetists, 20, Hanover Square, W., 8.30 P.M.—Clinical Evening.

West Kent Medico-Chirurgical Society, Royal Kent Dispensary, Greenwich Road, 8.45 P.M.—Dr. George Vivian Poore: The Purvis Oration on Dietetic Problems. After the Oration there will be a conversazione. Exhibitions will be given by Mr. J. J. Vesey, Mr. Leslie Miller, Dr. Pepperdene, Mr. Ernest Clarke, and Dr. Morgan Dockrell.

Laryngological Society of London, 20, Hanover Square, W., 5 P.M.—Discussion on the Treatment of Nasal Polypi, opened by Dr. Lambert Lack and Mr. Cresswell Baber.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

RANDALL.—On November 19th, at 40, Worple Road, Wimbledon, the wife of Martin Randall, M.D., F.R.C.S., of a son.

WARDEN.—At 9 Rue Chalgrin, Paris, on November 22nd, the wife of Dr. A. A. Warden, of a daughter.

WALTER.—On November 24th, at 232, Lytham Road, Blackpool, the wife of R. A. Walter, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

JOHNSON—SMITH.—At Park Church, Glasgow, on November 21st, by the Very Rev. Dr. Donald Macleod (one of Her Majesty's Chaplains for Scotland), Arthur George Johnson, L.R.C.P., L.R.C.S.Ed., of Darlington, only son of George Johnson, Stourthorpe House, Sutton, and nephew of Thomas Earp, J.P. (late M.P. for Newark), to Isabella, youngest daughter of the late Finlay Smith, Tarbert, Argyleshire.

MARRIOTT—GOCHER.—On November 8th, at the Parish Church, Edgbaston, by the Rev. Horatio Spurrier, M.A., Vicar of Shildon (uncle of the bridegroom), assisted by the Rev. Canon Cresswell Strange, M.A., Vicar of the parish, Hyde Marriott, B.Sc., M.B.Lond., eldest son of the late Joshua Marriott, of Stockport, to Emily Katharine, third daughter of Thomas Gocher, of Edgbaston. At home December 5th, 6th, and 7th. No cards.

DEATHS.

MACKAY.—At 2, Learmonth Terrace, Edinburgh, suddenly, on November 20th, George Mackay, M.D., Deputy Surgeon-General, Madras Army (retired), in his 81st year.

NEALE.—On November 22nd, Richard Neale, M.D.Lond., of South Hampstead, N.W., and Sandgate, Kent, aged 73.

RAWDON.—On November 22nd, at Underbank, Elstree, Herts, suddenly, Henry Greenwood Rawdon, M.D., F.R.C.S.Ed., late of Liverpool, second son of the late Joshua Rawdon, of Rock Ferry, Cheshire, aged 83 years. Interred at Elstree, November 26th.

EDWARDS.—On November 20th, at his residence, Tyn-y-Fordd, Colwyn Bay, North Wales, Rozer Edwards, M.D.Durh., M.R.C.S.Eng., L.R.C.P.Lond., in his 50th year.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.
CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.
CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.
CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Ecrasement, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.
CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.
CITY ORTHOPÆDIC. *Attendances.*—O.p., M. Tu. Th. F., 2. *Operations.*—M., 4.
EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.
GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.
GUY'S. *Attendances.*—Medical, 1.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p., Tu. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.
HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Tu., 2; Th. S., 9.30.
KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.
LONDON. *Attendances.*—Medical, daily, i.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.
LONDON TEMPERANCE. *Attendances.*—Medical, i.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, i.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.
LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.
METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.
MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.
NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.
NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.
NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 3; Dental, F., 9. *Operations.*—Th., 2.30.
ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.
ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.
ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2, Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.
ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.
ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; 1.-p., Tu. Th., 2.30.
ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2
ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.
ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; 1.p., 1; o.p., 12; Obstetric, i.p., Tu. F., 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.
ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 3; females, W., 9.30. *Operations.*—Tu., 2.30; Th., 2.
ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu., F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.10; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.
ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.
ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30. Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.
SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.
THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily exc. M., 10.
UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th. 2.
WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 9.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 3; S., 10. *Operations.*—Daily, about 2.30; F., 10.
WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

HIBERNICUS desires to learn the composition of the proprietary remedy "Trilene," for the reduction of weight.

OPHTHALMIC SURGEON writes: Can any medical man kindly inform me where smoking-tobacco free of nicotine can be obtained and whether it is smokeable, as I am anxious to try it in cases of toxic amblyopia, in which the temptation to smoke is too strong to be resisted. I believe some firm in Edinburgh or Glasgow make it, but I cannot get an address.

MEDICAL BOOKKEEPING.

C. would be glad to know if some easy method of bookkeeping for private practice, in which the daily "posting up" can be dispensed with, the number of books required, the cost of books, and name and address of person supplying them.

DWARFED GROWTH.

ATROPHIC asks for advice in the treatment of a girl aged 7 years who does not grow. There is a tuberculous history on the mother's side. The child was quite well until 16 months old, when she had chronic and offensive diarrhœa lasting nearly a year, and off and on since. She has no bony signs of rickets and is very intelligent. For the last two years she has been in fair health, but has scarcely grown at all. Her present weight is 37 lbs. and height 39 inches. Will thyroid feeding, he asks, be of use?

SEX OF OFFSPRING.

G. S. H. writes: I believe that the sex of offspring is accepted as having some basis in the relationship of conception to the menstrual period, especially either immediately before or after. Can you tell me what is the accepted view?

*** There is not, so far as we can ascertain, any accepted view. The only statement bearing on the matter which a short search has unearthed is in Geddes and Thomson's *Evolution of Sex*, p. 47: "Dusing also points out that females with small placenta and little menstruation bear more boys."

ANSWERS.

OLD APOTHECARIES' JARS.

DR. F. HYDE MABERLY (Cork) writes: With reference to the note on "Old Apothecaries' Jars," in the BRITISH MEDICAL JOURNAL of November 17th, I may mention that anyone interested in these will find a good many Italian specimens among the Italian majolica collection in the Victoria and Albert Museum, South Kensington. They are of various quaint shapes, the decorations being often applied in bold polychromatic designs. Most of the titles require a knowledge of the older Pharmacopœias for their elucidation. A few more specimens may be seen in the Salting loan collection in the next room of the Museum.

NOTES, LETTERS, Etc.

MEDICAL OFFICERS IN THE HIGHLANDS AND ISLANDS OF SCOTLAND.

OUR attention has been called to two advertisements in a local paper from the Parish Council of Nesting, Shetland Islands. In the one case a salary of £25 a year is offered for Lunnasting, Whalsay, and Skerries; in the other a salary of £15 a year for the Nesting district; in both cases "to include medicines to paupers, with fees for vaccination, and "fees for quarterly visits to pauper lunatics in private dwellings. We are informed that the population in Nesting and the other places mentioned is 2,580, Whalsay and Skerries being islands. We should advise medical men who are disposed to think of applying for these appointments to consider whether the emoluments offered are reasonable, and should they take the same modest view of the value of medical services as the parish council, at least to obtain satisfactory assurances as to fixity of tenure, a free house, and an annual holiday.

IRISH DISPENSARY DOCTORS AND GUARDIANS.

DR. M. HENRY (Belfast) writes: The following is an account of the money subscribed to defray my expenses against the Antrim guardians

	£	s.	d.
Subscriptions	22	7	0
(See BRITISH MEDICAL JOURNAL, July 14th *et ante*.)			
	£	s.	d.
Solicitors' bill of costs	17	18	1
Guardians' costs at Assizes	3	0	3
	£20	18	4

This leaves a balance of £1 8s. 8d. in my hands, but I was paid for two weeks' work instead of three by the guardians. I beg to thank those who so liberally helped in the above case.

THE MATRICULATION EXAMINATION OF THE UNIVERSITY OF LONDON

J. B. C. writes: In your report of the second meeting of the new Senate of the London University you notice that an early duty will be to make suggestions as to the Matriculation Examination. Perhaps my experience of the London Matriculation, or rather of the General Medical Council in regard to it, may be of interest.

Being undecided as to whether law or medicine would be my final decision, and believing that the London Matriculation was accepted as an entrance to either profession, I did not inquire too closely into the conditions of the General Medical Council, the more especially as the University syllabus states in general terms that its Matriculation is accepted by the former body for registration but passed the June

examination, taking chemistry as my optional subject in preference to a second language. With what result? That having commenced my first year's course I find myself refused registration on the grounds that I have passed in a science (which is held of such importance that it is included in the first year's course of every medical degree in England) instead of a second language (one of which—French—may be said to be a stock subject with every schoolboy), the hardship being the greater since there are inferior examinations accepted if the required subjects are taken. In the past the London Matriculation certificate has been valued because it admitted its possessor to the professional courses without further examination. And parents were not under the necessity of deciding on their son's career until he was of an age to actually commence his course, knowing that if he in the meantime passed the Matriculation he was possessed of a valuable starting point. Under the new regulations of the General Medical Council this is no longer so. The Matriculation in itself does not qualify one for registration. Either then the Matriculation should include a second language in its compulsory subjects, and thus maintain its past value, or the General Medical Council should relax a rule which at present is as absurd as it is unnecessary, taking the London Matriculation as a proof of at least an average education.

The Appeal on Behalf of the Widow and Family of the late Dr. Quinlivan.

The following additional subscriptions have been received towards this fund, the objects of which were fully stated in the British Medical Journal of November 17th, 1900, p. 1450:

	£	s.	d.
Dr. F. J. Smith, 138, Harley Street, W.	3	3	0
Dr. Caldwell, 14, Stratford Place	1	0	0
Dr. Hirsch, Charlinch Rectory Place, Woolwich	1	1	0
Dr. Hingall Elmfield, 197, High Road, Balham	1	1	0
Surgeon Major H. De Tatham, 8, Duke Street, St. James's ...	3	3	0
Dr. Bullen, 12, Pembroke Road, Clifton	0	10	6
Dr. Wickham, 1, Westbourn Road, Barnsbury, N.	1	1	0
Dr. M. McCarthy, 46, Manchester Road, Warrington ...	0	10	6
Mr. and Mrs. Quinlivan Gower Hall, Cooreclora	2	0	0
Dr. R. Swyer, 224, Brick Lane, E.	1	1	0
Dr. I. Dorran, 38, Old Street	0	10	6
Dr. S. P. Snook, Weymouth	1	0	0
K. W. N.	0	5	0
Dr. E. T. McDonnell, 16, Stephens Road, Bow, E.	1	1	0
Dr. E. Niall, 13, Dulwich Road, Herne Hill	0	10	6
Dr. Balfour Graham, Leven, Fife	0	10	6
Dr. Ambrose Carney, Glenavon, Romford, E.	1	1	0
	£19	0	6

Empiricism or "Unexplained Observation."

L. S. A. (retired) writes: Mr. Dewar's letter under the above heading brings to my mind a matter that made an impression on me when I was in practice. At the time I began study the "expectant" treatment was in vogue, and the value of nearly all drugs was doubted. My father, however, had been bred in the bleeding and purging era, and although he had discarded the lancet in obedience to public—not his own—opinion, he continued to commence the treatment of most diseases by what he called "clearing out the primæ viæ." If it be true that "Bring up a child in the way it should go and when he is old he will not depart from it," so "bring up a child in the way he should not go, and he is still less likely to depart from it in after-life." This was exactly my case. My teachers told me drugs were useless, and Professor Henderson intimated that to gain immortality all that was necessary was five grains of sodium chloride given very occasionally. In spite of all this, I went back to calomel and opium for such diseases as pneumonia, pleurisy, etc. I do not know that it did my patients much good in the way of saving their lives, but what I did notice was this, that during my twenty-five years as a country apothecary I had no empyema whilst my neighbours, who treated pleurisy with liquor ammoniæ acetatis followed by ammonia and bark had a fair proportion of patients walking about with a tube in the thorax. Time passed, Listerism came up, and amongst the multitude of antiseptics I saw—to my astonishment—that mercury perchloride was one of the most reliable. Of course it may only be a coincidence but when I saw it I was unscientific and even vulgar enough to exclaim "Good old calomel." However, the prevention of such operations as paracentesis is almost unnecessary nowadays, for surgery has made such wonderful strides since I retired that, according to what one reads, the most serious operations are almost without danger, and many are a positive luxury; indeed, in the near future we may—amongst the vacation amusements—expect to see something like the following announcement: "Anyone wishing to spend a pleasant summer holiday can have cholecystcolostomy (this brief designation appeared lately in the British Medical Journal) performed at," etc.

Formic Acid and Formalin in the Treatment of Phthisis.

Dr. J. Lardner Green (St James's Street, S.W.) writes: As I have for years past investigated the therapeutical properties of formic acid and formalin, I am much interested in your remarks on the Harveian Lectures delivered by Dr. Maguire, wherein he reports upon his treatment of phthisis by intravenous injection of pure solution of formic aldehyde. In my paper read at Portsmouth, August, 1899, I referred to the results I obtained since 1895 of the inhalation of the spray of a solution of formic aldehyde, and suggested the addition in some cases of sp. ammon. arom., whereby the irritating qualities of the formic aldehyde are obviated. I strongly advise that the ammonia, instead of being merely added to the formic aldehyde, be given in a chemical combination of formate of ammonia, or, as it is called, urotropine; this is perfectly soluble in normal solution, and free from any pungent quality.

LETTERS, COMMUNICATIONS, Etc., have been received from

A Amused; A. E.; Antihumbug; Atrophie; A. H. P.; Dr. T. R. Atkinson, Chadwell Heath; A. M. C.; Mr. E. L. Anderson, Liverpool; A.; Association of Registered Medical Women, Secretary of, London; Dr. S. Agnew, Lurgan.

B Between Two Stools; Mr. W. J. Baird, Bury; Bournemouth Medical Society, Secretary of, Bournemouth; Mr. W. P. Blumer, Sunderland; Dr. H. Barnes, Carlisle; Mr. G. H. Broadbent, Manchester; Mr. L. A. Bidwell, London; Dr. A. H. Bampton, Ilkley; Mr. C. A. Ballance, London; A. Brownlie, M.B., Redcar; Mr. J. Bennett, Warrington; Mr. H. J. Blakeney, Birmingham; Dr. F. G. Bushnell, Plymouth Mr. J. Busfield, London; Dr. J. G. Blackman, Portsmouth; Mr. C. Beesley, Exmouth.

C Cymro; C.; A. Cox, M.B., Gateshead; Mr. J. G. Craggs, London; Dr. J. M. Clarke, Clifton; Mr. A. H. Cheatle, London; T. Campbell, M.B., Bridge-of-Weir; Mr. O. Corfield, Bristol; Dr. A. E. Cooper, London; Dr. W. H. Corfield, London; J. G. Clegg, M.B., Manchester; Mr. H. J. Clark, Swanage; Dr. C. J. Cullingworth, London; J. W. Crawshaw, M.B., Manchester; J. E. Charles, M.B., Birmingham; Dr. W. L. Chubb, Folkestone.

D District Medical Officer; D.M.O.; D. H. Distin, M.B., Enfield; Mr. M. Duggan, Bowdon; Dr. L. Drage, Hatfield; Dr. R. Dudfield, London; Dr. T. Dutton, London; Mr. G. Dalton, London; Dr. J. C. Dunlop, Edinburgh; Dr. S. Delépine, Manchester.

E Dr. C. R. Elgood, Windsor.

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G Dr. J. Gay, London; Mr. W. E. Grange, London; J. E. Gemmell, M.B., Liverpool; Dr. E. Gwynn, London; G. K. Grimmer, M.B., Edinburgh; Mr. O. F. F. Grunbaum, London; Mr. P. B. Giles, Bletchley; E. A. Goulden, M.B., Stockport; Mr. J. L. Green, Salisbury.

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I Inkpot; Mr. A. Ireton, London.

J J. S. M.; Juvenal; Miss M. D. Jones, M.D., New York; Juvenis; Mr. W. M. M. Jackson, London.

K Dr. G. Kempe, Salisbury; T. S. Kirk, M.B., Belfast; Dr. T. N. Kelynack, Manchester; Mr. W. Kirkby, Manchester.

L Late Infirmary Sister; Mr. T. G. S. Leary, Stoke; Dr. A. W. W. Lea, Manchester; Mr. C. A. Leigh, London; Mr. J. B. Lamb, Harrow-on-the-Hill; R. P. R. Lyle, M.B., Newcastle-on-Tyne.

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O Observer; Officer R.A.M.C.; Ophthalmic Surgeon.

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ON RECENT RESEARCHES

WITH REGARD TO THE

PARASITOLOGY OF MALARIA.

Being a portion of the Address delivered at the Anniversary Meeting of the Royal Society.

By the Right Hon. the LORD LISTER,
Retiring President of the Society.

Through the Malaria Committee the Society has kept in touch with the progress that has been made in unravelling the mystery of the greatest scourge of our tropical colonies, and with the steps that advancing knowledge has suggested for its suppression. The subject has now reached a stage at which it may be not unfitting to refer briefly to what has been accomplished.

The term "malaria" implied the belief that some vitiated state of the atmosphere was the cause of the disease. But the knowledge gained of late years of the parasitic nature of infective disorders pointed clearly to such an origin of the intermittent fevers, as the various manifestations of malaria have been termed. Accordingly diligent and long-continued search was made in the water and the soil of malarious districts in Italy for the suspected living agent, but without success.

Laveran's Discovery.

The discovery was made in 1880 by Laveran, a French army surgeon stationed in Algiers, who observed in the red blood corpuscles of malarious patients what he regarded as adventitious living organisms; not of vegetable nature like the bacteria which constitute the *materies morbi* of so many infective diseases, but a very low form of animal life. In what he believed to be the youngest condition of the organisms, they appeared in the red blood discs as tiny specks of colourless protoplasm, possessing amœboid movements. Those growing at the expense of the red corpuscles which they inhabited consumed them more or less completely, at the same time depositing in their own substance a peculiar form of dark brown or black pigment, such as had long been known to form characteristic deposits in the organs of malarious subjects. As they grew they assumed various forms, among which was what Laveran termed the "rosace," a rounded body bearing at its circumference little spherules, while the pigment was accumulated at the centre.[1]

This discovery of Laveran's, at first regarded with the gravest suspicion by pathologists, was the first great step in the etiology of malaria. It supplied the means of distinguishing the disease from its counterfeits, and it explained the wonderful specific efficacy of quinine, till then given only empirically. Quinine is remarkable in the circumstance that it acts with deadly effect upon some microbes, in dilutions which are quite unirritating to the human tissues. It can thus be given in sufficient doses to kill the malaria parasite in the blood without injuring the patient.

Golgi's Observations.

Nine years after Laveran's discovery, Golgi, of Pavia, who had been specially studying the "rosace" form of the parasite, and had become convinced that the spherules at the circumference of the rosace were sporules of the microbe, announced that he had observed differences between the rosaces of the tertian and quartan forms of the fever, so great and so constant as to make him satisfied that they were two distinct species of organism. At the same time he had made the extremely important observation that the periods of occurrence of the fever corresponded with the times of maturation of the rosaces. These all coming to maturity about the same time shed their sporules into the blood, and this determined the febrile attack. The free sporules then, according to his view, attached themselves severally to other red discs, constituting Laveran's tiny amœbæ, and grew in the red corpuscles without causing symptoms till they had produced a fresh crop of sporules ripe for extrusion; the time for this being two days in the tertian and three days in the quartan form. Thus the periodicity of the intermittent fevers and their variety in that respect were alike explained.[2]

The Æstivo Autumnal Parasite.

A few months later a third species of the parasite was recognised, having the peculiarity that some of its individuals, instead of being of rounded form, were of crescentic shape. This species received the title "æstivo autumnal," on account of the season in which it showed itself in Italy. It was not so regular in its periods as the others, and was much more dangerous. The existence of these different species was at first very generally doubted, but it is now universally accepted, and is of very great importance. The examination of a drop of blood from the finger of the patient enables the physician to decide not only whether the disease is malaria, but which of the three types it will follow. The more dangerous crescent form is commonest in the tropics, and hence has been termed by Koch "tropical malaria." The quartan has proved the mildest of the three.

The process of sporulation might seem at first sight to explain the whole life-history of the parasites. For their propagation within the human body that process does indeed make ample provision. But the mystery remained—How did they gain entrance into the human system? Though present in abundance in the blood of the malarial patient, they are absent from the excreta. Spontaneous generation having been long since exploded, what could be their mode of origin in the external world? This problem has of late been completely solved.

Manson's Deductions.

Among the forms of the parasite observed by Laveran was one which he termed "flagellated," possessing filamentous appendages which exhibited extremely active movements, by virtue of which they were often seen to break off from the parent microbe and swim away. These flagella were regarded by many biologists as products of degeneration resulting from the abnormal influences to which the parasites were exposed in blood outside the body. This Laveran could not believe. Indeed it was the remarkable activity of the flagella that finally satisfied his own mind that what he had discovered were really living parasites; he regarded the flagella as the highest form of development of the microbe. There was another observer who felt equally convinced that the flagella were living elements—our Fellow, Dr. Manson. He, however, went a step further. Seeing that the flagella were never met with in blood when first drawn, but only made their appearance after some little time had elapsed, he conceived that their function must be that of spores for spreading the parasite in the external world, and some suctorial insect seemed to him the probable agency for their diffusion. He had observed several years ago that another parasite of the human blood, a microscopic nematode worm, filaria, is drawn with the blood into the stomach of a kind of mosquito, and finds in the insect a secondary host, in the tissues of which it passes through a new cycle of development. He became deeply impressed with the idea that a similar series of events might occur with malaria, and he expounded his views fully before the Royal College of Physicians of London. The notion that mosquitos might be in some way associated with malaria had occurred to Laveran and to others, but by no one had it been brought home with such logical force as by Manson.

Ross's Observations.

Major Ronald Ross, of the Indian Medical Service, on a visit to this country became deeply impressed by Manson's arguments, and determined to test his theory on returning to India. Using mosquitos bred in bottles from the larva, he caused them to bite persons affected with the crescent form of malaria, and afterwards sought in the bodies of the insects for evidence of the development of the parasite within them. For two long years he pursued this search, making about a thousand observations, but to no purpose. So far he had employed two kinds of mosquito common in the district where he was stationed; but in August, 1897, having been supplied with some larvæ of a species rare in that locality, and having bred the fully developed insects from them, he induced eight of them to bite a patient with crescents in his blood, and examined their tissues at successive periods. Four of them were killed at once for the investigation of the flagellated bodies. Of the remainder, one examined four days after biting showed under a high magnifying power several rounded bodies embedded in the wall of the stomach,

differing from any natural structure of the insect, and containing granules of pigment "identical in appearance to that of the parasite of malaria."[3] The eighth mosquito was killed one day later, and exhibited bodies precisely similar except that they were distinctly larger and more substantial, implying that they had grown in the interval. Thinking that in all probability he had at length found that which he had been so long in search of, and feeling uncertain when he might again obtain the rare species for confirmatory investigation, he at once sent a description of his observations to London, accompanied by his preparations and an independent report upon them by a colleague. Dr. Manson, to whom among others they were submitted, was so much struck with the preparations that he had a drawing made of the pigmented bodies in them, for publication along with Ross's paper. Though, like Ross, expressing himself with caution, he inclined to his interpretation of the appearances. The paper contained a minute description of the rare mosquito, which seemed to Ross to belong to a "family distinct from the ordinary" kinds.

In the following month he made a similar experiment with another species of mosquito which appeared closely allied to the subject of his last observations. He succeeded, though with some difficulty, in getting two of them to bite a patient with crescents. One of these insects, killed next day, was examined with a negative result; but in the second, killed forty-eight hours after biting, the peculiar pigmented bodies were again seen among the tissues of the stomach. Meanwhile "some scores" of the same species "unfed or fed on healthy blood, had been examined without finding the cells."

In the same month he observed precisely similarly pigmented bodies in a common mosquito which he had seen feeding on a patient affected with the parasite of mild tertian fever. Here he had not the rigorous evidence supplied by insects bred from the larva[4]; and it was quite a new thing to find the pigmented bodies in ordinary mosquitos. But all the patients on whom his previous observations on the common species had been made had been affected with crescents; and the parasite concerned being in this case a new species, it did not seem unlikely that it might be harboured by the common insects.[5] These new facts removed all doubt from his mind; and he felt that he had the subject in his grasp, and wrote to that effect to Manson. But to his bitter disappointment he was at this time despatched to another part of India to study another disease, and thus several precious months were lost.

In February, 1898, however, he was told off for the special investigation of malaria, and a laboratory in Calcutta was set apart for his use.[6] Few cases of human malaria being available at that season of the year, he turned his attention to some closely-allied forms of disease common in birds. He soon found that one of the ordinary kinds of mosquito, which had invariably given negative results when fed on patients with crescents, developed pigmented bodies among the tissues of the stomach, if fed on birds—such as sparrows—containing in their blood the form of bird parasite known as proteosoma. The birds presented a ready field for experiment; and the kind of mosquito—the grey mosquito, as he termed it—was very abundant in Calcutta; so that it was easy for him to hatch from the larva any number that he might require. Discoveries now followed each other in quick succession. He soon announced that the pigmented bodies grew rapidly from day to day, till after about a week they assumed large proportions, projecting like buttons from the outer surface of the stomach, and often showing a curious appearance of radiating striæ. Next we learned that the striæ had been indications of spore formation, and that when the bodies had attained maturity they burst into the general body cavity, discharging enormous numbers of minute elongated organisms which he termed "germinal rods." Then followed the remarkable observation that the germinal rods soon leave the general body cavity and accumulate in the cells of the salivary or poison glands, and in the duct leading from them to the proboscis with which the bites of the insect are inflicted; and, lastly, he completed the cycle of evidence by ascertaining that healthy sparrows could be infected with the proteosoma by causing mosquitos to bite them at the appropriate period after biting an infected bird.

Thus was in truth established the mosquito theory of malaria; for taking into account the close resemblance of the proteosoma to the human malarial parasites, together with the facts ascertained by Ross regarding the infection of the rare mosquitos with human crescents, we could not doubt that the course of events which he had traced in the sparrow occurred also in man. And the two sets of observations taken together clearly established the fact that, as Manson had predicted, different species of malarial parasite may require different kinds of mosquito as their alternative hosts.

At the same time the presence or absence of pigmented bodies in the stomach wall afforded a sure means of distinguishing those kinds of mosquitos which convey malaria to man from those which are incapable of doing so. And it may be added that the multitude of negative results after feeding grey mosquitos with crescent blood, considering the great prevalence in Indian birds of the parasite with which that species of insect is liable to be infected, afforded pretty conclusive evidence that the mosquito never derives the germs of malaria from the larva, and can acquire them only by biting some infected animal.

MacCallum's Observations.

But although the mosquito theory was thus demonstrated, there remained a link wanting in the chain of biological sequence. The flagella which Manson regarded as spores were destitute of malarial pigment, whereas the smallest corpuscles seen by Ross in the stomach wall invariably possessed it. How was this inconsistency to be explained? What was the relation of the unpigmented flagellum to the pigmented corpuscle? The answer had been already independently supplied.

I was present at a sitting of the Zoological Section of the British Association at the Toronto meeting in 1897, when Dr. MacCallum, a young pathologist of the Johns Hopkins University at Baltimore, read a paper describing the results of an investigation in which he had long been engaged into another form of malaria parasite, halteridium, especially common in crows. He told us—and he illustrated his statements with preparations under the microscope—that he had distinguished differences, which he regarded as fundamental, between the spherical bodies seen in the shed blood of a bird affected with that parasite. Though alike in size, some had a more granular protoplasm than the others, which had a more hyaline aspect; and he had observed that the more hyaline ones alone emitted flagella. These, after wriggling themselves free from the parent cell, swam away till they approached some corpuscle of the other, more granular, sort; when the first that reached it plunged into its substance and disappeared, while all others were by some amazing provision absolutely refused entrance. Here, then, was witnessed in an exceedingly low form of animal life a process of fertilisation identical with that which occurs in an echinus or a fucus. The flagella were neither more nor less than spermatozoa, and the more granular cells were ova. As the result of the fertilisation the female cell was seen by MacCallum to alter its shape in the shed blood and assume an elongated form to which the term vermiculus was applied. This new creature was possessed of wonderful powers of locomotion, sometimes in its powerful career piercing through the substance of a red corpuscle.[7] Nothing could well be imagined better adapted for penetrating the layer of cells that line the stomach of the mosquito; and as the vermiculus retained its pigment, Ross's pigmented bodies were naturally accounted for.

These observations of MacCallum's might seem at first almost too wonderful for credence; but they have been fully confirmed by others.

It appears to be doubtful whether halteridium ever produces the "rosace" form with its attendant sporulation, but there is no doubt that the process of fertilisation seen in that parasite occurs in human malaria. MacCallum himself observed the act of conjugation in the crescentic human form, though he did not see the subsequent development of the vermiculus.

Observations of Koch and Grassi.

Koch made a further step by observing the vermiculus of proteosoma in blood from the mosquito's stomach.[8] And, finally, our medallist, Grassi, who in other ways has made

most important contributions to this subject, has in a recent work,[9] accompanied by very beautiful illustrations, not only described the presence of vermiculi in abundance in the blood in the stomach of mosquitos during the first two days after biting patients affected with malaria, but he has traced and figured the pigmented bodies of the smallest size in the tissues of the stomach in the immediately succeeding period, these bodies retaining in some instances the elongated form of the vermiculus after passing through the layer of epithelium that lines the cavity of the organ.

Sporulation and Sexual Reproduction.

It has thus been abundantly established that the parasites of malaria are present in the patient's blood in two distinct forms, one sporulating asexually in the human system and causing the attacks of fever, the other undergoing sexual development in the body of the mosquito. That both forms are developed from the spores introduced by the mosquito is certain. At what stage they begin to develop their respective peculiarities is not yet quite made out. The crescent form is peculiarly favourable for this inquiry, as it is the crescents only which discharge the sexual function, and they are easily distinguished from the sporulating form, not only by their shape but also by their much larger size.

The development of the crescents has been specially studied by the Italian pathologists Bastianelli and Bignami,[10] who have been able to distinguish the young crescents while still of extremely small dimensions; and they have made the remarkable observation that, while the crescents are as a rule only found in the blood of the finger when they have arrived at maturity, the young forms are to be seen in internal organs such as the spleen, but above all in the bone marrow, where alone, according to these observers, the youngest recognisable crescents are to be found.

Seeing that, in whatever part of the body they are, the parasites always inhabit the blood, it seems difficult to conceive what can be the cause of their preference, at different stages of their growth, for the blood vessels of different regions and organs. But of this we find parallels in several other cases of blood parasites; the most striking perhaps being the astonishing fact, that of two species of filaria that infest the human blood, one only shows itself in superficial parts at night, and is therefore termed "filaria nocturna," while the other has the name "filaria diurna," because it only appears by day in the finger blood, and retreats into deep parts for the night.

"Anopheles" and "Culex."

Ross was not an entomologist, and he was unable to learn in India the names of the species of mosquito with which he had been working, till Daniels, one of the explorers sent out by the Malaria Committee, having gone to Calcutta to confirm or otherwise Ross's work, informed him that his rare kinds, which acted as hosts for the human crescents, belonged to the genus *Anopheles*, and that the common sort, which performed the same office for proteosoma, belonged to another genus, *Culex*. It has been a matter of great interest to ascertain whether all mosquitos which act as conveyers of malaria to man are of the genus *Anopheles*, and the exceedingly common and numerous species of *Culex* guiltless in that respect. Very numerous investigations into this question, and especially those conducted by Grassi and his coadjutors, seem to have proved that such is the case, and that, so far as human malaria is concerned, *Anopheles* alone have to be considered.

Our other two explorers, Messrs. Christophers and Stephens, have made various important contributions to our knowledge of malaria. Thus, having paid special attention to the very dangerous disease which, on account of one of its symptoms, is termed blackwater fever, they have come distinctly to the conclusion that it is not a special disorder but a form of tropical malaria. If this is the case, it is of immense practical importance; for it will follow that any means efficacious for the prevention of ordinary malaria will prove equally so for the deadly blackwater fever.

The Infection in Young Children.

Another most important fact which they have ascertained, and which was independently observed by Koch, is that in a native population in a malarious region, while the adults may be perfectly free from the disease, an enormously large percentage of the young children contain the parasites in their blood. Though the disease appears to be much less dangerous to the native children than to new arrivals, implying that they have a degree of congenital immunity, the parasites in the young natives are perfectly efficacious for causing dangerous fever in white people, when conveyed to them by mosquitos. Hence the important practical inference that white people settling in a malarious tropical region should not, as they now commonly do, plant their houses near native settlements, but place them at some considerable distance from them, about a quarter of a mile being apparently sufficient. And Christophers and Stephens in their last communication have gone so far as to express the opinion that the following of this simple rule would go very far indeed towards rendering the malarious tropics healthy to Europeans.

In a communication to this Society it is the scientific side rather than the practical that is naturally chiefly dwelt on. Yet I should have been glad, had time permitted, to have referred to the various measures of prevention and treatment of malaria which the light of recent knowledge has already suggested, and which have already borne important fruit. I must now content myself with saying that, very various as these measures are, they are all, without exception, based on the mosquito theory.

Notes and References.

[1] Laveran, *Du Paludisme*, Paris, 1891. [2] Laveran, *op. cit.* [3] British Medical Journal, December 18th, 1897. [4] British Medical Journal, February 26th, 1898. In this second paper Ross did not repeat the description of his method, given in the former article, of using mosquitos bred in bottles from the larva. But as that had been his practice for more than two years, there can be no reasonable doubt that he continued it with this new species. I have also his personal assurance that such was the case. [5] As the result of further knowledge there is no doubt that this common mosquito had derived its pigmented bodies, not from the man it was seen biting, but from a bird affected with another species of malarial parasite. [6] It has seemed necessary to refer to these points in detail, as considerable misapprehension has prevailed in some quarters regarding them. [7] On the Hæmatozoan Infection of Birds, by W. G. MacCallum, M.D., *Journal of Experimental Medicine*, vol. iii, No. 1, 1898. [8] R. Koch, Ueber die Entwickelung der Malaria Parasiten, *Zeitschrift für Hygiene und Infections Krankheiten*, Band xxxii, 1899; exceedingly beautiful photomicrographs of different kinds of malaria parasites in various stages of development accompany this article. [9] Grassi, *Studi di uno Zoologo sulla Malaria*, Roma, 1900. [10] *Sulla Struttura dei parassiti Malarici*, per G. Bastianelli ed A. Bignami, Società per gli Studi della Malaria, 1899.

CLINICAL LECTURES
ON THE
CAUSES AND CURE OF INSOMNIA.

Delivered at the Queen's Hospital, Birmingham.

By Sir JAMES SAWYER, M.D.Lond., F.R.C.P., F.R.S.Edin.,
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Lecture II.
Hypnotic Drugs.

In the treatment of insomnia you may find it necessary to exhibit some of the drugs which are known to you as hypnotics or soporifics, which are remedies that induce sleep. When you have to deal with a case of insomnia do not assume that you must of necessity give a hypnotic drug. I advise you rather to assume that you can cure a given case of insomnia by understanding its particular causation and by remedying the same, rather than by attacking the effect by dosing with some hypnotic. Give hypnotics only in exceptional cases; only administer such drugs when you cannot help it. Your experience in practice will enable you to decide, with increasing precision, when such an exceptional case is before you. Rely whenever you can upon an intelligent causal treatment of insomnia, and upon a judicious employment of some of the non-medicinal helpers of sleep which I am about to describe to you. As a rule the successful treatment of a case of sleeplessness follows from the discovery of its cause. In the severer forms of psychic insomnia we must often at once secure sleep by the action of some efficient hypnotic. I prefer opium or chloral. By the use alone of one of these drugs we

can often quickly cure acute insomnia depending upon some sudden mental shock or strain. You will find that a few nights of sound and sufficient sleep, artificially induced by the exhibition of a reliable hypnotic, will do more than anything else to restore to the brain the power of sleeping without further aid from drugs. Besides chloral hydrate, opium, morphine and the other soporific derivatives of opium, the chief hypnotic drugs are sulphonal, trional, paraldehyde, amylene hydrate, and the bromides, to which may be added alcohol and affusion of the head with cold water. For details concerning the comparative merits and demerits of chloral hydrate, paraldehyde, amylene hydrate, sulphonal, and trional, I must refer you to the admirable writings of Professor Binz.[1]

Sir T. Lauder Brunton insists upon a well-recognised and valuable consideration, namely, that a combination of hypnotics is sometimes more successful than any of them singly. He recommends a combination "of small quantities, such as 5 or 10 minims, of solution of opium or morphine, with 5 grains of chloral and 10 to 30 of potassium bromide."[2] These and other hypnotics may be variously combined to meet the indications of each particular case, according to the judgment of a skilful adviser.

The Risk of Hypnotics.

I must warn you very plainly and very seriously of the risks which attach to the administration of powerful hypnotic drugs. Many human lives are yearly lost as the consequence of the taking by sufferers from insomnia of overdoses of hypnotics. All drugs which produce sleep as a physiological effect, and the relief of insomnia as a therapeutic action, with the exception, perhaps, of the bromides, produce stupor rather than sleep in over-doses, which deepens into the sleep which knows no waking when they are ingested or injected in larger doses still. So never allow a patient to dose himself with hypnotics. Keep the matter quite within your own secure hands, upon well-recognised limits of safety. In the less acute and more chronic forms of psychic insomnia, where the sleeplessness or wakefulness usually depends upon prolonged worry or overwork, I employ chloral or other powerful dormitives sparingly. They should only be used as temporary remedies when it is necessary to secure at once a fair amount of sleep. A patient should never be allowed to swallow chloral or any other of the dangerous but valuable hypnotics whenever he feels so disposed, neither should he apportion their doses for himself; he can only safely take them under direct medical control and observation.

Overwork.

Another important point must not escape from view. It is this: An overworked man or woman must never be permitted to go on with their overwork and habitually secure sleep by chloral or any other hypnotic. In such a case we must relentlessly aim at preventing the sleeplessness by removing its cause, instead of pursuing the illogical and precarious course into which a patient would often persuade us of permitting that cause to continue, and of trusting to counteract or suppress one of its effects by medicine. Work which prevents due sleep is dangerous work. When a man cannot sleep because he works his brain too much, we must make as a condition of our help that he stop or greatly lessen his labour; especially should he abstain from mental work for some hours before going to bed. In many persons the cerebral hyperæmia of severe mental toil does not fall down to the circulatory limits required for healthy sleep for several hours after the cessation of such work. But I advise you to be wisely suspicious as to accepting work as a cause of insomnia. Nature provides that disposition to rest shall follow work. It is mostly worry, not overwork, or it is work under wrong conditions, which brings unrest.

General Hygienic Considerations.

Whatever the cause of the insomnia, a holiday, with complete change of scene and with distinct change of activities, will often do much to cure. Great as is the curative influence of new surroundings and of new outlets for energy, in many cases of psychic insomnia we cannot do without drugs. Potassium bromide is by far the best hypnotic in well-nourished patients and in the slighter cases generally. It is marvellously powerful in producing nervous calm; it is a direct and quite safe brain sedative. But it must be given properly, and in full doses; after getting into bed 30 to 60 grs. dissolved in water should be the dose. Sometimes you may usefully combine with it some drug which will favour the contraction of the weakened cerebral blood vessels. For this indication we may give tincture of ergot or tincture of digitalis, one or both. In many cases of chronic wakefulness arising from prolonged mental strain, the patient is distinctly anæmic. The insomnia cannot be cured unless the anæmia be cured. The pallor of the patient's face, the lightened tints of his visible mucous surfaces, and his soft and small pulse, declare the condition of his blood. Such a person mostly feels drowsy when he is up, and wakeful when he lies down. He needs hæmatinics, of which the best are iron and arsenic, singly or combined. His diet must be generous, containing plenty of fish, meat, and eggs. For such a patient alcohol is often the best hypnotic. The prescription of alcohol as a remedy in disease is often difficult and sometimes dangerous. To many people a "nightcap" of toddy is a superfluous, perhaps hurtful, luxury. It gives, however, perhaps better than anything else, rest and sleep to the worried brain of feeble persons whose blood is poor. If I am sure of anything in therapeutics I am sure that alcohol is the best hypnotic in many cases of chronic psychic insomnia, when the patient is worried and weakly, sorrowful and anæmic. We need not exaggerate our responsibility in the prescription of alcohol, but we should never forget it. I have been accustomed to insist that when we use alcohol, in the form of any of the fluids which contain it, in the treatment of insomnia, we should explain to our patient the reasons for the employment of the remedy, and that we should discontinue this remedy, as we discontinue the use of other drugs, when the conditions which called for its exhibition shall have disappeared.

There are many other matters to which you must give attention in the treatment of chronic psychic insomnia, if you would follow my advice that you should only give hypnotics in exceptional cases, and only when you really cannot obtain a successful result without them. I can now do little more than mention the more important of such details to you.

Some of them you will find useful in some cases, in other cases others. How best to combine them in any given case experience will teach you. First, whether he sleep well or ill, the patient ought from day to day to go to bed and to get up at fixed and regular times. "Lying in bed in the morning" is not a remedy for insomnia. Healthy sleep is a rhythmic act. The conditions for its periodic recurrence must be supplied. An afternoon nap for half an hour or so after a meal, with the feet kept warm before a fire, is helpful, and I have found in practice that it conduces to rather than hinders better sleeping in bed at night. Again, daily bodily exercise in the open air but always short of great fatigue must be enjoined. What is called carriage exercise is better than no outdoor change at all, but walking is a far better exercise, and cycling better still, and riding on horseback the best of all. A worn and worrying man, habitually wrapt up in an absorbing torture of self-consciousness, exaggerating his subjectivities, and sleeping badly, must come out of himself, and blot out his self-consciousness with the saving graces of objectivities when he mounts a cycle or a horse's back. Gardening in the open air, not in conservatories or hothouses, affords good exercise, and it is very efficient in keeping up objective attention.

Dwellers in towns may find good objective employment of a kind counteractive of insomnia, in various physical exercises and "drills," in fencing with foils, and in other similar recreations, all of which you must learn to understand in their several details, so that you may prescribe them intelligently to suit the particular needs and aptitudes of individual patients; many may at least copy Archbishop Whately, who remedied the strain of his logic by splitting his logs, and give their minds a refreshing and recreative objective bent, and their muscles healthy work by cutting up firewood. As to sunshine, I welcome the present therapeutic worship of the the sun, and you will find free and long daily exposure to sunshine a valuable adjuvant in the cure of insomnia. Again, many people have acquired more or less insomnia in the

acquisition of the bad habit of thinking out their affairs upon getting into bed.

ADJUVANTS.

In such cases especially, and in the cure of insomnia generally, people who find it difficult to get off to sleep have been advised to count monotonously, one, two, three, up to a thousand or more, until they fall asleep; to picture some familiar scene and keep the mind fixed upon it; to repeat the letters of the alphabet over and over again. The late Dr. Pereira gave some interesting illustrations of the well-known fact that the repetition of monotonous impressions on the senses of hearing, seeing, or touch are provocative of sleep. One passage from his monumental work on remedies I may quote to you. Speaking of monotonous impressions in the therapeutics of insomnia, he wrote: "This is the principle of the 'method of procuring sound and refreshing slumber at will' recommended by the late Mr. Gardner, who called himself the hypnologist. His method was for some time kept secret, and was first made public by Dr. Binns. It is as follows: Let the patient 'turn on his right side, place his head comfortably on the pillow, so that it exactly occupies the angle a line drawn from the head to the shoulder would form, and then, slightly closing the lips, take rather a full inspiration, breathing as much as he possibly can through the nostrils. This, however, is not absolutely necessary, as some persons always breathe through their mouths during sleep, and rest as sound as those who do not. Having taken a full inspiration the lungs are then to be left to their own action; that is, the respiration is neither to be accelerated nor retarded too much; but a very full inspiration must be taken. The attention must now be fixed upon the action in which the patient is engaged. He must depict to himself that he sees the breath passing from his nostrils in a continuous stream, and the very instant he brings his mind to conceive this apart from all other ideas,' he sleeps. 'The instant the mind is brought to the contemplation of a single sensation, that instant the sensorium abdicates the throne, and the hypnotic faculty steeps it in oblivion.'"

These various methods seem to be devices for changing the current of conscious cerebration. In my practice I have found the plan of taking deep inspirations commended. But for the most part these expedients succeed for a night or two, and they can scarcely be relied upon. These sundry practices may even keep up wakefulness; when the mind attends to them too closely, they may sustain the self-consciousness which keeps the brain from resting. To try hard to go to sleep is often the surest way to keep awake. We do many things best when we forget ourselves, and going to sleep is no exception to the rule. Again, to promote the sleep of a person in bed, you should make sure that the bedclothes which cover him are sufficient and not excessive. If the covering bedclothes be especially arranged in quantity each night by thermometric guidance, so as to secure that the thickness of the upper clothes will give to the inmate of the bed a general feeling of comfort, and not of sleep-preventing discomfort from either local or general chilliness or local or general over-heating, sleep will be powerfully promoted. And, further, if these arrangements be made with the knowledge and approval of the patient we may gain the valuable adjuvant of his self-confidence as to sleeping, and establish within him a happy expectation likely to be realised. For your guidance I may tell you that from observations I have made I have found that in a large bedroom in the middle of a large house, without a fire or other modes of heating and with a window open, a Fahrenheit thermometer stood at 70° or upwards in very hot weather, and at 44° or less in very cold weather. At a temperature of 44° the upper bedclothing should be a sheet, three blankets, a light counterpane, and a light small blanket, not "turned over" at the top and not "turned in" at the bottom; while at a temperature of 70° it should be a sheet only. Between these extremes the changes should be gradual. These extremes should be the ends of a series of gradations passing through about nine terms. With a little care you can make a thermometric register, marking the suitable clothing for a given external temperature of the bedroom in any particular case, and so you may cure insomnia and prevent its recurrence.

In all cases the bedroom window should be open all night and all the year round, and arranged so that it may be so without draught; the head of the bed should be away from a wall; and the best bed on which to lie is a hair mattress, covered with a sheet and a blanket, and supported upon a chain stretcher. In some cases a little food taken just at the time for sleeping is an efficient soporific. You may often observe that the good effects of a little nourishment—a cup of cocoa or a small piece of dry bread, taken upon getting into bed or upon awakening after a slumber which is too short for a night's rest, are most happy. You may usefully remember that sleep may often be induced by the temporary application of cold to the head or to the general surface of the body. A person who has been lying awake will often fall asleep at once upon regaining his bed after getting out of bed and sousing his head, neck, and hands in cold water, or after following Charles Dickens's plan of standing at his bedside until he feels chilly, and thereupon shaking up and cooling his pillows and bedclothes, and then getting into bed.

In the toxic kinds of insomnia we must especially endeavour, as I have already suggested to you, to act upon the maxim, "*Cessante causâ, cessat et effectus.*" We must stop or lessen the consumption of tobacco, alcohol, tea, etc., as the case may be. A discussion of the treatment of gouty insomnia, and of the sleeplessness arising in some chronic kidney diseases, would involve a consideration of the whole question of the therapeutics of the maladies upon which these forms of wakefulness depend. Senile insomnia is very obstinate. Perhaps in the bromides, with full doses of hop or henbane, we have the most efficient and least harmful medicinal means of relief; while the promotion of sleep may be accomplished by an intelligent combination of some of the non-medicinal measures to which I have referred.

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[1] *Lectures on Pharmacology*, New Sydenham Society's Translation. [2] *A Textbook of Pharmacology*, etc. [3] *Elements of Materia Medica*, etc.

REMARKS ON THE DIAGNOSIS AND TREATMENT OF ARSENICAL NEURITIS.*

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BEFORE the outbreak of the present epidemic our knowledge of the symptoms of arsenical neuritis was based on the records of about 70 cases, which are to be found scattered through the literature of the last thirty years. That it was adequate to enable us to form a correct diagnosis is shown by the fact that my colleague, Dr. Reynolds, from a study of the prominent symptoms in a number of cases which came under his notice at the Crumpsall Hospital, was led to suspect and subsequently to prove the presence of the poison.

There can, however, be no doubt that the careful investigations of the features of the present epidemic which are now being carried on will lead to fuller and more accurate knowledge regarding the characteristic symptoms of arsenical neuritis. At present it is too early to speak positively in respect to some of the phenomena which have been observed, and particularly as regards their dependence on poisoning by alcohol or by arsenic. It may, however, be useful to draw attention to certain features which require further elucidation. Before doing so I may mention that hitherto our main help in diagnosing arsenical from the only other variety of neuritis—namely, the alcoholic—with which it is likely to be confused was derived from a consideration of associated symptoms.

Thus, in *alcoholic cases* we frequently found:

1. Physical signs of enlargement of the heart, together with symptoms indicating cardiac failure—namely, dyspnœa, dropsy, and a large tender liver.

2. Evidence of mental deterioration, which is characterised by a failure of memory associated with a peculiar disorder in the appreciation of time and locality.

* This article has been written in response to a kind request of the Editor that I should send him something on the treatment of arsenical neuritis.

On the other hand, in *arsenical* cases we did not expect to find impairment of heart or of brain, and based our diagnosis chiefly on the presence of certain symptoms which were known to result from arsenical poisoning. These are:

1. Certain skin lesions:
(*a*) A peculiar pigmentation, sometimes closely resembling that of Addison's disease.
(*b*) Herpes zoster, which is present in a small percentage of cases.
(*c*) Bullous or erythematous eruptions.
(*d*) A thickened condition of the skin over the knuckles and other places.
2. Loss of hair; falling off of the nails.
3. Intermittent dysuria or glycosuria.
4. Coryza and œdema of the eyelids.
5. Ulceration of the gums and fauces.
6. The presence or history of acute unaccountable attacks of indigestion, associated with nausea, salivation, and epigastric pain, and sometimes with vomiting and diarrhœa.

In the present epidemic most of the features just mentioned have been observed; it is important, however, to note that attacks of indigestion and other evidence of gastro-enteric disturbance, although occasionally present, have not been conspicuous, and in many cases have been entirely absent.

CARDIAC AND PSYCHICAL SYMPTOMS IN ARSENICAL NEURITIS.

Before leaving the consideration of symptoms which are associated with those of alcoholic and of arsenical neuritis, respectively, I would suggest the necessity of paying particular attention to the condition of the heart and to the peculiarities of any psychical disorders that may be present in the cases now under observation.

With regard to the heart there is no evidence, so far as I know, that arsenic directly attacks its muscular tissue; at the present time a few patients, who state that they have never taken much beer, show signs of cardiac enlargement, but it is difficult to absolutely eliminate the effects of alcohol. As regards psychical disturbance several writers have testified to its occasional occurrence in severe cases of arsenical poisoning; thus Alexander found incoherence of ideas, Marik speaks of weakness of memory, and Korsakow includes arsenic amongst the causes of psychoses that are met with in cases of multiple neuritis. In the case of a woman who is at present in the Royal Infirmary under the care of Dr. Dreschfeld, who states that she has only taken a small quantity of beer, there are, in addition to extensive pigmentation of the skin and well-marked symptoms of peripheral neuritis, certain mental symptoms, including a loss of memory for recent events, which closely resemble those found in cases of alcoholic paralysis.

DIFFERENTIAL DIAGNOSIS.

Let us now ask, Are there any peculiarities in the symptoms which we attribute to peripheral neuritis that would suggest the influence of arsenic rather than of alcohol? There appear to me to be three groups which require to be specially noted, namely:

(1) *Hyperæsthesia* of the skin and muscles, which, although common in alcoholic neuritis, is more constant and generally more severe in the cases now under observation.

(2) *Erythromelalgia*. — The vasomotor phenomena which characterise the condition known by this name, while only occasionally present in alcoholic cases, have been conspicuous features in the present epidemic.

(3) *Ataxia*.—I have paid particular attention to the investigation of this condition in cases of peripheral neuritis, and both in the *Treatise* published in 1892 and in the article in Clifford Allbutt's *System of Medicine* I have insisted on the rarity of real inco-ordination of movement in cases of alcoholic neuritis. Hence I have been much struck by its comparative frequency in the present series of cases, and I trust that careful observations will be made with regard to it, as well as to the degree of any motor weakness with which it may be associated.

Ataxia. Loss of Knee-jerks, Bronzing of Skin.—On November 22nd a man was admitted under my care at the Manchester Infirmary, who showed marked inco-ordination in the movements of both arms and legs, but only a moderate degree of impairment in muscular power. His inability to stand with his eyes shut and his disorderly gait, in which the forepart of the foot was well raised in its forward jerk, made the case closely resemble one of tabes. The knee-jerk was absent, and cutaneous and muscular hyperæsthesia were extreme. The skin everywhere was as deeply bronzed as in a typical case of advanced Addison's disease; it showed also a fine branny desquamation, while over the knuckles and feet it was thickened and scaly. There was coryza, and the tongue presented a characteristic silvery surface. In this case there was no mental disturbance. The heart was enlarged. The man stated that he had been in the habit of taking 10 to 12 glasses of beer a day for the last ten years. He is now (December 1st) much better, although the inco-ordination and the hyperæsthesia are still considerable. The pigmentation over the lower part of the abdomen and the buttocks is much darker than it was a week ago; this darkening is not due to potassium iodide or other drug. It is important to note that the left knee-jerk can now be elicited, for I have never known so quick a return of the knee-jerk in any case of alcoholic paralysis.

TREATMENT.

Removal of Cause.

The first essential in dealing with a case of peripheral neuritis is to find out the cause and to remove it, or to stop its action as soon as possible. The cause is nearly always some poison; and if the patient be withdrawn from its influence and placed under favourable conditions complete recovery is the rule. In the present epidemic arsenic appears to have been the potent factor, but let it not be supposed that alcohol is entirely innocent. In some quarters there appears to be a tendency to believe that alcohol has been over-rated as an etiological agent in the production of peripheral neuritis. On the contrary, all the evidence at present in our possession indicates that it is the most common cause of that disease, and, we may add, one of the most powerful influences in other ways which tend to cripple and shorten life. It may be hoped that at least one advantage of the present epidemic will be to direct public attention once more to the enormous quantities of alcoholic beverages which are still consumed in this country.

When we know that patients who visit our hospitals have been in the habit of taking ten, twenty, and even thirty pints of beer a day, and as a result are gradually but surely losing their physical and mental powers, and then reflect on the present arsenical panic, we begin to wonder why there has never been an alcoholic panic. The scare with regard to poisoning by arsenic has been fully justified, but surely consternation regarding poisoning by alcohol might be looked on as equally natural.

There appears to be a curious difference in the relationships of doctors and patients in respect to alcohol and to other poisons. If a doctor finds that his patient is taking lead, arsenic, or mercury in poisonous doses, he tells him so, and urges him to discontinue his dangerous practice. But if alcohol in large quantities is being taken, the doctor requires more courage to tackle his patient, for he runs the risk of offending, and possibly of losing, his client.

Nevertheless, the gain in self-respect ought to compensate for the temporary loss of a client, for, as Dr. Barlow has well said:

> What can be more humiliating to us as medical men than to have repeatedly to attend people who every day are shortening their lives and converting a remediable condition into a hopeless disease, whilst we stand with folded arms, or write prescriptions, and have not the courage to tell them what is right, and stick to it?

Rest.

Having removed the patient from the influence of the poison the next thing is to place him under the most favourable conditions for recovery. Now in all except the slightest cases rest in bed is advisable. The patient is thus protected from exposure to cold, the pernicious effects of movement are reduced to a minimum, and local treatment can be carried out more readily and satisfactorily.

Nursing.

In the acute stage the suffering of patients with arsenical neuritis is often extreme; and it is of the utmost importance to relieve this as promptly and effectively as possible. The severest cases require a water-bed; this not only relieves pain better than an ordinary bed, but also gives more support to a weak patient, and thus lessens the danger to life arising from a feeble heart or from paralysed respiratory muscles.

In feeding the patient or in attending to his evacuations the nurse should exercise the greatest care and gentleness, so that all unnecessary movements on the part of the patient may be avoided.

On no account must she attempt to massage the limbs.

Relief of Pain.

For the relief of tender nerves and muscles there is nothing better than warm fomentations. It is best to apply them intermittingly; a warm fomentation may be put on the painful part for half an hour, and the application repeated every four hours; a layer of hot cotton wool taking its place in the intervals. Occasional vapour baths may afford the patient great comfort; but they should not be used when the action of the heart is much impaired.

Drugs.

As regards drugs, in the early stages of neuritis, salicylate of soda and potassium iodide, either alone or in combination, appear to be of service. Neuralgic pains may be relieved by the administration of antipyrin, phenacetin, or exalgin; but when the suffering is very great the hypodermic injection of morphine becomes necessary. Let it be particularly noted that in the acute stage strychnine must not be given.

Diet.

But of far greater importance than drugs is the regular and careful administration of nourishment, in the forms of boiled milk, beef tea, beef extracts, soups, and broths. Benger's food or peptonised gruel may be required, and when vomiting is a prominent symptom nutrient enemas should be administered.

Complete rest in bed in a well-ventilated room, careful feeding, and exposure to sunlight are the essential points in the treatment of the early stages of multiple neuritis.

Convalescence.

When the acute symptoms have subsided, but not before, recourse may be had to massage, electricity, and tonic treatment. In the acute stage massage would be unendurable, and certainly very hurtful; but its application must not be delayed too long. It may be employed as soon as extreme pain and tenderness have disappeared. At first massage should be employed in the gentlest manner and only for short periods of time; but as soon as the patient stands it well it ought to be regularly and vigorously applied. The patient should also be encouraged to make voluntary movement against resistance; and other modes of Swedish exercises can be employed with advantage. Inco-ordination of movement is best treated by Fraenkel's method, the essential feature of which is to submit those muscles which manifest the inco-ordination to a series of graduated and systematic exercises.

By these means the nutrition and strength of the muscles and the co-ordinating power are improved, while any tendency to contracture is overcome. Moreover, the patient's capacity for assimilation of food is thus steadily increased.

The restoration of the degenerated nerves and muscles may also be aided by the daily application of electricity. The constant current is the most useful in stimulating the nutrition of the affected muscles. Large electrodes are desirable in order that as much muscular tissue as possible may be reached by the current. As soon as the muscles respond to a weak faradic current this form of electricity may also be employed with advantage. A daily warm bath, followed by vigorous friction to the skin, is of value, whilst tonics and cod-liver oil often prove of great service. Arsenic has been recommended in the treatment of multiple neuritis, but of course it must not be given in the cases under consideration. Of all drugs that may be regarded as tending to the restitution of the paralysed parts, strychnine is unquestionably the most valuable, and it is better to administer it hypodermically than by the mouth. It is advisable to begin with a small dose, say $\frac{1}{60}$ gr., and then gradually increase the quantity.

From first to last, abundant fresh air and sunlight are of the greatest importance; and as soon as the patient is able to take outdoor exercise a change of air is often advisable; in many cases, however, it will be some time before local massage can be entirely dispensed with.

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1 *Medical Chronicle*, 1892-93.

Medical Practitioners in Lisbon.—According to official statistics for the current year recently published, the number of medical practitioners in Lisbon is 174. This gives a proportion of 1 to every 1,902 of population.

THE SURGERY OF CHRONIC ULCER OF THE STOMACH AND ITS SEQUELÆ:

BEING A SERIES OF CASES IN WHICH OPERATIONS WERE PERFORMED FOR VARIOUS NON MALIGNANT DISEASES OF THE STOMACH.*

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The various conditions resulting from chronic inflammatory processes in or near the stomach, and giving rise to dilatation of that organ, may be classified as follows:

1. Temporary, intermittent narrowing of the pylorus, reflex in character, the result of muscular spasm. This condition is largely or entirely dependent upon chronic ulcer of some portion of the stomach.

2. Circumscribed or annular fibrous constriction at or near the pylorus.

3. Diffuse cicatricial induration at or near the pylorus or first portion of the duodenum.

4. Cicatricial contraction and induration with adhesions between pylorus, duodenum, abdominal wall, liver, gall bladder, etc.

5. Cicatricial contraction and induration at the site of an ulcer situated in the body of the stomach, giving rise to the condition known as "hour-glass contraction."

6. Adhesions external to, and primarily independent of, the stomach and duodenum originating in inflammatory conditions of the gall bladder, bile ducts, etc., or rarely in traumatism (Krönlein).

1. The condition of *pyloric spasm*, inducing retention of the stomach contents, and, as a sequel, the gradual dilatation of the viscus, is one now generally recognised by surgical authority. Associated with local spasm are hyperacidity of the gastric contents and frequently, if not invariably, chronic ulceration of the stomach. The resulting group of symptoms is described by French surgeons as "la maladie de Reichmann" and is looked upon therefore as a distinct morbid entity. The Continental teaching would have us consider that the chronic ulceration depends upon, and is induced by, the hyperacidity of the gastric secretion, but there are very compelling reasons for believing that the ulcer is not the outcome but the cause of the hyperacidity, though the perpetuation of the ulcer may indeed result. The spasmodic contraction of the pylorus is held by some to be independent of any organic disease of the stomach to be "functional." A case is recorded by Schnitzler in which a tumour could at times be felt in the neighbourhood of the pylorus. At the time of the operation nothing was at first discovered, but within the few minutes of observation a definite hardness, resembling a tumour, was thrice observed as the result of forcible pyloric contraction and spasm.

The precise sequence of events in these patients is difficult or impossible to determine; probably chronic ulceration of the stomach induces pyloric spasm, hyperchlorhydria, gastric stasis and consecutive dilatation. After gastro-enterostomy, as Carle and Fantino have shown, the hyperacidity disappears. Probably the rest which is thereby assured to the organ allows healing of the ulcer, and as a result subsidence of spasm and hyperacidity.

2. *Circumscribed Fibrous Constriction at the Pylorus.*—This ring-like narrowing results from the healing of a comparatively small circular ulcer. The fibrous ring may be $\frac{1}{8}$ to $\frac{1}{2}$ or $\frac{3}{4}$ inch in breadth, is situate either precisely at the pylorus or within an inch of it on one side or the other, and is sharply defined. The scar of the ulcer is found, in the cases that present themselves to the surgeon, more often on the anterior than on the posterior surface. The patency of the pylorus is reduced to a varying degree; there may be slight constriction, or, as in one of my cases, a narrowing to a degree permitting only, and with difficulty, the passage of a director. It is in this condition that pyloroplasty is attended with the fullest measure of success. The stricture, at times almost string-like in its sharp and abrupt limitation, is readily divided, and healthy supple tissue, lending itself easily to suture, is found on each side of it.

* Read before the Mirfield and District Medical Society.

3. *Diffuse cicatricial induration or infiltration* at or near the pylorus or first portion of the duodenum. This condition results from the presence of an ulcer, large in size and irregular in shape, deeper and of longer duration than the form last described. There is, judging from the symptoms, an ulcer actually unhealed or readily breaking down on trivial provocation in not a few cases of this kind. On examining these patients at the time of operation one finds a dense indurated scar, rendering the pylorus or the adjacent portions of the stomach or duodenum hard and resistant. The induration may be of such extent and of such density that the appearances and characteristics of a malignant growth may be mimicked with remarkable nicety. In one case of my own, which I submitted to the operation of gastro-enterostomy, believing the pyloric mass to be malignant and irremovable, the patient gained so rapidly in health and has so stoutly maintained his improvement for a period exceeding two years that I am sceptical as to the accuracy of my diagnosis. Thayer and Hirsch, Lindstrom, Kammerer, and others have mentioned examples precisely similar, and Mayo Robson has recorded a case of pylorectomy for supposed malignant disease, which on minute examination proved to be chronic inflammatory thickening.

4. The condition just described may be complicated by *the existence of surrounding adhesions*, of varying but frequently of remarkable toughness. Such adhesions are protective in character, and indicate a deep erosion of the ulcer and a threatening of perforation. In those examples in which the adhesions anchor the pylorus to the abdominal wall or the liver it is probable that a kinking is produced, which is exaggerated by a gradually-increasing dilatation. A very beautiful example of this kind is recorded by Mr. Page, of Newcastle.

5. *Cicatricial contraction and induration at the site of an ulcer situated in the body of the stomach*, giving rise to the condition known as "hour-glass" contraction. The two forms of acquired hour glass contraction of the stomach are very clearly illustrated by the two cases recorded in my list.

a. In this form an ulcer situated generally near the middle of the stomach has, by its contraction, separated the viscus into a pyloric and a cardiac portion. It is as though a tape had been tied round the organ. The ulcer is clearly seen, and produces a marked puckering of the surface. To the touch the constriction is tough, dense, and fibrous. The channel of communication may be so narrow as to admit only a No. 10 or 12 catheter. There are no external adhesions, and the stomach as a whole is as freely movable as under normal conditions.

b. In the second form an ulcer on the anterior surface of the stomach, midway or approximately so, between the orifices has eroded through, or almost through, the entire thickness of the stomach wall. Protective adhesions have formed as the ulcer has deepened, and the base of the ulcer has become adherent to the peritoneum of the abdominal wall. Extravasation of the stomach contents has not occurred; on separating the adhesion an opening into the stomach is exposed—a gastric fistula. This adhesion anchors the stomach to the abdominal wall, and, when dilatation of the stomach occurs, intense dragging pains are experienced, which rapidly induce nausea and vomiting.

The area of gastric adhesion is marked out upon the surface as an unduly rigid and often exquisitely tender patch. The impression of a tumour in the stomach wall may be temptingly suggested.

6. *External adhesions* near the pylorus and duodenum, the result of perigastritis. These may result from gall stones, cholangitis, tuberculous peritonitis, injury, and so forth. The case mentioned in the tabulated list is the only one I have operated on purely for the gastric disturbances, though I have had several others in which dilatation of the stomach has been merely an inconspicuous episode in the complex symptoms of cholelithiasis. The importance of these perigastric adhesions was first demonstrated by Mayo Robson in 1893, and in my judgment that is one of the most important advances made in our recent knowledge of abdominal diseases. The adhesions in the majority of the cases I have met with are readily enough detached or broken down, with the result that obstruction is thereby relieved, but it is not unlikely that gastro-enterostomy may at times, in the more severe cases, when adhesions separate with difficulty, are unusually dense, or in their manipulation involve the risk of laceration of the liver or other viscus, be the more prudent and successful procedure.

SYMPTOMS OF PYLORIC STENOSIS.

It is important at the outset to emphasise the fact that in the early stages of the two diseases, pyloric cancer and simple pyloric stenosis, the symptoms are identical. Later the differentiation becomes progressively accentuated, but it is in the early stage that the surgeon must be asked to see the patient if operation is to be successful in those which eventually prove malignant.

The symptoms and the signs of pyloric stenosis depend upon the consecutive dilatation of the stomach. Stomachs are of widely varying size and capacity, within normal limits. A dilated stomach is one which is unable to evacuate its contents into the duodenum within the normal period of time. "Gastric stasis," as it is called, results, and food is retained in the stomach for two, three, or more days. So long as a stomach, even though deformed by rigid cicatrices or invaded by malignant growth, is able to empty itself in the normal limits of time, symptoms of moment are lacking.

A close examination of the history of patients suffering from fibrous stenosis of the pylorus will reveal in a certain, and probably not small, proportion of cases evidences of antecedent ulceration of the stomach. The period of intense or active ulceration is so well developed that it is referred to as an "attack" lasting some days or weeks. After this there is a period of quiescence. But at no long interval of time there are troubles which are grouped under the widely comprehensive term "indigestion." Grumbling discomfort or subacute pains are experienced two or more hours after food, and thereafter increase gradually in severity. Vomiting may occur, and the ejected material is seen to consist of ill-digested food, the taste of which is bitter and nasty. As the case becomes more chronic pain becomes less aggressive, but a sense of distension and of local anger after meals is commonly present. Vomiting occurs at increasingly long intervals. The stomach during, perhaps, many days gradually fills with food, which is there stagnant and undigested. When the limit of capacity is reached there is an attack of vomiting, terrific, gushing, copious. In the ejecta, foods taken days before may be recognised unaltered, or the taste of them may be perceived by the patient. After this outburst there is quiet for a few days, when the stomach, again distended, is again emptied. Meanwhile, the health of the patient suffers; he loses flesh, becomes sallow, pinched, and withered in appearance. Thirst is always present, and the mouth and tongue are dry, harsh, and hot.

The frequence and the severity of the pain depend not upon the dilatation of the stomach, but rather on the activity of any ulcer which is present. An ulcer of the pylorus or duodenum which is embedded in a mass of cicatrical infiltration which it has produced probably heals with difficulty, and when healed is liable with trivial hurt to break down. There is no grievous pain unless ulceration or adhesions are present. A dilated stomach causes merely a passive and endurable sense of fulness, weight, heat, and increasing discomfort. If ulceration be present there will probably be local tenderness in the epigastrium, pain in the lower dorsal region, and occasionally gastrorrhagia and melæna.

When the symptoms of pyloric stenosis, apart from ulceration, are alone present, the patient is not long in recognising that his bodily comfort and sense of well-being are dependent upon his maintaining a moderately empty stomach. Vomiting is therefore self-induced, or the aid of the stomach tube is invoked. The relief experienced from lavage is very considerable, and is as a rule instantly appreciated; but after months of its employment the unbroken and inevitable routine becomes often irksome and distressing.

In all cases of gastric dilatation, even the most passive, there are occasional outbursts of acute pain, more frequent vomiting and retching, and occasional hiccough. In general a distinct irritative cause for these inflammatory attacks can be remembered.

In the surgical treatment of the various cicatricial conditions found in and around the pylorus, any of the following operations may be found necessary:

1. **Pyloroplasty, gastroplasty.**

2. Gastro-enterostomy.
3. Pylorectomy.
4. Gastrolysis.

Pyloroplasty.

Pyloroplasty, or the transverse division of the stricture and the stitching of the wound in a vertical direction, is an operation of limited applicability.

The cicatricial processes occurring in an ulcer situated at or in close proximity to the pylorus, result, as I have mentioned, in permanent stenosis and contractions of widely variant form. In the first variety described above, the narrow annular, or partially annular, stricture, pyloroplasty is the simplest operation, and is attended by small risk and by great and lasting advantage. In cases of pyloric spasm it is theoretically more appropriate than any other operation. The incision dividing the stricture must be at the least 2 inches in length, and may with advantage be more.

It has been said that the risk of subsequent contraction of the scar in pyloroplasty is an emphatic reason for the preference being given in all cases to gastro-enterostomy. The recurrence of stenosis is due, I think, rather to fault in selection on the part of the operator than to any inherent malice in the method. Three points in this connection deserve special attention in order to ensure success.

1. The scar of the ulcer must be small in size, especially in width, and be sharply defined. There must be no cicatricial infiltration with the exception of the small sclerosed area and the bowel walls must be soft and supple.

2. The incision dividing the stricture must be of adequate length, and must be continued on each side, well into healthy tissue.

3. There must be no peripyloric adhesions of any, even the most trivial, kind.

In appropriately selected cases there can be, I believe, no likelihood of recurrence.

Gastro-enterostomy.

Gastro-enterostomy is in my experience an operation far more frequently called for than pyloroplasty. In the third and fourth varieties I have mentioned of pyloric stenosis following ulcer it is the method of choice, and as these forms are decidedly more frequent than all others, the operation must in consequence have a far larger scope.

In performing this operation in malignant and non-malignant cases, I have used Murphy's button, Laplace's forceps, and simple suture, and have united the jejunum on all but two occasions to the anterior wall of the stomach. Murphy's button is an instrument that must be used when the utmost haste is desirable, as, for instance, in cases of malignant disease, with incessant uncontrollable vomiting, well-established cachexia, and progressive collapse. No mechanical appliance is then so satisfactory. The risks of the button are, however, not inconsiderable; death has resulted from perforation and intestinal obstruction, and later operations have been demanded for the removal of the button from the stomach.

In using the instrument it is not necessary to carry out the operation in the manner advised by Murphy. The purse-string suture is needless, probably is actually harmful. An incision is made in the stomach or intestine of just sufficient size to admit the half of the button; after its introduction the incision is partially stitched up by one or at the most two Lembert sutures, so placed that the cylinder of the button is tightly gripped by the edges of the bowel wound. If the suture is introduced to the left of the cylinder on the stomach side, it should be to the right on the intestinal side, so as to ensure a greater accuracy of serous coaptation.

Laplace's forceps I have used on three occasions, and will never use again. In my last case a second operation was called for owing to a return of the symptoms, and I found the opening made at the previous operation completely closed. I had used the forceps frequently in the *post-mortem* room, and twice on the living, and I had become, I think, reasonably skilful in their management, so that I cannot but consider that the instrument itself was the cause of failure. The method of simple suture is the one I have adopted in my last 4 cases, malignant and non-malignant. It is with practice possible to apply the suture without haste in from 4 to 8 minutes, and greater speed than that is rarely necessary.

One unquestioned advantage gained by the use of mechanical appliances seems to me to be the security that they give during the period when the operator is making himself adept in the technique of intestinal manipulations.

Operation.

I perform the operation as follows:

The abdomen being opened by an incision about three-quarters of an inch to the right of the linea alba, the jejunum is sought for by passing the finger down to the left of the spine and feeling for the inferior duodenal fold. Immediately above and to the right of this is the duodeno-jejunal flexure from which the jejunum can be traced. A loop of this bowel is then pulled out, emptied and constricted by an elastic ligature. The stomach is pulled into the wound from above, and a long strip of gauze is packed all round the two viscera. A continuous silk suture is then applied for 3 inches, uniting the jejunum to the stomach along an oblique line, whose higher end is towards the cardiac orifice. The jejunum and stomach are then in turn laid open in the following manner. An incision 2 inches to 2½ inches long is made through the serous and submucous coats only; as they are divided they retract, and an ellipse of mucous membrane over half an inch wide in the centre, and narrowing off at each end, pouts into the wound. Two pairs of nibbed forceps, one toward each end, grip and pull upon the ellipse of mucous membrane, which is then excised. A close continuous catgut suture then unites accurately the posterior edges of divided mucous membrane, and at one extremity is tied to a separately knotted suture, which then is carried round, uniting the anterior lips. Finally, the serous membrane in front is united by a continuous silk suture. I believe the removal of this ellipse of mucous membrane and the accurate suture of the edge to be advantages, in that they tend to prevent the closing of the anastomosis from swelling or pouting of the cut edge.

After the anastomosis is complete, I apply two or three sutures to the proximal portion of the jejunum to fix it to the stomach at a higher level, and one or two to the distal portion near the greater curvature. To this disposition—which I adopt, whatever the method of suture—I attribute the absence of the regurgitation into the stomach or bowel contents, which has been so frequently remarked. It is important in applying the sutures to make sure that the opening in the jejunum is at that part most distant from the mesenteric attachment. There is a tendency to apply the side of the jejunum to the stomach, and thereby to invite the formation of a spur, to which has been attributed importance as a causative factor of regurgitation. It has been frequently observed that regurgitation after the use of the Murphy button is most unusual, and I believe this to be due to the fact that the intestinal half of the button must be introduced at the portion opposite to the mesentery.

Pylorectomy.

Though I have opened the abdomen at least half a dozen times in the expectation of doing this operation, I have never yet performed it. Pylorectomy may be the operation of the future, but most emphatically it is not the operation of to-day. In cases of simple pyloric stenosis it can only be called for when a definite tumour has been formed by cicatricial infiltration and induration, round an old-standing ulcer to such an extent and in such a manner that a doubt is felt as to the character of the tumour, a doubt which only microscopic examination can resolve. Pylorectomy performed then is the only proper course. To remove a pylorus which is known to be the seat of cicatricial changes only is unnecessary, for a simpler and far safer operation is equally effective. And so far as malignant disease is concerned it has seemed in my own cases that as soon as the disease can be recognised as malignant before operation it is no longer local, and therefore no longer capable of being completely removed.

After-results of Gastro-enterostomy.

After gastro-enterostomy the stomach, if previously largely dilated, undergoes a very decided diminution within the first three weeks. In none of my cases has the organ returned to its normal size. In one only has there been any difficulty arising from the narrowing of the newly-made anastomosis, and that was the fault of the mechanical appliance used at

TABLE OF OPERATIONS FOR NON-MALIGNANT DISEASES OF THE STOMACH.

Pyloroplasty (for Pyloric Ulcer and Stenosis).

Name and Date.	Sex.	Age.	Condition Found: Operation.	Symptoms and Description.	Result.	Remarks.
T. W., Aug., 1899	M.	38	Scar of ulcer exactly at pylorus, puckering, but no adhesions. Pyloric channel equal in size to a No. 8 or 9 catheter. Pyloroplasty	Twelve years ago had "ulcerated stomach," a sharp illness lasting about a fortnight, attended with extreme pain in epigastric region and on the right of that, frequent vomiting, but no hæmorrhage. More or less indigestion ever since this attack; has never felt able to eat indiscriminately, but has carefully selected his diet. Now marked dilatation of stomach, and obvious peristaltic contractions. Vomits every three or four days, in large quantities. On examination of stomach contents, free HCl is found	R.	Quite well in August, 1900. Has gained 2 stone, and eats "anything."
A. H., Sept., 1899	M.	36	Scar of ulcer at pylorus, no adhesions, but decided limited thickening—pyloric channel just admits a director. Pyloroplasty	When 18 years of age had an illness, which his medical attendant at that time told him was due to an "ulcer on his stomach." For the last 18 years (half his life) has had daily attacks of indigestion, except for a period of nearly 2 years, which terminated six years ago. Has lived for last 3 or 4 years entirely upon fluids. Has tried all medicines without lasting advantages. For 12 months has washed the stomach out daily once or twice. Now has pain after every meal, beginning about 2 hours after, and lasting until vomiting is induced, or lavage is employed. Stomach dilated, and splashy. Wave-like contractions very distinct. Nothing felt on palpation over pylorus	R.	Patient writes: "Restored to perfect health after 18 long years of suffering. I am heavier than I have ever been before."

Gastro-enterostomy (for Pyloric Ulcer, Thickening, and Adhesions).

(By the aid of mechanical appliances.)

E. B., Jan., 1900	F.	41	Thickening at pylorus, and along first portion of duodenum, with contraction and many adhesions. The adhesions were carefully broken down. A gastro-enterostomy was performed with the aid of Laplace's forceps; the operations being very simple and speedy	At age of 16 had an illness, attended with the vomiting of blood, on one occasion in large quantity. Pain after food ever since, at times better, at times worse. Diet has been carefully and rigidly supervised. In June, 1899, pain began to be much more acute, and vomiting, which before had been inconstant, now became frequent. Large quantities (4 pints) were vomited. On examination of abdomen, a large contracting stomach seen. Nothing abnormal felt over pylorus	R.	Quite restored to health. Eats well, and suffers no pain.
F. S., Feb., 1900	M.	35	Very dilated stomach, with pyloric contraction, some thickening, and many adhesions. Gastro-enterostomy with Laplace's forceps	Prolonged symptoms of chronic ulceration of stomach with hyperchlorhydria. Under medical treatment (bismuth and morphine about two hours after meals, etc.) he improved for a time, but eventually treatment induced no improvement. Since June, 1899, has been steadily losing ground. Pain and vomiting severe and disabling, and of daily occurrence. On examination a large and contracting stomach	R.	"Has been very well since the operation."
A. B., Jan., 1900	M.	55	Enormous stomach. When distended with two seidlitz powders, the outline of the greater curvature descends behind the symphysis pubis. An ulcer was found at the pylorus extending onwards into the duodenum, cicatricial contraction very marked, adhesion to liver. Gastro enterostomy by the aid of Laplace's forceps, and separation of old adhesions	Dyspepsia for 10 or 12 years, culminating 5 years ago in an "attack" which lasted 2 weeks, and was remarkable for the severity and continuance of epigastric pain, and the persistence of vomiting. Since this attack, has had periodic seizures of copious vomiting, at intervals of 24 hours to 3 weeks. Pain after food, at intervals of 3 to 6 hours, varying greatly in severity, but generally not amounting to more than discomfort. On one occasion in hospital the vomited matter measured 5½ pints. The stomach was huge and flabby, but contractions were always visible. HCl present	R.	Patient reports himself "as well as ever he was in his life, and able to eat anything."

This patient returned to hospital in March. After the operation there was considerable relief for about a month. Then after a heavy meal, consisting largely of boiled peas, there was an attack of pain and vomiting, and from that date the symptoms gradually returned. On admission his condition was practically the same as before operation. The abdomen was again opened, and a second gastro enterostomy, with the aid of Murphy's button, performed. The opening made at the first operation, between the stomach and intestine, was practically closed. Patient made a good recovery. When seen in September, 1900, he said he was "never better in his life," had gained over 2 stone in weight, and had no gastric anxieties or discomforts.

Gastro-enterostomy (by Simple Suture).

S. H., Aug. 1, 1900	F.	49	Hard cicatricial ring at pylorus, a few adhesions, chiefly to liver; the finger, invaginating the anterior wall of the stomach, feels and recognises the pyloric orifice merely as a dimple. Gastro enterostomy by suture without mechanical appliances	Nine months ago first noticed pain in epigastric region after eating; 5 months ago first vomited; pain and vomiting speedily increased in frequency and severity. Now the pain commences about one or two hours after food, and continues until vomiting comes on spontaneously or is induced. No blood has ever been noticed in the vomit. No solid food has been taken for 2½ months; the chief diet is milk and soda. Considerable wasting. A dilated stomach is obvious on examination. On distension by seidlitz powder, the greater curvature descends 2½ in. below the umbilicus, and contractions faint, but distinct, are seen. Free HCl	R.	"Complete relief
J. H., June, 1900	M.	32	Dense ring at pylorus, sharply defined, and about ⅛ inch in breadth. A few adhesions which separated readily. Gastro-enterostomy without mechanical aid	Symptoms of ulcer, "acid dyspepsia" 10 months ago; relieved for one month by bismuth and morphine. For 7 months severe pain after all foods, worse about two hours after a meal. Vomiting every two or three or four days up to three months ago, since then almost daily. Stomach dilated and contracting. Lost 2 st. in weight. Free HCl	R.	Has regained lost weight, and can eat heartily without discomfort.

Gastrolysis.

M. S.	F.	55	Many adhesions round pylorus, gall bladder, and bile ducts to abdominal wall and omentum. Some of the more fibrous adhesions clearly obstructing pylorus. Adhesions all freely separated.	Three years' symptoms. Epigastric and right hyponchondriac pain radiating to right and left scapular regions; paroxysmal vomiting irregular and capricious, never severe. Is chiefly concerned about the persistence and intractability of the pain. Stomach decidedly large. The area corresponding to upper portion of right rectus is very tender, and the resistance here is marked	R.	Convalescence retarded by an attack of bronchitis, due probably to the anæsthetic. Reports herself in October as entirely free from pain, and gaining steadily in strength.

Hour-glass Contraction of Stomach following Ulceration.
Gastroplasty.

Name and Date.	Sex.	Age.	Condition Found: Operation.	Symptoms and Description.	Result.	Remarks.
R. D. Aug., 1899	F.	39	Hour glass stomach; the narrow constriction being near the middle of the stomach, and adherent to the anterior abdominal wall over an area equal to a crown piece. On each side of this the stomach dilated, and seemed to be anchored by the adhesion. On separating the stomach from the abdominal wall, an opening into the viscus was exposed, and stomach contents escaped. This opening was enlarged transversely, and the wound and fistula stitched up vertically. An omental graft was brought to cover in the sutured area, in order to guard against future anchoring	Ten years ago an illness characterised by profound anæmia. Seven months ago clear symptoms of ulcer of the stomach, but neither then nor at any time any acute illness suggestive of perforation. Now vomits after all ordinary food, and more often than not even after small quantities of fluid food. Pain after food is exceedingly severe. On examination of abdomen a dilated stomach can be felt. At one point, a little to the left of the middle line, and slightly below the ensiform cartilage is an area 2 ins. in diameter, which is markedly tender, and offers increased resistance on palpation. This area was found, at the operation, to correspond precisely with the area of stomach adhesion. Patient has lost weight, and deteriorated seriously in general health during the last few months	R.	For a month after the operation, pain at times, and loss of appetite. Since then has been free from pain, and in excellent health. Appetite and digestion good.
M. P. April, 1900	F.	27	Hour-glass stomach. The constriction was about 4 ins. from pylorus, the passage between the two sacs equalled a No 12 catheter in diameter. There was marked induration and puckering, but no adhesion to the abdominal wall or elsewhere. The strictured neck was divided by an incision about 2½ ins. long in the transverse direction, and stitched up vertically, the mucous membrane with a continuous catgut suture, and the serous with a continuous silk suture. Two additional interrupted sutures were applied at each end of the wound	No history of gastric ulcer. Has complained of irregular attacks of pain in epigastric region for 11 months, always associated with the taking of food, and coming on about one hour after a meal. Vomiting occasional and irregular, in rather large quantities: no blood. On examination, stomach distended and splashy; contractions seen when distended. Medical treatment has proved unavailing	R.	Vomiting for 5 days after the operation, blood-stained. Since then perfectly well.

N.B.—Eleven operations on 10 patients; all recovered.

the operation. The second operation in this case has been perfectly successful.

There can, I think, be now no doubt that in all cases of gastro-enterostomy, performed by whatever method, there is invariably and almost continuously some bile present in the stomach. The presence of bile and pancreatic juice in the stomach was formerly considered to be a matter of serious import, and even to be lethal. A case of my own, however, in which all the bile and all the pancreatic juice had, after suture of the duodenum at the duodeno-jejunal flexure, to pass into the stomach through the pylorus, and thence into the jejunum implanted in the anterior wall of the stomach, suffered no disability of even the most trivial kind. Bile and pancreatic juice in the stomach do not affect in the least the health, comfort, or general well-being of the individual. The supposed advantages of posterior gastro-enterostomy in preventing regurgitation of these fluids are therefore not worth considering. Moreover, Chlumskij, in reporting 10 cases in which the parts were examined *post mortem* after gastro-enterostomy by suture, says that in not one of them was the opening found of sufficient size, and this he attributes to inaccurate suture of the mucous membrane. It is necessary therefore to make an opening which appears decidedly larger than is necessary. If this be done, and if the mucous membrane be removed in the manner I have described and accurately sutured, there will be, in my opinion, no fear of undue contraction at any subsequent period.

The improvement in the health and general condition of the patient after successful gastro-enterostomy is most striking. Appetite returns with the power of appeasing it. Food is taken with relish, pain is altogether lost, weight is gained, sometimes with amazing rapidity, and the patient experiences that "joie de vivre" which comes with a return to bodily health.

In the table of operations are:

2 cases of pyloroplasty.

2 cases of gastroplasty for "hour-glass" contraction of the stomach.

6 cases of gastro-enterostomy (2 by simple suture, 3 by Laplace's forceps, and 1 by Murphy's button).

1 case of gastrolysis.

All the patients recovered from the operation are still living, and all are completely relieved of those symptoms of gastric disturbance which made operation imperative.

CASE OF HOUR-GLASS STOMACH AND PYLORIC STENOSIS: GASTRO-ENTEROSTOMY: DEATH.

BY

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and

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This case deserves record, inasmuch as it was one of double constriction of the stomach, non-malignant in character, in a young woman, for which gastro-enterostomy was performed. Unfortunately, however, this was done in the second compartment of the stomach, so that, although the operation itself was successfully carried out, no relief to the symptoms was obtained, and death ensued.

Report of Case.

History.

The patient was a female domestic servant, aged 25, single, and was admitted into the hospital, complaining of pains in the stomach, vomiting, and flatulence.

Up to the age of 20—that is, five years before admission—she had had no serious illness, but had suffered to some extent from indigestion of food, the chief symptom of which had been pain in the stomach, which became worse after meals. This continued for five years before the onset of her serious illness. It must be considered, therefore, that the total duration of symptoms referable to the stomach was ten years. Five years before admission the patient began to vomit after taking food; severe pain preceded the vomiting, which relieved it. At no time was any blood brought up. The vomiting has persisted ever since, but not continuously, there being intervals in which she was able to retain food. The pain, which was formerly relieved by the vomiting, had become constant for a few months before admission. It was of a gnawing character, and was situated about the middle of the abdomen. Flatulence had been also a troublesome symptom. During the five years of her illness the appetite had never been good, and the bowels had been constipated. Up to two years before admission the patient could take the ordinary diet of her class, but during this period she had been living on bread and butter, boiled

eggs, and milk, with no meat and no vegetables. She had during this period got steadily thinner, and the skin had during the past five years become darker in colour, with well-marked mottling of the skin of the arms and legs.

Condition on Admission.

The patient was a young woman well made, but wasted. She complained of great weakness, and presented no signs of organic disease of the nervous system, of the heart, lungs, or kidneys. There were patches of brown coloration of the skin, which generally was of a brownish colour, but showed patches of deeper colour on the chin, the eyelids, and the backs of both hands and wrists, although the fingers were quite normal in colour. Pigmentation was present in the axillæ and over the lower dorsal and upper lumbar vertebræ. Both legs were pigmented up to the thighs, pigmentation being specially marked on the inner side of both legs, especially on the right side.

The chief symptoms which the patient exhibited, as well as the physical signs, were referable to the abdomen and the stomach more especially. She had pain after food, and recurrent attacks of vomiting, with constipation and flatulence. At no time was there any hæmatemesis.

The abdomen was not particularly distended, though at times there was some fulness in the epigastrium, which moved to respiration. There was pain in the epigastric and umbilical regions, as well as tenderness. There was no enlargement of the liver or spleen. Palpation did not reveal any definite tumour. At times, however, a definite fulness could be felt in the stomach region, and on one occasion deep friction of the abdominal wall elicited an irregular peristalsis, passing from the left hypochondrium towards the umbilicus. A succussion splash was not infrequently obtained in the stomach, and these facts, with the vomiting of a large quantity of fluid, indicated dilatation of the stomach, with some obstruction.

The vomit, as a rule, was large in quantity, and was frothy. On standing it settled into two layers—an upper layer of clear fluid, and a lower one of a grumous deposit, containing sarcina, yeast cells, and epithelium cells. It was very acid to test paper, and a chemical examination on one occasion gave the following results: Total acidity equal to 0.45 gram per cent. HCl; free hydrochloric acid, 0.3 gram per cent. There was therefore an excessive amount of hydrochloric acid present (hyperchlorhydria), a condition observed in some cases of non-malignant obstruction of the pylorus.

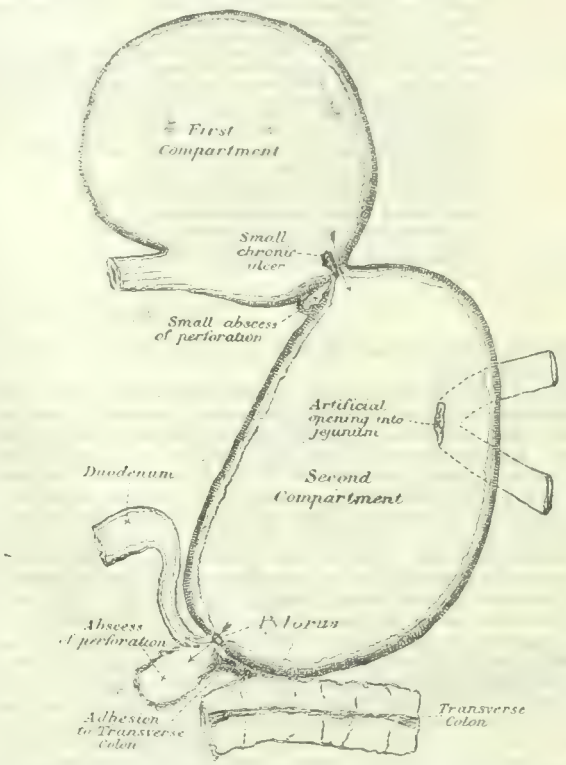
Water was frequently introduced into the stomach while the patient was in the hospital, and, as a rule, more was recovered than had been introduced. Thus, on one occasion, 54 ounces of warm water were put in, and 70 ounces of fluid were withdrawn. On another occasion 2 pints of warm water were put in, and 3 pints 6 ounces of fluid were withdrawn. This operation was done at different times, and showed that the stomach always contained fluid—that is, never emptied itself.

The patient was under purely medical treatment for about 30 days. During this time she was treated sometimes with antacids and with a varying diet: milk, bread and butter, scraped meat, beef tea, toast, peptonised milk, minced meat, jelly, and oranges. Systematic lavage of the stomach was at first practised, but no benefit ensued from any form of treatment.

The active peristalsis showed that there was obstruction, probably at the pylorus. This was confirmed by the signs of dilatation of the stomach, by the repeated vomiting of large quantities of fluid, and by the recovery of more fluid from the stomach than was put in by the tube. No tumour was felt, and the absence of malignant disease was confirmed by the long duration of the illness, to some extent by the age of the patient, and by the comparatively slight effect the illness had had on the general nutrition. It was considered that the condition was probably one of pyloric constriction due to cicatrised ulcer, although there had been no hæmatemesis.

Operation.

An operation was undertaken in the hope that the stenosis of the pylorus might be relieved either by a local plastic operation, or at least by gastro-enterostomy. The stomach was prepared for the operation by frequent washings, first with saline solution and then with boric acid lotion. Whilst doing the lavage of the stomach, the house-surgeon noticed on several occasions that after emptying the stomach and then introducing a known quantity of liquid into it he was unable to recover as much as he had put in. This observation was not reported until the necropsy had revealed the hour-glass constriction of the stomach. Had we heard of it it might have suggested to us the presence of the constriction, for it clearly indicated the escape of some of the fluid from the first compartment of the stomach into the second, from which the tube failed to withdraw it. A similar observation was made by Wölfler on a patient with hour-glass constriction of the stomach, for the relief of which he performed the operation of gastro-anastomosis successfully. Wölfler also found in his case that sometimes after the fluid had returned from the stomach quite clear, another washing brought away a quantity of partly-digested food, which had evidently been regurgitated from the pyloric to the cardiac segment of the stomach.



Length of first compartment, 6 inches; width of first compartment, $3\frac{1}{2}$ inches. Length of second compartment, $7\frac{1}{2}$ inches; width of second compartment, 4 inches. Width of first stricture, $\frac{1}{10}$ inch; width of second stricture, $\frac{1}{10}$ inch. Distance of gastro-enterostomy opening in bowel from pylorus, 22 inches.

On April 27th, 1900, the abdomen was opened by an incision extending from the ensiform cartilage nearly to the umbilicus. The stomach was at once exposed, and in the neighbourhood of the pylorus a hard mass 3 or 4 inches in diameter was detected. It involved the pyloric end of the stomach, the first part of the duodenum, the gastro-colic omentum, and the first part of the transverse colon. It was not possible to tell in exactly which part of the indurated mass the stenosed part lay. It was evident that such an operation as pyloroplasty was out of the question, as also was removal of the diseased part of the stomach. The pyloric end of the stomach was unduly fixed by adhesions, and apparently compressed by bands of omentum. The latter were divided, and by the separation of adhesions the pylorus was allowed to drop a little and to become more mobile. At this time the hour-glass constriction of the stomach was not detected. Certainly no special examination was made for such a condition, as the state of the parts about the pylorus seemed sufficient to explain all the symptoms. The constriction was situated

high up under the diaphragm, and it was so inconspicuous that at the necropsy it was not noticed during the removal of the organ, and was only detected when the stomach was separately examined. In the diagram which represents the dissected specimen the constriction is very plain, but before dissection the two segments of the stomach were lying in close apposition, and were to some extent adherent to one another. Had the constriction been recognised at the operation, it would have been necessary to establish a free communication between the two segments of the stomach either by gastroplasty or by gastro-anastomosis, as well as to connect the pyloric segment of the stomach with the jejunum. As it was, only the latter operation was done, and it obviously did not fulfil the requirements of the case. Von Hacker's method of gastro enterostomy was employed. The posterior surface of the pyloric part of the stomach was found loosely adherent to the peritoneum behind it; and so it was necessary, in order to get a healthy peritoneal surface to work with, to go as far over to the cardiac end as possible. The intestine used was a coil of jejunum about 12 inches from the termination of the duodenum. The junction was made by stitching; two rows of continuous sutures were inserted; the external row involved the peritoneal and muscular coats only, whilst the internal one involved all the coats. The operation lasted about an hour.

After-History.

After the operation, the patient vomited repeatedly. She was much relieved by having her stomach washed out with saline solution, and she passed a comfortable night. On the following day her pulse became rapid and feeble. An infusion of 30 ounces of normal saline solution caused temporary improvement. Rectal feeds were given every four hours, and they were retained well throughout. On the evening of the day after the operation, the patient was given ½ ounce of the following mixture every hour by mouth: White of egg ℥j, brandy ℥j, water ℥iv; but as the vomiting returned it was discontinued. The patient was again relieved by washing out the stomach, and her pulse, which had again become feeble and rapid, was improved by the subcutaneous infusion of a pint of saline solution. Another attempt was made to feed the patient on the second day after the operation; this time half an ounce of milk and water was given every hour. Vomiting recurred, and the stomach feeding had to be discontinued. Washing out the stomach also failed to check the vomiting. On the third day the pulse improved, but the vomiting continued. The temperature ranged from normal to 100.8° F. On the fourth day the pulse failed again. Nothing that could be done was of any benefit, and on the fifth day after the operation the patient died.

Post-mortem Examination.

There was no sign of organic disease in the body, except in connection with the stomach. The artificial opening from the jejunum into the stomach was normal in appearance: the stitches were firm, and there was no peritonitis round the wound. The cause of death was not connected with any specific infection of the wound. The abdominal wound was also normal in appearance.

The stomach was greatly enlarged, and was found divided into two compartments by an hour-glass constriction separating the fundus from the middle and pyloric regions of the stomach. In addition there was stenosis of the pylorus. The condition is shown in the diagram (p. 1636).

The first constriction was extreme, and was about half an inch in width and a quarter of an inch in length. The mucous membrane on the œsophageal side was slightly puckered round the orifice of the constriction. It was smoother on the pyloric side. On the proximal side of the stricture there was a small ulcer passing irregularly through the orifice. The edges were not greatly thickened, but the ulcer had perforated the coats of the organ, producing externally in the position shown a small cavity completely enclosed and containing pus. The length of this cavity was a little over an inch. The mucous membrane of the first compartment of the stomach was generally thickened, especially near the stricture. There was hypertrophy of the muscular coat over about one-half of the compartment, starting near the orifice.

The second compartment of the stomach was much larger than the first. The pylorus was represented by a small opening, about a quarter of an inch in diameter. The connection of the pylorus with the duodenum was demonstrated only with great difficulty, but a careful dissection showed that the pylorus led into a greatly constricted first part of the duodenum, and also into a pear shaped cavity, about 2½ inches long, which contained pus, and was surrounded by greatly-thickened connective tissue. The cavity was due to a perforation beyond the pylorus. This greatly-thickened wall was connected with a mass of cicatricial tissue, which firmly united it to the first part of the transverse colon. This was the mass noted at the operation. The mucous membrane of the colon was normal. There was general thickening of the mucous membrane of the second compartment of the stomach and uniform hypertrophy of the muscular coat.

The condition of things, therefore, was: (1) Hour-glass constriction of the stomach, with a perforating ulcer at the constriction and a small abscess outside; (2) extreme pyloric stenosis with perforation, leading to the formation of a small abscess and a large amount of cicatricial tissue just beyond the pylorus.

The artificial opening into the intestine had been made into the second compartment of the stomach, so that no relief to the symptoms was obtained.

COMMENTARY.

As regards the causation of the stomach condition, this may be considered under the heading of the causation of the hour-glass constriction and of the pyloric stenosis.

Causation of the Hour-Glass Constriction.

As regards the hour-glass constriction, the presence of a chronic ulcer at the spot might suggest this as a prime factor, chronic ulceration leading to the constriction. The small size of the ulcer, however, seems quite disproportionate to the great constriction produced, which was quite as if a tight cord had been tied round the stomach. Again, it might be thought that the constriction was congenital, and had been aggravated by the formation of a chronic ulcer. No adequate explanation appears to be forthcoming. It may be, however, that a chronic ulcer may in some cases excite a persistent contraction of the circular muscular fibres of the stomach, leading, with the formation of fibrous tissue, to a permanent stricture, a suggestion which has also been made for the causation of tight strictures of the rectum by small ulcers.

Causation of the Pyloric Stenosis.

The causation of the pyloric stenosis does not appear to have been due to an ulcer of the stomach. There was no ulceration in the second compartment of the stomach, and the mucous membrane round the narrowed pylorus was quite smooth. The constriction appears to have been due to something occcurring beyond the pylorus, in the first part of the duodenum. It is probable that a small duodenal ulcer was the prime cause, the small perforation resulting causing the formation of a small abscess, and a large amount of cicatricial tissue between the pylorus, duodenum, and transverse colon.

Nutrition.

How the patient could have lived so long with so small an amount of food entering the duodenum is certainly remarkable. There was, as has been said, well-marked, but not extreme, wasting, and it is probable that the great constriction had not appeared until two years before death, as, up to that time, she had been taking ordinary food. To have sustained life at all, digested food must have been absorbed from the stomach, and that the functions of the stomach were not completely destroyed was shown by the large amount of free hydrochloric acid (0·3 per cent.) found in the vomited matters. Towards the end of her life, however, some bacterial fermentation had occurred, as shown by the presence of organic acids.

THE HARVEIAN LECTURES

ON

PROGNOSIS AND TREATMENT IN PULMONARY TUBERCULOSIS.

Delivered before the Harveian Society of London, November, 1900.

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[ABSTRACT]

LECTURE II.

WE must now discuss the effect of individual symptoms and complications upon prognosis in the first stage. The most important are pyrexia, general weakness, digestive disturbances, and hæmoptysis.

Pyrexia may be absent and this may be a favourable sign, but it is not always so. Its absence may be due to lack of protection or of reactionary power, and if with absence of pyrexia there be extreme general weakness and bacilli in the sputum the condition is grave. With general strength well maintained the prognosis is good, indicating that the attack is not powerful, the resistance good and not fully called forth. Leaving the general strength out of the question, one

may roughly say that the higher the pyrexia the worse the prognosis in this stage, and *vice versâ*. But it must also be remembered that neurotic patients may show a very high fever when nothing much is wrong, and in the absence of physical signs such a condition is confusing. Like enteric fever tuberculosis of the lungs may have a most turbulent outbreak and soon lapse into a very ordinary attack, and this without the presence of neurotism.

As shown by Dr. Kingston Fowler, a morning temperature higher than the evening temperature points to tuberculosis. It carries with it the more unfavourable prognosis. The condition is, however, rarely present. A morning temperature which is always above normal is unfavourable, whatever be the evening temperature. This refers to the mouth temperatures only.

General weakness is unfavourable, but especially cardiac and vasomotor weakness. These conditions indicate prospective lack of resistance and interfere with several methods of treatment.

Digestive disturbances also interfere with treatment. Attacks beginning with digestive disturbances as the only sign generally do badly. (These were further described).

Hæmoptysis in this stage need not cause great alarm, except as an element in the diagnosis. Repeated small hæmoptyses sometimes relieve a congested lung. Repeated copious hæmoptysis increases the gravity of the case. One single large hæmoptysis without pyrexia and without extensive lung signs is of no great importance, but one large hæmoptysis with pyrexia, carries with it a serious prognosis, if the diagnosis of tuberculosis be fully established. Hæmoptysis may be due to too high feeding, and then is not serious but beneficial. This is usually found in middle and late life.

The prognosis of the second stage, that of "progress," may be treated under the same headings.

The nature of the physical signs is of some importance, as indicating extension of the mischief. Pleuritic rubs are of little importance, so also are small *râles* or crepitations, but most important are the *râles* known as large, bubbling, resonant, metallic or consonant, but which I prefer to style echoing. They indicate softening of inflammatory tissue and echoing of the crackles thereby produced in very small cavities. The cavities cannot be diagnosed with certainty during life, though the condition is sometimes called "diffused cavitation." The sign means the giving way of the tissue and its addition to the signs of the first stage indicates extension of the action of the germ, and renders the prognosis less favourable.

The localisation of the physical signs is important, as indicating the spread of the infection. We must first inquire how such spread may take place from one point of infection to another point in the same or the opposite lung. The methods may be classified thus:

(*a*) Simple contiguity of tissue.
(*b*) Lymphatic absorption.
(*c*) Bronchial insufflation.
(*d*) Venous conduction.
(*e*) Arterial conduction.

(*a*) Extension by contiguity of tissue is estimated not so much by the area of consolidation as by the spread of the *râles* from the point of primary infection, the wider the spread and the worse the prognosis. The spread is greatly resisted by the boundaries of the lobes of the lungs, and is for a long time limited to the lobe of origin. Hence the importance of locating the boundaries of the lobes. When the lesion has thus passed the boundaries of a lobe the prognosis becomes worse, but such extension is generally by:

(*b*) Lymphatic absorption, which, no doubt, helps in extension by contiguity, as shown by sections of croupous pneumonia. But lymphatics are contained in pleural adhesions between the lobes, and thus assist in breaking down the natural barriers to extension. Lymphatic absorption helps in the spread of tuberculous mischief beyond the lung limits to the bronchial glands and still more remote parts. Such an occurrence marks a late stage of the disease, and is unfavourable.

(*c*) Extension by bronchial insufflation is most important. It is the cause of the caseous masses found in the middle of a lower lobe as secondary to an initial lesion in one of the upper lobes. Infected secretion from the initial lesion is drawn into the lower lobe by insufflation after cough. The detection of such a lesion during life greatly increases the gravity of the prognosis. It seems to occur on either side no matter on which side the primary lesion is situated, and the primary lesion may be so slight as to be easily overlooked, while the secondary lesion is very prominent. The malignity of the latter consists in its power of becoming a focus for further spread, and it generally advances more rapidly than the initial lesion.

(*d*) and (*e*). The circulation of blood through the lung is twofold. The pulmonary artery is the functional artery of the lungs, but the nutrient vessels are the bronchial arteries from the aorta. The bronchial veins carry blood from the lungs, possibly infected, back to the right heart to be once more sent through the lungs and possibly to reinfect them. Probably in this way numerous scattered patches in both lungs are produced and greatly increase the gravity of the prognosis.

Arterial conduction is called into play when blood which has once passed through the lungs and there infected, reaches the aorta and (driven through the bronchial arteries) once more reaches the lungs, producing the scattered patches already mentioned. Similarly tubercle of the meninges, kidneys, spleen, and so on is caused, and its prognosis is most unfavourable.

Extension to parts remote from the lungs is accomplished by the lymphatics and arteries as already stated, but mostly by the sputum after it has left the lungs. The most important extensions in this manner are to the:

(*a*) Larynx,
(*b*) Intestines,

for their presence greatly increases the gravity of the prognosis.

(*a*) Tuberculosis of the larynx is always secondary to a lung lesion, no matter how ill marked or even indetectable the lung lesion may be. (Reasons for this view and illustrations of it were given.)

(*b*) Infection of the intestines is caused by swallowing the sputum. It affects the parts where the poison is most easily caught, and can lie the longest undisturbed, and is therefore most common in the vermiform appendix and the lower part of the ileum. Its symptoms are well known, and are nearly always precursors of the end.

Only two symptoms are in this stage of much use in prognosis, namely pyrexia and hæmoptysis.

The second stage is never without pyrexia. The higher the fever and the worse is the prognosis, but worst is hectic fever with differences of possibly eight degrees between morning and evening temperatures.

Hæmoptysis is a much graver symptom in the second than in the first stage, and may be dangerous. It is due to ulceration of a blood vessel. Its dangers are:

(*a*) Loss of blood.
(*b*) Shock with cardiac failure.
(*c*) Fright.

General weakness, emaciation, night sweats, etc., are of some, but not of great, value in prognosis.

The third stage or "result" must be considered in two phases—"cavitation" and "fibrosis"—which may be almost entirely separate or more or less combined. Given that a cavity is present, then the more highly-pitched its percussion note and the more resistance there is to the percussing finger, and the more favourable is the prognosis, since these conditions mean a thick fibrous wall to the cavity. Echoing *râles* indicate a further progress of the disease, a combination of second and third stages, and are unfavourable.

In this stage dyspnœa is of prognostic value. In cavitation it is due mostly to loss of lung tissue, but in fibrosis mostly to interference with the suction of blood into the right side of the heart, from deficient inspiratory expansion. Dyspnœa is greater in fibrosis than in cavitation, but carries with it a more favourable prognosis when present in the former condition.

Failure of circulation should be carefully watched for in the third stage, for its occurrence is very dangerous. Pneumothorax is dangerous because of producing shock and even sudden death, but when this risk is passed its prognosis is not very unfavourable. It is the more common in cavitation.

Hæmoptysis is the great danger of the third stage of pulmonary tuberculosis, and is often fatal. If in copious amount it generally proceeds from rupture of an aneurysm of the pulmonary artery in a cavity. (A collection of such aneurysms was shown.) The aneurysm is produced

by negative pressure in the cavity produced by relief of its walls after compression during cough. They may easily be ruptured by violent percussion, and may be present in only small cavities. Fatal hæmorrhage, by reason of the presence of these aneurysms, is more common in cavitation than in fibrosis. On the whole, the prognosis is more favourable in fibrosis than in cavitation.

For many years after quiescence has set in there is risk of further outbreak by reason of reinfection from concealed tubercle.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A CASE OF SCARLATINA PEMPHIGOIDES.

In reference to the interesting case of scarlatina pemphigoides related by Dr. Somers in the British Medical Journal of November 3rd, it may be of interest to state that a case of a very similar nature occurred in my practice in the third week of April last.

The patient was a married man, having a family of five young children, whose ages ranged from 12 to 3 years, all of whom were attacked by the disease in a mild form, and recovered from it without any complication. The mother was the only member of the family who did not contract the disease.

The father's case was the last of the sequence, and presented no unusual features up to the fourth day of the rash. From this date, however, the eruption became, especially on the flexor aspects, vesicular; and the vesicles rapidly coalesced and formed large bullæ, which burst soon after, and gave to the skin a look as if it had been badly scalded. The appearances of the front of the chest and abdomen, and also the flexor aspects of the arms and thighs during the process of repair was very interesting, the shrivelled epithelium being thrown into roughly-circular folds over the bullous areas, and mingled here and there with drying pus, giving it a marbled appearance. The febrile symptoms gradually subsided with the inflammatory symptoms in the skin, but they were unduly prolonged by this peculiar outburst.

I ascribed the bullous eruption to the fact that the patient did not go to bed during the attack, or even report himself ill. I first saw him when the vesicles were beginning to form; and he said he was suffering from great irritation over the chest and abdomen, and scratched himself freely to relieve it. There is no doubt that in this case the friction of the clothes was largely responsible for the superadded skin affection, and I greatly doubt its origin from any such cause as double infection.

Ash, Dover. E. A. C. Baylor, M.D Dub.

ANEURYSM BURSTING INTO PERICARDIAL SAC.

History.—T. W., a stevedore, aged 32, had been under my observation for some years for occasional dilatation of a bad stricture of the urethra. On September 27th he consulted me for that purpose, but as he complained of pains in the chest I did not pass the sound. I examined his chest carefully, but found nothing abnormal on percussion or auscultation. The pains were much better in a few days. On October 11th he complained of having caught cold and a recurrence of the pains. I again carefully examined his chest, and found nothing abnormal. I ordered him home to bed, and told him to send if he became in any way worse. On October 13th he went to work feeling quite well, and so he continued until October 15th, when he died in bed at 7.30 A.M., giving a cry of pain.

Post-mortem Examination.—On opening the chest the pericardium was seen to be much distended, fluctuating, and very blue in appearance. It was full of soft blood clot. A small aneurysm of the ascending aorta, about the size of a walnut, was found in the pericardial sac. This had ruptured somewhat posteriorly.

Remarks.—I consider it impossible to have diagnosed it during life, owing to its position so near the heart and its small size. The valves of the heart were healthy and the organ slightly hypertrophied, but otherwise healthy. The lungs, kidneys, and all other organs were normal. The patient had had syphilis some years earlier.

Bristol. John Wm. Taylor, M.R.C.S., L.R.C.P.Lond.

FOREIGN BODY LONG RETAINED IN THE EXTERNAL AUDITORY MEATUS.

I think a parallel case to that reported by Mr. Benson under the title Foreign Body Twenty-five Years in the External Auditory Meatus may be interesting. An old lady, 78 years of age, had complained more or less for thirty years of deafness in her left ear, which, as far as she could remember, had come on quite suddenly. I found the ear full of wax, and advised syringing; which I proceeded to do. After one or two large pieces of the hardened wax had come away, I was considerably astonished to find a small round ball about the size of a pea discharged from the ear into the basin. This, on examination, proved to be a piece of tortoiseshell, which had broken off from one of the ornamental combs she used to wear over thirty years previously.

The tympanic membrane was thickened and slightly vascular. After using Politzer's bag twice, the hearing was almost normal in the ear in question.

St. Boswells, N.B. Wm. L. Cullen, M.B.Edin.

A CASE OF CONGLUTINATIO ET ATRESIA ORIFICII UTERI DURING PARTURITION.

In July last I was called in to see a Chinese woman, who, it was stated, had been in labour for three days. The Malay and Siamese midwives who were in attendance informed me that although the pains had been strong and regular the child had ceased to descend after the first day. The parturient woman appeared to be a well nourished robust young woman. She had had three children, and in all three labour had been normal.

On palpation uterine contractions were distinctly felt; the head was fixed, and the fœtal heart was distinctly audible below the umbilicus on the left side. After much opposition on the part of the patient vaginal examination was sanctioned. The head at every pain appeared to descend, pushing the anterior vaginal wall forwards and downwards, and rendering it so tense that I at first mistook it for the distended bag of membranes. I then endeavoured to feel for the os, which was represented by an irregular narrow groove facing the hollow of the sacrum. I inserted the tip of the finger into the groove, and with a little manipulation I was able to enlarge the opening by tearing away some adherent tissue by which agglutination of the margins of the os had taken place.

Once released the os rapidly enlarged, the membranes ruptured, and labour terminated within two hours from the time I saw the patient. The child had evidently been subjected to great pressure, as a large quantity of meconium came away soon after the membranes had ruptured.

P. G. Edgar, M.B., C.M., L.M.,
Acting Senior District Surgeon, Perak.

DISLOCATION OF THE STYLOID PROCESS.

Several references have appeared lately in the British Medical Journal to a condition of the throat described as dislocation of the styloid process.

The diagnosis seems to have chiefly rested upon the recognition by palpation of a hard, movable body in the lateral wall of the pharynx.

The existence of the subpharyngeal cartilage of Luschka seems to have been overlooked. This structure is by no means rare, and from the frequency of its occurrence I am inclined to think that this body was probably mistaken for a displaced styloid process. The cartilage occurs not only in the lateral wall of the oro-pharynx, somewhat behind and below the faucial tonsil, but also in the tonsil itself, which I have often verified by microscopic examination, attention having been drawn to it by experiencing an exceptional resistance to the guillotine. It consists of hyaline cartilage embedded in a capsule of white fibrous tissue, and is supposed to be a vestige of the third post-oral arch.

Devonshire Street, W. Wyatt Wingrave, M.D.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL HANTS COUNTY HOSPITAL.

A CASE OF STRANGULATED VERMIFORM APPENDIX FORMING A FEMORAL HERNIA.

(By Henry Hemsted, Jun., M.R.C.S., L.R.C.P., House-Surgeon.)

A. A., a married woman, aged 33, was admitted on July 8th, 1900, with the physical signs of a strangulated femoral hernia.

History.—On July 6th she attempted to lift a heavy pair of steps, and thinks she "ruptured herself." She found a lump in the right groin, but did not take much notice of it till next day, when it became tender and painful. On the morning of July 8th she felt ill, and vomited eight times. Her bowels were open on the evening of July 7th, after the accident, and again freely at 11 A.M. on July 8th. She also passed flatus on each day.

Condition on Admission.—The patient was found to be an anæmic woman. There was very little constitutional disturbance. Locally there was a tumour in the right groin, about the size of a large walnut, tender, painful, irreducible, and dull on percussion. Reviewing the history of the case, it was thought to be either a case of strangulated omentum or a Richter's hernia.

Operation.—At 5.45 P.M. (one hour after admission) the usual incision for strangulated femoral hernia was made; the sac was exposed and opened. About 2 ounces of dark, foul fluid escaped. A loop of bowel of very small calibre and dark mulberry colour presented in the sac. On pulling down this loop to ascertain whether there was ulceration or perforation at the site of stricture, one end was found free with a blind extremity and a small mesentery, thus proving itself to be the vermiform appendix in a strangulated condition. The extruded portion, about 5 inches in length and about the size of a piece of stethoscope tubing, was ligatured and amputated, subsequently appearing almost empty. The hernial aperture was then closed with silk and the cutaneous wound sutured.

The patient made a good recovery.

Remarks.—The unexpected discovery that the appendix was the strangulated viscus explains satifactorily the otherwise somewhat anomalous symptoms of this case, but I fail to see why the increased intra-abdominal pressure consequent upon attempting to lift a pair of steps should react on the vermiform appendix sufficiently to force it alone into the crural canal. Is it possible that pressure by muscular contraction on a large intestine distended with gas or fluid could so increase the intra-alimentary tension as to forcibly extrude this cæcal divertieulum? Might not the straightening out observed in the inflating pipe of the inner tube of a bicycle tyre, or of the pneumatic facepiece of a Clover's inhaler, when this elastic cavity is distended with air or water and then compressed, be produced as an experimental analogy in support of this theory? The patient had been habitually much troubled with flatulent dyspepsia.

[I am indebted to Mr. Margerison for permission to publish this case.]

RUPTURED UMBILICAL HERNIA WITH EXTRUSION OF INTESTINES.

(By Henry Hemsted, Jun., M.R.C.S., L.R.C.P., House-Surgeon.)

H. B. was brought to the hospital from a neighbouring town about 2 P.M. on June 30th, 1900, with a ruptured umbilical hernia.

He was a well-nourished and corpulent bricklayer, aged 60, He was found to have about a yard of small intestine and a large mass of omentum protruding through the ruptured sac of an old umbilical hernia.

The following history was elicited: He had had a "rupture t the navel" for more than ten years, which had become tenaer and painful on several occasions. He had always been able to put it back himself, and did not take much notice of it. At about 10 A.M. on June 13th, while he was whitewashing a ceiling, he "felt something burst." On examination his two mates found that his "guts had come out." They tried for several minutes to replace the viscera, but were unsuccessful; the patient also tried for himself, with a like result. A surgeon was then called in, and having prevented further extrusion by means of carbolised towels and a horse-girth, he despatched the man to the hospital in a carriage.

About half an hour after admission the patient was anæsthetised with ether, the intestine reduced with some difficulty, the omentum ligatured and removed, and, finally, the sac excised and the wound closed. The patient died twenty-two hours after operation from shock, in spite of intravenous saline injections and other measures.

Remarks.—The hernial sac showed no sign of sloughing, and appeared to have given way in its upper part by a transverse rent. Spontaneous rupture of an umbilical hernia is, fortunately, a very rare occurrence, and is then usually preceded by sloughing of the containing sac. I can learn of only one other case on record, though doubtless a more exhaustive research would reveal others.

[I am indebted to Mr. Margerison for permission to publish this case.]

REPORTS OF SOCIETIES.

THE ROYAL SOCIETY.

Lord Lister, F.R.C.S., President, in the Chair.

Friday, November 30th, 1900.

Anniversary Meeting.

The anniversary meeting was attended by a large number of Fellows assembled to hear the retiring address of Lord Lister. The delivery of the address was preceded by some formal business, including the statement of the Treasurer on the satisfactory financial condition of the Society.

The President's Address.

Lord Lister then delivered the customary anniversary address, and referred in the first place to the Fellows who had died since the last anniversary meeting. In speaking of Sir James Paget, he said that his career afforded a remarkable example "of the triumph of intellect and science over very formidable obstacles. At the same time, his lofty conception of professional dignity and duty, his rare unselfishness and great personal charm, aided by his rare though unostentatious eloquence, not only secured the affectionate admiration of his professional brethren, but gave him a general elevating influence, perhaps unrivalled in a surgeon." Lord Lister also referred at some length to the careers of Sir John Bennet Lawes and of Professor Willy Kühne, Professor of Physiology at Heidelberg, and a foreign member of the Royal Society. Lord Lister then turned to the main topic of his address, which dealt with the parasites of malaria and their dissemination by the mosquito. These passages are printed in full at page 1625.

Medals.

After the address the medals were presented. The Copley Medal was awarded to M. Berthelot, the Rumford Medal to M. Becquerel, the Davy Medal to Professor Koerner, the Darwin Medal to Professor Haeckel, and the two Royal Medals to Major MacMahon and Professor Alfred Newton. Unfortunately most of these gentlemen were prevented from being present to receive the medals in person, and the medals for the foreigners were handed over to *Attachés* from the French and German Embassies.

Vote of Thanks to Lord Lister.

The vote of thanks to Lord Lister for his address was moved by Lord Kelvin, and seconded by Sir A. Geikie. As this was the last appearance of Lord Lister in the Presidential chair, this vote was something more than a mere formal expression of thanks.

Election of President and Report of Council.

The ballot for the new Council was then proceeded with, and all the recommendations of the old Council in this direc-

tion were adopted, including the election of Sir William Huggins as the new President.

The report of the Council, which had been previously circulated, was taken as read. We give below some extracts from the report, which we think will be interesting to our readers.

REPORT OF COUNCIL.

The report stated that during the year the time and attention of the Council had been largely occupied by business connected with matters of national and international scientific interest in which the Government had either directly sought the advice and assistance of the Society, or had itself given assistance and financial support to undertakings promoted by the Society in the interests of science.

National Physical Laboratory.—The work carried on by the Kew Committee of the Royal Society had been taken over by the Executive Committee, and the Kew Committee had been dissolved. Though the Council regretted the decision not to erect the laboratory in the Deer Park, they had gratefully accepted Bushey House as the site for the laboratory, and the work of preparing the house and erecting new buildings would be taken in hand at once.

National Antarctic Expedition.—Under the direction of the Joint Committee of the Royal Society and the Royal Geographical Society preparations were being pushed forward, and the construction of a vessel to be named the *Discovery* had been begun. The commander appointed was Commander R. F. Scott, R.N., and the head of the Scientific Staff was Professor Gregory. It was hoped that the expedition would be ready to start by August, 1901. The sum received was £91,000, out of which the Treasury had contributed £45,000; the total amount required was £120 000.

Malaria.—The three observers mentioned in the last year's report of the Council as pursuing their investigations in British Central Africa, under the direction of the Malaria Committee, had returned thence. Two had since been continuing their investigations on the West Coast of Africa. The results at which they had arrived, some of which were of great practical importance, had now been published in part, and a memorandum of the results obtained, together with a note containing some practical suggestions for preventive measures, had been sent to the Colonial Office for circulation among the Colonies concerned. Further reports would shortly be published, and, on the return of the observers in December, the plan of further operations would be carefully considered. Among other things, arrangements would probably be made for carrying out in suitable stations experimental measures with a view to the local examination of malaria-bearing mosquitos.

International Catalogue of Scientific Literature.—The Council had decided that the Royal Society should itself be the publisher of the *International Catalogue of Scientific Literature*, and steps were being taken to organise a British Central Bureau. The catalogue would be issued in 17 volumes relating to 17 different sciences. At the International Conference of 1900, six countries officially subscribed for 104 sets of volumes, and four other countries would probably take 36. The United States had taken 65 complete sets, and the Royal Society had made itself responsible for 45 others, but with regard to 28 such sets, it had been relieved by promises of subscriptions from other countries. The catalogue would be started on January 1st, 1901.

International Association of Academies.—It had been arranged to hold the first meeting of the International Association of Academies in 1901, probably at Easter.

Proposed British Academy.—The Council reported that the International Association of Academies had decided that no society devoted to one subject or to a small range of subjects would be regarded as an academy, and that an academy might be admitted either to the literary section alone, or to the scientific section alone, but not to both unless its constitution showed that the sphere of its labours embraced both literary and scientific subjects. Hence as matters at present stood, the Royal Society being a scientific society only, the United Kingdom could only be represented on the scientific section of the Association. The Council of the Society had consequently entered into communication with distinguished men of letters with regard to the formation of a Literary Academy. These gentlemen were of opinion that it would not be desirable to attempt to form such an academy by the federation of existing societies, and in a memorandum suggested that the Royal Society might give its aid in one of two ways: (1) It might enlarge its scope and include a section corresponding to the "Philosophico-Historical" and "Philological" division of the German Royal Academies and Societies; or (2) it might address a memorial to the Government pointing out the exceptional position in which England was placed as compared with other European countries through the absence of any Academy representing departments of study other than mathematics and natural science, and advocating the formation of such an Academy. The Council had consequently appointed a Committee of Fellows which had presented a report, but this report had not yet been considered by the Council.

Catalogue of Scientific Papers.—Progress had been made with the catalogue of scientific papers, and with the classified index thereto. The Committee hoped to have the whole of the work completed by the end of July, 1901.

Quinquennial Census.—Representations having been made to the Council by the Royal Statistical Society as to the desirability of taking an intermediate census of a simple and comparatively inexpensive character in the year 1906, Lord Salisbury and Mr. Balfour had been approached on the subject, and the matter was under the consideration of the Local Government Board.

The Presidency.—The report concluded as follows:—"Lord Lister, who has held the office of president for five years, having expressed the wish not to be put in nomination again, the Council unanimously resolved to invite Sir William Huggins to allow himself to be nominated to the office, and are glad to be able to report that he has accepted the invitation. It would be superfluous for the Council to enlarge upon the assiduity and success with which Lord Lister has discharged the onerous duties of his office to the great advantage of the Society, but they have great pleasure in announcing that he has consented to have his name included in the list of those submitted to the Society for election into the Council for the coming year."

PATHOLOGICAL SOCIETY OF LONDON.

W. Watson Cheyne, F.R.S., President, in the Chair.

Tuesday, December 4th, 1900.

ACUTE EMPHYSEMATOUS GANGRENE.

Messrs. E. M. Corner and D. Singer communicated a paper on this subject. The details of the case reported appeared in the *Lancet* of November 17th, 1900, but certain facts and further references were added.

Mr. Singer pointed out that bacteriologically acute emphysematous gangrene was divisible into two main groups according as the organism to which the disease was due was either aërobic or anaërobic. Group I, Aërobic: Only one organism had been described in this group, which was identical with Sanfelice's bacillus œdematis aërobius, and which bore a very close resemblance to the members of the colon bacilli group, differing only in minor points, such as the appearance of colonies on gelatine, and the production of gas in a medium not containing sugar—such as Uschinsky agar. This bacillus never occurred in pure culture, being always mixed with some one or two of the pyogenic organisms—most commonly the streptococcus pyogenes. This also agreed with the results of experimental inoculation, pure cultures producing only an œdematous swelling without gangrene or emphysema. Group II, Anaërobic, included two members: (1) An organism which varied greatly in morphological and pathogenic characters in different cultures, and had been described under the names of bacillus aërogenes capsulatus (Welch and Nuttall), bacillus emphysematosis (Fraenkel), and bacillus perfringens (Veillon and Zuber). This was by far the most common cause of acute emphysematous gangrene, and sometimes occurred in pure culture. (2) The bacillus œdematis maligni (*vibrion septique* of Pasteur). This organism, which was erroneously believed to be the most common cause of this disease, had only been fully proved to be so in one series of cases by Chauveau and Arloing.

Mr. Corner spoke upon the great differences with regard to the reported cases, it being frequently impossible to distinguish between specific gangrene and ordinary decomposition. The occurrence of anomalous cases also embarrassed the subject. Cases due to a mixed infection were usually due to an aërobic bacillus, the bacillus œdematis aërobius, and pyogenic organisms; sometimes it was a mixed pyogenic and anaërobic infection; but these two classes differed but little in their clinical features. The authors' case represented this type very well. The signs were pain, swelling, and bronzing of the part, with high temperature and perhaps a rigor. Within forty-eight hours the part became green and discoloured, and gas formation could then be detected in the tissues. The red bronze discoloration was due to the septic organisms, and preceded the gangrene as it spread. There was no gas formation in this part. Death occurred in about four days if nothing was done. The relation of this gangrene to diabetes was also discussed. The great difficulty was the association with arterial disease, lessened resistance of the tissues, the presence of sugar, etc., which might allow ordinary decomposition to appear spreading and emphysematous. Cases due to mixed anaërobic infection did not seem to differ much from the above. When due to pure infection, quite a different clinical type was present. All signs of inflammation and suppuration, both local and constitutional, were absent. Pain, swelling, and early gas formation were the earliest symptoms. The affected region was white, swollen, and the superficial veins were enlarged and distinct, full of gas, painful at first, later anæsthetic. There was no fever usually, and the pulse rate and mental state were only affected late in the disease. Such instances were always due to an anaërobic infection. In both of these classes of case anomalous conditions existed which were subacute and sometimes due to autoinfection. These seemed due to different virulence of the organisms, which varied from the non-pathogenic to the most highly pathogenic, and so there were corresponding clinical variations. Referring to the treatment, Dr. Bloodgood's opinion was cited: "If infection is recognised early and the destruction of the soft parts and bone is not extensive, free incisions and continuous baths should be tried. If the general symptoms are not immediately relieved amputation should be done. If, however, the infection is recognised late, one should take no risk, but amputate at once." Dr. Bloodgood's experiences were chiefly concerned with

anaërobic infections, which showed great variety of virulence. It was doubtful if such a measure could be successful in a case of aërobic infection such as that described in the paper. Hence, as treatment had to be decided before the bacteriological results were known, amputation was the safest practice. Anomalous cases of aërobic infection might be treated after Dr. Bloodgood's advice.

In answer to the PRESIDENT, Mr. SINGER stated that the number of bacilli isolated from such cases were three: (1) The bacillus of malignant œdema (in one series of cases); (2) B. aërogenes capsulatus (this was the commonest); (3) B. œdematis aërobius.

A CASE OF ATROPHIC MAMMARY SCIRRHUS.

Dr. S. BONTOR recounted a case of the above, in which death occurred at an advanced age from asthenia. No ulceration or metastasis took place. A tumour in the left breast was noticed at the age of 54; twelve years afterwards a similar growth showed itself in the right breast, and in the neighbouring skin. Death did not take place till the patient was 77 years of age. The disease ran a painless course.

HÆMANGEIO-SARCOMA OF THE BREAST.

Mr. A. G. R. FOULERTON reported what he considered an example of the above from a woman aged 59; the tumour had been present in the left breast for three years and lay to the inner side of the nipple. When divided it was found to be well defined, and was of a deep red colour. Certain of the axillary glands showed similar growth. Histologically it consisted of trabeculæ between columns of cells amidst which ran capillaries with endothelial walls, the cells immediately around the vessels being columnar. Considerable hæmorrhage had occurred. The author regarded the columnar cells as due to proliferation of the endothelium.

Mr. S. G. SHATTOCK observed that the specimen was very like one of the first of the villous carcinomata recorded at the Society; the exhibitor of the latter had regarded it as a vascular sarcoma, but the Morbid Growths Committee had held it to be a villous carcinoma of which the connective tissue processes accompanying the capillaries was remarkably delicate; these processes were thickly clad with epithelium and the lumen of the space nearly or quite blocked with the ingrowths.

Dr. A. F. VOELCKER held the same view as the preceding speaker.

Dr. LAZARUS-BARLOW supported the author.

[The specimen was referred to the Morbid Growths Committee.]

CYSTIC ADENOMA OF THE ADRENAL.

Dr. W. C. BOSANQUET exhibited the above specimen.

SARCOMA OF THE STOMACH.

Dr. H. THURSFIELD described the case of a boy who presented a hard nodular mass in the left hypochondrium, and died of exhaustion. The whole of the stomach was involved, the growth being one of small round cells. There was a tumour over the right ascending ramus of the jaw, and a mass in the left lobe of the thyroid. The necropsy was unavoidably incomplete, and the speaker was not sure that the growth of the stomach was the primary disease.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

ROBERT JARDINE, M.D., President, in the Chair.

Wednesday, November 28th, 1900.

GLASGOW MATERNITY HOSPITALS PAST AND PRESENT.

THE PRESIDENT delivered an address on this subject. He first gave an account of the midwifery work in Glasgow before the first maternity hospital was started. In the sixteenth and seventeenth centuries the work was largely in the hands of midwives. In those days the Kirk looked after the morals of the midwives. From Dr. Duncan's *Memorials of the Faculty of Physicians and Surgeons of Glasgow* he quoted a statement that one Kate Freeland was summoned before the Presbetery on April 4th, 1589, "to assr. for her professioun to be ane midwyfe gif she has not been knawin win ye toun and citie of Glasgow to ye inhabitatis yair, and to underly ye (censure?) of ye Kirk according to her demerites." In 1740 the Faculty instituted an examination for midwives which had been continued throughout the century. It was enacted that:

After the 1st of January, 1741, any midwife who shall pretend as such to practise within the shyres of Lanark, Renfrew, Ayr, and Dumbarton, without a licence, shall be fined in the sum of forty Pounds.

Two and sixpence was the only charge made to the midwives for the licence. It would thus be seen that the registration of midwives, which had become such a burning question south of the Tweed, was no new thing in Scotland. The first maternity hospital of which he could find record was a small private one started in 1791 by James Towers, surgeon. Mr. Towers afterwards became the first Professor of Midwifery in the University in 1815. In 1805 an attempt was made to found a public lying-in hospital, but it failed. In 1834 the Glasgow Lying in Hospital and Dispensary was founded by Dr. James Wilson. The hospital was long hampered by want of funds and unsuitable accommodation. Epidemics of puerperal fever were common; but, in spite of opposition, the hospital struggled on until at length the present building was opened in 1881. The present hospital, although it might have been quite up to date twenty years ago, was now far from an ideal place in which to do the work they were called upon to do. Not only was it too small, but there was neither an operating theatre nor an isolation ward in it, and the labour rooms were no larger than ordinary bedrooms. The operative work had increased quite tenfold, especially within the last decade. From 1834 to 1841, in the first hospital 445 cases were attended.

Of these 6 were forceps cases (1 in 74), 2 versions (1 in 222), 1 craniotomy (1 in 445) 9 operations in all (1 in 49); while during the 10 years from 1889 to 1898 inclusive 4,322 cases required: forceps 650 (1 in 7), versions 154 (1 in 28), craniotomies 112 (1 in 30), inductions of labour 90 (1 in 48), Cæsarean sections 56 (1 in 77), *post-mortem* Cæsarean sections 2 (1 in 2,161), 1,064 operations in all (1 in 4).

The President made a strong appeal to the Fellows of the Society to make known the wants of the institution to their wealthy friends, and closed his address with a short history of the different men who had held the appointments of chief physicians in the past. The founder, Dr. James Wilson, and his son, Dr. J. G. Wilson, had been on the staff for nearly fifty years. The President showed a large number of interesting specimens, and also all the newest instruments and apparatus employed in midwifery work.

On the motion of Dr. W. L. REID a hearty vote of thanks was accorded him for his interesting address.

LIVERPOOL MEDICAL INSTITUTION.

PATHOLOGICAL AND MICROSCOPICAL SECTION.

J. H. ABRAM, M.D., in the Chair.

Thursday, November 15th, 1900.

PRODUCTION OF CRYSTALS OF ALBUMIN.

DR. BRADSHAW read a note on the production of crystals of albumin by G. Hopkins's method, and showed well-formed crystals obtained from the white of eggs and from horse's serum. The latter were 0.5 mm. in length, and formed hexagonal prisms terminated at one end by a hexagonal pyramid and at the other by a basal plane. With polarised light they were seen to be bi-axial, and with crossed Nicholl's they showed straight extinction. Elementary analysis of the egg-albumin crystals washed free from ammonium sulphate by means of acid solution of sodium chloride and dried at 110° C. showed percentage of carbon as 51·66, and H 6·71. These percentages were slightly lower than Hopkins obtained with alcohol coagula. The egg-albumin crystals appeared to be embryonic, and were too small for their optical characters and their form to be determined.

MALIGNANT ADENOMA.

Dr. BRIGGS read a paper on the morbid anatomy of malignant adenoma, simple adenoma, and the glandular changes of chronic endometritis. He stated that he and the obstetric assistant at University College, Liverpool, had recently revised the museum catalogue, and for that purpose 100 malignant new growths of the uterus had been subjected to microscopic examination. Of the 100 new growths, 74 were ordinary carcinomata, 6 sarcomata, and 20 malignant adenomata. Under ordinary carcinomata there had been included carcinomata with the alveoli packed with epithelium (squamous-celled growths), in order to differentiate them from the typical glandular growths known as malignant adenomata. Both were cancerous, but to emphasise the difference in struc-

ture clearly he had refrained from employing the term adeno-carcinoma. It was especially useful to make this clear, as microscopical methods in diagnosis were reliable in ordinary cases of carcinoma and sarcoma, provided, as Sir John Williams had aptly expressed it, the "vicious" bits were excised. Dr. Briggs founded his paper mainly on cases which he had treated by vaginal hysterectomy, 83 in number, of which he could produce complete clinical and pathological evidence. Of the 83, 3 were sarcomatous growths of the cervix, and 80 were cancerous growths; 65 of the cervix, and 15 of the body of the uterus. Of the 65 cervical growths, 4 were malignant adenomata, and, of the 15 corporeal growths, 11 were malignant adenomata. These figures were interesting and important in two ways: (1) malignant adenoma had been proved more amenable to radical treatment; (2) malignant adenoma was less readily diagnosed by microscopical methods. He intended to refer to the diagnosis and morbid histology, reserving his report on the result of treatment for another occasion. As to the diagnosis of corporeal malignant adenomata, he showed the uterus and a section of the growth from each of three cases treated by vaginal hysterectomy. The diagnosis in these cases had rested on well-marked post climacteric bleeding from the small senile uterus. He then cited the remarkable history of a case treated by curetting without effect in 1881.

The patient, a single lady, was now living at the age of 70 years and in good health. This lady remembered the menopause at 44, leucorrhœa at 48, continuous bleeding at the age of 50 (1881), when her doctor curetted her uterus and removed a polypus. The slight blood loss persisted for the next eighteen years before appreciably affecting her health. She then felt discomfort and occasional pain, and sought advice; after which Dr. Briggs saw her, and removed by the curette a piece of malignant adenoma. By vaginal hysterectomy in 1899 the uterus, shown, was removed. The uterus had remained mobile, although its coats had been infiltrated by the malignant adenomatous growth.

Such a history raised many points of importance; if the disease was originally malignant adenoma, the course was as slow as some cases of rodent ulcer of the face; if chronic endometritis preceded the malignant adenoma at that stage (1881), on the usual plea of post-climacteric bleeding, a recommendation that the total extirpation of the uterus was advisable might, if refused, have exposed the gynæcologist to the charge of having advised too radical an operation. Were such cases ever apparently cured at an early stage by curetting? Dr. Briggs related the histories of cases of malignant adenoma of the body of the uterus to illustrate the difficulties in diagnosis where chronic uterine suffering and hæmorrhagic discharges existed before the menopause. A test for the nature of the disease by the examination of scrapings was considered, and a series of lantern slides were exhibited. He exhibited a series of sections of curettings from cases of endometritis, interstitial and glandular, and endeavoured to prove the possibility of distinguishing them from sections of malignant adenomatous growths. The round-cell infiltration in malignant adenoma was scattered in patches; the glandular cells varied in shape, cubical or columnar, usually in a single layer. The relative proportion and disposition of glands and stroma were always changed in a marked manner. Infiltration of muscle was often visible; it might be absent from curettings. The naked-eye appearances of curettings assisted the diagnosis, by their opacity as compared to the translucent curetting from inflamed tissues. Sections of cervical malignant adenomata were exhibited from cases of apparent cure of the disease. The proportion of these growths to cervical cancer in his experience was 1 to 16, a circumstance which might explain to some extent the relatively small number of cervical malignant growths cured by radical operations when compared with the corporeal malignant growths which were mostly malignant adenomata.

Dr. Stervks knew of no class of cases so troublesome in their early history, or that so taxed the diagnostic ability of the practitioner. One of the most interesting cases narrated was a patient of his, a lady aged 60 years. Dr. Briggs curetted in the first instance, and later it became necessary, on account of the distinctly malignant nature of the disease, for him to perform complete hysterectomy. The operation was a decided success in every way. The patient bore the operation well, and to-day was strong in every particular, with no return of the trouble.

The Chairman, Dr. Alexander, Mr. Paul, and Dr. Buchanan also took part in the discussion; and Dr. Briggs replied.

Specimens.

Mr. Newbolt showed (1) a malignant polypus of the nose, for which he had removed the upper jaw, in a man, aged 52 years; (2) growths affecting both breasts in a woman, aged 64 years, for which double amputation had been done.—Mr. Keith Monsarrat showed (1) a specimen of the so called congenital hæmatoma of the sterno-mastoid from an infant, aged 2 weeks. The microscopic sections showed the tumour to consist of fibrous tissue, between the strands of which were young and multiplying muscle cells. There was a complete absence of blood pigment or any other appearance justifying the name hæmatoma. (2) Sections from a congenital sacro-coccygeal tumour. The growth, which was entirely independent of the rectum and had no connection with the spinal canal or the bones, was considered to have probably originated in a mesoblastic "remnant" at the hinder end of the embryo.—Dr. W. Blair Bell showed specimens and photographs of (1) volvulus of small intestine round an adhesion to the parietes above the bladder occurring six weeks after operation for strangulated inguinal hernia in a woman aged 44, who died within six hours of the onset of symptoms; (2) obstruction of the ileum due to plum stones, on the proximal side of a large patent Meckel's diverticulum, which had a well-marked accessory band, and was adherent near to the umbilicus; the specimen was from a boy aged 14.—Dr. W. T. Allen showed a stomach with carcinoma occluding the pylorus, upon which a gastro-enterostomy had been performed five months before death, from a man aged 45, who died of cancer of the liver, and had shown hardly any gastric symptoms.—Dr. Grossmann showed: (1) Preparations of a retinal glioma; (2) a series of six human embryos collected for the purpose of examining the development of the eye. Four were from four to eight weeks gestation, and complete; the ova were partly opened to show the embryos floating in the amnion outside the chorion.—Dr. J. Hay showed specimens of diffuse carcinoma of the lung. The patient had also suffered from cancer of the liver and left kidney.—Dr. R. J. M. Buchanan showed specimens of fuchsin bodies in the epithelial cells of pulmonary cancer, prepared from the growth exhibited by Dr. Hay.—Dr. J. Wigglesworth showed the calvaria and brain from a case of hydrocephalus. The specimen was from a male patient, aged 48 years. The brain weighed 2,479 grams, and the ventricles contained 1,035 c.cm. of fluid.—Mr. W. Thelwall Thomas showed (1) an enlarged thyroid gland, removed from a young woman aged 21 years; the growth weighed 2lbs. 6ozs.; it was of the colloid variety. She was up and about on the ninth day; (2) two large gall stones that had produced acute intestinal obstruction, with fæcal vomiting; they were from women, one aged 65 years, the other 52 years; neither patient had ever suffered from jaundice; (3) a mixed oxalate and phosphatic urinary calculus, weighing 5½ozs., removed by suprapubic lithotomy from a man aged 51 years; the bladder was sutured, and healed by first intention.—Dr. Nathan Raw showed (1) a specimen of enormous distension of the bladder; (2) a large strangulated hernia containing the whole of the intestines.

The specimens were discussed by the Chairman, Sir W. M. Banks, Drs. Carter, Hay, Raw, Buchanan, and Messrs. Alexander, Thomas, and Monsarrat.

MIDLAND MEDICAL SOCIETY.

Jordan Lloyd, F.R.C.S., President, in the Chair.

Wednesday, November 14th, 1900.

Uterus Removed by Abdominal Section.

Dr. Malins showed a large uterus, removed by abdominal section after a difficult labour.

The patient, aged 43, had been in labour some hours before a medical man was called in. The presentation was stated to be "a head, arm, and hand." Collapse followed, and signs of rupture. Forceps were tried, then delivery effected by turning. The whole front of the vaginal attachments, including the bladder, were found separated from the uterus. The left broad ligament was torn half way up its depth; the right broad ligament three-quarters of its depth. The patient lived for 60 hours, dying of septic peritonitis.

The uterus was remarkable for (1) the thickness of its walls (2 inches); (2) the clearness of the placental site; and (3) the absence of Bandl's or contraction ring.

Subcutaneous Rheumatic Nodules, without Obvious Joint Trouble.

Dr. Short read notes of a case of subcutaneous rheumatic nodules occurring on the scalp of an adult.

The patient was a woman, aged 20, who had developed the nodules six weeks before being seen. They were situated on the occipital ridges, the frontal ridges, and the temporal bone above the mastoid. They ached severely, and were tender. There was no history of rheumatic joint trouble, but pains in the limbs had been present, and the heart showed signs of early mitral stenosis. The nodules disappeared rapidly under treatment. Although met with in children this condition was rare in adults.

Iron Nut and Screw removed from the Skull.

Dr. Lowe exhibited an iron nut and screw, with a circular piece of bone, which he had removed by trephining from a man's skull.

The man had been thrown out of a cart, had pitched on his head on the hard road upon the nut, with the result that the nut had punched out a piece of bone in the region of the occiput, and lay buried in the hole it had made in the skull, the circular punched-out piece of bone lying loose on the surface of the dura mater. The injury gave rise to hardly any symptoms except a temporary dimness of sight, and the appearance of the wound aroused no suspicions that a foreign body had passed through it, this not being discovered till the time of the operation. A fracture of the bone only was diagnosed.

The patient made a good though rather tedious recovery.

GASTRO-JEJUNOSTOMY.

Mr. HASLAM showed a preparation from a patient on whom he had recently performed gastro-jejunostomy for symptoms of pyloric obstruction.

The man, aged 67, was greatly emaciated, and though no tumour could be clearly felt, it was thought that the case was probably one of malignant disease of the pylorus. Puckering and thickening were felt in this situation at the operation, but the patient was too feeble for prolonged examination. He died, five days after operation, of broncho-pneumonia. At the necropsy the pylorus would easily admit the finger, and there was an ulcer rather larger than a shilling of a simple nature in this position.

The obstruction was evidently the result of violent spasm of the pylorus, due to irritation from the ulcer.

PAPER.

Dr. THOS. WILSON read a paper on the varieties and treatment of prolapse of the uterus and vagina.

LARYNGOLOGICAL SOCIETY OF LONDON.—At a meeting held on November 2nd, Dr. DE HAVILLAND HALL, President, in the chair, Mr. STEWART showed a case of mucous polypus of the larynx, occupying the whole of the right vocal cord in a woman, aged 70.—Mr. SPENCER showed a specimen of cancer of the œsophagus, which had caused complete laryngeal paralysis. Mr. Spencer had excised one vocal cord, and this had successfully relieved the dyspnœa, but the patient died soon after. The utility of this procedure in such cases was called in question by Sir Felix Semon. Mr. Spencer also showed a case of progressive sinking of the bridge of the nose following bilateral hæmatoma of the septum. The hæmatoma followed an injury, and disappeared without deformity within a month, but now, two years later, there was marked sinking in of the nose. The case was discussed by the PRESIDENT, Dr. THOMSON, Mr. PAGET, Dr. GRANT, Dr. WATSON WILLIAMS, Mr. BABER, Dr. LACK, Mr. VINRACE, and Dr. WINGRAVE.—Dr. BARCLAY BARON showed a case of laryngeal growth in a man, aged 49. The upper aperture of the larynx seemed almost filled by the growth, which apparently sprang from the base of the epiglottis or adjacent parts of the ventricular bands.—Dr. WATSON WILLIAMS showed a new form of ethmoidal cell-cutting forceps.—Dr. TILLEY showed a patient with tuberculous laryngitis, in which the local lesion was suggestive of malignant disease.—Dr. DUNDAS GRANT showed (1) a female with probable primary chancre of the tonsil; (2) a case of alveolar epithelioma of the ethmoidal cells and maxillary antrum, in which he had removed part of the upper jaw and ethmoid, but had saved the alveolar and palatal processes of the maxilla; (3) a specimen of sarcoma of the thyroid gland, in which the whole gland was affected. Dysphagia and dyspnœa were urgent, and extirpation was attempted, but with fatal result on the fourth day; (4) a case of malignant disease of the larynx, the treatment of which was discussed, and it was considered inoperable. Dr. WYATT WINGRAVE showed microscopic specimens from Dr. Grant's cases, and also a case of laryngeal papillomata in a girl, aged 8. He considered the growths were the remains of an exaggerated vocal commissure, in spite of the fact that no symptoms appeared until the child was 5 years old.—Dr. STCLAIR THOMSON showed a case of tuberculous laryngitis; Mr. WAGGETT a case of fracture of the thyroid cartilage in a female produced by crushing the larynx with the fingers of an assailant; and Mr. C. A. PARKER a case of hæmorrhages on the vocal cords. There was one hæmorrhage about the centre of the upper surface of either cord, and one of these had occurred suddenly during the examination of the patient a month previously, and had subsequently remained unaltered.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—At a meeting on November 16th, Mr. R. CLEMENT LUCAS in the chair, Mr. ALFRED H. TUBBY showed an infant suffering from imperforate anus and recto-vaginal fistula, in whom an anus had been formed by operation. The aperture of the fistula lay within the hymen. The success of any operation seemed to depend mainly upon the extent of the rectal mucous membrane. If the mucous membrane ceased a couple of inches up he thought it almost impossible to form a useful anus through the thick intervening tissue, most of which finally assumed a cicatricial character. Mr. Tubby also exhibited a cavernous angioma, which he had removed from a male child aged 5 months. It formed a firm mass the size of an orange, filling up the left side of the scrotum, and extending to the external ring. Mr. H. B. ROBINSON stated that he had removed an angioma closely connected with the round ligament, from the left side of a girl's inguinal canal. It seemed to be parallel with varicocele in the male.—Dr. GEORGE CARPENTER showed a boy, aged 3½ years, with many subcutaneous fibrous nodules. There was neither a family nor a personal history of rheumatism; the child had not suffered from sore throat, nor did he present evidences of cardiac mischief. The liver and the spleen were slightly enlarged. The nodules affected mainly the extensor tendons of the hands, feet, wrist, and ankles. They appeared at the age of fourteen months, and since the patient had been under observation (September, 1898) they had increased in number. Galvano-puncture of individual nodules had been practised with considerable success, but no remedy had been found that prevented fresh nodules appearing. Mr. H. B. ROBINSON thought that, whatever name might be given to the case, the prefix "osteo" must find a place, since the bones were certainly involved. In reply to the CHAIRMAN, Dr. CARPENTER stated that radiographs had failed to reveal any changes in the bones. Microscopically a nodule had been found to be made up of fibro-nuclear tissue.—The CHAIRMAN exhibited a skiagraph of a case of fracture dislocation at the elbow in a boy, aged 10 years. As the injury resisted all attempts at reduction, Mr. Lucas, five weeks after the accident, excised the joint with a view to restoring mobility to the elbow. Mr. F. C. ABBOTT had later had an almost identical case in a girl, aged 10. Failing under an anæsthetic to reduce the dislocation, he cut down upon the ulna, sawed through the base of the olecranon process, and found an oblique fracture of the capitellum and external condyle, which had united in a somewhat forward tilted position. Reduction was prevented by callus from that fracture. After gouging away some bone, he was able to reduce both bones. The olecranon was then wired and the external wound closed. The patient had regained excellent movement, with the exception of complete extension.—Mr. SYDNEY STEPHENSON showed (for Dr. SEPTIMUS SUNDERLAND) a case of hygroma of the neck in a boy, aged 3 years. Mr. F. C. ABBOTT regarded such cases as dilated lymphatic vessels in which one space had grown infinitely larger than the others. Mr. H. B. ROBINSON thought "cystic lymphangioma" a better name than hygroma. He had latterly obtained better results by injecting the growths with Morton's fluid than by excision. The large cyst was first treated in that way, and then the smaller ones were pricked separately and some of the fluid rubbed into the openings.—Mr. WALTER EDMUNDS showed a case of unilateral coxa vara in a boy, aged 8 years, who had been noticed to limp for about three years. A skiagraph showed the neck of the right femur to lie at a right angle with the shaft of the bone, and the upper part of the shaft to be slightly bowed outwards.—Dr. WAYLAND C. CHAFFEY showed an instance of brachial monoplegia in a newly-born infant, with early rigidity. Dr. Chaffey thought the brachial plexus had been injured by the forceps used at the confinement.—Dr. HENRY ASHBY said that this case was doubtless due to injury to the fifth and sixth nerves in the brachial plexus. Although not uncommon amongst the lower classes, where the midwife presided in the lying in room, a certain number of these cases were met with in private practice, where force was not used and the labour was easy. Mr. H. B. ROBINSON pointed out that in a contracted pelvis the shoulders were too broad to enter the contracted brim, so that the nerves were stretched between the tilted head and the tip of the shoulder. In another group of cases traction on the arm might give rise to the condition. Double cases were rare. Dr. EDMUND CAUTLEY regarded the cases as one of Erb's paralysis, and in this opinion Dr. LEONARD GUTHRIE agreed.—Dr. THEODORE FISHER showed a photograph of a brain with a small blood cyst in the upper part of the right lenticular nucleus, from a child, aged 8 months, who had died from broncho-pneumonia.—Dr. THEODORE FISHER read a short paper on some cases of thrombosis of cerebral veins in children.

MIRFIELD AND DISTRICT MEDICO-CHIRURGICAL SOCIETY.—At the November meeting Dr. J. A. ERSKINE-STUART in the chair, twenty-two medical men were present. Dr. L. J. MILNE (Mirfield) showed a specimen of carcinoma mammæ in a dreadfully ulcerated condition, removed after twelve months'

treatment by a spiritualist.—Mr. Moynihan (Leeds) read a paper on the surgery of chronic ulcer of the stomach and its sequelæ, which is published on p. 1631.

British Laryngological, Rhinological, and Otological Association.—The annual general meeting was held on November 9th, Dr. Barclay Baron, President, in the chair. —The officers were appointed for the ensuing year, Mr. Mayo Collier being elected President.—Mr. Lennox Browne reported the case of a patient, the subject of epithelioma of the larynx, from which a (presumably) benign growth had been removed nine years previously, remarking that, although no microscopical examination had been made in the first instance, it was not reasonable to suppose that recurrence would have been delayed so long had the case been one of squamous epithelioma, as was revealed on the more recent occasion.—Dr. Wyatt Wingrave showed slides which illustrated the undoubtedly malignant nature of the removed tissue.—Mr. Lennox Browne also reported two cases of epilepsy, benefited by removal, in the first instance of tonsils and adenoids from a child, aged 5, the subject of epilepsy in a grave form, with mental hebetude, and in the second by removal of adenoids, from a female patient, aged 19, the subject of *petit mal*. In both cases potassium bromide had been given in enormous doses without benefit before operation, but had proved most effective in very small doses (3 grains) afterwards.—Dr. Chichele Nourse showed a middle-aged man with papillomatous growths on his left vocal cord.—Mr. Dennis Vinrace showed a patient with extensive ulceration of the tongue.—Dr. Dundas Grant read notes of a case of nasal synechia in a girl aged 19. There was no history of injury, but the prominent symptom, pain across the bridge of the nose, had followed an attack of influenza two years ago. Dr. Dundas Grant also showed a case of rapid enlargement of cervical glands in an elderly woman, for which no peripheral cause was discovered. The diagnosis lay rather between tubercle and some form of new growth.—Dr. Wyatt Wingrave showed a case of congenital syphilitic ulceration of the nose in a female aged 20. Marked improvement followed mercurial treatment. Dr. Dundas Grant regarded the case as one of lupus.—Dr. F. Tresilian (Enfield) showed a case of old-standing tertiary syphilis of the nose, pharynx, and larynx in a man aged 40 There was a subglottic stenosis in the upper part of the trachea. Dr. F. Tresilian also showed a girl, aged 16, with a large new growth in the right lobe of the thyroid gland and abductor paralysis of the right vocal cord due to pressure on the recurrent laryngeal nerve.—Mr. Dennis Vinrace showed a case of cleft palate.—Dr. W. H. Kelson showed a man, aged 30, with well-marked exostoses in each external auditory meatus.—The new President, Mr. Mayo Collier, having taken the chair, delivered an address upon mouth breathing and its relations to diseases of the nose, throat, and ear, and accessory sinuses.

Association of Registered Medical Women.—At a meeting on November 6th, Mrs. Scharlieb, M.D., M.S., President, in the chair, Miss Ellaby, M.D., showed a child under her care in the hospital presenting unusual manifestations of congenital syphilis.—Mrs. Stanley Boyd, M.D., read the notes of and showed the specimen removed from a case of resection for malignant disease of the cæcum, with parts of the ileum and ascending colon, in a woman, aged 34.

A lateral anastomosis between a low coil of the ileum and transverse colon had been first carried out, and followed at once by resection of about three inches of the ileum, the whole cæcum, and the greater part of the ascending colon, with some mesenteric glands lying in contact with the inner layer of the mesocæcum. The cut ends of the ileum and cæcum were inverted and closed by a double line of sutures

The patient made a good recovery, though convalescence was somewhat tedious, and she left the hospital at the end of eight weeks. The growth, a columnar epithelioma, involved the ileocæcal valve and the lumen of the bowel above for some two or three inches.—Mrs. Garrett Anderson, M.D., read a paper on the menopause.

Dermatological Society of Great Britain and Ireland. —At a meeting on November 28th, Dr. J. H. Stowers, Vice-President, in the chair, Dr. P. Abraham showed a case of lupus erythematosus in a man, with very unusual distribution.—Dr. T. D. Savill showed (1) a typical case of adenoma sebaceum in a young child; (2) molluscum fibrosum. In discussion on this case an opinion was expressed that it might be considered an instance of von Recklinghausen's disease, being associated with pigmentation and neuro-fibromata; (3) xerodermia.—Dr. Russell Ryan showed a case of psoriasis simulating a syphilide; (2) alopecia areata, which had apparently been cured within four months by a treatment with 10 per cent. solution of lysol.—Dr. D. Walsh showed (1) a case of symmetrical tophi in an elderly man. These were of unusual size, and some of them had broken down, forming abscesses; (2) senile pigmented mole on the cheek of an old woman; (3) a photograph of ichthyosis hystrix.—Mr. G. Pernet showed (for Dr. Radcliffe Crocker) a case of psoriasis of somewhat unusual aspect and distribution. Several microscopic specimens were also exhibited.

Bristol Medico-Chirurgical Society.—A meeting was held on November 14th, Dr. D. S. Davies in the chair. Before commencing the business of the evening, the President in feeling terms referred to the death of Mr. S. H. Swayne, a Past-President of the Society.

Dr. J. Michell Clarke shows patients with: (1) Tumour in the interpeduncular space; (2) tumour in the motor area of the brain; (3) progressive muscular atrophy commencing in the shoulder muscles; (4) Tumour of the brain in a boy aged 8. Dr. Stack commented on this patient.—Mr. C. A. Morton showed patients with: (1) Diffuse overgrowth of the tissues of the thigh; (2) congenital varix of one lower limb, perineum, and penis; (3) congenital dislocation of the hip, with skiagraph.—Dr. A. Ogilvy showed patients with congenital anomalies of the eyes.—Dr. T. Fisher showed a patient with congenital stenosis of the pulmonary artery, and specimens of the aorta and pulmonary artery arising from the right ventricle, and of the aorta arising from the right ventricle and the pulmonary artery from the left ventricle.—Dr. Jas. Swain showed two sets of multiple calculi he had removed by suprapubic cystotomy, and a columnar epithelioma removed by colectomy, all from aged patients. Mr. Morton, Mr. Ewens, and Dr. Stack spoke on the subject. —Dr. A. B. Prowse showed a specimen of cardiac embolism.—Mr. Munro Smith showed a skiagraph of a case of "stave of thumb," and a specimen from a child in which death was caused by the impaction of a piece of walnut in the larynx.

Dr. E. A. H. Groves read a paper on eclampsia. Dr. Aust Lawrence and Dr. W. C. Swayne discussed the paper.—Mr. Paul Bush showed upwards of 200 lantern slides illustrating scenes during the Boer war.

Bournemouth Medical Society.—At a meeting on November 14th, Dr. Arthur Ransome, F.R.S., President, who was in the chair, read a paper on aseptic or antimicrobic medicine. He mentioned how widely spread the antimicrobic principle was in medical practice, and gave instances adopted by Nature to prevent the action of microbes. He thought that the aseptic or antimicrobic treatment might be arranged under the following heads: (1) Those intended to keep the organisms at bay, to prevent them from approaching a wounded surface, or from entering any of the portals of the body; (2) those designed to meet and kill them or to destroy their virulence either on their approach or after they had effected an entrance; (3) those concerned in strengthening the natural defences of the body against the inroads of pathogenic microbes. Each of these was considered in detail.

Clinical Society of Manchester.—At a meeting on November 20th, Mr. F. A. Southam, President, in the chair, some abdominal cases were shown by Dr. A. T. Wilkinson.—Mr. E. Stanmore Bishop showed a large fibro-myomatous uterus.—Mr. Francis Riley read notes of a case of cerebro-spinal meningitis, and showed the patient.—Mr. J. E. Platt brought forward a patient in whom he had cured a popliteal aneurysm by ligation of the femoral artery.—A short demonstration on some of the more recent devices for examining the larynx in children was given by Dr. E. S. Yonge.

Birkenhead Medical Society.—At a meeting on November 16th, Dr. Blood, President, in the chair, Dr. Stansfield read notes of a peculiar case of pyæmia which presented many difficulties in diagnosis. An interesting discussion followed.—Dr. R. T. Hughes read notes of a case of a needle in the foot, and showed a skiagraph.—Dr. Dixon read notes of a case of a needle in the knee, illustrated by a skiagraph.—Dr. W. E. Floyd read notes of, and showed specimens from, two cases of hysterectomy for epithelioma of cervix and fibroma.—A scale of fees for the district, drawn up by a subcommittee, was submitted, and, after a discussion, was adopted.

REVIEWS.

SOME RECENT WORKS ON HYGIENE.

(Continued from page 1262.)

DR. SACHS, in his volume on carbonic oxide poisoning,[4] has endeavoured to give a coherent account for medical readers of the information at present existing as to carbonic oxide poisoning and the various forms in which it is met with in practice. The book is divided into parts dealing in succession with the chemical, clinical, toxicological, and other aspects of the subject, each part being treated with great fulness. The author has undoubtedly succeeded in bringing together a large amount of material. The result is, however, by no means satisfactory, the information given being often confused, incomplete, seriously inaccurate, or not up to date. These defects are evident enough even in the first pages. Thus, on page 1 we find a paragraph which is unintelligible: "The most important source of carbonic oxide is the combustion of coal or carbon-containing substances. In this process the quantity of carbonic oxide formed increases with the temperature; wood charcoal gives at 350° C. 78.6 per cent. of CO_2 and 21.4 per cent. of CO, but at 1100° C. only 1.3 per cent. of CO_2 and 98.7 per cent. of CO." A few lines further down water gas is stated to contain 56.2 per cent. of hydrogen, 14.6 per cent. of CO_2, and 28 9 per cent. of CO, and the reader is left to conclude that this is the normal composition of water gas. The next paragraph contains the somewhat alarming statements that, according to Boussingault, the leaves of plants give off carbonic oxide; and, according to Valentin, gas from the stomach of an animal contained 2 48 per cent. CO.! On pp. 4 and 5 two impossible analyses of "charcoal fumes" are quoted without further comment; and on the next page petroleum oil gas is stated to contain 17.5 per cent. of carbonic oxide. How a substance such as petroleum oil, containing no oxygen, comes to yield 17.5 per cent. of carbonic oxide is not stated. The account of the symptoms of carbonic oxide poisoning, and the mode of action of the gas, is very confused, and the reader will be lost in the mass of detail cited. The same criticism applies to the account given of the tests for carbonic oxide in the blood. Thus the first test described is that of mixing strong caustic soda with a portion of the suspected blood and observing the colour, which, if carbonic oxide is present in large amount, is red. If this test is made in a test tube as recommended, the normal reduced blood found in any dead body will give a similar red colour from the production of hæmochromogen, and a wrong conclusion will thus probably be drawn. The second test given is the spectroscopic, in which the persistence of the two absorption bands after addition of ammonium sulphide shows the presence of carbonic oxide. The author mentions that it may be necessary to wait for half-an-hour before any conclusion can be drawn, but omits to say that all this waste of time may be avoided by gently warming the solution. He also states erroneously that the narrow absorption band which can often be seen in the red after the addition of ammonium sulphide is due to hæmatin. After this latter statement we were less astonished than we otherwise should have been to notice that the blood spectra represented in the coloured plate at the end of the book are grossly incorrect. How such a set of spectral charts could ever come to be published we are at a loss to understand. We certainly cannot recommend the book as a trustworthy work of reference on the subject of which it treats.

Dr. J. EDWARD SQUIRE'S little pamphlet on the *Preservation of Health and the Hygiene of the Home*[5] is written in a manner easy to be understanded of the people, and is packed from cover to cover with varied and valuable information. From Galton grates to gout, from the construction of houses to the destruction of pediculi there is little that concerns the health and comfort of man on which the author does not give sound advice. The short account of the principles on which houses should be built will help to open the eyes of Suburbia to the shortcomings of her jerry-builder probably more effectually than would many elaborate treatises. Dr. Squire's remarks on alcohol are somewhat misleading in their brevity. The harmfulness (or otherwise) of alcoholic beverages cannot be gauged merely by the amount of alcohol they contain. Three pints of weak beer and half a quartern of whisky do not produce similar effects, though they may contain equal quantities of alcohol. The section on the chemistry of food—an incomprehensible subject to the laity—might advantageously have been shortened, and greater space devoted to the perennially interesting question of "drink."

It often happens to a medical man who obtained his qualifications before bacteriology was included in the curriculum to wonder whether in any particular case the bacteriologist could help him in its diagnosis. Having come to the conclusion that he could obtain help, he is at a loss to know how to collect the necessary material and transmit it to the bacteriologist. To such a one Dr. SYMES'S little book on *The Bacteriology of Everyday Practice*[6] will be a boon. It does not pretend to do more than explain what the practitioner should do in order that he may obtain the help of the bacteriologist, but this it does well.

NAHRUNGSMITTEL UND ERNÄHRUNG DER GESUNDEN UND KRANKEN (Foods and Nutrition of the Healthy and the Sick). Von Dr. FELIX HIRSCHFELD. Berlin: A. Hirschfeld. 1900. (Roy. 8vo, pp. 260. M. 6).

THIS book will be most valuable to all interested in food and feeding. It is written by one who has distinguished himself by fruitful original work in this direction, and the data of the composition of food stuffs, their heat value, and the part they play in metabolic exchange are all of the latest and most trustworthy kind. Towards this end the work of Rubner is abundantly quoted, and the thoroughness with which this observer has worked is recognised by all. Among other valuable pieces of information, we note analyses of the various patent foods and meat extracts now foisted so sedulously on the public. A new way of looking at this subject is the cost of this particular form of nutriment; for a pound of proteid one may spend ten or twenty times the sum for which it may be obtained in the shape of meat or cheese.

We wish that some of our younger workers here who have the time and energy at their disposal could dispel by accurate analysis and experiment some of the mists of exaggeration that surround similar preparations in this country, and so bring home both to the public and to practitioners the fact that teaspoonfuls of extractives do not contain more than a trace of nutriment. Even if the teaspoon contained nothing else but proteid, how could it possibly replace the 100 grams of proteid which is a man's normal supply for the twenty-four hours?

Dr. Hirschfeld is not merely a chemist, he writes as a practical physiologist and physician. Too often a chemical analysis of a food is taken as the criterion of its nutritive value; knowledge of the latter we need hardly point out is derived from experiment alone. In the course of investigations of this kind one may not infrequently come across a preparation which chemically contains a large percentage of proteid material, but which, on account of its indigestibility, has little or no value as proteid food.

The second part of the book relates to the feeding of patients suffering from various diseases. Here, of course, the author is on more uncertain ground, and there is room for the proverbial disagreement between doctors. But this portion of the subject is treated in a very judicious way, and the facts cited and opinions given will be of the greatest value to all those who have to deal with this most important factor, that of diet in combating pathological processes.

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[4] *Die Kohlenoxyd Vergiftung in ihrer klinischen, hygienischen, und gerichtsärztlichen Bedeutung* (Carbonic Oxide Poisoning in its Clinical, Hygienic, and Medico-Legal Aspects). Von Dr. W. Sachs. Brunswick: Vieweg und Sohn. 1900. (Demy 8vo, pp. 246, table of coloured spectra. M.4.)

[5] *The Preservation of Health and the Hygiene of the Home.* By J. Edward Squire, M.D.(Lond.), D.P.H.(Camb.). London: Sanitary Publishing Company for the National Health Society. 1900. (Fcap 8vo, pp. 80. 10 illustrations. 3d.).

[6] *The Bacteriology of Everyday Practice.* By J. O. Symes, M.D., D.P.H (Medical Monograph Series No. 7.) London: Baillière, Tindall and Cox 1900. (Crown 8vo, pp. 88. 2s. 6d.)

DEATH CERTIFICATION:

DEFECTS OF THE PRESENT SYSTEM AND SUGGESTIONS FOR THEIR REMEDY.

III.

In previous articles we have dealt with the recommendations of the Select Committee appointed in 1893, and at the conclusion of the last article the proposal to appoint public medical certifiers was considered. It was pointed out that among other objections to this plan the interposition of a medical certifier might lead to serious delay in cases in which it would be necessary eventually to hold a public inquest. We now propose to discuss an alternative proposal which would involve a smaller amount of disturbance of existing arrangements, and would present certain other features which we believe would be likely to commend it not only to the medical but also to the legal profession, as well as to coroners.

An Alternative Scheme.

This objectionable delay seems inseparable from the employment of medical certifiers in the country acting for large districts independently of the coroner, and for whose report the coroner must wait before he can take any action. The *alternative* scheme favoured by some coroners is to have all cases in which there is no certificate from a medical man in attendance—that is, all that it is proposed to hand over to medical certifiers—reported direct and in the first instance to the coroner, as, in fact, the great majority of them are now. The last annual report of the Registrar-General (1898) shows, as we have already said, that of the total of so-called "uncertified deaths"—10,441 in all—no fewer than 7,940 had been reported to coroners before registration, while only the remaining 2,501 cases were registered without any such reference to the coroner. All that is necessary, say some coroners, is:

(1) To order that these 2,501 cases should be reported to the coroner before the registrar registers them, in the same way that other cases are now reported; and

(2) That power should be given to the coroner to order and pay for an investigation and report by *any suitable local practitioner*.

The coroner with this report in his hand, having already received the police report of the non-medical elements of the case, would at once decide that an inquest was unnecessary, or could at once fix the time and give the necessary final instructions if an inquest must be held. At present the law does not permit coroners to pay anything for a *post-mortem* examination or a medical report of any sort unless an inquest is subsequently held. So that, if there is a shadow of a doubt as to its being a natural death, the doubt can only be dispelled by a formal inquest, whereas a preliminary *post-mortem* examination might supply quite sufficient evidence to justify the medical practitioner who makes it in giving a certificate of the cause of death, and the coroner in declining to hold an inquest.

In this way the whole class of uncertified deaths could be turned into cases in which a medical investigation in pursuance of the coroner's order had been made. A *medical* certificate founded on this investigation should be forthcoming, and registration could take place on it in accordance with the principle laid down in the Committee's first recommendation.

It is also claimed for this plan that confusion would be avoided by having the whole of the threads in the hands of one official—the coroner—to whom alone all inquiries are now entrusted; that it would be less of an upset to national habits and ideas, and that friends would like better to have the local doctor than to have a strange official coming into the house at such a time.

Defective Coroner's Inquests.

The weakest point in this alternative plan seems to be that the law as it stands does not require that a coroner shall be a registered medical practitioner. We are anxious to say nothing which might appear to reflect on coroners as a body. As a body they are no doubt inspired with the desire to discharge the important duties committed to them efficiently and impartially, and it will be gladly admitted that there are in their ranks many men who have rendered conspicuous services to the community. On the other hand, inquests are from time to time reported which show that there are coroners who do not appear to have attained to a just view of their responsibilities. Many an inquest is held which is nothing better than a farce, and nothing is really ascertained beyond the fact of death, and the cause remains as obscure as before the coroner took up the inquiry. It would be tedious to attempt to make a list of such failures. A large number have been recorded in these columns even within recent years, but a few examples may be quoted of the kind of inquiry to which objection is taken.

Two children—the one an infant, the other aged 3 years—were left by their parents asleep; when the parents returned, three hours later, the infant was found dead; an inquest was held, and the coroner opened the proceedings by informing the jury that death might have been caused by suffocation, that there was no evidence to show the cause of death, that if the jury were not satisfied with the evidence he would adjourn and order a *post-mortem* examination, but he hoped that something would be brought out in the evidence which would satisfy them. The mother appears to have been the chief witness, and she said that the infant was quite healthy and well-nourished, that it was not suffering from teething or convulsions, or any chest affection, but that she had given it some teething powders. She could not account for the death. No medical evidence was called, and the coroner informed the jury that he thought the deceased was too fat, and that it had evidently been suffering from teething, and had no doubt died in convulsions. The jury returned a verdict of death from natural causes—to wit, convulsions.

In another quite recent case the report in a local paper stated that a young child was found dead in bed with its parents. It had previously suffered from diarrhœa and sickness, for which it had no medical attendance. At the inquest no medical man was summoned, but a female neighbour, who had been called in by the parents after the death, gave evidence, and said that she "had had considerable experience in nursing children," and that in her opinion the child died from "convulsions, brought on from weakness and wind." And the jury returned a verdict accordingly.

If it be the duty of the coroner and jury to ascertain the true cause of death, and not to make a guess at it at the suggestion of the former, then such inquests as these are a farce, and the verdict futile.

In another case a deputy coroner held an inquest on an old woman, aged 74. The daughter was called, and said that the deceased had been ill for three weeks, and suffered much pain from boils on the back of her neck, but had declined to have medical aid; that on the day of her death she bought some ammonia, which she was in the habit of taking to ease her breath; and that shortly after taking it she was found helplessly sitting in her chair, foaming at the mouth, stretched as if in a fit, and unconscious. A doctor was sent for, and attended, but death occurred the same evening. When asked why she took the ammonia the witness said that deceased had replied that she was weary of living, but she had never been heard to threaten at any time to take her life. A grocer's wife was then called, and said that she sold twopennyworth of ammonia to the deceased, who was in the habit of buying it. The deputy coroner then, according to the report, said that this was the whole of the evidence he proposed to call, as the jury had quite sufficient to prove the cause of death; they had the facts before them that the deceased bought the ammonia and took it. The jury made reference to the presence of the medical attendant, who was prepared to give evidence; but the coroner declined to call him as a witness, and said he did not intend to pay his fee as he could give no further evidence as to the cause of death than that already given. Subsequently several of the jurymen through their foreman again expressed a desire that the medical witness should be called; but the coroner declined to do so, although he said that if the doctor wished to give evidence voluntarily he would take it down. Ultimately the jury returned a verdict to the effect that the deceased died from poisoning by ammonia, but that there was no evidence to show the state of her mind when the act was committed. We were informed by the doctor who attended the deceased that when he saw her she was lying on her bed quite conscious; she complained of no pain, there was no dyspnœa, no dysphagia, no aphonia, and that her breath did not smell of ammonia. He was shown a small bottle unlabelled, smelling not very strongly of ammonia, the contents of which the woman stated she had taken because she had been worried by her breathing. On the back of the neck was a large sloughing carbuncle, which appeared to have received no treatment of any kind.

This is an example of the errors into which coroner and jury are likely to fall by holding inquests and returning verdicts in the absence of medical evidence. Quite apart from the result of his observations communicated to us by the medical attendant, which would seem to point to the fact that death was due to exhaustion produced by the carbuncle, it would seem that the coroner and jury really had no evidence that the death was due to ammonia poisoning. All they knew was that the old woman had taken some ammonia, which she was in the habit of purchasing, and that she had died, but they had no evidence that the symptoms attending death were those of ammonia poisoning, and as no *post-mortem* examination was held of course they had no evidence that there were any signs of ammonia poisoning.

We are quite ready to admit that such fiascos are exceptional and that improvement is taking place,[1] but they occur

[1] It would be unjust not to recognise the great influence for good exercised by the Coroners' Society under a succession of distinguished Presidents, with the continuous assistance of the able Honorary Secretary, Mr. Braxton Hicks, coroner for the South Western District of London.

too frequently, and their special importance in the present connection is that they inevitably compel us to ask the question, If these things happen at public inquests, is it not more than probable that the private inquiries are sometimes very incomplete and unsatisfactory?

PROPORTION OF INQUESTS NOT HELD ON CASES REPORTED.

It will be remembered that the Registrar-General, in his letter to the President of the General Medical Council, printed in the first article of this series (November 24th, p. 1511), expresses his opinion that

> Much might be effected under present conditions by coroners in the way of largely reducing the number of uncertified causes of deaths if more inquests were held respecting such cases in districts where the proportion of uncertified causes is large.

In this connection it is very curious to note the remarkable difference which exists in different districts in the proportion of inquests not held on cases reported. Thus in the ten metropolitan districts this proportion varied during the year 1899 from 11 per cent. in Southwark to 34 per cent. in the Southern district. The Chief Officer of the Public Control Department of the London County Council gives this information in his *Report* for 1899.[2] But he makes no comment on it, and suggests no explanation. Yet some explanation there must be; and it would certainly be interesting, and possibly instructive, if we could arrive at it. Probably there is more than one cause at work. It might be due to a real difference in the circumstances under which deaths occurred. But this is not likely to be an important element when comparing two adjacent districts in London South of the Thames. We are obliged to assume that the difference is in some way due to the officials of the two districts—coroners, registrars, medical practitioners—all, or some. But in what way? The theory that in the one district the coroner is "slack" compared with his brother official in the next district—that he habitually declines to hold inquests in a number of cases in which the others would have held them—is not necessarily true. Indeed we find that in another adjacent district presided over by a coroner whose zeal and activity are above suspicion, and have often been acknowledged in the BRITISH MEDICAL JOURNAL—the South-Western district—the proportion in question is almost as great as in the Southern district—no less than 30 per cent., as compared with the average 19 per cent. for the whole metropolis. The explanation in this, and perhaps in other cases, may very well be not that the coroner is slack, but that the medical men and registrars are more alert and strict, so that a certain number of doubtful cases which in other districts are certified or registered uncertified without question, are in this district reported to the coroner, who, with a well-trained staff of experienced "officers," is able to satisfy himself that a formal inquest is not necessary. In this way it seems possible that the very strictness of the coroner in requiring to be satisfied in all doubtful cases before registration may lead to a large proportion of cases being reported as to which no coroner would consider an inquest called for.

It should also be said that the number of "inquests not held" is not the same thing as the number of uncertified deaths; because a large number of the former are subsequently certified, the medical practitioner merely desiring to be assured, before certifying, that the coroner would take the same view of the propriety of certifying that he (the medical attendant) took. It is, therefore, impossible without further statistics to say whether in any given district an increase in "inquests not held" corresponds to an increase in "uncertified" cases. It is the latter only that it is desirable to see "cease as a class."

But there are other less satisfactory explanations which cannot be excluded as possible in other districts, and especially in country districts. It must be remembered that every coroner has to exercise his own unaided discretion in his interpretation of the statutory directions as to when an inquest is to be held, and in particular he has to interpret the expression, "a sudden death the cause of which is unknown." What is "a sudden death"? What is "an unknown cause" of death? There appears to be no legal definition of either expression. The statute has to be interpreted according to each coroner's individual standard. It is to be expected, therefore, that the results will be different; and it is to be feared that the discretion of the coroner, conscientious though it may be, is not always enlightened. How indeed could we expect so much from coroners who have no medical knowledge? A large discretion is deliberately left to coroners by the law, rightly perhaps, with a view to avoiding unnecessary inquests. But is it not obvious that such a discretion can only be satisfactorily exercised by those who have some scientific knowledge of the physiology of death, and some acquaintance with its rarer forms—such as can only be found in men who have received the training in medicine, surgery, and midwifery qualifying for admission to the *Medical Register*.

[2] London: P. S. King and Son. 8*d*.

MEDICAL CERTIFICATES OF DEATH.

The "Recommendations" we have been discussing so far are designed to secure a *medical* certificate in every case, so that "uncertified deaths shall as a class cease to exist." But the Select Committee found in the course of their inquiries that "the class of *certified* cases left much to be desired, so far as affording a record of the true cause of death, and the detection of it in cases where death may have been due to violence, poison, or criminal neglect is concerned." The evidence given before the Committee proved that:

> Amongst *certified* deaths are to be found many deaths attended by unqualified assistants and certified by qualified practitioners who may have never seen the cases [this we are glad to think is no longer possible]; deaths certified by medical practitioners who have not seen the patient for weeks or months prior to death, and who only know by hearsay of death having occurred; and deaths in which the true cause is suppressed in deference to the feelings of survivors. Such cases are numerous; but in addition, evidence was given as to cases accidentally brought to light of deaths registered, with a view to insurance or other frauds; of persons afterwards discovered in some cases to have been murdered, and in other cases to be still alive; deaths registered under circumstances suggestive of fraud, regarding which it was not known whether the subjects had or had not died.

Accordingly, the next three Recommendations of the Committee are aimed at the defects of the law which render such abuses possible. They are briefly: That the medical practitioner in attendance before certifying the cause of death, should inspect the body personally, or require a certificate verifying the fact of death by two neighbours of the deceased; that the certificate should be sent direct to the registrar instead of being handed to the relatives; and that the certificate shall be in a prescribed form, and no other accepted. These recommendations are in themselves highly desirable. We believe they are approved of by the profession generally, always on condition that the fresh burdens and responsibilities imposed on medical attendants shall be acknowledged by a reasonable fee paid by the State for services rendered to the State. Already in requiring a certificate of the cause of death the State enacts a service for which it pays nothing. The principle is a wrong one and must not be extended.

Medical men will gladly see themselves relieved from the embarrassment caused occasionally by being obliged to hand the friends of the deceased a statement that death was due to a cause which they look on as a blot on the memory of the dead, or more or less damaging to the family, such as alcoholism, syphilis, or insanity. Regard for the feelings of friends as well as for the truthfulness of the register, alike require that the certificates should be sent to the registrar direct.

The "invidious duty," as the report rightly calls it, of deciding in a doubtful case whether it should be referred to the coroner, would be removed from the medical attendant by the adoption of the rule recommended by the Committee, (though not forming one of their ten "Principal Recommendations," namely, that no certificate should be given by a medical practitioner "in any case in which he is unable to certify that death is due to disease. In all cases in which he does certify he should include in his certificate a statement pointing to the absence of accident, poison, violence, or criminal neglect." Such a rule would be a protection to the medical attendant. Ignorance of the requirements of the law relating to inquests prevails to an astonishing extent among the better classes of patients, who are apt to look upon the intervention of the coroner as a slur upon the deceased or his friends, and to resent accordingly any refusal on the part of the medical attendant to give such a certificate as will save them from it. The Committee state that from evidence placed before them "it is to be feared that medical certificates are

sometimes given in cases which should properly form the subject of an inquiry by the coroner," and they "concur in the opinion that it is desirable to define as precisely as may be possible the circumstances in which a medical man in attendance should *not* give a certificate of death."

"Attendance during Last Illness."

Moreover, the statement in the present form of certificate that the certifier "attended the deceased during his last illness" is too vague, and is, the Committee complained, "interpreted in a very elastic fashion."

On this point the Committee remark that "the medical staff at hospitals are especially prone to attach a wide meaning to the words in question;" and that in the case of children especially, who have been out-patients at hospital, there is little difficulty in obtaining a certificate from some member of the staff on a statement of the relatives that the patient—seen some time previously by another member of the staff—is deceased.

We fear that through easy-going kindliness medical men both on and off hospital staffs do sometimes certify on the mere statement of relatives, thinking no evil of the relatives, and not dreaming of the door they were opening to possible crime and fraud. Here at least there seems to be a legitimate opening for "Public Medical Certifiers."

Meantime "hospital doctors" ought to show an example of strict adherence to the law. No man is justified in "certifying" any fact of which he has no personal knowledge. But this good-natured laxity is not confined to hospital doctors, as the following case, for which we can vouch, will show:

A woman was found dying in the street of a town to which she was an occasional visitor. She was removed by the police to her lodgings close at hand; the nearest doctor was sent for in haste, and death occurred as he entered the room, just twenty minutes after she was found in the street. The doctor, who had never seen her before, very properly declined to give a certificate. The friends then went to another medical man in a distant part of the town who had attended the deceased five months and a-half ago, but had not seen her since. This practitioner—a deputy police surgeon, by the way—not knowing that the matter had been already reported to the coroner, actually gave the friends a certificate in the usual form, stating the cause of death as "Primary, dilatation of stomach. Secondary, cardiac syncope. Duration, six months." The usual statement, "I attended deceased during her last illness," was left standing, followed by the statement that he last saw her alive at a date just five months and a-half previously. On that certificate the friends were going to remove the body to a distant part of the country, but the registrar, knowing his business, declined to register, and the plan of the friends for escaping an inquest failed.

The Committee recommend that "attendance during last illness" should be defined as meaning "personal attendance by the person certifying upon at least two occasions, one of which should be within eight days of death." The adoption of this definition should be welcomed by medical men on several grounds. It would clear up all doubt as to the interpretation of an utterly vague expression which has to be interpreted by each practitioner for himself under threat of heavy penalty if he interpret it wrongly; it would relieve a medical man from the unfairness of being expected by the relatives (and possibly by the coroner) to give a certificate of the cause of death if he has seen the last breath taken, or even been called in some hours after death. It would also tend to induce the friends of persons who are taken ill to summon medical attendance and secure two visits at least at the earliest possible moment, and it would probably lead to a practice with persons in precarious health and sufficient means to arrange for a regular weekly visit as a matter of routine with a view to enable their own attendant to give a certificate instead of calling in the Public Medical Certifier, if that official were to become an established institution, or an inquiry by the coroner were the other alternative adopted.

Proposals of the London County Council.

Shortly after the report of the Select Committee of the House of Commons appeared the Public Control Committee of the London County Council took up the question of coroners' law amendment and made a number of suggestions, which were adopted by the Council in 1895, and appear again in the report issued recently. These comprise all the recommendations of the Select Committee and a number of additional suggestions, some of which very closely concern the medical profession. The most important of these is:

That every case of death after surgical operation should be reported to the coroner with a view to preliminary inquiry and, if necessary, the holding of an inquest.

No reasons are given in support of this sweeping proposal. It is not attempted to show that coroners do not possess sufficient power to hold an inquiry whenever there is reasonable cause to suspect that death may have been due to any carelessness or neglect, or that they fail to exercise such powers in suitable cases. We are not aware that coroners have shown any desire for this addition to their responsibilities. The principles by which coroners are guided is well laid down by Mr. Braxton Hicks, the Secretary to the Coroners' Society:

It has been considered that a person going to a hospital for treatment is prepared to undergo all that is necessary in the *bonâ fide* opinion of a medical man for such treatment.....If, however, any complaint is made as to the treatment of the deceased or otherwise by the hospital authorities, on information being given to the coroner, an inquest should be held to inquire into the matter.

It may be that there is an uneasy suspicion amongst a portion of the public—excited and fostered by antivivisectionists, antivaccinators, and the like—that operations are done in hospitals for the sake of experiment, and it may be politic to allay all genuine uneasiness by offering every possible facility for investigation in such cases. If the proposal were confined to hospitals and public institutions it would not perhaps be unreasonable or objectionable. It would be analagous to the report which is now made to the coroner under the Lunacy Acts, of every death in a lunatic asylum. No interference by the coroner takes place on these reports unless there is something unusual which seems to require investigation.

If, however, the suggestion of the London County Council is extended to operations on private patients, who are, of course, free to choose their own attendants, we can see no reason whatever for it, but many reasons against it. Surgeons are liable as it is, both civilly and criminally, for the results of mala praxis. It is possible to urge with some plausibility that patients in institutions are not in a position to enforce their legal rights, or to bring complaints of mala praxis, which yet they could support by testimony. But this argument whatever it may be worth will not apply to private patients.

The London County Council also recommend that

When the medical practitioner is unable to certify he should be required to report direct to the coroner;

and on this point their original report makes the following remark:

It would in many cases save delay in investigation, which is often of considerable importance, if medical practitioners who are unable to give the usual death certificate were required to give notice of the fact to the coroner.

This is very true. The value of the services rendered by the medical practitioner to the State and to all concerned in any given case is great, and we are glad to see it admitted. He is obviously the fittest person to undertake this duty. He is on the spot: he has constant experience of the necessary routine: people look to him to direct them what to do in the presence of unexpected death. The notification seems logically necessary to complete the provision for immediate certification and registration in all cases. If the medical man does not feel justified in giving a death certificate, it would be no hardship to say so officially. But, as we have already said, the State should pay a reasonable fee for the service exacted. That, in our opinion, is the principle on which medical men should insist. It is one which the public can understand and can respect, and one which ought not to be infringed.

It will be recollected that an interesting discussion arose in our columns last spring in consequence of a resolution of the Council of the Coroners' Society which asserted that it was the common law duty of the medical attendant (as well as of others) to report to the coroner cases of violent or unnatural death. We had little difficulty in showing that there was no legal obligation whatever to do so. But it does not follow that the profession should decline to accept such a duty if imposed by the proper authority—the Legislature and accompanied by the proper recognition, a fee however microscopic. On the contrary, a clear imperative statutory direction what to do in such cases, leaving the medical attendant no option, would relieve him from the embarrassment which must occasionally occur so long as the duty is doubtful. Here, as in every case in which fresh duties are imposed upon the profession, its members ought to make a stand for the principle that professional services rendered to the State must be paid for by the State.

(*To be continued.*)

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

Subscriptions to the Association for 1900 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, DECEMBER 8TH, 1900.

THE BIRMINGHAM CONSULTATIVE INSTITUTION.

The proceedings before the General Medical Council in the matter of the Consultative Medical and Surgical Institution, established in Birmingham by Mr. Arthur Chamberlain and his friends, with the assistance of the funds of the Birmingham Hospital Saturday Fund, are of particular interest, since they show very distinctly the attitude which the Council is prepared to take with regard to medical advertising, a subject upon which, as we have recently had frequent occasion to point out, a definite pronouncement was urgently needed. At the same time, the circumstances surrounding the complaint made against Dr. Irvine, the medical officer employed by the Consultative Institution, were so far special and peculiar that certain points of difficulty arose.

The complaint against Dr. Irvine was, in effect, that by accepting service with the Institution he made himself a party to the advertisements issued, in which superiority over other practitioners was claimed for him. The Consultative Institution was founded by gentlemen in Birmingham whose motives were no doubt good, though they acted in disregard of the rules, written and unwritten, which regulate the conduct of the medical profession, greatly to its own and to the public advantage. When they found that the plan which they had formulated met with the unanimous and strongly expressed disapproval of the whole profession in Birmingham, they might well have paused before carrying it into execution.

The Institution was promoted by gentlemen, some of whom were associated with the collection and administration of the Hospital Saturday Fund in Birmingham, and was indeed assisted in its inception by a loan of £400 from that Fund. Its avowed object was to put within the reach of persons of limited means, who were unwilling to place themselves in the position of recipients of hospital relief, the services of consultants of experience at a fixed fee of half a guinea. It was not proved that the class of persons who have availed themselves of its services has thus far been other than that for which it was intended. But no provision seems to have been made to secure that this shall always be the case. Inasmuch as the offer upon the part of a considerable number of Birmingham consultants of the highest standing to see any patients for whom the Hospital Saturday Fund would vouch at the same fee of half a guinea was not entertained, because it was held that such a voucher would injure the self-respect of the applicants, it is difficult to see in what way its promoters can guard against abuse. Nor does the position that it is a philanthropic venture, stoutly and, we believe, quite sincerely, advanced by its supporters seem entirely consistent with this contention—at all events until it becomes self-supporting, which at present it is not, its balance sheet showing a deficit and an indebtedness together approaching to £1,000. If it be worth the while of practitioners of the experience and attainments claimed for those who are to carry on the work to do so upon a salary, the amount of which they fully earn in half-guinea fees, then it is equally worth the while of such persons to see patients at a half-guinea fee without the intervention of the Institution. In other words, unless the patients seen are the recipients of a form of charity, the Institution has no *raison d'être* whatever.

The avowed objects, as set forth in pamphlets which have been widely distributed in Birmingham, include the assertion that the means of those for whom it is intended would be "unduly taxed by paying the usual consultation fees," but as the consultants of the town are perfectly willing to see proper patients upon these same terms, this statement requires modification. It was admitted by Mr. Arthur Chamberlain in his evidence that so far it had been a failure in respect of being "consultative" in the ordinary sense of the term, but he hoped that it might outlive the prejudice which existed against it in the local profession, and in time become so. We hardly imagine that the contemptuous designation of "street doctors" which he used will bring those so described in flocks to his institution to procure further advice upon difficult cases.

So much for the nature of the Institution; we now pass to the relations of its medical officer to the proceedings of the body which he serves. A pamphlet which was very widely circulated, and which gives Dr. Henry Ward Irvine's name and qualifications, contains the following expressions, "patients in need of better advice and more advanced treatment" and "the higher skill and knowledge of some consulting physician or surgeon as the case may be, who, by reason of his special training, experience, and research is competent to give the best possible consideration and advice." It is a sufficiently obvious implication that they will obtain this at the hands of the medical officers of the Institution. This pamphlet not only contained Dr. Irvine's name, but was issued some time after he had entered into his agreement, which bears date February 28th, and it was not stated during the hearing before the General Medical Council that he had made any protest or raised any objection to the description of his attainments there set out.

It is quite true that Dr. Irvine, as is set forth in the pamphlet, had gained considerable distinction as a student, especially in classics, but his first medical qualification dates back only as far as 1895, so that whatever his abilities it can hardly be claimed that he has ripe experience such as is claimed on his behalf. It can hardly be doubted that had an individual made use, for himself, of eulogistic statements such as those in the pamphlet, he would be held to have overstepped the line laid down by the General Medical Council by which anything in the nature of claiming superiority over other practitioners was emphatically condemned. Hence the question turned

somewhat upon whether Dr. Irvine was to be held responsible for statements made about him in the pages of the pamphlet, and the Council arrived at the conclusion that he must be considered to have had full cognisance of them, and to have given at least a tacit approval. At all events, the Council found that the charge laid before them at the instance of the Medical Defence Union was proved. It did not, however, proceed to the determination of the degree of gravity of the offence, but had recourse to an alternative laid down in its Standing Orders—that is to say, the further consideration of the charge was postponed till its next session. A study of the Minutes of past sessions of the Council discloses that the usual result is that the person concerned alters his modes of procedure, and that at the next session the matter is dropped on reception of evidence that such is the case.

An unusual feature of the whole matter is that not only is this Consultative Institution more or less under the wing of the Hospital Saturday Fund, but it is exploited by gentlemen whose aim is that it shall be self-supporting, and who declare that under no circumstances shall it become a profit-making concern. Should it succeed it is intended to appoint other specialists, first a surgeon and then an oculist, etc. The difficulty of making those who are not members of any profession understand the true professional spirit was well exemplified in the evidence tendered on behalf of Dr. Irvine; it was very apparent, even when it was not definitely expressed, that the speakers thought that the opposition was to a large extent actuated by a fear of injury in a pecuniary sense; and Mr. Arthur Chamberlain even suggested that when it had gone on for a time it would benefit the consultants of Birmingham by educating the population up to the employment of consultants in suitable cases, as though this would remove or mitigate the objections offered to his pet scheme.

It is very unfortunate that the medical profession should find itself in conflict with a disinterested scheme, which, however mistaken, was started with philanthropic intent, and thus be liable to have its motives impugned, as has been already done by certain newspapers. But we cannot regret that this opportunity of repudiating anything which in the least approaches to self-advertisement has been afforded. If they are open to conviction we should imagine that the promoters of the scheme will have learnt from the inquiry that they have embarked upon a venture which can hardly succeed in fulfilling its promises to the public, and that it is not calculated, granting that the want set forth is a real one, to fill the gap.

PROFESSOR HITZIG ON BRAIN FUNCTION.

We published last week an abstract of the second Hughlings Jackson Lecture, delivered before the Neurological Society on November 29th, by Professor Hitzig of Halle, who as a pioneer in the domain of the experimental physiology of the brain in using the galvanic current as a stimulus has priority even over our own David Ferrier, whose brilliant results depended on using the less diffusible faradic current. The lecture, which was in English, was given in the Examination Hall on the Victoria Embankment. The earlier part, dealing with the historical development of the doctrine of representation of movement and sensation in the brain cortex, may perhaps be of more particular interest to professed neurologists and physiologists; the narrative of the acquisition of our knowledge of the existence of special centres in the cortex may also perhaps be of more limited interest; but the latter part of the lecture dealing with the precise function of some of the cortical centres must be of intense interest to all men who care anything about scientific medicine.

Opinion on this subject is divided into two or even three schools. The one holds that the centres situated in the central convolutions of the brain—those grouped in man around the fissure of Rolando—are purely motor; the other that these centres are to some extent sensory as well as motor; while a third extreme school would perhaps compare them with purely sensory centres. Everyone admits that when the Rolandic areas in man are destroyed paralysis results, and for practical purposes the controversy narrows itself down to this plain issue—is there in addition any sensory disturbance?

As it is almost impossible to detect very slight disturbance of sensibility in animals, and quite impossible to draw conclusions with any confidence as to their subjective sensations, it is for these and other reasons preferable to pay special attention to the conditions observed in patients suffering from lesions in this region. The one school—the combined school, as we may term it—asserts that in limited lesions of the Rolandic areas in man certain symptoms are superadded to the motor paralysis. These are, briefly, an extremely slight impairment in the sense of touch limited to the paralysed part—so slight as perhaps not really to merit the term "anæsthesia," as it merely amounts to this, that light touches are not felt so clearly on the paralysed parts as elsewhere—and a defect of localisation of these light touches, these being erroneously referred usually in a definite direction; with also, of course, a sense of loss of position, as is acknowledged by almost all observers. These phenomena are not ascribed by this school to any lesion of sensory centres proper, for they maintain that sensation has its maximum representation not in the convex surface of the brain at all, but elsewhere, probably in the region of the gyrus fornicatus, while it is admitted by most that lesions in the neighbourhood of the posterior part of the internal capsule which produce complete hemianæsthesia do not necessarily produce motor defects. As met with clinically therefore the conditions of "cortical anæsthesia," perhaps even wrongly called "anæsthesia," are not met completely by the experiments of Professor Schäfer, in which monkeys "still felt the slightest touch of a straw"—relatively a rather strong stimulus—after Rolandic areas had been excised.

It is surely not unreasonable to suppose that with the registration in the brain of those sensations associated with movement derived from the muscles, joints, tendons, and fibrous membranes, giving origin to the so-called "sense of position," should be combined sensations from those areas of the skin from which the brain is accustomed to receive impressions when particular movements are performed. Of course defects in the perception of sensory stimuli and defects in the manifestation of motor impulses need not necessarily be due to a lesion of identical cells, but to many it will seem from the evidence derived from

limited lesions that if there are two classes of cells—one concerned with movement, and the other with sensations of movement—those governing any particular segment of the body must be anatomically close together.

A practical point raised by the lecturer seems worthy of consideration by those who are called upon to advise as to the expediency of an exploratory operation on the brain or a craniectomy for any reason. He has adduced evidence to show that as regards the dog the mere uncovering of the brain to a slight extent, without any disturbance of its substance, may lead to evident disturbance of mobility, of sensibility, and of the power of vision; and he asks how can anyone be surprised that the most manifold disturbances of function should appear, if he opens the skull to a large extent and makes the greatest inroads on the brain? As Professor Hitzig said, the interdependence of clinical observation, of physiology and anatomy in the elucidation of problems of life, is well illustrated by Dr. Hughlings Jackson's work and its developments.

THE CURRICULUM FOR THE D.P.H.

We called attention last week to one important principle involved in the report sprung upon the General Medical Council by the Public Health Committee on Wednesday, November 28th. The Committee, with the view of dealing leniently with candidates who hold official positions under the Secretaries of State for War, for India, or for the Colonies, had proposed to form two classes of candidates, senior and junior respectively, and to make a material difference in the curriculum of the two classes. The dangerous nature of this innovation was, as we observed last week, recognised by many members of the Council, and the greater part of the debate turned upon this point. It is, perhaps, for this reason that other points in the proposed new draft regulations did not receive all the attention which they deserved. The circumstances which led up to the present report were that at the last Winter Session the Council determined to send a report then presented by the Public Health Committee to the bodies which conferred diplomas in Public Health for their observations on certain recommendations made by the Committee. In the present report the Committee, after considering, and it may be added generally disregarding, the observations of the licensing bodies, adopted new regulations, which differ from the old mainly in this that while under the old rules the six months' practical work with a medical officer of health could, where so desired, run concurrently with the six months' work in a public health laboratory, by the new rules three months of the outdoor sanitary work must be taken either before or after the laboratory course. The result is that any medical man whose name appears on the *Medical Register* subsequently to January 1st, 1890, must now devote nine months to meet the requirements of the General Medical Council before he is eligible for examination for the D.P.H.

In the present issue of the British Medical Journal will be found letters from two medical officers of health of great experience as teachers, dealing with this new scheme, and we have reason to believe that many other medical officers of health who have hitherto given instruction to candidates for the D.P.H. will be disposed to sympathise with our correspondents' criticisms.

One of the new rules requires that the candidate shall be "associated day by day" with the medical officer of health in his routine and special duties, and we are assured that a literal compliance with this rule will often be quite impracticable. From the standpoint of London, where a very large proportion of the candidates study, the rule is impossible. There are not ten medical officers of health in London who are in the habit of taking pupils. Can they each be daily accompanied in their offices and in their rounds day by day by a minimum of, say, four candidates? By the present arrangements for giving such instruction one or two afternoons a week, the work is practicable, though poorly paid, and the candidates are able to make a selection of those medical officers of health who have special aptitude and facilities for giving this class of information; and it is difficult to see how matters can be materially improved upon.

We are disposed to agree with Dr. MacAlister in his opinion that the Committee was "a little doctrinaire on the subject," and that the two branches of study might well be concurrent. Would not the Council have been better advised had it listened to the counsel of the University of Cambridge, and not taken an action regarding which it might be said that, where disapproval is not implied, the change is in no case advocated by anyone of the licensing authorities it consulted?

The University of Cambridge (which has been an examining body since 1875) reported that "as to the question of the overlapping of the prescribed course of laboratory work and outdoor sanitary practice, there seems to be no good reason for laying down a rule of the Council. No harm can arise from a certain latitude to candidates in the distribution of their time, provided that the courses are efficient, and not hurried through in a few weeks, and the examinations are of a sufficiently searching character"; and the University of Edinburgh was of opinion "that three months is a reasonable period for the instruction."

It is to be hoped that the Council will make an opportunity for reconsidering its decision, and it is a regrettable circumstance that the Public Health Committee did not take the opportunity of publishing their report at an earlier date, so that the members of the Council could have obtained the views of those medical officers of health who are actually engaged in the work before it committed itself to a course which many of those who are qualified to judge, and are equally desirous with the Council to maintain the diploma at a standard which will guarantee that the possessor has a distinctly high proficiency, both scientific and practical, in all the branches of study relating to public health, look upon as ill-advised. The whole matter appears to require further and more careful consideration at the hands of the Council.

LORD LISTER ON THE MOSQUITO-MALARIA THEORY.

Most men of science when they get on in years, although they may retain their interest in some particular study, and even their capacity for original work in their special line, lose to a great extent the catholic faculty of assimilating, or even of comprehending, new ideas or of appreciating

fresh developments in other departments of science. Like other habits, that of thinking along one line tends in time to dominate the whole man, and to become in fact his life. Few escape this Nemesis, few preserve youthful receptivity into advanced life; not even, perhaps indeed least often, those who by dint of genius have attained distinction. The remarkable address delivered on November 30th by Lord Lister on retiring from the Presidentship of the Royal Society shows that he at least, the venerated and venerable apostle of antiseptic surgery, is one of the few. If any man might have been tempted by the fascination and inestimable value of his life's work into one groove of thought and action it is Lord Lister. But the remarkable address which we print elsewhere shows that his genius has not been trammelled nor his sympathy narrowed by preoccupation in one particular line of work. It shows him ripe in experience and judgment, youthful and sympathetic in the comprehension and appreciation of new ideas. The remarkably lucid and well-balanced sketch of the gradual evolution of the mosquito-malaria theory shows that his early and fruitful studies in bacteriology have not so occupied his mind as to make him blind to the advance of collateral but widely different investigations. Belonging to different kingdoms of Nature and demanding different methods of observation and experimental study the bacterial and the protozoon are equally familiar to him, and at his hands have their respective pathological values fairly assessed. The categorical statement of the leading facts bearing on the mosquito-malaria theory and the frank acceptance of the theory by so great a master in science will do much to assure its general acceptance, and to hurry on the practical measures it so plainly indicates. Lord Lister has done a great service to those of our countrymen who have been mainly instrumental in establishing this important theory. Hardly had the theory been enunciated by Manson and demonstrated by Ross than certain Continental writers, by ignoring or belittling the work of these men, and at the same time by magnifying their own, seemed to wish to draw to themselves the credit of this important departure in pathology. Lord Lister has checked this somewhat undignified form of scientific piracy. The clear and masterly way in which he has marshalled the various steps in the discovery has once for all placed the facts in their historical order and in their proper light. By so doing he has rendered a distinct service to British medicine and to British men of science.

EPIDEMIC PERIPHERAL NEURITIS IN BEER-DRINKERS.

THE last link in the chain of evidence as to the arsenical origin of the present epidemic of peripheral neuritis has been provided by Dr. J. Hill Abram and Dr. A. S. Grünbaum, of the Thompson-Yates Laboratory, and by Dr. Nathan Raw, Superintendent of the Mill Road Infirmary, Liverpool, who have found arsenic in the urine of patients suffering from the disease. One of the cases recorded by Dr. Nathan Raw is of particular interest. A man who had been a teetotaller for six months suddenly ceased to be such, and consumed 36 pints of beer within three days, with the result that forty-eight hours later he showed the early symptoms of the disease. Taking the average of the analyses of beers by Mr. Kirkby, published in the BRITISH MEDICAL JOURNAL of December 1st, as $\frac{1}{5}$ gr. of arsenic per gallon, and applying it to this patient, it follows that toxic symptoms arose after taking $\frac{1}{2}$ gr. of arsenious acid. This appears to show that the estimate quoted last week of 1 gr. in 3 gallons as a very dangerous amount is by no means over-stated, seeing that a proportion of 1 gr. in 9 gallons produced the early stages of the malady. Toxic symptoms from taking medicinal doses of arsenic are, of course, by no means uncommon. A case is recorded of a patient who developed such after taking 3 minims of Fowler's solution three times a day for 15 doses, that is, from rather less than $\frac{1}{2}$ gr. of arsenious acid. This result must probably be looked upon as due to idiosyncrasy in the patient. As is well known, individual patients show great difference in their susceptibility to the not very dissimilar action of lead, and it is quite conceivable that many persons in the Northern Counties and the Midlands, who have ingested no less arsenic with their beer than those recorded as patients, have escaped without serious illness. There is some evidence to show that arsenic and alcohol combined have a greater influence in producing peripheral neuritis than either alone, as manifested, for example, in the administration of Fowler's solution and brandy for chorea. It is well known that arsenic has an irritant action on the kidney, large doses producing even hæmaturia, and it is not impossible that the results of its irritation check the excretion both of the alcohol and of the arsenic by the kidney. The close resemblance of the cases in this epidemic to alcoholic neuritis, especially perhaps of the earlier cases, put great difficulties in the way of the recognition of the disease. The pigmentation itself is chiefly manifested on portions of the body not ordinarily susceptible of easy examination in out-patient practice. In a paper on the difficulty of the differential diagnosis Dr. Cran, of Salford, maintains that the earlier cases were far less typical than the later. Cases during the last week have been reported from St. Helens, Warrington, Heywood, Darlaston (South Staffordshire), and Bacup. Dr. John Brown, the Medical Officer of Health for Bacup, has found arsenic not only in common beer, but in the best beer; he found, indeed, that two alone out of eleven breweries in that borough were supplying pure beer. In regard to Chester, where the alternative diagnosis of beri-beri has some supporters, it may be mentioned that Mr. W. F. Lowe, the Public Analyst of Chester, is said to have found arsenic in samples of beer consumed locally. The provisional conclusions of the Committee of Experts appointed by the Manchester Brewers' Association, that all beer in the brewing of which sugar from the manufactory, which must be considered the chief *fons et origo mali*, should be recalled, and if found contaminated destroyed, that none should be sent out until found free from arsenic, and that none should be sold without a certificate of freedom, will commend themselves to the majority as wise precautionary measures. The Local Government Board, we are glad to know, has instructed one of its medical inspectors, Dr. G. S. Buchanan, to watch the epidemic on its behalf, and we understand that he is already engaged in visiting the various places that have been principally affected.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

IN the *Times* of December 6th there appears a letter from Mr. Burford Rawlings, Secretary and Director of the National Hospital for the Paralysed and Epileptic, announcing that, at the request of the Lord Chancellor, the Right Honourable Sir Ford North has consented to conduct an inquiry into the allegations made by the medical staff concerning the care, comfort, and treatment of the patients in the hospital. The terms of the reference under which the inquiry will be conducted are stated to be "to inquire into and report upon the allegations concerning (*a*) the diet of the patients: (*b*) the condition, care, and treatment of the patients; and (*c*) the nursing of the hospital, brought forward under the headings above quoted in the statement dated May, 1900, issued by the medical staff to the governors on or about June 16th, 1900." It will be noted that the real matter in dispute between the medical staff and the Board of Management is simply ignored. The inquiry is, in fact, to be held on points which, however important in themselves, really constitute a side issue. It will be well, therefore, that the Board should clearly understand that such an inquiry cannot be accepted

by the medical profession as meeting the requirements of the situation. The real question at issue is the necessity, in the interest of the hospital, of the medical staff being granted a fair representation on the Board. Once more we appeal to the good sense of the members of the Board to bring a dispute which is becoming a public scandal to a satisfactory end by granting the legitimate demands of the medical staff.

PROFESSORS OF ANATOMY AT THE ROYAL ACADEMY.

THE dignified office of Professor at the Royal Academy, now vacant by the death of Professor William Anderson, F.R.C.S.Eng., is not an easy one to fill, for it requires a good knowledge of anatomy combined with a certain amount of technical skill as a draughtsman, and the duties are performed before a critical audience well acquainted with both arts. The office must necessarily be held by a surgeon, and on the present occasion there are at least two candidates both eminently qualified, and both by chance members of the University of Oxford. Dr. Colenso has already been a candidate, as he was *proxime accessit* for the appointment when Professor Anderson was chosen. He has lately published a series of figures to illustrate *Living Anatomy*, showing the working in a variety of positions of the human muscles throughout the human frame. Professor Arthur Thomson has for several years been the Lecturer on Anatomy in relation to Art at the Royal College of Art at South Kensington, and is the author of a *Handbook of Anatomy for Art Students*. There have hitherto been only seven professors of anatomy since the Royal Academy was founded in 1768, and they have all been men of distinction. The first holder of the office was Dr. William Hunter, who was appointed by the King in 1768. There is a picture of him by Zoffany in which he is represented delivering a lecture on the muscles, surrounded by a group of Academicians. Hunter's portrait is the only part of the picture that is finished. Hunter discharged the duties with great zeal and enthusiasm. He pointed out the application of anatomical knowledge, and the adaptation of the anatomy of expression to painting and sculpture. His observations are said to have been characterised by much originality and just critical acumen. He resigned the office, however, before his death, and was succeeded by his former assistant, John Sheldon, who was appointed on July 18th, 1782, William Cumberland Cruikshank, Dr. Johnson's surgeon, being also a candidate. Sheldon died in 1808, after a prolonged period of ill-health. He was an anatomist of rare promise, who did much good work on the anatomy of the lymphatics and in connection with the subject of embalming. But he had also many other interests, for he believed that he had found an easy way to catch whales with poisoned harpoons, and he is said to have been the first Englishman to make a balloon ascent. He was succeeded at the Royal Academy by Mr. (afterwards Sir) Anthony Carlisle, who had been for some time a student at the Royal Academy, and had published in the *Artist* an essay on the Connection between Anatomy and the Fine Arts. He was chosen in preference to Sir Charles Bell, who was himself an excellent artist. Sir Anthony was surgeon to the Westminster Hospital, and was President of the Royal College of Surgeons of England in 1829 and again in 1837. He died in 1846, but he was succeeded at the Royal Academy in 1825 by Joseph Henry Green, the friend and executor of Samuel Taylor Coleridge, the poet. Green's lectures were celebrated for the graphic power with which he described the symmetry of form, the anatomy of expression, and the poetry of painting. He was President of the Royal College of Surgeons in 1849 and 1858. Green was succeeded by Richard Partridge, President of the Royal College of Surgeons in 1866, who was appointed Professor of Anatomy at the Royal Academy in 1853. Partridge had some skill in drawing, as he had taken lessons from his brother John, a distinguished portrait painter. Partridge in due time yielded his chair to John Marshall, who taught anatomy in relation to art with great ability. He was appointed Professor of Anatomy at the Royal Academy in 1873, and, like his predecessors, was a President of the Royal College of Surgeons of England, filling that office in 1883. Marshall was succeeded, on his death in 1891, by the late Professor Anderson, perhaps the most genuinely artistic holder of the office since its foundation.

THE SANITARY INSTITUTE AND THE HOUSING QUESTION.

LAST July the Sanitary Institute organised a most valuable conference in London in reference to the housing question, at which more than 100 local authorities were represented by mayors, engineers, medical officers of health, architects, and others engaged in the complex and varied aspects of this great social problem. A letter has now been sent by the Secretary of the Institute to Her Majesty's Government forwarding certain resolutions passed by the conference, stating that "great dissatisfaction with the existing statutes was very generally expressed," and urging the Government to bring forward without delay "a satisfactory measure of reform." The resolutions of the conference call attention to the extravagant cost of schemes dealing with the clearance of insanitary areas, and urge the extension of the period for repayment of housing loans to 100 years, and the relaxation of departmental restrictions on building cottages for workmen. These modest measures of reform have repeatedly been advocated in these columns, and we greatly regretted that the Government's Housing Bill of last session turned out to be so framed as to preclude the incorporation of such reasonable amendments as those approved by the conference. Some 800,000 persons in London alone are living in a condition of overcrowding; the need of additional supply of dwelling accommodation in and near growing centres of industry is the most pressing of social questions; local authorities under present restrictions find it almost impossible to provide urban dwellings at rents which shall be both payable and paying, without placing a charge upon the rates. Meanwhile the house-jobber and the slum-owner grow fat on the competition for the wretched accommodation they offer at rents which are simply extortionate. Once the supply is equal to the demand, rent would resume a more rational ratio to the workman's wage instead of the third or fourth which it now often represents. But sanitary authorities are fettered alike in building cottages on vacant areas and in clearing rookeries under housing schemes. Whether his squalid rooms are let at inflated rentals or whether houses unfit for human habitation are expropriated, the slum landlord or house-jobber stands to gain, and present tenants of sanitary dwellings erected by local authorities are penalised for the sake of posterity. The case is complete and clear, and popular opinion demands that the Government should deal early and adequately with the question.

MEDICAL GRADUATION IN GERMANY.

SOME two years ago the Prussian Government enacted that from October 1st, 1898, the degree of Doctor of Medicine should be conferred only on candidates who had already passed the State examination, except in cases in which a special authorisation was granted by the Minister of Instruction. Last year a similar enactment was made in Bavaria. Since that time negotiations have been going on between the several States of the German Empire, with the object of extending this measure to the whole Empire, and thus bringing about uniformity in the conditions on which the degree is given. An understanding has now been

arrived at, and the new regulations for graduation in medicine are published in a recent number of the official *Reichsanzeiger*. They apply to all candidates, German and foreign, from the beginning of the academic year 1900 01. Foreigners who have not passed the State Examination can obtain the degree under certain conditions as to study, but they will not be allowed to use the title of medical practitioner. The same regulation applies to such Germans as may be in the same predicament. Every month a list of all newly-admitted doctors is to be published in the *Reichsanzeiger*, together with detailed information as to the curriculum of study, the examinations passed, the subject of thesis, and the number of marks gained by each one of them. Henceforth, as before; the licence to practise medicine in Germany and the right to use the title "medical practitioner" (*Arzt* or *Praktischer Arzt*) are acquired only by passing the State Examination. The title of "Doctor" is merely a university degree which previously could be acquired by candidates who had not passed the State Examination; in future it will be conferred only on those who are already *approbirt* or qualified in a legal sense.

THE ALFRED HUGHES MEMORIAL.

On Saturday, November 24th, a meeting was held in the Library, University College, Cardiff, to consider the form which the memorial to the late Professor Hughes should take. Dr. W. T. Edwards, Vice-President of the College, occupied the chair. On the proposition of Dr. Isambard Owen it was unanimously resolved that a medal be founded and awarded annually in the Medical School of the College, and that a fund be raised to endow the Anatomical Museum, which owes its origin to a gift of £350 from Professor Hughes. Since in addition to the great services he rendered to medical education in Wales, Professor Hughes lost his life in the discharge of what he considered a public duty, it was felt that not only his friends, but all patriotic countrymen would take pleasure in assisting to establish such a suitable memorial. The co-operation and support of all patriotic Welshmen, as well as of personal friends, is therefore being invited. The Committee hopes to raise a fund of £1,000 to £1,500, the interest upon which will be devoted annually to the advancement of the museum henceforth to be known as the Alfred Hughes Anatomical Museum. A meeting of citizens, subsequently convened by the Mayor of Cardiff, approved the action of the previous meeting and the form of memorial chosen, and pledged its support in the raising of the fund required. Mr. J. Lynn Thomas, formerly Senior Surgeon to the Welsh Hospital, South Africa, Mr. D. W. Evans, Honorary Local Secretary to the same hospital, and Mr. J. Austin Jenkins, Registrar of the University College, have been appointed Honorary Secretaries to the Memorial Committee, and his Worship the Mayor of Cardiff Honorary Treasurer. A sum of £400 has already been promised.

THE OTOLOGICAL SOCIETY.

The Otological Society of the United Kingdom held its first annual dinner on December 3rd, under the presidency of Sir William Dalby, at the Café Monico, London. Sir Thomas Smith, Bart., in proposing "The Otological Society of the United Kingdom," said that forty-two years ago he was an unwilling practitioner in all branches of surgery. In those days the remedies which were used by aural surgeons in London were very few and very simple, and consisted of the syringe, counter-irritants, leeches, the burnt onion, and last, but not least, the wool off the sheep's back, The wool was collected from the sheep on Salisbury Plain, brought to London, and credited with a virtue of the most extraordinary kind. The treatment with the burnt onion consisted in taking a slice of that vegetable and burning it, after which it was put into the external orifice of the ear. Mr. Toynbee was the first to study aural diseases in a scientific spirit, and the study had been carried on by Sir William Dalby, and many others who were present that evening. Some Society like the Otological was a necessity to enable the scattered and individual efforts of various investigators to be collected. The success of a Society depended on the number of workers, and in the Otological Society there was a very considerable band of exceptionally strenuous workers. The toast was replied to by the President, who said that he was rejoiced to see present the Presidents of the principal medical societies of London, and he took it to mean that those Presidents had come to dine with the Otological Society not merely as an empty compliment, but to let them know that the position of aural surgery was considered and believed by them to have advanced to such an extent that the necessity for the Otological Society was recognised by them. He was delighted to see them also because they came in a kindly spirit to welcome the Otological Society as a sister Society. Referring to the assistance he had received from the honorary secretaries, Mr. Ballance and Mr. Arthur Cheatle, the President said that it was reserved for the surgical genius of Mr. Ballance to perfect the operation for mastoid disease, and he considered that Mr. Ballance's name would be connected with that procedure in the annals of British Surgery. The President concluded by saying that he hoped he had made it quite clear that the Otological Society would maintain the best interests in its highest sense of aural surgery in the United Kingdom. Dr. Sandford, of Cork, proposed "The Guests," and expressed the hope that in the future Ireland might have the honour of entertaining the members of the Otological Society as guests. He ended his remarks by coupling with the toast the names of Sir Richard Douglas Powell, Dr. Pavy, Mr. Pridgin Teale, and Professor Young. Sir Richard Douglas Powell, President of the Clinical Society, said that he wished to present on behalf of the guests the congratulations of those engaged in general medicine and general surgery to the members of the Otological Society on its happy foundation. Dr. Pavy said that as President of the Royal Medical and Chirurgical Society he experienced great pleasure at being present that evening as a guest at what he supposed might be termed the christening of a sister Society. The foundation of such a Society could only result in the advancement of scientific knowledge. Mr. Pridgin Teale, of Leeds, said that he could remember what might be termed the pre-otological days when surgeons as a rule did not get beyond syringing wax out of the ear, but at the present time aural treatment and aural surgery attracted great attention and interest, because they were based on scientific methods. Professor Young, of Manchester, said that societies like the Otological, apart from issuing *Transactions*, did a great deal for the public good; they encouraged original work and secured that it should be properly continued.

A MALARIA EXPERIMENT IN INDIA.

The *Indian Medical Gazette* for November reports an experiment on the prevention of malaria by attempting to destroy the mosquito, which has lately been conducted in Calcutta by Dr. Neild Cook. Soon after the rains set in the *Anopheles* disappeared almost entirely from the tanks where it had been found during the dry weather; but, on the other hand, it appeared with much greater prevalence in rainwater puddles in nearly all parts of the town. In two cases of fever in good European houses the larvæ were found in close proximity to them. The Port Commissioners and Messrs. Bird and Co. having complained that the work of coaling at the docks was seriously interfered with by an epidemic of fever among their coolies, Dr. Cook and Captain Rogers, I.M.S., visited the lines of

these coolies, and found that although they were very well housed, and were drinking filtered water, the fever which prevailed among them was of a distinctly malarial type. A ditch of stagnant water was found to run the whole length of the lines at the distance of only a few feet. In this ditch larvæ abounded. The ditch was liberally treated with tar under Dr. Cook's supervision on August 14th, and again on August 19th and 26th; but this had no appreciable effect either on the breeding of the *Anopheles* or in preventing cases of fever. Captain Rogers states that on making a visit of inspection a certain amount of the tar was to be seen as a fine film in portions of the drain, and only a few *Anopheles*, but when he visited the same place three days later he found that while there were not many larvæ in the upper untreated part of the drain, there were more in the part which had been tarred. This result, Captain Rogers thinks, may be due to the fact that this portion had a larger number of likely-looking pools, and also to the absence of small frogs, which were probably driven out by the tar. This result seems to show that tar is not very trustworthy as a larvicide. Dr. Cook, however, on visiting the coolie lines on October 1st, found that the *Anopheles* had practically disappeared, and the fever cases had greatly diminished in number. In a neighbouring village fever had been very prevalent, and *Anopheles* were found in every pool. Since the occurrence of a flood caused by a cyclone in Calcutta the fever has disappeared and the *Anopheles* also. It is probable that the floods washed away and destroyed the *Anopheles* larvæ.

AN ANTI-MALARIAL VACCINE.

Dr. Kuhn, medical officer to the German troops of the South West African Protectorate, is said to have discovered a method of curing and preventing malaria. He obtained from horses suffering from an epizootic prevalent in the locality—probably that known as "horse sickness"—an organic liquid with which he inoculated patients in the very height of the malarial paroxysms. The experiment was made on Europeans as well as natives, and in all the cases the malarial infection was replaced by acute febrile symptoms, which in the space of two to six weeks ceased without treatment by drugs. Moreover, it is claimed that persons inoculated with the "organic fluid" aforesaid enjoy a true immunity, and in proof of this it is stated that 50 natives treated in this manner since the beginning of 1899 have had no further attacks of malaria, whilst other natives not so treated have suffered severely. It is unfortunate that the information vouchsafed on a matter so important to the welfare of colonial mankind is so vague, and in particular that we are left in the dark as to the nature of the "organic fluid" which has such wonderful effects. Announcements of this kind are becoming too frequent. Almost every week it is stated—usually in some irresponsible quarter—that some one or other has found an organic fluid or extract of more or less mysterious nature which is capable of curing everything from cancer to corns. We do not wish in any way to discredit the claims of Dr. Kuhn, of whom we confess we know nothing, but we think it will be well to wait for further and more definite information before jumping to the conclusion that a means of happy despatch has been found for a disease which it is estimated is more fatal to the human race than any other.

THE MALARIA MOSQUITO IN CUBA.

To the second (August number) of the *Revista de Medicina Tropical* of Havana, Professor Juan Guiteras contributes a preliminary note on the *Anopheles* mosquito in Cuba. He has found the larvæ of that insect in great abundance in certain places. As in other countries they have been found in stagnant waters rich in algæ. The larvæ present the characters described by Grassi as distinctive of the larvæ of *Anopheles superpictus*. This is the only *Anopheles* larvæ that has so far been found in Cuba, with the exception of one met with in one place which presents the characters of *Anopheles bifurcatus*. Of this larva, Dr. Guinteras was unable to obtain the corresponding imago, but he was able to follow the complete evolution of the other larvæ, and he succeeded in procuring a large number of perfect insects. These turned out not exactly to belong to the species above mentioned—namely, *Anopheles superpictus*—but to the group of various species resembling each other, which, in addition to *superpictus*, includes *pseudopictus*, *costalis*, and others. The common Cuban *Anopheles* resembles in the distribution of the spots on its wings the *costalis*, which is the common species in tropical West Africa. But it presents differences which, in his opinion, undoubtedly entitle it to be regarded as a distinct species. The insect has the characteristic attitude described by Ross, the proboscis and abdomen forming almost a straight line, which invariably makes an angle of 45 or more degrees with the surface on which it rests. Dr. Guiteras made his *Anopheles* bite a patient whose blood showed the æstivo-autumnal hæmatozoon in moderate abundance, and forty-eight hours afterwards he found in the stomach of one of the mosquitos the hæmatozoon in the form of the zigote, corresponding to that phase of evolution.

MR. RUDYARD KIPLING ON THE OPIUM QUESTION.

The snare of the interviewer is generally set in vain in the sight of that old journalistic bird, Mr. Rudyard Kipling, and it is therefore with considerable surprise that we find in the *Therapeutic Gazette* of November 15th what purports to be a "Medical Interview" with the creator of Mulvaney. The interviewer is Dr. Robert H. M. Dawbarn, Professor of Surgery in the New York Polyclinic Medical School, and Surgeon to the City Hospital, New York. Professor Dawbarn states that a few years ago it was his privilege to spend part of an evening chatting with Mr. Kipling at the Authors' Club in New York City. On his shoulders must rest the responsibility of publishing as an interview what would seem to have been a private after-dinner chat. But as Dr. Dawbarn has thought fit to print his notes of the conversation, there can be no indiscretion in our giving the substance of the opinions expressed on the opium question by an observer of such exceptional competence as Mr. Kipling. Dr. Dawbarn expected a scathing denunciation of the drug, and of those whose cupidity, in high Government positions, invites its general usage. Mr. Kipling, however, spoke of it as the friend, and in certain ways the mainstay, of millions among the natives of India. He said that there is an admitted difference between races in their reaction to the habitual use of opium. A native takes it increasingly up to a certain point, and does not then, as a rule, go beyond this for the rest of his life—just as is the case among the great majority of white men with tobacco. On the other hand, the white devotee of opium generally steadily increases his dosage till it makes shipwreck of his life. Mr. Kipling held it to be an indisputable fact that in India natives who are regular eaters of opium are thereby strengthened for arduous labour; and he further asserted that they are comparatively free from "the fever of the country," a severe prostating form of malaria common in the rice paddy-fields, the many hundreds of square miles of low, swampy land, swarming with a native population. He also said that opium is effective in treating this fever. Mr. Kipling added that he had often been exasperated by the "mote and beam conduct" of English clergymen regarding opium. They go out to India, he said, during a brief vacation, for example, and will of course see there an occasional instance of opium intoxication, though, according to Mr. Kipling, such cases are not common. On their return to England those clergymen vehemently denounce the

opium traffic in India, on the strength of what they have seen, which at its worst is, in Mr. Kipling's opinion, as nothing to the crying home evil of drunken and quarrelsome men, women, and children in the streets of every English town. Mr. Kipling said that but little cannabis indica in any of its forms is used in India; and that little mainly among the Mohammedans and the well-to-do. We do not know how far Mr. Kipling would accept Dr. Dawbarn's report as representing his deliberate opinions on the opium question; but we do not think there is anything in the conversation to which the higher criticism would object as improbable. Few men know India so well as Mr. Kipling, and it is interesting to find his views so closely in accord with the conclusions of the Opium Commission.

THE MEDICAL STUDENT PAST AND PRESENT.

The annual dinner of the students of the Medical Faculty of University College, Liverpool, took place on December 1st at the Exchange Station Hotel, Dr. T. R. Glynn being in the chair and Dr. J. Hill Abram in the vice-chair. Places were laid for about 130. Dr. Glynn, in replying to the toast of the professors and lecturers, spoke of the improvement in the type of medical student since his early days, an improvement largely due to the higher standard of the preliminary examinations. His humorous description of certain modern types of student was on the whole complimentary, and was much enjoyed by all present. He spoke of the frequent anxieties attending practice, and urged the students to cultivate a sense of humour, which would often help them to bear with the irritability and unreasonableness of patients when they might otherwise lose heart, and give way to feelings of annoyance or disgust. Dr. Abram spoke of the necessity for forming a union in connection with University College.

A LADY DOCTOR'S DOUBLE VICTORY.

A French law court has lately had before it a case presenting some features of special interest to medical practitioners. A lady who holds the degree of Doctor of Medicine of the Faculty of Paris some time ago operated on a young child for abscess of the neck. The operation was successful, but the father declined to pay the bill, which amounted to 400 francs. The lady brought an action, and the defence was that the operation had been badly done, and that the treatment had done more harm than good. These allegations were supported by a certificate from a dentist. The Court, finding its unaided intelligence unequal to the settlement of the dispute, called in the assistance of Professor Brouardel, who is the principal authority on medico-legal matters in France. The eminent Dean of the Faculty of Medicine, after a careful inquiry, gave it as his opinion that the operation had been perfectly successful, and that the treatment had been thoroughly satisfactory. The lady, encouraged by this opinion, straightway brought a further action for damages, on the ground that the defendant had sought to justify his refusal to pay by misrepresentations calculated to injure her in her professional capacity. The Court heard the case argued at full length, because the point, though reasonable, was held to be new, and finally decided in the lady's favour on both counts. The ungrateful parent had therefore not only to pay the bill for attendance, but 50 francs in addition as a solatium to the wounded professional feelings of the lady doctor.

THE LONDON WATER QUESTION.

The London County Council has decided, upon the advice of its Water Committee, to request the President of the Local Government Board to receive a deputation. The object of the deputation is to inquire of Mr. Long, who has, to the ill-disguised disappointment of Mr. Chaplin, been substituted for that gentleman as President of the Local Government Board, what steps the Government propose to take for giving effect to the recommendations contained in the report of Lord Llandaff's Commission. We gather from the speech of Mr. Ritchie, the new Home Secretary, at the banquet to the new metropolitan mayors, that in his opinion—and presumably in that of his colleagues—"the Government ought not to unduly interfere with the legislative projects of the London County Council;" and the right honourable gentleman illustrated this opinion by special allusion to the London water question. It may be too sanguine to assume that the Purchase Bills promoted by the London County Council will now have the support of Her Majesty's Government, but such language from a Cabinet Minister may reasonably be regarded as indicative of action by the Government on this long delayed and overripe legislative problem.

THE CAMPAIGN AGAINST TUBERCULOSIS IN FRANCE.

From a summary issued by Dr. Léon Petit it appears that the recommendations of the Special Commission appointed by the French Minister of Public Instruction are: That the Public Health Bill now before the Senate be passed, with the addition of certain clauses relative to the sanitation of dwellings; that tuberculous patients in hospitals be isolated, precautions being taken to secure the antisepsis of wards and the protection of the staff; that in the army and navy, in prisons, etc., special measures of prevention be adopted; that tuberculosis be included among contagious diseases; that attention be paid to the prophylaxis of tuberculosis in railways. The necessity of an active antituberculosis propaganda is insisted on, and it is urged that preventive measures be taken in all places and collections of persons under the direct control of the State. The Commission also recommends a stricter regulation of the meat and milk supply, and the adoption of measures for the repression of alcoholism as an accessory cause of tuberculosis. Dealing with curative measures the Commission lays down the conditions required in a sanatorium, and urges that facilities should be provided for the treatment of poor children in seaside hospitals. It recommends the establishment of antituberculosis dispensaries in towns, and a more liberal application to tuberculous persons of the law of July 15th, 1893, which should be made easily applicable to small communes. It now remains for the French Government to see that the recommendations of the Commission are carried out.

NOTIFICATION OF INFECTIOUS DISEASES IN SPAIN.

By Royal decree, dated October 10th, 1900, the Spanish Government has made the notification of all cases of infectious or contagious disease compulsory on medical practitioners attending such cases. Unfortunately the terms of the decree do not specify the diseases included in its scope nor the method of procedure to be adopted in sending in the notification to the proper authority. Apparently no provision is made for a fee to the notifying practitioner, and it seems even to be doubtful whether the notifier is not compelled to pay the postage.

THE BISHOP OF BARROW ON EXPERIMENT IN MEDICINE.

We learn from a report in the *Carlisle Journal*[1] that at the annual meeting of the Cumberland and Westmorland Branch of the Royal Society for the Prevention of Cruelty to Animals, held at Carlisle on November 21st, under the presidency of the Bishop of Barrow, Miss Lumsden, late Warden of University Hall, St. Andrews, who, it is understood, attended the meeting as the representative of the parent Society, made an attack on the employment of experiments on animals in medical research.

[1] *Carlisle Journal*, November 23rd, 1900.

After alluding to such practices as the docking of horses' tails and the cutting of dogs' ears, she stated that vivisection was the darkest cruelty of all, and was proceeding to give at large her views on vivisection, when she was interrupted by the chairman. Bishop Ware, in interposing, said great benefits had been done to mankind through experiments properly conducted. The Society was not a Society formed to take proceedings in regard to properly conducted scientific experiments, but to stop needless cruelty to animals. He held such a strong feeling in regard to the benefits to mankind due to vivisection properly conducted that he could not take the chair at a meeting where such views were expounded as they had heard. It is only fair to Miss Lumsden to state that after the chairman's remarks she explained that all she desired was the very strictest regulation by law.

LECTURES AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The following are the courses of lectures for 1901: The Erasmus Wilson Lecturer, Mr. Walter Edmunds will deliver three lectures on Monday, February 18th Wednesday, February 20th and Friday, February 22nd, on the Pathology and Diseases of the Thyroid Gland. The Arris and Gale Lecturer, Dr. T. G. Brodie, will deliver three lectures on Monday, February 25th, Wednesday, February 27th, and Friday, March 1st, on the Vascular and Muscular Mechanism of the Lung, and the Action of Drugs upon this Organ. Professor Christison Addison, Hunterian Lecturer, will deliver three lectures on Monday, March 4th, Wednesday, March 6th, and Friday, March 8th, on the Topographical Anatomy of the Abdominal Viscera in Man. Professor Percy Furnival, Hunterian Lecturer, will deliver three lectures on Monday, March 11th, Wednesday, March 13th, and Friday, March 15th, on the Pathology, Diagnosis, and Treatment of the various Neoplasms of the Stomach and Intestines. Professor C. Stewart, LL.D., F.R.S., Hunterian Lecturer, will deliver six lectures on Monday, March 18th, Wednesday, March 20th, Friday, March 22nd, Monday, March 25th, Wednesday, March 27th, and Friday, March 29th, on the Protection and Nourishment of the Young of the Vertebrata. The Hunterian Oration will be delivered by Mr. N. C. Macnamara. The lecture hour is 5 P.M.

In the Budget of the Hungarian Minister of Education for 1901 there appears a sum of 332,000 crowns for the establishment of a general pathological institute together with a Pasteur institute at Buda-Pesth.

Sub-Commissioner A. C. W. Jenner, the news of whose murder by a band of rebels in the Jubaland Province of British East Africa was received by the Foreign Office last week, was the third son of Sir William Jenner, who died in 1898. Mr. Arthur Charles William Jenner, who was born in 1864, was a Bachelor of Arts of Oxford and a member of the Bar. He was formerly a lieutenant in the Middlesex Regiment.

At a meeting of the French Académie des Sciences on November 19th, Sir Joseph Hooker, formerly Director of the Royal Gardens, Kew, and sometime President of the Royal Society, was elected a Foreign Associate in the room of the late Professor Bunsen. Sir Joseph Dalton Hooker, G.S.I., C.B., is a member of the medical profession. He took the degree of Doctor of Medicine at the University of Glasgow in 1839, and in the same year obtained the Licence of the Royal College of Surgeons of Edinburgh. He served for some years as a surgeon in the Royal Navy.

At the meeting of the Royal Medical and Chirurgical Society on Tuesday next, at 8.30 P.M., Dr. Manson will give a brief summary of the recent advances in knowledge of the parasitology of malaria, and Drs. Sambon and Low will relate the experiments carried out by them on behalf of the Colonial Office and the London School of Tropical Medicine in the Campagna and in London, already fully described in the British Medical Journal. Dr. Rees will give a demonstration of the cycle of the malaria parasite in man and in the mosquito, and of the anatomy of the mosquito.

MEDICAL NOTES IN PARLIAMENT.

[From our Lobby Correspondent.]

The Opening of Parliament.—On December 3rd the House met, and the benches were well filled by about three-fourths of the members. The *personnel* of the House had changed a good deal, and among medical members Dr. Clark and Dr. Fox were missed; while, owing to the absence of the Irish members, Dr. Tanner was not in evidence. On the whole it was rather a dull opening, and lacked the earnestness which a new Parliament usually shows. This was, no doubt, due to the fact that the object of meeting was only to raise money for the war, and therefore did not suggest those interesting subjects for legislation which new members approach with a hope that in older representatives is chastened by a long experience of the difficulties of pushing on social reforms. For the medical world this first day of the new Parliament had a special interest, inasmuch as, for the first time in history, a member of the profession had the honour of seconding the nomination of the Speaker. Dr. Farquharson, who has sat in the House since 1880, and so has become one of the senior unofficial members on the Liberal side, was selected for the duty in the absence of Sir Joseph Pease, and made an able and characteristic speech, full of dry humour and well-deserved appreciation of the Speaker. Afterwards, in conjunction with the proposer, Sir James Ferguson, who first entered the House forty-six years ago, he helped to conduct Mr. Gully to the Speaker's chair. When the Speaker was elected the work for the first day was finished, as until the Royal Assent is signified to the choice of the Commons the House cannot be constituted for swearing in the members and the transaction of business.

The Business of the Session will be strictly confined to supplying the monetary needs of the Government; it will, in fact, be all Government business, and there will be no chance for private members to introduce Bills. In the next or second session of the new Parliament the opportunity will come for those who aim at such legislation as the Midwives Bill or Medical Reform. Even questions will only begin at the end of the week, as Tuesday and Wednesday were occupied in swearing in members. The treatment of the sick and wounded at the seat of war, and the prevalence of enteric fever, will be raised by questions, and also the general work of the Medical Services.

The Speech from the Throne is answered by an address from the faithful Commons, and it is on this address that the debate at the beginning of a session arises. The speech on this occasion is of the briefest, and affords little opportunity for raising any debate outside the war and its financial aspects. Much will depend on the speech made by Mr. Balfour on Thursday night, as it may to a large extent conciliate the Opposition. There is sure, however, to be some debate on the conduct of the war, and the burning of farms and the treatment of the sick and wounded are certain to be raised in some form or other. The Hospitals Commission is said to have difficulties over its report, and this document, so important for the medical services, is consequently not likely to be ready for consideration during this autumn session. The debate on the address may be prolonged by amendments moved by private members which cannot appear till the end of this week. The real business of the session will begin next week, when the Chancellor of the Exchequer makes his statement as to the money required for carrying on the operations in South Africa. In the debates which follow, there will be again opportunity for discussing the medical aspects of the war.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1900.

NOTES.

The Birmingham Medical and Surgical Consultative Institution was before the Council on November 30th in connection with the case of Dr. Henry Ward Irvine. It is the first instance in which a practitioner has been reported for disregarding the resolution of Council passed in May, 1899—"That the Council strongly disapprove of medical practitioners associating themselves with medical aid associations by which systematic canvassing and advertising for the purpose of procuring patients are practised"—and it is highly satisfactory that no technical difficulties prevented the Council from arriving at a decision.

The facts of the case are probably within the recollection of many of our readers, but may be briefly recapitulated. In the beginning of last year Mr. Arthur Chamberlain, after having failed to induce the governors of the Birmingham Hospital for Women to support him in establishing a paying out-patient clinic in connection with that institution, turned his attention to the Birmingham Hospital Saturday Fund, and proposed that the fund should establish a consultative institution, with a staff of salaried consultants, who should charge a uniform fee of half a guinea, and he offered to contribute a proportion of the expenses of establishing and maintaining such an institution until it should become self-supporting. This proposal naturally met with vigorous opposition from the consultants and specialists in Birmingham who were neither themselves willing to be placed in the position of salaried officers of such a corporation as the Hospital Saturday Fund, or to see strangers introduced for the purpose. It was pointed out that no one with the necessary qualifications would care to accept such offices, and that such an institution could only secure the services of a man who would not possess the experience which would justify him in being regarded as a consultant or a specialist. But the Committee of the Hospital Saturday Fund seemed to have made up its mind upon the matter. Instead of replying to these arguments, it urged the subscribers to the fund to rely upon its capacity to carry the plan to a successful issue, and pointed to the success of the Convalescent Homes established on the north coast of Wales as a proof of their capacity to carry out large schemes for the benefit of the working classes. At a meeting of the Hospital Saturday Fund delegates the report recommending the adoption of the scheme was carried by the vote of a majority, and the necessary funds were voted.

In order that no effort should be spared to prevent the consummation of this most undesirable undertaking, representatives of the medical profession sought, through the Lord Mayor of Birmingham, a conference with the promoters of the scheme, and at a meeting presided over by the Lord Mayor, Dr. Saundby, Mr. Priestley Smith, and Dr. Thomas Wilson, met Alderman Cook, Mr. Aston, and five other representatives of the Hospital Saturday Fund. At that meeting it was pointed out that the statement which had been repeatedly made that there was no alternative for the working man who wished for skilled advice between the consultant whose fee was two guineas on the one hand and the hospital on the other, was not true. It was shown that the two-guinea fee was charged by only a few of the leaders in medicine, surgery, and gynæcology; that one guinea was the recognised fee of the consultants in Birmingham, and that many saw cases twice for a guinea, and others even three times. It was also pointed out that many of the provident institutions and sick societies in the town had consulting staffs who saw members of these societies for half-a-guinea. The objections to the proposal were expressly formulated, and it was clearly intimated that such an institution as it was proposed to establish would be practically certain to use means for obtaining practice which would not meet with the approval of the medical profession, and would bring it under the notice of the General Medical Council.

These assurances were supported by various meetings of consultants and specialists, as well as general practitioners, held in Birmingham, but they produced no result. The offer made was disregarded, and after an interval it was announced that the plan of establishing the Consultative Institute would be pursued. The advertisement for a duly qualified consulting physician and a duly qualified consulting surgeon when issued was refused by the medical press, which with one voice condemned the scheme and warned all members of the medical profession against accepting the proposed offices. In spite of this warning Dr. Henry Ward Irvine, a graduate of the University of Dublin, applied, and was appointed "consulting physician" at a salary of £500 per annum. Consulting rooms were taken for him in Newhall Street, which is in the centre of the town, and is occupied largely by the consulting rooms of the medical profession.

Had this been all it is possible the Institute would have been allowed to die a natural death; it does not seem to have been strikingly successful, as at the end of six months only 222 consultations have been effected, showing a gross income of £116. But the Committee, not content to rest the scheme upon its unsupported merits and the abilities of Dr. Irvine, tried by advertisement to obtain for him patients whom his fame might not otherwise have reached. His qualifications and attainments were made the subject of laudatory notices in the Birmingham Hospital Saturday Fund magazine, *Forward*; many thousands of circulars were distributed through the town, and a large poster card, upon which the names of the Committee, Dr. Irvine's name and qualifications, his hours of consultation, and the fee charged, were duly set forth, was issued by thousands to be hung in public-houses, restaurants, Board schools, hairdressers' shops, factories, and similar places. This appeared to be such flagrant contempt of the regulation of the General Medical Council of May, 1899, that the matter was reported to the General Medical Council in May of the present year. The Council, as is its usual practice, has proceeded with no undue haste, and six months were allowed to elapse before Dr. Irvine was brought before it.

The case had been taken up by the Medical Defence Union, and Dr. Bateman appeared in support of the charges. The proof was very simple, and the documents put in established the facts complained of. The defendant was represented by Mr. Freeman, Q.C., who, after making some technical objections which were dealt with, argued that the Consultative Institution was a charity which should be allowed to advertise, and that Dr. Irvine was in no way responsible for the advertisements issued. Alderman Cook, of Birmingham, who was called as a witness for the defence, made the extraordinary statement that "he did not think the notices amounted to advertising, and that the Institution would keep on sending them out in precisely the same manner as any hospital, and in no other way." We are not prepared to say that we approve of all that is done by every hospital in the country, but we have never heard of one which issues such advertising cards as those sent out by the Birmingham Consultative Institution. In answer to Dr. Bateman, Alderman Cook said he did not think it right and proper to describe the Consultative Institution as a charity (thereby disavowing the term used by Mr. Freeman in his opening address); he preferred to call it a "philanthropic institution," but he admitted that the money which was subscribed for the Hospital Saturday Fund was subscribed for the purpose of charity. Mr. Aston, the Honorary Secretary of the Institution, said there was practically no limit to the class of patients; that the person visiting the institution paid the fee to Dr. Irvine, who accounted for it periodically; that there had been 7,000 or 8,000 copies of the notice issued; that they were sent, not only to subscribers of the Hospital Saturday Fund, but to anyone asking for a copy, and that probably 3,000 copies of the poster had been published. He also said that it was intended that Dr. Irvine should visit patients at their own homes, but he could not say whether he had actually done so. He further emitted the curious opinion, which we fear, in spite of its absurdity, goes for something with the working classes "that anyone who

went to a consultant and asked for a reduced fee became the object of charity, and lost a certain amount of self-respect." Asked as to the meaning of the word "consult" as applied to a physician he said he was unable to explain it.

Mr. Arthur Chamberlain, who was the next witness, seems to have begun his evidence in a most offensive manner. He spoke of the general practitioner as the "street doctor," and stated that Dr. Irvine was an M.D., while the others were not, and he justified the advertisements issued by saying that they did not differ from those issued at the time of the establishment of the Women's Hospital in Birmingham in 1871. Before the end of his examination, however, he appeared to perceive that the tone he had assumed was not doing his case much good, and at the end of his evidence he said that if his scheme was contrary to the traditions of the medical profession in the opinion of the Council, he would reconsider his position. No one who has listened to the conduct of intricate disciplinary cases before the General Medical Council can have failed to appreciate with what exceeding care and scrupulous justice the rights of an accused person are jealously watched and guarded, sometimes in spite of and in opposition to the well-meaning but misguided efforts of the accused's legal advisers, who may unwittingly fail to see that by persisting in certain lines of defence they are jeopardising their client's best interests. In this case, Mr. Chamberlain was considerately, calmly and judicially set right when he so far forgot himself as to apply the contemptuous term "street doctors" to general practitioners in Birmingham. His scarcely-veiled threat to swamp Birmingham with general practitioners who would consult with the consulting physician of the institution was gently brushed aside; and when, in the course of his cross-examination, instead of answering a question he made a speech to prove that Birmingham men were not mean—a fact that was not germane to the matter under discussion, the Council indulgently smiled, and the cross-examination was proceeded with without further notice being taken of the inconsequential character of the reply. The President of the Council himself interrogated Mr. Arthur Chamberlain concerning the absence of any rules for the guidance of the consulting physician of the Institution, and the want of these rules probably accounted for the discrepancies in the evidence, not only of Mr. Chamberlain, but also in that of Mr. William Cook, J.P., Alderman of the City of Birmingham, and in that of Mr. Aston, the honorary secretary of the Institution, to which attention is called above.

Dr. Henry Ward Irvine in his examination defended his acceptance of the post on the grounds that the Institution was of a philanthropic character, and denied any personal knowledge of or share in the advertising that had taken place. When asked what was meant by the title "consulting physician," he said "he would not say that it implied anything beyond the ordinary practitioner," but he declined to say what it would imply.

After the Council had conferred in private the President announced its decision, and, addressing Dr. Irvine, said that the Council considered the charge had been proved, but that it had decided to adjourn its further consideration until the session in May next in order to give him an opportunity to reconsider his position.

It is to be hoped that this warning, coming as it does after the unanimous expression of opinion by the medical profession, will convince Dr. Irvine of the folly of continuing to occupy his present position. He has been induced to lend his aid to an attack upon his profession which has been conducted without any regard to or consideration for its traditions. He has associated himself with men who, under the guise of philanthropy, are trying to reduce medical practitioners to the position of servants of capitalist schemes. It is idle to gild this institution with the title "philanthropic." As much may be claimed for every corporate body which does not seek profit as its end. The aim of Mr. Arthur Chamberlain was clearly in the first instance to force upon the medical practitioners in Birmingham a development of hospital out patient practice, which, if generally adopted, would be most injurious, and it should not be forgotten that doctors have at least an equal, if not greater, right than the subscribing public to say in what form and under what conditions they shall co-operate in the work of medical charity. When money subscribed for the purpose of charity is used—as, unfortunately, it has been used in many instances—for the promotion of schemes to which the word charity can no longer properly be applied, the terms of the trust are abused, and the schemes should no longer receive the support of the medical profession.

Undoubtedly, the case against the Birmingham Consultative Institution rests, not so much upon these general considerations as upon that of the gross and flagrant advertising in which it was proved to have indulged. This, fortunately, has brought it clearly within the jurisdiction of the General Medical Council.

We congratulate the General Medical Council and the medical profession in Birmingham upon the success which has attended its efforts in this case. Congratulations are due also to the Medical Defence Union and to its General Secretary, Dr. Bateman who conducted the case with much ability. We hope it will serve as a warning to similar institutions which, if not as bad, carry advertisement beyond proper limits.

The decision as to what is "infamous conduct in a professional respect" rests solely with the General Medical Council. We have high judicial authority for stating that "if it is shown that a medical man in the pursuit of his profession has done something with regard to it which would be reasonably regarded as disgraceful or dishonourable by his professional brethren of good repute and competency, then it is open to the General Medical Council to say that he has been guilty of "infamous conduct in a professional respect." This definition was framed by the late Lord Justice Lopes with the assistance of Lord Davey, and was approved of by Lord Esher. The leading case which deals with the jurisdiction of the General Medical Council is Allinson *v.* the General Medical Council (1894 1 Q.B.) There the plaintiff, whose name had been removed from the *Register*, applied to the court for relief on the ground (*inter alia*) that there was no evidence upon which the defendant Council could reasonably come to the conclusion at which they had arrived. Upon this point, however, Lord Davey said: "We have not to say whether the Council were right or wrong in the inference which they drew: all we have to say is whether there was evidence on which they might as reasonable men come to their conclusion." Provided they proceed on the above principle, it does not appear that the Courts can interfere with the General Medical Council, nor does the Court take upon itself to define what is infamous conduct in a professional respect, the determination of that point being left entirely to the General Medical Council.

The Question of Death Certification came before the Council on a complaint against a registered practitioner that he had given two death certificates under circumstances in which they should have been withheld, the patients having been attended by an unqualified assistant, and not having been seen by the certifying practitioner during life. It was contended by the defence that one of the patients was alive when seen—that is to say, that although she appeared to be dead, and was believed to be so by those about her, some pulsation of the heart still existed. But it was not contended that any information as to her condition which could not have been equally attained had death already occurred was obtained. Both were cases of labour; in the one death occurred after twelve hours of labour, the child not being born; in the other some ten days after labour. The first was certified as "morbus cordis, uterine hæmorrhage," the other as "childbirth, cardiac disease indefinite, embolism." Of the first case the certifying practitioner had no prior knowledge whatever, and it is difficult to see why he should have set down that she had heart disease, as all that he could ascertain when he saw her was that there was evidence of profuse hæmorrhage. As to the cause of that hæmorrhage, he apparently accepted the statements made to him by the unqualified attendant, who had sent down to the surgery for instruments some two hours before the death, but it was not in evidence that he had used them. The other case he had seen some three months previously, when he discovered the existence of mitral disease; but he had not seen her in the interval, and he had no grounds for the diagnosis of embolism save that she had died rather suddenly, after going on—according to the statements of the unqualified man—perfectly well from the period of her con-

finement. Thus incidentally the question of covering became imported into the case, as if certificates are given thus they serve to protect an unqualified man from any unpleasant consequences which might ensue were they withheld. It was stated that the unqualified assistant was the brother-in-law of the certifying medical man, but the question how far he was his servant was a difficult one, and to this much evidence called by the defence was directed. The practice was conducted under conditions which are at least unusual in the South, though said to be not uncommon in the North of England. The principal, Dr. Renton, who is now dead, held a number of appointments, amongst them being those of medical officer of health in various adjacent districts. He employed about five assistants, some qualified and some unqualified, who resided at different points and were not partners. Dr. Allen was one of these, and his position appears to have been that of conducting the practice at one centre, where he received all the fees up to £500 a year and a share in amounts above this. But he had no interest in the general earnings of the practice, and although it seems that he was expected to give any assistance elsewhere than in his own district when it was called for, neither of these two cases occurred in his own special district. His brother-in-law, who was alleged to have been a medical student at Bellevue Hospital, New York, and for a time at Newcastle-on-Tyne, but who had never passed any examination, was brought back from America, and introduced into the practice by Dr. Allen, but as his employer's servant and not his own. It was distinctly stated that he was paid by Dr. Renton, and that Dr. Allen had no interest in his earnings whatever at the date of these occurrences. Subsequently, however, he did become Dr. Allen's servant for a time, and the last payment to him was made by Dr. Allen; as to this period Dr. Allen candidly admitted that at times the unqualified man had done more than was proper for an unqualified assistant, and this he now regretted, but he disclaimed responsibility for him at any antecedent period. The Council found that the charge of improper giving of the death certificates was proved, but they postponed the further consideration of the case till the next session, and in communicating this decision the President gave an emphatic warning against any action that, by protecting an unqualified man from the consequences of his actions, even though not in the employment of the certifier, amounted in effect to covering.

The Council appears to have taken a lenient course, and there would seem to have been several reasons for their so doing. It was clear that the introduction of his brother-in-law had not resulted in any profit to Dr. Allen, and that, undesirable as it was, it took place prior to the issue of the Council's last pronouncement on covering. Dr. Allen had been a distinguished student, and had acted as chief demonstrator to Professor Cleland, having abandoned the pursuit of anatomy on account of ill-health; testimonials as to his general character were abundantly produced, and it would seem as though family reasons may have brought him into a position which he freely admitted was not entirely defensible, while for the past year he has had no connection, direct or indirect, with unqualified men. A prior investigation had taken place before one of the medical inspectors of the Local Government Board in regard to the confirmation of his appointment as medical officer of health in one of the districts, and some part of the evidence produced had been already given in that inquiry, and had been quoted in the local newspapers, but the action of the Local Government Board in the matter of the appointment has not yet been announced.

The Sale of Poisons in open surgeries was raised by a case brought at the instance of the Pharmaceutical Society. It is, we believe, well known that in the south-west of Scotland it has not been an unusual practice for medical men to keep, under the guise of surgeries, open chemists' shops in which the public were served by persons not qualified under the Pharmacy Acts; a large number of prosecutions had been instituted for selling poisons and convictions obtained, but only against the actual sellers. In the particular instance three convictions had been obtained against such employees, one against one individual, and two against another, who remained in his position after these convictions. In one case laudanum had been sold to a small child, and the mother of this child died from an overdose which she took, though it was suggested that she had not obtained it all from one source; nevertheless, the unqualified person was left in the shop after this catastrophe.

Registered medical practitioners are exempt from certain provisions of the Pharmacy Act, and it was contended that the defendant in the case came within the purview of the General Medical Council by having abused his position as a medical man in lending himself to breaches of the law in a manner dangerous to the public. The defence took the line that the offences, if he were responsible for them at all, were not against the Medical Acts, and it was alleged that he had told his assistants not to sell poisons. It was, however, abundantly clear that if he had done so he had condoned their disobedience. It was further urged that, inasmuch as it is allowed that a medical man may employ an unqualified dispenser for compounding medicines under his supervision and upon his own responsibility, therefore his doing so in an open shop is equally permissible. But it is obvious that there is a wide difference between a practitioner having medicines made up for his own patients, which is done under his own eye, and keeping an open chemist's shop at a place other than his own house, and any plea that no harm could result was sufficiently refuted by the death which ensued in the one case, whether the laudanum had been purchased at one such shop or at two. The General Medical Council decided that the offence charged had been proved, but that the further consideration of the case should be adjourned to the May session, during which interval the defendant might reconsider his position. The Council therefore obviously took the view that it was a proper case for their consideration, although they made no pronouncement as to the degree of gravity of the case for the present. Probably the intimation thus conveyed will have the effect of putting an end to the keeping of open chemists' shops away from the residence of the practitioner, which appears to be a somewhat local practice; not, however, to be in any way justified in this case by the absence of chemists' shops in the place, for it was in evidence that this want was adequately supplied.

The First Year and the attitude of the Royal Colleges in London thereon was the subject of a prolonged debate. The legal opinions which had been obtained by the College of Physicians from Mr. Cripps, Q.C., and by the Council from Mr. Muir Mackenzie, were in agreement in so far that both lawyers concurred in stating that the Council had no power of coercing the licensing bodies to adopt its recommendations, short of the extreme measure of advising the Privy Council that their diplomas should not be recognised. They differed on the point of the indefeasible right of the Council to impose what terms it pleased upon the registration of students. A temperate, though somewhat unbending, statement of the case signed by Mr. Bryant on his own responsibility, and a lengthy and somewhat petulant preamble to their legal opinion which was issued on the authority of the College of Physicians, constituted the only important additions to the material already in the Council's hands. The Council decided to adhere to its previous position, which leaves it in conflict with the bodies in question. From the tone of the speeches of Sir Dyce Duckworth and of Mr. Bryant, the impression might be gathered that the College of Physicians is more irreconcileable than the College of Surgeons. Dr. MacAlister pointed out the question was not a legal question, but whether students should finish their ordinary course of study before they became technically medical students. Sir John Batty Tuke, Chairman of the Education Committee, crystallised the whole debate into a few words in his statement that the actual point at issue was whether the General Medical Council was to be the Council of Medical Education or whether it was to hand over its duties to the two Colleges. His advice was that the Council should fight it out to the bitter end. Dr. McVail also urged the Council to come to a decision, because it was quite evident that the other licensing bodies in Scotland and Ireland were determined not to remain any longer under what they conceive to be a disadvantage as compared with the inducements offered to students by the Royal Colleges.

REPORT OF PROCEEDINGS.

Thursday, November 29th.

SIR WILLIAM TURNER, President, in the Chair.

The Minutes of the last meeting were read and confirmed.

THE BIRMINGHAM CONSULTATIVE INSTITUTION.

The Council then proceeded to consider:

The case of Henry Ward Irvine, of Cornwall Buildings, Newhall Street, Birmingham, registered as M.B., Bac. Surg. 1895, M.D. 1897, Univ. Dubl., who has been summoned to appear before the Council to answer the following charge, as formulated by the Council's Solicitor:—

That he accepted the office of Consulting Physician to the Consultative Medical and Surgical Institution, Birmingham, at a salary, and approved or acquiesced in the extensive advertisements issued by that institution by posters exhibited in the various manufactories, trading establishments, and mercantile offices of the city, by advertisements in the daily press, and by lithographed letters and printed pamphlets, widely circulated, setting forth conspicuously his name and medical qualifications, and referring to his special ability as a general consulting practitioner, and soliciting and inviting the public to consult him at a reduced fee.

The complainant is Robert Saundby, of 140B, Great Charles Street, Birmingham, registered as Lic. R. Coll. Phys. Edin. 1874, M.B., Mast. Surg. 1874, Univ. Edin., Mem. R. Coll. Surg. Eng. 1874.

Mr. MUIR MACKENZIE attended as legal adviser.

Dr. BATEMAN appeared on behalf of the Medical Defence Union, which had been instructed to take up and conduct the case on behalf of the complainant.

Mr. FREEMAN, Q.C. (instructed by Messrs. Pinsent and Co., of Birmingham) appeared on behalf of Dr. Irvine.

Dr. BATEMAN stated that the case was a very important one, as on the decision of the Council would depend the question as to whether systematic advertising and touting for patients for so-called charitable institutions would be authorised by the highest authority of the medical profession or not. The matter at issue was supported by Dr. Irvine and a number of laymen on the one hand, and on the other by Dr. Robert Saundby and many medical practitioners of the city of Birmingham, who were again supported by the leading journals in the medical profession; and it had been decided to lay the whole of the facts before the Council as the only body that could do justice between the parties. It was not difficult to understand why commercial men could not understand the reason that advertising was not permitted in the medical profession; no doubt they considered it very foolish, because advertising to a commercial man was the breath of his life, whereas in a professional life it would mean asphyxia. But members of the Bar and solicitors were not permitted to advertise; members of the Stock Exchange were debarred from advertising, and if it could be proved that they had they would be excluded. In May, 1899, the General Medical Council unanimously passed the following resolution:

That the Council strongly disapproves of members of the medical profession associating themselves with medical aid associations which systematically practise canvassing and advertising for the purpose of procuring patients.

The resolution was mainly directed against a particular class of medical aid associations, and he thought he should be able to prove that this institution, which was now before the Council, would come under the head of a medical aid association, although the fees charged were higher than those of the ordinary grade of medical aid association. Having proved systematic advertising for the purpose of procuring patients, which he hoped he should be able to do, he would later ask the Council to say that he had brought his case within the lines of the resolution which he had read. In support of his case he proceeded to read a number of documents, from which it appeared that in 1898 Mr. Arthur Chamberlain devised a scheme, which he communicated to the Hospital Saturday Fund Committee of Birmingham, for the establishment of a consultative institution. A meeting was held at which the proposal was approved, and a small governing body appointed to take suitable rooms in the centre of the city, to engage a properly-qualified consulting physician and a properly-qualified consulting surgeon, the consultants' salaries to begin at £500 a year, to be increased from time to time as the success of the Institute justified. The consulting officers would be in attendance throughout the day, and also during convenient hours in the evening. A nurse would answer the door, and, in fact, patients would receive the same attention and individual treatment as they would receive when seeking the advice of a leading medical consultant. It was further proposed that a uniform consulting fee of half a guinea should be imposed. Advertisements were inserted in the newspapers, and a pamphlet was widely circulated in connection with the institution which constituted an advertisement of which he complained. The members of the medical profession in Birmingham strongly condemned the scheme, and said they were perfectly prepared to meet the alleged want in a generous way, and to enable persons unable to pay the usual fee to obtain the services of the highest consultants in the profession in Birmingham. In November, 1899, advertisements were inserted in the lay papers for a consultant, and Dr. Henry Ward Irvine was appointed Consulting Physician to the Institution. Notices appeared in the local press, showing to the full extent the nature of the advertising, notices that the institution had begun operations and bills were issued, and these he put in to prove systematic advertising for the purpose of securing patients, which, he contended, Dr. Irvine must be held privy to. The placard issued by the institution contained the following:

THE CONSULTATIVE
MEDICAL AND SURGICAL INSTITUTE,
BIRMINGHAM.
Objects.

To lessen the strain on hospital charity by providing on terms within and under conditions suitable to their pecuniary means and position, medical and surgical aid to those who would otherwise seek it gratuitously, or be unduly taxed by paying the usual consultation fees.

Dr. Bateman then read the joint deposition of Joseph Ensor Troute and Cornelius Howard, from which it appeared that these bills were displayed in restaurants and shops in the city. In conclusion he submitted that, had Dr. Irvine, apart from the institution, allowed his name, address, qualification, hours of consultation, and fees, to be advertised by bills, posters, pamphlets, and newspaper paragraphs in the city of Birmingham, there could have been no question that he would have been guilty of misconduct in a professional respect; and the fact that it was under the ægis of this institution managed by laymen did not alter the gravity of the offence, and should not be held to excuse or palliate such conduct. He submitted that the documents he had put in fully proved his case, and called no witnesses.

Mr. FREEMAN took the preliminary objection that no statutory declaration by the complainant had been submitted to the Penal Cases Committee, as required by the Standing Orders of the Council.

Mr. MUIR MACKENZIE said the Council had the right to dispense with any technical omission.

Mr. FREEMAN then objected to the putting in of the joint declaration by depositions of Messrs. Troute and Howard on the ground that he had had no previous notice of it, and therefore was not prepared to meet it or cross-examine the deponents. He applied for an adjournment of the case to enable him to do so, or the withdrawal of the declaration in question.

After some discussion the PRESIDENT said the Council would discuss the point *in camerâ*, and strangers were requested to withdraw. On readmission,

The PRESIDENT intimated that the Council had decided not to receive the statutory declarations dated November 20th and 25th on the ground that they came too late, and that no opportunity had been given to cross-examine the persons who made them; but the inquiry would be proceeded with.

Mr. FREEMAN then proceeded to address the Council on behalf of Dr. Irvine. He said he hoped to be able to show that there was absolutely nothing in the case which would justify the Council finding that Dr. Irvine had been guilty of anything like infamous conduct in a professional sense. He (Mr. Freeman) found difficulty in understanding precisely what the charge was, because the only communications he had had on the subject were the letter from the Registrar of May 3rd, and the official document of the solicitor on October 8th. The institution in question arose out of the Birmingham Hospital Saturday Fund, which had been in existence since 1877, and was instituted for the purpose of collecting money from the people of Birmingham, and distributing it among the hospitals which gave assistance to the poor. As the work grew it was found desirable to institute other branches, and they had been found to be of enormous advantage. But for a long time it was felt that there was a gap between the hospital and the consulting physicians, and that many people went

to the hospital and obtained free advice who ought not to have done so, and prevented the time of the gentlemen who attended there being given in the way it was originally intended, because the fees of the consulting surgeon were in many cases too high for them to pay. In 1897 Mr. Chamberlain thought that if something in the nature of this institution were founded it would fill the gap, and it accordingly was instituted. That was shortly the history of the institution. He would call Mr. Chamberlain, Alderman Cook, the Honorary Secretary, and Dr. Irvine, who would prove that it was absolutely a charitable institution. Whether the Council thought the scheme a wise one was another question; but if people chose to put their hands in their pocket and use their money for philanthropic purposes no one could complain. The question the Council had to decide was a most serious one to a professional man. If they came to the conclusion, contrary to the facts, that what Dr. Irvine had done might be declared infamous and were to strike his name off the *Register*, they would be practically ruining him for doing what was being done by hundreds of people all over the country, because he would be excluded from his profession for joining an institution whose philanthropy he fully believed in, and one which was doing a very good work in Birmingham, although it had not unfortunately met with the approval of the medical profession of that city. Dr. Irvine had done nothing in connection with the institution for which he was in the smallest degree responsible, much less had he done anything which would justify the course the Council was asked to take.

Alderman W. Cook, examined by Mr. Freeman, said he resided at Birchfield, in Staffordshire, was a Justice of the Peace, Alderman for the city of Birmingham, and Chairman of the Hospital Saturday Fund, which originally existed for acquiring money from the working classes, and paying it over to the Hospital Committee. Subsequently it was felt that something different was required between the medical practitioner and the hospitals, and in 1898 Mr. Arthur Chamberlain came forward with a scheme which was adopted at a large public meeting, and a Committee appointed to carry out the details. They interviewed some of the medical practitioners in Birmingham in order to obtain their assistance, but they were not able to obtain it. The Committee then obtained rooms for the purposes of consultation, and finally Dr. Irvine was selected as consulting physician. They then took steps to make the institution known by sending round to all their subscribers who were on the list of the Fund, as they had done for the last twenty-seven years, and expressed a request that the owners of factories and workshops should put up notices in their factories in order to effect that purpose as a great number of workmen were subscribers to the Hospital Saturday Fund. They got the bills up specially in order that they might be exhibited in the places where their subscribers could find them. Dr. Irvine was not in a single instance consulted with regard to those notices: they had no other reason for putting Dr. Irvine's name on the notice than that he was consulting physician to the institution; the promoters of the institution in no way benefited pecuniarily by the members. He had lost money up to the present time, for it was a fact that although the fee for a patient was 10s., it really cost about 30s. There was not the slightest truth in the suggestion that this institution was practically run for the profit of Mr. Arthur Chamberlain and a few others.

Cross-examined by Dr. Bateman: He thought that notices such as he had referred to hung up in shops and restaurants were not advertisements. It was true that the more patients they had the less money he and others would have to subscribe. He had not lent money to the institution, and he had not been asked to give a penny to it. The consultant's salary began at £500 a year, and was to be increased from time to time as the institution progressed. He did not think the notices amounted to advertising, and the institution would keep on sending them out, but precisely in the same manner as a hospital would, and in no other way. He did not think it right and proper to describe it as a charity; their subscribers could not afford to pay consultants a guinea or two guineas consulting fee, but they were anxious to pay the half-guinea instead of going to the hospitals. At the present time it was not a philanthropic institution, but he hoped it would be self-supporting in the future.

By Sir William Thomson: The income derived by the institution would be used for the maintenance and development of its objects. A single opening announcement did not constitute advertisement. The last advertisement was sent out in June. He could not say if any other advertisements had been sent out since.

By Sir John Tuke: If the fees paid to the institution amounted to £1,016 instead of £116, their idea was to employ another consultant physician; he did not think one was sufficient.

By Mr. Victor Horsley: He could not say that if the number of patients increased this would not be a philanthropic institution; it would still be part of the Hospital Saturday Fund, which was a philanthropic institution; they gave £10,000 to the hospitals absolutely without any condition. The Hospital Saturday Fund was a pure charity, and the Consultative Medical and Surgical Institute was a branch of that Fund. He did not think that any person who wished to obtain the benefits of the Consultative Institute had a prescriptive right to it by reason of the fact that he was a subscriber to the Hospital Fund.

By the President: Persons who were not subscribers to the Hospital Fund might take the benefits of the institution.

By Dr. MacAlister: Some of the Committee of the Hospital Saturday Fund were also members of the Consultative Institute, and they were finding the money to carry it on. They had not discussed whether, in the event of the institution being able to pay its way, it would refund the money which had been advanced by the Hospital Saturday Fund.

By Dr. McVail: The institution was being carried on at a loss; but the time might come when it would be carried on at a profit. If it ever did, it would be absolutely impossible for that profit to be diverted to any of the other objects of the Saturday Fund.

By Mr. George Brown: The Hospital Saturday Fund was a fund subscribed for the purposes of charity and used for that purpose.

By Dr. Atthill: He believed Dr. Irvine gave his whole time to the institution, but he was not quite certain.

Mr. Freeman stated that it was a fact that Dr. Irvine was bound not to take any other practice.

Mr. Aston (examined by Mr. Freeman) said that he was the honorary secretary of the Consultative Institute. The notices which had been referred to were sent out purely as an announcement, but no other notices had been issued, and there was no intention to continue issuing them. The advertisements inserted in newspapers did not contain the name of Dr. Irvine.

By the President: Persons in Birmingham who were not subscribers to the Hospital Saturday Fund might receive the benefits of this institution; the institution was open to all of those who thought they came within the scope indicated as the objects of the institution. Persons going to the consultant at the institution might take a ticket or letter of recommendation, or they might go in and say, "I wish to consult you, and there is my fee of half a guinea." The institution was absolutely open.

Cross-examined by Dr. Bateman: The class of patients to be treated at the institution were indicated at the public meeting. They did not make any test to see if they came within the scope so indicated. The exact class for which it was intended was pointed out by Alderman Cook at the meeting, and it was said that anyone of that class might go without their receiving charity. There was practically no limit to the class of patients, but it was well understood. Any person visiting the institution paid the fee to Dr. Irvine, who accounted for it periodically. There had been, perhaps, 7,000 or 8,000 copies of the notice issued. They were sent not only to the subscribers to the Hospital Saturday Fund, but to anyone asking for a copy. They had had applications from their delegates for copies to be sent to their subscribers, but it would be open to anyone passing along the street to go in and get a copy, whether he was a subscriber or not, as it contained the information concerning the institution. Probably 3,000 copies of the posters had been published; there were 2,000 firms which subscribed to the Hospital Saturday Fund, and they would have to send one to each.

By Dr. Little: He could not say whether anyone had been

refused the privilege of consulting Dr. Irvine on the ground of being a person of superior income; Dr. Irvine would be the only person to judge of that.

By Sir CHRISTOPHER NIXON: They had done all they possibly could, by announcement at their lectures and at meetings, to point out the class of patients whom they thought entitled to receive treatment at the institution. He received the fees from Dr. Irvine, who would probably keep a register. The Committee of the Consultative Institute had seen the register up to date, and apparently there had been no abuse. The register contained the name, address, and occupation of the "patient." Dr. Irvine had no written instructions from the Committee as to ascertaining the means of the persons consulting him. He would decide that for himself; it was intended that Dr. Irvine should visit patients at their homes, but he could not say whether he had actually done it so far.

By Mr. VICTOR HORSLEY: The subscribers to the Hospital Saturday Fund in Birmingham might expect to get some return for their subscription. The privilege given to the subscribers to the Hospital Saturday Fund, and to others for whom this institution was intended, was to enable them to obtain that advice which they would otherwise go without altogether, and letting them pay a fair amount for it. It was impossible for anybody in Birmingham to obtain a consultative opinion at a reduced fee, except at the Consultative Institute, because anyone who went and asked for a reduced fee became an object of charity and lost a certain amount of self-respect. The Committee of this institution expected Dr. Irvine to give an opinion upon any case that might be brought before him, or, if he thought best, to employ somebody else. The Committee would not be the judges of the complaint or the nature of the illness; the doctor would be the sole judge.

By Dr. WINDLE: Restaurant keepers and hairdressers might be subscribers to the fund, but that was not so general as with the factories. If they were subscribers they would receive one of the cards referred to in the ordinary routine. Many people had asked when the institution would be open, and the card was given to them for their informaaion.

By Dr. LITTLE: The meaning of the word "consult" was to consult with the patient; he could not say what was the exact meaning of the word "consult" as applied to physician.

Mr. ARTHUR CHAMBERLAIN (examined by Mr. FREEMAN) said he was a Justice of the Peace, and for many years had taken an interest in the Birmingham Hospital Saturday Fund. In 1898 he originated the scheme which had been referred to by Mr. Cook. He had also taken a great interest in hospital charity, and this scheme was suggested for the class of people whom he knew required such an institution in Birmingham. It was a philanthropic institution that they hoped to see self-supporting, but which, at the present moment, was not. He should not like to see it a charity, because one of their objects was to preserve the self-respect of those who had to seek the advice of such an institution, who objected to the charity of the hospital, and who were in need of some higher advice than they could get from their "street doctor;" it was for that class of person that they thought this institution was required. It was ridiculous to suppose that the gentlemen who founded this institution were in any way interested in it. He had himself advanced £200, and nobody in Birmingham would suggest that he hoped to receive a profit on it. He was responsible a good deal for the arrangement of the institution. They called Dr. Irvine the consulting physician because they intended him to be consulted by the ordinary or general practitioner who had been attending to the workmen or schoolteacher, who found it necessary to ask for some other advice; to his knowledge Dr. Irvine had acted in that way, but the fee should be proportionate to the financial position of the person who sought his advice. There was no provision to prevent anybody going to consult Dr. Irvine. As a matter of fact, they had found, as stated in the report, that they were patients who would have sought gratuitous advice at the hospitals; that they were unable to pay the usual physician's fees, and yet were in need of some advice beyond that of the ordinary practitioner. The objects of the institution were generally known in Birmingham, and whatever might be the opinion elsewhere, the men of Birmingham were not mean, and they certainly would not go to an institution like this to save a fee. The proceeds of the institution when they were obtained would have to be applied to the development of the institution itself. The notice which had been referred to was the ordinary notice, for which he himself was responsible in the case of the Women's Hospital, and was sent out in the same way as in the notice of the Consultative Institute. It was not an advertisement.

By the PRESIDENT: The institution had no printed regulation beyond what was contained in the rules, aims, and objects of the institution. They had not found it necessary to frame regulations to regulate the action of its consulting physician.

Cross-examined by Dr. BATEMAN: If they were to appoint a consulting surgeon, he did not think they would have to send out fresh bills, as by that time it would not be necessary to further advertise the institution. The difference between Dr. Irvine and the "street doctor," as he called him, was that one was an M.D. and the other was not. The reason Dr. Irvine's qualifications were set out in the circular was because certain attacks had been made on the institution, and it was thought better when the man was appointed to mention what qualifications he had earned in his examination.

By Mr. VICTOR HORSLEY: The Women's Hospital in Birmingham was a charity and not a business concern. Dr. Irvine had not had surgical cases brought before him, and the work of the institution was restricted, and it did not advertise that they cured all diseases.

By Dr. GLOVER: The reason for the existence of the institution was to preserve the position of independence of the patients and to retain a feeling of self-respect. If the Council told him that anything they had done had set aside the traditions of the profession they would reconsider their position, they were not clear that they had and they came before the Council for the first time to say what was right and what was wrong.

By Dr. MACALISTER: In the posters announcing the opening of the Women's Hospital at Birmingham the names of the members were given, the same as was done in regard to this Consultative Institute.

Dr. HENRY WARD IRVINE (examined by Mr. FREEMAN) said he was a duly-qualified man, and consulting physician to the Birmingham Consultative Institute. He saw the advertisements for the post which he now occupied, but before accepting it satisfied himself that it was an institution of a philanthropic character from which the promoters received no gain. He was not consulted in any way with regard to the adverments which were issued by the institution, and his name did not appear in the advertisements in the paper. The evidence of the Secretary with regard to the posters was perfectly true. So far as he knew, there was nothing in the nature of general or systematic advertising. There was nothing more than was usual at the opening of similar institutions. He personally had not been systematically advertising, and until he received the intimation from the Registrar to the Council, he had no idea that what had been done was in any way wrong. There was no rule of the institution showing that he was to see a particular class of patients. The report issued by the Society correctly described the position in society of the people who went to the institution. He kept a casebook in which he put down the occupation and particulars of the case; there was also a register kept by the owners. He could not say that he attached any meaning to the term "consulting physician" as applied to himself. He did not think that term denoted anything particularly.

Cross-examined by Dr. BATEMAN: He had a legal agreement with the institution, which he would produce. He was present at the annual meeting. He had read the paragraph announcing that the institution had begun operations. He had seen the bills which had been referred to. He did not say there was anything in the title "consulting physician," which implied anything beyond the ordinary practitioner; he would rather not say what it would imply. He dealt with the medical cases, and had refused surgical ones. He saw the advertisement for the post in the *Irish Times;* it contained the words "consulting physician." He had visited people at their homes in connection with the institution. His entering into a legal agreement as a consulting physician, limiting his practice to the institution for a year, was not inconsistent with the etiquette of the profession.

By Mr. Victor Horsley: In order to ascertain the position of persons coming before him, he asked the patient his name, address, and occupation; there was no inquiry officer attached to the institution. The institution was in the same position as the hospitals in London. The consultations held were on behalf of the institution to which the fees went.

By Sir Dyce Duckworth: Sometimes the patients came with a letter of introduction; he wrote a prescription for every case. He took notes of cases, which he regarded as his own private notes. The prescriptions he prescribed were dispensed at the chemist's shop. Some of the patients came three or four times on successive days.

By Dr. Glover: The whole of his time was taken up with the institution.

By the President: If he saw a patient in consultation with another practitioner the fee would be half a guinea; that was to say, the fee was a half guinea whether he saw the patient at the institution or in the patient's home.

By Dr. Windle: He had not suggested to the secretary at any time that the card should be withdrawn.

By Mr. Muir Mackenzie: The £116 representing 222 patients in the accounts did not represent 222 different persons. There were some names repeated. The accounts were not drawn by him, and he was not responsible for them in any way. He did not furnish the number of the patients. The names were taken in numerical order; 222 consultations would be the more correct way of expressing it.

Strangers were directed to withdraw. On readmission,

The President, addressing Dr. Irvine, said: The Council has given careful consideration to your case, and I have to tell you that the Council considers the charge which you were required to answer has been proved, and it was further decided to adjourn the further consideration until the session in May next. The Council regards the conduct complained of as being of a serious character, and in adjourning the case it gives you an opportunity to reconsider your position. That is the deliverance of the Council.

Friday, November 30th.

Sir William Turner, President, in the chair.

The Minutes of the previous day were read and, as corrected, confirmed.

Charge of Covering.

The Council then proceeded to consider the case of William Allen, of Shotley Bridge, co. Durham, registered as M.D., Mast.Surg. 1877, Q. Univ. Irel., who had been summoned to appear before the Council to answer the following charge as formulated by the Council's solicitor:

That, being a registered medical practitioner, he, on two occasions, gave and signed certificates of death of persons on whom he had not only not attended professionally, but who had been to his knowledge attended and medically treated by an unqualified person named Burke, who was, to his knowledge, attending and treating patients, and otherwise acting as though he had been a duly-qualified medical practitioner. The names of the persons whose deaths were so certified are Emma Jane McCue and Hannah Margaret Longstaff.

Mr. Muir Mackenzie, instructed by Mr. Winterbotham, appeared as legal adviser to the Council. Mr. Atherley-Jones, Q.C., M.P., instructed by Mr. Butt, appeared for Dr. Allen.

Mr. Winterbotham (Solicitor to the Council) stated that, as there was no complainant, it devolved upon him to state shortly the facts of the case, and call the attention of the Council to the documents which had been put in evidence. On June 4th last the Local Government Board held an inquiry into certain charges which had been made against Dr. Allen, as medical officer of health, which amounted, in effect, to a charge of covering an unqualified medical practitioner. In the course of that inquiry evidence was given with regard to the giving of certificates of death in the two cases above mentioned, which evidence was brought to the notice of the Council. The documents he proposed to adduce in evidence was a *précis* of the evidence given at that inquiry taken from the best available source—namely, newspaper reports, which were supposed to be verbatim. The important question in the case was whether Mr. Burke, who was undoubtedly and admittedly an unqualified man, was really covered or employed by Dr. Allen. He then proceeded to read extracts of the evidence taken before the Local Government Board Inspector, which he put in; and also an agreement made in April, 1893, between Dr. Allen and Dr. Renton, from which it appeared that, although the practice belonged to Dr. Renton, Dr. Allen was to have the entire management and pay all the expenses of the practice, with the exception of drugs and surgical and medical appliances; and that, after deducting £500, which Dr. Allen was to receive, and paying an annuity of £100 to the widow of a Mr. Richards, he took three-fourths of the net profits. It, therefore, appeared to him (Mr. Winterbotham), if Mr. Burke was employed as assistant in the business, as a matter of law, under that agreement his salary would come out of the pocket of Dr. Allen, and Dr. Renton could in no way be charged with it.

Mr. George Brown thought it undesirable that extracts only of the evidence should be read to the Council; if they were to act upon it the whole case should be laid before them.

Sir William Thomson thought there was great force in Mr. Brown's observation, and was proceeding to discuss the point, when the President observed that, as it involved a question of procedure in a penal case, it should be discussed *in camerâ*.

Strangers were directed to withdraw; on readmission,

The President announced that the Council had decided to proceed, but that if counsel for Dr. Allen wished it the whole of the evidence should be read.

Mr. Winterbotham then put in certified copies of the documents he had referred to as constituting the evidence against Dr. Allen.

Mr. Atherley-Jones then proceeded to give details of the career of Dr. Allen from the time he obtained his qualifications down to the time he entered the service of Dr. Renton as assistant. In 1896 Dr. Renton was seeking another assistant, and Dr. Allen spoke to him about Mr. Burke, who was his brother in-law, and was then studying in America, with the result that Mr. Burke was appointed an unqualified assistant, and retained the appointment up till November, 1898, when Dr. Renton retired, and invited Dr. Allen to take over the practice with a view to purchasing it. This Dr. Allen did, retaining the services of Mr. Burke as dispenser. This state of things existed down to March, 1899, when Dr. Allen became, so to speak, *sui juris*, and he gave notice to terminate the agreement. On behalf of Dr. Allen he (the learned counsel) was prepared to admit that Mr. Burke did from March, 1899, sometimes with a qualified man and sometimes alone, perform certain services which, if the Council took a rigid view of its resolution passed in November, 1897, might be held to amount to an employment of an unqualified practitioner, but up to that time Dr. Allen was in no way responsible within the purview or true intent of that resolution, which required that only qualified gentlemen should be employed. With regard to the case of Mrs. McCue, Dr. Allen was in no way responsible for the attendance of Mr. Burke. Dr. Allen attended the woman and saw signs of life, and then gave a certificate of death, which he filled up with his own hand in every particular except the name and age of the woman. There was a conflict of evidence with regard to what took place, but he should ask the Council to accept Dr. Allen's version of the matter. The learned counsel then read a number of testimonials, one of which was from Professor Cleland of Glasgow, speaking in high terms of Dr. Allen's professional and private life, and concluded a long address by stating that although the Local Government Board was perfectly right in bringing the matter before the Council, yet, when the facts and circumstances connected with it had been fully appreciated, he was entitled to say that the conduct of Dr. Allen had not been more than that of a person having shown undue regard to a person connected with him by marriage.

Dr. Allen, examined by Mr. Atherley-Jones, said he was employed by Dr. Renton in 1883 as an assistant: from 1884 to 1896 unqualified men were employed there. In 1896 Dr. Renton asked him if he knew of an unqualified man who could attend to the practice in Allandale, and he recommended his brother-in-law, Mr. Burke, who was a medical student at Bellevue College. Burke was employed, and remained there from 1896 to the end of 1898. In 1898, Dr. Renton retired, and he, Dr. Allen, went to reside at his house, as he intended to purchase the practice. He took Burke with him, and he remained there till 1899. He (Dr. Allen) had attended Mrs. Longstaff three months before her death from heart disease. On

the night before she died he was informed that she had been confined ten days before, and he came to the conclusion that the development of the heart, which naturally took place in pregnancy, had been followed by wasting, and that heart disease was the cause of death. He had never certified before so long after seeing the patient, and he went and asked the registrar if he would accept a certificate with every blank filled in. He said: "If a fully-qualified man gives me a certificate which gives the cause of death, and the name and age of the patient, and the time of death, I am bound to accept it." The registrar gave him a certificate which he wrote out in the office, stating the age and name of the patient, and the cause of death, but omitting to state the date of his last visit. He had not attended Mrs. McCue previous to the day of her death. Immediately he was called he drove over in a friend's trap. The woman was lying in bed, pale and motionless; he examined her carefully and found several pulsations of the heart. She was *in extremis*, but not actually dead. He could do nothing in the way of treatment, as she was in such a bad condition; he found hæmorrhage had set in very suddenly shortly before he was called in. The woman died ten minutes after his arrival, and he thought he was justified in giving a certificate. He filled in the certificate with the exception of the age and name of the woman, which he did not know; they were filled in by his sister, Burke's wife. It was false to suggest that he kept a book of signed certificates. He was then examined at some length with regard to other allegations which had been investigated by the Local Government Board inspector.

Dr. LITTLE protested against the time of the Council being taken up with matters not contained in the charge.

By Mr. ATHERLEY-JONES: Up to 1898 he never received any profit or remuneration in respect of patients living at Allandale. With the exception of Burke, he had never employed an unqualified man; since last March he had employed a fully-qualified man.

On the motion of Dr. MACALISTER, seconded by Mr. BRYANT, the standing orders were suspended until the witness's examination-in-chief was concluded, and the report of the Pharmacopœia Committee had been adopted.

By the PRESIDENT: The Local Government Board was awaiting the decision of the Council on this matter before stating the result of its inquiry.

Mr. ATHERLEY-JONES explained that Dr. Allen was an applicant for certain public appointments which required ratification by the Local Government Board.

The further examination was adjourned until the following day.

THE INDIAN AND COLONIAL ADDENDUM TO THE PHARMACOPŒIA.

The Council then considered:

THE REPORT OF THE PHARMACOPŒIA COMMITTEE ON THE INDIAN AND COLONIAL ADDENDUM, 1900.

The Pharmacopœia Committee, having been entrusted with the duty of preparing the *Indian and Colonial Addendum to the British Pharmacopœia, 1898*, have now the honour to submit for the approval of the Council copies of the completed draft of the work.

The scope of the work was indicated in the preface to the *Pharmacopœia of 1898*, when it was stated that in the contemplated *Addendum* "medicinal plants and other substances suggested for inclusion by Indian and Colonial authorities" would be dealt with more fully than was possible at the time. The principles which have been observed in its construction are the same as those which have already been adopted by the Council in the *British Pharmacopœia, 1898*. A brief statement of the objects and plan of the *Addendum* is included in the preface which the Committee have drawn up.

The preparation of the work has involved a large amount of correspondence with administrative, medical, and pharmaceutical authorities in many parts of the Empire; and the Committee desire to record their acknowledgments of the interest shown and the assistance rendered by those who have thus co-operated with them.

The Committee have, within the last few months, held a number of special meetings for the revision and completion of successive drafts. They believe that the final proof, subject to the correction of such typographical errors, if any, as may be detected, may now be fitly adopted by the Council, and approved for publication in the manner prescribed by statute.

The volume is about double the size of the *Additions* of 1890, which was published at the price of one shilling. The Committee suggest that, in view of the expense incurred in its preparation, three shillings would be a suitable price for the *Addendum*. The power of actually fixing the price rests with the Commissioners of Her Majesty's Treasury.

To the labours of the late Chairman, Dr. Leech, who continued to devote time and thought to the work up to the end of his life, and of the Secretary, Dr. Tirard, the Committee have been much indebted. Acknowledgments are due to Mr. W. Kirkby of Manchester, and to Mr. E. Morell Holmes, for valuable advice and assistance in reference to questions of pharmaceutical botany. Dr. Attfield, editor of the *British Pharmacopœia, 1898*, has also edited the *Addendum*, which is its supplement. He has for many years applied himself to the work of adapting the *Pharmacopœia* to the requirements of the empire at large, and his task is now successfully completed. The Committee accordingly suggest that a special vote of thanks for his long-continued services should be passed by the Council.

In order that the *Addendum* may be issued to the public before the end of the present year the Committee recommend:

1. That the completed draft (subject to the correction of typographical errors, if any) be adopted by the Council as the *Indian and Colonial Addendum (1900)* to the *British Pharmacopœia, 1898*.

2. That the President and the Chairman of the Committee be authorised to communicate with the Commissioners of the Treasury on the question of the price to be fixed for the *Addendum*, to arrange for its publication, and to make the proper statutory announcement thereof by notice in the *London, Edinburgh, and Dublin Gazettes* (Medical Act, 1862).

3. That pending formal publication the Committee be empowered to distribute "advance copies" to the medical and pharmaceutical journals, and to arrange that copies may be placed for the inspection of the public in the Council's offices in London, Edinburgh, and Dublin.

Dr. MACALISTER stated that the *Addendum* marked a new departure and the completion of a plan formed many years ago. In the preface to the *British Pharmacopœia* of 1867 the Council expressed the desire that it might serve its purpose throughout the Empire, and now for the first time it had succeeded in approaching that idea, and it was necessary first that the *Addendum* should be adopted by the Council before the final proof was struck off; and it was necessary that the Council should approach the Treasury in order to fix the price. The Council could not do so, it could only make a suggestion. The Committee proposed to print 10,000 copies because nothing less would cover the cost of printing, binding, and publishing, together with the cost involved in the preparation of it. The sale might amount to between 8,000 and 9,000, so that if the Council received 2s. on each copy it would have £1,000 if all 10,000 copies were sold. The Council, therefore, stood to lose not more than £100 on the sale of the 10,000. It seemed to him that the volume could not be sold at a lower price.

On the motion of Dr. MACALISTER, seconded by Dr. MCVAIL, it was resolved to adopt the completed draft, subject to the correction of typographical errors, as the *Indian and Colonial Addendum to the British Pharmacopœia, 1898*, to authorise the President and the Chairman of the Committee to communicate with the Treasury on the question of the price, to arrange for its publication, and to make the proper statutory announcement by notice in the *London, Edinburgh*, and *Dublin Gazettes*.

Moved by Dr. MACALISTER, seconded by Sir DYCE DUCKWORTH, and agreed:—

That the thanks of the Council be conveyed to Dr. John Attfield, F.R.S., for his long-continued and valuable services as editor of the *British Pharmacopœia, 1898, Indian and Colonial Addendum, 1900*.

The Council then adjourned.

Saturday, December 1st.

Sir WILLIAM TURNER, President, in the chair.

THE INDIAN AND COLONIAL ADDENDUM TO THE PHARMACOPŒIA.

The Minutes of the previous proceedings having been read, the President informed the Council that on the previous day, owing to the hurry to get the report of the Pharmacopœia Committee on the *Indian and Colonial Addendum* adopted before rising, they had considered it without its having previously been received and entered on the Minutes. He suggested a motion to that effect should now be passed and incorporated in the Minutes.

Dr. MCVAIL moved, Mr. BRYANT seconded, and it was resolved:

That the report of the Pharmacopœia Committee on the *Indian and Colonial Addendum* be received and entered on the minutes.

The Minutes as amended were then adopted.

THE CHARGE OF COVERING.

(*Continued from previous column*)

The Council resumed the consideration of this case. Dr. Allen was recalled.

By Mr. VICTOR HORSLEY: He had no direct evidence that Mrs. McCue suffered from heart disease; but he thought that would account for the hæmorrhage. Knowing Mrs. Longstaff suffered from heart disease, he thought hers was a case of embolism. Since March, 1899, he had not employed Burke as an assistant in the ordinary sense of the word; he only stopped on with him after Dr. Renton retired to fill a gap.

By Sir CHRISTOPHER NIXON: He had endeavoured to conform

strictly to the regulations of the Council as regards unqualified assistants.

By Sir Dyce Duckworth: He could not deny that Burke by his services earned money for the firm but he would have to account for it. The only money he (Dr. Allen) received was for his own practice, and he did not benefit by Burke's services.

By Mr. Muir Mackenzie: He was aware of the Council's resolution with regard to covering. He had given money to Burke once or twice but it was Dr. Renton's which he had received at Shotley Bridge, and for which he had rendered accounts. It was money out of the one-fourth share of the profit belonging to Dr. Renton which he gave to Burke.

By the President: He derived no personal gain for those divisions of Dr. Renton's business over which he had no direct supervision. At the time Burke was employed he (Dr. Allen) was an assistant to Dr. Renton and in no way a junior partner.

A number of other questions having been put by various members of the Council strangers were directed to withdraw. On readmission:

The President, addressing Dr. Allen, said: The Council has considered your case with great care, and these are the conclusions which the Council has come to—That the charge which you were required to meet has been proved to the satisfaction of the Council; that the further consideration of the charge made against you has been adjourned until the May session. The Council feels it to be its duty to express its sense of the gravity of the charge, and gives you this opportunity to consider fully your position as regards the direct or indirect sheltering of unqualified practitioners.

Adjourned Disciplinary Cases.

The Council then proceeded to the further consideration of the conviction of James Alexander Graydon, L.F.P.S.Glasg. for assault adjourned from the meeting on May 24th. The facts of the case were briefly reported in the British Medical Journal of June 2nd, 1900, page 1348. Mr. Graydon attended and furnished evidence as to his conduct since last May.

Strangers were directed to withdraw, and on their readmission the President announced that the Council had considered the case, and the additional evidence produced as to his conduct during the last six months, and that the Council had therefore not seen fit to direct the Registrar to erase Mr. Graydon's name from the *Medical Register*.

The Council then proceeded to the further consideration of the charge of covering against Andrew Alexander of Blaydon-on-Tyne, L.R.C.P. and L.R.C.S.Edin., L.F.P.S.Glasg., which had been previously considered at the meetings on May 25th and May 26th, and adjourned on the latter day.

Mr. Appleby, solicitor, of Newcastle, appeared for Dr. Alexander, who, he stated, had dismissed his assistant, and had endeavoured to the fullest extent to carry out the requirements of the Council, and had furnished an affidavit as to his good character for a long period.

Replying to Mr. Victor Horsley, Dr. Alexander stated that he held the same employment, but was now doing the whole of the work himself.

Strangers were directed to withdraw; on readmission

The President, addressing Dr. Alexander, said: The Council has considered the further evidence which you have submitted; it has decided to take no further steps in your case, and the Registrar is not directed to erase your name from the *Register*.

Dental Disciplinary Case.

On the motion of Dr. MacAlister, seconded by Dr. Pettigrew, it was resolved that the standing orders be suspended until the case of Mr. Vansittart be considered.

The Dental Committee reported that William Vansittart, registered in the *Dentists' Register* as having been in practice before July 2nd, 1878, and whose address in the *Register* was 4, Westbourne Grove, London, W., had been convicted of misdemeanour—namely, the neglect of William Vansittart, a boy aged 10 years, in a manner likely to cause him unnecessary suffering or injury to health, and had been ordered to be imprisoned and kept at hard labour for three months.

Mr. Vansittart did not appear.

Strangers were directed to withdraw; on readmission,

The President said the Council had resolved, "that William Vansittart having been proved to have been convicted of a misdemeanour, the Registrar be directed to erase his name from the *Dentists' Register*."

The Council then adjourned.

[Sir William Turner, President, in the Chair.

Monday, December 3rd.

The Minutes of the proceedings on December 1st were read and approved.

The Employment of Unqualified Pharmaceutical Assistants by Medical Men.

The Council then considered the case of John Martin Thomson, of Clarkston, Airdrie, registered as M.B., Mast. Surg. 1891, Univ. Edin., who had been summoned to appear before the Council to answer the following charge, as formulated by the Council's solicitor:

That he, being a registered medical practitioner, habitually employs as assistants for the sale of drugs and poisons persons who are not qualified to acts as chemists or pharmaceutical assistants, and thereby causes such persons to commit breaches of the Pharmacy Acts.

Mr. Muir Mackenzie attended as legal assessor.

Mr. Peter Morrison, jun., S.S.C.Edin., attended on behalf of the complainants, the Pharmaceutical Society of Great Britain, together with the Assistant Secretary of that body, Mr. John Rutherford Hill.

Dr. Martin Thomson attended, together with his counsel, Mr. T. Ernest Saunt, M.R.C.S., barrister.

Mr. Muir Mackenzie answered in the affirmative a question by Mr. Brown as to whether the Council was competent to deal with the case, having regard to the provisions of the Pharmacy Acts.

Mr. Morrison, in opening the case, said that the complaint had been laid on behalf of the Pharmaceutical Society, because they felt that while they were charged with the duty of enforcing the Pharmacy Acts in Scotland, a practice had arisen which really nullified the Statute, and this case was a typical example of the offence which was being committed. On three different occasions Dr. Thomson's assistants had been convicted under the Pharmacy Act, and therefore it could not be said that he was ignorant of what the law on the subject was. This practice has been going on for some time, and the Pharmaceutical Society had thought it their duty to bring the matter to the knowledge of the Council in order that it might be put a stop to. In support of these facts he read an affidavit by Mr. Rutherford Hill, from which it appeared that it was the practice in large towns in Scotland for medical practitioners to keep a shop and carry on a general business for the sale of drugs and poisons to the public. At some of these shops it was the practice for the doctor to attend for consultation during certain hours of the day, but otherwise the business was left in charge of an assistant who was an unqualified person, and in many cases a boy or girl at a small weekly wage was put in the shop to sell the goods. One case was mentioned as an example, where a little girl was supplied by Dr. Thomson's unqualified assistant with threepennyworth of laudanum, which she took home to her mother, who drank it in the presence of the child, and died. The Pharmaceutical Society regarded this practice not only as a great danger to the public, but held that it amounted to covering: and that medical men by so acting were guilty of conduct which was improper and unbecoming to a professional man. This case was not an isolated one: the evil was widespread and far-reaching in its effects, as the fact that there had been no fewer than 46 prosecutions of unqualified assistants would prove. As the Sheriff in one case had remarked, the doctors were taking advantage of their professional status to cover unqualified assistants, who were punished, while the doctors escaped any penalty.

Mr. Rutherford Hill (examined by Mr. Morrison) said he was the Assistant Secretary of the Pharmaceutical Society, and produced the documents referred to in his affidavit, and the record of the convictions against Dr. Thomson's assistant: he was present when the convictions took place. The statements contained in the journals put in were perfectly correct.

Cross examined by Mr. Saunt: The penalty inflicted upon John Thompson in one case was 2s. 6d. and no costs, and in the second case was 10s. The third prosecution was against one McIlwraithe, also an unqualified assistant.

Re-examined by Mr. MORRISON: The second conviction against John Thompson was remitted to the Lord Advocate, who wrote a letter to the Pharmaceutical Society in regard to the matter.

By Mr. MUIR MACKENZIE: Dr. Martin Thomson was medical attendant to the Sheriff, who heard the second case, and he took up an exceedingly hostile attitude towards the prosecution. He stated that he disapproved of the Pharmacy Acts altogether, and thought the course adopted was very improper. To show his disapproval of the Act he imposed a penalty of 2s. 6d. only.

By Dr. GLOVER: There was no relationship existing between Dr. Martin Thomson and his assistant.

By Sir HECTOR CAMERON: An unqualified assistant could sell laudanum to a girl 11 years of age without committing an offence under the Act.

The conviction of the assistants was not disputed.

Dr. MARTIN THOMSON, examined by Mr. SAUNT, said he had a dispensary at 141, Grange Street, Airdrie. On November 24th he received a telegram from the Solicitor to the Council summoning him to appear before the Council. He objected to the notice being sent in that way, as it was calculated to do him harm. He had also received a notice from the Council with regard to the employment of unqualified men, and he considered he was acting within the terms of such notice. His assistants had not sold poison with his consent. He had no recollection of having told Mr. Hill that he would give the Pharmaceutical Society all the trouble he could, as was deposed to in the affidavit.

By Mr. VICTOR HORSLEY: His shop opened at 9 o'clock in the morning and closed at 7 at night; he was present from 11 to 12 and from 6 to 7. He considered his employment of John Thompson after his conviction was a legitimate employment within the terms of the Council's notice, because the custom was almost universal in the West of Scotland, and had been so for years.

By Sir DYCE DUCKWORTH: Thompson would not sell poison unless he (Dr. Thomson) was present.

By Sir WM. THOMSON: The first time he had any knowledge that he was contravening the Act was when his assistant was first prosecuted. After McIlwraithe's prosecution he dismissed him, and warned the others not to sell poison unless he (Dr. Thomson) was present. After John Thompson's second conviction, he kept him on because he could not get a properly-qualified assistant to take his place; there was considerable difficulty in getting fully-qualified chemists. John Thompson was 26 years of age, and was perfectly competent to prepare prescriptions.

Cross-examined by Mr. MORRISON: He admitted the necessity for having a qualified assistant if he wished to sell poisons. He had not a very extensive sale of poisons, and he doubted if it amounted to £3 worth in a year. He kept a poisons book, but had not got it with him. He was aware that in the circular from the General Medical Council the words "under the immediate personal supervision of registered medical practitioners" occurred.

By Dr. LITTLE: He opened the shop in Airdrie, but was in practice some time before doing so.

By the PRESIDENT: He sold across the counter himself, but the assistant told him the price of the articles.

By Dr. GLOVER: There were two chemists and five medical practitioners at Airdrie with a population of over 20,000.

By the PRESIDENT: Three medical men had opened shops at Airdrie like himself.

Professor YOUNG pointed out that the bottle which had contained the poison was labelled with the name of Dr. Martin Thomson as the seller when he was not the actual seller.

Mr. RUTHERFORD HILL, by permission of the Council, was recalled, and stated the circumstances under which he had the conversation with Dr. Martin Thomson referred to in his affidavit.

Mr. SAUNT, addressing the Council on behalf of Dr. Martin Thomson, protested against the course adopted by the Solicitor in sending notice to his client by a telegram. With regard to the charge, he submitted that whatever was done in the shop was not in contravention of the regulations laid down by the Council. No doubt the Council objected to doctors keeping shops, but that should be brought to their notice, and if they were not told that it was against the Orders of the Council they would go on doing it. He submitted it was not right to make his client a scapegoat in regard to this matter, and that he ought to be exonerated.

Mr. MORRISON, in reply, said the Pharmaceutical Society considered that an appeal to the General Medical Council was the only way possible to put a stop to the practice. The law was settled that they must proceed against the actual seller, and the prosecutions he had referred to were widely advertised in the West of Scotland but with no effect.

The PRESIDENT stated in reply to the remarks of Mr. Saunt as to the notice that was sent to his client, that it was done after mature consideration and after receiving the advice of their legal adviser, and that they were acting entirely within their right and the Standing Orders as to the mode in which this inquiry had been brought before the Council. It was also to Dr. Martin Thomson's advantage not to have the inquiry held over until May next. Strangers were directed to withdraw. On readmission:

The PRESIDENT, addressing Dr. Martin Thomson, said: "The Council has very carefully considered your case, and I am instructed to read to you the judgment which it desires me to deliver to you:—That the charge which you were required to meet has been proved to the satisfaction of the Council; that the further consideration of the charge proved against you has been adjourned until the May session. You will receive a notice to appear here at the May session, and you will have to produce evidence on that occasion that you are no longer conducting your business in the manner that you have been doing. The Council feels it to be its duty to express its sense of the gravity of the offence, and gives you this opportunity to consider fully your position."

The Council then went into *camera*, the PRESIDENT stating that there would be no more public business that day.

Tuesday, December 4th.

Sir WILLIAM TURNER, President, in the Chair.

THE Minutes of the previous day's proceedings were confirmed.

EXEMPTION FROM PARTS OF EXAMINATIONS.

Mr. VICTOR HORSLEY wished to know whether it would not be more convenient, before discussing the Report of the Education Committee, and certain communications thereon, that an answer should be given to the question which he had set down, because that also concerned the Conjoint Board. His question was:

To ask the representatives of the Conjoint Board for England whether any, and if so what, exemptions from any portion of the examinations of the Board were granted during 1897 and 1898 to candidates presenting themselves for examination by the Board.

Sir DYCE DUCKWORTH understood Mr. Horsley's question to refer to exemptions granted by the Conjoint Board in 1897 and 1898, or any other year under any circumstances, from any part of the final examinations of the Examining Board in England.

The PRESIDENT did not think the question covered more than the two years mentioned.

Mr. VICTOR HORSLEY replied that that was so, and it was not only in relation to the final examinations, but any portion of the examination.

Sir DYCE DUCKWORTH then read the following answer to the question:

(1) No exemptions were granted in 1897 and 1898, or in any other year under any circumstances from any part of the Final Examination of the Examining Board in England. (2) Exemptions were granted in those years from the First and Second Examinations of the Board to students of recognised universities only. (3) No exemptions from the earlier examinations of the Board were allowed to candidates who have passed at any examinations except those of recognised universities. (4) As an example of the exemptions allowed, it may be stated that candidates who had passed the Intermediate M.B. Examination of the University of London, or the First M.B. Examination of the University of Oxford, or the Second M.B. Examination of the University of Cambridge were exempted from the first and second examinations of the Board, and were admitted direct to the Final Examination on producing the certificates required by the regulations. This applies to Scotch and Irish universities, and to certain Indian, Colonial, and foreign universities recognised for the purpose. (5) It is impossible at this short notice to give exactly the number of candidates during the years 1897 and 1898 who were granted exemption from the

First and Second Examinations, but 100 students a year would be about the number. (6) If this question has any connection with the returns of exceptional cases sent to the General Medical Council annually, it is only necessary to draw attention to the fact that the return relates to exceptional cases "in regard to length of course of professional study," and not in regard to exemptions from examination.

Mr. Victor Horsley was sorry to say that the answer did not satisfy him at all.

The President pointed out that the position of things at that moment was that a question had been asked and had been answered.

Mr. Victor Horsley replied that he was going to conclude with a motion to the effect that the representative of the Conjoint Board for England be requested to furnish to the Council in writing the individual cases of exemption from any portion of the examinations of the Board granted during 1897 and 1898.

The President thought it would be better that it should come from the Conjoint Board itself through its official officer.

Mr. Victor Horsley agreed.

Sir Christopher Nixon seconded the motion.

Sir Dyce Duckworth thought it would be invidious to confine it to the body mentioned in the motion, and suggested it should refer to all examining bodies.

Mr. George Brown suggested that the motion should extend to 1899.

Dr. Reid inquired what was meant by the word "exemption."

Mr. Victor Horsley thought the word was generally understood to mean that a candidate called upon by an authority to pass a certain examination who produced certain certificates would therefore be exempted from passing either the examination *in toto* or a portion of it.

Sir Hugh Beevor thought this was a measure which would be better dealt with by the Examination Committee, and that it should report to the Council after examining into the facts.

The President replied that the Council must pass the motion first, and then they could say what should be done.

After some discussion,

The President inquired if there was any amendment to the motion, and, there being no reply, he put the motion as follows:

That the medical authorities who grant exemptions in any part of the professional examinations which they hold be requested to furnish the Council with a detailed list of the exemptions granted by them in the examinations held during 1897, 1898, and 1899.

The motion was carried.

Sir Dyce Duckworth stated that in passing the resolution the Council had thrown an enormous amount of work and labour on a number of officials, and it would be a laborious piece of work for the Examination Committee. He only hoped that the results would be commensurate with the amount of labour entailed.

The Royal Colleges in England: The First Year.

The debate, adjourned from May 31st, 1900 (on the recommendations in the report of the Education Committee on certain communications from the Royal College of Physicians of London and the Royal College of Surgeons of England), was then proceeded with.

The President pointed out that when this measure was last before the Council, and was adjourned, he was requested to obtain the opinion of counsel on the legal point in issue between the Royal Colleges and the Council. That opinion had been obtained and was before the members, and, with the consent of the President of the Royal College of Physicians, they also had a print of the case which was submitted to the counsel for the Royal College of Physicians and the opinion given by that counsel.

Mr. Bryant had no intention or wish to enter very fully into the important questions between the Royal Colleges and the Council, but he had a great wish to make the measure as clear as possible to the members of the Council, and under those circumstances he had drawn up a memorandum which had been printed and circulated. He thought it put in a short way the points in dispute, and he wished to know if it was necessary to read it.

The President thought the better course would be to read it, and it could be taken as his (Mr. Bryant's) speech.

Mr. Bryant then read the following memorandum:

"Moved by the desire to make the position of the London Royal Colleges, in the question before us, as clear as possible, I have drawn up an epitome of the reasons which have influenced them in their action, as a supplement to the full statement contained in the Memorandum appended to the report of their Committee of Management, printed on page 425 of vol. xxxvii of our Minutes for this year. The English Colleges were desirous of making Chemistry, Physics, and Biology subjects of study before the medical student began his professional career; under the conviction that it would be desirable to have these preliminary scientific subjects studied and got rid of by an examination test before the special medical curriculum was commenced.

"With this object the Colleges accepted the teaching of these subjects at such schools and institutions—other than medical schools—as in their judgment afforded a high standard of efficiency; and to test this standard the schools were visited by representatives of the Colleges, with the exception of those which had been approved by the authorities at South Kensington, and more recently most of those schools have been, and all will soon have been visited.

"This Council, when the Colleges made this arrangement, sanctioned their procedure, as testified by the following Minute of the Council, to be found in vol. xxxi, p. 162;

"'Moved by Dr. Tuke, seconded by Dr. Bruce (December 4th, 1894):

"'A student who has previous to registration attended a course or courses of study in one or all of the subjects, Physics, Chemistry, and Biology in any University, school of medicine, or teaching institution recognised by any of the licensing bodies, may without attendance be admitted to examination in these subjects, provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.'

"The Colleges at that period in 1894 hoped that the students of these subjects would qualify in them before they commenced their five years' curriculum, and that the period of study of these subjects would be included in the work of the year before registration, and they did so under the opinion that the scheme, as sanctioned by this Council, would be a step towards the realisation of the wish that the subjects of study would soon form part of a preliminary scientific examination, which the medical student would in the near future be called upon to pass before he entered upon his more special professional work.

"In this hope the Colleges have been disappointed, for the sister Colleges have not shown any disposition to follow their example, and the students who adopted the scheme in London soon discovered that the six or nine months which were taken up by the study of these subjects before registration gave them no advantage over their fellow students who took these subjects up as part of their five years' curriculum, as they had still five years of professional study to fill up.

"Under these circumstances the London Colleges were unable to maintain their advanced position, and adopted, although with regret, the ways of the other colleges and universities which count as part of the five years' curriculum the time spent in the acquisition of these subjects when taken either at a medical school or at a recognised teaching institution.

"But in so doing the Colleges continue to recognise the teaching of the accepted schools and institutions which they had previously recognised, and at the present time deduct only from the full five years' medical curriculum the six or nine months which may have been spent in the acquisition of the required information, which has, moreover, to be tested by an examination. In fact, the London Royal Colleges in this matter place themselves alongside the London University, new or old, and are satisfied—if the examination test proves satisfactory—with the teaching which preceded it. And for adopting this practice some members of this Council have expressed their strongest disapprobation of our action, and assert that the London Colleges, by their change of position, have practically nullified the regulation requiring a fifth year of medical study, and have reduced the curriculum to the old four years' course. Whereas, under the scheme of the Colleges as now carried out, however long a period a student might take in passing the examination in these preliminary subjects—whether it be one,

two, or more years—he is still required to devote four full years to his special professional studies; whilst in following the scheme this Council is now urging us to maintain, where—as in a large number of cases—the Preliminary Science Examination is not completed in one year, the more special professional subjects are necessarily crowded into the remaining period of the curriculum, which thus becomes less than four years, and at times seriously so.

"With respect to the refusal of the London Colleges to give up to this Council the approval of the list of institutions which the Colleges may recognise for the purposes of study, I can only adduce two reasons: the first being that the Colleges are authorised, if not bound, by their charters to bear the responsibility, and consequently cannot evade it; and secondly, that if we handed over to this Council the power of selection, we should be imposing duties upon the Council which it could not possibly satisfactorily carry out, and which do not fall within its powers.

"Under these circumstances it seems a pity that this Council should have entered upon a course of action which may seem to interfere with the rights and privileges of the Royal Colleges, and at the same time involve this Council in duties which they have no power to undertake."

In reply to Sir JOHN TUKE, Mr. BRYANT said that the memorandum he had read had not been approved by the Royal Colleges.

Sir DYCE DUCKWORTH stated that the Royal College of Physicians of London had no further information to bring before the General Medical Council. The curriculum of the College remained the same as it did last May, and there was no change whatever to report.

Dr. MACALISTER reminded the Council that what was adjourned last May was the consideration of this recommendation:

That the report from the Education Committee, with certain communications from the Royal Colleges of Physicians and Surgeons of England, be received, and entered as an Appendix in the Minutes. Moved by Dr. MacAlister, seconded by Dr. Payne, That Recommendation 1 in the report of the Education Committee be approved—namely: (1) On the first question the Committee maintain the opinion they have repeatedly expressed, that ordinary school education should be completed before the five years' medical curriculum is entered upon, and they believe that the regulation in question is the simplest practical method of ensuring this. They therefore recommend that the Council should continue to adhere to it.

The regulation there referred to, and which came into force on January 1st, 1900, was:

No medical student shall be registered until he passes a preliminary examination as required by the General Medical Council, and has produced evidence that he has commenced medical study at a university or school of medicine, or at a scientific institution recognised by one of the licensing bodies, and approved by the Council.

In order that the Council should have the whole of the documents bearing on the subject, Dr. MACALISTER moved, Mr. BRYANT seconded, and it was resolved:

That the points containing the case with opinion from the Royal Colleges, and the case with opinion from the General Medical Council, be received and entered on the minutes.

The PRESIDENT, replying to Mr. GEORGE BROWN, said the Royal Colleges had no objection to the opinion of Mr. Cripps being read, as they desired the fullest publicity in the matter, and he thought Dr. Muir Mackenzie's opinion should also be read.

THE CASE OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

Case for the Opinion of Counsel.

Counsel has herewith:—

Print of Charter Acts and By-laws of the Royal College of Physicians, and a Translation of the Charter Print of Examining Board Regulations, with List of Medical Schools.

Print of Resolutions and Print of Regulations of the General Medical Council.

The College of Physicians are, as counsel is aware, an ancient Corporation, and as regards the Medical Acts they are entitled to hold qualifying examinations and to confer diplomas on their Members and Licentiates who have passed such examinations [conveying ?]the right of registration under the Medical Acts.

Under the provisions of Section XIX of the Medical Acts, 1858, and Section III of the Medical Act, 1886, the College of Physicians have acted conjointly with the College of Surgeons in holding qualifying examinations and granting a primary qualification to practise medicine, surgery, and midwifery, such primary qualifications consisting of the Licence of the College of Physicians, and the Diploma of Membership of the College of Surgeons. But inasmuch as the Conjoint Scheme as constituted under the Medical Acts is a temporary working arrangement of a purely voluntary character on the part of the two Colleges concerned, it is apprehended that the original inherent powers and privileges of the respective College are in no way affected or prejudiced thereby.

A print of the regulations of the Examining Board under the Conjoint Scheme is sent herewith. It will be seen that by the first regulation a candidate is required to complete five years of professional study in order to obtain the double diploma. It is shown by a note to the first regulation that the first of the five years may be spent at an institution (not being a medical school) which is recognised by the Examining Board for instruction in Physics, Chemistry, and Biology, or six months only may be so spent if biology is excluded. Appended to the print of the regulations is a list of the institutions which have been recognised by the Examining Board for the purposes of the Board's first regulation.

The General Medical Council is a body having well-defined statutory duties under the Medical Acts for the purpose of registration of duly qualified medical practitioners. The Council have at different times attempted to interfere with the procedure of the Colleges in the exercise of their powers in granting diplomas, and more particularly on a recent occasion have claimed an authority to control the Royal Colleges in their selection of teaching institutions recognised by them for courses of instruction and study which they require every candidate for their diplomas to pursue before his admission to their several examinations.

The Colleges believe that the General Medical Council have no authority under the Medical Acts, or otherwise to interfere with them in the discharge of their duty in the way indicated, and have resisted such interference.

Under these circumstances the College of Physicians are desirous of obtaining the opinion of their standing counsel, not only on the particular circumstances that have arisen, but also on the general question whether the General Medical Council have authority to lay down rules binding the Colleges as qualifying bodies, and interfering with their discretion in the discharge of their duties.

The particular question upon which the issue has been recently raised between the General Medical Council and the Royal Colleges arose as follows: In the year 1898 a letter was sent by the Royal College of Surgeons of Ireland to the General Medical Council protesting, for reasons best known to themselves, against the recognition by the English Colleges (as represented by their Examining Board) of grammar schools, science schools, and technical schools (where time spent in receiving instruction in Physics, Chemistry, and Biology is allowed to count towards the five years' curriculum under the regulations of the Examining Board), unless such institutions be first approved by the General Medical Council on evidence supplied to it.

This letter was referred by the General Medical Council to their Education Committee. The Committee reported, and on June 7th, 1899, the report was considered by the Council, and the following recommendation of the Committee was adopted:

"That the regulations in regard to registration [of students] from and after January 1st, 1900, be amended as follows:

"No medical student shall be registered until he has passed a preliminary examination as required by the General Medical Council, and has produced evidence that he has commenced medical study at a university or school of medicine, or at a scientific institution recognised by one of the licensing bodies and approved by the Council."

It was further resolved that the form for the registration of students be altered in conformity with this resolution, and that the amended regulations be communicated to the qualifying bodies. The Registrar of the General Medical Council, by a letter dated June 19th, 1899, communicated with the Royal Colleges accordingly.

Upon this resolution it may in the first place be noted that the General Medical Council have no status or authority to visit or inspect schools or colleges, or require information from them. It is difficult, therefore, to see how they can acquire sufficient first-hand knowledge to enable them properly to carry out their self imposed duty.

Next it may be observed that the General Medical Council are here endeavouring to coerce the Royal Colleges in this matter by a threat to refuse registration to students from any of the schools recognised by the Colleges, of which the Council may please not to approve. In this the Council are ignoring (no doubt wittingly) the fact that any control by the Council of the preliminary examination and registration of students has no statutory authority or sanction, and has only been acquiesced in by the qualifying bodies as a convenient arrangement which can be repudiated by them if they see occasion. There seems to be no provision whatever in the Medical Acts for registration of medical students, either by the General Medical Council or any other body. Probably many people have forgotten that the College of Surgeons continued its independent preliminary examination and registration of students down to 1881. Consequently the attempt of the Council to make use of such tacit arrangement to force the Colleges to comply with a regulation which, as will presently appear, the Council have no authority to make, seems a highly improper one.

The Colleges under the licensing authority conferred by their charters and statutes, and the obligations attaching thereto, have up to the present time always determined for themselves from what sources they would receive evidence of instruction for the purposes of their examinations and the granting of diplomas. They therefore felt it incumbent on them not to let this latest attempt of the General Medical Council to encroach on the authority and responsibility of the qualifying bodies pass without a serious disclaimer, and accordingly they replied to the General Medical Council in November, 1899, as follows:

"The Royal College of Physicians of London and the Royal College of Surgeons of England fail to recognise any authority under the Medical Acts in virtue of which the General Medical Council may impose the conditions formulated in the regulation in regard to the registration of medical students referred to in the letter from their Registrar.

"They decline to recognise the 'requirement' that scientific institutions where medical study is commenced should be approved by the General Medical Council."

This reply has been met by a rejoinder (embodied in a letter from Sir William Turner, the President of the General Medical Council, dated in November, 1899) stating that the Council have resolved to adhere to their resolution, and inviting the Colleges to reconsider their position "in view of important bearing on the maintenance of the standard of study and examinations in the country at large."

Upon this rejoinder it may be observed that the Colleges would regard the abandonment of their principal position as a retrograde movement not at all in the interests of medical education. But be that as it may, the advice of the General Medical Council is scarcely likely to commend itself to the consideration of the Colleges when appended to what the latter regard as a renewed challenge, and coupled with the assumption of an authority which the Colleges believe to be wholly illegal. It might be suggested that, after all, the submission of a list of institutions for the approval of the Council is a very small matter not worth contesting, or which might be capable of amicable arrangement. But however small the occasion, a most important principle is at stake, namely the defence of the authority of the qualifying bodies against these repeated attempts at encroachment by the General Medical Council, of which the present one is in a new direction. The Colleges are always ready to consider recommendations from the Council, but not requirements.

It is true that should the General Medical Council be so unwise as to carry out their threat and refuse registration to any student commencing his studies at one of the schools recognised by the Royal Colleges, the latter would be able to follow an alternative course and accomplish their object by admitting such students without registration to their examinations and diplomas, the Council having no power to refuse to register diplomas; but this would be inconvenient to the Colleges, because it would involve the setting aside of the established arrangement for registration of students, and might be troublesome to the student (for instance in the case of his being a candidate for other qualifications).

Also it is felt by the Royal Colleges that the General Medical Council have no right to obstruct them in the lawful discharge of their duties by refusing registration to students. And the College of Physicians, on their part, wish to be advised whether they have any remedy at law by mandamus or otherwise against such obstruction, supposing that they be willing to pursue it.

After the preliminary remarks it is desirable that the pretensions of the General Medical Council to supersede in various ways the authority of the qualifying bodies, and to trespass on their sphere of duty, should now be examined in the light of the Medical Acts, from which alone the Council derive whatever power they possess. Proceeding, then, to test these pretensions in this way, it may be pointed out that the General Medical Council were constituted by the Medical Act of 1858, which conferred on them administrative powers for carrying out the provisions of the Act, the purpose of which was as stated in the preamble, "that persons requiring medical aid should be able to distinguish qualified from unqualified practitioners." The most important of these provisions may be shortly summarised as follows:

(1) The instituting and keeping a public register of persons holding qualifications to practise medicine or surgery granted by bodies having the requisite statutory authority, and named in a schedule to the Act (Sections XIV to XIX).

(2) Associated with this is the power of removing from the *Register* the name of any person convicted of felony or misdemeanour, or guilty of "infamous conduct in a professional respect," of which last for registration purposes only the Council are the judges. And inasmuch as certain legal disabilities in the exercise of their profession are imposed by the Act on unregistered practitioners, this power becomes a penal one, and is administered in judicial form (see Sections XXIX, XXXVI, and XXXVII).

(3) Closely connected with the duty of registering statutory qualifications is the further one of obtaining from the qualifying bodies information respecting the conditions under which their respective qualifications are granted, particularly the course of study and examinations to be gone through, and the yet more important duty of visiting and inspecting the qualifying examinations.

If from information so obtained the General Medical Council should be of opinion that these conditions "are not such as to secure the possession, by persons obtaining such qualifications, of the requisite knowledge and skill for the efficient practice of their profession," the General Medical Council are authorised to represent this opinion to the Privy Council, and there the duty of the General Medical Council ends; it rests exclusively with the Privy Council to take further action if they think fit (Sections XVIII, XX, and XXI).

These are the leading provisions of the Act, but as regards the last-named provision (3), which especially concerns the subject matter of this case, it is desirable that counsel should have before him the actual words of the Acts of 1858 and 1886, by which the powers of the General Medical Council in this respect are defined and limited. These are as follows:

Section XVIII of the Act of 1858 provides that the qualifying bodies, when required, should furnish the General Medical Council

> "With such information as they may require as to the courses of study and examinations to be gone through in order to obtain the respective qualifications . . . and the ages at which such courses . . . are required to be gone through and such qualifications conferred, and generally as to the requisites for obtaining such qualifications, and any member ..... of the Council or any person ..... deputed for this purpose by such Council ..... may ..... be present at any such examinations."

Section XX provides that

> "In case it appear to the General Medical Council that the course of study and examinations to be gone through in order to obtain any such qualification ..... are not such as to secure the possession by persons obtaining such qualification of the requisite knowledge and skill for the efficient practice of their profession, it shall be lawful for such Council to represent the same to [the] ..... Privy Council."

And Subsection XXI provides that

> "It shall be lawful for the Privy Council upon any such representation as aforesaid if it see fit to order, that any such qualification ..... shall not confer any right to be registered under the Act."

Provision follows for revoking such order on satisfactory amendment of its procedure by the qualifying body.

Turning now to the latest legislation on this subject, namely, the amending Medical Act of 1886, important amendments will be found bearing on these provisions. A title to registration is made to depend by this Act on the candidate having passed a "qualifying examination" conducted by one of the qualifying bodies, or a combination of them, and such examination is defined for the first time to be an examination limited to the subjects of medicine, surgery, and midwifery, corresponding in fact with the final or strictly professional examination of the universities and corporations. The duty of the Council to inspect and report on these examinations is more clearly defined and the directions for carrying it out more explicit.

These amendments indicate a notable distinction drawn between the "qualifying examination" and any earlier ones, and between the strictly professional subjects of medicine, surgery, and midwifery, and the preliminary and scientific ones which lead up to them; and at the same time they more clearly define the circumstances which would justify such a representation to the Privy Council on the part of the General Medical Council as is referred to above.

The important clauses are the following:

> "On and after the appointed day a person shall not be registered under the Medical Acts in respect of any qualifications referred to in any of these Acts unless he has passed such qualifying examination in medicine, surgery, and midwifery, as is in this Act mentioned (Section II of the Medical Act, 1886).
>
> "A qualifying examination shall be an examination in medicine, surgery, and midwifery, held for the purpose of granting a diploma or diplomas conferring the right of registration under the Medical Acts by any of the following bodies, namely....." (Section III, Subsection 1).
>
> "The standard of proficiency required from candidates at the qualifying examinations shall be such as sufficiently to guarantee possession of the knowledge and skill requisite for the efficient practice of medicine, surgery, and midwifery, and it shall be the duty of the General Medical Council to secure the maintenance of such standard of efficiency as aforesaid; and for that purpose such number of inspectors as may be determined by the General Medical Council shall be appointed by the General Medical Council, and shall attend as the General Medical Council may direct, at all or any of the qualifying examinations held by any of the bodies aforesaid" (Section III, subsection 2).

Section III, subsection 3, defined the duties of inspectors in attending and reporting to the General Medical Council on such examinations, and provided that copies of such reports should be sent to the examining bodies for their observations, and afterwards with these observations appended to the Privy Council.

Section IV, subsection 1, provided that:

> "If at any time it appear to the General Medical Council that the standard of proficiency in medicine, surgery, and midwifery, or in any of those subjects, or any branch thereof ..... is insufficient, the General Medical Council shall make a representation to the Privy Council, and the Privy Council, if they think fit after considering such representation, and also any objections thereto made by any body or bodies to which such representation relates, may, by order, declare that the examinations of any such body or bodies shall not be deemed qualifying examinations for the purpose of registration."

With regard to the words "or any branch thereof," the reference is obviously to particular departments of medicine, surgery, and midwifery, such as public health, forensic and psychological medicine, ophthalmic and aural surgery, and diseases peculiar to women or gynæcology.

From the foregoing survey it seems clear that the powers of the General Medical Council as regards the qualifying bodies, and the manner in which they discharge their statutory duty of granting diplomas, are simply administrative under the Acts, they comprise a power of scrutiny, and in certain events which are precisely indicated by the terms of the sections of making a representation to the Privy Council in the prescribed terms (see Section XX of the Act of 1858, and Section III, Subsection 2, and Section IV, Subsection 1, of the Act of 1886), on which representation the Privy Council may take action or not as they see fit.

On the other hand, it appears equally clear that no constructive or legislative powers, so to say, are conferred on the Council by the Acts: no power that is to enact and issue rules, regulations, or "requirements" which can bind or control the qualifying bodies as to the manner in which they are to discharge their duties, or to lay down a curriculum of study to which all must conform; or prescribe the number and character of the examinations to be passed, or to schedule the teaching institutions or hospitals from which the qualifying bodies may or may not receive evidence of general scientific or professional education. There seems no vestige of authority given to the General Medical Council by the Acts to interfere in any such way with the qualifying bodies, or to do any of the things named, or many others which they see fit to do.

Counsel will doubtless refer to the full texts of the Acts of Parliament bearing on the questions suggested by this case before giving his considered opinion thereon.

The control of all such matters as those just referred to rests (as the College of Physicians contend) with the qualifying bodies [illegible] ably connected with the exercise of the statutory [illegible] diplomas, for which each of such bodies is responsible [illegible] always been exercised by the qualifying bodies through [illegible] lations of their own enacting, and no Act has, it is [illegible] passed relieving them of their responsibility in these [illegible] ferring their responsibility to the General Medical Council.

It is submitted, therefore, on behalf of the College of Physicians, that the recent action of the General Medical Council in making a "regulation" that the institutions (other than [illegible] fying bodies accept evidence of instruction [illegible] be approved by the Council, is entirely outside the Council's powers, that the attempt to enforce it by refusing registration to students of those schools or institutions of which it may not approve is therefore unjustifiable.

It is further submitted that the whole of the so-called "[illegible] and "requirements" which the Council have erected on the [illegible] less assumed [illegible] by the [illegible] The [illegible] resolution [illegible] herewith, shows the systematic way in which the Council have assumed to themselves, and elaborated a jurisdiction for which the statutory origin and basis of the Council appears to afford no foundation.

Counsel will therefore please advise the Royal College of Physicians

Questions.	*Answers of Counsel.*
I. Generally, whether the General Medical Council have any and what authority to lay down rules binding the Royal Colleges as qualifying bodies, constituting the Examining Board and interfering with the exercise of their discretion in the discharge of their duties?	I. The General Medical Council have no authority to lay down rules binding the Royal Colleges, as the qualifying bodies constituting the Examining Board, nor can they interfere with the exercise of their discretion in the discharge of their duties.
II. And in particular whether the General Medical Council have any or what authority to control the Royal Colleges in their selection of teaching institutions recognised by them for courses of instruction and study before admission to examination?	II. It is clear that the General Medical Council have no control or authority in the selection of teaching institutions.
III. Whether the General Medical Council have any statutory or other authority for their regulations as to the registration of students and resolutions thereto (of which a print is sent herewith), or can such "regulations" and "resolutions," or any other regulations or resolutions be received by the Royal Colleges only for what they are worth as recommendations?	III. The registration of students is a voluntary Registration Council Act for the convenience of all parties concerned. The Royal Colleges can, by altering their own examining regulations, disregard entirely the registration of students. If the General Medical Council seek to introduce qualifications for registration of students, including matters quite outside their jurisdiction, it may be necessary for the Royal Colleges to alter their own examining regulations; but if the General Medical Council merely desire to carry out their own duties, and there is a difference of opinion between the Council and the Royal Colleges, this difference could be brought for decision before the Courts.
IV. If the General Medical Council have no such authority as is referred to in questions 1, 2, or 3, then what remedy have the Royal Colleges against the General Medical Council, by mandamus or otherwise, for obstructing the Colleges in the lawful discharge of their duties by refusing registration of students?	IV. It is not a case for mandamus, but I think an action could be brought on the Chancery side asking for a declaration that the resolution which has been communicated, and to which the Royal Colleges object, is beyond the powers of the Council, and an infringement of the rights of the Royal Colleges.
V. Generally in the matter.	V. I should advise a meeting between representatives of the Council and the Royal Colleges, in order to agree, or in the event of agreement not being possible, to act in concert in order to obtain the opinion of the Court in the least expensive and most satisfactory way.
January 23rd, 1900.	(Signed) C. A. CRIPPS.

THE CASE FOR THE GENERAL MEDICAL COUNCIL.

Case for the Opinion of Counsel.

Counsel is aware that the Medical Act of 1858, which establishes the General Medical Council, and provides for the keeping of a register of qualified practitioners, also gives to the Council certain powers with regard to the course of study and examinations necessary to obtain the qualifications mentioned in Schedule A of the Act. Section XVIII authorises the Council to require the several Colleges and bodies mentioned in Schedule A to furnish the Council with such information as they may require as to the courses of study and examinations to be gone through in order to obtain the respective qualifications mentioned in Schedule A to the Act, and the ages at which such courses of study and examination are required to be gone through, and such qualifications are conferred, and generally as to the requisites for obtaining such qualifications, and under Section XX, if the General Medical Council is not satisfied that the course of study and examinations are such as to secure the possession by the persons obtaining such qualification of the requisite knowledge and skill for the efficient practice of their profession, the Council may represent this to the Privy Council, who may suspend the right of registration in respect of qualifications granted by such body.

The Act of 1886 provides that after an appointed day no person shall be registered under the Medical Acts in respect of any qualification referred to in those Acts unless he has passed such qualifying examination in medicine, surgery, and midwifery as is mentioned in that Act, and after specifying what bodies may hold these qualifying examinations the Act provides (Section III, Sub-section II) "that the standard of proficiency required from candidates at the said qualifying examinations shall be such as sufficiently to guarantee the possesssion of the knowledge and skill requisite for the efficient practice of medicine, surgery, and midwifery, and it shall be the duty of the General Medical Council to secure the maintenance of such standard of proficiency aforesaid." For this purpose the General Medical Council may appoint inspectors who may attend the examinations and report to the Council, and the Council, if not satisfied with the character of the examinations, may, as in the previous Act, make representations to the Privy Council, who may withdraw from any medical authority the right to hold the qualifying examinations.

It has from time to time been the practice of the General Medical Council to pass resolutions on the subject of professional education, and transmit these to the various examining bodies. For instance, on the 6th of June, 1890, a resolution was adopted: "That with regard to the course of study and examinations which persons desiring to qualify for the medical profession shall go through in order that they may become possessed of the requisite knowledge and skill for the efficient practice of the profession, the Council now resolves that, in its opinion, the following conditions ought to be enforced without exception on all who commence their medical studies at any time after January 1st, 1892. First: That (with certain exceptions specified) the period of professional study between the date of registration as a medical study and the date of final examination for any diploma which entitled its bearer to be registered under the Medical Acts must be a period of *bonâ-fide* study during not less than five years. Secondly That in every course of professional study and examinations the following subjects must be contained." (Here follows a list of fifteen subjects, with a note that it is to be understood that the Council offers no opinion as to the manner in which the subjects should be combined or distributed for purposes of teaching or examination.) "Thirdly: That at successive stated times during the first four years of the course of study all students must pass such intermediate examinations as will test their proficiency in the successive earlier branches of medical education, and while tending to promote a due sequence in the medical studies will also tend to lighten the final examination of matters which can properly be spared from it."

It was also resolved: "That the resolutions of the General Medical Council in regard to preliminary examination in general education required to be passed previous to the commencement of professional study, adopted on June 5th, 1890, be transmitted to the various examining bodies whose examinations are at present received as fulfilling the conditions of the Council with the intimation that these resolutions will come into operation on January 1st, 1892. Further, that the resolutions of the Council on professional education and examination adopted on June 5th and 6th, 1890, be transmitted to the several medical authorities."

At a meeting of the Council held on May 29th, 1893, it was resolved: "That the Council confirm its requirements in regard to professional education as set forth in the following resolutions." Then a number of resolutions were adopted in the following form:

"That Requirement 1 be as follows," etc.

"That Requirement 2 be as follows," etc.

Another resolution adopted at the same meeting was: "That the following recommendations of the General Medical Council in regard to professional education, as now codified by the Education Committee, be confirmed." Then follow a number of provisions termed "regulations."

These may be taken by counsel as illustrations of the line which the Council has from time to time taken with the view of regulating the course of study and examinations for admission to the profession. Having, under the Medical Act of 1858, power to require information as to the courses of study and examinations at the various qualifying bodies, and to pass an opinion upon the information thus obtained, and to make representations to the Privy Council thereon, the practice has grown up, and has been found convenient, of passing resolutions sometimes called opinions, sometimes recommendations, sometimes resolutions, sometimes regulations, and sometimes requirements, and these have been forwarded to the bodies whose course of study and examination entitles them to grant the qualifications, and have, as a rule, been accepted.

Another point which is referred to in the first of the above resolutions should here be mentioned, that is, the registration of medical students. The Acts say nothing of any register except the *Medical Register*, but ever since the year 1863 a register of medical students has been kept by the Council. This was done on the report of a subcommittee appointed in 1864, and has been in operation ever since, and persons have not, as a general rule, been admitted by the licensing bodies to their examinations if their names do not appear on the register. There have, however, been exceptions: for instance, the authorities of Trinity College, Dublin, disapproved of the curriculum laid down by the General Medical Council for preliminary education, and declined for a time to register their students at all, and very few registrations of their students by the General Medical Council took place from 1886 to 1894. The registrations were then resumed. During this period Trinity College admitted their unregistered students to their own professional examinations. In 1894 the question was settled, and a regulation to meet exceptional cases was passed, namely: "All applications for special exceptions to the regulations of the Council in regard to preliminary examinations in general education shall be addressed to the Registrar of the General Medical Council, who shall submit them to a committee of six of its members appointed by the Council."

A question has recently arisen between the Council and the Royal Colleges of Physicians and Surgeons of London on account of the fact that the Royal Colleges have recognised certain secondary and other schools as institutions at which instruction in Chemistry, Biology, and Physics might be obtained and the first of the five years of medical study might be spent. For the purposes of this case (which is to determine the legal rights of the parties) it will be sufficient to state the point in a very simple form The General Medical Council (being at issue with the Royal Colleges on the advisability of this arrangement) made a regulation to the following effect: "No medical student shall be registered until he has passed the Preliminary Examination, as required by the General Medical Council, and has produced evidence that he has commenced medical study at a university or school of medicine, or at a scientific institution recognised by one of the licensing bodies, and approved by the Council." The Royal Colleges have taken exception to this regulation. They contend that the General Medical Council has well-defined statutory duties under the Medical Acts, and that they have no authority to interfere with the Royal Colleges in the discharge of their duties as qualifying bodies, and they question the authority of the General Medical Council to lay down rules binding the Colleges as qualifying bodies, and interfering with their discretion in the discharge of their duties.

The legal question involved seems a comparatively simple one. It would be difficult to contend that the recommendations or regulations made by the General Medical Council with regard to medical education are in themselves binding on the various qualifying bodies. If these qualifying bodies decline to adopt these regulations the Act of 1858 appears to point out the course which the General Medical Council can take, but if a representation to the Privy Council is the only remedy, it would seem that the General Medical Council must be prepared to satisfy the Privy Council that the refusal of the qualifying body to accept the Council's regulations, and its adoption of other regulations with regard to the course of study or examinations, which in the opinion of the General Medical Council are less satisfactory, would make the course of study or examinations to be gone through such as would not secure the possession by persons ob-

taining the licence of the qualifying body of the requisite skill and knowledge for the efficient practice of their profession.

The further question, however, arises whether the refusal of the General Medical Council to enter on their register of students persons who have not complied with their regulations renders them liable to any proceedings at the suit of the qualifying bodies aggrieved. There is no statutory duty imposed upon the Council of keeping such a register; it was started as a convenience, and was assented to by the licensing bodies. It would appear to be perfectly open to the qualifying bodies to admit to their course of study and examination students who are not so registered, and when the course of study and examinations have been gone through, and the candidate has obtained a qualifying diploma, he is entitled, under Section XV of the Medical Act, 1858, to require that his name shall be entered upon the *Medical Register*.

It does not seem material for the purpose of this case to deal more at length with the precise point which has given rise to the difference between the Council and the Royal Colleges, or to enter in any way into the merits of the question. Let it be assumed for the purposes of this case that the regulation of the General Medical Council is very desirable, and that the course taken by the Royal Colleges is, in the interests of medical education, undesirable. The question that counsel has to consider is in what way, if any, the Council can enforce their regulation on a qualifying body which declines to be bound by it, and the further question arises whether the qualifying body has any legal remedy against the Council for declining to register students who have not complied with the regulations laid down by the Council.

The question has already received the consideration of the Royal Colleges, and a copy of a case submitted by them to Mr. Cripps, Q.C., and of his opinion, is sent herewith.

1, New Court, Lincoln's Inn,
August 15th, 1900.

THE GENERAL MEDICAL COUNCIL AND THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.

Opinion.

I HAVE fully and carefully considered the facts stated in the case, and the questions in which my opinion is desired. I have also very carefully considered the effect of the provisions of the Medical Acts of 1858 and 1886 which apply to those questions, of which the most important are Sections XVIII, XIX, XX, and XXI of the Act of 1858 and Sections III and IV of the Act of 1886. I have also referred to and considered the resolutions of the General Medical Council, the terms of which are set out at pages 74 and 161 of the Council's Minutes for 1899, which are (I assume) those, or amongst those, to which the Royal Colleges object.

My opinion on the questions on which I have been asked to advise is as follows:

1. The General Medical Council is not, in passing resolutions embodying the opinion and recommendations of the Council with regard to the course of professional study which the licensing bodies ought to prescribe for their students, and communicating those resolutions to the licensing bodies, infringing any rights of the licensing bodies or acting in excess of the Council's powers.

2. The General Medical Council is acting within its powers and rights in prescribing a regulation to the effect that no medical student shall be registered in the *Students' Register* until he has passed the Preliminary Examination as required by the Council, and has produced evidence that he has commenced medical study at a university or school of medicine or at a scientific institution recognised by one of the Licensing Bodies and approved by the Council. The contention of the Royal Colleges that, by prescribing this regulation as one which must be complied with by students as a condition of being registered in the *Students' Register*, the General Medical Council is infringing the rights of the Royal Colleges or acting in excess of its powers, cannot, in my opinion, be maintained.

3. The refusal of the General Medical Council to register in the *Students' Register* students who do not comply with the Council's regulations as specified in the Council's resolutions, will not give, either to the Licensing Bodies to which the students belong, or to the individual students, any right to institute or maintain any legal proceedings against the Council.

4. The General Medical Council has no power to compel the licensing bodies to comply with the requirements and recommendations contained in the resolutions of the Council with reference to the courses of preliminary study to be gone through by students. If the licensing bodies decline to be bound by or adopt the recommendations of the Council there is no form of proceeding by which the licensing bodies can be ordered or compelled to adopt the Council's recommendations. The only power which the General Medical Council can exercise in such a case is that of making a representation to the Privy Council. But the General Medical Council can only make a representation to the Privy Council if it appears to the General Medical Council, on the information which it has obtained as to the courses of study and examinations to be gone through in order to obtain the diplomas of a licensing body, by means of the inquiries which the Council can make under Section XVIII of the Medical Act of 1858, and the attendance of members of the Council at the examinations, that the course of study and examinations of the licensing body are not such as to secure the possession by the holders of its diplomas of the knowledge and skill for the efficient practice of their profession.

5. I would add in reference to the opinion of Mr. Cripps, Q.C., a copy of which has been sent to me, that in my opinion no such legal proceedings as are indicated in paragraphs 3 and 4 of that opinion could be maintained in the High Court against the General Medical Council.

(Signed) M. MUIR MACKENZIE.

4, Temple Gardens, E.C., September 24th, 1900.

Dr. GLOVER asked the Chairman of the Education Committee if anything had occurred since the last session which had caused them to modify their opinion.

The PRESIDENT having pointed out that there was a difficulty as to the initiation of the debate, suggested that the Council should go into Committee, and this was done.

Dr. MACALISTER said that when this matter was last before the Council the Education Committee stated what they thought was the law on the matter, namely, that the Council had no power to compel any licensing body to adopt its view with regard to medical education and registration by any direct means. All it could do if it were not satisfied with the course of study and examination of any particular body was to lay the facts before the Privy Council. The registration of students was entirely a creation of the Council, and as the *Students' Register* was the property of the Council it had complete control over it. The regulation proposed by the Committee was one which enabled the Council for the first time to control the beginning of medical study on the part of students who desired to enter themselves on the *Register*. It appeared to him that there was nothing in the law contrary to the view entertained by the Education Committee, although Mr. Muir Mackenzie and Mr. Cripps agreed that the rules and regulations were within the powers of the Council and the Council alone. The question whether the students should or should not have finished their course of ordinary education at an ordinary school before they became technically medical students was one of wisdom and expediency. He had prospectuses of a number of schools on the list recognised by the licensing bodies, and among them were three higher-grade Board Schools. By a recent decision of the Board of Education such schools were open for the scientific instruction of children of not more than 15 years of age; such a child would leave school one year before he could commence his medical study, as 16 was the minimum age. These schools were well fitted for teaching elementary physics, and they qualified for the examination of the Science and Art Department, but he did not think that such schools, supported out of the rates, should be styled "Medical schools recognised by the General Medical Council," as he had been informed some of them advertised themselves. Where was this going to stop? The end would be that this recognition, of which so much had been made, would become a nullity, because any decently equipped school would be put on the list, a state of things which he regarded as a *reductio ad absurdum*, and one which, if the Council approved it, would be most disastrous to medical education. The Council could prevent the schools of which it did not approve appearing on its list, and had the right to protecting its *Students' Register*, which was the only means of checking what the Council considered to be an abuse. If the Council assented to the attitude adopted by the Royal Colleges it would have to consider whether it would be possible to retrace its steps and make it no longer necessary for the Council to have anything to do with secondary schools at all, a conflict on the question of the recognition and approval of these schools would thereby be avoided.

Sir CHRISTOPHER NIXON sympathised with the Royal Colleges in this matter, but he did not think they had treated the Council with the consideration which was due between two bodies of great influence in the profession. From what he had heard outside the Council, many of the licensing bodies looked to it to secure uniformity of privilege as they had expected it to insure uniformity of curriculum and examination. If it were once shown that concession might be made to influential bodies like the Royal Colleges of Physicians and Surgeons, the Council would have to make concessions to other bodies. What ought to be recognised was that the General Medical Council was the one body in the country which co-ordinated the privileges of the different bodies represented on it.

Dr. GLOVER pointed out that the Council was in a better position than when the subject was last before it, inasmuch as it had the legal opinion not only of its own counsel but of the counsel of the Royal Colleges. Both agreed that the Council had no power to insist on its regulation. He thought it better to bring the matter to a crisis by proposing:

That the President of the General Medical Council, the Chairman of the Education Committee, and two other members of the latter be empowered to meet the representatives of the Colleges, with a view to the amicable settlement of this question, as suggested by Mr. Cripps, Q.C., in Answer V.

Mr. TEALE seconded the amendment.

Dr. MACALISTER said that Dr. Glover had misunderstood most of what he had said. He must, therefore, not be under-

stood as assenting to what Dr. Glover had said as representing his (Dr. MacAlister's) view.

Dr. BRUCE observed that a good deal of the chemistry which had been acquired by medical students was simply to enable them to pass their examinations. He asked the Council to go back a little on the path it had been moving along, and to make the five years five years of real medical study.

The PRESIDENT, in reply to a question as to whether the Council would be bound by the conclusion come to by the proposed arbitration committee, said that the amendment required the addition of the words "and to report to the Council."

Dr. PETTIGREW thought there was a slight misunderstanding. It was quite true that the fifth year was to be a clinical year, but that was for the purpose of freeing the first two years, which were considered overburdened. In those years chemistry and biology were to be taken, and if these were eliminated there would be a difficulty. What was to be put in place of chemistry, for example?

Dr. BRUCE replied: Medical chemistry.

Dr. PETTIGREW was afraid that that was a distinction which would not hold water. With regard to adding another year to medical study (for it amounted to that, he thought), were they now prepared to say that everyone who wanted a diploma or a licence must spend six years in study? He did not say that was not a proper thing, but the question was had they advanced sufficiently to say that that should be the rule in the future?

The PRESIDENT felt that the Council was wandering into matters which were not before it.

Mr VICTOR HORSLEY wished to know whether an amendment such as was before them was in order unless it contained within itself some distinct indications of instructions which were to be furnished to the delegates of the Council.

The PRESIDENT looked upon the measure as arising out of the papers before the Council. The discussion in May was practically adjourned for those papers, and he thought the matter arose legitimately. It was, of course, for the Council to say what instructions it would give its representatives.

Mr. VICTOR HORSLEY pointed out that Mr. Cripps naturally did not give even a hint of what their instructions should be.

The PRESIDENT agreed, and said that was entirely for the Council. He, however, thought it was not worth while discussing the instructions to be given until it was known whether the Council were willing to appoint representatives. If the Council agreed to appoint representatives it was for it to say what instructions the representatives were to have.

Mr. VICTOR HORSLEY said that his point was that until the business opened six months ago was completed the Council was not in a position to carry out the amendment of Dr. Glover.

The PRESIDENT alluded to the fact that in the proposed amendment there the words: "With a view to the amicable settlement." The existing condition might be called somewhat acute, as between the Council on the one hand, and the Colleges on the other, and Dr. Glover had indicated that by an expedient of the kind he suggested an amicable settlement might be carried out. The President thought it was a legitimate amendment.

Mr. VICTOR HORSLEY, whilst bowing to the ruling of the President, submitted that it was a charitable vagueness.

Sir JOHN TUKE said that, as Chairman of the Education Committee, he had so far held his tongue simply in the hope that some way out of the difficulty might have been pointed out. He felt absolutely unable to come to any conclusion whatever on the subject. He could not vote for Dr. Glover's amendment for the reason that it was merely another postponement of the question. It was going over the old weary ground time after time, and nothing was gained. Speaking as a member of the Council only, he was sure he was giving expression to what was in the minds of every person when he said that what they had to decide was whether the Council, as the Council of Medical Education, was to be in the hands of the two great Colleges. That was the gist of the whole matter. These two great bodies had laid down regulations which must be followed by the minor bodies, and therefore became actually the arbiters and dictators of medical education in the country. How was that to be decided? In his opinion there was but one way to decide it, and that was to fight the matter to the bitter end. He held that the Council's system of the registration of students was an absolute part of the machinery by which it exercised its functions. By the Medical Act, 1858, Section XVIII. the Council was instructed to make inquiries as to the length of time during which studies were conducted. How was the Council to know whether a man was of a proper age, or had studied sufficiently long unless it knew the exact date at which he commenced? He thought that morally the Council had a strong case, but he did not know whether it had or had not legally. He would rather fight and lose than go on in a perfectly indefinite manner.

Dr. PYE SMITH said he was in the unfortunate position of differing from the Royal Colleges as to the substance of the measure, and of differing from the majority of the Council as to methods. It seemed to him that if the Council approached the question from the point of view that it could not perform the duties imposed upon it by Act of Parliament, it would not fulfil what the profession expected of it, and would be embarking upon a ruinous strife. For this Council to attempt to exercise any political influence would be absolutely ruinous. Its duty to the public, and through them to the profession, was to keep up the high standard of entrance into the profession. A member had spoken of the work which had been done for the profession by the Council, and he fully admitted it, but he asked whether their best work had not been done when the Council had kept strictly to its proper business. The Council was far too numerous, and the first requirement was to diminish its numbers; but still it must deal with the subjects which came before it in a business-like manner. Other bodies had done quite as much good as the Council. The objects of the two Royal Colleges were right objects. They wanted to prevent a medical student's curriculum being spoilt by his being sent back again and again in preliminary subjects. How that was to be done was a difficult point. The attempt of the Colleges to deal with it was perfectly *bonâ-fide*, but he thought it led them further than they intended at first, or further than was wise. The question was, what was the Council to do? He thought that, whatever it did, it ought not to go to law. The spectacle of the profession being divided into litigants before judges, for lawyers to sneer at, and penny newspapers to twit them, would be most unedifying and disastrous. He thought the Council should go to almost any length sooner than have such a scandal. If a conference such as was proposed were held, he thought a conciliation would come about.

Sir WILLIAM GAIRDNER thought that the matter could be regarded from two points of view. The first was on the question of principle whether the Colleges were moving in the right direction or not. The second was the question of rights and privileges. The question between the Colleges and the Council was perhaps a legal matter, and he did not wish to say anything on that. But upon the question of principle he had not heard anything to disturb his original conviction that the Colleges were right. The English Colleges were moving in the right direction in trying to encourage elementary science teaching. The whole trend of the future would be to bring elementary science—the teaching of Nature and its properties—into elementary schools, and to make the upper forms of those schools places in which elementary ideas of science could be communicated, and, if they were to be communicated at all, communicated as the first part of medical education. Therefore he thought the English Colleges were perfectly right in principle. No consideration would induce him to vote in any way that would kill the tendency—or tend to turn back the tendency—to introduce science more broadly into the general education of schools. If the function of schools was to teach science, it did not matter whether they called the schools grammar schools or what they called them. On the other point, he thought the Colleges were wrong in principle, in that it was inexpedient for them to take upon themselves to lop off, as it were, one of the five years of medical training that had been deliberately imposed by the General Medical Council as necessary. At the same time, they must not shut their eyes to the fact that the Colleges were to a certain extent led into that by what had taken place between the Council itself and the Scottish Universities. He supported Dr. Glover's motion with pleasure, although he would strongly wish that something of the kind suggested by Dr. MacAlister could be adopted.

Dr. McVail hoped that Dr. Glover's amendment would not be passed, because it meant a delay of over six months. By that time six months the Triple Board of Scotland and the Double Board of Ireland would have made their own arrangements. This matter could not be put off indefinitely, and the Board in England allowed to act in this way. He wished to stand upon the resolution which the Education Committee came to.

Professor Ball said he had much diffidence in rising to speak on this measure, as he was such a junior member, but the question was one of such very considerable importance to the Corporation which he represented that he thought it was his duty to do so. The question was one which vitally affected the Irish Corporation. Some time ago the Council of the Royal College of Surgeons in Ireland had before them the very large percentage of rejections in physiology, and they tried to investigate the causes. They got reports from two examiners, and were told that where candidates came up who had been well ground in chemistry, biology, and physics, there was no difficulty in teaching physiology; but students who were not properly "grounded" in that way were unable to profit fully by the teaching, with the result that they failed in their examinations, and failed frequently, which was a very disastrous thing, because it demoralised the student. The evil consequences of repeated rejections were numerous. If the Conjoint Board in England adopted the proposed course other bodies would either have to follow or to face a very great competitive advantage which the Conjoint Board in England would have. He asked whether it would not be better to face the question of the five years' curriculum altogether. That was a thing they might well review. Had the additon of the legal minimum fulfilled the predictions which were made for it? If the five years' curriculum had so far improved the condition of the student, they would expect a largely diminished percentage of rejections in the examinations. Had that been the case? The five years' curriculum had reduced the number of men entering the profession, not by cutting off the supply of the very best men, but of men to whom an additional year was not a matter of indifference. He had known University Arts students who had given two or three years to arts hesitate about entertaining the medical profession, because of the additional year. Many of those men were capable of passing their examinations in a short time if they had the opportunity. He thought one way of meeting the difficulty was, if possible, to reopen the whole five years' question.

The President pointed out that this was raising a question which was not before the Council; he did not think Professor Ball should go into that.

Professor Ball said as one examining body was practically reducing the curriculum to four years, was it not possible to open the entire question?

The President replied that he did not think it was. He thought Professor Ball would have to give formal notice of motion.

Professor Ball observed that it seemed to him they were going back to the four years on a side issue.

The President then put the amendment of Dr. Glover (with the addition of the words "and to report to the Council"), and declared the same lost.

Dr. Payne agreed with Dr. Pye Smith that there should be no legal proceedings between the two bodies, but if they were to be avoided concession was needed, which concession must not be a one sided one. The legal position of every licensing body was that, within very wide limits, it could do what it liked, and if the General Medical Council did not approve, it must appeal to the Privy Council; but any body acting in that spirit would be doing very great injury to the profession. The general impression was that the Council had addressed a mandamus to the Royal Colleges saying they must do this thing or that, but it had done nothing of the kind. The recommendation was that the Council should maintain its rights in accordance with its own ideas; and as the right of registration belonged to the Council, it had not only the right but the duty to exercise that right as it thought best in the interest of the profession. He was inclined to think that if the representatives of the Colleges and the representatives of the Examining Board could meet the representatives of the Council and confined themselves to the question of detail it was possible they might come to some agreement. The Council had never asserted that it had the right to coerce a licensing body in this matter.

Mr. Victor Horsley moved the closure, which was seconded by Dr. Bennett, and carried.

At the request of Dr. Heron Watson, the names and numbers were taken down, when 21 voted for, 5 against, 3 did not vote, and 2 were absent.

Sir Dyce Duckworth explained that he voted against the closure because he had not had an opportunity to speak.

The President then put the original motion, moved by Dr. MacAlister and seconded by Mr. Bryant, which was carried as follows:

On the first question the Committee maintains the opinion it has repeatedly expressed, that ordinary school education should be completed before the five years' medical curriculum is entered upon, and it believes that the regulation in question is the simplest practical method of ensuring this. It therefore recommends that the Council should continue to adhere to it.

By request the names and numbers were taken down, when 21 voted for, 5 against, 3 did not vote, and 2 were absent.

For (21).—Dr. MacAlister, Dr. Payne, Mr. Tomes, Dr. Atthill, Dr. Pettigrew, Dr. McVail, Dr. Heron Watson, Mr. Ball, Mr. Young, Dr. Windle, Mr. Brown, Mr. Tichborne, Mr. Teale, Sir C. Nixon, Dr. Bennett, Mr. Horsley, Sir George Philipson, Dr. Reid, Sir Hector Cameron, Sir William Thomson, and Sir John Tuke.

Against (5).—Mr. Bryant, Sir Dyce Duckworth, Dr. Pye-Smith, Dr. Glover, and Dr. Bruce.

Did not Vote (3).—The President, Sir William Gairdner, and Sir Hugh Beevor.

Absent (2).—Mr. Power and Dr. Little.

On the motion of Dr. MacAlister the Council resumed.

Dr. MacAlister said he had to report to the Council that the Committee of the whole Council had recommended that the recommendation of the Education Committee be approved. On that he had to move:

That the Royal Colleges be informed that the Council, having taken into consideration the memorandum of the Colleges and the legal opinions relating thereto, has resolved to adhere to its resolution with regard to the registration of medical students, which came into effect on January 1st, 1902.

Sir John Tuke seconded the motion.

Sir Dyce Duckworth thought the Council might further consider the full gravity of what it had committed itself to, because it was neither more nor less than that the Council had taken up a position which was absolutely illegal. His own impression was that this resolution could not possibly receive the assent of his College; at all events, a state of tension would exist for the future unless something was done, because if the Council were to put in force its resolution with respect to Recommendation 2, his College would do its own registration. It had been stated that the Council was making no encroachment on the privileges of the Colleges; they (the Colleges) maintained it was so doing, and doing so by a side wind. The Council had no right to enforce any particular line with regard to the two Colleges, which had rights under charter to maintain intact for their successors, and that they meant to do. This might be the last occasion on which he would speak in the Council, but he thought it was stepping outside the Act in trying to encroach upon the privileges of the Colleges. If the Conjoint Board or the University of London were faced with this resolution, he would very much like to hear the debate which would take place on the subject.

Dr. Payne observed that the English Conjoint Board were on all-fours with any other institution.

Dr. MacAlister stated that the Royal Colleges in London were the only bodies who had raised any objection.

Sir Dyce Duckworth replied that the Scottish Conjoint Board was acting in a precisely similar manner to the English Conjoint Board.

Dr. Heron Watson said that was not the case; Sir Dyce Duckworth's information was absolutely inaccurate.

Sir Dyce Duckworth observed that the Scottish Conjoint Board accepted all the bodies which were accepted by the English Conjoint Board. In conclusion he thought it beneath the dignity of a body like the General Council of Medical Education to attempt to enforce regulations which it had no power whatever to enforce.

Sir William Thomson said the only body so far as he knew which had disregarded the advice of the General Medical Council in this matter was the Conjoint Examining Board

in England The resolutions had not been framed against them because they were the English Board, but because they had departed from the regulations of the Council, and had held out in their announcement that students were to have a four years' course in medicine. Other bodies were carrying out loyally the intimation which the Council had given, and were insisting upon the five years' curriculum. That which he predicted in the course of the original debate would happen had happened—namely, that these schools recognised by the Conjoint Board would term themselves "medical schools," for it had been stated that two of them were actually advertising themselves as such. If the Council was to have the direction of medical education, was it to stand by and see these private schools, or Board Schools, or South Kensington schools, advertising themselves as medical schools? To do so would be to cast a slur on the dignity of the profession. It was against that result, as one of the effects of the action of the Conjoint Board in England, that the Council took action two years ago. It was said that the Colleges were in the position of defending their rights, but they were not the only body which had rights to defend, and others were quite as jealous as those two bodies could be. If the contention of the Royal Colleges were to prevail, he was informed that the Irish and Scotch Colleges would go back to the four years' course, because there was no reason why they should be at a disadvantage in the matter. But it was the duty of the Royal Colleges in London to fall in with the arrangements which the General Medical Council had laid down for the purpose of raising the standard of medical education.

Mr. Bryant protested against the dogmatic assertion that the Royal Colleges had reduced the five years period to four.

Sir William Thomson maintained that it was practically what their contention amounted to.

Mr. Bryant said that in many of the colleges and universities which allowed the preliminary subjects to be taken up as part of the medical curriculum for the five years, there was constant overlapping, so that the subsequent study of purely professional subjects was crowded into the last three or three and a-half years. The Royal College of Surgeons of England maintained that the best thing a man could do with regard to the preliminary subjects was to get rid of them in the first year so that they should not intrude on the subsequent period.

Mr. George Brown thought the Board schools were not medical schools in the sense in which these regulations were framed when the five years' curriculum was accepted by the Council. It was fully the intention of the Council that it should be five years' medical education in a medical college or hospital, and in maintaining that position the Council was acting not only within its right, but in accordance with all the resolutions that had been adopted before.

The resolution was then put and carried, 20 voting for and 4 against.

On the motion of Dr. MacAlister, seconded by Dr. Bennett, the two following resolutions were adopted:

That this matter be remitted to the Executive Committee, with such advice as they shall think fit to obtain, to draw up and submit to the Council for approval a list of scientific institutions, the study at which shall qualify for admission to the *Students' Register*.

That in the meantime individual applications for students' registration, which the Registrar, in the absence of special instructions, cannot at present accept, be referred to the Students' Registration Committee as exceptional cases, to be dealt with on the lines laid down by the Council.

Inspection of Examinations of Apothecaries' Hall, Dublin.

Moved by Sir Dyce Duckworth, seconded by Dr. Pettigrew:

That the Reports by the Examination Committee on the Inspection of the July and October Examinations of the Apothecaries' Hall, Dublin, be received and entered in the Minutes.

The Council adjourned.

[Owing to the great length of the report of Tuesday's proceedings of the General Medical Council, the publication of the concluding day's proceedings is unavoidably held over this week. It will appear in the next issue of the British Medical Journal.]

INDIAN AND COLONIAL ADDENDUM TO THE BRITISH PHARMACOPŒIA, 1898.

When the General Medical Council issued the current *Pharmacopœia*, reference was made to various steps which had been taken to extend its sphere of influence. So far back as 1867 the Council indicated the desire to supply one uniform standard and guide throughout the British Empire, and to accomplish this object the Council, with the aid of Her Majesty's Privy Council, sought assistance from various medical and pharmaceutical bodies in India and the Colonies. The result was in part seen in the inclusion in an Appendix of certain alternative substances or preparations sanctioned for local use. In 1898 it was stated that the Council had in contemplation the early preparation of an *Addendum*, in which medicinal plants and other substances suggested for inclusion by Indian and Colonial authorities would be dealt with more fully.

This *Addendum* is now before us, and it represents a vast amount of labour compressed into small space. Many of those who were responsible for the *British Pharmacopœia* are still members of the Committee of Revision; the late Dr. Leech, who was Chairman, has been succeeded by Dr. MacAlister, and Mr. Brudenell Carter by Dr. J. F. Payne, otherwise the Committee is unchanged. Dr. Tirard has continued to act as Secretary, Dr. John Attfield as Editor. Only one new worker is mentioned—Mr. W. Kirkby of Manchester—who has acted as referee on questions of pharmaceutical botany. It is, however, obvious that the *Addendum* could not have been produced without the zealous co-operation of a large number of medical and pharmaceutical authorities throughout the Empire.

The influence of the *Addendum* is likely to be very widespread, and it is even possible that it may pave the way towards the Utopian dream of a Universal Pharmacopœia. Although it is primarily intended to meet the requirements of India and the Colonies, there are numerous indications of gradual approximation to the standards of other countries. This is as it should be; for example, in the Dominion of Canada, where chemists and medical practitioners have frequently to employ both the *British* and the *United States Pharmacopœia*. It is, however, possible that the *Addendum* may influence medical practice in this country, that some who are weary of the use of drugs with familiar names may for the sake of novelty wish to prescribe these remedies whenever their preparations can be imported. It is accordingly our intention to publish a series of short notes giving some brief account of the therapeutic uses of the several novelties. Meanwhile, we subjoin a classified list of the drugs and preparations included in this *Addendum*.

The *Addendum* contains the names of 54 drugs and of 65 preparations, all but one made from the newly-recognised drugs. The following is a list of those drugs, together with their English synonyms where the English term is not identical with the Latin, the recognised preparations of the several drugs, together with the names of the divisions of the British Empire in which the several drugs and preparations are intended to be used:

Acaciæ Cortex.—Acacia Bark. The dried bark of *Acacia arabica*; also the dried bark of *Acacia decurrens*, the Sydney or the Victorian and Tasmanian Black Wattle. India and Australasian and Eastern Colonies.
Decoctum, ½ to 2 fluid ounces.

Acalypha.—The fresh and dried herb *Acalypha indica*. India and Eastern Colonies.
Extractum Liquidum, 5 to 30 minims. Succus, 1 to 4 fluid drachms.

Adhatoda.—The fresh and dried leaves of *Adhatoda vasica*. India and Eastern Colonies
Extractum Liquidum, 20 to 60 minims. Succus, 1 to 4 fluid drachms.
Tinctura, ½ to 1 fluid drachm.

Agropyrum.—Couch Grass, Triticum. The dried rhizome of *Agropyrum repens*. Australasian, Eastern, and North American Colonies.
Decoctum, ½ to 2 fluid ounces. Extractum Liquidum, 1 to 2 fluid drachms.

Alstonia.—The bark of *Alstonia scholaris* and *Alstonia constricta*. India and Australasian and Eastern Colonies.
Infusum, ½ to 1 fluid ounce. Tinctura, ½ to 1 fluid drachm.

Andrographis.—The dried plant *Andrographis paniculata*. India and Eastern Colonies.
Infusum, ½ to 1 fluid ounce. Liquor Concentratus, ½ to 1 fluid drachm.
Tinctura, ½ to 1 fluid drachm.

ARISTOLOCHIA.—The dry stem and roots of *Aristolochia indica*. India and Eastern Colonies.
Liquor Concentratus, ½ to 2 fluid drachms. Tinctura, ½ to 1 fluid drachm.

ARNICÆ FLORES.—Arnica Flowers. The dried flower heads of *Arnica montana*. North American Colonies.
Tinctura, ½ to 1 fluid drachm.

AURANTII CORTEX INDICUS.—Indian orange peel. The fresh and the dried outerpart of the pericarp of varieties of Citrus Aurantinum grown in India and Ceylon. India and Eastern Colonies.

AZADIRACHTA INDICA.—Indian Azadirach, Neem bark, Margosa bark, the bark of the stem of *Melia Azadirachta*. India and Eastern Colonies.
Infusum, ½ to 1 fluid ounce. Tinctura, ½ to 1 fluid drachm.

BELÆ FRUCTUS.—Bael Fruit. The fresh half-ripe fruit of *Ægle Marmelos*. India and Eastern Colonies.
Extractum Liquidum, 1 to 2 fluid drachms.

BERBERIS —The stem of *Berberis aristata*. India and Eastern Colonies.
Liquor Concentratus, ½ to 1 fluid drachm. Tinctura, ½ to 1 fluid drachm.

BETEL —The leaves of *Piper Betle*. India and Eastern Colonies.

BUTEÆ GUMMI.—Butea gum, Bengal Kino. The inspissated juice obtained from incisions in the stem of *Butea frondosa*. India and Eastern Colonies.

BUTEÆ SEMINA.—Butea Seeds. The seeds of *Butea frondosa*. India and Eastern Colonies.
Pulvis., 10 to 20 grs.

CALOTROPIS.—Mudar. The root bark of *Calotropis procera* and *C. gigantea*. Dose in powder, 3 to 10 grs. as a tonic; as an emetic 30 to 60 grs. India and Eastern Colonies.
Tinctura, ½ to 1 fluid drachm.

CAMBOGIA INDICA.—Indian Gamboge. The gum resin obtained from *Garcinia Morella*. Dose, ½ to 2 grs. India and Eastern Colonies.

CATECHU NIGRUM.—Black Catechu. An extract from the wood of *Acacia Catechu*. Dose, 5 to 15 grs. India and Eastern and North American Colonies.

CISSAMPELOS.—The root of *Cissampelos Pareira*. India and Eastern Colonies.
Decoctum ½ to 2 fluid ounces. Extractum Liquidum ½ to 2 fluid drachms.

COSCINIUM.—The stem of *Coscinium fenestratum*. India and Eastern Colonies.
Infusum ½ to 1 fluid ounce. Liquor concentratus, ½ to 1 fluid drachm. Tinctura, ½ to 1 fluid drachm.

CUCURBITÆ SEMINA PRÆPARATA.—Melon Pumpkin Seeds. The prepared fresh ripe seeds of cultivated plants of *Cucurbita maxima*. Mediterranean Colonies. Dose, 3 to 4 ounces bruised with a little water or milk to a creamy consistence.

DATURÆ FOLIA.—Datura Leaves. The leaves of *Datura fastuosa* and of *D. Metel*. India and Eastern and West Indian Colonies

DATURÆ SEMINA —Datura Seeds. The seeds of *Datura fastuosa*. India and Eastern Colonies.
Tinctura, 5 to 15 minims.

EMBELIA.—The fruit of *Embelia ribes* and of *E. robusta*. India and Eastern Colonies.
Dose, 1 to 4 drachms.

GOSSYPII RADICIS CORTEX.—Cotton Root Bark, the root bark of *Gossypium herbaceum*. India, and Eastern, North American, and West Indian Colonies.
Decoctum, ½ to 2 fluid ounces. Extractum Liquidum, ½ to 1 fluid drachm.

GRINDELIA.—The dried leaves and flowering tops of *Grindelia squarrosa* and *G. robusta*. Australasian and North American Colonies.
Extractum Liquidum 10 to 20 minims.

GUMMI INDICUM.—Indian Gum. A gummy exudation from the wood of *Anogeissus latifolia*. India and Eastern Colonies.
Mucilago.

HIRUDO AUSTRALIS.—Australian "leeches" Hirudo quinquistriata, the five-striped or Australian leech. Australasian Colonies.

HYGROPHILA.—The dried herb, including the root of *Hygrophila spinosa*. India and Eastern Colonies.
Decoctum, ½ to 2 fluid ounces.

ISPAGHULA The seeds of *Plantago ovata*. Dose in powder, 5 to 150 grs. India and Eastern Colonies.
Decoctum, ½ to 2 fluid ounces.

KALADANA Pharbitis nil. The seeds of *Ipomœa hederacea*. Dose, 30 to 50 grs India and Eastern Colonies
Pulvis compositus, 20 to 60 grams. Tinctura, ½ to 1 fluid drachm.

KALADANA RESINA —Kaladana Rosin, Pharbitisin. Dose, 2 to 8 grs India and Eastern Colonies.

KAVÆ RHIZOMA —Kava Rhizome. The decorticated, dried and divided rhizome without the roots of *Piper methysticum*. Australasian Colonies.
Extractum Liquidum, 30 to 60 minims.

KINO EUCALYPI.—Eucalyptus Kino. Botany Bay Kino. An exudation from the stem of various species of Eucalyptus, having the characters and responding to the tests given for Kino on page 167 of the *British Pharmacopœia, 1898*. Dose, 5 to 20 grs. Australasian Colonies.

MYLABRIS.—The dried beetle *Mylabris phalerata* or other species of the genus, provided they yield a proportion of cantharidin equivalent to that contained in *M. phalerata*. India, and African and Eastern Colonies.
Acetum. Emplastrum. Emplastrum Calefaciens. Liquor Epispasticus. Unguentum.

MYROBALANUM.—Myrobalans. The immature fruit of *Terminalia chebula*, usually distinguished in commerce as Chebulic myrobalans. Dose in powder, ½ to 1 drachm. India and Eastern Colonies.
Unguentum, unguentum c. opio.

OLEUM AJOWAN.—Ajowan Oil, Ptychotis Oil. The oil distilled from the fruit of *Carum copticum*. Dose, ½ to 3 minims. India and Eastern Colonies.

OLEUM ARACHIS —Arachis Oil, Earth Nut Oil, Ground Nut Oil, Pea Nut Oil. The oil expressed without the aid of heat from the seeds of *Arachis hypogæa*. May be used in place of olive oil in India and Africa, Eastern and Australasian Colonies.

OLEUM GAULTHERIÆ.—Oil of Gaultheria, Oil of Wintergreen. The oil distilled from the leaves of *Gaultheria procumbens*, or from the bark of the sweet birch, *Betula lenta*. It contains at least 90 per cent., but generally a larger proportion, of natural methyl salicylate associated with small quantities of a terpene or of other substance. Dose, 3 to 10 minims. North American Colonies.

OLEUM GRAMINIS CITRATI.—Oil of Lemon Grass, Indian Oil of Verbena. The oil distilled from *Andropogon citratus*. Dose, ½ to 3 minims. India and Eastern and West Indian Colonies.

OLEUM GYNOCARDIÆ.—Gynocardia Oil, Chaulmoogra Oil. The fatty oil expressed from the seeds of *Gynocardia odorata*. Dose, 5 to 10 minims, gradually increased from ½ to 1 fluid drachm. India and Eastern Colonies.
Unguentum.

OLEUM SESAMI.—Sesame Oil. The oil expressed from the seeds of *Sesamum indicum*. May be used in place of olive oil for liniments, ointments, and plasters in India and Africa, Eastern, and North American Colonies.

OLIVERI CORTEX.—Oliver Bark. Black sassafras, the dried bark of *Cinnamomum Oliveri*, Australasian Colonies.
Tinctura, ½ to 1 fluid drachm.

PICRORHIZA —The dried rhizome of *Picrohiza Kurroa*. Dose in powder, 10 to 20 gr. as a tonic; as an antiperiodic, 40 to 50 gr. India and Eastern Colonies.
Extractum Liquidum, 20 to 60 minims. Tinctura, ½ to 1 fluid drachm.

PODOPHYLLI INDICI RESINA —Indian Podophyllum Resin. A powdered resin prepared from Indian podophyllin rhizome. Dose, ¼ to 1 gr. India and Eastern Colonies.
Tinctura, 5 to 15 minims.

PODOPHYLLI INDICI RHIZOMA.—Indian Podophyllum Rhizome. The dried rhizome and roots of *Podophyllum Emodi*. India and Eastern Colonies.

SAPPAN.—The heart wood of *Cæsalpinia Sappan*. Indian and Eastern Colonies.
Decoctum, ½ to 2 fluid ounces.

TINOSPORA.—The stem of *Tinospora cordifolia* collected in the hot season. India and Eastern Colonies.
Infusum, ½ to 1 fluid ounce. Liquor Concentratus, ½ to 1 fluid drachm. Tinctura, ½ to 1 fluid drachm.

TODDALIA.—The root bark of *Toddalia aculeata*. India and Eastern Colonies.
Infusum, 1 to 2 fluid ounces. Liquor concentratus, ½ to 1 fluid drachm.

TURPETHUM —Turpeth. The dried root and stem of *Ipomœa turpethum*. Dose in powder 5 to 20 grs. India and Eastern and North American Colonies.
Tinctura Jalapæ Co., ½ to 1 fluid drachm.

TYLOPHORÆ FOLIA.—Tylophora Leaves. The dried leaves of *Tylophora asthmatica*. Dose in powder, ½ to 2 grs., as an expectorant; as an emetic, 15 to 30 grs. India and Eastern Colonies.

URGINEA —Indian Squill. The younger bulbs of *Urginea indica*; also the younger bulbs of *Scilla indica*, taken soon after the plants have flowered. India and Eastern Colonies.
Acetum, 10 to 30 minims. Oxymel, ½ to 1 fluid drachm. Pilula Ipecacuanhæ cum Urginea, 4 to 8 grs. Pilula Composita, 4 to 8 grs. Syrupus, ½ to 1 fluid drachm. Tinctura, 5 to 15 minims.

VALERIANÆ INDICÆ RHIZOMA —Indian Valerian Rhizome, the dried rhizome and rootlets of *Valeriana Wallichii*. India and Eastern Colonies.
Tinctura Ammoniata, ½ to 1 fluid drachm.

VIBURNUM.—Black Haw, the dried bark of *Viburnum prunifolium*. North American Colonies.
Extractum Liquidum, 1 to 2 fluid drachms.

The *Addendum* also contains Extractum Glycyrrhizæ Spirituosum, made with extract of liquorice, alcohol, and water.
Dose, ½ to 1 fluid drachm.

With regard to the source and properties of some of these drugs further investigations, especially in the countries in which they are found are, it is said, much to be desired, and the hope is expressed that their official recognition will conduce to research of this kind. It is intended that the drugs and preparations shall be prescribed by the medical practitioner according to his own judgment of their value; it is not intended that they shall be substituted by the dispenser or pharmacist for more or less similar articles already included in the *Pharmacopœia*, except in those cases where authority for such substitution is expressly given.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

The autumn meeting of the above Association was held on Wednesday, November 28th, at the Hotel Cecil, the President, Inspector-General W. H. Lloyd, M.D., R.N., in the chair.

There was a large attendance of members, including Dr. Mapother and Sir W. Thomson (Vice-Presidents), Dr. R. Fegan (ex-President), Dr. Gilbart Smith (Chairman of Council), Dr. James Little (Dublin), Dr. Jocelyn Swan (Honorary Treasurer), Surgeon-General Sibthorpe, C.B., Professor Arthur Barker, Colonel Boileau, A.M.S. (Trowbridge), Dr. Hutchinson Swanton (Honorary Secretary, Dinner Committee), Dr. P. S. Abraham, Colonel McNally, C.B., A.M.S., Dr. Mouillot (Harrogate), Dr. Hamilton Bland, Dr. de Zouche Marshall, Dr. W. Douglas, Dr. J. M. Ryan (Colchester), Dr. Pringle Morgan (Seaford), Dr. George Stoker, Colonel Thornhill, I.M.S., Dr. Ayres Moore (Colwyn Bay), Dr. W. H. Bourke, and the Honorary Secretaries, Dr. James Stewart (Clifton), and Mr. P. J. Freyer.

The Chairman of Council reported that since the summer general meeting the Association had sustained a great loss by the death in South Africa, while in the service of his country, of a much beloved member, the late Sir William Stokes of Dublin, of whom he, like many another old Meath man, could say: "He was once my teacher, always my friend." His hearty and sympathetic interest in its welfare, ever since he honoured the Association by becoming its president in 1884, had placed the members under an obligation it would be difficult to overestimate. He concluded by moving the following resolution:

That the Honorary Secretaries be instructed to convey to Lady Stokes an expression of the deep sympathy felt by the members of the Irish Medical Schools' and Graduates' Association in her recent bereavement and of the loss they had sustained through the death of one whose conspicuous talents, genius, and eloquence not only won for him the admiration of his countrymen, but secured for him a world-wide reputation, and whose distinguished services to this Association entitled him to their warmest gratitude.

Surgeon-General Sibthorpe seconded the resolution.

Dr. James Stewart said that during the sixteen years of his work as Honorary Secretary he had invariably received the most appreciative encouragement from the late Sir William Stokes, whom he had always found ready and willing to place at the disposal of the Association his powerful eloquence, when opportunity offered, against the monopoly of honorary appointments in certain hospitals in England.

The resolution was carried unanimously.

The Chairman of Council also reported that a letter had been sent to Field-Marshal Lord Roberts, V.C., inviting him to honour the Association with his presence at dinner upon his return from South Africa.

This was approved of by the meeting, which thereupon adjourned.

Dinner.

The members and their friends sat down subsequently to dinner in the Grand Hall of the hotel, the President, Inspector-General Lloyd, M.D., R.N., occupying the chair. A large number of guests were present, including General Sir W. Olpherts, V.C., G.C.B., Mr. A. Perceval Graves (Irish Literary Society), Professor Starling, M.D., F.R.S., Rev. Sir Borradaile Savory, Bart., Professor Corfield, Sir Hugh Beevor, Bart., M.D., Mr. Dudley Hardy, R.I., Colonel Rawson, R.E., Mr. Claud Woakes, Major Clifford, Dr. Stabb, Major Olpherts, Captain R. A. Marshall, V.D., and several ladies.

The loyal toasts having been duly honoured, Dr. George Stoker proposed the health of "Our Defenders," and in the course of his speech paid a warm tribute to the devotion to duty of the individual members of the Royal Army Medical Corps, several of whom had lost their lives through their unflinching courage. The system of administration in the Army Medical Department was a matter for consideration at another time, but no words of his could give any idea of the splendid work done by the doctors, the nursing sisters, and all who had to attend to the sick and wounded.

The toast was acknowledged by Sir William Olpherts on behalf of the regular forces, and by Major Clifford on behalf of the volunteers.

The toast of "The Guests" was given by Dr. James Little, and acknowledged by Sir B. Savory, Bart., and Mr. Alfred Perceval Graves, who, in responding, said he was proud to be a descendant of Dr. Graves of Dublin, and concluded by reading a humorous poem of his own composition on the Irish Country Doctor, whereupon Mr. Marshall sang the song "Father O'Flynn," of which Mr. Graves is also the author.

The toast of "The Irish Medical Schools' and Graduates' Association" was given by the Chairman, who said that it was the second largest of the medical societies in the kingdom, and that its numbers were increasing. He made a sympathetic allusion to the death of a past president, Sir William Stokes, and concluded by calling upon Sir William Thomson, who, in reply, said he was glad to remember that the hospital with which he had been associated in South Africa was Irish in inception, in organisation, and in staff. The hospital has been honoured by being the only civil organisation in the van of the great march which ended in Pretoria. In Pretoria their 100 beds grew to 500 with results with which the country might feel proud.

THE PLAGUE.

Prevalence of the Disease.

India.

During the week ending November 11th the returns for all India show a mortality of 2,943, being an increase of 795 as compared with the previous week.

Bombay Presidency.—Of the 2,943 total deaths, 2,663 occurred in the Bombay Presidency.

Bombay.—In the city of Bombay the number of deaths from plague was 53 during the week ending November 11th, being 31 fewer than during the week immediately preceding. The total mortality in the city also shows a satisfactory decrease. During the week ending November 11th, 777 deaths occurred from all causes, a considerable fall compared with any previous records during 1900. Respiratory diseases still show an excess over the normal, but their total is gradually diminishing.

Poona.—Plague shows further diminution in Poona. In the city 13 and 18 were the respective number of plague deaths on November 11th and 12th, and in the cantonment 2 or 3 deaths occurred daily during the same period.

Calcutta.—No fresh cases of plague were recorded in Calcutta on Novemper 7th, nor until November 14th, when 1 fatal case was recorded. Calcutta is practically free of plague.

In Bengal 242 deaths from plague were recorded during the week ending November 11th.

In Mysore there occurred during the week ending November 2nd 829 deaths, showing a decrease of 106 as compared with the previous week. The decrease was mainly owing to the lessened plague mortality in Mysore city. Bangalore city shows 79 deaths against 116 during the same period. The total number of plague cases in the State since the commencement of the outbreak are 34,969, of which number 27,729 died of the disease. In the Kolar Gold Fields during the week ending November 11th there were 22 attacks and 20 deaths, compared with 10 and 8 during the previous week.

Mauritius.

For the week ending November 29th, 41 fresh cases of plague were recorded, and 25 deaths from the disease.

South Africa.

Since November 25th no fresh case of plague has occurred in the neighbourhood of King William's Town. The official report communicated by telegram dated December 3rd states that there have been 12 plague cases in all: 4 proved fatal, 1 has completely recovered, the remainder are still under treatment. It is a significant fact that no deaths from the disease have occurred since medical control was established, and the inoculation of patients with Yersin's antiplague serum was adopted.

Tuberculosis in Iowa.—The Iowa Board of Health has placed tuberculosis on the list of infectious diseases, and recommended that persons suffering therefrom and infected premises be dealt with accordingly.

THE MALARIA EXPERIMENTS IN THE CAMPAGNA.

We have already announced that the experiment on the prevention of malaria, which was carried out in the Campagna under the auspices of the Colonial Office, was completely successful. Drs. Sambon and Low returned to England in November in robust health, having demonstrated in the most practical manner that by adopting suitable precautions it is possible to live throughout the malaria season in one of the worst haunts of that scourge without contracting the disease. The intrepid experimenters will themselves describe the scientific results of their mission before the Royal Medical and Chirurgical Society next week. In the meantime a short account of their mode of life during the experiment may be interesting.

The Choice of a Place of Experiment.

It was decided to choose the Roman Campagna as the place of experiment, not only because of its being the classic land of malaria, but because, being within a short distance of Rome, the experiment could be easily watched, and the men who had volunteered to carry it out might speedily obtain assistance in case of disaster.

It had been arranged between Dr. Manson, Professor Celli, and Dr. Sambon that the experiment should be carried out at Cervelletta, a low-lying place in the valley of the Aniene (river) between Rome and Tivoli. This locality is now being



Fig. 1.—View taken near Ostia. (From a photograph by Dr. Low).

cultivated by a colony of Lombard peasants, who have already given to a part of the district the appearance peculiar to the agricultural districts of Lombardy. They level the soil quite flat and divide it in large rectangular fields bordered by irrigation canals and trees. The Lombard peasant is a sober, hard-working, and excellent field labourer.

When Drs. Sambon and Low arrived in Rome at the beginning of June, they soon understood that it would be unwise to erect their experimental hut in the Cervelletta district for the following reasons:

1. Their experiment would undoubtedly have been considered as part of Professor Celli's wider experiment which was being carried out in the same district.

2. Cervelletta was not considered by all sufficiently malarious, and Professor Grassi, who was also intending to make protective experiments in the malarious region round Paestum, positively stated that if the British experiment succeeded and his failed, he would consider that the British one had not been carried out in a district sufficiently malarious.

For these reasons Drs. Sambon and Low consulted all the Italian physicians who had made a special study of malaria—Drs. Marchiafava, Celli, Bignami, Bastianelli, Dionisi, Gualdi, Grassi, etc., and they all agreed that the worst places were Maccarese and Ostia, both districts placed at the mouth of the Tiber on the low and swampy alluvial soil of recent formation. They visited both places very carefully, and selected the Ostia district as the scene of their experiments. Maccarese was discarded:

1. Because it is almost uninhabited during the fever season.

2. Because the owner of the property (*tenuta*) seemed unwilling to afford them any facilities. The year previous he had let to Professor Grassi an old ruined tower near the Buffalo swamp (*Procoio delle bufale*) for experiments on malaria and he thought, therefore, that Professor Grassi had a claim to that



Fig. 2.—The mosquito-proof hut.

district, even to the bats of the locality, which they were forbidden to catch. It seems that there had been trouble between the proprietor and Professor Grassi on account of Professor Koch having been allowed to visit the locality.

Ostia was chosen because it harboured a small colony of Ravenna people. Many of these had to remain during the fever season to collect the water melons which they grow very extensively in the dried-up bed of the old *stagno*. It was



Fig. 3.—A protected house, showing mosquito netting. (From photograph by Professor Postemuski).

thought that the state of their health would serve as a control to the experiment. Moreover, the name of Ostia is well known, it having been the port of ancient Rome. In the district of Ostia they selected the locality called Fumaroli, after the name of a previous owner, because they were told by all the people of Ostia that it was the deadliest place in the region.

King Humbert's Interest in the Experiment.

The place selected was within the Royal estate, so that they had to ask the King's permission to erect the hut there. King Humbert very kindly consented, and showed great in-

terest in the experiment. He promised to visit the hut, gave them permission to go about his hunting preserve as they pleased, placed his gamekeepers at their disposal, and ordered that every day the state of their health should be reported at headquarters.

The assassination of the King on July 29th at Monza caused Dr. Sambon as an Italian great sorrow. In 1884, whilst nursing the cholera-stricken poor of Naples, he had the honour of accompanying His Majesty, who had come to Naples in the very worst days of the epidemic, when men died like flies and omnibuses were used to carry the dead.

In token of their grief they sent an enormous wreath to the funeral—a wreath of pine boughs, with a bunch of red roses, white roses, and blue hortensia flowers to represent the English colours. They cut the pine branches themselves. The King was very fond of the pine wood of Castel Fusano, and they therefore thought that nothing could be more appropriate. Shortly after the following telegram was received from the Queen:

Dr. Sambon, Castel Fusano.—Sua Maestà la Regina ringrazia dal profondo del cuore per gentile, pietoso pensiero che aveva carissimo.
Marchesa di Villa Marina.

[Her Majesty the Queen thanks you with all her heart for the kind, gentle thought, which touched her deeply.
Marchioness of Villa Marina]



Fig. 5.—Italian Red Cross malaria ambulance.



Fig. 4.—How horses protect themselves against flies. (From a photograph by Dr. Burton-Brown).

The Mosquito-proof Hut.

The Municipality of Rome also showed great interest in the experiment, and undertook the erection of the hut at its own expense. At the end of the experiment the hut was presented to the Municipality of Rome, with the reservation of the right of sending again next summer a student from the London School of Tropical Medicine to make further investigations into the subject of malaria.

In digging the foundations for the hut a rude Roman tomb was found. It was made of large terra-cotta slabs, and contained the skeleton of a young female. A coin of the Emperor Commodus was found near the base of the skull. It was evidently the coin that had been placed between the lips of the dead woman to pay her passage across the Styx. The necessary formalities to obtain permission to erect the hut and the building of it took nearly six weeks. Great difficulty was experienced in obtaining skilled workmen because of the fear of fever.



Fig. 6.—Red Cross medical officers treating labourers in the Campagna. (From a photograph by Professor Postempski).

The month of June was employed in visiting various parts of the Campagna and studying the hæmo-parasites of various vertebrates, such as bats, pigeons, frogs, lizards, etc. At last on July 19th they were able to take up their abode in the hut.

A Plague of Flies.

Their life in the Campagna was in no way monotonous, because they had plenty to do; but the heat was intensely felt, especially on account of the great moisture of the swampy locality—very frequently in the morning a heavy white mist hung over the canals which surrounded the compound.

One great source of enjoyment was bathing in the glorious sea beyond the pine forests, but it was almost as much as a man's life was worth to attempt to reach the sea on account of the breeze flies. They were a terrible pest in July and August, when it was almost impossible to go through the jungle. The horses suffered dreadfully from them—the poor beasts used to form themselves in large circles, sometimes of fifty or sixty in the middle of a field, and remained thus clustered together during the hottest part of the day, tossing their heads and lashing their long tails. (See Fig. 4, p. 1680.)



Fig. 7.—How the labourers in the Campagna seek to protect themselves against malaria.

Life in the Hut.

The experimenters used to sleep with their windows open. Their neighbours thought them mad, and predicted they would surely get fever. Many who would not believe this fact which had been related to them came to the hut during the night and in the early morning to see if it were really true.

When people saw that they not only escaped fever, but that they grew even more vigorous, and gained a better colour notwithstanding the fatiguing excursions, the continuous work, and the bad food, they began to flock to the hut for advice and quinine.

Several distinguished physicians visited the hut; amongst these were Professor Grassi, Professor Celli, Professor Bastianelli, Dr. Plehn, Dr. Supitza, Dr. Gualdi, Professor Postempski, Professor Rossi, and others.

Labourers in the Campagna.

Ostia, like all other malarious districts in the Roman Campagna, has no indigenous population. The little wretched town of mean buildings gathered round the old mediæval castle is inhabited by a fluctuating population, which comes there from all parts of Italy, but chiefly from the south. In winter a large number of labourers come to plough the fields and sow the corn, but they leave before the end of June. In summer other workmen come for short periods to harvest the corn and maize. The life of these labourers is wretched in the extreme; they may well be called "white slaves." They suffer fearfully from malaria. They were sometimes met returning bare-footed to their distant homes, under the scorching sun, delirious from fever. They often fall by the roadside, and many have died in the ditch in sight of the great grey expla.

They work from dawn to sunset closely watched by overseers on horseback, who drive them like beasts. If they dare complain an infantry regiment is called out to keep them in order. Their food is dry bread. Those who can afford it add a morsel of cheese or an onion to the fare. They sleep in little huts made of boughs and straw. Many have no covering between themselves and the starry heavens. Usually a donkey with barrels of water is sent out to the field labourers, but the maize harvesters complained that for three successive days they had had no



Fig. 8.—Pool haunted by *Anopheles claviger*. (From a photograph by Dr. Sambon.)

water to drink. Thirst is a terrible affliction under the August sun at Ostia, and these poor peasants had been obliged to drink the polluted waters of the muddy Tiber. Still the poor wretches made light of it, and one woman was heard to warn another, who was taking up the yellow water of the river with her hand, to be careful lest frogs should breed in her stomach.

The people who gather reeds at the mouth of the river live in huts built on piles, which look exactly like the tree-houses or pile dwellings of the New Guinea Papuans.

In Maccarese, as in Terracina (Pontine Marshes), the drainage canals are kept clear of aquatic plants by means of herds of buffaloes, which are driven through them by men who follow in punts screaming and howling, whilst others followed by dogs run along the shore, also howling and throwing stones at the buffaloes.

Anopheles at Ostia.

Only two species of *Anopheles* were found by the experimenters in the district, namely, *A. claviger* and *A. pseudopictus*. Although *A. bifurcatus* is said to be found in the locality, they did not come across a single specimen. *A. claviger* is by far the commonest *Anopheles* of the district; it is the one that is found in all the houses of the district, and is, without doubt, the chief propagator of the malarial fevers of the region.

The *Anopheles* larvæ in Ostia were not limited to small pools and ditches, but were found in all the drainage canals, in the large ponds in the forest and jungle, and in the wide canal which forms the outlet of the swamp.

That the *Anopheles* in the latter place had not been carried adrift is patent by the fact that there was no current of water in the canal during the summer on account of the mouth being blocked up by sand, and that they were found especially numerous in the little shallow inlets enclosed by clumps of reeds, and rich in duckweed. In all the canals, and in several of the pools, were shoals of fish of all sizes and enormous numbers of frogs.

Together with *A. Claviger* the larvæ of many species of *Culex* were found, and in the pools of Castel Fusano within the pine wood and in the neighbouring swamp larvæ of *A. pseudopictus* were also found mixed with the former. The number of larvæ in the different pools varied very much at different times without any apparent cause.

The fully-developed *Anopheles claviger* was found in great numbers in the houses, stables, and henhouses, frequently resting on cobwebs. They always chose the darkest corners, and very often were found under beds, tables, and chairs. In the rooms of an inn in Ostia which had blue stripes on the ceiling, the *Anopheles* seemed to settle by preference on the darker colour.

In the month of July *A. claviger* was very abundant, and continued so till the middle of September, when four days of torrential rain at this time greatly diminished their numbers. After this, however, the numbers again increased, and remained fairly constant till the middle of October, when the weather became cooler and the autumn rains set in.

In July and August no mosquitos were seen on the wing during the day, but in September and October, when there were several dull and cloudy days, a few occasionally appeared round the hut. Taken altogether, however, their times were very constant, the time of appearance being a few minutes after sunset and that of disappearance soon after sunrise.

The Mosquitos in the Daytime.

At first the experimenters were very careful during the day excursions lest mosquitos should bite them, but they soon found out that they could venture safely through jungle and forest. Of course in cover, near ditches or pools, mosquitos, especially of the genus *Culex*, would soon come to bite if one sat down and rested, but they never troubled the experimenters while tramping across country. As an instance of the little probability of being bitten by *Anopheles* during the day, it may be mentioned that in their many attempts at capturing some specimens in woods and jungles by resting and waiting for them, Drs. Sambon and Low were most unsuccessful.

In the rooms of houses or huts, in which the insects were sometimes amazingly numerous, they never attempted to bite while the experimenters remained there capturing them in test tubes. Most of these had evidently fed during the night on people or fowls, or dogs and cats kept in the living rooms; they were gorged with blood.

The Despatch of Mosquitos to London.

The mosquitos sent to London after having been infected by Professor Bastianelli on suitable cases at the S. Spirito Hospital, were taken from the Stagno of Porto, which was once the famous hexagonal dock built by Trajan there after the Ostia port had become useless. They were sent in gauze tubes enclosed in a square wooden box, with openings on the four lateral sides to allow of free ventilation. The gauze tubes (or rather, mosquito-netting tubes) were adopted to prevent, as much as possible, the bad effects of shaking. The idea occurred to Dr. Sambon whilst observing that *Anopheles* rested preferably on cobwebs, and did not fly off when the webs were shaken by the wind.

A Deadly Spot.

The past summer was exceptionally malarious, as all authorities are agreed. It has often been said that it is sufficient to sleep one night in Ostia to contract fever, but till now there was no positive evidence of this beyond the assertion of the many hunters who came to the locality for the purpose of shooting. This year during their stay, soon after the assassination of the King, fifteen or sixteen police agents were sent to Ostia to arrest some suspected Anarchists supposed connected with the plot. Professor Celli told Dr. Sambon, on the authority of the police medical officer, that although these men remained only part of a night in Ostia, they all developed fever in about a fortnight.

SIR GEORGE HARE PHILIPSON.

On November 29th, under the auspices of the Southern Branch of the Durham University Medical Graduates' Association, Sir George Hare Philipson, the founder of the Association, was entertained at a complimentary banquet at the Café Royal, Regent Street, London, W. Some sixty members and their friends were present. Among those invited to do honour to the guest of the evening were Sir William Turner, President of the General Medical Council; Sir Walter Foster, M.P., Sir John Batty Tuke, M.P., Sir James Crichton-Browne, M.D., F.R.S., Mr. Christopher Heath, Mr. H. T. Butlin, Professor Ernest White, Dr. Danford Thomas, and Dr. Little of Dublin.

A great many letters and telegrams of congratulation expressing hearty good wishes were received from all parts of the South of England from members whose engagements prevented their attending to personally convey their felicitations to their old teacher.

Dr. F. S. Palmer, of East Sheen, Vice President of the Association, presided, and, after the usual patriotic toasts, Sir James Crichton-Browne proposed the health of "The Guest of the Evening." Referring to his own connection with the Medical College of the University of Durham, where he was formerly Lecturer on Psychological Medicine, Sir James traced Sir George Hare Philipson's career from his appointment as Lecturer on Morbid Anatomy and Secretary to the College in 1865, to the position he now holds as President of the College and representative of the University on the General Medical Council, paying a warm tribute to his high accomplishments, his energy, his perseverance, and his punctilious regard for the feelings of others, which have placed him in the exalted position he now holds, and have gained for him the highest esteem of his professional brethren. The toast was received with unbounded enthusiasm and musical honours.

Sir George Philipson, in the course of his reply, alluded to his long association with the College which, during his official connection with it, had become an integral part of the University. His brief mention of a proposal from outside which might sever the connection of the College of Medicine at Newcastle with the University of Durham in furtherance of a scheme for establishing a University of Newcastle was met with most vigorous and emphatic cries of dissent from the assembled graduates, which could not fail to impress Sir George, to whose force of character, tact, urbanity, and unwearying efforts the incorporation of the Newcastle College of Medicine with Durham was mainly due.

The health of the visitors was proposed in a vigorous and

telling speech by Dr. Frederick Spicer and responded to by Sir Walter Foster, M.P. Sir William Turner proposed the health of the Chairman, and Sir George Hare Philipson that of the Honorary Secretary, Dr. T. Outterson Wood, a former lecturer at the Newcastle College. Excellent songs and music were given under the able direction of Mr. Arthur E. Godfrey, and the singing of Auld Lang Syne in orthodox fashion brought a bright and enjoyable evening to a close.

THE EPIDEMIC OF PERIPHERAL NEURITIS TRACED TO ARSENICAL CONTAMINATION OF BEER-MAKING MATERIALS.

Arsenic in Invert Sugar and Glucose.

Through the kindness of Professor Delépine we have received samples of sulphuric acid used for making glucose, and also of invert sugar and of glucose used in the preparation of the beer which has given rise to symptoms of arsenical poisoning. We have had these analysed, and the following is the preliminary report of the analyst:

1. Sulphuric acid No. 42, obtained on November 23rd by Dr. Tattersall from firm F, supplying firm A. This contains arsenic in considerable amount.
2. Invert sugar No 26 from firm A (brewery), J. D. This contains arsenic in marked amount, but much less than in 1.
3. First sample of glucose No. 23. This contains arsenic, but less than in 2.

MANCHESTER.

An official report of the Medical Officer of Health for Manchester, Dr. James Niven, to the Hospital Subcommittee of the town on the outbreak of arsenical poisoning is in our hands. Some idea of the extent of the epidemic in the district may be gained from the information it contains that about 1,000 cases have been notified by medical men, and about 700 have been sent into the union hospitals, and allowing about 300 cases for which no returns have been made, a total is reached of at least 2,000 cases seen by the medical men of the district. Dr. Niven's conclusions will be given in full in our issue of next week.

SALFORD.

Difficulties of Diagnosis in the Early Cases.

By R. D. Cran, M.R.C.S., L.R.C.P.Lond.,
Medical Officer of Health, Third District, Salford Union.

I think as a matter of general interest to the medical profession and justice to myself, it would not be out of place for me to add a few remarks to the admirable report of Professor Delépine and Dr. Tattersall concerning the recent beer poisoning in Salford.

During the past few months I have had a gradually increasing number of cases of peripheral neuritis passing through my hands, until they became inexplicable by any increasing consumption of alcohol. I therefore on November 9th took the liberty of drawing the attention of the medical officer of health to the extraordinary number of cases of peripheral neuritis in my district, which I attributed to some poisonous substance in the beer. I also gave him a list of 73 examples of severe and undoubted cases of the disease which had been under my charge. In discussing the matter with him I expressed an opinion that the poisonous substance was not lead, since in all the cases there were most marked sensory disturbances, and no blue line in the gums or lead colic. I did not feel justified in stating arsenic as the cause because no rash was to be seen in any of the cases, although for some months I have had patients coming to me suffering from peculiar nondescript skin eruptions, but I was unable to link the two series of cases. Also, as the majority of these cases of peripheral neuritis belonged to the lower classes, in whom personal cleanliness is usually non existent, it was well-nigh impossible to distinguish between the peculiar, almost uniform darkening of the skin due to arsenic and that due to dirt without the closest examination, preceded by a vigorous application of soap and water, such as would be used on admission to a general hospital. In no case was there any marked sickness or diarrhœa; the congested appearance of the eyes was such as one would expect in the blear-eyed alcoholic, and the "erythromelalgic" condition of the hands and feet appeared to be due to trophic changes. In my experience it was only towards the later periods of the epidemic that cases began to emerge from the typical alcoholic type, with loss of memory and the peculiar waking dream-like state. I have no doubt that most of the earlier cases were marked instances of alcoholic peripheral neuritis, who might have escaped had there been no other deleterious substance in the beer. I therefore consider that it was almost impossible for any general practitioner, with the clinical material at his command and working under the usual disadvantages, to distinguish between a poisoning by arsenic and a poisoning by some form of alcohol.

I hope I have stated clearly why this epidemic had reached such terrible dimensions before its nature was recognised, as, judging from the papers which are now being published secondarily to the most important article by Dr. Reynolds, the diagnostic symptoms were so marked that the merest tiro in medicine should have at once diagnosed the nature and cause of the disease. I should like to thank Dr. Tattersall for the kind manner in which he undertook the prompt investigation into the cause of the beer poisoning in Salford.

LIVERPOOL.

Discovery of Arsenic in the Urine.

Dr. John Hill Abram writes from the School of Pathology, Thompson-Yates Laboratories, Liverpool, as follows: Although the cases of multiple neuritis have not been so numerous in the Liverpool district as in Manchester, yet there has been a decided increase. In a small group of cases (18) brought to my notice by Dr. Hocken, of Birkenhead the general symptoms resemble those described by Dr. Reynolds, with the exception that pigmentation of the skin was not noted. The cases correspond with beri beri rather than with any other form of neuritis, and it is remarkable that in all cardiac enlargement with a marked increase in the pulse frequency was present. They correspond, therefore, more closely to the Chester cases than to the Manchester group. I have seen one case with Dr. Moore, of Wallasey, in which the pigmentation was extreme. After the suggestion of arsenical poisoning was put forward, I took one of the Birkenhead group into the Royal Infirmary, and an investigation of the urine by Dr. Grünbaum has shown that it contains arsenic. This has thrown some light upon the whole matter, and as the detection of arsenic in the urine has not, so far as I am aware, been alluded to, I thought it might be worth noting—first, from the confirmatory evidence it affords of the view that the present epidemic of neuritis is due to arsenical poisoning; and, secondly, as a diagnostic help in atypical cases.

Dr. Nathan Raw, Medical Superintendent of the Mill Road Infirmary, informs us that during the last week 9 fresh cases have been admitted into that infirmary. The character of the cases, he adds, has undergone a change, as at present the new admissions present more the symptoms of arsenical poisoning than alcoholic neuritis.

In one case, that of a man aged 40, there was some indication of the amount of beer necessary to produce the symptoms, and the time that elapses before they arise.

On Sunday, Monday, and Tuesday, November 24th, 25th, and 26th, he drank 36 pints of beer; previous to that time he had been teetotal for six months. In 48 hours he was seized with burning pain in his face, ears, hands, and feet, with œdema of the eyelids and running of the eyes. He had no vomiting or diarrhœa. Since admission he has much improved. I found arsenic in his urine on December 2nd and 3rd, but none on December 4th. One woman, who had been in hospital for two weeks, died from excessive beer drinking with arsenical symptoms.

Our Liverpool correspondent writes: "The brewers are displaying great activity in getting rid of any beer which is suspected to contain any arsenic, and upwards of 1,100 barrels have been emptied down the sewers."

HEYWOOD, LANCASHIRE.

By H. H. I. Hitchon, M.R.C.S.Eng., L.R.C.P.Lond.,
Medical Officer of Health.

For the last six months attention has been drawn to an unusual outbreak of peripheral neuritis here. Probably 200 or 300 people have suffered.

Symptoms.—At the latter end of May and early in June several persons who consulted me complained more or less of the following symptoms: Rashes on the hands and feet (which were accompanied by tingling and burning sensations, etc.), discharges from the eyes and nose, sore eyes, and puffiness of the face. The symptoms appeared to commence nearly always in the feet, then the hands were attacked, and a few days afterwards the very characteristic appearance of the face was noticed. A few weeks later the nervous symptoms became more marked; great muscular weakness was complained of, also tingling and numbness, "pins and needles," shooting pains, burning sensations, intense pain if the foot was touched even by the other limb or by the bedclothes. The pain was usually increased by warmth and diminished by cold; cramps, especially of the feet and hands occurred, and pressure on the calves caused very great pain. The muscles of the limbs wasted. The knee-jerks were generally increased at first, later they became diminished, and later still often lost. The plantar reflexes were usually increased. Sleep has often been very disturbed, and insomnia has been very frequent. Dreams, nightmare, visual and auditory hallucinations whilst waking, and in two or three cases loss of memory have been complained of. It is interesting to note the absence of nausea, vomiting, colic, or gastric pains and diarrhœa. A slightly furred tongue, loss of appetite, and constipation were the chief gastric troubles. Hoarseness and a short troublesome cough were the chief respiratory troubles.

Causation.—On close inquiry it was discovered that the sufferers invariably took either beer or stout as their drink, and that abstainers and spirit drinkers escaped. This coincidence caused me to suspect the beer, and led me three months ago to inquire into the brewing industry here. An inspection was made, and, in view of the possibility of metallic contamination being the cause of the outbreak, great attention was paid to the passage of the ingredients through vats, pipes, etc., during their various processes. Nothing was found to account for the epidemic, which appeared more mysterious than ever when I was informed that the same articles were being used and were being obtained from the same places as usual. As soon as Dr. Reynolds's discovery was known, samples of beer and stout were obtained, and arsenic was found in some of the samples. Out of 60 or 70 cases seen 11 only have been women. Not only the heavy drinker has suffered, but many persons who have only taken from one to two pints daily. The ages of the patients vary from 20 to 60 years, and the working classes have suffered chiefly.

Remarks.—As would be expected, the outbreak is abating now less beer and stout are being consumed. It will be interesting and also very important to learn if arsenic, and that alone, is the sole cause of this serious epidemic of peripheral neuritis, or is it due also to alcohol, or is it due to some other toxic body which is present in the contaminated beer or stout? It is difficult to believe that 0.04 gr. of arsenic per gallon of beer or stout could produce such serious symptoms in a patient who has only taken a pint in a day.

BACUP.

CASE IN A CHILD OF TWO YEARS.

By JOHN BROWN, M.D Vict., D.P.H.,
M.O.H. Bacup.

DURING the recent epidemic of peripheral neuritis now proved to have arisen from the drinking of arsenicated beer, I have seen no reference to any case occurring among very young children. Such must be of very rare occurrence, as it is to be hoped that parents do not generally allow children so young to drink beer. Moreover, if a case occurred in a child, it would most probably not be detected easily, as it is a condition no one would suspect in a child so young. Last week, however, whilst treating a patient affected with peripheral neuritis, my attention was directed to the case recorded below, and I was led to suspect that the little patient was suffering from arsenical poisoning by the fact that the father had peripheral neuritis. Dr. Kelynack very kindly came over to Bacup to see the case with me, and expressed his opinion that it was undoubtedly a distinct though mild case of peripheral neuritis due to arsenical beer.

The patient was a bonny-looking little girl aged 2 years. She had been unwell for some days, suffering from pains in the feet and legs. She wanted her shoes always off: evidently her feet felt hot and uncomfortable. The child was too young to give subjective symptoms. The face was flushed, the eyes watery, and there was slight running from the nose.

Cutaneous System.—There was no pigmentation of the face, neck, thorax, axilla, abdomen, or groin. Erythematous areas were present over the arms and forearms in the region of the elbows, most marked on extensor surfaces. The palms were red, especially over thenar and hypothenar eminences and about the tips of the fingers. In the lower extremities there was marked erythema over both knees, and on the right side above the patella several distinct, irregular brownish patches, evidently due to pigmentation in the superficial layers of the skin, and not to effusion of blood. There were similar pigmentary spots above the left knee, but neither so well marked nor so extensive. There was erythema of the soles and toes, and a distinct border to the erythema along both sides of the feet and around the heels.

Nervous System.—As the child sat in the lap of a relative the feet looked "dropped" as if the extensors were paretic, but there was no distinct paralysis. There was no impairment to tactile sensation, no muscular hyperæsthesia, no plantar reflex, no dorsal extension of the big toe. The knee-jerks were absent.

Remarks.—The father keeps a public-house, and the child, though so young, was accustomed to get little "sups" of beer from the customers at the bar. Samples of the beer I have carefully tested, and found arsenic present. In four distinct cases of peripheral neuritis occurring in Bacup I have examined the beer and have found arsenic present, some in dangerous quantities. Out of 14 different samples of beer, no fewer than 12 showed distinct evidence of arsenic. No doubt many cases of peripheral neuritis due to arsenicated beer have been overlooked.

[Dr. John Brown informs us further that out of 14 samples of beer from 11 different breweries which he examined as medical officer of health, he found evidence of arsenic in 12. He adds that some of the brewers have responded to his application to them to stop the sale of the contaminated beers, and that he expects the sale of all beer containing arsenic in the borough will be stopped by the end of this week.]

DARLASTON, SOUTH STAFFORDSHIRE.

By VINCENT J. MAGRANE, L.R.C.P.I., etc.

ABOUT the middle of August a few cases of acute inflammation of the hands and feet first came under my notice; since then over 50 cases have come under my care. At first I thought, as most of the cases occurred among ironworkers, that it was due to the hot weather which prevailed at the time, but as subsequently women were also attacked, and all cases were beer drinkers, I naturally concluded that these were cases of alcoholic neuritis.

Most of the cases have been ushered in with vomiting, diarrhœa, severe abdominal pains, swelling of the face, especially around the eyes, and frequently urticaria. The tongue was very foul, and there was elevation of temperature. At the present time I have under my care two cases of complete loss of power of hands and feet, and 1 case of pigmentation. All classes seem to have been attacked—shopkeepers, publicans, and workpeople. Since August I have seen also several cases of herpes zoster attacking different parts of the body, the majority the thorax.

I regret I have not had any opportunity of obtaining an analysis of any of the beers consumed by these patients, but the symptoms are precisely similar to those described in the various reports in the BRITISH MEDICAL JOURNAL of December 1st.

CHESTER.

RESEMBLANCE OF SYMPTOMS TO BERI-BERI.

BY
WILLIAM A. NEWALL, M.D., Ch.B.Vict., District Visiting Surgeon (late Senior House Surgeon), Chester Infirmary.
and
JOHN R. PRYTHERCH, M.B., Ch.B.Edin., M.R.C.S.Eng., L.R.C.P.Lond., Assistant Resident Medical Officer, Chester Infirmary.

IN view of the fact that so far as we know we stand alone in considering the possibility of some at least of our cases of peripheral neuritis being due to beri-beri we think it advisable to furnish further reasons for suggesting such an opinion. As shown in our paper which appeared in the BRITISH MEDICAL JOURNAL of December 1st, we had previously considered the possibility of metallic poisoning. Taking Mr. William Kirkby's tables of analysis showing the quantity of arsenic present in various samples of beer, etc., we see that the amount varied from 0.01 to 0.28 grain per gallon; and in view of the statement that 1 grain in 3 gallons constitutes a dangerous contamination

we beg to point out that the amount found (equal to 0.3 to 0.84 gr. in three gallons) falls short of this estimate. As to the amount of beer taken, we know of 40 men who admit a minimum of six pints a day in a district supplied by five different breweries, and not a single case of peripheral neuritis has come under observation or is known in the locality. On the other hand, several of our cases have taken not more than one pint a day and two or three are total abstainers. Arsenic is not a cumulative poison, but is rapidly eliminated by the urine and other secretions. It is strange that there is no record of arsenic having been found in the urine or other secretions of any case during the present epidemic.[1]

One of our cases, which according to Surgeon-Major Ross presented typical symptoms of beri-beri, has not taken alcohol in any form. She is a country woman who has lived on simple country fare, any jams, etc., of which she has partaken very little, have been made at home with sugar costing 2d. a pound.

It has been suggested as a probability that cases in which beer has not been taken, may have been due to the presence of arsenic in jams, sweets, lemonade, etc. If so, it is a remarkable fact that children, who are the largest consumers of these commodities, have entirely escaped. As regards the possibility of the introduction of beri-beri, the following case, which came under our notice two days ago, is worthy of note:

A man, aged 35, belonging to Chester, six years ago had a severe illness in Panama, which was said by a French physician to be beri-beri. He was advised to leave the country. Since his return he has lived in various parts of England, but mostly in this town, and until six months ago followed the calling of a hawker; since then he has kept a common lodging-house. In December, 1898, he was admitted an in-patient at the Infirmary, suffering from peripheral neuritis. From two months before the above date up to the present time he has been a total abstainer. He says he has several times had attacks resembling his first illness abroad, except that they have not been so severe.

It is worthy of emphasis that he has lived in three different houses in Chester, that his occupation as a hawker caused him to stay in various surrounding towns and villages for several days at a time, and that recently he has kept a much-frequented common lodging house. We are not aware of any restrictions with regard to the landing of sailors from ships affected with beri-beri.

Pigmentation in the cases which presented the most typical symptoms of beri-beri has been either very slight or entirely absent; and in others in which it has been undoubtedly present, it has come on several weeks after admission to hospital, where arsenic has not been prescribed nor beer given. None of our cases have presented any general inflammatory lesions of the skin. In two or three there have been erythematous eruptions of the arms, which have quickly disappeared. In another patient a rash developed eight weeks after admission to hospital. It is unilateral, and consists of a number of bullæ containing dark fluid, and placed over the course of the sixth intercostal nerve.

By kind permission of Dr. John Roberts, of Chester, we are allowed to mention particulars of two cases under his care. They were at first quite helpless, have been treated for two months with large doses of arsenic, and their beer has not been stopped. One is now completely recovered, and the other is able to walk about.

We see in reports from other towns that, as in our cases, diarrhœa has generally been entirely absent. During the last week 11 fresh cases of peripheral neuritis came under our observation. In conclusion, we can only say that after reading the reports of analyses of beer, and particulars of cases in other towns, we are still of opinion that there is some other cause than the arsenical contamination of beer to account for the present epidemic. With regard to some at least of our cases we still think that they are not due to arsenic; and if they are, then it must be admitted that symptoms indistinguishable from those presented by beri-beri can be produced by arsenical poisoning.

[1] As will be seen, arsenic has been found in the urine both by Dr. Abram and by Dr. Nathan Raw.—Ed. B.M.J.

The First Tuberculosis Sanatorium for the Poor in Portugal.—The first sanatorium in Portugal for poor persons suffering from tuberculosis was recently opened. The sanatorium is the old fort of Ontao, on the sea coast near the town of Setobal. It has accommodation for 100 patients. Before admission patients are kept for some days isolated and under observation. The sanatorium is under the patronage of the Queen of Portugal.

ASSOCIATION INTELLIGENCE.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1901.

Meetings of the Council will be held on January 16th, April 17th, July 10th, and October 23rd, 1901. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before each meeting—namely, December 26th, 1900; March 28th, June 20th, and October 2nd, 1901.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

Lancashire and Cheshire Branch.—A meeting of this Branch will be held at the Medical Institution, Liverpool, on December 12th. Members who wish to bring forward communications, read papers or propose new members, are requested to communicate at once with the Honorary Secretary, T. Arthur Helme, M.D., 3, St. Peter's Square, Manchester.

Southern Branch: South-East Hants District.—The next meeting of this District will be held at 5, Pembroke Road, Portsmouth, on Tuesday, December 11th, at 9 P.M., when a Bacterial Demonstration will be given by Dr. A. M. Fraser.—J. G. Blackman, Poplar House, Kingston Crescent, Portsmouth, Honorary Secretary.

Border Counties Branch.—The next meeting of this Branch will be held at the Railway Hotel, St. Boswells, N.B., on the afternoon of Friday, December 21st. Members intending to read papers, show cases, etc., and gentlemen desirous of joining the Branch, should kindly communicate as soon as possible with the Honorary Secretary, W. F. Farquharson, M.D., Garlands, Carlisle.

SOUTH-EASTERN BRANCH: WEST KENT DISTRICT.

A meeting of this District was held on November 23rd, Mr. R. T. Cæsar in the chair.

Communications.—Mr. M. A. Adams read a paper on the Waters of Carlsbad, in the course of which he went fully into the chemical composition of the Carlsbad water, the mode of life at Carlsbad, and the benefits to be expected from treatment there. Several members joined in the discussion which followed.—Dr. Ground read a paper on the Treatment by Atropine of a case of Morphine Poisoning.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

The second ordinary meeting of this Branch for the session was held in the Birmingham Medical Institute on November 8th, Dr. Milner Moore, President, in the chair.

New Members.—The following gentlemen were elected members of the Branch: W. D'Este Emery, M.D., Birmingham; R. M. Heggs, L.R.C.P., M.R.C.S., West Bromwich; R. F. C. Leith, M.B., M.A., Birmingham; W. H. Pollard, M.B., Smethwick; J. R. Ratcliffe, M.B., Moseley.

The scientific portion of the proceedings will be published in a future issue.

Presentation.—At the conclusion of a course of lectures on nursing on November 28th, the members of a class of Birmingham ladies presented the lecturer, Mr. Arthur Loxton, with an edition of Scott's novels.

SPECIAL CORRESPONDENCE.

SYDNEY.

The Australian Natives' Association.—Investigation Committee of the New South Wales Branch of the British Medical Association.—The New Medical Bill.—Papers at the New South Wales Branch Meeting.

FOLLOWING upon the action taken by the profession with regard to the Australian Natives' Association, as recorded in my last letter, the Board of that association approached the Council of the New South Wales Branch of the British Medical Association, asking for a conference with a view to arriving at some settlement of the difficulties. Delegates from the Council of the Branch and from the Board of the Australian Natives' Association met in conference, but after considerable discussion it was apparent that the fixation of a wage limit, which was one of the points urged by the Branch delegates, would not be agreed to. The conference was thus fruitless, and the Australian Natives' Association stands a society condemned not only by the New South Wales Branch of the British Medical Association, but also by the whole profession in New South Wales. The profession was never more united than at present on the subject of the encroachment of illegitimate medical benefit societies of all kinds, and a firm stand is now taken against any such society. By special resolution of the New South Wales Branch any medical officer of these objectionable societies is debarred from membership of this Branch, and will not be met in consultation by other members of the Branch. If, however, the medical officer resigns his connection with the society, then after the lapse of five years he may apply for membership of the Branch, and may be met in consultation.

Acting upon a resolution passed at the meeting of the profession held in Sydney in August last, the Council of the New South Wales Branch of the British Medical Association has appointed an Investigation Committee to collect information with regard to medical benefit societies, hospitals, etc., and all matters bearing upon these questions; and has passed some by-laws to control the work of the Committee. At the first meeting of this Committee Dr. Coutie, the President of the Branch, was appointed Chairman, and Dr. Maitland Gledden Secretary. It is intended that all matters relative to clubs shall be investigated by this Committee, and the information thus acquired by them is to be the property of the Council of the Branch, and for their exclusive use. In view of the misrepresentations frequently made, and the peculiar conditions of practice in this colony, it is desirable that any medical man coming to this city before accepting any appointment or taking up *locum tenens* work should call upon the Secretary of the New South Wales Branch of the British Medical Association, Dr. G. T. Hankins, who will always be happy to advise newcomers on local matters.

The Medical Bill which was drawn up after consultation between Mr. Price, M.L.A., and the Council of the New South Wales Branch of the British Medical Association, has now passed both Houses of Parliament and only awaits the assent of the Governor. This is practically the first instalment of much-needed legislation to protect the public against the ravages of quacks, etc., and although it is admittedly defective in many respects, it is something to have even this measure of protection. The Bill is a short one, and only provides for the registration of all legally qualified medical practitioners, and for punishment of all who illegally assume medical titles or pose as qualified practitioners. It is expected that the Bill will be amended in some respects before long. In consideration of the valued services of Mr. Price in securing the passage of this Bill, a hearty vote of thanks to that gentleman was passed at the last meeting of this Branch of the Association.

At the last meeting of the New South Wales Branch Dr. Fourness Barrington read a paper "On the Proper Scope for the Removal of the Uterine Appendages, and some Points in the Technique." The author raised his protest against the removal of ovaries and tubes for all sorts of aches and pains in the pelvis unless there was clear evidence of these organs being diseased themselves. He referred to cases he had come across in his own practice, in which the removal of uterine appendages had been urged, although there were no signs of disease in them, the patients having recovered completely under simple treatment. The protest was a timely one in view of the *morbus secandi* which appears to afflict some of the young practitioners. Dr. Maitland, Assistant-Surgeon to Sydney Hospital, read a paper on a case of removal of stone from the pelvic portion of the ureter in a male by ureterotomy. Some skiagraphs of the case taken by Dr. Herschel Harris, Honorary Skiagrapher to the Sydney Hospital, were exhibited; they showed clearly the position of the stone in the ureter. The operation was admittedly a difficult one, and Dr. Maitland was congratulated upon the successful result by members. In the course of discussion Mr. E. T. Thring urged the great advantage to be derived from the use of Halsted's hammers in stitching up wounds in the ureters, bile ducts, etc., in the course of abdominal operations.

CORRESPONDENCE.

THE *MEDICAL REGISTER*.

SIR,—The attention of the Executive Committee having been called to an article appearing in the *Lancet* on October 27th, on the subject of inaccuracies in the *Medical Register*, I was directed to report on it to the Committee, and in order to allow the explanation contained in the report to be publicly known, I was authorised to send it to you for publication.—I am, etc.,

H. E. ALLEN,
Registrar.

General Medical Council Office, 299, Oxford Street, London, Dec. 3rd.

REPORT TO THE EXECUTIVE COMMITTEE BY THE REGISTRAR ON THE *MEDICAL REGISTER*.

By the direction of the President of the Council I have to report on some alleged inaccuracies in the *Medical Register*, to which attention was drawn by an article in the *Lancet* on October 27th. The article dealt with two questions—(1) the appearance on the *Register* of the names of practitioners who were dead, and (2) the vagueness of some of the addresses. A list was given of 35 practitioners who were dead but whose names still appear. An analysis of this shows that 3 of these have been removed during this year, and that 14 belong to the Scotch or the Irish Branch. With these latter I have no official right to deal, and the Registrars in Scotland and Ireland respectively are fully alive to their duties in correcting the *Register*. Deducting these 17 names, there remain 18 respecting which some explanation is required from me. The Committee will remember that steps are being taken in this office to send circular letters of inquiry, under Section XIV of the Act, to all persons on the English *Register*, to ensure its accuracy before the election of direct representatives to take place next year. A great part of this work has been done, but a section of some 7,000 or 8,000 names remains to be dealt with next spring. Within this section, 10 of the 18 names referred to occur, and these will all be duly dealt with next year under the operation of Section XIV. There remains 8 names to be accounted for. Three of these are those of practitioners who died in Australia, and of whose deaths it was extremely difficult to obtain any information, and there are no local registrars abroad whose duty it is under the Medical Acts to report deaths. Five names of practitioners who are stated by the writer in the *Lancet* to be dead remain to be referred to. I use the word "stated" with no desire to call in question the accuracy of the information possessed by the *Lancet*, but to remind the Committee that your officials here cannot act except on legal evidence. We make every use we can of obituary lists, carefully looking through them and sending letters of inquiry in the case of every death that we hear of unreported by a local Registrar, but we must have either a returned letter or a death certificate before erasing a name, or we must wait for six months after sending the letter. I should be glad to simplify the work of the office by at once striking off the *Register* the names of all practitioners whose deaths are reported by the medical press in this country or abroad, but without the direction of the Council I should be acting very wrongly in doing so. The Committee will perhaps allow me to refer briefly to some of the causes which conduce to the non-erasure from the *Register* of the names of deceased practitioners. The proximate cause is, of course, that the deaths are not reported by the local Registrars, whose duty it is to report them, but there are more remote causes. Why are they unreported? Not always, or mainly, I think, because the local Registrars are negligent in performing their duty in this respect, for the discharge of which they, moreover, receive a fee; but because often they are not aware that the deceased person was a medical man whose death ought to be reported. When a practitioner, either on account of advanced age or some other cause, has ceased to practise, and retired, possibly into a new neighbourhood, he ceases to be known as a medical practitioner, and when his death occurs he is regarded as a private individual, and no certificate from the local Registrar is therefore forwarded to this office. In other cases young men—and unfortunately the percentage of deaths among newly registered practitioners is very high—travel into distant parts in search of health, and some dying, chiefly among strangers, are unknown to have been medical practitioners. There is yet another class of men who change their profession. I have myself known several medical men who have become clergymen, and others doubtless enter other professions in the same way, and naturally when their deaths occur they are returned to the local Registrar as of that profession to which they last belonged.

Thus there must always be a certain number of deaths unreported by

local registrars, and it is only by continuing the plan lately adopted in the office of systematically sending out letters to all persons on the *Register* under Section XIV that the names can be removed.

The second subject referred to in the *Lancet* was that of the vagueness of some addresses, and the names of eight practitioners were given whose only address was "Australia." On this point I would remark that great care is taken to obtain from a person registering for the first time a sufficiently full address, and I do not know of any case in which such a vague address has been accepted, though in the unlikely event of the practitioner insisting upon its acceptance, I do not quite see how it could be refused. The vague addresses, however, come about afterwards, and I will explain how. A practitioner decides to go abroad, and just before he leaves his old home, or perhaps afterwards when travelling—for we have sometimes had letters written on board ship—he bethinks himself to tell us that the old address is no longer his, and that he is going abroad, say, to Australia. Well, on receipt of this intimation the old address manifestly cannot be retained; we have been plainly told that it is incorrect, and for the time being "Australia" is put against the name in lieu of anything better, and we await the subsequent arrival of more detailed information. In many cases this information comes when the practitioner has fixed upon his domicile, but sometimes, either because he forgets to write, or does not think it worth his while, no further advice comes, and the address of Australia, used temporarily, has to become permanent.

With the Committee's permission, I should like to refer very briefly to another letter that was a sort of addendum to the previous article. It appeared in the issue of the *Lancet* of November 17th, and was from a Mr. Tastle, of Londonderry, who, under the heading of "Inaccuracies of the *Medical Register*," gave a list of five names of persons known by him to have died in that neighbourhood, though the names still appeared. Now investigation showed that these practitioners certainly were dead, but investigation also showed that they were all living at the time that the *Medical Register* left the office for press, and that they died subsequently during the present year, and were all duly taken off. I was advised of the death of one of them in February, of that of another in March, of a third in May, of a fourth in July, while the fifth practitioner died on November 8th, just nine days before the letter of complaint appeared. It is difficult to conceive of a more groundless letter of complaint, but unfortunately it was unwittingly assumed by the *Lancet* that the letter contained a just charge, and an editorial note was subjoined pointing out that the letter "added force" to the view that the *Medical Register* was "dangerously inaccurate," and courteously reminding the General Medical Council that it would be well if it discharged its duties better.

The *Medical Register* may, of course, have its blemishes, but it ought to be remembered that it contains over 35,000 names of practitioners scattered over the whole world, in regard to some of whom it is extremely difficult to obtain official information, so that while, for the reasons I have pointed out, it is scarcely possible to avoid the appearance of the names of a few practitioners who are dead, the general accuracy of the *Register* is, considering this difficulty, well maintained, and the value of the work is, I would humbly submit, greater than is supposed by many.

In November 26th. HENRY E. ALLEN, Registrar.

MEDICAL EDUCATION.

SIR,—I agree absolutely with the opinion expressed by Dr. Henry E. Armstrong in his recent letter to the *Times* as to the inadequate teaching of chemistry and other ancillary branches of science.

But I do not think he quite touches upon the question how this preliminary teaching of chemistry and the like can be best obtained and subsequently utilised. The Council and staff of Epsom College have long held that the subjects referred to by Dr. Armstrong should be taught thoroughly as school subjects; at the same time the future student should not be allowed to specialise in science subjects until his general education has reached a certain standard, and his faculties trained so as to be able to gain a firm hold of the elementary principles. Every student should be sent to a school where science is taught and the teaching recognised by the medical examining bodies. After he has passed through the ordinary course of study necessary for a good education he is introduced to the lecture room, the chemical laboratory, and the biological room, and in a class of say 20 students each individual works under the personal supervision of his teacher, and he is taught as far as possible to get an intelligent grasp of the subjects brought before him. In fact our plan has been to teach all the subjects required for the Matriculation and Preliminary Scientific Examinations of the University of London, and the majority of our boys pass one or both of these tests. Many have also succeeded in obtaining scholarships afterwards at Oxford or Cambridge, and winning honours in the university examinations. After leaving his school or the university, the student joins a hospital fitted to spend the whole of his five years' curriculum in the pursuit of those advanced subjects comprised in a sound medical education. It is common experience that the subjects taught in the smaller forms possible in a public school are better remembered and more readily available for practical use than when the individual relation of teacher and taught is lost in the larger lecture theatres of the great medical schools.

Few teachers of experience will question the statement that the results of the teaching of scientific subjects are found to be of little use, and "practically *nil*," if those subjects are taught prematurely, before the mind has been fitted to grasp their first principles, by a course of training suited to early years, or if again a mass of crude facts is imparted where the intelligence has not been awakened or the ground properly prepared.—I am, etc.,

C. HOLMAN,
November 27th. Treasurer of Epsom College.

THE DIPLOMA IN PUBLIC HEALTH.

SIR,—Most of those who have the teaching in the larger centres of population of many candidates for the D.P.H. will regard the alteration in the rules for the course of study as not only an unnecessary increase in the expenses and difficulties of a candidate, but also as a rule which must inevitably reduce the numbers of those who would otherwise have worked for the diploma. All will feel that if the gentlemen who constitute the Public Health Committee had been better informed on the special subject with which they had to deal, no such alteration would have been entertained.

The Committee in their report showed themselves to be desirous of considering leniently the case of candidates who hold official positions under the Secretaries of State for War, for India, and for the Colonies, and they made certain propositions in the draft rules whereby a class of "senior" students (that is, those who have possessed a registrable qualification for ten years) were to be freed from the necessity of attending a course of instruction in a fever hospital, and instead of six months' work with a medical officer of health, only sixty days were to be required. But notwithstanding this desire of their Special Committee, the Council pass a resolution which makes that which was originally a very difficult matter almost an impossible one to such candidates by demanding a course of nine months instruction instead of the original six.

The members of the Committee appear to have consented to the new rule, and, thus starting with the intention and desire to lighten the conditions affecting this special class of candidates, they end by increasing them. The existing rules were sufficiently stringent, and while every one will sympathise with the feeling generally expressed at the meeting that these should not be lightened, it is impossible to see any sufficient grounds for increasing their stringency.

In the report of the proceedings of the Council, as given in the issue of of the BRITISH MEDICAL JOURNAL for December 1st, Sir William Gairdner is reported to have stated that Dr. Russell, formerly medical officer of Glasgow, "pointed out that there was really nothing like a uniform practice in the work under the Medical Officer of Health and that the differences were so great in reference to the somewhat rigid methods followed in Glasgow, that the practice in other quarters was nothing less than a perfect sham." This statement is unfair and unjust to many of those in London, Cambridge, Edinburgh, Birmingham, Manchester, Newcastle, and elsewhere, who have earned and deserved the highest appreciation at the hands of candidates who have worked under them.—Yours, etc.,

December 4th. M.O.H.

SIR,—At the meeting of the General Medical Council on Wednesday, November 28th, a new regulation as regards the course of study for the Diploma in Public Health was agreed to in the following form: "Candidates shall have produced evidence that after obtaining a registrable qualification they have, during six months—of which at least three months shall be distinct and separate from the period devoted to laboratory work under regulation (I)—been associated day by day in the duty, routine and special, of the Public Health administration, under the supervision of the medical officer of health of, etc."

That a man before acting in a responsible capacity, whether private or public, should have been engaged in gaining experience as apprentice, or assistant, or deputy under a principal, goes without saying; but that this should take place after, and not before, qualification also went without saying in the medical world, until the new regulation appeared. Is the General Medical Council about to change its policy?

Candidates for the Diploma of Public Health are free to

choose, within limits, under what medical officer of health they shall obtain the six months' practical instruction in sanitary work, and they regard that work as a preparation for the practical portion of the second part of examination for the diploma. They mostly go to the few medical officers of health who have had experience in this kind of teaching, so that the teachers being few each has a number of students. A busy medical officer of health can devote one or at most two afternoons a week to demonstrating practically the application of scientific and legal methods to sanitary works and purposes, but to expect him to do more is to call upon him to neglect his public duties. The result will be that highly trained scientific men will be handed over to acquire their knowledge from sanitary inspectors, officers whom it may later be their duty to supervise.

The requirements of the practical portion of Part II of the examination for the diploma are the application of the science learnt in Parts I and II, and of scientific methods to inquiring into and reporting upon sanitary conditions and works, and the limitations imposed by sanitary laws. Practical sanitation and sanitary law can only profitably be learnt in combination for the purposes of public administration. It is to be regretted that no attention was paid to the opinion from the University of Glasgow, "that the length of time devoted to the study of practical sanitation does not so much matter as the kind and range of the subjects studied; and in order to ensure some general uniformity of range of instruction, it would suggest that a schedule of subjects to be studied should be drawn up by each medical officer of health who is entitled to teach candidates, and should be submitted to each body granting a diploma in public health for approval."

Mere routine work is a waste of valuable time. A dozen or two good discourses on sanitary laws, by-laws, and regulations in their various practical applications to sanitation, together with a dozen or two good demonstrations of practical sanitary conditions and works in their scientific, constructive, and legal aspects, the discourses and demonstrations forming one combined course according to a set syllabus, would be infinitely more valuable than the mere imposition of times and hours by regulation.

So much for instruction and practical application. If experience also be required, then that should follow qualification, as it does in the case of candidates proceeding from the M.B. or B.Sc. to the M.D. or D.Sc. degree, but this requirement raises the question of an additional examination.—I am, etc.,

December 3rd. THOROUGH.

THE SEX OF PATIENTS SUFFERING FROM GASTRIC ULCER.

SIR,—I am much obliged by Dr. Saundby's very courteous and valuable letter on the proportion of men to women in the cases of gastric ulcer which come to a necropsy. The proportion in clinical cases no one has doubted. I hope to add a second series of *post-mortem* cases to the hundred which I published several years ago; but I admit at once that the evidence adduced by Professor Welch of Baltimore and by Dr. Saundby is so far conclusive in favour of the commonly-accepted view that the incidence of gastric ulcer on each sex shown by the deadhouse does not materially differ from that observed at the bedside.—I am, etc.,

Brock Street, W., Dec. 5th. P. H. PYE-SMITH.

THE LONDON MATRICULATION EXAMINATION.

SIR,—If the Secretary of the Girls' Public Day School Company will kindly state what proportion of the Company's schools enjoys the manifold advantages of the Clapham High School, and why any of the schools are deprived of such advantages, I shall be most happy to withdraw any part of my remarks in the BRITISH MEDICAL JOURNAL of November 24th which his replies may show to be unjustifiable.—I am, etc.,

December 2nd. YOUR CORRESPONDENT.

ERRATUM.—In Mr. T. Hyde Hills's letter on An Outbreak of Diphtheria among School Children published in the BRITISH MEDICAL JOURNAL of December 1st, page 1614, column 2, paragraph 5, should read "Over 100 prophylactic," etc., instead of as printed

OBITUARY.

G. HUTCHINSON MILNES, B.A., M.D.CANTAB.

IT is with great regret that we have to record the sad death, at the early age of 41, of G. Hutchinson Milnes, B.A., M.D.Cantab., which took place at Plymouth on November 20th, the result of an overdose of morphine, self-administered.

It is believed that for a short time past Dr. Milnes had been in the habit of administering to himself subcutaneous injections of morphine with the view of obtaining sleep at night, and upon this occasion he must have inadvertently taken an overdose. This is borne out by the finding of the jury, who returned a verdict of "Death by misadventure."

Dr. Milnes was educated at Repton School, and commenced his medical studies at St. George's Hospital in 1876; there he held the office of House Physician and Resident Obstetric Assistant, and subsequently was for two years House-Physician at Addenbrooke's Hospital, Cambridge. In June, 1884, he graduated B.A., and a few months later M.B., taking the degree of M.D.Camb. in 1891. In 1886 he entered the Royal Navy, and served both in the Mediterranean and the Red Sea. As Surgeon to H.M.S. *Starling* he took part in the defence of Suakin, 1888, and was present in medical charge of the naval brigade at the action of Gemaizeh, for which he received the Egyptian war medal with clasp and the Khedive's bronze star. On his return to England in 1890 he was posted to the Royal Naval Hospital, Haslar, and was Assistant Instructor in Hygiene. He resigned his commission, however, in October, 1890, and settled in Derby.

In 1895 he was appointed Physician to the Derbyshire Royal Infirmary. A shrewd, hard-working, and painstaking man, he had devoted his whole time and exceptional energy to the study of his profession and to the relief of human suffering. Recognising as he did the great strides that are ever being made in the science of medicine, and especially preventive medicine, he spared neither time nor money to secure these advantages for the benefit of those for whom and amongst whom he lived and worked. Though somewhat austere and reserved, he was courteous to a degree, and his kindliness of heart and frank uprightness of character endeared him to many.

The medical profession of the town and county of Derby, and more especially those who were intimately connected with his infirmary work, feel indeed that they have lost a colleague of exceptional ability, one whose place they cannot hope to fill, and the memory of whom time will not efface.

PROFESSOR OLLIER,

Lyons.

IT is with deep regret we have to announce the death of Professor Ollier, the distinguished surgeon of Lyons, which occurred suddenly a few days ago. Louis Xavier Edouard Leopold Ollier was born at Lyons in 1825, and was therefore 75 years of age. He took his Doctor's degree at the Paris Faculty in 1857. Returning to his native city he was appointed Surgeon to the Hôtel Dieu and Professor of Clinical Surgery. His name was best known to his professional brethren by his work on the regeneration of bone from the periosteum after resection. The following is a list of his principal contributions to surgical literature: *Des moyens chirurgicaux de favoriser la reproduction des os après les résections*, etc. (1859); *Recherches expérimentales sur la production artificielle des os au moyen de la transplantation du périoste*, etc. (1859); *Traité expérimental et clinique de la régénération des os et de la production artificielle du tissue osseux* (1867); *Des résections des grandes articulations* (1870); *De l'occlusion inamovible comme méthode générale de pansement des plaies* (1874); *De l'éléphantiasis du nez et du son traitement* (1876), and *Traité des résections et des opérations conservatrices* (Paris, 1885). In Professor Ollier surgery loses one of its most distinguished representatives. His fame, which was world-wide, was founded on work of enduring value.

DR. JOHN NEILL WAUGH, of Brisbane, Queensland, who recently died at the advanced age of 82, was born in 1818, and became a Member of the Royal College of Surgeons of England in 1840. He took the degree of M.D. at St. Andrews in 1856, and in the same year obtained the licence of the Apothecaries' Society. He practised first in London, and

while still a young man visited many parts of Australia, India, and Africa, before finally settling down in Brisbane. In 1862 he returned to England, and during a comparatively brief sojourn here he married a relative of Mr. Holman Hunt. Dr. Waugh had been in his generation a famous amateur oarsman. During his residence in London, he threw himself into the sport of rowing with great enthusiasm. He was one of the original members of the Ilex Rowing Club on the Thames, and later he took a prominent part in founding the London Rowing Club.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ASHANTI DESPATCHES.

THE *London Gazette* of the 4th inst., publishes despatches from Sir F. M. Hodgson, Governor of the Gold Coast Colony, and from Colonel Sir J. Willcocks, Commanding the Ashanti Field Force, dealing with the recent operations against the rebel Ashantis and the relief of Kumasi. Sir F. Hodgson encloses a report from Major A. Morris, reciting the circumstances under which the column under his command succeeded in breaking through the rebel lines around Kumasi and reaching the coast. In his report Major Morris says: "Assistant Colonial Surgeon P. J. Garland, Principal Medical Officer, gave me much assistance, and his medical arrangements were very good.....Assistant Colonial Surgeons E. H. Tweedy and A. J. Chalmers displayed much zeal and energy in their manifold duties." In transmitting the report, the Governor endorses the mention thus made.

Sir F. Hodgson, in a second despatch, tells of the work done by the officers left to guard the Fort at Kumasi when it became necessary, in consequence of shortness of provisions, for the bulk of the force to break through the rebel lines. Among the officers he brings to notice is Dr. J. B. Hay, Assistant Colonial Surgeon Gold Coast Colony. Of him he writes: "Dr. Hay is a civilian officer whom the exigencies of service in West Africa drew temporarily into a post involving military duties. He is a very excellent and efficient officer, and I cannot say too much in his praise. He it was who was instrumental in rescuing under circumstances of considerable peril the body of native officer Akkere, Gold Coast Constabulary, when that officer was killed in the reconnaissance of April 23rd, as reported in my confidential despatch of July 14th. I should have been glad to have recommended this officer, who is now doing duty with the Ashanti Field Force, for the receipt of a military reward, but as he is a civilian I presume that I am precluded from doing so. I therefore ask that his probationary period as an Assistant Colonial Surgeon may be considered at an end, and that he be placed on the establishment of medical officers from June 23rd, with the higher rate of pay granted to such officers."

Colonel Sir James Willcocks, in his despatch, goes into much interesting detail of the work achieved by the force under his command. He also mentions the services rendered by Dr. Hay during the trying period of the investment of the troops with whom he was acting. In his summing up of the good work done by the officers under him, Sir James includes the following: "Dr. McDowell, West African Frontier Force, Principal Medical Officer of the Field Force. There is no officer in the force who has done better work; he is indeed a tower of strength; his untiring energy and devotion to duty are remarkable. I desire to bring him prominently to notice.... The following have done good work: Surgeon-Lieutenant Fletcher, Militia Medical Staff Corps, wounded; Dr. MacFarlane, Lagos Hausas, wounded; Dr. De Groot, Gold Coast Service; Staff-Sergeant Payne, R.A.M.C., wounded."

ROYAL NAVY MEDICAL SERVICE.

STAFF-SURGEON H. P. SHUTTLEWORTH has been placed on the retired list, October 23rd. He entered as Staff Surgeon, August 20th, 1885, and became Staff-Surgeon, August 20th, 1897.

Fleet-Surgeon GEORGE S. SMITH, and Surgeon R. R. FASSON, M.B., have been appointed to the *Blake*, for medical charge on the voyage to Malta, November 27th, and to the *Empress of India*, undated.

ROYAL ARMY MEDICAL CORPS.

MAJOR M. O'C. DRURY retires on retired pay, December 5th. He was appointed Surgeon, July 31st, 1880, and Surgeon-Major, July 31st, 1892. He was in the Soudan campaign in 1885, receiving a medal with clasp and the Khedive's bronze star, and in the Burmese war in 1886-7, for which he was mentioned in despatches, and granted the Indian Frontier medal with clasp.

Colonel W. F. BURNETT, Principal Medical Officer at Mandalay, is appointed to officiate as Principal Medical Officer Bengal Command, with the temporary rank of Surgeon General, from October 15th.

Deputy-Surgeon-General JAMES CARROLL died in Dublin on November 27th. He was appointed Assistant Surgeon, January 3rd, 1851; Surgeon, January 26th, 1858; Surgeon-Major, January 3rd, 1871; and Honorary Deputy-Surgeon-General on retirement on half pay, January 26th, 1870.

In a telegram from Bloemfontein, dated December 1st, Lord Kitchener, in reporting the fighting near Bronkhorst Spruit on November 29th, says that Lieutenant CHALLIS was severely wounded, being hit in three places while gallantly attending wounded men under a heavy fire. Surgeon-Captain GODFREY, of the New Zealand Mounted Rifles, was also wounded in the same engagement.

The undermentioned are returning from South Africa, doing duty on the voyage: Lieutenant-Colonel H. L. BATTERSBY, Lieutenant W. JAGGER, Civil Surgeons J. A. BARNES, L. COOPER, J. E. KER, W. L. WAINWRIGHT, L. V. CAROLL, W. C. ALLAN.

Among the invalids returning home from South Africa are the following: Major W. G. A. BEDFORD, Major R. W. LORD, Major J. G. BLACK, Captain K. M. CAMERON, Major T. ARCHER, Lieutenant F. S. WALKER, Civil Surgeon D. V. M. ADAMS.

MEDICO-LEGAL AND MEDICO-ETHICAL.

UNQUALIFIED PRACTICE.

IN the BRITISH MEDICAL JOURNAL of November 24th, page 1541, the proceedings of an inquest in which an unqualified practitioner named Rawlings was committed for trial on the coroner's warrant for manslaughter were noted. The manslaughter was alleged to have been committed by him in his treatment of a woman for cancer by means of a "cancer and tumour" lotion and a "cancer and fungus" lotion. It appears that on November 23rd Rawlings was brought before the magistrates at Barnsley. According to the report in the *Leeds Mercury* similar evidence was given, and the prosecution urged that a person of competent skill may be unfortunate upon some occasions, but one entirely incompetent must abstain from medicine or surgery unless there be no means of gaining better help.

Mr. C. Miller, for the defence, submitted that there was no case to answer, and argued that the defendant made a special study of and had been very successful in the treatment of cancer. A dozen persons from Barnsley and district who had been operated upon, or had been told that their only hope was in being operated upon, but who had been cured by defendant's treatment, were ready to give evidence.

From the report, however, it appears that the magistrates did not think any evidence necessary, but on this statement of the prisoner's counsel held that the charge of manslaughter had not been made out, and discharged the prisoner.

In spite of the decision of the magistrate, Rawlings can be brought up at the next assizes on the coroner's warrant, when the question of a "true bill" can be decided by the grand jury irrespective of his dismissal at the police court.

THE TITLE OF DENTIST.

A REGISTERED medical practitioner is entitled to use the designation Dentist or Surgeon-Dentist. Section III of the Dentists Act, which deals with the unauthorised assumption of titles, ends with the words "provided that nothing in this section shall apply to legally qualified medical practitioners."

TITLE OF "DR." AND FOREIGN DEGREES.

A CORRESPONDENT writes: Would you kindly tell me if I am quite within my rights in putting "Dr." on my card and doorplate, holding a degree from the U.S.A., and the triple qualification of the Scottish Board? As the American degree necessitated a long residence and a rigorous examination, it ought to hold a position not inferior, to say the least, to the M.D. Brussels.

*** In reply to our correspondent we would repeat the opinion we have before expressed, that a duly registered medical practitioner holding a *bonâ fide* (although unregistrable) foreign degree need fear no legal consequences for prefixing "Dr." to his name on doorplate or card. We can go no further than this.

CHARGES FOR ATTENDANCE ON CASE OF ACCIDENT.

BETWEEN TWO STOOLS writes that he has recently been attending a poor man for injuries caused by being run over by a gentleman's carriage. The injuries were of a serious character, and his attendance has been a long one. He has been told by the patient's relations that the owner of the carriage had promised to pay the doctor's bill. He wishes to know at what rate he should charge for his attendance, and states that the patient resides at a distance of three miles from his house.

*** Under the circumstances stated our correspondent would not be able to recover from the owner of the carriage his charges for attendance on the patient if they were disputed, so that it would be wise on his part to make them as reasonable as possible. They should be neither more nor less than what he would expect the patient to pay himself if he had the means, and should be in accordance with the charges made by the medical practitioners in the neighbourhood for attendance in such cases.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, [illegible] births and 4,[illegible]17 deaths were registered during the week ending Saturday last, December 1st. The annual rate of mortality in these towns [illegible] had been 17.6 per 1,000 in each of the two preceding weeks, it rose last week to 18.0. The rates in the several towns ranged from [illegible] in Croydon, 12.3 in Cardiff and in Norwich, [illegible] in Halifax, 22.9 in Liverpool, Blackburn, to 21.5 in Wolverhampton, [illegible] and 26.9 in Sunderland. In the thirty-two provincial towns the mean death-rate was 18.2 per 1,000, and exceeded by [illegible] the rate recorded in London, which was 17.9 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.6 per 1,000; in London this death-rate was equal to 1.4 per 1,000, while it averaged 1.[illegible] in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.1 in Burnley, 3.4 in Derby, 3.5 in Wolverhampton and in Sunderland, 3.8 in Blackburn, and 4.0 in Swansea. Measles caused a death-rate of 1.2 in Wolverhampton, and 3.0 in Swansea; scarlet fever of 1.1 in Blackburn, and 1.4 in Sunderland; whooping-cough of 1.0 in Huddersfield, 1.1 in Blackburn and in Sunderland, 1.5 in Hull, and 1.9 in Derby; and diarrhœa of 1.1 in Black-

burn, and 1.2 in Wolverhampton. The death-rate from "fever" did not exceed 1.0 in any of the large towns. The 89 deaths from diphtheria included 29 in London, 8 in Sheffield, 7 in Leeds, and 6 in Leicester. One fatal case of small-pox was registered in London, but not one in any of the thirty-two provincial towns; and 2 cases of small-pox remained under treatment in the Metropolitan Asylum Hospitals on Saturday last, December 1st. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,728 and 2,725 at the end of the two preceding weeks, had risen again to 2,727 on Saturday last; 279 new cases were admitted during the week, against 289, 261, and 246 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, December 1st, 844 births and 672 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 19.2, 19.9, and 20.3 per 1,000 in the three preceding weeks, further rose last week to 21.7, and was 3.7 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 11.8 in Perth and 17.2 in Leith to 25.2 in Paisley and 26.6 in Greenock. The zymotic death-rate in these towns averaged 2.9 per 1,000, the highest rates being recorded in Aberdeen and Greenock. The 302 deaths registered in Glasgow included 1 from small-pox, 4 from scarlet fever, 33 from whooping-cough, and 6 from diarrhœa. Four fatal cases of measles, 2 of whooping-cough, and 4 of diarrhœa were recorded in Edinburgh. Six deaths from diarrhœa occurred in Dundee; 7 from measles, 2 from diphtheria, and 2 from diarrhœa in Aberdeen; 2 from "fever" in Paisley: and 5 from whooping-cough in Greenock.

LUNATIC TRAMPS AT POLICE STATIONS.

Cymro, who is a district medical officer, and not a police surgeon, says he was requested to visit a tramp detained at the police station and deemed to be a lunatic. He paid two visits there, and found him to be insane. "Cymro" attended at the court (as he says) to give evidence on this point, and finally certified to the lunacy of the patient. He asks whether he can claim a fee for each visit, in addition to the fee for the certification.

*** As the patient was not in custody for any criminal offence, we question whether our correspondent will be able to establish a claim for any fee beyond that allowed by the magistrate for certifying the patient as a lunatic.

MEDICAL NEWS.

Harveian Society of London.—The annual dinner of this Society took place on Thursday, November 29th, at the Café Monico, the President Mr. W. H. Lamb, M.B., occupied the chair, being supported by Dr. Church, President of the Royal College of Physicians, Sir R. Douglas Powell, Dr. W. F. Pavy, Mr. Watson Cheyne, Dr. Dundas Grant, Mr. Edmund Owen, Dr. T. Morton, Mr. G. Eastes, Dr. S. West, Dr. W. Ewart, and over a hundred members and guests. After the toast of "The Queen," Mr. J. H. Morgan, President of the Medical Society, proposed "Success to the Harveian Society," now in its seventieth year. He thought that in the multiplication of special societies there was some danger that the old general societies might suffer, but the attendance that night seemed to indicate that there was no falling-off in the enthusiasm of the members of the Harveian Society. The Chairman replied on behalf of the Society, which he said now numbered over 400 members, of whom more than 300 were resident in the neighbourhood of the Society's place of meeting. Mr. Edmund Owen, in a felicitous speech, proposed "The Sister Societies" and "The Guests." Dr. Pavy (President of the Royal Medical and Chirurgical Society) replied for the former, and Dr. W. S. Church for the latter. Mr. G. Eastes proposed the toast of "The President," to which Mr. Lamb replied; and, before resuming his seat, he proposed as a toast "The Honorary Secretaries." Mr. Raymond Johnson, to whom the excellent organisation of the entertainment was chiefly due, and Mr. Hubert C. Phillips having replied, the company shortly afterwards separated.

British Medical Temperance Association.—The British Medical Temperance Association held a meeting on November 30th in the rooms of the Medical Society of London, Professor Sims Woodhead in the chair, when a paper was read by Dr. Heywood Smith on alcohol in relation to women. He gave reasons for believing that intemperance was increasing among women, owing to several causes, and urged the abolition of the grocer's licence. An animated debate followed, in which Drs. Stewart, Paramore, Drysdale, Morton, Hazel, Doubavand, Halliday, Hingston Fox, Ridge, Mr. McAdam Eccles, Mrs. Drysdale, and the President took part, and the following resolution was unanimously adopted: "That this meeting, having had under its consideration the prevalence of intemperance amongst women and its effects upon the health of the community, expresses its conviction that the existence of shopkeepers' licences promotes female intemperance, and believes it to be a matter of urgency that they should be abolished."

British Gynæcological Society.—The annual dinner of the British Gynæcological Society was held at the Café Monico on November 29th. Dr. W. J. Smyly, the President, was in the chair. The toast of "The Guests" was responded to by Sir James Dick and Sir William Thomson. The latter referred to the work done by the Irish Hospital in South Africa and its mobility. He described the march from Bloemfontein to Pretoria with Lord Roberts, dwelling upon the endurance, discipline, self-denial, and courage of the British soldiers, warmly repudiating the imputations which had had recently been uttered by Mr. Kruger with regard to the British army. He deplored, as exaggerated and unpatriotic, the letters which had appearad with regard to the treatment of our soldiers in the campaign. He had not himself seen anything to justify such representations; considering the exigencies of war, everything that could be done had been done. The Palace of Justice, a splendid building in Pretoria, in which the Irish Hospital was established, offered exceptional advantages for the care of the sick and wounded. Within four days of its being given up to them they were able to accommodate 80 wounded, and their results would compare favourably with those of home hospitals. The President of the British Medical Association, in proposing the toast of "The British Gynæcological Society," traced the early history of the Society, and referred to the good work it had done, and the great advantage it had been to the profession at large by the diffusion of knowledge; and in coupling the toast with the name of the President, he alluded to the high position he occupied as an obstetrician. The President suitably replied. The toast of "The Universities and Medical Corporations" was proposed by the President of the Obstetrical Society of Edinburgh. He emphasised the objects of the University for the furtherance of research, quite apart from its teaching functions, expressing a hope that the new University of London would proceed on these dual lines, which would ensure its ultimate success. Sir Henry Roscoe, who replied for the University, briefly sketched the outlines on which the University of London would be conducted. There would be the same liberal attitude to all, both men and women, who could take advantage of its teaching and degrees. At the same time, the high standard which had been aimed at by the London University in the past would be strictly maintained. He referred to the Jenner Institute as a great means for the advancement of medical science, so great that it was hardly appreciated to the extent it ought to be, and to which the great liberality of Lord Iveagh had so largely contributed. Sir Christopher Nixon replied for the Medical Corporations in an interesting speech.

MEDICAL VACANCIES.

The following vacancies are announced:

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, with apartments and board. Applications to the Chairman of the Medical Board by December 17th.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Surgical Officer. Salary, £100 per annum, with furnished apartments, rations, etc. Applications to the Clerk to the Guardians, Parish Offices, Edmund Street, Birmingham, by December 10th.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House-Surgeon. Salary to commence at £60 per annum, with board, washing, etc. Applications to the Secretary, 15, Richmond Terrace, Blackburn, by December 12th.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Three House-Surgeons. Salary, £160 per annum, with furnished apartments, etc. Applications to the Assistant Secretary, 113, Queen's Road, Brighton, by December 27th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—(1) Second House-Surgeon and Anæsthetist. Salary, £70 per annum. (2) Third House-Surgeon. Salary, £60 per annum. Candidates must be unmarried. Board and residence provided in each case. Applications to the Secretary by December 26th.

BURY DISPENSARY HOSPITAL.—(1) Senior House-Surgeon. Salary, £100 per annum. (2) Junior House-Surgeon. Salary, £80 per annum. Board, residence, and attendance provided in each case. Applications to the Secretary, Knowsley Street, Bury.

CENTRAL LONDON SICK ASYLUM DISTRICT.—Second Assistant Medical Officer and Dispenser at the Asylum, Hendon. Salary, £75 per annum, with board and residence. Applications to the Clerk, Cleveland Street Asylum, W., by December 14th.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £100 per annum, with board, apartments and laundress. Applications to the Secretary.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House-Physician. Appointment for six months. Salary at the rate of £30 per annum, with board and residence. Applications to the Secretary by December 10th.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Assistant House-Surgeon. Salary, £40 per annum, with board and residence. Applications to the Secretary by December 13th.

DOUGLAS: NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon; unmarried... Salary, £82 per annum, with board and washing. Applications to the Honorary Secretary, 25, Athol Street, Douglas, Isle of Man by December 11th.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary, £40 per annum, with residence, board, and washing. Applications to the Secretary by December 13th.

GLAMORGAN COUNTY ASYLUM, near Bridgend.—Assistant Medical Officer, unmarried, age preferred between 23 and 28 years. Salary, £150 perannum, with board, lodging, and washing. Applications, to the Medical Superintendent by December 17th.

GLOUCESTER: GENERAL INFIRMARY AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House-Surgeon. Appointment for six months, but eligible for re-election. Remuneration at the rate of £30 per annum, with board, residence, and washing. Applications to the Secretary by December 18th.

GREAT NORTHERN CENTRAL HOSPITAL.—Non-resident Assistant House-Surgeon. Appointment for six months. Salary at the rate of £60 per annum, with luncheon and dinner. Applications to the Secretary by December 17th.

HANWELL: LONDON COUNTY ASYLUM.—Junior Assistant Medical Officer, between 23 and 30 years of age. Salary, £150 per annum, with board, furnished apartments, and washing. Applications on forms provided to the Clerk of the Asylums Committee, 6, Waterloo Place, S.W., by December 8th.

HARTLEPOOL HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board, washing, and lodging. Applications to the Honorary Secretary, 15, Town Wall, Hartlepool, by December 18th.

HEMEL HEMPSTEAD: WEST HERTS INFIRMARY.—House-Surgeon and Dispenser; unmarried. Salary, £100 per annum, with furnished rooms, board, etc. Applications to the Honorary Secretary by December 12th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Resident Medical Superintendent. Salary, 100 guineas per annum, with board and residence. Applications, on forms provided, to the Secretary by December 11th.

HULL ROYAL INFIRMARY.—(1) House-Surgeon; unmarried. Salary, 100 guineas per annum, with board and furnished apartments. (2) Junior Assistant House-Surgeon. Salary, £40 per annum, with board and lodging. (3) Honorary Surgeon. Applications for (1) and (2) by December 10th, and (3) by December 12th.

IPSWICH: EAST SUFFOLK AND IPSWICH HOSPITAL.—Two House-Surgeons, unmarried. Salary, £80 and £70 respectively, with board, lodging, and washing. Applications to the Secretary by December 11th.

KING'S COLLEGE, London.—Professor of Anatomy. Applications to the Secretary by December 14th.

LEEDS: HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Appointment for six months but eligible for renewal. Salary at the rate of £125 per annum. Applications to the Secretary of the Faculty by December 14th.

LIVERPOOL STANLEY HOSPITAL.—Honorary Assistant Physician. Applications to the Honorary Secretary by December 14th.

LONDON HOSPITAL MEDICAL COLLEGE.—Assistant Demonstrator of Anatomy. Salary, £90 per annum. Applications to the Warden by December 10th.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer for the Asylum for imbeciles at Caterham. Unmarried, and not exceeding 35 years of age. Salary, £150, rising to £170, with rations, lodging, attendance, and washing. Applications on forms provided to be sent to the office of the Board, Victoria Embankment, E.C., by January 5th.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich Road, S.E.—Junior Resident Medical Officer. Salary, £60 per annum, with board, attendance, and washing. Appointment tenable for six months, with prospect of re-election as Senior. Applications to the Secretary by December 18th.

NEWCASTLE-UPON-TYNE UNION.—Assistant Medical Officer at the Workhouse, unmarried. Salary, £150 per annum, with furnished apartments, rations, and washing. Applications to the Clerk to the Guardians, Union Offices, Newcastle-upon-Tyne, by December 19th.

NORTHAMPTON GENERAL INFIRMARY.—House-Surgeon; unmarried, and not under 23 years of age. Salary, £125 per annum, with furnished apartments, board, etc. Applications to the Secretary by December 13th.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon; unmarried. Salary, £140 per annum, and all found except board. Applications to the Secretary.

PADDINGTON INFIRMARY.—Clinical Assistant and Second Assistant to the Medical Superintendent, unmarried and between 21 and 30 years of age. Appointment for six months. Board and lodging provided, and honorarium of £30. Applications to the Medical Superintendent at the Infirmary, 235, Harrow Road, W., by December 11th.

RHONDDA URBAN DISTRICT.—Medical Officer of Health. Salary, £500 per annum. Applications, endorsed "Medical Officer of Health," to the Clerk, Public Offices, Pentre (Glam.), by December 12th.

ROYAL EAR HOSPITAL, Soho.—House-Surgeon, non-resident. Small honorarium given. Applications to the Honorary Secretary, Medical Board, before December 15th.

SALFORD UNION.—Assistant Resident Medical Officer at the Union Infirmary, Hope, near Eccles. Salary, £130 per annum, with furnished apartments and attendance. Applications endorsed "Assistant Medical Officer" to the Clerk of the Guardians by December 12th.

SALVATION ARMY MEDICAL DEPARTMENT.—Honorary Dental Surgeon. Applications to Commissioner Pollard, 101, Queen Victoria Street, E.C., by December 15th.

SEAMEN'S HOSPITAL SOCIETY, Greenwich.—House-Physician for the "Dreadnought" Hospital. Salary, £75 per annum, with board and residence. Applications to the Secretary by December 10th.

STEPNEY BOROUGH.—Medical Officer of Health, not more than 45 years of age. Salary, £750 per annum. Applications marked "Appointment of Medical Officer of Health" to the Acting Town Clerk, Limehouse Town Hall, Commercial Road East, by December 13th.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior Resident House-Surgeon, unmarried. Salary £100 per annum with furnished residence and board. Applications to the Honorary Secretary by December 22nd.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician, (2) House-Surgeon. Appointments for six months. Board and lodging provided in each case. Applications to the Secretary by December 20th.

WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer. Applications to Mr. F. Dawkins, 9, Gerrard Street, Soho, W., by December 21st.

WINCHESTER ROYAL HANTS COUNTY ASYLUM.—House-Surgeon, unmarried. Salary, £65 per annum, rising to £75, with board, residence, etc. Applications to the Secretary by December 10th.

MEDICAL APPOINTMENTS.

AITKEN, John, M.B., Ch.B.Glas., appointed an Outdoor House-Surgeon to the Maternity Hospital, Glasgow.

BOYD, Stanley, F.R.C.S., appointed Consulting Surgeon to the Paddington Green Children's Hospital.

BURGHARD, Frederick F., F.R.C.S., appointed Surgeon to In-patients at the Paddington Green Children's Hospital.

BUTTERFIELD, Frank, M.R.Lond., appointed Senior House-Surgeon of the Blackburn and East Lancashire Infirmary.

HENDERSON, John, M.B., Ch.B.Glas., appointed an Outdoor House-Surgeon to the Maternity Hospital, Glasgow.

HOGARTH, R. G., F.R.C.S.Eng., appointed Surgeon to the Children's Hospital, Nottingham.

JOHNSON, Robert G., M.R.C.S., L.R.C.P., appointed Registrar and Pathologist, North London Consumption Hospital.

LEIGH, J. Dickinson, M.B., F.R.C.S.E., D.P.H., appointed Certifying Factory Surgeon for the Scarboro' District.

MILLSON, George, L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer of Health for the Borough of Southwark.

MILNE, John Wallace, M.B., C.M.Aberd., M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant Surgeon in the Aberdeen Royal Infirmary.

SCOTT, James, M.A., M.B., Ch.B.Glas., appointed Indoor House-Surgeon to the Maternity Hospital, Glasgow.

SMITH, W. E., M.D.Lond., B.S., appointed Certifying Factory Surgeon for the Beeston District, co. Nottingham.

STARR, Ewen C., F.R.C.S., appointed Surgeon to Out-patients at the Paddington Green Children's Hospital.

TRUMPER, W. A., L.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant House-Surgeon to the Royal Devon and Exeter Hospital, Exeter.

TURNER, Percy E., M.B., B.S.Dunelm, L.R.C.P., D.P.H.Oxon., appointed Superintendent of the Salvation Army Medical Department in India, with headquarters at the Catherine Booth Settlement, Nagercoil.

ST. THOMAS'S HOSPITAL.—The following gentlemen have been selected as House Officers from December 4th, 1900:

House Physicians—C. F. Selous, L.R.C.P., M.R.C.S.; H. H. B. Clarke, L.R.C.P., M.R.C.S.

Assistant House-Physicians—Z. Mennell, L.R.C.P., M.R.C.S.; F. B. Skerrett, B.Sc.Lond., L.R.C.P., M.R.C.S.

Obstetric House-Physicians—(Senior) H. R. Beale, L.R.C.P., M.R.C.S. (Junior) E. W. Hedley, M.A., M.B., B.C.Cantab.

Clinical Assistants in the Special Department for Diseases of the Throat—C. A. R. Nitch, M.B.Lond., L.R.C.P., M.R.C.S.

Several other gentlemen who hold office before have received an extension of their appointments.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 8.30 P.M.—Dr. F. de Havilland Hall: The Diagnosis and Treatment of Thoracic Aneurysm (adjourned discussion, with special reference to Treatment by Injection). Mr. Alban Doran: Painless Calculous Pyonephrosis without Fever: Nephrectomy: Recovery.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. James Galloway: Consultation. (Skin.) 5.15 P.M.—Dr. StClair Thomson: The Surgical Anatomy of the Nose and Accessory Sinuses, including Nasal Suppuration.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Mr. L. A. Bidwell: The Preparations before Abdominal Operations.

TUESDAY.

Royal Medical and Chirurgical Society, 20, Hanover Square, W., 8.30 P.M.—Discussion on Malaria, in which Drs. Manson, Sambon, and Low will take part. Demonstration of parasites by Dr. Rees.

Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, W.C., 8 P.M.—Communications.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Harry Campbell: Consultation. (Medical.) 6 P.M.—Dr. Seymour Taylor: Class, "Applied Anatomy."

Hospital for Diseases of the Skin, 53, Stamford Street, Blackfriars, S.E., 5 P.M.—Dr. C. F. Marshall: Tertiary Syphilides.

WEDNESDAY.

Sanitary Institute, Parkes Museum, Margaret Street, W., 8 P.M.—Discussion on the Practical Aspects of the Plague at Sydney (with illustrations), to be opened by Mr. Frank Tidswell, Principal Assistant Medical Officer of the Government of New South Wales.

Hunterian Society, London Institution, Finsbury Circus, E.C., 8.30 P.M.—Dr. Hingston Fox will read a paper on Notes on Recovery from Acute Disease; Studies in Prognosis.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. E. W. Roughton: Consul[illegible]

Hospital for Consumption and Diseases of the Chest, Brompton, S.W., 4 P.M.—Dr. Perkins: On the Diagnosis of Incipient Pulmonary Tuberculosis.

THURSDAY.

Charing Cross Hospital, Post-Graduate Course, 4 P.M.—Mr. Gibbs: Surgical Cases.

British Gynecological Society, 20, Hanover Square, W., 8 P.M.—Specimens by Mr. Furneaux Jordan, Mr. Bowreman Jessett, and Dr. Herbert Snow. Papers—Dr. Elder: Some interesting and unusual Abdominal Cases. Dr. Hodgson: Circulatory Phenomena as a sequela of the Pregnant Uterus.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Still: Jaundice in Children.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Mr. L. A. Bidwell: The Treatment after Abdominal Operations.

Ophthalmological Society of the United Kingdom.—Clinical evening: Patients and Card Specimens at 8 P.M. Chair at 8.30 P.M. Mr. J. Herbert Fisher: Case of Congenitally Imperfect [illegible] of Iris from back of Cornea. Mr. W. T. Lister: Large Dermoid [illegible] of the Cornea in an Ox's Eye. Mr. [illegible] ample [illegible] Papilloma [illegible]

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Treacher Collas: Consultation. (Eye.)

British Balneological and Climatological Society, 20, Hanover Square, W., 8.30 P.M.—Dr. Waddell: The Suppression of Malaria.

Clinical Society of London, 20, Hanover Square, W., 8.30 P.M.—Dr. Tyson: A case of Ankylostomiasis. Dr. [illegible] Fawcett and Mr. [illegible] [illegible] Mr. W. [illegible] sm filled with Concretions of Urate of Soda in a case of Gonorrhœal Rheumatism.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGES.

O'KINEALY—TREVER.—On November 14th, at St. [illegible], by the Rev. Canon Luckman, Captain F. O'Kinealy, [illegible] to Helen Mabel, only daughter of Rev. late Judge of the High Court of Calcutta, to Helen Mabel, only daughter of Rev. Geo. A. Trever, of Queen's Gardens, London.

STEVENS—JENKINS.—On December 1st, at Llandaff Cathedral, by the Rev. J. R. Buckley, assisted by the Rev. [illegible], [illegible] Crescent, Cardiff, to Annie, only daughter of R. Jenkins, Netherwood, Llandaff.

DEATHS.

BEVAN.—On November 30th, John Iron Bevan, M.B., C.M.Edin., of Glyn Sithen, Mumbles, Swansea, aged 82.

JONES.—On December 1st, 1900, at Llangrannarch Wells, Breconshire, Elizabeth Ada, the dearly beloved wife of Wm. Black Jones, M.D., B.S.Lond., and third daughter of W. K. Burman, of Clapton, N.E.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

MEDICAL OFFICER asks for experience as to bacterial tanks in the treatment of sewage from an infectious diseases hospital.

J. A. R. asks for information as to any cases of pregnancy after nephrectomy, where the pregnancy has been allowed to go to full term, and the result.

HOME AND SCHOOL FOR FEEBLE-MINDED CHILD.

M.D., M.S. would be glad to hear of any institution which would undertake the teaching of a "feeble-minded" boy, aged 11 years. The parents would be willing to pay any reasonable fee. They have strong objections to sending the boy to live in an institution, and would prefer boarding him with some suitable person, and letting him attend the school for teaching and training.

CHARGES FOR JOURNEY.

PARIS was asked to make a long journey in order to accompany home a patient who had suffered fracture of the skull in a railway accident. He was absent from home for 36 hours. Accompanying the patient was a sister-in-law who had sustained a severe scalp wound which had entirely healed, and another lady suffering from bruises. He wishes to know what would be a fair fee to charge. He is a general practitioner in a fairly large middle-class practice. The fee will be paid by the railway company.

*** We are advised that our correspondent would be justified in charging 7s. a mile for the patient with fractured skull; for the others, if under his professional care, 2s. 6d. a mile each.

POISONING BY COCAINE.

STAFF-SURGEON writes: Two days ago I had occasion to apply cocaine on a man in his ship for ligaturing condylomata, and after, I should think, about a grain had been applied he showed unmistakable symptoms of slight poisoning; after being in considerable pain from the condylomata which were ligatured he suddenly began to laugh, Stimulants and beef tea were given, bleeding from the remaining condylomata encouraged, and hot fomentations were applied, and in an hour or so the symptoms passed off. This is only the second time I have seen any symptoms of poisoning by cocaine since I have been in the navy—once before, when opening a bubo, and certainly not more than three-quarters of a grain had been injected. During the period he was laughing, etc., his pulse was intermittent. I should like to know other medical men's experience of the drug, and how far it can be pushed; at present it seems doubtful.

ANSWERS.

WE would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided.

PERDIX.—A great deal has been written as to the use of formic aldehyde and various preparations of it as a disinfectant. A note on the subject was published in the BRITISH MEDICAL JOURNAL of December 1st. A paper by Drs. Kenwood and H. J. Curtis, published in the *Journal of the Sanitary Institute* for 1897 contains a fairly full bibliography down to that date.

M.R.C.S.—We are indebted to Mr. Gerald Dalton, Honorary Secretary of the Association of Physicians and Surgeons (Society of Apothecaries), for the information that the Society of Apothecaries is of opinion that diplomates holding the qualifications of M.R.C.S and L.S.A., registered before 1886, are not entitled to style themselves "physician"; if the L.S.A. were obtained after 1886 they are so allowed, and may use the letters L.P and S.S.A. in conjunction with M.R.C.S., except on death certificates, in which case the letters must at present remain as hitherto, M.R.C.S. and L.S.A.

J. S. M.—The following works might be read with advantage as a preparation for giving a course of lectures on Home Nursing for the County Council: *Artificial Feeding and Food Disorders of Infants.* W. B. Cheadle, M.D. Fourth Edition. (London: Smith, Elder and Co. 1896. 5s.) *Domestic Hygiene.* By Thomas Dutton, M.D. (London: Henry Kimpton. 1894.) *Manual of Personal and Domestic Hygiene.* By A. T. Schofield, M.D. (London: Allman and Son. 1889. 2s.) *Medical Nursing.* By J. Wallace Anderson, M.D. (Fourth Edition. 1891. 2s. 6d.) *Care of the Sick and Dying.* By Arthur Brinckman. *Handbook of Nursing for Home and Hospital.* By C. N. Wood. (Fourth Edition. 1882. 2s.)

NOTES, LETTERS, Etc.

THE APPEAL ON BEHALF OF THE WIDOW AND FAMILY OF THE LATE DR. QUINLIVAN.

THE following additional subscriptions have been received towards this fund, the objects of which were fully stated in the BRITISH MEDICAL JOURNAL of November 17th, 1900, p. 1450:

	£	s.	d.
Rev. Father Walters	1	1	0
Dr. Sansom, Harley Street	1	1	0
Dr. J. Cotter, Cork	2	0	0
	£4	2	0

	£	s.	d.
Brought forward	4	2	0
Dr. Moynahan	1	1	0
Dr. Sheahan, Portsmouth	1	1	0
Dr. Spooner...	0	5	0
Dr. Beven	0	5	0
Dr. John Malvany, Portsmouth	1	1	0
Dr. Rehane, 29, Egerton Crescent, S.W ..	1	1	0
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LETTERS, COMMUNICATIONS, ETC., have been received from

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A CLINICAL LECTURE
ON
POLYORROMENITIS, OR COMBINED SEROUS INFLAMMATIONS.

By FREDERICK TAYLOR, M.D., F.R.C.P.,
Senior Physician to Guy's Hospital.

Case.

Ada E. S., aged 39, was admitted to Guy's Hospital on February 4th, 1900, for pain and swelling in the abdomen.

History.

She had had a slight attack of rheumatism twelve or thirteen years before, influenza eight years before, and again last Christmas. She had been married twelve years ago, and had had no children. She said on admission that she often suffered in the morning from retching, and brought up a little watery fluid, and had no appetite for breakfast. She had cramps at night, and suffered from flatulence and palpitation; she often lost her voice suddenly, and did not regain it for two or three days. She commonly drank beer during the day and spirits at night, and usually took a little alcohol to relieve the pain at the beginning of each menstrual period. For two or three weeks previous to admission she had a cough, with dark sputum, and lately she was unable to continue She also had a [illegible]

Condition on Admission.

She was well nourished, dark, wanting in colour, but without puffiness of the face or œdema of the legs. The abdomen was full, tense, bulging in the flanks, slightly tender, especially in the epigastrium. There was dulness in the flanks and above the pubes, changing with the position of the patient, but no fluctuation or thrill. The liver and spleen could not be felt, nor any tumour. The impulse of the heart could not be felt, the dulness covered the third costal cartilage, and a soft systolic murmur was heard at the apex and at the base. A few *râles* were heard at the left base. She expectorated a little frothy mucus. The urine showed a trace of albumen, and had a specific gravity of 1012.

Progress of Case.

The temperature during the next few days was 101.8°, the pulse 104, and the respirations 32. She complained of pain in the abdomen and in the loins. On February 9th a blood count gave red corpuscles 3,500,000, leucocytes 8,500, hæmoglobin 35 per cent. On February 11th a few fine *râles* were heard at the left apex, and on February 19th the left base behind was dull as high as the scapular spine, with diminished breath sounds, diminished vocal resonance, and absence of tactile vocal fremitus. Dulness was then noticed in front, and on February 23rd the left side of the chest was aspirated, and 76 ounces of a slightly reddish serum of specific gravity 1018 were drawn off. The condition of the abdomen remained very much the same, slightly increasing in bulk before the aspiration, and again diminishing.

On March 18th she was again aspirated, and 73 ounces of greenish-yellow fluid, of specific gravity 1020, were withdrawn. On March 19th the left side of the chest was resonant in its upper half, dull in the lower half. The breath sounds were rather faint at the base; there was no bronchial breathing, no ægophony; tactile vocal fremitus was felt nearly to the base.

Temperature.

During the whole of this period of seven weeks from the date of admission the temperature has been oscillating above the normal level. The first week it ranged from 100° to 103°, the second week between 99° and 102°; in the third week the morning temperature fell on three occasions to 98°, the evening rising to 101° or 101.4°, and for the remaining four weeks it has been chiefly between 99° and 101°, with a morning drop to normal only on four separate occasions.

The patient whose case I have read above first, as you will see, came under us as a case of ascites, and the point to be determined was the nature of the origin of the peritoneal effusion. I cannot here enter into a full discussion of the causes of ascites and their differential diagnosis, but I will merely say that in the present instance the choice seemed to lie between tuberculous peritonitis and cirrhosis of the liver. In favour of the former was the fact that the temperature was raised; but, on the other hand, this was not strongly against cirrhosis of the liver, because it is well known that in cases of cirrhosis of the liver a long continued fever, with daily oscillations of some extent, has occasionally been observed.

In favour also of cirrhosis were a few points in her history, as, for instance, her admission that she did take spirits on different occasions, and her occasional morning sickness, and inability to eat a good breakfast; but the general appearance of the patient did not support this. We were in this position, when it was discovered that she had some dulness at the base of the left chest.

Dulness at the base of the lung may indeed be the result of pressure upwards of peritoneal fluid, so as to force the diaphragm upwards and compress or displace the lower part of the lung. But, on the one hand, such a procedure is much less likely to occur on the left side than the right, on account of the presence of the stomach in the former case; and, on the other hand, the amount of fluid in the abdomen was not sufficient—that is, the pressure of fluid in the abdomen was not enough to have explained such an occurrence, even if it had been on the right side.

When after a few days the dulness increased in an upward direction, it became obvious, or at least highly probable, that we had to deal with a liquid effusion into the pleura as well as into the peritoneum. Thereupon the diagnosis of tubercle became more probable, and that of cirrhosis was out of count as explanatory of the whole case, though it was conceivable that an ascites from cirrhosis might coexist with an independent pleural effusion arising in some other way.

There is, of course, yet another disease which would account for the simultaneous existence of pleural with peritoneal effusion, and that is heart disease causing passive effusions into both these cavities. In support of this we have a mention of a soft systolic murmur at both base and apex of the heart, and of the upward extension of the cardiac dulness. But the latter could be explained by displacement upwards as well, or by cardiac distress, that the valvular apparatus of the heart was actually upset. It might indeed have been considered an objection to the view of its cardiac origin that the pleural effusion was unilateral, whereas heart disease commonly produces bilateral effects; but so far as the pleural cavities are concerned, the last formula does not hold good invariably, and a one-sided pleural effusion may certainly occur in connection with a valvular lesion.

Setting aside as still more deficient in supporting evidence, the possibility of a mediastinal tumour obstructing the veins in such a way as to produce this double passive effusion, we are thrown back upon a combination of inflammatory effusions of which, in a chronic or subacute form, tubercle is undoubtedly the most common cause.

This frequent association of the serous cavities in a common lesion is a fact which has long attracted attention, not only in the case of combined tuberculous peritonitis and pleurisy, but also in the case of some more acute diseases, such as acute rheumatism—which often invades the pericardium and pleura simultaneously—and pyæmia, which may attack every one of the four great serous sacs at the same time.

An interpolated note in the Italian edition of my *Manual of the Practice of Medicine*, which is now in course of publication, calls attention to this association, which has so far impressed Italian physicians with its clinical and pathological significance that they have given a name or names to this multiple inflammation of the serous cavities, and that several articles have been written upon this combined lesion, in which its causes have been classified, its significance indicated, and its course and terminations described.[1] The names are polyserositis and polyorromenitis, of which the latter is to be preferred because it is derived from Greek words alone, and not from a Greek word and a Latin word, as polyserositis is. The word ὀρρός in Greek means serum.

It is clear that we must guard ourselves from regarding this conception as a separate disease, and from thinking that we have got to the bottom of our case when we have given it this imposing name. It obviously only represents a common grouping of pathological conditions of sufficient frequency to require attention, and sufficiently constant in its pathological or etiological antecedents to make its study fruitful. We may compare the name with the name polyarthritis, by which we mean multiple inflammation of joints. Such polyarthritis occurs as a part of acute rheumatism and of osteo-arthritis; it may be a result of pyæmia and of syphilis. When we meet with a polyarthritis we have to consider what are the diseases, what are the bacteria, or what the disease poisons which are known to produce it.

Similarly, when we meet with a polyorromenitis we have to ask, what are the diseases, the bacteria, or the disease poisons which will cause it?

Polyorromenitis may be acute or subacute or chronic, and the causes of these varieties are likely to be different. One cause of an acute simultaneous inflammation of the serous

cavities is the pneumococcus. It is a common experience to find that pericarditis occurs in the course of—and, as a rule, with a somewhat later onset than—croupous pneumonia; and as such croupous pneumonia is almost invariably accompanied by pleurisy, we have, then, two membranes, pericardium and pleura, inflamed together, and by a common cause. Similarly, pericarditis frequently complicates empyema, especially when the empyema is on the left side.

Another cause of a polyorromenitis is streptococcal or staphylococcal invasion. We see this in pyæmia and septicæmia. In the old days, when pyæmia was a common event in our surgical wards, and not infrequently imported accidentally, from the insignificance of the wound or lesion causing it, into the medical wards, we were constantly seeing cases of double purulent or sero-purulent pleurisy, with purulent pericarditis, and occasionally purulent peritonitis.

The following case, which died in the clinical ward only three weeks ago, is an instance of acute polyorromenitis involving all four serous cavities, and due, no doubt, to pyogenic organisms. The preceding erysipelas, a streptococcal disease, is of interest in this case:

An errand boy, aged 15, had an attack of rheumatism two years ago, another attack in the following winter, and a third attack in October, 1899. After this he had shortness of breath and swelling of the feet, and for two months before admission he was in bed with swelling of the ankles, knees, and wrists, pain in the joints, and fever. He observed erysipelas of the chest and abdomen, and on the left wrist and forearm.

On admission, he was wasted, jaundiced, and very prostrate. The right forearm and hand, the upper arm and right side of the chest wall, and both legs and feet were œdematous; blotchy cutaneous hæmorrhages on the posterior surface of the left wrist, hand, and smaller petechiæ scattered over the lower part of the chest; a sore over the right olecranon process and a dark scab on the left. He was too ill to examine exhaustively, but he was found to have a feeble and diffused cardiac impulse, best felt 1 inch outside the nipple line, and a soft systolic murmur at the apex accompanying feeble cardiac sounds. A pleuritic rub was felt and heard at the lower part of the left chest in front and at the side, and some *râles* at the left base. The abdomen was distended, tense, with conspicuous superficial veins, a thin smooth, shiny skin, and a somewhat protruding umbilicus. It was resonant in front, dull in the flanks, and a thrill could be obtained. The liver projected an inch and a half below the costal margin, and a peritoneal rub was felt on its anterior surface. The bowels were loose, and motions were passed in the bed. Pulse 120, respirations 32, temperature 98°. The urine contained bile pigment, but no albumen. He rapidly got worse, and died before 1 A.M. on the 17th.

Necropsy.

Recent pleurisy, with 40 ounces of fluid on the right side, and 20 on the left. Acute hæmorrhagic pericarditis, with 20 ounces of fluid. Recent vegetations on the aortic, tricuspid, and mitral valves. Acute peritonitis, with lymph over the surfaces of the liver and intestines, and 50 ounces of turbid reddish serum. Kidneys, stomach, and duodenum congested. The solid organs much congested. The liver weighed 1,149 grams; the spleen was small, weighing 82 grams. Posterior mediastinal tissues œdematous; anterior mediastinal glands enlarged and showing irregular caseous deposits, and glandular tissue stained with bile.

Then, as a cause of the acute form of the disease, we have rheumatic fever—or, we will say, the rheumatic poison or rheumatic germ—which, while it causes a polyarthritis as its characteristic feature, causes in many cases a polyorromenitis—that is, simultaneous inflammation of the pericardium and the pleura.

In a communication to a provincial medical society, published afterwards in the *Lancet*,[2] I described cases of combined pleural and pericardial adhesions, which are often very obscure in regard to their symptoms and physical signs. Such cases include some of the cases of so-called mediastinitis, when the pleural or pericardial inflammation has extended to the connective tissue of the centre of the chest. But whether or not this last be the case, these cases are, of course, instances, of the later results of acute polyorromenitis, often having a rheumatic origin.

We must also mention the tubercle bacillus as a cause of acute polyorromenitis in a small number of cases. Though, as a rule, tuberculosis of the pleura and pericardium gives rise to somewhat chronic lesions, yet cases of acute inflammation not infrequently arise; and some cases of acute peritonitis in young people, which may look clinically like peritonitis from appendicitis, or even like intestinal obstruction, may prove on operation or after death, to be set up by tubercle. Only a few weeks ago a young woman died in the clinical ward under these circumstances.

But, after all, tubercle plays its most important part in relation to chronic and subacute inflammations of the serous membranes, and it is by far the most frequent cause of them. I have no doubt that many of you may have already seen such cases, and that a diligent search through our clinical or *post-mortem* records would readily supply us with a long list of them. Our Italian friends have submitted such cases in large numbers to analysis, and the following are some of the conclusions they have arrived at with regard to etiology, course, and development.

Polyorromenitis is more frequent in males than females, and the majority of the cases occur between the ages of 16 and 30. It is usual for one serous cavity to be invaded before the others, and in most instances it is the peritoneum which is first attacked. Here I may observe that the Italians are prepared to give this name, implying multiple inflammation, even to cases where only one serous membrane is involved, I suppose on the view that even in such a case the causative agent was the same, and secondary inflammations might just as well have arisen, as in undoubted cases of multiple serous inflammation.

In any case, the disease generally begins in one serous membrane and subsequently invades the others, and this invasion occurs according to the following three types, of which the first-mentioned is the most frequent, and the last-mentioned the least:

3. The pleura of one side is first, then the pleuræ, begin opposite.

4. Pericarditis generally follows a pleurisy, and especially a left-sided pleurisy.

5. The inflammation may first involve one pleura, then the peritoneum, then the other pleura.

The interval between the invasion of the different sacs may be a few weeks, as in the case of our patient, or some months. The duration, too, is very variable, and the result may be recovery with adhesions, or it may be a fatal termination in phthisis. Attention is specially called to mild cases in children, involving perhaps the peritoneum alone, which cases often recover in a couple of months. The case I had a few years ago of a delicate, ill-fed boy, who had a mild fever with a moderate degree of ascites, who came into the hospital and went out well in eight or ten weeks, would no doubt be placed under this head. I was content to call it tuberculous peritonitis, and as already explained I should even now have scruples about classing it with polyorromenitis, because I have no evidence that more than one serous membrane was involved. The boy is now well, and has had no further developments in the direction of tubercle or serous inflammation. Many years ago, at the Evelina Hospital, a particularly healthy-looking and robust young nurse rapidly developed a pleural effusion in the left side. After two or three weeks her abdomen swelled, and all the evidences of a moderate ascites were present. She was warded in the hospital, and in a relatively short time both effusions cleared up, and she went away to the country apparently quite well.

I have no proof that this case was tuberculous; but what I wish to impress upon you is that the position taken up by some of those who have written upon this subject, and strongly maintained by Picchini,[3] is that subacute and chronic polyorromenitis is practically always tuberculous. In the present case we have failed to obtain evidence of bacteriological research in favour of this. She has not provided any sputum for the discovery of bacilli, and, though the fluid from the pleura has been on each occasion inoculated into animals, the animals have died rather unaccountably a few days afterwards without presenting any tuberculous lesions. However, the strength of our belief of its tuberculous nature here lies in the constant fever, in the simultaneous effusions in the two cavities, and the impossibility of accounting for them by any cardiac, renal, or hepatic lesion.

While assenting to the general proposition that such cases are as a rule tuberculous, I am not prepared to exclude the possibility of an exception, bearing in mind that such a case as that I have already referred to,[4] where dense and thick adhesions of the pleuræ, pericardium, and peritoneum were found after death, constituting, therefore, a polyorromenitis, or the results of one, without any single fact *post mortem* to

show that it was tuberculous, and nothing in the history to show that it had an acute origin.

The prognosis of polyorromenitis in general must depend very much on the cause. The prognosis of pneumococcal polyorromenitis is no doubt very much worse than the prognosis of a pneumococcal pneumonia, or a pneumococcal empyema or pleurisy; that is, the implication of the pericardium is a very unfavourable addition to the case, whether this be from the direct lesion of the heart itself, or from the increased virulence of the organism or organisms which might seem to be implied by its extension to another cavity.

Streptococcal and staphylococcal polyorromenitis is undoubtedly often fatal, and the case of the boy I have recorded just now may be taken as an instance of this. Rheumatic polyorromenitis is of much less serious prognosis. It is true that of the relatively small percentage of deaths in acute rheumatism, a good proportion are in cases where pericarditis and pleurisy coexist; but, on the other hand, of cases of the double inflammation a large proportion recover. But we must remember that it is those cases which may subsequently give rise to serious symptoms either in the form of adherent pericardium, or of combined adhesions of pleura and pericardium with or without effusion. We know that ordinary uncomplicated tuberculous peritonitis constantly gets well; and the pleurisies which have been until recently regarded as idiopathic or catarrhal, and which are now by many regarded as tuberculous in all cases, also recover completely. So also we see recovery in cases where the serous cavities are associated in a common suffering. The case of the nurse is an instance, and there is at least a possibility that the case I have just described here may leave the hospital practically convalescent. This is not always the case; indeed, I should have thought the fatal cases would be in the majority.

Tuberculous peritonitis is probably fatal in more than half the cases; pleurisy is directly fatal in much less; but the associated lesion is not likely to be less fatal than the more fatal of the two operating alone. The addition of a tuberculous pericarditis probably renders death nearly certain.

But supposing recovery from the immediately inflammatory lesions, there remains the risk from permanent adhesions, whether in pleura, peritoneum, or possibly pericardium; and the risk of the development of tubercle in internal organs, especially the lungs or meninges, in the forms of acute miliary tuberculosis, phthisis, and acute tuberculous meningitis.

The figures given by Picchini are distinctly more favourable than I have here suggested. Out of his 50 cases, he states that there were 22 deaths, 7 cases improved, and 21 cures.

The treatment of the condition of polyorromenitis must be conducted on the lines of the treatment of the separate tuberculous lesions concerned. In suitable cases you would have recourse to perfect conditions of hygiene, to good food, and pure air with all the advantages that are so often seen to accrue from residence either at high levels, or at a bracing sea-coast. For our hospital patients there is no doubt that the residence in a well-ventilated, capacious, and airy ward, with regular and good food, and absence from all work and household cares, often constitutes such an improvement in the surroundings of the patient as to lead at once to a diminution in the activity of the tuberculous process. This at least we see constantly in the case of phthisical patients no less than in cases of tuberculous peritonitis.

Internally as drugs we have administered cod-liver oil, creosote, and iron, and many recommend no other drugs likely to antagonise the pernicious effect of the tubercle bacillus, arsenic, iodine, and mercury. As local measures we have aspirated the left chest, and have applied mercurial ointment to the surface of the abdomen. The former measure was justified partly as a means of diagnosis, partly as a therapeutic measure in view of the large quantity which seemed and was proved to be present. Mercurial inunctions in the treatment of tuberculous peritonitis have often seemed to be valuable, and their use has often been followed by practical cure, that is, by the subsidence of all the symptoms, and the return of the patient, often a child, to the ordinary conditions of healthy life, though it must be allowed that peritoneal adhesions are very probably left behind in many cases. Laparotomy is a method of treatment which I will not now discuss, but which may become desirable, in the event of our present treatment not proving adequate.

P.S.—The tuberculous nature of the lesion was demonstrated by a laparotomy performed on August 7th. For some weeks previous to this a rather ill-defined area of solid resistance had been recognised in the abdomen below and to the right of the umbilicus. The abdomen was opened by a vertical incision. Between four and five pints of clear, yellow serum were discharged. Tubercles in great numbers were found in the peritoneum, and the subperitoneal tissue was greatly thickened. The patient died on November 10th. The lungs were found to be adherent to the parietes; at both apices were deposits of healed tubercle with surrounding emphysema and throughout both lungs were numerous tubercles of firm consistence like small glass beads with no sign of caseation. The stomach and intestines were matted together and completely adherent to the parietes by old fibrous adhesions, and masses of caseating tubercle lay in among them. The peritoneum was much thickened through-adjacent parts. There was no fluid in either pleural or peritoneal cavity.

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THE HARVEIAN LECTURES

ON

PROGNOSIS AND TREATMENT IN PULMONARY TUBERCULOSIS.

Delivered before the Harveian Society of London, November, 1900.

By ROBERT MAGUIRE, M.D., F.R.C.P.Lond.,

Physician to the Brompton Hospital for Consumption and Diseases of the Chest; Physician to Out-patients, St. Mary's Hospital, Paddington.

[Abstract.]

Lecture III.

In treatment we must still consider the pathology of the condition under discussion, and think of how we can:

(*a*) Increase the normal resistance of the tissues to the invasion of the bacillus and its congeners;

(*b*) Hinder the action of the bacillus by destroying its congeners, the staphylococcus pyogenes, and the pneumococcus;

(*c*) Hinder the action of the bacillus tuberculosis by interfering somewhat with its own vitality; and

(*d*) Attempt to kill the bacillus tuberculosis *in situ*.

(*a*) Increased resistance is obtained by augmenting the vital powers of the body by overfeeding, fresh air, and adjuvant measures. This has been done for many years and with much good effect. Nursing discipline is an important item in such treatment. The open-air treatment is of great value, but it is very necessary that it should be practised with more care and common sense than has hitherto been adopted. Individual cases require individual treatment, and not every case ought to be subjected to the routine of a sanatorium. The digestive powers and the capability of resisting cold require special attention, and without it much harm may be done.

Drugs are of use in the maintenance of general body health. Arsenic is very valuable, and in the form of sodium cacodylate I have used it by the mouth and also subcutaneously. In the latter form it is sometimes more convenient than the older preparation, and thus lends itself to the administration of a somewhat larger dose. Otherwise the cacodylate acts merely as a body stimulant, and is certainly not a cure for tuberculosis of the lungs.

Dr. Habershon has used glycogen subcutaneously, with the object of stimulating the phagocytic properties of the leucocytes. His observations are not yet completed. De Backer

has administered preparations of yeast in various ways, and his results seem to be disappointing. The yeast cells are supposed to act as additional phagocytes. I have used nuclein as hereafter described, in order, again, as in Dr. Habershon's method, to stimulate the phagocytal power of the leucocytes. The effects will presently be mentioned.

There are many similar methods which cannot here be recorded, though those described are the most noteworthy. The remainder of the lecture will be devoted to the description of a new method of treatment which I have devised, taking as a basis the peculiar circulation of blood through the lungs, and it is an attempt to fulfil the indications mentioned under (*b*). (*c*), and (*d*). It proposes (*b*) to kill the congeners of the tubercle bacillus, (*c*) to hinder its action, and (*d*) possibly to kill it, *in situ*.

We may call the method

ASEPSIS OF THE LUNG.

Inhalations of vapours cannot be of sufficient strength to attack lung germs, if they are weak enough to pass the glottis, and even then probably go no farther than the bifurcation of the bronchi. Subcutaneous injections of germicides are so diluted before they reach the lungs as to be then powerless. Germicides given by the mouth are similarly rendered powerreach every spot of infection, or cure it when reached. An antitoxin is greatly to be desired, but so far has not been obtained. I have thought that such might be contained in the pleuritic serum of a tuberculous patient, but have failed to separate it. The surgical removal of infected portions of lung tissue is not to be seriously thought of, and is better ignored. But anything injected into the peripheral veins must necessarily first pass to the lungs, diluted only with the contents of the right ventricle at the time of its arrival at that cavity. I have tried to obtain a germicide which might be thus injected. Cyanide of mercury, which has been used for syphilis in a similar manner, was too dangerous to be used on tuberculous patients. Experiments upon animals by Mr. Plimmer showed that potassic iodide and also perchloride of mercury were impossible. These and all other remedies which would appear to be useful were first tried on rabbits to determine their safety before any attempt was made on human beings. It would have been desirable to first infect the animals with pulmonary tuberculosis and then attempt their cure, but this is not easy to do, and would have made the research almost endless. After ascertaining the general safety of the methods on animals I tried most of the methods on myself, so as to ascertain the symptoms likely to arise in patients.

Hearing that diastase could dissolve cellulose, and knowing that cellulose was a constituent of the envelope and protoplasm of the tubercle bacillus, I determined to use this intravenously. Its solution is very difficult to prepare; still more difficult to render aseptic. [Details of the preparation were here given.] At last I obtained a solution of taka-diastase in tricresol and again in formic aldehyde, and found on injection into the veins that some improvement of the lung condition occurred, but also a marked febrile reaction resembling ague. The results were not encouraging.

Cytase, prepared from crushed oats, according to this method of Mr. Horace Brown, F.R.S., is difficult to obtain in limpid solution. [A specimen of such solution was shown, and also sections of barley demonstrating its solvent action upon this cellulose envelope.] At present I have not tried this, but the action of cytase and also of diastase is probably too slow to be of use in therapeusis. Nevertheless, both are worthy of further investigation.

In view of the remarkable effect of the nuclein upon tuberculous glands, I used it by the mouth in patients suffering from tuberculosis of the lungs and with no effects. Afterwards I used it intravenously and with the same effect as with diastase. There was a certain amount of improvement in the general condition, but again a marked febrile reaction. I used it in the form of the liquor nucleinicus of Messrs. Squire and Sons, a solution of nucleinate of soda.

Dr. Habershon found a febrile reaction after the subcutaneous injection of a glycogen, which had not been rendered free from nitrogen. I have seen the same result after employing gelatine intramuscular injections for the treatment of aneurysm of the aorta. Probably the fever is due to the introduction of a foreign albumen into the blood system.

In the foregoing experiments the requisite antiseptics became of all importance, and I determined to try the effect of these alone. Formic aldehyde appeared most likely to be of use. Using first a strength of 1 in 250,000, then of 1 in 100,000, and so on, I at last reached a solution of 1 in 2,000, which could be employed with safety. I found that, at this time, I could inject 30 minims or 2 c.cm. in the space of five heart-beats, and hence one could calculate the strength in the right ventricle. Thus, to each filling of that cavity there was added 0.4 c.cm. of the solution, and in an ordinary man this would mean that for five heart beats the lung would be washed out with a solution of formic aldehyde having a strength of 1 in 500,000. But further attempts allowed me to use a more rapid process of injection and for a longer period, so that one may now hope to get a sluicing of the lung, during a considerable number of heart beats, with a solution of 1 in about 50,000. Some of the solution will remain in the lungs, and another portion will be brought back to the lungs after passing through the general system, so that the effect on the lung tissue will be much greater than that here represented.

pump, and after a few c.cm., and after a while 10 c.cm., were

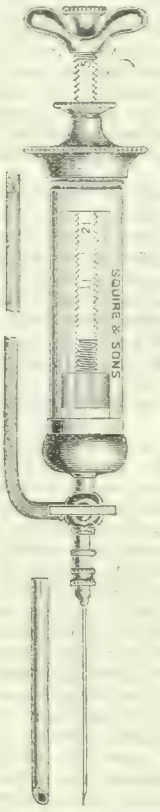
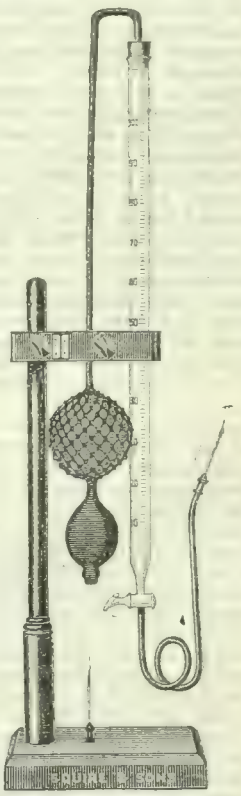


Fig. 1.


Fig. 2.

This is, even now, useful when the intravenous pressure happens to be unduly great, and I think it might conveniently be used by surgeons for other intravenous injections. But more convenient on most occasions is the burette with a pump arrangement here represented (Fig. 2).

The needle should be of as large a calibre as can possibly be introduced. In order to use as much injection fluid as possible I had it made with normal salt solution, and this, containing 1 in 2,000 of pure formic aldehyde gas, and prepared by Messrs. Squire and Sons with all antiseptic precautions,

we have styled for convenience "hæmasepsin." Of this I have injected 50 c.cm. daily, and with practice this can be done with safety and certainty. But let no one lightly undertake these injections. They seem to be very easy, but they are, in fact, remarkably difficult to do. The vein is prone to roll by the side of the needle. The needle very often pierces the opposite wall of the vein, and so a troublesome hæmatoma is produced and also much pain. The arm should be ligatured as for venesection, the skin anointed with 1 in 12 carbolic and vaseline after having first been cleansed with 1 in 20 solution of carbolic acid. The needle should then be plunged boldly into the vein, the ligature loosened, and the tap of the burette turned. If the injection is not entering the vein a painful swelling will at once be observed, and the needle ought at once to be withdrawn. If the injection succeeds, the needle can be quickly withdrawn, and a little pressure suffices to stop all further hæmorrhage.

I advise that not more than 50 c.cm. of a 1 in 2,000 solution should be injected daily. Larger quantities and greater strength caused, in myself, first albuminuria, next copious hæmaturia, and lastly thrombosis of a vein in the arm.

[Further details of the technique and of the experiments mentioned were here given.]

Cough is generally increased by the injection, and the expectoration becomes thereby more frothy and mucous.

The cases selected for treatment were all such as showed pronounced lesions. Some were treated at the Brompton Hospital, others at St. Mary's Hospital, some as out-patients under Dr. Reid, of Lambeth, and others, again, in the country, at the Hendon Infirmary under Dr. Findlater. In all [illegible] of about 70 cases are now available. The sputum. One such improvement [illegible]; he had a marked "multiple pleuritic" outbreak of pulmonary tuberculosis, and I have previously shown that the prognosis of this condition is most grave. Yet he has now no tubercle bacilli in the sputum, he expresses himself as being quite well, and if you examine his chest you will find nothing more than here and there the indications of pleural adhesions. I have treated a few cases of putrid bronchiectasis by this method and with excellent results. I should expect the treatment to be of use in acute pneumonia.

I repeat that the method should not be lightly employed, and that it requires a considerable amount of practice to ensure certainty of injection. The progress of the patient also should be carefully watched.

[Since delivering the lectures I have been able, by modifying the solution, to employ a greater strength of the formic aldehyde.]

THE AFTER-HISTORY OF APPLICANTS REJECTED FOR LIFE ASSURANCE.*

By ANDREW MACPHAIL, B.A., M.D., M.R.C.S.Eng., L.R.C.P.Lond.

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There is one event that happens unto all. The physician expresses it in terms of prognosis, the medical examiner for a life insurance company considers not the event itself, but the probable time of its fulfilment.

The insurance of houses and ships and goods against the casualties of fire and tempest is against a contingency which may not occur; the insurance of a man's life is not against any contingent event, but against that one which happens to all. It is only a question as to when it will arrive, and the medical examiner is to say if it will be delayed until the period prescribed by experience as embodied in the Mortality Tables. According to the "American Table," a man of 35 years of age is expected to live until he is 67 years old; it is the medical examiner's place to say if this be true of each individual case which comes under his hands.

The history of applicants rejected is a subject profitable for study to physicians as such and to medical examiners also. It shows how prone to fallacy our conclusions are when the operations of human life are concerned. When a patient is ordained unto death in the mind of his physicians, the sentence is quickly verified or disproved, but in the case of the medical examiner, it may be delayed for many years. An applicant once rejected quickly passes out of sight, and, as a rule, does not aspire to become a unit in a table of statistics. I do not mean that he quickly passes out of mortal vision, because you will be surprised to know how many rejected applicants go on their way utterly heedless of the opinion some medical examiner has framed.

Another source of difficulty lies in the insurance office itself. It is quite true that these institutions, if you believe what you hear, are purely eleemosynary in their nature, but it is hard to believe, with our knowledge of the conduct of affairs in this present evil world, that the controllers of them are moved by abstract benevolence alone. There may be a rivalry in doing good, and this honourable rivalry exists between insurance companies, but it fosters a disposition on the part of a company to keep its information, its statistics, and results to itself, lest some watchful Pharisee should use it to do good in another way, and so be led to boast himself in his annual statement. For example, all rejected risks used to be registered in one central office, open to all companies. The result was that offices writing impaired lives obtained a clue to the refused business of level premium companies, and appropriated it to themselves.

The history of accepted cases is accessible enough, and sometimes it is a painful study when a policy-[illegible] of a transformed into a death-[illegible] before his eyes he will go to the other extreme, doing an injustice to the applicant, and realises his [illegible] putting obstacles in the way of the company's legitimate aspirations.

A medical examiner is more than a physician; he is an officer of a company which depends not for its success only, but for its very solvency, upon the fidelity with which he does his work. In the main it is the agent's business to induce a man to enter the company; it is the medical examiner's business to keep him out. He is not called upon to give an abstract opinion of a case, he is asked to decide whether his company shall assume a large financial risk. But the object o the examination of applicants is not that none but the absolutely healthy shall be accepted: it is to ensure that those who receive policies shall at least come up to the standard revealed in the tables of mortality. If it were not for this the offices would be crowded with weaklings, for it is they who desire insurance most, and their risk would have to be carried by the healthy subjects until they refused to bear the burden longer. Then comes the receiver.

I feel quite sure that everyone of us has been informed with some degree of particularity, and it may be persistency, of the value of life insurance. It may have escaped us how valuable it is in vital statistics and in medical fees to the profession from which the examiners are drawn. Up to the year 1830 it was not the custom to employ an examiner at all. The directors looked a man over and formed an opinion from their impression alone. Then a certificate from the family attendant was required, but it was the middle of this century before regular examiners were generally appointed. In Great Britain nearly 45 per cent. of the population carry policies of one kind or another, and over a million and a-half of regular policies are in force in that country. In the United States and Canada 300,000 policies were issued last year, from which the medical profession drew a million and a-half dollars in fees. In these millions of recorded lives one would think there is a vast store of information upon the subjects of life and death, which only needed classifying to make it available for important use. It is information of a more or less exact character, and, as the late Sir Francis Johnston used to say, a statement is not necessarily false because it is sworn to. The task to which I have set my hand is this: to deal with a small part of this mass of information for the following particular purposes:

1. To determine the ratio which rejections bear to all applications.
2. To ascertain the causes of rejection.
3. To trace the after-history of such cases.

The records I have used are those of one of the largest life

* Read before the Montreal Medico-Chirurgical Society.

insurance companies in the United States and Canada for the years from 1885 to 1895, the territory covered being the Province of Quebec, and Ontario, for a part of the period. The longest history will therefore cover a space of fifteen years, from 1885 to 1900, the shortest five years, the average exposure being ten years.

By actual count the applications were 5,115 in number, and the risks declined or postponed were 409; the rejections, therefore, amount to 8.11 per cent. For the first three years the ratio was 8.02, for the first five 8.15, for the second five 8.07, and for each separate year it was practically the same. This shows, no matter how the agents revile us, that rejections take place according to some fairly intelligent system, but whether this experience holds true in other companies is a matter for inquiry. To say that 8 per cent. of all applicants examined by a company are declined does not mean that this is an indication of the physical health of the whole population, because the agent, before he expends his energy on a case, has already in a way exercised a certain process of selection. Taking these 409 as the refuse of the 5,000 cases, the causes for which they were thrown out are expressed in the following tables:

	Cases.
Family history of phthisis	84
Rheumatism in applicant	31
Asthma, previous attack ...	

Heart.

	Cases.		Cases.
Irregular action	19	Increased pulse and impulse...	7
Murmur with lesion	24		

Genito-Urinary.

General	5	Sugar	7
Gravel...	3	Tuberculosis, bones, glands ...	9
Renal colic	6	Syphilis	13
Albumen in old persons ...	5	Ear disease	12
Albumen in young persons ...	17	Dyspepsia	4

Nervous System.

Epilepsy	6	Sunstroke	4
Paralysis	5	General	7
Infantile paralysis	3		

Deficient Physique ...	10	General causes, including cataract, climate, hernia, blindness, bæmophilia, appendicitis, fistula, accident, newly married, jaundice, climacteric, ignorance, diarrhœa, chloral habit, insanity and history of insanity	22
Age	6		
Pregnancy	5		
Recent fevers	6		
Alcohol	12		
Occupation	12		
Unknown	17		

If now I could inform you with absolute exactness of the after-history of these cases, if I could determine the condition of those who are now alive in relation to the causes for which they were rejected, and of those who are dead, the connection between the original lesion and the cause of death, I should have a valuable document. I can tell you something, but not all. It is those who love statistics most who know their weakness best. You cannot classify these still living in respect of their present health, since health cannot be expressed in percentages, and present impairment cannot except in a very imperfect way be converted into terms of expectancy. That is what I meant by not attempting to prove too much, nor laying upon figures a greater burden than they can bear. Again, of the dead, you cannot, excepting very imperfectly, establish the connection between an old lesion and the cause of death. Who can say, for example, in the case of a person dead of pneumonia who had an irregular heart, what was the precise relation of the two events? Of these 409 rejected cases I have already ascertained the after-history of 235, whether they are living or dead. It is a mere matter of industry to continue the research until the record is fairly complete. The record must be nearly complete before drawing final conclusions from it, since it would not be fair to assume that the after-history of those rejected cases which we can trace coincides with the history of the cases lost sight of, because it is easier to prove that one man is living than that another is dead.

Taking these 235 cases to begin with, they are all living excepting 31. The following table shows the cause of rejection, the cause of death, and the time elapsed between the two events.

No.	Cause of Rejection.	Cause of Death.	Time Elapsed.
1	Rheumatism	Blood poisoning	5 years.
2	Hæmorrhage	70 years of age	13 years.
3	Heart murmur	Heart disease	7 years.
4	Alcoholism	Heart and liver disease	—
5	Lungs doubtful	—	—
5	Tumour of lip	—	10 years.
7	Lungs doubtful	Liver disease	13 years.
8	Family history	Pneumonia	6 years.
9	Hæmorrhage	Accident	9 years.
10	Family history	—	—
11	Inguinal hernia	—	8 years.
12	Renal colic	—	—
13	Family history	Phthisis	8 years.
14	Syphilis	Syphilis	3 years.
15	Nervous prostration	Died at 77	8 years.
16	Intermittent pulse	Poison	9 years.
17	Family history	—	4 years.
18	Aortic murmur	Heart disease	5 years.
19	Lung involved	Phthisis	2 years.
20	Phthisis	Phthisis	5 years.
21	Lungs involved	Heart disease	3 years.
22	Pleurisy	Pleurisy	—
23	Syphilis	Pneumonia	2 years.
24	Family history	Alcoholism	—
25	Hemiplegia	—	—
26	Family history	Pneumonia	3 years.
27	Age 65	Peritonitis	4 years.
28	Small physique	Heart disease	—
29	Epilepsy	—	5 years.
30	Unknown	Alcoholism	5 years.
31	We must	Cystitis	2 years.

the death-rate amongst rejected [illegible] short of the mortality which prevails amongst [illegible] in how far In effect this can be done by taking the mortality rate per 1,000 amongst persons of average insurable age, which is 36 years. The exposure in the present case is ten years, and normally 894 persons out of 1,000 should be alive at the end of that time, or 106 persons will have died in the period. Our rejections number 409. If these were normal lives we should expect 43 deaths to occur. I have only been able to trace 235 cases, and amongst these we should expect to have 25 deaths. As a matter of fact the deaths number 31. From this table it will appear that at least 12 persons died of a condition in no way connected with the cause of rejection, that many of them lived a good period, and that so many are still with us who ought long ago to have gone to their own place, or at least to the place assigned them by the medical examiners. It is well again to insist upon the weakness of the statistical nature. We cannot always draw an inference from a statement to the truth of that statement. As Sir James Stephen so convincingly observed, while facts and figures cannot lie, the witnesses who state them can and frequently do lie.

This mortality amongst rejected applicants, so slightly in excess of the normal, must seem surprising. Probably the period of exposure (ten years) is not long enough. Exact results could only be obtained by comparing the period lived with the individual expectancy, which in young persons may amount to 30 or 40 years. Even if a man be alive at th end of 20 years, he has no right to blame the medical examiner. He may die before his appointed time. This source of error seems to be confirmed by an examination of 18 consecutive rejections in 1885. I have traced the after-history of 16 of these, and after 15 years 7 are dead. The average age of the 7 was 49 years, the expectancy was 23 years, the actual time lived was 9½ years. All of which points to this—that an extensive and thorough search should be undertaken with the certainty of a large reward in knowledge of vital phenomena. Indeed the imperfection of the present record is due to the fact that it is only the beginning of a wider inquiry.

The after-history of many cases is precisely the same as others which have not been rejected because rejection often takes place on insufficient grounds, and for causes of a more or less accidental nature. A medical director exercises his judgment, and often is guided merely by the impression a case makes upon his mind. One example will serve. Seven years ago a man made application upon the same day to two different companies for the same kind of policies and was examined by the same physian who was acting for both companies. One application was refused, the other was accepted. The reason for this anomaly was that the applicant had an

aunt who died of consumption, and this fact carried weight in the mind of one director, while in the other it was of no account. The man is still living and in good health. There is no factor in life insurance of more importance than a family history marked by tuberculosis. The experience of the United States Life Insurance Company for twenty-three years shows that 27 per cent. of their mortality was due to consumption. Equally striking is the table prepared by the Mutual Life Insurance Company dealing with their entire mortality during the fifteen years from 1879 to 1893, which amounted to 22,085 cases. Up to twenty-nine years of age, the mortality was 35 8 per cent. of all cases in non-consumptive families and 45 6 in families with a tainted record, in the next decade 26.3 and and 39.6, in the next 17.6 and 24 6, in the next 6.7 and 15.7, in in the next (that is from 60 to 69 years of age) the ratio was 5.8 and 8 2. A more recent tabulation of the mortality in this company from 1843 to 1898, covering 46,525 cases, gives to tuberculosis 5,585 deaths, a percentage of 24.27 under 45, 10.88 between 45 and 60, and 40 3 above 60 years of age.

Of late years, however, it has been proved that a bad family history may be largely neutralised by a good personal record, the chief indication being the weight of the occupant. Dr. E. J. Marsh has made this very clear in the table referred to, and from it he is led to the following striking conclusions.

1. That the history of consumption in any member of the immediate family increases the probability of its appearance in an applicant.

2. That consumption in a brother or sister is at least of equal importance as when it has occurred in a parent.

3. That persons who are under the standard or average of weight are much more liable to consumption than a proper [illegible] standard. That the [illegible] a susceptibility to phthisis, or at least is a reasonable suspicion of such predisposition.

4. That persons who exhibit a robust or well developed body have little susceptibility to consumption.

5. That the personal condition of weight and robustness has far more value than the family history in diminishing the liability to consumption, therefore

6. The evidence presented by a well-developed body may outweigh the suspicion attached to unfavourable family record.

7. That these influences of family history and personal weight are of the same grade for every age, and their importance is not lessened by the fact that the individual has reached middle life.

Of the 409 rejections 84 are for family history, that is over 20 per cent., but in view of Dr. Marsh's valuable research many of these cases would now be acceptable if the body weight of the applicant were good. In addition to these 84 rejections there were 21 for physical signs of pulmonary disease, 10 for asthma and bronchitis, 9 for pneumonia and 17 for hæmoptysis, making 141 in all for causes connected with the respiratory organs or nearly 35 per cent. Of the 31 deaths out of the 235 cases I have been able to trace 9 at least were due to this cause, and in all there was a tainted family record.

The after-history of rejected cases depends upon the cause for which they have been rejected. Let us look at those which have to do with the heart. The pathologist, the clinician, and the medical examiner view the heart from different standpoints. The pathologist sees the heart as it is, the clinician inquires how it is doing its work, the medical examiner asks how long it will continue to fulfil its office. When the heart is working well it works regularly and without noise; when it is working badly, it does it irregularly with noise and murmur. But it may murmur and be irregular and yet do good work. When we consider that the process of circulation consists in the passage under pressure of fluid through a series of complicated channels and orifices, the wonder is not that there should be murmurs, but that they should ever be absent. Indeed, murmurs are always present if you can only hear them. Again, the heart may not beat with absolute rhythm and yet it may accomplish its purpose with satisfaction. There are three problems connected with the heart which present themselves to the medical examiner. There is the estimation of the negative value of certain organic lesions, of functional murmurs, and of irregularity of beat. Usually these problems are not considered at all, they are merely dismissed. Organic lesions and murmurs are so closely connected, the question is to decide what sequence exists between them.

As a rule medical examiners never see cases of heart disease with well-marked symptoms; the most an applicant will admit is some shortness of breath after unusual exertion, some coldness or slight swelling of the feet, but very often not this much can be evoked even in the presence of an unmistakable lesion.

Again, a murmur is observed, the case is postponed, and upon re-examination the heart sounds are normal. Such a murmur is usually spoken of as functional, but it will not do to assume that all murmurs which have disappeared must have been functional in character. Sir William Gairdner with Sir Andrew Clark made a study of cases of cardiac disease prolonged beyond expectation after the physical signs and symptoms had been well recognised,[1] and at the meeting of the British Medical Association in Edinburgh in 1898 Sir William took up the parable again. In one case the patient had signs of cardiac disease for upwards of thirty years, when they all disappeared. He traced another case from the year 1862; the cardiac disease had passed out of recollection, and the patient is still alive. A third case was one of tricuspid obstruction by a tumour attached to the wall of the right auricle, in which the patient survived for ten years and then died of pneumonia.

Many of these lesions which interfere with the [illegible] the sounds are pericardial, [illegible] to the inflammatory white spots so commonly found on the wall of the heart. This alteration in structure must produce murmurs hard to distinguish from valvular, but may have no effect upon the longevity of the patient. No matter how slight the organic lesion as revealed by unusual sounds or rhythm, it debars the applicant from acceptance; but if the murmurs have disappeared, or even if they are present and the heart cannot be made to reveal any weakness by the various devices which examiners employ, such a case is liable to have a very favourable history.

Turning away from organic lesions let us look for a moment at those disorders which are so often functional, such as irregularity of beat, excessive and diminished rate, termed respectively arrhythmia, bradycardia, and tachycardia.

An applicant with irregular heart usually merits little further attention at the hands of the examiner, yet many such cases are entirely without significance. Osler quotes the case of the late Chancellor Ferrier, whom we all knew as a man of "unusual mental and bodily vigour." He had an extremely irregular pulse for fifty years at least, and yet lived to be 87. All varieties of arrhythmia may be observed. "The beats during inspiration may be more frequent, though less full, than during expiration, the paradoxical pulse of Kussmaul" (Osler), there may be an occasional dropping of the cardiac beat, the systole may be so weak as to produce no pulsation, though a faint sound may be observed, strong and weak contractions may alternate regularly. The beat may be of the fœtal character, "in which the character of the first and second is almost identical," and, lastly, there is the galloping rhythm, which "we can both see and feel as well as hear."

Up to the present no attempt has been made by medical examiners to assign these irregularities of rhythm to their proper cause. All applicants presenting the condition have been declined, and that is one reason why their after-history has been more favourable than we would expect.

An unusually slow heart is by no means uncommon. Napoleon's is stated to have beat only 40 per minute, and H. C. Wood reports the case of a physician in whom the condition persisted for fifty years without symptoms.

There are many other curious anomalies of the heart whose exact significance is hard to determine. There is what is known as the insurance heart, in which the rapidity is increased in a moment to a surprising degree. I have known three cases in which the applicant would have fallen to the ground as soon as the stethoscope touched the chest had not the examiner prevented it. One of these, with singular irony, was himself an insurance agent, and of unquestionable sound-

ness of health. The rapidity may be so excessive as to amount to a positive delirium cordis, with no consciousness on the part of the applicant of any disturbed action. There is also the irritable heart of young persons due to some instability of the nervous mechanism, which is thrown into a tumult for little or no cause. These are all quite apart from the increased pulsation due to tobacco, coffee, tea, and alcohol.

Congenital anomalies of the heart afford an explanation of some unusual sounds and of alterations in the rhythm. Many of these conditions are not prejudicial to longevity and should be kept in mind when forming an opinion upon a risk in which the heart attracts attention. A fine collection of such hearts was shown at the London meeting of the British Medical Association in 1895, and the whole subject is considered in the March number of the *Johns Hopkins Hospital Bulletin*. An open foramen is not inconsistent with long life, and may reveal itself only by an increased pulsation in the vessels of the neck. Defects in the septum between the cavities may occur and give rise to a "loud, constant murmur in the upper pericordial region," and narrowing of the pulmonary artery may account for "a loud systolic murmur in the second and third interspace." Anomalies of the aorta, such as persistence of the ductus arteriosus, may be the cause of another systolic murmur and an inequality of the pulse. None of examiner. [illegible] incompatible with old age, though during

For life insurance the important [illegible] confusion of sounds, the unusual condition is peculiar to the individual, [illegible] has persisted for many years, that it is not associated with any objective symptoms or with any impairment of health.

It is worth while citing two or three cases. R. E. was rejected in 1846 on the ground of irregular heart action following rheumatism. He has been examined six times since, and always rejected. He has outlived all his examiners, and my informant refused to examine him in case he too would be added to the number.

In 1873 three of the best-known members of the profession in Montreal were examined the same day; two were taken and the other left. The two who were accepted have gone to their rest, the third is with us after twenty-seven years, and to all appearances with twenty-seven more of successful work before him.

In 1897 I examined J. R., and recommended his acceptance. The Company wrote that he was declined fifteen years before for a loud aortic murmur, and asked me to re-examine him in the light of that information. I did so, but could find no trace of it, and he was accepted.

From our table, it appears that 50 cases out of 409, or 12 per cent., were rejected for causes connected with the heart, and I have only been able to discover 5 deaths from heart disease. It is impossible from the records to separate absolutely functional irregularities from those indicating organic lesions, but, so far as it appears, there were 19 of the former and 24 of the latter. All companies are afraid of rheumatism, and I find 31 rejections from this cause on account of the obvious connection between the disease and heart lesions.

There is next the large matter of albuminuria. It must be viewed from the two standpoints occupied by the medical examiner and the director respectively. To the director the term "albuminous urine" is one of sinister significance. His records reveal that death from a disease habitually associated with this condition is alarmingly common. The Mutual Life records 2,997 deaths, a percentage of 6.66 of deaths from all causes. He has proof of that in his claim papers. He has the high authority of Osler for holding "that the presence of albumen in the urine in any form and under any circumstances may be regarded as indicative of change in the renal epithelium." He is seized of the fact that albumen in the urine is of pathological significance. Certainly normal urine contains none, and when it does occur it is not without cause. Increased arterial tension alone will not suffice to produce it without epithelial changes, and the director knows, further, that albumen is significant of many conditions not specifically associated with the kidneys, such as epilepsy, neurasthenia, concealed syphilis, anæmia, and even diabetes before the appearance of sugar. These are facts; his mind is made up, and he will reject all such cases until we are able to demonstrate to him the exact significance of albumen in every case—and that we cannot do.

On the other hand, injustice is wrought to many an individual, and this is the side which appeals to the examiner. We have found albumen in the urine of persons who answered to every test of health, and whose after-history was in no way affected by it, even if it persisted with more or less regularity for years. We find it in more than one member of a healthy family, but we may find a tendency to phthisis also in otherwise healthy families. Those who have much to do with athletes reports its presence in the urine of most of them, after taking some severe form of exercise, such as bicycling or football, and in these cases casts, free renal epithelial cells, and leucocytes are also found. It is also associated with excessive mental and sexual activity, and all these conditions, it is to be noted, apart from the presence of albumen, are not particularly favourable to the insured. It is not uncommon in women, but the source is often extravesical, and in both sexes it may follow the exhibition of drugs, such as the salicylates and potash. Another element of confusion is the fallacy in the test itself, due to a deposit of nitrate of urea or resinous acids when nitric acid is used, of peptones and alkaloids in the presence of picric acid, of xanthin when perchloride of mercury is employed. Last of all, serum albumen may be confounded with the other coagulable proteids, such as nucleo-albumen, hemialbumose, and globulin. The detection of albumen depends upon the test employed. Posner contends that it is always present, but in entirely [illegible] to be recognised by ordinary reagents tive specimens in the usual way, reveal it when nitric acid vised acceptance of the risk. The same specimens [illegible] consecu- with chemical accuracy and traces of albumen were found in 4. Here there is confusion, either the testing as ordinarily done is of no value or refined chemical methods should not be employed. I adhere to the latter view. It is not a question whether or not a substance supposed to be albumen is present. It is a question whether the applicant is or is not in good health. With all these conflicting elements the medical examiner must feel constrained to lay aside his favourable opinion of an individual case, and classify it in the black list of "albuminuria" no matter how firmly he is convinced that the after-history will be favorable. I have separated the cases of albuminuria in persons under 40 from those occurring over that age, presuming that the former were of the cyclic variety, and I find them 17 in the young and 5 in the old, with no deaths in either class. Renal colic and gravel were answerable for 9 rejections, and I can only find 1 doubtful death from such causes. The first rejection was made by this company in August, 1885, for renal colic; the applicant is yet amongst us and in good health, though he has since been cut for stone.

The after-history of rejected cases is rendered unduly favorable, because the applicant was declined on account of the presumption of sugar being present in the urine. In March last I declined to recommend a young man, a confectioner of 21, for this reason, and referred him to his family physician for consultation. After two days he sought such advice, when every trace of sugar had disappeared. An easy explanation of this anomaly is that my tests were fallacious, because many substances will reduce the copper in Fehling's solution, such as mucin, creatinin, uric acid, glycuronic acid, and allantoin. Yet having this in mind, and having tested three different samples and finding carbon dioxide after fermenting with brewers' yeast, I could come to no other conclusion, even while remembering that sugar may be present after a heavy meal of carbohydrates in various forms of impaired digestion and in certain irritable conditions of the nervous system. I find seven rejections from the presence of sugar or of substances confused with it, but no deaths.

Many risks are refused on account of personal habits, especially in respect to the taking of alcohol. There is a wide divergence of view by examiners upon this point, and that view is affected by the habits of the examiner himself. When a person's conscience commences to work upon this subject it is very liable to draw the judgment out of line, but a corporation which is not disturbed by this factor may be depended upon to judge correctly. There used to be a rule that an ounce

and a half of alcohol daily was the limit of safety, but no such rule can be applied, for this amount would be quickly dangerous to some while others would be unaffected by much larger quantities. We are all pretty well agreed that alcohol in reasonable amounts and at proper times is not only harmless but actually productive of good, and it often seems as if those who needed it most are the bitterest opponents of its use. Indeed the case of a total abstainer should be searched into as diligently as the case of the habitual drinker, since abstinence may be due to a knowledge of hereditary taint, to personal intemperance in early life, or to some physical condition which does not go with robust health and long life. But there is a class of risks which all companies agree to consider bad. This is the class of liquor dealers and manufacturers who are brought into daily and intimate connection with alcohol. It is here a little and there a little unconsciously, but without intermission. The tissues are never wholly free from its effect and this is a condition favourable to the slow, chronic change which ends in permanent impairment by the substitution of lower tissue for the higher, connective tissue for the proper vital cells of the organ. There is besides a moral hazard associated with this business, which no one can estimate exactly, and for that reason the after-history of cases rejected for this cause is conflicting. There were twelve rejections for this alone and three deaths.

Many cases are rejected on account of pregnancy, and at first this would seem unjustifiable, seeing that the mortality from childbirth is extremely low, not more than one-half of 1 per cent. This is to prevent women from insuring against that particular contingency and rules are made accordingly. If a woman insures her life under the usual conditions the company lays no restrictions upon her child-bearing, but they will not accept her within two years of marriage nor until she has borne her first child, or until it is pretty clear that she will never have any. This condition led to five rejections.

A large number of rejections arise from causes personal to the medical examiner himself. He puts upon the records remarks that should never go there. He may answer "Yes" to the question of spitting of blood, and then explain that it occurred during pneumonia or from laryngitis, or from "hard work" or "bad weather." One examiner answers "Yes" to gravel, and then explains that it was probably "dyspepsia."

A wrong impression is made upon the director's mind, or if he understands the true situation he cannot issue a policy on any ambiguous application, for at any time it is liable to become a death claim and go before the Claims Committee, who see only the fact and not the explanation which negatives it. The medical director wants no observations, however acute they may be; no reasoning, however subtle, no opinions, however judicial; he wants a nay to be a nay and a yea, yea, without qualification, and above all he does not want a good risk vitiated by "remarks."

REFERENCE.
1 British Medical Journal, February 5th, 1887.

A CASE OF VARICOSE ANEURYSM OF THE AORTA COMMUNICATING WITH THE PULMONARY ARTERY.

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Cases of aneurysm of the aorta opening into the pulmonary artery are rare, and as the one described below was under observation for some weeks, and the symptoms pathognomonic of this condition are not absolutely settled, I have thought it worthy of record.

A brief summary of the clinical history is that the patient, without obvious cause, began to suffer from shortness of breath, palpitation, and œdema beginning at the feet. There was a marked thrill over the left side of the chest, and a loud, continuous murmur, with systolic and diastolic exacerbations. Later there were marked anasarca, scantiness of urine (varying in quantity from 9 to 16 ounces per diem), orthopnœa, and gradual failure of pulse.

History.—A. B., aged 36, was a hotel porter, and had never had any previous illness. He had had gonorrhœa, possibly syphilis, and drank about four pints of beer daily. Three weeks before admission on going up a steep hill one evening he experienced great shortness of breath; this progressively increased. A week later his feet began to swell, and in another week his abdomen swelled and the urine became very scanty in amount. There was no pain, and no other symptom besides palpitation.

Condition on Admission.—He was well nourished, rather puffy looking, and the skin rather dusky in hue. The pulse 110, not collapsing or water-hammer; there was no capillary pulsation; arteries slightly thickened; respiration 24. The chest wall was œdematous, especially on the left side. There was marked pulsation in the carotid and subclavian arteries; the veins of the neck also showed pulsation, and they filled up from below. The heart's apex was in the fifth space, 2 inches outside the nipple line; the area of dulness extended ⅔ inch to the right of the sternum and to left to the apex beat; it was enlarged upwards and to the left, there being dulness over the sternum as high as the lower border of the first ribs, and outwards to left in first and second intercostal spaces. There was an area of deficient resonance extending about 1½ inch from left border of sternum. A very marked thrill could be felt over the whole of the dull area and slightly beyond it, and also over the subclavian arteries and first piece of sternum; this thrill continued almost throughout the cardiac cycle. The precordial area was bulged, and pulsated everywhere. In addition there was deep-seated pulsation to be felt to the left of the sternum in the second and third intercostal spaces. On auscultation a low pitched roaring murmur was heard, continuous but varying in intensity forming as it were a background to loud blowing systolic and diastolic murmurs. These murmurs were loudest at the sternal end of the third left intercostal space and fourth left costal cartilage, next loudest in the second intercostal space. During his first week in the hospital the murmur was audible without a stethoscope some inches away from the patient's chest. Below the fourth rib the heart sounds had a galloping rhythm, and the systolic and diastolic murmurs were heard. A loud double murmur was also audible in the back down the left vertebral groove. No tracheal tugging and no laryngeal paralysis were present. There was some fluid effusion into the left pleura. The liver was much enlarged, and showed true pulsations following immediately after the heart beats.

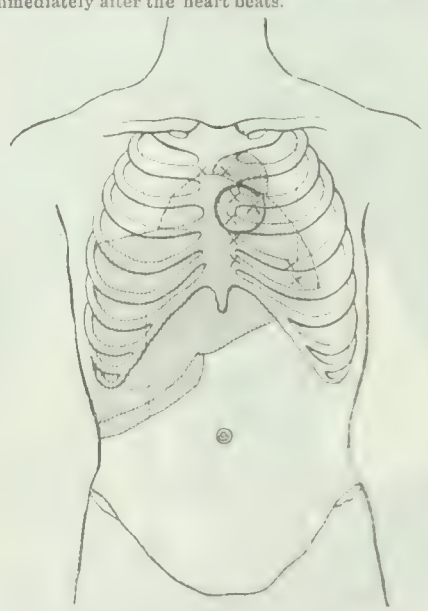


Fig. 1.

After-History.—The murmur remained much as above described until his death, the systolic portion being the loudest as a rule: but both systolic and diastolic murmurs varied in this respect, one day one being the louder and another day the other. Both thrill and murmurs became less distinct towards the end as the heart's action grew weaker, and the cardiac dulness to the right of the sternum became more extensive owing to progressive dilatation of the right ventricle. The murmurs could be heard over the great vessels and faintly over the carotids, but not over the brachial or radial arteries. The pulse was never of the water-hammer character, it remained regular, and the rate varied from 100 to 116 until a few days before death, when it reached 140. Respiration 26 to 32; it was easy so long as he was quiet, and there was no orthopnœa until just before the end. Temperature subnormal. There was no cyanosis, a dusky hue being only noticed for a day or two after admission and for three days before death, and even this was not marked. There was no marked anæmia. The urine was very scanty, the quantity passed being from 6 to 14 ounces in the twenty-four hours, once 16 ounces; specific gravity 1022 to 1026; it contained urea 3.5 to 5 per cent., a trace of albumen, a moderate deposit of urates on most days, no sugar, occasionally a hyaline cast. The dropsy steadily increased, and fluid accumulated in the pleural and abdominal cavities; the abdomen was drained, and a large quantity of fluid drained from the legs by means of Southey's trocars.

The anasarca was more marked on the left side of the trunk and limbs on admission, but later was much greater on the right—probably merely due to the position in which he mostly lay in bed.

Post-mortem Examination.—The veins of the neck and upper part of the trunk were very full of blood. Both pleural cavities contained fluid, and the lower lobes of the lungs showed more or less collapse. Just above the anterior cusp of the aortic valve opened out a small sacculated aneurysm, rather oval in shape, and about the size of a bantam's egg; it bulged into the pulmonary artery, and formed a rounded swelling on the right side of the root of the aorta. The wall of the aneurysm was very thin, and it bulged into the pulmonary artery over the position of the right posterior cusp of the pulmonary valve, which was stretched over it and closely adherent to it, so that as a valve it was non-existent; the other two cusps of the valve were somewhat thickened. In the thinnest part of the wall of the aneurysm a perforation had taken place into the origin of the pulmonary artery just below the cusps of the valve; this perforation was irregularly oval, and about the size of a sixpence. The pulmonary artery appeared small, the conus arteriosus was dilated and its wall hypertrophied, being nearly ¼ inch in diameter. The aortic valve segments were somewhat thickened and opaque, but came together. Both pulmonary and aortic valves were incompetent to the water test, the former most so. The heart was enlarged, weighing 15 ounces; both ventricles were dilated and hypertrophied, the right the most. Its wall was ⅜ inch in thickness, and the tricuspid valve admitted six fingers. Above the aneurysm the aorta was somewhat dilated for a short distance, and its posterior wall very thin and slightly bulging. The lining membrane showed patches, mostly smooth, of commencing atheroma. The other organs simply showed the changes of chronic congestion from heart failure.

Treatment chiefly consisted in endeavours to promote diuresis and to



Fig. 2.—About one-third natural size. Taken from the anterior surface of the heart, the right ventricle having been laid open and the incision continued through the pulmonary artery. *x*, cut edge of pulmonary artery; *a* is placed on the perforation in the wall of the aneurysm, the arrow points to the remains of the pulmonary valve segment above it; *b* placed on the aneurysm bulging into conus arteriosus, the rod close to *b* has been passed through the perforation; *c*, cavity of right ventricle; *d*, of left ventricle.

maintain the strength of the heart; all attempts, however, to produce a greater flow of urine were unsuccessful, no drug of the many tried having any effect; amongst these was diuretin, which had a remarkably good effect in Sir Wm. T. Gairdner's case to be referred to.

For the last two or three weeks of his life the aspect of the patient, with the general anasarca and scanty flow of urine, recalled that of a patient in a late stage of renal disease. The diagnosis of a varicose aneurysm was made from the first, chiefly from the very peculiar character of the murmur at the base of the heart, and of the thrill felt over so wide an area; both murmur and thrill recalled these features as seen in two cases of varicose aneurysm formerly under my care. The aneurysm was also obviously at the commencement of the aorta; the difficulty was to decide into what it had perforated. Against the communication being with the superior vena cava were that in these cases the onset is generally marked and sudden; there is great cyanosis, together with œdema and distension of the veins of the upper part of the body; whether the chest wall is œdematous depends upon the position of the obstruction, whether above or below the point of entrance of the azygos vein into the vena cava; an abnormal area of dulness, if present, would be behind or to the right of the sternum (first piece), and thrill and murmur would either be over the sternum or to the right of it, or at any rate not so distinctly to the left of the sternum as in the above case. In the absence of these signs it seemed tolerably clear that the varicose aneurysm was not one of the aorta and superior vena cava, and during life it remained uncertain into what vessel it would be found to have opened, although the physical signs and the known relative frequency of the direction of such perforations made it probable that the aneurysm had opened into the pulmonary artery or into the right ventricle or its conus arteriosus. The site of the murmur and thrill, and position of extension of area of dulness upwards and to the left of the sternum, were certainly suggestive of communication with the pulmonary artery, but at this time I was not aware that such a communication could take place without causing marked cyanosis, and this was entirely absent.

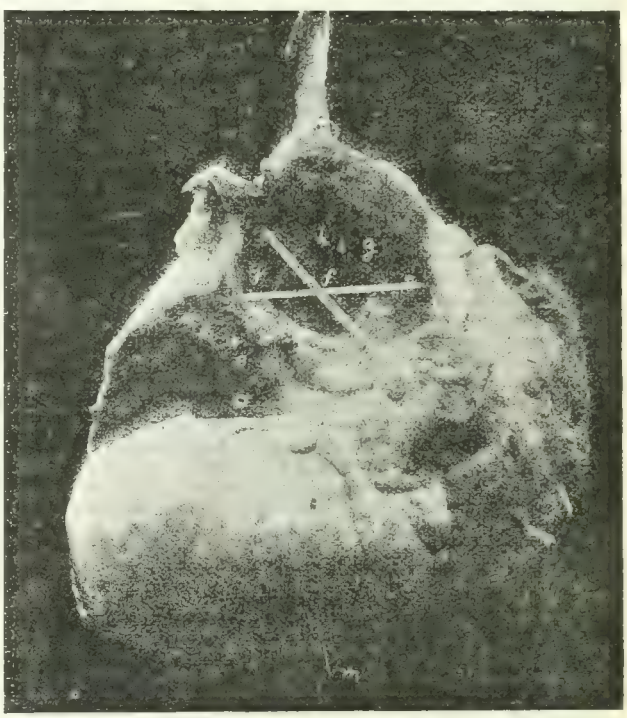


Fig. 3.—Slightly larger than Fig. 2. *e*, cavity of left ventricle just below aortic valve; *f* placed on the centre of the opening of the aneurysm from the aorta, the opening is just above the aortic valve, the two rods keep it open; *g g* indicate the margins of the aneurysm; *h* placed next the perforation (faintly indicated) at the bottom of the aneurysm; *i*, cut edge of aorta; *m*, surface of left ventricle.

Walshe,[1] after describing the symptoms in the diagnosis of a sudden communication between the aorta and the pulmonary artery or right ventricle (amongst which he mentions a powerful systolic thrill limited to the second and third interspaces close to the sternum), goes on later to say that "habitually sudden, actually instantaneous in its occurrence, the communication may, on the contrary, be slowly effected..... If the communication arise in this gradual fashion, the attendant symptoms may be wanting in the elements of sudden cardiac shock and respiratory distress." This statement was certainly borne out by my case.

Sir Wm. Gairdner[2] publishes a full report of a case which corresponds almost exactly with the one above described, and judging from the excellent plates, the aneurysm was of about the same size, and opened into the pulmonary artery in the same position. Sir W. Gairdner notices especially the re-

markable euphoria or complacent optimism of his patient even when the subject of advanced general dropsy, and I should have added that my patient was always cheerful and contented, and did not appreciate the grave nature of his illness.

In Sir William Gairdner's case the patient, aged 33, had suffered from some shortness of breath for twelve months; the pulse "was fairly characteristic of aortic regurgitation"; there was a remarkable tendency to muttering delirium, especially at night, with more or less albumen in the urine, and no definite dull area over the chest apart from the extension of the cardiac dulness. His case corresponds with mine in the appearance of dropsy one week before admission to hospital, and in the absence of other symptoms than shortness of breath and palpitation; in the absence of hæmoptysis, marked cyanosis, and of orthopnœa until shortly before death; in well-marked increase of the transverse dulness of the heart, especially of that due to dilatation of the right ventricle, in high degree of general dropsy, enlargement of the liver, and moderate pulse rate (98 to 116) until near the end. He describes the murmur as being extremely loud and all but continuous over the right ventricle. "Over the aortic area V.S. and V.D. murmurs very much of the usual characters in aortic disease can still be separately distinguished; but..... the loud, almost roaring, hollow murmurs heard midway between the left nipple and the middle line are such as to confuse the ear as to the rhythm."[3]

It will thus be seen that with some minor points of difference the correspondence between the symptoms in the two cases is remarkably close, the chief points to be borne in mind for the diagnosis of future cases of gradually-established communication between the aorta and pulmonary artery being the gradual onset, with shortness of breath, palpitation, and dropsy, the peculiar murmur and thrill heard and felt at the base to the left of the sternum (with or without deep-seated pulsation and a small area of dulness in the second and third left intercostal spaces), and possibly also over the right ventricle; enlargement of the heart, and especially dilatation of the right ventricle; rapid development of general dropsy, with scanty excretion of urine; absence of marked cyanosis and orthopnœa; moderate increase in the rate of the pulse which may be, but is not always, of the regurgitant type; great engorgement of the liver, and possibly a sense of well-being relatively to the serious condition present.

References.
[1] *Diseases of the Heart*, Fourth Edition, p. 528. [2] *Glasgow Hospital Reports*, 1899, p. 1. [3] *Loc. cit.*, p. 6.

WHAT IS A DISEASE?

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The meaning attached to the word "disease" has undergone a process of evolution during many centuries, while the science of medicine has emerged from darkness into light. The current conception of "disease" is indeed, and has always been, the central thought in the medical world. The time has come to give the word a definite value and meaning in accordance with the position the science of medicine now occupies. Not probably till her sister science bacteriology came to the help of medicine was it possible to do this; the task is now, however, simple.

The most direct method will be to take an example from the group of germ diseases. Under certain conditions the typhoid microbe becomes parasitic in man; pathological changes occur in consequence, which we include under the name of typhoid fever. In the absence of this particular microbe this disease, according to present knowledge, cannot occur. Here is a self-defined disease, and from it we deduce a general definition:

The sum total of the pathological consequences resulting in a patient from the interference with his physiological state by a disease cause.

When the disease cause is of extrinsic origin, as in typhoid, the resulting disease is a self-defined entity. Lead poisoning and heat stroke may be cited as examples representing other classes of diseases due to causes of extrinsic origin. There is some apparent, but no real, difficulty in defining the cause when this is of intrinsic origin, provided always that we make up our minds to confess ignorance where it exists instead of concealing it in a cloud of words. Lithæmia, gout, and goutiness form at present a very vague symptom group. Define the cause as a sluggish metabolism resulting in ill-prepared waste products, and they are bound into a definable and treatable "disease." Some forms of insanity, hysteria, chorea, and asthma are also caused by function failures of other kinds, and the failure of a function is just as definable a disease cause as the invasion by a microbe. The unphysiological stress that fractures a patella, ruptures an aortic valve, or that produces "athlete's heart," emphysema, or the bone changes of laborious occupations is no less real or definable as a cause of disease than the ingestion of alcohol or lead. Incomplete development and prolonged wear and tear are accountable for other groups of diseases, properly so-called, that are familiar to us all. It is only necessary to cultivate a definite habit of mind to make the method that would result from the adoption of the above definition of disease perfectly plain.

At the risk of being thought presumptuous, I would say that it is on this foundation—the adoption of a recognised method—that the teaching and practice of medicine must in the immediate future be remodelled. Lengthy explanation and a multiplication of examples are equally unnecessary in addressing those whose lives are devoted to the study of medicine. The table below gives at a glance a rough idea of the shape a scientific classification of diseases would take.

There are clearly some diseases, though not a great many, the causation of which is still in doubt. Carcinoma is an example of one such class. Cirrhosis of the kidney—when not part of gout, lead poisoning, or other already-defined disease—cirrhosis of the thyroid leading to the symptom group, myxœdema, the changes in the cord resulting in idiopathic spastic paraplegia, and many other similar conditions in various organs, are probably all parts of toxæmias, whose true causation will, let us hope, soon be cleared up. It is in such cases that the "frank confession of ignorance which takes us a long way towards enlightenment" would be such an advantage and such a relief.

At present, the lack of one uniform method in medicine leads to an utter want of uniformity in textbooks and all other means of instruction. It is little exaggeration to say that "diseases"—the current coin of our science—are at present arranged and valued rather to suit the speciality of the

Diseases are due to Causes of Intrinsic, Extrinsic, and Undetermined Origin.

Intrinsic.				Extrinsic.			Undetermined Origin.	
Wear and Tear.	Incomplete Development.	Function Failure.	Unphysiological Stress.	Parasitic.	Non-parasitic Matters introduced into the Economy.	Deleterious Physical Interference.	Tissue Overgrowth.	Toxæmias of Unknown Nature.
Atheroma, chronic senile general paralysis	Idiocy, cleft palate, congenital heart defects	Gout, insanity, hysteria, lateral curvature	Writer's cramp, athlete's heart, transverse fracture of patella	Tuberculosis, malaria, hydatid disease	Alcoholism, plumbism	Wounds, heat-stroke, frost-bite	Carcinoma, lipoma	Spastic paraplegia, anterior poliomyelitis, cirrhosis of kidney.

teacher than to aid the comprehension of the student. Our pathological museums are chaotic, and therefore repellent to the student. Medicine is a science without a method, and until our leaders adopt one we shall not take the place that belongs to us.

THE RELATION BETWEEN CAUSE AND EFFECT IN DISEASE.*

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IN considering the pathology of diseases we often have occasion to use the term "specific." It is well, then, to ask ourselves what this term means. A "specific disease" is literally a disease which has certain definite characters which distinguish it from all other diseases. There are two ways in which a disease may be specific.

1. It may be due to a specific causal agent.
2. It may be characterised by specific lesions.

It is obvious that our conception of any disease will differ according to which of these criteria we adopt as our basis of specificity.

For example, let us consider tuberculosis. If we adopt the anatomical basis—that is, if we consider tuberculosis to be a disease characterised by the presence of certain definite anatomical lesions called tubercles, we must include in this term, not only those cases in which the tubercle bacillus is the causal agent, but also other cases due to other organisms such as aspergillus, and we must exclude all diseases not characterised by these lesions. If, on the other hand, we adopt the etiological basis, we must exclude all cases which are due to organisms other than the tubercle bacillus, and we must include cases in which the anatomical tubercles are not present; for the tubercle bacillus occasionally gives rise to a diffuse instead of a nodular inflammation.

Thus the term "tuberculosis," which originally had a purely anatomical significance, has now come to have a meaning which is purely etiological, and in consequence those diseases which are characterised by anatomical tubercles, but which are not due to the tubercle bacillus, have been designated by the unsatisfactory term "pseudo-tuberculosis."

The same change is now, unfortunately, taking place in the meaning of the term "pneumonia." This originally meant a disease characterised by the anatomical condition of inflammatory consolidation of the lung. Now, however, there is a growing tendency to include pneumonia among the specific infective diseases, that is, among the diseases due to a specific micro-organism. If this is done we shall have to describe pneumonia, not as a disease characterised by an inflammation of the lung, but as a disease which is the result of infection by the diplococcus pneumoniæ, and we shall have to include in it certain cases of broncho-pneumonia, pericarditis, meningitis, otitis, empyema, etc., any of which conditions may be caused by the diplococcus with or without the characteristic inflammation of the lung. Judging from the analogy of tuberculosis we may expect in the future to read about "pneumonia" of the meninges, ear, pericardium, etc., and we may also find the term "pseudo-pneumonia" introduced to describe those diseases characterised by inflammation of the lung, but not due to the diplococcus pneumoniæ.

It is thus a great mistake to give an etiological significance to a term the significance of which is purely anatomical. It is sure to lead to great confusion in medical nomenclature. With regard to this question of specificity I should like to lay down the following two complementary laws.

1. No specific causal agent always gives rise to characteristic lesions.
2. No specific lesion is always produced by a single definite causal agent.

Besides the examples given above, I will give the following:

1. The diphtheria bacillus usually gives rise to a fibrinous inflammation of the fauces or larynx with the production of membrane. Sometimes, however, the membrane is wanting, and instead of a fibrinous there is a gangrenous or œdematous inflammation. On the other hand, fibrinous inflammation of the fauces may be due to other organisms than the diphtheria bacillus.

2. Congenital syphilis, if it affects the liver, usually gives rise to a pericellular cirrhosis. It may, however, give rise to other forms of cirrhosis, or to gummata. On the other hand, pericellular cirrhosis of the liver is occasionally found in patients presenting no other evidences whatever of congenital syphilis.

3. The streptococcus pyogenes in the subcutaneous tissue may give rise either to a suppurative or a non-suppurative inflammation, and suppuration may be produced by organisms other than the streptococcus.

4. Chronic alcohol poisoning, if it affect the liver, usually gives rise to a multilobular cirrhosis. It may, however, give rise to other forms of cirrhosis, or to fatty degeneration without cirrhosis. On the other hand, multilobular cirrhosis may be due to other causes than alcohol poisoning.

These examples might be multiplied indefinitely, but I have given a sufficient number to demonstrate the general truth of the two laws given above.

So far I have considered only anatomical lesions. It remains to consider those lesions which may be termed functional, such as alterations in secretion or motor activity. At first sight it appears doubtful whether we can apply the laws to specific alterations in functional activity, but, on closer investigation, it will be seen that, although there are apparent exceptions, yet there are numerous cases in which the laws hold. At any rate, the second law would appear to hold good in all cases.

5. Morphine, while usually producing narcosis, sometimes produces excitement. On the other hand, narcosis is produced by many agents besides morphine.

6. Lead poisoning, if it affect the central nervous system, may give rise to either excitement or dulness.

As an apparent exception to the first law may be mentioned the action of tetanus toxin on the central nervous system. It is quite possible, however, that the tetanus toxin may sometimes reach the central nervous system without producing the characteristic convulsions, since an examination for the tetanus bacillus is only made when the characteristic convulsions are present.

We have now to consider the following question, Why does the effect produced by a specific causal agent vary in different cases? The answer is to be found in the fact that no disease is dependent on one cause alone. The factors concerned in the production of a disease can be divided into (1) the essential factor, and (2) the adjuvant factors; the essential factor being that without which the disease could not occur, and the adjuvant factors being those which assist in production of the disease, but which in themselves are not individually essential.

In those diseases which are due to a specific causal agent, this agent itself is the essential factor, the adjuvant factors being those usually known as the predisposing causes. It will be found that, granting the access of the causal agent to the body, the adjuvant factors can be reduced to two in number: (1) The locality to which the causal agent is applied; (2) the relative virulence (or dose) of the causal agent. By "relative virulence" I mean the virulence of the causal agent considered in relation to the susceptibility of the patient.

1.—*The Locality to which the Causal Agent is applied.*

(*a*) An irritant applied to an epithelial surface usually gives rise to a catarrhal inflammation—for example, inflammations of the lung due to inhalation, or to the spreading of an inflammation along the air passages, usually have the characters of broncho-pneumonia.

(*b*) An irritant applied to a surface covered by endothelium usually sets up a fibrinous inflammation, such as is seen in pericarditis, etc.

(*c*) An irritant acting on connective tissue tends to produce a suppurative or an indurative inflammation, etc.

2.—*The Relative Virulence (or Dose) of the Causal Agent.*

The intensity of any disease varies with the virulence of the causal agent and with the susceptibility of the patient. Thus an irritant of low relative virulence acting on connective tissue gives rise to a productive inflammation, if the virulence is greater the result is suppuration, and if the relative viru-

* Communicated to the Leeds and West Riding Medico-Chirurgical Society, November 16th, 1900.

lence is very great the effect is a serous inflammation leading to spreading œdema.

Conclusions.

From these facts I draw the following conclusions:

1. If a disease is due to a specific causal agent it is not characterised by specific anatomical or functional lesions.

2. If a disease is characterised by specific lesions we must not expect to find a specific causal agent. From this it follows that from the characters, histological or macroscopical, of the lesions we cannot positively affirm that the disease is due to a specific causal agent. The only means by which we can affirm this is to find and isolate the causal agent itself.

3. Variations in the characters of the lesions in diseases due to specific causal agents depend not on the nature of the agent, but on the locality to which it is applied and on its relative virulence.

MYOKYMIA, OR PERSISTENT MUSCULAR QUIVERING.

By R. T. WILLIAMSON, M.D.Lond., F.R.C.P.,
Physician to the Ancoats Hospital, Manchester; and Assistant Lecturer on Medicine, Owens College.

A short time ago a patient came under my care at the Ancoats Hospital, suffering from a peculiar persistent quivering of the muscles of the limbs and trunk. The symptoms corresponded to those met with in the very rare affection to which Professor Schultze has given the name of "*myokymie*" (μῦς, a muscle, and κῦμα, a wave), and Dr. Kny (who had previously reported two similar cases) that of "myoclonus fibrillaris multiplex." I have only been able to find records of eight cases in medical literature, but probably others have been reported.

The following are the notes of my case:

J. C., aged 21, clerk, was admitted as an in-patient at the Ancoats Hospital, August 29th, 1900. suffering from a peculiar persistent quivering of the muscles of the limbs, trunk, and face.

Previous History.

The left leg had been suddenly paralysed in infancy (probably owing to acute anterior poliomyelitis), and had remained useless. At the age of 16 years the left (paralysed) leg had been seriously injured, through an accident, and amputation had been necessary at the upper part of the left thigh.

Two years ago (at the age of 19) he had first noticed quivering of the muscles of the right leg. The onset was gradual, and the quivering spread in course of time to the muscles of the arms, trunk, face, and tongue. There had been no cessation or diminution of the symptom since its onset. After the amputation of the left leg he had been able to get about with the aid of a crutch, but recently he had found great difficulty in doing so, owing to the right leg frequently "giving way" through the muscular quivering.

He had always been a teetotaller, but had taken strong tea with each meal for many years. Three times a day for many years he had taken two cups (about one pint) of strong tea. He had only smoked about an ounce and a-half of tobacco weekly.

Condition on Examination.

The patient was fairly well nourished, and there was no definite wasting of any of the muscles of the arms, right leg, or trunk. There was a well-marked lateral curvature of the spine, which had gradually developed since the left leg had been amputated. The most striking symptom was a persistent rapid quivering of the muscles of the right leg, the arms, trunk, face, and tongue. Sometimes one small bundle of muscle fibres contracted rapidly, giving the appearance of fibrillary contraction; sometimes several bundles of muscle fibres contracted; at other times the whole muscle would contract rapidly. The symptom was best seen in the leg, and the quivering affected chiefly the thigh and calf muscles. At one moment a bundle or several bundles of muscle fibres would contract rapidly; directly afterwards a wave of contraction would pass over the whole muscle. This muscular quivering produced a very slight shaking or trembling of the whole leg, even when the patient was in bed. When the quivering was very violent, rapid and repeated slight flexion movements of the foot occurred at the ankle, owing to the quivering of the calf muscles. The arms were affected in a similar manner but not quite so markedly as the leg, the muscles of the shoulder, upper arm, and forearm being most affected, those of the hand very slightly. In the arms the quivering or contraction did not affect the whole of a muscle so frequent as in the leg. The rapid and repeated quivering of the muscles of the arms and leg continued more or less all day long; the muscles were affected in a most irregular manner, and the frequency of the quivering varied considerably.

The muscles of the chest and abdomen presented occasional fibrillary contractions. The muscles of the face and tongue, the masseters and neck muscles presented frequent fibrillary contractions. The eyes were not affected; there was no nystagmus. The muscular quivering and contractions in the limbs and trunk continued when the patient was at rest in bed, as well as when he was going about. When the arms were held out in front of the chest, the muscular quivering produced a slight tremulous movement of the whole limb resembling that so frequently seen in Graves's disease; but there was not the flexion and extension movements of the fingers or wrist which are seen in paralysis agitans. The muscular quivering and slight tremor of the limbs were very little affected by voluntary movement; they were not diminished thereby; if any change occurred at all, they were slightly increased. The muscular quivering was increased by excitement, and when the patient was undergoing examination. The patient was able to write fairly well, and though the writing was slightly jerky, it was much better than in the various other forms of tremor, with the exception of paralysis agitans. He was also able to draw a straight line on paper fairly well.

The patient could perform all the movements of the arms and legs, and there was no localised wasting or paresis of muscles. There was no rigidity of the limbs. The knee-jerk was a little increased. There was no ankle clonus. On attempting to obtain ankle clonus occasionally a few jerks were obtained, but at other times this symptom was entirely absent. The plantar reflex was normal (flexor type). There was no loss of sensation to touch, pain, or temperature. The sensory cranial nerves were unaffected. There were no mental symptoms. The patient was not emotional or nervous. There was no affection of speech. The patient often complained of palpitation of the heart, and the pulse was often quick, 84 to 108 per minute. Examination of the heart, lungs, and abdomen revealed no evidence of organic disease. The patient complained of frequent sweating. There was no exophthalmos, no Graefe's symptom, and no thyroid enlargement. There was a little nausea after food; the bowels were regular

The urine was often pale, at other times of normal colour. The quantity was increased; it was measured for sixteen days, and found to vary in amount from 64 to 124 ounces daily. The specific gravity varied considerably: when the urine was pale it was often low—1005 to 1008; at other times it was 1012 to 1015. Albumen and sugar were absent. The reaction was sometimes alkaline, sometimes acid. The temperature was normal. Insomnia was a frequent symptom.

As the patient had taken strong tea at every meal for many years I allowed him no fluids except milk and water for two weeks, but without any result as regards his symptoms. During the four weeks he was in the hospital there was no definite change; some days the muscular quivering was a little less, but the diminution was never permanent. The muscular quivering continued more or less all day long, just as it had done for two years.

The symptoms in the case just recorded corresponded to those in the affection to which the name of "myokymia" has been given. Similar cases have been recorded by Kny, Schultze, Hoffmann, Biancone, Buber, Karcher, and Mayer. In the 8 cases of which I have been able to find records in medical literature, the ages were from 21 to 71. All the patients were males. Five of the eight were peasants or country labourers. One patient was a painter, another a lead solderer; both of these patients suffered also from symptoms of lead poisoning. One patient suffered from chronic double sciatica. In all of the 8 cases the legs were most affected. In 2 cases the legs only were affected; in 1 the legs and muscles of the back; in 2 the arms and legs; in 1 the legs and arms but not the hands; in 1 almost all the muscles of the body; in 1 almost all the muscles except those of the face and neck. [In the case which I have just reported, the muscles of the limbs and trunk, as well as those of the neck and face, were affected.] In 4 cases recovery occurred in the course of a few months; in 1 case there was distinct improvement. The treatment, in the cases in which recovery occurred, was by warm baths and galvanism (Kny), by bipolar faradic baths (Kny), by rest in bed and warm baths (Schultze). Buber's case improved distinctly under treatment with the galvanic current and warm baths. Biancone recommends complete rest in bed, warm baths, and sodium salicylate.

The cause and pathology of this peculiar affection are at present unknown.

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A BRIEF ACCOUNT OF THE RECENT EPIDEMIC OF CHOLERA IN KASHMIR.

By ERNEST F. NEVE, M.D., F.R.C.S.E.,
Kashmir.

Once more Kashmir has been visited by a sharp epidemic of cholera. Thus, in 13 years there have been three invasions. In 1888 there were probably 18,000 attacks, and a total mortality of nearly 10,000; in 1892 the official returns showed 16,845 cases, with 11,712 deaths; owing to the concealment then extensively practised by the people, it is probable that

there may have been hundreds of unregistered cases. This year there have been about 7,600 attacks and 4,256 deaths.

Kashmir, with its protecting belt of mountains, lies so far from the plains of India, and has so cold a winter, that cholera is not endemic. Indeed, a special train of circumstances is almost required if the valley is to become infected. In 1888 the hundreds of camp followers of the Maharajah brought it in. I remember, on the day of his arrival, meeting four men, on the bank of the river, carrying into the city an emaciated corpse-like form, a man in the collapse stage of cholera. A few days later the disease broke out in all directions. Since then improved roads and increased facilities for travel have tended to increase the risk of periodic outbreaks. Even now the long mountain roads, crossing passes and rivers at intervals, admit of the application of quarantine. And yet, even with such favourable conditions, this has nevertheless failed absolutely.

Cholera had been prevalent in the Punjab during the summer. A traveller from the Lyallpur District was taken ill and died of cholera on the Banihal road, one of the shortest routes to Kashmir, on July 18th. About 4,000 coolies were working on a new road close by. On July 21st the disease broke out amongst these, and 200 cases occurred, of which 176 died. Probably a large number of the milder cases were concealed. The survivors fled, many of them to Kashmir, carrying, no doubt, the infection with them. Hindu pilgrims, too, on their way to the sacred cave of Amarnath, at the north-east of Kashmir, traversing the infected districts, also suffered, and acted as carriers.

After a time of anxious expectation it was announced that cases of cholera were beginning to appear at the east end of the valley, the point at which the Banihal road enters. By September 3rd, 470 cases had occurred, 35 villages were infected, and, worse still, 18 cases had appeared in the city of Srinagar, which has a population of 125,000. The disease continued to spread, and on September 12th there were 93 new cases in Srinagar, and 143 in the district around. After this there was a gradual decline in the city. The maximum in the surrounding district was reached on September 28th, when the record of new cases was 250. From this time there was a steady improvement. On October 24th there were only 40 fresh attacks in the whole valley.

Compared with the last two epidemics this one has been comparatively small. The reasons are not far to seek: (1) A good supply of pipe water has been brought to the city; (2) in the early autumn the nights begin to get quite cold owing to the altitude; (3) a great deal has been effected in the way of sanitation during the past few years.

The introduction of a supply of pure water has saved hundreds of lives in Srinagar. In spite of this, however, in some of the more crowded and insanitary quarters, the disease appeared to obtain at any rate a temporary footing.

The mortality as a whole was very constant, being about 56 per cent. The records of some districts are much higher. This may be due partly to the intensity of the poison, but is more probably owing to the concealment of non-fatal cases. As time went on there was a tendency for the attacks to assume a milder character. The cold no doubt checked the growth of the bacilli outside the body. Rain appeared to favour the spread of the disease. Continuous rain, however, which ushered in colder weather, proved very beneficial.

Prophylactic treatment with sulphuric acid is, I believe, of value in averting the disease. At the Mission Hospital all cases of chronic diarrhœa were treated in this way. Only one was attacked, and in spite of debility (due to traumatic discharging empyema, the result of a severe gunshot wound, for which he was under treatment), he made an excellent recovery.

The immense importance of early treatment with some preparation of opium cannot be too strongly insisted upon; 70 per cent. of those treated by us in this way recovered. The proportion would have been larger, but our returns included bad cases to which we were called too late. In two cases on the second day I found an appearance of spores in the bacilli after prolonged staining with carbol-fuchsin, a point of some interest, as their existence is denied by high authorities.

During the epidemic excellent work was done by Major Roberts, Acting Residency Surgeon, and by Dr. A. Mitra, the Chief Medical Officer to the Kashmir State.

QUININE HÆMOGLOBINURIA.

BY A. G. WELSFORD, M.D., F.R.C.S.ENG.,
Johannesburg, South Africa, late P.M.O. of the Beira Railway.

WITH regard to the theory that the so-called blackwater fever of the tropics is a peculiar condition caused by the administion of quinine in malarious patients, few (if any) practitioners who are experienced in tropical practice believe that this is a common cause, because while they are in the habit of prescribing quinine in large doses for all varieties of the malarial fevers, they do not practically find that blackwater fever results, and they also know that blackwater fever is a strictly localised disease, and that there are some malarious districts Africa which are free from it.

It is a fact that quinine can in certain very rare cases cause hæmoglobinuria, but so rare are they that there are few observations on record. The following case is interesting as being one of these rare cases.

CASE I.

A.B., a white prospector, was admitted into the Beira Railway Hospital in June, 1899. He had been in the country nine years, and had just returned from a trip into the interior, which had lasted nine months. He was suffering from a high degree of malarial cachexia. He had had frequent slight attacks of blackwater fever during the previous three years. He rarely, if ever, took quinine. On admission he objected to take quinine, alleging that a single dose invariably made his urine black, but he eventually consented to take two 10-grain doses, which were administered at 8 A.M. and 2 P.M.. At 6 P.M. the patient had a rigor; the temperature, which before was normal, rose to 105° F. with vomiting and pain. At 7 P.M. he passed 10 ounces of black urine. He improved during the night, and next morning his urine was clear, but still contained a little albumen.

Before taking the quinine the patient had been up and about, and there was therefore a possibility of the hæmoglobinuria having been due to chill. To obviate this source of error the patient, who took a most intelligent interest in his case, after his temperature had remained normal for a period of seven days was put to bed for two days. On the third day two 10 grain doses of quinine were given with the same result; the temperature rose in the evening with rigor, vomiting, and pain, and 12 ounces of black urine were passed. The following morning the urine was clear, and in two days there was no albumen.

CASE II.

A more doubtful case of quinine hæmoglobinuria occurred in the case of a man who was admitted with a somewhat severe attack of blackwater fever. This was treated without quinine and the patient recovered. Three weeks later his temperature rose to 100° F., and 10 grs of quinine were ordered three times a day. Two days later his temperature suddenly rose to 105° F., and his urine became black and continued so for two days. As in this case the symptoms were well marked; this attack may have been a relapse.

The exact relationship between blackwater fever and malaria is not yet made out, but the symptoms of blackwater fever are so definite that the fever can be readily distinguished from the transient hæmoglobinuria which in the first-mentioned case followed the administration of quinine.

Hæmoglobinuria may be produced by several poisons, among which are potassium chlorate, carbolic acid, and arseniuretted hydrogen. It is in this category that quinine hæmoglobinuria must be placed.

Blackwater fever, if not due to a specific organism, is due to the toxin of malaria, and falls in line with the hæmoglobinuria sometimes produced by the toxins of syphilis, yellow fever, enteric, and scarlet fevers.

MEMORANDA;

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

A FATAL CASE OF POISONING WITH ZINC SULPHATE: NECROPSY.

I WAS called to see A. C., a widow, aged 53 years, at about 5 P.M. on July 5th, 1900. She was said to have swallowed a large packet of sulphate of zinc at some time between 1 and 3 P.M. She was suffering from severe pain in the stomach and bowels, paleness of the countenance, coldness of the limbs, irregular pulse, and cold sweats, with purging, but had only vomited about a teaspoonful. I administered a large amount of carbonate of soda diluted freely with tepid water. Copious vomiting of a white fluid ensued (showing presence of carbonate of zinc). After which I directed that she should be frequently given white of egg and milk, and later on, when signs of collapse appeared, whisky with the latter. I injected

1 gr. of morphine for the pain, and afterwards gave 1 gr. opium tablets at intervals. I saw her again at 7 and 9 P.M. At the latter time she seemed easier. When visited at 9.20 A.M. on July 6th she was almost pulseless and collapsed. Every effort was made to revive her, but she died in a state of collapse at about 10.30 A.M., about twenty hours after taking the poison.

NECROPSY.

(Made by the coroner's order forty-eight hours after death.)

Externally.—The body was well nourished: *post-mortem* lividity slight, decomposition rapid.

Condition of the Head and Viscera.—The membranes of the brain were congested, and there was a large amount of blood-stained serum in the sinuses. The brain weighed 2¾ lbs.; the arteries at the base were congested, and there was a considerable amount of serous fluid in the left ventricle, and a little in the right.

Condition of Thorax and Viscera.—The pleura was normal and non-adherent. Both lungs were engorged with dark blood. Heart normal, although slightly hypertrophied.

Condition of Abdomen and Viscera.—The stomach contained partially digested egg and milk. The mucous membrane lining it showed patches of intense inflammation, but this was much more marked in the small intestines, which were inflamed throughout; the inflammation in the large intestine was, again, of a patchy character. So vivid was the congestion of the small intestine that it was plainly visible from the outside before they were slit up. Liver, 51 ozs., anæmic but otherwise normal. Spleen, soft and congested. Left kidney, 4½ ozs., and fatty; right, 4 ozs., normal.

REMARKS.—Death was due to shock, resulting from the intense and very extensive inflammation of the mucous lining of the stomach and intestines. The condition of the brain, and particularly the amount of serum in the ventricles, would indicate that the woman was not of perfectly sound mind at the time. The packet contained 1 oz. of sulphate of zinc, but it is possible that she had a second ounce from another chemist.

Lower Kennington Lane, S.E. G. D. MACKINTOSH, L.R.C.P.

METABOLIC FEVER.

I VENTURE to suggest the above name for a form of fever which is common in children during the summer months, and which is generally called a "bilious attack," a "chill on the liver," a "bilious cold," a "feverish cold," and so on. Having seen so many cases this summer, all with identical symptoms, I think we might safely give a definite name to these cases. I have chosen the above name because it probably explains the cause of the fever—namely, increased metabolism, increased tissue waste, increased and at first unsuccessful attempt to replace the waste, and a system clogged with used-up tissues—"the products of metabolism," which the excretory organs are unable to dispose of fast enough.

Symptoms.—Severe frontal headache, profuse perspiration (probably an attempt to get rid of the products of metabolism), vomiting, irregularity of bowels (generally constipation), temperature 101° to 102° F., loss of appetite. The patient is not thirsty at first, but at the end of twenty-four hours great thirst is complained of. The vomiting is at first severe; in one case the patient vomited some blood. The perspiration is also most marked, the patient's nightgown being "soaking wet." The urine is much as usual, and does not appear unusually high coloured.

Etiology.—In every single one of my cases I have been able to show that the patient had undertaken some unusual exercise during the days immediately preceding the attack; these cases are therefore most common in the summer holidays when boys who have spent many hours daily in school or at their home work suddenly find themselves free to roam about, play cricket all day, and generally over-exert themselves. In one of my cases a boy, 12 years old, who had not been on a bicycle for over a year, rode 20 miles one day and 40 the next, after which he developed the above symptoms. Another boy, 10 years old, developed them after some athletic sports, in which he entered for flat races; he spent the three days previous to the sports in "training." Another boy, aged 16, developed them after a 20-mile walk, he being employed in the city as a clerk, and quite unused to walking long distances. A girl, aged 8, developed them, because (in the words of her mother) "she had a hoop given her three days ago, and has been tearing about each day, and all day, like a mad thing, up and down, up and down the road." Another girl, aged 6, had been "trotting about in town all day with her parents, and came home tired out."

These are the predisposing causes. What happens? Probably the accumulation of "products of metabolism" acts on the heat-regulating centre in the medulla interfering with thermotaxis, causing thermogenesis and reducing thermolysis.

Treatment.—Absolute rest in bed for three days. Drugs: Calomel purge, one small dose of antipyrin, tonics. Diet: First day, practically *nil*; second day, bovril, milk, and soda; third day, fish.

The patient is usually well on the fourth day. There was no history of mosquito or gnat bites in any case, and no "chill."

Leytonstone. ARTHUR TODD-WHITE.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL HANTS COUNTY HOSPITAL, WINCHESTER.

A CASE OF ANGIOMA OF THE SPINAL CORD, WITH RECURRENT HÆMORRHAGES.

(Under the care of Dr. HARMAN.)

[Reported by C. A. J. A. BALCK, M.B., Ch.B., House-Physician.]

THE patient, a grocer, was admitted on February 23rd, 1900.

Previous History.

Always of a neurotic temperament, he began in the summer of 1896 to complain of occasional pains in his legs. In November of that year there was a sudden exacerbation of these, combined with retraction of the head and loss of power of his lower extremities. There is said to have been also anæsthesia of one leg. There was no apparent reason for the onset of this attack, and the symptoms gradually passed away, though it was six months before he could resume work. Exactly two years later—that is, in November, 1898—a second similar attack occurred as he was entering his lodging after his day's work. A feeling of stiffness and suffocation came over him, he was carried upstairs, and a medical man summoned, who injected morphine. A few minutes later his breathing became laboured and a fatal result appeared imminent. He rallied, however, and ten days later was able to be taken to his home. He was there treated with phenacetin, but apparently without much benefit, as three weeks later his removal to this hospital was advised. He was admitted on December 29th, 1898. The house-physician of that time has the following notes on him: "The muscles on the right hip are atrophied; the great trochanter stands out prominently and is also enlarged. The patient complains of pain on pressure along the whole course of the great sciatic nerve." The patient left the hospital on April 5th, 1899, much improved, though walking lame and with occasional shooting pains. On February 21st, 1900, he had a third attack. There was acute pain up the spine and retraction of the head. Some phenacetin relieved him sufficiently to enable him to undertake the journey home, a distance of six miles. He was brought in a cab to the house, where he seemed to improve a little. The next night, however, he became delirious, and was seen by a physician, who advised his immediate removal to the hospital.

Condition on Admission.

Nothing could be made out at the seat of pain. Tendon reflexes were exaggerated on both sides and the right leg was atrophied. Recovery again took place, and in the beginning of March he was up and walking about, apparently well.

After-History.

On March 10th, while in bed, the patient suddenly uttered a loud scream. I went up to him, and found him in apparently intense pain, lying with his head retracted and groaning loudly. On inquiry he said he was suffering from great pain in the back of the neck and on the back of the right thigh, along the course of the great sciatic nerve. Any attempt to move his head forward caused him great agony. Various means were tried to relieve the pain; of these, the subcutaneous injection of morphine and the local application of heat seemed most successful. The patient complained of inability to micturate, and was very restless and wandering throughout that day and night, only quieted by morphine; there was no rise of temperature.

On March 11th the effect of chloroform was tried. But under the anæsthetic the rigid retraction of the head persisted. When the head was pushed forward it of its own accord returned into the retracted position. Morphine was again administered, and kept the patient fairly quiet during the day. About 11 P.M., however, he became delirious and quite unmanageable, shouting loudly, and trying to get out of bed. He was quieted by a large dose of morphine, and slept till about four o'clock in the morning. He then woke comparatively free from pain, and able to move his head backwards and forwards, asserting, however, that the forward position caused him great pain in the right arm and leg.

On March 12th the patient remained in much the same condition—restless, wandering, complaining of much pain, and only quieted by morphine; 9 ounces of urine were drawn off him by catheter. Bromides were given four-hourly, but as yet had no apparent effect on him.

On March 13th he complained of great pain in the eyes, and of impaired vision, otherwise his condition was unchanged.

On March 14th the pain in the eyes was worse. He was, however, able

to pass urine, and the pain in his neck was better. His temperature went up to 101.4°, on this day for the first time going above 100°. The hypodermic injections of morphine were omitted on this day, the bromides being continued.

On March 15th he was much quieter. His temperature went up to 102.6°.

On March 16th he complained of great difficulty in swallowing, otherwise his condition was unchanged.

On March 17th his speech was affected, becoming very indistinct. His temperature rose to 103°, and on March 18th the temperature went up to 103.8°.

On March 19th the temperature was down; he was able to articulate better, and to move his head forward without pain. He however began to lose control of his sphincters, and in the evening his pulse became running. The bromides were therefore stopped and strychnine given instead.

On March 20th, at 10 A.M., the patient gave a sharp cry and fell forward on his face, apparently unconscious. He continued in this state for two hours and then rallied somewhat, and was able to speak, though with difficulty. He was able to take small quantities of food by the mouth, but both his sphincters were absolutely relaxed. His head at this stage was not so stiffly retracted as hitherto. His pupils were sharply contracted, but dilated on pushing the head forward. Later in the day the patient became quite unconscious again.

On March 21st he was still unconscious; his breathing was extremely rapid—80 per minute. He died at 5 in the afternoon.

Post-mortem Examination.

With some difficulty permission was obtained to examine the cord *post mortem*. On opening the spinal canal all the membranes were found intensely congested, and pressing on the cord in the lumbar region was a large recent blood clot. The brain was not examined. In the right lung was found some fibrous thickening.

The spinal cord was sent up to the Clinical Research Association for examination. Their report is as follows: Transverse sections of the lumbar enlargement of the cord show destruction of the right half of the cord by hæmorrhage, which seems to have taken place from an angiomatous formation at the back of the cord spreading into its posterior and lateral regions. The vessels are so large and thick-walled that the growth must be called an arterial or cavernous angioma. Rupture of these vessels has then caused an extensive hæmorrhage, which is entirely under the pia arachnoid, and does not reach the subdural space. It has travelled along the posterior and right lateral aspects of the cord up the cervical enlargement, but there are no signs of damage to the cord itself above the lumbar region. There are no signs of any malignant growth.

Remarks.

The puzzling feature in the case was the recurrent nature of the attacks, with practically complete recovery after each. The fact that a large recent blood clot was found *post mortem*, makes, I think, the hypothesis of recurrent hæmorrhages the most natural explanation. The abatement of symptoms would be explained by the absorption of the blood clot.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

F. W. PAVY, M.D., F.R.C.P., F.R.S., President, in the Chair.

Tuesday, December 11th, 1900.

DISCUSSION ON MALARIA.

DR. MANSON gave a general introduction dealing with the recent additions to our knowledge of the parasitology of malaria. In 1887 the cycle of Golgi—the cycle of malaria in the human body—was already recognised. But many forms of the parasite were at that time still unaccounted for. The Italian school, for example, thought these were degeneration forms. Because the flagellated form did not appear inside the human body, it was by some believed that its function was outside the body, and as its intracorpuscular form could not leave the body of its own accord, it was considered that it must be removed by an outside agency, that from mechanical reasons this agent must be a blood sucker, and on account of geographical and epidemiological reasons, a special mosquito. Major Ross demonstrated as regards human malaria that the parasite entered the mosquito stomach. He found it necessary in order to complete the chain of evidence to use the proteosoma of the sparrow. This passed from the stomach to the salivary gland, and thence to healthy sparrows. Ross, therefore, had traced a metamorphosis in the stomach of the mosquito, but MacAllum was the first to show that the parasite was a bisexual organism, and that the female being impregnated became motile and penetrated the stomach wall. The evolution of hæmomenas, the parasite of the æstivo-autumnal fever, was then described by Dr. Manson both inside the human body and outside the body. It was still unknown what determined the transformation of the spore into the intracorporeal phase of the Golgi cycle, into the female parasite, and into the male parasite respectively. The condition of the latent malarial parasite was as yet unknown. The mosquito being the active agency, it was important to know which species must be incriminated. It was known that four or five species of the genus *Anopheles* were concerned, but nothing was known of the action of any of the other forty-six known species. No species of *Culex* had as yet been incriminated in regard to malaria. African expeditions had been organised to investigate blackwater fever, but they had resulted in little as to that itself, but materially in adding to our knowledge of the malarial parasite. Koch, with Christopher and Stevens, showed that children were specially susceptible to malarial infection. The fact that an immunity was obtained by individuals was thus given an explanation. Facts illustrating the proclivity in children were given from the region of British Guiana. Evidence had been adduced by Daniels to show that the immunity was acquired from previous attacks. Koch's view of the quinine origin of blackwater fever was absolutely untenable. That blackwater fever was an intense form of malaria was not borne out by facts; the infection was usually a mild one. The idea that it was due to a special type of malarial parasite possibly resulting from passing through a special form of mosquito, or that it was a disease *sui generis*, as had been held, were not improbable. Cattle salted to Texas fever, when subsequently attacked by rinderpest, gave, Edington had shown, the phenomenon of hæmoglobinuria, and a similar result might be produced by the co-operation of the cause of malaria with that of some other disease. Avoidance of natives was a good preventive measure if practicable. Quinine was an absolute protection if given properly; so also was the destruction of mosquitos; to prevent the biting of man by mosquitos was also a perfect prophylaxis. Such measures were not always possible. Efforts had to be made in all directions to attain a reasonable degree of prophylaxis. It was fair to mention that the experiments of Drs. Sambon and Low were only made possible by Mr. Chamberlain's enlightened appreciation of the importance of tropical medicine as a factor in Colonial development.

DR. SAMBON then read a paper communicated by himself and Dr. Low. After giving a history of the discovery of the different forms of the malarial parasite and pointing out that the first in the prophylactic field was Celli in protecting man from the mosquito, he went on to say that the experiments of the authors were planned out by Dr. Manson. The conditions of the experiments were detailed as described in the JOURNAL of last week. The implication of inhabitants in neighbouring houses to the mosquito-proof hut was emphasised, as also was the susceptibility of the younger members of the community. The risk of contracting fever in the daytime was infinitesimal. Of fifteen *Anopheles* collected at one time only two were found to be infected on examination.

DR. REES, of the School of Tropical Medicine, arranged a demonstration illustrating the papers.

OBSTETRICAL SOCIETY OF LONDON.

ALBAN DORAN, F.R.C.S., President, in the Chair.

Wednesday, December 5th, 1900.

RETROFLEXION OF THE GRAVID UTERUS.

DR. W. J. SINCLAIR read a contribution to the diagnosis and treatment of retroflexion of the gravid uterus. In a typical case of retroflexion of the gravid uterus, he pointed out that the symptoms produced a *tout ensemble* which was quite characteristic, and should make diagnosis easy and certain. The striking constant feature was irritability of the bladder with more or less retention of urine. The contributions to the journals on the diagnosis and treatment of the condition had a tendency to exaggerate the frequency of complications, and the literature of the subject seemed to indicate a too ready resort to operative treatment. The special method of treatment advocated was extremely simple. It consisted essentially in the introduction of a watch-spring pessary, care

having previously been taken to empty the bowel and bladder. After the introduction of the pessary, if the patient was made to rest on her side, lying over with her face downwards as far as she could with comfort, it would be found that the action of the pessary alone restored the uterus to its normal position in a few hours. Illustrative cases were given. The whole number of cases in which the method of treatment had been tried by the author was 15. These had been consecutive, and in all the method of treatment had been successful. One case was mentioned in which the watch-spring pessary treatment was adopted owing to a misunderstanding in a case of fibroid tumour attached to the fundus uteri, which had fallen back into Douglas's space and produced the bladder symptoms of retroflexion of the gravid uterus. In this case the action of the pessary raised the tumour into the abdominal cavity. The question of retroflexion of the uterus as a cause of abortion was mentioned incidentally. Abdominal section or any severe method of treatment of retroflexion of the gravid uterus was deprecated. Ventrifixation after abortion and involution was recommended in cases of adherent retroflexed uterus.

The President agreed that retention of urine and irritability of the bladder were very important symptoms for diagnostic purposes. Of recent cases Konrad's, of Buda-Pesth, was interesting. Relief came too late. Sloughing of the mucous membrane of the bladder and death followed abortion, which occurred three days after reduction of the uterus. He had referred at the April meeting to Unterberger's case, where the displaced pregnant uterus obstructed the bladder and forced open the urachus. Lastly, he dwelt on Gemmell's case, at Liverpool, where a woman was seized with abdominal pain and retention of urine at the third month, and backward displacement of the gravid uterus was suspected. The mass in the pelvis, however, was found to be a fibroid, which was enucleated through an abdominal incision. Pregnancy continued to term. As to difficulty in keeping the reduced uterus in place, the President referred to Szanto's case where the displacement was attributed to relaxation of the supports of the uterus, caused by typhoid fever; the uterus was replaced manually. Under such circumstances recurrence of the displacement was no doubt very probable.

Dr. Inglis Parsons had found that the air-ball pessary answered very well. He preferred this gradual method to the more rapid method of manual reposition, because it was less likely to produce abortion. Cases of retroversion bound down by adhesions were not at all common; he had never come across a case of this kind in which pregnancy had occurred. If confronted with this complication he would prefer to open the abdomen, free the adhesions, and hope the pregnancy would go to term.

Dr. Galabin thought Professor Sinclair's paper was valuable in calling attention to a mode of treatment the value of which would seem not to have been duly appreciated, provided that it proved as successful in the hands of others as in those of the author. He did not think, however, that this treatment ought to supersede the even simpler one of immediate taxis. He was accustomed to place the patient in the knee-elbow position and apply pressure to the fundus, first from the vagina, then, if that failed, from the rectum. His experience was that an anæsthetic was not required in one case out of twenty. He had been accustomed, twenty-five years ago, to restore retroversions of the gravid uterus in the out-patient room without even admitting the patients to the hospital. In some cases, however, an anæsthetic alone rendered the taxis practicable. He had never finally failed to reduce a uterus, nor had found it necessary to induce abortion, and for many years had employed nothing but immediate taxis. His experience, therefore, strongly confirmed Professor Sinclair's view that firm adhesions in connection with retroversions of the gravid uterus were very rare. He had not found abortion follow immediate taxis, but had known it occur during the use of elastic pressure. He had not employed the watch-spring pessaries as a primary treatment, but had always employed them both for keeping up the uterus when restored and in cases in which the restoration at first did not appear quite perfect. In future he should certainly try the plan when restoration could not be effected without an anæsthetic. As regarded the mechanism of the pessary, he attached even more importance to a leverage which Professor Sinclair had not mentioned than to the one which he did mention. This resulted from the traction on the cervix produced by stretching backward the posterior vaginal fornix. In this case the uterus itself was the lever, the fulcrum was the position of the internal os, where the uterus was most fixed by its ligaments, and the dragging of the cervix backward tended to tilt the fundus forward.

After some remarks by Dr. Herbert Spencer,

Dr. Drummond Robinson referred to a case of incarcerated retroverted gravid uterus, which he had seen when he was clinical clerk to the late Dr. Matthews Duncan.

The patient, aged 24, was pregnant for the first time, had retention of urine on November 6th, soon followed by constant dribbling of urine. On November 28th nine pints of ammoniacal urine were drawn off by catheter. On December 6th, after many unsuccessful attempts to replace the retroverted gravid uterus, Dr. Duncan induced abortion. On December 5th protrusion and redness of the umbilicus was noticed, and a few hours afterwards offensive urine began to ooze from it; this continued until the patient's death on December 20th. The mucous membrane of the bladder began to slough and to be passed *per urethram* soon after the patient's admission to hospital. At the *post-mortem* examination the mucous membrane of the bladder was almost completely absent, and the bladder communicated with a fistula at the umbilicus. The uterus was not adherent in Douglas's pouch. The right broad ligament contained an abscess.

Dr. Duncan stated that he had never previously been obliged to induce abortion for this condition.

Dr. Boxall thought they were much indebted to Professor Sinclair for drawing attention to the fact that abdominal section or any severe method of treatment was rarely called for. For his part, he had never met with a case which would not yield to well-directed pressure, and he doubted if anyone present had met with a case which necessitated even puncture before the uterus would be replaced. He regarded chloroform as useful in enabling the reduction to be effected with less force and consequently with less danger of producing abortion than when no anæsthetic was given.

Dr. Ewen Maclean cited a case of retroverted gravid uterus at the fourth month in a primipara. The symptoms were urgent, and, the usual manipulations failing, the patient was admitted to hospital with a view to the administration of an anæsthetic. After left decubitus, however, for several hours, the uterus suddenly reduced itself into its normal position.

Dr. Sinclair briefly replied.

The Essential Factor in the Causation of Sex.

Dr. E. Rumley Dawson read a paper on the essential factor in the causation of sex: a new theory of sex. The author said the ovaries normally discharged ova independently of each other, probably working alternately. The proof was that the number of cicatricial depressions, the result of ruptured Graafian follicles, were nearly equal in each ovary, and together they equalled the number of menstrual periods passed. Normal single pregnancy was the result of the fertilisation of an ovum from one ovary only, by the combined secretion of both testicles; therefore the male parent did not influence the sex of the coming child. The sex of the child depended upon which ovary supplied the ovum fertilised; if the right a male, if the left a female. He quoted cases of ovariotomy where one ovary only was removed, the subsequent pregnancy giving a child corresponding in sex to the ovary which was not removed. He also gave cases of tubal pregnancy where, by operation, a male fœtus was removed from the right tube, the corpus luteum being in the right ovary; and *vice versâ*, where a female fœtus occupied the left tube, the corpus being in the left ovary. Cases were quoted to show that the affected tube in tubal pregnancy, and in tubal moles was generally on the same side as the corpus-luteum-bearing ovary. Cases where either tubal or cornual pregnancy occurred on the opposite side to the corpus-luteum-bearing ovary were unusual, and explained by two theories, namely: (1) The grasping by the tube of one side of the ovary of the opposite side; (2) the transmigration of ova. The production of twins and plural births was also considered. Here the ovaries must act at or about the same time when the sex of the twins was different, while, when twins were of the same sex it was shown that the ovary of one side might provide two ova. Unilateral sterility was shown to account for those cases where the children were all of the same sex, or where, after a child of one sex was born, the remainder were of the opposite sex. The usual mixture of children as regarded sex, which most parents had, was due to both ovaries

usually being active, and thus supplying children of each sex. There were two ovaries only, and two sexes only.

The President remarked that discussion on sex problems had been popular from time immemorial, but however interesting they might be they seemed ever barren of useful results. Dr. Dawson had taken great pains to collect what must certainly be called clinical evidence, and had thus avoided *a priori* arguments founded on one or two cases of unilateral ovariotomy. Did he seriously believe that where a male heir was a matter of national importance the removal of a queen's left ovary would at least avoid disappointment?

Dr. Blacker was surprised to find Dr. Dawson claiming originality for a thing which dated back to 500 B.C. In view of the large number of observations collected by various observers, and the numerous experiments carried out upon animals, he found it impossible to believe that the male parent played no part in the determination of sex, and that the sex of the ovum was settled at the time of its expulsion from the ovary. Dr. Dawson's theory did not explain any of the known facts with regard to the relative proportion of the sexes. Even if they accepted it, it did not advance their knowledge as to the real cause of sex. He felt sure that many of the Fellows could instance cases of unilateral ovariotomy and subsequent pregnancy which were in direct opposition to Dr. Dawson's assumption. He could relate two such cases. If the time ever came when they would be able to explain the exact causation of sex, he felt sure that it would be found to be not in one theory, or in any one factor, but in a number of factors interacting under varying conditions. Any theory of sex put forward for acceptance must apply to the whole of the vertebrata. Birds had only one ovary. The common fowl had only one—the left ovary. Would Dr. Dawson kindly explain where, according to his view, cocks came from?

After remarks by Dr. Inglis Parsons and Dr. Maurice Dee,

Dr. Herbert Spencer said the paper was supported by what appeared at first sight to be an imposing array of facts, and contained some statements of opinion which were not facts. It was a pity that more inquiry had not been made as to the sex of the children born after unilateral ovariotomy. He had himself removed a left-sided ovarian tumour completely, and the patient had in a subsequent pregnancy borne twins of different sexes. There was no doubt whatever that the tumours had been completely removed. Cases of this kind absolutely disproved the theory of the author.

Dr. Dawson, in reply, stated that pregnancy, after the removal by operation of the tube of one side and of the ovary of the opposite side, was to be explained by transperitoneal migration of the ovum. He did not consider that the male parent had anything to do with sex causation, nor did he consider it necessary to argue from causation of sex in the lower animals, but confined his arguments to the human species. Cases where, for instance, male children were born years after the removal of a right ovary might be explained by a small portion of the right ovary having been left behind, and he quoted two cases to show that this had not infrequently occurred. In one such cases both ovaries had been removed, yet a male child was subsequently born on two occasions.

Specimens.

Dr. Herbert Spencer showed two specimens of parovarian cyst with twisted pedicle, in which the ovary only was congested and inflamed.—These specimens were discussed by the President, Dr. Boxall, and Dr. Maclean.

MEDICAL SOCIETY OF LONDON.

John H. Morgan, F.R.C.S., President, in the Chair.

Monday, December 10th, 1900.

The Diagnosis and Treatment of Thoracic Aneurysm.

Dr. Kingston Fowler reopened the discussion on this subject. The diastolic thud was of very great value; he did not know that it occurred in any other condition. "Tracheal tugging" when present, in his experience was always associated with thoracic aneurysm. In only one case of mediastinal tumour had he met with an exception. It was difficult to generalise in regard to the Tufnell treatment; three months was the longest time in his experience during which it had been faithfully carried out. A contraindication was the presence of aortic regurgitation when this regimen tended to break down cardiac compensation. If there were hypertrophy of the left ventricle and a to-and-fro aortic murmur, aortic regurgitation was probable rather than aneurysm. It had probably better be continuous than intermittent. It was difficult to know to which of the many factors involved in the routine treatment of aneurysm any observed improvement was due. Lancereaux's method he had seen tried in 3 cases. In one seven injections were administered without any particular result. In another the patient was taken suddenly ill six days after the first injection, the symptoms being apparently due to embolism. The physical signs showed no change; partial unconsciousness set in about half an hour after the attack of faintness. The next day there was severe pain at the back of the head and neck. Whether this condition was due to the injection was uncertain, but the symptoms suggested blocking of the internal carotid of one side, as had been found in a similar case in France. In the third case fifteen injections were given in gradually-increasing strength and quantity.

On the whole, it must be considered no benefit had been obtained. His experience of the treatment was not favourable. Judgment as to coagulation in the sac of an aneurysm was very fallacious. Prognosis was probably better than was generally supposed; the duration in one case referred to was thirteen years.

Dr. Gilbart Smith alluded to Dr. de Havilland Hall's case. He had examined the larynx when there was no paralysis, but evidence of probable previous specific disease. He at that time thought the man had a shrunken left lung uncovering the base of the heart. Two years later the pulsating area had increased, and the pain was more severe, and he began to suspect aneurysm. In another case where there was tracheal tugging, the necropsy showed a dilated pulmonary artery and a shrunken lung, but no aneurysm. A case was described in which on that day an aneurysm was revealed by the Roentgen rays, and the irregularity of the outline in another case differentiated a malignant growth from an aneurysm. He had seen no distinct benefit from gelatine injection, and had for long given up the Tufnell treatment. Tracheotomy was only indicated when the larynx was directly implicated.

Dr. Seymour Taylor referred to the cardinal signs of aneurysm as distinguished from those of a mediastinal tumour. A thrill over the sac was both a diagnostic and a prognostic sign; it was evidence of the absence of laminated clot, and with diastolic shock was diagnostically conclusive. A puffing sound, with expiration heard over the trachea or in the mouth, was also evidence of pressure on the trachea. Tracheal tugging was of little or no diagnostic value. He had seen no benefit from Tufnell's treatment.

Dr. Cautley thought Tufnell's treatment was employed in unsuitable cases, those of low vitality and physique, hence the adverse results. He believed that in cases of simple sacculated aneurysm, due to a strain, good might follow, and he described a case in which cure apparently resulted from it. Its adoption needed a strong-minded man who would carry it out completely, and was healthy to start with. A case of abdominal aneurysm he had seen improve under Tufnell's treatment and the administration of calcium chloride.

Dr. de Havilland Hall, in reply, said he was unaware that potassium iodide alone was as good as a modified Tufnell's treatment. The longest time under which a patient of his had been under the treatment was seven months. In cases of double stenosis of the trachea from direct pressure, and from paralysis of the abductors, it was of special moment to decide whether or not tracheotomy should be performed; if there were no respiratory excursions of the larynx indicating pressure on the trachea, operation was certainly useless.

Sheffield Medico Chirurgical Society.—At a meeting on November 22nd, Dr. E. Wearne Clarke, President, in the chair, Dr. W. S. Porter showed a patient with symptoms of ataxia and Romberg's symptom well marked, in whom the reflexes, superficial and deep, of the lower extremities were exaggerated. There was history of syphilis 23 years ago. Some of the characteristic symptoms of tabes were wanting, and the exaggerated knee-jerks led Dr. Porter to call the case ataxic paraplegia.—Dr. Arthur Hall read notes of two cases of acute yellow atrophy of the liver. One occurred in a woman, not pregnant, aged 28; the other in a young man aged 20, a bricklayer. Both proved fatal, the first in twenty-five days, the other in thirty-nine days. In neither case was leucin or tyrosin found in the urine after repeated and careful examination, or even in that removed from the bladder *post mortem*. Urea was found in fair amounts. Necropsies

showed the typical changes found in the disease. Inoculations from the liver and blood in one case proved sterile.—Mr. R. Favell showed a specimen of extrauterine gestation in a woman, aged 33, married seven years, but never before pregnant. The pregnant tube and a quantity of clot were removed, and the patient made a good recovery.—Dr. C. N. Gwynne read a paper on the radical cure of hernia in children, with notes of over sixty cases. Whilst admitting that the expectant treatment by a truss was preferable in a number of cases, he contended that the advantage which the radical cure conferred placed the method in the forefront in the treatment of the majority of cases that presented themselves at the out-patient department of our hospitals. The operation, with proper precautions, was a safe one, and the percentage of failures was very small. He was in favour of the method of operation adopted by Lockwood, which was really a modification of Bassini's operation. Out of his sixty cases, only one had relapsed. By his method no dissecting of the sac out was necessary, with its attendant difficulties and danger to the structures of the cord. After the skin and superficial fascia were cut through, he isolated the cord, and, raising up the sac with its surrounding tissues, cut between two fingers right into the sac, and with a pair of scissors opened it up to the external ring. He then incised it across, and stripped it of the surrounding tissues from the inside, completing the operation by tying the neck of the sac, cutting off the distal portion, and returning the stump through the internal ring. The hernial aperture was then closed by sutures.

Bradford Medico-Chirurgical Society.—At a meeting on November 20th, Dr. F. Farrow, President, in the chair, Dr. J. H. Bell showed two minute books of the Bradford Medical Society—1835-1854.—Dr. T. Jason Wood showed a case of Erb's paralysis in a man of 22.—Dr. Moorhead showed a patient suffering from erythema of the abdominal wall with a localised patch of gangrene, which had followed repeated exposures to the *x* rays. The patient was said to have swallowed a nail. There were three plates exposed on each of the three days with an interval of a month between each *séance*. Twenty-one days after the last exposure the rash appeared and a gangrenous patch in the centre about 1½ in. by ½ in. developed which showed no sign of spreading or of healing. The eruption had not responded to any treatment.—Mr. C. F. M. Althorp showed a patient from whom he had removed a thyroid cyst about the size of a tennis ball.—Mr. William Horrocks showed one lobe of a hypertrophied thyroid which he had removed.—Dr. Mantle shewed four cases of Raynaud's disease and alluded to two other cases which he had at that time under treatment.—Dr. R. H. Crowley showed specimens of (1) aneurysm of left ventricle of the heart; (2) tumour of œsophagus giving rise to no symptoms; (3) melanotic sarcoma of brain (secondary to skin); (4) cancer of heart (secondary to breast); (5) embolism of middle cerebral artery; (6) large infarct of spleen; (7) tuberculous ulceration of larynx; (8) scales from a case of rupia; (9) very extensive typhoid ulceration of large intestine and ileum. One of the ulcers had perforated and the case had been treated by laparotomy. Patient died seven hours after operation.—Dr. T. Jason Wood showed patient and read notes on a case of chronic empyema treated by thoracoplasty. The patient was a girl of 22. The empyema was first incised in January, 1898, and a second opening was made in July of the same year. In December, 1898, there was still an abundant discharge. An incision was made was made in the posterior axillary line and the posterior halves of the third to ninth ribs removed with the underlying thickened pleura. Further resections of ribs were performed on October 8th and in June, 1900, involving the removal of the ribs, second to ninth inclusive. The patient when shown was in good health and there was practically no discharge from the side. There was very little deformity of the spine.

Ipswich Clinical Society.—A meeting was held on November 15th, Mr. C. K. Moseley in the chair.—Mr. W. R. Brogden showed a case of Hodgkinson's disease:

The patient was a girl, aged 10. The glandular swellings affected both axillæ and both sides of the neck, chiefly in the posterior triangles. Some were the size of large plums. The parotid, sublingual, and submaxillary glands were unaffected. There was no pain nor tenderness, and no signs of any "breaking down" process. There was no abnormality in the abdomen or thorax. The girl was markedly anæmic, the blood showing considerable diminution of the red corpuscles, and she suffered from amenorrhœa. Iron, arsenic, and iodide had so far caused no improvement. Mr. Brogden mentioned two other cases, both ending fatally. Mr J. R. Staddon and Dr. H. H. Brown also mentioned cases.—Mr. Brogden also showed an old man from whom he had successfully excised the upper jaw for a large epitheliomatous growth affecting the antrum.—Mr. Wynn Davies showed: (1) A woman, aged 50, who had quite recently cut a lower canine and two lower incisor teeth; (2) a middle-aged woman with a chronic ulceration at the angle of the mouth, probably a rodent ulcer.—Mr. Sinclair showed: (1) A case of chronic irido-cyclitis in a young girl, without any history of a constitutional cause; (2) a case of chronic interstitial keratitis in one eye of a healthy young woman, with complete absence of congestion; (3) a case of vascular pannus, without granular lids, under treatment with infusion of jequirity.—Mr. C. K. Moseley read notes of a case of acute peritonitis. A clerk aged 32 was attacked after a hearty meal with abdominal pain and sickness. He vomited two or three times and had several loose motions. This went on over the two following days, and he was first seen on the fourth day, and said he had one of his old "bilious attacks, but it was lasting longer than usual." He was very ill; tongue dry, pulse uncountable, temperature 100°, abdomen retracted all over, and tender on deep pressure. He was given ⅓ gr. of morphine. Five hours later the pulse had improved, but his condition was otherwise unaltered. Later in the evening he vomited once and hiccough came on, and the lower part of the abdomen was tympanitic. At midnight laparotomy was performed by Mr. Moseley. Foul gas and some thin pus escaped from the peritoneal cavity; the intestines were everywhere moderately distended; the appendix was soft and swollen, and contained a hard mass within it. It was removed. The intestine in its neighbourhood was acutely inflamed, and showed numerous patches of gangrene. The patient died five hours after the operation. Dr. H. H. Brown and Mr. J. F. C. Hossack commented on the case.

North of England Obstetrical and Gynæcological Society.—A meeting was held on November 16th, Dr. J. B. Hellier, President, in the chair. The following specimens were shown:

Dr. T. W. Martin: Pyosalpinx removed by abdominal section.—Dr. Richard Favell: (1) Double pyosalpinx; (2) ectopic gestation; (3) cast of mucous membrane of bladder from a case of exfoliative cystitis.—Dr. Rumboll (Leeds): Epithelioma of the clitoris.

—Dr. T. W. Martin related a case of acute inversion of the uterus in a primipara, which occurred spontaneously one hour after normal labour, and was accompanied by great pain, hæmorrhage, and shock. Under chloroform ten hours later the uterus was completely reduced by taxis, though not without considerable difficulty. The patient made an uneventful recovery.—Dr. T. B. Grimsdale (Liverpool) related a case of vesico-vaginal fistula with destruction of the posterior wall of the bladder and urethra. This occurred as the result of sloughing after labour in a primipara aged 21, with contracted pelvis. A simple cloaca existed between the bladder and the vagina, and the urethra had entirely disappeared. In the treatment two objects were aimed at: (1) Closure of the bladder; (2) restoration of control over the urine. The bladder was first dissected away from the uterus up to the peritoneal reflection. This fold was now brought down and materially reduced the size of the opening. At a later period the uterus was pulled down and fixed to the perineal muscles, so that by their contraction the cervix could be pressed against the symphysis and pubic arch, forming an obstruction to the escape of urine. The patient was now quite dry if she kept quiet, but urine escaped on exertion to any extent. No trace of urethra could be discovered. Remarks were made by Dr. Sinclair and Dr. Donald.—The President read a note on the occurrence of abortion. He had analysed the history of 1,810 married women, out-patients at the Hospital for Women, Leeds. These women had given birth to 6,974 children, an average of 3·87 each. They had had 1,288 abortions—that is, one to every five and a-half children; 1,616 of the women had become pregnant, 184 were sterile; of these, 58 only had had one or more abortions, but had never gone to term. Thus it followed that amongst a group of women

in whom the frequency of abortion might be supposed to reach its maximum 96.5 per cent. of those who became pregnant would sooner or later bear one or more children at term.—Dr. W. J. SINCLAIR read a paper on a series of ten successful cases of Cæsarean section.

CHELSEA CLINICAL SOCIETY.—At a meeting on November 20th, Dr. WILLIAM EWART, President, in the chair, Dr. FOSTER PALMER showed an unusual organism believed to belong to the class of myriopodes which had been expelled from the urethra of a male patient.—Dr. VINRACE showed a foreign body, also expelled from the urethra of a male patient, who was suffering from symptoms of vesical irritation, had passed for himself a bougie made from an ordinary candle. The foreign body was composed of phosphatic material, embedded in what appeared to be paraffin wax.—Mr. NOBLE SMITH read a paper on the Conservative Treatment of Tuberculous Disease of Joints. He described the principles of efficient local fixation of the diseased parts, as carried out at the City Orthopædic Hospital. He advocated operation upon the bones in the neighbourhood of diseased joints, in the early stages of disease, as a means of rendering excision unnecessary, and he expressed doubts as to the necessity of amputation, in almost any case of tuberculous joint disease. Two illustrative cases were shown. Mr. Noble Smith urged that complete fixation of joints, removal of diseased bone without the excision of joints, and in the majority of cases without even opening joints, together with full and nutritious feeding, was the most successful treatment. A discussion followed, in which the PRESIDENT, Drs. MORRIS, DICKINSON, HARRISON, VINRACE, and NITCH SMITH took part.

SOUTH-WEST LONDON MEDICAL SOCIETY.—At a meeting on November 14th, Dr. GILBERT RICHARDSON in the chair, Dr. HABERSHON read a paper on the diagnosis of gastric ulcer, with some remarks on treatment and prognosis. After showing the absolute liability of each period of life, he emphasised the fact that some special cause for gastric hæmorrhage as well as a special liability to perforating gastric ulcer existed in young females. In males the liability to the disease gradually rose from infancy to old age. Enumerating the difficulties of diagnosis, he divided the cases into four classes: (1) Those simulating acute dyspepsia or acute gastric catarrh, in which the typical symptoms were wanting and the true nature of the case suddenly revealed by gastric hæmorrhage or perforation; also a class in which the disease was entirely latent and the first important symptom of which was sudden perforation. (2) The anæmic gastralgic case, with pain occurring not only after food, but after any exertion or fatigue. (3) The neurotic case of irritable stomach, often with an exaggerated account of pain, sometimes with incessant vomiting. (4) The cases of gastric ulcer in the pyloric region, the symptoms of which were always anomalous, with pain occurring at irregular intervals, and sometimes relieved by food. Vomiting was not always present and hæmatemesis not a constant symptom. Gastric dilatation was almost always present in the late stages of the disease. Remarks were made on the methods of examination of the stomach in neurotic cases, and stress was laid upon the help in mapping out the outlines of a dilated stomach by means of the bell sound and the conduction of the second cardiac sound. The paper concluded with remarks on treatment, medical and surgical, and upon the indications of use in making a prognosis.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—At a meeting on November 21st, Mr. W. B. HOLDERNESS, J.P., President, in the chair, Dr. A. J. ANDERSON showed: (1) A patient, aged 70, from whom he had excised a third of an inch of the left vas deferens for retention of urine due to enlarged prostate; the use of the catheter was discontinued two days after the operation, though it had been necessitated two or three times a day before, and the urine since had passed without the slightest trouble; (2) a man, aged 72, from whom he had removed a large tumour of the testis; the growth of the tumour was accompanied by a good deal of hectic fever, which disappeared after the operation; the tumour was exhibited.

Dr. J. K. WATSON showed: (1) A case of injury to the elbow-joint; (2) a specimen of a perforating gastric ulcer in a girl, aged 21, who had previously only complained of a few dyspeptic symptoms. Death occurred twenty seven hours after rupture.—Dr. ELGOOD showed a case of ulceration of the epiglottis, thought to be tuberculous.—Dr. E. B. HULBERT showed, by permission of Mr. J. R LUNN, of St. Marylebone Infirmary: (1) A specimen of sacculated aneurysm of the abdominal and thoracic aorta; (2) a heart affected with ulcerative endocarditis: both the mitral and aortic valves were involved; (3) several drawings and photographs of uncommon diseases, including osteitis deformans, Charcot's disease, tabetic feet, syringomyelia, arthritis of the temporo-maxillary articulation, and tuberculous disease of various joints.

Dr. W. F. LLOYD gave a demonstration upon polarimetry.—Dr. A. J. ANDERSON read a paper entitled Drain Poisoning in Private Practice. He referred to the evils resulting from "jerry-building," instancing cases of bronchitis, pneumonia, whooping cough, and rheumatic fever. As examples of well-known diseases caused by sewage emanations, diarrhœa, gastro-intestinal disturbance, and certain forms of sore throat simulating diphtheria were mentioned, and he thought that cholera, enteric fever, erysipelas, pneumonia, puerperal fever, and diphtheria had a heavier incidence in persons exposed to these baneful influences. He laid great stress on the importance of self-education in the matter of drainage, and the absolute necessity of a personal supervision of the work of carpenters, plumbers, builders, and even architects. He finally instanced several cases which had come under his notice where some insidious disease had been clearly traced to drain poisoning, and called attention to the lowered state of vitality entailing neuralgia and other minor ailments observed in those who are more slowly poisoned by sewer gas. A discussion ensued, in which Drs. CASEY, ELGOOD, STURTON, TOMLINSON, BRUCE PORTER, HULBERT, and HALE took part.

KIDDERMINSTER MEDICAL SOCIETY.—At a meeting on November 23rd, Mr. J. L. STRETTON, President, who was in the chair, showed a woman, aged 28, on whom he had operated for tuberculous disease in the apex of the right lung.

A three-inch vertical incision was made, with its centre over the third rib; a portion of this rib was excised subperiosteally about four inches in length. The lung was found to be very adherent and was separated with difficulty with the hand as far down as the lower level of the third rib. There was profuse hæmorrhage, which was arrested by sponge pressure. The portion of lung separated was then surrounded with a *serre nœud* and cut away, leaving a stump about the size of a five-shilling piece. Adhesion made it impossible to fix the stump in the wound. Forty-eight hours after the operation an attempt to remove the *serre-nœud* was abandoned on account of hæmorrhage. For some days after the operation there was considerable difficulty in breathing, and constant cough and hæmorrhagic expectoration and some bleeding from the wound. The breathing and cough gradually improved, and the hæmorrhage ceased after the seventh day. Some symptoms of septic action appeared on the fifteenth day so a counter-opening was made in the back and a drainage tube passed through; from that date the improvement was continuous, though slow. The portion of lung removed consisted of about a third of the right upper lobe and contained a cavity. The President said that in future cases he would make a much freer separation, so that he could fix the stump in the wound. This would give more control over hæmorrhage and lessen the chance of sepsis. He had adopted a vertical incision to give more room, as he had anticipated having to remove more ribs, but such ample room was afforded by the removal of one that in future he should make a transverse incision. The President also showed:

(1) A hat-pin which he had removed from the urethra of a man aged 55. (2) a man aged 40 suffering from the remote effects of syphilis.—Mr. T. POLE-KITSON showed a perforated appendix removed from a boy aged 13 years. The patient made an uninterrupted recovery.—Mr. BYWATER showed an old man who had had a subclavicular dislocation for five weeks before it was reduced. He was now regaining his power of movement in the shoulder.—Dr. EVANS read notes of (1) cases of hallux rigidus which after excision of the head of the metatarsal bone, followed by amputation of the toe without relief from the pain, cure was eventually effected by removal of a portion of the internal tarsal branch of the anterior tibial nerve. (2) A girl admitted to the infirmary suffering from chlorosis whose pulse on admission was 230.

Dr. ADDENBROOKE read notes of a case in which he had operated for strangulated inguinal hernia. The patient was a boy aged 11. On opening the sac it was found that the abdominal cavity contained pus, so the abdomen was opened in the middle line and washed out. The patient made a good recovery. A curious feature in the case was the development of parotitis a few days after the operation.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—At a meeting on November 15th, Mr. J. RUTHERFORD MORISON, President, in the chair, Dr. DRUMMOND exhibited a young

man, aged 26, the subject of prolonged stupor, whose case was reported in the BRITISH MEDICAL JOURNAL of November 24th, p. 1497.—Dr. G. R. MURRAY showed a case of paroxysmal hæmoglobinuria:

The patient, a man, aged 25, had malaria five years ago, there was also a history of syphilis. For the past two years he had worked as a river boatman. Two years ago, after having fallen into the water, he had his first attack of hæmoglobinuria, since when attacks had been frequent in winter and rare in summer. The man was now anæmic, and displayed slight enlargement of the spleen. After exposure to cold he felt chilly, had aching pain in the loins, radiating forwards, and passed only one small sample (two or three ounces) of porter-coloured urine. At these times the temperature rose to 101° F. During and after attacks red blood corpuscles were much diminished as compared with previous counts.

—Dr. BOLAM gave a lantern demonstration of the spectra of various pigments which might be observed in specimens of urine. With reference to this case he demonstrated the pigment to be methæmoglobin, and the deposit to contain large quantities of oxalates. Dr. DRUMMOND, Mr. MORISON, Dr. BEATTIE, and Dr. BOLAM took part in the discussion.—Dr. VICKERMAN RUTHERFORD showed four cases of lupus after treatment by exposure to Roentgen rays; the extent and duration of the disease had been variable, and in one there was consolidation of the right apex. Some of the cases exhibited had shown slight improvement, but in none could cure be claimed. Dr. COLEY referred to another method of treatment—namely, by that of sunlight—the heat rays being intercepted by a blue glass lens. Recovery, in his experience, had been incomplete, but gave an encouraging degree of success.—Dr. PATTERSON (for Dr. LIMONT) exhibited: (1) morphœa; (2) lichen ruber planus; (3) figured specific rash; (4) cheiropompholyx; (5) dermatitis and staining from lyddite; (6) fibroid tuberculosis cutis; (7) pityriasis rosea.—Mr. H. B. ANGUS showed (1) a boy who, sixteen months ago, from fracture of the middle third of the humerus had his musculospiral nerve involved in the callus. Three months ago the nerve was freed, a strip of triceps muscle being interposed between it and the bone. The boy now showed perfect recovery from previous paralysis; (2) a boy, who a year ago had suffered severe crush in a coal pit with extensive laceration of soft parts, separation of the lower epiphysis of the humerus, and comminution of the diaphysis. He had been sent to hospital for amputation. Two inches of the shaft were excised and wired to the lower epiphysis, the wound having been cleansed as far as possible. A useful and almost perfect arm was the result. A long and interesting discussion ensued as to the septicity or asepticity of coal dust, in which Drs. ADAMSON, ROBINSON, MURRAY, DAVIS, MODLIN, BENNET, and Mr. G. G. TURNER took part. The colliery doctors alleged that dust from the virgin coal was aseptic.—Mr. J. D. WARDALE exhibited 3 cases of rodent ulcer illustrating various degrees of involvement of the orbit, some of which had been treated by excision and others by caustics, but all of which had recurred. Mr. MORISON, Mr. MARTIN, and Dr. BOLAN discussed these cases, the last named asserting that the reason for local recurrence in cases of rodent ulcer was that surgeons went wide rather than deep. Dr. WARDALE also brought forward a patient who exhibited double dislocation of the lens, the one forward into the anterior chamber, the other backward into the vitreous.—Mr. H. B. ANGUS (for Dr. HUME) exhibited a large hydronephrotic kidney from which 146 ounces of fluid had been aspirated previous to removal. There was a history of injury but he rather regarded the condition as congenital. The boy also exhibited two plates of cartilage at the sites of the third branchial clefts. His mother and sister had the same congenital defect.—Dr. BEATTIE exhibited two similar specimens of enormous sacculated aneurysms which had both sprung from the anterior and convex surface of the junction of ascending with transverse arch. The one had eroded and pointed through the manubrium sterni, the other through ribs and costal cartilages to the right of the sternum. Both sacs contained a large amount of dense laminated clot, and both specimens exhibited diffuse specific aortitis. The patients had died, one from increasing respiratory difficulty, the other from cerebral embolism.

A PLAGUE laboratory has been established in the Hygienic Institute of Munich, under the direction of the head of the Institute, Professor Hans Buchner, who has named Dr. Hahn his deputy. The laboratory is intended for the examination and diagnosis of suspicious cases of plague.

REVIEWS.

SOME RECENT WORKS ON MEDICINE.

UNDER the energetic direction of Dr. OSLER the Johns Hopkins Hospital has become one of the most famous centres for comprehensive clinical study. Year by year fresh monographs proceed from one or other of the active workers collected together in this great school, and Dr. Osler contributes at least his share both in quality and quantity. The new work on *Cancer of the Stomach*,[1] which he has prepared with the help of Dr. THOMAS MCCRAE, is a slender volume, containing a careful study of all the cases of cancer of the stomach which have been treated in the Johns Hopkins Hospital since its opening on May 5th, 1889, until March 31st, 1898. They number, in all, 150 cases, out of which the proportion of males to females was as five to one, while 57 per cent. occurred between the ages of 40 and 60 years. The white and coloured populations contributed in proportion to their relative numbers, but among the white patients it was noticeable that most were of foreign birth, and especially of British origin. Comparatively few gave a family history of cancer or of old gastric trouble, nor could the cases be referred in any special degree to alcohol, mental influences, local irritation, or injury. There were no cases under 20 years of age, but six occurred between the ages of 20 and 30, and in these young persons the disease ran a rather rapid course, and terminated as a rule somewhat suddenly. A surprisingly large number had a history of an acute onset, and on admission the symptom most generally complained of was pain; next to this came vomiting, dyspepsia, and loss of weight and strength. The pain was generally aggravated by taking food; but in others, where neither the position of the growth nor the absence of ulceration afforded any explanation, the ingestion of food was followed by relief of pain. Vomiting was especially related to growths situated at one or the other opening of the stomach, these symptoms being less marked when the growth was upon the walls. In one case, in which the vomited matter was foul and fæcal, so that communication with the colon was suspected, the odour was apparently due to sloughing of the growth as no such communication existed at the *post-mortem* examination. The appetite was practically normal in a rather surprising number of these cases, though in about half there was decided anorexia. Loss of weight was a much more common symptom, and occurred even when there were no marked diagnostic features. The authors properly lay great stress upon the value of the examination of the stomach contents by the stomach tube. They consider the presence of blood to be always suggestive of cancer. Free hydrochloric acid was permanently absent in most cases but was present in some. Lactic acid was generally but not constantly found. In several cases the authors were able to detect masses of malignant tissue by microscopical examination of the stomach washings. A tumour could be recognised during life in 115 cases, of which 48 were situated in the epigastrium. Inflation of the stomach usually dragged the tumour downwards and to the right, and, contrary to the opinion of Broadbent, the authors assert that in their experience a much larger number of cases of dilatation are due to malignant disease than to any other single cause. They remark upon the occasional absence of both anæmia and cachexia, and attribute comparatively little importance to the evidence to be obtained from the examination of the blood as an aid to diagnosis, although in the differentiation of cases of cancer of the stomach from pernicious anæmia they consider that a blood count below one million red blood corpuscles is strongly in favour of the latter. An interesting point to which attention is drawn is the fact that although as a rule cases of cancer of the stomach tend to get steadily worse, in certain exceptional instances there may be arrest of the downward course or even temporary improvement with increase of weight. In one of their examples this followed an exploratory incision, though nothing further was done on account of the extensive nature of the disease; in another a very positively reassuring opinion was expressed by a consultant. The authors' very

[1] *Cancer of the Stomach: a* [illegible] By W. Osler, M.D., F.R.S., F.R.C.P.Lond., and Thomas McCrae, M.B., L.R.C.P.Lond., of the Johns Hopkins Hospital, Baltimore. [illegible] H. K. Lewis. [illegible] pp. 157. 6s.)

careful consideration of all the elements of diagnosis leads them to the conclusion that the early recognition of cancer of the stomach cannot be made with certainty, and as they fully accept the opinion of Czerny and Rindfleisch that the presence of a positively diagnosed tumour is a contraindication to radical surgical operation, they urge that exploratory incisions should be more frequently undertaken. Where the growth is at the cardiac opening they are of opinion that gastrostomy should be done as soon as the obstruction is recognised, and before it constitutes any real hindrance to the taking of food, as to wait until the patient has become feeble, emaciated, and anæmic is to court disaster. They recognise the value, when pyloric stenosis has occurred, of making an artificial communication between the stomach and some part of the small intestine by which means life is prolonged, nutrition is improved, and discomfort lessened. Their views on the medical treatment of these cases are, as might be expected, not very encouraging but thoroughly sound. The best general tonic is in their opinion arsenic, and the most valuable means for allaying symptoms and alleviating discomfort is the regular use of the stomach tube. On the whole, while not advancing in any special degree our knowledge of this disease, this work contains much valuable material in support of modern ideas and practice.

Dr. CHEADLE'S *Occasional Lectures*[2] contain many valuable and suggestive points, and will prove very welcome both to practitioners and students. The subjects dealt with, as the author very truly observes in his short preface, are rarely treated adequately either in textbooks or by clinical teachers. The lines of treatment laid down are eminently wise and practical and will, we think, be found of especial value by those interested in the diseases of childhood. The first lecture on the use and abuse of tonics is admirable, and we heartily agree with the author that there is probably no class of remedies the use of which is more frequently abused. The third lecture contains many useful suggestions as to the treatment of certain minor disorders of childhood, such as night-terrors, periodic pyrexia, and skin eruptions associated with dyspepsia. The lecture on chronic constipation is, perhaps, one of the best in the book. The importance of regular and systematic treatment is strongly urged, and excellent methods are suggested to replace the powerful purgative drugs and the habitual use of stimulating foods which are so freely and ineffectually resorted to. In discussing the treatment of pulmonary diseases, Dr. Cheadle justly inveighs against the indiscriminate use of expectorants so often administered in a purely haphazard manner. He advocates icebags instead of poultices in cases of pneumonia. In the lecture on scurvy rickets the etiology of this condition is very fully discussed by Dr. Cheadle. The effect of peptonising and pancreatising processes on milk is considered, and the special incidence of this disease among children of the richer class is largely attributed to the frequent use of artificial foods. An interesting series of 68 cases of the disease seen by the author is appended to this chapter. The rest of the book consists of the lectures on the Rheumatism of Childhood delivered by Dr. Cheadle in 1888 before the Harveian Society. Some new matter has been added, and they have been completely revised. Many will be glad to read them again in their new form.

In his small book, *On Rheumatism, Rheumatoid Arthritis, and Subcutaneous Nodules*,[3] Dr. HAWTHORNE ably discusses the vexed questions as to the connection between what may be termed rheumatism proper and the complaint known under the various names of rheumatoid arthritis, osteo-arthritis, chronic rheumatism, and rheumatic gout. These questions are by no means settled even at the present day. There is no doubt, however, that a large majority now regard rheumatism and rheumatoid arthritis as two separate and distinct disorders, and this view is held, too, even by most observers who admit the very frequent history of a prior acute rheumatism in the sufferers from rheumatoid arthritis. Dr. Hawthorne calls special attention to the occurrence of subcutaneous fibrous nodules in rheumatoid arthritis in cases in which acute rheumatism could be excluded, and he justly claims that if such nodules can be shown to be identical with those occurring in acute rheumatism, then a further link has been rivetted in the connection between the two complaints. He gives details of six cases in which subcutaneous nodules occurred in connection with unmistakeable rheumatoid arthritis, and in one of these he had the advantage of having had a large subcutaneous nodule over the olecranon excised and microscopically examined. After the result of this examination it cannot be doubted that fibrous subcutaneous nodules, histologically identical at any rate with those occurring in acute rheumatism, also occur in certain cases of rheumatoid arthritis. But, granting this, there would seem to be important differences in the nodular manifestations of the two complaints. The nodules in acute rheumatism generally occur in crops, and each individual nodule usually attains its full size in the course of a few days. Their existence is also essentially temporary, although in exceptional instances such as Dr. Hawthorne has cited they may persist for as long a period as eight months. It would seem from the description of the nodules in the cases of rheumatoid arthritis, that they only slowly attained their full growth, and were much more permanent in their character than the most persistent of those occurring in acute rheumatism. A single large nodule over the subcutaneous surface of the ulna must be a rarity in acute rheumatism, but such would seem a usual occurrence in rheumatoid arthritis, judging by the figures in Dr. Hawthorne's book. The sites affected by the nodules in the hands and other parts would seem to be somewhat different in the two complaints. In rheumatism, again, fibrous nodules are almost invariably associated with grave cardiac lesions; the very few cases in which fibrous nodules occurred without cardiac complications being so exceedingly exceptional that they may fairly be disregarded in drawing clinical distinctions between the two conditions. In no one of Dr. Hawthorne's cases is there any record of the heart being affected; in fact where the state of that organ is mentioned, it was healthy. On the whole, then, there would seem to be important clinical differences between the "typical rheumatic nodule" and those occurring in rheumatoid arthritis. But it may be, as Dr. Hawthorne says, that too much stress has been laid upon fibrous subcutaneous nodules as being pathognomonic of rheumatism. His little work is exceedingly well written, and a valuable contribution to a difficult subject.

Although the Italians cannot claim to be the pioneers in working out the mosquito-malaria theory, yet they must always be given an honourable place in the history of this important discovery; and, after reading Professor CELLI'S work, *La Malaria*,[4] no one can fail to feel some degree of admiration for the energy and promptitude which such men as Grassi, Bastianelli, Bignami, and others displayed in confirming and amplifying Ross's work. It is pleasing to see that Professor Celli asked Dr. MANSON to write an introduction to his work, the English translation of which has been made by Dr. J. J. EYRE.[5] This is a graceful acknowledgment of the eminent English parasitologist's right to the credit of having formulated the mosquito-malaria theory. The most interesting part of the book is that which describes the various experiments undertaken by the author with a view to the institution of rational prophylactic measures against malaria. Professor Celli stated his conclusions pretty fully in an article published in the BRITISH MEDICAL JOURNAL. Practical sanitarians working in malarious countries will be glad to have full details here. It must be pointed out, however, that Celli's experience is limited to the Roman Campagna, and that measures which have proved successful in his hands will not necessarily be effective in other malarious countries. It must be remembered that climatic, racial, social, and many other factors play a part in

[2] *Occasional Lectures on the Practice of Medicine.* By W. B. Cheadle, M.D., F.R.C.P. London: Smith Elder, and Co. 1900. (Crown 8vo, pp. 324; 7s. 6d.

[3] *Rheumatism, Rheumatoid Arthritis, and Subcutaneous Nodules.* By C. O. Hawthorne, M.D., M.R.C.P., Assistant Physician to the Royal Hospital for Children and Women. London: J. and A. Churchill. 1900. (Demy 8vo, pp. 54. 2s. 6d.).

[4] *La Malaria.* Secondo le Nuove Ricerche con Tavole e Figure.

[5] *Malaria according to the New Researches.* By Professor A. Celli. Translated from the Second Edition by J. J. Eyre, M.R.C.P., L.R.C.S., D.P.H.; with an Introduction by Patrick Manson F.R.S. London: Longmans. (Demy 8vo, pp. 300; 40 Illustrations and 3 Maps. 10s. 6d.)

determining the prevalence of malaria in any given country. The book is divided into two parts—etiology and prophylaxis. The first part opens with a short history of malaria in Italy, especially in the Roman Campagna. It is shown what good results the Romans obtained by proper drainage of this region, and how the disease returned when the drainage was neglected. The chapter ends with a review of the economic losses sustained by Italy from the prevalence of malaria. Professor Celli estimates that 15,000 lives are sacrificed annually to this disease, and that more than 5,000,000 acres of fertile soil remain uncultivated in Italy alone on account of this scourge. There is a good account of the malaria parasites of man and of the lower animals, and the mosquito cycle of Ross is carefully described. There is also a good description of the life-history and habits of the mosquito, which includes many observations made by the author. As to immunity, which is discussed at some length, the author agrees in the main with Koch in believing that natives acquire a decided immunity to malaria. The second part of the book shows the striking revolution which has taken, and is still taking, place in views as to the etiology and prophylaxis of malaria. Prophylaxis is dealt with under several headings—personal, domestic, urban, rural, etc. There are some useful tables, indicating the effects of various substances on the larvæ and pupæ of mosquitos. It is improbable, however, that paraffin or any other of the so-called culicicides will play more than a secondary part in the prevention of malaria. Speaking generally, collections of water which cannot be dealt with by drainage will not be successfully treated by any of these substances. In the canals of the Campagna itself, for example, they would be impracticable. The various forms of fumigation have also been discarded in the Campagna, the different experimenters relying solely on protected houses during the past season. The book is not a complete monograph on malaria, as it deals for the most part with the parasitology and prophylaxis only. It will, nevertheless, well repay careful study by all who are interested in malaria and its prevention. The volume is well "got up," printed in large type and on good paper. The illustrations are sufficiently numerous and effective. The text, however, has in many places suffered in the translation.

We cannot congratulate Professor Smith on his endeavour (to use his own words) to deal as exhaustively as he could with that most interesting disease *Diphtheria*.[6] We are quite aware that it is impossible to exhaust the subject in a course of three lectures, and, as a matter of fact, Professor Smith enters at length into certain questions only. Not one of these, however, does he treat exhaustively. Take, for instance, the question of school influence. He repeats most of the arguments of his report to the London School Board in 1896. Yet that very report has been submitted to some adverse criticism, which, having regard to its source, he should have considered on approaching the subject a second time. At any rate, to ignore it is not to deal with the subject exhaustively. So, too, with other questions he especially discusses—the bacteriological diagnosis and the antitoxin treatment as carried out in the Asylums Board's Hospitals. We gather that he is largely indebted for statistics to a work by Professor Sims Woodhead, and to the reports of the Statistical Committee and medical superintendents of the Asylums Board, and more explanation is needed for many of the tables; as they stand there is no warrant for some of the conclusions he arrives at, as, for instance, the statement that "even allowing for errors of observation, over 20 per cent., or some 3,000 cases, were admitted to the Asylums Board's Hospitals [during 1895 and 1896] which afforded no evidence, clinical or bacteriological, of diphtherial infection." If the author had taken up one or two questions and gone into them thoroughly, he might have produced a work of more than ordinary value; but he attempted too much for the space at his disposal. We are, however, indebted to him for publishing as an Appendix a most interesting letter on the question of school influence, by Dr. J. de Körösy, of Buda-Pesth.

Professor Hayem's work in connection with the study of the blood is so well known and widely appreciated, that any further contribution from him must command attentive notice. His new book[7] contains forty-four lectures delivered at the St. Antoine Hospital during the past seven years, and gathered together, according to the modern French custom, by two of his pupils. To those who are familiar with the author's great monograph *Du Sang* there is little here that is novel, but it has a special value in that it consists mainly of clinical addresses on individual cases. The practical bearing of recent researches is hence well illustrated. The most important sections are those treating of chlorosis and of symptomatic anæmias, which occupy nine and twelve lectures respectively. Under the latter heading are treated subjects of considerable clinical interest, such as the anæmic form of cancer of the stomach and chronic infectious jaundice associated with splenomegaly. Another rare condition of which a case is fully discussed is methæmoglobinæmia; the patient was a woman, who died in consequence of the administration of some unknown drug as an abortifacient. The sections on treatment are as a rule extremely good; in that on chlorosis great attention is paid to the associated symptoms, especially those of gastric origin. The whole book may be recommended as an excellent adjunct to more systematic treatises. The plates, by M. Karmanski, are of quite exceptional beauty and fidelity, though perhaps the neutrophil granulations are in places a little too definitely indicated.

Eighteen years have elapsed since the first edition of Dr. Graham Steell's small work on the *Physical Signs of Pulmonary Disease*[8] made its appearance, but its author gives no indication that it contains any fresh facts or new deductions in its present form. Taking for his text the classic descriptions of Laënnec and Walshe, he endeavours to give an intelligible account of the healthy and morbid sounds which may be elicited by percussion and auscultation of the lungs, but the usual impression is left upon the mind that no verbal description of sound is of much practical value. The terms employed, such as "clearness" and "fulness," may bear different interpretations to different readers, but, as some sort of description is needful, it is perhaps more satisfactory to abide by the original terms and explanations. Inspection and palpation are fully considered, but it is somewhat disappointing in a book intended for modern students to find no reference to the cultivation of the tactile sense, to which Dr. Maguire and others have called attention, and by means of which much useful information may be gained by those who have the sense well developed. As a help to students, we should have looked for more precise classification and greater simplicity. The modern student is more inclined to use his common sense than to be led by cut-and-dried descriptions. He learns for himself that "bronchial breathing" is not a fixed quantity, but varies with every patient, and that diminished volume of respiratory sound is sometimes due to a small local cause in the lung or pleura, just as the movements of the hand may be hampered by an inflamed spot upon it. For those who have the time to spare, however, the perusal of Dr. Steell's book will be interesting as a trustworthy groundwork for future study.

[6] *Diphtheria*: being the Harben Lectures for 1899. By William R. Smith, M.D., D.Sc., F.R.S.Edin, etc. London: Baillière, Tindall and Cox. 1900. (Roy. 8vo, p. 118. 6s.)

[7] *Leçons sur les Maladies du Sang* [Lectures on Diseases of the Blood]. Par Georges Hayem, Professor in the Faculty of Medicine, Paris, etc. Paris: Masson et Cie. 1900. (Demy 8vo, pp. 720, with four coloured plates. Frs. 15.)

[8] *The Physical Signs of Pulmonary Disease*. By Graham Steell, M.D. Second Edition. Manchester: J. E. Cornish; and London: Simpkin, Marshall, Hamilton, Kent, and Co. 1900. (Crown 8vo, pp. 162. 3s. 6d.)

REPORTS AND ANALYSES

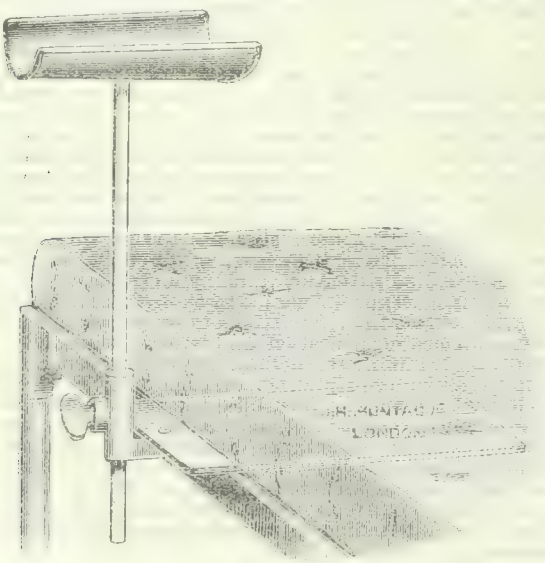
AND

DESCRIPTIONS OF NEW INVENTIONS

IN MEDICINE, SURGERY, DIETETICS AND THE ALLIED SCIENCES.

Position in Kidney Operations.—Mr. C. Carter Braine, F.R.C.S.Eng. (London) writes: All surgeons and anæsthetists will admit that a suitable position and the maintenance of that position throughout the operation, especially if it be upon the kidney, is of the greatest service to the operator and

the administrator of the anæsthetic, as well as for the benefit of the patient. In such operations as lumbar colotomy, nephrolithomy, lumbar nephrectomy, nephrorrhaphy, etc., and other operations in which the patient is turned upon his side, it frequently happens that although the patient is placed in a good position at the commencement of the operation, that position is very liable to become gradually altered, until ultimately the patient's thorax is more or less flat upon the table, the head burrowed into the pillow, and the upper arm hanging dependent over the side of the table, thereby adding its weight to the already encumbered thorax. In addition to this a hard pillow is frequently placed under the loin to raise the pelvis, and most likely manual pressure applied to the abdomen in the endeavour to force the kidney up into the wound, thereby interfering with the easy descent of the diaphragm. Although none of these factors individually can be said to hamper the respiration, yet taken altogether they not infrequently cause marked respiratory embarrassment. To obviate some of these difficulties the upper arm may be bent at right angles at the elbow, and the hand placed on the table, but this position is difficult to maintain on account of the flaccidity of the muscles, and eventually the arm doubles under or slips off the table. Another and a better plan is to place the hand of the upper arm on an assistant's shoulder; this effectually keeps a good position and relieves the breathing, but it brings another assistant close up to the table, and impedes the view of the operation. Recently I have used the instrument depicted in the woodcut, and find it answers for all purposes admirably. It consists of a broad



iron plate which is intended to be pushed between the table and mattress, and is kept in position by the weight of the patient's body; to this is attached a sliding rod bearing the arm support, and which can be adjusted to any height required. When the patient is placed in position with his arm resting in the arm support the patient remains on his side, and there is no tendency to roll away from the operator on to the thorax, and the weight of the arm is taken from off the chest. The contrivance is very simple, readily adjusted, and —I can speak from experience—a great boon to the anæsthetist. Should no mattress be in use, then a simple clamp can take the place of the plate, and the instrument be clamped direct on to the table. Many other purposes for which it can be used in operations on the extremities will at once suggest themselves, but it is intended chiefly for operations on the kidney through the loin.

Mr. Montague, of 101, New Bond Street, London, is the maker.

Professor Celli, before opening his course of lectures in the Rome Institute of Hygiene, unveiled a bust of Tommasi-Crudeli—his predecessor in the chair—which he has had placed in his lecture room.

GENERAL COUNCIL

OF

MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1900.

NOTES.

Exemption from Previous Examinations was the subject of a debate in the General Medical Council, which was reported in the British Medical Journal of December 1st. It arose on the Report of the Registrar, called for by the Council on May 30th, 1900, "on the evidence of previous examination required by the various licensing bodies from candidates claiming exemption from further examination in certain subjects," on the ground that they have already passed in these subjects before other licensing bodies. The particular interest of the subject is in its bearing on the exemption of foreigners from examination. Neglecting for the present the nature of the evidence that is considered satisfactory by the various Boards, we would direct attention to the conditions of the exemption itself. It may be laid down as a rule to which there is no exception that no British licensing body will exempt a candidate for a qualification to practise from the Final Examination, but in regard to the previous scientific examinations the custom varies within rather wide limits. From this aspect the Examination Boards may be divided into three categories—those which make no exemption, those prepared to make exemption in some of the earlier subjects alone, and those willing to exempt from all the earlier subjects. To the first group belong the Universities of Oxford, Cambridge, and London, with the Royal University of Ireland; to the second group the University of Durham, the Victoria University, and the four Universities in Scotland; to the third group belong the remaining licensing bodies in England, Scotland, and Ireland, including the University of Dublin.

By the Royal College of Physicians of London a candidate is excused from the first examination for the licence in so far as he has passed a similar examination for a degree in medicine at a University in the United Kingdom, in India, or in a British colony, or absolutely if he has obtained any colonial, Indian, or foreign qualification to practise. A candidate is excused from both the first and second examinations if he has passed in the subjects at an examination for a degree in medicine in any University of the United Kingdom. The Royal College of Surgeons of England and the Conjoint Board of the Royal Colleges grant complete exemption from the first and second examination if the subjects have been passed in a degree examination of any recognised University. The Apothecaries' Society of London grants a similar complete exemption to candidates who have passed the primary examination of any other recognised licensing body, and the same applies to the Conjoint Colleges of Scotland and Ireland and to the University of Dublin.

In regard to the second group, the University of Durham exempts candidates who have passed the first examination of the English Conjoint Board from biology, and those who hold a qualification from a recognised British Licensing Board from elementary anatomy and biology. The Victoria University exempts qualified practitioners alone from particular subjects. The Scottish Universities exempt candidates from certain scientific subjects such as botany, zoology, physics, or chemistry, if they have completed a course of study and passed an examination in these subjects at a University of the United Kingdom or at any other recognised University.

Although the report contains many implicit references to concessions which the British Examining Boards are prepared to grant to foreigners, yet there is no explicit reference to any special restriction in regard to them. Thus the Royal College of Physicians of London will grant exemption from its first examination to any man from any country who possesses a qualification entitling him to practise in that country; the Conjoint Colleges of England will grant exemption to anyone who has passed the requisite previous examinations in any recognised University; while the Apothecaries' Society of London, the University of Dublin, and the remaining Conjoint Colleges will exempt anyone who has passed the previous

examinations of any other licensing body, home or oreign. If there be any limitations to this apparent catholicity of the British Licensing Boards it would be satisfactory to have them defined and the principles on which they are based formulated.

The Report of the Finance Committee in response to Mr. Horsley's motion last session was issued too late for anything approaching to adequate discussion. This was the second special report upon the finances of the Council, the first having been presented in May, so that both deal with practically the same period and the same figures. Yet the first tells the Council that it ought "seriously to consider whether it is not possible to reduce its expenditure to a very large extent"; the second that there does not appear to "be ground for any serious anxiety," and proposes some trivial economies as the most it has to recommend.

In the first report there is a table from which the *Pharmacopœia* is eliminated, the profits upon which had saved the situation, and as the *Pharmacopœia* will certainly not afford any profit for the next ten years, it ought to be eliminated from any report which purports to forecast the immediate future. That table pointed out that, eliminating the *Pharmacopœia*, there was over a septennial period an annual excess of expenditure over income of £912, but it showed, without calling express attention to it, that the excess for the last three years was £1,800 a year. The new tables are so drawn up as to show a better result, but this is arrived at by embracing a decennial period and including the *Pharmacopœia*; even so, useless though it is a means of forming an estimate for the future, an excess of expenditure over income is demonstrated. And both reports point out that within the next few years large and certain items of increased expenditure are already in view, so that it is exceedingly difficult to understand the rose-coloured view of the situation set forth by Dr. MacAlister, and still more difficult to go with him when he stated that deficits or surpluses were a mere matter of the way in which the accounts are presented. In criticising the report Mr. Horsley pointed out that it failed to touch upon one of the points especially referred to it, namely, the financial relations of the General Medical Council and its branches, and that the recommendations were futile, consisting in pointing out that it would be an economy if direct representatives elected at by-elections would resign their seats at the same time that the tenure of the others expired, a thing which he had long ago publicly promised to do, and that the only real economy was the extension of the daily sittings of the Council by one hour. But Sir Dyce Duckworth, unintentionally, demolished this suggested economy by pointing out that during the present session the Council had sat over time to so great an extent as to make up a whole day, which would certainly not be done were the normal hours increased. Mr. Tomes pointed out that, while the manner of keeping accounts prescribed by the Act of 1858 made it difficult to follow out the real position, it was discoverable, if any took the trouble to unearth it; and that the accounts were misleading and almost a sham, though this was nobody's fault. Anyone reading them would suppose that the English Branch was obtaining interest for its capital, as though its transactions with the General Medical Council were with some really distinct body. Thus an item for £696 per annum appeared as paid to the Branch by the Council for interest on the capital of the Branch, which was invested as a mortgage on the Council's premises. But, inasmuch as the Council has practically no income, and merely calls upon the Branches for a percentage payment with which to meet its expenses, the fact that the Council makes this payment increases the contribution of the English Branch by over £400 a year, so that it puts into its pocket only about £290 as interest upon £25,000. Exactly similar considerations apply to the sinking fund by which in fifty years the General Medical Council become possessed of the freehold, for the Branch has to provide some £120 per annum towards paying itself off. Thus the English Branch, while appearing to be in receipt of ordinary interest on its £25,000 in fact nets about 0.6 per cent. It would seem that this virtually amounts to a gradual transfer of a part of the assets of the Branch to the general body by a side wind, and the General Medical Council, though practically without any income (except that derived from the *Pharmacopœia*), is in this way accumulating considerable capital by degrees. Granting that this result was not undesirable, he asked the pertinent question whether this indirect method was the most desirable way of doing what was not contemplated under the existing statute. Sir Christopher Nixon took up the case for the Irish Branch, and emphasised the absurdity of the position with regard to the advance of £500 which was given to it only to be immediately taken away again as their contribution to the General Council under the percentage rate, and held that the only rational course would be to hand over the assets to the General Council. After Sir William Thomson had moved the closure —with what object was not apparent—and several members of the Committee had declared that they could not and would not do anything more, a motion by Dr. Heron Watson and Dr. McVail to obtain the services of a professional accountant to elucidate matters was carried, so that after all the Committee had to withdraw from their *non possumus* position, and the matter will come up again. Like most other important reports of committees, this was presented late in the session, an evil to which we have repeatedly drawn attention.

The Apothecaries' Hall of Dublin, by the mouth of its representative, Mr. Tichborne, made once more a protest against the tone and the terms of the report of the Examination Committee on its examinations. The result this time was that the report was adopted as it stood. The chief grievance was a comment upon the passing by a conference of examiners of a candidate who had obtained less than pass marks, a course which the Inspector had endorsed.

There followed a motion by Dr. Atthill which asked the Council to obtain counsel's opinion whether this body was acting *ultra vires* in appointing any examiners other than certain members of its own governing body, he claiming that under its own charter and under the terms of the Act of 1868 it had no power to go outside these persons, and that any additional examiners ought to be appointed by the General Medical Council. After a short discussion, the point whether the Council could have anything to say to matters which were partly antecedent to its incorporation in 1858 having been raised, the motion was dropped for the moment, and the question of the competence of the Council will have to be settled before it can again be raised.

REPORT OF PROCEEDINGS.

Wednesday, December 5th.

Sir William Turner, President, in the Chair.

The Minutes of Tuesday's proceedings were confirmed.

Proceedings in Camerâ.

The Council then went into *camera*.

On the public being readmitted,

The President said he had to make the following announcements:—That Sir George Duffey had accepted the appointment of Inspector of Final Examinations for the year 1901, and that Dr. W. Parker Herringham, M.D.Oxon., F.R.C.P.Lond., Assistant Physician to St. Bartholomew's Hospital, had accepted the appointment of Inspector of Examinations of the Apothecaries' Hall, Dublin. He also had to communicate that the Council had instructed the Registrar to restore the name and qualifications of Robert Ingram Robertson to the *Medical Register*.

Inspection of Examinations of Apothecaries' Hall, Dublin.

The Council then resumed the consideration of the report of the Examination Committee on the inspection of the July and October examinations of the Apothecaries' Hall, Dublin. The report on the October examinations was as follows:—

IV.—REPORT BY THE EXAMINATION COMMITTEE.

Members.—Sir Dyce Duckworth, Chairman; Mr. Bryant, Dr. Heron Watson, Mr. Teale, Dr. Pettigrew, Dr. Little, Sir William Thomson, Dr. D. C. McVail.

Examination for the first, second, and third parts are alone usually held in October by this Board. On this occasion a Final Examination was held in deference to the protest and memorial handed in by the candidates who were rejected in Midwifery in June.

One candidate entered for the First Examination who had passed his Preliminary and First Professional Examinations in Scotland, the latter before the Scottish Conjoint Board. The Apothecaries' Board, not being satisfied with the standard in Physics required by the Scottish Board, re-

examined him in this subject. He was passed. Two candidates entered for the second part, one being the candidate just referred to. He was rejected in Anatomy and Pharmacy, but passed in Osteology and Physiology. The other entered for the solitary subject of Pharmacy, and was rejected. Two candidates entered for the third part, one already referred to seeking to pass in Materia Medica and Hygiene. He passed in the former subject, and was rejected in the latter. Your Committee fails to understand how this candidate was eligible to proceed to a third part of his Professional Examination before he had completed his second part. The other candidate entered for the subject of Pathology alone, and passed in it.

1. For the Special Final Examination five candidates entered, two being exempt in Medicine and Surgery, and all entering for Midwifery. One was rejected in Medicine, two in Surgery, and one in Midwifery. One candidate was rejected in all the subjects. Three received their diplomas.

2. The Inspector notes that one candidate was allowed to pass in Medicine with an inadequate mark, but he approved the unanimous decision of the Board in respect of this proceeding. Your Committee fails to understand the Inspector's approval of such an irregularity, and directs the attention of the General Medical Council to this matter.

3. As shown on page 10, the candidate (D) received a mean of 46 marks in Medicine, but in no division of the subject did he exceed 47 marks, the pass marks being 50. On the other hand, your Committee notes that another candidate (H), who received pass marks in two divisions of the subject, and had a mean of 45 marks, was rejected.

4. Your Committee finds that the title of Doctor is attached to the names of the Examiners in Pharmacy, and to one of those in Materia Medica. Such titles attached to these names are not to be found in the *Medical Register*. Further, one of the Examiners in Anatomy is described as a Fellow of the Royal College of Surgeons of Ireland. As an Examiner in Osteology the same individual (apparently) is described as a Licentiate of that College, and does not appear on the *Medical Register* as holding the higher qualification.

5. Your Committee is of opinion that such laxity in the employment of registrable titles is highly reprehensible on the part of any licensing body which grants diplomas admitting to the *Medical Register*.

6. The Inspector considers the examinations sufficient, and is satisfied that the Board is endeavouring to maintain a good level of proficiency. Your Committee hardly feels justified, in view of the above irregularities, in expressing its agreement with the Inspector.

7. The Assistant Examiners in Surgery state that they consider this examination a sufficient test for the qualification to practise.

In reply to the Inspector's and the Surgical Examiners' report, the authorities of the Apothecaries' Hall state that they have no comments to make; and remark that, as some of the candidates had nearly qualified at the July Examination, it was determined to make the October Quarterly Examination a qualifying one.

The Examination Committee learns with regret that its Inspector, Dr. Gibson, has resigned his duties, and desires to urge the importance of filling up the appointment during the present session of the Council.

DYCE DUCKWORTH,
Chairman.

November 27th, 1900.

Mr. TICHBORNE said that the reports on the face of them showed an animus against the Hall, and he thought they should not go out without amendment; they went beyond the findings of the Inspector and the Examiners. He then indicated certain passages which he proposed should be deleted.

Sir DYCE DUCKWORTH, Chairman of the Examination Committee, said that he should leave the Council to form its own opinion from the documents before it.

The PRESIDENT read the terms of the resolution, and stated that he had received no amendment.

Mr. TICHBORNE moved as an amendment that paragraphs 2, 3, 4, 5, and 7 be omitted from the report on the examinations of October, 1900.

Sir JOHN TUKE reminded the Council that unless Clause 4 were withdrawn it would be necessary for the Council to pass a vote of want of confidence in the Registrar. It seemed to him extraordinary that the Committee should have allowed such a paragraph to appear in the report. It was like the old expression that any stick was good enough to beat a dog with. Then as to the reflection upon Dr. Gibson and the conduct of the Board in raising the marks of the men, he could only say that they should let those who were without sin throw the first stone.

Dr. GLOVER asked if it was not possible to come to some amicable solution, and whether the Examination Committee would agree to omit the paragraphs complained of.

Sir DYCE DUCKWORTH did not know what the Examination Committee would do, but he knew what he, as Chairman, would do, and that was not to consent to the withdrawal of any paragraphs. He did that for this reason—that the duty of the Examination Committee of the Council was to receive reports from the Council's Inspector, and to read them carefully, and do their best to put the Council in possession of all the facts relating to the examinations. It was well known that this particular body had given the Council an immense amount of trouble and anxiety, and that for years it was a body that was under suspicion.

Mr. TICHBORNE objected to the remarks of Sir Dyce Duckworth, because the Examination body in question never did receive any condemnation. It was another Examining body altogether which acted conjointly with the Hall. Every time the question came before this Council Sir Dyce Duckworth reiterated the remark he had just made. This Mr. Tichborne considered extremely unfair, and certainly was not legal, if he might use that term.

Sir DYCE DUCKWORTH said that at any rate the examination of this body, in conjunction with another body, came under very severe observations from the Council some time ago. The examinations were held now by order of the Privy Council, under the ægis of the General Medical Council. Therefore the Council had closely to inspect the work done by the Hall. The reports had been carefully drawn up, and he was not aware that Mr. Tichborne had disputed any of the main facts set forth. The Examination Committee had felt it to be their duty to call the attention of the Council to the things referred to in the report. If they were not to do that the work of the Examination Committee would become a mere farce, because if it was merely to reflect the opinion of the inspectors they could state that in three lines. But the duty of the Examination Committee as he understood was to analyse the results sent in by the Inspector, and to put a completely unvarnished account of them before the Council without fear or favour. Speaking for the last time in the Council as the Chairman of that Committee, he looked upon that as the duty of the Chairman of the Committee or in fact any other Committee. They did not exist to please everybody, but they existed to do their duty, and as long as he was on that Committee he should endeavour to do so.

The PRESIDENT put the amendment to the Council, and declared it lost.

Mr. YOUNG said that as long as the Committee confined themselves to questions of fact in their reports nobody could take objection to it; but he wished to exclude Clause 5, and he moved an amendment to that effect.

Sir HECTOR CAMERON seconded.

The amendment was then put and was lost.

Dr. BRUCE said he did not think it right that a man should be appointed Inspector by the Council and not receive its support. He moved that paragraph 7: "Your Committee hardly feels justified, in view of the above irregularities, in expressing its agreement with the inspector," be omitted.

Mr. TICHBORNE seconded the amendment, which, on being put, was lost.

The PRESIDENT then put the original resolution, that the reports be received and entered on the Minutes, which was adopted.

Dr. ATTHILL, in moving:

That the opinion of counsel be taken as to whether any examiner appointed to take part in the examinations held by the Apothecaries Hall of Dublin, for their registrable qualifications, other than the Governor, Deputy Governor, and Director of the said Hall, being the examiners authorised by the Act 31 Geo. III, should not be in accordance with the terms of the Medical Act, 1886, be appointed by this Council,

stated that certain members had asked for information as to the rights and powers of the Directors of the Apothecaries' Hall. He was not actuated by any animus, and he did not wish to put the Apothecaries' Hall to any expense or trouble, but he simply desired that it should comply with the law, which it did not do at present.

Dr. BENNETT (in the absence of Dr. Little) seconded the motion.

Mr. TICHBORNE protested against the time and money of the Council being expended in this manner. He thought the statement of Dr. Atthill that his wish was quite friendly to the Apothecaries' Hall would be received with a smile, particularly in Dublin. Certainly he did not view it in that light.

Dr. MCVAIL rose to a point of order. He thought it was entirely outside the function of the Council to consider the resolution at all. The motion was not in order. They had nothing whatever to do with anything antecedent to the Act of 1858, and as the motion involved a matter antecedent to that date it did not lie with the Council to decide the question. If this matter had to go to a court of law it must be done by some outside body. If the College which Dr. Atthill represented or any private person in Dublin thought the Apothecaries' Hall were not acting legally, they

could take the matter before the courts in Dublin, but the Council had nothing to do with it.

The President said it was difficult for him to say whether the motion was in order or not from the point of view of Dr. McVail, because he had raised a legal question, and that was not for the President to decide.

Mr. Brown thought they should not discuss such a matter at the last hour of the session, and he appealed to Dr. Atthill to withdraw the motion. Dr. Atthill could then take such advice as he liked as to whether the motion should go on the programme next session.

Dr. Atthill did not regard it as a legal question; he thought it was a question for the Council.

The President pointed out that the question raised by Dr. McVail was whether the General Medical Council was the body that should raise the question, or whether the question, if it was to be raised, should not be raised by some body or person aggrieved by the present action of the Apothecaries' Hall.

Dr. Atthill said it was the Council that was aggrieved, because its right had been infringed.

Sir Christopher Nixon thought the point of order should be decided first.

The President said that a difficulty arose because it was not a question of mere order of business, but it raised a point of law. The question raised by Dr. Atthill was whether instead of limiting themselves to the appointment of two examiners in surgery under the Act of 1886 they should not appoint all the examiners required for the examination of the Apothecaries' Hall except the five persons who were Governors of the Hall. He thought it was a complicated question.

Dr. Glover thought it was most unfortunate to introduce such a question at this late stage of the session.

Mr. Victor Horsley said that what Dr. McVail wanted was the opinion of Mr. Muir Mackenzie, who was present, as to whether the Hall was within Section xx of the Act of 1858. That was on the point of order, and that point must be settled before they could proceed further.

The President thought it was rather a question of powers to appoint examiners, and not a question of whether the courses of study and examination were such as to secure the possession of the requisite standard. The question was who should appoint the examiners other than governors and directors.

Mr. Victor Horsley understood that was Dr. Atthill's point, but Dr. McVail had pointed out that they had no right to discuss that question, because they had no control over bodies in respect of such powers. They had no powers themselves, in fact, to discuss the subject at all. He asked for the President's ruling on the point. He proposed that the President should now ask Mr. Muir Mackenzie what his opinion was, and that he should inform the Council.

The President said that the question had assumed a phase which it did not present when it first came before them, because important legal questions were being now raised which were not in his mind, or in the mind of the Chairman of the Business Committee when the motion was put on the paper. If this motion, or any motion on the same lines, were sent in to him by Dr. Atthill, he would ask Mr. Muir Mackenzie to advise him upon it.

Dr. Atthill said if it was understood that the President would ask Mr. Mackenzie to advise him on the question before the session next May, he was quite satisfied to withdraw the motion for the present.

The President agreed, but requested Dr. Atthill to send the motion to him, because he (Dr. Atthill) might find it necessary to reconsider the terms of the motion after the discussion which had taken place.

Dr. MacAlister pointed out that the question really was whether this was a competent motion.

Dr. McVail inquired whether, under the circumstances, the motion should appear on the Minutes.

The President replied that he thought it should not.

At the request of Mr. Victor Horsley, Mr. Tichborne said he would furnish a copy of the old diploma of the Apothecaries' Hall of Ireland for inspection.

Committee on the Prevention of Personation.

Mr. Victor Horsley moved that the interim report of the Committee upon Personation be received and entered upon the Minutes as follows:

Report.

The Committee have taken the opinion of the Solicitor to the Council on the legal question raised in the discussion on May 28th, 1900.

In the opinion of the Solicitor, the Council is fully empowered, under Section xiv, Medical Act, 1858, to frame and enforce the proposed regulation that applications for registration must be made in the handwriting of the applicant on an official form.

Victor Horsley,
November 28th, 1900. Chairman.

In doing so he stated that he did not intend to take up the time of the Council, so much of which had been expended upon what he might term squalid business, so that this question could not receive fair consideration. He asked the Council to postpone its consideration.

Dr. Bruce seconded the motion.

Dr. MacAlister suggested that the question submitted to the solicitor and the opinion which he had given might be given as an appendix to the Report.

Mr. Victor Horsley said that would be done and the motion was then agreed to.

Regulations for D.P.H. Examinations.

On the motion of Dr. MacAlister the report of the Committee of the whole Council on the regulations for diplomas in Public Health were received and entered on the Minutes.

Mr. Teale, in moving their adoption, said that the rules were not quite identical with those which were before the Committee, as a few alterations had been made, in order to bring them into conformity with the old Rules and Regulations which they superseded: the emendations were simply verbal.

Dr. Bruce, in seconding the motion, said that he felt sure that the Council in adopting them would be doing the right thing.

Sir Hector Cameron said that by the resolutions which were proposed the curriculum was compressed into nine months. The last suggestion of attendance upon an infectious hospital, although it was not so stated, actually was really meant to run concurrently with the rest of the required education, so that a medical officer, coming from India, say, and returning, would be able to do the whole curriculum within the limits of his leave, and in that respect the period of time was distinctly lessened.

Sir William Gairdner thought the report of the University of Glasgow on this subject was worth attention. In order to ensure general uniformity of instruction it suggested that a schedule of the studies should be drawn up and submitted to each body granting a diploma. Such a method, in his opinion, would tend to prevent inequalities of practice in the granting of certificates. There was hardly time, at this late period of the session, to put that into shape, but he thought it was a highly important suggestion.

Mr. Teale thought the suggestion was essentially one for the consideration of the bodies which granted diplomas. The motion was agreed to.

On the motion of Mr. Teale, seconded by Dr. MacAlister, it was resolved:

That the resolutions and rules now adopted come into force on the 1st January, 1902.

Moved by Dr. MacAlister, seconded by Mr. Teale, and agreed:

That the resolutions and rules now adopted be transmitted by the Registrar to the several bodies which grant diplomas in public health.

The text of this document is as follows:

Public Health.

Resolutions and Rules adopted by the General Medical Council on December 5th, 1900, for Diplomas in Public Health granted after January 1st, 1902.

I. The Council, having regard to the terms of Section xviii of the Local Government Act (1888), and of Section liv of the Local Government (Scotland) Act (1889), and observing that under those sections special privilege is to be accorded to the holders of the diplomas granted under Section xxi of the Medical Act (1886), and therein described as diplomas in Sanitary Science, Public Health, or State Medicine, thinks it essential to declare, with regard to its own future action under Section xxi of the Medical Act (1886), that it will not consider diplomas to "deserve recognition in the *Medical Register*" unless they have been granted under such conditions

of education and examination as to ensure (in the judgment of the Council) the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health; and the Council, in forming its judgment on such conditions of education and examination, will expect the following rules to have been observed:

1. A period of not less than twelve months shall have elapsed between the attainment of a registrable qualification in medicine, surgery, and midwifery, and the admission of the candidate to any examination or any part thereof for a diploma in Sanitary Science, Public Health, or State Medicine.

2. Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has during six months received practical instruction in a laboratory or laboratories, British or foreign, approved by the licensing body granting the diploma, in which chemistry, bacteriology, and the pathology of the diseases of animals transmissible to man are taught.

3. Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Rule 2) been associated day by day in the duty, routine and special, of Public Health administration, under the supervision of

(*a*) In England and Wales, the medical officer of health of a county or of a single sanitary district having a population of not fewer than 50,000, or a medical officer of health devoting his whole time to Public Health work; or

(*b*) In Scotland, a medical officer of health of a county or counties, or of one or more sanitary districts having a population of not fewer than 30,000; or

(*c*) In Ireland, a medical superintendent officer of health of a district or districts having a population of not fewer than 30,000; or

(*d*) A medical officer of health who is also a teacher in the Department of Public Health of a recognised medical school.

*** The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence under Rule 3, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates.

4. Every candidate shall have produced evidence that, after obtaining a registrable qualification he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration.

5. The examination shall have been conducted by examiners specially qualified; it shall have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health.

*** The rules as to study shall not apply to

Medical practitioners registered, or entitled to be registered, on or before January 1st, 1890.

II. The Council shall, from time to time, appoint an inspector or inspectors of examinations in public health, with special instructions to report to the Council whether the examination of each licensing body does or does not afford evidence on the part of candidates passing such examination, of a distinctively high proficiency, scientific and practical, in each and all of the branches of study which concern the public health.

REPORTS OF EDUCATION COMMITTEE.

On the motion of Sir JOHN TUKE, seconded by Dr. MACALISTER, the reports of the Education Committee were received, entered on the Minutes, and adopted. The reports dealt with the following matters:

I. On the steps taken for raising the standard of preliminary examination.

II. On an application from an American University for the recognition of its Arts examination.

III. On the Medical and Pharmacy Amendment Act, 1899, of the Cape of Good Hope.

On the suggestion of Sir JOHN TUKE the consideration of the reports was postponed until next session.

MEDICAL AID ASSOCIATIONS COMMITTEE.

Dr. GLOVER moved, and Mr. TEALE seconded, that the following report of the Medical Aid Associations Committee be received and entered on the minutes:

REPORT BY THE MEDICAL AID ASSOCIATIONS COMMITTEE.

In making an interim report your Committee have to announce that they continue to receive from various parts of the country painful proof of a certain* amount of friction between the profession and the medical aid associations, especially such associations as are conducted on commercial principles, with the aid of canvassing, advertisements, etc. The loyalty of the great mass of the profession to the regulations of the Council with regard to such practices should be fully realised by the Council; the more so, as in several towns it has entailed at least temporary loss on some practitioners who have resigned appointments rather than expose themselves to the charge of violating the wishes of the Council. One such case has been formally brought to the notice of the Council, in the form of a complaint against a practitioner who, it is alleged, accepted office where such practices are allowed. The case, unfortunately, was brought forward too late for consideration at the present meeting.

The Committee continue to believe that in regard to those medical aid associations, composed for the most part of the great friendly societies, the most promising method for removing differences is in the creation of a Conciliation Board. The General Medical Council has done all in its power to recommend and to promote the creation of such a Board.

The success of such efforts must rest now with the profession itself, acting through its voluntary Associations, and especially the British Medical Association, the Council of which a few months ago appointed a Committee to treat directly with the friendly societies on this subject. Its resolution is in the following terms:

"The Council appoints a Committee to confer with the representatives of the friendly societies with a view to drawing up a scheme for the formation of regulations regarding the powers and duties of the proposed Conciliation Board."

The President of the British Medical Association is the President of this Committee. We are kindly informed by him that the Committee has met once, and decided on some matters of principle. It is to be hoped that before the meeting of the General Medical Council in May your Committee will be able to give a final report on this important subject.

December 4th, 1900. J. G. GLOVER, Chairman.

Mr. VICTOR HORSLEY objected to the wording of the first paragraph. He thought the expression "a certain amount of friction between the profession and medical aid associations" did not represent the true feeling in the profession on the subject at all; he thought it ought to be "a serious degree of friction." The second and much more important point was in relation to the Council of the British Medical Association. As he had the honour to be a member of that Council, and was present at a meeting of it at Ipswich, he could state that a resolution was then come to which materially altered the relation of the British Medical Association to the question of a Conciliation Board. It was perfectly true, as Dr. Glover had said, that for a technical reason the original resolution of the British Medical Association remained firm for twelve months; but he (Mr. Victor Horsley) wished to inform the Council that at Ipswich the Council of the British Medical Association distinctly, by resolution, came to the conclusion that they would have nothing to do with it unless they were satisfied that the question of wage limit would be raised: and the friendly societies had repeatedly stated that they would oppose the question of wage limit being raised at all at this Conciliation Board. The present attitude of the Council of the British Medical Association was that that was a proper question to be raised before the Conciliation Board, and he therefore thought that the terms of this report, which the members of the General Medical Council had only seen for the first time that day, were not absolutely correct. The feeling of the British Medical Association as reflected in its Council was not that which this report would tend to convey. The difficulty might be got over by a reference to the proceedings of the British Medical Association at Ipswich, and then readers of this report of the Medical Aid Associations Committee would be in full possession of the facts, which at the present moment they were not.

Dr. GLOVER had no objection to substituting the word "serious" for "certain." He thought that Mr. Victor Horsley had not succeeded in showing that there was any inaccuracy or misrepresentation in the report as to the position of the British Medical Association or its Council. It had been said that the Friendly Societies had repeated stated that they would oppose the raising of the question of the wage limit at the Conciliation Board; but he was not aware that the Friendly Societies had ever objected to this question being raised and being discussed. On the contrary, they had suggested that the best remedy was the discussion of it. The British Medical Association represented, no doubt, persons of different opinions in regard to this matter, but Mr. Horsley personally had never been friendly towards it. The British Medical Association at its meeting at Ipswich adopted a resolution that the Conciliation Board Committee should not be reappointed or something to that effect. That seemed rather a curt way of dismissing a subject which had occupied a great deal of the time of the Council. He (Dr. Glover) had received a letter asking him to call atthe office of the British Medical Association in order to understand what the position of that body was in regard to the matter, and an official had pointed out to him that that resolution did not in any way alter the fact that the resolution of the Council had existed and would continue to exist, for the examination of this very question of the Conciliation Board, and what was in the report was the *ipsissima verba* of the representatives of the Council of the British Medical Association. He believed this took place before the proceedings at Ipswich which had been referred to. It had been pointed out to him that by a by-law of the Association or a Standing Order, it was not in the power of the annual meeting to rescind a resolution within six months of the time of which it was passed.

Mr. VICTOR HORSLEY pointed out that he was not referring to the annual meeting, but to a meeting of the Council.

* This word was altered to "serious" (see next page).

Dr. GLOVER replied that it was a resolution passed within the last six months, and the Committee therefore stood. He had received a letter from the President of the British Medical Association that week pointing out that the Committee had had a meeting. That, he thought, would satisfy the General Medical Council that their Committee had given them the exact position of the British Medical Association in regard to this matter. If the British Medical Association came to the conclusion that this wage limit question made the matter impracticable, or if it did not see its way clear to go on with the matter, there was an end of it; but at present the Committee were investigating it, and the General Medical Council had only to wait.

The substitution of the word "serious" for the word "certain" in the report having been adopted, the resolution was put and carried.

PROPOSED NOTIFICATIONS AS TO MEDICAL AID ASSOCIATIONS.

Mr. GEORGE BROWN, in moving—

That notices be published by advertisement and otherwise to the effect that association with medical aid societies and clubs which systematically canvass for patients may be regarded by the Council as infamous conduct in a professional respect, rendering any practitioner proved to be guilty thereof liable to have his name removed from the *Medical Register*.

said that he had brought forward a resolution to a somewhat similar effect last session, which, at the urgent request of Sir John Tuke and Dr. McVail, he withdrew; and he substituted this resolution, the terms of which he did not think could be regarded in any sense too strong or too clear; because it was evident from what had taken place in the Council that, unless they made their position perfectly clear, they would have members of the profession coming before them and saying they did not understand what the regulations of the Council meant. The notice would have a very far-reaching effect, and might be regarded by some members of the profession as an interference with their professional rights, but the better class of the profession would not be interfered with at all, and by accepting this motion the Council would be expressing the feelings of every medical man practising in this country whose name was worth retaining on the *Register*.

Dr. BRUCE said he would second the motion, but appealed to Mr. Brown to postpone it till next session.

Dr. MACALISTER thought that if there was any case which might be affected by this resolution, it would be most indecent to pass it now, and he moved that the question be now put.

After some further conversation and appeals from various members of the Committee, Mr. GEORGE BROWN, although most reluctantly, with the consent of his seconder, withdrew the resolution.

REPORT FROM THE SPECIAL FINANCE COMMITTEE.

Mr. BRYANT moved that the report of the Special Finance Committee be received and entered on the Minutes. He pointed out that its special feature was that the Council was not in such a desperate financial position as some of its members seemed to think. It was true they were spending a little more money than their income, but it was not a heavy sum, and only averaged £88 6s. 2d. He admitted that that was a balance on the wrong side, but at the same time, having regard to their banking account, even if that excess continued for some years, the real property which they possessed would enable them to continue making the sacrifice year by year without any serious detriment to the work of the Council. He also referred to the fact that when the debt on the building was paid off £1,000 a year would be added to the income, which would enable them to pay off any liability they might have, but that would not happen until 1949.

On the motion of Dr. MACALISTER, the Standing Orders were suspended till the business on the programme was finished.

Mr. BRYANT continuing, said the recommendation of the Committee were:

That the Executive Committee be authorised to amend the Standing Orders as follows:

1. That the session of the General Medical Council commence on the Monday.

2. That a meeting of the Executive Committee be held on the Saturday immediately preceding.

3. That the sitting of the Council commence each day at 1 P.M.

These recommendations he would propose *seriatim*.

Sir DYCE DUCKWORTH formally seconded the motion, which was carried.

Mr. VICTOR HORSLEY moved:

That the Special Finance Committee be reappointed, and that the report promised this session be remitted to them for further consideration of, and report upon the references contained in the resolution of the Council of May 31st, 1900.

He reminded the Council that last session he asked for a committee to consider and report on the financial position of the Council and the financial relation of the Council to its Branches, and further to report on the measures that were desirable to place the Council's financial affairs on a satisfactory basis, and he submitted that the Committee had not obeyed the reference and had not fulfilled the duties entrusted to them. Their report of the first two points was carefully misleading and optimistic, and was not justified, nor was the speech of the Treasurer. Lastly, they made no recommendation whatever with regard to the third reference. Their recommendations consisted of three small domestic economies which in no wise touched the reference. It was no doubt true, as stated in the report, that an analysis of the accounts did not "appear to furnish any serious anxiety as to the financial position at the present time"; but an analysis of the accounts as presented by the Committee was a very different analysis from that which might be made by individual members, and if an actuary had made an analysis of the accounts he would not have presented a report of this character. He intended to adduce facts against the assumption that they were justified in embarking on a certain expenditure simply because they had money in the bank; as a Council they had no money. The Branches had, but they as a Council were nearly as poor as the Irish Branch which, was almost bankrupt. The Branches had property which the Council's legal adviser had informed them they had no right to hold. That was a state of things he did not consider satisfactory. The Treasurers thought that because some of the Branches had money at the bank that that was justification for going on, as it were, in a thoughtless way spending any balance they happened to have up to the last penny. He could not understand how men of ordinary sense could approve of such a condition of affairs, and still less could he understand them thinking that they were doing their duty in so reporting on this subject to the Council. He then criticised in detail the report in order to bear out his contention, and showed that his opinion in regard to the Branches had been confirmed so long ago as September, 1899, by Mr. Muir Mackenzie, who then advised that the only course it was advisable to adopt was to endeavour to obtain an amendment of the Medical Act. He hoped if the report was referred back to the Committee that they would furnish another report next May with that proposal contained in it properly analysed; it ought to have been dealt with in the present report, and duly analysed, hostilely if they liked, but at least the opinion of Mr. Muir Mackenzie should not have been passed over. He (Mr. Horsley) considered the omission was a grave matter, and justified the remission of the report to the Committee. That the optimism of the present report was not justified by the facts could be recognised by reference to the table on page 470 of the Minutes of last session, showing the comparative income and expenditure of the Council. If that table meant anything it meant that the deficit in the accounts of the Council was a much more serious affair than the Committee wished to admit. The average deficit for the last three years was £1,800 per annum. Perhaps the most humorous part of the report was the last paragraph that "unnecessary expense would also be avoided were it arranged that a direct representative elected at a by-election should vacate his seat at a general election, so as to prevent the possibility of having an election in three years out of five, as might easily be the case in England." He invited the attention of the members of the Committee to an address which he issued to the electors some three years ago, in which he pointed out the fact that the profession would be taxed in this very particular way; and that, in order to avoid that tax he intended to resign his seat when his colleagues of necessity resigned.

The PRESIDENT stated that was the very reason why it was inserted—not as an example to Mr. Victor Horsley, but as an example to others.

Mr. VICTOR HORSLEY said it was ridiculous to incorporate in the report at this late period such a clause as that. He concluded by reasserting that the only satisfactory manner of putting the Council's finances on a proper basis was to provide that all the funds should be paid into the central office, and that each branch office should be managed on ordinary commercial lines, which could only be effected by a change in the Medical Acts. He asked the Council to reappoint the Committee, and remit the report to them for further consideration, and with an expression that they would look upon it from this point of view.

Mr. TOMES, in seconding the motion, pointed out that the economies recommended by the Committee were designed to meet a deficit, which for the last three years amounted to £1,800 a year. He was prepared to show that this was the fault of no particular person, but was the result of the Act; and that the accounts were a perfect sham—a *reductio ad absurdum*—when they were analysed. Thus, while it appeared on the face of the accounts that the English Branch received £696, an ordinary rate of interest for its capital invested in a mortgage on the premises, its contributions to the expenses of the General Council were actually swelled by the payment of this interest to the extent of over £400 per annum, so that it netted only £296, and the same thing was true of the sinking fund, for which the English Branch had to provide £120 per annum out of the sinking fund by which it was itself being paid off, so that it finally pocketed about 0.6 per cent. on its investment. This practically amounted to a gradual transfer of a very large sum out of what would otherwise be the Branch assets to the General Council, doing by a side wind what was not contemplated in the Act. In a less degree the same thing was true of the other Branches.

Sir WILLIAM THOMSON moved the closure, but the PRESIDENT, exercising the discretion vested in him by the Standing Orders, refused to accept it.

Sir CHRISTOPHER NIXON desired especially to emphasise the fact that the Council had been shown to be in an absolutely illegal position by its legal adviser, who had advised the Council to get an amendment of the Act, and he thought it right to refer the report back to the Committee, with the clear understanding that they were to obtain an amendment of the Act. He held, with Mr. Victor Horsley, that the only way of dealing with the matter was to hand over all the assets to the General Medical Council, and let the Council be responsible to the branches.

Dr. MACALISTER took a much more serious view of his position as a member of the Committee than Mr. Horsley would have the Council think. He (Dr. MacAlister) thought the question the Committee had to settle was whether or not the Council as such was in a sound financial position, and this report showed that the finances of the General Medical Council and its branches were in a position which did not call for any anxiety whatever. Sir Christopher Nixon was absolutely misled in regarding the position of the Council as illegal; the mere fact that Mr. Muir Mackenzie advised them in eventualities to apply for a new Act showed they were not acting illegally; the law forced them to do what they were doing. If it had been illegal he would have said, "Stop doing it." The Council was hampered and tied by the Act, but must stick to it. As to the expenditure, the Committee thought that the Council could meet a slight excess of expenditure over income for years to come without absolutely feeling it. The figures which had been cited as showing excess of expenditure were more or less artificial. The general income was very little, but the Council could call in as much as it liked from bodies who had got the money, and there was absolutely no limit to what it could ask for. If the report were referred back the Committee could do nothing more, and he should decline to have anything more to do with it. He claimed the right to have it put to the Council.

Sir DYCE DUCKWORTH and Mr. BRYANT also said that they would decline to serve, the latter observing that Mr. Victor Horsley looked at it from one point of view, while the Committee looked at it from another.

Dr. PETTIGREW moved that the discussion be adjourned until next session, as it was far too important a subject to discuss in such a small house.

Dr. MCVAIL, in seconding the amendment, took exception to recommendations of the Committee, as it would be impossible for many members to reach town on Monday, and as to the extension of the time for sitting he found four hours a day quite sufficient.

Mr. VICTOR HORSLEY supported the amendment, as he desired at the next session proper time to fully expose the unconscious misrepresentations which Dr. MacAlister had given to his and Sir Christopher Nixon's statements, and of the history of the whole business.

Dr. HERON WATSON also supported the adjournment, and he thought the opinion of an actuary should be obtained by the Committee and laid before the Council, and there would then be no room for captious objections.

The amendment was then put and carried.

The PRESIDENT thought the suggestion of Dr. Heron Watson should be incorporated in a motion, and, after some conversation,

Dr. HERON WATSON moved, Dr. MCVAIL seconded, and it was resolved:

That the Treasurer be requested to obtain from a professional accountant, and to circulate among the members of the Council at least a month before the next session, a detailed statement with special reference to the state of the Council's finance referred to the Special Committee.

Sir DYCE DUCKWORTH wished to point out that during the course of this session they had saved six hours by overtime, which made more than one day. He hoped that fact would be recognised and understood. He considered it exceedingly bad and irregular, because in his opinion no good work was done after 6 o'clock.

THE MIDWIVES BILL.

It was moved by Dr. MACALISTER, seconded by Sir HUGH BEEVOR, and resolved, that the following report from the Midwives Bill Committee be received, entered on the minutes, and the recommendations contained therein adopted:

REPORT.

The Committee has considered the following letter—remitted to the Committee by the Executive Committee—received from the Coroners' Society of England and Wales, bearing on the proposed legislation for midwives:

"20, Lupus Street, London, S.W., June 15th, 1900.

"Sir,—I beg to inform you that at the last annual general meeting of this Society (which numbers 263 members), held on the 31st ultimo, a discussion arose upon the Midwives Bill, and eventually the following resolution was unanimously passed, namely:

"'That this Society, although approving of the principle of the licensing of midwives, is of opinion that the Bill now before Parliament does not provide for the adequate control and supervision of midwives.'—I am, Sir, yours faithfully,

"A. BRAXTON HICKS, Honorary Secretary, etc.

"The Secretary, General Medical Council."

It was resolved to report this letter to the Council, and recommend that it be sent to the Lord President of the Privy Council, with a request that it be taken into consideration by him.

November 30th, 1900. WM. TURNER, Chairman.

STUDENTS' REGISTRATION: EXCEPTIONAL CASES.

On the motion of Sir DYCE DUCKWORTH, seconded by Dr. MACALISTER, it was resolved that the report of the Students' Registration Committee on exceptional cases be received, entered on the Minutes, and adopted.

VOTE OF THANKS.

On the motion of Dr. GLOVER, seconded by Dr. WINDLE, a hearty vote of thanks was accorded to the President for his courtesy in the chair.

The PRESIDENT having expressed his thanks, the proceedings terminated.

ENTERIC FEVER AND WAR.—The remarks made by Mr. H. E. Clark, Surgeon to the Glasgow Royal Infirmary and President of the Glasgow Medico-Chirurgical Society, will commend themselves to all who desire to see things as they really are. Having just returned from the front, where he was Surgeon-in-Charge of the Scottish National Red Cross Hospital, he has stated the opinion that the defects in the medical service in South Africa did not lie with the Medical Department or War Office, but depended on the fact that war was war. The medical authorities could not be blamed for not anticipating the terrible outbreak of enteric fever which converted Bloemfontein into a gigantic hospital camp. The outbreak was due to the long, exhausting marches, night bivouacs, and scanty food, as well as to drinking the contaminated water of the Modder River. He considered that the Hospital Commission would show that the work accomplished had been great in amount and excellent in quality.

THE EPIDEMIC OF PERIPHERAL NEURITIS TRACED TO ARSENICAL CONTAMINATION OF BEER-MAKING MATERIALS.

MANCHESTER.

The report by Dr. Niven, M.O.H., for Manchester, to which reference was made in our last issue, is dated December 3rd, and is addressed to the Hospitals Subcommittee.

Preliminary Inquiries.

It will be remembered that Dr. Reynolds's paper on An Epidemic of Peripheral Neuritis among Beer Drinkers in Manchester was published in the British Medical Journal, dated November 24th, and Dr. Niven states that the first intimation which he had of anything indicating an outbreak of a fresh form of disease, or of the existence of impurities in beer, was received from Dr. Reynolds on Tuesday, November 20th. On November 21st Dr. Niven met Dr. Reynolds and Dr. H. G. Brooke at the Crumpsall Workhouse, and saw a large number of cases presenting special and fairly uniform symptoms of the kind which have been described by many contributors in the last three numbers of the Journal. Dr. Niven at once arranged that twelve samples of beer should be taken from six tied houses, "sixpenny" and "fourpenny" from each, and in consequence of information received from Professor Delépine on November 22nd to the effect that he had discovered a considerable amount of arsenic in particular saccharine matters used in brewing, samples of these saccharine materials were obtained from two breweries implicated by the patients on November 23rd. On the following day, November 24th, the Medical Officer of Health improvised a laboratory aided by the Assistant Medical Officers of Health, Dr. Coates, and Dr. McCleary, and by Mr. R. M. Rowe of the Sanitary Department. On November 27th sufficient information had been obtained by analyses to proceed further and samples of the saccharine matter said to have been used by the brewers were rapidly obtained by the medical officers, and an examination of all the saccharine matters furnished as used in the 20 Manchester breweries visited, as well as of three glucoses used in the manufacture of cheap sweets and jams, was commenced, no arsenic was found in the sweets and jam. With regard to the saccharine matters used in the manufacture of beer, 46 specimens from 20 breweries were examined, and arsenic was found only in the glucoses and inverts emanating from one firm, in which it was present apparently in considerable amount. It was known that 5 of the 20 breweries were using this material or had just discontinued it, while in another instance its use had been discontinued for two months.

On November 27th a circular was sent to all the medical practitioners in Manchester asking for certain information, and the replies have proved valuable and instructive. "The general impression conveyed by the statements of medical practitioners is that the worst has passed, and that the worst period of all was towards the end of October."

On November 28th samples of beer were obtained from a number of public-houses:

Some samples since taken from public-houses and examined unofficially have been found to contain an appreciable amount of arsenic. The number of samples of beer and stout examined unofficially since the instruction of the Committee has been 45, of which 11 have been found to contain arsenic. Subsequent samples from the same houses have been sent to the Public Analyst.

Altogether the Medical Officer of Health has received information of about 1,000 cases of the above class of illness from 90 medical men. These do not include the cases which have been sent into the union hospitals during the last few months, which will probably come to 700 or so more.

Allowing over 300 cases to medical men who have not answered the circular, there have thus been at least 2,000 cases which have been seen by a medical man.

There will no doubt be a good many more with minor degrees of illness which have not been seen by a medical man.

Statistics.

Dr. Niven then gives the deaths occurring in Manchester week by week from the beginning of January, 1899, to the week ending December 1st, 1900, under the following heads:

Peripheral neuritis, neuritis, alcoholism, cirrhosis of the liver, other disease of the liver, gastritis in adults. The deaths from peripheral neuritis have nearly doubled in 1900. The difference is, however, confined to recent months, since up to the end of May there were in 1900 only 5 deaths from this cause, as compared with 8 in 1899 from January 1st to May 31st. The deaths from neuritis number 11 in 1900 as compared with 5 during the same period in 1899, from alcoholism 98 in 1900 as against 77 in 1899, from cirrhosis of the liver 105 in 1900 as compared with 88 in 1899, from gastritis 19 in 1900, 9 in 1899.

Tables have been prepared for 1897 and 1898 as well as for 1899 and 1900 (to week ending December 1st), and the results may be thus summarised:

Numbers of Deaths in the first Forty-Eight Weeks.

Causes of Death.	1897.	1898.	1899.	1900.
Peripheral neuritis	11	17	18	39
Neuritis (other)	2	5	5	11
Alcoholism	71	43	77	98
Cirrhosis of the liver	88	76	88	105
Other diseases of the liver	35	32	17	20
Gastritis (adults)	25	32	9	19
Total	232	205	214	292

These figures show that there has been a progressive increase in the number of deaths placed in the group selected during the last three years. Deaths from diseases of the liver other than cirrhosis, and deaths from gastritis are fewer in 1899 and 1900 than in 1897 and 1898, which is somewhat remarkable.

On the other hand, the number of deaths from peripheral and other forms of neuritis suddenly increased in 1898, and again in 1900, so that the number of deaths from these causes in the present year is 50 as against 13 in 1897.

The number of deaths from alcoholism has increased steadily since 1898, so that the number already recorded in 1900 is more than double the number recorded in 1898. In 1897, however, the number of deaths is considerably in excess of the number recorded in 1898.

The same observations apply to the number of deaths from cirrhosis of the liver, except that the increase in 1899 over 1898, and in 1900 over 1899 has been more gradual under this heading.

As it would seem that gastritis and disease of the liver, other than cirrhosis, are not conditions which need be taken into account, it is interesting to see how the figures stand when these causes of death are taken off. We have in

1897.	1898.	1899.	1900.
172	141	188	253

and the increase since 1898 comes out much more conspicuously. It is permissible to surmise that the causes operating so seriously since May of the present year were present also in 1898 and 1899, though to a much less extent.

CASES ILLUSTRATING THE NATURE OF THE DISEASE AND ITS DIRECT CONNECTION WITH ARSENICAL POISONING.

By James Niven, M.D.,
Medical Officer of Health for Manchester.

It seems proper to insert here a medical account of cases, all of whom had consumed beers proved to have lately contained arsenic. In addition, this gives me an opportunity of acknowledging most gratefully the full and careful replies which I have received to the circular from the Health Office from many practitioners and from one or two consulting physicians. A sketch will be given of the chief features of the disease, derived partly from these reports, partly from such observation as I could make in walking through the wards of the union infirmaries, which the medical officers most courteously allowed me to do, besides giving every facility to the assistant medical officers in taking rough notes of cases. And first, before connecting the cases with a particular beer supply, I should like to give a brief account of a case, volunteered by Dr. R. A. Burdett in answer to the circular from the Health Office, which is probably somewhat typical of a severe case, though wanting some characterisric features.

CASE I.—A. B., aged 58, a confirmed alcoholic, came under treatment on November 4th suffering from gastritis and vomiting. Then followed a rapid succession of symptoms—tingling, numbness, tenderness of muscles, and paralysis of legs. On November 12th there was marked drop wrist, then mental hallucinations. Death occurred without any previous coma on November 21st. I could not understand the extreme rapidity, the very sudden onset, and death without any warning. The illness came on after a drinking bout. It will be seen that there is nothing in this account which absolutely differentiates this case from a case of alcoholic neuritis except the rapidity of the paralytic phenomena.

The following short series of cases is intended to illustrate the connection of the symptoms observed with the presence of arsenic in the beer or stout habitually consumed by the patients.

Cases in which a sample of beer or stout was taken from the public-house regularly frequented by the patient, after the patient was first seen by my assistant medical officer or by myself, and shown to contain arsenic, are marked **A** at the commencement of the case.

Cases in which recent samples of the beer or stout consumed by the patient—that is to say, denoted by the name of a particular brewery—were shown to contain arsenic, but in which the beer or stout was not traced to the particular public-house frequented by the patient, are marked **B**.

Cases in which all that we know about the kind of beer and stout consumed by the patient is that the firm whose sugars have been found to contain considerable amounts of arsenic had supplied this particular brewery are marked **C**.

Out of a total of 20 Manchester breweries, 10 had been so supplied, and the great majority of the samples taken were from the ten breweries which had used the arsenic-containing sugar.

The values of the cases (**A**), (**B**), (**C**), as regards bringing home the illness to a particular beer, are almost equal, since the patient, when first seen by us, had been almost always ill for a considerable time, and of course the consumption of the beer producing the initial illness would often go some weeks further back still.

A. CASE II.—C. D., a woman, aged 38, Miles Platting, under the charge of Dr. James Ling, was seen also by me on December 1st.

History.—The patient, a well-nourished woman, took ill about ten weeks ago with symptoms of rheumatism. Her hands tingled, seemed to swell, and her fingers contracted. Her feet were painful, causing her to scream out when they were pressed. The outside of the sole was especially painful. She had hyperidrosis of the legs. No irritation of the conjunctiva was noticed. She did not complain of sickness. For seven weeks she had had very little power of walking, and during all that time had been ataxic. She became unconscious first on November 29th, having been for some days subject to delusions. A marked feature of the case had been loss of memory. On November 30th she had convulsions.

Anamnesis.—Her face presented a dusky bronze, but the trunk showed yellow pigmentation. She is now in a comatose condition: the pupils are contracted; she has dropped wrist. The metacarpal interossei are much wasted, as is the adductor pollicis. The fingers remain plump, and the contrast is very marked. She grins with pain when the muscles of the calf are pressed (Sir Lauder Brunton's expression). Her breathing is irregular, 27 to 22, the pulse 120, the temperature 101° F.

Remarks.—This patient died on December 2nd. She had taken large quantities of beer, often mixed with whisky. The beer, it is said, was always obtained from the same public-house.

B. CASE III.—Noted by Dr. Coates at Crumpsall Hospital by the kindness of Dr. Reynolds and the resident officers. This case has a special interest as showing that well-marked symptoms have been induced within a fortnight of the first copious draughts of beer.

E. F., adult woman, was discharged from Crumpsall Union Infirmary five weeks ago before she was seen on December 7th by Dr. Coates suffering from alcoholism or arsenical poisoning. After discharge she took beer very freely for a week or so, since when she has had two or three gills per day. Three weeks ago she began to have numbness in the feet, a few days later tingling in the feet, followed by numbness and tingling in the hands. About this time she had some vomiting and diarrhœa. There is not and has not been conjunctival irritation. Pigmentation is fairly well marked. There is well-marked erythromelalgia and hyperidrosis, especially in the hands and feet. There is pain in the calves on pressure, and paresis of the legs with slight ataxia, but no wasting or weakness of the extensors of the forearm.

Two beers **B.B.** CASE IV.—G. H., an adult woman, was seen by Dr. Coates at Crumpsall on December 7th. This case illustrates the not infrequent excessive pigmentation.

Her illness had begun fourteen weeks before with vomiting and diarrhœa, which persisted for three weeks. She had had occasional attacks of vomiting since, until admission a week before. About thirteen weeks before she had "sore eyes which kept running." Seven weeks after the onset of illness she had numbness and tingling in the feet, followed by pain in the feet and calves. There was erythromelalgia; the calf muscles were painful on pressure, and there was slight paresis. Pigmentation was well marked, like severe Addison's disease. She is said to have taken four or five glasses of beer a day.

CASE V.—I. J., an adult woman. Beer from two sources, neither suspected. Symptoms not very characteristic.

B. CASE VI.—Q. A., an adult woman, had been ill eight weeks.

History.—Illness begun with running at the eyes, followed soon after by pain in the feet and calves, and "blotches of redness" on the legs, which later appeared on the face and trunk. She had had "blisters" on the legs.

Anamnesis.—At present the eyes are watery, there are patches of erythema on the trunk and legs. Pigmentation is not well marked.

Two beers **B.C.** CASE VI.—K. L., an adult woman. Seen by Dr. Coates at Crumpsall on December 7th.

History.—Her illness had began eleven weeks earlier with vomiting, which persisted till she gave up beer two or three weeks ago. She had at first numbness in the feet. Two weeks later she had "pain in the calves and shinbones." Two weeks after that numbness and pain in the hands. She was a heavy beer and spirit drinker.

Anamnesis.—The eyes are suffused, the face dusky, pigmentation on the trunk well marked. There is well-marked neuritis in legs and arms. The calves are very painful on pressure. There is complete paralysis of the extensors of the wrist, wasting of the extensors and interossei, and paralysis and wasting of the extensors of the leg. The feet are very painful and red, and the skin of the feet thickened all over.

B. CASE VII.—M. N., an adult woman.

History.—Her illness began with vomiting thirteen weeks before. Two weeks later she had numbness of feet, with some loss of power.

Anamnesis.—Watery eyes, erythromelalgia, hyperidrosis of hands and feet, tenderness of the calf on pressure, some loss of power in the legs, pigmentation general, œdema of legs and ascites.

A. CASE VIII.—(Case communicated by Dr. James Laing.) O. P., a man in the prime of life; has been in the habit of drinking one glass of beer a day at dinner. About a month before he gave up taking this, because of symptoms observed in his hands. He felt a growing stiffness in them, a kind of laziness, and a sensation as if he were about to take hold of a battery. There was also pain in the big toes. Beer was given up some time before arsenic was mentioned.

A sample of the particular beer (which corresponds to the quality 4d. was handed to me, and found to contain only a trace of arsenic; but other beers from the same source have been found to contain appreciable amounts, so that the supply previous to the one in use when the beer was stopped might have contained a fair amount.

B. obtained when working. CASE IX, communicated by Dr. Laing.—Q. R., an adult man, reported December 7th.

History.—Two months ago he had running at the eyes, vomiting which persisted, and he could scarcely see. He was dizzy when he stooped, or if he turned quickly he was inclined to fall. About the same time he felt his hands and feet itching. He had "pins and needles" in his fingers and toes, and pain in his heels and toes. Presently he began to feel weak in the legs; then he suffered from loss of memory in a very marked degree. Although a confirmed toper, he had never suffered from vomiting or loss of memory before. He also had diarrhœa. He consulted Dr. Laing about a small abscess on the eyebrow, not on account of the above symptoms. Up to the last fourteen days he has drunk a gallon of beer a day.

Anamnesis.—At the present time, in addition to these symptoms and signs, he has the following: His face and arms are deeply bronzed on a congested ground. He has a papular eruption on the arms, and a dark pigmentation on the side of the nose and over the eyebrow.

Dr. Laing has been informed by one man that when on the "spree" he had drunk as much as 5 gallons of beer a day. Many of the above symptoms are alcoholic, or have been recognised in cases of alcoholism. Perhaps the most striking features are the mental affection and the pigmentation.

The following cases have been obtained by Dr. McCleary, at the Chorlton Union Infirmary, by the kindness of Dr. Orchard and of the resident staff:

A. CASE X.—M. B., aged 36, admitted November 27th, was seen December 7th by Dr. McCleary.

History.—The patient was confined on September 20th. For a month before confinement she had slight cough. No other symptoms appeared till one week after confinement, when her eyes began to run and her legs felt weak. A fortnight after confinement she began to suffer from vomiting in the morning before getting up. About this time she lost her appetite, which had previously been good. Three weeks after confinement she began to have a feeling of "pins and needles" in the fingers, and three or four days later had similar sensations in feet. The legs and arms became gradually weaker. A month after confinement she completely lost power in the legs below the knees, and by November 24th she had become unable to raise her arms in any way. She drank 3 gills of beer daily from one public-house.

Present Condition.—Slight lachrymation. Marked weakness of arms and legs, and some wasting of extensor muscles of both limbs. Knee-jerks absent; tactile sensation in hands and feet slightly impaired. Marked tenderness in both calves; walks with difficulty and soon tires; cannot lift her toes well from ground. Complains of burning sensation along outer borders of feet. The tongue was smooth, white, with a silvery appearance. The pulse, temperature, and respiration were normal.

This case is interesting as giving a fortnight from the comment of drinking to the onset of symptoms, about the same interval as was found in Case III.

B. CASE XI.—U. V., a man aged 42, was admitted on November 24th, and seen by Dr. McCleary on December 8th.

History.—Illness began four weeks ago, but for the last twelve months he had suffered from "rheumatic pains" in the legs, and was in Ancoats Hospital for these pains for three months. He came out six weeks ago, and a fortnight later his eyes began to run and his feet to burn.

Present Condition.—Partial loss of power in legs and arms, tenderness of calves; soles of feet erythematous and scaly, and sweat freely. Hands also scaly, and palms sweat freely. Knee-jerk slightly impaired; tongue white and furred. Urine, specific gravity 1025, acid, no albumen.

B. CASE XII.—X. Y., a man aged 58, was admitted on November 14th.

History.—Illness began eight weeks ago with tingling in feet. He was a teetotaller till last August Bank Holiday, since when he has been a heavy beer drinker.

Condition on December 8th.—Loss of power in extensors of hands and feet; burning sensation in feet, and pain; tingling in hands; tenderness in calves. Dark yellow pigmentation all over trunk and face, most marked in legs. Feet very scaly, knees and elbows also scaly; knee-jerk lost; eyes run water; fair appetite; tongue slightly furred and very tremulous. Urine, specific gravity 1010, acid, no albumen

Two beers **B.** Case xiii.—Z. Y., a man aged 38, was admitted on November 28th.

History.—He began to be ill last June. The first symptom was loss of power in the legs, followed by burning sensation in the feet. Drank 1 pint of 4d. beer daily from two places

Condition on December 8th.—Partial loss of power in legs and arms; unable to walk. Impaired tactile sensation in the hands and feet. Knee-jerk lost. Lachrymation. Tongue silvery, slightly furred; tenderness in calves; erythema in soles of both feet. The whole body is slightly pigmented; a dirty yellow pigmentation is fairly well marked on the legs. The pulse, temperature, and respiration are normal. Urine, specific gravity 1010, acid, no albumen.

A. Case xiv.—Case recorded by Dr. Williamson in the British Medical Journal of December 1st. Having seen Dr. Williamson's case, and ascertained the particular public-house, we procured a sample of the stout which his patient was in the habit of drinking. The stout gave well marked arsenical reactions.

B. Case xv.—A. N., a woman aged 51. For this case I am indebted to Dr. R. G. McGowan.

History.—The patient had drunk heavily of beer for two or three years, consuming from 2 to 3 quarts daily. In the early part of September, 1900, she began to be troubled with vomiting after drinking. Towards the middle of September her feet and legs began to swell; her sleep was disturbed, and she always felt tired. On October 2nd Dr. McGowan was called in. The patient had a bright red, discrete, papular rash on the legs, arms, and chest, with other symptoms not distinctive; there was a slight trace of albumen in the urine. On October 7th she complained of giddiness, and had to be helped downstairs On October 10th mental symptoms developed. She had slight loss of memory, and failed to recognise friends. On October 12th Dr. McCleary saw the case, on account of suspicion that the case might be one of scarlet fever. Dr. McCleary suggested that the case was toxic. On October 15th the mental symptoms had increased almost to dementia; there was loss of power in the legs; the knee-jerks were diminished; there was no pain in the legs on pressure. On October 17th the knee jerks were lost. All stimulants were stopped at the beginning of attendance, and the patient seemed to improve, but from October 17th she grew rapidly worse, bronchitis supervened, and she died on October 31st. The diagnosis ultimately arrived was peripheral neuritis.

In the above case there is nothing except the swift course of a fresh set of symptoms, and the occurrence of extensive erythema to distinguish it from alcoholic neuritis. Dr. McGowan has been more fortunate in his other cases, but he believes the above to be a case—not the most typical—of arsenical poisoning.

It is needless to multiply instances further. Any number can be traced at once, either directly to a named beer or stout or else to a public-house where only a particular beer is sold, which we have ascertained, and with absolutely insignificant exceptions (if any) these have come from brewers known to have used the one sugar containing arsenic. The great majority derive from breweries, the beer or stout from which, obtained at public-houses on or since November 30th, have been proved to contain arsenic. This appears to prove that the overwhelming majority of these recent cases, even when they most closely simulate "alcoholic neuritis," have in reality been of arsenical origin.

I will now return to the brief description of the cases which I proposed to give and which is compounded of my own observations and of the full descriptions of their experience generously sent in by busy men.

Summary of Symptoms.

In the slighter cases the illness appears to begin with tingling and numbness in the fingers and toes. The muscles waste, and partly from want of power, partly from defective sensation, the hands become useless except for the most ordinary purposes. The extensors of the legs and feet are invaded, and a peculiar ataxic gait is produced, the patient rolling slightly from side to side as he walks.

In the cases which I have seen at the union infirmaries, gastric symptoms have been notable by their absence, and the physicians have noted the excellent appetite which the patients have shown. I have not seen acute irritation of the conjunctiva in any case in the union infirmaries, yet of two cases which I have seen, in one sent to me by Dr. Fox, of Rochdale Road, the patient, besides general vivid scarlet patches, had marked irritation of the conjunctiva. The absence of gastric symptoms and of conjunctival irritation are especially remarked upon by Dr. H. G. Brooke, the eminent dermatologist, as being a general feature of the cases seen by him at the Skin Hospital. The cases at the union infirmaries, however, show a general peculiar but unmistakable watery glistening of the eye.

As regards gastric symptoms, again, the observations of a number of practitioners show that gastric symptoms were not infrequent at the commencement of their cases, and there is good reason to believe that a falling off in the sale of some beers had already taken place in October on account of the gastric symptoms which they caused. It is difficult to offer any satisfactory reason why gastric symptoms should have been so slightly experienced by the great majority of the patients taken into the union infirmaries.

It is suggested that a considerable proportion of these cases are chronic soakers, and would take no note of a slight gastric attack. Further, it is not improbable that the gastritis from which many of them must suffer would protect the stomach against any violent reaction to a moderate degree of stimulation. At all events, it is certain that the sensory disturbances of the hands and feet followed by paresis, and in a certain proportion by complete paralysis, were the first symptoms noted in a very large proportion of the cases. Many cases suffered at a comparatively early stage from dropped wrist and dropped big toe.

In nearly all the cases which I saw there was marked wasting of the interossei, and the hollow spaces between the metacarpal bones formed in some instances a singular contrast to the plump digits. The abductor indicis is almost invariably wasted. There is in a considerable proportion of the cases tenderness to pressure in the muscles of the calf.

In not a few cases there was redness, slight swelling, and great tenderness along the outer border of the sole and in the ball of the foot (erythromelalgia). The tenderness is often recorded alone, or pain and swelling without the vivid redness observed in other cases, and in some few instances the palm of the hand was noted as being tender. Perhaps this may have to do with the hyperkeratosis of the palms of the hands and soles of the feet noted by Dr. H. G. Brooke and other observers.

Cutaneous eruptions have been frequently observed though I have seen but few. They have been mostly erythemas, but papular eruptions, urticarias, and bullæ have also been observed. I have seen one case covered with bright scarlet patches half the size of a threepenny piece, and eczematous and psoriasis-like eruptions are noted by different observers. In one case with bullæ on the legs and a papular eruption on the arms, I was informed that the latter eruption had appeared three weeks after the patient came under treatment in the Withington Union Infirmary—treatment which included cessation of beer.

Statistics of Symptoms.

Out of 54 sets of observations only 6 record the absence of cutaneous eruptions.

Out of the same number, tenderness of the calf on pressure fails to be observed only in 5 instances.

Pain, swelling, and tenderness of the foot (erythromalalgia) were observed by 34, while only by eight did any affection of the sole fail to be observed.

Paralysis or paresis was noted by 48, and muscular wasting by 45 observers. Paræsthesia and paralgesia were frequently observed.

Another observation made by several medical men is the increase in recent months in the number of cases of herpes zoster.

Pigmentation of the skin has very frequently been observed, and can be seen in many cases in the union infirmaries, varying from golden-yellow patches on the face, chest, and feet through bronzing always more extensive to a deep mulatto pigmentation covering the front of the trunk and recalling Addison's disease.

Pigmentation has been noted by 40 out of 54 observers. A fair number present a picture like Addison's disease, resembling mulattoes.

Hyperidrosis of the hands and feet was a very marked feature of some of the Union cases, and two observers spontaneously call special attention to it.

Desquamation is not uncommon, and two observers spontaneously direct attention to it.

Œdema is mentioned by one observer, and is of frequent occurrence.

Several medical practitioners spontaneously drew attention to loss of memory and to the occurrence of delusions. This may be taken to imply that these were frequent phenomena. My friend, Dr. James Laing, has drawn my attention to the frequent occurrence of mental impairment, and especially to loss of memory, which has been very well marked even in chronic soakers, in whom this feature might not have been expected to appear so striking.

Major Ross's suggestion that beri-beri may prove to be in large measure a form of arsenical poisoning is supported by the fact that beri-beri is endemic near the tin mines at Singapore as pointed out by Dr. E. S. Reynolds, and amongst the tin miners of the Malay Archipelago as pointed out by Dr. A. W. Sinclair in his paper to the British Medical Association at Leeds in 1889.

LIVERPOOL.

The epidemic of arsenical poisoning has every appearance of subsiding, as only 8 new cases have been admitted to the Mill Road Infirmary in the last week, mostly of a mild type. Great activity has been displayed by the city health authorities in withdrawing all suspected beer.

SALFORD.

Dr. Charles H. Tattersall, Medical Officer of Health, Salford, writes: My attention has been called to the fact that in the Notes on the Arsenical Poisoning Cases in Salford, published in the British Medical Journal of December 1st, I had in no way acknowledged the intimation stated to have been given me by Dr. Kelynack as to the presence of arsenic in inverted sugar.

I was unaware until to-day that the verbal intimation had been left at my office, although I knew Dr. Kelynack had called on me on the 23rd ult., when he failed to see me, as I was absent pursuing the inquiries which resulted from Professor Delépine's discovery on the 22nd of the presence of arsenic in a sample of glucose.

Although Dr. Kelynack's information reached me too late to be of use, I would have acknowledged the trouble he had taken to inform me what Mr. Kirkby had found had I been acquainted with the nature of the statement he had made to my clerk in my absence.

DARLASTON, SOUTH STAFFORDSHIRE.

Dr. Vincent J. Magrane writes under date December 11th: Since writing my previous note in the British Medical Journal of December 8th, page 1684, one of the brewers in the neighbourhood who owned two of the houses from which some of my patients drew their supply of beer, has had some analysed, and, finding arsenic present, has had 12,000 gallons destroyed. He has published this fact in the local press. I may add that I have not had any fresh cases during the last fortnight, thus proving that the scare has had a beneficial effect in inducing brewers to recall and destroy their ales.

The Detection of Arsenic in Beer.

Mr. Charles Estcourt, F.C.S., Public Analyst to the City of Manchester, writes: There is no doubt that substances enter into the composition of modern beer which interfere with the usual methods of analysis for the detection of arsenic. This must have forcibly struck every chemist who has analysed beer for the presence of arsenic, as very many have, in beers brewed from arsenical glucose, and failed to detect it.

Two of the nostrums used in the brewing of modern ales are finings, which are "cut" with sulphurous acid, and bisulphites of lime and magnesia, etc. These are both used as preservatives either in washing the barrels or by adding direct to the beer. If chemists had been acquainted with the presence of these in beer, much less difficulty would have been felt in dealing with arsenical beer.

Both these compounds will prevent the discovery of arsenic in beer by the "Marsh" test, and by the "Reinsch" also, for unless in the "Reinsch" test the beer is boiled some time with acid before putting in the copper, the sulphurous acid in the beer may produce the blackening.

Beers brewed from malt, hops, and glucose may be used direct in the "Marsh" apparatus, and if arsenic is present it will be detected. I have tried the experiment with beer before racking when sulphurous acid had not been added.

Thus it is not organic matter alone which makes arsenic in beer so difficult of detection. This I proved by taking a beer absolutely free and adding to it a known quantity of arsenious acid. In the Marsh apparatus I got out practically all I had introduced. To another portion of the same beer, with arsenic in such proportion as gave a large deposit in the heated tube, I added a very small quantity of a bisulphite of calcium, and got no deposit of arsenic on the heated tube, only sulphur appearing there. The arsenic was obtained from the flame at the end of the tube when received on porcelain.

The difficulty I had in connection with the twelve samples of Manchester beer is now explained. I had to do the samples in a day. I did take twelve working hours, and knowing nothing of the presence of sulphite I found no arsenic. I may say I had only about eleven ounces per sample, and in the small quantities I used for experiments the trace of arsenic was probably lost in the preparation of the beer for the Marsh test.

I may premise that I tried a series of experiments with the original beer which did not succeed in the small quantities I was compelled to use. Any test to succeed must deal with not less than 100 c.cm., and this should be charred only to intumescence with acid, then diluted and filtered, and the filtrate evaporated. I did this process in flasks, but found the medical officer here was doing the process in porcelain basins, which I now adopt. If one omits to evaporate the filtrate, sulphurous acid may easily be present (carbonaceous matter and sulphuric acid) and spoil the experiment.

Mr. F. Wallis Stoddart, F.I.C., F.C.S., Public Analyst, Bristol, writes: The various accounts of poisoning with arsenical beer that have lately appeared in the columns of the British Medical Journal contain no reference to the fact that the arsenic present in crude sulphuric acid, and presumably also in glucose manufactured therefrom, exists largely, if not entirely, in the higher state of oxidation as arsenic acid. It would be of great interest if those of your correspondents who have had an opportunity of examining the suspected beer and brewing materials would state whether the methods used for analysis were such as would determine the whole of the arsenic in whichever form it may have been present. It is well known that processes which satisfactorily separate all arsenic present as arsenious acid are not equally successful with arsenic acid: and failure to recognise the latter would, of course, furnish a reasonable explanation of one of the most perplexing features of the outbreak, namely, the minuteness of the doses credited with the production of such serious results. The discrepancies which occur in the published records of cases, and the not unimportant points of difference between those records as a whole and the textbook descriptions of chronic arsenical poisoning might also find an explanation in some specific action of arsenic acid, the toxicology of which appears to be by no means thoroughly worked out.

CONTRACT MEDICAL PRACTICE.

Club Patients and the Wage Limit.

The Portsmouth *Evening News* of November 28th gave a report of the initiation of Messrs. J. H. A. Majendie, M.P., R. Lucas, M.P., H. K. Pink, ex-Mayor, and Councillor E. S. Springings as financial members of Court "St. Ives" (8,741) A.O.F., and we have received a letter from a correspondent in Portsmouth complaining of such an abuse of the club system. "Surely," he writes, "this is a *reductio ad absurdum* of the club system, when men of wealth and position can command the service of the club doctor for 3s. 6d. per annum. Had these gentlemen been elected honorary members, as distinguished from financial, no adverse criticism could be made."

There is reason to believe that this is not an isolated case, and that in many instances throughout the country men like the above have been elected as financial members of friendly societies.

It is useless to argue that such members would not be likely to ask for the services of the club doctor. The obvious answer is, Why then do they become financial members? It is well known that all these societies admit honorary members, who pay an annual subscription, but are not entitled to club benefits, so that there is no reason to elect such men in any other capacity, unless there is some ultimate view of utilising the club benefits. It will be seen, therefore, that there is every reason in the world for medical men to insist on the principle of a wage limit. Nothing short of this will be of any good in protecting the profession from the exploitations of wealthy men who are not ashamed to avail themselves of a cheap medical service, which was never intended for any but working men, and those who in time of sickness might find it hard to pay the ordinary charges of a medical practitioner.

CONTRACT MEDICAL WORK IN GLASGOW AND WEST OF SCOTLAND.

M.B., C.M. writes: It seems the curse of contract work increases and threatens more and more to invade our profession. Long have the lower units been partially submerged by its flood, but it is not to stop there. The masses are the basis of all power in the State, and granted that they become thoroughly saturated with the advantages of co-operation, and with selfishness closing their eyes to any glimmering of doing unjustly, are they likely to confine their operations to their present victims? As an old worker in the lower ranks, and as a club doctor, I know that our ordinary fees, small as they are, are cut down 50 per cent. more for work done by contract. If English doctors are fighting against 3s. or 4s., why should the clubs, then, be able to point the finger at Scotland, and say medical attendance can be got there for 2s. 6d. per annum? This is a mighty saving for the people, and are the middle classes beyond the range of being inoculated with the same craving? At present they are in ignorance, but a little organisation may complete the system. If the principle of contract work is good enough for the general practitioner, is it not also good for the consultant? What I wish particularly to write about is to request the local Branch of the Association to call a meeting of the profession, not merely the members, but all practitioners, contract workers and others, and especially others, to consider the question and to appoint a committee with a paid secretary if considered necessary. This is a matter that deserves the consideration of those who do not hold clubs. For a club doctor to take an active part in such work means he is "spotted." I appeal to our professors not to be above taking an active part in this matter. We get plenty of good counsel before leaving our *alma mater*, but we have not long left it till we are face to face with the question of contract work, and of this we know nothing and so blunder. Many of us can look back to an initial blunder where a little instruction given before leaving our college would have enabled us steer a better course. Why should teachers be above anything which affects the professional welfare of their students? How can our teachers expect us to carry out all their instructions at a rate of 2s. 6d. a man per annum? What of good honest work and the dignity of the profession? We are an unorganised body dealing with an organised, and in the latter there is much ignorance, tyranny, and socialism, and much judging of medical men from its own lower level. I hope we will get assistance from those not yet affected. Even a discussion on the question would do good. Otherwise,

"Vain
The struggle, vain, against the coiling strain."

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

SUBSCRIPTIONS to the Association for 1900 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, DECEMBER 15TH, 1900.

AFTER-HISTORY OF APPLICANTS FOR INSURANCE.

IF it were possible to follow up the after-history of all applicants rejected for life insurance much valuable information would be gained and many useful lessons would be taught. One thing would certainly come out—that the medical examiner shares the common lot, and is not infallible. It must be the experience of most practitioners in medicine to have come across patients, who boasted that years ago they were rejected for life assurance, and yet here they are still alive, whereas very probably the man who condemned them has himself paid the debt to Nature. Now it will not be altogether fair to assume that because these rejected applicants are still alive, their rejection was a mistake. The mere fact of rejection for life assurance is sometimes a sufficient warning to the applicant to amend his life should his habits be at fault, or the detection and recognition of some flaw may lead the applicant to take precautions which any less powerful stimulus would have failed to bring about.

Still all medical examiners will admit that they are liable to err in two directions: they may reject lives which might safely have been taken at an advanced premium or even at the ordinary rate; and, on the other hand, they may recommend applicants for assurance who do not live to their expectation. The happy mean in this, as in most other affairs, is very difficult to attain, and hence such a paper as that by Dr. Macphail of Montreal, published at p. 1697, is of great value. His inquiry, however, must be checked by a careful consideration of the deaths occurring within the first ten years after assurance. A series of papers on the latter subject was recently read at a meeting of the Life Assurance Medical Officers' Association, and promises to give rise to a useful discussion. The more exactly the medical examiner can appraise the value of the life of the applicant the better will it be for all parties. In the first place, the company expects to be protected from loss, as far as possible, and on the other hand the applicant should not be inconsiderately rated up, still less rejected, without good reason.

The question of the rating up or rejecting an applicant with a family history of consumption is receiving much attention at the present time. The recognition of the infectious nature of the disease has discounted to a considerable extent its hereditary transmission. It is now pretty generally agreed that a bad family history may be largely neutralised by the personal record and examination of the applicant, especial attention being directed to a due proportion between height and weight. Though fully admitting that the doctrine of heredity in regard to consumption requires to be revised, we would urge that this should be accompanied by even greater strictness than in the past, in respect to the personal factor. Deaths from consumption bulk so largely in the early years after assurance, that any relaxations in one direction must be counterbalanced by increased vigilance in the other.

Dr. Albert H. Buck's report to the United States Life Insurance Company on the "Mortality of Rejected Risks" contains much valuable information. His tables show that over 43 per cent. of the mortality of rejected lives was due to consumption, as against 27 among the assured. This affords a signal example of the successful weeding out of undesirable lives. These tables also show the much greater importance of the personal predisposition than the inherited—429 applicants were rejected on personal grounds with 64 deaths, whereas there were 470 rejections for inherited predisposition with only 19 deaths.

But perhaps the cases rejected on account of some cardiac abnormality furnish the greatest number of surprises, and Dr. Macphail's remarks on this subject deserve careful attention. We cannot, however, agree with one of his conclusions, namely: "No matter how slight the organic lesion as revealed by unusual sounds or rhythm, it debars the applicant from acceptance." This is certainly not the case in this country, as for some years past applicants with cardiac murmurs, presumably of organic origin, have been accepted with an addition, and, so far as statistics are at present available, the result has been most encouraging, and has afforded ground for the belief that eventually a much larger number of heart cases may be accepted. Aortic regurgitation must of necessity be excluded, and for the present cases of mitral stenosis hardly come within assurance limits. On turning our attention to functional conditions of the heart, the so-called "assurance heart" will be found to be a constant cause of difficulty to the medical examiner, and it is particularly in these cases that a mature and well-balanced judgment is required.

Dr. John Munn, of the United States Life Insurance Company, has traced the life-history of rejected applicants in a series of cases. He found that 11 per cent. of those presenting themselves for examination had albuminuria attended with no discomfort or unpleasant symptoms, and with no discoverable cause for its existence. He followed up the cases—69 in all—and concludes his article as follows: "In view of the fact that 4 of the number have died, and that the general appearance of the majority of those who have been under observation for more than one year is gradually deteriorating, I am led to believe that albuminuria should be regarded as of grave significance."

Until our powers of differentiating between the several varieties of albuminuria have become more accurate there will, doubtless, be cases of albuminuria in the rejected list who will live up to their expectation, or even beyond it. Probably in the existing state of our knowledge it will be well to follow Dr. Macphail, and reject only those appli-

cants in whose urine albumen is detected by the ordinary tests, and not to have recourse to refined chemical methods.

Dr. Macphail is somewhat hard upon total abstainers. The amount of good which can be credited to the account of alcohol is so exceedingly small in comparison with the enormous amount of evil caused by it, that it hardly seems fair to state that "the case of a total abstainer should be searched into as diligently as the case of the habitual drinker." There are a few cases of reformed drunkards who have become total abstainers, but their number is too small to affect the general average, and experience leads us on this side of the Atlantic distinctly to the conclusion that, from a life assurance point of view, total abstainers have many points in their favour. Total abstainers may not present the same appearance of good condition as their alcoholic compeers, but they are preserved from many of the degenerative conditions met with in all except the most moderate drinkers, so that if the reformed drunkards are excluded, it will be found that total abstainers have an excellent record.

We have glanced at a few of the points contained in Dr. Macphail's paper, and we would conclude by expressing the hope that others may be induced to follow his example, as it is only by careful study of the after-history both of accepted and rejected lives that any advance in the science of life assurance can be expected.

THE CONSERVATIVE TREATMENT OF TUBERCULOUS JOINT DISEASE.

DURING the last decade a very decided change, almost a revolution, has taken place in regard to the surgical treatment of localised tuberculous disease in England. So quietly, with so little beating of drums has this revolution been accomplished that it might well be possible for a careful student of the literature of surgery to have overlooked it altogether. The final result, however, is that an excision of a joint by a classical method, as described in the textbooks of operative surgery, is, nowadays, an operation of comparative rarity.

On the introduction of modern methods into surgery the conservative treatment of tuberculous joint disease received a very considerable impulse. Excisions, erasions, the opening of abscess cavities in the ends of the long bones, and similar measures were substituted in many instances for amputation. Indeed, so far did the impulse carry, that the excision of an affected joint, the hip or the knee, was advocated and performed at the earliest possible moment, when symptoms were few and but little pronounced. Gradually, almost imperceptibly, the routine treatment has been considerably modified. It is largely owing to the work of the German surgeons that this change has been brought about. The first and decidedly the most valuable discovery, which has helped towards the change, is that of the influence of iodoform on the progress of tuberculous diseases. Since 1862, when Rhigini reported upon the pharmacology of iodoform, its use in surgery has been increasing. Mosetig-Moorhof was, we believe, the first to suggest its anti-tuberculous properties, and to advise and adopt its application to the wounds left after the excision of tuberculous joints. The method of injection of iodoform in suspension was practised first in the Vienna Clinic in the days of Billroth, and it is entirely owing to the persistent advocacy of his pupil, Professor Mikulicz, that the surgical world has become satisfied of its undoubted value. Of the manner in which iodoform acts it is not possible to speak with confidence. As explaining its influence Mikulicz and Lomry have shewn that it exerts a mild antiseptic action, which Binz has attributed to the influence of iodine in the nascent state. De Ruyter has attempted to show by his investigations that its action may consist in the strengthening of the protective materials contained in the cells and their products. Henle believes that the beneficial effect of iodoform may consist simply in its being able to excite inflammation to the requisite degree. It acts with sufficient vigour to bring about an energetic reaction involving the curative symptoms of hyperæmia, cell infiltration and cell proliferation, but not so strongly as to disturb the vital properties of the sound cells. But whatever the explanation may be, there can no longer be any doubt of the fact that a very decided influence is excited upon the course of a tuberculous joint disease or a tuberculous abscess cavity by the local application of iodoform.

The method of causing venous congestion in a limb affected with tubercle was introduced in 1892 by Bier of Kiel and has since been generally known by his name. It is a method which has never gained the confidence of English surgeons. Many years ago Rokitansky drew attention to the rarity of active phthisis in lungs in which there was passive congestion, although evidences of healed foci were often clearly recognisable. From this he concluded that congestion in the pulmonary circulation not only lessened the predisposition to tubercle, but was capable of bringing about the cure of those foci which were present before the commencement of the congestion. Bier, mindful of the observation of Rokitansky, produced a venous congestion in a limb affected with tubercle by applying an Esmarch's tube tourniquet with sufficient force to obstruct the venous outflow without impeding the arterial circulation. In practice the bandage is now applied intermittently, and when not in use efforts are made to dispel the considerable œdema which has resulted.

The method is one which entails a considerable patience and a very watchful care on the part of surgeons and nurses. Of its efficacy those who have overcome its difficulties speak in no uncertain terms. It is not always applicable; it is at times unsatisfactory, and must be abandoned, but the balance of evidence is very heavily in its favour.

Mikulicz employs these two methods in conjunction in the following manner: Venous congestion is produced in the limb and maintained until an opinion can be formed of its action in the individual case. If it cannot be borne it is abandoned. If, on the other hand, its beneficial influence has been proved, the iodoform treatment is superadded, and continued in such manner and to such length as may be necessary. Orthopædic appliances are carefully adjusted, and the most rigid attention is paid throughout to the general health and comfort.

The local treatment of tuberculous joint disease has naturally its limitations. There are certain cases in which, owing to the extent and severity of the local lesion, and its serious menace to the general health, it is necessary to rid the patient as speedily

as possible of the offending member, and amputation will be performed. In disease of the knee excision is still frequently performed, not because the disease cannot be controlled by local measures, but because the ultimate functional result is often better. With the exception of these cases, however, the very large majority of tuberculous joints can be safely and effectually treated by the more conservative methods.

In a volume recently published[1] a detailed analysis of the work done in the last few years in the Clinic at Breslau, under the direction of Professor Mikulicz, is given. There can be no doubt that the results here tabulated are better than anything which has been so far achieved elsewhere. The publication of this work, which is deserving of thoughtful consideration, will very probably result in a new and more vigorous interest being taken in the conservative treatment of tuberculous joint disease in this country.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

A somewhat remarkable change has come over the complexion of the controversy, which, owing to the action of the Board of Management, has arisen at this hospital. The inquiry arranged by the Board of Management was opened by Sir Ford North on December 10th. We may observe incidentally that it appears that the resolutions of the Board with regard to this inquiry were adopted on November 2nd, but were only communicated to the medical staff on December 6th. On the following day the medical staff drew up a statement in which they declined to recognise the "Court of Inquiry." First, because it had been constituted by one of the parties to the controversy only, namely, the Board. Secondly, because its scope was limited to the domestic condition of the hospital, and excluded the important topics of its constitution and management, and did not for instance include the taking of money from out-patients, the by-laws which permit the Finance Committee to have a quorum of one, nor the rules which exclude the honorary medical officers from all share in the management. And thirdly, because the Court of Inquiry which would profess to deal with "the diet of the patients, the condition, care, and treatment of the patients, and the nursing of the hospital," did not include a medical as well as a legal authority. The Secretary-Director now reports that "owing to the medical staff not being represented, the inquiry upon the matters referred to Sir Ford North was," on December 10th, "adjourned *sine die*." But the Secretary-Director states further that at this Court of Inquiry the Board of Management were represented by counsel (Mr. Alfred Lyttelton, Q.C., M.P., and Mr. Boydell Houghton), and that Mr. Alfred Lyttelton stated to Sir Ford North that he had already advised the Board of Management to agree to any adjournment which might be necessary to enable the medical staff to instruct counsel and to present their case. It would not be surprising, should the staff eventually consent to appear at the inquiry, that they may not consider it necessary to instruct counsel, and we should like to know whether the fees of the counsel instructed by the Board of Management are to come out of the funds of the hospital, and if so whether this is a proper way of disposing of such funds. But this by the way, for Mr. Lyttelton went on to say that he had advised the Board that the scope of the inquiry should be enlarged so as to include every matter of fact in controversy between the medical staff and the Board, and that the inquiry so enlarged might be made with the assistance, if thought expedient, of two assessors, one nominated by the Board of Management, and the other by the medical staff. Mr. Lyttelton further said that while in his view the question of the demand of the medical staff to be directly represented upon the Board of Management was not a proper subject for reference, yet that every matter of fact bearing on or relevant to it might be dealt with. These matters of fact would embrace the question of facility of inter-communication between the medical staff and the Board and the question of the past administration of the hospital, which would, of course, include the position, functions, and acts of the Secretary-Director. The position now appears to be exceedingly odd. The Board of Management having chosen Sir Ford North to hold an inquiry, engaged counsel to appear thereat, and counsel practically informed Sir Ford North that they had advised their clients that the reference was bad, and that the inquiry on such reference would be futile; whereupon Sir Ford North adjourned the inquiry *sine die*. We are not told the grounds on which counsel advised the Board that the question of the representation of the medical staff on the Board was not a proper subject for inquiry. The medical staff have declined to go into the inquiry on the conditions originally formulated by the Board of Management, and the governors, from whom the Board of Management derives its authority, have not been consulted before this expensive inquiry was instituted. It will not be surprising if the governors of the hospital now take the matter into their own hands and insist upon being represented at the inquiry at least by an assessor, or possibly of taking even stronger action, and we learn from a letter from Mr. Melvill Green published in the *Times* of December 13th, that he has already heard from one hundred governors that they are in favour of action being taken by the governors and independently of the Board of Management. As we go to press, we hear a rumour that the Board of Management is now prepared to agree to the principle that the medical staff should be adequately represented on the Board. If this rumour be true—and we have reason to believe it well founded—a solution of the difficulty ought to be easy; but the medical staff is not likely to leave this essential point an open question for the determination of a court of inquiry.

REFORMS IN THE ARMY MEDICAL SERVICE.

A Subcommittee of the Parliamentary Bills Committee of the British Medical Association is about to invite the medical schools and colleges to state the reasons why well-qualified candidates do not join the R.A.M.C. We suspect the main reasons will be found to be insufficient pay, long foreign service, and want of study leave. Meanwhile we note with satisfaction that in the latest edition of the Regulations for the Army Medical Service the surgeon-general of an army in the field is restored to his proper place on the staff of the general officer commanding-in-chief. He was removed from that position against the protests of those who take an enlightened interest in the health and well-being of the army. The experiences of the war in South Africa have hastened his restoration to a position from which he should never have been removed. What is still wanted is that his staff of a secretary and orderly officers, should also be restored. We also notice that steps in local rank in South Africa have at length been conceded to officers acting in administrative positions superior to their army rank. Two most important administrative reforms on which we have insisted have thus been accomplished. They are probably the prelude to others

[1] *Mikulicz's Conservative Treatment of Tubercular Joint Disease.* By Dr. A. Houb, Chief Assistant at the Surgical Clinic, Breslau. Translated by C. W. Cathcart, F.R.C.S., Senior Assistant-Surgeon Royal Infirmary, Edinburgh. Edinburgh: E. and S. Livingstone, 1900. (Royal 8vo. pp. 110, 4s. 6d.)

of a far-reaching kind, for Mr. Brodrick, in his speech last Tuesday, is reported to have said that the War Office was only waiting for the report of the Hospitals Commission in order to take prompt action on army medical matters: and "no preconceived ideas would prevent the taking of measures, however drastic, necessary to put the service on a "proper footing."

WAR OFFICE METHODS OF OBTAINING MILITARY MEDICAL OFFICERS.

We learn from a paragraph in the *North British Mail* that the authorities of Glasgow University have been applied to to secure for the further service of the Government a number of medical men to proceed to South Africa to replace others whose period of service in South Africa is about to expire. The pay promised is £1 a day, with a free passage out, an advance (as for a captain in the army) for field allowance, as well as rations while in the field, the use of a Government horse, and a soldier or civilian servant. The engagement is to be for twelve months, and an allowance of two months' full pay is promised on the satisfactory completion of the engagement and a free passage home. We have no fault to find with the pay and allowances. For newly-qualified men the conditions may be termed liberal, and it is probable that the number of men required will be procured. It is quite another matter, however, whether the country is by this provision getting full value for its money. No provision seems to be made as to the fitness for their work which these young medical men are likely to be called upon to do. The army surgeons, before taking up duties in military hospitals or in the field, are required to go through special courses of training at Netley and Aldershot. It seems therefore necessary to conclude that the men, about to proceed direct from their university training to take up duty in South Africa are insufficiently equipped. It may be said that they are only temporarily employed; but they will be entrusted with valuable lives and placed in responsible positions. We have in this country a large number of volunteer surgeons attached either to regiments or to the Volunteer Medical Staff Corps. These officers, although perhaps not adequately trained, are yet compelled to pass an examination, more or less searching, as to their duties with their regiments or with their corps. Many take a deep and intelligent interest in medical military work, and at personal sacrifice of time and money devote their best energies to the work in hand. Yet the War Office has never invited one of these volunteer medical officers, as volunteer officers, to join the army staff. The omission has been so often repeated that it can be no other than the result of a deliberate plan—a plan which can only imply a slight to volunteer surgeons. Those civilians who have gone to the front have not been required to show any previous training in medical military duties. It is believed that to employ volunteer surgeons the question of rank would come up, and therefore it is better to avoid the complication by neglecting the volunteer surgeon altogether. This is surely a short-sighted policy—a policy by which the country is not getting the best that is to be got for the money expended, and one which can only prevent medical men in civil life spending time and money in fitting themselves for military duties in the field or in military hospitals by joining the auxiliary forces. War Office methods are denounced generally by the country, but in no department is the line of policy it is pursuing likely to harm the efficiency of the army more than in the medical service.

ARSENIC IN BEER.

We have received the following report from Mr, Charles E. Cassal, F.I.C., Public Analyst, on samples of sulphuric acid, invert sugar, glucose, and beer, kindly placed at our disposal by Professor Delépine. The report refers to certain of the samples as to which Professor Delépine and Dr. Tattersall gave particulars in the BRITISH MEDICAL JOURNAL of December 1st.

Report on the Examination of Samples of Sulphuric Acid, Glucose, Invert Sugar, and Beer, received from the Editor of the BRITISH MEDICAL JOURNAL *on December 3rd, 1900.*

I certify that I have examined the samples above referred to for the presence of arsenic, and that the results I have obtained are as under stated:

No. 1. Sulphuric acid No. 42, obtained on November 23rd by Dr. Tattersall from firm F, supplying firm A. Arsenic present in considerable amount.

No. 2. Invert sugar No. 26 from firm A (brewery), J. D. Arsenic present in marked amount. Much less than in No. 1.

No. 3. Brewery A. First sample of glucose No. 23. Arsenic present in marked amount. Less than in No. 2.

No. 4. Glucose No. 47. Firm F supplying Brewery A. Sample obtained by Dr. Tattersall on November 23rd, 1900. S. D. Arsenic present in marked amount. About the same amount as in No. 2.

No. 4. Beer labelled Y from Brewery A. Arsenic present in marked amount.

The amount of each sample was far too small to admit of satisfactory results being obtained from attempts to estimate the quantity of arsenic present.

London, December 8th, 1900. CHARLES E. CASSAL, F.I.C.

We publish in another column an abstract of the report which Dr. Niven, Medical Officer of Health for Manchester, has presented to his authority, and also an addendum by him, giving a long series of clinical reports of a series of typical cases, which have been placed at his disposal by practitioners in Manchester. He shows that there has been a remarkable increase in the number of deaths attributed to peripheral neuritis, to alcoholism, and to cirrhosis of the liver in the first eleven months of 1900, as compared with the twelve months of 1899, but that an analysis of the figures for these periods, taken together with those of 1897 and 1898, gives grounds for supposing that the causes which have brought about the present epidemic operated also in 1898 and 1899.

THE LONDON COUNTY COUNCIL AND ARSENICAL BEER.

At the meeting of the London County Council last Tuesday, the Public Health Committee made the following satisfactory report to the Council:

The statements which have appeared in the press with respect to the occurrence of cases of peripheral neuritis in Manchester and the neighbourhood owing to the presence of arsenic in the beer sold in that city appear to have aroused considerable suspicion as to the beer sold in London, and we have therefore thought it desirable to obtain reports from the Medical Officer and the Chemist on the subject. The Medical Officer has caused inquiries to be made as to the number of persons suffering from peripheral neuritis who had been under treatment during the last few months at St. Bartholomew's, Guy's, and the London hospitals, at the Paddington, Chelsea, and Lewisham infirmaries, and at the Central Sick Asylum, and we are glad to be able to say that no increase has been observed at any of these institutions. The Chemist during the past seven days has purchased twenty samples of porter and low-priced ales at the brewery taps of some of the large and well-known breweries, as well as from some of the smaller and less-known firms. He has also obtained from two well-known manufacturers in London eight samples of brewers' glucose and saccharine. All the samples have been most carefully examined, with the result that they have been found to be free from arsenic. Attention having also been called to the fact that many makers of jams, marmalade, cheap confectionery, etc., use glucose in the manufacture of these preserves, seven samples have been taken, and on examination have also been found to be free from arsenic. Although not one of the thirty-five samples analysed has been found to contain any arsenic, we think that the examinations should be continued for the present, and we have instructed the Chemist accordingly, and will report the result after the Christmas recess.

The Londoner may therefore rejoice that his customary glass and his children's sweetmeats appear to be uncontaminated by arsenical adulteration.

THE DIFFICULT DUTIES OF PUBLIC VACCINATORS.

It is generally admitted that by the passing of the Vaccination Act of 1898 the public vaccinators of England and Wales have had duties of a much more onerous character thrown upon them than those they had to perform under previous regulations, and this has been found to be specially the case in those districts where any strong feeling against vaccination is prevalent, or even where a few strong opponents exist. It does not seem to be understood so generally as it ought to be that it has now become the duty of public vaccinators to afford all reasonable facility for children resident in their respective districts to be vaccinated, and this at the public expense, if their parents or guardians desire it to be done; and in order that this principle may be brought into practice they are required by the regulations under which they act to call (after having given due notice of their intention to do so) at the house where an unvaccinated infant is known to be, and to offer to vaccinate it if the person in charge of the same wishes for the operation or is willing to have it performed. When the last Act relating to vaccination came into force (January 1st, 1899) this visit to offer to vaccinate became one of the compulsory duties of public vaccinators, but notwithstanding it was often regarded as being made with an intention to vaccinate even if the parent or other person in charge of the child did not sanction the operation, and so firmly was this erroneous impression held in some districts that many public vaccinators were rudely treated, and some even threatened with violence when making their official visit. We have been informed of one case in which the public vaccinator on making one of these visits, though welcomed by the mother of the child whose vaccination was proposed, was immediately afterwards met by the father armed with a potato fork, which he threatened to use against his visitor if he did not at once retire. This is but one illustration of the many unpleasantnesses which are known to be associated with their unsolicited visits, and it is much to be regretted that opposition to vaccination should be supported by any who voluntarily accept a position of responsibility in reference to carrying out the requirements of statute law. We have received a copy of the *Cardigan Advertiser*, in which appears a report of a recent meeting of the Cardigan Board of Guardians, and the question of vaccination occupied much time, as a formal charge was preferred against Dr. Havard, a public vaccinator of the district, by Mr. Colby, one of the members of the Board, a magistrate and a well-known opponent of vaccination, of having vaccinated an infant without the consent of the father. This act was described by his accuser as illegal, because such consent had not been previously obtained. The case against Dr. Havard appeared at first to be of a somewhat grave character, as it was supported by the Clerk to the Board, who expressed his opinion that the consent of the father was necessary before the vaccination could be properly or legally performed. Although Dr. Havard had numerous supporters, who appeared to think no defence necessary, he claimed the right to reply to a charge so publicly made. He informed the Board that he vaccinated the child in the presence of the mother, who had consented to the operation; that he saw nothing of the child's father on the day of his visit, but that he was led to believe that the father was then away from home. He stated, further, that on the proper day for inspecting the child after its vaccination, his deputy called for this purpose, and was then graciously received by the mother, father, and grandfather of the child, and that all then appeared satisfied. Dr. Havard contended that he had strictly complied with the law when he vaccinated the child with the consent of the mother, and that no dissatisfaction in reference to the case would have cropped up if it had not been brought about by his accuser, Mr. Colby, who had been occupied unsuccessfully for years past in getting up charges against himself and other officers of the Board, and had done his utmost to obstruct the working of the Vaccination Act by holding meetings at which he encouraged parents to refuse vaccination, and even when acting as a magistrate in Petty Sessions had placed stumbling blocks in the way of public officials and thereby wasted much of their time. That Dr. Havard was in this case following a strictly legal course may be seen from the words of the Vaccination Act, 1898: "I (1) The period within which the parent or other person having the custody of a child shall cause the child to be vaccinated shall be six months from the birth of the child, etc." Since the mother of the child gave her consent, we fail to see how any charge of illegality could by any possibility be established against Dr. Havard, and it is a great satisfaction to find that on a division being called for to decide this question the majority of the guardians (18 to 4) took this view of the matter and acquitted Dr. Havard of the "unfounded charge" which had been made against him. The fees which he had claimed for the vaccination of the child in question, but which had been withheld pending the decision of the Board, were consequently ordered to be paid. We venture to think that Dr. Havard need not fear a repetition of any such unfounded charge, and we congratulate him on his successful defence.

THE MEDICAL EXAMINATIONS OF THE UNIVERSITY OF LONDON.

The pass list of the recent M.B. Examination of the University of London, published in the British Medical Journal of December 1st, shows that the somewhat anomalous state of things pointed out by Sir Samuel Wilks in the memorandum which was printed and discussed in the Journal of November 17th, continues. Six names appear in the first division, and 48 in the second, a proportion similar to that which has existed for some years in both the Intermediate and the Final M.B. pass lists. Unless we are to believe that the glory has departed from the recruits to the medical profession, and that the prevalent neuroses have rendered our youth decadent, the fault must lie either with the standard of the examination or the preparation given for it at the various medical schools. It does not appear that a similar falling off of good candidates has been noticed by other examining bodies, though the University of London is the only body that divides its pass list into two divisions; apparently therefore the fault lies in the examination. The papers at the recent M.B. Examination presented very fair questions for a pass examination, and after rejection of more than half the candidates, a larger proportion than one in eight should have been able to gain a place in the first division if its standard were not unreasonably high. As was pointed out in the previous article on this subject, it might be better to restrict the Honours examination to such candidates as have passed in the first division, and to lower the present standard of the first division so as to allow of the "good all-round" men attaining to it in a larger proportion than is the case at present.

A CIVIL SURGEON IN THE CHINA EXPEDITION.

Comparatively little has yet been heard of the individual experiences of medical men who took part in the recent fighting in China, beyond the interesting letter from Dr. Molyneux, of Cheefoo, which was published in the British Medical Journal of October 27th. Some details taken from a private letter by one who was in the thick of it may therefore be interesting. Dr. Wykeham Myers, of Formosa, several members of whose family were among the besieged at Pekin, when things began to assume a threatening aspect went to the front at Tientsin, and volunteered for

service with the forces. His patriotic offer was at once accepted, and with the local rank of Major he was attached to the British Field Hospital. He was present at the battles of Pitsang and Yangtsan, and took part in the march on Pekin. He was specially selected to bring back the wounded after each battle to the base at Tientsin—an honourable but most responsible duty. On one occasion, in the dead of night, one of the boats carrying 25 helpless wounded began to fill. She had to be beached, and the wounded were got out only just in time before she sank. For this service Dr. Wykeham Myers was told that he would be mentioned in despatches. Speaking of the work on the battlefield he says that though the fire was sometimes hot, the surgeons all thought more of the heat of the sun, which beat with merciless fierceness on them as they dressed the wounded in the low dhoolies. He says that the experience of surgeons in China fully confirms the statements of those in South Africa as to the "humanity" of modern rifles, the bullets from which pierce through viscera, including bladder and intestine, apparently with no bad results. Dr. Myers took part in the triumphal march through the Palace, and it may be mentioned that on that historical occasion Dr. Myers was able to establish a precedent which will doubtless be useful in the future to the medical profession when claims have to be made on its behalf for representation in public pageants and State ceremonies. In virtue of his local military rank Dr. Myers had a right to take his place in the march. He preferred, however, to go as representing the whole body of British civil practitioners, who had done good work on the field both in China and in South Africa. The Chief of the Staff, who was overwhelmed with applications for places, was inclined to refuse to allow Dr. Myers to go "on such sentimental grounds." But the General on being appealed to said that the request seemed to him a very sound and reasonable one, and this settled the matter. Accordingly Dr. Myers, representing the civil practitioners, marched in rank with Majors Watson, R.A.M.C., Manifold, I.M.S., and White, I.M.S., Lieutenant-Colonel Rainsford, R.A.M.C., being in front. We congratulate Dr. Wykeham Myers on the success of his public-spirited efforts for the proper recognition of his profession, and on the good service which he was able to render his country at a time of grievous difficulty and danger.

A FRENCH MEDICAL APOSTOLATE.

Professor Huchard, of Paris, appears to burn with a fine apostolic zeal for the propagation of French medical ideas *in partibus infidelium*. Last year, as was duly chronicled in the British Medical Journal, he undertook a mission to Scandinavia for the purpose of preaching the scientific gospel according to Laënnec, Claude Bernard, and Pasteur, "without whom modern medicine would not exist." His journey through Denmark and Sweden seems to have had something of the character of a royal progress. At any rate, he was encouraged by the welcome which he received to suggest that similar expeditions should become yearly "fixtures," and in the *Journal des Praticiens* of December 1st he announces that on his proposition another French mission to Scandinavia will probably be organised for next year under the auspices of the Société de Thérapeutique. Professor Huchard's own fancy turns towards the sweet but insanitary South; he feels drawn to Sicily, Greece and Turkey. He announces that next year, in May or more probably September, a "scientific caravan" will, on his initiative, be organised. He intends to place himself in communication with the medical societies of the countries which he proposes to visit, and he hopes that those societies will reciprocate his feelings of brotherly love. He emphasises the fact that he and his companions are not going as simple tourists, but as physicians in search of new things. He says he wishes, in the words of Montaigne, to rub and file his brains against those of others (*frotter et limer notre cervelle à celle d'aultruy*). This is an altogether praiseworthy desire, for there is no narrowness like that of the man who, if we may borrow a phrase from Oliver Wendell Holmes, thinks the axis of the earth sticks visibly out of the market-place of his native town. From this kind of intellectual provincialism our French neighbours, with all their openness of mind to ideas, are by no means free. Dr. Huchard's mission, therefore, can hardly fail to be fruitful of useful results.

THE CLIMATE OF ENGLAND.

Mr. W. H. Dines, B.A., in a paper read before the Royal Meteorological Society in November last, comes to the conclusion that "from a health point of view the English climate is one of the best in the world," and he therefore deprecates, unless in exceptional circumstances, the practice of leaving England with the view of finding a healthier climate. While it is probably true that many of the foreign health resorts have a higher death-rate than the country districts of England or even than London, we cannot agree that this fact expresses the whole truth. It may be said that practically the value of a winter climate for invalids is in proportion to the number of hours which can be spent out-of-doors without serious discomfort. Many English health resorts, even in this respect, are not adequately appreciated; for if the patient is sufficiently discriminating and persevering, he may, without leaving England, spend a large share of each winter's day in the open air, and there are a few specially favoured places where the amount of sunshine and mild weather is surprisingly large. The curves given in Mr. Dines's paper bring out many interesting points. Thus, while in 1890, 1891, 1892, and 1894, in which the summers were cold, the summer rise in the death-rate was delayed: in 1893, 1896, 1897, 1898, and 1899, in which the summers were hot, the summer death-rate was the highest in the year. Mr. Dines notes the curious rise in the death-rate always occurring early in January, which he cannot explain, though it must, he thinks, be due to extraneous and artificial causes. This cause, we may say, is not far to seek. During the week following Christmas Day the registration of deaths is delayed from obvious causes, and thus an artificial rise in the death-rate of the following week is created. With the statement that the general death-rate "in a locality into which there is much immigration is utterly fallacious" we entirely agree. More than half the total deaths that occur are at ages under 1 and over 60 years of age, and, as neither old people nor young children migrate to any great extent, the death-rate in rapidly-increasing districts is nearly always much understated. If health resorts which are so often found advertising ridiculously low death-rates would remember this fact, and publish the death-rate among infants and among the old, or publish a death-rate which is corrected for age and sex distribution, according to the Registrar-General's method for the thirty-three great towns, they would be supplying information in which medical men might have greater confidence than in the artificial death-rates with which they are now supplied.

THE PREVENTION OF MALARIA IN ITALY.

Professor Celli, who is a member of the Italian Parliament, will, it is said, present to the Chamber a drastic proposal for the suppression and prevention of malaria in Italy. He proposes to make punishable by law the neglect of landowners and all employers of labour to provide in malarial districts every means of fighting the fever. Signori Boselli and Sonnino have submitted to the President of the Chamber a proposal that the Minister of Finance be empowered to purchase a supply of quinine of the purest quality, which is to be sold to the public at a trifle over cost price, the margin being intended to protect the

Government against loss from fluctuations in the price of the raw material. It is calculated that the very slight profit on the sale would average £40,000 yearly, which would be devoted to the extermination of malaria. This proposal, it is said, is likely to meet with formidable opposition.

HOUSING LONDON WORKERS IN THE COUNTRY.

A step in the right direction was made by the London County Council at its last meeting, when it was resolved to purchase under the Housing Act of last session some 31 acres of land at Norbury in Surrey, on which it is proposed to build cottages for artisans. The site when completely developed will afford accommodation for about 5,800 persons. The plan for developing the estate prepared by the architect and tentatively approved by the Housing Committee provides for the erection of 551 single cottages of 3, 4, and 5 rooms each, and of 211 double cottages each containing tenements of 2 and 3 rooms. Two roads, 45 feet in width, planted with trees, are shown on the plan running east and west through the estate, and subsidiary roads, 40 feet in width, will also be formed. Provision for a small open space dividing the estate is also made. It is estimated that 195 persons can be housed per acre, and the average number of cottages per acre would be about 25. The rents proposed to be charged are approximately as follows: Single cottages—3 rooms, 7s. to 9s.; double cottages—3 rooms, 6s. 6d.; 2 rooms and small kitchen, 6s.; 4 rooms, 9s. 6d.; and 5 rooms, 11s. to 11s. 6d. The cost per acre of the site is about £600. We look to the provision of cottage dwellings for the working classes within easy reach of London by rail or tram as a valuable auxiliary to any real solution of the housing problem in central, eastern, and South London by inducing a centrifugal tendency, and thus by relieving the overcrowding and high rents in slumland.

"CLERICAL ERRORS."

It is often stated that clergymen are not business men, and that it would be as well if they were to confine their attention solely to ecclesiastical matters. Whether these statements are true or not, it certainly appears that they are at least warranted in connection with letters testimonial which are so often granted by clergymen to quack medicine proprietors and to unqualified practitioners. Religious and other papers are full of puffs endorsed by the clergy of various denominations as to the efficacy of more than one patent medicine or appliance which they assert can cure "all ills which flesh is heir to." An instance of this clerical puffing has just been brought to our notice. In the *Yorkshire Post* of December 7th appears a letter which is headed "The Spread of Cancer." It purports to be signed by "Ellis C. Mackie, Vicar," and is addressed from the "Vicarage, Glaisdale, Grosmont." In it the vicar desires to bring to the notice of the readers of the paper in question "the remarkable success which has attended the treatment of Mr. Edward Armstrong, one of my parishioners." He goes on to assert that "for thirty years he has been instrumental in bringing a complete cure to hundreds of people. No less than 31 cases has he treated on Lord Downe's estate here at Danby, and in all his experience he claims never to have had a failure. This year I can personally bear witness to three cases: one of cancer of the leg, cured; one on the arm, cured; and one near the eye, being at this moment successfully carried through." He continues: "It is a cure by plaster, and as such Mr. Armstrong makes no claim to cure cancer of the tongue or of any internal organ, but anything which may be reached by this external form of cure he undertakes with complete confidence of success. . . . . I send herewith a remarkable photograph of a cancer on the arm of his wife, which had been under treatment a few weeks, and which came away about a week after the photograph was taken." Whether this success was due to photography is not quite clear. We do not know the size of Lord Downe's estate, but it seems extraordinary that 31 cases of cancer should be found upon it, and of course we can only presume that, as usual with unqualified persons, any external lump or tumour, however benign, is instantly diagnosed as cancer and promptly plastered. That a clergyman, who is assumed to be a member of a learned profession, should thus aid and abet a practice which is bound to do more or less harm, even if only by false and incorrect diagnosis, without treatment, is not flattering to his cloth. The Vicar of Glaisdale would probably object to his parishioners receiving spiritual counsel from a doctor, and we venture to remind him that in matters medical the advice of those outside the medical profession can be only described as "the blind leading the blind." The Editor of the *Yorkshire Post* adds the following judicious footnote to the letter as it appeared in the columns of that newspaper: "We suspect what Mr. Mackie describes as cancer has been something less malignant." It would be well if Mr. Mackie had sought the advice of some member of the profession before rushing into print to prove his judgment faulty and to announce his approval of the unorthodox.

STREET CRIES.

The first cases under the new by-law of the Middlesex County Council prohibiting street cries were heard at the West London Police-court. According to the report in the *Times* the offences were alleged to have been committed on Sunday, November 18th, by the defendants who were costermongers, and consisted in their almost continuous shouting throughout the day in the streets of Acton, giving rise to an intolerable nuisance. The magistrate (Mr. Rose) said the by-law had been passed to stop such nuisances, and would have to be severely administered if the annoyance continued. As it was a new law mere payment of costs would be sufficient. He suggested that the costermongers should make the law known to their companions. People of the costermonger class, and others living in populous noisy districts are said to become afflicted—or perhaps it should be said blessed—with an acquired dulness of hearing. It is quite possible that the defendants and their companions are unaware of the degree of annoyance to which they subject the inhabitants of quieter districts who have not been gradually rendered immune to discordant sounds. The provisions of the new by-law will perhaps lead them to accept the fact that their unnecessary cries are an intense annoyance to quiet people who have probably been working hard and need rest, more especially on the "day of rest," and are a serious detriment to invalids, whose sense of hearing is often painfully acute.

DEATH OF AN INFANT FROM OPIUM.

An inquest was held at Coventry recently into the circumstances attending the death of a child 4 months old, who, as it is reported in the *Coventry Herald*, having been suffering from bronchitis for three weeks, was given by its mother a dose of a cough mixture obtained from a chemist. The chemist had not given her any directions as to the employment of the medicine. The dose was only half a teaspoonful, but the child died shortly thereafter, according to the evidence, as the result of opium poisoning. It appears that Dr. Harman Brown was attending the father, and noticing that the infant was ill, advised the mother to get a notice from the relieving officer, and gave her a bottle of medicine for the child. According to the statement of the mother he had only seen the child twice, and hence she had purchased the cough mixture from the chemist; but Dr. Harman Brown said that he had visited the child on a great many occasions, and on the last he had told the mother that the child was so much better that he would not call again. The coroner pointed out that in the first instance it was an act of kindness on

the part of Dr. Brown to attend the child, and directed the jury to credit his statement, and not to believe all the mother had said. The jury returned a verdict in accordance with the medical testimony, and added a rider fully exonerating Dr. Harman Brown from all blame. This is the second case of opium poisoning in an infant that has been reported in our columns during the last fortnight. There seems to be some urgent need for measures to prevent the repetition of such occurrences. If a child dies as the result of counter practice, so called, or as the result of neighbourly officiousness, it is surely clear that someone is gravely in fault, and someone should be punished.

THE PUFFING OF DRUGS.

WE are glad to note that the Faculty of Medicine of the University of Edinburgh has, in connection with a recent case, formally expressed its disapproval of the publication in trade advertisements of laudatory certificates from its graduates. Some of the university authorities have in the past adopted an attitude of *non possumus* in connection with complaints of such conduct on the part of their graduates, but we are happy to believe that these bodies, which occupy a very important position in connection with medical education, realise the desirability of enforcing upon their graduates a standard of professional conduct at least equal to that required by the Royal Colleges and similar licensing corporations.

THE EQUIVALENCE OF INTOXICATION.

THE relative intoxicating power of wine and beer has recently been discussed in the public press, and *Truth* committed itself to the opinion that it takes more beer than wine to make a man drunk, and that if the sale of spirits were prohibited in England there would be very little drunkenness. Clearly an important point in settling this question is the degree of dilution of the alcohol, whether with soda water or with an infusion of hop. In this relation the following figures, adapted from the *Allgemeine Zeitung* for July 19th, may be of interest. They show the consumption of wine, beer, and whisky per head in pints for Europe and America during 1898. They give also an estimate of the equivalent in pure alcohol for each of the beverages. The strongest beer contains about 9 per cent. of alcohol and the weakest about 2 per cent.; therefore the average ratio is taken as 5.5 per cent. Sherry contains about 27 per cent. of alcohol, while champagne and the Rhine wines contain about 7 per cent.; the average is therefore taken as 17 per cent. Whisky contains between 50 and 60 per cent. of alcohol; its average is therefore taken as 55 per cent.

Yearly Consumption per Capita.

	Wine in Pints.	Alcohol Equivalent in oz.	Beer in Pints.	Alcohol Equivalent in oz.	Whisky in Pints.	Alcohol Equivalent in oz.	Total oz. of Alcohol.
Great Britain ...	3¼	11	253½	278	8	88	377
Germany... ...	6	20	215	247½	14½	159½	427
France	19½	66	43½	48	16½	181½	295½
Russia	—	—	7	8	8½	91½	—
Switzerland ...	11½	39	116½	128	10½	115½	282½
Netherlands ...	—	—	—	—	14	154	—
Norway	—	—	37⅔	41	4⅔	49⅔	—
Sweden	—	—	—	—	14	154	—
Denmark... ...	—	—	165	181½	26	286	—
Belgium	—	—	362	398	15	165	—
United States ...	1¾	6	103	113	7	77	196

From this it will be seen that if in Great Britain the sale of spirits were prohibited, less than 25 per cent. alone of the immediate cause of drunkenness would thereby be abolished; or, in other words, our hypothetical man would have to drink about 80 extra pints only of beer in the year to achieve the same toxic result—that is, less than 2 additional pints in each week. In regard to alcoholic strength a pint of beer is equivalent to about 3 wineglassfuls of wine and 1 wineglassful of whisky. So if a man takes a wineglassful of whisky and mixes it with 18 ounces of soda water, he is drinking beer for all intoxicating purposes. It may be taken as an axiom, except perhaps for the lightest German beer, that the limit of drunkenness is, for the average man, well within his power of imbibing fluid. The limit of drunkenness is, however, a personal equation. But if a man be not temperately inclined he ingests alcoholic fluid until the desired effect is produced, and even if he be so inclined the standard of his temperance is often gauged at a little less than his power of resisting the toxic effect of the alcohol element. But for the real toper, be it on beer, whisky, or wine, the goal of intoxication is eventually reached, and even if spirits were abolished as our contemporary suggests, the goal would still be reached on the principle of the old wayside sign, "Drunk for a penny, dead drunk for twopence." While giving our contemporary every credit of desiring abstract temperance, it seems that a theory according to which any man would rarely be drunk if limited to wine and beer is not without risk. It is practically certain that not many men in England will get delirium tremens during the first year of the new century from drinking champagne, but we should be devoutly thankful if the man in the street would drink less beer than he did during the last year of the old century.

THE CONSTITUTION COMMITTEE.

THE third meeting of the Constitution Committee appointed at the annual meeting of the British Medical Association at Ipswich was held on December 7th. Mr. Edmund Owen was in the chair. Considerable progress was made, and a subcommittee was appointed to draw up a report on the proceedings of the Committee to date. It was arranged that the next meeting of the Committee should be held on January 9th.

PROFESSOR THOMAS R. FRASER, Dean of the Faculty of Medicine of the University of Edinburgh, has been elected President of the Royal College of Physicians of Edinburgh.

THE Friday evening meetings of the Royal Institution of Great Britain will commence on January 18th, 1901, when Professor Dewar will give a lecture on Gases at the Beginning and End of the Century.

IN consequence of the resignation of Dr. the Hon. Alan Herbert, fresh appointments have been made to the staff of the Hertford British Hospital, Paris, by the election of Dr. Leonard Robinson and Dr. D. E. Anderson as Visiting Physicians.

THE whole of the debt on the Royal Infirmary, Aberdeen, has been cleared off by the magnificent donation of £25,000 from Lord Mount Stephen. Lord Mount Stephen was born at Dufftown, and in his youth, before he went to Canada to become a millionaire, was himself, it is stated, on one occasion an inmate of the infirmary.

WE are requested to state that the Committee of the Neale Testimonial Fund have decided that the testimonial to the late Dr. Neale shall consist of (1) a life-size portrait in oils, by Mr. T. B. Kennington, the painter of the excellent memorial portrait of the late Professor Hopkinson, and (2) four handsome silver bowls, suitably inscribed, to be presented to the four members of Dr. Neale's family. As soon as possible a list of subscribers and a balance-sheet will be published.

MEDICAL NOTES IN PARLIAMENT.

[From our Lobby Correspondent.]

The South African Hospitals Commission.—The First Lord of the Treasury announced on Monday, in reply to a question, that he hoped that the Commission would be in a position to present their report early in the ensuing year. There are many rumours about the character of the report, and well-informed members hint that it will be more or less of a compromise.

Invalid Soldiers returning from the seat of war appear in some instances to have had inferior and improper accommodation, and Lord Carrington raised quite an animated debate upon the subject in the House of Lords on Monday night. The practice of the War Office has been to send back the men as third-class passengers, and in some cases there has no doubt been hardship. This third class is not really "steerage," and each man had a separate bunk. In cases of decided invalidism the rule should always be as it has been promised to be in the future—second-class accommodation. As to the dietary, when the question was raised in the House of Commons the Secretary of State read out a most liberal diet sheet, but as Sir Walter Foster put it, there ought to be some officer with each detachment of invalids to see that the men receive the food promised and in a suitable form. The numerous cases which are coming home now every week should be carefully selected before they embark; and cases recovering from typhoid, as was remarked in the Commons, might in many instances be kept for their convalescence a longer time in South Africa. This was specially urged during the debates on the Supplementary Estimate, not only in the interest of the men themselves, on account of the occurrence of relapses during and after return, but also because of the possible danger of starting fresh epidemics of typhoid in this country.

Typhoid Fever among the Troops in South Africa.—In answer to Sir Walter Foster on Tuesday, the Financial Secretary to the War Office stated that there had been up to September 28th 15,655 cases of typhoid fever, that of these 3,642 had died and 9,128 had been sent home as invalids. These figures, when compared with the return up to June 29th, show that during the subsequent three months there were 2,598 cases and 468 deaths.

The Forces in South Africa.—The returns of the Forces in South Africa issued by Sir Evelyn Wood, A.G., and frequently quoted in the debates of this week, show that a total of 267,311 men, exclusive of officers, have been engaged in the war. On December 1st there were 210,293 in South Africa; up to November 30th there had been killed 3,018, wounded 13,886, died of disease or wounds or accidentally killed 7,786, and in hospitals in South Africa on October 2nd, 11,927. No fewer than 7,541 not invalids had returned to England, while 35,548 had returned as sick and wounded, including those who had died on the passage.

Camp Cooking in the British Army was the subject of a question by Captain Norton, who pointed out the defective state of camp cooking in the British army as compared with that existing in the German and American armies. He suggested the provision of a due number of trained cooks and courses of practical cooking for the Army Service Corps, so as to promote greater efficiency as regards ordinary diet and the preparation of emergency invalid diet from ordinary rations. It was stated in reply that reports had been called for as regards the cooking in South Africa, and that so far no reports had been received showing defective cooking, or that sickness was attributable to such a cause.

The Army Supplementary Estimate.—The vote for the sixteen millions asked for to meet the expenditure of the South African war was introduced by the new Secretary of State for War in a very clear, but somewhat depressing, speech. He was very candid with the House, and very careful not to hold out too rosy prospects as to the early termination of the war. Many points were discussed in the course of the debate on Tuesday, and among others the treatment of invalid soldiers and the general efficiency of the medical administration. Sir Walter Foster pointed out that the statistics showed that typhoid fever was still alarmingly prevalent among the forces in South Africa, and that there had been some 2,600 cases in the three months ending September 28th, and that while the mortality from the disease during the Bloemfontein outbreak had been stated by Lord Roberts to be 21 per cent., the death rate for the whole period of the war was over 23 per cent. There had therefore been at some places and at some periods a mortality much heavier than that at Bloemfontein. He urged the importance of having a sanitary corps attached to the Army Medical Department, as in Continental armies, to look after the sanitation of camps, which he believed from information given him had been too much neglected. The strength of the Army Medical Corps was also discussed, and an appeal made to the authorities to strengthen the Corps, and not to rely so much on the hazardous expedient of enrolling civil surgeons in large numbers in cases of national emergency. The Secretary of State remarked that he should be glad if the hon. member for Ilkeston could tell him how to get surgeons for the army, and then followed the retort that that was the business of the War Office, and that the member for Ilkeston "could not prescribe till he was called in." Later in the debate the Secretary for State for War, in promising attention to the points raised by Sir Walter Foster, said that he had once followed a prescription of his with regard to the Army Medical Service, and that it had not agreed with him politically. This was in reply to a remark by Mr. Labouchere, who said he had no doubt there might be a gratuitous consultation if the War Office wished it. Mr. Brodrick said further that when the report of the Hospitals Commission reached the War Office it would act promptly, and that no preconceived ideas would prevent the taking of measures necessary, however drastic, to put the service on a proper footing. There was no desire to prejudge the matter.

The Corporation Tax and the Royal Colleges.—Sl John Tuke called the attention of the House on Tuesday to the fact that the Royal Institutions of Civil Engineers had by a decision of the House of Lords been exempted from the payment of the Corporation Tax (1894), and asked whether the Royal Colleges of Physicians of London and Edinburgh could not claim similar treatment. He pointed out in his question the especial hardship of the case, as the Colleges played an important part in administering and regulating medical education and examination, in maintaining laboratories for original research, and from time to time in advising the Government. If the authorities insisted on the payment, there would be five years' arrears to be paid, and so a great strain thrown on the resources of the Colleges. The Chancellor of the Exchequer, in reply, gave no hope of the Crown not pressing its claims, which had been confirmed in the case of the College of Surgeons in the Court of Appeal. The two Colleges will therefore have to face the hardship of large inroad on their funds.

Poison in Beer.—The epidemic in Manchester and other places due to arsenic in beer brought up Sir Cuthbert Quilter, the pure beer champion, with a question on Tuesday. He wanted to know what action the Government intended to take in view of this poisoning of his favourite beverage. The First Lord of the Treasury, in reply, assured the House that the President of the Local Government Board had the matter under observation from the first. One of the medical inspectors of the Board had visited the places affected, and had been instructed to obtain all possible information from those who, in brewing or in other manufactures, use brewer's sugar, and as regards the action of local authorities for detecting arsenic and other substances in manufacture. The local authorities have also had a circular addressed to them recommending that analyses should be made of beer and articles of food in which glucose and similar substances are used.

DEATH CERTIFICATION:

DEFECTS OF THE PRESENT SYSTEM AND SUGGESTIONS FOR THEIR REMEDY.

IV.

VITIATED VITAL STATISTICS DUE TO NON-CERTIFICATION OR INADEQUATE MEDICAL CERTIFICATION.

WE may now sum up the various causes which operate to vitiate the vital statistics of the United Kingdom founding our remarks on the reports of the Registrar-General for England and Wales.

In the last year reported on by the Registrar-General, 1898, 91.9 per cent. of the total deaths occurring in England and Wales (507,541) were certified by registered medical practitioners; inquests were held respecting 6.2 per cent., while 1.9 per cent. were altogether uncertified. In connection with each of these groups serious vitiation of vital statistics occurs.

1. Even when medical practitioners have been in attendance prior to death, 4.2 out of the 91.9 per cent. of the total deaths above named were "so unsatisfactorily stated in the registers as to be useless for purposes of classification." This is due to the continued appearance in death certificates of such indefinite causes of death as dropsy, hæmatemesis, mortification, tumour, hæmorrhage, without further definition.

2. When we turn to deaths in respect of which inquests were held, matters are much more unsatisfactory. Probably in the majority—certainly in a large proportion—of such inquests medical evidence is given; "but except in cases where a *post-mortem* examination is stated in the coroner's certificate to have been made, it is impossible to ascertain whether or not medical evidence was given at the inquest, and, if given, what was the purport of that evidence." We heartily endorse the further remark of the Registrar-General "that the reliability of the national system of death registration should be seriously impaired by such means" (that is, without due statement in the verdict of the cause of death) "is much to be regretted." Thus, in 1898, out of 29,286 inquests, 4,873 causes of death were not sufficiently defined to be of value for classification.

3. The uncertified deaths in which no inquest was held numbered 10,441 in 1898, of which 7,940 were reported to the coroner and an informal inquiry was made by an unskilled officer, or an informal letter from a medical practitioner was accepted as satisfactory, while 2,501 were not reported to the coroner.

The total effect of the above three factors in disturbing the national vital statistics is very considerable. Even the inquiries made to a praiseworthy extent from the General Register Office when an unsatisfactory cause of death—for example, tumour, peritonitis, syncope—is returned, while serving an educational purpose and tending to secure increasingly accurate statistics, render for the time being comparisons with past years most difficult.

Thus some of the registered increase in the deaths from cancer is caused by transference from ill-defined headings to cancer as the result of letters sent out from the General Register Office, and a further portion to more accurate registration without the stimulus of these letters. A simple calculation will show that if a proportionate share in the reduction of mortality between 1867 and 1895 under the heading "deaths from indefinite causes," equal to that given to every other cause of death were given to cancer, the increase in the registered death-rate from this disease would have been from one-half to one-third less than it appears in the official tables. The registered increase of circulatory, respiratory, and renal diseases is explicable partially, if not entirely, to a similar transference from such headings as old age, syncope, dropsy, to headings which express the disease behind these symptoms or condition.

It is open to question whether it is justifiable to classify under the stated cause of death any death concerning which a medical certificate is not forthcoming. It would, we consider, be preferable to classify in a separate table all deaths not medically certified. A glance at Table P, on page xlviii of the Registrar-General's report for 1898, shows to what extent vitiation of vital statistics is caused by making any use of these returns for nosological purposes. The proper remedies for the present statistical chaos are to insist upon:

1. A full return of the cause of death from every coroner's inquiry;
2. A medical inquiry into every uncertified death; and
3. Direct transmission of medical certificates of death to the registrar, for which payment should be made.

Were these changes made an accurate return could in each instance be enforced.

STILLBIRTHS.

The evidence laid before the Select Committee as to the treatment of stillbirths (real or alleged) disclosed a state of things truly scandalous. It seems that the body of a stillborn child may legally be disposed of by burial or otherwise, without any record being kept of its birth, death, or burial. It may be burned or buried, or left unburied for that matter, anywhere so long as it does not constitute a nuisance. "The body is, so far as the law is concerned, treated as though it had never existed" (Report). No burial order is required even when the body is brought for burial in a public burying ground. All that is required is a declaration from a "qualified informant" that the child was not born alive. With that the burial ground authorities must be satisfied if there was no medical attendant and no coroner's inquest. If, then, it is desired to bury a liveborn child as a stillbirth, all that is necessary is a declaration by any old woman or anyone else who says she was present at the birth, and that the child was not born alive, and that there was no medical attendant. That is sufficient, we are told, for most undertakers, with whom practically the decision as to its sufficiency rests. Advantage is taken of this laxity of the law to a very large extent. The number of children buried as stillbirths is described as "enormous" and of these probably one-third to one-half, amounting to many thousands annually, are buried on no better testimony to the cause of death than that of a midwife, or other unskilled person. "Persons interested in hiding a crime would of course give such certificate, and a certificate from the mother of an illegitimate child would be regarded as sufficient authority for burial" (Report). It is obvious, therefore, that

> The facilities that exist for the disposal of bodies of children said to be stillborn without the production of scientific evidence of stillbirth afford opportunities for easily getting rid of the bodies of children who have lived and have met their deaths by foul means. *There is reason from the evidence, to think that a great number of cases of crime are concealed under statements that children are stillborn.*

In corroboration of this we might mention a case which came before a Bench of magistrates some years ago. It was proved that a woman who acted as midwife made a business of getting half-a-crown from the mothers of children alleged to be stillborn, and promising to get the bodies buried at the local cemetery; instead of doing so she threw them away, and they were found in different places. It was further proved that the superintendent of the cemetery kept no proper register of the burials of stillborn children, and took no trouble to obtain a proper declaration that the children were stillborn. The Chairman of the Bench said that, in the opinion of the Bench, the system adopted at the cemetery was "likely to promote the most serious crimes."

The Select Committee significantly observed that

> In the case of illegitimate children the fact that a stillbirth has not to be registered, coupled with the desire for secrecy, is an inducement to a certain class of midwives to ensure that the child be stillborn.

Finally, the Committee express themselves convinced that as a matter of fact the absence of any necessity for registration of stillbirths is *fraught with danger to child-life*, and accordingly they regard it as of the utmost importance that all stillbirths that have passed a certain period of gestation should be registered upon the production of satisfactory evidence. We are informed that an effort was made at the instance of the Coroners' Society to get a provision inserted in the Midwives Bill of last session forbidding burial authorities to accept any certificate of stillbirth, or to allow any stillborn child to be buried on the authority of any certificate, except that of a registered medical practitioner, or by order of the coroner in writing. The Home Office, while apparently sympathising with the object, found a difficulty in dealing in a Midwives Bill with what is really a branch of the burial law. The Bill did, indeed, contain a proviso that nothing in it should be construed as authorising a midwife to grant any certificate of

death or of stillbirth. The effect of this would be to leave the law exactly as it is.

When it comes to defining a stillbirth for the purpose of distinguishing it from a miscarriage, the Committee find there is no definition generally recognised either in England or in foreign countries, but they think that the term of seven months' gestation, as accepted in Germany and Denmark, affords a convenient starting point for registration.

It is a curious fact that there appears to be no definition in our law of the term "stillbirth." Some authorities maintain that it should be restricted to cases in which death has taken place in the womb some time before delivery, and should not be applied to cases in which death takes place during parturition, even though it may have taken place before the child is "born" in the legal sense. It is obvious, however, that the words "not born alive" used in the form of medical certificates issued by the Registrar-General must be taken in the strict legal sense, and therefore in connection with certification and registration the term stillbirth must include all cases in which death occurs during parturition.

One result of this alteration of the law would appear to be that every fœtus would have to be examined by a medical practitioner in order to answer the question "Had this fœtus passed the period of seven months?" It would not do to allow midwives and other unskilled persons to answer this, for that would reopen the very door which the law is intended to close to fraudulent misstatements. Clearly there is a difficulty here, which was foreseen by Dr. Ogle. If the burial is to be permitted without a medical certificate up to a certain period how is the registrar or the burial authority to be satisfied as to the period reached in any given case? On this ground Dr. Ogle declared the proposal impracticable. Leaving this difficulty to solve itself, the Select Committee considered that for all purposes of registration stillbirths should be treated as ordinary deaths, and only registered upon production of a certificate (1) from the medical attendant, or (2) from the public medical certifier, or (3) from the coroner after inquest.

CONCLUSION.

We must now conclude these observations on Death Certification. We have aimed at setting before our readers the most striking defects of the law, and discussing the remedies proposed, taking as our guide the report of the Select Committee of 1893. There is little to add to the topics discussed with the eminent witnesses who appeared before the Committee. Differences of opinion may exist as to some of their recommendations. But even a new Select Committee at the present day could hardly find any fresh topic or anything new to say about the old ones.

To sum up these very briefly, the reforms most needed are the following:

1. No death to be registered except on a certificate of the cause of death in the prescribed form given (*a*) by the registered medical practitioner in attendance during the last illness, or (*b*) by the coroner (1) after inquest, or (2) after investigation made in pursuance of his order by a registered medical practitioner.

2. All deaths not certified in the prescribed form by a registered medical practitioner in attendance during last illness to be reported forthwith to the coroner (*a*) by the medical attendant, where there is one; or, failing him (*b*) by any of the persons qualified to be informants of the death; or (*c*) by the registrar. A reasonable fee to be paid to the medical practitioner reporting a case to the coroner.

3. The certificates given by the medical attendant to be in a prescribed form, none other being admissible; and to certify the fact of death (verified by the certifier or by two neighbours), and also that death was due to disease, and not caused or accelerated by accident, poison, violence, or neglect. This certificate to be sent direct to the registrar by the medical attendant, and a reasonable fee to be paid for it.

4. "Attendance during last illness" to be defined as personal attendance on at least two occasions, one of which has been within eight days before the death.

5. In all cases where the prescribed certificate by a registered medical practitioner is not forthcoming, the coroner to have discretionary power to order and pay for a medical inspection of the dead body and report thereon with or without a *post-mortem* examination, to be made by a registered medical practitioner to be named by him in each such case.

6. The coroner's certificate after inquest to state whether medical evidence of the cause of death was given, and the purport of it.

7. Stillbirths which have passed the period of the seventh month of gestation to be, as far as circumstances permit, treated for purposes of registration as ordinary deaths.

THE MEDICAL SICKNESS AND ACCIDENT SOCIETY.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, W.C., on November 30th.

In the absence of the Chairman (Dr. de Havilland Hall) the chair was taken by Mr. J. Brindley James, and there were also present Dr. J. B. Ball, Mr. F. S. Edwards, Dr. Walter Smith, Dr. M. Greenwood, Mr. Frederick Wallace, Dr. J. W. Hunt, Dr. W. Knowsley Sibley, and Mr. Edward Bartlett.

The accounts presented showed that the sickness experienced still continued to be below the expectation. The funds now amount to nearly £140,000, and the interest earned by them is over £4,000 a year. A considerable amount of these funds is still invested in loans to local authorities, paying 3½ per cent., and in some cases more. The Committee received a report that the deeds relating to these securities had recently been examined by the Auditor in the presence of the Chairman, Dr. G. A. Heron (one of the Trustees), and Dr. G. E. Herman (one of the Treasurers), and found in order. At the same time bank certificates were produced for the stock investments of the Society.

Prospectuses and other information can be obtained on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

FOR the week ending November 18th the total mortality from plague in India was 2,963, an increase of 776 as compared with the previous week.

In *Bombay* the number of plague deaths has remained through November at a low and a fairly level average. During the week ending November 18th the number of deaths attributable to plague rose slightly; they number 62 as compared with 53 during the previous week. The general death-rate in Bombay is declining steadily; during the week in question it amounted to 47 per thousand, a much lower percentage than has existed for a considerable period.

From *Ahmedabad* a few cases of plague are reported.

In *Poona* there was a marked decline in the plague mortality during the week ending November 18th; the daily plague mortality, which had averaged about 30, fell to an average of almost half that number.

In *Bengal*, Patna was the most seriously affected city by plague, but in Gaya, Saran, and Monghyr, the disease was rife during the third week of November.

In *Calcutta* a fatal case of plague occurs now and again, the last reported being on November 15th. Practically, however, Calcutta may be considered for the time being free from plague.

In the *Jullundar* district, to the East of Lahore in the Punjab, several villages had recently returned a few cases of plague, but at the end of the third week of November the whole district was officially declared to be free of plague.

In the *Mysore State* plague rages to a greater extent than in any other district of India. A meeting of the influential representatives of the people was recently held in Bangaloro, at which an abolition of compulsory segregation was asked for, with the result that the measure has been withdrawn. The deputation further asked that the compulsory removal of plague patients to hospital be stopped; this also was agreed to, provided the native authorities insisted upon the patients being taken to camp, or left in the house while the remainder of the occupants left. The plague returns to Mysore for the week ending November 16th were: Bangalore city and cantonment, 134 deaths; Mysore city, 192 deaths; the goldfields, 10 deaths.

MAURITIUS.

During the week ending December 6th, 47 fresh cases of plague were reported in Mauritius, and 33 deaths from the disease.

CAPE COLONY.

A fresh case of plague is reported to have occurred on December 11th at Izeli, near King William's Town. The patient was a woman who had been nursing her son who was afflicted with plague. Some seven miles from Izeli, at the village of Milokus, a number of cases of illness suspected to be plague have occurred.

THE WAR IN SOUTH AFRICA.

THE MILITARY HOSPITALS IN NATAL.

By Archibald Watson, M.D., F.R.C.S.Eng.,
Professor of Anatomy and Operative Surgery at the Adelaide University, S. Australia; late Consulting Surgeon to the Forces in Natal.

Pietermaritzburg, November 10th.

During the time the late Sir William Stokes was in Natal he contributed some interesting experiences to your pages regarding the hospitals on the lines of communication in Natal, notably those of Ladysmith and Mooi River.

His untimely demise rendered it impossible to place on record his impressions of the excellent work done in the military hospitals at Pietermaritzburg, where the special facilities which he enjoyed as Consulting Surgeon to H.M. Forces enabled him to appreciate at their true value the efforts of those who controlled that huge institution—the Military Hospital at Fort Napier with its 1,000 beds and the auxiliary hospitals which were integral parts thereof, namely, the College Hospital with 300 beds, the Legislative Assembly Hospital with 66 beds, and the Municipal Hospital (Grey's) with 50 of its beds devoted to military patients.

The General Hospital at Fort Napier is in itself a maze of scattered buildings, including the garrison church, which after the battle of Colenso had to be equipped and turned into a ward. The smaller hospitals above mentioned were all about a mile and a-half to two miles distant from the General Hospital and at opposite points of the town; and thus it will be seen that the P.M.O., Lieutenant-Colonel P. H. Johnston, R.A.M.C., found himself suddenly confronted with a most difficult problem at the beginning of hostilities, but succeeded within a few days in transforming all these institutions into hospitals of a very efficient type. This feat was not accomplished without the able co operation of Majors Anthony Dodd and A. L. F. Bate, R.A.M.C., Divisional Officer. Last June the former met with an accident through his horse falling, and was invalided to England, to the sincere regret of everyone associated with him; his heavy duties as Registrar and Secretary then devolved on Major Bate, an officer whose iron constitution has saved him throughout his career from appearing on the sick list. I am indebted to him for the following statistics:

The greatest number of sick and wounded under treatment in one day after the battle of Colenso was 1,348.

The number of patients invalided to England was 3,500.

The number of operations performed was 260, chiefly for gunshot wounds, and of these a very comprehensive and instructive report, illustrated by many beautiful x ray photographs, has been prepared by Dr. Irvine, Civil Surgeon attached to the R.A.M.C.

The good results obtained by the surgeons, apart from their personal skill, were in great part due to the amazing rapidity with which the wounded were transferred to Maritzburg, and carried from the station to the fort by the use of the McCormack-Brook pattern of wheel stretcher which, provided it is handled as directed by the inventors, can scarcely be improved upon.

From a civilian point of view, the General Hospital, Maritzburg, was all the more difficult to administer, as the *personnel* was constantly changing, nurses and doctors coming and going; nevertheless, benefit resulted by thus feeding other hospitals nearer the front with medical officers, nurses, and orderlies, who, during their period of service at Fort Napier, had become more or less familiar with military discipline and the exigencies of military surgery. As the campaign drew to a close the subsidiary institutions reverted to their original purposes. The General Hospital, Fort Napier, was gradually converted into a stationary hospital of 200 beds, and the bulk of the patients there were transferred to Howick, where the hospital is more modern and more salubriously situated than that at Maritzburg, from which it is separated by little over an hour's ride by rail. It is controlled by Major Westcott, P.M.O., and, besides the sick from General Buller's forces, has latterly received the wounded from General French's army outside the bounds of Natal.

General Sir Redvers Buller, V.C., etc., and Colonel Gallwey, C.B., P.M.O., of Natal, selected the site on which the Howick Hospital stands, and General Buller naturally takes a pride in it. Nevertheless, when he visited the General Hospital, Maritzburg, for the last time, he paid the highest tribute in his power to Lieutenant-Colonel Armstrong, Acting S.M.O., R.A.M.C., and Major Bate, R.A.M.C., in the absence of Lieutenant-Colonel Johnston, who was temporarily on the sick list as a result of the great strain to which he had been subjected during the whole of the previous twelve months.

In conclusion, I would like to say that in common with Sir William Stokes, Sir Thomas Fitzgerald, and Professor J. Chiene, late consulting surgeons to H.M. Forces, I fail to see that any other system than the one persistently followed by the authorities in Maritzburg could have produced similar favourable results, an opinion which, had he lived, Sir William Stokes would undoubtedly have placed on record.

IMPERIAL YEOMANRY HOSPITAL.

Mr. L. Vernon Cargill, F.R.C.S., who has now returned to London after acting as ophthalmic surgeon to the Imperial Yeomanry Hospital since its establishment at Deelfontein, sends us some notes which bring the history of the hospital down to November 10th, shortly before he left.

At that date there were 492 patients in hospital, of whom nearly four-fifths were Yeomen. Most of the cases then being received were convalescents, and the staff of the hospital at Deelfontein had been further reduced by the departure not only of Mr. Cargill, but also of Messrs. Christopherson and Ashdown, for England while Dr. Washbourn was engaged with the Branch Hospital at Pretoria.

Perforation in Enteric Fever.

Mr. Cargill states that three cases of perforation in enteric fever had been operated upon, but none had recovered. The following is the report of the last case:

The patient, a man, aged 30, was under the care of Dr. Elliot. Perforation occurred in the fourth week of the disease, which was severe, and marked by much toxæmia. Distension was not great. At the time of perforation the pulse was 96, and the temperature 101.2° F. There was no fall of temperature with the perforation, although the pain was sudden and severe enough to make the patient call out and to double him up in bed. During the next few hours the temperature gradually rose to 102.6° F., and the pulse to 116. Tenderness and rigidity increased in the lower half of the abdomen. Mr. Ballance operated within six hours of the attack of pain, and found the perforation immediately under the laparotomy wound, in a coil of the ileum 18 inches from the cæcum. It was one-sixteenth of an inch in diameter, and there had been very little leakage into the abdominal cavity. The aperture was closed by eight Halsted silk sutures, quite half an inch of the wall of the bowel being unfolded on each side of it. As a precautionary measure, a few stitches were placed in another Peyer's patch 12 inches from the cæcum, to unfold its very thin base. The intestinal coils and Douglas's pouch were sponged dry. No irrigation or drainage was used. The patient progressed extremely well for the next forty-eight hours; the pulse came down to under 90, the temperature was subnormal, there was no pain, and it was thought that he would pull through. At the end of this time however, he again complained of abdominal pain, distension came on rapidly, the temperature rose to 102.6° F., the pulse to 144, and he died fifty-six hours from the time of operation. There was no vomiting, either at the time of the initial perforation or subsequently. At the necropsy it was seen that another minute perforation had occurred through the base of the same ulcer as before, along the track of one of the sutures, and had caused the second attack of peritonitis. The whole of the Peyer's patch, which was a very wide one, had not been infolded at the operation, as too much narrowing of the lumen of the bowel was feared. There was extensive ulceration in the lower 3 feet of the ileum, and also in the cæcum.

Enteric Fever and Dysentery.

The number of cases of enteric fever admitted during the month preceding the date of the report had increased, but the general type of disease was less severe than formerly, owing, as was believed, to the better condition and therefore greater resisting power of the men. The frequency of phlebitis in the convalescent stage was noticeable and suppurative otitis media was also far from uncommon. Two cases complicated with malaria gave Widal's reaction, and also showed the tertian parasite in the blood. A few cases of acute and many of chronic dysentery have been admitted and have done well. Trial was being made of various native remedies for the treatment of dysentery, but the cases so treated had been few in number, and the results had not been very striking.

Cardiac and Renal Disease.

The number of cases of cardiac and renal disease admitted had increased. Some of the cardiac cases were instances of valvular disease arising during an attack of acute rheumatism, but the majority were examples of failure of compensation due to the strain of hard work and exposure on an already damaged heart. To the same causes the cases of acute kidney affection can be traced. Rheumatism, especially the subacute articular

and muscular varieties, is still very common. It is interesting to note that in the great majority of the former, and in many of the latter there is a history of previous acute rheumatism. Acute rheumatism is, and has been, conspicuous by its absence, though many patients convalescent from the disease have been admitted.

Dr. Elliot remarks that from what he has seen here he would be inclined, if examining men for war purposes, to reject all, or nearly all, who have passed through an attack of rheumatic fever. The selection of men for the Yeomanry battalions has apparently been made on specially liberal lines. Many cases of old standing valvular and renal disease have come out, and one man arrived in hospital with an unhealed nephrotomy wound with which he had left home. Other cases have come under the care of the Ophthalmic Surgeon of Yeomen who have been passed and sent out for active service in the field, the condition of whose eyes and sight should have led to their rejection.

ENTERIC FEVER AT MOOI RIVER HOSPITAL.

The following extracts from a letter dated October 24th from Major Henry H. Johnston, R.A.M.C., who has been in charge of the medical or enteric fever division of Mooi River Hospital, Natal, since January 29th, is of interest as showing how the risk of infection to the hospital staff and orderlies, who are in direct attendance upon the enteric fever cases, may, by the exercise of care, be kept down to a very low percentage as compared with even the surgical division of the same hospital.

In a letter dated September 26th Major Johnston mentioned that the percentage of deaths among the enteric fever patients in this hospital, since it was opened in January, had been lowered to slightly under the 10 per cent., at which it stood when we published his letter of August 10th in our issue of September 15th—namely, 118 deaths out of 1,209 cases, exclusive of officers.

The enteric fever disinfection carried out in this hospital since February last has been very successful. Although 45 per cent. of the *personnel* have been employed in the enteric fever wards, only about 26 per cent. of the cases of enteric fever have occurred among them, the remaining 74 per cent. of cases having occurred among the *personnel* employed in other parts of the hospital, so that the risk of enteric fever infection among the orderlies employed in the enteric fever wards has always been about half of what it was among the orderlies employed in other parts of the hospital. Notwithstanding that every precaution was taken to detect cases of enteric fever among patients transferred from other hospitals, on their arrival here, so as to ensure their isolation, a certain number, in the early stages of the disease, escaped notice, and were treated for days or weeks in the general wards of the hospital, before they were diagnosed and transferred to the enteric fever wards in the medical division of the hospital. Such cases no doubt were sources of infection as adequate precautions against the spread of infection were not taken.

During an outbreak of enteric fever all excreta should be disinfected and incinerated, as it is impossible to detect every case of enteric fever in its early stages in the general wards of a hospital. There has not been a single case of enteric fever among the officers and civil surgeons employed in this hospital, but out of about 750 men of other ranks there have been 34 cases, 9 of which occurred among the orderlies employed in the enteric fever wards, and 25 among the non-commissioned officers and men employed in other parts of the hospital.

Of the above number, 3 only have been contracted since June 1st, and 1 of these was contracted in the Transvaal when the patient had been detached on temporary duty for several weeks.

As regards the 9 cases contracted among orderlies employed in the enteric fever wards, several were probably due to carelessness on the part of the orderlies, some of whom were punished for eating their meals and sleeping in vacant beds in the enteric fever wards. To lessen these risks the orderlies were supplied with improvised hay mattresses in their own tents, and a hot meal was provided for the night orderlies at 2 A.M.

The following is the meteorology of Mooi River for September: Mean temperature in protected shade 4,500 feet above sea level, minimum 45.3° F., maximum, 75.2° F.; highest 89° F. on 24th, lowest 34° F. on 9th and 10th; mist on 3 days; rain on 1 day on 16th, 0.47 inch; prevalent wind N. and N.N.W. 19 times, S. and S.E. 17 times; no frost. Spring began in the beginning of September, and at present (October 24th) the country is quite green with fresh vegetation.

THE PRINCESS OF WALES HOSPITAL SHIP.

On December 10th the Princess of Wales visited Southampton for the purpose of inspecting the hospital ship named after her. It had shortly before arrived from South Africa with a third draft of ill and wounded soldiers. Of the 170 patients comprising this draft, over 100 were confined to their cots when the ship left Cape Town, but on arriving at Southampton only 9 were bedridden. One case, however, had proved fatal, and that was the only death which had occurred on board while the *Princess of Wales* had been in use as a hospital ship. The total number of admissions of sick and wounded for treatment had been 728. It is greatly to be hoped that the ship, the fitting out of which cost at least £8,000, will not be dismantled, but no orders have as yet been received for its return to South Africa, and the Committee are apprehensive that it will be paid off.

THE WELSH HOSPITAL.

At a meeting of the General Committee of the Welsh Hospital on December 10th a report on the present position of the hospital and the work it had accomplished was read by Sir David Evans. Between June 5th and September 24th 757 patients had been treated in the hospital, most of whom were suffering either from enteric fever or gunshot wounds. The number of fatal cases was only 8. Not a single case of gunshot injury needed amputation, a result ascribed to the clean perforation made by the Mauser bullet and to the use of the telephone probe. The following resolution was proposed by Sir John Williams and seconded by Viscountess Barker, President of the Ladies' Committee:

The Committee of the Welsh Hospital in South Africa desire to record their profound sorrow for the death of the originator of the hospital and their able and devoted secretary, Professor Alfred Hughes, who, when the hospital was in serious difficulties owing to deaths and illness among the staff, volunteered to go to South Africa to undertake its management, and while in the discharge of his duties at Pretoria fell a victim to enteric fever. The Committee feel that no nobler example of self-sacrifice can be found in the annals of medicine. They would convey to the sorrowing widow, children, and relatives their deepest sympathy, and at the same time express their highest appreciation of his self-sacrificing services in the cause of the sufferers in the war.

THE LANGMAN HOSPITAL.

Twenty-two of the staff and five of the nurses of the Langman Hospital, accompanying 7 officers and 381 men sick and wounded, arrived at Plymouth on December 8th. The medical arrangements on board the transport were in charge of the staff of the Langman Hospital, Civil Surgeon C. Gibbs, F.R.C.S., being the senior officer. During the ten months the hospital has been in service in South Africa no fewer than 1,200 patients have been treated, of whom over 300 were surgical, and there has not been among them a single death.

The St. John Ambulance Brigade is despatching 100 more hospital orderlies for service in South Africa, having received a further requisition from the War Office to that effect. This is in addition to the 68 extra brigade men despatched a fortnight back at Lord Roberts's request, and brings the total of its members on active service up to 1,739, of which over 60 have died from enteric fever and other diseases.

LITERARY NOTES.

In referring lately to Dr. John Johnston's *Musa Medica* we stated that the book was published by the Savoy Press; we are informed that this is incorrect. It is published by the Labour Press, Miller Street, Manchester.

At a meeting of the New Zealand Branch of the British Medical Association some time ago it was decided that the *New Zealand Medical Journal* should be resuscitated. The first number is now before us, and both its contents and its appearance are highly creditable to the editor, Dr. J. Malcolm Wason, and his assistants. It contains a presidential address on colonial practitioners delivered by Dr. Walter Thomas at the annual meeting of the New Zealand Branch held last February. Dr. Thomas does not give an altogether roseate account of medical practice in the colonies. He says medical experience there assuredly encourages a suspicion that clients may be roughly divided into two sections—one which calls in the doctor to prevent the annoyance of an inquest, and another which does so in order to have someone to blame should anything untoward occur. Dr. D. Colquhoun, of Dunedin, writes on the need of State institution for the treatment of inebriety, epilepsy, and consumption. A case of empyema of the antrum of Highmore is contributed by Dr. Saunders; Dr. A. Young describes a case of pseuden-

cephalia, and Dr. George Wilson one of anencephalous monster. The Editor contributes an article on cancer, in which he states that the result of an inquiry instituted by Dr. Martin and himself was to show that there had not been an actual increase in the prevalence of cancer in the colony during the last five years. Better means of diagnosis and more frequent use of the microscope almost entirely accounted for the increased number of cases which figured in the reports of the Registrar-General. The remainder of the number is mainly occupied with reports of the meetings of the New Zealand Branch.

Dr. P. Hamonic has recently issued a work entitled *La Chirurgie et la Médecine d'Autrefois*, containing 487 illustrations of ancient instruments (Maloine, Paris, 1900). Dr. Hamonic is recognised as an authority on archæological matters, and has a large collection of instruments, etc., illustrating the practice of the healing art in former times. His object has been to show what ancient practice was, not by the use of historical documents but exclusively by the evidence of instruments and apparatus in his collection which was on view in the Exhibition. An ancient instrument of unquestionable authenticity gives a better notion of old time practice than the most detailed description.

Adolf Pichler, who died at Innsbruck on November 15th, was born in 1819, and entered the University of Vienna as a student of medicine in 1842. He soon, however, exchanged medicine for mineralogy. In 1848 he fought at Ponte Tedesco and Caffaro, and in later years, while continuing his study of geology, he gave himself to the service of the Muses, and acquired a considerable reputation as a poet. Many of his poems, which showed deep humanity and keen observation, relate to medical subjects.

The Portuguese Public Health and Charity Department has begun the publication of a periodical entitled *Annaes de Saude Publica do Reino*, intended to make known all ordinances and new laws relating to sanitation and other matters relating to the public health and sanitary administration. The first volume, which has already been issued, contains a review of sanitary legislation and administration during the last twenty years.

In the *Argosy*, Mr. Havelock Ellis estimates the number of really eminent persons whose names are included in the *National Dictionary of Biography* as about 800. Very few of these are women. To every 100 eminent men there are only about 4 eminent women. As regards nationality (eliminating individuals of mixed ancestry), it is found that 74 per cent. are English, nearly 16 per cent. Scotch, 5 per cent. Irish, over 3 per cent. Welsh, and 2 per cent. Cornish. As regards the social class from which the eminent persons spring, it is found that even when the larger number who are sons of peers are left out of account, no less than 21 per cent. still clearly belong to the small number of people who can be said to be of "good family," and in reality the proportion is still larger. The professional classes (often merging into the previous higher social class) claim over 41 per cent., a very large proportion. A remarkable fact about the contribution of the professional classes is that although lawyers, doctors, engineers, military and naval officers, etc., are included under this head, no fewer than half of the eminent persons furnished by these classes are the offspring of clergymen and ministers. Only 15 per cent. belong to the trading or commercial classes, though these range from bankers and manufacturers to publicans, and 6 per cent. to the farmer and yeoman class. The craftsman and artisan classes (closely allied to the trading class but possessing a real manual training, and including weavers, smiths, millers, saddlers, etc.) are, however, responsible for 15 per cent. The unskilled workers, the great mass of the population, have furnished scarcely 2 per cent. of our eminent and ruling men. Nothing could show more clearly than these figures the peculiarly oligarchic basis on which English civilisation has been built up.

Dr. S. Weir Mitchell was the guest of honour at a reception given at the Penn Club, Philadelphia, on November 17th. There were present many distinguished representatives of the pulpit, the Bench, and Bar, and the business community. When a young man Dr. Mitchell spoke to Oliver Wendell Holmes about his desire to take up writing as a profession. He was advised by the Autocrat of the Breakfast Table to stick to medicine, make a success of that, and then later in life return to the field of letters. This was virtually the advice always given by Sir Walter Scott, who used to recommend literary aspirants to have a bread-winning profession before they ventured to woo the Muses.

Among forthcoming publications of the Clarendon Press is an *Anthology of French Poetry*, from the tenth to the nineteenth century, translated by the Very Rev. Henry Carrington, M.A., Dean of Bocking. The following rendering of Jaques Delille's Ode in Praise of Coffee (eighteenth century) may be of interest to some of our readers:

Coffee affords a good restoring draught,
Which clears the fumes of wine too freely quaffed;
By her you gain, when you the table quit,
A calm more courteous, and a brighter wit;
And soon recovered, by her powerful aid,
You are not of a second feast afraid.
She, by the god of verse, is praised and loved;
The poet's genius is by her improved.
Our frigid rhymers, if at times inspired,
Write their best lines by Coffee's fragrance fired.
She can enliven philosophic plan,
And make an analyst a pleasant man.
Statesmen, through her, well feasted and content,
Form happy schemes of better government.
Knowledge sometimes to journalists she brings
Of court intrigues, and deep designs of kings.
Peace, truces, wars, she to his dreams can show,
And lets him, for six sous, the world o'erthrow.

The bard is judiciously silent as to certain less praiseworthy qualities of the beverage of which he sings.

The New York *Medical Review of Reviews*, which is ably edited by Dr. Daniel Lewis, resembles the Mormons in one thing—it has "a peculiar institution." This is an excellently compiled index of "the month's leading articles." The entries are classified under different headings, so that reference is made easy. Subscribers can purchase any of the journals quoted from the publisher of the *Medical Review of Reviews*, an arrangement which strikes us as convenient.

Dr. Frederick Taylor's *Manual of the Practice of Medicine* has received the compliment of translation into Italian, having been selected because there was a want in Italian literature of a manual "essentially practical, clear, and precise." The translation has been made from the fifth English edition by Dr. Luigi Ferrio, Physician to the Ospedale Maggiore di San Giovanni in Turin, who has added a number of paragraphs and notes on subjects with regard to which important observations have recently been made, and also a few new sections, as well as some series of prescriptions. The number of illustrations also has been increased to 266. The book in its Italian dress has larger type on a larger page, and presents altogether a more agreeable appearance to the eye than the stunted volume issued by the English publishers.

ASSOCIATION INTELLIGENCE.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1901.

Meetings of the Council will be held on January 16th, April 17th, July 10th, and October 23rd, 1901. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before each meeting—namely, December 26th, 1900; March 28th, June 20th, and October 2nd, 1901.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the office of the

Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH.—A meeting of the Branch will be held at the Railway Hotel, St. Boswells, N.B., on Friday, December 21st, at 3.30 P.M. A meeting of the Council will be held at 3.15 P.M. Order of business: Minutes of last meeting; election of new members. Dr. Somerville (Galashiels) will read a paper on the Presence of Foreign Bodies in the Bronchi. Dr. Mair (Hawick) will open a discussion on Tuberculosis. Dr. Hamilton (Hawick) will read a paper on the Dangers of the Vaginal Douche. Dr. MacGregor (Jedburgh) will show: (1) Patient with free movement of knee-joint after an injury which exposed the joint and severed the ligamentum patellæ; (2) specimen: lymphadenoma from inguinal region; (3) temperature chart from a case of infective endocarditis. Dr. Calvert (Melrose) will read Notes on a Case of General Paralysis, with special reference to the subcutaneous administration of hydrobromate of hyoscine. Dr. Young (Earlston) will read Notes on a Case of Exophthalmic Goitre, the supposed result of Lightning Shock. Dr. Cullen (St. Boswells) will read (1) Notes on an Obscure Nervous Case; (2) Notes of a Case in which Scirrhus and Tubercle were co-existent in the Female Breast. Dr. Highet (Workington) will make a few remarks on the Beer Scare and its connection with Arsenical Poisoning. Dr. Henderson (Galashiels) will read Notes on a Case of Rupture of a Tubo-peritoneal Abscess. Dinner will be served at the Hotel after the meeting; price of dinner, 5s., exclusive of wine. Members intending to dine are earnestly requested to notify Dr. Cullen, St. Boswells, by December 19th at latest.—W. F. FARQUHARSON, M.D., Garlands, Carlisle, Honorary Secretary.

GLOUCESTER BRANCH.—The next meeting of this Branch will be held at the General Hospital, Cheltenham, on Tuesday, December 18th, at 7 P.M., when Dr. G. B. Ferguson will read a paper on the Diagnosis of Abdominal Tumours.—W. W. GROSVENOR, 18, Clarence Street, Gloucester, Honorary Secretary.

SOUTH EASTERN BRANCH: EAST KENT DISTRICT.

THE 157th meeting of this District was held at the Kent and Canterbury Hospital on November 29th; Dr. HALSTEAD of Ramsgate in the chair. Fifteen members and visitors were present.

Confirmation of Minutes.—The minutes of the last meeting, held at Broadstairs, were read and confirmed.

Appointment of Chairman for Next Meeting.—The CHAIRMAN proposed that Dr. Alexander of Faversham should occupy the chair at the meeting to be held at Faversham in March, 1901. This was seconded by Mr. B. RIGDEN, and carried.

Paper.—Dr. ROBINSON (Dover), who has recently studied plague in Glasgow, read a paper on Plague and its Recognition. He dealt with the history of the disease as represented in official reports, referring to its diffusion from period to period, its propagation in a continuous manner, and its spread by transportation. Whilst true bubonic plague was easily recognised, this was not the case with the pneumonic, enteric, and septicæmic types, or *pestis minor*. This was well illustrated in the Glasgow epidemic, seven cases having occurred, and three weeks having elapsed before the disease was recognised. The type in these instances was enteric, and they simulated typhoid fever so closely as to be notified as such. The case in Wales also simulated enteric fever. It was only by bacteriological examination that the true nature of the malady was diagnosed in both localities. The present pandemic character of plague was referred to, and especially its extension to this country was dwelt upon, as showing the necessity for alertness in the detection of the first cases in any locality. The new departure of the Local Government Board was also mentioned in providing for bacteriological examination without cost to the local authority, and also in providing, in case of necessity, a limited supply of Haffkine's prophylactic.

Rare Cases.—Dr. WHITEHEAD REID (Canterbury) related two rare cases. The first was a myxosarcoma of vesical submucous tissue, occurring in a female aged 2 years and 9 months. The disease was of very rapid growth, the whole bladder being filled with a gelatinous substance, perfectly clear, and of a consistence like thick jelly. The left ureter was blocked, and the kidney on that side, weighing 5 ozs., was cystic and full of pus. The bladder was greatly hypertrophied. There were no secondary deposits anywhere. A microscopic section of the growth was shown. The second case was one of high spinal transection, the lamina of the fourth cervical vertebra being fractured and driven under the fifth vertebra. The condition was relieved by operation on the fourth day. The patient, a male, aged 36 years, lived six weeks and three days. The symptoms were detected, and successful methods for counteracting the cystitis, so liable to occur in such cases, were described.

Development of the District.—Dr. LARKING (Folkestone) having given notice of his intention to "bring forward certain suggestions as to the methods best adapted to secure an increase in the number of members of the district, and in the average attendance at the meetings," proposed that a special meeting should be shortly convened at Canterbury to consider the matter.—The resolution was seconded by Dr. LATTER (Folkestone).—Dr. WHITEHEAD REID moved as an amendment that the question should stand over until the annual meeting in May.—The amendment was seconded by Dr. DAVIS (Hythe), and, on being put to the vote, the amendment was carried.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.

A MEETING of this District was held at Tunbridge Wells on December 4th, Dr. ADENEY, J.P., in the chair.

Hallux Valgus.—Mr. FOOTNER showed two cases of hallux valgus in which he had operated for relief of the deformity—in one case by simple section of the metatarsal bone, in the other by removal of the head of that bone. The result was satisfactory in both cases, but better in the latter. He exhibited skiagraphs illustrating the condition of the patients before and after operation.

Nodal Points of Pain.—Mr. C. H. GOLDING-BIRD read a paper on this subject. Having enumerated certain points on the body surface which were normally very sensitive to pressure and sometimes led to errors in diagnosis, he discussed several points in the vicinity of joints which became painful as the result of injury or disease, describing the pathology, diagnosis, and treatment of the several conditions to which the pain might be due.

Gall Stones.—Mr. SYDNEY CAUSTON showed a pyriform gall stone, weighing 7 drs. 10 grs., removed by laparotomy from the lower part of the small bowel of a woman, aged 50, in in whom it was causing intestinal obstruction; the patient died from exhaustion on the seventh day after the operation.—Mr. RIX narrated a case in which attacks of intestinal obstruction were due to the "ball-valve" action of a large gall stone which co-existed with a malignant stricture of the colon.—Mr. STAMFORD cited a case in which a large enterolith, composed of calcium and magnesium phosphate was passed by a woman of 70.

GLOUCESTERSHIRE BRANCH.

A MEETING of this Branch was held at the General Infirmary, Gloucester, on November 20th, Mr. E. C. CRIPPS, President, in the chair. Thirty members were present.

President's Address.—The PRESIDENT gave his address, entitled, The Country Doctor: his Trials, Recreations, and Rewards.—Mr. C. FIRMIN CUTHBERT moved a vote of thanks, and this was seconded by Mr. E. T. WILSON and carried unanimously.—Dr. BATTEN proposed:

That the Honorary Secretary be instructed to have the address printed at the expense of the Branch, and a copy sent to each member

This was seconded by Mr. G. B. FERGUSON, and carried unanimously.

Specimens.—Mr. E. DYKES BOWER showed the following pathological specimens:

(1) Cystic kidney and calculus removed from a girl; recovery: (2) calculus weighing 6½ grains, in which is embedded a hairpin, removed from the bladder of a girl by the suprapubic operation; recovery. (3) sarcoma of choroid (second stage); (4) intraocular sarcoma (

Mr. WILLIAM WASHBOURN showed specimens under the microscope.

METROPOLITAN COUNTIES BRANCH. SOUTH EASTERN DISTRICT.

A MEETING of this District was held at St. Thomas's Hospital on November 28th, Mr. CHARLES SANGSTER, Vice-President of the District, in the chair.

Lesions of Brachial Plexus.—Dr. TURNEY read a paper on certain lesions of the brachial plexus and their causation. He said the affections with which the paper dealt were at first sight heterogeneous, but were connected by their common causation. They were due to the elevation of the arm over

the head while in the lateral position. It was doubtful if muscular action alone was able to produce this result, though there were certain facts which rendered this a not improbable supposition. But in all the cases referred to in the paper the effective factor was passive and not active elevation of limb. The immediate cause of the nerve lesion was compression of the roots of the cervical plexus between the clavicle and first rib. The higher roots, that is, the fifth and sixth, in consequence of their lying further out than the others, were more accessible to the pressure and less able to escape from it. In consequence of this special tendency to implication of the fifth and sixth roots, the paralysis not uncommonly took the type known as Erb's palsy. Very often, however, the whole plexus was injured, and then the paralysis was complete, involving not only the intrinsic muscles of the limb, but also those which connected the shoulder girdle with the trunk, particularly the serratus magnus and latissimus dorsi. The mechanical conditions by which this pressure was brought about, and the reasons for its occurrence in the one special movement of elevation of the limb, were then described. Clinically, the cases might be grouped either according to their exact causation, or according to the type of the symptoms. Under the first system of grouping would be found: (*a*) post-anæsthetic palsy, the elevation of the arm occurring during anæsthesia; (*b*) traumatic, in consequence of falls with the arm in the elevated position; (*c*) climber's palsy, the victim being usually an inexperienced gymnast trying to climb "hand over fist" and failing; (*d*) finally, what the writer was inclined to call "nursemaid's palsy," as the trouble arose through the nurse's practice of lifting children out of the perambulator with one arm. Reference was made to a remarkable instance of this occurring three times in the same family, with a more or less severe form of paralysis resulting each time. According to the other system of grouping, the following classes might be distinguished: (1) Lesions of the whole brachial plexus, including the serratus magnus and latissimus dorsi; (2) Erb's palsy, this second type was often seen as a stage in the recovery from the first as well as an independent entity; (3) paralysis of one or both serratus magnus muscles; in this group the paralysis of the serrati was not altogether isolated, but formed the predominant feature. A short discussion followed.

Cases.—Mr. MAKINS then showed some cases of gunshot wounds.—Other cases were shown by Mr. ROBINSON and Dr. RUSSELL.

BATH AND BRISTOL BRANCH.

THE second ordinary meeting of the session was held at Bath on November 28th, Mr. A. W. PRICHARD, President, in the chair. Forty-eight members and visitors were present.

New Members.—The following were elected members of the Association and Branch: Charles Begg, M.B., C.M.Edin. (Bath); F. C. Forster, M.R.C.S., L.R.C.P. (Bath); Albin Seddon, L.R.C.P.and S.Edin. (Frome); R. Carter, M.D., M.R.C.P.Edin. (Bath); Robert L. Knox, M.R.C.S., L.R.C.P. (Freshford); R. C. Martin, M.R.C.S., L.R.C.P. (Clifton); Arthur Bulleid, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg. (Midsomer Norton); A. B. Cridland, M.R.C.S., L.R.C.P. (Bristol); Sidney G. Tippett, M.B.Lond., M.R.C.S., L.R.C.P. (Clifton).

Medical Men and Coroners.—A letter was read from the Secretary of the West Somerset Branch with regard to the giving of opinion to the coroner by members of the medical profession previous to or in lieu of holding an inquest. It was resolved:

That this Branch supports the opinion of the West Somerset Branch, but suggests that it represents this opinion to the Central Council of the British Medical Association.

Communications.—Mr. W. R. ACKLAND demonstrated the use of his new instruments for the treatment of antral empyema, and Dr. WATSON WILLIAMS made remarks upon them.—Dr. W. S. MELSOME described a case of simultaneous obstruction of the ileum and jejunum following perforating gastric ulcer, and Mr. HARSANT commented upon it.—Dr. CAVE read notes of two cases of pneumococcal infection: (1) Arthritis; (2) peritonitis. In the discussion which followed, Dr. SHINGLETON SMITH, Dr. PARKER, Dr. MARKHAM SKERRITT, Dr. MICHELL CLARKE, Dr. CARRUTHERS, and Mr. POLLARD took part.

Papers.—Dr. PRESTON KING read a paper on some causes of gout, and Dr. CAVE made some remarks upon it.—Dr. WIGMORE read a paper on the treatment of severe albuminuria associated with pregnancy, which was commented upon by Dr. OGILVY.

SOUTHERN BRANCH: SOUTH WILTS DISTRICT.

A MEETING of this District was held on November 21st at the Salisbury Infirmary, Mr. H. J. MANNING presiding.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Election of Vice-President.—Mr. Herbert Wills was unanimously elected Vice-President of the District.

Selection of Subjects for Discussion.—It was proposed by Mr. L. S. LUCKHAM, seconded by Dr. ORD, and carried unanimously:

That in future a subject shall be selected by the Committee of the District for discussion at each District meeting.

New Member.—Mr. A. E. J. Bancroft was elected a member of the District.

Medical Examination for Life Insurance.—Dr. W. J. HARRIS (Shaftesbury) read a paper on insurance companies and their fees, and moved:

That the Committee of the District, with Dr. Harris added to their number, should consider the question of raising the existing fees for medical examination in insurance cases.

Dr. Harris's proposition was carried, the Committee being asked to report on the subject at the next meeting of the District.

Communications.—Dr. GILBERT KEMPE read a paper on a Case of Intestinal Anastomosis. The operation was performed for the removal of a colloid carcinoma of the bowel. Dr. Kempe used Murphy's buttons in this case with a very satisfactory result, the patient making a good recovery.

HALIFAX, NOVA SCOTIA, BRANCH.

THE annual meeting of this Branch was held at Halifax on October 17th, Dr. E. A. KIRKPATRICK, President, in the chair.

Report of Council.—The annual report of the Council for the session 1899-1900 was read by the SECRETARY. It stated that the past session of the Branch had surpassed in some ways any previous one. The number of meetings held, in spite of the distraction caused by the excitement of the contingent last winter, was 11, the same number as the preceding year. The average number of members attending each meeting was over 16, while compared with 15 the previous session. The number of members taking part in meetings was 40 compared with 32 the previous year. The work done during the year was of sufficient quantity and high quality. The Government had responded to the petition of the Association in regard to tuberculosis by passing legislation providing for the construction and maintenance of a sanatorium.

Election of Officers.—The election of officers resulted as follows:—*President:* Dr. G. C. Jones. *Vice-President:* Dr. Thomas Walsh. *Treasurer:* Dr. M. A. B. Smith. *Secretary:* Dr. C. D Murray. *Council:* Drs. Ross, Kirkpatrick, Murphy, Walsh, Trenaman, Major Peeke, R.A.M.C., and Dr. G. M. Campbell. *Representative on General Council:* Surgeon-General O'Dwyer, A.M.S.

SPECIAL CORRESPONDENCE.

EDINBURGH.

Diphtheria.—Bacteriological Examinations.—Professor Chiene on his South African Experiences.

RECENTLY paragraphs, which have appeared in some of the newspapers regarding an "outbreak" or "epidemic" of diphtheria, have caused great and unnecessary alarm. The terms used are perhaps somewhat too strong. There is no doubt that since June last diphtheria has been more prevalent in the City of Edinburgh than is usual. This will be seen by a glance at Table II. The increase in June and July was due to a more or less definitely localised outbreak, which was

clearly traced to milk infection, and ceased on stoppage of that milk supply. During the last four months, however, the number of cases has kept up and has shown a tendency to increase, so that there can be no question that sore throat and diphtheria have been unusually prevalent not in one district only but throughout the town. For the purpose of comparison Table I gives the intimations, deaths, admissions to the City Hospital and deaths there, during the periods from January 1st to November 30th in the two years of 1899 and 1900.

Table I.

Years. From January 1st to November 30th.	Number of Cases Intimated.	Total Deaths.	Number of Cases Admitted to City Hospital.	Number of Deaths in City Hospital.
1899	250	29	136	11
1900	421	47	270	32

It must be added that quite possibly all these cases were not cases of true diphtheria, though intimated as such, nor indeed even all the cases removed to the City Hospital. Some of the latter were doubtless removed for observation, and some because they were presumptive or possible centres of infection, and the greater danger had to be avoided. Table II shows the intimations and deaths in each month for the same period.

Table II.

	From January 1st to November 30th, 1899.		From January 1st to November 30th, 1900.	
	Intimations.	Deaths.	Intimations.	Deaths.
January ...	26	5	19	2
February ...	24	4	26	4
March ...	30	4	25	3
April ...	25	0	14	4
May	16	1	27	3
June	18	2	69	
July	18	2	40	4
August ...	14	0	40	4
September ..	19	4	45	7
October ...	20	3	47	7
November...	31	4	69	1

Judging from the number of deaths the disease either has not been of a very fatal character or has been more amenable to treatment. Antitoxin is now fairly generally used, and that at an early period of the disease, thus preventing spread to the larynx, the most fatal accompaniment. And when the disease has spread to the larynx intubation is found to be a more rapid and less dangerous form of treatment than tracheotomy. The reason or reasons for the unusual increase of diphtheria are not so easily assigned. The fact remains. It may be due to the excess of subsoil water, or to other causes. Since the end of the third week of September there has been a very unusual amount of rainfall. During the month of October the fall was 4.87 inches, the largest since 1864; while during the month of November the fall was 5.42 inches, the most excessive rainfall since the year 1772. The total rainfall for the two months was thus 10.29 inches.

Sir Henry Littlejohn, medical officer of health for the city of Edinburgh, has issued the following circular to the medical profession:

> I am instructed by the Health Committee to intimate to you that the town is now prepared, until further notice, to undertake the bacteriological examination of sputum, urine, and milk for phthisis, blood for typhoid, and swabs for diphtheria occurring among the citizens of Edinburgh.
>
> The specimens should be sent to me accompanied with the following details, which will be regarded as private and confidential
>
> Name, age, and sex of patient.
>
> Residence and occupation.
>
> Stage of the disease.
>
> It is indispensable that all the above particulars be furnished to ensure speedy attention.

The last sentence is printed in small capitals in red ink. It is obvious that in large measure the scheme is foredoomed to failure. Those members of the profession at least who practise among the better classes will not give "all the above particulars" which are a *sine quâ non* "to ensure speedy attention." We would suggest to the Public Health Committee an immediate revision of the circular, with the elision of the red type line, and a request simply for some initials, the age and sex of the patient. If that be done at once the scheme will be of great value. A protesting letter, signed "M.D.," was published in the *Scotsman* of December 11th. The writer points out that

> for many years the Royal College of Physicians has been doing this work at its own expense, and it is right and proper that the town should now take the work over, but I for one object very strongly to supplying the name and address of the patient from whom the specimen comes. Such inquisitorial methods were not adopted by the Royal College, are unnecessary, and are distinctly offensive. Of course, when the examination is complete, and when a definite diagnosis has been reached, the matter is on a different footing, and if the case be found to be one of diphtheria, it would necessarily be reported.

Professor Chiene on December 1st lectured to the members of the Edinburgh University Union on the views and impressions he had formed during his stay in South Africa. The lecture was illustrated by a series of limelight views from photographs taken mostly by Mr. Stumbles on the spot. On Wednesday, December 5th, Professor Chiene gave to the Edinburgh Medico-Chirurgical Society an account of his experiences in South Africa.

BELFAST.

The Belfast Bacterial Sewage Scheme: Appointment of Professors Letts and Lorrain Smith.—Health of Belfast: Notification Act: The Milk Question.—The Nursing Question in the Armagh Union.

THE City Council at its monthly meeting on December 1st adopted by 24 to 6 a very important recommendation of the Joint Improvement and Public Health Committee. For some time past experiments on an extensive scale have been carried on by the town authorities on the bacterial treatment of sewage; these experiments, it is understood, gave a favourable result. Before, however, committing the town to a heavy expenditure, the Council have determined on the recommendation of the above Committee to employ Dr. Letts, Professor of Chemistry; and Dr. Lorrain Smith, Professor of Pathology and Bacteriology, Queen's College, Belfast, to examine and report at as early a date as practicable on the scheme for purifying the main drainage sewage, and as to its effect on the lough; and also to give evidence at the local inquiry, at an inclusive fee of 150 guineas each. It is confidently expected that the report which will be presented will not only prove a reliable guide to the Council in carrying out a much-needed improvement, but will be included in the standard literature of the question.

At the same meeting the superintendent medical officer of health presented a report on the health of the city; there were 195 cases of typhoid and simple continued fever, and 82 of scarlet fever notified, and the annual death-rate from all causes is calculated at 18.5; the typhoid and phthisis mortality is excessive; scarlatina, rheumatism, heart and chest diseases, diarrhœa, when compared with the incidence in other towns, generally more than hold their own; it is hard to believe that there is a great improvement in the health of Old Belfast. A severe attack was made on the local working of the Notification Act; the profession is accused of notifying too much and too little; and a subcommittee has been appointed to investigate the matter. The question of the sterilisation of milk was also mentioned in the debate. In the quarterly report of the city analyst, dated September 10th, it is stated that 26 samples of milk were found adulterated, and 8 of very poor quality, and fines amounting to £81 were imposed.

A serious difficulty has arisen between the Local Government Board and the Armagh Board of Guardians; the former body ordered certain nursing arrangements to be carried out, and the guardians, on the advice of counsel, decided to contest the case, and at the same time have sent a letter to the Local Government Board. The question is important, as it involves the problem of the employment of probationers in the infirmaries instead of fully-trained nurses.

PARIS.

Surgical Clinic at the Pitié Hospital: Professor Terrier on Sterilisation.—Opening Lecture and Presentation to Professor Raymond at the Salpêtrière.—The Conseil d'Hygiène and the Prevalence of Typhoid Fever.—Dr. Yersin's return to the East.—Small-pox in Paris.

PROFESSOR TERRIER, before beginning the regular work of the session in his surgical clinique at the Pitié Hospital, gave a lecture indicating to his students the principles of his surgical methods. His constant aim, he said, was to simplify, and he had reached a method of asepsis which, without being so absolute as that of the laboratory, was such as was practicable in surgery. This plan was employed not only in aseptic operations, but also, generally speaking, in septic operations. The water is sterilised. For small quantities this was done by using glass flasks in an autoclave. For large quantities, however, prolonged ebullition for at least three-quarters of an hour was necessary. M. Morax had shown—and this was the opinion of Pasteur—that water so treated only contained spores in small number, and that in practice these might be neglected. Professor Terrier in his new operating theatre has had two coppers (*chauf bains*) fixed, one to supply hot water and the other cold boiled water during the operation. The water used for washing the hands or cleaning instruments during the operation was ordinary sterilised water or sterilised saline solution. Chloride of sodium would be rendered aseptic by melting it in a crucible. The physiological saline solution of 7 in 1,000 was sterilised in large flasks placed in the autoclave. When operating M. Terrier never washed his hands with antiseptics, but used the saline solution exclusively. The great question, however, was not so much to wash the hands, but rather to avoid infecting them; a septic operation (for example, on an empyema) could be performed without soiling the hands. Professor Terrier never used either alcohol or ether; the patient's skin was washed with soap and boiled water, then it was washed with saline solution and dried. The results had been excellent. An important point was the necessity of dipping the hands into the sterilised saline solution as often as possible during the operation, and then wiping them with a sterilised compress; this wiping cleansed the hands, and allowed of greater dexterity. M. Morax had shown that if the hands were not washed during an operation the sweat glands rendered them septic, owing to the presence of staphylococcus albus in the ducts. Instruments were placed in copper boxes sterilised at dry heat, 160° to 180° C. during 35 to 40 minutes. Dressings (compresses, tampons, gauze, wool) were sterilised in the autoclave. MM. Terrier and Quenu, to make certain that the necessary temperature had been reached, in the centre of the boxes of compresses or gauze employed tubes containing either (*a*) benzoic acid, which melts at 121° C., and with which may be mixed some methyl green, or (*b*) phthallic anhydride, which melts at 129° C., to which some eosine may be added. These salts were coloured if the point of fusion has been reached. (*c*) Exceptionally M. Terrier used salicylic acid, which melts at 156° C. For sutures he used silk almost exclusively, and catgut only exceptionally. The silk thread, which was fine, was arranged in small round boxes and sterilised in an autoclave, as used in a bacteriologist's laboratory. In order that its resistance might not deteriorate, the temperature was never raised above 119° C. to 121° C.

Professor Raymond recommenced his clinical lectures on November 20th in Charcot's clinique at the Salpêtrière, and showed many interesting cases, including examples of neurasthenia, general paralysis, and a man with syringomyelia. The amphitheatre was crowded, and at the close of the lecture, in honour of the professor's nomination to the Académie, his many students (past and present) and friends presented him with his portrait in the form of a bronze medallion executed by the artist Vernier.

At a recent meeting of the Conseil d'Hygiène of the Department of the Seine, as a consequence of the great prevalence of typhoid fever in Paris, the following motions were proposed and agreed to, with the object of exercising an efficient control over the city engineers:

1. That the control of the Conseil d'Hygiène Publique et de Salubrité be rendered efficient, in a positive and permanent manner, over the collecting, carrying, and distribution of the domestic water supply of the department of the Seine.
2. That a sufficient protecting zone be established round the collecting ground of spring water.
3. That the Paris spring waters be carefully watched at their source, in order to at once eliminate any which may be recognised as suspicious.
4. That these waters be protected in their whole course to avoid any contamination.
5. That these waters be eventually purified, either by filtration or by other methods of purification, and that for this object experiments be undertaken in the sterilisation of large volumes of water.
6. That in Paris the different sources of domestic water supply be separated with the shortest possible delay.

Dr. Yersin, who has been staying in the Pasteur Institute, left Marseilles recently on his return to the Far East.

During the week ending November 24th small-pox caused 8 deaths in Paris, a diminution as compared to the numbers registered during the preceding weeks; 74 fresh cases of the disease were notified, but in the following week a further increase occurred (109 fresh cases and 17 deaths). The number of small-pox patients in the hospitals on December 1st was 169 (males 77, females 92); during the preceding four weeks the numbers under treatment in the hospitals have been 179, 190, 174, and 178 respectively. Citizens are taking advantage of the facilities offered for free vaccination and re-vaccination, and nearly 2,000 persons were so treated on two days in one week at the Académie de Médecine.

CORRESPONDENCE.

THE SCALE OF FAHRENHEIT'S THERMOMETER.

SIR,—I should like to add a few words in corroboration of what I have already stated[1] as to the origin and meaning of Fahrenheit's scale. This is not a question of supposition, as many have made it, but one simply of history. There was, first of all, the instrument described in the *Philosophical Transactions* in a paper which I said was supposed to be written by Sir Isaac Newton. It was an oil thermometer, with a scale starting from freezing, and making the first fixed point above this the temperature of the body; and this he called by the round number 12. This determined the scale.

I now find in Brewster's *Life of Newton* an account of this paper, which is simply and without hesitation called Newton's. Sir David Brewster describes the instrument, as I have said, which makes the freezing point zero and the temperature of the blood 12, followed by the higher temperatures of the melting points of different substances.

I have also had given me a paper on thermometers written in the year 1884 by Mr. R. H. Scott, the late Secretary of the Meteorological Council. He therein says:

> Newton comes next on our list, and in the *Philosophical Transactions* for 1701 we find a paper certainly from his pen on the scales of thermometers, and in it he announces that his instrument filled with linseed oil is marked 12 at the temperature of a man's blood. This is the first notice we have of blood heat on the scale.

Then comes a new point of interest by the appearance of the name of the great Dutch physician in the question. Mr. Scott, when speaking of Fahrenheit, says that he gave up a scale he had been using by the advice of Boerhaave in favour of one which marked blood heat, but doubling this to twenty-four for the sake of convenience. "He afterwards divided these degrees into quarters, and this gave him 96 for blood heat, a reasonably close approximation to the true value of the armpit temperature of a healthy subject."

I stated in my paper that in the *Encyclopædia Britannica* it is said that Fahrenheit founded his scale on that of Newton. Since I wrote this I have had an interview with Dr. Mill, Librarian to the Royal Geographical Society, the writer of the article, and he informs me that from the researches he then made, this certainly was his conclusion—that Fahrenheit took Newton's scale as his standard.

To my mind it seems quite conclusive that the thermometer now in use was originated by Sir Isaac Newton, and that he took the temperature of the human body as the starting point of this scale.—I am, etc.,

Grosvenor Street, Dec. 1st. SAMUEL WILKS.

[1] BRITISH MEDICAL JOURNAL, October 20th, 1900, p. 1212.

THE BIRMINGHAM CONSULTATIVE INSTITUTION.

SIR,—The correspondence of which I enclose a copy may b of interest to the members of the British Medical Association. I do not, of course, offer any comments on the Council's decision, which, you will observe, has been accepted by me in all good faith, and which it is my desire loyally to respect.—I am, etc.,

HENRY WARD IRVINE.

The Consultative Medical and Surgical Institution.
Consulting Rooms, Cornwall Buildings,
Newhall Street, Birmingham, Dec. 10th.

P.S.—You report me as having said in the inquiry that "a register was kept by the *owners*." What I said was that "a register was kept by the *nurse*." The defective acoustics of the Council room are doubtless responsible for this mistake.—H.W.I.

[COPY.]

To the Secretary to
The General Medical Council,
299, Oxford Street, London.

6, Bennett's Hill,
Birmingham,
Dec. 1st, 1900.

Dear Sir,—

Re DR. IRVINE AND THE COUNCIL.

We need hardly say that the decision at which your Council arrived on the November 29th was entirely unexpected by us and by our client, and that the generality of their direction, namely, that he should reconsider his position before the next session of your Council in May next, places him in a position of serious difficulty.

We have to-day discussed the matter with him with a view of carrying out the Council's direction. In so doing we have carefully considered the charge which the Council has held to have been established, and recalled, so far as we are able, the points which (from the questions asked) appear to have influenced the minds of the members of the Council; and we will proceed to deal with them in the following paragraphs:—

1. It was suggested that the pamphlets which have been sent out (certainly without Dr. Irving's approval) contained observations reflecting on the general practitioner, and magnifying Dr. Irvine's professional skill and abilities. While admitting, as he did, that some paragraphs could bear such construction, he desires again to emphasise that he was not in any sense responsible for the circulation, much less for the preparation of the pamphlets, and at his request the Institution will not issue any more of these pamphlets, and will, so far as possible, withdraw those already issued.
2. As to the circulation of the posters. We infer from certain questions asked that although these posters were honestly intended to be mere announcements of the inauguration of the new movement, their retention, even by members of the Hospital Saturday Fund, may be thought to be continued advertisement. In order to meet this objection the Institution have again, at Dr. Irvine's request, agreed to withdraw all these posters.
3. Criticism was directed to the title by which Dr. Irvine is described by the Institute in the above-mentioned pamphlets and posters. As, however, the Institution has agreed to withdraw these, this objection is now removed.
4. We do not recollect that any objection was raised to the terms of the Institution's first report, but we are authorised to say that no further copies will be circulated.

We think we have now (so far as the material at our disposal enables us) dealt with the points raised at the hearing, but (confirming the evidence of Mr. Chamberlain) we are authorised by Dr. Irvine, and the representatives of the Institution, to say that he and they will carefully consider any suggestions which your Council may desire to make in relation to the duties discharged by their medical man.

We write without delay, as we understand your Council remains in session only until Wednesday next, and will not meet again until May.

Yours faithfully,
PINSENT AND CO.

General Council of
Medical Education and Registration
of the United Kingdom,
299, Oxford Street, London, W.

December 3rd, 1900.

Dear Sirs,—

In reply to your letter of the 1st inst., I am directed by the President of the General Medical Council to say that the resolution of the Council on Dr. Irvine's case is that its further consideration be adjourned until the May Session. It will then be for him to submit to the Council any evidence relating to his professional action and conduct in the interval which he may desire to offer. The Council will then proceed to consider what judgment it will pass on the charge which has been proved against him.

The matter cannot be reopened at the present session of the Council, and I am not in a position to offer any suggestions on the points raised in your letter. A copy of the Council's Standing Orders in reference to the procedure in cases where judgment is deferred is enclosed herewith.

Yours faithfully,
H. E. ALLEN,
Registrar.

Messrs. Pinsent and Co.

THE DIPLOMA IN PUBLIC HEALTH.

SIR,—As a metropolitan medical officer of health who receives pupils, I have read with much wonder and some concern of the recent action of the General Medical Council. As to whether it was wise to make a rule extending the course of instruction for candidates for diplomas in Public Health from six months to nine, I express no opinion; but I may observe that in the opinion of those best qualified to judge, it appears to be as unnecessary as it is undesirable, and it must inevitably have the effect of excluding a considerable number from working for the diploma.

Being one (of only seven, I believe) of the metropolitan medical officers of health who take pupils for the six months' course of practical instruction in the outdoor work and duties of the medical officer of health, I am naturally concerned with the proposed new rule to the effect that the pupil must be associated day by day with us in our work. The matter, Sir, is quite impracticable; it is so utterly impossible that I do not propose to set forth here the results of such a rule if an attempt were made to put it into practice. If the rule is enforced, I shall have no alternative but to give up the work, and I cannot believe that any other metropolitan medical officer of health will engage in it.

But if the difficulties (and dangers) of carrying out such a rule in the metropolis, where there are some thirty-four medical officers of health, are so great, what is to be said with reference to our large provincial cities, with only one medical officer? Most of these are now teaching centres, and, under the proposed new rule, the one medical officer of health would have to be associated daily in his work with several students. In three months the friction and complaints arising from such action would make his position quite untenable.

One indeed hopes that, in accordance with the suggestion of the article in the BRITISH MEDICAL JOURNAL of December 8th, the Council will reconsider their decision.—I am, etc.,

December 11th. CURRICULUM.

KIRKES' PHYSIOLOGY.

SIR,—Some time back you published in the BRITISH MEDICAL JOURNAL a letter from Mr. John Murray, publisher and proprietor of *Kirkes' Physiology*. He drew attention to the fact that an unauthorised edition of a book bearing the same name was being published and sold in America. Those of your readers interested in the question of international copyright may be curious to know what has happened since. The following extract from the *Boston Medical and Surgical Journal* of November 8th (which follows reviews of the two rival editions) will show that the reprehensible conduct of certain publishers and writers in America still continues; in fact, a fresh edition of the unauthorised version has recently appeared:

It may seem strange to the uninitiated on reading the above reviews to find two books, both called *Kirkes' Handbook of Physiology*; the reader will naturally stop and wonder which is the book. To explain this peculiar anomaly, by giving a short history of *Kirkes' Physiology*, this note is written.

About the year 1850 Dr. Kirkes, with the aid of the late Sir James Paget, produced in England *Kirkes' Handbook*. This book, in vulgar parlance, "filled a long-felt want." It passed through many editions, until at last Kirkes died; then, after passing through various minor changes, the editorship of the volume was assumed by Mr. Baker and Dr. Harris, and by them the book was kept up to date, Mr. Murray, the publisher, owning the book. In this country, the book was reproduced by Lea Brothers and Co., and by them sold to Messrs. William Wood and Co. (What they sold is a mystery, as they had no rights to sell.) This firm never had permission to use either the late Mr. Baker's or Dr. Harris's name in connection with their publication. Still the publication and the sale went merrily on. Over four years ago Dr. Harris and Mr. Baker resigned their offices as editors. Mr. Baker is now dead, and Professor Halliburton assumed sole control, producing the present English publication, or Blakiston's American edition. Although Mr. Baker and Dr. Harris have had no connection with the book for over four years, Messrs. William Wood and Co. still produce a *Kirkes'* claimed to be edited by these men, and revised for American consumption by Warren Coleman and Dr. Charles L. Dana. In Wood's edition, under review, several illustrations can be seen (those on blood crystals) which have been lifted bodily from Halliburton's edition, and no acknowledgment made. There is also a remarkable similarity between the two editions in parts of the text. Perhaps this may be explained by the theory of telepathy.

Of the two editions I understand that Blakiston's is the only edition published in this country with the owner's permission, and from which the editor, Professor Halliburton, receives any remuneration. However, the present unfortunate state of [illegible] copyright law [illegible] no legal obstacles in the way of Messrs. [illegible] the book as they have done, but there [illegible] be shocked to find that in the [illegible] who assist in such questionable [illegible] not only from Mr. Murray the owner, but from Professor Halliburton. To sum up the whole matter, [illegible] that Blakiston's is the authorised edition, while Wood's is [illegible]

This statement is substantially correct. The figures of blood crystals which are specially mentioned as having been "lifted" were in the *Handbook* before I assumed control. But other figures which have been added during my editorship

have been pilfered; so that the ethics of the case remain unaltered.

The editor of the *Boston Medical and Surgical Journal* is to be thanked for the determined stand he has made in this matter in the interest of international honesty.—I am, etc.,

King's College, Dec. 6th. W. D. HALLIBURTON.

LONDON DIPLOMATES AND THE REFORMED UNIVERSITY.

SIR,—The greater towns outside the metropolis vie with one another in offering facilities to their students to obtain university rank, with no greater expenditure of time or labour, and the teaching, material, and opportunities give them surely no greater claim for this distinction; yet it is an unfair disadvantage in the long run to the London diplomates. The comparison of faults hardly bulks most on the side of the diploma men. For example, the practical clinical examinations are as stiff as any. A matter of favourable comment, it also seems to me, is that lately in the journals articles entirely by these gentlemen claim an unbeaten merit for crispness, thoroughness, and above all a characteristic practical terseness with effectiveness. In veering towards the harder examinations and longer curriculum in an overcrowded profession, where can be the harm in giving a pass degree to diplomates if it shall not interfere—apart from alphabetical distinctions—with the best men or women reaching universal acclaim for originality or success? The readiness is all, but the opportunities would be broadened by this scheme.

The academic object of giving a licence has been lost sight of, and might be well enough reintroduced. In the earliest and the mediæval universities it was customary for disquisitions, arguments, dissertations to precede the *licentia docendi* or licence, which was obtained as a direct preliminary to formal acceptance into the degree of the university. The M.B. apparently now takes its place in the medical faculties. The colleges and the ancient City Company of Apothecaries, which confers by-the-by a non-trading licence in medicine, do not monopolise the practice of licensing round London as formerly, but have failed to get it recognised by a university in England. And so we hobble along.—I am, etc.,

Sloane Square, S.W., Nov. 28th. H. ELLIOT-BLAKE.

DEATH CERTIFICATION.

SIR,—In reference to the suggestion in the BRITISH MEDICAL JOURNAL for an alternative scheme to the "public medical certifier," I hope you will allow me the opportunity of asking medical men, especially the country doctors, to express their opinion upon it. No doubt there are many most excellent and conscientious coroners, still they are human, and among them it may be assumed that some will occasionally abuse their powers. He may have a difference with a doctor, and for this reason will avoid him as much as possible; or he may have a friend he desires to give his cases to in another doctor. Under either of these circumstances, should an uncertified death occur, he will order his friend or another doctor who possibly never sets foot in the district in a general way, to examine and certify to him the result of death, not only to the annoyance of the medical man residing in the district, and very likely attending in the usual way the people where the death has occurred, but will also be objectionable to such people. I do not think any country doctor attaches any importance to the fees for inquests, as except in such cases where the coroner makes a rule of sending one special doctor when he requires medical evidence at his inquests, the fees are so few and far between as to be of little or no value; but a medical man does object to have another living on the borders of his practice sent to his patients to investigate a case that should properly fall to him.

I think the powers of coroners are quite sufficient without adding to them; and I strongly advocate a "public medical certifier" who should not be allowed to practise in the district over which he is appointed to certify.

With regard to the farce of some inquests, I will only mention one, as it was worse than a farce. Immediately after the report of a gun was heard a man was found shot. A doctor was fetched, who after careful examination proved conclusively how the deed was carried out, and would also have given most satisfactory evidence that it was a case of suicide during temporary insanity. But no medical evidence was called, and on the direction of the coroner an open verdict was returned. Comment is unnecessary.—I am, etc.,

December 9th. N.

THE COUNCIL OF THE MANCHESTER MEDICAL GUILD AND LECTURES TO MIDWIVES.

SIR,—Dr. Sinclair, in his letter under the above heading, attributed to Dr. Broadbent the intention to hurt Dr. Lea in describing him as Dr. Sinclair's assistant. It was obviously unfortunate that Dr. Broadbent's language was not more explicit in describing the relationship between these two gentlemen. Still, I cannot believe that he or any other member of the Council of the Guild could be actuated by unkind feelings towards Dr. Lea, who has served the Society so well, and whose resignation was regretted by all. Although a gynæcologist, he always took a broad and tolerant view of the midwives question, and many of us were looking forward to his help on the Subcommittee lately appointed to consider it. At the time of his resignation of the Secretaryship he expressed a wish not to sever his connection with the Council, so even yet we may have his valuable assistance in considering this many-sided subject.

Although one of those who supported the resolutions which caused Dr. Lea to resign, I feel it would be better if in future resolutions, except in cases of urgency, were not sent to the press until they had been confirmed by a general meeting. This would enable members of the Guild who are not on the Council to attend and criticise its resolutions, and possibly have them amended or rescinded. It is to be hoped that a rule to this effect will be framed at the general meeting next month.

The tone of Dr. Sinclair's letter is to be regretted. It clearly aims to offend, if not insult, gentlemen whose great offence is that they passed resolutions which he, with superb belief in his own infallibility, majestically despises. The Council of the Medical Guild may not be so sublimely conscious of its "human dignity" as perhaps Dr. Sinclair is of his own, but it has practical work in hand which it will continue despite his sneers. Such controversial methods as he employs can do no good, and only recoil upon those who use them.—I am, etc.

Irlams-o'-th'-Height, Dec. 3rd. DAVID OWEN.

LECTURES ON MIDWIFERY TO MIDWIVES.

SIR,—One cannot help being grateful and gratified that Professor Sinclair has condescended "to intervene, however reluctantly," in this discussion, and to make some excellent suggestions to the Council of the Medical Guild with a view to the prevention of leakage: (1) Introspection; (2) see themselves as others see them; (3) imagine the unconcern; (4) suspend for a time the practice of stirring up strife; (5) so put a stop to leakage. I am sure the Council will receive these proposals with the respect to which they are entitled, emanating as they do from a distinguished, if not the most distinguished, of the members of the Guild. Of course it is premised that such a peace-loving man practises all these articles himself, and that he sees himself as others see him—namely, that as he first commenced these unauthorised lectures, he was the primary cause of "the strife" he so much laments; that he was the first to issue "diplomas," however valueless they might appear to those who knew they were issued by men who were as presumptuous as they might be well-intentioned.

It is curious, if he is aware that the diploma I have referred to is still exhibited in the window, with his name appended as well as that of Dr. John Scott, that he has nothing to say about it, and that as a member of the staff of the Maternity Hospital he does not condemn the advertisement in the *Manchester Evening News*, a copy of which appeared in the BRITISH MEDICAL JOURNAL of November 10th, page 1408. Of course there was no such practice in his day, and we must "suspend for a time"—how long?—"the stirring up of strife to prevent leakage." Professor Sinclair appears to forget that "leakage," if well regulated, is often exceedingly useful.

Permit me to say further, in reply to Dr. Sinclair, that he is mistaken in rendering what I said of Dr. Lea—that it was certainly not "meant to hurt," nor ever dreamt of—that I never "intended to imply that he had acted under undue

influence and was practically not a free agent." I think too highly of Dr. Lea to ever imagine anything of the sort.—I am, etc.,

Ardwick Green, Dec. 1st. G. H. BROADBENT.

P.S.—The term (assistant) was used for consideration of your space instead of saying (was in the habit of assisting him at his operations).—G. H. B.

THE NEED FOR PROPERLY-EQUIPPED LABORATORIES IN IRELAND.

SIR,—The recently published addresses of Professor Pearson, delivered at the opening of the winter session at Queen's College, Cork, in the *Lancet*, November 3rd, 1900,[1] and his letter in the BRITISH MEDICAL JOURNAL, December 1st; of Professor Byers (presidential address to the members of the North of Ireland Branch of the British Medical Association, BRITISH MEDICAL JOURNAL, November 10th, 1900); of Professor W. H. Thompson (presidential address to the Ulster Medical Society, BRITISH MEDICAL JOURNAL, November 24th, 1900); and of Sir Christopher Nixon (presidential address to the Section of Medicine, Dublin Academy of Medicine, BRITISH MEDICAL JOURNAL, December 1st, 1900), with your valuable editorial remarks, show clearly the necessity for properly-equipped laboratories in Ireland, and emphasise the miserable ideas of the Government as to their duty in endowing such institutions so valuable to the State.

Sir C. Nixon deserves every credit for his desire that a Jenner Institute should be established in Dublin, and in time this may be accomplished; but considering what the Government has recently done for the Veterinary College in Dublin, and that on the Board of that College Dublin citizens are so fully represented, it is only fair that if a Jenner Institute is to be established in connection with the Dublin Veterinary College, some of the rich Dublin citizens, such as the Iveaghs, Ardilauns, Jamesons, or Powers, or the City Corporation, should provide the necessary funds.

No doubt, as Sir Christopher Nixon writes, the question is a most interesting one "as to what influence a school of veterinary medicine is likely to exercise upon human medicine, and in what way that influence may be utilised for the benefit of the Dublin Medical School," but Dublin is not Ireland, and there are medical schools of great importance outside the Irish metropolis; and to expect that State funds should be further expended in providing a Jenner Institute in association with this Dublin Veterinary College is indeed absurd, when, at the same time, the Government will do nothing to meet the pressing demands of Cork and Belfast, where there are medical schools, and in the case of Belfast with a population exceeding that of Dublin. The whole tendency of the present day in educational matters (medical and otherwise) is decentralisation; and the duty of the Government in Ireland is not to add another to the many richly-endowed corporations in Dublin, but to provide first for the more pressing claims of other parts of Ireland.

The Government in 1849 established the Queen's Colleges in Ireland (in Belfast, Cork, and Galway). These are entirely State-controlled institutions, but, notwithstanding the new developments in medical science (pathology, State medicine, hygiene, etc.), the annual grant for their support remains the same as it did when they were founded. It is surely the duty of the State to see that these new departments in these Colleges are properly equipped and endowed. They owe this to Munster and Ulster, and until the Government has fully-equipped, proper laboratories in Cork and Belfast, Dublin, which has so recently received a large grant for its Veterinary College, can well afford to wait. No city in the Empire for its population has received such an amount of State aid as Dublin, and the tendency of the present age is against further centralisation. Of what use would a Jenner Institute in Dublin be to Cork or Belfast? Suppose, in the recent outbreak of plague in Glasgow, the authorities had been obliged to go to Edinburgh or London to make the early and prompt diagnosis of that scourge, was it not owing to the fact that they had properly trained specialists in their laboratories that the disease was stamped out, and that Glasgow was, it is calculated, saved millions of money? Has not Manchester shown itself equal to deal with the obscure problems connected with the recent epidemic of peripheral neuritis? Liverpool and Birmingham do not depend on London, or Glasgow on Edinburgh; and, so in Ireland, there should be no more centralisation in Dublin until other properly-equipped laboratories are provided and endowed in various parts of the country, such as Cork and Belfast, suited to the areas in which they are situated; and where, in cases of sudden emergency, as a result of the specialised work in these institutions, prompt measures, often of great importance to the State, may be taken.—I am, etc.,

December 3rd. ONE WHO KNOWS IRELAND.

[1] See also BRITISH MEDICAL JOURNAL, p. 1383.

MYOSIN ALBUMEN IN FAILURE OF THE HEART IN THE AGED.

SIR,—Having received many applications from fellow practitioners for fuller information, as the result of a paper communicated to the annual meeting of the Association this year on the Dietetic Treatment of Cardiac Failure in the Aged,[1] more particularly inquiring as to the exact source and methods of preparation and treatment of myosin albumen, it may perhaps be of use briefly to set out the same for publication as the readiest method of complying with these requests.

Primarily, the readiest and cheapest source of myosin is good beef steak (and not "shin of beef" or "gravy beef"), as the maximum can be obtained from a smaller quantity of the former than the two latter. Freedom from too much fibrous tissue and fat is a distinct advantage.

Take ¼, ½, or 1 pound of beef steak; remove as much of the fibrous tissue and fat as possible, and reduce the same to finest sausage pulp in a mincing machine. This is more effectively done if the meat be prevented from issuing too rapidly from the machine either by a cork in the delivery tube or the palm of the clean hand placed in the same place, the handle being at the same time turned and reversed repeatedly.

It is essential that the meat be well crushed, and not "cut up finely," "pounded," or minced by a chopper, as the more sarcolemma tubes that are ruptured the better. Put the meat pulp now into a large basin, and add a cold normal chloride of sodium solution (roughly about 60 grs. to the pint). Do not add the salt to the meat pulp, but to the cold water before pouring it on the meat.

The amount of cold water used is immaterial; rather use too much than too little, except where the raw solution is intended for immediate administration without cooking as a drink with port wine or spices. After adding the cold saline solution, sufficient to float and cover the meat, beat up with a fork or egg-beater for five minutes, then leave standing under cover for 15 to 20 minutes, and again beat up for another five minutes. Skim away any floating fat. Now pass the whole through a fine hair or wire sieve to remove the raw meat fibre, and place on one side. (This, if not further required, makes capital "mince," or "Hamburg steak," if an egg or two be added, especially in poorer families.) Next take the red fluid, and place in a saucepan (enamelled) and heat gradually till the globulins, para globulins, albumins (with hæmoglobin) are quite curdled out, leaving the water quite clear and limpid, and devoid of colour.

If, owing to kidney affections, the extractives—as urea, uric acid, etc.—are undesirable, let the solution boil in order to extract them from the curd. Next pass through fine muslin or hair or wire sieve, and collect the myosin curd for use in puddings—custard, rice, sago, or tapioca—or as panada with egg-yolk and cream. This can easily be disguised, as the resulting curd has absolutely no taste. If, on the other hand, it is desirable that extractives be used, then, after the myosin has been curdled out, remove some of the clear water, and then take the raw meat fibre which was removed before curdling and placed on one side, and put it in a muslin bag and drop into the saucepan containing the curdled myosin, and go on now to prepare ordinary beef-tea by prolonged cooking. When finished, remove the bag of meat fibre, and there remains now beef-tea with an enormous amount of nutritives as well as stimulant extractives.

It is necessary that the myosin be curdled before adding the muslin bag containing the raw meat fibre, as otherwise the myosin will mostly be curdled in the bag and be lost.

The above two methods of treating the myosin curd meets

[1] BRITISH MEDICAL JOURNAL, October 13th.

the requirements of those who object to "uric acid," and those who do not. This method of using myosin in cases of heart failure in the aged supplies them with the much-needed sarcous nutriment, especially in cases where there are no teeth left to masticate, or ill-fitting false teeth owing to senile alveolar absorption precludes from proper or efficient mastication, leads to dyspepsia and consequently abandonment of proper food, with fatal resort to "slops," as discussed in the previous paper above mentioned.

The "myosin curd" and "myosin curd beef-tea" can be combined or peptonised or seasoned according to the taste of the patient or the desires of the physician.—I am, etc.,

Gower Street, W.C., Dec. 2nd. F. W. Forbes Ross, M.D.

FIBROIDS OF THE UTERUS BECOMING MALIGNANT.

Sir,—In your report of the Royal Medical and Chirurgical Society's meeting of November 13th, 1900, Dr. Champneys says, "he could not understand fibroids frequently becoming malignant, although the two might coincide"; Dr. Lewers "knew nothing about fibroids becoming malignant."

It is not sufficiently known that fibroids either (*a*) become malignant, (*b*) are mistaken for sarcoma, or (*c*) are associated, or coincide, with malignant disease of the uterus fairly often. In fact, so often as to give some grounds for removal of the whole organ whenever the uterus is removed for fibroids.

Professor Schauta, at the International Congress of Obstetrics and Gynæcology held in Amsterdam in 1899, in his report gives 11 cases of carcinomatous or sarcomatous degeneration of the cervix which had been left behind. These were published up to 1898. Dr. Doyen gives 1 case. I have seen 2 cases.

Of cases in which malignant degeneration has occurred in the uterus of patients who have been advised not to submit to operation, I have had 3 and Mr. Martin and Mr. Jordan have had several.

With a view to the formation of more definite opinions on these points, perhaps it would be well to place on record every case of malignant degeneration of fibroids of the uterus or of their association with malignant disease, and also of malignant disease in cases of hysterectomy with preservation of the cervix.

I may suggest, without reflection, that in places with several hospitals the patients may not return to the first hospital for second advice.—I am, etc.,

Wolverhampton, Dec. 8th. Fred. Edge.

THE CAUSATION OF THE CONGENITAL STRIDOR OF INFANTS.

Sir,—The paper in the British Medical Journal of December 1st by Drs. John Thomson and Logan Turner may be welcomed by all who are interested in this subject. We are glad to find that they have adopted our views as regards the local changes in the upper aperture of the larynx by means of which the stridor is produced. When, however, they proceed to conclude that the primary condition is "a disturbance of the co-ordination of the respiratory movements, probably due to some developmental backwardness of the cortical structures which control them," we are unable to accept their conclusion for the following reasons:

1. If the position be accepted that the local changes in the superior laryngeal aperture are sufficient to account for the stridor, we can see no necessity for invoking a purely hypothetical lesion in the central nervous system, and we have failed to find in the above paper a single piece of evidence in support of the author's views.

2. No information is supplied as to the nature of the ill-co-ordinated respiratory movements. In our experience the respiratory movements—apart from the local changes in the upper aperture of the larynx and the results following from them—go on exactly in the same way as in very young children, regarding whom the authors say that "the respiration under normal conditions is peculiar in being irregular in rhythm and in force, as if the co-ordination involved in its movements were not as yet under full control." They describe most accurately the "ill-co-ordinated and spasmodic nature of the breathing" in infants as the normal condition, and do not point out any peculiarity in the breathing of those patients, who, nevertheless, are said to acquire a deformity of the larynx through some such peculiarity.

3. We admit the fact that babies may make a similar crowing sound when they are coming out of chloroform, but deny that this crowing is produced in the same way as the stridor under discussion; for such crowing, which occurs also in the case of adults under similar circumstances, and not infrequently in infants during violent fits of crying, is due to spasm of the vocal cords and not to closure of the upper aperture of the larynx.

For these reasons we find ourselves unable to agree with the assumption by Drs. Thomson and Turner of a cerebral neurosis. We may add, indeed, that their valuable experimental work on the cadaver has tended to confirm us in our view that a deformity, in the shape of imperfect expansion of the upper aperture of the larynx, is the primary factor, and that it is congenital.—We are, etc.,

G. A. Sutherland.
London, W., Dec. 4th. H. Lambert Lack.

HOSPITAL ABUSE.

Sir,—I was attending a patient here whose case required operation. She was quite willing to pay for this, and is a patient in very comfortable circumstances. Unbeknown to me she was sent into a London hospital by her employers, and the operation done there. As a matter of fact, her travelling expenses, etc., cost her far more than the fee I intended charging, and of which I had informed her.

Surely this is a gross case of hospital abuse. Are not hospitals for the poor, and are not subscriptions obtained upon this understanding? Is it a fair thing that we should pay hospitals enormous sums for our education, and then that we should be robbed by them, and the public deceived? Surely because an employer is rich he cannot send patients into hospitals indiscriminately. I cannot afford to be robbed by hospitals.—I am, etc.,

Leslie Fletcher, L.R.C.P.Lond., etc.
Hoxne, Suffolk, Dec. 3rd.

THE L.S.A. AND TITLE OF "PHYSICIAN."

Sir,—May I ask through the medium of the British Medical Journal why the Apothecaries' Company have granted the title of "Physician" to their licentiates registered after 1886 and have withheld that privilege from those who obtained the licence before that date?

As the matter now stands, an L.S.A. (1886) or after is allowed to style himself physician and surgeon, while an M.R.C.S. and L.S.A. obtained before that date is still to be called surgeon and apothecary.

This does not seem fair or reasonable. Presuming that the title of "Physician" is given on the strength of having obtained a licence to practise physic, I cannot see why it can be withheld from those who have passed the same examination, but at an earlier date. Perhaps some of your readers may explain this apparent paradox.—I am, etc.,

December 8th. M.R.C.S. and L.S.A. before 1886.

THE LONDON MATRICULATION EXAMINATION.

Sir,—Your correspondent's rejoinder seems hardly adequate. His words were: "The Girls Public Day School Company continues to be behindhand in the matter of physical exercises, and requires too much home preparation." This statement is a grave one when made to the medical profession, whose concern is so intimate and constant with the health of children at school. Your correspondent does not allude to my reply, which I venture to think disposed of his statement; but refers to a letter signed by eight medical gentlemen with regard to one of our schools of which they had personal knowledge, and asks how many of the company's schools have the same advantages.

My former letter covers the whole ground, but I add the desired statistics. The company has 33 schools, with about 7,200 pupils. In all there are the organised games and gymnastic training I referred to. All have either playground or playfield, or both. One only has no proper playground, land for the purpose being unattainable, but it has the use of a playing field as well as a large recreation room. In all the system which I described is adopted to guard against overwork in home preparation. All have a medical adviser.

The plan of individual examination on entrance and regular supervision by a lady doctor is an innovation in day schools. It is in use now in seven of our schools. It will be borne in mind that in these day schools, except for four, or at the most five and a-half hours, five days a week in term time the pupils are at home in the care of their parents.

The question is, therefore, one of the delegation by parents of an important part of their responsibilities. Our Council would be glad to have the plan adopted in all their schools, but they must carry parents with them and cannot force the pace.—I am, etc.,

A. McDowall,
Secretary

Girls' Public Day School Company, Limited, 21, Queen Anne's Gate, London, S.W., Dec. 12th.

THE RULE OF HOSPITAL RETIREMENT.

Sir,—There are doubtless many beside myself much interested in this question. It is of vital import to all hospitals, more especially in the case of those to which medical schools are attached. It is a deplorable fact that there are many assistant physicians and surgeons in London and elsewhere between the ages of 40 and 50 who may continue as such for some years before they become full physicians or surgeons. This lateness and slowness of promotion act most prejudicially in the advancement of the treatment of in-patients, and in the teaching of students in the wards.

To remedy this state of things: (1) The age of retirement should be invariably at 60; (2) after seven years' service as an assistant, that title should be dropped, and there should be allotted to the promoted medical officer at least one-third of the beds in the possession of his senior.

It might be well if this promotion after seven years were voted by ballot of at least half of the medical staff. In this way a poor teacher, an indifferent practitioner, or an otherwise objectionable colleague would be eliminated. A little of such weeding of some of the staffs of the British medical schools would be of no small advantage, both to the pupils and patients.—I am, etc.,

November 30th. A Professor Who Retired Early in Life.

ABDOMINAL OPERATIONS: THE CASE OF DR. IMLACH.

Sir,—Judging from the letters which have recently appeared in the British Medical Journal, it seems that Dr. Imlach, through his friends, is endeavouring to pose as a martyr to science, the suggestions being that he was the pioneer of oöphorectomy, and that his enforced retirement from the Women's Hospital was due to the fact that the value of the operation was not known and appreciated at that time, and therefore public opinion was opposed to it.

I beg to traverse the entire position thus assumed. Dr. Imlach was not the pioneer of oöphorectomy. Lawson Tait had advocated and practised it long before; and the reasons for Dr. Imlach's enforced retirement were the following:

Rumours of a disquieting nature had been in circulation for some time amongst the profession and the public, and a scandal was arising; hence a Committee of the members of the Liverpool Medical Institution was elected to inquire into the matter, consisting of Drs. Nevins, Waters, Cameron, Macfie Campbell, J. H. Wilson, Alexander, Mr. Bickersteth, and Sir William Mitchell Banks. Dr. Cameron later on resigned his position. These gentlemen, after a long and exhaustive inquiry, came to the following conclusions:

That many cases had been operated upon without any relief resulting to the patients;

That a prior treatment of rest and palliative treatment had not been adopted;

That many women stated that they were operated upon without having the full nature of the operation and its results first explained to them;

This report was furnished to the members of the Institution, and to the Committee of the Women's Hospital, with the result that at the annual meeting of the latter Dr. Imlach was not re-elected.

It is ridiculous to assume that the members of this Committee did not understand the nature of the operation, or were influenced by antagonistic motives, as hinted. One fact, concerning the first conclusion arrived at, stands out pre-eminently to confirm it, namely, since 1886, although the attendance at the Women's Hospital has doubled, the percentage of cases of oöphorectomy since Dr. Imlach's enforced retirement has fallen from 27 per cent. to less than 4 per cent. Further comment is needless.

To endeavour, therefore, after fourteen years of silence to raise a false issue on the enforced retirement of Dr. Imlach from the Women's Hospital is contrary to truth, justice, and expediency, and it would have been better if the advice I gave to Mr. Bickerton had been followed, namely, "to let sleeping dogs lie."—I am, etc.,

Liverpool, Nov. 27th. Arthur Wiglesworth.

NURSING HOMES.

Sir,—Will you permit me as an old member of the profession, though not now in practice, to draw attention to the enormous charges made by some nursing homes, and the accommodation and attendance therein? I have lately had a young lady relation a patient in one for two months, and as I visited her there I am in a position to state the facts of the case.

The room the lady occupied was a fair-sized one on the entrance floor, looking out into a back yard with a brick wall within ten feet of the window. In the passage outside there was a kitchen lift which rattled up and down frequently during the day. There were no carpets on the stairs, so that there was frequent noise of footsteps. There was a knocker on the front door, with numerous applications to it from callers. The charge for this accomodation was £10 10s. per week.

There were two so-called nurses in the home in addition to the lady owner (or superintendent, I don't know which), but neither of them was properly trained; indeed, they had gained what knowledge they had in the home itself. This necessitated two special nurses being engaged, one for day, the other for night, at a cost of £2 2s. per week each, with £1 1s. for their board, or a total of £6 6s. per week in addition to the £10 10s., or a total of £16 16s. per week. I have the bill before me as I write, and on it I observe a printed item, "Special nurse" and "Board of ditto," proving that this is quite a common circumstance, that is, that the nursing supplied for £10 10s. is insufficient. I may say the value of the food supplied, chiefly milk, could not have been on an average more than 2s. per diem.

I also observe on the bill a printed item, "operation fee." Surely the medical profession is going down when "eminent surgeons" allow their fee to be collected in this fashion.

Altogether the mother of this young lady had to pay £127 for the benefits of this nursing home for eight weeks, which combined with the fees of the operator and the medical attendant and sundry other expenses, totalled up to over £300.

There is one other point I wish to allude to—namely, the undue influence exerted by the managers of these homes on the medical attendants. In the case I speak of the lady in charge wanted to go on her "holiday" and there is no doubt but that she put pressure on to get the patient "up" long before she should have been allowed out of bed—result, a severe relapse, which nearly proved fatal, and several extra weeks in the home at £16 16s. per week.

I do not sign my name, as I do not wish in any way to identify the home, the patient, or the medical attendant, but enclose the bill for your perusal. Possibly a discussion on this matter in your columns may lead to good results, as such charges are a terrible strain on people of moderate incomes.—I am, etc.,

December 10th. M.D.

THE MANAGEMENT OF THE SOFT PARTS IN THE MASTOID OPERATION.

Sir,—In the British Medical Journal of November 17th a short article by Dr. J. Kerr Love upon the above subject called forth some critical remarks from Dr. P. McBride, remarks with which I almost entirely agree, but to which I also take considerable exception. It seems to me that Dr. Love confuses the operation designated as "the Schwartze operation" with that usually termed "the Schwartze-Stacke operation," in the performance of which certain very important advances upon the original Schwartze operation have been

made. In the treatment of chronic suppurative disease of the middle ear and its adnexa, where deep-seated bone disease is present, the Schwartze operation is not radical, and to my mind is unsurgical, for the reason that the bridge of bone which is left between the antrum and the middle ear (which in chronic cases is almost invariably diseased) prevents not only thorough inspection of the diseased cavities, but also free drainage and surgical cleanliness. For years past aural surgeons have practically limited the performance of the Schwartze operation to acute cases, cases which must always be regarded from a totally different standpoint than genuinely chronic cases. For years past also, great attention has been paid to the treatment of the soft parts, and various plans have been adopted for dealing with them, the main idea being, by means of incisions, to so dispose of them as to line a portion of the antro-tympanic cavity (made as the result of the operation), and to endeavour to promote epidermisation of the remainder of the cavity from the edges of these flaps.

In Dr. McBride's letter in your issue of November 24th it seems to me that sufficient credit is not allowed to Mr. Ballance, and that Siebenmann's technique and Ballance's are confused. The essential point in Ballance's operation is that the whole antro-tympanic cavity is lined by *one* large skin graft, and those who have performed the operation know only too well how difficult it is to cut a sufficiently large graft for this purpose. The method adopted by Ballance is, I consider, quite new, and will, I believe, revolutionise the treatment of such cases; its advantages are enormous, and the rapidity with which healing takes place is truly astonishing. In my own practice I have performed several hundred operations for the cure of intractable suppurative ear disease with bone complications, and have found the frequent packing of the antro-tympanic cavity most irksome to the surgeon, and frequently most painful to the patient, to say nothing of the practical difficulties encountered in keeping granulations from forming upon its somewhat extensive bony walls; nor is this all, for frequently, even when after some months of local treatment (and I think three months by no means too long an estimate), the walls of the antro tympanic cavity have epithelialised, the inner wall of the tympanic cavity will still frequently be found uncovered, and presenting a secreting surface and a surface ready to become again infected by external agencies. Ballance's operation, when performed according to the rules laid down by the author, does away with these disadvantages. The large graft covers the inner tympanic wall and the bony walls of the antro-tympanic cavity, and secures at once that the exposed bony surfaces, lined as they are at the time of the second operation by a thin and very delicate layer of pink granulations, are covered by a complete layer of dry epithelium, which at once adheres, and as it were seals up the surfaces from future infection. The fact that the original line of incision has to be reopened and a second administration of an anæsthetic given for this epithelialising, although possibly a slight disadvantage, seems to me to be more than compensated for by the comparatively short and painless after-treatment, and by the still more important consideration that by its performance a definite cure can be promised which, so far as I am aware, can be promised by no other operative procedure with which I am acquainted.—I am, etc.,

Manchester, Nov. 26th. W. MILLIGAN.

THE ROYAL NAVAL MEDICAL SERVICE.

SIR,—In common with many of my brother officers, I am glad to see that some of the grievances of this Service are being noticed in the BRITISH MEDICAL JOURNAL.

Your correspondent, "Another N.O.," refers to the question of relative ages and ranks. I submit that this matter could be settled in a fairly satisfactory manner by promoting to staff-surgeon at 8 years, and to fleet-surgeon at 16 years' seniority. This could be done without change in the scale of pay, and it would place the medical officer on a footing somewhat approaching that of the executive branch. The lieutenant ranks with a major at 8 years; why should the medical officer, who is usually an older man than the lieutenant, have to wait until he has served 12 years? Again, if a lieutenant be promoted at all, he almost invariably becomes a commander before he has completed 16 years' lieutenant's time; it seems, therefore, only reasonable to expect a similar step for the medical officer, promotion to fleet-surgeon, at latest on completion of 16 years' service.

With regard to the important question of retirement at the end of 20 years' service, I hope that the danger to the Department of any breach of faith in this direction is already recognised by the Admiralty. If it became known in the medical schools that retirement after 20 years is obstructed, the number, and, more important still the quality, of the candidates for entry would be reduced by 50 per cent.

It is, however, a deplorable fact that medical officers nearing the completion of 20 years' service are careful to conceal their intentions with regard to retirement, believing, rightly or wrongly, that should those in authority be made aware of such intentions, they would frustrate them by appointing the officer to some foreign station.

A grievance which is sorely felt by all, and which is the cause of more bitter complaint than almost any other of our tribulations is the profound secrecy observed at headquarters regarding the probable movements of officers, and the consequent impossibility of any arrangement in the way of exchange such as is permitted between officers in the R.A.M.C.

I have said that the changes suggested in times of promotion to staff and fleet surgeons might be effected without change in the scale of pay; but I think the Admiralty would do wisely to increase the pay of fleet-surgeon on promotion to 30s. per diem. At the present rate, 27s. per diem, there is not sufficient inducement to the fleet-surgeon to serve on, for if he be a married man he is really better off on his pension of 20s. per diem, and without the expenses of messing on board ship, than he is when serving and receiving 27s. per diem.

Setting aside, however, for the present this proposal concerning pay, I would submit the proposed changes in respect of promotion as worthy of serious consideration, because these changes could be effected without any cost to the country, and the position of the naval medical officer could thereby be rendered distinctly more attractive.—I am, etc.,

November 13th. A STAFF-SURGEON, R.N.

SIR,—The Navy is an extraordinarily conservative institution, and such anomalies as your correspondent of September 15th points out are due to the fact that in times gone by they suited the exigencies of the service. When the present scale of rank and pay was constituted surgeons began life as such at a much earlier age than they do now, while promotion in the executive branch occurred at a later age than obtains now. At that time officers of different branches of the same relative rank were practically of the same age; nowadays the medical officer is, on an average, in promotion eight years behind the executive officer of the same age. This state of affairs has no business to continue.

Another anomaly is that though the education and outfit of a properly-equipped medical officer are far more expensive than is the education of either chaplains or naval instructors, his initial pay is less. It is trying when comparing the length of a chaplain's professional education with that of a surgeon's, and the relative severity of the examinations each has to pass to find that the lesser labour results in the greater wage.

The last anomaly I wish to draw your attention to is the absurdly low limit of age of the entry of surgeons. How can a man in these days be properly, generally, and professionally educated at the age of 21? He certainly can have held no house appointments at his hospital. Now the man wanted in the navy is the practical man who has had the practice of his profession ground into him after qualification. As a fact the average age of entry is between 24 and 25, and candidates have usually either held appointments or have done some practice since qualification, but it is hard on such men to feel that the only men who can hope ordinarily to reach the top of the tree are those who passed in directly after they were 21. Such men are usually sons or relations of naval officers who realise the supreme importance of early entry. Personally I think the age should be raised to 23 at the least.—I am, etc.,

October 25th. N. O.

"HAFFKININE."

SIR,—Dr. Balfour Stewart in his paper on The Methods of Making Antitoxic and Preventive Fluids in your issue of October 27th refers to the use of terms conveying erroneous

descriptions of the mixed products used for antiplague inoculation by Haffkine. The following are names used in a single official circular referring to the employment of this "preventive fluid," by an officer who is a skilled bacteriologist:—"Haffkine's antiplague vaccine," "the prophylactic," "the prophylactic material," "the plague prophylactic," "the serum," "the vaccine," "antiplague vaccine."

In the same issue of the British Medical Journal, Dr. Balfour Stewart uses the alternative terms:—"Haffkine's prophylactic fluid or vaccine." Miss Margaret Christie abides by "Haffkine's prophylactic," whilst you in an editorial paragraph (p. 1269) elect to call it "antiplague vaccine." Your Paris correspondent (p. 1257) will not commit himself by any reference to the fluid or its important constituents, but sums up the matter as "Haffkine's method of vaccination with dead bacilli."

In the Madras Presidency, with the consent of M. Haffkine and the approval of the President, Medical Board, India Office, the Madras Government (on my recommendation) last year directed the use in all official correspondence of the word "Haffkinine" as sufficiently descriptive, and conveying a just tribute to the learned bacteriologist. There is no reason why Madras should have a monopoly of this, if not euphonious, at least decidedly convenient, term.—I am, etc.,

W. G. King, Lieutenant-Colonel, I.M.S.
Sanitary Commissioner for Madras.

Guindy, Madras, Nov. 21st.

TREATMENT IN INFIRMARY LOCK WARDS.

Sir,—Perhaps you will allow me, as having had charge of an infirmary block in which the female lock ward was included, to make a few remarks with regard to the letter of "M.B Lond., D P.H Cantab.", and your own paragraph on the same subject.

Although the soiled clothes were passed through the laundry before they were returned to the patient on her discharge, they were not otherwise disinfected. Dresses, hats, etc., were invariably returned to the women very much the worse for crushing. In fact, the poor make this disregard of their clothes one of their many grievances against Poor-law infirmaries.

The diet in the lock ward was always the most meagre in the infirmary diet list, and usually consisted of tea and bread and butter (?) at 8 o'clock, a small portion of meat and potatoes at 12 o'clock, and tea (almost undrinkable) at 5 o'clock. Patients fasted from tea to breakfast-time, unless they had saved something from previous meals.

Difficulties were always made by the authorities if any kind-hearted young doctor ordered extras for some specially debilitated case. I found the nurses under me very ignorant of the disease, and in consequence afraid of necessarily contracting it if they themselves were to apply any local dressings required. Consequently the doctors frequently had to content themselves with ordering baths or letting the patients apply dressings for themselves. There was only one bathroom and one watercloset for all cases, whether gonorrhœal or syphilitic.

As to the unruliness of the patients, I found that they could easily be managed by kindness. I may add that at one infirmary, where there was a lady doctor, the discipline of the ward very much improved; and that the nurses took courage when they saw her making local applications for the patients, and heard the special lectures which she gave on the subject.

If rescue workers would try to make these wards bright and more comfortable (when first I took charge of this ward I found that flowers and pictures were prohibited, though freely supplied to other wards), and would supply games and needlework as well as books (not only religious books), the women would not be so eager to be discharged before they were really cured, and many of them would really be rescued from their evil life.—I am, etc.,

November 26th. Late Infirmary Sister.

Presentation.—On November 23rd, at Topcliffe, near Thirsk, a testimonial was presented to Mr. Thomas Carter Mitchell, M.R.C.S., on behalf of some 270 subscribers. It consisted of an illuminated address, a silver salver, and a purse of gold. The salver bore an inscription stating that it was presented by the inhabitants of Topcliffe and district on his retiring from practice so ably and faithfully carried on for 40 years.

OBITUARY.

HENRY GREENWOOD RAWDON, M.D.St.And., F.R.C.S.Edin., etc.

Liverpool.

It is with more than ordinary regret that we record the unexpected death of this accomplished and estimable surgeon, who until recently occupied a prominent position in Liverpool, a city to which he was closely united by many ties of friendship and by a long professional career.

Dr. Rawdon was descended from an old Yorkshire family, some of whose members had served with distinction in the Parliamentary army during the Civil War. He was born at Rock Ferry, Birkenhead, received his medical education at the school of the Liverpool Royal Infirmary and at Guy's Hospital, and became a Member of the Royal College of Surgeons in 1858. He took the degree of M.D.St.And. in 1859, and became F.R.C.S.Edin. in 1885. Soon after he obtained his qualifications to practise he was appointed House-Surgeon to the Liverpool Royal Infirmary, and was later Pathological Prosector and Demonstrator. He was afterwards appointed Surgeon to the Infirmary for Children, Liverpool. Subsequently he became Surgeon to the Royal Southern Hospital in the same city, and was placed on the consulting staff of the Infirmary for Children. He was at one time Honorary Medical Officer to the Bluecoat School and also a Vice-President of the Medical Institution. He was held in great esteem by his professional brethren, and acquired a high reputation, more particularly as an operator in cleft palate. About three years ago he retired from practice. He was in his 64th year when he was suddenly seized with symptoms indicating hæmorrhage into the pons Varolii, which soon led to a fatal termination. He leaves no family.

We are indebted to Mr. Rushton Parker for the following tribute to his memory:

Dr. Rawdon was an excellent surgeon, one of the best in his day and neighbourhood, where his achievements in hospital practice were well known and respected. His reputation was made at the Infirmary for Children, where he showed the highest expertness and much originality and ingenuity in the repair of hair-lip and cleft palate, in addition to general surgical skill of the first class. The writer and other surgeons of the place owe to Dr. Rawdon the basis of their practical knowledge of cheiloplasty, uranoplasty, and staphylorrhaphy, besides a good example and ungrudging advice in the development of our art. He was married, without issue, to an accomplished lady, Miss Brown, of Edinburgh, whose family is connected with that of the late Dr. Christison, and who has left pleasant memories in a wide circle of her own and of her husband's friends.

On Dr. Rawdon's final retirement from hospital he and his wife found a delightful retreat at Elstree, Hertfordshire, where they planned for themselves a busy leisure in gardening, cycling, and rural retirement. This happy project was grievously interrupted by Mrs. Rawdon's death a year ago, and is now suddenly and pathetically ended by his own. He was a man of unostentatious life, held in high regard by his professional and other friends, who, while regretting his removal from them, viewed with sympathetic interest the healthful prospect of useful life that seemed to await both Dr. and Mrs. Rawdon.

ALBERT ERNEST ELLIOTT, M.A.Cantab., M.R.C.S., L.R.C.P.,

Civil Surgeon, Field Force, South Africa.

We regret to notice the announcement of the death of Civil Surgeon A. E. Elliott, from enteric fever, at Middleburg, South Africa, on December 1st. He was one of the first to offer his services at the end of last year, and was attached to No. 4 Field Hospital. His energy and devotion to duty were at once appreciated, and he was sent to the front and was with the hospital at Spearman's Farm during the battle of Spion Kop. At the time of his death he was attached to the 4th Brigade Division Royal Artillery, in medical charge of the 21st, 42nd, and 53rd Batteries, and had recently been mentioned in despatches as always being in the firing line.

Mr. Elliott graduated B.A.Camb. in 1892 and M.A. in 1895. He received his medical education at St. Thomas's Hospital, and took the diplomas of M.R.C.S., L.R.C.P.Lond. in 1898. He was a keen sportsman and a good all-round athlete, having won his Rugby Blue at Cambridge and his International Cap for England. Personally, the soul of honour and pluck, he was a man of whom the profession may be proud, and his untimely death at the outset of his career will be mourned by a wide circle of friends among whom he was deservedly popular.

Mr. FREDERICK TREVES has been kind enough to send us the following tribute to Mr. Elliott's services:

Mr. Elliott joined No. 4 Field Hospital at Frere some little time after the battle of Colenso. He accompanied the hospital to Spearman's Farm, and helped to attend the wounded from Spion Kop and Val Krantz. He followed the hospital back to Chieveley and thence on to Ladysmith. He was an admirable surgeon, most eager and most painstaking in his work and most thorough in all that he did. He was particularly unselfish and very kind-hearted. He had no idea of sparing himself, and if I saw a figure going round the tents at unusual hours of the night I knew it was Elliott. The soldiers were much attached to him and he to them. Nothing was too much trouble for Elliott, and his thoughtfulness for others was always making itself apparent. He was the very best of companions, always genial, always ready, keen for everything that was going, whether it was an extra spell of work or a suddenly-devised expedition. It was a great pleasure to work with him, and I know well that everyone in No. 4 Field Hospital will deeply and sincerely mourn his death. As the soldiers would say, he was "a really good sort."

PROFESSOR LEWIS SAYRE,

New York.

PROFESSOR SAYRE, who died recently at the age of 80, was born on February 29th, 1820, at Battle Hill, New Jersey, and received his preliminary education in the Transsylvania University at Lexington. In 1839 he went to New York and studied medicine, taking his degree in 1842 at the College of Physicians and Surgeons. For the next ten years he was Preceptor in the College. After filling various hospital appointments he became Surgeon in 1853 to the Bellevue Hospital. In the same year he was appointed to the Chair of Surgery in the College of which he was one of the founders—of the Bellevue Medical College, which in 1898 was annexed to the University of New York. He was also one of the founders of the New York Academy, of the New York Pathological Society, and of the American Medical Association, of which body he was President in 1880. He had a world-wide reputation as an orthopædic surgeon, and his name is well-known in connection with his method of treatment of spinal curvature. He took great interest also in sanitary reforms.

He was the first surgeon in America who successfully performed resection of the hip for coxalgia; this he did in 1854. During the meeting of the Congress of Medicine of Philadelphia in 1876 he performed the operation before a large number of surgeons, among whom was Lord Lister. It was in a report presented to the American Medical Association in 1876 that he first brought forward his method of treatment of curvature by the plaster jacket, and on that occasion the Association passed a special vote of thanks to him for this invention "as marking an epoch in the history of surgery."

Among his writings are the *Mechanical Treatment of Chronic Inflammation in the Joints of the Lower Extremities*, 1865; a *Practical Manual of the Treatment of Club-foot*, 1869; *Lectures on Orthopedic Surgery and Diseases of the Joints*, 1876; *Spinal Disease and Spinal Curvature: their Treatment by Suspension and the Use of the Plaster-of-Paris Bandage*, 1877.

WE regret to record the death after a very brief illness at his residence, Tynyffordd, Colwyn Bay, on November 20th, of Dr. ROGER EDWARDS. Dr. Edwards was 60 years of age, and was a native of Dolgelly. He studied medicine at University College, London, taking the M.R.C.S.Eng. and L.R.C.P.Lond. in 1875. He subsequently held the appointments of House-Physician at University College Hospital, Senior House-Surgeon at the Royal Free Hospital, London, and Resident Medical Officer at the Toxteth Park Workhouse, Liverpool. He started practice at Bala, and whilst there held the Medical Officership of Health. Removing to Llanfyllin, Montgomeryshire, he established an extensive practice, and became one of the most prominent public men in the county. He was several times re-elected Mayor of Llanfyllin, was a member of the County Council, and chairman of the County Governing Body. His active interest in education and local government affairs made him exceedingly popular, and when three years ago he left the county he was the recipient of a public testimonial from the inhabitants of Llanfyllin and district. He removed to Colwyn Bay where he acquired a wide and growing practice, and was much beloved for his generosity. In 1896 he took the degree of M.D. at Durham, he was a member of the North Wales Branch of the British Medical Association, and frequently contributed papers at the meetings. He was buried at Llandrillo-yn-rhos Churchyard on Saturday, November 24th, and leaves a widow to mourn his loss.

WE have to record with regret the sudden death of Mr. J. M. MENZIES, M.A., the valued Honorary Secretary for sixteen years of the St. Andrew's Graduates' Association. He attended the annual general meeting of the Association on Friday, St. Andrew's Day, and on the proposal from the chair by the President, Sir Charles Gage Brown, he was re-elected with applause to the office he had filled so well. On Sunday, December 2nd, he felt a little poorly, this soon passed into acute pain in the chest and arms, and before medical assistance could be procured he died, apparently of angina pectoris. The Association sustains a great loss by his removal, for he was an able adviser on all university interests, and a genial friend of all its members by whom he was highly esteemed.

THE death on December 11th is announced of Mr. LIONEL EDWARD KAY-SHUTTLEWORTH, British Vice-Consul at San Remo. Mr. Kay-Shuttleworth, who was born in 1849, was educated at Cambridge, and became a Member of the Royal College of Surgeons of England in 1876.

WE have to record with regret the death of FREDERIC EDMUND HUBBARD, M.R.C.S., L.R.C.P., of Diss, Norfolk, which occurred on November 25th after a long and trying illness borne with patient courage. Dr. Hubbard was born at Hythe in Kent in 1858, and received his preliminary medical training at Guy's Hospital. He was appointed Senior House Surgeon to the Kent and Canterbury Hospital in 1884, which office he held for nearly two years. In 1886 he entered into partnership with Dr. T. E. Amyot, of Diss, a well-known and widely-esteemed practitioner, on whose decease Dr. Hubbard took the whole practice, carrying it on with conspicuous success until slowly-increasing weakness, against which he struggled bravely, compelled him to cease work. He took a sea voyage to Norway in the summer of 1899, and another to the Mediterranean in September, 1899, unfortunately without benefit to his health. He was a member of the Norwich Medico-Chirurgical Society, and held the appointments of Medical Officer of the 5th Diss District of Depwade Union, and Public Vaccinator to the same District, Medical Officer of Health of Diss Urban District, and other appointments. His loss is deeply mourned by a wide circle of patients, by whom he had become greatly beloved for his kindly nature, uprightness of character, and earnest endeavours to allay suffering. He leave a widow and two young children.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession who have recently died are Dr. Henry D. Noyes, ex-President of the New York Ophthalmological Society, aged 68; Dr. Gustave Peltier, of Sedan, who served as Surgeon to the Hospital of that town in the Franco-Prussian war, and was the author of numerous contributions to the *Progrès Médical*; Dr. Ant. Ferreira França, sometime Professor of Surgical Pathology in the Medical Faculty of Rio de Janeiro; Dr. Apollinaris Podres, Professor of Surgery in the University of Charkow, aged 47; Dr. Bernhard Spinola, Director of the Charité Hospital, Berlin, aged 64; Dr. Duplouy, sometime Director of the Medical Department of the French Navy; and Dr. Giovanni Chiverny, of Milan, formerly Medical Superintendent of the

Asylum of Senavra in the Province of Coma, author of numerous contributions to medical literature, most of which appeared in the *Archivio delle Malattie Mentali*, aged 88.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE UNDERMANNING OF THE ARMY MEDICAL SERVICE.

THE following is the distribution of the active list of the Army Medical Service, as shown in the Army List for December:

Distribution in the December Army List, 1900.

Ranks.	Home.	South Africa.	Other Foreign Stations.	Not Posted.	Total.	Remarks: Seconded.
Surgeon-Generals ..	5	1	4	—	10	—
Colonels	7	9	9	—	25	2
Lieutenant-Colonels...	23	37	63	—	123	4
Majors	32	174	159	3	368	3
Captains	19	69	103	1	192	6
Lieutenants	38	118	28	2	186	—
Total...	124	408	366	6	904	15

The total is 5 less through retirements on the non-effective list. There are 6 more at home, 14 fewer in South Africa, 1 more at other foreign stations, and an addition of 2 to the surgeon-generals, and colonels in South Africa in the position of the position of colonels, are all now granted [illegible] and majors in rank; this seems to be the result of our persistent advocacy of such measures.

There are 2 retired officers and 7 of the Militia Medical Staff Corps serving in South Africa, and 114 retired officers are employed.

It is now a year since we began to give these monthly abstracts relative to the distribution of army medical officers. There is a total increase of about 70 medical officers on the active list compared with December, 1899. South Africa, which then accounted for 245, now absorbs over 400, with a corresponding fall in the numbers at home and at other foreign stations. The number seconded has declined and the unposted fallen to a minimum, notwithstanding the stress of wounds and sickness which meanwhile has fallen on the service.

The service is probably in a better position as regards numbers than it was a year ago, but still far under the strength required to bring it to efficiency.

THE PEKIN DESPATCHES.

A PARLIAMENTARY paper just issued contains the "Reports from Her Majesty's Minister in China respecting events at Pekin." The first despatch, dated June 10th, describes the rapid spread of the "Boxer" movement at the end of May; and in subsequent despatches Sir Claude Macdonald gives a vivid picture of the conduct of the Chinese authorities, and of the sufferings endured by those who were shut up with him in the Legations during their eight weeks' siege. Sir Claude speaks highly of the gallantry of the forces, British and foreign, which defended the Embassy, including in his praise the many volunteers who lent their aid. "One of the most important departments in the system of defence," he says, "was the international hospital. The two doctors doing duty were Dr. Poole, Legation Surgeon, and Dr Velde, of the German Legation. During the siege 135 cases passed through the hospital, 25 suffering from illness; the rest were all severely wounded. Owing to the devotion and skill of these two medical officers, 110 of the wounded were eventually discharged cured; and this notwithstanding that towards the end of the siege, the resources of all the dispensaries having proved unequal to the strain, medical appliances, such as bandages and medicated wool, had to be replaced by makeshifts made from cast-off linen, the wool being replaced by sterilised sawdust.

Further despatches on the same subject appear in the *London Gazette* of December 11th. They are principally from Captain Edmund Wray, Royal Marine Light Infantry, Commanding the British Marine Guard at the Pekin Legation, and are in form of a diary of events. Captain Wray encloses a report from Dr. Wordsworth Poole, C.M.G., Physician to the Legation, in which that gentleman desires to bring to notice "the conduct of Richard G. Fuller, Sick Berth Steward of H.M.S. *Orlando*, who worked under me in the International Hospital during the siege of Pekin. The work was excessively arduous, and he proved himself an invaluable assistant. He was indefatigable at his work, of which he has an excellent knowledge. He managed the sick of eight nationalities with great tact. Both myself and my colleague, Dr Velde, formed a very high opinion of his capabilities. In fact, it would be impossible to overpraise his conduct."

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty:—ARTHUR S. G. BELL, Surgeon to the *Boscawen* for the *Minotaur*, December 5th; WALTER H. S. STALKARTT, M.D., Surgeon to the *Alacrity*, December 7th; HUGH T. BURNISTON, M.B., Surgeon to the *Duke of Wellington*, additional, for Portsmouth Dockyard, December 13th.

ROYAL ARMY MEDICAL CORPS.

MAJOR F. M. BAKER, M.D., retires on retired pay, December 8th. He was appointed Surgeon, March 6th, 1880, and Surgeon-Major twelve years later. He has no war record in the *Army Lists*.

Captain WILLIAM PEARSON BARTER died at Agra, India, on December 2nd, at the age of 34. He was the last surviving son of Brigade-Surgeon J. F. Barter, Indian Medical Service, retired, and was appointed Surgeon-Lieutenant, July 29th, 1893, becoming Surgeon-Captain three years thereafter.

Civil Surgeon COURTENAY C. PARSONS died of enteric fever on December 2nd at Harrismith, Orange River Colony. He was the eldest son of Dr. Parsons, of Dover.

The following have been discharged from hospital to duty: Lieutenant G. J. S. ARCHER, Captain G. ST. C. THOM.

MILITIA MEDICAL STAFF CORPS.

MAJOR Sir J. R. A. CLARK, Bart., late Army Medical Staff, is promoted to be Surgeon-Lieutenant-Colonel, December 5th.

Surgeon-Lieutenant Colonel W. TWIGG, M.D., Mid-Ulster Artillery (Southern Division Royal Artillery), retires, retaining his rank and uniform, December 13th.

ARMY MEDICAL RESERVE.

SURGEON-MAJOR A. KINSEY MORGAN resigns his commission [December 8th.

COLONIAL MEDICAL SERVICE.

SURGEON-MAJOR JAMES IRVING, M.D.Edin., Canterbury Mounted Rifles, President of the British Medical Association in New Zealand, died at Nelson, New Zealand, on October 28th. He was the first resident at Newark-on-Trent.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL C. LITTLE, M.D., Madras Establishment, who entered the service as Assistant Surgeon, March 5th, 1872, is promoted to be Colonel from February 12th, 1900.

Major JAMES HENDERSON SELLER, M.B., Bengal Establishment, died at Mandalay on November 25th, aged [illegible] years. He was appointed Surgeon September 5th, 1885, and Major twelve years later.

Surgeon-General GEORGE VERNON CURRIE, Bengal Establishment, died at Eastbourne Terrace, Hyde Park, on December 3rd, aged 72 years. He entered the service as Assistant Surgeon January 14th, 1854; became Brigade-Surgeon November 27th, 1879; and retired with the honorary rank of Deputy Surgeon-General April 10th, 1884. He served in the Indian Mutiny campaign in 1857, and was in the engagement at Hari Mardan (medal), and in the Afghan war in 1879, including the action at Kam Dakka (medal).

THE VOLUNTEERS.

SURGEON-CAPTAIN T. W. J. ALLEN, M.D., 1st Lincolnshire Artillery (Western Division Royal Garrison Artillery), resigns his commission, November 28th.

The undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps respectively specified: JOHN R. EVANS, 1st (Pembrokeshire) Volunteer Battalion the Welsh Regiment, November 28th; ARTHUR M. WARE, M.B., 14th Middlesex (Inns of Court) Rifles, November 28th; BERTRAM ADDENBROOKE, M.D., 1st Volunteer Battalion the Worcestershire Regiment, December 5th; HENRY G. L. ALLCROFT, 1st Cinque Ports Rifles, December 5th.

Surgeon Lieutenant R. B. WRIGHT, 1st Cheshire and Carnarvonshire Artillery, is promoted to be Surgeon Captain December 5th.

Surgeon-Major D. E. FLINN, 5th (Irish) Volunteer Battalion the King's (Liverpool Regiment), is promoted to be Surgeon-Lieutenant-Colonel December 5th.

Surgeon-Captain H. G. ASHWELL, 1st Nottinghamshire (Robin Hood) Rifles, resigns his commission, December 5th.

Surgeon-Captain A. MACPHEE, M.D., 5th (Glasgow Highland) Volunteer Battalion the Highland Light Infantry, is promoted to be Surgeon-Major, December 5th.

Surgeon-Major F. W. GIBBON, 1st Durham Engineers, has been granted the Volunteer Officers' Decoration.

Surgeon-Lieutenant-Colonel J. MAY, 2nd Devonshire Artillery (Western Division Royal Garrison Artillery), resigns his commission, December 12th; he retains his rank and uniform.

Surgeon-Lieutenant S. P. JOHNSON, M.B., 1st Warwickshire Artillery, is removed from the Volunteer Force [illegible] for his services, he wearing the Volunteer decoration for his services, he wearing the Volunteer decoration.

Surgeon-Lieutenant-Colonel W. S. LIMRICK, 4th Volunteer Battalion the King's (Liverpool Regiment), resigns his commission, retaining his rank and uniform, December 12th.

The undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps respectively specified, dated December 12th:—ARCHIBALD G.

GULLAN, M.B., 8th (Scottish) Volunteer Battalion the King's (Liverpool Regiment); JAMES G. ANDREW, M.B., 1st Lanarkshire Regiment; VERNON J. GREENHOUGH, M.B., 2nd Volunteer Battalion the Sherwood Foresters (Derbyshire Regiment).

Surgeon-Captains P. S. SPOKES and J. W. PARE, M.D., 17th (North) Middlesex Rifles, and Surgeon-Captain A. G. BATEMAN, M.B., 16th Middlesex (London Irish) Rifles, resigns their commissions, December 12th.

VOLUNTEER MEDICAL STAFF CORPS.

THE annual supper and smoking concert of No. 1 Company, composed of students from Middlesex, Charing Cross, King's College, and University College Hospitals, took place at headquarters, Calthorpe Street, on November 30th. Surgeon-Captain Whait was in the chair, and about seventy members and guests were present.

Among the toasts were "The Queen," "Our Guests," and "Those of the Corps serving in South Africa." Speeches were made by the Commanding Officer, the Major, and the Adjutant.

The concert was a great success, and an altogether enjoyable evening was spent.

THE ROYAL NAVY MEDICAL SERVICE.

NIL DESPERANDUM writes: It is with satisfaction I read the letters of "M.O., R.N.," "N.O." and "Naval Medico" in the BRITISH MEDICAL JOURNAL concerning the Naval Medical Service, for they are the first to draw attention to what the majority of naval medical officers feel are the disabilities under which they serve. No doubt the previous silence has been largely due to the *esprit de corps* of the department, and to the strong feeling that the deliberations of the Departmental Committee which sat last year to inquire into the conditions of the Naval Medical Service would have resulted in the removal of these disabilities. Though some important alterations for the better instruction of surgeons on entry were made, the privilege of a post-graduate course extended to the senior medical officers and the supply of surgical instruments to ships decided on, they have failed to remedy what are felt to be real grievances. At present a surgeon joins at an average age of something over 24. He has to go twelve years before getting his promotion to staff-surgeon, which is equivalent to the rank of senior lieutenant, who receives his step after eight years' service as a lieutenant, which rank is usually obtained between the ages of 21 and 22. He, therefore, at the age of 29 is the surgeon's senior by some seven years, and is still more his senior some five or six years later on promotion to commander, a rank a surgeon cannot obtain under twenty years, which makes a disparity of rank for rank of ten years. This disproportion as regards rank is not felt to the same extent by the naval instructors, who get their various steps in the same manner as ourselves—namely, by length of service—but who obtain their promotion to staff and fleet rank after eight and fifteen years respectively.

To the civilian this question may seem a small matter, but to those who have to spend the greater part of their time on board ship it is of the greatest moment, as on the question of seniority the choice of cabins depends, besides which even the most open-minded man must feel some loss in dignity to have as his senior in rank an officer so very much his junior in age.

Financially the surgeon in the service is certainly able to live on his pay so long as he remains single, but, being human, he probably sooner or later contemplates matrimony, and may, while *non compos mentis*, enter the wedded state. From this time onward, unless blessed with private means, he is constantly hampered with financial difficulties. Taking a man of 30 years of age with six years' service, his salary is £246 per annum. Out of this salary he has to support two establishments, even though he be attached to a harbour ship and lives to a great extent at his home. His mess bills on board can hardly be less than £5 per mensem; and what with uniform and customary ship entertainment, his service expenditure is close on £100 a year, leaving something less than £150 for the support of his home and the keeping up of the necessary insurance on his life. No very substantial increase takes place till his promotion to staff surgeon, six years later.

Under the present conditions the surgeon who entered at the age of 25, having fulfilled special appointments, has much less chance of reaching the higher ranks than the man who entered immediately after qualifying, for although ability is taken into account in promotion to Deputy-Inspector General, the younger man starts with some years to his credit, and can afford to wait, while the elder one has to retire on account of age.

The grievance pointed out by "Naval Medico" is certainly a very real one, and no doubt the prospect of having to take turns in the ship duties with a surgeon in many cases fresh from Haslar influences men to retire on reaching the completion of their twenty years.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

Appointments.—Mr. F. H. Neville, F.R.S., and Dr. Marshall Ward, F.R.S., have been appointed members of the General Board. Dr. H. L. Anderson and Mr. W. Bateson, F.R.S., have been appointed members of the Committee of the Board for Biology. Mr. J. E. Marr, F.R.S., has been appointed University Lecturer in Geology, and Mr. H. Herbert Smith, Gilbey Lecturer in Agriculture; Professor Macalister an additional Examiner in Anatomy, and Dr. S. H. Habershon an additional Examiner in Medicine; Dr. Annington, Dr. Collingridge, Dr. Tatham, and Professor Woodhead Examiners in Sanitary Science for the D.P.H.

Walsingham Medals.—The gold medal has been awarded to Mr. H. H. Dale, of Trinity College, for his essay on the Galvanotaxis of Ciliate Infusoria; and the bronze medal to Mr. R. C. Punnett, of Caius College, for his essay on the Formation of the Pelvic Plexus.

Affiliation.—The University of New Brunswick has been affiliated to the University of Cambridge.

Humphry Museum.—The Senate has decided to demolish the old octagonal museum at the medical school, which at present occupies the site of the proposed Humphry Museum. Temporary accommodation for the displaced departments will be provided in buildings belonging to the University Press.

UNIVERSITY OF EDINBURGH.

NUMBER OF STUDENTS IN MEDICINE AND IN SCIENCE.

TABLE I gives the number of entries in the various years of medical study during the past five sessions, in each case at November 30th. The last line gives the increase or decrease as between this session and last:

TABLE I.

Session	Year of Study.					
	1st.	2nd.	3rd.	4th.	5th.	Total.
1896-97	218	223	202	239	279	1161
1897-98	205	208	228	193	333	1167
1898-99	187	211	212	211	329	1150
1899-1900	221	176	213	207	319	1136
1900-1901	237	192	187	203	275	1094
Increase or decrease ...	+ 16	+ 16	— 26	— 4	— 44	— 42

The most interesting point in this table is the increase in the numbers in the first two years of study. The fall in the second, third, and fourth years was a necessity from the smaller numbers in the earlier years. As to the first year note also that the present session is 23.4 above the average of the past five years.

Table II gives the numbers of students of science during the past five sessions.

TABLE II.

	Year of Study.			
	1st.	2nd.	3rd.	Total.
1896-1897...	54	25	38	117
1897-1898..	48	39	33	120
1898-1899...	58	28	33	119
1899-1900...	61	32	33	126
1900-1901...	61	31	44	136
Increase or decrease	No change	— 1	+ 11	+ 10

The total number of students in all the Faculties is less by 45 than last session, and less by 26 than the average of the past five years.

At the Medical Preliminary Examination in October last there appeared for examination 128 candidates, including 13 women. Of these, 61 passed in English and 20 failed; in mathematics 48 passed and 38 failed; in Latin 48 passed and 47 failed; in Greek 13 passed and 1 failed; in French 36 passed and 49 failed; in German 3 passed and 7 failed; in Bengali 1 passed; in Urdu 1 passed.

In the Faculty of Medicine there passed the Preliminary at one University Examination 36; at two University Examinations 9; partly with outside exemptions 17; entirely with outside exemptions 59; exempted by degree in Arts or Science 7, completed Preliminary 128, as against 119 in November, 1899; partly completed Preliminary 14; formerly completed Preliminary or otherwise accounted for 106; total first year students of medicine (including extra-academical graduation women), 248.

There are 13 matriculated women students of medicine. These are in attendance at the Class of Physics, the only University class open to them. There are 173 Extra-Academical Graduation Students of Medicine.

UNIVERSITY OF LONDON

M.B. EXAMINATION FOR HONOURS.—The following candidates have passed this Examinations as undernoted:

Medicine.—First Class: E. A. Gates, St. Thomas's Hospital; Olive McDougal (Gold Medal), London School of Medicine and Royal Free Hospital; D. J. McGavin (Scholarship and Gold Medal), Mason College and Queen's and General Hospitals, Birmingham. Second Class: Louisa Hamilton, Royal Free Hospital; Mary Hannah Frances Ivens, London School of Medicine and Royal Free Hospital; W. H. Willcox, B.Sc., St. Mary's Hospital; Louisa Woodcock, London School of Medicine and Royal Free Hospital. Third Class: W. F. Addey, University College; W. Payne, Westminster Hospital; A. B. Soltau, London Hospital.

Obstetric Medicine.—First Class: Mary Hannah Frances Ivens (Scholarship and Gold Medal), London School of Medicine and Royal Free Hospital; D. J. McGavin (Gold Medal), Mason College and Queen's and General Hospitals, Birmingham; A. B. Soltau, London Hos-

pital. Second Class: Louisa Hamilton, Royal Free Hospital. Third Class: E. M. Niall, St. Bartholomew's Hospital; M. H. Phillips, University College and Royal Infirmary, Bristol; W. H. Willcox, B.Sc., St. Mary's Hospital; Florence Elizabeth Willey, B.Sc., London School of Medicine and Royal Free Hospital.

Forensic Medicine.—First Class: W. H. Willcox, B.Sc. (Scholarship and Gold Medal), St. Mary's Hospital. Second Class: Margaret Bernard Dobson, London School of Medicine and Royal Free Hospital. Third Class: W. H. Coltart, Mason College; W. Gough, B.Sc., Yorkshire College; Mary Hannah Frances Ivens, London School of Medicine and Royal Free Hospital; J. W. Little, St. Thomas's Hospital; A. B. Soltau, London Hospital.

UNIVERSITY OF ST. ANDREWS.

THE half-yearly meeting of the General Council of St. Andrews University was held on November 30th in the hall of the United College, under the presidency of Mr. James Stewart, the Lord Rector.

Deaths of the Duke of Argyll and the Marquis of Bute.—Resolutions were passed recording the regret of the Council at the loss sustained by the University by the death of the late Duke of Argyll, who for forty-eight years had been its Chancellor, and by that of the late Lord Bute, who, besides having been Lord Rector of the University for six consecutive years, was one of its most munificent benefactors in modern times.

Election of Chancellor.—Lord Balfour of Burleigh was unanimously elected Chancellor in succession to the late Duke of Argyll.

Professorships of Anatomy and Physiology.—The report of the Committee on Ordinances and Draft Ordinances was read recommending the General Council to approve of the two draft ordinances for the foundation of the Bute Chair of Anatomy and of the Chandos Chair of Physiology; the report and recommendations were unanimously adopted. The step of establishing two medical Professorships in Anatomy and Physiology had been made possible by the munificence of the late Lord Bute, who had set apart a sum of £20,000 to form the endowment of the Chair in Anatomy.

Finance.—A long discussion followed with regard to University finance. The excess of expenditure over income for the previous year had been £490. A Committee was appointed to procure funds for and to select a suitable memorial to the late Marquis of Bute.

MEDICO-LEGAL AND MEDICO-ETHICAL.

A CORRESPONDENT sends us a copy of the [illegible] which are announced Sunday evening health lectures to be given by [illegible] well-known local members of the medical profession. We do not think that the fact that these lectures are to be delivered on Sunday evening in a Congregational church differentiates them in essence from other health lectures delivered elsewhere, but there has been great laxity in the way in which such lectures have been advertised. We may add that it is derogatory to the medical profession for medical men to allow themselves to be advertised by large posters as delivering a lecture upon some professional subject, and we have no evidence that this is contemplated in the particular case. We would suggest that local Ethical Committees should endeavour to check the practice

DANGEROUS PRESCRIBING.

IT is laid down by decisions in the High Court that "it is no crime for anyone to administer medicine, but it is a crime to administer it so rashly and carelessly as to produce death." Sir Matthew Hale, in his *History of the Pleas of the Crown*, in relation to this point has said: "The doctrine, therefore, that if any dies under the hand of the unlicensed physician it is felony is apocryphal, and fitted, I fear, to gratify and flatter doctors and licentiates in physic, though it may, as I have said, have its use in making people cautious and wary how they take upon them too much in this dangerous employment." When, however, gross negligence, unskilfulness, and ignorance are proved to have either caused or accelerated the death of a person treated either by a registered or unqualified practitioner, culpable homicide can be charged where no intention to kill can be alleged.

In an inquest held recently at Trecynon, before Mr. Rhys, the deputy coroner, and reported in the *South Wales Daily News*, the danger of unskilled persons prescribing for and treating surgical injuries was illustrated. The inquest was upon the body of a miner named Thomas. From the evidence it appeared that he had been working at his colliery on October 3rd, and that a lump of coal thrown towards the "tram" had struck him upon a finger, causing an incised and contused wound, which bled freely. The wound was immediately attended to by a medical man, assistant to Dr. Bankes. Six days later Dr. Bankes was again sent for, when he found that the patient was suffering from erysipelas and abscesses in the hand and arm. On inquiring into the history of his treatment since the date of the accident, Thomas informed the doctor that he had been putting barley meal and an ointment to the wound. Death ensued from blood poisoning and exhaustion.

A Mrs. Annie Howells, of 8, Harriett Street, after being duly cautioned by the coroner, stated that she had been asked by the deceased to make up some ointment for him. She asked him for 7½d. for the same, and he gave her 1s. She made up the ointment, which consisted of olive oil, black resin, yellow wax, Burgundy pitch, and horse turpentine, and he took this away with him. She never saw him again, and she did not know whether the ointment was used by him or not. She had never seen the wound.

Dr. Bankes, recalled, stated that the ointment used was not suitable for such a cut. He was not, however, prepared to say that the blood poisoning was necessarily caused by the said treatment.

A daughter of the deceased who was called said the ointment was left in the house, but she had not seen the deceased use it.

The coroner, in his summing up, pointed out that there was really nothing to connect Mrs. Howells with the death. He added that she never saw or dressed the wound, and that it was very stupid for a man who paid for a doctor to go and get quack medicines. A verdict of death from blood poisoning was returned.

It is to be hoped that Mrs. Howells will treat this case as a salutary warning, and not dispense and sell ointments of the use of which she is ignorant, in future; but we doubt it.

A GOOD SAMARITAN.

WE have received from two correspondents copies of the *East Anglian Daily Times* containing a letter expressing gratitude to a certain club doctor for his devoted attendance to a poor woman for a period extending over many years. The letter bears internal evidence of being sincere, and we cannot agree with our correspondents that there is the smallest ground for the insinuation that the gentleman named in it has had any share in its preparation or publication. As a profession we deprecate such public professions of gratitude, but in the present instance the circumstances seem to have warranted the praise. If a medical man goes down a coal mine to render services to entombed miners, his name gets into the papers, and it would be very unworthy to suggest that he went down the mine or procured the publication of the paragraph in order to advertise himself. In the case now under consideration, a club doctor, probably overworked, certainly underpaid, attended for more than nine years a poor young woman who was suffering from a distressing and incurable malady, going very frequently to see her, and doing all that he possibly could to alleviate her sufferings. There are many medical practitioners giving the same humble and nearly unpaid services whose main reward is the gratitude of the poor; if occasionally this feeling seeks expression in a letter to the papers, we cannot find it in our hearts to blame those who take this way of showing it.

THE CENTURY THERMAL BATH CABINET COMPANY.

A CORRESPONDENT writes, complaining that being induced by the offer to allow him a cabinet at half-price on condition that he recommended the bath to his patients, he sent £1 15s., and received an apparatus which he regards as not worth more than 15s. He sent the bath back and tried to get his money returned, but this only involved an additional 6s. 5d. carriage from the railway company. He now offers to sell it to any medical practitioner for 7s. or less. We cannot say that we have very much sympathy for our correspondent. The implied contract to buy something at less than its value on condition that the purchaser recommends it to his patients is an improper one, and has been condemned in these pages (see BRITISH MEDICAL JOURNAL, October 27th, 1900, and November 11th, 1899).

UNQUALIFIED PRACTICE.

In the BRITISH MEDICAL JOURNAL of December 3rd we noted that Mr. Rawlings was charged [illegible] manslaughter of a woman named Dransfield, of Royston, near Barnsley, whom he had treated (as an unqualified practitioner) for cancer by means of applications for external use. The magistrates dismissed the case, but, we learn from a report in the *Cheshire County News*, that the committal by the coroner was taken before the judge at the assizes held at Leeds, and was by him referred to the grand jury. A "true bill" was not, however, found by the grand jurors, and the foreman having duly reported this to the judge, Mr. Rawlings was discharged from custody.

LAND TAX ON HOSPITAL PROPERTY.

IN the case of the Governors of St. Thomas's, St. Bartholomew's, and Bridewell Hospitals *v.* Hudgell, heard by Mr. Justice Wills, the plaintiffs, according to a report in the *Times* for November 27th, claimed exemption from land tax levied on certain buildings belonging to them in the borough of Southwark, known as Maidstone Buildings. Relief was demanded under 38 Geo. III, c. 5, which exempted all houses and lands which on the 20th day of March, 1694, belonged to the "sites" of (*inter alia*) the plaintiffs' hospitals. The point in dispute was whether the word "sites" referred merely to buildings on the sites of the hospitals in question, or to other property belonging to the plaintiffs. In spite of the fact that the tax had been paid without demur since 1780, his lordship gave judgment for the plaintiffs, declaring that they were not liable to pay the tax.

SEPTICÆMIA AFTER EXTRACTION OF TEETH.

Two deaths from septicæmia following tooth extraction have recently been recorded. In both cases the operators were unqualified dentists, and in both there seems reason to suppose that the infection was produced by dirty instruments. In the first case, which occurred at Bow, the deceased had a tooth extracted at a chemist's in Rotherhithe, and stated to his wife that a pair of old dirty black pincers had been used, and added that he had felt half-inclined to tell the man not to put the dirty things in his mouth. The necropsy made by Dr. Frederick Smith, Senior Pathologist and Lecturer at the London Hospital, disclosed intense meningitis; all the teeth were loosened, there was an open wound in the left cheek, and the bone was bare. In witness's opinion the wound was due to carelessness: a properly skilled dentist would not have caused such a wound. The forceps having been produced, one of the jurors remarked that the instrument was more fit for drawing teeth from horses than from human beings. The other case occurred at Manchester, death being due to septicæmia, which was set up, in the opinion of the surgeon called in consultation, by infection received at the time of operation. The operator was unqualified, and it was elicited from him that the words, "qualified by examination" appeared upon the premises, but this, he said, did not apply to him but to the deceased Mr. Parkinson, whose executors carried on the practice. The words "exors of" are, or used to be, used in advertisements in very inconspicuous letters, while the name of Parkinson and his qualification are made conspicuous: this has been going on for some years. In both of these cases the jury raised an emphatic protest against this sort of unqualified practice being carried on without let or hindrance.

ENQUIRENS.—The ordinary social rule should be followed

A HOUSE-SURGEON'S DIFFICULTIES.

PONTOON.—We are very glad to hear that our correspondent has been cleared of the charges brought against him. No doubt it would be pleasant to receive an apology from his accusers, but he may rest satisfied with the ultimate if tardy justice of the Committee.

A SMALL GRIEVANCE.

INTER ALIA.—Our correspondent should not allow himself to be disturbed by reports brought to him by his patient. It is highly undesirable that dressings applied by one doctor should be removed by another for the purpose of giving a certificate. It would be much more satisfactory in the interests of members of the club to accept the certificate of any properly-qualified medical practitioner. Both A. and B. seem to occupy false positions, in which some friction is inevitable. The best way to prevent future misunderstandings is for A. and B. to become personally acquainted, and to seek a friendly solution of these small difficulties.

SUBSTITUTE ATTENDANCE IN A MIDWIFERY CASE.

M.C.—A., who practises in the country, writes that being unable to attend to a patient who had engaged him for her confinement, when her time came he recommended that another doctor (B.) in the village should be sent for. This was done, and the other doctor delivered the patient—A. only arrived when all was over. What arrangements ought A. to come to with B., who attended, regarding the after-attendance and the fee?

**** Under the circumstances mentioned, our correspondent should have written to the other doctor asking him to attend for him. In that case the latter would have retired at once when his services were no longer required, but would have been entitled, according to the custom of the profession, to one-half of the fee. In our opinion that would be the best arrangement in the present case, as our correspondent instructed his patient to call in the doctor who attended her, but in such cases it would be more courteous if he were himself to ask the favour of his brother practitioner.

THE OBLIGATIONS OF A *LOCUM TENENS*.

HERNE HILL.—A substitute must not retain either patients or fees coming to him in his capacity as the substitute for the owner of the practice. He may continue in attendance if desired until the end of the illness, but he should account for the fees. He must decline absolutely any permanent connection with patients who have come to him through that introduction.

INQUESTS ON WORKHOUSE PATIENTS.

T. G. P.—We believe that the coroner can pay a fee to the medical attendant of a workhouse or workhouse infirmary at a coroner's inquiry as to the death of a patient dying in such institutions. Such fees are, we understand, paid in some districts.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,082 births and 3,937 deaths were registered during the week ended Saturday last, December 8th. The annual rate of mortality in these towns, which had risen from 16.9 to 18.0 per 1,000 in the four preceding weeks, declined again last week to 17.7. The rates in the several towns ranged from 11.5 in Croydon, 11.8 in Cardiff, 13.6 in Portsmouth, and 14.4 in West Ham to 21.2 in Sunderland, 21.5 in Sheffield, 21.9 in Liverpool, and 22.1 in Hull. In the thirty-two large provincial towns the mean death-rate was 17.8 per 1,000, and exceeded by 0.3 the rate recorded in London, which was 17.5 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.6 per 1,000; in London this death-rate was equal to 1.5 per 1,000, while it averaged 1.7 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.1 in Sheffield, 3.4 in Blackburn, 4.4 in Swansea, and 4.8 in Preston. Measles caused a death-rate of 3.0 in Swansea; scarlet fever of 1.3 in Burnley; whooping-cough of 1.0 in Halifax, 1.4 in Derby, 1.5 in Nottingham, 2.0 in Hull, and 2.2 in Preston; "fever" of 1.0 in Plymouth, 1.2 in Wolverhampton, and 1.3 in Preston; and diarrhœa of 1.5 in Blackburn. The 98 deaths from diphtheria in the thirty-three towns included 34 in London, 14 in Sheffield, 8 in Leeds, and 8 in West Ham. No fatal case of small-pox was registered, either in London or in any of the thirty-two large provincial towns; and only one small-pox patient remained under treatment in the Metropolitan Asylum Hospitals on Saturday last, December 8th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,725 and 2,727 at the end of the two preceding weeks, had declined again to 2,687 on Saturday last; 259 new cases were admitted during the week, against 261, 246, and 279 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, December 8th, 721 births and 641 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had increased from 19.2 to 21.7 per 1,000 in the four preceding weeks, declined again last week to 20.7, but was 3.0 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 17.2 in Leith and 17.4 in Dundee to 21.9 in Perth and 23.1 in Edinburgh. The zymotic death-rate in these towns averaged 2.8 per 1,000, the highest rates being recorded in Aberdeen and Greenock. The 303 deaths registered in Glasgow included 1 from small pox, 2 from measles, 5 from scarlet fever, 5 from diphtheria, 18 from whooping-cough, 4 from "fever," and 6 from diarrhœa. Nine fatal cases of measles, 3 of scarlet fever, 2 of diphtheria, 2 of whooping-cough, and 3 of diarrhœa were recorded in Edinburgh. Two deaths from whooping-cough and 3 from diarrhœa occurred in Dundee; 4 from measles, 2 from diphtheria, 2 from whooping-cough, and 3 from diarrhœa in Aberdeen; 2 from whooping-cough in Paisley; and 5 from whooping-cough in Greenock.

ASSOCIATION OF PORT SANITARY AUTHORITIES.

A MEETING of this Association was held on November 23rd at the Guildhall, London. The President of the Association, Alderman Fraser, of Hull, was in the chair, and representatives of the following port sanitary authorities were present: London, Liverpool, Hull and Goole, River Tyne, River Tees, Southampton, Cardiff, Manchester, Rochester, and Newport.

Infectious Disease in Foreign Ports.—A letter was read from the Local Government Board, declining, for reasons stated, the request of the Association that it should furnish all port sanitary authorities with any information it might receive of infectious disease at foreign ports. It was resolved that the Board should again be approached on the subject.

Exemption of Government Vessels from Inspection.—A paper was read by Mr. G. J. Woodman, J.P. (London), on the exemption of Government vessels from inspection in regard to infectious diseases, which was discussed by Dr. Collingridge (London), Dr. Harker (Tyne Ports), Mr. F. F. Smith (Rochester), Councillor Clarke (Liverpool), Dr. Walford (Cardiff), Dr. Hope (Liverpool), Dr. Harris (Southampton), and Dr. J. W. Edwards (River Tees), and a resolution was carried to the effect that all Government vessels and those belonging to foreign Governments, should be inspected with reference to infectious diseases in the same manner as other vessels.

Precautions against Plague at Ports of Liverpool.—Councillor Clarke read a paper on the precautions taken at Liverpool, and stated that while the plague was at Glasgow there was an officer from Liverpool at the Glasgow railway station closely watching the trains going to Liverpool and another at Liverpool inspecting the trains arriving from Glasgow. Alderman J. F. Spence described the precautionary measures taken at the Tyne Port, and Councillor F. F. Smith described those taken at Rochester, and Dr. Fraser those at Hull. In the discussion that followed Dr. Collingridge insisted that no system of plague inspection could be efficient which was not personally carried out by qualified medical men. Dr. Harker laid stress on the necessity of port medical officers having at hand the necessary apparatus for instant bacteriological examination of plague patients, and he urged the desirability of fitting steam vessels with modern disinfecting apparatus. Dr. Mason (Hull) advocated the employment of temporary wooden hospitals in lieu of ordinary isolated wards. The rat problem in Hull has been met by fumigating the holes with sulphur. Dr. Walford and Dr. Clarke also joined [illegible] Powers Required.

Port Sanitary Administration.—Alderman T. Walton, Dr. A. Wellesley Harris (Southampton) opened a discussion on this subject. It was contended that bills of health should be given by port sanitary authorities alone, and that to prevent the importation of small-pox by means of vessels additional powers were required. Dr. Collingridge, Dr. Hope (Liverpool) and Dr. Harker took part in the discussion.

Other Business.—On the motion of Dr. Walford it was decided to refer to a future meeting the question of the intercommunication between port medical officers as to the presence of infectious diseases. The President moved: "That in the interests of port sanitary authorities throughout the country, a representation be made to the Local Government Board that the subscriptions to the Association and the expenses of the delegates attending the meetings of the Association be allowed by the Board's auditor." The motion was seconded by Mr. G. J. Woodman, and was declared carried. It was announced that the next meeting of the Association would be held in Liverpool in February, 1901.

THE CRUMPSALL WORKHOUSE.

AT a meeting of the Manchester Board of Guardians, held on November 28th, it was stated that the Committee appointed to inquire into the circumstances attending the death of a general paralytic in the Crumpsall Workhouse from the violence of an attendant would make recommendations directed to avoid any understaffing of the department and that it would be presented at the next meeting. One of the inspectors of the Local Government Board who was present at the meeting of the Committee strongly advised that an additional night attendant should be appointed in the imbecile and epileptic department.

WATER ANALYSIS.

AQUA.—It is quite impossible to do what our correspondent suggests; that is, to give figures for the various estimations made in water analysis which shall serve as a useful and safe guide whether a sample of water may be used for drinking purposes. The right interpretation of the results of a chemical analysis of water is very complex and difficult, involving considerable knowledge of the characters of waters derived from many different sources, the composition of which varies very considerably, quite apart from animal pollution. It would be impossible to give one standard to which numerous exceptions would not apply, and which might not lead to the condemnation of safe supplies and the passing of dangerous ones. It would be an easier matter to give the figures constituting standards of purity for each of the waters derived from various sources, such as surface waters (peaty and non-peaty) chalk, red sandstone, greensand, etc. "Aqua" should purchase and study a work dealing with the subject of water analysis and the interpretation of results, and even then it will only be after considerable experience that he will cease to be in difficulties over occasional samples. It is, generally speaking, more easy to analyse waters correctly than to interpret the results aright, and it is generally for that reason that specialists are so frequently consulted

VACCINATION GRANT.—Mr. Arthur G. B. Lory, Public Vaccinator for the Chudleigh District of the Newton Abbot Union, has been awarded the Government grant for successful vaccination.

MEDICAL NEWS.

Dr. Anton Baron von Eiselsberg, Professor of Surgery in Königsberg, has been recommended by the Professoren-Collegium as the successor of the late Professor Albert in the Chair of Surgery in the University of Vienna.

Irish Medical Schools' and Graduates' Association.—The Commander-in-Chief, Field Marshal Lord Roberts, V.C., K.P., will honour the Irish Medical Schools' and Graduates' Association by his presence at a banquet to be given by its members to their distinguished fellow-countryman on his return from South Africa. Lady Roberts and her daughters have also graciously accepted the invitation.

The Journey to the Riviera.—We have received from the Brighton Railway Company a small illustrated handbook, entitled *The Riviera and Italy for a £10 Note.* A series of inexpensive Riviera tours are given *viâ* Newhaven and Dieppe, and we are informed that by a return ticket costing £10 first class, and £7 7s. second class, and available for forty-five days, it is now possible to visit the whole Riviera coast, including Marseilles, Cannes, Nice, Monte Carlo, San Remo, etc. The journey can be broken at Paris in both directions.

The Central London Throat and Ear Hospital.—An entertainment in aid of the above hospital was held at the Bijou Hall on November 29th. A lecture entitled Four details touched on by Mr. Maud was the ammunitions Mr. W. T. ammunition pouches with which the British soldier is provided. He showed how exceedingly uncomfortable they must be, when fully packed, to the unfortunate man who has to lie down for hours at a stretch, it may be, without daring to stir. During the interval in the lecture Mr. Lennox Browne announced that the funds of the hospital had benefited to the extent of over £1,000 as the result of the entertainment.

The Treatment of Yellow Fever.—Under this heading there appeared in the British Medical Journal of December 1st a paragraph stating, on the authority of the *Vossische Zeitung*, a German periodical of the highest character, that Dr. Angelo Bellinzaghi had been awarded a prize for his researches on the treatment of yellow fever. We think it right therefore to give equal publicity to the following paragraph which was published in the *New York Medical Record* of November 24th: "Dr. Angelo Bellinzaghi, who is reported in the papers to have received from the Mexican Government an award of 50,000 dollars for the production of a really curative serum for yellow fever, is said to be on his way to New York and Washington. He announces that he is about to organise a company with a farm near San Antonio, Texas, for the production of his serum on a large scale. Dr. Bellinzaghi seems not to have published his method of preparing the serum, nor have we seen in any medical journal any account of his bacteriological studies of yellow fever, if he has made any such."

Glasgow University Club, London.—The winter dinner of this club was held at the Café Royal on December 5th, and was attended by a large company of members and their guests. Professor Sir Hector C. Cameron, M.D., took the chair, and among those who supported him were Lord Lister, Sir W. T. Gairdner, K.C.B., Right Hon. James A. Campbell, M.P., Surgeon-General Jameson, M.D., Director-General A.M.D., Rev. Dr. Macewan, and Mr. G. L. Craik. Among the guests were Major Babtie, V.C., C.M.G., Sir J. Batty Tuke, M.P., Dr. Bruce of Dingwall, and Surgeon-General Don. The dinner was a very pleasant one, and the various toasts were received with much heartiness, but the enthusiasm of the evening rose to a climax in response to the special toast to Major Babtie, who has just returned from South Africa with the honours of the Victoria Cross fresh upon him. Major Babtie is a Glasgow graduate, and was welcomed home by his old friends and fellow students with a warmth that we fancy will remain a pleasant recollection to him for a long time to come.

A Coroner on Hospital Abuse.—In the course of a coroner's inquest upon the body of a 6 months old child of an accountant, held at Huddersfield, it appeared from the evidence of the mother that the child had been delicate from birth, and that she had twice taken it to the infirmary, where it had been attended to by one of the medical officers. On the Monday previous to its death she wrapped it up and placed it inside the fender, but as far as possible from the fire, which was low. This was done to give the child warmth. During her absence in the cellar for not more than two minutes the child's clothing became ignited and its legs were severely burned. The mother in her alarm rushed with it to the infirmary, but the child, never very strong, succumbed to its injuries. The deputy-coroner who held the inquest pointed out to the parents that the infirmary was not the proper place for those who could afford to pay for medical attendance. No medical man, we feel sure, would raise any objection to a child in a case of serious accident receiving immediate attention at a hospital or infirmary; but in this case the child had previously been taken to the hospital on more than one occasion, and we take it that the deputy-coroner's remarks referred to this and were therefore justified.

Extension of the Stockport Infirmary.—The new north wing of the Stockport Infirmary erected in commemoration of the Diamond Jubilee of the Queen was opened on November 28th by Lord Newton. This extra accommodation is needed particularly in order to provide wards for female patients and for children. The estimated cost of the extension is about £12,000, and of its maintenance about £2,000 a year. The additions consist of a large pavilion block covering an area of 420 square yards, and four storeys in height. There is a one- patients. On the upper ground floor at the back of the main tilated, and well-lighted ward, measuring 54 feet by 23 feet, which provides room for 14 beds. On this floor, also, are provided patients' day rooms and house-surgeon's quarters. On the first floor is another similar ward with offices, and in addition a small ward, measuring 17 feet by 16 feet, for special cases. Adjoining the latter is a top and side-lighted, well-appointed operating theatre with anterooms. The operating theatre and adjoining rooms have a special system of warming and ventilating. Fresh air supplied by an electric fan is made to pass through water and play over a coke breeze screen, so that it can be warmed in cold weather and cooled in warm weather. The nurses' quarters are on the second floor. The building is heated with hot-water apparatus and open fireplaces. The front elevation is a replica of the existing wing completing a symmetrical façade.

MEDICAL VACANCIES.

The following vacancies are announced:

BIRMINGHAM: GENERAL HOSPITAL.—Two Casualty Assistant Physicians. Appointments for one year, but eligible for re-election. Salary, £50 per annum. Applications to the House Governor by December 28th.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, with apartments and board. Applications to the Chairman of the Medical Board by December 17th.

BOURNEMOUTH: ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Secretary by January 1st, 1901.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House-Surgeon. Salary, £80 per annum, with board and lodging. Applications to the Secretary by December 22nd.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Three House Surgeons. Salary, £100 per annum, with furnished apartments, etc. Applications to the Assistant Secretary, 113, Queen's Road, Brighton, by December 27th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—(1) Second House-Surgeon and Anæsthetist. Salary, £70 per annum. (2) Third House-Surgeon. Salary, £60 per annum. Candidates must be unmarried. Board and residence provided in each case. Applications to the Secretary by December 26th.

CHELSEA, BROMPTON, AND BELGRAVE DISPENSARY, Sloane Square, S.W.—Surgeon. Applications to the Secretary by December 31st.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—Clinical Assistant. Applications to the Secretary.

CHELTENHAM GENERAL HOSPITAL.—Junior House-Surgeon, unmarried. Salary, £45 per annum, with board, lodging, and washing. Applications to the Honorary Secretary by January 5th, 1901.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £100 per annum, with board, apartments and laundress. Applications to the Secretary.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Assistant House-Surgeon. Salary, £40 per annum, with board and residence. Applications to the Honorary Secretary by December 18th.

EDINBURGH UNIVERSITY.—Additional Examiner in the following departments: (1) Pathology, (2) Surgery, (3) Practice of Medicine, (4) Medical Jurisprudence and Public Health, (5) Midwifery, (6) Physiology. Applications to the Secretary, University Courts, University of Edinburgh, by January [illegible].

GLAMORGAN COUNTY ASYLUM, near Bridgend.—Assistant Medical Officer, unmarried, age preferred between 23 and 28 years. Salary £[illegible] per annum, with board, lodging, and washing. Applications to the Medical Superintendent by December 17th.

LOUCESTER: COUNTY ASYLUM.—Junior Assistant Medical Officer; unmarried, and not over 30 years of age. Salary, £120 per annum, rising to £130, with board, lodging, and washing. Applications to the Medical Superintendent.

GLOUCESTER: GENERAL INFIRMARY AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House-Surgeon. Appointment for six months, but eligible for re-election. Remuneration at the rate of £30 per annum, with board, residence, and washing. Applications to the Secretary by December 18th.

GREAT NORTHERN CENTRAL HOSPITAL.—Non-resident Assistant House-Surgeon. Appointment for six months. Salary at the rate of £30 per annum, with luncheon and dinner. Applications to the Secretary by December 17th. (The salary was incorrectly given as £60 last week.)

HOSPITAL FOR WOMEN, Soho Square, W.—Assistant Surgeon, must be F.R.C.S. Eng. Applications to the Secretary by December 20th.

HULL ROYAL INFIRMARY.—Junior Assistant House-Surgeon. Salary, £40 per annum, with board and lodging. Applications to the Chairman, House Committee, by December 24th.

KIMBERLEY BOARD OF HEALTH.—Medical Officer. Salary, £750 per annum, with allowance of £5 per month for horse keep. Applications to "The Secretary, Kimberley Board of Health, care of the Agent-General for the Cape of Good Hope, 112, Victoria Street, London, S.W.," by December 28th.

LAMBETH INFIRMARY.—Clinical Assistant. Appointment for six months. Salary at the rate of £50 per annum. Personal application to the Medical Superintendent.

LEEDS PUBLIC DISPENSARY.—Two Resident Medical Officers. Salary, £100 per annum, with board and lodging. Applications to the Secretary of the Faculty.

LEICESTER INFIRMARY.—House-Physician. Salary, £100 per annum, with board, apartments, and washing. Applications to the Secretary, 24, Friar Lane, Leicester, by January 5th, 1901.

MARGATE: ROYAL SEA BATHING HOSPITAL.—Assistant Resident Surgeon. Salary, £52 per annum, with board and residence. Applications to the Secretary at the offices, 30, Charing Cross, London, S.W., by January 10th, 1901.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer for the Asylum for Imbeciles at Caterham. Unmarried, and not exceeding 35 years of age. Salary, £150, rising to £170, with rations, lodging, attendance, and washing. Applications on forms provided to be sent to the office of the Board, Victoria Embankment, E.C., by January 5th.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich Road, S.E.—Junior Resident Medical Officer. Salary, £60 per annum, with board, attendance, and washing. Appointment tenable for six months, with prospect of re-election as Senior. Applications to the Secretary by December 18th.

NEWCASTLE-UPON-TYNE UNION.—Assistant Medical Officer at the Workhouse, unmarried. Salary, £150 per annum, with furnished apartments, rations, and washing. Applications to the Clerk to the Guardians, Bridge Road, S.E.—upon-Tyne, by December 18th. R.C.S.Eng. Applications to the Secretary by December [illegible]

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck Street, W.—Resident Medical Officer. Salary, 100 guineas per annum, increasing to 120 guineas, with furnished apartments, etc. Applications to the secretary by December 18th.

STOKE-UPON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—Assistant House-Surgeon. Appointment for six months. Board, apartments, and washing, and an honorarium of not less than £10. Applications to the Secretary by December 27th.

SHREWSBURY: SALOP INFIRMARY.—House-Surgeon. Salary, £100 per annum, with board, washing, and residence. Applications to the Board of Directors by December 8th.

SUNDERLAND: MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House-Surgeon; unmarried. Salary, £80 per annum, with board, residence, and washing. Applications to the Honorary Secretary by January 5th, 1901.

WANSEA GENERAL AND EYE HOSPITAL.—House-Physician. Salary, £75 per annum, with board, apartments, and washing. Appucations to the Secretary by December 24th.

TAUNTON: TAUNTON AND SOMERSET HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £60 per annum, with board, lodging, and laundry. Applications to the Honorary Secretary.

TIVERTON INFIRMARY AND DISPENSARY.—House-Surgeon. Salary, £80 per annum, and all found. Applications to the Honorary Secretary.

TYNEMOUTH VICTORIA JUBILEE INFIRMARY.—Resident House-Surgeon. Salary, £100 per annum, with board, residence, and attendance. Applications to the Secretary, 43, Howard Street, North Shields, by December 18th.

VICTORIA HOSPITAL FOR CHILDREN, Queen's Road, S.W.—House-Surgeon. Appointment for six months. Honorarium, £25, with board and lodging. Applications to the Secretary by December 20th.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior Resident House-Surgeon, unmarried. Salary £100 per annum, with furnished residence and board. Applications to the Honorary Secretary by December 22nd.

WEST DERBY UNION.—Resident Assistant Medical Officer at Mill Road Infirmary, Everton; unmarried. Salary, £1 0 per annum, with rations. Applications to the Clerk to the Guardians, Brougham Terrace, Liverpool, by December 18th.

WESTERN GENERAL DISPENSARY, Marylebone Road.—Two Honorary Surgeons. Applications to the Honorary Secretary.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician, (2) House-Surgeon. Appointments for six months. Board and lodging provided in each case. Applications to the Secretary by December 26th.

WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer. Applications to Mr. F. Dawkins, 9, Gerrard Street, Soho, W., by December 21st.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Surgeon. Appointment for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing. Applications to the Chairman of the Medical Committee by January 3rd, 1901.

MEDICAL APPOINTMENTS.

ANDERSON, Daniel Elie, B.A., B.Sc., M.B.Lond., M.R.C.S.Eng., L.R.C.P.Lond., L.S.A., M.D.Paris, appointed Visiting Physician to the Hertford British Hospital, Paris.

ATKINSON, T. R., M.D.Durh., appointed Medical Officer for the Third District of the Romford Union, *vice* C. J. Glasson, M.D.Brux., L.R.C.P.Lond., M.R.C.S.Eng., resigned.

BATHURST, L., M.R.C.S., L.R.C.P.Lond., appointed District Medical Officer of the Ellesmere Union, *vice* J. Griffiths, M.R.C.S.Eng.

BERNARD, G., M.D.Kingston, L.R.C.P., L.R.C.S.Edin., appointed District Medical Officer of the Sunderland Union.

BRAND, G. H., M.D.Brux., L.R.C.P., L.M.Irel., L.S.A.Lond., appointed Medical Officer for the examination of candidates for the Royal Navy and Royal Marines for the Northampton District.

BROWN, J. Walter, B.A., M.B., B.Ch.R.U.I., appointed House-Surgeon to the Children's Hospital, Forest House, Nottingham.

BYFORD, W., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer of Health for the Borough of Ruthin, *vice* W. D. Jones, L.R.C.P.Edin., M.R.C.S.Eng., resigned.

BYRNE, R., B.A.R.U.I., L.R.C.P., L.R.C.S.Edin., appointed Extern House-Surgeon to the North Charitable Infirmary, Cork.

COOKE, R. P., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Oldbury District of the West Bromwich Union *vice* C. Lyddon, L.R.C.P.Edin., M.R.C.S.Eng., resigned.

DREW, Douglas, B.S., M.D.Lond., F.R.C.S.Eng., appointed Surgeon to the In-patients at the Hospital for Women, Soho Square.

ELLIS, R. Sidney, M.B., Ch.B.Edin., appointed Resident Medical Officer to the St. Mary's Hospital for Sick Children, Plaistow, *vice* T. S. Sellors, L.S.A.Lond., resigned.

HOBHOUSE, —, M.D.Oxon., M.R.C.P., appointed Physician to the Alexandra Hospital for Sick Children, Brighton.

HUDSON, O. H., L.R.C.P.I., M.R.C.S.Eng., appointed Medical Officer of Health to the Dronfield Urban District, *vice* H. M. Richards, M.D.Lond., resigned.

KIRK, T. D., M.D., M.Ch.R.U.I., appointed Medical Officer of Health for the Montgomery Urban District, *vice* T. Morgan, L.R.C.P., L.R.C.S.I., resigned.

LOCKYER, Cuthbert, M.D., B.S., M.R.C.P.Lond., F.R.C.S.Eng., appointed Honorary Gynæcologist to St. Mary's Hospital, Plaistow.

MCGREGOR, Robina, M.B., Ch.B.Edin., appointed House-Surgeon to the Victoria Hospital for Sick Children, Hull.

MACKENZIE, W. Leslie, M.D.Aberd., D.P.H., appointed Medical Inspector to the Local Government Board for Scotland.

MANNING, Ernest J., M.R.C.S.Eng., L.R.C.P.Lond., appointed Junior Assistant House-Surgeon to the Royal Devon and Exeter Hospital.

MITCHELL, C. M., M.D., appointed District Medical Officer of the Oakham Union, *vice* G. Shields, M.B., C.M., resigned.

ROBB, J. B. K., M.A., M.D.Aberd., appointed District Medical Officer of the Burnley Union, *vice* S. Lawson, L.F.P.S.Glas., L.M., resigned.

ROBINSON, Leonard, M.D.Edin., M.D.Paris, appointed Visiting Physician to the Hertford British Hospital, Paris.

SHEAHAN, Gerald, L.R.C.P. & S., appointed House-Surgeon to the Royal Southern Hospital, Liverpool, *vice* Infirmary for Children, Liverpool.

SIDEBOTHAM, G. W., M.R.C.S.Eng., appointed Certifying Factory Surgeon for the Broughton Astley District of Leicestershire

SIMPSON, Alexander, M.A., M.D.Aberd., appointed Medical Superintendent of the New Lancashire County Asylum, Winwick Newton-le-Willows.

THOMPSON, C. H., M.D., M.R.C.P., appointed Clinical Assistant to the Chelsea Hospital for Women.

WHITEHEAD, Arthur E., L.R.C.P., L.R.C.P.Edin., appointed Assistant Resident Medical Officer to St. Mary's Hospital for Sick Children, Plaistow.

DIARY FOR NEXT WEEK.

MONDAY.

Polyclinic, 22, Chenies Street, W.C.. [illegible] Anatomy of Nose and Accessory Sinuses, including Nasal Suppuration.

TUESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. C. T. Williams: Consultation. (Medical.)

Pathological Society of London, 20, Hanover Square, W., 8.30 P.M.—Mr. F. T. Paul (of Liverpool) will read a paper on Chronic Mastitis and its Relation to Tumour Formation (lantern demonstration). Card specimens: Dr. J. H. Drysdale: Broncho-œsophageal Fistula. Mr. H. Schalberg: Hæmorrhagic Pancreatitis with Fat Necrosis.

WEDNESDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Dr. Burney Yeo: Clinical Lecture: The Treatment of Tuberculous Peritonitis.

Royal Microscopical Society, 20, Hanover Square, W., 8 P.M.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W., 4 P.M.—Dr. Habershon: Emphysema.

Royal Meteorological Society, Institution of Civil Engineers, Great George Street, Westminster, 7.30 P.M.

THURSDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. J. Hutchinson: Consultation. (Surgical.)

London Temperance Hospital, Hampstead Road, 2 P.M.—Dr. Soltau Fenwick: Clinical Demonstration.

Harveian Society of London, Stafford Rooms, Tichborne Street, Edgware Road, W., 8.30 P.M.—Mr. D'Arcy Power: The Disappointments of Surgery.

FRIDAY.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C., 4 P.M.—Mr. Herbert Tilley: Consultation. (Throat.)

London Temperance Hospital, Hampstead Road, 2 P.M.—Dr. Porter Parkinson: Case of Tricuspid Regurgitation.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

COLLINS.—On December 1st, at the Mall, Wanstead, Essex, the wife of Geo. W. Collins, M.R.C.S.Eng., L.R.C.P.Lond., of a son.

DAVIES.—On November 30th, at Home Lodge, Great Amwell, the wife of Arthur Templer Davies, M.D.Cantab., F.R.C.P., of a daughter.

MARRIAGES.

BARNES—GOATE.—On December 6th, at St. Thomas's Church, Portman Square, W., Edgar George Barnes, M.D.Lond., of Hill House, Eye, Suffolk, to Florence Campbell Goate, younger daughter of the late Major William Manby Goate, of the 35th (Royal Sussex) Regiment.

CROWE—GRIFFITHS.—On November 29th, 1900, at Christ Church, Didsbury, Manchester, by the Rev. Walter Thompson, assisted by the Rev. E. Abbey Tindal, George E. Crowe, M.D., of, 65, Barlow Moor Road, Didsbury, to Elsie, eldest daughter of Thomas Griffiths, Esq., of Fairfield, Didsbury.

HILLIARD—HAZELL.—On December 8th, at St. George's, Bloomsbury, by the Rev. A. B. Boyd-Carpenter, M.A., assisted by the Rev. C. Ridley, B.A., Vicar of Fleet Marston, Bucks, Harvey Hilliard, M.R.C.S., L.R.C.P.Lond., of 30, Wilton Place, S.W., eldest son of the late Robert Harvey Hilliard, M.R.C.S., L.R.C.P.Edin., of Aylesbury, to Charlotte Rippon, younger daughter of Walter Hazell, of 9, Russell Square, London.

PERRY—GORDON.—On November 19th, 1900, at Agra, India, Francis Frederic Perry, F.R.C.S., Lieutenant-Colonel Indian Medical Service, to Hilda Madeleine, daughter of D. Chunes Gordon, Esq.

DEATHS.

CHAMP.—On October 25th, at Mathinna, Tasmania, John Howard Champ, M.D., aged 1 years.

IRVING.—On October 26th, suddenly, at Christchurch, New Zealand, James Irving, M.D., First President of the New Zealand Branch of British Medical Association, aged 61.

MONKS.—On November 22nd, at Marseilles, Raymond, eldest son of Lieutenant-Colonel C. Monks, I.M.S., Port Surgeon, Aden, aged 9½ years.

TERRY.—On November 24th, 1900, at Daventry, May, wife of John Terry, L.R.C.P.Lond., M.R.C.S.Eng., also on December 2nd, 1900, at Reading, John William, son of the above, aged 20 days.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—I.p., Tu., 2.30; o.p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30; Children, Tu. F., 1; Rontgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, i.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, i.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, i.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, i.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F. S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, i.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, i.-p., M., 2.30; Tu. F., 3.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, i.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations*—Daily, 9.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NORTH-WESTERN. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10. exc. W., 2.30.—Th., 2.30.

ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; i.-p., Tu. Th., 2.30.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. Th. F., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Laryngic, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, W., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; i.p., 1; o.p., 12; Obstetric, i.p., Tu. F. 1.45; o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, M. Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females, W., 9.30. *Operations.*—Tu., 2.30; Th., 2.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1. Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—I.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th. 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30. *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30; (Ear), Th., 9.30.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 8.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondent of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

C. J. T. asks: Are the figures obtainable of the death-rates from heart disease since 1860, or is this disease included in the death-rate from "diseases of the circulatory system" and not differentiated?

*** The deaths from the different forms of heart disease are distinguished from deaths from other diseases of the circulatory system. See *Registrar-General's Annual Report for 1898*, p. 140 and lxxviii.

FEES FOR COUNTRY JOURNEYS.

A GENERAL PRACTITIONER in London has asked us a question of a kind which is not infrequently addressed to the BRITISH MEDICAL JOURNAL, and which it has always been found extremely difficult to answer. He is asked to go into the country to see a patient in good circumstances; the visit takes up altogether about twenty-four hours, his out-of-pocket expenses are about £1. The fee which he would charge the same patient at his residence in London would be half a guinea. What ought he to charge for the country journey?

Our correspondent does not say whether when he visited the patient in the country he met a local practitioner in consultation. If he did we presume that he might justly charge a higher fee than if he merely paid his visit in his capacity as the family medical attendant. We are advised by a gentleman engaged in general practice in a part of London where houses are highly rated, that he would himself charge, for such distances as forty or fifty miles, half the consultant's fee, that is to say he would charge one-third of a guinea a mile; where the distance was greater he would charge at a somewhat lower rate per mile. He adds, however, that he would be largely guided by all the circumstances of the case, which can only be known to the practitioner himself.

As far as we can ascertain, there is no recognised scale of charge for work of the kind under consideration, and by a general practitioner in practice they charge.

ANSWERS.

"MIDLAND" does not say whether he has any error of refraction. We think it would be essential to ascertain this before any treatment likely to be successful could be recommended.

J. D. H.—We believe that pharmacologists generally recognise that calomel (mercurous chloride) generally contains a small portion of mercuric chloride (perchloride of mercury), and that many hold that the action of calomel in small doses as an antiseptic, especially in intestinal disorders, is to be attributed to the presence of the perchloride.

BOLUS.—A recognised nurse's certificate can only be given by a hospital or infirmary with not less than 100 beds, having a resident medical officer and a trained matron. Lectures in elementary anatomy, physiology, hygiene, and practical nursing must be given by the staff and matron. The probationers residing three years in such an institute could receive a certificate which would be recognised.

DWARFED GROWTH.

MR. H. GILFORD, F.R.C.S., Norwood House, King's Road, Reading, offers to give information to "Atrophic," who asked a question in the BRITISH MEDICAL JOURNAL of December 1st, if application is made to him direct.

INDIAN MEDICAL SERVICE.

A CORRESPONDENT who has not enclosed his card or given any *nom de guerre*, will find a set of examination papers in the Educational Number of the BRITISH MEDICAL JOURNAL, August 25th, p. 520. For the other information which he requires he should apply to Surgeon-General Hooper, C.S.I., India Office.

PREGNANCY IN CONTRACTED PELVIS.

RACHITIS.—Such suppositories are largely sold, are sometimes successful, but sometimes fail. Most obstetricians would think it the better course for the patient to be delivered at full term by Cæsarean section, and then sterilised.

PREGNANCY AFTER NEPHRECTOMY.

DR. C. E. PURSLOW, M.D. Lond. (Birmingham), writes as follows in reply to "J. A. K.," who asked for information as to any cases of pregnancy after nephrectomy where the pregnancy has been allowed to go to full term and the result: I reported one such case in the BRITISH MEDICAL JOURNAL of March 26th, 1898. The patient, aged 27, had been operated on by my colleague, Mr. Bennett May, and her left kidney removed. Eighteen months later she was confined of her first child at term under my superintendence, and although during pregnancy there had been some albuminuria and occasional headache, both mother and child did well.

TOBACCO SINE NICOTINE.

DR. S. INGLEBY ODDIE (Croxley Heath, Herts), Dr. H. R. BROWN (Maldon, Essex), and Dr. A. LLOYD JONES (Colney Hatch Asylum) write to suggest that the tobacco, stated to be deprived of its nicotine, as to which "Ophthalmic Surgeon" inquires, is the Tinico flake tobacco sold by Messrs. J. P. Burns, 17, South Exchange Place, Glasgow. Mr. R. H. NICHOLSON (Exeter Aberdour, Fife) writes to say that Mr. John Sinclair, 66A, Princes Street, Edinburgh, prepares a tobacco called Parson's Pleasure, which is "particularly devoid of nicotine."

F. in reply to "Ophthalmic Surgeon" wishes to ask if he has heard of cigarettes made with a paper mouthpiece containing cotton wool on which is sprinkled some drops of acetic acid? It is said to counteract the effect of the nicotine.

THE COCKADE.

ZYGOMA.—WE believe that our correspondent is not by virtue of his appointment as Admiralty surgeon or agent entitled to put a cockade on his coachman's hat.

MEDICAL BOOK-KEEPING.

DR. HUGH HEALD (Ormskirk) writes in reply to "C." (BRITISH MEDICAL JOURNAL, December 1st): The simplest and best form of medical book-keeping requires only one book in addition, of course, to a cash book. My book is 12 ins. square and contains 600 pages; each page is ruled into two columns; at the top of the left column a space is left for the name and address of the patient, and any other particulars thought necessary; each column has a small space on the left for date and on the right for shillings and pence. The book is indexed like a ledger and the pages are numbered. I put down every item in its proper place at once or as soon as possible, and also put the charge in the space to the right. At the end of a half year, or when a patient asks for the account, it is only necessary to add up the figures. Each family or patient has a page to themselves, thus you have a complete history of each patient on one page. The account book was made for me by Mr. Peter Draper, Burscough Street, Ormskirk.

MR. W. BARON COCKILL (Kendal) suggests that "C." should communicate with Mr. Gerald Veale, c/o Messrs. Leather and Veale, accountants, Leeds, in regard to a very useful daybook (which is in quarterly sections) and ledger. He also offers to send a filled-in quarterly daybook for his inspection if he desires it.

MR. W. H. ROWTHORN, L.R.C.P. (Kimberworth Road, Rotherham), will be pleased to give information concerning a very easy method of keeping books if he is written to.

MR. GLEDHILL (41, St. Martin's Lane, W.C.) will also send particulars of a method, and Messrs. SUMNER AND CO. (50A, Lord Street, Liverpool) wish it to be known that they supply a daybook, price 7s. 6d., designed by a medical practitioner.

SOUTH AFRICAN HEALTH RESORTS.

LIEUTENANT-COLONEL [illegible] mistake to suppose there are no suitable places at present in South Africa. There are any number of such places, notably Lemonfontein, Beaufort West, about eighteen hours by train from Cape Town. I can recommend this hotel, though it is very difficult to get rooms in it. They should be secured beforehand, and as long notice as possible up to two months given. Cost, £12 to £15 per month, or £3 10s. and £4 per week. The sanatorium at Claremont, about two miles from here and nearer Cape Town, would also be a good place to stay until arrangements could be made for going up country.

NOTES, LETTERS, Etc.

THE DEATH OF "SENTIMENTAL TOMMY."

DR. CAMPBELL HIGHET (Cardonald) writes: Under "Literary Notes" in the BRITISH MEDICAL JOURNAL of December 1st, "Lady Pippinworth" asks the opinion of the profession on the peculiar manner in which Mr. J. M. Barrie puts an end to the life of Tommy in his book *Tommy and Grisel*. I should not be surprised if Mr. Barrie has founded this part of his story on fact; and as "truth is stranger than fiction," with your permission I shall offer as testimony of my belief in the reasonableness of Mr. Barrie's story, the facts of a case that came under my notice while I was practising as assistant in Dalmellington in 1895. I was called in great haste to see a little boy, aged 4 years, the son of a farm labourer, who had met with an accident. When I got to the house I found that the child had already been some 15 minutes dead; in fact, death had been almost instantaneous. The cause of the accident and death I learned after some time from the mother and brother of the deceased, who naturally were too excited to give me at first anything but a very disjointed account. The deceased along with his brother and some other children had been swinging on a five-barred wooden gate close by. The little fellow had been standing with both feet on the lowest bar, which was nearly a foot from the ground; and resting his hands upon the third bar had thrust his head through between this bar and the one immediately above it. When the brother (aged 8) of the deceased swung the gate it shut with a bang, causing his little brother to lose his footing, and remain suspended with his head so jammed between the third and fourth bars of the gate that his larynx was tightly compressed. The child's feet did not reach the ground, and he seems not to have had the presence of mind to use his hands to raise his body, or if he had, then his weight and the fright rendered his arms powerless for good. The older boy, immediately he saw what had happened, instead of going to his brother's assistance, ran screaming to his mother, as children do when anything happens; but before the poor woman had time to release the child he was already dead. A careful examination of the body failed to show any evidences of dislocation of the cervical vertebra which by laceration of the spinal cord would have led to instant death. The conclusion I came to was that the child had died from suffocation, due to the pressure exerted upon the larynx during at least four to five minutes. I think there is a very close resemblance between the mode of death in this case and that of poor "Tommy," from the medico-legal point of view, in which "Lady Pippinworth" asks us "in all seriousness" to explain the mode of "Tommy's" death.

FOREIGN BODIES IN HERNIAL SACS.

DR. B. K. POLK, B.S. (Chicago) writes: In regard to foreign bodies in hernial sacs, alluded to by Mr. W. R. E. Williams in the BRITISH MEDICAL JOURNAL of October 13th, p. 1108, it strikes me that the objects alluded to were more apt to be detached appendices epiploicæ than phleboliths. Professor Hektoen, of this city, has gone over the subject (*Cook Co. Hospital Reports*, vol. i, p. 118), and cites many cases, several of them from hernial sacs—for example, Wilks and Moxon (*Patholog. Anat.*, 1889, p. 304). Canton (*Westminster Med. Soc. Reports*, 1850), and Thompson *Trans. Path. Soc. London*, 1860).

THE NOTIFICATION OF PHTHISIS.

M.D., D.P.H. writes: I read with interest the letter in the BRITISH MEDICAL JOURNAL of December 1st of the Medical Officer of Health, Hampstead, on the subject of the notification of phthisis, more particularly in connection with the danger of infection by the chalice. May I be allowed to point out that a discussion on the subject has been going on for some weeks past in the correspondence columns of a weekly Church paper, the *Pilot*? The pity seems to be that, while medical men, who are all agreed as to the danger, write to medical papers, the clergymen—with whom, after all, the official responsibility for Church matters rests—write to clerical papers. There can be no use in a discussion in which each side reads only its own arguments. If medical experts were to send letters to the paper referred to, some practical good might be done. So far only one doctor, a medical woman, has written to the *Pilot* on the sanitary aspect of the question.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Dr. J. Attfield, Watford; Dr. A. G. Auld, London; Dr. H. E. Annett, Liverpool; Mr. G. P. Alexander, Forfar; Mr. S. Alexander, London; Dr. D. E. Anderson, Paris. **B** Mr. O. Bowen, Liverpool; Messrs. Burroughs, Wellcome, and Co., London; Mr. W. Buchanan, Chatham; G. Black, M.B., Torquay; Mr. A. W. Bodger, London; Mr. G. H. Broadbent, Manchester; Dr. H. T. Bulstrode, London; H. W. Bernard, M.B., Preston. **C** Mr. M. Christy, Broomfield; Dr. W. L. Christie, Clifton; Mr. L. V. Cargill, London; J. A. Cree, M.B., Paris; Carolus; Dr. N. H. Choksey, Bombay; Mr. J. B. Curgenven, Hildenborough; Dr. A. Cordes, Geneva; Curriculum; Civis; Colonial; Dr. G. Cowen, New Malden. **D** Mr. L. W. Davis, Ipswich; A. F. Dixon, M.B., Cardiff; Dr. A. Duke, Cheltenham; Mr. H. Davis, Harrogate. **E** Enquirer; Dr. F. Edge, Wolverhampton; Mr. C. Estcourt, Manchester; Mr. T. F. Elmes, Cork. **F** Dr. P. J. Freyer, London; F.; F. L. N.; V. G. L. Fielden, M.B., Belfast; Mr. W. J. Fisk, London; Dr. W. F. Farquharson, Carlisle. **G** Mr. Gledhill, London; Glebe Sugar Refining Company, Manager of, Greenock; J. Gibson, M.B., Doune; E. A. Goulden, M.B., Stockport; J. E. Gemmell, M.B., Liverpool; Mr. A. E. Gladstone, Messrs. Ferrers. **H** Dr. W. D. Haliburton, [illegible] M.B., Glasgow. **I** Dr. D. B. Lees, London; Lancastrian; Dr. R. E. Lord, Colwyn Bay; L. T. T.; Dr. J. A. Lycett, Wolverhampton. **M** M.D. D.P.H.; Dr. W. Milligan, Manchester; Dr. W. A. Mackay, Southport; Medical; Dr. R. Maguire, London; Dr. D. Murray, London; M.B., C.M.; M.R.C.S. and L.S.A. before 1886; Mrs. Major, Coventry; M.B.; Mr. J. C. Milne, Glasgow; Midland; R. W. Mackenna, M.B., Liverpool; Dr. J. A. Menzies, Rochdale; Mist. Alba; M.D.; Member; Mr. V. J. Magrane, Darlaston; Mr. S. W. Macilwaine, Redhill. **N** Mr. J. Niven, M.B., Manchester. **O** Mr. D. Owen, Manchester; Obstetrical Society, Secretary of, London. **P** Dr. P. H. Pye-Smith, London; Dr. T. D. Poole, Wolverhampton; Dr. B. K. Park, Chicago; R. Parker, M.B., Liverpool; Dr. J. F. Payne, London; Dr. C. E. Purslow, Birmingham; Mr. H. C. Phillips, London; Phthisis; Dr. J. E. Platt, Manchester; Mr. R. J. Paull, London. **R** Mr. T. F. Raven, Broadstairs; Dr. J. Reid, Redhill; Rachitis; Rural; Mr. J. W. Root, Liverpool. **S** Dr. S. Sunderland, London; E. A. Smith, M.B., Southport; Messrs. Squire and Sons, London; R. de S. Stawell, M.B., Shrewsbury; Dr. J. A. Shaw-Mackenzie, London; Mr. F. W. Stoddart, London; Dr. G. Steele-Perkins, London; Dr. D. W. Samways, Mentone. **T** "Traveller," Editor of, London; H. G. Timms, M.B., Thornton Heath; Mr. C. H. Tattersall, Salford; A. D. Turner, M.B., Felixstowe. **U** Uncertain. **V** Victoria Wine Company, Manager of, London. **W** Mr. D. Walshe, Grahgue; Mr. C. F. Wightman, London; Mr. W. R. Williams, Clifton; A. Wauchope, M.B., Glasgow; Dr. F. B. Wynn, Indianapolis; Mr. A. H. Ward, London; W. M. H. **Z** Zygoma, etc.

BOOKS, ETC., RECEIVED.

Bale's Dental Surgeons' Daily Diary and Appointment Book. London: John Bale, Sons, and Danielsson. 7s.

A Textbook of Pathology in relation to Mental Diseases. By W. F. Robertson, M.D. Edinburgh: W. F. Clay. 1900. 21s.

Sexual Debility in Man. By F. R. Sturgis, M.D. New York: E. B. Treat and Co. 1900. 12s. 6d.

Ergebnisse der neueren Sporozoenforschung. Von Dr. M. Lühe. Jena: Gustav Fischer. 1900. M. 2.80.

"Knowledge" Diary and Scientific Handbook for 1901. London: "Knowledge" Office. 3s.

Outlines for Dissectors. By F. G. Parsons, F.R.C.S. Parts I and II. London: John Bale, Sons, and Danielsson.

A Manual of Gaol Hygiene. By Major W. J. Buchanan, B.A., M.B., B.Ch., D.S.M., I.M.S. Second Edition. Calcutta: Bengal Secretariat Press. 1900.

The Essentials of Practical Bacteriology. By H. J. Curtis, B.S., M.D., F.R.C.S. London: Longmans, Green, and Co. 1900. 9s.

Transactions of the Clinical Society of London, Vol. 33. London: Longmans, Green and Co. 1900.

Plague: How to Recognise, Prevent, and Treat Plague. By James Cantlie, M.A., M.B., F.R.C.S., D.P.H. London: Cassell and Co. 1900. 1s. 6d.

The Guide to South Africa. Edited annually by A. S. Brown and G. G. Brown. 1900-1901 Edition. London: Sampson Low, Marston, and Co. 1900. 2s. 6d.

*** In forwarding books the publishers are requested to state the selling price

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A CLINICAL LECTURE
ON
SYPHILITIC DISEASES OF THE TONGUE.

Delivered at University College Hospital.

By CHRISTOPHER HEATH, F.R.C.S.,
Consulting Surgeon to the Hospital.

Gentlemen,—We have had lately in the ward a remarkable case of gumma of the tongue, and I thought it would afford a good opportunity to say a few words to you concerning syphilitic diseases of the tongue, considering that cases of this description form a fair proportion of the affections you will have to treat in your practices.

Primary Syphilis of the Tongue.

With regard to primary syphilitic disease or chancre of the tongue I have first to say that it is a very rare thing. Personally I do not remember to have seen an actual chancre of the tongue, but I can show you here, in a German book containing good illustrations, a picture of a tongue with a chancre upon it. A chancre of the tongue, like a chancre of the lip or chancre of the finger, does not present that remarkable hardness which a chancre on the genital organs does. It is very important to remember that, and when you see a patient with a sore upon the lip (and sores on the lip are more common than on the tongue), and notice that there is no induration of the sore, but that there has been very early and rapid enlargement of the lymphatic glands beneath the jaw, you may conclude, especially if the patient is a young person, that in all probability it is a chancre; the same thing applies to the tongue.

The way in which the tongue may be inoculated with the syphilitic virus may vary, and one can imagine abominable practices occurring in certain well-known cities, but I hope not in London, whereby actual inoculation of the tongue may take place. You must remember, however, that a person may get a chancre of the tongue or of the lip perfectly innocently, because there is no doubt, in the present day at any rate, that mucous tubercles in the mouth can produce a primary chancre in the mouth of another person. I wish to put this point strongly, because up to within recent times it has been denied, but no leading syphilographer nowadays questions that syphilis is communicable by mucous tubercles. Since then these mucous tubercles are common in secondary syphilis, considering the careless habits people have of using cups and spoons and pipes after one another, it is not wonderful that from time to time a primary chancre occurs in the tongue. Primary chancre of the tongue must of course be treated like chancre elsewhere, that is to say with mercury.

Secondary Affections of the Tongue.

Referring to the evidence of constitutional syphilis, we happen to have here to-day a patient, who, as you see, has a well-marked secondary eruption. The man has evidently got secondary syphilis, and now on putting out his tongue you notice that he has a fissured tongue, and I have no doubt that at some period the site of these fissures was marked by mucous tubercles. I say so because I find that on turning his lip out a little at the corner, it will be seen that the lip and the tongue have mutually inoculated one another. It is common to find further back in the cheek patches of mucous tubercles, which are distinctly inoculated from the tongue to the cheek. These mucous tubercles are just the same "mucous plaques" as we call them that you find so commonly about the female genitals. We do not so often see mucous tubercles about the male genital organs, because in the male the skin is kept dry; but in the female, where there is moisture and probably some vaginal discharge, we very commonly get on the moist skin about the vulva and the anus mucous tubercles, of which I can shew you a very good representation in this book.

Here in this man I now show you there is exactly the same condition of things about the mouth, that is to say, one moist surface with another moist surface constantly touching it, in a patient under the influence of the syphilitic poison, resulting in the development of mucous tubercles.

These mucous tubercles may, moreover, occur in children as the result of congenital syphilis, in children who exhibit other evidence of congenital syphilis such as coppery patches about the buttocks and mucous tubercles about the anus. This is very important because a child with mucous tubercles about the mouth may so easily infect a woman whose nipple it sucks, though it cannot infect its own mother, the mother having already syphilis in her system; this is known as "Colles s law."

Another symptom of constitutional syphilis about the tongue and mouth is the development of inflammation superficial in its character. With it we get very commonly a shedding of the superficial layers of the mucous membrane of the tongue, including the filiform papillæ. I believe that condition is much more common than is supposed, but it is not often seen, for what we more commonly meet with is the condition seen when the patient comes complaining of a sore tongue, with a history of having put up with the soreness for some weeks. Here the appearance has become altered, and more commonly the bald patch is found which is so significant of secondary syphilis of the mucous membrane of the tongue and mouth. The patient may have gone through the first stage without its having been recognised, and as a result of that shedding of the epithelium there is a certain amount of cicatrical tissue causing smoothness of the surface of the tongue, recognised as the characteristic "bald patch."

Syphilitic Ulceration of the Tongue.

We may have another condition following that—namely, inflammation going on to ulceration, and that may show itself in various ways. It generally is a multiple ulceration, making grooves in the side of the tongue, not affecting very much the dorsum, but involving fairly deeply the sides and tip of the organ. I send round an illustration, and in Fig. 1 of this plate you will see fissuring of the tongue and some hypertrophy of its tissue. Here is a better illustration, which shows exceedingly well the appearance after the ulceration has healed, and we have there a certain amount of thickening; you will notice also the sulci or grooves which have been cut into the tongue by the process of ulceration. That process may of course extend a good deal into the tissue of the tongue, and you occasionally find, as is shown here, a true glossitis or inflammation of the tongue due to the syphilitic poison. In the case of the woman whose tongue I lately removed you may remember that I called attention more than once to the fact that behind the gumma there was an ulcerated surface due to syphilis, so that we had there the late secondary and the tertiary manifestations of the disease together. You may even have the tongue split down the middle by ulceration; it is rare, but it does occur now and again.

We have, then, this ulceration, and we may have either with or after the ulceration a very considerable amount of chronic thickening of the tongue a thickening of perhaps only one side of the tongue, and of a very chronic character. This thickening of the tongue is apt to alarm a patient, who immediately begins to think that he is suffering from malignant disease. I have no plate here which shows it, but you can understand that where there is chronic inflammation there may be chronic thickening, and that one side of the tongue may feel hard and lose a good deal of its ordinary characteristics.

The treatment for all forms of secondary syphilis of the tongue I am quite sure is the same, and that treatment is the administration of mercury. There is no use whatsoever in attempting to treat secondary syphilis of the tongue with potassium iodide; you must give the patient mercury, and you must push the mercury not merely constitutionally, but locally, if you wish to make a complete cure. I am in the habit of using a mercurial mouth-wash, beginning with a strength of gr. ½ of perchloride of mercury to the ounce, that is to say, about 1 in 2,000, and this strength I gradually increase. My usual prescription is perchloride of mercury, gr. ½, with 2 drachms of honey made up to an ounce of water. I tell the patient to take a mouthful of this, and to have his watch out and see that he holds the wash in his mouth for five minutes by the watch, as five minutes is a longer time than people think. It is quite useless to merely

tell a patient to use a mouth-wash; then he simply gargles a little and spits the lotion out, and that is of no use at all. The tongue must be "pickled," and if the patient takes his watch out and breathes through his nose, and holds the lotion in his mouth for five minutes two or three times a day, it is astonishing how these tongues improve. Mercury must be given to the patient at the same time internally, and there are many ways of giving it. I have myself come to the conclusion that there is no more satisfactory way of giving mercury than by inunction, that is to say, by rubbing it in over night when the patient is going to bed. The patient should rub the mercury into the inner part of the thighs or the front of the belly, beginning with half a drachm of the blue ointment and going on to a drachm. This rubbing may be continued for many nights together without producing irritation, but if that occurs then the site of the rubbing should be shifted to the lower part of the abdomen. One great advantage of prescribing mercury in this manner is that it gets into the system very gradually, and that the patient is not affected in the mouth. The patient bears the drug better, and it is a more satisfactory plan than giving mercury by the mouth. You must warn the patient that, though he may have a daily warm bath to cleanse himself, he should not use soap except once a week, when the ointment may be washed away. I generally recommend a man to wear pyjamas, and to wear the same pyjamas every night for a fortnight or three weeks, in that way securing the entrance of mercury into the system without any inconvenience.

Most of you have heard that at Aix la Chapelle there is a system of treating syphilis which is certainly extremely valuable. That system is nothing more nor less than what I have been describing to you. The people at Aix la Chapelle make a great fuss about the value of the sulphur water and the sulphur baths in use there; these are certainly very pleasant, but they have no real bearing on the cure; it is the steady daily rubbing in of the mercury by the attendants which produces such marked effects. The course at Aix la Chapelle is for six weeks, and it is easy to get a patient here in his own house to rub for six weeks, and then perhaps he may leave it off for a month or so, and then resume for a time. With reasonable precautions against getting wet and taking cold, I have found no difficulty in this treatment being carried out.

It is very important that you should never salivate a patient, that is a thing of the past; to avoid salivation it is the custom at Aix la Chapelle to use an alum mouth-wash. Every patient there carries about with him this mouth-wash, and he is continually rinsing out his mouth. I have no doubt that if a patient be treated in this systematic manner the most marked curative effects can be secured.

Late Secondary or Early Tertiary?

Now let me draw your attention to the fact that there are cases of syphilitic tongue on the borderland between the secondary and tertiary stages; I mean cases which are not actually gummatous, but which are instances of late ulceration, and these cases are satisfactorily treated in the way I have indicated. I have a drawing here made as long ago as 1870 of the tongue of a man who was brought to me because it was thought that he had epithelioma. I did not think it was epithelioma, and on looking over his body found on his thigh a well-marked eruption which no one could possibly take for anything but syphilis. Under the influence of mercury that man's tongue got perfectly well, and I may add that there is no doubt that tongues have been removed before now for conditions which might have been cured by mercurial treatment. When I hear of a patient remaining well for years after removal of the tongue for epithelioma, I have my doubts as to the correctness of the diagnosis, and it is natural to do so in the case of patients surviving for many years such a deadly disease as epithelioma of the tongue.

Tertiary Syphilis of the Tongue.

We will now consider tertiary syphilis of the tongue, of which we have such a remarkable example in the case of the woman who came into the hospital early in October. She is a middle-aged woman who had got what no one could doubt was a well-marked ulcerated gumma of the tongue. She happened to come in at the time of the October examinations at the colleges, and I sent her down as one of the cases. I believe there was only one opinion expressed, and that was that it was a case of well-marked gumma of the tongue. This gumma, you will remember, was in the ulcerated condition, and you must bear in mind that before it was ulcerated there was a hard mass to be noticed involving nearly the whole of the right side of the tongue, but in her case there was something more, for all through the tongue there were little nodules of syphilitic deposit. It was one of those cases of multiple gummata which are not commonly seen, the gummata spreading through the substance of the tongue. I ought to add that she had an enlarged gland under the chin. I thought myself that the state of irritation of her mouth was sufficient to account for that enlargement, and I did not at first consider that there was anything of a malignant character about the condition. I said at the time, incorrectly however, as it turned out afterwards, that we should cure the case by full doses of potassium iodide and a mercurial mouth-wash. We began with moderate doses of potassium iodide, giving it combined with ammonia and bark. She was put upon 10 grain doses, and seemed to be improving, and then we increased the dose to 20 and finally to 30 gr., but we noticed that she did not further improve. In consequence of a tendency to salivation I was obliged to stop the mercurial mouth-wash, and give her a lotion containing myrrh. What I generally order is just sufficient tincture of myrrh poured into warm water to make it milky. After some little time I felt quite sure that if there was not an epitheliomatous condition present that there ought to be, because the patient did not improve. It was clear that it would be better for her to get rid of the tongue than to allow the organ to continue in that condition, and the patient herself was only too glad to consent. A fortnight ago, therefore, I took away the whole tongue, and you may remember that I had to put my clamp-forceps behind the circumvallate papillæ just in front of the epiglottis. On taking away this large tongue it showed to the naked eye the pasty appearance in the red muscle which is so characteristic of gumma, and there were also present the small gummata scattered through the tongue which I have mentioned. I particularly said to Mr. Curtis, the surgical registrar, that I hoped he would make a careful examination because I was not at all satisfied that it was solely a gummatous condition, and eventually, quite at the back of the tongue, Mr. Curtis found a very distinct mass of epithelioma, a small amount certainly, but distinctly epitheliomatous. A specimen has been placed under the microscope for you to see to-day, and you can recognise there what no one can doubt to be epithelioma.

It is clear, then, that this patient, having gone through a prolonged course of ulceration of the tongue, eventually developed epithelioma, and I am glad therefore that I have removed the entire tongue. I hope I have removed the whole of the disease, but though I went close to the epiglottis, I am afraid she will have further trouble in connection with the glands in the chin. You will remember that last Wednesday I very carefully scraped them out, and cleaned up the part generally; and we must hope for the best.

In connection with these cases of gumma of the tongue which go on for a long time, and develop epithelioma, I will quote to you a saying of Mr. Jonathan Hutchinson: "If you irritate a part sufficiently long you may grow epithelioma." As an example of this take the irritation of a pipe continually affecting a lip, and ending in the development of epithelioma of the part, and this is a well-known fact clinically, for we hardly ever meet with epithelioma of the lip except in males who smoke. Given, therefore, any prolonged irritation, you have the probability that epithelioma will grow, and that is exactly what has happened in the case of this woman. It is this sort of case which is brought to you with a history that the patient has had a sore tongue, and has been under judicious medical care, with the result that, though the tongue has improved up to a certain point under potassium iodide, yet it has never got well. These cases of a double kind, if one may so call them, which have epithelioma grafted on to a gumma, may, and do, for a short time improve under the influence of potassium iodide, for no doubt the ordinary small-celled inflammatory exudation becomes absorbed, and things become improved for a time; but potassium iodide has no effect whatsoever on epithelioma, and the tumour goes on growing, eventually

resulting in some operation having to be done if the patient's life is to be prolonged.

The treatment of a gummatous condition I have already indicated, full doses of potassium iodide with the addition, as a rule, of a mercurial mouth wash. It is astonishing what a quantity of potassium iodide some of these patients will bear, taking sometimes 30 to 40 grs. three times a day, with the result that eventually a thorough healing may occur.

Leukoplakia.

There is one other thing I should like to say a few words about, and that is a disease of the tongue with which you are all familiar, which we call leukoplakia, and I put it last because it is by no means always of syphilitic origin. Leukoplakia may occur entirely apart from syphilis, the common cause being tobacco, but if a patient is not only the subject of syphilis but also smokes tobacco, he is very likely to have a much worse tongue than if he were free from syphilis. Although I do not say that every case of leukoplakia is complicated with syphilis, as of course that would be incorrect, still I do say that many cases arise in conjunction with syphilis, the result partly of syphilis and partly of local irritation, and further, I believe that you must always have that local irritation present in order to produce leukoplakia.

Warts.

In connection with the subject of my lecture, there is another thing I must mention, and that is the condition known as warts. I show you here a man with tertiary syphilis of the palate and throat, and the point I want you to note is that at the base of the tongue, quite at the back of the organ, there is a somewhat warty condition. That is not a very common thing, but the condition is one of the evidences of syphilis, and this case affords a good example of it. He is being treated for tertiary syphilis, and you will notice that his face is scarred and that his palate is perforated. I am treating the warty portion of the tongue with nitrate of silver, and if necessary I shall try chromic acid, 10 grs. to the ounce. Another useful application is cyanide of mercury, 15 grs. to the ounce, brushed over the affected portion of the tongue. This often does wonders for this sort of thickening, and also for old chronic ulceration. It is necessary, of course, to be careful that the patient does not swallow any of the application.

I need hardly remind you that you must not confuse the syphilitic warts at the back of the tongue with the condition that sometimes is seen on a perfectly healthy tongue; I refer to the slight hypertrophy that may occur sometimes of one of the papillæ of the tongue. I lately saw a case of wart of this kind in a gentleman who had not the slightest trace of syphilis about him, it was merely a slight hypertrophy of one of the papillæ of the tongue, and the best treatment is to touch it with the acid nitrate of mercury.

ABSTRACT OF A CLINICAL LECTURE ON RECURRENT APPENDICITIS.

WITH REMARKS ON A SERIES OF FIFTY CASES TREATED BY OPERATION.

Delivered at the Manchester Royal Infirmary.

By F. A. SOUTHAM, M.B.Oxon., F.R.C.S.,

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The causation and symptoms of recurrent appendicitis, and its treatment by removal of the appendix, having been described, the following reference was made to a series of 50 operations which had recently been completed for this affection, as the conditions met with in the cases so treated served to illustrate many of the points to which attention had been directed.

Condition of Appendix.

In almost every case the walls of the appendix were thickened, and at some point in its course the lumen was either partially or completely occluded. On the distal side of the obstruction the tube was frequently found to be dilated and distended with fluid, which in most cases was of a mucopurulent nature, but in a few instances clear and watery or consisting of pure pus. In some cases the appendix was quite straight, in others twisted or sharply bent on itself, occasionally at such an acute angle that its tip was almost in contact with its cæcal extremity.

Occurrence of Suppuration.

In 15 cases suppuration had occurred in the neighbourhood of the appendix. In 12 instances a localised abscess was present, often of small size—for example, not containing more than half a teaspoonful of pus. In other cases there was no distinct collection of pus, but small caseous deposits, evidently the inspissated remains of former abscesses, of which the fluid portion had become absorbed. In 3 instances the suppuration was diffuse, there being well-marked evidences of general purulent peritonitis when the patients came under observation.

This fact—namely, the frequent occurrence of suppuration in recurrent appendicitis[1]—should be borne in mind in the treatment of this affection, for it is a strong argument in favour of operative interference. Though in the majority of cases the attacks subside time after time without any formation of pus, yet there is always a great risk of this complication occurring, and it would appear that a repetition of the attacks is no safeguard against it. In most of the cases where an abscess had formed the attacks had been frequent, and in each of the 3 patients where the suppuration was diffuse, they had been so numerous that the patients had lost count of them.

The formation of pus was usually found to be associated with a perforation of the appendix, and was therefore probably excited by an escape of its contents. In one case the abscess presented in a very unusual situation—namely, on the anterior wall of the rectum—the first symptom indicating its existence being a sudden attack of retention of urine. The abscess was tapped and drained *per rectum* with a satisfactory result, and the patient, a male, made a good recovery.

Fæcal Concretions.

In 7 cases fæcal concretions were found to be present; in 5 the concretion was lying inside the appendix, in 2 it was outside, having perforated the walls of the process and excited suppuration round it.

Foreign Body.

In only 1 instance was a true foreign body present, and this was a pin, which was found in an abscess cavity in close proximity to the appendix. The pin had probably been lodged in the appendix for some time, and then ulcerated through its walls, for the process was surrounded by adhesions and almost obliterated. The head of the pin was encrusted with a considerable deposit of calcareous matter.

Adhesions.

In the majority of cases adhesions were present, in some instances so slight as to cause no trouble, in others so extensive and so dense that considerable difficulty was experienced, first in recognising, and afterwards in liberating and removing the appendix. Their presence or absence bore no relation to the number or severity of the attacks, and it was impossible to say before the operation whether or not they would be encountered. For example, there was not a trace of an adhesion met with in one patient who had suffered from about twenty well-marked attacks, while in others, after only two or three slight attacks, they were found to be so extensive as to render the operation extremely difficult. It was noticed that when a local thickening or induration could be felt during the quiescent period following an attack, adhesions were always present, but the absence of this sign could not be taken as an indication that they did not exist, for the appendix was often found lying behind the cæcum with its tip directed backwards, fixed and buried in a mass of adhesions, which it was impossible to recognise previous to operation, and not even after the abdomen was opened until the overlying cæcum had been drawn forwards and upwards out of the way.

A complication occasionally met with as the result of former attacks of appendicitis is intestinal obstruction from inclusion and compression of a coil of bowel in a mass of old adhesions. Several cases of this kind (not included in this series) have come under my observation where a median laparotomy was performed for the relief of the obstruction, and where the intestine was found so tightly constricted and bound down that its liberation was a matter of considerable difficulty.

NUMBER OF ATTACKS AND THEIR BEARING ON THE QUESTION OF OPERATIVE INTERFERENCE.

In 40 cases the patients had suffered from three or more attacks, and in 13 instances the attacks had been so frequent—often ten or twelve, and sometimes even more numerous—that no count of them had been kept. In 5 cases there had been only one distinct attack, the operation being performed, as pain, tenderness, and a localised thickening persisted for some time after the subsidence of all the acute symptoms. In one of these, the appendix contained a hard fæcal concretion; in 2 it was completely stenosed and dilated beyond; in the remaining 2 it was bent and bound down by adhesions, so that there would undoubtedly have been a recurrence of the attacks in each instance if it had not been removed. The persistence, therefore, for some weeks or months of a tender swelling or thickening in the situation of the appendix, especially if accompanied by rigidity of the overlying muscles and a varying degree of pain, may be regarded as an indication for operative interference, even when a patient has suffered only from a single attack of appendicitis. In the absence of these symptoms, I should not advocate operation after a first attack, for it is a well-recognised fact that a patient may suffer from a single attack and have no recurrence. The probability of the attack recurring is variously estimated at from 23 to 44 per cent. of all cases. When, however, a patient has suffered from a second attack, operation should be advised, even in the absence of any local symptoms during the quiescent periods, for after a second attack more are almost certain to follow.

DURATION OF SYMPTOMS

The length of time during which the patients had suffered from the attacks varied from several months to six years.

SEX.

Of the 50 patients, 35 were males and 15 were females, it being generally found that the former sex are the most liable to this affection.

AGE.

As regards the age of the patients, more than one-half of the cases—namely, 29—were met with in persons between 20 and 30 years old, 12 occurred in persons between 10 and 20, 7 between 30 and 40, and 2 between 40 and 50; so that after 30 years of age the tendency to this affection diminishes as life advances. Its more frequent occurrence in young subjects is probably due to the fact—as Kelynack[2] has pointed out—that more lymphoid tissue is present in the wall of the appendix in the young than at a more advanced age, and the tendency for this structure to become the seat of inflammatory processes in early life is well recognised.

NOTE AND REFERENCE.

[1] In 14 cases operated upon since the completion of the above series, a local abscess was found in 3 instances. This gives a total of 64 cases, in 18 of which suppuration had taken place—that is, in 28 per cent. [2] *The Pathology of the Vermiform Appendix*, p. 56.

QUANTITATIVE COLOUR-TESTS.*

BY KARL GROSSMANN, M.D., F.R.C.S.E.,
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MORE than ten years ago I pointed out the shortcomings of the method of testing the colour sense by means of Holmgren's wools. At the Tenth International Medical Congress at Berlin in August, 1890, I described the model of an apparatus constructed for the purpose of obviating those defects. The apparatus itself was constructed soon after, and proved to be of service. A long spell of illness and other causes subsequently prevented me from pursuing the subject, but on resuming it I find the matter stands practically to-day where it stood ten years ago.

The insufficiency of Holmgren's test in a number of cases had already been observed by others before 1890. To mention a minor objection to the test: as used at present everywhere it is only a daylight test. With the variability of the quality of the light on the one hand, and the restriction of its applicability, on the other, owing to the frequency of dark days in this country, a great inconvenience exists. True, a remedy could be found by selecting a set of colours adapted for a particular artificial light. But the very fact that this has not been done shows how very deep the faith in the infallibility of the Holmgren test is rooted.

CENTRAL COLOUR SCOTOMA.

There is, however, a very serious objection to the Holmgren test which cannot be overcome by any makeshift or adaptation, but claims our full attention, and that is the occurrence of a central colour scotoma. This is all the more important and dangerous as it need not be a congenital defect, but may be acquired and even transient—for example, in nicotine poisoning. Here past statistics leave us completely in the dark and are totally valueless. Sometimes it occurs that the faulty mode of examination (Holmgren) declares such an individual colour sound, and that practical life then puts him to a more severe test, showing him to be colour blind for his actual requirements. I will not take any of the older observations of others or myself, but will refer to a case published recently by Mr. Bickerton[1]: The second officer of a 4,000-ton steamer, when on the bridge, could not distinguish between a green and a white light, and nearly brought about a collision with a sailing vessel, a catastrophe being averted only by the accidental arrival of the captain on deck. Mr. Bickerton relates the case without any comment as to its nature. Professor Lodge, to whom he sent the patient for examination, found only "a slight defect of red sensation," and no explanation is given. Without knowing anything further about the case, it would be surprising indeed to me if this was not a case of central colour scotoma which would have been readily detected by a proper test. The letter by Dr. Hubert Seager, quoted in that article, says:

> I do not remember to have yet seen any discussion on the peculiar form of colour blindness to which I myself (and, no doubt, other people as well) am subject—inability to distinguish at night between a red and a green light at a distance exceeding half a mile, though I can pass any test for colour or long sight in daytime, and can distinguish coloured lamps perfectly at night within half a mile's distance. I tested this condition of my eyesight again last year when I was at sea for a week or two, and found it unaltered ..... Naturally such a state of colour blindness might lead to very serious accidents at night, and the Board of Trade tests should be adapted to such defects.

Clearly here we have a case of a central colour scotoma in both eyes. A coloured signal sufficiently near is both strong enough and large enough to give a sufficiently large image on the retina, in fact, to exceed the area of the scotoma; if the distance increases both the intensity and the size of the light decrease, and the image falls within the limits of the scotoma, with the result of not being recognised correctly. On the other hand, the Holmgren wool skeins will be easily recognised in such a case. They can be manipulated, and, even if the scotoma be fairly large, can be brought near enough to the eye to cover a large area of the vision field. And that is exactly what we do see in some cases of "doubtful" colour blindness.

In order to detect cases of colour blindness of the kind just referred to, the following points have to be taken into consideration. The test object must be:

(*a*) Variable in colour, that is, a variety of colours must be at hand so as to avoid the learning by heart of three, or four, or five colours only.
(*b*) Variable in size, that is, from a large size down to a very small point.
(*c*) Variable in intensity, that is, it must be possible to make it bright, and through all transitions dark to almost extinction.

This can best be effected by using actual signal lights suitably arranged. An equality of the source of light can easily be obtained as well, a point of great value for the comparison of the results. Moreover the examinee is thereby put under precisely the same conditions as he meets in his occupation as seaman or railway employee. If the conditions under (*b*) and (*c*) are sufficiently variable, there is no need to vary the distance within which the tests have to be recognised.

One other point should be observed. Any method in which the examinee has to give an answer to such a question as, "What colour is this?" ought to be avoided. In this respect the principle of matching one colour with a second one, to be selected out of a batch of others, which underlies the Holmgren-Seebeck test, is paramount.

Uniformity of the source of light being necessary, the examination is carried out in a darkened room, artificial light of a given kind being employed.

* Read in the Section of Ophthalmology at the Annual Meeting of the British Medical Association at Ipswich, 1900.

DESCRIPTION OF THE INSTRUMENT.

The following is a description of the instrument I have used. A few modifications which will materially reduce the cost of production, and will also be found to be improvements, will be mentioned at the end.

In order to reproduce in the apparatus the actual conditions of practical life, I took as the source of light an ordinary signalling hand lamp, such as used on some railways (Fig. 1, *a*)* In front of the bull's-eye are placed

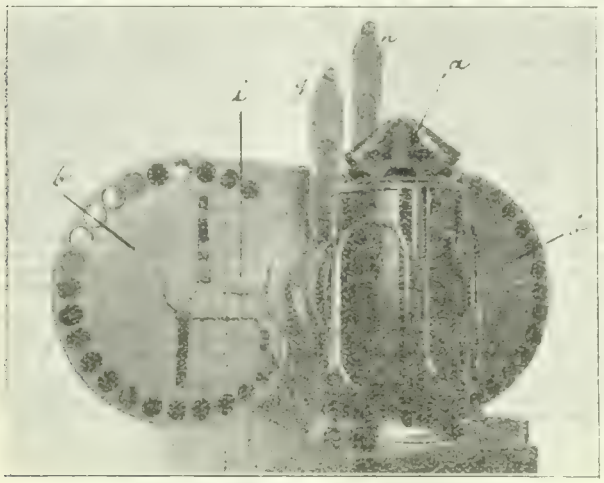


FIG. 1.

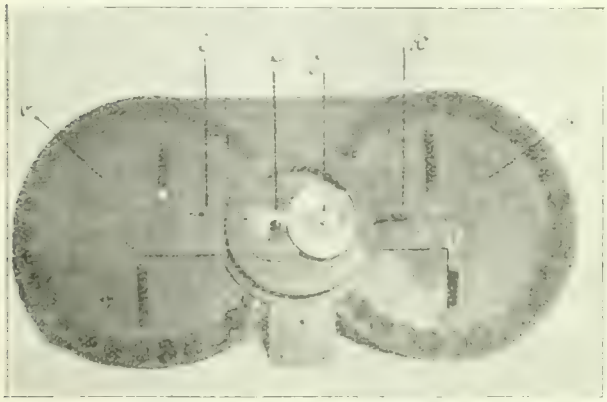


FIG. 2.

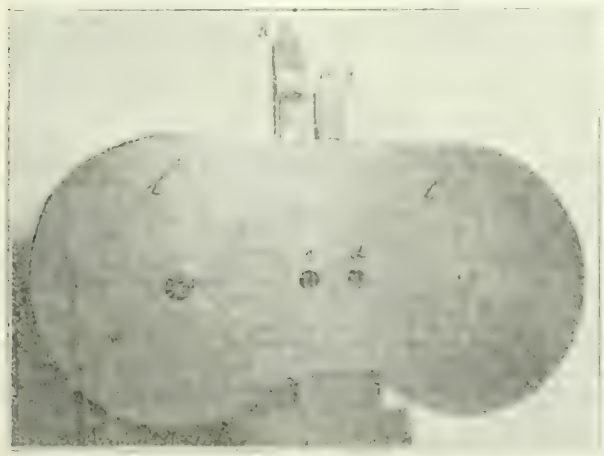


FIG. 3.

two metal discs (Fig. 1, *b*), capable of being moved round their centres, and perforated near their edges by circular apertures filled with glasses of various colours. The colours in each of the discs correspond, though arranged in different order. On the other side of the discs is a metal plate (Fig. 3, *l*), which overlaps them, and is perforated by two holes (Fig. 3, *c*, *d*), one beside the other. Each of these holes is so placed, that by rotating the disc on its corresponding side each of the coloured glasses is in turn brought between it and the bull's eye of the lantern.

Between the bull's eye and each opening in the plate there is an iris diaphragm (Fig. 2, *e*, *f*), with indicators (Fig. 2, *i*, *k*; Fig. 1, *i*) showing the diameter of the apertures in millimetres. [Fig. 2 represents the apparatus seen from the back after the lamp has been detached.]

Between the diaphragms and the lamp two slips of glass, suitably mounted, are made to slide up and down. (Fig. 1, *g*, *h*; Fig. 3, *g*, *h*). These slips are tinted neutral grey, the intensity being graduated from complete transparency at one end to almost complete opacity at the other.

They were first made of neutral-tinted glass, ground wedge-shaped, but the great cost of such wedges led me to make them of graduated neutral grey tint myself at a very trifling cost from ordinary dry plate negatives suitably exposed to light, and developed. These slips are measured photometrically, and indexed accordingly.

By this means the opening for the light falling through a coloured glass can be made to vary in size from 10 mm. diameter to pin point, and in intensity from light to dark. An almost unlimited variety of lights, both coloured and "white," can thus be obtained. Both discs can be moved independently, as can also the diaphragms and glass slips.

For convenience sake I use the mirror method for testing, a method which I have employed for over twenty years in my consulting room for Snellen's letters. I place the instrument on a table, with the mirror in front at 15 feet distant. I am seated to the right of the apparatus, the examinee to the left. I select one of the colours of the right disc, the iris, diaphragm, and tint slip having been suitably adjusted. The examinee is then instructed to turn the left disc so as to find a match for the signal light of the right disc. The coloured glasses are partly chosen from various pairs and sets of confusion colours ("twin colours" and "triplet colours" of my previous tests). There are at present thirty in each disc, but half that number will probably be found sufficient.

The graduated neutral tint glass slips will be replaced by discs graduated in a similar fashion. These will be easier to fix, and therefore cheaper, than the sliding glass slips.

The lamp used hitherto has been the colza oil lamp shown in Fig. 1, *a*. Although the flame was kept fairly steady, variations in the intensity of the light could not always be avoided, and in future the source of light will be a standard sperm candle, the unit adopted in all countries for measuring the intensity or quality of any light.

ADVANTAGES OF THE INSTRUMENT.

As already mentioned, I insist upon the matching of colours, and do not ask any question whatever as to their names. This is a point of paramount importance, which I cannot too strongly insist upon in any colour examination. (For this reason the apparatus just described by Professor Eversbuch in (*von Graefe's Arch.*, l., i, June, 1900, is inadequate.)

If anyone should object to having the two coloured signal lights side by side simultaneously, the one to be compared with the other, since in practical life, at sea and on a railway, it is a necessity to determine and interpret a single signal, the apparatus can be used in a corresponding manner. Either of the lights (Fig. 3, *c*, *d*) can be blocked out by a cover. One cover is removed first, a coloured light shown, and the cover let down again. The examinee is then asked to match this signal from the other disc after the cover of his side has been lifted.

By narrowing the diaphragm we are able to detect the smallest central scotoma, the possibility of which has hitherto been completely neglected in all practical tests. They have not been looked for even in examinations with spectroscopic instruments; not that there need have been any difficulty in detecting them, but because their importance, and even their existence, has not been recognised. The selection of twin-coloured signals is a saving of time and adds greatly to the practical utility of the apparatus.

The apparatus admits of the adoption of a standard for the quantitative measurement of colour perception. I have hitherto used as the standard the lamp=1 candle power, 1 mm. diaphragm, 50 per cent. of the light obscured, and a distance of 15 feet from the mirror=(10 yards actual distance). I am, however, measuring this again, using the actual standard sperm candle in place of the colza lamp, and shall

* The figures are from photographs taken for me by Dr. T. R. Bradshaw.

publish the results as soon as possible. (The coloured glasses must, of course, be of a certain standard quality.)

We may by this means be enabled to form a standard as simple and as useful as Snellen's standard for form vision. With the average normal central colour vision (C. V.) reduced to $\frac{1}{2}$ for red and green, rejection of the examinee is advisable; with C. V. reduced to $\frac{1}{4}$ it becomes an absolute necessity.

To secure accuracy each eye should be examined separately, and, though for practical purposes it would be quite sufficient if one eye only satisfied the colour test, still it would be of great importance to know that such and such an individual was suffering from a defect of colour perception in one eye.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, March 17th, 1900.

REMARKS ON CHRONIC ENLARGEMENT OF THE PANCREAS IN ASSOCIATION WITH OR PRODUCING ATTACKS SIMULATING BILIARY COLIC.*

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DISEASES of the pancreas are not yet as well understood, or as thoroughly worked out, as diseases of the other abdominal viscera. Two reasons appear to me to explain this in the main: first, the pancreas is not easily examined in the living subject, owing to its depth and the protection given it by the liver and stomach; and secondly, the examination of the organ at necropsies is often most perfunctory. Evidence of the truth of the latter statement seems to me to be afforded by the condition of acute infective pancreatitis. This disease has only of recent years received recognition, but it is very unlikely to have originated as a new disease in the last few years, and yet if the organ had been thoroughly examined in past times, the striking picture presented by it could hardly have been overlooked.

The purpose of this communication is to present 4 cases of enlargement of the pancreas which I have found accidentally when operating on the gall bladder or ducts. Two of these were distinct errors in diagnosis, for gall stones were not found, although it was believed that they were responsible for the symptoms.

CASE I.

History.—The first case occurred in 1897 in the practice of Dr. N. H. Turner, with whom I saw the patient, a gentleman aged 44, in what appeared to be a characteristic attack of gall stone colic. There was pain in and to the right of the epigastric region, going through to the back, vomiting and distinct jaundice; tenderness also existed over the lower margin of the liver in the right semilunar line. There had been several similar attacks at intervals of weeks or months, some of them associated with shivering.

Operation.—I operated for gall stones in April, 1897, but none existed, and the only condition found which might explain the attacks was a considerable mass in the head of the pancreas, firm but not very hard, somewhat lobulated on the surface, and occupying such a position that it might easily compress the common bile duct. A guarded prognosis was given, the friends being told by me that whilst such formations did at times disappear after operation, yet this one was likely to be a malignant growth.

After-History.—A good recovery followed the operation, and for some months the patient considered himself relieved. Subsequently the attacks returned, and the patient at this date, three years and a half after his operation, still suffers from them; but he is otherwise well, and evidently his pancreatic enlargement was not due to malignant growth. Soon after the operation, although I knew exactly where to palpate for the tumour, I could never satisfy myself that I felt it, but the patient's muscles were most difficult to relax.

CASE II.

History.—The second case occurred in a stout woman, aged 53, who was admitted to the General Hospital April 4th, 1899, complaining of attacks of biliary colic. The first seizure was in November, 1898, the symptoms being severe pain in the epigastrium, radiating widely over the abdomen, and associated with vomiting. Several minor attacks followed, and a severe one at Christmas, after which four gall stones were discovered in the motions. On March 25th a severe attack occurred, and three small stones were passed.

Operation.—The operation was performed on April 7th, 1899, the gall bladder being only slightly distended with muco-purulent material, and three small gall stones lay near the orifice of the cystic duct. A mass the size of a good orange was felt in the position of the head of the pancreas—it was firm but not hard, rather lobulated, and fairly movable. Only a slightly bile-stained discharge took place from the gall bladder for more than a month, and then bile escaped copiously.

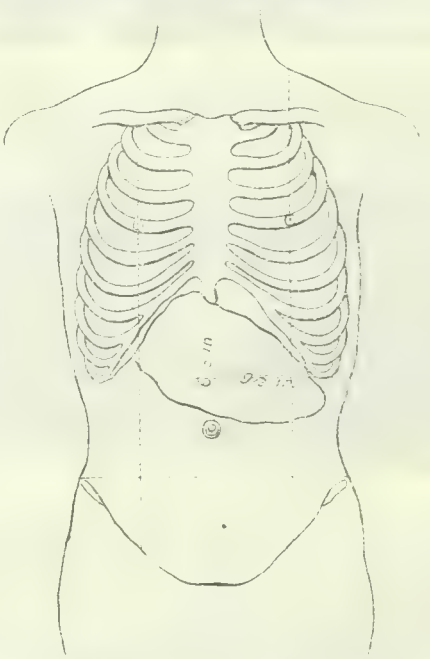
After History.—The drainage tube was retained for a couple of months to ensure complete recovery from the cholecystitis which existed at the time of the operation, and it was six months later before the wound finally healed. The patient was anæmic and feeble at the time of the operation, and for some months afterwards, but she is now in excellent health. Here again I could not with certainty palpate the pancreatic enlargement, but the thickness of the abdominal walls was considerable. Warned by previous experience I looked upon this patient as suffering from an inflammatory enlargement of the pancreas and not from growth.

CASE III.

History.—The third patient, a man aged 29, of spare habit, was admitted to the General Hospital, July 29th, 1899, with a history of frequent attacks of abdominal pain during the preceding twelve months. The pain was described as of a sharp pulling character, commencing in the middle line, midway between the umbilicus and the xiphoid cartilage, and going through to the back. Occasionally the pain was to the right or left of the point above mentioned; rarely vomiting accompanied the pain, and only on three occasions had jaundice been noticed; gall stones had never been recognised in the evacuations. No tumour such as a distended gall bladder could with certainty be recognised, but the region below the liver was tender and the muscles rigid. There was tenderness on percussion over the edge of the right erector spinæ in the ilio-costal space.

Operation.—At the operation on July 31st the gall bladder was found distended, and over 800 stones were removed varying in size from a mustard seed to an orange pip. A firm, lobulated mass, nearly the size of one's fist, was felt behind the stomach, beneath the liver, above the transverse colon, and crossing the front of the vertebral column; this was regarded as a chronically inflamed pancreas.

After-History.—I did not see the patient for some weeks after the operation, as I was leaving for my holiday, but he made a very good recovery, and was discharged healed on August 29th. He came to the hospital again in December, 1899, complaining of pain in the epigastrium; a mass could then be felt in the region of the pancreas, and examination from time to time showed that this was enlarging with some rapidity; the patient was therefore readmitted on January 22nd, 1900. At this time he



looked ill, was losing weight, complained of pain deep in the epigastrium and of constant nausea and inability to take food. The urine contained a haze of albumen, but was free from sugar, the stools were normal in colour, and did not appear to contain fat. A tumour existed which extended above to the xiphoid cartilage, and below nearly to the umbilicus, its long axis was transverse, and it extended somewhat beyond the semilunar line on both sides, being a little more extensive on the left than on the right side; a thrill could be obtained over it. Examination of the chest posteriorly failed to give any physical signs of the tumour. The diagram shows an outline of the cyst, which measured 9½ inches transversely and 6½ inches vertically.

Second Operation.—The abdomen was opened over the most prominent part of the cyst to the left of the middle line; the great omentum, which was not adherent, was pushed away, and 80 ozs. of dark, greenish fluid were removed with the aspirator; the cyst was then opened, and a further considerable quantity of fluid escaped into sponges. The cyst wall appeared to consist of two layers, an outer tough fibrous coat about the thickness of the external oblique aponeurosis, and an inner layer about a quarter of an inch thick, of pale pink, rather friable material. The opening in the cyst was stitched to the peritoneum, and two drains were placed in the cavity. The fluid was, unfortunately, not examined until the next day, so that changes may have occurred in it; the reaction was then alkaline, and it had neither diastatic nor peptonising power.

After-History.—In the first twenty-four hours there was a profuse dis

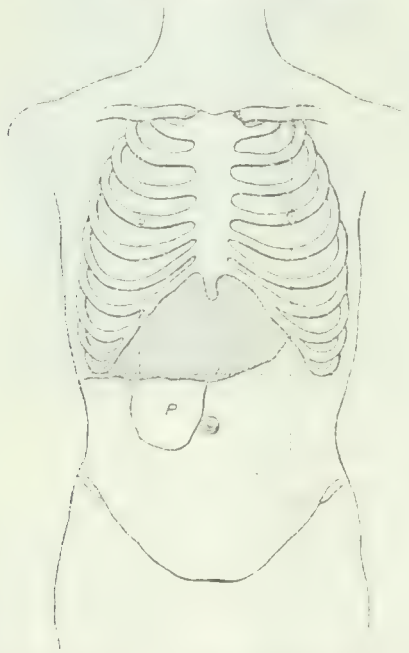
* Read at a meeting of the Birmingham and Midland Counties Branch of the British Medical Association.

harge of yellowish, serous-looking fluid; this diminished rapidly in a ew days, but it persisted for a long while, the cavity not closing entirely until four months afterwards, during which time the patient improved much in weight, and the haze of albumen in the urine disappeared. He has been at work as a gardener for five months, and remians in excellent health.

CASE IV.

History.—A male, aged 35, was admitted to the General Hospital on March 4th, 1899, complaining of abdominal pain and jaundice. Eleven months before, whilst reaching something, the patient was seized with sharp pain in the left hypochondrium, which continued for nine days. Some months later he was laid up for twelve weeks with sharp pain in his abdomen accompanied by vomiting. The attack for which he was admitted commenced on October 29th, when he noticed that his urine was very dark. On October 30th he had severe pain across the small of the back, of a sharp stabbing nature, running down the left hip and thigh, and associated with pain and shivering. He vomited on this and the following days, and his skin became yellow and his motions pale in colour. It was also elicited that there had been pain in the umbilical region, but it was not severe.

Condition on Admission.—He was rather deeply jaundiced, and the liver extended some 3 inches below the costal margin. A rounded hard mass could be felt beneath the right rectus muscle; it extended to the middle line and to 1½ inch below the umbilicus (see diagram, P). Resonance



existed over it, and bimanual palpation failed to detect any swelling in the right loin; the mass was slightly tender, and percussion over the edge of the right erector spinæ caused pain. The diagnosis made was gall stones impacted in the common duct, and the mass felt below the liver was regarded as a distended and somewhat displaced gall bladder.

Operation.—The abdomen was opened by the usual vertical incision, and the gall bladder was found distended, but the mass palpated proved to be a greatly enlarged head of the pancreas; it was hard and had a lobulated surface. The gall bladder was opened, but it and the ducts were free from stone. Drainage of the gall bladder seems likely to be followed by a permanent biliary fistula, for it was uncertain whether the pancreatic enlargement were malignant or inflammatory, and, if the latter, whether it would subside and leave the common duct free. By means of a small Murphy button the gall bladder was anastomosed with the duodenum, and, as there had been slight soiling by intestinal contents, a drain was inserted down to the anastomosis, and the remainder of the wound closed.

After-History.—The jaundice rapidly disappeared. The button was passed on the thirteenth day, and an uneventful recovery took place. The patient soon returned to work, and has from time to time been examined. The pancreatic enlargement is still to be felt though it is less than it was, and the patient's general condition is good so that he is able to do laborious work. At the point where the drainage tube was inserted there is a small hernia, brought about mainly by a chronic cough from which the patient suffers. Quite recently I learnt in an accidental way that the patient suffered from a hard chancre three or four years ago; but he has had no syphilitic manifestations for a long time, and I do not associate his pancreatic enlargement with this disease.

The common features in these cases are enlargement of the head of the pancreas with attacks of colic and more or less complete blocking of the common bile duct. It is not necessary to recall the anatomy of the parts concerned further than to point out the close association between the terminal portion of the pancreatic duct and the common bile duct, both of which are closely embraced by the head of the pancreas and joining together have a common opening into the duodenum. Whatever blocks the outlet of these ducts into the duodenum blocks both the glands associated with them.

The obstacle may be within the duct, biliary or pancreatic calculus or inflammatory swelling of the lining; or it may be outside as from new growth or inflammatory enlargement of the head of the pancreas. In the cases under consideration no calculus could be detected in the conjoint duct or in either of its branches, but owing to the thickening of the head of the pancreas it would be impossible to say with certainty that pancreatic calculus did not exist. This is especially true in Case IV, where the painful attacks beforehand were quite atypical and where great swelling of pancreatic tissue existed. Pancreatic calculus appears to be a comparatively rare condition, and one which may be unsuspected until discovered in the *post-mortem* room, for, owing to the feeble muscular power of the duct of Wirsung colic is rare. It may, however, occur, and is then likely to be mistaken for biliary colic, from which it is chiefly distinguished by the position of the pain, which in pancreatic colic is either between the umbilicus and the xiphoid cartilage or along the left costal arch. My impression is however that calculus was not responsible for the pancreatic condition in three of my patients though it may have been in the fourth. The possibility of the enlargement in either case being due to malignant growth could not be absolutely dismissed at the time of operation, but the lapse of time and the present condition of the patients quite disposes of the question of malignant new formation.

We are therefore driven by exclusion to infer that the pancreatic enlargement was probably inflammatory in origin. Blocking of the common bile duct by inflammatory mischief spreading from the duodenum is a well-recognised cause of jaundice.

It is not unreasonable to infer that a similar block occurs in the pancreatic duct in view of its anatomical relations and swelling of the pancreas may be brought about by retained secretion beyond. Probably, however, the pancreatic duct and gland are invaded by organisms from the bowel which produce not merely a passive enlargement by blocking secretion, but an inflammatory swelling such as occurs in the salivary glands, which in its more intense forms may produce an abscess or the still more dangerous condition, acute infective pancreatitis. If the common bile duct is not already blocked by inflammatory mischief, it can hardly escape compression from without when the swelling in the head of the pancreas attains any considerable size, hence jaundice is likely to be one of the secondary results produced by pancreatic infection.

You will gather, then, that I regard the four patients as having suffered from chronic pancreatitis, which in two of them led to an ill-founded diagnosis of gall stones. In the other two, gall stones coexisted, and possibly by inflicting damage on the common duct in their passage, directly induced the pancreatic inflammation.

We have perhaps hardly sufficient information at present to enable a diagnosis to be made between certain affections of the biliary apparatus and chronic inflammations of the pancreas; further experience may provide what is now wanting. If operation seems to be required, fortunately the same steps have to be taken, whichever condition is present. If the abdomen has been opened by one of the usual incisions, it will speedily be determined whether gall stones exist, and how they should be removed. If they have been removed, or if none are present, what is required for the treatment of the pancreatic condition? My own cases are too few to enable me from personal experience to speak decisively upon this point, but whilst collecting these notes I have come across a reference to a paper recently published by Mr. Mayo Robson,[1] whose large experience of operations for gall stones has furnished him with as many as seventeen cases of chronic pancreatitis. If the symptoms call for operative interference, two methods of treatment offer themselves, either prolonged drainage of the gall bladder in the manner usually employed after cholecystotomy, or an anastomosis between the gall bladder and the duodenum. In my first case, being then ignorant of the condition I had to deal with, I did neither, and the patient still suffers as before the operation. In the

second patient prolonged drainage was employed to cure the cholecystitis, and incidentally appears to have acted beneficially on the pancreas. In the third case the gall bladder was drained, but only for a short time, and the pancreatic trouble subsequently increased until a large cyst formed. In the fourth patient, for the reasons mentioned in the notes of the case, I joined the gall bladder to the duodenum with resulting cure of the jaundice and the other symptoms complained of, but the pancreas still remains somewhat enlarged.

In the paper referred to Mr. Robson commends prolonged drainage of the gall bladder in preference to cholecystenterostomy and in his hands it has given very satisfactory results. His objection to cholecystenterostomy is chiefly the likelihood of the anastomotic opening closing without giving such prolonged drainage of the gall bladder as will suffice to cure the pancreatitis. A more important objection I think is offered by the greater risk implied in an anastomosis as compared with mere drainage of the gall bladder. Probably in the majority of cases the simpler method will be employed, anastomosis being reserved for those cases in which the nature of the pancreatic enlargement and its subsidence are doubtful, or in which prolonged drainage fails to cure.

The occurrence of thickening about the head of the pancreas with jaundice has in the past had a dire significance, it being constantly inferred that malignant growth was present. The possibility of a more hopeful explanation is offered by such cases as I have described and by those contained in Mr. Robson's paper, whilst the value of exploratory opening, when there is any room for doubt, is strongly emphasised.

REFERENCE.
Lancet, July 28th, 1900.

A CASE OF CONGENITAL HYPERTROPHY WITH STENOSIS OF THE PYLORUS.

BY
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A FULL term male infant, born of healthy parents, weighed at birth 8¾ lbs., and did not present any outward deformities or abnormalities. The mother's milk was not available, but the child's feeding was most carefully supervised. The first symptoms—vomiting and convulsions—arose when the infant was a fortnight old; diarrhœa and vomiting occurred a week later; temporary relief followed careful dieting, but after another week's interval profuse sickness set in, the vomited matters being highly acid, and apparently completely digested. Vomiting now continued on and off, the amount returned being sometimes in excess of that recently taken, constipation was troublesome, and the child lost weight. When six weeks' old death appeared imminent from continued convulsions. Probably these convulsions depended on the absorption of toxic material from the stomach, and may be considered as analogous to tetany in gastric dilatation. On rectal injections of saline solution containing albumin, rectal feeding by enules, and abstinence from any food by the mouth, the infant rallied, and even put on a little weight.

Five days before death the vomited matters contained blood, as shown by microscopic examination. Three days before death dilatation of the stomach was made out, this, though carefully sought for previously, had not been found. At no time could any tumour in the region of the pylorus be detected. It had been looked for, inasmuch as the condition found after death was suspected during life. Death was preceded by increasing asthenia and emaciation. The infant was 7 weeks and 5 days old. The infant was under the care of Dr. Crofton-Atkins, and was seen twelve days before death by Dr. Rolleston.

Necropsy.—A very limited examination only was possible. There was great hypertrophy, with almost complete occlusion of the lumen of the pylorus. A transverse section of the thickened pylorus showed a mere radiating fissure representing the canal of the pylorus, which barely admitted the point of a pin. It is probable, as pointed out by Pritchard, that the degree of stenosis found after death cannot be regarded as an accurate gauge of that existing during life. The thickness of the wall of the pylorus was 8 mm., and was manifestly largely due to increase in the circular muscular coat, which was 4 mm. thick, the longitudinal coat being 2 mm., and the mucous and submucous coats 2 mm. thick. There was hypertrophy of the muscular coats in the antrum pylori and neighbouring part of the stomach, and intense injection of its mucous membrane.

Microscopic sections were taken through the pylorus in the situation of the accompanying photograph, and from the



Fig. 1.—Transverse section of the hypertrophied pylorus, actual size. The lumen of the pylorus is seen as a radiating fissure. (From a photograph by H. G. Drake-Brockman, M.R.C.S.

middle of the stomach. At the pylorus the mucous membrane was well preserved and healthy; the submucosa was condensed, probably merely a mechanical effect of pressure; the circular muscular coat was greatly increased in thickness, and showed a few foci of small cells between some of the muscular bundles. The mucous membrane in the piece of the stomach wall examined showed catarrhal inflammation. It is probable that spasmodic closure of the pylorus prevented this catarrhal change from spreading into the pylorus. The condition of the œsophagus was not examined. There was, therefore, stenosis of the pylorus of extreme degree, and marked hypertrophy of the circular muscular coat. The gastritis was probably a late or terminal phenomenon, and showed itself clinically by blood in the vomit five days before death.

REMARKS.

In the BRITISH MEDICAL JOURNAL of April 28th, 1898, one of us (R.) published a case, in conjunction with Dr. L. B. Hayne, and referred to 22 previously recorded cases. Since then published reference has been made to 19 other cases: Meltzer (5),[1] Still (3), Cautley (2), Fletcher (1), Batten (1), Pritchard (1), Adler (1), Stern (1), Thomson (3), and Fisher (1); in addition, 2 cases referred to by Ashby in 1897 but omitted in the collection of 22 cases, must be included.

We have therefore references to 44 cases already published, though in some the bare statement of the observation only exist, making with the present case 45 in all.

It is noteworthy that the great majority (about three-fourths) of these cases have been recorded since 1897, when J. Thomson drew special attention to the subject. It is therefore probable, as pointed out by several writers, that the disease is less rare than might be thought. Further, it is a significant fact in the short history of this disease that not uncommonly an observer who has seen one case, and thus become familiar with the existence of the condition, is able to report others. [Hirschsprung, Henschel, Gran, Thomson, Soltau Fenwick, Schwyzer, Meltzer, Cautley, Still, Ashby]

In 30 cases in which we have been able to obtain information as to sex, 18 were males and 12 females. Drs. J. Thomson and J. Raglan Thomas (case recorded by Morley Fletcher) kindly gave us information on this point. Most of the cases were under 4 months old.

The causation of the condition has attracted a great deal of attention and speculation. Of the explanations given, two are the most prominent: (*a*) That it is a congenital redundancy; "Nature, in her extreme anxiety to provide an efficient pyloric sphincter, has over-exerted herself, and produced too great a quantity of muscular tissue" (Cautley); and (*b*) that of "congenital gastric spasm," that is, there is a functional disturbance of the nervous mechanism of the stomach and pylorus leading to over-action, and so to hypertrophy (Thomson). It seems reasonable to combine these views so far as to believe that there is some congenital hyperplasia of the pyloric sphincter, and that spasm supervenes on this, and is largely responsible for the symptoms manifested.

Diagnosis.—Obstinate vomiting associated with constipation in an infant whose dietary is carefully supervised may suggest the disease, but a diagnosis cannot be made in the absence of a tumour. In this case, though we were attracted by the idea, it did not seem justifiable to make a positive diagnosis of congenital hypertrophic stenosis of the pylorus. Such a conclusion would carry with it the question of surgical interference, and in the absence of a palpable tumour it would be impossible to exclude all other possible causes of vomiting in an infant.

Prognosis.—Cases in which this condition has been diagnosed, and in which recovery has occurred, have been mentioned by Finkelstein (3), Senator (1), Batten (1), and Barlow (1). Possibly some of these instances are, as suggested by Still, developmental variations in the amount of muscular tissue in the pylorus, in which the stenosis is not great. In Batten's case, where a male child had signs and symptoms of the disease when 11 weeks old, and recovered under careful treatment, but died from acute broncho-pneumonia and gastro-enteritis when 11 months old, the stenosis was not extreme.

A point of interest is whether these slighter cases, that do not prove fatal in early life, may subsequently present themselves as cases of simple pyloric stenosis. In the 31 cases described as congenital stenosis of the pylorus collected by Maier, and Landerer the ages ranged from 12 to 80 years, and though the type is certainly a different clinical one, it is possible that they are the outcome of slightly marked muscular hypertrophy in early life. It is conceivable that a primary muscular excess might in course of time undergo fibrous transformation, and result in fibrous stricture of the pylorus.

Treatment.—Rectal feeding led to temporary improvement in this case, but the condition of the pylorus, as shown in the woodcut, could hardly have been successfully treated by any means short of surgical.

Slighter cases, when recognised, should be treated, as Batten suggests, by nasal feeding, which, by obviating the peristalsis set up by deglutition, probably both (1) allows digestion and absorption to go on, and (2) tends to minimise the spasmodic stenosis of the hypertrophied pylorus. Probably a combination of rectal and nasal feeding, with a cautious and gradual return to ordinary means would be the best plan.

Six cases have been submitted to operation. Recovery followed Loreta's operation by Nicoll; the others were unsuccessful. Pylorectomy was performed in a case of Thomson's, and gastrostomy in Meltzer's, Stern's, Adler's, and Thomson's cases.

For the photograph illustrating this paper we wish to express our thanks to H. G. Drake-Brockman, M.R.C.S.

REFERENCE.

[1] In the earlier of his two contributions Meltzer speaks of having seen five cases. His second and usually quoted paper is devoted to a detailed account of one case.

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FURTHER OBSERVATIONS ON EPIDEMIC ARSENICAL PERIPHERAL NEURITIS.

BY ERNEST SEPTIMUS REYNOLDS, M.D.LOND., F.R.C.P.,

Assistant Physician to the Manchester Royal Infirmary; Visiting Physician to the Manchester Workhouse Infirmary.

IT has been very gratifying to me to have had my observations on the symptoms and cause of epidemic peripheral neuritis amongst beer drinkers so fully confirmed, and even more pleasing to know that the source of the arsenic has been traced, as was first done by Professor Delépine to the glucose and invert sugar, and ultimately to the commercial sulphuric acid, so that there is



FIG. 1, Case 1.—Paralysis of extensors of wrist and fingers.

every probability of a stop being put to the outbreak. At first Dr. Brooke and myself were of opinion that the source of the arsenic would be found in some connection with sulphur, and from the symptoms presented by a private patient of Dr.



FIG. 2, Case 1.—Showing "dropped feet" from paralysis of anterior tibial and peroneal muscles; slight keratosis of soles of feet.

Brooke's it seemed to be in the sulphur with which the hops were treated. I am glad that this has been found not to be the case, but that it has been found in the sulphur compounds from which the sulphuric acid is made.

In the many extremely interesting papers which have been published, a few new facts have been recorded. First and foremost the discovery of the arsenic in the urine, of the presence of which I was first told by Professor Dixon Mann on November 27th, who had obtained it the day previously from 6 ounces of urine passed by a woman who had been recently drinking beer. Diarrhœa has been noted in the acute cases, affection of the nails in several, and vomiting and diarrhœa in the suckling infant. All these observations I can confirm from my more recent cases.

A few symptoms which I have not yet seen reported may be of interest. The pigmentation does not occur in fair-complexioned patients, or, at any rate, only to a slight degree, perhaps in the form of a deeper pigmentation of pre-existing freckles. In many cases there seems to be a distinct sequence of events as regards the rash;



Fig. 3. Case 2.—Showing pigmentation and very marked general œdema.

it is first erythematous, especially on the hands, face, neck, and, as pointed out to me by Dr. Luff, the upper part of the chest; this becomes by degrees much darker, then passes into marked pigmentation, which finally desquamates in small branny scales, and so is removed after some weeks. The bullæ seem to be rare, as I have only seen four examples. Herpes zoster (which was indeed the one symptom which first led me to suspect arsenic as the cause of the epidemic) is only moderately common, and yet not very rare, as I have already remarked on the great relative increase of such cases in the last six months in this district, and since November 18th I have seen 6 fresh cases of herpes presenting also other symptoms of arsenical neuritis.

I have seen not a few cases of neuralgia affecting various spinal nerves which was not followed by herpes, although I expected it would be. In one case there was anæsthesia (not quite total) of the whole of the left fifth cranial nerve, but I have seen no other cranial nerve affected.

Of the circulatory and respiratory symptoms I have noted in several cases post-sternal—sometimes epigastric—pain, together with marked breathlessness and a feeling of great exhaustion on exertion, these symptoms being very similar to those occurring in beri-beri. So great and so lasting has cardiac asthenia been, that some of our cases in the Crumpsall Hospital have fainted after being allowed to get up, and have had to be put back to bed; I shall refer to this in speaking of the treatment. The bronchitis and dilated heart in many cases have been marked features, and a few patients have spat blood, there being no appearance or physical signs of phthisis. The hoarse voice seems to be entirely due to catarrh and swelling of the vocal cords, for on examination I found this, but no paralysis of the cords.

The vomiting and diarrhœa had been so profuse and marked in the earlier stages that several women have told me they had not been drinking beer for a month before admission, but had been taking spirits, and when asked the reason said that the beer did not seem to be "agreeing" with them and had made them sick; this was, of course, before the presence of arsenic was known. Dr. Judson, one of the resident officers at Crumpsall, tells me that two or three of his patients have had hæmorrhage from the bowel.

Since November 18th, 1900, I have seen about 150 fresh cases, and since that date 4 deaths have occurred at Crumpsall, all women; 1 died suddenly from heart failure, 1 from dilated heart with œdema and bronchitis (see photograph), and 2 from extensive paralysis, gradual heart failure and exhaustion.



Fig. 4. Case 2.—Legs.

The interesting questions raised by my colleague, Dr. Judson S. Bury, as to how many of the total symptoms we must ascribe to arsenic, and how much to alcohol can, I think, hardly be answered at present, and the same applies to the differential diagnosis and etiology of beri-beri. I can only refer to my original paper, and repeat that so far as I can see the skin lesions are *the* distinguishing features.

That beri-beri and so-called alcoholic paralysis with heart failure are extremely similar is undoubted. So long ago as 1890 Dr. Alcock (now of Goole), who had recently been one of the House-Physicians at the Manchester Royal Infirmary (when the late Dr. James Ross was investigating alcoholic neuritis), and had just returned from the China voyage, told me that he could see no difference whatever between beri-beri and alcoholic paralysis with heart failure. It would be a delightful induction if we could say that beri-beri and alcoholic paralysis and œdema were due to arsenic poisoning, but the facts known at present do not justify such a theory, for it would not explain the absence of the skin lesions in beri-beri (I can find no mention of them in the published accounts) and so-called alcoholic paralysis, nor would it explain the different relative frequency of those symptoms common to the three conditions. I agree with Dr. Bury that it seems very probable that arsenic in itself is quite sufficient to cause serious failure of the heart muscle, and I



Fig. 5, Case 3.—Very marked pigmentation, with branny desquamation of pigmented scales; wasting of arms from atrophic paralysis.

am inclined to think it may cause some mental confusion, but certainly not to the same extent as we ordinarily find in alcoholic paralysis.



Fig. 6, Case 3.—Showing marked wasting of anterior tibial and peroneal muscles of legs.

As regards the duration of the present epidemic, I think I can trace it back for over twelve months, for during this period I have been much struck and puzzled by the number of cases of pigmentation occurring at Crumpsall.

Treatment.—I trust I may be allowed to endorse, with a few exceptions, the most wise and excellent account of the treatment of these cases given by Dr. Judson Bury in the British Medical Journal for December 8th. The exceptions are that having seen such alarming heart symptoms and such feebleness of the pulse with low tension at Crumpsall, I should hardly like to give such depressing drugs as salicylate of soda and iodide of potassium, even though the latter drug is said by Sir William Gowers to aid in the elimination of the arsenic. For the same reason I should not recommend antipyrin or exalgin for the pain, though phenacetin might possibly be safer. In the early stages we have been content with rest in bed, a little digitalis, tonic doses (3 or 4 minims) of liq. strychninæ, bismuth, and soda if the stomach symptoms were prominent, and carbonate of ammonia and senega for the bronchitis; for the pain, small doses of morphine have seemed to us to be the best treatment. With these exceptions, let me again say how cordially I agree with what Dr. Bury has said.

Finally, I must thank my assistants, Drs. Sissons, Anderton, and Judson, the resident medical officers at the Manchester Workhouse Infirmary, for their great help in what has been and still is a most arduous task.

Photographs of 3 cases, showing various types are here reproduced. One woman (unpigmented) is of fair complexion, but in addition to the paralysis, has the typical keratosis of the soles of the feet.

THE STRENGTH OF THE HYPERTROPHIED BLADDER.

By D. W. SAMWAYS, M.D., D.Sc. M.R.C.P.,
Mentone.

The strength of the hypertrophied bladder, if I may judge from the descriptions given of it, would appear to be no greater as a safeguard against rupture than that of the bladder normally. Obviously, if this be so, the risk of rupture becomes considerably increased. The distribution of the muscular coat leaves the impression that "the mucous membrane between the fasciculi is insufficiently supported," and that the bladder hypertrophies foolishly, and to its own hurt.

A consideration, however, of the thin rubber ball covered with netting commonly attached to a spray apparatus should correct this impression. Such netting not only prevents a too great expansion of the ball, but materially strengthens the rubber seemingly unsupported between its meshes. Each little sacculus of rubber as it bulges out forms the segment of a sphere whose diameter is many times smaller than that of the rubber ball itself, by which without the netting it would alone be supported. The netting allows the sacculus to form, and pulls its walls inwards. Without the netting no sacculus could form, and the walls of the same segment of rubber could only be supported by the almost tangential force of the adjacent rubber, which would have to be very great to afford a sufficient radially directed pressure-component to resist the outward pressure. The fasciculi, therefore, by altering the direction of pull, save the rubber from being exposed to a strain which otherwise would have increased as the pressure augmented, and *ceteris paribus* in the same proportion.

The strength of a segment is increased in the inverse ratio of the size of the sphere of which it forms part. Thus if when not fasciculated the bladder have a diameter of 4 inches, the force required to burst a certain segment of its walls may be represented by S. If, without the bladder altering in size, the segment be supported between muscular fasciculi so that the segment now is part of a sphere whose diameter is 1 inch, the bursting force now becomes S, and $\frac{S}{S} = \frac{4}{1}$.

When the bladder, therefore, hypertrophies, *its whole wall is strengthened.* The interfascicular spaces, by becoming sacculated are put into what is economically and mechanically the most ideal condition for supporting pressure. When large sacculi develop, or spontaneous rupture occurs, the causes are probably additional pathological complications rather than errors in mechanical principles during hypertrophy.

INTRAPERITONEAL RUPTURE OF THE BLADDER.

OPERATION FOUR DAYS AFTER INJURY: RECOVERY.

BY W. PERCY BLUMER, F.R.C.S.EDIN.,
Surgeon to the Sunderland Infirmary.

J. P. B., labourer, single, aged 35, was admitted into the Sunderland Infirmary at 1.30 P.M. on August 2nd, 1900, complaining of pain in the abdomen and inability to pass urine.

History.

On the evening of July 29th, while walking along a street, he was seized with a feeling of giddiness and fell, striking his abdomen on the kerbstone. On recovery, he felt little the worse for his accident, and walked home. On reaching home he discovered that all attempts at micturition were fruitless; there was, however, a slight escape of what he took to be blood. On July 30th he stayed in bed and sent for a doctor, who prescribed a pill and saw him only once. He remained in bed till August 2nd, and feeling no better, walked to the infirmary, a distance of over two miles. He had been drinking heavily just before his accident, and said his bladder was full at the time.

Condition on Examination.

The abdomen was greatly distended all over, somewhat tender on palpation, and absolutely dull in both flanks and across the abdomen to a little above the umbilicus. There was no extravasation into the perineum. Hiccough was constant and distressing; this had been the case for the three days prior to admission. He appeared very ill; the face was pale and drawn, with sunken eyes. No food had been taken, except milk and water, since the accident. Pulse 60 per minute, regular and fairly full. Temperature 96° F.

A soft rubber catheter passed easily, and immediately bloody urine flowed, 196 ounces in all being drawn out (quantity carefully measured). The abdomen thereafter resumed a more normal appearance. There was no doubt as to the nature of the injury.

Operation.

Laparotomy was performed at 4 P.M., with the assistance of Mr. T. F. Hopgood. The patient having been put under chloroform an incision was made in the middle line just above the pubis, and the abdominal cavity entered in the usual way. A quantity of fluid similar in character to that previously drawn off flowed out. The bladder was lightly contracted, and showed a vertical tear on the posterior wall, which admitted two fingers easily, the peritoneum covering its wall being torn an inch lower down. There was no peritonitis.

The rent was closed with continuous sutures, the bladder tested, the abdominal cavity flushed out with hot boracic solution and the abdominal wound stitched up, a Keith's drainage tube being inserted, and a soft catheter tied into the bladder.

After-History.

The tube was exhausted one hour afterwards (fluid ½ ounce), then again in two hours (fluid 1 ounce). Thereafter exhaustion was made every four hours. The tube was withdrawn at the end of forty-eight hours, and the opening closed with a flying suture.

On the evening of August 5th the patient became very noisy and restless, attempting to get out of bed, pulling out the catheter and threatening the nurses; he suffered also from slight hallucinations. A hypodermic injection of morphine, ¼ grain, followed by ⅛ grain one hour later, had the effect of quieting him, and that night he slept better. On August 6th he was quiet, and slept seven hours.

On August 7th, when dressing the wound, the lower stitches appeared very tense, and on cutting two a drachm or so of pus, and what was evidently urine, escaped. The opening was syringed with 1 in 5,000 corrosive solution and drained with iodoform gauze. That evening a consultation was held as to the advisability of opening up the abdominal wound; it was, however, deemed inexpedient on account of the sloughing state of the tissues and the almost entire absence of symptoms of peritonitis. A fine rubber drainage tube was inserted instead of the iodoform gauze, and hot boracic fomentations applied every two hours. A seidlitz powder was administered.

There was evidently a little leakage from the bladder, and small quantities of urine continued to flow through the tube in the abdominal wall, the channel being cut off from the general peritoneal cavity.

The remaining stitches were taken out on the tenth day, when the whole length of the wound burst open, and a large slough was taken out. The urine was now very alkaline. On August 9th, 99 ounces of urine were secreted in the twenty-four hours. The bladder was syringed out with boracic lotion, and boracic acid, 10 grains, was given thrice daily. This treatment was continued for ten days, after which salol was administered in 5-grain doses every two hours, in place of boracic acid, up to 60 grains in the day. Under this treatment the cystitis rapidly yielded.

The temperature was generally subnormal for the first ten days, but on the third and tenth days it reached 99° F. On the sixteenth and twenty-first days it reached 101° F. It then fell to normal, and remained so until the end.

The fistula was rather slow in healing, but the patient was discharged quite well on October 29th. During the last week of his convalescence he had three epileptic fits of a transitory nature.

Remarks.

I have not been able to find on record such a case. The points calling for special mention are:

1. The length of time between the injury and operation.
2. The large amount of fluid in the abdomen causing comparatively little trouble.
3. That four days after the injury the patient walked over two miles.
4. The absence of symptoms of peritonitis.

I am indebted to Dr. C. G. Wotherspoon, house-surgeon, for the notes of this case. His care and attention materially contributed to the patient's recovery.

NOTES ON A CASE OF PROFUSE HYDROPERITONEUM COMPLICATING UTERINE FIBROIDS.

BY A. C. BUTLER-SMYTHE, F.R.C.S.E.,
Surgeon to the Samaritan Free Hospital for Women and Children, and to the Grosvenor Hospital for Women and Children, Westminster.

IN abdominal surgery one frequently meets with cases in which uterine fibroids are accompanied by varying quantities of hydroperitoneum, the amount seeming to depend more on the mobility of the growth than on its size. Instances of profuse hydroperitoneum occurring in patients free from thoracic or other abdominal disease are, however, uncommon, and therefore I have ventured to publish this case.

Mrs. T., aged 40, consulted me in December, 1895, on account of an abdominal swelling.

History.—She had been married seventeen years and had had three children, the youngest being then 14 years of age. Menstruation began at 15, and her periods had always been regular and painless, the loss being free and the flow lasting usually seven days. Her last period had occurred in November, 1895. In her early life she had had the usual minor ailments, and after marriage pneumonia. She had also two attacks of influenza. Six months previous to her visit to me she experienced some abdominal pain, and later on a swelling was noticed in her right side. This swelling seemed to become bigger before each period, and in the intervals it decreased in size. Of late she suffered from constipation, and there were symptoms of bladder pressure. There had been no loss of flesh within the last six months, her weight being now 8 st. 11 lbs. Up to December she had enjoyed good health and was well able to attend to her business and household duties.

Condition when First Seen.—Medium height, pallid features, skin moist, tongue clean, pulse regular and of fair volume, temperature normal, respirations natural, slight hæmic murmur at base, but otherwise the heart seems healthy, bowels constipated, urine free from albumen and sugar, liver normal. Bimanual examination revealed two movable tumours in the abdomen, one situated in the right iliac and lumbar regions, the other occupying the hypogastric and left iliac regions. Pressure on one or both of the tumours was communicated to the uterus, showing them to be closely connected with that organ. The cervix uteri was hard and granular, the os patulous, and the uterine cavity measured 3½ inches. The diagnosis arrived at was 'subperitoneal uterine fibroids," and it was agreed that operative interference was uncalled for in the absence of severe symptoms. The patient was therefore put upon ergot and iron, and advised to live frugally, avoiding wines and stimulating diet.

Progress.—The patient remained in fair health until August, 1896, when she had an attack of peritonitis, and in my absence from town consulted Sir Spencer Wells, and later on Mr. Alban Doran, both of whom advised against operative measures. During the following ten months she had little to complain of, and continued at her business, being able to take long walks and look after her house. On June 28th, however, she met with an accident, being knocked down by a cart when crossing the road. She was much bruised on the abdomen, thighs, legs, and arms, and narrowly escaped being killed. The accident was followed by abdominal pain, and from that date she rapidly lost ground.

Repeated Aspirations.—The tumours became tender, emaciation was marked, and on August 24th free fluid was detected in the abdomen. By September 13th she was much distended, and 18 pints of clear amber-coloured fluid were removed by aspiration. On September 24th she was again relieved, 20 pints being withdrawn. At the end of two weeks, on October 6th, the aspirator was again necessary, and about 20 pints were evacuated. On October 25th the patient was admitted into the Grosvenor Hospital for Women, Westminster, and two days later she was for the fourth time aspirated, 21 pints being removed. The reaccumulation of fluid, however, was so rapid that on November 2nd about 14 pints were taken away.

Operation.—The patient now decided to have the tumours removed. Accordingly on November 6th I operated. On opening the abdomen about a gallon and a half of fluid escaped. The parietal peritoneum was unusually thick and injected. The omentum was adherent to the parietes, and also to the anterior surfaces of both tumours. There was much intestinal adhesion, the cæcum and appendix cæci having to be dissected off the lower part of the right tumour before it could be brought outside the abdomen. The *serre-nœud* was then placed in position, and the operation completed. Chiefly owing to the extent of intestinal adhesions the operation occupied two hours, and the patient when put to bed was in a very collapsed condition.

Recovery.—She rallied steadily, and made a good recovery. There has been no return of the hydroperitoneum, and at the present time the patient enjoys the best of health.

To my mind it is clear that the hydroperitoneum was directly caused by the injury to the peritoneum covering the fibroids, inasmuch as up to the date of the accident the patient was in very fair health, whereas all the bad symptoms rapidly developed after the injury, and were at once relieved, and the patient cured by the removal of the uterus and tumours. The following points seem to me to be worthy of consideration, and may be of interest to my hearers:

1. The ovaries and tubes were healthy.

2. The tumours removed were simple fibromyomata, and showed no signs of malignant or other degeneration, but the peritoneum covering them was thick and injected. The tumours were not œdematous.

3. Up to the date of the accident no free fluid had been detected, and there was no loss of weight.

4. Emaciation was first noticed, and free fluid in the abdomen first detected, about six weeks after the accident.

5. So far as could be ascertained the patient was free from thoracic or abdominal disease.

6. Though aspiration had to be performed five times in six weeks, and about 20 pints of fluid were evacuated each time, yet there was no reaccumulation of fluid after the supravaginal hysterectomy, and the patient remains in perfect health (July, 1900).

OTOMYCOSIS IN THE TROPICS.

By H. CAMPBELL HIGHET, C.M., M.D.,
Physician to the Royal Palace, Bangkok.

OTOMYCOSIS, or the growth of fungus in the external auditory meatus, is apparently a rare disease in temperate climates if one may judge from the scanty literature on the subject. During eight years work in Singapore and Bangkok, however, my experience has been that it is quite a common—if not the most common—disease affecting the external auditory meatus which one meets with in the tropics. The reason for this appears to be that all the conditions favourable to the growth of fungi are present—namely, heat, moisture, and the presence practically everywhere in abundance of the spores of the fungi. All my cases were in adult Europeans. Children are said to be exempt from the disease.

Symptoms.—These vary in intensity according to the severity of the case. There may be simply a sensation of blocking of the ear with slight impairment of hearing. Itching, pain, and often a considerable amount of watery discharge, is complained of, and the patient notices that his pillow has been stained during the night by a yellowish fluid which he finds exuding from one or both ears. Both ears are usually affected, but often in different degree. When an attack of acute diffuse inflammation of the meatus supervenes, as is unfortunately a frequent complication, great pain and sleeplessness follow and often a considerable rise of temperature is noted for a few days.

Physical Appearances.—In typical first attacks the meatus is seen to be filled up with a soft wool-like substance which varies in colour according to the type of fungus present. As I have seen it it is usually of a pale lemon yellow or a very pale yellowish green. On passing a probe into the canal the obstruction is found to be soft and moist and is readily removed. The walls of the canal may be found to present quite a normal appearance, but as a rule they are somewhat reddened, and the irritation may have gone as far as to have led to some desquamation of the epithelium. In cases in which the attention of the patient has been suddenly drawn to his ears by an acute attack of pain and deafness, it will be found that there are signs of extension of the catarrh to the middle ear. In chronic cases, besides the soft masses of recent fungus, impacted masses of a material like sodden newspaper are found in the meatus. These come away in large scales, or even casts of the canal, and the walls are found to have undergone thickening, so much so as in some cases to hide the tympanic membrane. Microscopical examination of the fungus reveals the presence of such common fungi as the penicilium glaucum, aspergillus, and more commonly in my experience the mucor mucedo.

The complications noted in my cases were diffuse inflammation of the external auditory meatus, acute serous catarrh of the middle ear, chronic catarrh of the same, perforation of the membrana tympani, swelling and even abscess of the lymphatic glands at the angle of the jaw, and eczema of the meatus and pinna. The acute adenitis, the result of septic infection from the ears, was so severe in one case as to require the administration of chloroform on two separate occasions in order to open abscesses on either side of the neck.

Diagnosis is usually easy, and is at once settled by the microscope.

Prognosis.—This is a readily curable disease, but is only so if the case be taken charge of by the physician himself. To hand over the details of treatment to the patient is a plan which leads to much trouble and disappointment. I have known of cases going on for weeks and even months when carelessly attended to.

Treatment.—As much of the fungus as possible should be removed with a cotton and probe, and then the canals should be well syringed with a warm solution of bichloride of mercury (1 in 5,000). The canal is then thoroughly dried with cotton wool, so as to get rid of all water, which favours the growth of the fungi, and finally it is sponged with a solution of bichloride of mercury in absolute alcohol (1 in 1,000). This gives rise to considerable pain for a moment, but it soon passes off. The alcohol is allowed to evaporate, and then the meatus is plugged with sterilised cotton-wool, which is not removed until the following day. It will then be found that many of the spores that had resisted the action of the germicide applied the previous day have germinated in the interval, and there is apparently as much fungus as before. It is not so dense, however, and is more easily removed by the same means. This process is repeated daily until no more fungus forms, then the eczema or other complication is treated in the usual way. After the fungus has ceased to grow I often insufflate a powder of boric acid 2 parts, bismuth salicylate 1 part, and oxide of zinc 3 parts. Such a combination completes the cure not only of the otomycosis, but also of the eczema of the meatus.

Prophylaxis consists in keeping the ear canals very clean and dry, and especially in avoiding the entrance of sea water, which by reason of its deliquescent salts apparently conduces more than fresh water to the growth of the fungi.

AMBULANCE WORK.—At Wallsend, recently, 29 certificates of the St. John Ambulance Association were presented to members of the ambulance corps in connection with Messrs. Swan and Hunter's shipyard on the Tyne, and subsequently Dr. Robert Alfred Wilson, honorary surgeon to the corps, was presented with a silver mounted umbrella.

AT a recent meeting of the Stockport Infirmary a resolution was passed expressing the regret with which the resignation of Dr. Keay—who had been resident medical officer for four years, and since 1887 honorary surgeon—was received.

SOME POINTS IN THE TREATMENT OF SPINAL ABSCESSES.

By A. H. TUBBY, M.S.Lond., F.R.C.S.Eng.,

Surgeon to the Westminster Hospital, the Evelina Hospital for Children, and the National Orthopædic Hospital.

For clinical and operative purposes spinal abscesses may be divided into two classes—those which are deeply situated and show little tendency to come to the surface for a considerable time, but rather to burrow deeply; and those which make their way comparatively rapidly to the surface either in the lumbar or inguinal region, with reddening and tuberculous infiltration of the skin. It is the first variety, the deeply-burrowing abscess, with which this paper mainly deals. Putting aside treatment by aspiration as inconclusive and inefficient, and dissecting out of the abscess sac as ideal and often impossible, I venture to emphasise the following points in treatment, the value of which I have been able to prove practically on several occasions:

1. Do not wait to open a spinal abscess until the skin is reddened and involved.

2. So far as possible open the abscess at certain "seats of election," the places of evacuation to be decided by the direction taken by the abscess and by the surgeon.

3. Wherever evacuation is decided upon, let it be done as far as possible away from the groin, and in such a position that more than one opening can be made into the abscess cavity.

4. Carefully cleanse the cavity and rub the interior thoroughly with menthol or iodoform solution.

5. Avoid drains of all kinds.

6. Be careful to carry out perfect aseptic measures from first to last.

To enlarge upon these points:

1. Some surgeons prefer to place their patients at rest in the hope of absorbing the fluid portion of the pus. In many cases, instead of this occurring, the abscess makes its way towards the surface, and then operation should be performed at once, before the skin and subcutaneous tissue have become infected by tubercle. If such an untoward event occur a persistent tuberculous sinus remains.

2. As to the seats of election of opening an abscess, providing it is not pointing, I may illustrate my meaning by a very successful case: D. G., aged 5, came under my care with a right-sided spinal abscess of the ilio-psoas variety in 1894. It occupied the whole of the right iliac region, and extended beneath Poupart's ligament into Scarpa's triangle. It seemed to me that if this were opened in the usual manner in Scarpa's triangle and drained, the result would be an opening at one of the extremities of a long abscess track, and the case would result in the formation of an obstinately discharging tuberculous sinus in the neighbourhood of the genital organs with a great probability of septic infection. The child was therefore placed in bed and carefully watched, and it was seen that the abscess gradually became less in size in its abdominal part and greater in its femoral part without any signs of pointing. I therefore waited until the abscess had almost entirely disappeared from the abdominal cavity, and no fluctuation could be felt by transmission beneath Poupart's ligament. The femoral part had extended to the junction of the middle and lower thirds of the thigh. This change in the position of the abscess occupied about three months, and doubtless the prolonged rest had a most beneficial effect on the spinal abscess. At the end of the waiting period I made three small incisions into the abscess cavity from the outer side of the thigh, and thoroughly cleansed the cavity by irrigating with sterilised water and rubbing the walls dry with plugs of iodoform gauze on spongeholders. The three openings were then entirely closed by sutures and a firm dressing applied. The wounds healed by primary union, and no further trouble followed except that on the third day a little clear fluid had collected beneath the middle one of the incisions. This was allowed to escape, and the skin healed perfectly without any trace of tuberculous infection. The child has been seen on many occasions since, and there has not been the slightest return of the abscess. Thus, in this case by waiting I had the gratification of securing my seats of election for opening the abscess with the happiest results.

3. As to the importance of making more than one opening into the abscess sac and away from the groin when the abscess is of the ilio-psoas variety, unless the abscess is urgently pointing I would advise that the child should be placed in bed, and the swelling allowed to increase until it is so large that it is easy to make without any difficulty two or more openings into it. This appears to me to be a cardinal point in the treatment of these cases. The advantages of multiple openings are great, for from the physical point of view the evacuation of the contents is likely to be more complete when air has free access to the cavity, and pockets of pus are less likely to remain partially unemptied. Then, again, by means of the several openings all parts of the cavity can be brought within reach of a sharp spoon, the irrigator, and the cleansing sponge. It is also easy to apply an application to the sac wall. It is my conviction that the more in number the incisions which are made into the abscess without risk, and provided that all are sewn up at the end of the operation, the better the result will be. In the case of P. L., aged 14, who had an abscess track 10 inches long extending beneath the skin of the back downwards from a cervico-dorsal carious site, I made no fewer than six incisions, and obtained primary union. Three years afterwards some more pus made its appearance on the other side of the spinal column; the same method was adopted with like results, and he has remained well for four years.

4. As to the substance to be applied to the walls of the sac: The best irrigating fluid is sterilised water followed by a solution of menthol, as used by Mr. Robert Jones. He, I believe, employs the following formula: Menthol, ʒj; rectified spirit, ʒj; glycerine, ℥ss. I have modified this somewhat, using paroleïn instead of glycerine. Especial care should be taken to rub the edges and sides of the incisions with this application so as to prevent tuberculous infection of the skin and subcutaneous tissue. It must also be well rubbed over every part of the sac.

5. The avoidance of drains. It may be said with moral certainty that a sinus from a spinal abscess if it last some months, especially in the case of a poor child treated as an out patient, will become infected with micrococci; that is, to tuberculous invasion septic invasion will be added. This increases immensely the danger of the case. Again, the insertion of a drainage tube often converts a healthy incision into a tuberculous sinus. On these grounds drainage tubes must be avoided and the wound sutured. The sutures should be inserted deeply and just short of the abscess sac, so as to approximate closely all the overlying tissues. It will be objected that in the absence of drainage fluid will reaccumulate in the abscess sac. In some cases it does, in many it does not. If it reappears it is very slight in quantity, often serous, and is probably due to the irritation of the menthol. All that is necessary is to reopen one of the incisions, evacuate the fluid, cleanse the wall of the incision with the menthol solution as before and suture again, keeping the patient at rest for many weeks afterwards. Pointing abscesses are the result of neglect and recurrent ones are often due to the want of sufficient rest.

6. Perfect asepsis from first to last. It is not necessary to dwell upon this point. It is one of the most important factors in the treatment of the case, and great responsibility rests upon the surgeon. In fact, it appears to me that the cardinal points in the treatment of these slowly burrowing spinal abscesses are: multiple incisions, absence of drainage, complete closure of the incisions at the time of operation, and perfect asepsis.

If the abscess when first seen is pointing, the skin for a considerable distance round should be asepticised, as much as possible of it and the affected subcutaneous tissues should be removed, the sac cleansed, and deep sutures placed so as to approximate the sides of the track and the skin edges

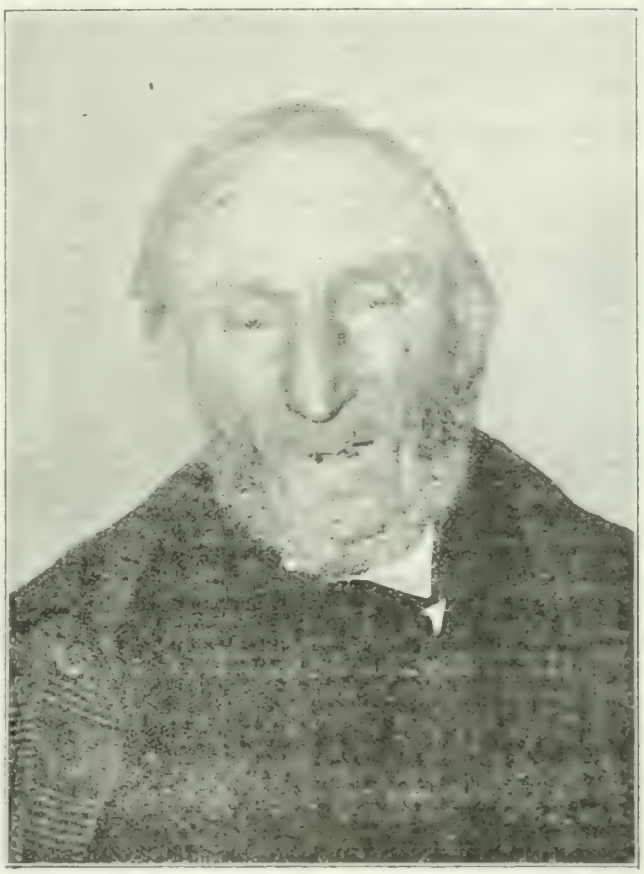
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The Teaching of Tropical Diseases in France.—At a recent meeting of the Paris Académie de Médecine, M Vallin presented a small work by Dr. G. Brault, Professor of Exotic Pathology in the medical school of Algiers, in which an account is given of the provision for the teaching of Colonial pathology in that school. There are now three French schools of medicine having regular chairs of Colonial diseases, namely, Bordeaux, Marseilles, and Algiers.

A CASE OF RESTORATION OF THE LOWER LIP AFTER ALMOST COMPLETE EXCISION FOR EPITHELIOMA.

By ROBERT KENNEDY, M.A., D.Sc., M.D.,
Assistant Surgeon, Western Infirmary, Glasgow.

Of the various methods of restoring the lower lip after complete or almost complete excision in cases of extensive epithelioma, those in which the flaps are taken from the sides with their bases below have many advantages over those in which the flaps have their bases above or at the sides. The former methods were introduced by Dieffenbach, improved by Jaesche, and perfected by Trendelenburg.[1] The operation in the following case was performed in the manner described by Trendelenburg, and the photograph of the patient, which was taken seventeen months after the operation, shows that the appearance of the new lip has not suffered by the lapse of this period of time.



Excision of entire lower lip for epithelioma. Restoration by Trendelenburg's method. Shows the patient seventeen months after the operation.

The patient, a man aged 78, was admitted to Dr. Patterson's wards in the Western Infirmary on July 4th, 1898, on account of an extensive epithelioma of the lower lip.

History.—Sixteen years earlier he had undergone an operation on account of epithelioma of the lower lip. The tumour was removed and he patient remained free from the disease till about a year before his admission to the Western Infirmary, at which time recurrence commenced and extended rapidly, so as to involve almost the entire lower lip.

Condition on Admission.—There was a hard and warty and partially ulcerated growth involving the greater part of the lip. No affected lymphatic glands could be made out.

Operation.—On July 5th, 1898, I removed a wedge, including all but a sixteenth of an inch of the border of the lip on either side, the apex of the wedge being at the lower border of the jaw. An incision about an inch in length was then carried directly outwards from the angle of the mouth, but passing through only skin, subcutaneous tissue, and muscle, and leaving the mucous membrane and submucous tissue intact. The submucous tissue and mucous membrane were, after having been dissected upwards from the tissues of the cheek, divided parallel to the incision in the skin, but about half an inch higher up. From the end of the transverse incision the entire tissue of the cheek was then divided by an incision curving sharply downwards in front of the facial artery, and ending at the lower border of the jaw about one inch from the symphysis. The same procedure was adopted on the opposite side and the two flaps drawn together, and sutured with silkworm gut in the middle line. The mucous membrane left projecting from the inner edge of the transverse part of the incision was then turned forward and sutured to the edge of the skin, thus forming a mucous membrane border to the lip. The gaps left in the cheeks were then completely closed by drawing the parts together with silkworm gut sutures.

After-History.—When the operation was completed the amount of traction on the cheeks was so great that the upper lip was forced upwards into contact with the nose, but by the following day the parts had adapted themselves so well to the new position that the upper lip had come well back to its old position and in a few days appeared in a perfectly natural position. The parts healed by first intention, except two small portions of the reflected mucous membrane which sloughed at the angles of the mouth. The patient was dismissed well on August 5th.

When seen in December, 1899, seventeen months after the operation, there was no recurrence of the epithelioma and no affected lymphatic glands to be felt. The new lip had a satisfactory appearance, presenting a well-formed mucous membrane border, and fulfilled the functions of the lower lip very well. There was no retraction, no tension, and he was able to perform voluntary movements of the lip and to pronounce the labial letters perfectly, and while drinking none of the liquid escaped.

The fact that the result of this operation has remained satisfactory after the lapse of seventeen months, apart of course from the possibility of recurrence of the epithelioma, shows that the new lip will stand the test of time. This, as far as my experience goes, is certainly not the case with the methods which were introduced by Syme[2] and by Andrew Buchanan.[3] The flaps in those operations were cut from below, remaining attached to the cheeks, and the disadvantages consist in the want of mucous membrane, and the difficulty or impossibility of closing the gaps left after raising the flaps to the level of the lip. The want of mucous membrane prevents the satisfactory formation of a mucous membrane border, and the raw surface on the inner side of each flap must heal by granulation. The result is that the inner surface of the new lip forms a contracting cicatrix, gradually causing retraction of the lip, which speedily destroys its appearance and utility. The operation is also a distinct improvement over that described by Dieffenbach, as the method of making the flaps by that method leaves gaps in the cheeks which are much more difficult to close.

References.

[1] Trendelenburg. Verletzungen und chirurgische Krankheiten des Gesichts. *Deutsche Chirurgie*, Lief. 33. [2] Syme. *Observations in Clinical Surgery*. Edinburgh. 1861. [3] Andrew Buchanan, On a Method of Restoring the Lower Lip, etc., *London Medical Gazette*, 1841.

Return of a Disgraced "Ambulance" Corps.—Under this heading the New York *Medical Record* in a recent issue relates the following edifying story. Thirty-three members of the Chicago Irish-American Ambulance Corps, which left that city to help the Boers in the Transvaal last February, returned on November 17th by the steamship *Trave*. There were 58 men in the corps, among them 6 physicians: Drs. J. R. McNamara, Herbert McAuley, James J. Slattery, R. L. Long, A. F. Corney, and J. B. Aderholt, all of Chicago. George Cassidy went as a nurse. The other 51 were supposed to be fighting men. Before leaving this country each of the 58 men went before a Justice of the Peace and made affidavit that he was going to South Africa, not as an ally of the Boers, but as an ambulance man, and each man pledged himself not to fight. Miss Clara Barton gave the Irish-American Corps a Red Cross flag, and recognised the organisation as a Red Cross auxiliary. The 6 physicians and the nurse adhered to their pledges, but all the others entered the fighting ranks of the Boers the minute they reached the Transvaal. Some of the men were killed, some were captured or ran away, and some are still fighting. We are pleased (adds our contemporary) to note that the reception the returning band of pledge-breakers got from the Committee which had been appointed to meet them was far from cordial, and instead of congratulations they received reproaches for having perjured themselves.

TWO CASES OF BLINDNESS DUE TO SPHENOIDAL AND ETHMOIDAL SINUS DISEASE,

BOTH CASES TERMINATING FATALLY: NECROPSY.

By G. VICTOR MILLER, M.D.

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A NUMBER of cases of the nature indicated by the title of this paper are on record. Sandford, six years ago, brought a case under the notice of the Ophthalmological Society in which there had been double optic atrophy from sphenoidal sinus disease, and was able to show the condition present in the skull after death. McBride mentions a case recorded by Rouge where there was exophthalmos, strabismus, deafness, and blindness. Death soon occurred, and the sphenoidal sinus was found diseased. Sphenoidal sinus disease sometimes gives rise to retrobulbar neuritis as described by Holmes. In addition to the above a considerable number of cases of sphenoidal sinus disease have now been placed on record by Schäfer (who first recorded the condition), Grünwald, Nöbel, Macdonald, Bronner, Heryng, etc.

In my two cases, I think the extensive disease in the ethmoid was the chief feature. Added to this were the symptoms of serious brain mischief.

CASE I. *Ozæna: Necrosis of Nasal Septum: Ethmoidal and Sphenoidal Sinus Disease: Brain Complication: Death.*—On September 8th, 1896, I saw with Dr. Hunton, in the Stockton Union Hospital, a youth (H.G.), aged 18, grocer's assistant, with the following history:

On August 31st, 1896, he was grinding a tea mill when he suddenly became unconscious, and was convulsed for an hour. On September 2nd he felt quite well again. On September 3rd he had another fit. He experienced a cloud over both eyes, and went totally blind within forty-eight hours. He was removed to the Union Hospital. The temperature was 99.2°. There was no albumen or sugar in the urine. The temperature never rose above 100°. He was conscious, comfortable, and had no pain whatever. The pupils were widely dilated, reacted very slightly to light, but there was no perception of light. The left disc was pale, ill-defined, and the veins over distended. The right was slightly pale. Up to this illness he had enjoyed very good health, and there was no history of syphilis or tubercle. His heart and lungs were healthy. The opinion now formed was that of some disease about the body of the sphenoid, namely, sarcoma, or perhaps gumma. A bad odour from the patient led me to examine his nose, which was found full of greyish-green ozæna crusts. He now stated that he had seen pieces like bone and skin come away from his nose. As douches were useless, the nose was cleared of crusts with probe and forceps on September 25th, and the following observed:

The nose is very roomy, turbinates much atrophied, nearly the whole of bony septum is away, horrible fœtid pus is coming from the open ethmoidal cells, and the perpendicular plate of ethmoid is necrosed and loose. We now diagnosed sphenoidal sinus disease, with secondary brain mischief in the region of the optic commissure.

After free douching, cocaine was applied and the ethmoidal cells scraped out and part of the necrosed perpendicular plate removed.

On October 2nd, as the patient was no better, the sphenoidal sinuses were explored, after the plan of Grunwald and Schäfer, namely, by passing a fairly large trocar along the lower border of the middle turbinate until the point came against the basisphenoid; then the point was tilted upwards and backwards, so that the trocar lay across the middle turbinate, and was then pushed firmly and very steadily on, until the point entered the sinus (a solid perforator with a shoulder a quarter of an inch from the point answers better). After the operation the discharge was increased in amount, and the patient felt better. Sight, however, did not improve. Later he was put on a mixture of potassium iodide and nux vomica, and kept quietly in bed, without, however, improving.

On October 7th he had another fit, became unconscious, and developed facial paralysis and divergent strabismus. He sank, and died three days later.

I greatly regret to state that permission to make a *post-mortem* examination could not be obtained. In this case I think there had been an escape of pus into the brain cavity, followed later by a suppurative meningitis. The family history was difficult to obtain, the boy's parents were dead, and he was practically without relations. He had the flattened nose usually seen in these cases, but there were no definite indications of hereditary syphilis.

CASE II.—K. S., a girl aged 14, was sent to the North Riding Infirmary, Middlesbrough, on March 9th, suffering from blindness, which had come on a fortnight previously.

Personal History.—She had had inflammation of the eyes five or six years before, lasting about three months. The present illness began three months before with a small sore in the roof of the mouth. This healed, the patient then began to complain of the head, and became listless and drowsy. Sight began to fail about two months later, and was entirely lost in four or five days. A discharge from the nose began three months before admission, and has increased.

Family History.—Father and mother living. Father denies any specific disease. Patient is the third and only living child. The first died immediately after birth, the second lived six weeks.

Condition on Admission.—The patient is extremely pale and unhealthy looking. Very tremulous when examined, otherwise inclined to be drowsy, and sleeps a great deal. The pupils are widely dilated. Has old corneal opacities, more marked in the right eye. Not the faintest perception of light, pupils do not react to light; movements of the eyes good. Does not complain of pain. Walks easily. Nothing definite in the fundus on examination with the ophthalmoscope; prescribed iron and ordered urine to be carefully examined. The fœtor of ozæna was not detected at this examination, and nothing had been said about discharge from the nose. A few days later I again examined the patient; she was *in statu quo*. Sleeps a great deal. Temperature varies between 98° and 100°. I detected a very bad odour from the patient, and observed distinct flattening of the nose. As nothing had been found in the urine, I proceeded to examine the nose, and found it full of typical greenish ozæna crusts. Thinking now of the previous case, I began to suspect sphenoidal disease. I ordered frequent douching of the nose with strong soda solution. This, however, had no effect, so I cleared the nasal passages with probe and forceps, and, after douching away the stinking pus which had accumulated under the crusts, I observed the following: There is a very large perforation of the nasal septum, in fact the whole bony septum seems to be absent. The ethmoidal region is occupied by granulation tissue covered with pus. There is dried pus on the nasopharyngeal wall. The nose is very roomy. The inferior turbinate is hardly recognisable, the middle turbinate much smaller than normal. The movements of the soft palate are to be seen on swallowing, and one can also recognise the Eustachian orifices. A further examination of the fundi at this time satisfied me that no definite changes were to be observed. No scar is to be seen in the roof of the mouth; there are no scars about the angles of the mouth. The teeth are fairly good and not peg-shaped, the hearing is good. The opacities in the corneæ are probably the result of interstitial keratitis; they interfere, to a certain extent, with the examination of the fundus. We had now two things in favour of hereditary specific disease, namely, the corneal opacities and the early deaths of the two other children. I accordingly prescribed syrup ferri iodide c. potassium iodide grs x., and decided to puncture the sphenoidal sinuses at an early date. The temperature at this time was slightly subnormal. On April 1st the sphenoidal sinuses were punctured in the same manner as in the previous case; next day there was considerably more discharge from the nose, and continued so.

Examination, April 7th.—Patient not so drowsy, still very pale and tremulous; bears the cold very badly; temperature still rather unsteady; pupils not so widely dilated, but do not react to light; patient still quite blind.

Ophthalmoscopic Examination.—Optic discs show decided change since previous examination, they are distinctly pale, evidently a commencing atrophy; nose very clean; inspissated pus on naso-pharyngeal wall looks as if it were trickling down from the openings in the sphenoidal sinus. On April 9th the temperature in the morning was 98°, in the evening it was 99°. On the morning of April 10th I passed a probe into the sphenoidal sinuses through the puncture openings previously made. Nothing further in the way of operative interference was done. The temperature on the morning of the 10th was 98.8°, in the the evening 99.2°. From this date until the 13th the temperature varied between subnormal and 99.4°. On the evening of the 13th the patient, after being up in the afternoon, complained to her father, who was visiting her, of feeling very sleepy and drowsy, more so than usual. On the morning of the 14th the temperature was 101.4°, and the patient was very somnolent. Later in the morning she fell into a comatose condition, from which up to late in the afternoon she could be roused by shouting to her. In fact this could be done until half an hour before death, which took place about 4.30 P.M. The pulse on the morning of the 14th was distinctly slow, from 55 to 60 per minute. In the afternoon and shortly before death it was very slow—from 45 to 50 per minute. Prior to the onset of the coma the patient had not complained of pain in the head or anywhere else, only of the drowsiness. There were no sweatings or rigors.

Post-mortem Examination.—This was kindly performed by the house-surgeon, Dr. Donaldson, in my presence, the head only being examined, and the following changes will, I think, be sufficient explanation of the cause of the blindness and a fatal termination. The base of the brain was very adherent to the anterior fossæ of the skull, and the base of the brain corresponding to the anterior fossæ was covered by a considerable quantity of fairly firm lymph. The cribriform plate of the ethmoid and the whole of the ethmoid was soft and carious, the whole breaking down under slight pressure of the fingers, causing pus to exude freely from the ethmoidal cells. The base of the skull occupied by the sphenoid was removed, and on examining the sphenoidal sinuses the openings made by the trocars were readily found. The anterior walls of the sinuses were carious and soft, and the sinuses contained pus. The whole brain was soft and putty-like in consistence, evidently the result of a general softening. There was no fluid in the ventricles.

In all probability ozæna in these cases was not true ozæna or atrophic rhinitis, judging from the extensive necrosis and loss of bone tissue. I believe they should be classed among syphilitic cases, and this would apply more especially to the second case, where there was undoubted evidence and history of hereditary specific disease. Some authorities hold that ozæna, or atrophic or fœtid rhinitis, is a disease of the mucous membrane; others that ozæna is secondary to disease of the sinuses (Michel, Grunwald).

Noebel (of Zittau) and Löhnberg (assistant) in the *Berl. med. Woch.* (March 12th, 19th, and 26th, 1900) discuss the whole question very thoroughly. Noebel says Ludwig Grunwald, in pointing out the relations of ethmoidal and sphenoidal disease to ozæna has placed it in the clear light of physical investigation, and after him there is nothing more to add. Therefore Noebel believes in the focal theory of the disease as against its being a disease of the mucous membrane or of the turbinates. Noebel says Grunwald's investigations have not advanced treatment, and he has some very important suggestions to make on that point. He does not believe in heredity as a predisposing cause. He considers ozæna to be in most cases a residue of infectious disease—for

example, scarlet fever, diphtheria, etc.—and this explains why it is seen in more than one member of the same family. As to the fœtor, he says, just as cavities in the mastoid, lung, etc., have their odour, so have cavities of the nose, and is due to saphrophytic parasites, which produce the gases formed from the products of bone necrosis.

As regards treatment, where there is ethmoidal disease he scrapes away the granulation tissue, diseased bone, etc., and opens the ethmoidal cells to give exit to pus.

Noebel's plan of opening the sphenoidal sinuses is worth noting. Previous to operation he applies a 20 per cent. solution of cocaine, in nervous cases partially anæsthetises, but prefers cocaine.

Armamentarium.

In addition to Grünwald's forceps and sharp spoons, he has three modifications of Bechmann's scissors; one pair of scissors curved on the flat to the right to cut through the left middle turbinate; another pair curved to the left to cut through the right middle turbinate; thirdly, a pair curved on the edge down towards the fingers; lastly, a pair of punch forceps to punch out as large an opening as possible in the anterior wall of the sphenoidal sinus. The dressings are sterilised and the nose well douched out.

First Step.

Separate the posterior half of the middle turbinate with the curved scissors cutting transversely through the middle turbinate. Cut away the posterior half with the scissors curved on the edge, then haul it away with snares or forceps and plug the nostril. A few days after this, having first found the ostium of the sphenoidal sinus with a probe, we enlarge it with a sharp spoon so wide that a blade of the punch forceps passes into the cavity. Now snip away the bony anterior wall of the sinus until a large opening is got.

If by now caries is demonstrated, we remove the granular degenerated mucous membrane with a sharp spoon, taking great care at the roof where is the brain, and at the outer side where is the optic nerve and the carotid artery. If the mucous membrane is not seriously diseased leave alone, but make the opening as large as possible, for it has a tendency to diminish in size as shown by Moritz Schmidt.

After cleansing the nose introduce iodoform gauze into the cavity, and into the nostril a tampon satuated with europhen oil, then send the patient to bed. Plug afresh daily. After the fourth day douche with astringents. Two effects of the operation manifest themselves—namely, cessation of headache and disappearance of fœtor. Both are explained by the free exit of the discharge. Naturally suppuration cannot cease until the cavity is healed.

Finally, Noebel says all attempts to solve the disease (ozæna) from the point of view of the turbinate theory, has proved unfruitful.

The focal theory has cleared up the essence of the disease from all points of view. That theory teaches us that the nasal suppurations—ozæna and others—depend chiefly on disease of the ethmoidal and sphenoidal sinuses, and to obtain cure or relief the treatment required is surgical, or it is without success. Grunwald and Schäfer have been in the habit of using a trocar to puncture the sphenoidal sinuses. Their plan is described along with Case 1. Spiess employs a trephine.

COMPLETE PROLAPSE OF THE RECTUM SUCCESSFULLY TREATED BY INTRA-ABDOMINAL FIXATION.

By THOMAS SINCLAIR KIRK, M.B., B.Ch.R.U.I.,
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This operation is suggested in several of our recent British textbooks, but as there are not many recorded cases the following one may be of interest. In May last, a male child, aged 12 months, was brought to the out-patient department of the Belfast Royal Hospital suffering from an extensive complete prolapse of the rectum. The protruding mass measured 4 inches in length; it was very congested, and the mucous membrane was marked with a number of small ulcers. The bowel could only be reduced under chloroform, and when reduced the sphincter was completely relaxed and offered no support at all.

The patient had been under Dr. Clokey's treatment for three months before coming to hospital, and had been given various astringent injections, had had the buttocks strapped together, and had worn a pad and T bandage at different times without the slightest benefit, and was finally sent to hospital for operative treatment.

On admission the bowel was reduced under chloroform and the buttocks carefully strapped together; the child was also circumcised. During the following twenty-four hours the bowel came down six times, and each time reduction was more difficult on account of the increasing congestion of the bowel, so I decided to open the abdomen and fix the rectum in its place. This was done through an oblique wound over the left iliac fossa, the abdominal wall being opened by splitting the muscles and aponeuroses parallel to the direction of their fibres. The small intestines were pulled over to the right and the rectum pulled upwards as far as possible. The peritoneum was then stripped off a part of the iliac fossa so as to expose the iliac fascia, and then the bowel was stitched with a continuous fine silk suture to the exposed area of iliac fascia. The suture was put in in an oval manner, so as to bring a large area of bowel into contact with the fascia. The portion of bowel so bound down was quite close to the attachment of the mesocolon, in order to prevent an aperture being left in which intestine might later become strangulated. The operation was simple, and easily performed. Next day the child seemed none the worse, and it made a rapid recovery, and has not shown the slightest sign of any relapse, although it had an attack of diarrhœa in August. The laparotomy scar is now quite firm, and has not stretched at all.

This was the first case of complete prolapse of the rectum on which I have operated, and I decided on this operation in preference to that which is, I believe, commonly performed in these severe cases—namely, complete removal of the prolapsed portion of bowel—on account of the success attending the similar operation of ventrifixation of the uterus, and on account of a dislike to mutilate the lower part of the rectum for fear of giving rise to stricture or want of control of the bowel, and also because I believe that the operation I performed is less risky as regards immediate recovery than that of removal of a part of the bowel.

The only objection I see to this apparently ideal operation is the risk of a subsequent ventral hernia, and this can be minimised to a great extent by spliting the muscles and aponeuroses as far as possible, and not cutting them.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

THE USE OF TUBERCULIN IN THE TREATMENT OF LUPUS VULGARIS.

It is with the hope that tuberculin may be useful in similar cases that I publish the following notes of a case in which surgical measures had been adopted previously at varying intervals over a period of three years, but without any material improvement: J. R., aged 40, a cook, was admitted into the Sussex County Hospital on May 1st, 1899, for lupus of the nose of three years' standing. The part had been scraped under an anæsthetic eight or nine times, the scraped surface having been touched with acid nitrate of mercury or fuming nitric acid on different occasions, and on no one occasion had the surface continued healed for more than a few weeks. Latterly the septum had become affected, and had been scraped, but the gelatinous-looking nodules had reappeared, and the disease was evidently advancing and infiltrating previously healthy tissue. There was no definite pain in the nose, but there was a smarting sensation which was more appreciable in cold weather. The patient had been in Guy's Hospital seven years previously for tuberculous disease of the left elbow-joint; the joint was excised, and she made a good recovery.

There was no family history pointing to tuberculous disease, and the patient was a healthy looking woman, although sparely built. Her heart and lungs were found healthy. Both sides of the nose were found to be affected, numerous apple jelly-looking deposits being visible; these were also present on the left side of the septum. The "old tuberculin" was used throughout; in addition cod-liver oil gradually increased to ℥j thrice daily was given.

During her stay in hospital she gained 5¾ lbs. in weight.

On May 6th 0.001 c.cm. of tuberculin was injected into the forearm. On May 7th the site of injection was swollen, red, and painful. Her temperature was 99.8°, and rose to 102.4°. On May 8th her nose was swollen, and became red and painful. She complained of headache, nausea, and a feeling of severe illness, but there was no indication of any inflammatory trouble in the left elbow, or in the lungs. Increased doses were given every four days, on each occasion being followed by fever, swelling of the nose, and general *malaise*. After 0.005 c.cm. had been given there was no reaction until 0.007 c.cm. was reached, when the nose again swelled up, and exuded serum, and the temperature rose to 101°, but subsided to normal the following day. Again there was a period of no reactions until the dose given reached 0.03 c.cm., when the temperature rose above 100°, and there was vomiting, and the patient felt very bad. Slight reactions followed each injection up to 0.09 c.cm., but neither this nor 0.1 c.cm. repeated on five different occasions produced any result, though fresh bottles of tuberculin were used on each occasion. The nose was now healed, and there was no evidence of any tuberculous deposit to be seen anywhere.

In October, 1900, the patient had been well ever since her discharge from hospital on the previous August. Her nose had given her no trouble whatever; there was no evidence of any disease, and considering the extent of the scraping operations, and of the tuberculous infiltration, as shown by the reaction to the injections, there was remarkably little deformity. Whether the cure will be permanent remains to be seen, but at all events the considerable amelioration, both as regards her suffering and the time given up to successive operations, warrants the retaining of tuberculin among the most useful anti-lupus remedies.

EDWARD F. MAYNARD, M.D.Edin.,
Brighton. Assistant Physician to the Sussex County Hospital.

MECHANICAL CONSTRICTION OF THE UVULA.

A CURIOUS case of mechanical constriction of the uvula has come under my notice, which I think is sufficiently interesting to report.

My patient was a linen weaver, about 30 years of age. At his work it is usual when threading the shuttle to suck the end of the thread through the eye of the shuttle. The day before I saw him there happened to be a small piece of loose thread remaining in the eye, which he sucked with considerable force into his throat. Retching and vomiting came on almost immediately, and continued for some hours. The forcible inspiratory and expiratory efforts during the vomiting must have caused the thread to twist around the uvula sufficiently tightly to interfere with the venous circulation, for in about two hours he noticed a swelling in his throat, and soon it became so large that suffocative symptoms were very troublesome, and he was only able to swallow with the greatest difficulty. When I examined him, about thirty hours after the occurrence, I found the uvula, from about a quarter of an inch below the velum palati, enormously swollen, and of a deep purple colour, resting on the back of the tongue, and almost filling up the opening of the fauces. With forceps and scissors I snipped off the swollen part, and on examining it I found a piece of linen thread, about 3 inches long, wound tightly several times around the constriction.

Portadown. W. E. HADDEN, M.D.

AN UNUSUAL CASE OF IODOFORM POISONING.

E. W., aged 35, although partially demented, was physically healthy with the exception of a small superficial sore on the right ear.

On July 21st, at 11 A.M., I applied a dressing of iodoform gauze, two layers thick, and 1 inch square, to this sore on the ear.

On the morning of the 22nd the nurse in charge of the case found the patient in bed, and the extremities very cold, the face anxious, the breathing normal, with the pulse poor. She soon became very restless, micturated involuntarily, and delirium of a muttering type was present. No erythema was visible, and no sample of urine could be obtained.

The pulp of chewed-up wood-wool and iodoform gauze was found in her bed; and she had evidently sucked the dressing during the night, and stated she had done so. She was given an emetic of mustard and water, which acted promptly. Hot-water bottles were then applied to the extremities, and the patient rallied, and drank hot milk. At noon on the 22nd the patient was given some nourishment, but vomited immediately, and complained of pain in the abdomen, and again collapse threatened. She was able to retain hot coffee, and with the exception of a rise of temperature to 102.4° F. that evening, she recovered without further symptoms of poisoning and was up on July 23rd.

The amount of iodoform in such a dressing must have been very small, but the patient must have been peculiarly susceptible to the drug. Dr. Fox has reported a case of Iodoform Poisoning by Smell only,[1] but in all other reported cases that I can find the drug has been absorbed from the dressing through a raw surface, and therefore I venture to report this case in which the drug was taken directly into the stomach.

Dublin. HENRY M. EUSTACE, M.D.

CASE OF PROLONGED RETENTION OF FLESHY MOLE.

MRS. A. F., aged 34, who has had two children, both of them living, had her last period in the last week of July, 1899. She consulted me in March, 1900, and asked me to attend her in her confinement. From her symptoms I diagnosed molar pregnancy. I delivered her of a fleshy mole about the size of a small melon on August 21st, 1900.

I publish this case as being of great interest from a medico-legal point of view, as the mole was retained *in utero* nearly 13 months. The case progressed favourably.

The Gables, Belper. R. A. JOHNSTON.

KARYO-CHROMATOPHILE GRANULES IN THE BLOOD.

I HAVE been much interested by the description of Plehn's "karyo chromatophile granules," which appears in the new edition of Dr. Patrick Manson's work on *Tropical Diseases*, page 10. During the latter five months of 1899 I had under my charge in hospital a Greek, aged 55, suffering from intermittent hæmaturia. The history of the case was that for three months previous to his admission he had had frequent hæmorrhages, varying much in intensity, accompanied by pain, and occasionally the passage of clots. On admission he was very anæmic, the spleen was moderately enlarged and hard, and during the attacks he suffered severe pain in the hypogastric region. I sounded for stone without success, and after the process examined the urine (drawn off by catheter) for shreds of villous tumour, with a like result. The urine contained many blood corpuscles; in fact, sometimes during the paroxysms consisted of almost pure blood, as shown by the large clots formed after it had been passed. With the exception of this there was nothing abnormal in the urine, certainly no bilharzia ova, which were carefully looked for, being the most common cause of hæmaturia in this hospital. Taking into consideration the anæmia, pain, hæmorrhage, and age of the patient, I made a temporary diagnosis of malignant disease.

Not being satisfied with the diagnosis, and still thinking bilharzia might be the cause, I made several microscopical examinations of the urine. One day, while looking at the red corpuscles under a one-eighth power, I noticed some small refractile bodies in their substance. On turning on the one twelfth oil immersion, I made the following observations: The bodies were small, red, motile, highly refractile, and were both intracorpuscular and extracorpuscular; I could not find any corpuscle containing more than three of these bodies (I mention this as the illustration in Dr. Manson's book shows twenty-five in one). Subsequent examination of finger blood showed the same bodies, but no ordinary malarial parasites. Until reading this new edition I had never seen any mention of these bodies in either periodical or book, but seeing that there were present in the man's

[1] *Dermatological Journal*, 99, p. 336.

blood minute motile organisms, intracorpuscular and extracorpuscular, I put the man on sulphate of quinine, which put a stop to the hæmorrhages, the last of which took place during November, and the patient was discharged cured, except for slight anæmia on December 20th, 1899. There was no fever during the whole course of the illness, and the hæmorrhages were irregular in their occurrence, roughly speaking, about three weekly.

WM. BRYCE ORME, M.R.C.S., L.R.C.P.,
Government Hospital, Port Said.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

BARRACKPORE MILITARY HOSPITAL, LOWER BENGAL.

A FATAL CASE OF TRAUMATIC TETANUS TREATED WITH ANTITETANUS SERUM.

(By Captain E. C. HAYES, R.A.M.C.)

THE treatment of tetanus by antitetanus serum is as yet on its trial, and this explains the publication of the following case:

G. W., R. G. Artillery, was admitted into hospital on June 6th, 1900, with a severe burn of the right hand. The back only of the hand was involved, and its outer part was mostly affected. The whole of the posterior surface of the four fingers was severely charred; the bone of the first phalanx was wholly exposed, as well as half that of the second phalanx, and the joint disorganised; the middle phalangeal joint of the third finger was also opened, and the extensor tendon was in view for about ½ inches of its length. The history of the case was that while working at a forge the patient had been overcome by the excessive heat, had fainted, and his hand had come in contact with the fire. The usual carron oil treatment was at once applied, and the patient transferred to hospital, where opium and stimulants with quinine were administered. There was, needless to say, considerable shock.

All went favourably up to June 14th (the ninth day), when the sloughs, which were very extensive, began to separate. On the morning of June 15th the patient complained of being unable to open his mouth freely. Examination revealed the fact that his masseter and sterno-mastoid muscles were abnormally tense and rigid. The onset of tetanus was at once suspected. The patient was seen in consultation with Major R. H. Moore, R.A.M.C. The question of amputation at the wrist was dismissed, as it was hoped to remove the toxin-producing focus by a less radical measure, especially as the thumb, forefinger, and middle digit at any rate were expected to recover. It was therefore determined to use almost continuously the hand bath with a warm solution of 1 in 1,000 corrosive sublimate *plus* 5 parts of tartaric acid, as recommended by Sahli and endorsed by Rose, of Zurich, a solution which Kitasato states kills tetanus spores in thirty minutes. The special stimulating fluid dietary on which the patient had been placed was continued, and isolation in a quiet dark room adopted. Antitetanus serum was sent for, and in the meantime hypodermic injections of a 1 per cent. solution of carbolic acid, as recommended by Rose, were given in 5-miuim doses every three hours, combined with the exhibition of chloral hydrate grs.xv at once and grs.x every two hours afterwards.

In the evening the patient remained in much the same condition. He was sweating, as is usual, very freely; but said his "mouth was better a trifle." He had received in all four hypodermic injections of carbolic acid, and the chloral had produced no drowsiness. His condition next morning was somewhat worse. The rigidity of the sterno mastoids had increased, and he had had during the night four severe attacks of spasm, involving the chest and abdominal muscles, and presumably also the diaphragm. Sweating was profuse. His speech was still fairly clear. The hand-bath had loosened the sloughs, and more were removed with forceps. The wound had commenced to granulate at the edges. The fingers were then separated by plugs of cotton wool, and immersion continued all day. Carbolic lotion was substituted for the corrrosive temporarily as a preventive measure against absorption of the latter. The chloral was stopped and a more vigorous sedative *régime* instituted—that is, ½ gr. of acetate of morphine was given hypodermically every three hours. This was continued all day. His temperature at 4 P.M. was 99.4°, and his pulse 98, full and strong. Spasms were more severe and easily excited, while the patient had obtained no sleep notwithstanding the morphine administered. At 5 P.M. the required antitetanin arrived from Messrs. Smith, Stanistreet, and Co., of Calcutta. They supplied it in the dried state, as prepared by the Jenner Institute of Preventive Medicine; dose 1 to 2 grams. The fluid serum was prepared from this and 1⅓ gram was hypodermically injected at once. The morphine was neither lessened nor discontinued. Through the night the hand bath was used.

On the following morning, June 17th, no change for the better had taken place. He appeared worse; had several severe spasms during the night, which were easily provoked. By the morning his temperature had risen to 103°, respirations 22 per minute, pulse 98 per minute, full and strong. Specific gravity of urine 1030. No albumen or sugar. There appeared to be less rigidity of the masseters and sterno-mastoids, but the recti abdominales were severely affected, and, with the onset of a spasm, emprosthotonos, though not very marked, appeared. A further ½ gram of the above antitetanin was then hypodermically injected at 10 A.M. The patient was left in the same state, and had no appearance of any impending danger. Spasms continued every quarter hour, as on the day before, and the pulse was full and strong, nevertheless the patient died suddenly in a spasm, of no severe character, quite unexpectedly at 2.5 P.M. Death was due presumably to spasm of either the heart or respiratory muscles.

Necropsy.—The brain was found to be highly congested, especially the superficial veins; the fourth and two lateral ventricles shared in the same condition; through the white matter minute points of congestion were present. The cord was in a similar state. The musculo-spiral and posterior interosseous nerves of the wounded arm were exposed, but no vascularity was found, though they had a pale yellowish and parchment-like appearance. The blood vessels were full of dark fluid blood.

REMARKS.—Taking Rose's definition of a severe case of tetanus as one occurring within ten days of the injury, this case must be regarded as moderately severe, though the clinical symptoms of its onset were comparatively mild. Osler remarks on this head that favourable indications are late onset of the attack, localisation of the spasms to the muscles of the neck and jaw, and absence of fever; from which also it must be concluded that the above case was of a medium degree of severity. If so, a favourable result would have been anticipated from the exhibition of antitetanin. It certainly was most disappointing in its results, particularly because I was biassed in its favour by the 63 per cent. of recoveries among cases collected by Gooderich which compares more than favourably with the pre-antitetanus serum day fatal percentage of 85 to 90. It may be fairly remarked as a contrast to these figures of Gooderich that Kanthack showed from collected cases treated with the most universally praised antitetanin, that of Tizzoni, the comparatively low figure of 25.8°. The evidence of one recorded case must of course be taken with that from others in attempting to answer an apparently unsatisfied question.

MILITARY STATION HOSPITAL, IPSWICH.

RUPTURE OF KIDNEY AND SPLEEN.

(By W. A. GARDINER, L.R.C.P.I., Lieutenant-Colonel, R.A.M.C.) Retired.

BOMBARDIER J. P., aged 40, a Royal Reserve man, had served in India twelve years, took his discharge, and was called up last March. He was rough rider to his Battery of Royal Field Artillery. He was a stout, somewhat florid man, in good health. On October 29th he was riding a remount in the barrack square, when his horse shied, and then bucked, throwing him heavily. He was, he said, riding at a walk, and loosely in his saddle, which accounts for the heavy fall.

He was at once brought to hospital, walking part of the way with help. I was in barracks, and saw him a few minutes after the accident. He complained of severe pain in the left loin, extending across the abdomen; he was perfectly conscious, and clear in his statements. He said he was not kicked, that, as far as he could tell, he "fell in a heap" on the left side, but more or less doubled up.

I found no external injury, no broken ribs, no injury to the head, or spine, and no contusion of the abdomen. The severe pain continued all day. He was admitted about 11 A.M., and died at 7.30 P.M. During the day he passed two or three times a small quantity of blood from the bladder.

A *post-mortem* examination was made thirty-nine hours after death. In this I was fortunate in having the assistance of Dr. George Elliston, M.O.H., Ipswich. The head was not examined. There was no mark of injury on the body except two trivial abrasions, one on the left cheek and one on the point of the left shoulder. There was no evidence of any injury to the abdominal parietes. The body was that of a well-fed, healthy, strong man, probably weighing about 13 stone. The lungs were normal with the exception of old adhesions on the left side. The heart, loaded with fat externally, was otherwise normal; the valves were healthy; its weight 1 lb. 7 ozs. The stomach was empty and quite healthy; the liver was healthy, weight 3 lbs. 14 ozs. The right kidney was normal, 6½ ozs.; the left kidney and the spleen were embedded in a mass of coagulated blood which occupied nearly the whole of the left side of the abdomen. The capsule of the kidney was ruptured, and the kidney was torn across into nearly equal separate halves—weight 8 ozs. The spleen also was ruptured at its lower end; the part torn was not, however, like the kidney, detached. The hæmorrhage appeared to have taken place chiefly from the splenic vessels. The intestines and bladder were normal. This very grave injury arising in so simple a manner can

be only partly explained by the severity of the fall. Probably muscular contractions at the moment helped, but it is a well-known fact that a complete fall from horseback at the moment when the rider is sitting loosely at a walk is likely to be worse than when going at speed and with a tight seat.

SALISBURY INFIRMARY.

TRAUMATIC TETANUS IN A CHILD OF 6½ YEARS: ANTITOXIN: RECOVERY.

(Under the care of HARCOURT COATES, M.R.C.S., L.R.C.P., Senior Honorary Surgeon to the Infirmary.)

THAT the mortality of traumatic tetanus in children is so great and the complications so difficult to combat are my reasons for publishing the following case.

H. J., aged 6½, a healthy well-nourished child of the upper class of society, on March 14th tripped over a toy cart and fell in the road, sustaining a severe laceration of the third finger of the right hand, breaking the nail. The spot where he fell had been quite recently covered with a rotting horse-manure heap. In my absence he was dressed almost immediately by a colleague, who, I understand, washed the wound with a 20 per cent. solution of carbolic acid. I saw him on March 16th, when I found free suppuration under the damaged nail. The hand was soaked in a solution of bichloride of mercury (1 in 1,000), dressed with cyanide lint, and the broken nail was removed. He went on very well until March 27th, thirteen days after the accident, when it was found that two incisor teeth had unaccountably disappeared. He had trismus, with risus sardonicus well marked, tension of the sterno-mastoid muscles, difficulty in swallowing, with some stiffness of the back muscles when he walked. He was, however, at this time running about and in good spirits. I found his temperature was 99.4° F., and his pulse 110. He was at once put to bed, given a calomel purge and 5 grs. of chloral hydrate and potassium bromide every three hours. Four hours after this slight spasms in the back muscles occurred, accompanied by a slight scream, with considerable rigidity of the whole of the spinal region.

On March 28th the spasms increased in severity and frequency, occurring every three or four minutes, and opisthotonos was well marked. The thoracic wall was absolutely fixed. His temperature was 101° and his pulse 140. Respiration was shallow and irregular, and the features dusky. His lower jaw was quite fixed. I injected the antitoxin serum to the extent of 15 c.cm. The act of injection caused a very severe spasm. The dose of chloral and bromide was increased to 10 grs. of each. The spasms went on with the same frequency, and on April 1st were so violent and so exhausting that the worst issue was anticipated, but on the morning of April 2nd there was a rather longer interval between the spasms, and they could be checked by a sort of hypnotic influence which both his mother and I were apparently able to exert.

By April 14th the spasms were reduced to short jerks which occurred only occasionally, and were generally caused by some little external cause of irritation. The backward curving of the head and the risus sardonicus were the last symptoms to disappear, the trismus commenced to relax quite early in the case. The child had at the time of writing just returned from the seaside and was quite well, except that he occasionally was somewhat irritable, and one foot was left slightly turned in.

REMARKS.—It is impossible to say whether the antitoxin had anything to do with the happy issue of this case, but I am quite convinced that the hypnotic influence was an important factor in the recovery, inasmuch as it postponed the spasms and enabled the child to get some rest and sleep at the time when he was certainly sinking from the want of it. I should have repeated the injection had I not feared a repetition of the spasm which it caused on the first occasion.

STATION HOSPITAL, MURREE, INDIA.

RAPID CURE OF POPLITEAL ANEURYSM BY ACUTE FLEXION.

(By Lieutenant-Colonel H. R. WHITEHEAD, F.R.C.S.Eng., R.A.M.C.)

PRIVATE J. S., Queen's Regiment, was admitted to the Station Hospital, Murree, with the following history. He first felt pain in the right popliteal space in the middle of June, 1900. He was doing gymnastics, and after jumping the horse he suddenly felt pain behind the right knee. He continued at his duty for about a fortnight, and did not notice any pulsation, but the leg was swollen and painful. He reported sick at the Station Hospital, Kuldannea, on July 4th, and it was then discovered by the medical officer in charge that an aneurysm of the popliteal artery was present. He was treated by elevation and flexion of the right leg, and low diet, and a great deal of the swelling disappeared. He was transferred to the Station Hospital, Murree, on July 15th. A very distinct fusiform tumour was then present in the right popliteal space; it was about the size of a pigeon's egg and pulsated. The pulsation was expansile and synchronous with that of the femoral artery. The case was evidently one of fusiform aneurysm of the popliteal artery. Only slight pressure symptoms were present and the man was in good health. He had had syphilis in 1896 and was rather intemperate in his habits, but otherwise had a good history.

Before proceeding to any operative measures, it was decided to try the effect of flexion of the limb. On July 18th I flexed the right leg on the thigh, and the thigh on the abdomen, and secured the limb in this position with bandages. After half an hour the pain was so severe that I had to relax the bandages somewhat, and at the end of an hour the pain was still great, and I discontinued the flexion. On relaxation of the flexion the tumour was still pulsating. The next morning nearly all pulsation had stopped. It could only be feebly felt. There was no coldness of the leg or foot, but the aneurysmal sac was very tender. The next day pulsation had completely stopped, and from that date to the present time (August 20th) had not recurred.

He had no coldness of the foot or extremity, and the collateral circulation was perfectly established. The tumour had consolidated and contracted, and could now be felt as a solid tumour in the ham.

The case is a remarkable one in the rapidity of the cure and the easy way it was effected.

ROYAL ISLE OF WIGHT COUNTY HOSPITAL.

SARCOMA OF KIDNEY: NEPHRECTOMY BY LANGENBUCH'S METHOD: RECOVERY.*

(Under the care of T. A. BUCK, M.B.Lond., Surgeon to the Hospital; President, Isle of Wight District, Southern Branch, British Medical Association.)

V. R., a spare pale girl, aged 14, was admitted to the hospital on May 30th, 1900. About 2 months before a lump as large as a hen's egg to the right of and above the umbilicus was noticed accidentally, and this gradually increased up to the time of admission, when it had the size of a fœtal head or large cocoanut. It was rounded and even except at the left margin, where it was indistinctly lobulated. The girth at the greatest prominence was 25 inches. Dulness began 3 fingers-breadth below the right nipple, and extended downwards to 2 fingers-breadth below the umbilicus. Laterally, dulness existed from 2 fingers-breadth to the left of the umbilical line continuously to the right loin and back. The tumour could be moved by the fingers placed under the loin, and it descended on forced inspiration. There was no pain throughout. The bowels were always regular and the appetite fair. The urine was pale, of a specific gravity 1014, and did not contain albumen. The liver could not be differentiated from the tumour by percussion or palpation.

On June 5th, 1900, an incision was made from the margin of the right lower ribs along the right linea semilunaris to within 2 inches of Poupart's ligament. The tumour was at once felt to be distinct from the liver, and presented itself, showing through the outer layer of the mesocolon as a fleshy-looking, semi-fluctuating mass covered with large veins. After division of the layers of mesocolon covering it, it was gradually enucleated, in doing which the aorta and vena cava were distinctly displayed. Its attachment to the spine seemed extensive, so that the first encircling ligature of the pedicle grasped so much substance that it was ineffectual. Hæmorrhage necessitated two other stout ligatures to be placed on the stump. The ureter was seen on the front and inner side of the tumour; it was simply tied with silk as near the bladder as possible. The cavity was thoroughly irrigated with hot water, which was not sponged out. A Keith's drainage-tube was inserted with a strip of sal alembroth gauze in it.

On June 10th the glass drainage tube was taken out and a rubber one substituted. On the 12th the rubber tube was discontinued. The after-history was almost uneventful. The patient got up on July 1st, and was out in the grounds on the 8th, returning to her home on the 20th to all appearance well, as she was reported to be on August 6th.

The kidney was sent to the Clinical Research Association, whose report on June 16th was: "The growth in this kidney is an exceedingly soft sarcoma, composed of small spindle-shaped cells, and traversed by very thin-walled vessels. It has undergone extensive caseous degeneration and cavitation."

* Read at the meeting of the Isle of Wight District of the Southern Branch of the British Medical Association.

REPORTS OF SOCIETIES.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

A. G. MILLER, M.D., F.R.C.S., President, in the Chair.

Wednesday, December 5th, 1900.

PROFESSOR CHIENE'S EXPERIENCES IN SOUTH AFRICA.

PROFESSOR JOHN CHIENE said that his stay in South Africa was divided into two distinct periods: (1) from the beginning of April till the end of June—from Capetown to Norval's Pont; (2) from the end of June till the end of August—from Norval's Pont back to Capetown. In the first period he was simply a consultant. In the second period the allegations regarding the Army Medical Department had reached Africa, and it was evident that other questions would necessarily demand attention. The questions were still *sub judice* and might not yet be discussed. Army medical reform was only a subsection of the wider question of army reform. Mr. Chiene proceeded to speak of the lessons he had learned in the hospitals of South Africa under the following heads: Ambulance, anæsthesia, *x* rays, hospital trains and ships, bullet wounds, injuries of the head, blood vessels, thorax, and abdomen, sanitation, medical cases, burning and burying, and finally, the work of the civil surgeon in South Africa. The four great hospitals in the neighbourhood of Capetown were Wynberg No. 1, Wynberg No. 2, Rondebosch No. 3, and Woodstock No. 4. Much had been said about Woodstock. It was an old building near Capetown, lying on the shore, and, like all old buildings in South Africa, it was infested at one time with small parasites, which gave rise to much discomfort. On his second visit, however, a great improvement had taken place in this particular. He never noticed any smell from the town drains which opened into the bay in the neighbourhood of the hospital. The drain for surface water was a short one, that for sewage opened 300 yards from the shore, and the current carried the dejecta away from the hospital, and judging from the excellent results of the surgical cases which he saw there he could not look on the hospital as an unhealthy one. The dejecta from the hospital, after being mixed with izal, were buried in a trench on the shore. These trenches gave no smell whatever.

Transport of Wounded.—Professor Chiene's time was mainly spent in the Wynberg and Rondebosch Hospitals, two days a week in each; both were on excellent sites. The conveyance of soldiers to the hospitals was either in hospital trains or in ordinary trains carrying invalids; the former were most comfortable, the latter very often the reverse. Some form of portable cooking stove must in future be carried on these ordinary trains by means of which simple food might be cooked. Stopping places could not be trusted to for a supply of food. As regards their conveyance from trains to hospital this was done in ambulance carts; on a smooth road an ambulance cart was fairly comfortable, but the MacCormack-Brook ambulance litters were certainly more comfortable than ambulance carts. A member of the Imperial Yeomanry, who had been in both as an injured man, said there was no comparison in the relative comfort. The litters were on rickshaw wheels, with rubber tyres, and worked most smoothly. The Boers used wagonnettes, and Cape carts to remove the wounded from the battlefield to the nearest hospital. Our soldiers frequently told Mr. Chiene that they would rather travel in an ox waggon than in an ambulance cart. Surely some improvement could be made. The essentials were strength, easy motion, easy turning, and for the patients to be easily reached by the attendant. The stage coaches in South Africa were hung on leather. No doubt they were the results of evolution and the survival of the fittest, and many thought that the old-fashioned leather springs were worthy of a trial for ambulance purposes. To avoid sickness analogous to sea-sickness the swing of the carriage must not be too great.

Anæsthesia.—Chloroform was the favourite, though A.C.E. and ether were in occasional use. Mr. Chiene never saw any trouble with any form of anæsthetic. A little struggling, but no sickness at the time and very little afterwards. Was the sickness in civil life a nervous condition which did not hold good among soldiers in time of war? The soldier accepted without demur any decision that was come to as regarded his treatment. He was contented, and asked no questions. "All right; I'm ready," was his answer. He reminded one of the condition of mind of a patient suffering from shock. He did not appear to take much interest in his own case. This was spoken of soldiers at the base, long after their injuries had been received they still seemed to be suffering from chronic shock, if such a term might be used. Mr. Chiene could recall only one case of a soldier who refused to be operated on. In civil life how different it was. People in civil life had a larger choice of doctors, and they went about from doctor to doctor till they found someone who agreed with their own and their friends' view of the case. Dr. Lorans, Medical Officer of Health for Mauritius, had told Mr. Chiene that he was much struck with the ease with which chloroform was taken, and the absence of all anxiety during its administration by his experience in the dreadful typhoon which visited Mauritius in April, 1892. In consequence of it many operations were necessary on those who had been injured. The Indian population in the island, in times of quiet, raised many objections to operations. On this occasion everyone was most amenable, and no objections were made, and the conditions of the patients greatly facilitated the administration of chloroform.

The X Rays.—Great difficulties were often experienced in localising bullets in the spine and pelvis. In the limbs little difficulty arose. In the pelvis a rectal examination sometimes localised a bullet, when the *x* rays had been found wanting. Mr. Chiene was satisfied that the efficient use of the *x*-ray apparatus depended very much on the experience of the man who used it. Mackenzie Davidson's method gained most acceptance.

Another thing which was very evident in South Africa was the distinct division of patients into two great classes—those who were anxious to go home, those who wished to go back and fight. The first were all septic cases, the second aseptic ones. Dysentery was the disease which most took the heart out of the men.

In Natal the absence of corridor carriages rendered the Princess Christian's hospital train of much value. Most fortunately it was ready just in time to cross the Tugela and bring back the sick after the relief of Ladysmith. Colonel Forrester, educated in Edinburgh, was in charge. Shortly afterwards he was seized with typhoid, which occasioned his death.

In Cape Colony there were four trains with every comfort: two of them under the care of Edinburgh men, Major Simpson and Captain Fleming, D.S.O. The good that these trains did was incalculable.

As regards the hospital ships, Mr. Chiene had no experience of those fitted up at home, but he saw two of the sick ships fitted up in Durban, the *Lismore Castle* and the *Simla*, and he was sure nothing could be better; they afforded every comfort and every convenience; and it was specially interesting to note that as regards the Durban ships they were fitted up by naval officers with no special experience, assisted by Major MacCormack. He had heard it said that when these ships went home they were the envy of the skilled artificers who had fitted up the hospital ships at home. Colonel Gallwey, the energetic head of the Natal Medical Service, looked on these ships as base hospitals. They contained 1,660 beds, and were a great help in relieving the congestion in the hospitals on the lines of communication. When one mentioned Colonel Gallwey's name one could not but recall the valuable work done by the [illegible] pany inaugurated by him. All spoke well of their bravery and gentleness. It had to be remembered that the problem in Natal was a much easier one than that in Cape Colony—55,000 men as compared with 150,000: 200 miles of railway as compared with 1,000. These two factors alone made all the difference.

Bullet Wounds.—A very interesting question was constantly raised when a soldier was struck at a near range the wound was worse than when received at a distance. Between 200 and 400 yards a more ragged wound resulted than when the soldier was struck at 1,000 or 1,500 yards. Possibly the bullet was like a top, at first it spun round a centre, and then after a time it settled down into its true course. In Johannesberg one saw several cases of severe brain injuries often fatal. One night three were admitted and all died. The newspapers asserted that these injuries were explained by expanding

bullets. Such bullets were undoubtedly found in the bandoliers, but the cases must be divided into two groups; first, those in which the bone and brain were severely injured and torn; secondly, those in which with a comparatively small bone wound the brain was much torn. In the first the injury was probably, if no shrapnel was being fired, due to expanding or explosive bullets. In the second the Mauser bullet might be the cause when fired at a short range.

As regards the poisoning of bullets, Mr. Chiene brought home some of the green-coated bullets, and Dr. Hugh Marshall, of the Chemical Laboratory, had kindly examined them and given the following interesting report:

EXAMINATION OF GREEN-COATED CARTRIDGES (MAUSER) FROM MAFEKING.

The coating extends from near the tip of the bullet to the shoulder of the case. It has not been applied by dipping, but apparently by smearing the molten material backwards and forwards along the cartridge. The coating is fatty or waxy in appearance. Over the bullet it is of a uniform green colour and opaque, but over the case the colour is irregular, and the yellow colour of the brass is distinctly visible in small patches through the coating; when examined by means of a lens the colouring matter is here seen to be in the form of small spots, distributed more or less thickly through a slightly coloured mass. When the coating over the bullet is carefully scraped off in very thin layers, it is at first found to be colourless, forming a white, greasy powder. Some distance below the surface the green colouring is reached, continuing right down to the surface of the bullet. The colourless material melts at about 47° C., and is easily saponified by alkalies. It has a distinctly acid reaction. The green-coloured portions when examined chemically give well-marked copper reactions. The bullets in these cartridges are composed of an outer steel envelope, plated inside and out with an alloy consisting principally, if not entirely, of copper and nickel, and filled with a lead core.

From the facts stated it is evident that the green colouring matter was not originally present in the coating, but has been derived from the metal. Probably the cartridges are simply coated with suet or tallow for the purpose of lubricating the rifle barrel. In course of time the fatty acids originally present, which would increase in quantity by keeping, have attacked the underlying metal, forming green-coloured copper salts, which have gradually spread through towards the outer surface of the fatty material. Apparently the copper is more easily abstracted from the copper nickel plating of the bullet than from the brass of the case.

From the point of view of those against whom the ammunition is employed there can be little difference between such coated cartridges and those which have not been so treated; from one cause or another the coating is fairly certain to be completely removed before the bullet reaches its billet.

Head Injuries.—Mr. Chiene's experience of cerebral herniæ before he went to Africa was very unfortunate; cases rarely recovered. In Africa the majority of the cases were on a fair way to recovery, and in some the recovery was complete. The antiseptic treatment could not fully account for it; possibly it was the larger opening in the bone. The intracranial pressure acted like a wedge, and the larger the opening the less the pressure. Dr. Louis Irvine, an Edinburgh man, a civil surgeon at Port Napier, Pietermaritzburg, spoke of the good results of formalin in cases of cerebral hernia. He used solutions varying in strength from 5 to 25 per cent. These solutions acted by drying up the mass, and were at the same time antiseptic.

At Wynberg a patient, when lying on his abdomen, was struck by a bullet in the right temporal region, which passed downwards, forwards, and inwards, into his mouth, through the hard palate opposite the right canine tooth. He made a good recovery.

In Johannesberg Mr. Chiene saw a man in whom the bullet passed transversely across the brain in the frontal region without bad consequences. At Rondebosch he saw a very interesting case in which a bullet was removed from the left temporal fossa above the base of the mastoid process. It had been localised by the *x* rays. It entered the skull to the left of the middle line, passed through both occipital lobes. A right hemianopsia resulted. The curious thing about the bullet was that when removed the base of the bullet was next the bone, the apex of the bullet looking in the direction of the line of fire. At Woodstock a Boer prisoner had lost by a shrapnel accident a large area of his skull. When Mr. Chiene saw him the wound was healed, but the bone was not restored, and as he was a middle-aged man there was little hope that ossific formation would take place. He suggested in order to prevent injury to the pulsating brain that he should wear a shield of Britannia metal. He smiled and replied "that he had had enough of that metal."

Injuries of Blood Vessels.—Several cases of arterio-venous aneurysm were seen in the South African hospitals. They occurred in the neck and extremities. Much improvement resulted from proximal ligature of the main artery when the communication was between the carotid artery and internal jugular vein. In the thigh, ligature of the femoral artery did good. In the leg the aneurysm, as a rule, was laid open, and the artery and vein ligatured above and below the opening. As far as could be judged, the cases were more allied to aneurysmal varix than varicose aneurysm, but there was not the great dilatation of the vein which is commonly described in such cases. Possibly the cases were too recent, and the venous dilatation occurred at a later date. There was no opportunity of making a dissection of any of those cases of arterio-venous aneurysm in the neck, but the improvement that took place after proximal ligature of the main artery with the absence of any venous dilatation made one wonder if the condition could be due to bruising of the artery and vein, and subsequent matting with constriction. No one could avoid noting the number of cases of painful neuritis from bruising of the nerve, the cases of neuritis due to adhesion of the nerves to bone after fracture, and the cases of neuritis due to splinters of bullets lodging in the nerve, without thinking that possibly the same thing might have occurred to arteries and veins lying side by side, and giving rise by matting and constriction to symptoms similar to those met with when there was a communication between the artery and the vein.

One case of arterio-venous aneurysm in the neck made a deep impression on Mr. Chiene. The bullet had passed through the neck from side to side, the track of the bullet passing behind the trachea and behind or through the œsophagus. There was a pulsating tumour low down in the neck immediately above the clavicle, so low down that nothing but distal ligature of the carotid could be attempted. He developed enteric fever, and was invalided home. Mr. Chiene heard of him recently in Devonshire jumping a 6-foot wall. No operation had been performed.

A strange coincidence in relation to arterio-venous aneurysm might be mentioned. Two brother officers in one regiment were wounded in the same battle. In one the bullet entered on the right side, 2 inches below the angle of the jaw, the wound of exit being at a corresponding point on the opposite side of the neck. In the other the track of the bullet was the same, the course reversed. In both an arterio-venous aneurysm developed near the wound of exit. They were taken off the field in the same ambulance and brought down to Wynberg. Mr. Makins operated, ligaturing the common carotid, in both cases with very decided improvement.

Injuries of the Thorax.—In lung injuries one was struck with the rarity with which the patient said that he spat blood at the time of the accident. Apparently the Mauser or Lee-Metford bullet passed through the lung, searing it and preventing hæmorrhage. On the other hand, it must be noted that in many cases there was hæmothorax, probably from the intercostals, and most of the surgeons were agreed that if the blood was slowly absorbed tapping assisted absorption, and there was also general agreement that a rise in temperature was the first indication that absorption had commenced. Empyema as a result of lung injuries rarely occurred.

Mr. Chiene saw several cases of penetrating thoracic wounds in which, after careful examination of the aperture of entrance and exit, one could not but come to the conclusion that the bullet had traversed the heart. It was earnestly to be hoped that a careful tabulation of all these cases would throw some light on the effects of the Mauser bullet on the viscera—lungs, intestines, heart.

Abdominal Injuries.—He had no opportunity of forming an opinion on the question of immediate operation in penetrating wounds of the abdomen. He could only say that he saw several cases in which complete recovery had taken place without operation. It was currently believed that the hungrier a man was the less his risk in an abdominal wound. One case at Kroonstadt in which the wounded bowel had been excised, and another case in Natal, were successful. As in the lung, so in the intestine, apparently the Mauser bullet made so small a wound that neither bleeding nor extravasation occurred. The recoveries after penetrating wounds in the abdomen could be explained in no other way. At Wynberg were two very interesting cases of penetrating abdominal wounds, in which a large hæmatoma formed in the iliac fossa. In one the abdomen was opened and the clot expressed; in the other absorption took place. In the one case the bullet

traversed both thoracic and abdominal cavities without evil consequences. It entered above the left clavicle, and was removed from Scarpa's triangle on the right side.

To a great extent in Kimberley, Bloemfontein, and Kroonstadt, and almost entirely in Johannesberg and Pretoria, the sick and wounded were in hotels, churches, and halls, and if there was free ventilation and the rooms were large they made excellent hospitals, but tents and hospital huts were better than houses. The purification of buildings must be very thorough. Many South African friends expressed to Mr. Chiene their fear for the coming year, and they anticipate a great outbreak of enteric in the near future. This would be a very serious affair, looking to the flood of emigrants, new to the country, who would rush north whenever they got the chance. There should be no delay in sending out the best incinerators, and compelling the authorities to burn the dejecta. Burying was common in Cape Colony, in the Orange River Colony, and Transvaal. In the three large hospitals in Natal, Estcourt, Mooi River, and Howick the dejecta were burned. At Johannesberg all the Kaffirs who removed and buried the dejecta were in good health, and in a very short time the earth in the trenches in which the burial had taken place resumed its normal appearance. Still burning was infinitely preferable. There should certainly be incinerators at all the railway stations to burn the dejecta from the hospital trains. Phlebitis of the common femoral vein was a frequent complication in enteric, delaying recovery, but not causing a fatal issue. Patients with typhoid died from exhaustion or hæmorrhage, rarely from perforation.

There was much difference of opinion as to the merits of typhoid inoculation. It would be some time before the results could be tabulated, because the medical sheets of the soldiers did not accompany them, and no definite data could be obtained, more especially from those who were admitted into hospital in a moribund condition.

There was a fever, in the nomenclature of disease used in the army, called "simple continued fever." Many held that it was an abortive typhoid, and at Estcourt Hospital five out of six cases reacted to the Widal test. Had these patients been inoculated for typhoid, and was the action due to the inoculation?

The Widal reaction test was not in use, as a rule, in the military hospitals. It was from the civil hospitals that we should hear regarding its value as a diagnostic.

As regards dysentery, one was struck with the great depression of spirits of the patient. The treatment by the free use of sulphate of magnesia followed by ipecacuanha was the favourite remedy. Dr. Watkins Pitchford, a civil surgeon at Estcourt, strongly recommended the use of izal along with bismuth and chlorodyne. He had described the treatment in the BRITISH MEDICAL JOURNAL of November 10th, 1900. He used it on the suggestion of Dr. Crossland, a civil surgeon on duty at Estcourt.

Abscess of the liver sometimes followed dysentery. Those who had most experience of this disease in India advocated posterior aspiration, then, if the pus was found, removal of the rib and free drainage. All dwelt on the importance of a very large drainage tube.

Two days ago Mr. Chiene received a letter from the Station Hospital, Ladysmith, dated November 1st, 1900, portions of which letter he read to indicate the sort of work which fell to the civil surgeon in South Africa.

I thought you would like to know more of the cases you were consulted about in the surgical ward here early in August. The Ayrshire footballer, with dislocation of the internal semilunar cartilage I operated on, on finding only a small portion of it turned over, I passed a chromic catgut through it, and the capsule of the joint. The wound healed by first intention. The yeoman with acromegaly was discharged to Howick and invalided home. The orderly with varicose vein operated on by tying the saphenous vein. He made an excellent recovery, and is regularly on duty. The young scout with locking of the elbow-joint was sent to Mooi River Hospital to have an x-ray photograph taken. The night he got there a great storm occurred. All the tents were blown down, and all patients transferred to various hospitals down the line. The most interesting case was the Grenadier Guard, in whom you diagnosed division from bullet wound of the medial nerve. The day before I intended to operate I thoroughly overhauled the arm, trying to locate the ends of the divided nerve. In this I failed, but next morning he awoke with returned sensation in the hand. I take it the nerve was not divided at all, but had become tied down, and strangled in fibrous tissue in the healing track of the bullet, and the manipulation had freed it. Under massage he made rapid progress, and was discharged to Howick with a very useful and still improving hand. I had my best week in South Africa last month. An operation for abscess of the liver from gall stone, iridectomy for glaucoma, radical cure of hernia, laparotomy for an abscess of the spine after enteric, all doing well.

This letter was from Dr. J. B. Ruddock, Civil Surgeon. Possibly such a letter would best illustrate what seemed to be an outstanding fact, namely, that the civil surgeon had been of much service in South Africa. Mr. Chiene concluded by expressing an earnest hope that the medical history of the war would be fully described in the form and with the thoroughness that the great Civil war in America had been dealt with by the Government of the United States. From such a history many most useful lessons would be learnt.

One or two members of the Society spoke, and Mr. Chiene was thanked for his interesting paper.

LOCOMOTOR ATAXIA WITH DOUBLE EXTENSOR RESPONSE.

DR. BYROM BRAMWELL showed this case.

The patient, a labourer, aged 44, presented all the characteristic symptoms of locomotor ataxia, namely, lightning pains, loss of knee-jerks, double Argyll-Robertson pupil, marked ataxia, and difficulty in walking, Rombergism, some difficulty in micturition. On examining the plantar reflex a very marked extensor response of the great toe was found to be present on each foot. This was exceptional, for in cases of locomotor ataxia the movement of the toes, if any, was flexion not extension. It was ascertained that the patient had had two attacks of hemiplegia: one which affected the right side, 11 years previously; and another which affected the left side 2 years previously.

This explained the double extensor response, and showed that the case was not an exception to the rule that in uncomplicated cases of locomotor ataxia the extensor toe reaction did not occur.

GLIOMA OF BRAIN.

DR. BRAMWELL also showed a large glioma infiltrating the right motor area and adjacent part of the cerebral cortex.

The patient was a sailor, aged 24, unmarried. He was first admitted to the Edinburgh Royal Infirmary on February 1st, 1899, suffering from epileptiform attacks. These attacks were for the most part Jacksonian in character. The spasms commenced either in the left side of the face or the left hand. The patient was discharged in March and readmitted on September 26th, 1899, much *in statu quo*. As no decided improvement occurred under iodide and bromide of potassium, the patient was trephined by Mr. Cotterill, the condition having been diagnosed by Dr. Bramwell as a gliomatous tumour of the brain. Nothing was found at the operation, which was performed on December 12th, 1899. The patient made a good recovery from the operation, but continued to have fits. He was discharged from hospital on January 10th, 1900. He presented himself again on October 9th, 1900, very much worse. For a month he had suffered from severe headache and vomiting. Double optic neuritis was now present, and a cerebral hernia of some size projected at the seat of operation. He died suddenly in a fit a few days after his admission. On *post-mortem* examination an extensive area of the motor cortex and of the subcortical tissue was found to be infiltrated with gliomatous tissue.

The case was an excellent illustration of those cases of intracranial tumour in which there are well-marked "localising" symptoms, but no general symptoms. Until a month before his death the patient did not complain of headache or vomiting, and during the first year that he was under observation there was no optic neuritis. An interesting feature of the case was that although the brain tissue looked normal, when exposed at the time of the operation muscular contractions could not be obtained by the application of the faradic current to the motor cortex. Dr. Byrom Bramwell also showed a skull-cap from a case which in many respects was very similar to the last one.

The patient, a man aged 54, suffered from very numerous attacks of Jacksonian epilepsy. In this, as in the last case, there were no "general symptoms"—no headache, vomiting, or optic neuritis, but well-marked localising symptoms: the fits began in the left arm. The patient was trephined over the right motor area (arm centre). The brain appeared to be normal to the naked eye, but did not respond to faradic currents. The patient died suddenly in a fit a few days after his discharge from hospital. On *post-mortem* examination a glioma was found 1⅛ inch from the surface immediately below the seat of operation.

The skull-cap showed the marvellous results which could, in some cases, be obtained by antiseptic surgery; the stitches in the dura three months after the operation were as fresh as if they had been put in the day before.

CASES, SPECIMENS, ETC.

MR. ALEXIS THOMSON showed a patient, aged 24, after complete excision of the larynx for epithel[illegible] (with specimen and micros[illegible] slides of tumour).—MR. STILES showed: (1) A boy after removal of a large simple lymphoma of the neck: (2) a girl six months after amputation at the hip and removal of the greater part of the innominate bone for tuberculous [illegible] by Dr. Rainy.—DR. ELDER showed: (1) Brains illustrating four different seats of cerebral hæmorrhage; (2) tumour of dorsal [illegible] pressing on spinal cord, from a case of paraplegia.—DR. CHALMERS WATSON showed a thermal bath cabinet for home use.

CLINICAL SOCIETY OF LONDON.

Sir R. DOUGLAS POWELL, Bart., M.D., F.R.C.P., President, in the Chair.

Friday, December 14th, 1900.

ANKYLOSTOMIASIS.

DR. W. J. TYSON of Folkestone related the case of a gentleman, aged 34, who had lived in China, and had enjoyed good health until May, 1899, when he lived in Singapore. The malarial parasite was then discovered in the blood and the ova of the ankylostoma duodenale in the fæces. On board ship he had been treated with thymol 10 grs. three times, but without satisfactory result. He was admitted into the Folkestone Hospital, and on the advice of Dr. Patrick Manson he was treated as follows:—

On September 24th two doses of Carlsbad salts were given in the morning and when the bowels had acted, then thymol was given in 30-gr. doses every two hours for four times, 120 grs. in all. During its administration the bowels acted several times. At 7 P.M. a further dose of Carlsbad salts was given, and the bowels again acted. On examination of the fæces a large number of worms and ova were found. The thymol produced, with the exception of a feeling of sickness, no unpleasant effect. A week later the above treatment was repeated on account of two or three worms being found in the motions. He made a rapid and complete recovery.

Dr. Tyson remarked that it was quite possible that this form of anæmia might be sometimes overlooked in England, especially as many people now travelled to the East. The large doses of thymol had an extraordinary effect on the parasite, but apparently did not affect the patient in any poisonous way. In this case the malarial parasite was present with the ankylostoma duodenale, which was not uncommon. The administration of thymol was not a suitable treatment for malarial disease or for any other form of anæmia than ankylostomiasis.

Remarks were made by Dr. TOOGOOD; and Dr. TYSON replied.

HÆMATOPORPHYRINURIA.

Dr. JAMES CALVERT related a case of hæmatoporphyrinuria in which on the testimony of the patient and of the doctor who had attended her no sulphonal had been taken.

The patient was a general servant, aged 32, admitted into St. Bartholomew's Hospital for hæmatemesis, diagnosed as due to gastric ulcer. The urine drawn off six hours after admission was of a dark cherry colour, and showed the bands of hæmatoporphyrin. She stated that she had passed similar dark urine about a year before; five days later an examination of the blood was made by Dr. A. E. Garrod. Hæmoglobin, 48 per cent.; red blood corpuscles, 2,292,000; white blood corpuscles, 8,500. On February 9th: Hæmoglobin, 68 per cent.; red blood corpuscles, 4,144,000; white blood corpuscles, 9,000. The urine gradually returned to its natural colour, and the patient made an uninterrupted recovery.

The fact that the hæmatoporphyrinuria occurred after hæmatemesis was interesting, because Stoker[1] held that hæmatoporphyrinuria occurring in sulphonal poisoning was due to the absorption of altered blood from hæmorrhages produced by the drug in the mucous membrane of the stomach and intestines—a view which was opposed, among other things, by the circumstance that such hæmorrhages were by no means constantly found at the *post-mortem* examinations of these cases. The blood counts were instructive, showing the increase of hæmoglobin and of red blood corpuscles occurring together with the hæmatoporphyrin in the urine. In its general characters the urine passed closely resembled sulphonal specimens. Hæmatoporphyrin was present in considerably larger amount than in ordinary morbid urines, but, as in sulphonal cases, the abnormal colour of the urine was chiefly due to other less known pigments.

Dr. A. GARROD said that although there were several cases reported which were due to sulphonal, and a few to trional, yet there were only 8 in which these two drugs could be excluded. He did not think the condition was due to the hæmatemesis, as he had found many cases of that disease unaccompanied by hæmatoporphyrinuria. It probably resulted rather from perversion of the processes disposing of effete hæmoglobin than from unduly active hæmolysis.

Dr. W. H. B. BROOK (Lincoln) mentioned a case under his care, in which the patient suffered from pernicious anæmia. Sulphonal was not used, and there was an excess of the aromatic sulphates over the inorganic sulphates in the urine.

SUPPURATIVE PERICARDITIS: INCISION AND DRAINAGE: DEATH.

Dr. JOHN FAWCETT and Mr. F. J. STEWARD reported the case of a boy, aged 8, admitted into Guy's Hospital on the sixth day of illness, with signs of lobar pneumonia at the right base. The signs of pericarditis were first noted on the next day.

Eleven days later pus containing the pneumococcus having been found on exploration, the pericardium was incised and drained by removal of a portion of the fifth left costal cartilage. After operation the boy's condition much improved, but fourteen days later a small localised empyema of streptococcal origin was found on the right side. The necropsy showed that the condition of the pericardium was rapidly clearing up, and that as far as it was concerned the result was most favourable. The surfaces were in apposition everywhere; there was no pus in the cavity, and, except for some thickening of the pericardium and a little lymph on the surface, there was no other naked-eye damage.

It is thus almost certain that had the patient not developed a streptococcal empyema he would have survived, but he was a very thin, ill-developed boy, and so a most unfavourable subject for so severe a series of infections.

After remarks by Dr. E. P. PATON,

Dr. BOSANQUET thought there was a great difficulty in diagnosing the presence of pus in the pericardium. As the condition of these patients was very grave, operations on the pericardium should be done under local anæsthesia. He had noticed a great excess of cases of pericarditis during the last year in Charing Cross Hospital, probably four or five times the usual number. The pneumococcus appeared to have a predilection for the pericardium, especially in young people.

Mr. WALLIS said that the cases of pericarditis opened under a general anæsthetic had, in his experience, soon died. He considered eucaine the best local anæsthetic for such cases, as it never produced faintness, and he had injected ℥vj of a 4 per cent. solution without its causing any toxic symptoms, either in children or adults. He hoped operations on the pericardium would become more common, and be done under a local anæsthetic.

Dr. PERCY KIDD referred to a patient with pericardial effusion, who was operated upon under eucaine. Several drachms of a 4 per cent. solution were injected, but the pain was not quite destroyed; it was greatest when the pericardium was seized with the forceps. Bernard had also found that the pericardium in animals was very tender. Frequently there was absence of friction sounds in pericarditis; in one case of empyema several ounces of pus were found *post mortem* in the pericardium without the existence of any friction sound before death to denote that the pericardium was involved in the disease.

Dr. VOELCKER said the fatal event was often brought about by meningitis in which pneumococci could be recognised. Cases of pneumonia in children which did not resolve often proved fatal from meningitis. Was it desirable to open the cavity at fault with a view to drainage?

Dr. GARROD said that the difficulty of diagnosing pus in the pericardium of adults was much intensified in the case of children.

The PRESIDENT said the authors deserved credit for their diagnosis, as pericarditis with empyema was very misleading.

Mr. BARKER considered that local anæsthesia was not suitable for children, with their emotional natures.

Dr. FAWCETT, in reply, said he did not know whether the brain had been examined. There had been no previous cases in the boy's home.

SODIUM URATE IN GONORRHŒAL RHEUMATISM.

Mr. W. G. SPENCER related a case of a coloured man, aged 33, who had contracted gonorrhœa 14 years previously, and had suffered at various periods since from spasmodic pain in the legs, stiffness of the knees, and swelling about the foot. He was of temperate habits, and there was no family history of gout.

On his arrival in this country he was unable to walk; the skin over the knees was red, shiny, hot, and tender, and the joints could not be moved without pain. Examination revealed the existence of a spasmodic stricture at the membranous urethra. The patient was treated for a time by dilatation of the stricture, and the joints improved, but the bursæ remained unaltered. The latter were explored, and some thick, white, semi-solid white material was withdrawn, which proved to be sodium biurate free from organisms. The contents of the bursæ were then removed, the cavities scraped, and colchicum was administered. He left hospital six weeks later. Mr. Spencer suggested that the concretions in the bursæ owed their existence to the gonorrhœal inflammation.

Mr. EASTES did not think the author had made out the connection between the condition of the bursæ and the

[1] *Schmidt's Jahrb.*, Bd. ccxxviii.

gonorrhœal rheumatism, and thought that the question should be left open.

Mr. SPENCER, in reply, said that the patient adhered to his statement that the bursal affection first arose when the gonorrhœal arthritis appeared. Gonococci had been found in liquid drawn from his inflamed joints.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Sir CHRISTOPHER NIXON, M.D., President, in the Chair.

Friday, November 16th, 1900.

THE OPEN-AIR TREATMENT OF CONSUMPTION.

DR. HOWARD SINCLAIR gave a short account of his experience of two years of open-air treatment of phthisis in the Forster Green Hospital, Belfast, and in the Rostrevor Sanatorium. The internal administration of antiseptics he found of little value. In selected non-febrile cases, without marked physical signs, good results had been obtained from tuberculin. Shelters and verandahs were used in wet or stormy weather, though, when possible, patients remained in the open up till 8.30 P.M. Electric light for this purpose was necessary. All reading and writing was done outside, the use of sitting-rooms being interdicted. It was most necessary that a sanatorium should be built for that special purpose, as no ordinary dwelling could be successfully adapted. Shelter by trees, as well as local formation of country, seemed to be one of the most essential features of a site. In exposed situations it became almost impossible to keep windows open. Proximity to centres of population was very objectionable for obvious reasons. The greater the number of cases one had to deal with the more did the sanatorium physician see the absurdity of treating every case by one fixed rule. On the rational allotment of rest, exercise, and dietary much of the success depended. Gain in weight was not always accompanied by lung improvement. Administration of large quantities of milk might for a time make up for the refusal to eat solid food. Cremation was the most satisfactory method of destruction of sputum. Of all known methods of treatment of phthisis, the hygienic, "open-air," or sanatorium system, was undoubtedly the best.

After remarks by Dr. LITTLE and Dr. FINNY, Dr. O'CARROLL said that from his experience of Newcastle (co. Wicklow) Hospital he was quite prepared to back up every word that had been said in favour of the open-air treatment. Still they should be careful lest they overdid it—for instance, a highly febrile patient was not fit for such methods. As an indication of improvement he laid great stress upon the general condition of the patient as regarded temperature, pulse, the condition of the alimentary canal, rather than upon any gain in body weight, and he instanced cases where the weight test proved fallacious—in fact, he believed there was a condition which might be termed fat phthisis, in which the patient grew very fat owing to deficient oxygenation.

After some remarks by Dr. COX, Dr. MCWEENEY said it was a common belief that when the sputum became small in quantity, and that when the case had obviously improved, the infectivity of the sputum was diminishing, and the number of bacilli in it small. Last week he had a striking example of the opposite, when he found the scanty sputum of a patient who had gained in weight, and had improved in every way, loaded with bacilli. He ventured to plead most urgently for the continuance of the tuberculin treatment, not in its original form, where it was considered necessary to produce violent constitutional disturbance, but in small doses, continued for a fortnight at a time with intervals. He did not advocate it from clinical experience, but he had read most carefully worked-out accounts of the effects of this treatment of patients in Germany, and he was convinced that important results would be achieved by it.

Sir J. W. MOORE said that in this discussion no one had mentioned the word sunlight, and sunlight played a part by no means second to that of fresh air. He believed they ought to have meteorological stations in connection with the different sanatoria for the purpose of taking sunlight observations.

The discussion was continued by Dr. PARSONS and the PRESIDENT; and Dr. HOWARD SINCLAIR replied.

PATHOLOGICAL SOCIETY OF LONDON.

W. WATSON CHEYNE, F.R.S., President, in the Chair.

Tuesday, December 18th, 1900.

THE RELATION OF CHRONIC MASTITIS TO TUMOUR FORMATION.

MR. F. T. PAUL stated that the tendency of chronic mastitis to end in tumour formation was a fact by which he was more impressed every year. It was well known that cancerous breasts almost constantly showed microscopical changes indicating a preceding chronic mastitis, and that breasts removed for simple chronic mastitis frequently presented appearances suggestive of the commencement of cancer. The same was also true of innocent tumours, even of those occurring in early life. The varieties of chronic mastitis were discussed. In the tuberculous form actinomycotic-like bodies were described as present in five or six cases. In the simple form it was considered that there was no true pathological distinction between cases occurring in early life and those met with during the involution period, as all the proliferative and cystic changes characteristic of the later form were sometimes present in the early kind. A case of marked bilateral chronic mastitis occurring in a girl, aged 18, and showing the cystic, intra-cystic, periacinous and epithelial changes in an excessive degree was described. The histology of involution mastitis showed that it commenced as a chronic inflammation, passing into a cirrhotic change accompanied by cystic alterations in the acini, and generally by a considerable increase in the gland elements. At this stage in some cases resolution took place, in others the irritation continued to be felt, especially in the periacinous connective tissues, which after prolonged stimulation might end in the growth of a fibro-adenoma. In other examples, or in other parts of the same organ, the epithelial structures responded chiefly, and intracystic papilloma or carcinoma might be originated. Attention was called to the following points: The association of chronic mastitis with adenoma in early life, and also with the cystic and other varieties met with at a later period; to its almost constant presence in conjunction with mammary cancer; to the marked bilateral mastitis which precede bilateral cancer; and especially to the highly suggestive appearances seen under the microscope in specimens of chronic mastitis. Taking these facts in conjunction with clinical experiences it seemed certain that chronic inflammation of the breast, if not the actual cause, was at any rate the frequent predisposing cause of tumour change in this organ, and in the author's opinion rendered excision desirable in all marked or inveterate cases.

MR. RAYMOND JOHNSON had made observations upon the forms of mastitis found in association with carcinoma of the breast, but his histological knowledge of mastitis unassociated with carcinoma was not large. At one time he had thought that the epithelial changes in the first class of cases were more pronounced than in the second, but he at present did not regard this as a rule to be relied upon. In some forms of chronic mastitis the epithelium elongated and underwent proliferation. However much inflammation there was, he did not think that this passed directly into carcinomatous disease; there was a difference in the histological look when malignancy arose; there was probably a second determining factor concerned, as yet unknown. Nor did the speaker think that an inflammatory process would account in all cases for the growth of adeno-fibromata; this might hold for microscopic forms, but not for the typical class of tumour arising in young adults.

MR. D'ARCY POWER, like Mr. Raymond Johnson, did not consider that an inflammatory process became carcinomatous in the strict sense, though it constituted a local predisposition.

MR. S. G. SHATTOCK endorsed the views of the two preceding speakers in that he thought a common process of inflammation insufficient to account for the genesis of carcinoma. Mr. Paul evidently did not hold much to the possibility of carcinoma being of microparasitic origin, otherwise he (Mr. Paul) would have referred to the so-named cancer body. Whatever the real nature of this was, its presence was a valuable diagnostic sign, and he thought that if Mr. Paul had found such bodies in the tissue in the borderland or doubtful cases he had referred to, the carcinomatous nature of the lesions might be safely held. The author of the communica-

tion had stated that in the cases of tuberculous mastitis he had seen there was no secondary infection of lymphatic glands. Curiously enough in the two examples which the speaker had examined there was marked tuberculous-lymphadenitis, the glands in one case showing softening caseous areas and in the other discrete tubercles. Mr. Paul had spoken of the presence of milky fluid in the cysts in some of his cases of mastitis, and the speaker asked him whether this was to be taken literally, especially as the author had, in addition, used the term "colostrum" corpuscles. He had for a long while thought that the marked fatty change present in the epithelial cells of mammary carcinoma (as shown by osmic acid) might be a physiological formation of fat. The older statements that the cells of carcinoma were functionless was now well known to be an error; this had been shown in gastric and pancreatic tumours, and he had specimens of secondary thyroidal carcinomata where the vesicles were filled with what to all appearance was colloid secretion. He had made several observations, in order to test the view in the case of the breast, by examining to see whether caseinogen was present in mammary carcinoma. The perfectly fresh tissue was extracted with water (using calcium phosphate), and tested with rennet. In no instance had any clot of casein resulted.

Mr. PAUL, in reply, said he had not made any observations upon the presence of casein in the fluid referred to.

CARD SPECIMENS.

Dr. J. H. DRYSDALE: Broncho-œsophageal fistula. Mr. H. SCHALBERG: Hæmorrhagic pancreatitis with fat necrosis.

EDINBURGH OBSTETRICAL SOCIETY.

R. MILNE MURRAY, M.D., F.R.C.P.E., F.R.S.E., President, in the Chair.

Wednesday, December 12th, 1900.

INDENTATIONS IN SKULLS OF NEWBORN CHILDREN.

DR. J. M. MUNRO KERR read a paper on Spoon-shaped Indentation in the Skulls of the Newborn, with illustrative cases, and a new method of treatment for the immediate relief of the deformity. Odd cases had been reported, but no one in this country had considered the subject in detail. In Germany the case was only a little better. In France, ever since Ambroise Paré first referred to the deformity, successive generations of obstetricians had interested themselves in the matter, and even now scarcely a year passed without one or more treatises or papers on the subject. The indentations were either spoon-shaped or furrow-shaped. The two varieties occurred with about equal frequency. Their etiology was in the main the same, but the furrow-shaped variety was much less serious, and seldom gave rise to immediate trouble. The purpose of the paper was to consider exclusively the spoon-shaped indentations, which were usually situated in one or other parietal or frontal bone in the neighbourhood of the anterior fontanelle, and were by no means uncommon, especially in Glasgow, where rickets was so prevalent amongst the lower classes, and parturition was in consequence so frequently laborious. The accident occurred, with few exceptions, when there was a deformity of the maternal pelvis, generally in flat rachitic pelves. The extent of the pelvic deformity need not be extreme; most commonly it was just sufficient to cause a moderate degree of obstruction to the passage of the head. In the great majority of cases reported extraction was completed by traction, either on the child's head with forceps, or on the trunk if the presentation was a breech, or the child had been turned. In a small proportion labour terminatated spontaneously. Where a deformity of the pelvis existed the indentation was usually caused by the head being pressed against the projecting sacral promontory; occasionally the anterior pelvic wall, an undue prominence of the ilio-pectineal eminence, and still more rarely an osseous tumour of the bony canal, as in the case of Hoffmann quoted by Lelièvre. On the maternal side, apart from deformities of the bony pelvis, there were very few conditions that had given rise to depressions of the fœtal skull. Veit reported a case in a normal pelvis where he attributed the cause to tetanic contractions of the uterus following the administration of ergot. Others had mentioned as causes lateral deviations of the uterus, contractions of the muscles of the pelvic floor, ankylosis of the coccyx, tumours of the soft parts, etc. Although abnormalities of the fœtus but rarely caused such depressions, they might to some extent favour their occurrence. Defective ossification was a condition that certainly predisposed to the accident. Dr. Kerr recently made some experiments on the skulls of stillborn infants, and found that in some cases he could produce depressions with the greatest ease, while in others he could make no impression on the bones, even if he used considerable force. On one living child he had noted that with the slightest pressure of the finger an indentation could be produced. Lelièvre cited a case described by Budin, where twins were born with depressions on their skulls. The after-coming head of the first child, which, presented by the breech, was arrested by the presenting head of the second. Both children were born dead. A prolapsed upper limb might cause a depression. The exact part played by the forceps was difficult to decide. Certain furrow-shaped depressions might be caused by an oblique grip of the head, but it was very doubtful whether spoon-shaped depressions, which almost always occurred in the upper part of the vault, were caused by the blades of the forceps. In the majority of forceps cases it was pressure of the head against the promontory of the sacrum, or some part of the pelvic wall, and not the blades, that was to blame. In a persistent occipito-posterior case Dr. Kerr had found a depression over the right frontal bone resulting from pressure against the descending ramus of the pubes on the left side. Most writers were agreed that forceps had directly very little to do with depressions. Boissard thought it was only when attempts at rotation were made that forceps could cause them. Depressions occasionally recurred. Ahlfeld reported the case of a woman who had three children born with them, and Steinsmann reported one who had five. The prognosis was not unfavourable. The indentations as a rule disappeared in a week or two, and caused no trouble immediate or remote. In some cases they remained as a permanent deformity, sometimes with minor nervous storms. Sometimes the infant lived for days, weeks, or months with marked local and general disturbances, ending generally in a fatal issue. The symptoms varied greatly. In some there were twitchings, convulsions, paralysis, etc. In others only fretfulness, disinclination to take the breast, etc. Dr. Kerr narrated an illustrative case. In another group of cases the infant was either born dead or so deeply asphyxiated that if the indentation were not at once removed death would certainly follow. That the accident was serious the following figures showed: Ahlfeld reported 10 cases with 2 deaths; Schroeder found in 65 cases, 34 per cent. of the children stillborn, 15 per cent. died from the injury, and 50 per cent. remained alive, and as far as could be learned with few exceptions were well; Meuke reports 14 cases with 3 deaths; Dr. Kerr had seen 5 cases, of which 3 were still alive and well. In the way of treatment exhaust pumps, cupping glasses, traction by what school boys call a "sucker," had been suggested. Lately Jennings trephined and elevated, but here there was no great urgency. In Boissard's case the depression was raised by making an incision through the scalp over the coronal suture, and a smaller one through the suture, passing a sound under the skull between it and the dura mater, and pressing out the depressed bone. In Panzani's case an incision was made through the scalp, then through the bone, and the depression was raised by passing an ear curette along between dura and skull. The oldest reference to operative interference was Tapret's in 1877, of which Boissard gave details. There was depression with fracture of the left parietal, left exophthalmos, right facial paralysis, and convulsions. On raising the depressed and fractured bone the symptoms had almost all passed away in twenty-four hours. Up to the present time such depressions had been left alone, except in the few recent cases just described. Dr. Kerr was inclined to adopt Boissard's method if the following new treatment, which he now first described, and had found successful in three cases, failed. Very little force applied to the depression from the inside was all that was necessary. That force must be applied early. The following was a case in point: A mature female child of average size in a primipara, persistent occipito-posterior, was delivered by forceps in a slightly asphyxiated condition and with a deep spoon-shaped de-

pression of the right frontal. The head was compressed antero-posteriorly when the depression came out with a sound such as one heard when a dent in a felt hat was removed. Another successful case had been reported to Dr. Kerr by Dr. Dunning and Dr. Malcolm Black, where death seemed imminent from depression of the left frontal. Dr. Kerr saw a third case a few days ago where again there was an indentation on the left frontal, and where antero-posterior pressure failed, but pressure in an oblique direction was successful. The treatment proposed was simple, and certainly well worth a trial.

The paper was discussed by Professor Simpson, Drs. Hart, Church, Ritchie, Fordyce, Ferguson, McVie, and the President; and Dr. Munro Kerr replied.

Eclampsia at the Sixth Month with Successful Labour at Full Time.

Dr. Michael Dewar read a paper on this subject. There were three series of convulsions at intervals of four days. The chief clinical feature was the absence of albuminuria. The woman made an excellent recovery, and carried the fœtus to full term. After discussing the diagnosis as to whether the case was one of eclampsia or epilepsy, Dr. Dewar discussed the etiology of eclampsia, and gave it as his opinion that it was not due entirely, if at all, to albuminuria, but rather to the development of a bacillus, which was the determining cause of puerperal convulsion in puerperal women, whether suffering from albuminuria or not. As regards treatment he condemned the use of morphine, and advocated an expectant treatment with the administration of bromides and chloral after emptying the bowels and bladder.

Professor Simpson referred to the bacteriological investigations as to the etiology of elampsia.

Dr. Haultain and Dr. McVie (Chirnside) were of opinion that the case reported by Dr. Dewar was not one of true eclampsia, while the President thought it was.

Dr. Dewar replied.

Specimens.

The President showed (1) dermoid ovarian tumour and ovary with recent corpus luteum, and (2) a myoma of rapid growth removed by hysterectomy.—Dr. Brewis showed (1) a fibro-cystic tumour of the broad ligament, (2) uterus removed for cancer of its body, (3) ovarian abscess and pyosalpinx, and (4) fibro-myoma removed by subperitoneal hysterectomy.—Dr. Haultain showed (1) omphalopagus twin monster born dead at full time, weighing 15 lbs.; if they had been alive they might have been separated; (2) fibroid uterus removed by panhysterectomy; (3) cancerous uterus removed by vaginal route from patient aged 29, with curious obstetric history; (4) extrauterine gestation at three months removed by laparotomy.—Dr. Scott MacGregor showed a uterus removed by vaginal hysterectomy for early cancer of cervix.—Dr. G. F. Barbour Simpson showed a pessary which had been retained in the vagina for twenty-five years.—Professor Simpson showed an example of intraperitoneal rupture of a peritoneal cyst.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Clinical Evening.

G. Anderson Critchett, M.A., F.R.C.S.E., President, in the Chair.

Thursday, December 13th, 1900.

Cases.

Mr. J. H. Fisher showed a case of congenitally imperfect separation of the iris from the back of the cornea:

The patient was a woman, aged 27, who had been treated recently at the London Hospital for an attack which appeared to be one of acute or subacute glaucoma. On examination the whole anterior surface of the left iris was pitted. At the outer and lower part there was a wide adhesion of the iris to the back of the cornea, while on the inner side it was adherent to a less extent. Mr. Fisher worked out the refraction under homatropine, with the result that the tension rose to + 1. There was pain, and the pupil remained dilated, although that of the right eye had regained its normal condition the next day. Eserine contracted the pupil and reduced the tension.

He considered that the case threw some light on congenital glaucoma, as the position of the iris here clearly was the cause of the increased tension.—Mr. W. T. Lister showed a large dermoid tumour on the cornea of an ox. There was a large growth on the cornea and sclera, from which grew a bunch of long hairs.—Mr. C. Brooksbank James showed a rare example of persistent pupillary membrane.

The patient was a child, aged 3. She was brought on account of a convergent squint. She was one of a family of four, none of the others having any eye affection. When 16 months of age there was a slight inflammatory attack, which lasted a few days only. In the right eye there was a convergence of 40. The iris was of a pale greyish-yellow colour. The normal pupil was occupied by strands which enclosed several openings. In the left pupil there were some small tags of pupillary membrane with good vision in the eye, and 5D of H. In the affected eye the vision was extremely bad, but the projection was good.

Mr. James also showed a boy, aged 11, who with his H correction had normal vision. In the fundus there was a large pigmented area below the disc, which had a crescent. The pigment was mostly under the vessels, but near the disc they dipped into it. There was also a strand of persistent pupillary membrane. Mr. James referred to some cases shown by Mr. Sydney Stephenson which had somewhat similar changes.—Mr. A. Stanford Morton showed a case of growth on cornea:

The patient was a boy, aged 7, who was first seen in August. At the upper corneal margin there was a yellowish spot 4 mm. in diameter: it was not raised above the corneal margin, and it extended downwards to about the margin of the undilated pupil. He tried to shave it off, but failed to do so. He then transfixed it and entered a space full of yellowish material, which he scraped out. It was found on examination to consist of connective tissue with some elastic fibres, but no fat. On the deep surface of the part removed was some cellular material in which there appeared to be a few giant cells, but there was nothing typical of tubercle. It certainly was not congenital, and it continued to spread, but very slowly.

Mr. Nettleship referred to a case he had seen with Mr. Bickerton which was somewhat similar, and here after a time it ceased to grow. Mr. Goldsmith also referred to a somewhat similar case.—Mr. A. H. Thompson showed a case of superficial choroidal atrophy without subjective symptoms in a member of a family subject to night blindness.

The patient was a woman, who made no complaint of her vision, which was found on testing to be $\frac{6}{9}$ in one eye and $\frac{6}{12}$ in the other. The maculæ were normal and the fields full. In each eye there was a large area of choroidal atrophy: there was, however, no night blindness or diminished light sense. This patient's father had difficulty in seeing objects, though he could see to read small print, and there were several members of the family who suffered from night blindness.

The President had found that many of these people found very great assistance from wearing glasses of a golden yellow tint, and he thought that the cutting off of the violet rays by glasses of this colour might be the explanation of this, although it did not help everyone. Remarks were also made by Mr. Edridge-Green and Mr. Tempest Anderson.—Dr. W. C. Rockliffe showed a case of conjunctival growth (? pinguecula).

The patient, aged 12, was first seen in August. The mother stated that at birth a small red pimple was noticed at the outer side of the left cornea, and it has slowly spread since then. A crescentic pigmented thickening surrounded the outer third of the cornea, which was 2 mm. in thickness. It was freely movable with the cornea, and had no deep attachment, so that a probe could be passed beneath it. It had not enlarged to an appreciable extent during the last three months. There was a tuberculous history, but a piece he had removed for examination had not yet been reported on. The fundus was normal, and the vision $\frac{6}{9}$. Dr. Rockliffe stated that he did not think it malignant, and he mentioned a similar case shown to the society by Dr. W. J. Collins.

In the *Ophthalmic Review* for October was an abstract of a paper by Le Grange, in which he stated his belief that they were usually of a dermoid nature, but they contained hairs; whereas in this case no hairs were present. Dr. Rockliffe expressed his intention of dissecting it out.—Mr. R. Marcus Gunn showed a case of (?) tubercle beneath the ocular conjunctiva.

The patient was a girl, aged 13, beneath whose conjunctiva of the left eye near the cornea was a vascular growth. She had tuberculous glands, but there was no family history of tubercle.

Mr. J. H. Fisher showed a case of sarcoma of the conjunctiva.

The patient was a man, aged 28, who had been invalided out of the army on account of the eye. In May of last year he first noticed a small red spot which grew and was removed in February of this year. It recurred and was removed again in May and also in August. There was now a flat yellowish-brown mass which was smooth on the surface and vascular. About one fifth of the cornea was covered, but the vision was good. There was no glandular enlargement and no specific history.

Mr. Fisher proposed to remove the eye with the growth, as partial operations had been proved to be useless.—Mr. C. Blair showed an unusual case of choroiditis.

The patient was a woman whose sight had been affected for about three months, and was now $\frac{6}{36}$. There was an area of closely-packed choroiditis with almost an entire absence of pigment. The patches were not raised, and the field of vision was defective. The vitreous was full of opacities, but there was no specific or tuberculous history.—Mr. Jessop always looked upon these cases of vitreous opacities as syphilitic, and thought that this case was really of that nature. Mr. C. O. Hawthorne also mentioned a case.—Mr. W. T. Holmes Spicer showed a case of nævus of the orbit.

The patient was a married woman, who, when seen in July, 1898, had some proptosis of the left eye due to a vascular tumour. In August of that year he did electrolysis without any immediate result. In January, 1899, he again electrolysed it. She became pregnant, and during this time it increased greatly in size. A hard mass was then felt, and on cutting into this it was found to be an old blood cyst. Shortly after the cornea ulcerated, and the eye was excised. Mr. Spicer then sent the patient to Dr. Lewis Jones, who considered that owing to the apparent free communication of the growth with the cavernous sinus electrolysis was not safe.

—Mr. FROST suggested that pressure might be beneficial. —The PRESIDENT thought that the growth had better be left alone owing to the danger of cutting into so vascular a tumour.

BRITISH GYNÆCOLOGICAL SOCIETY.

W. J. SMYLY, M.D., President, in the Chair.

Thursday, December 13th, 1900.

ABDOMINAL CASES.

DR. GEORGE ELDER read notes of four abdominal cases, with comments. The first was a case of acute gonorrhœal salpingitis, in which, after palliative treatment had been tried without success, the tubes were resected by abdominal section, the ovaries being allowed to remain. The second case was that of a very large renal cyst, with the symptoms and signs of an ovarian cyst with twisted pedicle. Repeated examination of the urine had failed to detect any abnormality in it. The third case was one of hysterectomy for a large fibroid; the patient made a good recovery, but a week after her return home was taken very ill with renal symptoms, from which she died four weeks later. The cause of death was apparently septicæmia. The fourth case was the later history of a patient whose ovaries and tubes were removed in 1894 for papilloma. She continued in very good health until the end of last year, when she was lost sight of.

Mr. BOWREMAN JESSETT said that he had reported a case very similar to the second one of Dr. Elder's, at a meeting of the Society some weeks ago; whilst the third case found a parallel in a case described by Dr. Purcell two years ago.

Mr. CHARLES RYALL, referring to the first case, said that it was very difficult to know how to advise men who had had gonorrhœa as to when it was safe for them to marry, especially when they had a chronic gleet; for it had been repeatedly proved that the disease might lurk, not only in the anterior urethra, but also in the posterior urethra and in Cowper's glands.

Mr. SKENE KEITH remarked that he had seen a case very similar to the one of hysterectomy reported, in his father's practice. The patient did well for some days after operation, except that she was very flushed and somewhat cyanotic. She died some weeks after getting home, and a *post-mortem* examination showed that there was hardly any kidney substance left.

Dr. JOHN SHAW, in speaking of the first case, said that although the symptoms and sequelæ were very like those of gonorrhœa, he had seen cases of salpingitis, especially of hydrosalpinx, on one or both sides in young women as a result of excessive sexual intercourse. Such a condition usually got quite well under hygienic treatment.

Dr. W. JAPP SINCLAIR observed that ten or twelve years ago he had a case of papilloma of both ovaries. He was under the impression at the time that the condition was a malignant one. But he saw the patient in the early part of last year, and she was then quite well. In another case the pelvis was so overgrown with papillomatous masses as to resemble a bird's nest; but the patient made a good recovery, and although this was five or six years ago she had remained quite well.

Dr. ELDER replied.

PAPER.

Dr. R. H. HODGSON read a paper on circulatory phenomena as sequelæ of the pregnant condition of the uterus.

SPECIMENS.

Mr. J. FURNEAUX JORDAN, Birmingham, showed specimens of carcinoma of the ovary, and of tubal gestation removed by vaginal cœliotomy. —Mr. BOWREMAN JESSETT and Dr. W. BALGARNIE showed a specimen of tubal gestation removed by abdominal cœliotomy.—Dr. HERBERT SNOW showed a specimen of pyonephrotic kidney ruptured by the fall of a picture in a case of uterine carcinoma.—Dr. P. Z. HEBERT showed a specimen of a 9-weeks embryo in an intact amniotic sac.—In the discussion on these specimens the following took part: Drs. HEYWOOD SMITH, HERBERT SNOW, J. A. MANSELL-MOULLIN, W. JAPP SINCLAIR (Manchester) and the PRESIDENT.

MIDLAND MEDICAL SOCIETY.

JORDAN LLOYD, F.R.C.S., President, in the Chair.

Wednesday, November 28th, 1900.

CHARCOT'S DISEASE.

MR. HASLAM showed a woman, aged 46, the subject of Charcot's disease.

She had always had good health, except for the fact that for the last five or six years she had had pains in both legs at irregular intervals. Ten months ago she twisted her right knee in getting into a cart, but she was able to go on with her work that day. On the following day the knee was greatly swelled, but there was very little pain. She kept about for two weeks, but then, owing to the weakness of her knee, she rested in bed for three weeks. The swelling disappeared to a great extent, but she could not trust herself to bear much weight on the knee, as it felt as if it would give way. Her condition was as follows on admission: (1) Walks with difficulty, owing to weakness of right knee; very little pain in it. (2) Knee 2½ inches more in circumference than sound one. (3) Swelling of synovial membrane; very little fluid present. (4) Temperature of knee increased. (5) Flexion very limited, owing to locking of bones. (6) Joint otherwise very loose, hyper-extension and lateral movement considerable (7) Slight thickening about lower end of femur. (8) Can stand with eyes shut. (9) No gastric crisis. (10) Tactile, and heat and cold sensations normal. (11) Pupils react to light and accommodation. (12) No trouble with bladder or rectum. (13) Knee-jerk on left side absent. (14) Shooting pains in legs at times. The *x*-rays show (1) very marked displacement of the tibia forwards and outwards; (2) slight thickening of lower end of femur; (3) considerable erosion of condyles of femur, and some of the head of the tibia.

UTERUS WITH LACERATED CERVIX AND VAGINA.

Dr. A. S. UNDERHILL showed a uterus with a lacerated cervix and vagina from a multipara, aged 34.

On October 4th, being in labour, she sent for a midwife. In about seven hours, after much difficulty, the head and shoulders were born, but, as delivery could not be completed, a medical man was sent for, who used some traction, and, not feeling certain as to the condition, advised her removal to the Guest Hospital. On admission, the head and thorax were protruding from the vulva, the upper cervical and mid-dorsal vertebræ were separated, so that the parts were only held together by skin. The vagina was completely blocked by a large fœtal abdomen palpably full of cysts. Embryotomy was completed by emptying several cysts. No force was used, and the fœtus was easily expelled. The placenta came away directly afterwards. Hæmorrhage was slight; the uterus contracted firmly. A full dose of ergot was given, and the patient was put back to bed. Four hours afterwards the house surgeon found her blanched, with a feeble-running pulse, restless, and only partially conscious. There was very little bleeding externally. Her abdomen now contained two swellings—the well-defined, firmly-contracted uterus, and by its side a deep-seated but less distinct swelling, crepitant on palpation, reaching well above the umbilicus. She died shortly after in a state of collapse.

Post-mortem examination showed a deep laceration through the whole thickness of the cervix and the adjacent wall of the vagina. The peritoneal cavity was not opened, but the peritoneum was stripped from the posterior wall of the abdomen to the left kidney, forming a large cavity filled with blood clot and causing the second swelling noticed before death. A fairly large vessel was found in the lacerated cervix, which had evidently been bleeding, and caused the stripping up of the peritoneum and the consequent death from hæmorrhage.

OTHER COMMUNICATIONS.

Dr. UNDERHILL also showed a specimen of double hydronephrosis with sacculated ureters, a large thickened bladder, and a stricture close to the membranous portion of the urethra. It was taken from a fœtus born at full term but dead. There were other abnormalities about the fœtus; a double harelip, cleft-palate, an interventricular foramen, a supernumerary finger on each hand, and supernumerary toe on each foot.—Mr. WILLIAM THOMAS showed specimens of the clip sutures advocated by Dr. Paul Michel.—Mr. HEATON read a paper on the prognosis and treatment of hernia in childhood.

MANCHESTER MEDICAL SOCIETY.

T. C. RAILTON, M.D., President, in the Chair.

Wednesday, December 5th, 1900.

CHRONIC INTUSSUSCEPTION TREATED BY COLOTOMY AND MAUNSELL'S OPERATION.

MR. E. STANMORE BISHOP showed a patient from whom an adenoid growth of the sigmoid flexure, with the intussusception it had produced, had been removed by Maunsell's operation after a preliminary colotomy. He remarked that the condition itself was not very rare, but that operators frequently attacked it through the dilated rectum. This was practicable enough if the growth were well within reach, but that there were two definite risks in this method, which became greater the higher the situation of the neoplasm; one was the possibility, during reduction of the reunited intestine —if the intussusception required removal—of the tearing out

or giving way of some of the sutures which, when once the bowel had regained its normal position, would be out of range of either sight or touch, and septic peritonitis might be set up without much if any warning. Another was the necessity for fæcal material to pass over the wound during its period of reunion, and the consequent possibility of septic absorption. Both these risks were avoided by a preliminary inguinal colotomy, which permitted a perfectly aseptic operation upon the bowel itself, whilst Maunsell's operation, which he described, gave a more perfect means of excision and reunion of the intussuscepted gut. The patient, specimen, and a microscopical section of the growth were shown.

MELANOTIC SARCOMA OF THE LIVER.

Dr. R. J. WILLIAMSON briefly described a case of melanotic sarcoma of the liver, following a primary growth in the right eye. The patient was aged 16. The liver was uniformly enlarged, and extended from the fourth rib to the anterior iliac spine on the right side. There was no ascites. The urine gave the reactions for melanin. At the necropsy the liver weighed 13¼ lbs., and was infiltrated with melanotic sarcoma at all parts. The kidneys and other organs of the abdomen and thorax were not affected. Remarks were added on the diagnosis of melanotic tumours of the internal organs, and two other cases (previously recorded) were referred to.

PAPER.

Mr. T. W. SMITH read a paper entitled Clinical Experiences in South Africa, and illustrated it by lantern photographs of a military hospital.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

MILNER MOORE, M.D., President, in the Chair.

Thursday, November 8th, 1900.

EXCISION OF TONGUE.

MR. HASLAM showed a man, aged 55, from whom he had removed the anterior two-thirds of the tongue, together with the tissues of the floor of the mouth and the submaxillary lymphatic glands, for carcinoma in December, 1898. The disease had been rapid in its onset, and the case looked unpromising. Both lingual arteries were ligatured, and the disease freely excised through a large submental incision. There had been no recurrence, and the patient was in good health.

CHRONIC INTUSSUSCEPTION OF SMALL INTESTINE.

Mr. GEORGE HEATON showed a large intussusception removed from a boy, aged 6, by enterectomy.

The intussusception was 6 ins. long, and was in the upper part of the jejunum. The apex of the intussusception was gangrenous, while the entering and returning layers were firmly united to one another at the upper end by old adhesions. It was a specimen of the somewhat rare condition of chronic intussusception. The child had suffered from the disease for more than three months, his main symptoms being recurring attacks of acute abdominal colic, with vomiting, rapid emaciation, rapid pulse, and towards the end of the case the appearance of a movable abdominal tumour.

Several of the most prominent and distinctive symptoms of intussusception were absent throughout. No blood or mucus was passed *per rectum*, and the bowels though somewhat constipated, acted well throughout his illness to enemata.

TUBAL PREGNANCY.

Mr. JOHN W. TAYLOR showed a specimen of unruptured tubal pregnancy, in which the stretching of the walls of the Fallopian tube, the thinning of its coats, and the separation of the muscular layer caused by the growth of the pregnancy were all plainly seen. At one part nothing was left of the tube but the single layer of peritoneum covering the abdominal surface. Here the swelling caused by the pregnancy and intratubal bleeding was protruding and pointing like the head of a boil, the contents of the tube being on the very point of escaping upwards into the abdomen.

CHRONIC ENLARGEMENT OF THE PANCREAS.

Mr. BARLING read a paper on this subject, which is published on p. 1766.

SOME SURGICAL ASPECTS OF CHOLELITHIASIS.

Mr. JORDAN LLOYD read a paper on this subject. He called attention to the frequency with which gall stones were met with in *post-mortem* examinations made upon persons dying from all diseases, and the comparative infrequency of their recognition in the living, and thought the discrepancy depended upon their non-recognition in the latter; an oversight due usually to misinterpretation of the symptoms to which they gave rise. Many cases of painful indigestion, spasms, colic, wind gastrodynia, abdominal neuralgia, etc., were really due to the presence of gall stones. He deprecated the common custom of using abstract phrases, such as indigestion, dyspepsia, etc., to explain groups of symptoms, the elucidation of which was not grossly obvious. He instanced many cases of chronic indigestion which were not permanently relieved until their symptoms had been traced to gall stones, which were successfully dealt with by operation. He discussed at length the leading symptoms upon which diagnoses has to be made, and referred to many common fallacies which existed with regard to most of them; for example, the common idea that gall stones should not be thought of unless jaundice declared itself at some time or other, whereas in the majority of cases of gall stones jaundice was conspicuously absent, even although calculi might be lying in the common bile duct. He detailed several cases illustrating the point. He pointed out also that in chronic cholelithiasis the gall bladder was usually thickened and contracted by inflammatory processes, so that it could not dilate to form a tumour. The absence, therefore, of a tumour due to the distended gall bladder was evidence of no value whatever. He described a mode of examination which he called the "liver bump," by which a sharp stabbing pain might be elicited by suddenly prodding the belly in the gall-bladder region. He regarded Osler's group of symptoms as almost diagnostic of stone within the common bile ducts, and instanced cases in support of his contention. The question of the attitude of the attendant, as regards the matter of treatment, towards a patient in whom gall stones had been diagnosed was then discussed. He agreed with the dictum of Robson on this point, that as soon as serious symptoms occurred, removal by operation was the only rational treatment. The dangers of operating were almost entirely the result of delay, as the mortality of simple cholecystotomy for stones within the gall bladder was probably less than 2 per cent. The paper was based on a personal experience of between sixty and seventy operations; the specimens removed being exhibited to the meeting.

The papers were discussed by Dr. T. E. UNDERHILL, Mr. J. W. TAYLOR, Mr. ALFRED FREER, Mr. SMALLWOOD SAVAGE, Dr. MELSON, and Mr. MORRISON; and Mr. BARLING and Mr. JORDAN LLOYD replied.

LIVERPOOL MEDICAL INSTITUTION.

EDGAR BROWNE, F.R.C.S.E., in the Chair.

Thursday, November 22nd, 1900.

MALARIA AND DYSENTERY.

DR. MACALISTER and Major RONALD ROSS showed two cases from the tropical ward of the Royal Southern Hospital.

(*a*) A case of æstivo-autumnal fever, in which the daily exacerbations had been severe, the temperature registering 106° to 107° F. in spite of the administration of large doses of quinine. After the administration of two doses of Warburg's tincture the attacks entirely ceased for nearly three weeks. The case presented retinal hæmorrhages (the so-called malarial amblyopia), the result of plugging of the retinal arteries with the malarial parasites.

(*b*) A case of dysenteric ulceration throughout the whole length of the colon, from which absorption had taken place, and the patient died of a consequent septic pneumonia. The diagnosis was rendered difficult owing to the absence of diarrhœa or other definite intestinal symptoms.

Major Ross remarked with reference to the first case that the infection was by the æstivo-autumnal parasites, and that the punctiform retinal hæmorrhages were an example of similar hæmorrhages often found in the cerebrum and meninges in pernicious paroxysms due to this organism. With regard to the second case Major Ross stated that there was leucopœnia in this case, and that doubtful amœbæ coli had been found in the stools—doubtful because the stool was old when examined. He questioned whether there was such a condition as malarial dysentery properly speaking, but thought that cases attributed to such were due to the concurrence of the two diseases.

Mr. R. J. HAMILTON did not consider that the diagnosis "malarious amblyopia" was borne out by the charts of the field of vision and the description given by Dr. Macalister. There were retinal hæmorrhages evidently, as there might be hæmorrhages anywhere in such a pernicious condition of the blood, and the central scotoma was due to a centrally-situated hæmorrhage. But the vision as recorded and the perimetric chart were not those of a toxic amblyopia, which would show evidences of a retro-bulbar neuritis, and a subsequent optic nerve degeneration might be looked for.

Dr. GRÜNBAUM remarked that since the discovery of the dysentery bacillus by Flexner and by Kruse, the serum diagnosis of this disease, which had already been shown to be possible, should be resorted to in doubtful cases. The necessary cultures were in Liverpool.

SUBDIAPHRAGMATIC ABSCESS COMPLICATING TYPHOID.

Dr. R. CATON and Mr. THELWALL THOMAS read notes of a case of subdiaphragmatic abscess complicating typhoid fever.

A man, aged 22, suffered from enteric fever with defervescence on the 24th day, was allowed up on the 43rd day, when the temperature at once rose. He was kept in bed six days and again allowed up, when he had a rigor and rise of temperature. No cause could be ascertained until a fortnight later, a dull area was percussed at the base of the left lung, and with an exploring syringe greenish yellow purulent fluid was withdrawn from what was thought to be the pleural cavity. An incision was made immediately, a portion of the eighth rib removed, and a normal pleura opened. The diaphragm was very near the ribs and elevated, and on palpation a hard rounded area could be made out under it. The costal pleura was sutured to the diaphragm, and on incising the diaphragm a firm convex, apparently bony mass was exposed, through which the knife could not enter, except at a small area ½ inch in diameter, when a pint of pus escaped from a cavity 5 inches in diameter, whose walls were ½ inch in diameter, and firmly calcified. Portions were taken away by bone forceps, but free oozing of blood forbade further removal and drainage tubes were inserted. The pus, examined bacteriologically, demonstrated the bacillus of typhoid in a greenish fluid, consisting of fatty granules, cellular *débris*, and cholesterin. A month later further portions of the eighth, and 4 inches of the ninth ribs, were excised, and on freely incising the diaphragm the remains of the calcified wall were rapidly excised, and proved to be adherent to liver, spleen, stomach, transverse colon, and omentum. The recovery was uninterrupted. The origin of the abscess was unknown; it must have been of a chronic nature, and probably resulted from a liver abscess or a suppurating hydatid cyst, which had become recently reinfected with typhoid bacilli.

INTUSSUSCEPTION OF VERMIFORM APPENDIX.

Mr. KEITH MONSARRAT read a note on intussusception of the vermiform appendix, and described the case of a boy, aged 4, who suffered for a month before admission into the Children's Infirmary from acute pain on the right side of the abdomen coming on in paroxysms.

When first seen there was intussusception in the region of the transverse colon. At the operation which followed, this was found to be secondary to an intussusception of the appendix vermiformis into the cæcum. Both primary and secondary intussusceptions were disinvaginated, and the boy made a good recovery. Only on one occasion during the five weeks before operation was any blood passed by the bowel, and there was no vomiting at any time.

The other recorded cases of the condition were analysed, and the symptoms discussed. Two types of invagination were distinguished: one analogous to ileo-cæcal and the other to ileo colic invagination in respect of anatomical relations. The development of secondary invaginations was also considered. With regard to treatment, he limited himself to the consideration of the best method of dealing with such an intussusception where irreducible.

Dr. GRÜNBAUM during a series of experiments on peritonitis had never observed peristalsis in the appendix vermiformis, and considered that it was improbable that invagination could occur as the result of its movements.

HAAB'S ELECTRO-MAGNET.

Mr. EDGAR STEVENSON described and demonstrated Haab's electro-magnet for removal of pieces of iron or steel from the interior of the eye. With this instrument, invented by Professor Haab of Zurich, a particle of iron or steel could be drawn from any part of the eye (by merely approaching the eye to the point of the instrument) into the anterior chamber, whence it was easily removed. The instrument was bipolar, about 2 feet long and 18 inches in diameter, wound in two sections each containing about 2,000 turns of insulated copper wire. It was energised by the city mains at 230 volts and took a maximum current of 6 ampères, thus giving a total force of about 2-horse power, and a lifting capacity of about half a ton. Mr. Stevenson demonstrated the lines of magnetic force, showing how long and straight they were compared to the short curved lines given off from Snell's electro-magnet, and also showed a piece of steel being acted upon in a tube of gelatine. The instrument would probably be successful in extracting needles, etc., from other parts of the body.

Mr. THOMAS H. BICKERTON testified to the value of Haab's magnet, and referred to a communication made to the BRITISH MEDICAL JOURNAL of September, 1898, by Mr. Reginald Bickerton, recording the experience gained of the use of this magnet in Professor Fuchs's clinic at Vienna, as follows:

Since this magnet has been in use, it has never failed to extract a splinter of iron or steel from the interior of the eyeball, no matter how deeply embedded.

EDGAR BROWNE, F.R.C.S.E., President, in the Chair.

Thursday, December 6th, 1900.

X RAYS IN LUPUS.

MR. C. THURSTON HOLLAND showed (1) two cases of lupus of the face treated by *x* rays. One was shown in 1898, and except for a very slight relapse necessitating six more exposures this year had remained cured, and was now practically well. The other, a girl of 8 years of age, was treated this year for a patch of lupus on the left cheek of 5 inches diameter. Ten exposures of ten minutes each had resulted in complete cure, the scar tissue being quite soft, non-adherent, and non-contractile.

Remarks were made by Dr. LLEWELLYN MORGAN and Dr. F. H. BARENDT.

UTERINE FIBROIDS.

Dr. H. BRIGGS related two cases of uterine fibroids of large size (growth and uterus weighed 8¾ lbs. and 10 lbs.). The lower uterine segment was involved and the pelvis blocked. In such cases the advantage of first getting rid of the growth by enucleation and then completing the hysterectomy by Baer's method were obvious. In some cases of large tumours enucleation, apparently safe, was tedious or difficult by reason of the dense fibro-myomatous trabeculæ intersecting the tumour and reaching its capsule.

EPIDEMIC OF PERIPHERAL NEURITIS.

Dr. NATHAN RAW briefly described the main clinical features of the recent epidemic of peripheral neuritis associated with symptoms of arsenical poisoning, and showed photographs and lantern slides illustrating the skin lesions and motor paralysis. The discussion was adjourned to the next meeting on December 20th.

MEDICAL WEIGHTS AND MEASURES.

Brigade-Surgeon-Lieutenant-Colonel E. NICHOLSON read a paper in which he said members of the medical profession should form an opinion on the British system of weights and measures, and on the alleged superiority of the metric system. He showed the evolution of the imperial weight from the Egyptian royal cubit, through the Alexandrian talent, and the Roman libra, and how the *P.B.* ounce differed by only half a grain from the Roman weights. The history of this and of the rival weights of bygone times, especially Troy weight, was detailed in printed tables. He regretted that the Pharmacopœia Committee had not resisted the permissive use of Troy weight by druggists, and showed that the adoption of imperial weight in the *P.B.* was ignored by the Board of Trade. He urged the use of "oz." instead of ℥ in the prescription of solid drugs, to ensure *P.B.* weights being used. An account of the metric system and its fallacies was given; it was being vigorously pushed by advocates whose representation of the alleged irrationality and difficulty of the British systems was due to their ignorance of it. He pleaded for a better teaching of our weights and measures, and of their concordance in schools. If every trade or profession spoke for itself, little dissatisfaction would be found with the system, which had grown with our civilisation; any trade or any person could decimalise our weights and measures for calculation or industrial purposes. The medical profession was warned against being lured into consent to the metric system by the plausible use of the word "scientific." Examples were given of how the metric system, even in France, after more than a century of official pressure and police action, was disliked by the people

they only submitted to the system without accepting it, and they evaded it whenever possible. The metric system, if made compulsory in this country, would be really a revolutionary system, uprooting a great deal more than our weights and measures.

Dr. Karl Grossman differed from Dr. Nicholson entirely in regard to his conclusions, and thought the paper an apology for the survival of the system rather than a claim for its persistence. The ancient Egyptians had done many things which we should never attempt, and others which our most brilliant intellects had failed to explain; but their mode of measuring and weighing did not suit the present time, with its altered conditions of communication, as well as the decimal system. The relationship between the metre, the gram, and the litre was simple and easily intelligible, and the adoption of the metric system would do away with the useless incubus of the weights and measures and the old multiplication table, and so far would relieve the brains of already overburdened school children. The present English system did not show the survival of the fittest, but the persistence of the "unfittest," and its proper place was beside the "cubit" in the museum amongst the relics of the past.

The President also made some remarks; and Dr. Nicholson replied.

Harveian Society of London.—At a meeting on December 6th, Dr. W. H. Lamb, President, in the chair, Mr. Edmund Roughton showed a man who complained of "sciatica." He had a large gumma in the gluteal region.—Dr. Yule read, for Dr. Leonard Guthrie, a report of a case of alexia due to letter-blindness and word-blindness. The different causes of word-blindness, real and apparent, were discussed, and the author held that this was a real instance of the affection, and that it was probably due to hæmorrhage in the region of the left angular gyrus, supra-marginal convolution, and perhaps superior temporo-sphenoidal convolution. Dr. Maguire and Dr. Caley discussed the case.—Dr. Alfred Eddowes showed a girl, aged 17, presenting a condition resembling lichen simplex chronicus extending in a narrow band from the spine to the point of the shoulder, thence in a more broken line down the arm and obliquely across the hand to the first, second, and third fingers. The lesion commenced from eight to nine years ago as an eczema on the back of the hand. Microscopically the papules had much the appearance of lichen planus, but the cell infiltration surrounded the hair follicles which formed the centre of each papule. The interest of the affection consisted in its distribution, considering that it was not congenital in origin.—Mr. D'Arcy Power showed a man, aged 64, with a sacculated swelling on the radial side of the palmar aspect of the wrist. The swelling was freely movable and lobulated. It possessed a well-marked pulsation, which was slightly distensile. The swelling appeared three months ago, and had gradually increased in size. The patient was a labouring man, who had never worn a wristlet and had sustained no injury to his wrist. The diagnosis seemed to lie between a sacculated radial aneurysm and a ganglion of the sheath of the supinator longus tendon, over which lay an enlarged and thickened artery. Aneurysm appeared to him the less likely, as such a condition in the radial artery was rare apart from injury and embolism. He proposed, however, to cut down upon the tumour and treat the condition he found. Mr. Roughton felt pretty sure the tumour was a ganglion. Dr. H. A. Caley considered that it was a ganglion intimately connected with the radial artery.—Mr. Hubert Phillips showed a case of severe bromide rash in an epileptic.

Nottingham Medico-Chirurgical Society.—At a meeting on November 21st a paper was read by Dr. Bell Taylor on the successful treatment of cases of blindness apparently incurable. He cited instances of recovery of sight after many years (some upwards of twenty) of blindness.—Mr. A. R. Anderson showed a ruptured kidney removed by operation from a man aged 48. The injury was probably caused by his falling, while drunk, on an axe.

The catheter drew off 3 drachms of bloody urine, but the distension of the bladder negatived the rupture. No sign of external injury. Incision in the linea alba revealed that the bladder was intact. There was some bloody serum in the peritoneum. Ecchymosis of mesentery, left side of omentum and mesocolon, with contusion of descending colon and sigmoid. No rupture of bowel. Posterior layer of peritoneum in the left lumbar region greatly bulged forward, extending down into the pelvis and, behind it, a large hæmatoma. The abdominal wound was closed, and an incision made for exploring the left kidney in the loin. On reaching the kidney the hand passed into a large cavity from which more than two pints of blood, urine, and clot were removed. Free bleeding was going on from the renal pelvis, and the kidney was found to be split practically into two parts crosswise at the centre, involving both ureter and vessels. It was removed, and after more clot had been taken from the large retro peritoneal cavity; this was washed out, a drain inserted, and the wound closed. The function of the right kidney quickly became re-established, and the patient made a good recovery.

Mr. Anderson also showed:

(1) A cerebral tumour—nature small spindle-celled sarcoma occupying left side of pons; (2) a ruptured tubal pregnancy, about 2 months fœtus, which burst into broad ligament.

—Mr. Willis showed a prepatellar bursa which he had removed. The bursa had very thick walls, having only a small cavity, which was segmented by hard fibrous bands. The patient had had repeated acute inflammation in the bursa on several occasions, and Mr. Willis pointed out the futility of painting iodine over the skin as a curative measure in such a case.

Otological Society of the United Kingdom.—The annual meeting was held on December 3rd, Sir William Dalby, President, in the chair. After certain alterations had been made in the existing rules of the Society, the election of office-bearers for the ensuing year took place.—Mr. A. H. Cheatle showed a patient suffering from deafness, perversion of taste, and facial paralysis associated with herpes. Mr. Milligan considered the case to be one of peripheral neuritis, probably of post-influenzal origin. Mr. Ballance concurred.—Mr. C. H. Fagge showed a patient suffering from bilateral auditory nerve paralysis, and suggested the diagnosis of intracranial tumour. Mr. Fagge, in reply to Mr. Cheatle and Dr. Milligan, said that no lumbar puncture had been performed, and added that no history of either congenital or acquired syphilis could be ascertained.—Mr. Richard Lake showed a patient upon whom a double ossiculectomy for chronic suppurative middle ear disease had been performed. In reply to questions and remarks by Mr. Cheatle, the President, Mr. Hill, Dr. Bronner, Mr. Fagge, Dr. Milligan, and Mr. Bull, Mr. Lake said that the discharge had lasted for 30 years; that the original cause was scarlet fever. In such cases he not only removed the outer attic wall, but also curetted everything which he could. Preliminary antiseptic treatment had been tried for three months.—Dr. Herbert Tilley showed a patient upon whom the mastoid operation had been completed by multiple epithelial grafts. Mr. Ballance pointed out that the patient could hardly be regarded as completely cured, as a considerable perforation still existed in the situation of the original membrane, and as discharge was still present. He did not think that either tympanum or attic had taken the graft as should be the case. He also considered it essential that all soft parts should be removed from the tympanum at the first operation in order to secure subsequent successful grafting.—Mr. Abbott related the history of a patient suffering from primary sarcoma of the base of the skull in the position of the Eustachian tube.—Mr. Ballance and Dr. Milligan demonstrated a new portable motor for surgical purposes, especially designed for operation on the mastoid region.

School Dentists' Society.—The annual report of this Society, drawn up by Mr. W. J. Fisk, L.D.S., R.C.S., Honorary Secretary, stated that the number of members had steadily increased, and now amounted to 38. A very interesting meeting was held at Leeds in July, 1900, when the equipment for the dental officer of a school was thoroughly discussed, and it was hoped that the recommendation made by the Society to the Local Government Board in regard to it would be adopted. In September the Lord Mayor of Sheffield, acting on the suggestion of a member of the Society, called a meeting in the Town Hall to hear addresses by members of the Society On the Necessity of the Supervision of the Teeth of School Children. As a result a Committee had been appointed to consider the best means of dealing with dental disease among the young people of that city. The question of

fixity of tenure for Poor-law dental officers had been fully considered, and it was hoped that in the near future dental officers under the Poor Law would have the same privileges in this respect as those already possessed by Poor-law medical officers. The Society had been able to answer many inquiries and requests for information from all parts of the United Kingdom on matters connected with school dentistry, and it was believed that in this way the Society was doing an enormous amount of good. The dental regulations, obtained by the Society from the naval and military authorities, had been largely in demand, not only by dental surgeons, but by public schoolmasters and others who had the care of young people.

Ulster Medical Society.—At a meeting on December 6th, Professor Thompson, President, in the chair, Professor Byers showed: (1) A large fibroid tumour which he had enucleated from the vagina that had no connection with the uterus; (2) a papillomatous ovarian cyst, the removal of which was followed by a papillomatous growth in the abdominal incision.—Dr. Thomas Houston showed microscopic sections of the tumours.—Dr. Calwell showed: (1) A specimen of hæmorrhage into the pons Varolii, which occurred in a woman who had been reported to have been drinking, and in whom the only symptoms were semi-unconscious, paralysis of legs, some movements of arms, and contracted pupils; death occurred quite suddenly; (2) a small malignant growth of the head of the pancreas, pressing upon the bile duct, and causing intense jaundice; the patient survived about three to four months; although neither tumour nor gall bladder had been felt during life, the correct diagnosis had been made.—Dr. John Campbell showed: (1) A movable kidney which he had removed by lumbar nephrectomy on account of advanced suppuration; (2) a fibroma of the ovary removed by vaginal section; (3) two uteri removed by vaginal hysterectomy for cancer of the cervix; (4) an ovarian cyst with myxomatous degeneration of a large solid portion; (5) a papillomatous ovarian cyst; and (6) a fibroid tumour removed by retroperitoneal hysterectomy.—A discussion took place on these specimens, in which the President, Drs. Darling, Dempsey, Mitchell, Sinclair, Byers, J. Campbell, and Calwell joined.—Dr. Fielden read a paper on the relative value of the various general anæsthetics. He discussed the occasions when it was inadvisable to give any anæsthetics, and the advantages of chloroform, ether, methylene, the A.C.E. mixture, and nitrous oxide and ether respectively, and when each should be used, and gave several important and practical points in the method of administration. The paper was spoken to by the President, Drs. J. Campbell, Fullerton, Sinclair, Kevin, Mitchell, Byers, and Calwell.

Glasgow Southern Medical Society.—At a meeting on November 29th, Dr. William Watson, President, in the chair, Dr. Ebenezer Duncan showed

(1) A case of spinal apoplexy; (2) a case of acute nephritis and uræmic convulsions treated with benefit by bloodletting; (3) two cardiac cases with well-marked murmurs, and showing no history of rheumatic troubles; (4) a case of phthisis pulmonalis in a soldier in whom the disease had developed in South Africa; (5) a case of diabetes mellitus treated with benefit by uranium nitrate.

—Dr. Alex. Napier showed

(1) A number of cases of lupus vulgaris in which very good results had been obtained by curetting and cauterisation; (2) Jacksonian epilepsy in a little girl; (3) a case of hæmicrania in a boy; (4) a description of a fatal case of glioma of the brain; (5) a case of peripheral neuritis; (6) a case of arthritis in a girl running a rapid course; (7) several well-marked examples of Graves's disease—in some the kidneys were quite movable; 8) a case of diabetes treated with nitrate of uranium.

Bristol Medico-Chirurgical Society.—At a meeting on December 12th, Dr. D. S. Davies in the chair, a resolution of thanks was passed to Mr. Paul Bush for the lantern slides that he showed at the previous meeting, illustrating hospital and other scenes during the Boer war.—Mr. A. W. Prichard read notes of a curious case of hypertrophy of the hand; the patient was shown as well as skiagraphs and photographs. Dr. Michell Clarke and Mr. R. Williams discussed the paper.—Dr. Michell Clarke showed a patient with muscular atrophy.—Dr. T. Fisher showed a patient with patent ductus arteriosus. Dr. Michell Clarke and Dr. Stack remarked on the patient.—Dr. J. O. Symes showed a microscopic specimen of leukæmic blood. Dr. A. J. Harrison and Mr. R. Williams commented on the case.—Mr. W. Roger Williams read a paper on medical science in the nineteenth century.—Dr. Lacy Firth read notes of a case of bilocular hydrocele. Mr. Munro Smith and Mr. Paul Bush spoke on the condition.

Society of Medical Officers of Health.—At a meeting on November 9th, Dr. A. Newsholme, President, in the chair, Mr. J. Cantlie read a paper on the Plague: its Symptoms and Spread, in which he insisted on the insidious character of the disease in the commencement of an outbreak. When he first took charge of the Plague Hospital at Hong Kong he was surprised to see the patients sitting up, talking, and smoking, some eating, a few sleeping, but still more so to find that during his round of 20 minutes four of the five and twenty in the ward had died, as did the whole of his first fifty, within a few days. He went on to describe the incubation period, the mode of invasion, and the chief types. The symptomatology and prognosis of each of these was fully discussed.

Rochdale and District Medical Society.—At a meeting on December 6th, Mr. G. W. Malin read a paper on pernicious anæmia, and mentioned that he had recently had three cases in three contiguous houses. He supported the theory that the excessive destruction of coloured corpuscles which had been shown to occur was due to the absorption of a poison by the gastro-intestinal tract. He also gave useful hints on treatment, especially as regards diet. Mr. Pooley mentioned a case which had occurred in his practice. A woman died of pernicious anæmia, and shortly afterwards her husband died of the same disease. Messrs. Jameson, Richmond, Chadwick, Stanwell, and Drs. Kerr and Wallace also took part in the discussion.

REVIEWS.

BOOKS ON LARYNGOLOGY AND OTOLOGY.

Visitors to Vienna know the loving and almost pious care with which, in that Mecca of the laryngologist, the original water-colour drawings of Türck are shown in the late Professor Stoerk's clinic. Türck's *Atlas* has long been out of print, but Schnitzler's has very satisfactorily supplied its place. Dr. Charles P. Grayson, of Philadelphia, has translated the text of another German Atlas, that of Dr. Grünwald, of Munich,[1] which, if not so large, excels everything we have hitherto seen in the way of coloured illustrations of diseases of the larynx. The figures give a systematic and admirable series of representations of all the typical affections of this region; and as they are led up to by a brief but adequate epitome of the anatomy, physiology, pathology, and treatment of laryngeal affections, we are supplied not merely with a picture book, but with an excellent introduction to the scientific study of the subject. We need not deal again with the work at any great length, for the original German edition has already been noticed in these pages (British Medical Journal, June 5th, 1899). We can only further emphasise our opinion of it as being still more valuable in its English edition. We remarked on the price of the German edition (8 marks) as being so moderate as to place it within the reach of all. We are pleasantly surprised to find that this well-bound translation can be issued for the small increase of half-a-crown. Such an atlas as this is not only valuable for the teaching of laryngology; it will prove of the greatest help to those who are perfecting themselves by private study.

The issue of the valuable *Handbook of Laryngology and Rhinology*, edited by Professor Paul Heymann, of Berlin,[2] has now been completed. Among the contents of the fasciculi issued recently is the final instalment of an elaborate article by Professor Schech on tuberculous disease of the larynx and trachea. The veteran Professor Gerhardt, of Berlin, follows with a monograph on syphilis of the larynx

[1] *Atlas and Abstract of Diseases of the Larynx.* By Dr. L. Grünwald, of Munich. London: The Rebman Publishing Company. 1898. (Crown 8vo, pp. 104, 107 coloured figures, and 25 text illustrations. 10s. 6d.)

[2] Vienna: Alfred Hölder.

and trachea. Dr. Paul Bergengrün, of Riga, in an article with two coloured illustrations, deals with leprosy of these parts. Other chapters are on acute infective phlegmon and erysipelas of the larynx (Dr. P. H. Gerber): the localisation of skin and parasitic diseases—herpes, pemphigus, etc.—in the larynx (Dr. F. Klemperer): chronic infectious infiltration-conditions of the larynx and trachea (Professor Pieniázek); diseases of the larynx in acute infectious diseases (Drs. Landgraf and Catti): diphtherial and croupous inflammation of the larynx and trachea (Professor Hoppe-Seyler); laryngeal affections in chronic and general diseases, including under this head anæmic conditions, diabetes, scrofula and rickets, gout, affections of the circulatory, digestive, and female sexual organs and kidneys, chronic poisoning with alcohol, tobacco, etc. (Dr. Sokolowski); malformations of the larynx and trachea (Professor Hansemann); hygiene of the larynx and voice and affections of the voice in singers (Dr. T. S. Flatau); and aids to laryngological instruction and photography of the larynx (Dr. R. Wagner). A preface, table of contents, and index of subjects complete the first volume, and as this contains over 1,500 pages, it will be seen that the whole subject of the larynx has been very exhaustively treated. Vol. II. (Pharynx and Naso-Pharynx) is completed in Parts 28 and 29. In these we find articles on pharyngeal affections in acute infectious diseases (Dr. Landgraf): morbid changes observed in the pharynx in general constitutional disturbances, and in certain chronic diseases (Dr. Sokolowski). This chapter touches on much the same points as those referred to in the article by the same author, already mentioned, on laryngeal affections in chronic diseases. Other articles are on tuberculosis and lupus of the naso-pharynx and pharynx (Dr. Otto Seifert): syphilis of the pharynx and naso-pharynx (Dr. Hopmann); leprosy of the pharynx and naso-pharynx (Dr. Bergengrün); pharyngo-scleroma (Dr. Pieniázek); and malformations of the pharynx and naso-pharynx (Professor Hansemann). An index of diseases likewise accompanies this volume. The remaining seven parts pertain to rhinology (vol. iii) and comprise an article on foreign bodies in the nose (continuation by Dr. Otto Seifert); adhesions in the nose (synechiæ and atresiæ) (Dr. Richard Kayser); affections of the sense of smell, of sensation, and of secretion in the nose (Professor O. Körner); also reflex nasal neuroses (Professor Jurasz) an article which, like several others, is supplied with a valuable bibliography arranged according to years, a method which might with advantage be more frequently adopted. "Epistaxis," by Dr. A. Rosenberg, forms the subject of the next article. Articles on various subjects follow in the subjoined order: Nasal Affections in Acute Infectious Diseases (1) measles, chicken-pox and scarlatina, by Dr. G. Catti, and (2) typhoid fever, influenza, and glanders, by Dr. W. Landgraf. Dr. Sokolowski writes on nasal affections in certain non-specific general diseases. "Rhinitis Diphtherica" forms the subject of a short article by Dr. P. Strübing of Greifswald. The editor has an article on Benign Growths of the Nose extending to 70 pages. Malignant diseases of the nose are treated of by Professor W. Kümmel, and tuberculosis and lupus by Dr. Gerber. The remaining articles are Syphilis of Nose, by Professor Schech, Leprosy of the Nose, by Dr. P. Bergengrün of Riga, Rhinoscleroma, by Professor Pieniazek, Diseases of the Accessory Cavities (maxillary and frontal sinuses, Dr. G. Killian, sphenoidal and ethmoidal sinuses, Dr. Max Schaeffer), Diseases of the Vestibule, by Dr. Kronenberg, Congenital Malformations of the Nose, by Professor Hansemann, and The Employment of Roentgen Rays in Rhinology and Laryngology, by Dr. T. S. Flatau. A table of contents and index to vol. iii and a preface conclude the issue. Some delay in bringing out the last numbers has occurred owing to influenza incapacitating several of the collaborators. Death has removed two of the contributors during the progress of the work, namely, Victor von Mihalkovics and Carl Stoerk. The mere enumeration of the articles in this exhaustive work, which is almost all we have been able to give, affords no idea of the value of the different monographs. They contain the results of an immense amount of research. The work is invaluable to the specialist, and, on account chiefly of its bibliographical data, is likely to remain so for some time. To the general practitioner who is acquainted with German it will also form most valuable reading on these special subjects.

Dr. CASTEX has passed a good novitiate before embarking on the writing of a textbook. His name is favourably known in this country as the author of sections dealing with his own speciality in the two large systems which have recently appeared in Paris—the *Traité de Chirurgie* (edited by MM. Le Dentu and Pierre Delbet) and the *Traité de Médecine* (edited by Drs. Brouardel and Gilbert). He has besides contributed considerably to the literature of the subject, and has not omitted to make himself personally acquainted with the practice of other countries including our own. The textbook before us,[3] therefore, bears the stamp of personal experience as well as of wide reading. In many parts it breaks away from the old limitations to which we have become accustomed, and it is indeed a relief to come across some new and practical illustrations in place of those which have been handed on from the days of Ziemssen. We would particularly call attention to the pages on suppuration of the accessory sinuses. Tuberculosis of the larynx is another question of the day which receives adequate attention. Dr. Castex has given an excellent, well-written, and practically illustrated guide to diseases of the throat, nose, and ear. Possibly the limited space at his disposal accounts for some curtailment in the last section; still, bearing in mind that the book is written for students and practitioners and not for specialists we must confess that the matter is well distributed. There is a satisfactory index, and a well-selected bibliography.

It is somewhat alarming at first sight to read that in a textbook, the *American Textbook of Diseases of the Eye, Ear, Nose, and Throat*,[4] the diseases of the eye are discussed in 24 sections by no fewer than 24 authors, while it has required 14 authors to describe the affections of the ear in 13 sections, and 19 specialist to grapple with the diseases of the nose and throat in 20 sections. If we allowed prejudice to run away with our judgment it would certainly lead us to condemn this fractional specialism of specialities, and to deplore the absence of unison which must result from such a subdivision. But on reflection it is evident that the "collaboration system" has fewer drawbacks when it deals with those departments of practice which are more surgical and technical than when it is concerned with systems of general medicine. Besides, a careful perusal of the textbook will remove any prejudice aroused by the first glance at such a long array of contributors; first, because each name commands attention on account of good work already done and secondly because the various sections are not only well written but well balanced. The work is in two volumes, but we are not informed of this either on title page or in the preface. This omission would be less noteworthy if each volume were complete in itself. But it is not so. For, although the first volume is entirely devoted to the eye, and the second entirely to the throat and ear, this division is nowhere indicated, and while there is a "contents" to the first volume it is found that this embraces the chapters in the second volume. Again, the "contents" is divided into three principal "Parts," tending to the idea that perhaps the work is in three volumes instead of two. Finally, there is no index to the first volume (the one entirely devoted to the ear), and anyone reading it has to take up the second volume to find a reference in the index. There is no index of authors. These defects are greatly to be regretted in a work which is claimed in the preface to be a volume of reference, and we are surprised to find them in a publication emanating from the States, which have taught us so much in the art of filing and reference-making. They certainly diminish the value of a publication which can otherwise be recommended as a reliable guide to the study of ear and throat affections, written by specialists who are in the first rank of the workers in these departments.

It is only three years since we were able to express a very satisfactory opinion of the first edition of the *Diseases of the Ear, Nose, and Throat* by Dr. SCOTT BISHOP of Chicago. We

[3] *Maladies du Larynx, du Nez, et des Oreilles*. Par André Castex, chargé du cours de Laryngologie, Rhinologie et Otologie à la Faculté de Paris. Paris: J. B. Baillière et Fils, 1899. 8vo. pp. 808, 140 illustrations. Fr. 12).

[4] Edited by G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College, Philadelphia; and B. Alex. Randall, M.A., M.D., Ph.D., Clinical Professor of Diseases of the Ear in the University of Pennsylvania. London: The Rebman Publishing Company. 1899. (Roy. 8vo. pp. 1,252; 766 illustrations, 59 coloured. 42s.)

were then able to note that brevity, usefulness, and accuracy were well combined. In the preface to the second edition[5] the author acknowledges the generous reception accorded to his work, and has acted on many of the suggestions made by reviewers. Two new chapters have been written, one on "Related Diseases of the Eye and Nose;" the other on "Life Insurance affected by Diseases of the Ear, Nose, and Throat." These chapters are of special interest in view of the attention being given to these subjects at present in this country. Many new coloured drawings and half-tone engravings have been added, and the improvements only enhance the opinion we have already expressed.

When reviewing the first edition of *Essentials of Diseases of the Ear*, by Dr. E. B. GLEASON, of Philadelphia, in 1895, the opinion was expressed that as a whole it might be found useful. This judgment has been confirmed by the appearance of a second edition.[6] It is drawn up in the form of questions and answers, and although we are not enamoured of this method of conveying knowledge, still we must concede that the book contains a very large amount of otological information in the briefest possible space. In the present issue the text of the first edition remains practically unchanged, but numerous additions have been made, especially with regard to the newer surgical procedures. Care has been taken to state clearly the applicability of each procedure, and what advantages to the patient, if any, can reasonably be expected to result from its performance. A number of new illustrations have been added.

Dr. BRADEN KYLE has produced a *Textbook of Diseases of the Nose and Throat*,[7] which he offers as a complete account of the subject suitable for students and practitioners. The author's bent seems to be towards pathology, and those portions of the book which deal with pathological subjects are decidedly the best. Morbid appearances are, as a rule, well illustrated, chiefly from original preparations. "Diseases are classified according to the pathological alterations caused by them." This is, we think, a mistake in the case of a new subject like rhinology, where the gaps in our knowledge are so conspicuous; and it leads to tedious repetition. Reports of individual cases have been "purposely omitted." Yet nothing is so valuable in building up a new subject as clear reports of carefully-observed cases. More serious than faults of arrangement, however, is the want of clearness and precision in describing operative procedures; the absence of detailed direction such as the practitioner needs when he goes to a book for help. For instance, in the section on empyema of the antrum the opening through the canine fossa is spoken of as the opening *from below*, and is apparently confounded with the alveolar opening. "From below the easiest method of penetration is through the canine fossa. If, however, the set of teeth is complete, the opening may be made either between the first and second molars or between the first molar and the second bicuspid," etc. Again in speaking of mucocele of the antrum he recommends "cutting away the outer or nasal wall of the cavity." Now the nasal wall of the antrum is, of course, the inner wall, but probably it is removal of the anterior part of the facial wall that is intended to be indicated—the canine fossa operation in fact. The direction for opening the sphenoidal sinus with a gouge "carefully following the upper border of the middle turbinated body—better with the aid of posterior rhinoscopy," is another example of a puzzle. In mucocele of the frontal sinus we are told that "in the majority of cases" the sinus may be opened from the nose by Palmer's drill. No directions are given, and the only word of caution the author vouchsafes is that "absence of the frontal sinus must be borne in mind." The presence of the cribriform plate and the cranial cavity might also, we think, be usefully remembered, considering that the proceeding recommended is decidedly dangerous, has led to fatal accidents, and is generally condemned as unjustifiable by expert opinion—in Europe at any rate. Dr. Kyle's book contains much good work which the expert may pick out for himself, but we cannot recommend it as a guide to students and practitioners.

Dr. COLLET'S hints on laryngoscopy for physicians[8] is a model in its way. It is very clear and concise, and, although it contains a large amount of information, there is yet no obvious attempt at condensation in the style, which is simple and natural. Outline drawings of a semidiagrammatic kind are freely used to illustrate the text. Escat's method of forced laryngoscopy in infants is described and illustrated, and the information as a whole is well up to date. The book is admirably adapted for busy students and practitioners.

Dr. WILLIAM A. AIKIN has written an extremely interesting and suggestive little book on *The Voice*.[9] It is likely to be most helpful to students and teachers of singing. Within a small compass it contains chapters on the voice, the breath, the resonator, the vocal cords, vowels (English and foreign), and practical directions for exercising the breathing, the resonator, and the cords. The chapter on the vowels might, we think, be amplified with advantage: in its present form it is sometimes a little puzzling. The book is suited to students who have mastered the elements of the subject.

[5] Philadelphia: The F. A. Davis Co. Demy octavo, pp. 574; 309 illustrations. Dol. 4.

[6] London: Henry Kimpton. (Cr. 8vo, pp. 206.)

[7] *A Textbook of Diseases of the Nose and Throat.* By D. Braden Kyle, M.D. London: Rebman. (Demy 8vo, pp. 646, 175 illustrations, 23 of them in colour, 20s.)

[8] *Notions de Laryngoscopie, Utiles au Médecin.* [Notes on Laryngoscopy for Physicians.] Par Dr. F. J. Collet. Paris: Masson et Cie. (Cr. 8vo, pp. 192. Frs. 3.)

[9] *The Voice: its Physiology and Cultivation.* By William A. Aikin M.D. Brux. L.R.C.P., M.R.C.S. London: Macmillan and Co.; New York The Macmillan Co. 1900. (Cr. 8vo, pp. 102. 3s. 6d.)

THE OFFICE OF CORONER.

[FROM A CORRESPONDENT.]

FEW offices perhaps have undergone so radical a metamorphosis as that of the coroner, or crowner, since its inception in times of which scarce any records have survived. Formerly armed with an autocratic and for the most part irresponsible authority, he executed a rough but just control over the lawless and the criminal inhabitants of the townships, villages, or hundreds into which this country was at that period divided. Up to the time of Magna Charta coroners were actually empowered to hold Crown pleas, try prisoners, and deliver judgment; while in Edward I's time they held inquiry into felonies, rape, and prison breach, as well as arson. The office of a coroner was then an honorary as well as an honorable one, and could not be held by anyone possessed of less than a knight's fee in land. Later he was paid by certain perquisites; his were the chattels of felons and amerciaments of townships when they allowed a murderer to escape. Further, he was, and still is (which seems rather an anachronism) entitled to a payment when he admits an accused to bail, or does the office of the sheriff. In his court he reigned supreme; he could exclude the public, lock up the jury, browbeat the witness, and mould a verdict! But the coroner of to-day can hardly call his soul his own, to say nothing of his court. Relegated often to the unsavoury purlieus of a public-house, he has to guide his jury to an unbiassed verdict in the presence of a crowd of persons interested, on some of whom the duty is imposed of minimising by their questions such evidence as may seem to tell against their clients, whether as to criminal or merely civil liability. Solicitors to watch the conduct of the case for any person who may possibly be implicated in the course of the inquiry; solicitors to represent the relatives of the deceased; solicitors to guard the credit of the brewery, factory, or mine in which a fatal accident may have occurred; assessors from the Board of Trade in railway cases; factory inspectors under the Factory and Workshop Acts; mines inspectors in colliery and metalliferous mines fatalities; and Government inspectors under the Explosives Act—each and all of these have a *locus standi* in his so-called "court," besides "any relative of any person whose death may have been caused by the explosion or accident with respect to which the inquest is being held," "any owner or manager of the mine," and "any person appointed in writing by the majority of the workmen employed therein" shall be at liberty to attend and examine any witness.

Notices must be sent to these inspectors, and the inquiry adjourned if they are unable to attend. Reports must be

forwarded within seven days to the Secretary of State in certain cases, bristling with details which it is not always easy to obtain; and the "medical cause" of death (when possible to ascertain it accurately) must be carefully included in the coroner's death certificate for the purpose of statistics.[1] It is this latter requirement which in my opinion makes medical men better fitted for the office than legal coroners; for the latter are often quite unable, owing to want of special knowledge of pathological and physiological terminology, justly to appreciate the evidence of experts in these departments (many ludicrous instances of which deficiency might easily be quoted); whilst, on the other hand, the legal knowledge necessary is nothing more than an accurate appreciation of the nature and value of evidence, and of a few technicalities in relation to the degree of guilt in manslaughter and murder cases.

It will, I suppose, be readily admitted that so far as preliminary investigation is concerned the medical coroner has facilities for obtaining gratuitous information from his medical *confrères* which the legal coroner does not enjoy, and hence it may safely be predicted (and facts might easily be adduced in proof if needed) that the latter must hold many inquests which the former could avoid, thus effecting a very material saving to the rates.

Among survivals of ancient usage which I think might with advantage be dispensed with is the committal by the coroner to the assizes of persons found by inquisition to have been guilty of manslaughter or murder. Since the Summary Jurisdiction Act and the Indictable Offences Act were passed, which empowered the justices to examine and remand from time to time, and admit to bail persons accused of any indictable offence, and especially to examine and bind over all witnesses for the defence; it seems not only superfluous but in the highest degree unfair to commit to gaol to await his trial a person against whom the coroner's jury have returned a verdict, founded, as all such verdicts necessarily are, on *ex parte* evidence, and subject to the disadvantage that no witnesses for the defence can be cross-examined or bound over to appear to speak for the accused.

It must be matter of common knowledge that in very many cases where a coroner's inquiry has resulted in a verdict of manslaughter, the preliminary investigation before magistrates has altered the entire aspect of the case, and the prisoner is discharged. Still, however, he must remain in prison (if unbailed) until the next assizes, when the Grand Jury will probably cut the Bill, and a *nolle prosequi* be entered. As a merely fishing inquiry, the advantages of investigation of all cases of suspicious nature by the coroner and his jury can scarcely be overestimated; but if his power was limited to ordering the party implicated to be taken before a Bench, and the subsequent proceedings were conducted in that court, the ends of justice would be furthered (or at least in no way interfered with), and hardship admitting of no redress would be saved in many cases. Indeed, it appears inexplicable that this anomaly should have survived so long, the only reason I can think of being the total ignorance of the public as to all that appertains to coroners, and the natural reluctance of coroners themselves to part with any of their powers. However this may be, it seems quite time that a prerogative which has long since ceased to serve any useful purpose, and obviously gives rise to much unnecessary suffering, should be dispensed with.

Another, though minor, inconvenience which results from this survival is to be found in the fact that inquests are very often held in one county when the crime or accident out of which the case arose took place in an adjoining one, with the result that the accused may be committed by the coroner to take his trial at assizes in that county in which his jurisdiction runs, while the magistrates commit him to another. Consequently, should the case come on for trial on the warrant of the Bench, the prisoner must be removed from the gaol or prison to which he was first committed by the coroner, and for this purpose expense and trouble are entailed, and it may be necessary to make an application to the Secretary of State, the Chief Constable of a county, or the Director of Public Prosecutions, as the case may be, for the issue of a "Habeas Corpus ad respondendum" for the purpose. This is an anomaly which could not occur if the suggestion made above were legalised; the coroner, upon the finding of his jury that an offence had been committed, say of manslaughter or murder, would simply instruct his officer to bring the party with all reasonable speed before a bench of magistrates, who would then discharge or commit him to the assizes for the county in which the offence arose. And further, if this power extended to those very frequent cases of grossly criminal neglect (but falling short of manslaughter) which come before the coroner (such as death by burning, for example), in which the apathy or drunken habits of the parent are indirectly the cause of the fatality, many persons would be prosecuted for cruelty who now too frequently escape. It has long been on the consciences of coroners that they are practically unable to deal effectively with those cases of almost daily occurrence in our large towns in which, while mothers drink or gossip with their neighbours, the infant in the kitchen (clad only in its nightgown) sets itself on fire. But unfortunately, as things are at present, to deal with criminal responsibility (short of manslaughter) does not lie with coroners, as it well might.

Coming to another matter. Not very long ago a short controversy was carried on in the columns of the BRITISH MEDICAL JOURNAL as to the duty of medical practitioners to send notice to the coroner under certain circumstances, but it was not pointed out by either party, so far as I remember, that the London County Council recommended in 1895 that "when the medical practitioner is unable to certify he should be required to report direct to the coroner." This would certainly conduce at least to lessen the number of uncertified deaths, a consummation which it has repeatedly been stated in the BRITISH MEDICAL JOURNAL is most desirable. In 1896, 11,000 deaths were registered as "uncertified," no fewer than 204 of which were held to have been due to violence.[2]

Although it is true that the modern system of registering births and deaths, and making it compulsory on the medical attendant to grant certificates free of charge, has already achieved great and valuable results, by giving reliable statistics of population, legitimacy, and other matters which concern the body politic; this does not suffice to throw much light upon the influence of drink (for medical men at present naturally shrink from stating such particulars in their reports so long as these are usually handed to the nearest relative of the deceased instead of under cover to the Registrar); nor on the influence of improper feeding of young infants, which is still the cause of an enormous infantile mortality; nor on the influence of mothers of young infants going to their factory leaving the child at home; nor on the influence of infant life assurance; nor on the number of still-born infants which with proper medical attendance would have been born alive, and a host of other matters which, if uncertified deaths could not be registered without a reference to the coroner, might be cleared up.[3]

As to the modern mode by which coroners are elected there can be no doubt that serious disadvantages attached to their election by the freeholders. Objections were also raised to their appointment by the justices in quarter sessions. But it must be admitted that in relegating this duty to the county councils the Act of 1888 has opened the door to certain disadvantages. The county councils are largely composed of men quite unfitted to form a correct judgment as to the qualifications of candidates for county coronerships. Many of them have no idea at all what is the nature and scope of the duties appertaining to the office, and this ignorance results in resolutions for reducing salaries, which (if they were not, fortunately, revisable by the Home Office) would be whittled away from motives of economy until worthy candidates could no longer be obtained. They fail to see that if they make a point

[1] A perusal of their verdicts appears to show that legal coroners seem especially prone to overlook the fact that from the registrar's point of view inquests are meant to be subservient to scientific and medical as well as legal uses. The nature of the fatal disease or *modus operandi* of the fatal injury ought to be ascertained and stated. Yet "Natural Causes" or "Death from Disease" are very common verdicts.

[2] BRITISH MEDICAL JOURNAL, 1897.

[3] This is strikingly illustrated by reference to your analysis of the vital and mortal statistics (in the BRITISH MEDICAL JOURNAL of August 11th last) from which it may be seen that the infant mortality rate of Blackburn and Wolverhampton, for instance (manufacturing towns), is upwards of 2 per cent., while that of London is considerably under 1; and with reference to "deaths uncertified" the proportion is still more startling, and varies from 0.3 per cent. in Brighton to 4 per cent. in Liverpool.

of cutting down the salaries whenever a vacancy occurs (as they are prone to do), either a larger number of inquiries will be held in the ensuing five years than need be, or the coroner will be inadequately paid. It is not difficult to prove that this cheeseparing policy defeats its object. For, if instead of thus seeking to save expense, the coroners were permitted to pay a reasonable fee of, say, 10s. 6d. to qualified practitioners for supplying information (often in their power to give) which would enable the coroner to dispense with inquest on receipt of notice from the police or registrar of a death appearing to demand investigation, it is obvious that many thousand pounds would be saved the county rates which, under the present short-sighted system are needlessly expended.

An enlightened council would probably prefer to make arrangements for supplying a decent central court (at least in thickly-populated places) with mortuary annexed, so that the present objectionable custom of holding inquests in the public houses might be less frequently resorted to, and the witnesses and jurors saved from the temptation to which they are now exposed. Moreover corpses need not then be left (perhaps for several days) in small tenements with accommodation hardly sufficient for the living members of the family, but in which one room must now be given up for the body of the deceased, a practice which modern ideas of sanitation has emphatically condemned.

These are some of the benefits to the public which medical coroners may be trusted steadily to pursue, and, through the medium of the BRITISH MEDICAL JOURNAL, perhaps eventually to attain.

THE EYESIGHT OF SCHOOL CHILDREN.

By J. F. BULLAR, M.A., M.B., F.R.C.S.,

Ophthalmic Surgeon, Free Eye Hospital, Southampton.

IN a leading article on Sight Testing in the Mercantile Marine in the JOURNAL for June 9th attention was called to the great advantage to be gained by the examination of the sight of all children at an early age at school.

Not only at sea but in many other capacities people are continually being handicapped by taking up employments for which their sight makes them ill-fitted.

I have come across scores of cases in which needlewomen, tailors, clerks, and others engaged in fine work have had to give it up or could only continue it with difficulty and did it indifferently on account of high degrees of astigmatism, hypermetropia, or other conditions affecting the use of the eyes.

Although great help may be given by glasses it is quite as unreasonable for a highly astigmatic man to become a tailor as for a man with a wooden leg to be a peripatetic country postman.

Some time ago I was asked by the Government Inspector of Schools for this district to examine the sight of the Board School children (about 16,000), but as the work was to be unpaid I was obliged to decline. However, we talked the matter over, and, eventually with the co-operation of the inspector—Mr. Rooper—I drew up some tables with which it should be easy for any master or mistress to make a preliminary test which could hardly allow any serious defect of sight or high degree of hypermetropia to escape detection.

The tables are divided into columns headed as in the specimen entries below:

1	2	3	4	5	6	7	8	9	10	11
					Test 1.		Test 2.			
No.	Date.	Teacher's Initials.	Name of Child.	Age.	Right Eye.	Left Eye.	Right Eye.	Left Eye.	Teacher's Remarks.	Medical Notes.
1	21-6-1900	J. B.	M. E.	9	6	9	12	12	—	—
2	21-6-1900	J. B.	R. J.	8	18	18	9	9	Cannot read well	To be examined.
3	23-6-1900	A.W.	K. R.	10	9	18	6	18	Has a squint	To be examined.
&c.										

They are accompanied by the following instructions for their use:

"The apparatus required for both tests is a set of test types (made for these tables by Curry and Paxton), and for Test No. 2 a pair of spectacles with round glasses 1½ inch in diameter, with lenses + 1.50 D.

"*Directions for Test 1.*

"1. Fix the card of letters in good light. The light should be daylight, but not direct sunlight. The child should stand with his toes on a chalk line 20 feet from the card.

"2. Cover first the child's left eye. Let him attempt to read the rows of letters on the card from the top downwards. Enter in Column 6 of the tables the number which is printed over the last line of letters which the child can read perfectly.

"3. Cover next the right eye, and after proceeding as before, enter in Column 7 of the tables the number printed over the last line of letters which the child can read perfectly.

"*Directions for Test 2.*

"Let the child put on the glasses.

"1. Cover the left eye (over the glass) and let the child attempt as before to read the letters from above downwards.

"Enter in Column 8 the number over the last line he can read.

"Cover the right eye (over the glass) and proceed as before, and enter in Column 9 the number over the last line the child reads perfectly.

"CAUTIONS.

"(*a*) A fresh card must be used for every test.

"(*b*) The child must not look at the card with both eyes, nor have time to study the card before the test is applied. Hence the child should be placed on the chalk line and one eye covered before the card is hung in his view, and only one child at a time should be admitted into the testing room. In this way learning the letters by heart is avoided.

"(*c*) Note that the child may chance to see better with the glass, or worse, or the glass may make no difference.

"(*d*) The column for the teacher's remarks should contain notes of obvious defects, such as sore eyes, squint, etc. No child should be tested until it is certain that it is familiar with all the letters of the alphabet.

"(*e*) Observe that Test No. 1 excludes all practical important defects except long sight, and that long sight is controlled by Test No. 2."[1]

The last column is intended for the use of the medical man to whom the tables should be sent when they are filled up. He will leave it blank opposite the names of the children whose sight is perfect or nearly so, and merely note those who require examination, either on account of bad sight or of hypermetropia, as shown by reading well in the second test.

For practical purposes it would be unnecessary to trouble about slight defects of vision or slight degrees of hypermetropia, and it would, of course, be easy to alter the strength of the + glass used in the second test if it should be found desirable.

The tables which I have described are intended, of course, merely to ascertain the existence of defects and not their nature. My idea is that some such test should be used in all schools, and that the master should inform the parents of those children whose sight appears to be defective.

If at present this is a counsel of perfection with regard to the Board Schools—and it is not for me to decide whether money is better spent on starting a poor child in a suitable career or in the endeavour to teach it French and the anatomy of frogs—it might at any rate be carried out in schools for the wealthier classes, and we should then see fewer cases of boys disqualified by defective sight after having suffered the process known as cramming for the army and navy.

THE Milan Committee for the establishment of a sanatorium for poor persons suffering from consumption, of which Dr. Gatti is President, has collected £24 000, and is engaged in the preparations of building a first sanatorium.

THE COOMBE LYING-IN HOSPITAL, DUBLIN.—At a meeting of the Governors of the Coombe Lying-in Hospital, Dublin, held on December 17th, Mr. Thomas George Stevens, F.R.C.S.I., was elected Master in the room of Dr. F. W. Kidd, whose Mastership had just terminated after the usual seven years of office. Mr. Stevens held the post of Assistant Master in the Coombe Hospital for the usual period, and at its expiration was appointed Gynæcologist at Jervis Street, Dublin, a position which he still holds.

PRESENTATION.—Dr. Alexander Buchanan (nephew of the late Professor Robert Buchanan of the Chair of Logic in the University of Glasgow), who has been medical officer in the parish of Tiree for forty years, has been presented with his portait in oils along with a very handsome writing desk as an expression of the high appreciation of the parishioners. The presentation was made by Mr. Hugh Macdiarmid, factor for the Duke of Argyll.

[1] These tables have been published at their own risk and expense by Messrs. Cox and Sharland of Southampton.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1900.

SUBSCRIPTIONS to the Association for 1900 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, DECEMBER 22ND, 1900.

DEATH CERTIFICATION.

FOUR articles on Death Certification have recently appeared in the BRITISH MEDICAL JOURNAL. They have dealt very fully with the subject, pointing out the defects and dangers of the present system and the directions in which reforms should be made. The articles have naturally been founded on the report of the Select Committee of the House of Commons, over which Sir Walter Foster presided in 1893. That report was most carefully drawn after a very exhaustive inquiry, and made very definite recommendations for the improvement of the law in the interests of the public. Seven years have passed and no legislation has been attempted. The law stands to-day exactly as it was twenty-five years ago. It usually takes a score or more of years to awaken the legislative mind in this country to a new idea, and, if certification of death were a novelty, we should not be sanguine of any immediate action. Fortunately it is more than twenty-five years old. The idea in actual working shape is on the Statute Book in the Births and Deaths Registration Act of 1874, and all that is now asked for is amendment of the law in order to give the public greater security against crime, and to provide for a more perfect record for statistical and sanitary purposes of the causes of death.

The Select Committee said that "it should be made impossible for any person to disappear from his place in the community without any satisfactory evidence being obtained of the cause of his disappearance." To secure that obviously desirable end certain necessary modifications of the law were recommended. Every death was to be registered on a legal medical certificate of its cause, or on an order from the coroner, or in Scotland from the Procurator Fiscal. Every death was to be verified before certification, and the certificate sent direct to the registrar. Every burial was to be by order of the registrar, and a receipt for the body was to be given on the back of the order to the registrar. Every body was to be buried or legally disposed of within a period of eight days, except by permission of a magistrate, and burial in pits or common graves was to be discontinued, in order to permit of identification of every body after burial. Stillbirths of seven months' gestation were to be treated as ordinary deaths for the purposes of registration. For the purpose of carrying out these proposals it was suggested that a new officer, to be called a "medical certifier," should be appointed in every sanitary district.

The Select Committee had evidently been convinced from the evidence before them that every death should not only be accurately referred to its special cause for the prevention of crime and fraud, but also that whatever method was adopted for the disposal of the body, that body should not pass away from the control of the law till it was satisfactorily accounted for. The registrar, instead of merely recording the cause of death, was to be required to order the burial and obtain from the burial authority a receipt for each body buried on his order. Under the present lax law which allows registration and subsequent interment on the statement of any informant, there are some ten thousand deaths annually which are "uncertified," that is, not certified as to the cause of death by a legally-qualified medical man. It is true that under the influence of the work of the Select Committee, and from the pressure exercised by the General Medical Council, the registrars have been directed to exercise greater strictness in accepting certificates from unqualified persons of late years. The percentage of uncertified deaths, which in 1878 was 4.85 per cent. of the whole, fell to 2.52 in 1893, and to 1.89 in 1898. This is satisfactory, but it is not enough. It does not meet the requirements of the Select Committee, that there should be satisfactory evidence of the cause of every death. Moreover, while the present laxity as to burials prevails, if uncertified deaths disappeared altogether from the Registrar-General's returns, there would still be opportunities for the concealment of crime, which ought not to exist. Some new machinery is therefore necessary to obtain the desired ends. The Select Committee recommended the appointment of a "medical certifier," who would be called in to determine the cause of death in all cases not certified by a registered medical practitioner. It was thought that the medical officer of health of each sanitary district might discharge this duty. There would be no difficulty in the plan in large towns where the medical officer of health has a regular staff of sanitary inspectors who could make the necessary inquiries. Similar plans have indeed worked well in many large cities, but there would be difficulty in rural districts, where the medical officer of health has often a wide area to supervise, and no adequate staff for the work. He is, moreover, usually in private practice, and so might possibly be brought into difficult relations with his medical colleagues.

It must be admitted, too, that it is not always wise to meet a defect in administration by the creation of a new official and a new department. It causes less friction to utilise existing machinery, and it also usually costs less: an important consideration. The late Registrar-General shrewdly suggested that much might be done to lessen the evils of non-certification if more inquests were held by coroners. If he had been able to go a step further and order his registrars to report all uncertified deaths to the coroners, who would make inquiry or hold an inquest if necessary, a great reform would have been made. It is done now in some cases, but it should be put upon a legal footing, and done in all cases under the sanction of a special enactment. If in densely-populated districts the coroner had a staff of officers trained to make the necessary inquiries, and if he were empowered by law to call in a medical man to inspect the body and make a

post-mortem examination where necessary, every uncertified death could be referred to its proper cause. In country parts the coroner has often a wide district, and difficulty and delay might arise in some cases; but in these days of trams, trains, and telegraphs, this objection is not fatal. That a medical coroner would for these duties possess many advantages is obvious, but the proposal would work even in the absence of this desirable condition, as medical aid could always be procured in difficult cases were the coroner empowered to pay the necessary fees.

It is this question of expense which is the great obstacle to legislation. Local authorities groaning under heavy burdens for local improvements are naturally opposed to fresh expenditure; and ratepayers in town and country jealously and angrily watch every increase in the rates. The Chancellor of the Exchequer is every whit as watchful against fresh additions to the national expenditure. Whether we adopt the proposal of the medical certifier or use the coroners with their existing machinery, more money will be required. The medical profession, too, feel that if additional labour is to be placed on them in filling up and forwarding improved forms of certificates, they should receive adequate pecuniary acknowledgment. The registrars, too, would no doubt put in a claim. The Select Committee suggested that the precedent of the Infectious Diseases (Notification) Act, 1889, should be followed, and a fee of 2s. 6d. be paid to the medical man for each death certificate. It has been calculated that this alone would cost between £60,000 and £70,000 a year, while the expenditure connected with the inquiries into uncertified deaths by either the medical certifiers or the coroners would probably cost as much more. This sum would also be increased by the registration of stillbirths. The grave mistake made in the early Act in making the death certificate a gift on the part of the doctor to the State stands up now as a formidable precedent against these new proposals. It is not insuperable perhaps, but it is serious, and it is as well to recognise it. For our part we do not think £150,000 to £200,000 a year, which is after all but a small fraction of 1 per cent. on the annual national expenditure ought to be a barrier to reforms so necessary for the prevention of crime and the advancement of the public health.

LUNG DISEASE IN THE ROYAL NAVY.

SOME time ago we called attention to certain views on lung disease in the Royal Navy which had been advanced in the *Times* by Captain Rason, R.N. Other writers afterwards contributed to the discussion of this important matter facts and opinions which deserve consideration. Thus "Mariner" pleaded for a consideration of the health of the stokers. Their work in hot stokeholes and engine rooms compares strikingly with the more open-air life of the seamen and marines, and may be found to conduce to greater waste by sickness, invaliding, and even death than occurs among seamen and marines. The class of ship's stewards is also worthy of consideration in this connection, as their duties are largely performed in confined air spaces.

Attention has also been directed to the boys' training ships as the source of much later lung disease in the fleet. Boys when sick are generally removed to hospital, but it would nevertheless be advantageous if the naval authorities were to take advantage of the holiday seasons to disinfect, ventilate, and dry the old wooden ships which are commonly used for training purposes. Fleet-Surgeon Harvey, R.N., medical officer of the boys' training establishment *Lion* in 1889 and 1890, furnishes valuable evidence as to the respiratory diseases in the two ships of this training establishment, the one for junior the other for senior boys, which clearly indicates the increase of such diseases with augmented complements, or the greater crowding of their berthing space. On August 11th, when dealing with the Naval Medical Statistics, we remarked on the comparative large amount of sickness in the *Lion*. These statistical reports, however, furnish no definite indication of the amount of lung disease in the boys' training ships; they record 97 cases of tubercle "affecting the lungs" in a mean force of 44,050 on the Home Station, including these training ships, while we also find, under diseases of the respiratory system, 155 cases invalided for phthisis, a ratio of 3·5 per 1,000, 46 of which are stated to have been from the boys' training ships, a ratio of 5·3 per 1,000 of their mean force, 8,660. The term "phthisis" in these statistics for 1898 still appears to signify pulmonary tuberculosis, and thus "consumption" is recorded as tubercle and also as "phthisis," as a disease of the respiratory system. We are, however, informed that measures have been taken to class all tuberculous affections as tubercle, according to the official nomenclature of diseases, in these statistics in future.

It has been asserted that naval crews were more healthy at the beginning of the present century. This, we think, would be difficult of proof; if we are not mistaken, scurvy, now virtually unknown in the service, was common and disastrous in those days, and we question if men and boys were then placed on the sick list for the trifling ailments which are now considered sufficient to prevent the performance of full duty.

Another correspondent urged "that the general principles of naval hygiene should form part of a naval officer's seamanship examination." We could name a very distinguished admiral, now retired, who did very thoroughly study naval hygiene, and, as captain in command of one of H.M. ships, was of great assistance to his medical officer in promoting hygienic measures in the ship under his command. This officer's knowledge was not merely perfunctory, as we fear it would be if crammed for an examination. It might be more advantageous to the commanding officers of H.M. ships if they relied on the expert knowledge of their medical officer in matters of naval and general hygiene and supported his proposals to promote it. As we have previously taken occasion to point out, we believe this is the case very generally in these days. Naval hygiene includes "clothing," if our naval authorities would only recognise the fact.

A very important cause of disease or predisposition to disease in the navy is the overcrowded berthing of ships and naval depôts of seamen and marines. The extension of the naval barrack system, which the present Admiralty are carrying out to replace in part, if not altogether, the old wooden ships almost invariably utilised for naval depots, is a most important reform on health grounds.

The harbour exercises as a means of healthy recreation which have been favoured by the popular and distinguished Admirals Fisher and Noel are also important.

Defective ventilation is a predisposing cause of much pulmonary disease, but, as we have elsewhere remarked, the ventilation of Her Majesty's ships has undergone great improvement of late years.

The public discussion of this subject will doubtless do good, as the importance and health-giving properties of fresh air are prominently brought to the notice of our naval men of all ranks, not only in the daily press, but also in their special naval and military papers. It may, however, take time to persuade them and the general public that, while rheumatism and neuralgia may follow from chills, common colds and consumption do not arise from such causes.

THE UNIVERSITY OF LONDON.

WE learn that at the last meeting of the Medical Faculty of the University of London, at which the Dean (Mr. Butlin) presided, Dr. Lauriston E. Shaw, Assistant Physician and Dean of the Medical School at Guy's Hospital, was elected Secretary of the Faculty. A report from a Subcommittee on the mode of procedure to be followed by the Faculty in transacting business was presented, and lists of Boards of Studies were read and considered. The next meeting of the Faculty will be held after Christmas, probably in the second week of January, 1901. The last meeting of the new Senate before the Christmas recess was held on Wednesday. Numerous reports were, we understand, presented both from the Academic Council and the Council for External Students. The Boards of Studies have been constituted after consultations with the various faculties concerned. The questions of finance and relations with the Treasury, and also the status and remuneration of the various officials, have been under consideration, and the Senate, on the advice of the Academic Council, is drawing up regulations for the recognition of teachers of the University and for the admission of institutions as Schools of the University. During the past two months the University has assumed an air of unwonted energy, and there appears to be an earnest desire, shared by all interests concerned, to bring the new organisation into full working activity with as little delay and as little friction as possible.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

THE schedule of grants sanctioned at the meeting of the General Council of the Prince of Wales's Hospital Fund on December 18th contains an intimation that the annual grant of £750, and a donation of £200, recommended to be given to the National Hospital for the Paralysed and Epileptic, Queen Square, is allotted "subject to settlement of the existing differences by May 1st, 1901." The Prince's Fund has thus taken the same course as the Council of the Hospital Sunday Fund, which adopted a similar resolution at its meeting on December 7th. Everybody will desire that this condition may be fulfilled. The medical staff has always courted the fullest inquiry, and we trust that no fresh difficulties may be raised by the Board of Management, on whom the onus of bringing this matter to a satisfactory termination now rests. The Board has been advised by its own counsel that its original arrangements for a court of inquiry, as well as the scope of the proposed inquiry, were unsatisfactory, and we hope that satisfactory arrangements for holding a more comprehensive inquiry may shortly be made public. We understand that the medical staff consider that the court of inquiry might best be constituted if each party—that is to say, the Board on the one hand, and the medical staff on the other—nominated one member, and that the Chairman, as is usual in such cases, should be chosen by the two nominated members.

THE NOVA SCOTIA BRANCH.

THE report of the annual meeting of the Nova Scotia Branch of the British Medical Association, which was published last week, shows a condition of general vitality and functional efficiency in the Branch on which both its officers and its members may be heartily congratulated. The events of the past year make it especially remarkable and praiseworthy that such excellent work should have been done by the Branch. The prevalence of war fever is a serious hindrance to scientific work, and the formation of a contingent for service in South Africa led several members of the medical profession in Halifax to throw off the gown and buckle on the sword. But, in spite of the disturbance of professional life thus caused, the Branch went steadily on its way; it did not allow the excitement of the time to interrupt the regularity of its meetings, and the average attendance of these was even higher than it had been in the previous session. Nor was the work done inferior either in quantity or in quality to that of former years. The public influence wielded by the Branch is proved by the fact that it has induced the Government to pass legislative measures providing for the construction and maintenance of a sanatorium for sufferers from tuberculosis. We venture to commend the example of the Nova Scotia Branch to some other Branches of the Association in Canada which, we are sorry to say, seem to be entering on a phase of somnolence. This is to be regretted for their own sake not less than for that of the parent Association. The British Medical Association with its Colonial Branches spreading all over the world is at once a concrete embodiment of the Imperial idea and a symbol of professional brotherhood throughout the empire. Both the scientific and the political usefulness of the organisation must suffer if Branches fall into decay. It is to be hoped that a new spring will soon come to melt the ice of apathy which has for some time benumbed the activity of one or two Branches within the dominion of "Our Lady of the Snows."

THE SOUTH WALES AND MONMOUTHSHIRE BRANCH.

ON November 29th, at the autumn meeting of the South Wales and Monmouthshire Branch of the British Medical Association, held at Llanelly, Dr. D. Arthur Davies, of Swansea, a former honorary secretary of the Branch, was presented by the President, Dr. A. Garrod Thomas, of Newport, on behalf of the members, with a handsome tea and coffee service. The testimonial bore an inscription to the effect that it was a token of personal esteem, and a slight acknowledgment of the valuable services rendered by Dr. Davies as one of the honorary secretaries of the Branch for a period of nearly twenty years.

WAR OFFICE METHODS OF OBTAINING MILITARY MEDICAL OFFICERS.

WE have received a letter from a distinguished officer of the Army Medical Service criticising some of the contentions contained in the paragraph under this head which was published in the BRITISH MEDICAL JOURNAL of December 15th. He holds that every encouragement has been held out to surgeons of volunteers, and that the idea that any slight was intended or any plan made to do without them is absolutely unfounded. There is, he says, another side to the question. Some of the medical officers belonging to volunteer regiments which furnished officers and men for the front expressed disinclination to proceed on account of their private practice. Further, the Director-General, he says, is not in a position to accept offers of service from volunteer medical officers without reference

to the wishes of their commanding officers, and permission was not always obtainable, because the commanding officer in some cases was disposed to reply, "Well, supposing my corps is mobilised I should want you." Some, however, obtained leave of absence from their corps, and were engaged on the terms offered to civilians, thereby gaining pecuniarily when their rank was not above that of captain. In reply to the argument that volunteer surgeons have to pass a proficiency examination as to their duty with their corps, he thinks that the argument would have more force had they been required to do duty with their corps. As it was, they were offering their services as *quasi*-civilians, and the War Office had to regard them as such in the first instance, and to establish an age limit for civilian surgeons, as it would probably have caused friction to ask men of 40 and upwards to serve under captains R.A.M.C., much junior to them in age. On the other hand, it was not considered wise, at any rate at first, to make men who were regarded as civilians responsible for stores as they must have been had they been in charge. Thus it was considered inadvisable to send out surgeon-majors and surgeon-lieutenant-colonels of volunteer regiments in their rank. Our correspondent then goes on to point out that the Director-General and his staff have very little acquaintance with the "personal equation" of volunteer medical officers. In conclusion he expresses the hope that the reserve of medical officers as it now exists will be abolished or completely remodelled; at present, he says, it is a name and no more. We publish in another column a letter from an attached volunteer surgeon who appears to be thoroughly contented with his lot.

THE IMPERIAL BACTERIOLOGICAL LABORATORY IN INDIA.

IT will be remembered that our Special Correspondent in India, in a letter published on October 14th, 1899, stated that the Government of India had under consideration a scheme for further developing the Imperial Bacteriological Laboratory at Muktesar so as to convert it into a Central Research Laboratory for India. Unfortunately in his next letter our correspondent had to relate that the laboratory had been destroyed by fire. The Government of India immediately undertook the reconstruction of the laboratory which, when completed, will be divided into two sections —the veterinary and the medical section respectively. We have now before us the report of Dr. Alfred Lingard, the Imperial Bacteriologist for India, which deals with the work for the year 1899-1900, and the report, like the previous reports which have been noticed from time to time in the BRITISH MEDICAL JOURNAL, shows that in spite of the unfortunate destruction of the laboratory, which involved the loss of the results of several years' laborious work, including a fine collection of trypanosoma from all available sources, with many hundreds of specimen illustrations of filariasis in equines and bovines, the reference library and chief parts of the manuscript of the Surra Report, vol. iii, much valuable work was done. The chief work was in connection with attempts to combat an extensive outbreak of rinderpest, which raged throughout the North-Western Provinces. Much of this work was of an experimental nature; for though the results of South African workers were largely utilised, as there exist differences of opinion in South Africa as to the best methods of prevention, Dr. Lingard set himself to determine the matter, having regard to the differences in the breed of cattle and climatic variations. Consequently much of the time of the bacteriologist was occupied in touring in the affected districts to inoculate and carefully note results. Some difficulty was experienced owing to the prejudice of the natives, but such excellent results were attained that, in many cases, the natives themselves later requested that their herds should be inoculated. Dr. Lingard employed the "simultaneous method" largely; and we gather from his report that he considers this the most satisfactory, as animals so treated enjoy a longer period of immunity. He also used serum, a precipitate obtained by the addition of a mixture of absolute alcohol and ether to serum, serum from animals not susceptible to rinderpest, but which had received large increasing doses of virulent blood; lastly, he experimented with glycerinated bile obtained from beasts that had died of rinderpest. Up to April, 1900, over 47,000 c.cm. of serum were distributed for preventive injection. The earlier batches of serum were prepared by the clotting method, but later it was obtained more speedily and of better quality by the centrifugal machine. This method has the advantage of supplying an almost sterile serum, the injection of which is free from the dangers of local suppuration. The activities of the laboratory did not cease, however, with the production of rinderpest serum. Some attempts were made to deal with plagues of locusts, and to that end tubes of a fungus which had been found pathogenic to the locusts of South Africa, were distributed from the laboratory throughout nearly all parts of India. At the time of the report, however, no results had been recorded. Another function of the laboratory consists in the preparation of mallein; and, in this connection, Dr. Lingard reports the results of his investigation of an outbreak of what was supposed to be glanders-farcy at Hapur. He established the fact that this outbreak was due to an epidemic of "lymphangitis epizootica" among the horses and mules of the Reserve Remount Depot at Hakur, and among the mules at Karnal. These latter animals had been imported from Italy. The symptoms of the disease are small tumours and open sores on different parts of the animals, associated with swellings in the course of the lymphatics, which are themselves corded and beaded. These swellings in time break down, and microscopic examination of the pus reveals the existence of roundish bodies, with somewhat pointed ends, highly refractile, either free in the pus or encapsuled in the cells. The disease is known in England as Neapolitan or benign farcy, and was first described by Rivolta in 1873. As it has an average incubation period of three months, and was first noticed in an Italian mule within six weeks of importation, it is fair to assume that the disease was imported with the animal. As it is highly virulent, and involved the loss of 112 animals, possibly some form of quarantine may in future be considered advisable for horses or mules imported from Italy. The specific organism of the disease is known as the "cryptococcus farciminosus Rivoltæ." The report is of unusual interest, and happily illustrates some of the numerous ways in which science may be employed for the public benefit.

MEDICAL CHARITABLE FUNDS.

AN urgent appeal for funds has reached us from Dr. Holman, the Treasurer of the Royal Medical Benevolent College. The position of affairs is plainly put in the following statement: It is increasingly clear that the Council must reduce the number of both pensioners and foundation scholars, if the income of the College is not maintained. No one can defend the dispensing of charity out of borrowed money, which cripples the work of any institution in the future. The appeal shows that the need of fresh subscribers is very urgent, since money has had to be found for heavy and unexpected charges which have arisen within the past three years for drainage and repairs. At the last May election there were no fewer than 23 applicants for pensions, and 31 candidates for foundation scholarships; yet for the former there were only 7 vacancies, and of the anxious applicants for the latter 27 had to experience disappointment, some, owing to superannuation, the more bitter pangs of permanent disappointment. It is to be feared that the numerous public

appeals in connection with the war in South Africa and the Indian famine will affect the receipts of many charitable institutions; but this very fact should stimulate medical men to give more generously at the present time to their own two leading charities. One of these is the British Medical Benevolent College; the other is the British Medical Benevolent Fund, which gives pensions and immediate grants. One fact stands out plainly in the case of both charities—money is wanted, and wanted immediately. Let no one say he is unable to give anything worth having, for no amount is too small to be welcome, and the committees of both institutions are glad to receive small contributions, especially annual subscriptions. Let practitioners, then, give much if they can afford it, little if their purses are limited. Contributors may rest assured that whatever they send will be more welcome than ever just now when funds are so urgently needed.

WEST PYRENEEAN DOCTORS IN THE MIDDLE AGES.

IN the *Gentleman's Magazine* for November, Mr. A. R. Whiteway attempts, not unsuccessfully, "to put together the dry bones of a typical medico of, say roughly, three good centuries ago, exercising his calling anywhere between Barège and the seaboard of the Bay of Biscay." From documentary evidence of one kind or another he gathers that the doctor, the apothecary, the surgeon, and the barber were, in effect, officers of State appointed to attend the people of the country after taking solemn oaths to treat those committed to their charge with ability and diligence. For this certain charges were fixed, but the individual, not the State, paid the bill. The form of the oath taken by the doctor of the King of Navarre, as preserved in the archives of Pampeluna, is to the effect that he will faithfully fulfil his duties of *fisiquia*, and take every possible precaution to preserve and keep in health the person of the Sovereign and not divulge his secrets. In the hierarchy of medicine the doctor came first, and he with a surgeon "not suspect" had to look after the surgeons, and also to inspect the quality of drugs sold, and tax the apothecaries' bills. The physician both in Bearn and Navarre was obliged to make oath that he would well and truly prescribe and see to the proper making up of his prescriptions. He had at first to go round with the magistrates three times a year to inspect the drugs in the apothecaries' shops, and when found bad to see them destroyed; but later, as this duty, which was discharged by the Royal College of Physicians of London until within comparatively recent times, appears to have been considered invidious, a State official was appointed for the purpose. Two offences against the medical code were held to be especially infamous—empiricism and having any interest in an apothecary's shop. As regards empiricism the penalty for a first offence was a flogging, for a second exile, while the other breach of etiquette was punishable by forfeiture of the stock-in-trade and banishment from the country. The offences of apothecaries were numerous, and the punishment in some cases a whipping. The worst was the improper sale of poisons—that is to say, when not duly prescribed by a known physician of reputation. The sale of inferior drugs was also punishable. Counter prescribing, unless in the case that a doctor could not be found, was punishable by whipping. As to fees, it is hard to speak with precision, as the relative value of money then and now is extremely difficult to fix, and the sol Morlaas was worth three times the sol Tournois. The doctor received the statutory fee of 9 sols Morlaas, and his expenses a day when he had to leave his town, and 1 sol 8 deniers for each visit in town, and 4 deniers in addition if he examined a patient's urine. He got 1 sol 8 deniers for a prescription. In Navarre the fee was half a franc a visit in town, and 3 francs a day out. Every member of the profession was a privileged creditor when death occurred, as such bills as theirs formed part of the funeral expenses, and even the sacred *dot* of a wife could be depleted to pay them to an extent not exceeding a fixed amount. In Bearn, as elsewhere, at that time, a serious operation was understood by the patient to be a matter of life or death. Surgeons, therefore, sometimes thought it prudent to ask for a bill of indemnity before operating. Thus, in 1541, Pierre du Poey, of Angouleme, when domiciled at Oloron in Bearn, induced Sansolet d'Oloron, before operating upon him for a certain affection, to execute a formal legal document undertaking for his whole family that they should not sue the surgeon for damages in the event of death ensuing from the said operation; while for himself he thereby further undertook in such event to "grant his pardon to his operator." From an inspection of the marriage contracts and wills of various village surgeons in the early part of the seventeenth century in Bearn, it would seem that they belonged to the peasant-proprietor class, and differed but little in habits of life from their patients, who were, as a rule, neighbours and friends. The physicians were often men of better birth, younger sons of richer families, as may be seen from a transaction such as the following, which took place in the year 1670, when Abraham Dufour, Doctor of Medicine, sold his deceased brother's seat in the Parliament at Pau for 36,000 francs to one Pierre de Landinat, an advocate. The lot of a medical practitioner of the olden time in the Western Pyrenees was a fairly enviable one. His vineyard gave him fair wine, his peach trees good fruit, his farmyard plentiful eggs and poultry, and his patients money enough to satisfy his modest wants. Thus he lived out his little day, near his native place, favourably recognised by the State, and respected by those among whom he lived and moved, and had his being.

THE GROWTH OF POPULATION AND THE DENSITY OF TOWN POPULATIONS.

A PAPER read by Mr. T. A. Welton before the Royal Statistical Society gives a graphic survey of the growth and distribution of the English population since the first census taken in 1801. At the same time it furnishes a useful prelude to the eleventh decennial census which will be taken in March next. It is well to be reminded that in 1801 no town outside London numbered 100,000 inhabitants, Manchester coming nearest with 91,432, while London itself contained only 922,000 inhabitants. At the time of the first census 36 per cent. of the people lived in towns of 1,000 inhabitants and upwards, but in 1891 64 per cent. of the people lived in towns exceeding 4,000 in population. The ordinary density of population in rural districts was, in 1801, about 100 persons per square mile; in 1891 it averaged 130 persons; in the former year rural interests were predominant, while in 1891 they were those of less than one-fifth of the whole people. Not only has there been a diminution in the proportionate numbers living in rural districts; but since 1851, following a severe check to their increase in 1841-51, there has been an actual decline in rural population. This contrasts strikingly with a specially great increase of rural population in 1811-21, the period marked by the cessation of the Continental war. We cannot follow in detail Mr. Welton's elaborate statistics as to the distribution of increased and decreased populations. It is clear, however, that the five divisions of London, Lancashire, the West Riding of Yorkshire, Staffordshire, and Durham are now "pre-eminent for the existence within their limits of dense and progressive populations. The important division of Gloucester, Devon, etc., has sunk from the fifth to the seventh place, whilst Wales and Cumberland, as well as Durham, show a marked advance. The Norfolk division is now at the bottom of the list." Mr. Welton has made an elaborate attempt to classify districts in accordance with their density of population; and the

assumptions which he has found it necessary to make illustrate the almost insuperable difficulties of this task. He points out that the area and density attributed to towns are not to be taken as strictly correct. This is obviously true. Thus, one municipality includes within its borders a large area of partially occupied suburban land or even of almost completely unoccupied rural land; while the boundaries of another do not extend beyond the strictly urban houses. Furthermore, the official densities of various towns vary from year to year irrespective of the growth of their populations. Thus, Manchester and Liverpool have in recent years widely extended their boundaries, and the density of their populations on acreage is apparently, though not truly, less than that of other towns whose boundaries have remained fixed. The true test of density of population is, as pointed out in a paper read before the Royal Statistical Society in 1891, "the number of persons to each room, not the number of persons on a given acre." We sincerely hope that the instructions to householders and enumerators at the forthcoming census will be so drafted that the information under this head will be more accurately furnished than was the case at the last census. If this be secured, a body of statistics will be available which will throw great light on the problems of housing, and not improbably lead to great and beneficent reforms.

PLAGUE IN AUSTRALIA AND INDIA.

AT the Sanitary Institute on December 12th, Dr. Frank Tidswell, principal Assistant Medical Officer of the Government of New South Wales, gave an address on Some Practical Aspects of the Plague at Sydney. After describing generally the means taken to recognise the plague, and drawing special attention to the great prostration and mental depression, Dr. Tidswell gave an account of the preventive measures taken by the authorities and the attitude of mind assumed by the community. The occurrence of fulminating cases in which death took place very rapidly excited the public mind. The medical man called in to the first cases very properly refused to certify the cause of death, and this was also the attitude taken up by the medical officers of health. Consequently the cases had to be cleared up by a necropsy conducted in the regular legal way. The coroner, being a layman, was naturally enough not ambitious of having even that amount of contact with plague subjects which "viewing the body" involved, and objected further to his morgues being contaminated by *post-mortem* examination upon them. The result was warfare between the departments of justice and public health, which lasted throughout the greater part of the epidemic. The difficulty was only partially overcome by setting aside one of the morgues for plague cases and obtaining the consent of the attendants to take charge of it for a consideration. The attitude assumed by the community of Sydney on the first announcement of a case of plague in their midst by the Public Health Department was one of angry incredulity. The Government was only lukewarm, but did not actually oppose the Public Health Department, and the storm of ridicule was faced by the adoption of preventive measures. A change came, and came quickly, when six plague patients died in rapid succession. The former disbelief gave place to panic-stricken appeals for guidance. The result was that the department of Public Health was able to put more radical measures into operation, and could only deplore the lack of confidence that prevented their earlier application. Dr. Tidswell concluded by describing the organisation of the medical ambulance and hospital staff for plague service, the treatment of patients and "contacts," also the method of dealing with infected houses and areas, and the process adopted for inoculation with Haffkine's prophylactic. Dr. Kaka dealt with the administrative difficulties experienced in Karachi, to which city he was medical officer of health. The city had passed through four epidemics since 1896, with 13,000 recorded cases of plague and some 10,000 deaths. The people would not notify correctly the cause of death, concealing corpses or throwing them into lonely spots or vacant houses. The average Indian believed that when a plague patient was taken away to hospital he had been removed to be poisoned. When a native fell ill it was the custom for the friends and relatives to congregate round the bed in great numbers, and he had seen in the earlier days of the plague twenty and thirty persons round a dying plague patient; these scattering to their own homes became so many foci of infection, and some became directly inoculated with the plague on account of the practice of moving about in houses with bare feet. Religious ceremonies had to be performed in the house after death, and the friends and relatives must sleep on the ground floor where the corpse was kept before final disposal. Should death occur after sunset the body must remain overnight in the house with the mourners watching round it. In his opinion it was not possible to isolate or disinfect the corpse of a person dead from an infectious disease in India. The isolation of the sick and segregation of contacts prescribed by the Epidemic Diseases Act were rendered useless not only by the people but by the plague itself. The native houses, the buildings of wattle and daub, were very dirty, and however carefully disinfected, plague recrudesced in many of them. No help in destroying rats in houses was to be expected from Hindus, who did not kill any animal, not even the ant, which was fed with sugar. If much troubled they might trap a rat, but only to release it in the neighbouring street. The only measure to which the people took kindly in Karachi was evacuation of infected districts, and when they had been educated up to this they formed in successive epidemics their own "voluntary camps," but it was not possible to prevent them taking their sick with them, nor could disinfection of their clothing and belongings be carried out. The people had, however, learnt to destroy by fire what they considered had become infectious. Evacuation had been understood from early times, for the villagers of Gurhwal, on the Thibetan frontier, when plague assumed epidemic proportions, were accustomed to turn out of their huts and encamp at some distance. Even if the natives took to sanitary precautions, the tide of an epidemic would only be stemmed. Something more was needed to prevent repeated appearances of plague, such as measures involving the wholesale destruction of rats and the general protection of the population by a prophylactic serum like Haffkine's—measures which he was sorry to say were impracticable, at any rate, at present. A discussion followed, in which Mr. Shirley Murphy, Dr. Franklin Parsons, and Dr. R. T. Hewlett took part.

"HOW TO FIGHT PLAGUE."

A LECTURE with this title was given on December 12th at the lecture rooms of the National Health Society by Miss Traill Christie, M.D., D.P.H., late Plague Medical Officer, India. The object of the lecture was to give some knowledge of both the clinical and the sanitary aspects of plague, with a special view to preparing nurses and female sanitary inspectors to aid in the fight against the disease should it spread in this country. After a short account of the bacillus and the symptoms of the main types of plague, illustrated by lantern slides lent by Mr. James Cantlie, the lecturer described the preparation and uses of the serums and vaccine of Yersin and Lustig, and of Haffkine's prophylactic. The lecture terminated with an account of the plague measures which have lately proved so successful at Glasgow. Special emphasis was laid on the ways in which women might aid in plague work, not only by nursing, but by careful house-to-house inspection, by distributing immediate relief to the very poor whose belongings might

have to be destroyed or removed for disinfection, and by allaying panic and encouraging the ignorant to submit to prophylactic inoculation, and to daily medical inspection. For further information the audience was referred to the recent Plague Number of the British Medical Journal.

THE SPITTING NUISANCE.

The National Association for the Prevention of Consumption and other Forms of Tuberculosis is making vigorous efforts to check the disgusting and dangerous habit of spitting in places of public resort. It has induced several railway companies to help in this crusade in the cause of public health and decency by allowing cards appealing to the public not to commit this abominable nuisance to be placed in waiting rooms and carriages. Of such cards 1,350 have been sent to the London and North-Western Railway, 500 to the London and South-Western Railway, 1,500 to the Midland Railway, 100 to the North Staffordshire Railway, 350 to the Great Central Railway, and 200 to the Cheshire Lines Committee. The aid of the London County Council has been secured, and 125 cards have been sent for distribution in places within its jurisdiction of that body. Fifty cards have also been distributed to workshops, hotels, and hospitals.

SYPHILIS AND NERVOUS AFFECTIONS AMONG THE ABYSSINIANS.

An interesting contribution by Holzinger, of St. Petersburg, is published in a recent number of the *Psychiatrische Wochenschrift* dealing with the subject of syphilis and nervous affections and other diseases observed by the writer, who was attached to the expedition recently sent by the Russian Government to the Emperor Menelik. In the course of the period during which Holzinger stayed in Abyssinia, his staff had treated medically some 13,000 patients. Alcoholism from the habit of drinking *toedtsch*, a highly spirituous liquor, and other liquors (imported) is said to be a very prevalent vice among the natives. Holzinger's observations on syphilis have a special interest in view of current opinion regarding the pathogenesis of the so called parasyphilitic affections. He found that syphilis was present in about 80 per cent. of the general population, but that it was of a benign type among the Shoans, the Abyssinians, and the Gallas. Syphilitic symptoms were limited to the primary and the secondary stages, tertiary lesions being very rare. There was apparently no special treatment for syphilis among the natives apart from baths and thermal waters. It is of interest to note that Holzinger only saw twelve cases of pure mental affections (psychoses) among 550 cases of various nervous disorders and diseases, and among these not one single case of general paralysis of the insane, which if present he believes could not have escaped his attention in the two great cities of Abyssinia in which he lived. Among the nervous affections were six cases of tabes dorsalis, two of which were without syphilitic antecedents.

AN EPILEPTIC COLONY

The sixth annual report of the Board of Managers of the Craig Colony consists mainly of the report of Dr. Spratling, the Medical Superintendent of the Colony. It is a satisfactory account of the year's working. The number of colonists increased by 50, and the average daily attendance was 355. Only 8 deaths occurred, as compared with 14 in the previous year, and the death rate (less than 2 per cent.) was the lowest since the year of opening. Thirty-one patients were discharged, the majority improved. We gather from the report that it is not so much in the cures effected as in the "marked increase in the ability and number of colonists to become fixed and useful factors in the colony's everyday life," that the *triumph of the true colony system* (our italics are capitals in the original) is demonstrated. Another observation (in capitals) is that as "the homes for the colonists grow smaller . . . . the greater is the measure of success," the two great factors in a judicious colony system being *classification* and *occupation*. We miss in the report the detail of medical and scientific work, which has been so interesting a feature of former reports, but we hope that ere long we may receive these—as suggested—in a separate publication. The photographs of patients at work are very impressive.

THE SANITARY CONDITION OF ST. GEORGE, SOUTHWARK.

The parish of St. George-the-Martyr Southwark, has now been merged with others in the new Borough of Southwark; and in the last annual report that Dr. Waldo, the Medical Officer of Health, has submitted to the Vestry, he has taken the opportunity of sketching the main changes that have taken place in his department during his term of office, which has covered seven years and seven months. Dr. Waldo is not given to glossing over existing evils which it is his duty to strive to remove, and which his authority has on some occasions shown a disposition to ignore, and in striking contrast to the optimism which is more commonly to be observed in the reports of medical officers of health, his reports have generally had a strain of pessimism running through them, which has been doubtless called forth by the special difficulties he has had to encounter in carrying out his duties. He points out that in 1899 St. George's had a population density of about four times that of London as a whole, and 400 times that of the United Kingdom, and he finds no reason to alter the statement advanced for several years past, to the effect that about 1 in every 14 of the population is born, grows up, lives, works, and often dies within the four walls of a one-roomed tenement. As "nearly all the mortality arises from preventable causes, it follows that there is room for large and permanent reduction in the death-rate," and he demonstrates by a table that the parish stands in a worse position with regard to its death-rate than London has stood in any ten-yearly period since 1840. He draws attention to the circumstance that such a comparison is open to fallacies, and he might have added that the fallacies are so numerous and important in instituting such a comparison from the standpoint of a crude death-rate as to rob the statement of almost all its value. Doubtless, however, the death-rate is exceptionally high, and the mortality from diarrhœa, diphtheria, and whooping-cough is excessive in the parish, as is also the infant mortality and the phthisis death-rate. From Dr. Waldo's survey of the vital statistics of the parish since his appointment he concludes, on grounds which are certainly sufficient, that the facts point to "a great and unnecessary waste of human life" in the parish. During the above-mentioned period much improvement in the sanitary condition and administration of the parish has been effected; and Dr. Waldo is to be congratulated on the circumstance that he has succeeded—often in the face of much difficulty—in introducing many reforms in sanitary administration, with the result that he may terminate his duties with the consciousness that he leaves the parish infinitely better—from a public health standpoint—than he found it.

DR. OSLER'S TYPHOID FEVER STATISTICS.

From a general summary in a recent number of the *Philadelphia Medical Journal* we learn that during the ten years ending May, 1899, 829 cases of enteric fever were treated in Dr. Osler's wards in the Johns Hopkins Hospital, Baltimore. Nearly half occurred in patients between 20 and 30 years of age, the rest in patients whose ages ranged from 5 to 70. The mortality rate was 7.5 per cent. The treatment

consisted principally in adequate nursing. The diet was mainly non-peptonised milk, diluted with lime water and egg albumen. Pyrexia was combated with the bath at 70° F., or, if necessary, with ice-cold sponges. If the heart tended to fail alcohol and strychnine were administered, and special complications received appropriate treatment. No intestinal disinfectant or antipyretic drugs were given, however, and but little medicine of any sort. The principal initial symptoms in the 829 cases were headache in 595 cases, anorexia in 414, diarrhœa in 322, constipation in 152, cough in 233, abdominal pain in 227, vomiting in 209, rigors in 200, and epistaxis in 182. Rose spots were present in 80 per cent. of the cases. In 71 per cent. the spleen was palpable. In rather more than 10 per cent. there was a relapse. In children, in nervous patients, and in very protracted cases, the general symptoms having improved, the tongue being clean and the appetite having returned, the temperature curve often showed a daily rise to 100° or 100 5° F. for ten to twenty-one days. If the spleen was not palpable in these cases, and if the urine was free from typhoid bacilli the patient was allowed to sit up, and solid diet was commenced. A persistent subnormal temperature during convalescence was very frequent. Intestinal hæmorrhage occurred in 6 per cent. of the cases, and in 10 per cent. of these there was a fatal termination. In 2.7 per cent. there was perforation, and in 3 of the 23 recovery took place after operation. In 1.9 per cent. phlebitis developed. Albuminuria was observed in 74 per cent., and tube casts in 47 per cent. The diazo-reaction was present in 68 per cent. of the cases examined, namely, in 796 of the 829. Herpes was noted in 29 of the 829 cases, and it is probable that it occurred in a great many more. Additional particulars will be obtainable from the forthcoming studies on typhoid fever in the eighth volume of the *Johns Hopkins Hospital Reports*.

SANITARY ADMINISTRATION IN SERVIA.

SINCE 1881 Servia has had a sanitary law which is due in great measure to Dr. Vladon Georgevitch. The Minister of the Interior is the responsible head in everything relating to sanitary and medical matters. He is assisted by an advisory committee called the Superior Sanitary Council. In each department or district there are departmental doctors under the direct authority of the Minister. They on their side have direct authority over communal doctors appointed by the local authorities. In case of need the aid of private practitioners and even midwives may be called in. The practice of medicine is under the direct control of the Minister. Each commune of 10,000 inhabitants is obliged to have a communal doctor. Those of 20,000 have three and those of 30,000 five. All communes of 5,000 inhabitants are compelled by law to have a communal midwife. Only one pharmacy is allowed for 500 inhabitants, though if circumstances seem to require it pharmacies may be established in smaller communes. In certain cases country doctors are authorised to have and use for profit a portable pharmacy. The town of Belgrade has a hospital and a lunatic asylum, both national. In addition to these two institutions, which take patients from any part of the country, there are communal hospitals, maintained and administered by communal funds and private subscriptions. The departmental and communal doctors act also as official experts. There is at Belgrade a State laboratory for researches connected with legal medicine. The prevention of infectious diseases is provided for as regards other countries by measures of quarantine and disinfection. Vaccination and revaccination are compulsory, so likewise is the notification of small-pox. In regard to other infectious diseases the law makes no mention of any special measure, but it gives to the Minister of the Interior full power to act as may be necessary in case of emergeney. He is also authorised to grant sufficient bursaries to send young students to study abroad. A school for midwives is established by law. The budget for sanitary purposes must be independent of the annual estimates. At present it amounts to nearly £40,000 a year. Since the public health law has been in existence the sanitary condition of Servia has gradually improved. Advantage has been taken of the progress of science; hospitals have been multiplied, laboratories and disinfecting stations have been established in large numbers; the hygienic measures for the prophylaxis of diseases, the control of the food supply, the sanitation of towns and public places, the inspection of schools, etc., have contributed to make Servia in respect of sanitary organisation little inferior to the great nations. In 1875 the number of medical practitioners in Servia was 37; now it exceeds 200. In Belgrade, Nisch, and Cragoujuvac there are medical societies, where sanitary questions are largely discussed. The Servian Medical Society issues a monthly review, entitled *Servian Archives of General Medicine*, which is edited by Dr. J. Danitch, and also a popular monthly review, entitled the *Health of the People*.

COLONIAL MEDICAL QUALIFICATIONS AND THE *MEDICAL REGISTER*.

IN a letter signed "Onlooker," addressed to the *Western Morning News*, the mistaken statement is made that the War Office is unable, under the Medical Act of 1858, to recognise any medical degree not obtained in this country, and an attempt is made to rouse popular indignation against the "obsolete Act" by inferring that the welfare of our troops in South Africa was thus imperilled. Medical readers will, of course, know that the statement and inference are quite erroneous. Medical practitioners with Colonial degrees not only served with the troops during the Boer war, but are still serving as medical officers in that war which still continues, although the correspondent, to whose letter we have referred, styles it "the late war." The *Medical Register* now contains a Colonial List, upon which can be found the names of medical men who have obtained degrees in certain Colonies. The correspondent has fallen into the error by not remembering or not knowing that the Medical Act of 1858 was amended by an additional Act of 1886. By this amended legislation, where a person shows to the Registrar of the General Medical Council that he holds a recognised Colonial medical diploma or diplomas (as hereinafter defined) granted to him in a British possession to which this Act applies, and that he is of good character, and that he is by law entitled to practise medicine, surgery, and midwifery in such British possession, he shall, by application to the said Registrar, and on payment of such fee not exceeding £5 as the General Medical Council may from time to time determine, be entitled without examination in the United Kingdom to be registered as a Colonial practitioner in the *Medical Register*. In the Act power is given to Her Majesty through the Privy Council to define, from time to time the Colonies to which the Act shall apply; but it is laid down that the Colony must afford to the registered practitioners of the United Kingdom such privileges of practising in the Colony as to Her Majesty may seem just. The Colonial medical diploma which is to be registered must be recognised by the General Medical Council as furnishing a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery. The current issue of the *Medical Register* contains the names of eight Universities and one College in British possessions granting degrees which are registrable in the Colonial List. These are the Universities of Sydney, Adelaide, Melbourne, and New Zealand in Australasia; the Universities of Bombay, Calcutta, Madras, and the Punjab in India; and the Ceylon Medical College.

MEDICAL SCHOOLS IN THE UNITED STATES.

According to Dr. Jacobi, in 1899 there were 156 medical schools in the United States, with 24,119 students; the latter have increased 142 per cent. in 21 years. Of the 156 schools 21 call themselves homœopathic, with 1,833 students; 7 eclectic, with 582; and 3 physio-medical, with 85 students. Of the 156 74 are departments of colleges and universities; 82 are separate institutions; and only 152 grant degrees. In addition to these 156 there are 10 medical schools for graduates, who come to the larger cities, mostly New York, for the purpose of taking courses, chiefly in specialities. In 1899 these 10 schools had 1,916 students, of whom 73 were women. Of the 10 graduate schools 3 are in Illinois, 1 in Louisiana, 4 in New York, and 2 in Pennsylvania. Less than 2,000 physicians are taught in these institutions annually, most of them in short courses. They employ 300 professors and 381 adjunct professors and instructors. There can be no doubt (says Dr. Jacobi) as to two effects: first, a good many practitioners of the country have a more or less brief opportunity to improve themselves, and secondly, many practitioners of the large city bask in the sunshine of the professorial dignity. Sometimes it seems as if plain doctors were scarce at present. But there are some left. At the time of the War of Independence there were probably 3,500 practitioners amongst the 3,000,000 inhabitants of the colonies. It is estimated that 400 of these had received medical degrees. In 1798 16 doctors of New York died of what was called "the plague"; there were 94 in New York in 1800. At present there are probably 120,000 practitioners in the United States. The ratio of doctors to population is less than 1 to 600 in the United States, while in Great Britain it is 1 to 1,100, and in Russia 1 to 8,500. Proportionately the United States have four times as many practitioners as France, five times as many as Germany, six times as many as Italy, and six times as many medical schools as either of these countries. Of the 55 political divisions in the United States, including Cuba, the Philippines, and Puerto Rico, 21 report no medical schools. Of the 156 medical schools in 34 political divisions, 80 admit both men and women, 7 women only, and 74 are departments of universities or colleges. One requires a university degree for admission, namely, Johns Hopkins, Baltimore; 12 a school course, 3 a three years', 12 a two years', 97 a one year's course, 29 a common school education, and 2 give no reports; 6 have a nine to ten months' course, 21 an eight to nine, 45 a seven to eight, and 84 less than seven months' course; 141 maintain a four years' course, 10 a three, 2 a two, and 2 a one year's course. As to 1 no information is vouchsafed by the authorities.

MCGILL UNIVERSITY, MONTREAL.

McGill University has deservedly won for itself a high repute among the English-speaking peoples, and has sent forth many strenuous workers, whose names are familiar. The opportunities for observation and research work in the McGill Medical College are great, as the laboratories are well equipped and the appliances for study are admirable. We are reminded of these facts by the receipt of reprints from various journals of studies in various branches of medicine from the pens of four McGill graduates. From the Molson Pathological Laboratory of the University is a paper embodying the results of 300 agglutination tests tried with the B. communis by John McCrae, M.B. Only ten positive reactions were obtained, and none of these in cases which had anything in common except that in three there was some lesion of the intestinal tract. Still it was shown that the more active the bacillus was in acid formation and gas production, the more liable it was to give a reaction. But the fact that so small a number of reactions was obtained is of interest as showing that the presence of what are "facultative toxin-producing bacteria" within the intestines does not result in the circulating blood containing "reactive" substances. Another paper narrates an interesting case of rigors with profuse sweating, in which the diagnosis was established by finding the B. typhosus in pure culture in the urine. This case is carefully recorded by Dr. W. W. Ford from Osler's clinic at the Johns Hopkins Hospital. The diagnosis eventually made was one of "typhoid septicæmia," deduced from the clinical symptoms, and the discovery, late in the disease, of the same bacillus in the circulating peripheral blood stream. Dr. R. T. M'Kenzie, who is demonstrator of anatomy in the University, describes the anatomical conditions in the feet of a case of double congenital talipes equino-varus in which it was found that the angle at which the neck of the astragalus joined the body measured 60 degrees as against the normal 12 degrees, which is a "reversion" to the Simian type. Lastly, Dr. Morrow, the University Lecturer in Physiology, has recorded some observations on the rate of propagation of the venous pulse, based on experiments on dogs. The diversity of the subjects of these papers shows that the McGill University possesses workers in the various fields of science, and with such opportunities as the Medical College offers, it is disappointing to learn that the workers are few. If we could venture to hope that aught that we might say would induce more men to embrace those opportunities, we should urge the graduates and students of the Montreal University to avail themselves of the benefits of extended laboratory work before entering upon the strife of general practice, for which they would then be better equipped.

THE QUEEN'S VISIT TO CIMIEZ.

We understand, although the matter has not yet been absolutely settled, that it is the Queen's intention to pay another visit to Cimiez this spring. Building operations are in progress in the neighbourhood of the Hotel Regina, where Her Majesty has stayed on previous occasions, and cartage work in connection with this might, it is thought, interfere with Her Majesty's comfort. If arrangements to obviate this can be made, as is anticipated will be the case, it is expected that the Queen will again stay at the Hotel Regina, and will probably go to Cimiez towards the end of February—that is to say, a little earlier than in previous years.

Mr. J. Lynn Thomas, F.R.C.S.Eng., has been appointed Surgeon to the Cardiff Infirmary at a specially-convened meeting of the Governors, in recognition of the services rendered to the Welsh Military Hospital in South Africa.

Dr. Thomas Reid has resigned his appointment as Waltonian Lecturer on Ophthalmology in the University of Glasgow. The distinguished oculist has held the lectureship for more than thirty years.

Dr. Arthur Robinson has been appointed Professor of Anatomy in King's College, London, in the vacancy caused by the lamented death of Professor Hughes. The Lectureship on Anatomy in the Middlesex Hospital Medical School is thus rendered vacant.

Sir William Thomson has been asked by the Lord Lieutenant of Ireland to remain Surgeon to the Household during His Excellency's stay in Ireland. Sir William having been recently appointed Surgeon to the Queen in Ireland, in the room of the late Sir William Stokes, had vacated the Surgeoncy to the Household. Sir William Thomson has been re-elected to his seat on the Council of the Royal College of Surgeons, his absence in South Africa having rendered void the election in June.

Dr. Arthur Thomson, Professor of Human Anatomy in the University of Oxford, has been appointed Professor of Anatomy at the Royal Academy of Arts. Professor Thomson previously held the office of Lecturer of Anatomy in relation to Art at the Royal College of Art, South Kensington, and is the author of a *Handbook of Anatomy for Art Students.*

The Committee and members of the Clifton Club, Bristol, entertained Mr. J. Paul Bush at dinner on December 13th. After dinner Mr. Bush, who was Senior Surgeon to the Princess Christian Hospital, gave a most interesting lecture on his experiences in South Africa, and his numerous lantern slides illustrating scenes during the Boer war were much enjoyed by the large company present.

At a recent meeting the Governors of the Royal Infirmary, Newcastle-upon-Tyne, appointed to the newly-created post of Medical Registrar W. Hardcastle, M.B., B.Hy., M.R.C.S., who received his medical education at the College of Medicine in Newcastle, and also at Charing Cross Hospital, London. He held the appointment of Medical Registrar in Charing Cross Hospital, and is therefore fully conversant with the requirements of the office.

The amount applicable for public use under the will of the late Mr. John F. France, F.R.C.S., will, it is thought, be about £25,000. His executors are instructed to expend the sum of £2,000 in purchasing from the Royal Asylum of St. Ann's Society the rights of presentation for necessitous orphan daughters of medical men of not less than five years' practice. Subject to this and certain other bequests of smaller amount, Mr. France has left half his residuary estate in trust for the Royal Medical Benevolent College at Epsom.

At the meeting of the Royal Statistical Society on December 18th the Howard Medal and a cheque for £20 was presented to Dr. J. F. J. Sykes, M.O.H. St. Pancras, for his essay on The Results of State, Municipal, and Organised Private Action on the Housing of the Working Classes in London and other Large Cities of the United Kingdom. It was announced that the subject upon which essays are invited in the present session is The History and Statistics of Tropical Diseases, with special reference to Bubonic Plague.

It is proposed to publish in the British Medical Journal of December 29th a special series of articles in which some account will be given of the state of medical knowledge and education in this country one hundred years ago. Owing to this, and to the fact that the index for the current half year will be issued at the same time, and to the further fact that two English Bank Holidays fall during next week, we must ask the indulgence of members who find answers to their communications delayed.

MEDICAL NOTES IN PARLIAMENT.

[From our Lobby Correspondent.]

Food Adulteration.—The Sale of Food and Drugs Act of last session has not been lost sight of, and two points were raised by questions last week. It will be remembered that the use of preservatives and colouring matter was referred to the consideration of a Departmental Committee. This Committee, we are informed, is not likely to report for some little time, as inquiries are being made in Denmark and elsewhere as to the practice abroad, and this information is necessary to complete the report. Sir Mark Stewart questioned the President of the Board of Agriculture on the standards to be laid down as regards the constituents of butter. The question of standards is admittedly most difficult, and the Board has not yet been able to set up standards for milk and cream, and so the determination of the standard constituents of genuine butter and the amount of extraneous matter to be allowed, cannot be determined at present.

Sickness in the Rhodesian Field Force.—Mr. Seton-Karr made, late on Thursday last week, a strong indictment against the manner in which the 17th and 18th Battalions of the Imperial Yeomanry were exposed to fever in the Beira country. These men were delayed in a most unhealthy district for sixteen days in one place and for fourteen days in another, and as a consequence, of the force of 1,100, 22 died and 200 were invalided home. The remainder were so saturated with malaria that they were incapitated for a time. The Secretary of State admitted the serious amount of sickness, but said the expedition was not organised by the War Office, and the railway by which the troops had to operate was not an English railway, and in spite of assurances to the contrary was not in a working condition. It was consequently impossible to push the troops forward from the unhealthy district. The Secretary of State promised not to be behind in taking up the matter from the point of view of the severe experience which the troops underwent.

Invalided Colonial Soldiers were the subject of a further debate in the Lords last week. The new Under-Secretary, Lord Raglan, said that wherever it was possible the men were sent direct to their own homes from South Africa, but in certain cases they were brought to England, and a depôt was formed at Shorncliffe. He had visited the camp, and found the arrangements of a satisfactory character. In certain cases the men were not medically examined before they went on board ship. "That was an unfortunate circumstance which the War Office very much regretted. In future arrangements would be made to remedy that mistake." The men were provided with superior third-class accommodation and proper dietary. The War Office would see that the men received all the comfort and consideration to which their services and suffering entitled them. Lord Burghclere and Lord Carrington took part in the debate, and expressed satisfaction at the statement of the Under-Secretary, and especially the promise that the men would in future have all the comforts of second-class travelling.

Poisoned Beer.—Mr. Chaplin raised this subject again on December 14th in a question to the President of the Local Government Board. Mr. Long stated that his Board had the matter under consideration from the first, and that Dr. Buchanan, one of their most experienced inspectors, had been instructed to obtain all possible information, including the action taken by brewers and the manufacturers of brewers' sugar, and by the local authorities for detecting arsenic in beer or other substances which contain chemically-manufactured sugar. An expert Committee, consisting of Sir Lauder Brunton, Drs. Stevenson and Luff (the analysts of the Home Office), Mr. Gordon Salamon, Dr. Buckley, and Mr. Fletcher Moulton, M.P., had made a careful investigation on behalf of the Manchester Brewers' Central Association. The brewers had granted every facility to this Committee, and Dr. Buchanan had been in communication with them. The medical officers of health for Manchester and Salford had given cordial co-operation and assistance. The Brewers' Association has pledged itself to recall or destroy all beer brewed with the implicated substances. The number of persons affected and the number of deaths alleged to have been caused will form part of Dr. Buchanan's report, which will be made public as soon as possible. Local authorities have been further recommended to have analyses made of samples of beer and articles of food in which chemically-manufactured sugars may enter. The Board had no power to stop the sale of any particular beer.

The Next Session.—Mr. Balfour announced before this short session closed on Saturday last, that the prorogation would be till February 14th, and that the next session might not meet possibly till February 19th.

THE LEGAL RELATIONSHIP OF PRINCIPAL AND ASSISTANT.

The employment of a qualified assistant, although often the result of a friendly arrangement, involves certain legal responsibilities on one side or the other which occasionally give rise to questions of difficulty, not only from a legal but also from a medico-ethical point of view. While cases involving questions in dispute between principal or assistant seldom come before the courts of law, yet inquiries are sometimes directed to the British Medical Journal which serve to show that the legal as well as the ethical relationship of principal and assistant is not always clearly understood. With a view to forestalling some of these questions we propose to give a short sketch of the law of master and servant, occasionally supplementing the law of the land by references to the ethical laws of the medical profession.

The resolution of the General Medical Council which prohibits the employment of unqualified assistants, renders it unnecessary to refer to persons of that class. The liability incurred by their employment is sufficiently well known.

Nevertheless, the employment of nurses, dressers, dispensers, and surgery attendants, under the immediate personal supervision of the practitioner, which is quite legal, always involves the relationship of master and servant. It is proposed, therefore, to state briefly the law with regard to payment of wages, length of notices, and the right of summary dismissal. The appointment of a *locum tenens*, and the distinction between his duties and those of a more permanent assistant will also be made the subject of comment.

The Agreement.

If the employment of an assistant is to last for more than a year the agreement must be in writing, otherwise it may be by parole. In all cases, however, it is more satisfactory for both parties to have the terms embodied in a written document. This should have a 6d. stamp if it relates to the employment of a qualified assistant, but no stamp need be affixed to an agreement or memorandum for the hire of any labourer, artificer, manufacturer, or menial servant (54 and 55 Vict., C. 39, Sched. I). A dispensary attendant would come under the last heading. A partnership, moreover, may be created by verbal contract, and for this reason, if for no other, it is advisable for a medical man and his assistant to reduce the terms of any agreement between them to writing.

Whether persons are partners is a question of intention to be determined by a consideration of the whole agreement into which they have entered. There is no doubt that an agreement to show the profits and the losses of a particular transaction constitutes the parties partners in respect of it (Greenham *v.* Gray 4 Ir. Com. L., Rep. 501), but this is not likely to affect the medical profession. Receipt of a salary varying with the profits does not of itself constitute the recipient a partner (Harrington *v.* Churchward, 6 Jurist, N.S. 576). The importance of the distinction between the relationship of partners on the one hand and a medical man and his assistant on the other, lies in the fact that a partner is for all purposes the agent of the firm, and as such can hire or discharge any servants that may be necessary for the proper conduct of the partnership business. He cannot do so, however, without the consent of the other partners. Again, supposing one member of a firm is guilty of negligence or incurs any fine or penalty by any wrongful act or omission in the ordinary course of business in the firm, the firm is liable therefore to the same extent as the partner so acting or omitting to act.

Having taken care that no partnership is created, it is necessary to consider the covenants which should be entered into by a qualified assistant. Of these the most important is that which prevents him from practising for a limited period within a given area after the termination of his period of service. A bond to this effect forms a material part of nearly every contract for the employment of an assistant, and even if it is omitted the ethics of the profession forbid a quondam assistant setting up in opposition to his former employer. The legal considerations which affect this "covenant in restraint of trade" need not here be discussed at any length, suffice it to say that before enforcing the court requires to be satisfied (*a*) that its operation is partial as to space; (*b*) that it is reasonable as affording protection to the principal, and (*c*) that there is consideration which is not merely colourable.

The following form of bond, which was printed in the British Medical Journal of August 11th, 1894, p. 345, is usually signed by an assistant at the commencement of his employment:

Know all men by these presents that I (the assistant, A.B., of, etc.) am held and firmly bound to (the principal, C.D., of, etc.) in the sum of (double the amount intended to be claimed), to be paid to the said C.D., his executors, administrators, or assigns, for which payment well and truly to be made I bind myself, my heirs, executors, and administrators, firmly by these presents. As witness my hand and seal this day of , 189 .

WHEREAS the said C.D. has for many years past exercised and practised the profession or business of a surgeon and apothecary (or general medical practitioner) at aforesaid; and whereas it has been agreed between the said C.D. and A.B. that the said A.B. shall become the assistant of the said C.D. in the exercise and practice of the said profession or business of a surgeon and apothecary, at the annual salary of £ , payable (quarterly or monthly, as the case may be), such engagement to be terminable at any time by either party giving to the other calendar months' notice in writing, and whereas it was agreed as part of the terms of such engagement that the said A.B. should not at the termination thereof practise, or assist in practising, as a surgeon or apothecary at , or within miles in any direction therefrom, without the consent in writing of the said C.D., and that the said A.B. should enter into the bond or obligation hereinbefore contained.

Now the condition of the above-mentioned bond or obligation is such that if the said A.B. shall, either as principal or assistant, or either alone or in co-partnership with any person or persons, exercise or practise, or assist in exercising or practising the said profession or business of a surgeon or apothecary, or either of them either at aforesaid, or within the distance of miles in any direction therefrom, at any time after the termination of his said present engagement with the said C.D., without the consent in writing of the said C.D., or, in case of his death, of his executors or administrators first had and obtained; then, and in such case, if the said A.B., his executors, or administrators, shall and do forthwith pay or cause to be paid to the said C.D., his executors, or administrators or assigns the sum of (half the penal sum) as, and by way of, liquidated damages, then the said bond or obligation shall be void and of no effect, otherwise it shall remain in full force and virtue.

Signed, sealed, and delivered by the above-named A.B. in the presence of..... (Seal)

Bonds are required to be stamped as follows:

	s.	d.
If the amount to be recoverable does not exceed £25	0	5
If such amount exceeds £25 but does not exceed £50	1	3
" " £50 " " £100	2	6
" " £100 " " £150	3	0
" " £150 " " £200	5	0
" " £200 " " £250	6	3
" " £250 " " £300	7	6
In any other case	10	0

A covenant not to practise is not confined to active practising. Thus, where a practitioner after having sold his practice went to see one of his former patients at her special request, this was held to be an infringement of the covenant, although she stated that she would not see his successor on any account (Rogers *v.* Drury, 57, *L. J.* Ch. 504).

Salary.

In the case of a yearly employment, it is customary to arrange for quarterly payment of salary. The amount does not then accrue due until the end of each quarter, so that if the contract is put an end to by mutual consent before the end of any quarter, the assistant is not entitled to claim *pro ratâ* for that part of the current quarter during which he has served (Grimman *v.* Legge, 8 B. and C., 324).

Where a man undertakes the duties of an assistant he thereby impliedly agrees to pay over all fees earned by him to his principal. Of course, special provisions for the payment of half fees in certain cases may be made in the agreement, otherwise it is contrary to custom and etiquette for him to receive any fees or money presents from the patients of his principal.[1] It is not usual for the principal to pay an assistant railway fare when coming to the employment in the first instance.

Where an assistant attends a case during the term of his employment which necessitates a further attendance on his part after the expiration of the term, he can claim the fee earned outside the period for which he was engaged,[2] but it is more usual to share such fee with his late principal.

Where the assistant is summoned to give evidence in con-

[1] British Medical Journal, June 1st, 1895, p. 1247.
[2] British Medical Journal, October 15th, 1892.

nection with a case he becomes entitled to certain fees. The question arises, Must he pay over such fees to his principal? This again depends upon the terms of the agreement, but where that document is silent upon the point, it seems that according to the custom of the medical profession he is not entitled to retain money so earned, with the exception of out-of-pocket expenses. An assistant is entitled to travelling expenses incurred when performing his duties; moreover he cannot be expected to walk more than a reasonable distance.[3]

In the case of a *locum tenens*, where there has been no express agreement, all fees earned by him while in service are both legally and ethically payable to his principal. Fees for giving evidence; for attending at the coroner's inquest; and for making a *post-mortem* examination come under this heading.

With regard to fees earned after the termination of the stated period, the same rule applies in the case of a *locum tenens* as that to which we have referred in the case of a permanent assistant.[4]

CONTRACTS OF AN ASSISTANT.

A principal is liable upon contracts entered into by his assistant when he has authorised him to enter into such contracts either expressly or by implication. Thus where an assistant usually orders drugs from a wholesale house on credit, the master will be held liable for all goods of this character obtained on credit through the medium of his assistant, and this liability remains even after the assistant has been discharged, unless the tradesman is duly informed. (Nickson *v.* Brohan, 10 Mod., 109.) Again, where a master, who is in the habit of dealing on credit, wishes to pay cash through his assistant, he should give due notice to the tradesman, otherwise in the event of embezzlement by the assistant the principal will still be liable to the tradesman for goods ordered on credit. (Greatland *v.* Freeman, 3 Esp., 85.)

RESPONSIBILITY FOR ACTS OF ASSISTANT.

With regard to the responsibility of a practitioner for the wrongful acts or negligence of those employed by him, it is probable that a distinction should be observed between a qualified and an unqualified assistant. A qualified assistant, being a registered medical practitioner, is entitled to practise medicine, surgery, and midwifery in his own right (49 and 50 Vict., c. 48, s. 6). Therefore, in every operation which he undertakes he is entitled to the same degree of protection which the law affords to his principal. A search through the law reports fails to disclose any cases of negligence on the part of qualified assistants for which their principals have or have not been held answerable. It is difficult, therefore, to speak with confidence upon the subject. It has been decided, however, that a medical man is liable to a civil action for injury resulting to a patient from his negligence or unskilful treatment, although the patient neither employed nor was to pay him. In the case of Longmeid *v.* Holliday (6, Ex. 761), Park, B., said:

> If a surgeon treats his patient unskilfully and thereby injures his health, he would be liable to the patient, even where the father or friend of the patient may have been the contracting party with the apothecary or surgeon.

Taking the rule to be that the fact of a person submitting to treatment at the hands of any medical man is sufficient proof of employment, it would appear that if the patients of the principal chose to permit his assistant to visit and operate upon them, they place themselves in his hands, and must look to him for satisfaction in the event of negligence on his part.

In dealing with questions of negligence, it should be remembered that a surgeon does not become an actual insurer when he undertakes an operation; he is only bound to display sufficient skill and knowledge of his profession. Upon this point the following remarks of Tindal, C. J. (8 C. and P. 475) are very instructive:

> Every person who enters into the practice of any learned profession, undertakes to bring to it a reasonable degree of care and skill. He does not undertake, if he is an attorney, that at all events you shall gain your cause; nor does a surgeon undertake that he will perform a cure, nor does he undertake to use the highest possible degree of skill: there may be persons who have higher education and greater advantages than he has; but he undertakes to bring a fair, reasonable, and competent degree of skill.

The skill and judgment exercised by a qualified assistant would be looked at from this point of view.

The following is an instance of negligence on the part of a *locum tenens*, for which the principal is ethically responsible. A doctor, who is bound to visit the members of a club employs a *locum tenens* to do the work in his absence. Owing to negligence or carelessness on the part of the latter, a patient is compelled to call in another doctor who charges a fee. Assuming that the patient is entitled to the free services of the club doctor, this fee should apparently be paid by him, although incurred by reason of the negligence of the *locum tenens*.[5] The position of a *locum tenens* with regard to negligence and responsibility therefore, is the same as that of a qualified assistant.

The liability of a practitioner for the acts or defaults of other assistants, such as apprentices, nurses, and clinical assistants, can best be gathered from a consideration of general principles. To state the law upon the subject briefly, an employer is liable for all "torts" (that is, wrongful acts) committed by the party employed, provided (1) they were within the scope of the employment, and (2) that they were either unintentional, that is to say, amounted to mere acts of negligence; or, if intentional, were intended to be done in the interest and for the benefit of the employer (Barwick *v.* English Joint Stock Bank, *L. R.* 2, Ex., p. 265).

An act is said to be within the scope of the servant's employment when, although itself unauthorised, it is so directly incidental to some act or class of acts which the servant was authorised to do that it may be said to be a mode, though no doubt an improper mode, of performing them. Thus, supposing it was part of the duty of a medical student assisting a practitioner to extract teeth, the extraction of a wrong tooth would in all probability be considered a tort for which his principal could be held liable. It is impossible to draw any hard-and-fast line between the classes of acts which are within and those which are without the scope of the employment, and in each case it is material to consider what acts the master really intends the servant to have authority to do.

The two following cases will give some idea as to the responsibility of medical men for the acts of their assistants, whether in the hospital or in the consulting room:

In Hancke *v.* Hooper (7 C. and P. 81) the liability of a surgeon for the acts of his apprentice was discussed. The defendant's apprentice bled the plaintiff at his own request in the basilic vein where there had been an old cicatrix, with the result that the plaintiff's arm became considerably swollen and discoloured. In summing up Tindal C.J. said: "It does not appear that the plaintiff consulted the defendant as to the propriety of bleeding him; he took that upon himself and only required the manual operation to be performed. He must show you that the injury resulted from want of skill; you are not to infer it. If there were no indications in the plaintiff's appearance that bleeding would be improper, the defendant would not be liable for the bleeding not effecting the same result as at other times, because it might depend upon the constitution of the plaintiff. The question is, Has the plaintiff proved that the injury resulted from the inexperience or want of previous knowledge on the part of the defendant's young man?" (The jury found for the defendant.) These remarks would apply to an assistant whose work is confined to his principal's surgery.

In Perionowsky *v.* Freeman and Anr. (4 F. and F. 977), the plaintiff, who had been a patient at St. George's Hospital, sued two of the surgeons of that hospital for maltreatment there by causing him to be placed in a bath so hot that he was scalded and injured. It was proved that the bath had been ordered by the defendants, but was actually administered by the nurses; that the defendants were not present at the administration, and that it was no part of their ordinary duty personally to superintend and direct such administration. The report of the case does not say whether the nurses were paid or no. Cockburn, C. J., in summing up to the jury, said: "In our great hospitals it is indispensable that such matters as baths should be left to the nurses, and the question is whether the defendants were present when the man was put into the bath, or were near enough to observe what occurred. The defendants will not be liable for the negligence of the nurses unless they were near enough to be aware of it, and to prevent it. No doubt persons who go as patients to hospitals are not to be treated with negligence, but, on the other hand, medical gentlemen who give their services gratuitously are not to be made liable for negligence for which they are not personally responsible." The jury returned a verdict for the defendants

CRIMINAL RESPONSIBILITY.

"If a physician or surgeon, even though he is not a regular or licensed one, acting with due care and skill, gives his patient a potion or plaster intending to do him good, and contrary to the expectation of such physician or surgeon it

[3] BRITISH MEDICAL JOURNAL, June 3rd, 1899, at p. 1383.
[4] BRITISH MEDICAL JOURNAL, October 2nd, 1897, p. 940.
[5] BRITISH MEDICAL JOURNAL, February 7th, 1891, p. 320.

kills him, this is neither murder nor manslaughter, but misadventure." Such is the law as laid down by Lord Hale, who was also heard to remark, "God forbid that any mischance of this kind should make a person guilty of murder or manslaughter" (1 Hale, P.C. 429). Since the Medical Acts the unlicensed "physician or surgeon" has ceased to exist, but the words of Lord Hale apply to the unqualified as well as to the qualified assistant, both of whom labour in the best interest of the patient. In the event of an assistant being guilty of criminal negligence, it may be taken that the principal is not criminally responsible unless he expressly command the acts or personally co-operate in them (see R. *v.* Bennet, 28 *L.J.*, M.C. 27). Nevertheless, the Court has held that in certain offences which are penalised in the Public Health Acts and the statutes thereunder, the master is criminally responsible for the acts of his servant.

Termination of the Employment.

Generally speaking, either party is entitled to notice before an agreement for service can be terminated. The length of the notice which should be served is in some cases specified in the document itself, but in the absence of any definite provision the following rules are of general application. In the case of a yearly hiring a three months' notice, terminating on a quarter day (though this is not essential), is amply sufficient. The rule which provides for the giving of one month's notice in lieu of wages is founded upon custom, and only applies to menial servants. Suppose the employment is for a year with salary payable quarterly, and that for some reason or other the agreement is dissolved by mutual consent in the middle of a quarter. In such a case the assistant cannot claim any portion of the wages due for that quarter (Grimman *v.* Legge, 8 B. and C. 324). It would be otherwise, however, if the length of the period of service were indefinite (Thomas *v.* Williams, 1 A. and E. 685).

If a *locum tenens* accepts an appointment for a month certain he must fulfil his contract to the end of the month before he can claim any part of the salary, as any breach of the agreement involves a forfeiture of the whole sum[6]. As to whether a reasonable "notice" has been given is a question for the jury (Green *v.* Wright, 1 C.P.D., 591). Where the employment is for an indefinite period, an assistant may claim his wages up to the date of the termination of the contract whether he has given or been given notice or not. Thus, in the case of Bayley *v.* Rimmell (1 M. and W., 506), an assistant surgeon sued his employer for wages under the following circumstances. He had been employed for nearly half a year, during which time payments had been made on account of wages, not according to any yearly amount or at any definite periods of the year. He subsequently fell ill, and was taken to hospital, and after his recovery did not, nor did the defendant require him to, return to his employment. It was held that as there was no evidence of hiring for a year he was entitled to recover on a *quantum meruit* for work done.

Dismissal without Notice.

In some cases a principal is entitled to dismiss his assistant without notice. Such a dismissal, if justifiable, has the effect of dissolving the contract of service, and may entail a serious loss to the assistant. Thus, if the salary is payable yearly—and the assistant has been guilty of conduct which entitles the master to dismiss him without notice—he forfeits all right to wages in respect of the portion of the year actually served (Ridgway *v.* The Hungerford Market Co., 3 Ad. and E., 171). But if the contract is put an end to by virtue of a power of defeasance exercisable by either party in accordance with the terms of the deed salary is payable *pro ratâ*.

The following instances of misconduct on the part of a servant or assistant have been held to warrant a dismissal without notice:

1. Being frequently absent and often sleeping out without leave.
2. Refusing to work during customary hours.
3. Habitual neglect of duties.
4. Abusing and insulting the master, and disturbing the peace of his family.
5. Claiming to be a partner.
6. The assertion of rights and privileges not warranted by the contract or the nature of the service.

If any such justifying cause for the dismissal exists, the master may use it as a defence to an action brought by the assistant for wrongful dismissal, although it was not itself the actual ground of the dismissal. On the other hand, temporary absence without leave, occasional insolence of manners and sulkiness, occasional disobedience in matters of trifling moment, do not afford sufficient ground for dismissal and dissolution of the contract of hiring and service without notice.

Where a servant or assistant feels that he hasbeen wrongfully dismissed, he should endeavour to obtain employment elsewhere, for, in the event of his bringing an action for wrongful dismissal, if it can be shown that the plaintiff could have immediately obtained similar employment equally on favourable terms, he will only be entitled to nominal damages (Macdonell *v.* Marsden, 1884, 1 Cab. and E. 281). In deciding what damage shall be claimed in an action for wrongful dismissal, the plaintiff should be careful to include arrears of salary, for recovery of damages precludes an action for wages *pro ratâ* (Goodman *v.* Pocock, 15 Q.B. 576).

Assistant Setting up in Opposition.

As we have already seen, there is no rule of law which prevents a quondam assistant setting up in opposition in cases where he has not executed a bond. Nor can he be restrained from soliciting the patients of his former principal. In such cases—to use the words of Lord Kenyon, C.J., in Nichol *v.* Martyn (1 Esp. 732, 1799)—"The conduct of the defendant may not perhaps be accounted handsome, but it cannot be said to be contrary to law." It goes without saying that such conduct is contrary to the most elementary principles of medical ethics.

In the case of a *locum tenens* employed by the month there is no implied undertaking on his part not to set up in the immediate neighbourhood.[7] His doing so, however, is contrary to the moral code.

Unpaid Assistants.

So much gratuitous work is done in the medical profession that it seems necessary to say a word or two with regard to the responsibility of a medical man for the acts and defaults of an unpaid assistant. It may be broadly stated that in order to constitute the relationship of master and servant there is no necessity for any consideration for the service (Wheatley *v.* Patrick, 2 M. and W., 650), and the employer will be liable for the manner in which the act was done just as if the servant were in his pay. Hence, any remarks which have been made with regard to the responsibility of a medical man for the acts of his assistant are applicable whether that assistant receive a salary or no.

Right to a Character.

When discharging an assistant or a servant there is a duty imposed upon the master to state fully and honestly all that he knows either for or against the servant, and communications thus made are privileged (Pattison *v.* Jones, 8 B. and C., p. 584); but no action will lie against him for refusing to give any character at all (Carrol *v.* Bird, 3 Esp., 201). If after he has given a favourable character other facts come to light which force him to alter his opinion, it is his duty to inform the person to whom he gave the previous testimonial of the change (Gardner *v.* Slade, 13 Q. B., 706). In the absence of express malice any character given by a practitioner is privileged, and no action [illegible]

The House Governor of the Newcastle Royal Infirmary.—Old Newcastle students will receive with regret the announcement that Mr. R. R. Redmayne, M.A., who has acted with great urbanity and ability as the House Governor of the Royal Infirmary for upwards of twenty-one years, has resigned his post. The good wishes of many past house-physicians, house-surgeons, and students go with him into his well-won retirement. The Governors have elected Mr. R. H. P. Orde, B.A.Cantab., to fill the vacancy caused by Mr. Redmayne's resignation. Mr. Orde has gained a large experience of infirmary duties in a similar, but junior, position in the London Hospital. This he brings with him to Newcastle, where, apart from the fact that he is a North countryman, a kindly welcome will await him on the assumption of his duties at the commencement of the New Year.

[6] British Medical Journal, October 2nd, 1897, p. 939.

[7] British Medical Journal, July 3rd, 1897, p. 03.

THE PLAGUE.

PLAGUE AND PLAGUE MEASURES IN THE TURKISH EMPIRE.

[FROM OUR CORRESPONDENT IN CONSTANTINOPLE.]

THE Turkish Empire has for some time past been quite free from plague, with the exception of a few sporadic cases in Egypt.

SMYRNA.

The small outbreak in Smyrna was limited to the occurrence of 22 cases, the first of which was recognised on May 7th, and the last on July 31st. Of these 22 cases 13 were severe, 5 were of medium severity, and 4 were mild. Nine of the patients died. The Greek community appeared to be the most susceptible to the disease, and of 7 patients of this nationality as many as 5 died. The other cases and deaths were distributed as follows: Turks, 7 cases and 2 deaths; Armenians, 3 cases and 1 death; Jews, 4 cases and 1 death; and Catholics, 1 case, which recovered. The large majority of the patients were drawn from the poorer classes of the population. The origin of the plague in Smyrna was never ascertained, but according to the official report of Dr. Lontfi Bey and Dr. Mizzi the infection was almost certainly brought from Egypt, and not by pilgrims returning from the Hedjaz, as the disease appeared in Smyrna before the pilgrims began to return from Mecca.

BEYROUT.

In Beyrout four cases of plague and a doubtful fifth were discovered on July 16th in a shop devoted to the preparation and sale of sesame-oil and sweetmeats. The building, in one of the most frequented parts of the market place, was large and very old. Four of the patients were found lying in a room on the upper storey; of these, three had worked in the shop for many months preceding the appearance of the disease, the fourth had come from a neighbouring village to see his brother, one of the patients, who was already ill before his arrival. All the patients were Mussulmans of the village of Damascus. The discovery of these cases gave rise to a great deal of alarm in Beyrout and the Lebanon, and large crowds of panic-stricken people fled from the town. The evidence that the cases were true plague was conclusive. In four of the patients the plague bacillus was found by the Sanitary Medical Officer of Beyrout, and also independently by a Professor of the French school of medicine in that town. The source of the infection was as obscure as in the case of Smyrna.

TREBIZOND.

A single case of plague occurred in Trebizond on June 11th. The patient was a child, and here also bacteriological inquiry left no room to doubt that the case was truly one of plague.

INFECTION OF A SHIP.

On August 22nd a case of plague was discovered in Constantinople on board the ss. *Niger* belonging to the Messageries Maritimes Company.

The ship, a large passenger steamer, left Constantinople on August 2nd; she called at Dardanelles, Clazomene, and Samos, and arrived at Beyrout on August 6th. Thence she proceeded to Mersina, and thence to Alexandretta, where she arrived on August 9th, and stayed five days. At this port the passenger, who later became the plague patient, came on board, on August 14th. On the same day the *Niger* left Alexandretta, and after calling at Larnaca, Latakia, and Tripoli (Syria), arrived at Beyrout for the second time on August 17th. From there she went to Samos, Clazomene, and Dardanelles, and reached Constantinople early in the morning of August 22nd. The ship was here granted free pratique, and 160 passengers were allowed to land. But at 1.30 P.M. on the same day one of the six passengers remaining on board (all of whom were intending to proceed with the vessel to Marseilles) was found to be ill, and clinically and bacteriologically the disease was proved to be plague. It was never known positively where the patient, an Armenian boy, contracted the disease. The most plausible suggestion was that the infection had remained in Beyrout, after the occurrence of the five cases mentioned above, and that it had in some way been brought on board this steamer, which, as will be shown immediately, must have been rather deeply contaminated. On the case being reported, an extraordinary meeting of the Board of Health in Constantinople was summoned, and it was decided that the vessel should at once proceed with the patient on board, to the lazaret at Clazomene, where the patient should be landed, and the ship, after disinfection, allowed to proceed *en contumace* on her journey to Marseilles. This decision was carried out, but on the arrival of the *Niger* at Clazomene a second patient (a steward) was discovered. He had sickened practically at the same time as the boy, and both probably caught the infection from a common source. Both appear to have been ailing the day before the *Niger* reached Constantinople, but the medical officer on board at the time of the *arraisonnement* of the ship in that port was apparently unaware of the one case, and did not regard the other as suspicious. Both patients were landed at Clazomene, and the vessel left *en contumace* for Marseilles after disinfection. At Marseilles two more cases of plague were discovered on board, and the *Niger* and her passengers were subjected to the various measures prescribed by the French sanitary regulations for infected vessels.

The occurrence of four cases of plague on this vessel within a short period shows clearly that she was somewhat extensively infected. Fortunately the infection does not seem to have been carried ashore by any of the 160 passengers who landed at Constantinople. Arrangements were made to ascertain, as far as possible, the names and addresses of these passengers, and to subject them to surveillance for ten days; but it must be doubted whether these arrangements were very thoroughly carried out, and it was indeed admitted that between 30 and 40 could not be traced at all. The incident is important. The infection seems to have clung to the vessel or its contents rather than to the people on board.

"OBSERVATION," DISINFECTION, AND INSPECTION *v.* QUARANTINE.

The plague in Egypt during the past summer has been of the character of a very mild but lingering outbreak. So far as concerned the measures taken in Ottoman ports to prevent the spread of plague to them from Egypt, they dealt solely with arrivals from Port Said and Alexandria. Ten days' quarantine—the measure still enforced by the regulations of the Turkish Sanitary Administration—was imposed against both Egyptian ports; but on August 9th this was reduced to forty-eight hours' observation with disinfection for arrivals from Port Said; and on October 2nd all measures were removed in regard to Port Said, with the exception of a medical visit on ships arriving at that port. On the latter date the measures against Alexandria were reduced to forty-eight hours' observation with disinfection, and on October 30th this was removed and a medical visit alone retained. On November 13th, however, the Board of Health learnt of 2 fresh cases of plague in Alexandria—one a native policeman, the other the captain of a British steamer, the *Dundee*. A long and animated discussion ensued at the Board in regard to the measures to be adopted. The ordinary course would have been to apply the *règlement* usually adopted by the Board for infected ports and return to a quarantine of ten days. But—and the matter is one of very real importance—the Board had, by its previous decisions, practically modified the *règlement*, and had admitted a new principle in dealing with epidemic disease. As in the case of Smyrna so in that of Alexandria, plague lingered long after its epidemic phase as a sporadic disorder, isolated cases continuing to occur at long intervals. This phase of plague had not been foreseen or provided for either by the Constantinople Board of Health in its regulations, nor by any of the International Sanitary Conferences in their successive conventions. The mechanism provided by these is clumsy and irksome in the sporadic phase of an outbreak. If their letter be followed, quarantine and other measures are necessarily imposed and removal at short intervals, and arrivals from infected ports are alternately subjected to very strict measures and to none at all. The real state of the infected port in question has not probably altered in the least in the meantime, the occurrence of successive cases at intervals not implying any real change in conditions, but merely being an index that the infection is still there, but in a mild, inactive form. It consequently seemed more logical to the delegates of the Ottoman Board of Health to proceed somewhat differently from the letter of the *règlement* in regard to Smyrna, Port Said, and Alexandria: and in each instanee, when the "epidemic" phase of plague was over, and the "sporadic" phase well established, instead of removing all measures in Ottoman ports against arrivals from those ports, an observation of 48 hours was imposed, and left in force even for some weeks after the apparent disappearance of plague altogether from them. In the case of Alexandria this period of observation was kept in force from October 3rd to October 30th, when, no more cases of plague being reported thence, it was removed altogether. When, a fortnight later, the two fresh cases in Alexandria mentioned above were reported, the Ottoman authorities were desirous of reverting to the *règlement*, and of enforcing ten days' quarantine as before—in a word, of beginning the cycle of measures again *de novo*. But fortunately wiser arguments prevailed. It

was successfully urged by the majority of the delegates to the Board that it would suffice to revert to the forty-eight hours' observation with disinfection; that the occurrence of these two cases did not alter the "sporadic" character of the disease in Alexandria; and that, had they occurred before October 30th (the date when all measures against that port were suppressed), the suggestion to revert to ten days' quarantine would never have been made. It was therefore agreed to impose no more than forty eight hours' observation with disinfection on arrivals from Alexandria.

This decision was taken on November 13th. Two days later a *tezkeré* was received from H.M. the Sultan praying the Board to reconsider this decision, and an extraordinary meeting was held on November 16th. Greece had, in the meantime, put on a quarantine of ten days against Alexandria, and the fear was expressed that the measure taken by the Board was insufficient to safeguard Ottoman ports from the risk of infection. Almost unanimously, however, the delegates were of opinion that the action taken was for the best, and that it was unnecessary to lengthen the period of observation. It was shown that in retaining an observation of 48 hours for some weeks the Board had acted, not less, but more strictly than the provisions of the *règlement*; that in doing so, it had foreseen the probability, amounting almost to certainty, that fresh cases of the disease would occur in Alexandria; and that a much better safeguard against the introduction of infection was provided by a 48 hours' observation kept in force for some weeks than an alternation of ten days' quarantine with no measures at all. This explanation has proved acceptable, and the measure referred to now remains in force.

Prevalence of the Disease.

India.

For the week ending November 24th the plague mortality for all India showed a decrease from 2,192 during the previous week to 1,899.

In Bombay city there was a decrease by 17 in the plague mortality returns during the week ending November 24th. Even this increased figure, however, is small in comparison with the corresponding week in 1899, when the fatal plague cases numbered 137, compared with 58 in 1900. As, however, the tendency of all plague recrudescences is to develop later during each year the disease appears, there is no guarantee that the usual cold weather outbreak may not yet occur.

Calcutta.—On November 22nd a fresh case of plague and 1 death from plague were reported. On November 23rd 3 fatal cases occurred, and on the 24th 1 fatal case of plague. On November 27th 5 fresh cases of plague were reported in Calcutta. This news is regrettable, as Calcutta had been practically free from plague for several weeks previously.

In the Gurdaspur district, near Lahore, 37 cases and 27 deaths from plague occurred in the village of Darnam during the first three weeks of November, and later news to hand on November 27th states that there had been 11 more deaths.

In the Mysore state plague is still severe. In Bangalore city for the week ending November 16th the number of deaths from plague were 149; and in the cantonments 185. In the city of Mysore during the same period 192 deaths from plague occurred.

During the week ending November 10th, in the Mysore State, there were 1,127 cases and 809 deaths from plague, compared with 969 cases and 705 deaths during the week immediately preceding.

Mauritius.

For the week ending December 13th, 39 fresh cases of plague and 27 deaths from the disease occurred in Mauritius.

WITH THE PEKIN RELIEF COLUMN.

(*From our Correspondent with the China Expeditionary Force.*)

The few days at the end of July and beginning of August that preceded the advance on Pekin were occupied in busy preparations, and none who were in Tientsin at the time will ever forget their experience. The heat was terrific and equal to Calcutta at its worst. Troops of every nationality arrived almost daily, and the streets gave ever-changing views of the different branches—cavalry, artillery, medical, commissariat and transport of the various armies—with here and there groups all eagerly discussing the one absorbing question—the date of the advance.

No. 43 Native Field Hospital was the first of our hospitals on the scene and was quartered in the buildings belonging to the Tientsin Club. It was soon followed by other field hospitals, and almost every day saw the arrival of a section until the Club buildings were over-filled and a second hospital had to be established in the Taku Road.

The Medical department of the Relief Column was under the command of Colonel Rainsford, R.A.M.C., and included

B. Section No. 22 British Field Hospital, with Major Manifold, I.M.S., and Drs. Myers and Molyneux (Civil Surgeons) attached.

A. B. and C. Sections No. 43 Native Field Hospital, under Captain William Carr, I.M.S., with Lieutenant Wilmore, I.M.S., in charge of A. Section, and Lieutenant Meakin, I.M.S., in charge of C. Section.

A. Section No. 42 Native Field Hospital, under Captain Harriss, I.M.S.

In addition to these were the regimental medical officers:

Major Whitchurch, V.C., I.M.S., 24th P.I.
Major Mould, I.M.S., 1st B.L.
Captain Herrick, I.M.S., 1st Sikhs.
Captain Walton, I.M.S., 7th Rajputs.
Captain Prynne, R.A.M.C., 2nd Royal Welsh Fusiliers.
Surgeon Hall, R.N., Naval Brigade.

The medical work of the column was very heavy, and the discomfort and strain of a hurried march with a minimum of transport fell, perhaps, more heavily upon the medical department than upon any other. It is true that the actual number of casualties at the battles of Pei Tsang and Yang Tsun, and during the entry into Pekin, were few, but the heat told very heavily upon the men, and each day the hospitals had all they could do in treating and bringing on men knocked over by the heat. Owing to the difficulty of obtaining transport in Tientsin, no riding mules or ponies were supplied to the hospitals until the last three days before we reached Pekin, and the sole means of transport for men unable to walk was the Indian dhoolie, with its six Kahars to carry it.

The hospital baggage had been reduced to the minimum consistent with effectiveness, and all, with the exception of two mule loads for each section, was carried by the junks on the river. Unfortunately, the great difficulties of moving the junks up the river, due to the unwillingness of the coolies employed, combined with the shallowness and tortuosity of the river, made it impossible to get the junks up to the camping grounds until long after the Force had reached them, and in some cases they did not arrive until after the Force had resumed its advance on the following day. Thus we were dependent for the most part upon what we could carry on two mules, and this made the treatment of the sick much more difficult than it would have been had it been possible to get the junks up in time.

At the battle of Pei Tsang, on August 5th, the wounded were taken in dhoolies straight from the field to junks specially prepared for them, which landed them in Tientsin the same evening. Only first field dressings were applied and morphine administered; no difficult surgical procedure was undertaken.

At the battle of Yang Tsun on the following day we were, on the other hand, far in advance of the junks, and our baggage was not available till the morning of August 7th.

The Start.

The main body left Tientsin on the afternoon of August 4th, having been preceded by an advance guard of the 24th P.I., with C. Section No. 43 N.F.H. the day before, and bivouacked for the night in pouring rain about 4 miles from Tientsin. The advance on Pei Tsang began at 3 A.M. the next morning, still in pouring rain and inky darkness. The loading of the mules and the march off were more unpleasant than any description would suggest, but all moved off satisfactorily, and the action began at daybreak.

The Action at Pei Tsang.

The Japanese had the honour of making the chief attack, and lost heavily. I had an opportunity of watching the work of their medical department, and their methods deserved the highest praise. The wounded were rapidly brought to the dressing stations in ordinary stretchers, and laid upon waterproof sheets. Their wounds were attended to, nourishment was given them, and they were quickly transferred to a temporary hospital established in a house near the river bank, from which they were subsequently taken by boat to Tientsin. During the morning our hospitals were several times under a heavy shell and rifle fire, but luckily escaped without casualties. At one time, in crossing an open plain, either our conspicuousness or the proximity of an ammunition train brought a heavy shell fire upon us. Happily the shells failed to burst or we should have suffered heavily, for they fell all round us.

The Action of Yang Tsun.

The attack on Yang Tsun was made at about 11 A.M., after a hot and dusty march of eleven miles across a flat plain covered with high crops of millet. The dhoolies followed behind the troops, bringing on the wounded in the direction of the enemy's position, where our camp was ultimately to

be. The shell and rifle fire was very heavy, and it seems extraordinary that so small a number of the attacking force should have been hit. The Americans, advancing on our right, suffered heavily from shell fire, and in one place I saw and gave what assistance I could to about 20 of their wounded waiting for their surgeons, who were busily occupied elsewhere. They most kindly returned the compliment by bringing into our camp two of our wounded for whom I had no means of transport.

The heat was very severe, and no water could be obtained beyond what little the men had in their bottles—most of them having been emptied before the battlefield was reached—and the chaguls or canvas bottles hanging from the dhoolies. There were many cases of sunstroke, one in a private of the Welsh Fusiliers ending fatally.

About half a mile from the village of Yang Tsun a dressing station was established, an arm shattered by a shell was removed, bandages were looked to, and hot broth and tea were given to the wounded. Subsequently the wounded were brought on to the camping ground and made as comfortable as possible for the night.

Never have I had such respect for the much-abused Indian dhoolie as on that day. To put a man into a dhoolie, shaded by its green Willesden canvas cover from the fierce heat of the sun was treatment in itself, and at night time the dhoolies were beds and tents at the same time. I was amused to overhear the comments of two Americans—both of whom looked very much done up with fatigue and heat—in forcible commendation of the British army, with the comfort of an Indian dhoolie as their text. The Americans had a very serviceable pattern of mule ambulance waggon, which we would have been very glad of during the march, but with the exception of our own I saw no covered stretchers among the whole force.

The night after Yang Tsun was a very trying one, and we had a busy time. The more serious wounds and those from which hæmorrhage was still going on were re-dressed, a large piece of shell was removed from a thigh, and a badly depressed compound comminuted fracture of the skull was elevated, large pieces of bone being removed.

The absence of clean water was our chief trouble. The river water was peasoup like in colour and consistence, and dead Chinamen floated down from time to time. We precipitated most of the mud by adding alum, filtered it with a Berkefeld hand filter, boiled it, and got an unpleasant but drinkable water. All this, however, took a long time, and it was impossible to get anything like the quantity of water we required for cleansing the wounds.

The following morning we awoke to find the junks had arrived during the night, and the wounded were put on board, under the care of Dr. Myers, and sent down to Tientsin in tow of a stern-wheeler. We heard subsequently that one of the hospital junks sank during the night, and that Dr. Myers had the greatest difficulty in getting the wounded safely transferred to another junk.

THE ADVANCE TO PEKIN.

From Yang Tsun to Pekin was a series of trying marches, either starting early in the morning and arriving about midday at the new camp, or starting late in the afternoon and arriving at, or sometimes after, midnight.

There was no wind, and the road lay chiefly between high crops, 12 ft. to 14 ft. in height, which effectively prevented any ventilation. The air appeared to be saturated with moisture, for one's skin was never dry, even when sitting still.

It would have been interesting to discover any marked difference between the troops of different nationalities as regards the number falling out with heatstroke, but I had no numbers to compare, and judging from personal observation, I cannot imagine that there was any great difference. British, Indians, Americans, Japanese, Russians, and French seemed to fall out steadily under the oppressive heat. Horses and ponies suffered heavily too, and many died. In one day the cavalry lost eight horses and the artillery three.

The water obtainable on the march was never good—at the best it had a strongly brackish taste, and I imagine that the water was responsible for a form of sickness which attacked most of the force at one time or another, and became known as "Pei Ho disease," after the river Pei Ho, from which our drinking water was obtained. It was characterised by nausea and sometimes vomiting, slight fever, and generally mild diarrhœa. As a rule it lasted about three days. The natives (Indian) and, I am told, the Japanese also, suffered a good deal with colic and diarrhœa. This might easily be explained by the number of green maize heads and water melons which they gathered and ate while on the march. Dead Chinamen and dead horses were frequently passed on the road, and their odour seemed to accompany one throughout the march.

The 14th of August, the day of our entry into Pekin, was by far the heaviest day of the march, and perhaps the hottest, but the excitement of reaching our objective, and the keenness to learn whether the Legations were safe and our end gained, was, I think, responsible for the fact that the troops bore it so well. Preparations for the march began at 2 A.M. at Tung Chow, and it was nearly 8 o'clock in the evening before we settled down to a meal in the Temple of Heaven.

I think that all who took part in the march of the column would endorse the opinion that none did their work more pluckily or better, or gave less trouble, than the dhoolie bearers, who carried their dhoolies—generally full—not only without a grumble, but with a cheerfulness that was most marked.

THE BACTERIAL PURIFICATION OF SEWAGE.

THE *Reports of the Thompson-Yates Laboratories*, Liverpool, contain in Part 1 of vol. iii, to which we have already referred, some interesting articles on subjects connected with purification of sewage.

I.—ACTION OF DIBDIN CONTACT BEDS.

An article on the Action of the Dibdin Contact Beds on Ordinary Crude Sewage and on Storm-water Sewage at West Derby (population 35,000) gives an account of the results produced (1) by the action of burnt ballast filter beds upon impounded storm-water after passage through a coke-screening chamber; (2) by the action of double contact beds upon the crude sewage, without any preliminary treatment. These double contact beds were constructed in order to assist the purification by land irrigation and land filtration already existing.

A very marked improvement was thus produced, not only upon the farm, but also upon the river Alt into which the final sewage effluent flows.

The contact beds, after working continuously for about nine months, became choked, so that it was decided to give them a rest. The report gives no details of chemical analyses by which the approximate amount of chemical purification might be estimated. The results of a large number of bacteriological analyses of the crude sewage and of the various effluents are recorded. Apparently these experiments were made in order to determine whether and to what extent the number of B. coli communis, B. enteritidis sporogenes, and of bacteria generally was modified by the treatment. According to the report, the total number of bacteria is greatly reduced by passage through the double contact beds (for example, from an average of several millions per c.cm. down to an average of about 600,000 per c.cm.). The number of B. coli communis in the effluents is considered high (though far less than those found by Houston in the effluent from the single contact bed at Crossness)[1] The average number of bacteria in the effluent from one of the second contact beds was 614,158; of B. coli communis, 10 036 per c.cm. It is very interesting to note that in the land drain effluent the average number of bacteria per c.cm. was only 17,887, of B. coli communis only 50 per c.cm.

The double contact beds do not appear to have produced a marked effect upon the numbers of B. ent. sporogenes present.

With regard to the reduction in the numbers of the B. coli communis, it may be inferred from the results recorded that this was very considerable. Unfortunately, however, no estimate of the number of these bacteria in the crude sewage is recorded, so that it is not possible to form any idea with regard to the actual amount of this reduction. (It may be

[1] BRITISH MEDICAL JOURNAL, August 18th, 1900.

remembered that Houston made a large number of analyses of the crude sewage of London at Crossness, and of the effluents from the first contact beds. In these effluents he found that the numbers of B. coli (or closely-allied forms) in 1 c.cm. varied from 100,000 to 1,300,000, numbers very nearly equal to those which he found in the crude sewage.)[2]

The report gives no details with regard to the manner of collecting samples, the methods of cultivating and counting, and the cultural and other characteristics of the special bacteria reported as being found and enumerated. Without such details it is not possible to estimate the value of the results recorded.

II.—Sewage Disposal in Germany.

In a Note on Experiments on Sewage Disposal in Germany, attention is called to nineteen excellent papers on this subject in the supplement to the *Vierteljahrschrift für gericht: Medicin und oeffentliches Sanitätswesen Jahrgänge, 1898 und 1900.*

Experiments have been carried out in various places by sanitary officials and engineers acting in harmony with Government experts, local authorities, and practising engineers. Such co-operation is contrasted with the methods in vogue in this country, where the local authority is required to submit a definite scheme to the criticism and judgment of the Local Government Board, instead of receiving expert advice and suggestion from that department.

The English systems of purification have been adopted in several places—for example, Cameron's "septic tank" with filter beds, and Dibdin's contact beds. The results obtained by these methods have not been so successful as in England. In the installations described the "septic tank" failed to reduce the sludge sufficiently, and the contact beds sooner or later became clogged with sludge.

A process of precipitation of the sewage by ferric sulphate, after admixture with powdered lignite, followed by sedimentation and a final sterilisation of the effluent with bleaching powder, produced a sterile and non-putrescible effluent. "The process (it is stated) is of considerable importance, because it demonstrates the practicability of obtaining a bacteriologically perfect effluent and of disposing of the sludge." As might be expected, however, it is very costly.

III.—"Fungi" Found in Sewage-contaminated Water.

In a note upon the two species of "fungus" commonly found in sewage-contaminated water, the leptomitus lacteus and the sphærotilus natans, it is stated that their presence indicates sewage contamination.

The leptomitus forms many soft tufts, which may be white, rusty-coloured, or black, springing from the sides of drains or attached to stones. The rusty colour indicates that the stream in which it is found is well aërated. In the absence of oxygen it becomes black and putrefies. Under the microscope it is seen to consist of long branching filaments, constricted at regular intervals and bearing "zoospores" on the terminal segments.

The sphærotilus (very similar to the leptomitus and also to beggiatoa) indicates much greater pollution. It also resembles carchesium lachmanni, consisting of long white wavy masses, like cotton-wool, but under the microscope is seen to be made up of chains of bacilli or long undivided filaments. The sphærotilus also occurs in, and may cause blocking of, aërobic contact beds.

Photographs of the leptomitus, sphærotilus, and carchesium accompany this description.

THE PREVENTION OF TUBERCULOSIS.

Nottinghamshire.

A meeting was recently held in the Town Hall, Newark, in support of the movement for establishing a sanatorium for consumption in Notts. The Mayor presided, and stated that the Duke of Portland had given a site for the building.

Dr. Handford explained the scheme formulated by the Notts Association for the Prevention of Consumption. The sum asked for was £5,000; £3,000 for the building, and from £1,000 to £1,500 for the first year's maintenance. At first only about a dozen patients would be accommodated, but it was proposed ultimately to provide for 25 patients.

At the annual meeting of the Nottinghamshire Branch of the National Association for the Prevention of Tuberculosis, held at Nottingham a few days later, the Duke of Portland, who as President occupied the chair, expressed the sincere hope that the scheme to erect a sanatorium for the county, which had been in embryo since June, 1899, might now take some practical shape. Now that the greater part of the strain caused by the war in South Africa was over, there seemed to be no object in further delaying the appeal for funds for the erection of a sanatorium. At the British Congress of Tuberculosis to be held next July, stock would be taken of the national progress in the war with disease. He hoped that the people of Nottinghamshire would not let it be said that they had failed to do their part. The Mayor of Nottingham (Councillor F. R. Radford, J.P.) moved:

That a hospital for the fresh-air treatment of consumption be established as soon as possible on Ratcher's Hill, and that steps be taken at once to raise the funds necessary for that purpose.

The resolution was supported by Dr. W. B. Ransom, who referred to the fact that though open-air treatment had been advocated in England sixty-one years ago, the first open-air sanatorium was established in 1859 in Silesia. He described the large number of institutions of a similar character which had been established in Germany during the last forty years, some built by private philanthropy, others founded on strictly business principles by insurance companies, who had found that it paid them to build such places, and to cure the men rather than to give them sick pay. In one year recently no less a sum than £150,000 had thus been expended. The sanatoria had not only a direct curative effect, but were powerful instruments in teaching the laws of health—educational colleges which were practical object lessons to every person sent out cured or improved.

Sir Charles Seely and others also spoke in support of the resolution, which was carried unanimously. Subscriptions amounting to about £2,800 have already been promised towards the £5,000 asked for. The Duke of Portland has offered the Association a site comprising 50 acres of moorland and pinewood at Ratcher's Hill, in Sherwood Forest. The site has a sandy soil, and is 470 feet above the sea, with a southern aspect and a good water supply. A sketch elevation shows a long, narrow, low building, with wide verandahs, and a central block of two storeys.

West of Scotland.

At the annual public meeting in connection with Quarrier's Orphan Homes and Consumptive Sanatoria of Scotland, Bridge of Weir, held last month at the Christian Institute, Glasgow, Mr. Quarrier mentioned that a sum of £11,909 was allotted during the year to the building and maintenance of the Consumptive Sanatoria. The report of the year's work in the sanatorium has been already noticed in these columns.

THE EMPLOYMENT OF UNQUALIFIED PHARMACEUTICAL ASSISTANTS BY MEDICAL MEN.

An extraordinary meeting of the Glasgow Southern Medical Society was held on December 14th, Dr. William Watson, the President, being in the chair, "for the consideration of the action of the General Medical Council in their recent decision respecting the sale of drugs and poisons by unqualified drug assistants."

Owing to the large attendance caused by the importance of the subject, it was found necessary to leave the usual meeting place and secure a larger hall.

In introducing the business, the Chairman explained the reason of their special meeting, and drew attention to the various points in the trial of the Airdrie practitioner before the General Medical Council. He asked for a free expression of opinion by those present on the very serious issues involved. An interesting discussion followed, in which the feeling was expressed that a very serious hardship would be inflicted on general practitioners should the decision of the General Medical Council be maintained.

In the opinion of some the General Medical Council had no *locus standi* in the question at issue, inasmuch as there had been no breach of the Pharmacy Act, and the offence with which the practitioner had been charged could not by any reason be considered under the category of "infamous conduct in any professional respect" whatever. The open and continued hostility of the Pharmaceutical Society against the general medical practitioner was bitterly commented on by various speakers. It was common knowledge that chemists and

[2] British Medical Journal, August 18th, 1900.

druggists themselves were guilty of the same offence, for they habitually employed unqualified assistants to dispense and sell drugs and poisons. The Pharmaceutical Society, it was held, should see that those whom they represented kept their own house in order before interfering with medical men in the exercise of an immemorial custom.

Various suggestions were made in the course of the discussion as to the best method of conserving the interests of the profession. A motion was proposed to the effect that this could best be attained at the present juncture by the formation of a medical defence union; but, owing to the lateness of the hour and the desire for further discussion, the meeting was adjourned until an early date.

PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.

A MEETING of the General Council of the Prince of Wales's Hospital Fund for London was held at Marlborough House on December 18th, the PRINCE OF WALES in the chair, to receive the report of the Distribution Committee. Nineteen members were present.

Lord ROTHSCHILD stated that the Fund had this year received from all sources the sum of £43,468 13s. 1d. The Fund would probably also receive £6,000 from the League of Mercy. The annual subscriptions were £1,200 more and the donations £5,000 less than last year.

The PRINCE OF WALES said that in consequence of the unusual needs of the several hospitals it was proposed to distribute £50,000 this year, being rather more than the net funds received, but it was hoped that the balance would be received before the end of the year.

Mr. HUGH C. SMITH presented the report of the Executive Committee. They had unanimously decided to recommend that this year £49,000 should be awarded to hospitals and £1,000 to convalescent homes, being an increase of £8,000 on last year. It was anticipated that the expenses this year would be only a little more than those of last. Eighty-seven hospitals had applied for grants, of which eighty-two were deemed to be within the scope of its distribution.

Lord LISTER presented the report of the Distribution Committee. The visitations of the Committee, while supplying reliable information regarding the various institutions, had proved of high value in stimulating improvements. The attention of the Committee had been directed to the objections of requiring in-patients to provide certain articles for themselves, such as tea, sugar, and personal linen. After full consideration they had, in increasing the grants or in renewing the larger grants made to institutions where these requirements were enforced, called the attention of the authorities to the objections attaching to the system, and had requested that in future they might be provided by the hospitals. Several of the best managed institutions made no such demands. During the last three years 287 additional beds had been made available to the poor of the metropolis through the agency of the Fund. Particulars of the grants recommended were then given.

Mr. J. G. CRAGGS read the report of the Convalescent Homes Committee. He explained that it had been deemed advisable, as last year, to make the grants fairly substantial rather than to multiply the number of participating institutions. Thus, many convalescent homes were excluded which might otherwise have appeared in the list read.

The PRINCE OF WALES, in acknowledging a vote of thanks for presiding, said he hoped that as time went on the Fund might increase in prosperity, so that the great object they had in view—that of placing the metropolitan hospitals on a thoroughly sound financial basis—might be accomplished.

CONTRACT MEDICAL PRACTICE.

THE CLUB QUESTION AT WIGAN.

THE *Wigan Observer* draws attention to a recent warning in our columns to medical practitioners against accepting any appointment to friendly societies in that district without first consulting the Honorary Secretary of the Wigan Medical Guild, and states that this has compelled the "Druids" to organise a "Medical Hall." It states that premises have been acquired in the town for this institution, which will shortly be opened, and that a medical practitioner has been found to give his services. This "Medical Hall" appears to be one of the ordinary medical aid institutes run by a friendly society in Wigan in consequence of the refusal of the various club doctors to accept any longer such inadequate remuneration as 2s. 6d. a member per annum. In order to save their pocket as much as possible, every facility is to be given to members of the public generally to avail themselves of the advantages of the "Hall." Its threatened opening, says our contemporary, "has caused consternation among a number of doctors."

If the practitioners of Wigan are united there need be little consternation. No doubt some practitioners can still be found to accept such posts, as they are not absolutely forbidden by the General Medical Council, but that body is beginning to regard them with more suspicion. Their very life blood is advertisement, and it is beginning to be recognised that it is dishonourable from a professional point of view for a practitioner to compete with his brethren by entering into contracts which, at least in the almost unanimous opinion of the profession, cannot be honestly carried out at the contract rate.

One thing is certain, that practitioners who accept such posts will not belong to the best class. None are likely to accept them who value the opinion of their professional brethren, and their tenure of office is likely to be of short duration. When the public finds this out the friendly societies will not find much co-operation on its part in keeping up such institutes. We shall hope to recur to this subject in a subsequent issue.

COLLIERS' CLUBS IN DURHAM.

THE *Newcastle Chronicle* of December 7th, under the heading of the Colliery Doctor Question, reports an action at the North Shields County Court, where Dr Newall sued the Backworth and District Medical Co-operative Association for £50 in respect of professional services rendered. A short time ago it was reported in our columns that the surgeons to the collieries in this district had decided to refuse to continue longer at the inadequate rates paid to them. As the terms offered by the doctors were refused, the colliers looked out for other medical assistance. To provide medical aid in the *interim* a contract was entered into with Dr. Newall to give his services at the rate of 2s. 6d. per visit. It was for arrears of salary under this contract that Dr. Newall brought his action, and the jury finally decided in his favour. The Backworth collieries would have found it far wiser to have accepted the terms offered by their surgeons. They have already, as is shown by this action, been put to considerable expense by the controversy, and their difficulties are by no means at an end. Although they now claim to have made a permanent appointment, it will be well to wait a little before estimating with any certainty as to its permanency. Medical men who take sides against their brethren do not find life in colliery districts all that could be wished, and are apt to look out for other situations at the earliest possible opportunity. When that occurs it will again be necessary for the collieries to incur another contract account like that they have just had to pay Dr. Newall. If their funds will bear so great a drain upon them, it at least proves they were quite able to pay the small extra remuneration asked by their old doctors.

SCALE OF FEES.

DEMOS asks whether the following scale of payments would be sufficient for proposed quarry club, where many of the members live at a distance of four or five miles away:—For men, women, boys, or girls earning 15s. or over per week, 1s. 3d. per lunar month; those earning less than 15s. per week, 7d. per lunar month. For this the medical officer is to attend him or her in sickness and accidents, and supply necessary medicines; and, if the man be a householder, to attend also wife (or housekeeper) and children up to the age of 14 years; confinement cases to be charged 15s. each.

*** It is not easy to advise as to rates that ought to be paid by the members of such a club without a complete knowledge of all the local circumstances, but it is difficult to see how any medical practitioner who did his work properly could get profit out of the proposed rate. In criticising it, too, it might be said that there ought to be a different scale paid for men, women, and children, and that more ought to be paid for attendance on the two latter classes than on the first. Confinements should never, except under very exceptional circumstances, be accepted at less than a guinea. In the case of quarries, collieries, etc., accidents should never be included in sickness clubs, for under recent legislation the employers are nearly always responsible for injuries to their servants due to accidents, so that medical men ought to experience no difficulty in getting reasonable remuneration for attending to such cases. Where the sick club includes accidents, it sometimes happens that the patient claims to be attended under his club contract, and tries to appropriate to himself money properly paid by the employer for medical attendance.

THE EPIDEMIC OF PERIPHERAL NEURITIS TRACED TO ARSENICAL CONTAMINATION OF BEER-MAKING MATERIALS.

A NOTE ON CERTAIN FORMS OF "BEER POISONING."

By A. CORSAR STURROCK, M.A., M.D.Edin.,
Resident Medical Officer, Manchester Royal Infirmary.

COINCIDENT with the increase of cases of peripheral neuritis admitted to the Manchester Royal Infirmary during the latter half of 1900, there has been a marked increase in the admissions of two other classes of disease among beer drinkers, which, it is reasonable to suppose, are referable to the same cause, although no signs of peripheral neuritis have been observed in them.

Cardiac Failure.

In Manchester one is familiar with a class of case which clinically shows signs of cardiac dilatation, with the symptoms of shortness of breath and œdema seen in all cases of cardiac muscle failure. This condition is associated with the consumption of alcohol in the form of beer, and it is worthy of notice that during this year in the Royal Infirmary there has been a distinct parallelism between the number of such cases admitted, and those of peripheral neuritis.

The following table shows those admissions:

	Peripheral Neuritis.	"Alcoholic" Cardiac Dilatation.
January	4	2
February	0	4
March	1	5
April	0	3
May	0	3
June	3	10
July	10	13
August	7	12
September	5	7*
October	4	8*
November...	16	7*
December (to 15th)	20	—

*Excluding cases also showing peripheral neuritis.

It will thus be noticed that in June, one month before any marked increase of cases of peripheral neuritis appeared, there was a very distinct increase in the number of cases of cardiac muscle failure ascribed to alcoholic poisoning. In every one of these cases the alcohol was taken in the form of beer, and it is evident that some poison in the beer was exercising a toxic influence on cardiac muscle, or perhaps on cardiac nerves. Heretofore some observers have held that this so-called alcoholic cardiac muscle failure is not due to alcohol *per se*, but to some other poison in the beer.

In some of the later cases of arsenical beer poisoning there have been but few symptoms of arsenical cutaneous eruptions or of neuritis in the extremities, but marked cardiac muscle failure (with paralysis of the diaphragm) had been a very serious condition. At the same time, most of our peripheral neuritis cases have suffered from shortness of breath, œdema, more or less widespread, and peculiar irritability of the heart. The heart sounds are feeble and in many cases on admission there is a mitral regurgitant murmur. The peculiar irritability of the heart is evidenced by a great quickening of the heart beat when the patient changes his posture. As an example, let me cite one case. In the lying position one patient's pulse rate was 64, sitting 78, and standing 104 per minute; regular in time but rather irregular in force when lying, the same conditions present when sitting, but when standing there was greater irregularity in force and frequent missed beats—these becoming more numerous the longer the patient maintained the erect posture. The pulse-tracings show a pulse of very low tension, with a sharp apex, small tidal and distinct dicrotic wave.

What I desire to draw attention to is the number of beer drinkers in whom the poison seems to have missed the peripheral nerves and only attacked the heart.

Interstitial Hepatitis.

There has also been seen during the past few months a class of beer-drinking patient suffering from what one has diagnosed as interstitial hepatitis. Of such cases there have been 8 admissions in the latter half of the year against none in the first half. The only complaints of the patients have been swelling of the abdomen, pain in the liver region, in some cases so acute as to simulate biliary colic, and in half the cases blood in the stools. On examination one has found an enlarged, hard, tender liver extending about two inches below the costal margin in the mammary line, considerable ascites without œdema, and in some cases icterus. With rest in bed and simple treatment the ascites has improved with great rapidity, and within a fortnight the liver has resumed its normal limits. The condition may be ascribed to beer drinking, but the incidence of the considerable number of cases at this time and the fact that the quantity of beer drunk seems in no case to have been excessive, make one imagine that the cause must be identical with that which has produced such a large crop of cases of peripheral neuritis.

THE REPORT OF THE COMMISSION OF EXPERTS.

The report of the Commission of experts, consisting of Sir Lauder Brunton, Dr. Thomas Stevenson, Dr. A. P. Luff, Mr. Gordon Salamon, Mr. Samuel Buckley, and Mr. J. Fletcher Moulton, Q.C., appointed by the Manchester Brewers' Association, has been issued, and confirms the information published in recent issues of the BRITISH MEDICAL JOURNAL. The Commission has not detected "the presence of arsenic in brewing materials, other than sugar supplied by Messrs. Bostock and Co., Limited."

ARSENIC IN BEER TUBING.

By JNO. BROWN, M.D.Viet., D.P.H.,
M.O.H. Bacup.

My researches as to the source of arsenic in beer confirm those of Mr. Kirkby, of Owens College, namely, that the greatest source is due to arsenicated sulphuric acid used in making glucose and invert sugar. There is, however, one possible and probable source of contamination of beer that I have not seen reported on. My attention was called to it by the fact that some of the arsenicated beers in Bacup were made from malt and hops only, no glucose or invert sugar being used. The amount present was probably less than 1 grain in 250,000. One brewer found I had taken the first draw from the pump in the morning, and suggested that the pipes and indiarubber tubing leading from the pumps to the barrel might be the cause. Samples of beer taken from the wood or barrel were found, by the most delicate tests known, absolutely free from arsenic. It was clear, therefore, that the contamination must be after the beer left the barrel.

There was distinct evidence by Gatzeit's test of arsenic present in both new and old india rubber tubing, also in old and new lead piping.

Old rubber tubing having been dissected into its three layers each was submitted separately to this test, also the layers together and results compared. In old tubing used (1) the inner coat showed an appreciable quantity of arsenic easily detected (the beer passing into tube was found arsenicated); (2) middle coat or canvas layer gave the most marked result, arsenic being found in distinct quantity; (3) outer coat showed a very faint, almost inappreciable, quantity. On comparing canvas layer or middle coat with result of three layers together, it was quite clear that this coat is the most highly charged.

New rubber tubing analysed similarly gave following results: (1) Inner coat practically free. (2) middle coat again gave evidence of arsenic being present in somewhat similar quantities to old tubing. (3) outer coat gave distinct traces. On comparing canvas coat with the three layers together the results again showed middle coat to be the chief source of arsenic. Quantity used in above investigations was 1 gram.

PENRITH, CUMBERLAND.

By JOSEPH E. BOWSER, M.B.Edin.

DURING the last two months a considerable number of persons residing in and near Penrith have suffered from symptoms similar to those described by Dr. Reynolds and others, and traced to the presence of arsenic in certain sugars used in the manufacture of beer. Most of the cases in this district have been of a mild type. Lachrymation, irritation of conjunctiva, dermatitis followed by desquamation chiefly affecting the feet and hands, erythromelalgia, pains and loss of power in the limbs, and diminution of the patellar reflex have been the most common symptoms. So far as my knowledge extends, no fatal cases have occurred in this neighbourhood. The local

brewers, with commendable promptitude, took efficient steps to prevent further mischief immediately the probable cause became known.

The history of the present epidemic suggests the question whether a similar state of things has ever occurred before. In the summer of 1887 the late Dr. Sanderson, of Penrith, read a paper at a meeting of the Border Counties Branch, in which he described an epidemic skin disease then prevalent in this neighbourhood, and exhibited a number of cases. The sufferers were male and female adults belonging to the labouring classes. The clinical features were lachrymation, irritation of the conjunctiva, and a skin rash—partly erythematous and partly papular—followed by marked desquamation, especially of the hands and feet, which were also the seat of pain and stiffness.

On September 21st, 1900, Dr. Ormerod, of Workington, exhibited a number of cases of an epidemic skin disease at a meeting of the Border Counties Branch held at the Workington Infirmary. The sufferers were exclusively adults, and were chiefly workmen engaged at the ironworks in the town. The symptoms resembled those observed in the Penrith epidemic of 1887. I stated my opinion at the meeting that the disease was of the same nature as that described in 1891 by Dr. Savill under the name of acute epidemic exfoliative dermatitis. A full account of this London epidemic was published in the BRITISH MEDICAL JOURNAL for December 5th, 1891, p. 1197. The cases were male and female adults, inmates of the Paddington Infirmary. The mortality was 12.8 per cent. The rash was papulo-vesicular, ending in marked exfoliation. Notes of 4 cases were given *in extenso*. Two of these were fatal. In addition to the rash, conjunctivitis, loss of hair, œdema of feet, vomiting, diarrhœa, and wrist-drop are mentioned. In the fatal cases tremor of the limbs and embarrassment of the respiration, without physical signs in the lungs, were observed. At the necropsy the mucous membrane of the stomach and intestines was found to be congested and hæmorrhagic.

Is it possible that these three epidemics—Penrith, 1887; London, 1891; and Workington, 1900—have a common origin? Is it possible that the presence of arsenic in food or drink was a factor in etiology?

I recognise that the dermatitis appears to have been a more dominant factor in the former epidemics. Can the fact that these epidemics occurred in summer—the Penrith epidemic in the exceptionally hot summer of 1887—explain the predominance of the skin lesions?

HYDE, CHESHIRE.

By STEPHEN INFIELD, M.R.C.S. L.R.C.P.

THE following cases occurred in the town of Hyde, which place has not been mentioned in connection with the epidemic:

CASE A.—On August 1st, 1900, I was called in to see Mrs. H., who complained of a burning pain in the soles of her feet. She could not sleep and looked extremely ill. Her face was bloated and the eyelids puffy, the conjunctiva being inflamed and watery. The soles of the feet were hot to the touch, the skin was swollen and of a bright red colour. There was no vomiting but loss of appetite and a dirty tongue covered with a thick creamy fur; there was a craving for beer, and she did not seem to care for alcohol in any other form. The gait was a shuffle rather than a walk; the hands were not affected. On August 13th some pigmented patches came out on the forearms, midway between the wrist and elbow, followed by others higher up. This case got steadily worse, due, I found out, to the fact that, contrary to my orders, she was still taking beer. Upon being kept in her bedroom she began to make slow progress. She is under treatment at the present time, and is able to get about fairly well. There was on two occasions some mental excitement.

REMARKS.

If this case was due to arsenical poisoning, there was evidently a craving for the drug rather than the alcohol, as she was not satisfied with anything but cheap beer. Although a bad case the extensors of the wrist were not affected. The question is suggested, how long before August 1st, 1900, had she been taking arsenic to cause the symptoms of poisoning, and how long has cheap beer been contaminated with arsenic?

CASE B.—Mrs. T., married, aged 56. From September 6th there had been numbness, pins and needles, affecting both feet, which were also very stiff, and considerable pain in the calf muscles of both legs. About September 23rd the fingers and hands became painful and tingled, being much worse when put into water, hot or cold. There was vomiting and sore throat. On October 22nd the face was puffy and the eyes watery, extensors of wrist not much if at all affected; the knee-jerks were increased. The calf muscles were tender to the touch and slightly wasted. The feet were red and shiny on their plantar surface. There was some difficulty in walking. There was sleeplessness, both during the day and night.

CASE C.—Mrs. R. On September 10th this woman noticed that she had a bad taste in her mouth, and that her tongue was very "dirty." In a few days she felt "pins and needles" and numbness in both hands and feet. On September 19th, while crossing the room, she suddenly fell down. This happened again later on in the day. She then went to bed, where she has been since. There was total paralysis below the knee, with complete wrist-drop. On November 7th I found that the palms of the hands were pigmented, and were desquamating freely. The legs were atrophied from the knees downwards; knee-jerks present but not exaggerated. The legs were very tender to the touch. She was still drinking fourpenny beer. The amount of beer she was in the habit of taking was 5 or 6 gills a day.

ILKLEY-IN-WHARFEDALE.

AMOUNT OF ARSENIC IN BEER.

DR. A. H. BAMPTON, from whom a note was published in the BRITISH MEDICAL JOURNAL of December 1st, sends the following addendum:

Arsenic has been found in varying quantities in different ales consumed here. A specimen of bitter beer, taken from a house the inmate of which I believed was suffering from the accumulative effects of arsenic, showed a very appreciable quantity present. The quantity varies according to the quantity of sugar used and the quality of the beer. The low-priced ales of low alcoholic strength contain least, but a larger quantity of mild ale is drunk by consumers. More sugar is used in brewing strong ale, and more time taken in fermenting it, to obtain the desired alcoholic strength. Most arsenic is found in the stronger ales. Most sugar was used in the summer brewings, when purging and acute symptoms were prevalent. At this time probably 3 grains of arsenic were present to the gallon, which would give an equivalent of ℿxx of Fowler's solution in a glass of ale. In one sample of sugar it was estimated that from 3 to 5 grains of arsenic were present to the pound. But different consignments of sugar would probably vary.

NEWCASTLE-ON-TYNE.

DR. OLIVER, of Newcastle-on-Tyne, in his reply to medical authorities in Manchester, who had invited him to make an inquiry into arsenical poisoning from beer in Newcastle and neighbourhood, has reported that neither in the large hospitals, medical charities, nor in the practice of medical men in Newcastle, has any case of poisoning from drinking beer so far shown itself.

LITERARY NOTES.

IT was announced in the BRITISH MEDICAL JOURNAL not long after the late Sir Andrew Clark's death, that Canon Malcolm MacColl was preparing a biography of him, to which a professional part would be contributed by Dr. Allchin. The book was to be published by Messrs. Longmans. A correspondent having recently asked if we could give him any information on the subject, we have made inquiries. We learn that Dr. Allchin's part was almost all completed more than two years ago. Canon MacColl's work has been delayed "by various causes," but the book is in progress, and he hopes to get it out in the first half of next year.

The Caledonian Medical Society offers two prizes of the value of £20 and £10 respectively for the best original essays on subjects selected from the domain of Celtic ethnology, history, or medicine. The competition is open without restriction. The essays must be written in English. Competitors will be allowed perfect freedom in choice of subject within the range of Celtic subjects indicated above. The Committee suggest the following as suitable titles: (*a*) Ancient Medical Manuscripts Gaelic or Irish; (*b*) The Origin, Language, Social Habits and Traditions of the Insular Picts; (*c*) The Influence of Scenery and Climate on the Music and Poetry of the Highlands. Full particulars may be obtained from the Honorary Secretary, Dr. S. Rutherford Macphail, Rowditch, Derby, in whose hands essays intended for competition must be by January 1st, 1902.

THE NEGUS AND THE FRENCH ANTITOBACCO SOCIETY.—The French Antitobacco Society has conferred its first diploma of honorary membership on the Emperor Menelik. This honour has been done that enlightened Monarch because, instead of making the use of tobacco by his subjects a source of revenue, he has absolutely forbidden the importation of the "herb nicotian" into Abyssinia. The Negus is at least entitled to the credit of not sacrificing his convictions to the desire of popularity.

ASSOCIATION INTELLIGENCE.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1901.

Meetings of the Council will be held on January 16th, April 17th, July 10th, and October 23rd, 1901. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before each meeting—namely, December 26th, 1900; March 28th, June 20th, and October 2nd, 1901.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

COUNCIL.

NOTICE OF MEETING.

A Meeting of the Council will be held in the Council Room of the Association at 429, Strand (corner of Agar Street), London, on Wednesday, the 16th day of January next, at 2 o'clock in the afternoon.

Dec. 20th, 1900. Francis Fowke, *General Secretary.*

THE LIBRARY.

In consequence of the Christmas Holidays, the Library will be closed from Saturday afternoon, December 22nd till Thursday morning, December 27th.

LANCASHIRE AND CHESHIRE BRANCH.

A general meeting of this Branch was held at the Medical Institute, Liverpool, on December 12th, Dr. R. C. Brown (Preston), President, in the chair. Over fifty members attended.

Minutes.—The minutes of the last meeting were taken as read.

Lectures on Midwifery to Persons Other than Medical Students.—It was proposed by Dr. Brassey Brierley and seconded by Dr. Tisdall:

That this meeting condemns the action of those members of the British Medical Association, notably those members of the Lancashire and Cheshire Branch, who continue to lecture to persons other than duly recognised medical students—upon midwifery and the diseases of women and children—and records its displeasure at the free distribution, by certain unauthorised examining bodies, of certificates and diplomas to these irregular persons, asserting that the holders of such documents are "skilled" in the practice of midwifery.

After some discussion, in which Dr. Wolstenholme, Crawshaw, O'Sullivan, Colin Campbell, and Wills spoke in support of the resolution, Dr. Dickson explained the position of the Birkenhead Lying-in Charity, and Drs. Woodcock, Carter, Stookes, and Ritchie spoke in opposition to the resolution, Dr. T. Arthur Helme pointed out that there seemed to be a confusion between the teaching of obstetric nurses and the granting of diplomas to midwives, and moved the following amendment, which was seconded by Dr. Ritchie:

That all the words following the words "That this meeting," down to and including the words "women and children and" be omitted, and the resolution so altered as to read: "That this meeting records its displeasure at the free distribution by certain unauthorised bodies of certificates and diplomas to midwives, asserting that the holders of such documents are skilled in the practice of midwifery."

Thereupon it was proposed by Dr. Mooney and seconded by Dr. Dunn:

That the question be now put.

The President declined to put the question until Dr. Brassey Brierley had spoken. On the amendment being put to the meeting, Dr. O'Sullivan objected, as he had not heard the amendment seconded, and appealed to the Honorary Secretary as to whether such was the case. Dr. Ritchie thereupon rose, and said that he would withdraw his seconding. On Dr. Brassey Brierley's original resolution being put to the meeting, 19 hands were held up in its favour, and 21 against, several members not voting. The President declared that the resolution was lost. Dr. Brierley asked that the names should be taken, and Dr. O'Sullivan challenged the numbers and asked that, owing to the difficulty of counting, members should divide. The President decided that the vote should be retaken, the members voting for or against to separate to opposite sides of the hall. On the votes being counted, there were found to be 24 in favour of and 23 against the resolution, which was therefore declared to be carried. Dr. Brierley then asked permission to withdraw his remaining resolutions in order that he might submit them on a future occasion.

Cæsarean Hysterectomy.—Mr. Colin Campbell read Notes on a Second Successful Case of Cæsarean Hysterectomy, describing the method of operating.—Mr. W. Berry, F.R.C.S.I. (Wigan), in moving a vote of thanks to Mr. Campbell for his paper, criticised the method of fixing the stump of the uterus outside the peritoneal cavity.—Dr. Bradshaw seconded the vote of thanks, which was carried unanimously.—Dr. Woodcock then proposed, Dr. Bradshaw seconded, and it was agreed, that the reading of the other papers be deferred owing to the lateness of the hour.

BRITISH MEDICAL ASSOCIATION LIBRARY.

List of Presentations of Books, etc.

Presented by the Authors:
- Barton (J. K.). Records of General Practice. 1900
- Eccles (W. McAdam). Hernia. 1900.
- Medical Officer to the Local Government Board. Report for 1898-9
- Sawyer (Sir James). Contributions to Practical Medicine. 1891.
- Steele (Graham). Physical Signs of Pulmonary Disease. 1900.
- Smith (Heywood). Practical Gynæcology. 2nd edition. 1900.
- Whitla (W.). Dictionary of Treatment. 2nd Chinese edition. 18

Presented by Robert Barnes, Esq., M.D., LL.D., Carlisle
- Baignères. Maladies des Femmes (2). 1807
- Broussais. Histoire des Phlegmasies. 1816
- Capuron. Maladies des Femmes. 1812.
- ,, Maladies des Enfants. 1813.
- Cloquet. Traité d'Anatomie Descriptive. 1816
- Nysten. Dictionnaire de Médecine. 1814.
- Pinel. La Médecine Clinique. 1815.
- Portal. Cours d'Anatomie Médicale. 3-5. 1803.

Presented by Dr. W. S. Bigelow, Boston, Mass.:
- Bigelow (H. J.). A Memoir. 1900.
- ,, ,, Surgical Anæsthesia. 1900.
- ,, ,, Dislocations, Fractures, etc. 1900.
- ,, ,, Orthopedic Surgery, etc. 1900.

Presented by John Croft, Esq., F.R.C.S.:
- British Medical Journal. 1867-1887.
- Journal of Anatomy and Physiology. Vols. 1 to 5. 1867-7
- Lancet. 1871-1888, and other vols. (duplicates).

Presented by R. S. Fowler, Esq., F.R.C.S., Bath:
- Salter. On Asthma. 1860.

Presented by J. F. S Fowler, Esq., M.B., Demerara:
- British Guiana Medical Annual. 1899.

Presented by A. Jacobi, Esq., M.D., New York:
- Festschrift in Honor of Abraham Jacobi. 1900.

Presented by the Medical Officer to Local Government Board:
- Dr. Fletcher's Report on Enteric Fever at Coleford. 1900.

Presented by Dr. Mendel, Berlin:
- Out-of-print parts of Neurologisches Centralblatt to complete vol.

Presented by H. Cooper Rose, Esq., M.D., London:
- Carus. Atlas der Cranioscopie. 1843.
- Dupuytren. Muséum d'Anatomie Pathologique. 1842.
- Hunter (J). Observations on Animal Development. Edited by R. Owen, with his illustration of that process in the bird described. 1841.
- Kölliker (A). Die Schwimmpolypen. 1853.
- Malpighii Opera
- Watt. Anatomico-Chirurgical Views. 2 vols. 1809.

Presented by W. Winkworth, Esq., M.R.C.S., Taunton:
- Salter. On Asthma. 1868.

Presented by the Editor of the British Medical Journal:
- Allchin. Manual of Medicine. Vol. r. 1900.
- Baginsky. Lehrbuch der Kinderheilkunde. 2 vols. 6 aufl. 1900.
- Bournoville. Recherches Cliniques et Therapeutiques sur l'Epilepsie etc. Tome 10. 1899.
- Broadbent (Sir W. H. and J. F. H.). Heart Disease. 3rd edition.
- Gamaleia.
- Knopf (S. A.)
- Lane (W. A.) edition. 1900.
- Lejars (F.).
- Macnaughton-Jones n. 1900.
- Maylard (A. E.). nd edition 1900
- Pearson (K.). The Grammar of Science. 1899.
- Pye. Surgical Handicraft. 4th edition. 1900.

Registrar General's Report. 61st, year 1898, 1900.
Roger et Josué. La Moelle Osseuse. Suite de Monographies Cliniques. 21. 1899.
Salinari (S.). Le Lesioni Traumatiche dei Centri Nervosi. 1900.
Schäffer. Atlas und Grundriss der Gynakologie. 2 aufl. 1899.
Shuttleworth (G. E.). Mentally Deficient Children. 2nd edition. 1900.
Squire (P.). Pharmacopœias of Thirty of the London Hospitals. 7th edition. 1900.
Stedman. Twentieth Century Practice of Medicine. Vol. 18. 1899.
Stonham (C.). Manual of Surgery. 3 vols. 1899.
Teacher (J. H.). Catalogue of Anatomical and Pathological Preparations of Dr. Wm. Hunter. 2 vols. 1900.
Veit. Handbuch der Gynäkologie. III. 2. 1899.
West (S.). Granular Kidney. 1900.

Transactions and Reports have been received from the following bodies:
American Gynecological Society. Vol. 24 1899.
American Dermatological Association. 1899.
American Laryngological Society. 1899.
American Orthopedic Association. Vol. 12. 1899.
American Pediatric Society. Vol. 11. 1899
Army Medical Department for 1898.
Columbia University Studies. Vol. 6. 1899.
Connecticut State Board of Health. Report. 1898.
Cremation Society of England. Transactions. 1899.
Epidemiological Society of London. Transactions. Vol. 18. 1900.
Galway, Queen's College. Calendar. 1900.
Glasgow Hospital Reports 1899.
Life Assurance Medical Officers' Association. Transactions. 1898-9.
Liverpool Royal Infirmary Reports. Vol. 3. 1898.
Michigan State Board of Health Report. 1897-9.
New York State Medical Association. Transactions. Vol. 16. 1899.
Ophthalmological Society. Transactions. Vol. 19. 1899.
Philadelphia College of Physicians. Transactions. Vol. 21. 1899.
Royal College of Physicians. List of Members, etc. 1900.
Royal Academy of Medicine in Ireland. Transactions. Vol. 17. 1860.
St. Bartholomew's Hospital Reports. Vol. 35. 1889.
University of London Calendar. 1900-1901.
Vereins für innere Medicin zu Berlin. Verhandlung. I. 1899.

BOOKS NEEDED TO COMPLETE SERIES:

The Librarian will be glad to receive any of the following volumes which are needed to complete series in the Library:

American Climatological Transactions. Vols. 1, 4, 5, 6.
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Centralblatt für Augenheilkunde. Hirschberg. 1891, January-July, 1892, January, September, and May, 1897.
——— für Bakteriologie. Bound volumes prior to 1899.
——— für klinische Medicin. 1880-1883; all 1888, 1891, No. 26 1892, No. 17.
——— für medicinischen Wissenschaften. Vols. 1-19.
Congrès Français de Chirurgie Transactions 1, 2, 3, 6, and 10.
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SPECIAL CORRESPONDENCE.

HONG KONG.

Crusade against Anopheles.—Bubonic Plague.

DURING the early months of this year the sanitary authorities were all alert to destroy the rats of the Colony, in the hope that by that means Hong Kong might be saved from the recurrence of bubonic plague. Now the residents in the Colony are interested in a crusade against the malaria-carrying mosquito. Mr. Thomas M. Young, F.R.C.S.Edin., civil surgeon in the army, has spent the greater part of two months in searching for the breeding pools of *Anopheles* mosquito, with the result that he has found them widely distributed over the Colony—at Peak, West Point, Wanchai, etc. The researches were reported to His Excellency Sir Henry A. Blake, G.C.M.G., who took a great interest in the subject. The practical outcome is that an experiment on a large scale is being made at Magazine Gap, where is situated the military sanatorium. This sanatorium was built several years ago, but has had to be abandoned, as the inmates were attacked by such severe fever. The *Anopheles* were found in a gully close beside the building, and the intention is to clear off most of the trees and undergrowth, and to destroy the breeding pools. The work is under the direction of Mr. Young, who has had experience of the habits of mosquitos in Sierra Leone.

There are still a few sporadic cases of bubonic plague, but during the last three days there have been no fresh cases. The figures up to October 30th are: Cases reported, 1,081; deaths, 1,023.

CORRESPONDENCE.

THE EMPLOYMENT OF UNQUALIFIED PHARMACEUTICAL ASSISTANTS BY MEDICAL MEN.

SIR,—I was not surprised to see by Saturday's Glasgow newspapers that medical men practising in the West of Scotland met in large numbers to protest against the action taken by the General Medical Council in prosecuting Dr. Thomson, Airdrie, for professional misconduct connected with breaches of the Pharmacy Act.

On the first blush it would appear that the Council is doing the work of the Pharmaceutical Society by acting as the cats-paw of that body.

In a report to the Penal Committee by another Scottish member of the Council and myself—which I am sorry was confidential, and therefore could not be published—that view was argued by the reporters in the strongest manner. We felt that the prosecution of offenders under the Act should be left to the legal defenders of the pharmaceutists' position.

Personally I have never had any sympathy with the Pharmacy Act; and I have felt and expressed the opinion, over and over again, that we are gradually becoming too much like the Chinese, by insisting on examination and registration of all classes, even down to plumbers and midwives.

Again, I know that the rule of employing only qualified dispensers is broken every day by pharmaceutists themselves.

Further, I am well aware of, and have suffered personally from, counter prescribing by druggists; and I shall only be too ready to join in any general movement to put down that mischievous practice.

But, while all this is true and demanding remedy, such cannot be found in any action that could be taken by the General Medical Council. The pharmaceutists have got their Act, and it would scarcely be becoming on the part of medical practitioners to play the part of spies, as the Pharmaceutical

Council did on Dr. Thomson. The cure for counter prescribing appears to me to lie in the hands of the profession itself. Were each individual practitioner to take decided steps to prevent his prescriptions being made up in shops to which he objected, probably chemists would find it their interest to cease prescribing as they constantly now do.

Coming to the main point: Why did the General Medical Council, in view of all I have said to the contrary, resolve to prosecute Dr. Thomson? It was alleged that Dr. Thomson persisted in breaking the law of the land, and the Council felt that in so doing Dr. Thomson was accused of taking an improper advantage of his position as a registered practitioner by covering an unqualified chemist.

After hearing the evidence of Dr. Thomson and others, the General Medical Council found him guilty of the offence. But they practically gave him the opportunity of purging himself by the simple process of dismissing his unqualified and employing a qualified dispenser. No doubt such a course of action will entail considerable expense on Dr. Thomson and others like him. But the carrying out of the provisions against unqualified medical assistants led to much more serious trouble and expense to their principals, and was naturally bitterly resented by both parties.

As to the bearings of this question on direct representation, I would like to add a word or two. I hold that the profession sooner or later ought to have an equal representation to that of the qualifying bodies on the General Medical Council, and at the same time the Council be cut down to one-half its number, say to sixteen members in all. And yet in this particular case, if I am not mistaken, all the direct representatives, however unwillingly, voted for prosecution, as the offence labelled seemed to them a scandal against the profession as a body and one that had either to be proved or disproved at the earliest possible moment.—I am, etc.,

WILLIAM BRUCE, M.D.,
Direct Representative for Scotland on the General Medical Council.

Dingwall, Dec. 18th.

LONDON DIPLOMATES AND THE REFORMED UNIVERSITY.

SIR,—The letters of your correspondents Dr. J. W. Gill and "L.R.C.P., M.R.C.S., L.S.A.," in the BRITISH MEDICAL JOURNAL of November 24th, strengthen the opinion that many London diplomates feel acutely their present condition, and would hail with pleasure any concession on the part of the reformed university which would allow them to enter for its professional examinations without the present matriculation, which is clearly prohibitory. The article on that subject in the same number of the JOURNAL tends to show that even amongst young people the strain of the work involved is painfully felt; many must have doubts whether the damage to health and eyesight caused by the requirements of the present system of examination in theoretical subjects is counterbalanced by the results. That is too wide a subject to discuss here; but there can be no doubt that the matriculation in its present form is a complete bar to men engaged in general practice.

That the Birmingham University is about to grant degrees to its past students on passing a final examination is exactly to the point,[1] though considering the high standard of the London examinations such a complete concession is hardly to be expected for us.

A suggestion has reached me, from one well qualified to judge, that petitions signed by those holding the qualifications of the two Colleges should be presented to their respective Councils, backed up if possible by the teachers in the London medical schools. Unfortunately we as a body suffer from want of cohesion—not the least of the disadvantages of the present state of affairs. The work is manifestly impossible for any isolated individual, but if any of your correspondents can make any suggestion how it can be carried out, either through the medium of the BRITISH MEDICAL JOURNAL or privately, I shall be glad to co-operate.—I am, etc.

A. GREENWOOD.

Crouch End, N., Dec. 1st.

THE DIAGNOSIS OF DIPHTHERIA.

SIR,—I have read with great interest Dr. Donkin's valuable paper which appeared in the BRITISH MEDICAL JOURNAL of November 3rd.

[1] BRITISH MEDICAL JOURNAL, November 17th, 1900, p. 1479.

Therein the author concisely states the position of the clinician of the present day in dealing with acute inflammatory diseases of the throat which may be diphtheria. It amounts to this: That when in doubt, and the condition is serious, "inject diphtheria antitoxin." But cases may arise, and I have recently had occasion to see one in consultation with my colleague, Dr. A. R. Coldstream, in which there was a complete clinical picture of diphtheria, which tended from the onset to a fatal issue, and in which diphtheria antitoxin was used without avail. The bacteriological examination showed the disease to be a pure streptococcal infection.

This case is an illustration of the inadequacy of the present position of applied serum-therapeutics.

The first examination of secretion from the tonsils and subsequent examination of the membrane showed an almost pure growth of streptococci. Yet the recommendation was given to inject diphtheria antitoxin, not because it was a logical course to pursue, but in view of the patient's serious condition, in the hope that the Klebs-Loeffler bacillus had been overlooked and might show up in culture, and most of all, perhaps, because there was nothing else to suggest, as antistreptococcal serum was not available.

But a case of this kind brings prominently to view the fact that membranous, non-diphtherial tonsillitis and pharyngitis may be quickly fatal, and that we must look to the bacteriologist not only to give an immediate statement as to the predominating micro-organism present, but to keep the market supplied with antistreptococcal as well as with antidiphtherial serums to which the practitioner can resort at the shortest notice. As the infection in these cases is often mixed, and knowing that both streptococcal and Klebs Loeffler bacillary infection may lead to a fatal issue, it would often be rational practice to inject both antitoxins in the same case.

In the clinical differential diagnosis between septic tonsillitis and diphtheria, experience has led me to regard the mode of onset as most important, though possibly not pathognomonic. In streptococcal infection the patient is knocked down at once as in scarlatina, the temperature rises quickly, and often reaches the maximum on the second day while pain is the predominant symptom. In diphtheria the onset is more gradual, the disease is not ushered in by a sudden rise of temperature, and pain does not seem so distressing a symptom as the intense sense of illness. But supposing both diphtheria and streptococcal serums to be equally within our reach, and apart from the question of mixed infections, we should not feel satisfied to inject either one serum to the exclusion of the other, on such clinical considerations, in any given case. Therefore, if we do not choose to inject both, our action must be guided by the bacteriologist.—I am, etc.,

STUART TIDEY, M.D Lond., M.R.C.P. Lond.

Florence, Nov. 18th.

THE LONDON MATRICULATION EXAMINATION.

SIR,—I must thank the Secretary of the Girls' Public Day School Company for his courtesy in giving me the statistics I asked for. I am glad to acknowledge that the seven schools which have medical inspectors are not behindhand in well-regulated physical exercise, and in preventing any pupil from overstraining herself in preparing her lessons at home. The remaining schools of the total thirty-three are, however, evidently behind these progressive seven. The term "physical exercise" was intended to include far more than the mere possession of playgrounds. I know that many girls do in fact manage to evade all exercise except compulsory drill once or twice a week, and the daily walk to and from school. I also know many who habitually exceed the home time table which is so excellent theoretically; especially is this the case during the examinations at the end of term. I quite recognise that the girls and their parents are much to blame; but whereas the one business of teachers is the welfare of their pupils, parents have to earn their bread or to superintend younger children, and can in most cases hardly be called specialists in education.

I fail to see why parents at twenty six schools should object to the plan of medical supervision which has proved so invaluable at seven schools. It is to such a Company as this, which is and has so long been the leader in the higher education of girls, that other girls' schools look for an example. May I suggest (1) that physical exercise be made compulsory

xcept in the medically unfit; (2) that a medical inspector at every school should determine what girls should be exempted from compulsory exercise and what girls should follow them in a modified form; (3) that an occasional unexpected short examination should be substituted for the regular long examinations at the end of term, and more especially in the hot summer term; (4) that the head mistress occasionally ask the medical adviser to address a meeting of parents and teachers on some point connected with the health of girls?—

December 18th. YOUR CORRESPONDENT.

CLASSIFICATION OF DISEASES.

SIR,—In connection with the papers by Drs. MacIlwaine and Powell White in the BRITISH MEDICAL JOURNAL of December 15th, may I draw attention to a paper on Classification in Pathology, by Charles W. Cathcart, F.R.C.S.Eng. and Edin., published in the *Edinburgh Medical Journal* for July and August, 1896, in which he advocates "cause" as a desirable primary basis of classification, and in this direction draws up a rational classification of disease?

He applied this method in rearranging the Museum of this College, of which he was until lately the Conservator, and as this rearrangement is approaching completion, Dr. MacIlwaine may be pleased to learn that soon our Pathological Museum, at any rate, will not be in that chaotic state to which he refers all pathological museums.

I may state, in addition, that our students are, every year, taking more advantage of the chances afforded them of studying surgery and surgical pathology in the Museum.—I am, etc.,

THEODORE SHENNAN,
Conservator of the Museum of the Royal College of Surgeons of Edinburgh.

Edinburgh, Dec. 18th.

TREATMENT IN INFIRMARY LOCK WARDS.

SIR,—Will you kindly allow me on behalf of, and by direction of, the Infirmary Medical Superintendents' Society to protest against two anonymous letters on the above subject, published in the BRITISH MEDICAL JOURNAL of November 24th and December 15th respectively, and also your own comment on the first letter?

I am of opinion that you have been assured very wrongly concerning the management of these wards, and am confident that, so far as the experience of the Society extends, the nursing of such wards is carried out without any distinction from other wards, the same care being bestowed as on the other branches of the work, and that it is not neglected as you suggest.

I should like to point out that the statements made in the first letter—to which your comment related—were apparently based on the uncorroborated assertions of a discontented patient. If your correspondent is aware of such grave defects in the administration of infirmaries, would it not have been better for him to have given us chapter and verse from his own experience rather than rely on the statements of a patient? Poor-law patients are not the most unbiassed or the most truthful of people.

I should like further to inquire whether "M.D.Lond., D.P.H.Cantab." brought "the incidents" which he states "are apt to occur" under the notice of the authority or authorities of the infirmary or workhouse at which he had such unfortunate experiences.

If the authority be a medical one, would it not have been more in accordance with professional etiquette to do so; and in the event of his failing to get what was right done, to have published the facts with full names and details? We do not wish to criticise some of the statements he makes on the authority of a patient, but possibly a little cross-examination would elicit some material facts which might put a very different complexion on affairs; and even as it stands, his account seems to merit criticism in many parts.—I am, etc.,

WM. J. KEATS, D.P.H.Lond., etc.,
Honorary Secretary.

Camberwell, S.E., December 19th.

*** Our correspondent must see that the gravamen of the statements made by "M.D.Lond., D.P.H.Cantab." does not rest on the "uncorroborated assertions of a discontented patient."

THE RESTING POSITION OF *ANOPHELES*.

SIR,—Drs. Sambon and Low[1] have called into question the accuracy of the statement "that the relative positions assumed by *Culex* and *Anopheles* are.....strikingly different," and appear to consider it erroneous. That there is a difference is apparent to any one who has observed the habits of both genera, but the positions assumed by them when at rest are more nearly alike than one would suppose on seeing them for the first time.

The *Anopheles* of St. Lucia (? *A. Albitarsus*) does not, like that described by Mr. Austen in his report, stand on its head (would it not be more accurate to say "on the end of its nose"?), but rests at a slight incline from the support, certainly not more than 45 degrees. When resting on the two front pairs of legs—its usual position—the last pair is seldom at rest, for the two legs are constantly describing circles in the air, not at all unlike the arms of a man swinging Indian clubs.

The different angles assumed by the different species of *Anopheles* when at rest would depend upon the relative lengths of the two first pairs of legs. A slight increase in the length of the middle pair would have the effect of tilting the posterior part of the body away from the support, thus increasing the angle. I say when at rest because a mosquito can alter its position, irrespective of the length of its legs, when for any reason it has occasion to move to another place without flying, or when feeding. As far as my own observations are concerned, the last pair of legs in both *Anopheles* and *Culex* are seldom, if ever, used as a support when resting, but are only used as organs of locomotion when walking or as balancers when flying.

There is one point of difference, however, which appears to have been passed over both by Major Ross and Mr. Austen, and by Drs. Sambon and Low, which enables one to distinguish at a glance between the two genera, regardless of the position assumed by the insect when resting. In *Anopheles* the proboscis and body are in the same straight line in whatever position the insect may be, while the proboscis of *Culex* always forms an angle with the body. Even when *Culex* raises her proboscis (as when in search of food through a net), so as to be as nearly as possible in a line with the body, the junction of the proboscis with the body is something like the attachment of a bayonet to a rifle—nearly parallel, but not in a line with the body—while the proboscis and abdomen of *Anopheles* taper away from the thorax like the two ends of a spindle.

Dr. L. O. Howard, the Entomologist of the United States Department of Agriculture, has carefully observed the resting positions of the adult *Anopheles*.[2]

He finds that when resting upon a horizontal surface, such as the ceiling of a room or the covering of the breeding jars, the insect clings with its four anterior legs in a nearly perpendicular position, its beak thrust forward toward the surface to which it clings. The hind legs are frequently in motion, but as a rule hang downward, with more or less of a bend at the knee-joint (femoro-tibial articulation). When resting upon a perpendicular surface, however, such as the side wall of a room or the side of a breeding jar, the body is held only at a comparatively slight angle from the surface. Sometimes it is nearly parallel to the surface. At other times it assumes an angle of 10° to 20° (occasionally even as great an angle as 30° to 40°), the proboscis being held nearly in a line with the body. Here again the insect supports itself by the four anterior legs, the hind legs dangling down with more or less of a bend at the knee. This position is common to both males and females.....When the body is held parallel, it will generally be found that one of the middle or hind legs has been broken off. They are very delicate, and readily break.

Dr. Howard reproduces some drawings of Mr. C. O. Waterhouse, of the British Museum, which illustrate the relative positions assumed by *Anopheles* and *Culex* better than any others that I have seen. Mr. Waterhouse sums up the points of difference in two short sentences. He writes[2]: "Whatever may be the attitude of *Anopheles*, it is all in one line; *Culex* is angular, humpbacked."

If the proboscis and body of *Culex* formed a straight line, as they do in *Anopheles*, the different attitudes assumed by them when at rest would not be so striking as to form one of the means of distinguishing between them.

I know of no species of *Anopheles* whose body and proboscis

[1] BRITISH MEDICAL JOURNAL, October 20th, 1900, p. 1158.

[2] *Bulletin*, No. 25, New Series, United States Department of Agriculture, Division of Entomology, p. 33.
Loc. cit., p. 34.

do not form a straight line, nor have I yet seen a *Culex* in which they do not form an angle.—I am, etc.,

St. Geo. Gray, M.B., B.Ch.(Univ. Dubl.),
Colonial Assistant Surgeon, St. Lucia, West Indies.

November 16th.

Sir,—I have read in the British Medical Journal of October 20th (the last which has reached me) the article by Drs. Sambon and Low on the above subject.

All credit is due to Major Ross, I.M.S., and Mr. Austen (a well known expert), for being the first to draw attention to the distinctive attitude assumed by *Anopheles* when at rest—distinctive at least so far as the species inhabitating Sierra Leone are concerned. I can testify from personal observation on the West Coast of Africa that their observations were absolutely correct. It remained for other observers to discover exceptions, if any, in other parts of the world.

Until now, I believe, no one has recorded an exception except Professor Grassi. So far as India is concerned, the rule laid down by Dr. Ross and Mr. Austen holds good for three out of the four species of *Anopheles* I have observed. The exception is a species whose acquaintance I have just made at Dhond, which certainly does stand with the posterior part of its body a little nearer the support on which it is resting than the other three species do, but its characteristic bradawl shape, with its proboscis and palpi held almost in a line with its body, distinguishes it at a glance from any of the many species of *Culex* with which I am acquainted in India and elsewhere.

We are compelled, therefore, to admit that the resting position hitherto believed to be characteristic of all members of the genus *Anopheles* certainly is not characteristic of one or two species. I feel sure, however, that all who have made a study of the subject will agree with me that the resting position *plus* the shape of the insect do afford in practice a distinctive generic difference between *Anopheles* and *Culex*. The former carries its body at at angle of about 45 degrees with the surface upon which it is resting; the latter *Culex* carries its body either parallel to the surface on which it is resting or with the posterior end pointing more or less towards it, and its head and proboscis at a considerable angle with the body, much as an elephant's head and trunk are carried. The drawings representing insects in these attitudes appearing (see Plates II and IV) in my book on *Mosquitos and Malaria* (Sampson Low and Co., Limited) were made by me from life whilst the insects were resting upon strips of paper in test tubes. I was careful to ascertain that they maintained the same attitudes when at liberty and resting on a wall.

I hold, therefore, that Drs. Sambon and Low are wrong in stating that "the resting attitude of mosquitos loses all the importance attributed to it as a diagnostic character between the *Culex* and *Anopheles* genera." Obviously the distinction does not hold good in all cases; but I believe, nevertheless, that it does so in most, and that it will, therefore, still be found of value.

Whilst making the drawings above mentioned, I observed another point of difference between the members of the two genera I had under observation, as pointed out in my book (in the explanations to Plates II and IV). In the case of *Culex*, the last pair of legs were often held with the tarsi curved up above the body; whereas, in the case of *Anopheles*, the last pair of legs, though often held in a similar manner, were kept below the body. This may or may not be found to apply to all members of these genera. It remains for other observers to say. At all events, I never observed the tarsi of any species "pointing downwards," as described by Drs. Sambon and Low.—I am, etc.,

Bombay, Nov. 9th. Cuthbert Christy.

ERYTHEMATOUS RASH DUE TO BORIC ACID.

Sir,—I have read with interest the case reported in the British Medical Journal of November 24th, by Dr. Handford of Nottingham, on an erythematous rash due to boric acid used for washing out a dilated stomach. In a clinical lecture on drug eruptions, published in the *Clinical Journal*, September, 1897, I recorded a case of boric acid poisoning with intense erythematous eruption from the application of boric acid ointment over extensive burns. This case unfortunately ended fatally. Since then I have observed from time to time quite a large number of erythematous eruptions due to absorption of this material from dressings applied to wounds, etc. In one case, which I reported in the *Lancet*, January 28th, 1899, the boric acid was used for washing out the bladder. I feel convinced that many cases of eruptions produced by boric acid occur and are never diagnosed as such, and that in this respect boric acid is not so harmless an antiseptic as is generally supposed.

My object, however, in writing this letter is to point out how very simple is the process for detecting its presence in the urine and how easy it is to ascertain by this means in doubtful cases of toxic eruption, whether there is boric acid in the system or not. As we know, it is more or less freely used as a food preservative, and its detection in the urine in doubtful cases, may lead to a successful diagnosis and immediate relief from the often troublesome eruption. In this connection it is worth noting that for some days after the boric acid has been stopped it is to be found in the urine. The method I adopt is that described in Morrow's work on *Drug Eruptions* (New Sydenham Society, 1893, vol. 148, page 403):

Make the urine alkaline by soda, evaporate to a syrup, mix with some pure white sand, evaporate to dryness. Powder the residue, cover it with alcohol and add a few drops of strong sulphuric acid. On igniting the alcohol it will burn with a green or green bordered flame.

The whole process is very simple and does not occupy more than a few minutes.—I am, etc.,

Sheffield, Nov. 25th. Arthur Hall.

THE SCALE OF FAHRENHEIT'S THERMOMETER.

Sir,—In the British Medical Journal of October 20th just arrived, I read with much interest the article under the above heading. I certainly have been under the impression, when and how obtained I cannot say (from a book perhaps, from a lecture possibly), that the scale of Fahrenheit's thermometer owned relationship with the temperature of the blood; but the explanation as to the principle of its construction, which I have always accepted as a matter of course though on what authority I do not know, differs from that mentioned by Sir Samuel Wilks. It is that the thermometer is in reality of centigrade construction; that originally the blood temperature was taken as one fixed point, the lowest temperature which was then believed to be possible was made the other fixed point, and the intervening degrees of temperature were represented by dividing the scale between these fixed points into 100 divisions. The lower of the two fixed points was, I understood, the temperature of a mixture of ice and salt.

It was then found that water froze at a temperature corresponding to the 32nd division on the scale, and that its boiling point was at the 212th division on the scale continued upwards. It may be asked how it is, if this explanation is to be believed, that the accepted temperature of the blood is placed on the Fahrenheit scale of to-day at 98.4° and not at 100°. The explanation I would suggest is that although the original fixed points were probably, as stated, the temperature of the blood and of the ice and salt mixture, it is not improbable that the blood was before long discarded as a standard furnisher—its temperature being found somewhat variable—in favour of freezing water, the temperature of which was seen to be invariable. Then having these fixed points (the temperature of the ice and salt mixture and of freezing water) the scale between which was marked into 32 divisions, it is, I think, apparent that as the art of making thermometer tubes of uniform calibre improved, it was found that the point at which the mercury or other expanded fluid stood when at the temperature of the blood corresponded to a point on the scale between the 98th and 99th divisions, for the point on an instrument so constructed would be no longer predetermined, having been discarded as a fixed point in favour of that of freezing water.

In other words, it appears that although on the thermometers first made—the calibre of which was doubtless less accurate than in subsequently constructed instruments—the expansile fluid at the temperature of freezing water was found to correspond to 32° (the scale between the fixed points mentioned being divided into 100 parts), nevertheless it would now, I take it, be found in the case of an accurate tube so divided that the freezing point of water did not correspond to the 32nd division on the scale, but that it lay midway be-

tween the 32nd and 33rd. Just as it is conversely found that when the standard of graduation is made by dividing the interval between points marking respectively the temperature of the salt and ice mixture and of freezing water into 32, the mercury at blood heat stands at 98.4°, and not at 100°.—I am, etc.

S. H. BURNETT, M.B., Capt. I.M.S.

St. George's Hospital, Bombay, Nov. 8th.

THE BIRMINGHAM CONSULTATIVE INSTITUTION.

SIR,—At a meeting of the Representative Committee of Consultants and Specialists, held on December 3rd, the enclosed resolution was adopted.—I am, etc.,

THOMAS WILSON.

Birmingham, Dec. 19th.

Resolved: That this meeting of the Representative Committee of Consultants and Specialists of the City of Birmingham desires to congratulate the Medical Defence Union and its able and energetic Secretary, Dr. A. G. Bateman, upon the successful result of the prosecution of Dr. Ward Irvine before the General Medical Council, and returns very sincere thanks for the assistance afforded to the medical profession in Birmingham.

THE TREATMENT OF DYSENTERY.

SIR,—In the article on the above by Dr. Watkins-Pitchford it would appear that many of the older methods of treating dysentery are being superseded by newer methods without any very adequate reason. Can it be that the older methods have not had a fair trial? Saline aperients, he writes, have been found "all but useless" because they could not be given in the initial stages. Undoubtedly they are most useful in the initial stages, but I venture to think they would also be very useful if judiciously employed in the later stages. Magnesium sulphate is the only saline aperient I have used, and this I have found of use in all stages when given in ʒj doses every hour for three or four, or even eight doses. Originally it was recommended in ʒij doses every two hours, and is used by some in this manner now. This "evacuant method" empties the loaded vessels of the intestine, causing a watery yellow evacuation to take the place of the mucus and blood, which is passed with so much straining; and lessens the number of the evacuations as well as the "griping," which is so distressing in the acute stage. When this result is obtained the saline should be followed by Dover's powder and bismuth, but repeated if the stools again become dysenteric.

The ipecacuanha cure is of necessity "much credited," having proved so very successful in the past, but has nothing whatever to do with Dover's powder! I remember well Surgeon General Maclean in his lectures citing a case in which the ipecacuanha treatment proved most beneficial after large doses of Dover's powder had been given even *ad nauseam*.

Then as regards diet, surely "the fact that milk was not a suitable diet" will be questioned by many who have had the treatment of this fell disease in the tropics. Of course there are some very exceptional cases where milk in any state of dilution seems objectionable (for example, in the case of milkmen), as also cases in which the magnesium sulphate or ipecacuanha are useless, but I think it will be found that in the majority of cases one or other of these forms of treatment with a careful dietary, consisting almost exclusively of milk or some "thick panada" will be as beneficial, if not more so, than many of the various forms of treatment which are now being tried.

In the chronic form of this disease I would again strongly recommend a trial of Indian hemp. Ten minims of the tincture rubbed up with pulv. acaciæ gr. x and bismuth. subnitr. gr. x in aq. menth. pip ʒj ter die will be found most useful. In addition wet packs or poultices to the abdomen, rest in bed, avoidance of alcohol, tobacco, and chills, with a carefully-regulated but nourishing diet, will, I think, assist most materially in overcoming that prolonged anæmic stage of the disease which so often wearies out both the patient and his medical attendant.—I am, etc.,

G. F. POYNDER.

Bedford, Nov. 13th.

SPRAINS OF THE INTERNAL LATERAL LIGAMENT OF THE KNEE.

SIR,—I have been much interested in the communication from Mr. Joseph Griffiths, of Cambridge, in the BRITISH MEDICAL JOURNAL of October 20th, on the above subject, especially as I was a sufferer from that trouble in my young days, having sprained the internal lateral ligament of my knee 41 years ago, when I was a pupil to the late Sir G. M.—then Mr—Humphry, at Cambridge. For two or three years I had a great deal of trouble, and when a student at St. George's I consulted Mr. Heather Bigg about having an apparatus to support the knee. I suggested a somewhat similar apparatus to the one used by Mr. Griffiths. Mr. Bigg, however, thought that it would be difficult to keep it in position, and made me instead a steel apparatus attached to the boot, to the leg, and the thigh, accommodating itself to every movement, and holding a band round the knee in such a way that it would seem impossible to sprain the internal lateral ligament with this strong support.

I wore this for a year or more with some slight benefit, but it was not a practical success, for two or three times I sprained the ligament while wearing the apparatus, and it then became clear to me that no mere mechanical support could be worn strong enough and stiff enough to effectually support the internal lateral ligament of the knee in an active young man. I then got a laced knee-cap with a leather splint at the back, and this was a complete success, not from its superior mechanical support, but because it limited the movements of the joint just sufficiently to make me always careful with that knee. I never had a renewal of the sprain while wearing this. Once or twice after I left it off I had slight reminders of the trouble, but the fact of having worn that knee-cap for a few years has engendered a lifelong habit of being a little more careful with that knee; while it has not prevented me from doing a fair amount of mountain climbing. The feeling I speak of became automatic. Mr. Griffiths's is the first communication I have seen on this subject, but the trouble is a common one. I have, however, always found that this peculiar kind of knee-cap, if properly worn, soon cured the annoyance in all who consulted me on the subject.—I am, etc.,

WALTER G. WALFORD.

Finchley Road, N.W., Nov. 16th.

ABDOMINAL OPERATIONS: THE CASE OF DR. IMLACH.

SIR,—Mr. Arthur Wiglesworth unfortunately does not even understand the contention of those who have been writing on this subject.

The suggestion is not that Dr. Imlach was a pioneer of oöphorectomy, but that he was a pioneer in the surgical treatment of several abdominal diseases which up to that date had been more or less neglected. Notably was he a pioneer in the treatment of abdominal and pelvic hæmatocele by abdominal section, and in the (conservative) surgical treatment of prolapsed and tender ovaries (oöphorrhaphy).

Fortunately this does not admit of any controversy. The Committee who sat upon his work, after considering his cases of hæmatocele treated by operation, wrote as follows: "On one point they (the Committee) feel decided, namely, that in ordinary cases of pelvic hæmatocele, it (the operation) is not to be recommended."

We now know that ordinary cases of pelvic hæmatocele are due to tubal pregnancy; it is only the extraordinary ones to which some other cause can be assigned.

Whatever, therefore, may have been the value of contemporary criticism on Dr. Imlach's methods in other respects, it is evident that this judgment was very much mistaken. Should not the signatories anticipate the verdict of the future—may I not say the verdict of to-day—by gracefully acceding to Dr. Imlach's request?—I am, etc.,

JOHN W. TAYLOR.

Birmingham, Dec. 15th.

KIRKES' HANDBOOK OF PHYSIOLOGY IN AMERICA.

SIR,—Not having seen the letter of Mr. John Murray upon the subject, Professor Halliburton's communication in the BRITISH MEDICAL JOURNAL of December 15th was the first intimation to me that my name continues to appear upon the title page of what may be called an unauthorised edition of *Kirkes' Handbook of Physiology*, published in America, as joint editor with (the late) Mr. Morrant Baker. The well-informed reviewer of the *Boston Medical and Surgical Journal*, quoted

by Professor Halliburton, gives a pretty accurate account of the history of the book in question. The first edition of *Kirkes' Physiology* was brought out in 1848 by Dr. Kirkes, assisted by Mr. (afterwards Sir) James Paget, and these names appeared upon the title page (I think) until 1869, when Mr Morrant Baker brought out the sixth edition. Mr. Baker continued to be sole editor until 1880, when I assisted him in bringing out the tenth edition. The book continued under our joint editorship until 1892, when the thirteenth edition was published; this was revised in 1894, and was, according to the preface, to be looked upon "in certain respects as a new edition." As far as I can recollect this revision was done by me. After the issue of this revised edition, Mr. Morrant Baker and I ceased to be editors; the former in consequence of failing health, and I because I had given up the teaching of physiology. The next edition was edited by Professor Halliburton, and was to a large extent a new book, with a complete rearrangement of the subjects and a much enlarged scope. The editor and the publisher were certainly justified in looking upon the fourteenth edition therefore as practically a new work upon physiology. Perhaps it would have been better if the old title had been given up, but there were no doubt cogent reasons against this. Since 1894, then, neither Mr. Morrant Baker (whose lamented death occurred in 1896) nor I have had anything whatever to do with the editing of *Kirkes' Handbook*, and the continued use of our names in this connection is a most unwarranted and unjustifiable proceeding.—I am, etc.,

Queen Anne Street, W., Dec. 18th. VINCENT D. HARRIS.

THE TOXIC ACTION OF CACODYLATE OF SODIUM.

SIR,—Professor Armand Gautier's treatment of phthisis has been so enthusiastically advocated in the columns of the daily press, and we have been so repeatedly assured that cacodylate of sodium, although it contains 55 per cent. of arsenious acid, is absolutely innocuous even in large doses, that many practitioners will feel inclined to give it a trial. I hope, however, if they do so they will exercise a more than ordinary amount of caution, and that instead of beginning with a dose of 3 or 4 grains they will be content to prescribe a very small fraction of that quantity. I have now under my care a young woman suffering from moderately advanced phthisis. I ordered her 1 gr. of the drug in a pill three times a day. The specimen was carefully selected, and was obtained from a well known maker in Paris. After taking eleven pills she suddenly developed symptoms of arsenical poisoning. She suffered from constant nausea and vomiting, there was complete anorexia, the tongue was raw and irritated, the conjunctivæ were inflamed, the eyelids were œdematous, and there was considerable prostration. The breath had a gangrenous odour, there was tenderness on deep pressure along the course of the nerves, especially in the lower extremities, and she was unable to move the left leg or extend the left wrist. On suspending the treatment the acute symptoms subsided in twenty-four hours, but the loss of power in the leg and in the arm persisted for three days. There was no diarrhœa, and there was no albumen in the urine. The physical signs in the chest underwent no alteration. She had been under observation for some weeks before the treatment was commenced, and the neuritis was not due to any extraneous cause. It may be argued that she was peculiarly susceptible to the action of arsenic. On that point I have no evidence to offer, but if ever again I prescribe so lethal an agent as cacodylate of sodium, it will not be in the heroic doses recommended by French physicians.—I am, etc.,

Welbeck Street, W., Dec. 18th. WILLIAM MURRELL.

OBITUARY.

COURTENAY CHARLES PARSONS, M.R.C.S., L.R.C.P.,

Civil Surgeon[8] South African Field Force.

EVERY member of the British Medical Association will have read with profound regret of the death of Civil Surgeon Courtenay Parsons, the eldest son of Dr. Charles Parsons of Dover, recently Treasurer of the Association.

Mr Courtenay Parsons began his medical work as a pupil at the Carlisle and Cumberland Infirmary, having previously matriculated at Cambridge for the Science Course. Subsequently he completed his medical curriculum at St. Mary's Hospital, London, and obtained the diplomas of M.R.C.S. and L.R.C.P. in 1896. Shortly afterwards he was elected Assistant House-Surgeon to the North Staffordshire Infirmary, where he remained fifteen months. On relinquishing this office he worked with several practitioners in order to become familiar with the routine of private practice.

When the war in South Africa broke out he volunteered for service, and in the early spring of this year he was appointed by the War Office Civil Surgeon to the 21st Field Hospital, with which he served continuously for eight months, with two colleagues. The exigencies of the campaign left him at length in sole charge whilst trekking for weeks continuously. It was, however, only early in November that he complained of feeling a little bit fagged, and he was looking forward to a little rest which he hoped to get on arriving at Harrismith, but otherwise was feeling very fit. On November 30th an official telegram announced that he was "dangerously ill," and on December 3rd another conveyed the intelligence that he had died of enteric fever on December 2nd. He gave his very best service even to the utmost for his fellows, and the rest which he needed after such continuous arduous work came too late to save him.

His brother, Lieutenant Francis Newton Parsons, of the Essex Regiment, who was awarded the V.C. for conspicuous gallantry at the battle of Paardeberg and on other occasions, was killed in action at Driefontein on March 10th. The deepest sympathy will be felt with Dr. Parsons in the loss of two such sons.

ALEXANDER DEAS DAVIDSON, M.A., M.D.CANTAB., M.R.C.S., L.S.A.,

Ophthalmic Surgeon, Swansea General and Eye Hospital.

WE record with much regret the death of Dr. A. D. Davidson, of Swansea, which occurred on December 7th. He had been in indifferent health since a severe attack of influenza three years before, and the immediate cause of his death was acute phthisis. The son of a naval surgeon, he was born in 1849. He entered at Clare College, Cambridge, and took the B.A. degree with honours in 1872, and the M.A. in 1875. On leaving Cambridge he commenced the study of medicine at St. Thomas's Hospital. He became M.R.C.S. and L.S.A. in 1877, and M.D. in 1880. After holding the posts of Ophthalmic Assistant at St. Thomas's Hospital and Resident Clinical Assistant at the Bethlem Hospital, he, in 1882, commenced practice in Swansea. Shortly after he became Medical Officer in the out patient department of the Swansea General and Eye Hospital, and a little later Ophthalmic Surgeon to the hospital, a post which he held until four months before his death. He was a Medical Officer of the Swansea Provident Dispensary, and a member of the South Wales and Monmouthshire Branch of the British Medical Association. He was one of the best known men in his profession in Swansea, and had a considerable reputation as an ophthalmic surgeon throughout South Wales. His loss will be greatly felt.

ETIENNE JULES BERGERON, M.D.,

Perpetual Secretary of the Paris Academy of Medicine

DR. BERGERON, Perpetual Secretary of the Académie de Médecine, who died recently, was born in 1817. He studied medicine in Paris, where he took his degree in 1845. He gave special attention to diseases of children, and was for many years physician to the Hôpital Sainte Eugénie, now the Hôpital Trousseau. Besides being a learned and skilful physician, M. Bergeron was also a distinguished hygienist. He was a member of the Council of the Public Hygiene of the Seine Department, where he made himself prominent by a number of valuable reports, among which may be mentioned one on the making of wine (1870), and another on the repression of alcoholism (1872). He succeeded Poëlard as Perpetual Secretary of the Academy in 1887. Dr. Bergeron was a man of the highest integrity of character and had a lofty sense of the dignity of his profession. His writings consist chiefly of reports presented to the Committee of Hygiene and of funeral discourses on deceased members of the Academy delivered every year in his official capacity: in this difficult species of literary composition he was a past master. Among

his other writings may be mentioned Monographs on Quinine Eruptions (1876); on the Geographical Distribution of Ringworm in France, and on Typhoid Jaundice. He took an active part in the creation and development of the Œuvre des des Hôpitaux Marins, of which he was president.

DR. JAMES MICHELL WINN died at his residence in Hampstead on December 8th in his 92nd year. He was, it is stated, the oldest M.D. of Glasgow, and also the fourth in the list of the Members of the Royal College of Physicians; he was not the oldest in point of age, there being a senior to him by six months among the Fellows of the College. Dr. Winn was born in the parish of Budock, in Cornwall, on December 25th, 1808. When about five years of age he went to reside with his parents at Lisbon, and was a resident in the Peninsula when the battle of Vittoria was fought in 1813. On returning to England his family resided for several years in London. Dr. Winn was educated at the Stockwell Park Academy. He commenced his medical studies at St. George's Hospital under Sir Benjamin Brodie and Dr. Chambers. He heard Mr. Abernethy deliver a lecture on one occasion, and was struck with the clear and practical style of the lecturer. On leaving St. George's Hospital he went in 1832 to the University of Glasgow to study for the M.D. degree. At that time the cholera had made its first appearance in England, and the average daily deaths at Glasgow amounted to upwards of one hundred. This gave him a good opportunity of studying the nature and treatment of that complaint at the Cholera Hospital. On returning to England he was appointed Honorary Physician to the Royal Cornwall Infirmary, a position he retained for fourteen years. In 1852 he settled in London, where he made psychology his chief study, and contributed numerous articles on that subject to the *Journal of Psychological Medicine*. He had written previous to this in 1848 a treatise on *General Paralysis of the Insane*. In a work on the *Nature and Treatment of Hereditary Disease*, published in 1869, he propounded a theory that all hereditary disease was interchangeable—in other words, mutually convertible. Dr. Winn was buried at Kensal Green on December 12th.

DR. D. E. SIEGENBECH VAN HEUKELOM, Professor of Pathology and Forensic Medicine in the University of Leyden, who died recently at the age of 50, was originally engaged in business. At the age of 29 he was able to gratify his inclination for medicine, and he began his studies in 1880. He graduated at Leyden in 1885, and was soon appointed Assistant in the Boerhaave Laboratory, where he devoted himself with great enthusiasm to pathological research. The fruits of his labours were published in the *Nederl. Tijdschrift voor Geneeskunde*, *Virchow's Archiv* and *Zeigler's Beiträge*. A collection of his papers was embodied in the *Recueil de Travaux du Laboratoire Boerhaave*, which was published by Brill of Leyden in 1899. In 1888 he was appointed to the newly founded Chair of Pathological Anatomy. As a teacher he made a great impression on his pupils, not only by his knowledge and enthusiasm, but by his fine personal character. Professor van Heukelom, who was a member of the Leyden Town Council, took the deepest interest in social questions, and was untiring in his efforts to improve the administration of lunatic asylums and prisons, and generally to better the condition of the people.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Rufus P. Lincoln, one of the foremost laryngologists of New York, who was one of the first to use the electric cautery in operations on the throat, aged 59; Dr. Moses Clarke White, Professor of Pathology in Yale Medical School, aged 81; Dr. Richard Altmann, Extraordinary Professor of Anatomy in the University of Leipzig, aged 48; and Dr. Durand, of Gros, one of the first medical men in France who gave attention to hypnotic suggestion. He was the author of a *Traité de l'Electro-Dynamique Vital* and a *Cours de Braidisme*, both of which were published in 1850. Dr. Gros, who was born in 1826, had to go into exile at the time of the *Coup d'Etat*, and did not return to his native land till 1860. He meddled little with politics afterwards, but was an unsuccessful candidate for the Senate in 1892.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE ALEXANDER MEMORIAL PRIZE.

OWING probably to the pressure of work entailed on the officers of the Royal Army Medical Corps by the war in South Africa, no essays, competing for the prize of £50 and a gold medal, have been received within the limits of time required.

The Committee have therefore resolved to offer the same subject for the next competition, namely, "Injuries to joints and long bones, caused by modern small-arm projectiles: their nature, diagnosis, and treatment, with special reference to the appliances required and available on field service."

Essays must reach the President of the Committee on or before December 31st, 1902, must bear a brief motto, and be accompanied by a sealed envelope similarly superscribed, containing the name and address of the author. No essay should exceed about 20,000 words, exclusive of tables, which may be added in the form of appendices. The competition is limited to executive officers of the Royal Army Medical Corps on full pay, and professors and assistant professors at Netley are not eligible while so employed.

THE ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty:—CHARWORTH L. NOLAN, M.B., Staff-Surgeon, and HENRY W. W. TOWNSEND, M.A., Surgeon, to the *Blenheim*, January 1st; EDWARD T. MEAGHER, Surgeon, to the *Briton*, January 1st; J. R. MUIR, M.B., Surgeon, to the *Jupiter*, January 1st; CHRISTOPHER L. W. BUNTON, M.B., Surgeon, to the *Forte*, December 13th; SYDNEY CRONEEN, Surgeon, to the *Raven*, December 13th; JOHNSTON H. ACHESON, M.B., Staff-Surgeon, to the *Anson*, undated; H. C. ADAMS, W. E. GRIBBELL, and H. V. WELLS, Surgeons, to the *Vivid*, for disposal, January 19th; L. LINDOP, J. WHELAN, and J. VERDON, Surgeons, to the *Duke of Wellington*, for disposal, January 19th; J. M. H. CONWAY, A. J. SHELDON, and C. R. RICKARD, Surgeons, to the *Wildfire*, January 19th.

The appointments of Staff-Surgeon J. H. ACHESON, M.B., and Surgeon R. B. AINSWORTH to the *Anson* have been cancelled.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Surgeons on probation are appointed Lieutenants, dated November 29th:—HENRY J. MCGREGOR, M.B.; WILLIAM R. P. GOODWIN, JOHN H. BRUNSKILL, M.B.; ARTHUR C. DUFFEY, M.D.; ARTHUR W. GIBSON, CHARLES D. MYLES, M.B.; ROCHFORD N. HUNT, M.B., HENRY E. J. A. HOWLEY, RALPH F. M. FAWCETT, WILLIAM L. STEELE, HUGH A. DAVIDSON, M.B.; THOMAS FINUCANE, M.B.; JOHN W. WEST M.B.; WILLIAM RIACH, M.D.; HERBERT R. BATEMAN, HORACE G. PINCHES, THOMAS WHITE, JAMES C. KENNEDY, M.B.; ARTHUR R. C. PARSONS, JOHN B. CAUTLEY, WILLIAM M. B. SPARKES, SAMUEL B. SMITH, M.D.; EYRE W. POWELL, JOHN JONES.

The following are on passage home from South Africa:—Civil Surgeons E. A. Nathan, E. M. Pearce, A. N. Weir, J. A. C. Macewen, G. L. Hadwell, A. C. Robinson, and J. Thomson; Hospital Dresser J. Atkins. For duty on the voyage: Lieutenant-Colonel H. J. Battersby, Civil Surgeons J. A. Barnes, L. Cooper, J. E. Ker.

Civil Surgeon B. A. Nicoll is returning from South Africa invalided.

Civil Surgeon Herbert Hartley, Lovat's Scouts, is returned as convalescent at Capetown.

The following have been discharged from hospital in South Africa to duty: Lieutenant N. J. C. Rutheriord, Civil Surgeon D. W. Johnson, R. Williams, G. L. Hayden, E. H. Worth, A. Young, Major G. A. Wade.

Among the casualties at Nooitgedacht on December 13th, Civil Surgeon Inglebach (? Englebach) is included as missing (believed wounded).

Civil Surgeon Barrett is reported as dangerously ill at Pretoria, December 13th; Civil Surgeon R. M. Cowie, dangerously ill, has slightly improved.

ARMY MEDICAL RESERVE.

SURGEON-MAJOR G. R. T. PHILLIPS is promoted to be Surgeon-Lieutenant-Colonel, December 15th.

Surgeon-Captain T. W. J. ALLEN, having resigned his appointment in the Volunteers, ceases to belong to the Army Medical Reserve, December 15th.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL J. YOUNG, M.B., Bengal Establishment, is appointed to officiate as Principal Medical Officer Punjab Frontier Force, with the temporary rank of Colonel, from October 8th.

THE MILITIA.

SURGEON-LIEUTENANT-COLONEL J. MUNRO, M.D., 3rd Battalion Durham Light Infantry, resigns his commission on account of ill-health, December 19th; he is permitted to retain his rank and uniform.

MILITIA MEDICAL STAFF CORPS.

SURGEON-CAPTAIN A. R. H. OAKLEY, from the 1st Volunteer Battalion the Essex Regiment, to be Surgeon-Captain, December 19th.

Captain W. V. SINCLAIR, from the 3rd Volunteer Battalion the Devonshire Regiment, to be Surgeon-Lieutenant, December 19th.

Surgeon-Lieutenant W. E. M. CORBETT, from the 2nd Volunteer Bat-

talion the Devonshire Regiment, to be Surgeon-Lieutenant. December 10th.

THE VOLUNTEERS.

SURGEON-MAJOR J. H. WATHEN, 1st Gloucestershire Artillery, resigns his commission, retaining his rank and uniform, December 19th.

CHARLES J. MACALISTER, M.D., formerly Surgeon-Captain 2nd Volunteer Battalion, is appointed Surgeon-Captain in the 8th (Scottish) Volunteer Battalion the King's (Liverpool Regiment), December 5th.

Brigade-Surgeon-Lieutenant-Colonel E. POCKLINGTON, 2nd Volunteer Battalion the East Surrey Regiment, resigns his commission, retaining his rank and uniform, and thereby vacating his appointment as Senior Medical Officer to the Surrey Volunteer Infantry Brigade, December 19th.

Surgeon-Lieutenants L. F. DEMETRIADI and H. W. WILLIAMS, M.B., 2nd Volunteer Battalion the Duke of Wellington's (West Riding Regiment), are promoted to be Surgeon-Captains, December 19th.

Mr. WILLIAM BRATTON is appointed Surgeon Lieutenant in the 2nd Volunteer Battalion the Durham Light Infantry, December 10th.

VOLUNTEER MEDICAL OFFICERS.

VOLUNTEER SURGEON writes: I quite agree with what your correspondent has written *re* volunteer surgeons and expenses; certainly no volunteer surgeon should be expected to subscribe to regimental prize funds, etc.: in fact, the mess subscription should be the only one expected from him. In many regiments, however, where there is an annual subscription to the corps both for officers and men, which does not include the mess subscription, the medical officer is let off the regimental subscription, and is not expected to subscribe to prizes, etc. This is quite right, and should apply to all corps, whether there is an annual regimental subscription or not, for many people quite overlook the fact that a medical man's time is money, and by attending at recruiting hours he often loses patients, which in these days of competition many can ill afford to do. Owing to expenses entailed in being a member of a corps, it is becoming annually harder to get volunteer surgeons. I think that as promotion to the different ranks of volunteer surgeons goes merely as a rule by time, any volunteer surgeon who has served with troops should be promoted more rapidly than in the ordinary course of events, as one month with troops is, from a purely military medical point of view, of greater importance than five years with volunteers; therefore I think that, say, three months with troops ought to be counted as equivalent to one year with volunteers for promotion.

As far as your correspondent's statement goes as to commanding officers sending round circulars to medical officers concerning doing duty at depôts, etc., the matter lies quite in the hands of the volunteer surgeon himself, as he can always refuse to go, except, of course, when the volunteers are mobilised owing to imminent national peril.

WAR OFFICE METHODS OF OBTAINING MILITARY MEDICAL OFFICERS.

M.A.CANT., M.A., M.D.DUBLIN, writes: In your issue of last week you assert in an article anent the employment of civil surgeons that the War Office has made no effort to obtain the services of volunteer medical officers. This assertion is quite contrary to the true state of the case.

In March last (Army Orders 58 and 59) the War Office asked for volunteer surgeons for service abroad and at home, and Army Order 51 March confirmed their eligibility for gratuity under the then existing Article 601 D Royal Warrant for pay, etc.; moreover during the volunteer camps in the summer principal medical officers were instructed when inspecting bearer companies, etc., to ask for volunteers for service under the above-mentioned army orders. It is difficult to conceive what other means—short of dragging the volunteer surgeons forcibly from their homes—the War Office could adopt. The response to this request of the War Office was, I believe of the most meagre description, and it is abundantly proved—as I have pointed out before in answer to rather acrimonious letters from officers of the A.M.R.—that neither they nor officers of the V.M.S. are as a rule available for anything more than aid of a very partial and localised nature. Hence the War Office has had to fall back again on the civil surgeon.

There is no question of "rank"; it is a pity to attempt to raise that "bogy." I have now served continuously for nearly three years, first as a civil surgeon and after as an attached volunteer surgeon, and I have met with nothing but kind consideration from the Army Medical Department and courtesy from general to drummer boy. I cannot conceive any one preferring the dreadful drudgery of general practice to service in the R.A.M.C., and it is my everlasting regret that the age limit prevents my obtaining a commission.

MEDICO-LEGAL AND MEDICO-ETHICAL.

AN ACTION FOR FEES.

BARKER AND JAMES *v.* COXE AND BURNARD.

THIS case was heard before Mr. Justice Wills on December 1st. The action was brought by Dr. R. H. Barker, who practises in partnership with Dr. James at Hungerford, to recover the sum of £201 7s. 6d. for professional services rendered to the late Mr Coxe, of Newbury in Berkshire. A dispute arose as to the sum of £45, the residue of the amount claimed having been paid into court by the defendants, who were the widow and one of the executors of the deceased. The defence was that these charges were unreasonable.

Mr. Atkin appeared for the plaintiffs, Mr. Spokes for the defendants.

According to Dr. Barker's evidence, it appeared that Mr. Coxe had been his patient for over twenty years. In April of the present year Mr. Coxe was suffering from a severe attack of gout and gangrene of the foot. He specially requested the plaintiff to visit him every evening at or after 9 P.M. Dr. Barker lived three and a-half miles from his patient's house. For each of these visits a charge of £2 2s. had been made. In cross-examination, he admitted that he generally charged 10s. 6d. for a daytime visit, and that the deceased had made him a present of £100 shortly before his death.

His Lordship observed that such a gift had nothing whatever to do with the present case.

Dr. Maurice (Marlborough), Dr. Watson, and Dr. Hampshed having given evidence to the effect that the charges were reasonable,

Counsel for the defendants called Dr. Major (Hungerford) and Dr. W. D. Clarke (Newbury), who stated that it was customary to charge a double fee for a night visit, but they admitted there was no invariable rule.

Without calling on counsel for the plaintiffs to reply, his Lordship gave judgment, and said that the reasonableness of a doctor's charges depended upon the circumstances of each case. Here the plaintiff had been requested to attend this patient every night in the week, and in his judgment the charges were reasonable. Judgment for the plaintiff, with costs.

THE FRIENDLY SOCIETIES AND THEIR MEDICAL OFFICERS.

ON account of the unsatisfactory relations which have existed for some time past between friendly societies and the medical profession in many places, the BRITISH MEDICAL JOURNAL has made it a rule to decline all advertisements for such appointments, as only in this way can it avoid occasionally, through ignorance of the local conditions, assisting those who are striving to reduce the medical profession to an unwholesome servitude. But this attitude of the JOURNAL must not be taken to imply any hostility to the friendly societies as a class, and it is certain that in carrying it out advertisements may have to be refused to which there would be no reasonable objection. In too many cases, however, these appointments have been made against the wishes of the local profession, and are filled by men who have not hesitated to defy professional opinion, and from such persons we cannot expect a very high standard of conduct. It is probably of one of these that an anonymous correspondent complains who sends us a circular in which the writer states, "I have resigned the position of senior medical officer to the medical institute held by me for upwards of seven years," and that he intends commencing practice on his own account at — Street on December 4th. The circular goes on to say, "the terms will be just the same as you have been accustomed to," and that "further particulars may be obtained any afternoon or evening at — Street." Such an attempt to prejudice his old employers and to attract to himself the patients with whom he has been brought into relation as medical officer of the medical institute is manifestly improper. It is probable that a remedy for this and other evils would be found by the General Medical Council if a case were properly brought to its notice.

LATENT INSANITY.

AN interesting case from a medico-legal point came before Dr. Danford Thomas, coroner for Central London, at the Paddington Coroner's Court recently. The subject of the inquest was supposed to have committed suicide by inflicting numerous wounds on himself with a razor. According to the brother's evidence the deceased, who resided with him, retired to his bedroom after dinner on the Sunday before his death, and, as he did not come down to tea, the brother went to look for him. He found him on his bed apparently insensible, with blood all over everything. He sent for the police and a doctor, and after their arrival the deceased was removed to St. Mary's Hospital, where he died a week later.

The house-surgeon deposed that on admission the patient had seventy-one wounds on different parts of his body, three being on the throat, but none of them more than skin deep. There was no bleeding when admitted, and he did not think that hæmorrhage had much to do with the death, nor was there anything of a dangerous character in the wounds. The patient was often delirious while in the hospital, and melancholic, and he was of opinion that death was chiefly due to melancholia and asthenia. At the necropsy a dozen lucifer matches were discovered in his stomach, and the liver showed some signs of degenerative changes, such as are common in phosphorus poisoning.

It would be difficult to demonstrate the precise cause of death in this case, but there can be little doubt that the deceased was not of sound mind, and had probably not been so for some time. Notwithstanding, it would have been impossible to have kept him under supervision. The brother stated that beyond being somewhat depressed, the deceased had manifested no sign whatever of mental aberration. He was regular in his habits, able to follow his business, and kept all his accounts with perfect accuracy.

When it is considered that persons of unsound mind are not always content to confine their operations to themselves, it cannot be regarded as good policy to discourage the activity of those officers whose duty it is to administer the lunacy laws, namely, relieving officers and medical practitioners generally. If such officers are to have actions brought against them for the slightest mistakes, it only serves in a Voltairean sense *pour encourager les autres*, even if the defendant eventually wins the action. The victor in a lawsuit seldom has much to congratulate himself about, and it would be far better if the law forbade such actions to be brought except in very exceptional cases. Why should it not be necessary to get the consent of a public functionary who knew something about the difficulties of lunacy practice, such as a Master in Lunacy, before any such action was permitted?

MEDICAL ADVERTISING.

DR. DAVID ANDERSON-[illegible] ciation, I take my turn [illegible] e it is one [illegible] cr- nic[illegible] d Ha[illegible] col[illegible] of Dr [illegible] because his name has appeared too [illegible] in print before the eyes of the public.

At the bottom, wherein does his case differ from the case of the men whose names appear on the enclosed?

That, Sir, is my difficulty. I am no advocate for advertising. Years

ago I stopped my name appearing in the London dailies as appended to bulletins I issued thrice a day when in attendance on a distinguished patient. That is more than some of the members of the Council have done. Are they so hard upon him because he gives his advice for a paltry half-guinea? And dares to call himself a consultant too. That *is* adding insult to injury!

Yet we can never get rid of Nemesis. I have heard sixpenny doctors complain that the competition of the consultants was ruining them. Only one does not call them consultants then, but Surgeon to Saint-this and Physician to Saint-that. And they give their advice for the price of the medicine bottle, the bottle of medicine being thrown in. But that they should be served in a like manner, and their fees (they are now reverentially called *consultants*) cut—why the very thought of it is intolerable!

Perhaps you will solve this difficulty of mine, perhaps you won't, and the Editor's W.P.B. will be its fate. Anyhow, I have for once exercised my privilege and—baited the Editor.

*** Our correspondent does his baiting as Bottom did his roaring, "as gently as any sucking dove.....as 'twere a nightingale." We entirely agree with what we take to be his main contention, that there must not be two rules, one for the consultant and the other for the rest of the profession; but before a man can be blamed because his name appears in the newspapers under circumstances which may suggest advertisement, it is only just to make sure that the advertised one was privy to the advertisement. In the case of one of his enclosures we may feel certain that this condition was not fulfilled. The gratitude of patients sometimes takes forms which are embarrassing to the practitioner, and we conceive the letter in question to be a case in point.

As to the other enclosure, it is an advertisement of a nostrum containing testimonials purporting to have been given by five medical men. In two cases only is the address given, and in neither can we ascertain from the *Medical Register* or the *Medical Directory* that any person of the name given practises at the place mentioned. This leaves three names. Two are fairly common surnames, and occur more than once on the *Medical Register*, but there is no means of identification. The fifth surname does not appear on the *Medical Register* at all. As to three of the five testimonials, therefore, it may be concluded either that the alleged givers are dead or that they never existed. Would it be too optimistic to extend the conclusion to the other two?

We hope that one result of the recent inquiry before the General Medical Council may be to convince everybody that for the honour of the profession all ranks must work together to resist the intrusion of the commercial spirit, with its inevitable sequence—advertising—into professional life.

LIABILITY OF SCHOOL BOARDS FOR MEDICAL ATTENDANCE.

MAC. was asked by the head mistress at a Board school to see a child and "to attend her and the Board would make it right." The accident was of such a nature that in addition to the initial treatment, 23 visits had to be paid, and an account for £2 10s. 6d. was sent in. After six months our correspondent was informed by a member that the Board did not know whether it could or would pay, and that the only reason which led them to entertain the application was that the playground had been neglected and was not safe for children to play in. A little later our correspondent was sent for by the head master to see a boy who had sustained a fracture. Our correspondent gave the necessary treatment and charged £1 1s. He asks whether there can be any doubt about the liability of the School Board.

*** We are advised that the questions raised involve considerable legal difficulty. It is not probable that the members of the School Board would be surcharged in a case of the kind, in respect of any payment made for the first attendance of a medical practitioner, but it is doubtful whether the schoolmistress could pledge the credit of the School Board even to this extent. It is only possible, however, to form an opinion on the point, as no express judicial authority can be found. In the case referred to, the schoolmistress ordered the continuous attendance of our correspondent, and if she did this without the authority of the Board, then, in analogy to the law of principal and agent as established by cases, she may have rendered herself personally responsible, not on the contract, but on her implied promise that she really possessed the authority which she affected to have. The above remarks are apart from any question of negligence on the part of the School Board, in allowing children to play in a playground which is in an unsafe condition. In that case, although as between the medical man and the School Board, the opinion above expressed may in general apply, the parent or next friend of the child might have a right of action on behalf of the child against the School Board, and the fees of the medical practitioner would form part of the damages recoverable. Under the circumstances we would recommend our correspondent to make a formal application to the School Board for payment of the claim, stating that in the event of their declining to pay the amount due, he would have to take legal advice as to his remedy, either against the School Board or personally against the headmistress who authorised his attendance on behalf of the Board. Having regard to the difficult nature of the case, our correspondent should consult a solicitor.

COLLIERY CLUBS.

B. J.—Taking the rate of pay at 2s. 6d. a head for attendance upon accidents only, and, assuming that the number of accidents varied at the different pits from a minimum of 10 per cent. to a maximum of 40 per cent. of the men employed, it is evident that in some pits the pay is satisfactory and in others decidedly the reverse. In the pits where the accidents average 10 per cent. the rate of pay per accident would work out at £1 5s.—a very fair fee. At the pits where the accidents average 40 per cent. the pay per case would only amount to 6s. 3d.—a very inadequate remuneration. The surgeons at these pits are certainly justified in standing out for increased pay, and 15s. a case is not an unfair sum to ask for. But as, judging from the statement before us, "B." bought the practice without knowing anything of the dispute, it seems only fair that he should be given the six months' time he asks for before he is boycotted by his professional neighbours for refusing to fall into line with them. "B." might be advised that the same fee should not necessarily be charged by both old and new societies. It might be based upon the number of accidents occurring at each pit.

THE PURCHASE OF A SHARE IN A PRACTICE.

CIVIS asks whether in negotiating for the purchase of a share in a medical practice it is usual: (1) When the whole purchase money is not paid at once to pay interest on the balance? (2) To bind oneself not to practise within a certain radius on the dissolution of the partnership?

*** Where the agreement is that the whole sum shall be paid down at once there is sometimes a clause that where the purchaser fails to do so he shall as an alternative pay interest at so much per cent. on the balance. Where the agreement is that the purchase money shall be paid in instalments at fixed periods, it is not customary, in the absence of an agreement to the contrary, to pay interest on the unpaid purchase money. It is usual for the vendor of a share in his practice to protect himself by binding the incoming partner not to practise within a certain radius in the event of a dissolution of partnership. The clause is usually mutually binding on either partner leaving the firm.

PERIOD FOR PRESENTATION OF ACCOUNTS.

RURAL writes that there is an impression in his district that accounts for professional services are only valid when rendered within a certain limited time. He would be glad of any information on the subject.

*** It is of no importance legally when the account is rendered, provided that payment is demanded within six years of the debt becoming due. The Statute of Limitations forbids the recovery of all simple contract debts later than six years from the time they first became due, unless the debtor has given a promise to pay in writing before the expiry of that time, or has paid a portion of the debt on account.

NOTIFICATION OF PARTNERSHIP.

A CORRESPONDENT sends us a copy of a lithographed circular notifying the existence of a partnership which he says has been sent only to the medical men practising in the neighbourhood and to the regular patients attended by him during the last twelve or eighteen months. We are of opinion that no objection can be entertained to such a notice circulated under the described limitations.

APPOINTMENTS AND THE SALE OF PRACTICES.

INTEGER asks for an opinion on the following circumstances: X., an old practitioner in a certain district, had in his practice nearly all the clubs and public appointments. X. dies, and his executors seek to sell his practice. Is it in accordance with medical etiquette (1) for any of the other practitioners of the district to apply for the clubs or appointments left vacant by X.'s decease? (2) would the answer be the same if other practitioners are invited to make application by club members and elective bodies? (3) or where the appointments are advertised?

*** There is no breach of professional etiquette in applying for an appointment which is vacant, and the vendor of a practice cannot claim to sell public appointments as part of the same. It is customary, however, to wait till an appointment is advertised, or until candidature is invited by the committee or council with whom the making of the appointment rests.

MIDWIFERY ATTENDANCE.

MEDICAL.—A correspondent writes that he was sent for about 9 P.M. to attend a lady in her confinement. As the pains were spurious he left her, leaving word that he was to be sent for when labour was more advanced. A few days later he heard that his patient had been attended by another medical man. He wishes to know whether he can recover from the husband his fee, one guinea.

*** Yes, if he had been engaged to attend this patient, and in consequence of that engagement visited her on the evening in question. Otherwise, if he was only sent for specially on that occasion to attend, if the labour then came on, he can only recover a fee for his visit and any service he may have then rendered.

THE OBLIGATIONS OF A *LOCUM TENENS*.

HOT WATER.—As we understand that Dr. B. attended Mrs. C. on behalf of Dr. A., he has quite rightly refused to attend Mrs. C. permanently. Had Mrs. C. wished to change her medical attendant she did not go about it the right way. She should have first sent an intimation to Dr. A., and then sought Dr. B.'s services.

FEES FOR CONSULTATIONS.

CAROLUS puts the following cases: (1) A patient of A. is a plaintiff in an action at law. A. certifies that he is unable to attend the court. The defendant requires another practitioner, B., to see the patient and report. B. asks A. to meet him at the patient's house and A. consents, and later B. makes his report. Who is to pay A. his fee for consultation with B.? (2) One of A.'s club patients wishes for a consultation with another practitioner. A. consents, and wishes to know whether he can charge his patient a fee for meeting the consultant, or is the consultation included in the ordinary duties of a club doctor?

*** (1) A.'s patient is responsible for the fee, but if he wins his action, this fee will be included in the costs that the defendant will have to pay. (2) It is no part of the duties of a club doctor to meet a consultant, but if he agrees to do so, he would probably be unable to recover any extra fee for so doing.

MEDICAL ETIQUETTE.

UNCERTAIN asks for an opinion on the following circumstances: A lad, A., is hurt in the employment of his master, B. B. sends for his own doctor, Y., who happened to be out. He then sent for Z., A.'s usual doctor, who attended. Who ought to take charge of A.—Y. or Z.?

*** Z. is entitled to retain the case, unless B. merely asked him to attend in the absence of Y.

ACCIDENTS INSURANCE AND THE WORKMEN'S COMPENSATION ACT.

X. Y. Z.—The scheme referred to in the BRITISH MEDICAL JOURNAL of December 1st is drawn up under Section 111 of the Workmen's Compensation Act. If the Registrar of Friendly Societies, after taking steps to ascertain the views of the employer and workmen, certifies that any scheme of compensation, benefit, or insurance for the workmen of an employer in any employment, whether or not such scheme includes other employers and their workmen, is, on the whole, not less favourable to the general body of workmen and their dependents than the provisions of the Act, the employer may, until the certificate is revoked, contract with any of his workmen that the provisions of the scheme shall be substituted for the provisions of the Act, and thereupon the employer shall be liable only in accordance with the scheme. In the Midlands such a scheme is in force. Contributions are made to a fund by both employers and men, and a society is formed called the South Staffordshire and East Worcestershire Mining District Compensation Fund, which is managed by a joint committee of masters and men. Any information as to the rules and rate of pay could be obtained at the office of the above Society, 267, Castle Street, Dudley, Worcestershire.

THE PUFFING OF MELLIN'S FOOD.

WE are sorry that Mellin's Food Company think it necessary to support the claims of the useful and well-known article they sell by a series of puffing circulars, some of them bordering on the ridiculous, which have been recently sent round to the medical profession. The last of these is one from a doctor who is put down in the *Medical Directory* as "travelling." He finds Mellin's Food useful after brain fag, and after excesses in smoking and alcohol! We hope the writer may be induced to withdraw this circular, as it is most derogatory to the medical profession that puffs of this kind should be permitted to be used for trade advertisements.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

THIRD EXAMINATION FOR MEDICAL AND SURGICAL DEGREES, PART I.—The following candidates have satisfied the Examiners:

Surgery and Midwifery.—H. St. A. Alder, B.A., Pemb.; A. P. M. Anderson, B.A., Trin.; B. L. T. Barnett, M.A., Joh.; J. Barnicot, B.A., Pemb.; A. G. Bate, B.A., King's; S. Bousfield, M.A., Cai.; A. H. Brehaut, B.A., H. Selw.; H. O. Butler, B.A., Emm.; C. de L. Carey, B.A., Emm.; C. J. Coleman, B.A., Trin.; A. J. Fairlie-Clarke, B.A., Emm.; H. Gordon-Smith, B.A., Trin.; A. W. Greig, B.A., Jes.; W. Hill, B.A., Emm.; A. E. Hodder, B.A., King's; E. H. Kitchin, B.A., Down.; J. L. Lock, B.A., Cai.; G. W. Micklethwaite, M.A., Trin.; F. E. Murray, B.A., Joh.; H. Spurrier, B.A., Cai.; J. Stirling-Hamilton, B.A., Jes.; A. H. Style, B.A., Emm.; H. E. Symes-Thompson, M.A., Christ's; A. E. Taylor, B.A., Down.; N. F. Tiechurst, M.A., Cla.; B. L. Thurlow, B.A., Cai.; E. G. Wales, B.A., Down.; F. K. Weaver, B.A., Trin.; H. H. Weir, Trin.

FIRST EXAMINATION FOR MEDICAL AND SURGICAL DEGREES, PART II.—The following candidates have satisfied the Examiners:

Elementary Biology.—A. G. Atkinson, Trin.; G. F. S. Bailey, Cai.; G. B. Bartlett, Sid. Suss.; R. L. Barwick, B.A., Christ's; A. E. Bonny, Sid. Suss.; H. A. Browning, Joh.; R. Burgess, Cai.; A. F. Burton, Christ's; C. St. A. Coles, Trin.; W. D. Coplestone, Jes.; G. W. Craig, Emm.; W. F. Denning, Trin.; G. H. Drew, Christ's; D. Embleton, Christ's; H. J. Gouvain, Joh.; J. L. Graham-Jones, Emm.; F. W. W. Griffin, King's; M. Grundy, Joh.; W. H. Hodgson, Christ's; C. J. R. Hollmeister, Cai.; V. C. Honeybourne, Joh.; N. G. Horner, Cai.; P. P. Laidlaw, Joh.; K. A. Lees, King's; R. B. Lloyd, Emm.; L. H. L. Mackenzie, Trin.; R. M. Miller, B.A., Cla.; H. W. Moxon, Joh.; E. V. Oulton, Christ's; H. A. Pontifex, Pemb.; R. L. Rawlinson, Trin.; E. Sandbach, King's; E. F. Skinner, Corp. Chr.; J. M. Smith, Christ's; B. S. Taylor, M.A., Cla.; C. B. Ticehurst, Joh.; C. H. Treadgold, Cla.; J. A. Venning, Trin.; B. Wahby, Non Coll.; S. L. Walker, Sid. Suss.; D. R. P. Walther, Pemb.; E. G. Wheat, Christ's; A. E. Wilson-Hird, Cla.

FIRST EXAMINATION FOR MEDICAL AND SURGICAL DEGREES, PART I.—The following candidates have satisfied the Examiners:

Chemistry and Physics.—A. G. Atkinson, Trin.; G. F. S. Bailey, Cai.; J. H. Board, Pemb.; S. Churchill, Trin.; E. B. Clayton, Cai.; A. I. Cooke, Cai.; W. D. Coplestone, Jes.; H. B. Corry, Cai.; G. H. Drew, Christ's; H. B. Ellison, Cai.; D. Embleton, Christ's; H. J. Fardon, B.A., Christ's; H. J. Gauvain, Joh.; S. Gooding, Joh.; J. W. Grice, King's; F. W. W. Griffin, King's; M. Grundy, Joh.; T. S. Hele, Emm.; A. L. Hetherington, Trin.; V. C. Honeybourne, Joh.; N. G. Horner, Cai.; C. E. M. Jones, King's; P. P. Laidlaw, Joh.; K. A. Lees, King's; L. F. G. Lewis, Christ's; C. Lillingston, Pemb.; J. W. Linnell, Joh.; P. C. Litchfield, Trin. H.; R. B. Lloyd, Emm.; S. G. Luker, Pemb.; S. G. MacDonald, Joh.; L. H. L. Mackenzie, Trin.; H. W. Moxon, Joh.; H. F. G. Noyes, Cai.; G. G. Packe, Trin.; H. A. Pontifex, Pemb.; J. M. Postlethwaite, Emm.; R. L. Rawlinson, Trin.; E. Sandbach, King's; W. H. Simpson, Cai.; J. M. Smith, Christ's; A. H. C. Suhr, Cai.; W. H. R. Sutton, Down.; R. Svensson, Cai.; H. H. Taylor, Pemb.; C. B. Ticehurst, Joh.; R. Wade, Christ's; S. L. Walker, Sid. Suss.; G. H. H. Waylen, King's; H. P. Weaver, B.A., Trin.; O. K. Wright, Christ's; R. F. Young, Christ's.

Pharmaceutical Chemistry.—E. E. Atkin, Cai.; J. B. Banister, Jes.; S. Barradell-Smith, Joh.; E. Beaton, Cai.; E. M. Brown, B.A., Pemb.; J. W. Chell, Joh.; H. M. Clarke, B.A., Cla.; H. P. Crampton, B.A., Cla.; F. D. Crew, B.A., Emm.; H. M. Davies, B.A. Trin.; C. E. Droop, B.A., Trin.; T. W. Dunn, Cai.; R. G. Elwell, B.A., Trin.; A. H. Fardon, Christ's; J. N. F. Fergusson, Joh.; R. L. Gamlen, Cai.; H. P. B. Gough, Sid. Suss.; W. B. Grandage, Cla.; J. R. C. Greenlees, Joh.; J. M. P. Grell, H. Selw.; C. R. F. Hall, B.A., Trin.; H. S. Hall, Pemb.; A. W. Hayward, Joh.; R. A. P. Hill, Cai.; W. R. Honeyburne, B.A., Pet.; B. L. Hopper, B.A., Cai.; C. W. Hutt, Trin.; J. B. Irving, B.A., Joh.; Q. S. Keat, Joh.; W. D. Keyworth, H. Selw.; B. T. Lang, Trin.; W. Lowe, B.A., Cai.; F. P. Luard, Down.; J. McIntyre, King's; H. F. Marris, B.A., Cai.; A. Morris, B.A., Cai.; T. M. Neatby, M.A., Joh.; F. W. M. Palmer, B.A., Jes.; W. O. Pitt, Emm.; R. Puttock, B.A., Emm.; F. P. Roberts, B.A., Cai.; D. W. Roy, Sid. Sus.; R. B. S. Sewell, Christ's; E. W. Sheaf, B.A., Down.; P. H. Smith, Pemb.; P. L. Stallard, Cai.; B. H. Stewart, B.A., Jes.; C. Strickland, Cai.; D. W. Tacey, B.A., Christ's; R. S. Taylor, Down.; H. A. R. E. Unwin, H. Selw.; H. B. Weir, Trin.; E. Wight, B.A., Sid. Suss.; W. P. Williams, Down.; J. K. Willis, Queen's; L. Worrall, B.A., Christ's.

UNIVERSITY OF DUBLIN.

At the Winter Commencements held on Monday, December 17th, the following Licences and Degrees in Medicine, Surgery, and Midwifery were conferred.

Licentiati in Medicinâ in Chirurgiâ et in Arte Obstetriciâ.—F. J. McAuliffe, F. C. Newland.

Baccalaurei in Medicinâ in Chirurgiâ et in Arte Obstetriciâ.—J. J. Abraham, C. A. K. Ball, C. P. Ball, C. K. Bushe, W. P. Cockle, J. Evans, H. Henry, E. F. Kough, H. W. Long, R. F. Manifold, J. Marnan, T. P. M'Kell, J. B. Meldon, R. W. Mullock, W. C. Oram, M. B. Smyth, J. R. Welland, R. C. Wilson.

Magister in Chirurgiâ.—R. H. Kennan.

Doctores in Medicinâ.—W. P. Cockle, J. Evans, J. J. Long, L. G. A. MacDonnell, J. C. Pounden, T. F. Smith, E. F. Stapleton, J. T. Wigham, R. F. C. Talbot (*in absentiâ*).

Baccalaureus in Medicinâ.—E. R. Chichester (*in absentiâ*).

UNIVERSITY OF ABERDEEN.

ON December 18th, Lord Strathcona, Lord Rector of the University of Aberdeen, delivered his Rectorial Address on the Growth of Imperialism. At the conclusion he offered to contribute £25,000 to the new University scheme, on condition that an additional £50,000 was contributed during the next twelve months.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN Ordinary Council was held on December 13th, Sir William MacCormac, Bart., K.C.V.O., President, in the chair.

SECRETARIAL DEPARTMENT.

The Council accepted the resignation of Mr. Edward Trimmer, who will retire in March, 1901, after a service of forty-two years. His successor will be the present Assistant Secretary, Mr. Cowell.

THE LAST ANNUAL MEETING OF FELLOWS AND MEMBERS.

The Council, having fully considered Resolution I moved at the meeting of Fellows and Members on November 15th, 1900, by Dr. H. Snow, M.R.C.S., and seconded by Mr. Joseph Smith, M.R.C.S., and carried *nem. con.*, recorded its opinion that it would be most undesirable to reopen the question of the representation of Members on the Council. The Council also requested the mover and seconder of Resolution II to furnish information as to the points in regard to which they were of opinion that the Medical Acts require amendment. In answer to Resolution III, the Council resolved that the annual report of the Council be sent only to those Fellows and Members who apply for it; but that, to save unnecessary trouble to those who desire to receive the report regularly, any Fellow or Member may on request have his name entered upon a standing list. The fourth resolution, which expressed the opinion that the Council would promote the wider interests of the profession, and would not injure those of this College, by agreeing to the recent recommendations of the General Medical Council with regard to (*a*) the combination with the Apothecaries' Society and (*b*) the question of the commencement of scientific studies, was laid before the Council.

REPORT FROM THE CENTENARY COMMITTEE.

Amongst other details the Committee reported that the cost of the dinner was £606. Towards this £308 was contributed by the subscriptions (two guineas) of those who were present at the dinner, whilst the rest was defrayed by the Council privately—that is, not from the College funds.

COOKE'S SCHOOL OF ANATOMY, ETC.

This was recognised by the Council for another year for the performance of the extra six months' dissection required for the Primary Fellowship Examination.

PROPERTY ADJACENT TO THE COLLEGE.

The President informed the Council that the property extending from Searle Street up to Nos. 35 and 36, Lincoln's Inn Fields, had been acquired by the Crown, and that it was proposed to erect on this site a building projecting beyond the general building line to within 4 feet of the pavement, and he pointed out that such a scheme if carried out would be very injurious to the College buildings and other houses on the south side of Lincoln's Inn Fields, and that, if at any time the Government were to acquire the intervening houses and extend their building on the same lines up to the College premises, serious damage would be caused to the College. The President further stated that he understood the London County Council had requested the First Commissioner of Works to reconsider the matter, and suggested that the Council of the College should take some steps to bring their objections to the proposed scheme under the consideration of the proper authorities. The President was requested to write to the First Commissioner of Works, and ask him to reconsider the matter.

THE LATE MR. HENRY LEE.

A bust of the late Mr. Henry Lee (by Thomas Brock, R.A.) was offered to the College by Mrs. Henry Lee, and accepted by the Council with their best thanks.

ADMISSION TO MEMBERSHIP.

The following gentlemen, having passed the necessary Examinations, have been admitted Members of the College:

H. C. Alderman, Yorkshire College and Royal Infirmary, Leeds; P. F. Alderson, Middlesex Hospital; A. P. M. Anderson and A. de C. Baker, Cambridge University and London Hospital; W. B. Bannerman, London Hospital; D. J. Bedford, Cambridge University, St. Thomas's Hospital and Mason College, Birmingham; H. A. Beetham, Yorkshire College and General Infirmary, Leeds; K. H. Bennett, and S. Breé, University College Hospital; H. A. B. Bransbury, St. George's Hospital; H. Braunt and J. A. Butler, Guy's Hospital; R. H. Botham, King's College Hospital: A. B. Brown and C. R. V. Brown, St. Bartholomew's Hospital; F. E. Brunner, Cambridge University and St. Bartholomew's Hospital; R. S. Burd, Mason University College, Queen's and General Hospital, Birmingham; A. Caddy, St. George's Hospital; P. W. L. Camps, Guy's Hospital; F. C. Carlé, King's College Hospital; H. A. Colwell, St. Bartholomew's Hospital; H. E. Crawley, Oxford University and St. Mary's Hospital; D. M. Davies, St. Mungo's College and London Hospital; W. S. Dickie, St. Mungo's College and Royal Infirmary, Glasgow; R. Dunstan, London Hospital; A. Edmunds, King's College Hospital; F. P. Edwards, Cambridge University and Westminster Hospital; G. D. Edwards, Cambridge, Bristol, and St. George's Hospital; R. A. Facey, P. R. Fort and A. H. Foster, St. Mary's Hospital; G. V. H. Fairhall, Melbourne University and Westminster Hospital; L. P. Farrell, Dalhousie University and University College Hospital; E. H. Felton and D. Forsyth, Guy's Hospital; B. G. Fiddean, University College, Cardiff, and Charing Cross Hospital; W. E. Fisher, University of Dunedin, New Zealand, and University College Hospital: C. H. Francis-Williams, St. George's Hospital; J. S. Gayner, St. Bartholomew's Hospital; K. W. Goadby, Guy's Hospital: L. Gollan, University of Melbourne and St. Mungo's College, Glasgow: E. V. Gostling Cambridge University and St. Thomas's Hospital; J. M. Gover, University of Durham; W. H. C. Greene, Cambridge University and St. Mary's Hospital; W. W. Halsted, St. Thomas's Hospital; G. Hamilton, University of Dunedin, New Zealand, and Middlesex Hospital; H. C. Harrison, Firth College, Sheffield, and St. Bartholomew's Hospital; C. M. Heanley, St. George's Hospital: C. E. Hicks and S. Hodgson, Guy's Hospital; C. E. Hogan, St. Bartholomew's Hospital; E. H. Hogg, Middlesex Hospital; Hugh Hughes, University College and Royal Infirmary, Liverpool; T. H. J. E. Hughes, King's College and St. Mary's Hospital; E. H. Hunt, Oxford University and St. Bartholomew's Hospital: B. F. Hussey, St. Mary's Hospital; R. Jacques, University College, Liverpool, and King's College Hospital; E. A. Johnson, Adelaide and Melbourne University, St. Bartholomew's and London Hospitals; D. M. Johnston, Durham University and St. Bartholomew's Hospital; E. W. J. Ladell, E. V. Lindsey, J. A. Lloyd, and F. H. Lowe, St. Bartholomew's Hospital; P. N. Lakshmanan, University of Madras and King's College Hospital; B. R. Lloyd, University College, Cardiff, and Charing Cross Hospital; R. E. Lloyd, University College Hospital; E. J. Manning, St. Mary's Hospital; J. C. Marshall and S. Mason, St. Bartholomew's Hospital: T. C. Mitchell, Yorkshire College and General Infirmary, Leeds; H. T. Newling, Royal Infirmary, Durham, and St. Mary's Hospital; W. W. Maxwell, Edinburgh University and King's College Hospital; J. C. Newman, Cambridge University and St. Bartholomew's Hospital; J. C. Norton, University College and General Infirmary, Bristol; J. C. Oates, Mason College, Queens and General Infirmary, Birmingham; W. S. Page, St. Mary's Hospital; H. McD. Parrot, Guy's Hospital; E. M. B. Payne, St. Bartholomew's Hospital; J. S. S. Perkins, Cambridge University and Guy's Hospital; P. M. Perkins, Durham University and St. Bartholomew's Hospital; M. H. Phillips, University College and Royal Infirmary, Bristol; L. J. Picton, Oxford University and St. Bartholomew's Hospital: G. W. Procter, Durham University and Middlesex Hospital; J. P. Race, Owens College and Royal Infirmary, Manchester; J. E. Richards, Charing Cross Hospital; B. H. St. C. Roberts, Mason College, Queen's and General Hospital, Birmingham; R. P. Richardson, Durham University and Westminster Hospital; A. R. Roche, Cambridge University and Westminster Hospital; E. N. T. Rogers, Middlesex Hospital; F. C. Rogers, St. Mary's Hospital: W. E. Rutledge and T. C. Savage, University College Hospital: H. Scanlan, McGill College, Montreal, and St. Bartholomew's Hospital; R. W. Shaw, Western University, Ontario and University College; F. W. Sime, Durham University and Guy's Hospital; F. A. Simpson, Cambridge University, St. Mary's and St. George's Hospitals; F. B. Skerrett, Owens College and Royal Infirmary, Manchester, and St. Thomas's Hospital; R. W. I. Smith, Edinburgh University and King's College Hospital; C. D. Soutter, Mason College, Queen's and General Hospitals, Birmingham; H. R. D. Spitta, St. George's Hospital and Durham University; L. E. Stamm, Guy's Hospital; C. M. Stewart, University of Toronto and University College Hospital: F. Stua University of Durham and St. George's Hospital; W. J. Susmann, Cambridge University and St. George's Hospital; J. Tattersall, St. Mary's Hospital; A. J. Tayler, King's College Hospital: E. D. Telford, Cambridge University, Owens College and Royal Infirmary, Manchester; W. M. Thomas, Guy's Hospital; G. W. Thompson, Edinburgh University; R. C. Turnbull. London Hospital: A. R. Tweedie, St. Bartholomew's Hospital; G. A. Upcott-Gill, University College Hospital; C. E. West, Oxford University and St. Bartholomew's Hospital; C. V. White, St. Thomas's Hospital: C. A. Wiggins, St. Mary's Hospital; A. R. B. Williamson, Queen's University, Kingston, Canada; and T. J. White, Guy's Hospital.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

AT a meeting of the Fellows of the College held on Monday, December 17th, Sir William Thomson was unanimously elected a member of the Council.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,720 births and 3,744 deaths were registered during the week ended Saturday last, December 15th. The annual rate of mortality in these towns, which had been 18.0 and 17.7 per 1,000 in the two preceding weeks, further declined last week to 16.8. The rates in the several towns ranged from 8.6 in Norwich, 11.2 in Oldham, 11.8 in Preston, and 11.9 in Croydon, to 20.0 in Gateshead and in Liverpool, 21.3 in Bolton, 22.1 in Nottingham, and 22.2 in Manchester. In the thirty-two large provincial towns the mean death-rate was 17.0 per 1,000, and exceeded by 0.5 the rate recorded in London, which was 16.5 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.5 per 1,000; in London this death-rate was equal to 1.2 per 1,000, while it averaged 1.6 in the thirty-two provincial towns, among which the highest zymotic death-rates were 2.4 in Nottingham, 2.5 in Swansea, in Bolton, and in Sunderland, and 3.7 in Sheffield. Measles caused a death-rate of 2.5 in Swansea; whooping-cough of 1.1 in Nottingham, in Sheffield, and in Sunderland; "fever" of 1.3 in Preston; and diarrhœa of 1.3 in Burnley. The death-rate from scarlet fever did not exceed 1.0 in any of the thirty-three large towns. The 77 deaths from diphtheria included 20 in London, 12 in Sheffield, 6 in Leeds, and 6 in Leicester. No fatal case of small-pox was registered last week, either in London or in any of the thirty-two large provincial towns; and only one small-pox patient remained under treatment in the Metropolitan Asylum Hospitals on Saturday last, December 15th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,727 and 2,687 at the end of the two preceding weeks, had further declined to 2,617 on Saturday last; 255 new cases were admitted during the week, against 246, 279, and 259 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, December 15th, 874 births and 596 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 21.7 and 20.7 per 1,000 in the two preceding weeks, further declined last week to 19.3, but was 2.5 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 16.6 in Leith and 18.1 in Edinburgh, to 19.7 in Glasgow and in Greenock, and 28.7 in Perth. The zymotic death-rate in these towns averaged 2.6 per 1,000, the highest rates being recorded in Aberdeen and Greenock. The 282 deaths registered in Glasgow included 3 from small-pox, 4 from measles, 4 from scarlet fever, 27 from whooping-cough, 4 from "fever," and 4 from diarrhœa. Three fatal cases of measles, and 2 of scarlet fever were recorded in Edinburgh. Nine deaths from measles and 3 from diarrhœa occurred in Aberdeen: and 3 from whooping-cough in Greenock.

ALDERSHOT: HOSPITAL FOR INFECTIOUS DISEASE.

THE Aldershot Council came to a wise conclusion at the meeting held on December 5th, when it decided to proceed at once with the completion of the infectious hospital instead of following the original scheme and building it by degrees. The danger arising from insufficient accommodation for infectious cases at a place like Aldershot is always great; last summer the hospital was overcrowded with 16 cases, and the medical officer had—through lack of a discharging ward—to send patients direct from the infectious wards to their homes. It is satisfactory to learn that, although there was some discussion, the resolution was adopted unanimously.

PROPOSED PUBLIC HEALTH LABORATORY FOR DEVON AND CORNWALL.

IN view of the fact that the "sanitary conscience" of the West of England is not yet awake to the need of county medical officers of health, the action of the Plymouth Town Council, on the advice of the Chairman of the Sanitary Committee, Mr. P. Swain, F.R.C.S., and the Medical Officer of Health for Plymouth, Dr. F. M. Williams, in appointing a "Public Health Laboratory Subcommittee" to promote "the provision of pathological facilities for the examination of infectious disease in the poorer classes, and to obtain the co-operation of the County Councils of Devon and Cornwall in the matter" is the more warmly to be commended.

FOOD EXAMINATION IN BERLIN.

THE establishment of a municipal research office in Berlin for the examination of articles of food is in contemplation. The cost of the building is

estimated at 440,000 marks (£22,000), and that of the installation of the laboratories at 92,000 marks (£4,600); the expense of maintenance is estimated at 23,000 marks (£1,150), while the amount allowed for salaries is 42,160 marks (£2,108). It is somewhat remarkable that although such institutions exist in Saxony, Bavaria, Baden, Hesse, Brunswick, Reuss, and in a number of German cities, as Nürnberg, Hanover, Görlitz, Breslau, Magdeburg, Göttingen, Hildesheim, Emden, Osnabruck, Munster, Frankfurt-on-the-Main, Düsseldorf, Essen, Elberfeld, Barmen, Krefeld, Trier, Koln, Coblenz, Marburg, Wiesbaden, Geisenheim, Bieberich, Halle, Stralsund, and Königsberg, there has hitherto been nothing of the kind in Berlin. At the head of the institute will be a director with a salary of 8,000 marks (£400), and under him a deputy who will be director of the chemical, bacteriological, and physical, microscopic and botanical department with 5,000 marks (£250). There will also be one bacteriological and four chemical assistants.

DISTRICT PAUPER PATIENTS UNDER CARE OF A PRIVATE PRACTITIONER.

RUFUS writes asking what he should do under the following circumstances: Some of my Union patients go a-begging to one lady, who sends them to her own doctor, who takes charge of the cases and treats them. The patients have no complaint to make against me, in fact come and tell me what they have had to do.

*** We should recommend our correspondent to discontinue his attendance while his patients are under the care of another practitioner, but for his own protection to inform them that he will be ready to take up their care again, *if they wish it*, when this ceases.

THE MEDICAL OFFICER OF HEALTH FOR LAMBETH.

Dr. Priestley's salary as Medical Officer of Health has been unanimously increased by £100 per annum by the Lambeth Borough Council.

FEE FOR REDUCTION OF REPEATED DISLOCATION.

"W.," who is a district medical officer, has a pauper patient who has often dislocated his shoulder during an epileptic paroxysm—three times during the past quarter. "W." asks whether he is in order in charging the fee of £1 for each dislocation.

*** We should recommend our correspondent not to make a charge for each dislocation if such should occur more than once in the quarter, and even this if it were to become a regular quarterly claim might give rise to dissatisfaction on the part of the guardians. It would be contended that when the regulations were framed which award a special fee for the reduction of shoulder dislocations it was never intended that they should refer to a case of this description. It should be borne in mind that the Local Government Board have the power, on the application of the guardians, to suspend the action of Article 177 of the Consolidated Order, 1847, if they think fit to do so.

INDIA AND THE COLONIES.

INDIAN REPORTS.

BOMBAY.

Hospitals and Dispensaries.—The report for the year 1898, submitted by Surgeon-General G. Bainbridge, M.D., is bulky. The statistics of the year are contrasted with those of the two preceding years, and thus relate to a period during which an epidemic of plague raged in the Presidency. The Government of Bombay, in a brief note which is appended to the report, comments on the absence of a comprehensive analysis of the effects of the plague epidemic on the administration of the medical institutions in the Mofussil, points out that the report does not include the various temporary plague hospitals which were opened for the treatment of the plague stricken, and shows that the effect of the outbreak has been to diminish the attendance of patients and reduce the number of persons seeking relief for such common maladies as skin diseases and malarious fever. In the report no attempt is made to give a readable account of the state of public health during the period under review, or of the measures and means resorted to for the purposes of medical relief. It is not an administration report, dealing with questions relating to the efficiency, defects, or improvements, actual or possible, of the system of public medical relief, but a dreary mass of figures and facts whose significance and use are buried and concealed by their prolixity or pettiness. The details furnished indicate, however, that the 314 institutions included in the report are doing good work, and are under careful management and supervision.

NORTH-WESTERN PROVINCES AND OUDH.

Dispensaries and Charitable Institutions.—The report for the three years ending December 31st, 1898, submitted by Colonel G. C. Hall, F.R.C.S., is an interesting document indicating progress. The number of institutions was increased by 22, of which 14 were for women. The period was one of famine and plague, and special preventive and relief measures were adopted which interfered with the working of the regular hospitals and dispensaries. The attendance and the number of operations showed a decrease, but there were signs in 1898 of a return to the figures of 1895. The attendance of women and children is growing; this is accepted by the provincial Government as a satisfactory circumstance. A commendable feature in the administration of these hospitals is the provision of special accommodation for Europeans and Eurasians, with the result that increased numbers of these classes are seeking relief. The finances of these institutions are in a satisfactory position, and it is evident that the administration takes a keen interest in them. The report shows that "in the 47 female hospitals of the province there were employed in 1898 19 lady doctors, 33 female hospital assistants, 5 matrons and a staff of 77 nurses, midwives, compounders, and dressers, while 39 female pupils were studying in the Agra medical school, and 33 in other centres." Twenty temporary dispensaries were opened during the year at large fairs and bathing festivals, and there were 32 asylums open for the blind, etc., and lepers.

MEDICAL NEWS.

THE Board of Trade has extended the muzzling order for dogs to the county of Brecon.

THE seventy-third annual congress of the German Scientific and Medical Association will be held at Hamburg in 1901.

DR. W. LESLIE MACKENZIE, who has been appointed an Inspector to the Local Government Board for Scotland, has resigned the post of medical officer to the Leith Town Council. The salary of the vacant office in £400 a year.

A BRONZE relief portrait panel to the memory of the late Samuel Gourley, M.D., F.R.C.S., J.P., has been placed on one of the walls of the Hartlepool Hospital, to which institution he was for twenty-five years honorary surgeon.

IT is announced that Surgeon-Major Reed of the United States army and a board of experts will continue the investigation into the propagation of yellow fever by mosquitos, and an experimental station will be established outside Havana.

IT is proposed to erect a monument in memory of the late Professor Camara Pestana, who fell a victim to his devotion to scientific research in the recent epidemic of plague at Oporto. A considerable sum has already been subscribed for the purpose.

THE honorary medical officers of the Royal Alexandra Hospital for Children, Brighton, recently presented Dr. Edward Mackey with an illuminated address on the occasion of his retirement from the Acting Staff as Senior Physician. Dr. Mackey has been elected one of the Consulting Physicians of the hospital.

DR. MARTIN J. P. DEMPSEY, F.R.C.P.I., Visiting Physician to the Mater Misericordiæ Hospital, Dublin, has been elected to the Chair of Materia Medica and Pharmacy in the Catholic University School of Medicine, rendered vacant by the death of Dr. F. J. B. Quinlan.

A memorial in honour of Bernhard von Langenbeck has been placed by the medical officers of the Prussian army in the great hall of the University of Berlin. It was recently formally handed over by Dr. von Coler, Surgeon-General of the Prussian army, to Professor Harnack, rector of the University.

PROPOSED HOSPITAL FOR PUTNEY.—Mr. Henry Chester, of Putney Hill, who died on October 23rd last, left a sum of money to the Haberdashers' Company of London, to be by it applied to the sustentation of a hospital, should such an institution be established in Putney. He directed that until such hospital has been established the income should be accumulated by investments, and if no hospital be erected and opened within twenty years, the income is thereafter to be paid to Guy's Hospital. It is stated that the amount available at present is about £60,000.

MEDICAL VACANCIES.

The following vacancies are announced:

BIRMINGHAM: GENERAL HOSPITAL.—Two Casualty Assistant Physicians. Appointments for one year, but eligible for re-election. Salary, £50 per annum. Applications to the House Governor by December 28th.

BOURNEMOUTH: ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Secretary by January 1st, 1901.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Three House-Surgeons. Salary, £160 per annum, with furnished apartments, etc. Applications to the Assistant Secretary, 113, Queen's Road, Brighton, by December 27th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—(1) Second House-Surgeon and Anæsthetist. Salary, £70 per annum. (2) Third House-Surgeon. Salary, £60 per annum. Candidates must be unmarried. Board and residence provided in each case. Applications to the Secretary by December 26th.

CHELSEA, BROMPTON, AND BELGRAVE DISPENSARY, Sloane Square, S.W.—Surgeon. Applications to the Secretary by December 31st.

CHELTENHAM GENERAL HOSPITAL.—Junior House-Surgeon, unmarried. Salary, £45 per annum, with board, lodging, and washing. Applications to the Honorary Secretary by January 5th, 1901.

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary, £80 per annum, with residence and maintenance. Applications to the Chairman of the Board of Management, 29, Eastgate Row North, Chester, by December 31st.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House-Physician. Appointment for six months. Salary at the rate of £30 per annum, with board and residence. Applications to the Secretary before January 7th, 1901.

DERBYSHIRE ROYAL INFIRMARY.—Honorary Physician. Applications to the Secretary by December 26th.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Assistant House-Surgeon. Salary, £50 per annum, with board and residence. Applications to the Honorary secretary by January 3rd, 1901.

DUDLEY: GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, £100 per annum, increasing to £120, with board, residence, attendance, and washing. Applications to the Secretary by January 10th, 1901.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—Pathologist and Registrar. Applications to the Secretary by January 15th, 1901.

EDINBURGH UNIVERSITY.—Additional Examiner in the following departments: (1) Pathology, (2) Surgery, (3) Practice of Medicine, (4) Clinical Medicine, (5) Midwifery, (6) Physiology, (7) Anatomy, including Anthropology, (8) Medical Jurisprudence and Public Health and Sanitation, Sanitary Law, and Vital Statistics, (9) Public Health Laboratory Work, (10) Chemistry, (11) Botany. Applications to the Secretary, University Courts, University of Edinburgh, by January 8th, 1901.

HOSPITAL FOR WOMEN, Soho Square, W.—(1) Assistant Surgeon, must be F.R.C.S. Eng. (2) Assistant Physician. Applications to the Secretary for (1) by December 20th, and for (2) by January 5th, 1901.

HULL ROYAL INFIRMARY.—(1 Junior Assistant House-Surgeon. Salary, £40 per annum, with board and lodging. (2) Honorary Assistant Surgeon for Out-patient Department. Applications for (1) to the Chairman, House Committee, by December 24th; for (2) to the Chairman, Committee of Management, by January 2nd.

KENT COUNTY ASYLUM, Barming Heath, Maidstone.—Fourth Assistant Medical Officer and Pathologist. Salary, £175 per annum, rising £5 a year, with furnished quarters, etc. Applications to Dr. F. Pritchard-Davies, Superintendent, by January 12th, 1901.

KIMBERLEY BOARD OF HEALTH.—Medical Officer. Salary, £750 per annum with allowance of £5 per month for horse-keep. Applications to "The Secretary Kimberley Board of Health, care of the Agent-General for the Cape of Good Hope, 112, Victoria Street, London, S.W.," by December 28th.

LANCASHIRE COUNTY ASYLUM, Whittingham.—Junior Assistant Medical Officer, unmarried, and not over 30 years of age. Salary, £150 per annum increasing to £200, and on promotion to £250, with furnished apartments, board, washing, and attendance. Applications to the Medical Superintendent.

LEEDS PUBLIC DISPENSARY.—Two Junior Resident Medical Officers. Salary, £100 per annum, increasing by £10 on reappointment, with board and lodging. Applications to the Secretary of the Faculty.

LEICESTER INFIRMARY.—House-Physician. Salary, £100 per annum, with board, apartments, and washing. Applications to the Secretary, 24, Friar Lane, Leicester, by January 5th, 1901.

LEITH BURGH.—Medical Officer of Health. Salary, £400 per annum. Application to the Town Clerk, Leith, by January 7th, 1901.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary, £100 per annum, with board and apartments. Applications to Mr. R. R. Greene, Secretary, Leith Offices, Liverpool.

LIVERPOOL STANLEY HOSPITAL.—Senior House-Surgeon. Salary, £70 per annum, with board, residence, and washing. Applications to the Chairman of the Medical Board by December 27th.

LONDON THROAT HOSPITAL, Great Portland Street, W.—Assistant Surgeon. Applications to the Honorary Secretary, Medical Committee by January 12th.

MANCHESTER: ANCOATS HOSPITAL.—Resident House-Physician. Salary, £80 per annum, with board, etc. Applications to the Secretary.

MARGATE: ROYAL SEA BATHING HOSPITAL.—Assistant Resident Surgeon. Salary, £52 per annum, with board and residence. Applications to the Secretary at the offices, 30, Charing Cross, London, S.W., by January 19th, 1901.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer for the Asylum for Imbeciles at Caterham. Unmarried, and not exceeding 35 years of age. Salary, £150, rising to £170, with rations, lodging, attendance, and washing. Applications on forms provided to be sent to the office of the Board, Victoria Embankment, E.C., by January 5th.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich Road, S.E.—Junior Resident Medical Officer. Appointment for six months, with prospect of re-election as Senior. Salary, £60 per annum, with board, attendance, and washing. Applications to the Secretary by December 31st.

NORFOLK COUNTY ASYLUM, Thorpe, Norwich.—Junior Assistant Medical Officer, not exceeding 30 years of age. Salary, £120 per annum, rising to £150, with board, lodging, and washing. Applications to the Medical Superintendent.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon; unmarried. Salary, £140 per annum, and all found except board. Applications to the Secretary.

OXFORD: RADCLIFFE INFIRMARY.—Honorary Assistant Surgeon. Applications to the Secretary by January 16th, 1901.

PARTICK BURGH.—Medical Officer, to act also as Casualty Surgeon. Salary proposed, £150 per annum. Applications to Mr. J. Donaldson, Clerk to the Commissioners, Burgh Chambers, Partick, Glasgow, by December 23th.

PORTSMOUTH: ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL.—House-Surgeon; unmarried. Salary, £100 per annum, with board and residence. Applications to the Secretary by December 27th.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Member of the Court of Examiners. Applications to the Secretary.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge Road, S.E.—Assistant Surgeon, must be F.R.C.S.Eng. Applications to the Secretary by December 28th.

SALFORD UNION.—Assistant Medical Officer at the Union Infirmary, Hope, near Eccles. Salary, £150 per annum with apartments and attendance. Applications endorsed "Assistant Medical Officer," to the Clerk to the Guardians, Union Offices, Eccles New Road, Salford, by January 9th, 1901.

SALISBURY FISHERTON HILL ASYLUM.—Assistant Medical Officer, unmarried, and not more than 30 years of age. Salary, £150 per annum, with board, lodging, and washing. Applications to Dr. Finch.

STOKE-UPON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—Assistant House-Surgeon. Appointment for six months. Board, apartments, and washing, and an honorarium of not less than £10. Applications to the Secretary by December 27th.

SHREWSBURY: SALOP INFIRMARY.—House-Surgeon. Salary, £110 per annum, with board, washing, and residence. Applications to the Board of Directors by December 28th.

SUNDERLAND: MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House-Surgeon; unmarried. Salary, £80 per annum with board, residence, and washing. Applications to the Honorary Secretary by January 5th, 1901.

SWANSEA GENERAL AND EYE HOSPITAL.—House-Physician. Salary, £75 per annum, with board, apartments, and washing. Applications to the Secretary by December 24th.

TAUNTON: TAUNTON AND SOMERSET HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £60 per annum, with board, lodging, and laundry. Applications to the Honorary Secretary.

VICTORIA HOSPITAL FOR CHILDREN, Queen's Road, S.W.—House-Surgeon. Appointment for six months. Honorarium, £25, with board and lodging. Applications to the Secretary by December 20th.

WESTERN GENERAL DISPENSARY, Marylebone Road.—Two Honorary Surgeons. Applications to the Honorary Secretary.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician, (2) House-Surgeon. Appointments for six months. Board and lodging provided in each case. Applications to the Secretary by December 26th.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing. Applications to the Chairman of the Medical Committee by January 3rd, 1901.

WORKSOP DISPENSARY AND VICTORIA HOSPITAL.—House-Surgeon and Dispenser. Salary, £150 per annum, with rooms and attendance. Applications to Mr. C. A. Whall, 44, Bridge Street, Worksop.

MEDICAL APPOINTMENTS.

BARCLAY, W. J., M.B., Ch.B., appointed Resident Medical Assistant at the Dundee Infirmary.

BODMAN, C. Osmond, M.B., B.S.Durh., M.R.C.S.Eng., L.R.C.P.Lond., appointed Resident Medical Officer to the Royal Hospital for Children and Women, Waterloo Bridge Road.

BRADFORD, W. G. H., B.A., M.B., B.C.Cantab., appointed Medical Officer and Public Vaccinator for the Debenham District of the Bosmere and Claydon Union.

DE SYLVA, Elph. J., B.A., L.R.C.P.Edin., L. & C.S.Edin., L.F.P.Glasg., appointed Medical Officer to the Parish of Lingwall, Whiteness and Weisdale, Shetland Islands.

DEY, Robert, M.B.Syd., appointed Government Medical Officer and Vaccinator at Wagga Wagga, New South Wales.

DINSMORE, Geo. H. J., M.B., C.M., appointed Medical Officer for the Eccles Parish Workhouse, Berwickshire.

ENSOR, C. A., M.R.C.S., L.R.C.P., appointed District Medical Officer and Medical Officer of the Workhouse of the Tisbury Union, *vice* J. A. Ensor, M.R.C.S.Eng.

FLACK, Frederick Henry, M.B., Ch.B.Vict. Univ., appointed Junior House-Surgeon to the Blackburn and East Lancashire Infirmary.

FREYER, John K., L.R.C.S., L.R.C.P.Irel., appointed Government Medical Officer and Vaccinator at Campbelltown, New South Wales.

GOSTLING, E. Victor, M.R.C.S., L.R.C.P., appointed House-Physician to the Derbyshire Royal Infirmary.

HARRISON, Edward M.A., M.D.Cantab., F.R.C.S.Eng., appointed Honorary Surgeon to the Hull Royal Infirmary.

HEPBURN, Malcolm L., M.D., B.S., F.R.C.S., appointed Surgeon to the Lowestoft Hospital.

HUNT, James S., M.R.C.S.Eng., L.R.C.P.Edin., appointed Superintendent of the Institution for Inebriates at the Dunwich Benevolent Asylum, Queensland.

HUTCHENS, Harold J., appointed Medical Officer of Health to the Joint Board for the Prevention of Epidemic Diseases, Brisbane, and to continue to act as Medical Superintendent of the Plague Hospital.

JOYCE, Caleb, M.B.Melb., appointed Health Officer to the Beaconsfield Board of Health, Tasmania.

KILVERT, J. Ellis, M.R.C.S., L.R.C.P., appointed House-Surgeon to the Derbyshire Royal Infirmary.

LESCHEN, Henry A., M.B., Ch.M.Edin., appointed Medical Superintendent at the Whitby Falls Lunatic Asylum, West Australia.

MCDOUALL, Herbert C., M.R.C.S., L.R.C.P.Lond., appointed Senior Medical Officer at the Hospital for Insane, Callan Park, New South Wales, *vice* R. J. Millard, M.B., Ch.M.Syd.

MACKIE, William James, M.D.Brux., L.R.C.S., L.R.Q.C.P.Irel., appointed Medical Officer of the Lunatic Asylum, Nelson, New Zealand.

MONTGOMERY, W. P., M.A.Oxon., M.R. and B.S.Lond., F.R.C.S., appointed Assistant Surgeon to the Manchester Children's Hospital.

NEWMAN, G., M.D.Edin., D.P.H.Camb., appointed Medical Officer of Health for the Borough of Finsbury.

RICE George, M.D.Durh., appointed Honorary Physician to the Derbyshire Royal Infirmary, *vice* C. A. Greaves, M.B.Lond., resigned.

ROBINSON, Arthur, M.D.Edin., appointed Professor of Anatomy at King's College, London.

SHAW, John C., M.R.C.S., L.R.C.P., appointed Surgeon to the Royal Far Hospital, Soho.

SOUTHERN, J. Acton, M.R.C.S., L.R.C.P., appointed Honorary Surgeon to the Derbyshire Royal Infirmary, *vice* W. Grafton Carpenter, M.D.St. And., resigned.

TURNER, J. A., M.B., C.M.Edin., D.P.H.Camb., appointed Executive Health Officer of Bombay.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office order or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGES.

BENNETT—TANGYE.—On December 18th, at Carr's Lane Chapel, Birmingham, by the Rev. J. H. Jowett, W. E. Bennett, F.R.C.S., of 22, Broad Street, Birmingham, son of Wm. Bennett, Hertford Place, Coventry, to Mary Ethel Tangye, only daughter of George Tangye, J.P., of Heathfield Hall, Handsworth, Birmingham.

DAWSON—YARROW.—On December 18th, at St. James's Church, Kidbrook, Blackheath, by the Rev. L. Dawson, brother of the bridegroom, assisted by the Rev. F. Wainwright and the Rev. Canon Leeke (Vicar), Bertrand Dawson, M.D., son of Henry Dawson, of Purley, to Minnie Ethel, youngest daughter of A. F. Yarrow, of Woodlands, Blackheath.

LINNGTON—SIMS.—On December 15th, at All Saints, Norfolk Square, W., by the Rev. William Boyd, M.A., William West Linington, F.R.C.S.Eng., of Folkestone, son of the Rev. W. A. Linington, Nightingale Lane, S.W., to Nina Sims, the eldest daughter of Charles Sims, Esq., L.D.S.Eng., of Edgbaston.

SHAW—WATHEN.—On December 15th, at St. Mary's Church, Westerham, by the Rev. W. M. H. Wathen, brother of the bride, assisted by the Rev. S. Le Mesurier, Vicar of the Parish, Cecil Edward Shaw, M.D., youngest son of the late Rev. George Shaw, Belfast, to Agnes Lascelles Wathen, fourth daughter of William Hulbert and Katharine Cadogan Wathen, of Westerham.

DEATH.

BRAINE.—On December 18th, at 67, Wimpole Street, W., Hannah Elizabeth, the beloved wife of Woodhouse Braine, F.R.C.S.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances.*—Daily, 2. *Operations.*—Tu. W. F., 2.
CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.
CENTRAL LONDON THROAT, NOSE, AND EAR. *Attendances.*—M. W. Th. S., 2; Tu F., 5. *Operations.*—1.p., Tu., 2.30; o.p., F., 2.
CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1; Women, W., 1; S. 9.30; Skin, M. Th., 1; Dental, M. Th., 8.45; Throat and Ear, F., 9.30; Electro-Therapeutics, Tu. Th., 9.30. Children, Tu. F., 1; Rontgen, W., 9.45; Orthopædic, Th., 1. *Operations.*—W. Th. F., 3; S., 2.
CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.
CITY ORTHOPÆDIC. *Attendances.*—O.-p., M. Tu. Th. F., 2. *Operations.*—M., 4.
EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. Tu. Th. F., 2.
GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F., 2.30; Skin, W., 2.30; Dental, W., 2.30. *Operations.*—M. W. Th. F.
GUY'S. *Attendances.*—Medical, 1.-p., M. Tu. Th. F. S., 1.30; o.-p., M. W. Th. F., 12; Surgical, 1.-p., daily, 1.30; o.-p., M. W. Th. S., 12; Obstetric, 1.-p., M. Tu. Th. F., 1.30; o.-p., Th. S., 12; Eye, 1.-p., M. Tu. Th. F., 1.30; o.-p., M. Tu. F., 12; o.-p., Ear, Tu., 12; Skin, Tu., 12; Throat, F., 12; Dental, daily, 9.30. *Operations.*—Tu. F., 1.30; (Ophthalmic), M., 1.30; Th., 2.
HOSPITAL FOR WOMEN, Soho. *Attendances.*—O.-p., M., 9; Tu. W., 12; Th., 9; F.S., 12. *Operations.*—M. Th., 2; Th. S., 9.30.
KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30 F., 2; Dental, M. Th., 10; Skin, M., 10. *Operations.*—W. Th. F., 2.
LONDON. *Attendances.*—Medical, daily, 1.p., 2; o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, M. Tu. Th. F., 9. *Operations.*—Daily, 2.
LONDON TEMPERANCE. *Attendances.*—Medical, 1.-p., M., 2.30; Tu. F., 8.30; Th. 2.0; O.-p., M. Tu. W. F., 1; Surgical, 1.-p., M., 2; Th., 3; O.-p., M. Th., 1.30. *Operations.*—Th., 4.
LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu. F., 6. *Operations.*—Daily, 9.30.
METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, M., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.
MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.
NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10
NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9; Th., 2.
NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2; S., 10; Surgical, daily, exc. W., 2; W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.
ROYAL EAR, Frith Street. *Attendances.*—M. S., 3; Tu. F., 9; W., 2.30; Th., 7.30. *Operations*—Tu., 3.
ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.
ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9.30; Throat, Nose, and Ear, W., 9.30. *Operations.*—W. S., 2 (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.
ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.
ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—O.-p., M., 2; i.-p., Tu. Th., 2.30.
ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2
ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. F. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F. 2; Skin, Tu., 9 Larynx, M. Th., 2; Orthopædic, Tu., 1.30; Dental, Tu. F., 9; Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F. 2; Abdominal Section for Ovariotomy, W., 2.
ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily; i.p., 1; o.p., 12; Obstetric, i.p., Tu. F. 1.45 o.p., M. Tu., 2.30; Eye, W. S., 1.30; Ear, M., 2; Skin, W., 2.45; Throat, F., 2; Dental, M. Tu F., S., 12. *Operations.*—Daily, 1; Ophthalmic, W., 1; Dental, Th., 9.
ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males, S., 2; females W., 9.30. *Operations.*—Tu., 2.30; Th., 2.
ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F. 1.45; o.p., M. Th., 1; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 8; Skin, M. Th., 9; Dental, W. S., 9; Electro-Therapeutics, W. S., 10; Children's Medical, M. Th., 9 *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30, S., 10; (Ophthalmic), F., 10.
ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children) 2; S., 4. *Operations.*—W. F., 2.
ST. THOMAS'S. *Attendances.*—1.-p., Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30 Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F. 2; o.p., daily, exc. S., 1.30; Ear, M. 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, W., 10.30; Electro-therapeutics, Th 2; Mental Diseases, Th., 10; Dental, Tu. F., 10; X-Rays, Tu. F., 2; Vaccination, W., 11.30 *Operations.*—Daily, 2; (Ophthalmic), Th., 2; (Gynæcological), Th., 2; (Throat), M., 9.30 (Ear), Th., 9.30.
SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.
THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu F., 6.30. *Operations.*—Daily exc. M., 10.
UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.
WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, M. Th., 2; Ear, Tu. F., 2; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 9.15; Skin, Tu. F., 2; Throat and Nose, Tu. F., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.
WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, M. Tu. F., 2; Eye, Tu. F., 9.30; Ear, Tu., 2; Skin W., 2; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 1, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

PROLONGED USE OF SACCHARIN.

ALPHA asks whether any ill effects—such as digestive trouble more especially—have been noticed in connection with the prolonged use of saccharin, say for three or four years, as a substitute for sugar.

DISTRICT NURSES.

A CORRESPONDENT writes that a local district nursing fund has a nurse who has undergone a certain amount of training in midwifery. Up to the present she has not been permitted to attend any patient not under the charge of a registered practitioner. Owing to this restriction, the committee finds that the poorest class will not employ her, but avail themselves instead of an ignorant midwife. Under these circumstances would the medical men of the district be justified in consenting to go and assist the nurse, if she got into any difficulty, while attending to a case where no medical practitioner was in charge?

*** As the medical practitioners would attend to a case in which a midwife had got into difficulties, they would no doubt do the same in the case of the nurse. None the less, it is incumbent on all medical practitioners to discourage the practice of allowing nurses to act except under the direct supervision of a medical man. The more respectable nursing institutes nearly always forbid their nurses to accept any cases not in charge of a medical attendant, and such a regulation is deserving of all respect.

ANSWERS.

G. B.—Our Berlin correspondent informs us that there are no regulations which would prohibit a Chinaman studying and taking a degree either at Freiburg or at Heidelberg University.

LA ROCHE.—Candidates for both the L.M.S. and R.A.M.C., who take up French or German as voluntary subjects, are given an English passage for translation.

HERNIA.—(1) We do not know of any institution where a fully-trained nurse could receive instruction in monthly nursing for so short a period as a fortnight; (2) in the case of a non virgin the finding of spermatozoa in the vagina alone would prove the occurrence of recent connection.

H. S. G.—One of the most comprehensive works upon pathological anatomy is that by Ziegler. The last edition is in two parts—general and special; the latter part is translated into English and published by Macmillan (1896); no translation of the former part has yet appeared; the translation of an earlier edition was published in 1885. This work includes a large amount of histology, but perhaps Weichselbaum's *Elements of Pathological Histology*, translated by Dawson and published by Longmans, Green and Co. (1895), would also be useful.

MEDICAL BOOK-KEEPING.

BOTH Dr. Rowthorn and Dr. Hugh Heald, who in the BRITISH MEDICAL JOURNAL of December 16th answered a question with regard to medical bookkeeping, ask us to state that they have received so many requests for further particulars that they find themselves quite unable to answer all the inquiries by private letter. We propose, therefore, to publish some particulars with which they have been good enough to offer to supply us, but regret that some slight delay must inevitably occur in doing this.

DR. GEORGE BIRT (Stourbridge) writes in answer to "C." in the BRITISH MEDICAL JOURNAL of December 1st, p. 1623:—As I have neither partner, assistant, nor dispenser, I have kept my books with as little trouble to myself as possible for the past 20 years. I buy a 5s. ledger and index it throughout by gumming strips of tracing cloth, on each of which I have written a letter of the alphabet, so that the letter projects beyond the page, and I can open the ledger at any letter required in a moment. I find half a page is quite enough to enter the attendance on a small family for a year. I enter the items in brief—for example, "V" signifies visit, and I use contractions for the prescriptions. I have no daybook, but use a Smith's visiting list. The first week or two in the year the writing is rather heavy, as there are so many new entries to be made; but after that, it does not take long to enter the day's work, and the account is always "posted up" and can be "priced" at any time, and one sees at a glance what the medical treatment has been. I gum the A slip on the first page, B on page 18 C 62, D 100, E 118, F 132, G 144, H 168, J 216, K 230, L 248, M 266, N 292, O 304, P 316, Q 356, R 358, S 380, T 420, V 444, W 464, Y 498.

NOTES, LETTERS, ETC.

THE APPEAL ON BEHALF OF THE WIDOW AND FAMILY OF THE LATE DR. QUINLIVAN.

THE following additional subscriptions have been received towards this fund, the objects of which were fully stated in the BRITISH MEDICAL JOURNAL of November 7th, 1900, p. 1450:

	£	s.	d.
Mr. and Mrs. F. J. Hamly	1	1	0
Dr. Guisani	1	0	0
Dr. Lohane	1	1	0
Dr. Dunn	0	10	6
Total	3	12	6

THE DEATH OF SENTIMENTAL TOMMY.

"LADY PIPPINWORTH" writes: I am exceedingly obliged to Dr. Campbell Highet for his letter on the above subject in the BRITISH MEDICAL

JOURNAL of December 15th, and for the case which he submits "as testimony of his belief in the reasonableness of Mr. Barrie's story." But after a careful consideration of the same, I am reluctantly forced to the conclusion either that Dr. Highet has not read the book or the extract embodied in my letter, or that he utterly fails to comprehend "the peculiar manner in which Mr. J. M. Barrie puts an end to the life of Tommy in his book *Tommy and Grisel*." There is little or no analogy between the case quoted by Dr. Campbell Highet and that of Mr. Barrie's hero. To begin with, there is the difference between the little boy of 4 and the grown man, Tommy. Again, the boy with his feet on the lowest bar of the gate thrust his head between two of the upper bars; away go his feet from the banging of the gate, and it is not difficult to see how the fatal result comes about, as Dr. Campbell Highet says the larynx was tightly compressed, and the child dies from suffocation. It is hardly necessary for him to add "that he seems not to have had the presence of mind to use his hands to raise his body, or that if he had his weight and the fright rendered his arms powerless for good." He was only 4 years old, poor child, and he probably kicked with his legs and hastened his death. This is as plain as the proverbial mud in a wine glass. But it was not so with Tommy. He was climbing a wall, and "as he was descending, one of the iron spikes on the top of it pierced his coat, which was buttoned to the throat, and he hung there by the neck. He struggled as he choked," the first and only point in common between Tommy and the poor Dalmellington boy—"but he could not help himself." In all seriousness, I want to know why? What on earth was there to hinder Tommy using his hands to unbutton the old doctor's coat? He was not a child of 4, and the operation, one would think, would be a simple and an easy one. Must we conclude that his presence of mind failed him, or that his fright rendered his arms powerless for good? For my part, I decline to have Tommy's death laid at my door. I am willing enough to believe, if you like, that Tommy committed suicide, but I can honestly say that no real blame for this rests with me.

THE MEDICAL SITUATION.

DR. THOMAS LAFFAN (Cashel) writes: Earnestly would I ask my provincial brethren to take a survey of the present medical situation. Many of them have sons for instance. How do they like being deprived of the power to give those sons so much as a petty vaccination certificate? They cannot take an apprentice either within or without their own families, though the visitors of the General Medical Council have reported that the clinical material now made use of is not sufficient for teaching purposes. We know how the General Medical Council have acted in the matter of apprenticeships. Driven to re-establish it they deliberately did it in such a way as to render the whole thing nugatory. I wanted myself to train a midwife in my hospital, but having got a private tip from headquarters that metropolitanism alone could be entrusted with so awful a responsibility, was fain to drop the project like a red-hot coal. All nurses can only be trained in the very places where the General Medical Council visitors tell us there is not material enough to train the students. The results are that half of them only receive a mock training, and that twice the amount of salary has to be paid them above what should be legitimate. Midwives determine who is to have the practice in a given locality. They do not confine themselves to natural cases, and I say that the Dublin examining bodies encourage them to do so by never exercising any control whatever over them. The profession, in point of fact, consists of two elements—the ruling few and the plundered many. The ruling few scoop all they can out of us as students and then plunder us of all our patients by converting their hospitals into hotels for unscrupulous rural knaves. There will be an election in February for a direct representative. Will some rural practitioner come forward who belongs to the masses—that is, to the plundered many—and who is, therefore, wholly unconnected with school or licensing body? And I for one will give him my hearty support if he will pledge himself to vote for the following:

1. Reform of the General Medical Council, so that the representative of each body on that Council shall be elected by the entire constituency only of the medical graduates or medical licentiates of such body.

2. That he will vote for the introduction of the competitive system into all branches of the public medical service.

3. That he will vote to put down all breaches of the medical curriculum which allow persons who are engaged in other avocations during each day to obtain fraudulent entrance into the profession.

4. That he will vote to put down back-door entrances to the profession in the shape of special stated or private examinations, and that he will insist that every member of the profession shall have access to every examination, and shall be even allowed to employ shorthand reporters to take down questions and replies.

5. That he will re-establish apprenticeships and utilise provincial hospitals for teaching purposes.

6. That he will vote for compulsory and national superannuation, and for fixity of tenure in the Poor-law service in Ireland.

THE CAUSATION OF SEX.

MR. THOMAS TUCKEY (Fowey) writes: Long ago, in my lamb and salad days, I furnished an article to one of the medical periodicals bearing on the determination of sex, and bringing forward the same theory as Dr. Rumley Dawson (BRITISH MEDICAL JOURNAL, December 15th, p. 1760). Some weeks afterwards I received a letter from a celebrated American ovariotomist, dated from New York, politely informing me that I was labouring under a misapprehension. He sent me statistics of many cases where my theory did not hold good; these statistics I have unfortunately lost, but they were convincing to the last degree. Sir John Falstaff, you may remember, had his own theory on the subject, and stated that milk and water fellows generally breed girls. This is contrary to my experience. Thus taking 150 first cases from my midwifery case book I find that of these 69 were males and 81 females. Of course the next 150 might reverse the proportion, but I think these 150 are fairly representative. Thus we see in first children, where the parents are generally young, the woman unexhausted and fresh, and the man not worn out by toil or other debilitating influences, there are twelve more female than male children. As far as my experience goes, I have often seen several female children at first and then the long-expected son and heir. We know that among insects, bees, ants, etc., the sex of the grub is determined by the amount of food, and that on the loss of the grub which is to become the queen, the working bees can produce another queen by feeding up a grub which with less nourishment would become a worker—that is, an undeveloped sexual individual. There is a deep physiological fact behind the Irish skit of the squire's wife who was lamenting to her labourer's wife that she had no son, while the labourer's wife had several. "Try potatoes, ma'm," advised the peasant. In feeding and the relative strength of man and woman, I think, lies the secret of sexual development, and not in the presence or absence of either ovary.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Mr. J. Ashworth, Heaton Moor; Alpha; Ajax; Association of Registered Medical Women, Secretary of, London; Dr. D. Anderson-Berry, Reigate; A. S. L.; Dr. F. P. Atkinson. **B** J. W. Batterham, M.B., St. Leonards-on-Sea; G. Birt, M.B., Stourbridge; Messrs. Burroughs, Wellcome, and Co., London; J. J. Buchan, M.B., Motherwell; J. E. Bowser, M.B., Penrith; Bournemouth Medical Society, Secretary of, Bournemouth; Mr. J. P. Bush, Clifton; Mr. A. E. Barker, London; Dr. E. A. Brown, Orange River Colony; Dr. R. J. M. Buchanan, Liverpool; F. M. Blumer, M.B., Stafford; Mr. W. L. H. Blenkarne, Worthing; Dr. J. Brown, Bacup; Dr. J. M. Bruce, Dingwall. **C** C. B.; Mr. H. N. Custance, London; E. L. Collis, M.B., Stourbridge; Mr. R. C. Chicken, Nottingham; Dr. W. C. Chaffey, Hove. **D** Demos; Dr. A. Duke, Cheltenham; Dr. J. S. Deckray, Bishop's Stortford; Dr. C. T. Dobson, London. **E** Mr. G. W. Eglington, Street; Mr. J. M. Elroy, Uddingston. **F** Family Practitioner; Dr. T. Fisher, Clifton. **G** Dr. W. W. Grosvenor, Gloucester; G. P., Junior; Mr. H. Gilford, Reading; Dr. P. N. Gerrard, Selangor; Dr. A. E. Giles, London. **H** Dr. M. Handfield-Jones, London; Mr. F. Horner, M.P., London; Hot Water; Dr. J. Highet, Workington; H. S. G.; Messrs. Hampton and Co., London; Dr. T. A. Helme, Manchester; Dr. C. F. Harford-Battersby, London; Dr. W. Habgood, Marple; Dr. J. B. Hellier, Leeds; Dr. H. Hollis, Wellingborough Dr. W. W. Hardwicke, Kingston-on-Thames; Dr. C. O. Hawthorne, London; Mr. G. Hawkins-Ambler, Liverpool; Dr. V. D. Harris, London; Mr. W. Hunt, Manchester. **I** Integer. **J** Job; Mr. J. R. Johnson, Richmond, Surrey. **K** Messrs. H. A. Kramers and Co., London; W. R. Kingdon, M.B., London. **L** Dr. R. P. R. Lyle, Newcastle-on-Tyne; Mr. A. G. B. Lory, Chudleigh; London; Mrs. Henry Lee, London; L.R.N.H.; Dr. J. K. Love, Glasgow; Lactodurum; Mr. R. M. Littler, Southport; Lincluden; Dr. A. E. Larking, Folkestone. **M** Mr. J. Y. W. MacAlister, London; Miss A. MacDowell, London; N. M. MacLehose, M.B., London; M.B., C.M.Glasg.; M.B., B.C.Cantab.; Dr. E. W. G. Masterman, Jerusalem; Medical Officer of Health; Dr. R. Marsden, Birkenhead; M.A.Cant., M.A., M.D.Dubl.; Dr. D. Melville, Tsolo; W. B. Mercer, M.B., Ripponden; Dr. S. R. Macphail, Derby; Mr. W. C. McDonnell, London; Dr. D. McKenzies, Leyton; Dr. W. Murrell, London; Member of B.M.A.; Mr. A. Maude, Westerham; Mr. D. J. Mackey, Tiree. **N** J. Niven, M.B., Manchester. **O** Messrs. Oppenheimer, Son, and Co., London. **P** Dr. J. Priestley, London; Dr. F. L. Phillips, Leamington. **Q** Sir Cuthbert Quilter, M.P., London. **R** W. Russell, M.B., Paisley; Rufus; Red Cross; J. M. Renton, M.B., Shotley Bridge; Rolobs; Dr. W. B. Ransom, Nottingham; R. S. C.; Mr. W. H. Rowthorn, Rotherham. **S** Dr. S. Sunderland, London; Sir James Sawyer, Birmingham; S. H.; Sheffield Medico-Chirurgical Society, Secretary of, Sheffield; Messrs. G. Street and Co., London; Dr. R. de S. Stawell, Shrewsbury; E. J. Sidebotham, M.B., Manchester; Dr. P. B. Smith, Aberdeen; Mr. W. J. Staddon, Ipswich; Dr. G. W. Steeves, Liverpool; Dr. T. Shennan, Edinburgh; Dr. D. Stewart, Nottingham; Dr. A. C. Sturrock, Manchester. **T** Messrs. Turnbull and Spears, Edinburgh; Dr. E. F. Trevelyan, Leeds; Dr. R. Turner, Liverpool; T. St. P. Tuckey, M.B., Fowey; Mr. J. W. Taylor, Birmingham; Mr. W. Tibbles, Nottingham; Mr. J. L. Thomas, Cardiff; Mr. W. Thomson, Manchester; Dr. A. Thomson, Oxford. **U** W. D. Urquhart, M.B., Birmingham. **W** Dr. F. H. Winslow, London; Wigan Medical Society, Secretary of, Wigan; Mr. E. M. Wilson, London; A. Wauchope, M.B., Glasgow; Woman Guardian; W. S. S.; Mr. A. H. Wood, Birmingham; Mr. W. H. Wright, Derby, etc.

BOOKS, ETC., RECEIVED.

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A Century's Retrospect of Medicine

1800—1900

Introduction

IT SEEMS fitting that in the issue of the BRITISH MEDICAL JOURNAL for December 29th, 1900, the last which will appear in the nineteenth century, some note should be taken of the passing epoch, and some attempt made to indicate what has been gained for medicine in the century which is drawing so rapidly to a close.

Many retrospective articles and addresses tracing the course and the sources of this progress have already been published, and to attempt to repeat the story would be to tell a tale already well told. The BRITISH MEDICAL JOURNAL may be the more readily excused from attempting the task, because the special "Queen's Commemoration Number," published on June 19th, 1897, on the occasion of the completion of the sixtieth year of the Queen's reign, dealt fully and systematically with the progress made in that part of the century during which the forward movement proceeded at an ever-accelerating pace.

It has been thought, however, that it would be interesting to try to show what was being taught to students of medicine in the schools of Great Britain and Ireland in or about the first year of this century, and to compare it with what is being taught in this last year of the century, and to indicate also how far the manners of that date and the customs and general conditions of life affecting the health of the community differed from those of the present day when we stand on the threshold of a new century, as did our forefathers in 1800.

But before passing to the articles which we owe to the kindness of a number of members of the profession who will be recognised as by their studies especially competent to deal with the several departments, it may be well to glance at the general position of affairs in 1800.

The third George was king, and the egregious Pye, his poet laureate, had that year, in a birthday ode, which ended with a new version of the National Anthem, called on Heaven for "awful justice red" against the world at large:

> But guard our monarch's head;
> God save great George!

Great George himself had given his consent to the Acts for the union of Great Britain and Ireland, which were to take effect on January 1st, 1801; but, sadly perplexed by what he conceived to be the obligation of his coronation oath, was, by his refusal to agree to Pitt's plans for Catholic emancipation, about to drive the great minister to resignation, and himself into a fresh access of insanity. The country was at war with France. But Bonaparte, first consul of the Republic, "on entering into office," had addressed a letter to the King of Great Britain and Ireland, written on 5th Nivôse, which happened to be Christmas Day, 1799, and had asked:

"How can the two most enlightened nations of Europe, powerful and strong beyond what their safety and independence require, sacrifice to ideas of vain greatness the benefits of commerce, internal prosperity, and the happiness of families? How is it that they do not feel that peace is of the first necessity, as well as of the first glory?"

These admirable sentiments had little effect on the actual course of affairs, and to quote once more from the laureate' birthday ode:

> Still the expecting Muse in vain
> Reluctant Peace impatient woos,
> Still cruel War's destructive train
> O'er half mankind their vengeance loose;
> Still o'er the genial hours of Spring,
> Fell Discord waves her crimson wing.

In plain English, Bonaparte had crossed the Alps in May, and had won the battle of Marengo on June 14th. Colonel Arthur Wellesley, it may be observed, who was presently, as the great Duke of Wellington, to be the chief agent in putting a term to the ambitions of Napoleon, was at this time in India, and though he had won reputation as a commander and as an administrator in Mysore he was not considered, in spite of the influence of his brother, who was Governor-General, of sufficient experience and seniority to be entrusted with the command of a military force, which he had been charged to organise for an expedition to Egypt.

In politics Pitt and Fox were the great names, but the Tories seemed firmly established in the confidence of the Crown and of the nation, and Grey, who was to carry reform in 1832, was a Whig politician somewhat under a cloud owing to his supposed republican leanings.

Of the great literary renascence which was to give distinction to the first quarter of the coming century there were no signs, or none which either the critics or the public could discover. Burns indeed had lived and died, and in 1800 appeared the first volume of his collected works, edited with a biography by Dr. Currie of Liverpool. A second edition of *Lyrical Ballads* had been called for (the first had appeared in 1798); but Wordsworth had wrapped himself about with the silence which was to last for so many years, and Coleridge, writing leaders in the *Morning Post* for a living, was known chiefly as the translator of Schiller's *Wallenstein*. Walter Scott, a man of 29, had published nothing original; Byron was a boy of 12, not yet gone to Harrow; Shelley was a child of 8, and Keats of 5 years.

With regard to the sciences ancillary to medicine it may perhaps be said, without much fear of contradiction, that the movements which have had most influence on the development of medicine in the nineteenth century have been the establishment of chemistry on a sound basis of exact experiment, the cell theory propounded by Schwann, the great generalisation of Darwin, the discovery of the science of bacteriology, and the elaboration of the theory of optics. Now in 1800 Humphry Davy, to whom chemical science in this country in its early days owed perhaps more than to any one man, was in 1800 a young man of twenty-two engaged as Assistant at the Pneumatic Institution established by Dr. Beddoes in Bristol for the investigation of the medical properties of factitious airs and gases. Among other gases with which he was experimenting was nitrous oxide, but anæsthesia was yet far in the future, and Davy was not to commence his life-work as a chemist until the following year when he received an appointment at the Royal Institution. Thomas Young, "physician, physicist, and Egyptologist," was a young Cambridge don of seven and twenty, who in 1800 was engaged in attending the London hospitals before setting up in practice as a physician in Welbeck Street. The only distinct indication which he had given of his future achievements was in a paper communicated to the Royal Society in the previous year, in which he related the results of his first experiments on sound and light, which were, however, to prove the foundation of his theory of interference. Darwin was not born until 1809, Schwann until 1810, and Pasteur not until 1822.

The regulation of the practice of medicine and surgery, so far as it was controlled by the State at all, was committed to the care of the Colleges of Physicians and Surgeons in London, Edinburgh, and Dublin, to the Faculty of Physicians and Surgeons in Glasgow, and to the Corporations of Apothecaries in London and Dublin. Though the medical graduates of recognised universities had certain privileges, practically any person who could show any right to practise derived it from one or others of these colleges or corporations, although there can be no doubt that many practised without let or hindrance whose only qualification was their innate and not disinterested belief in their own fitness.

Owing partly to privileges possessed and enforced by the Colleges, but partly also to a real difference in education and attainments which have now been effaced, the line of demarcation between the physicians and general practitioners was very much more marked than at the present day, when the choice of the line of practice which a young man shall adopt depends far more upon the depth of his own or his father's pocket than upon any difference in ability or education.

What would now be called general practice was largely, if not entirely, in the hands of apothecaries, whose medical skill and general attainments apparently varied very much, though their social position was always respectable, and sometimes a good deal more. The right to prescribe had at the beginning of the century (1703) been won against the opposition of the College of Physicians; but at the end of the century the apothecaries were themselves engaged in repelling the attacks of the druggists, who not only dispensed the prescriptions of the physicians—a right claimed by the apothecaries as theirs alone—but also pretended to prescribe, and even to attend surgical cases, for instance, to reduce fractures. In fact, what would now be called the prescribing chemist had come into existence, with this difference, that he added to an ignorance of medicine and surgery an almost equal want of acquaintance with pharmacy.

The legal position of the apothecaries was, in fact, very ill-defined at the end of the eighteenth century, and so remained until the passage of the Apothecaries Act of 1815, which extended the jurisdiction of the Society of Apothecaries over the whole of England, and rendered any person practising as an apothecary without a certificate liable to a penalty of £20. The Surgeons' Company of London, which in 1797 had sold its property in the City and bought land in Lincoln's Inn Fields, had just been succeeded by the Royal College of Surgeons of England, which received its first charter from the Crown on March 22nd, 1800; but the Royal College of Physicians still claimed, though with diminishing confidence, to exercise some degree of jurisdiction over the surgeons as well as over the apothecaries practising in London and within a radius of seven miles. The College then had its local habitation in Warwick Lane in a building erected after the great fire of London from the designs of Sir Christopher Wren. It was taken into use in 1674, and Rowlandson's sketch, which is reproduced (p. 1837) to illustrate Dr. Blandford's article on City Life in 1800, no doubt shows the interior of the "great room or cænaculum...the...meeting room of the College, a noble apartment wainscoated in the most elegant manner with fine Spanish oak." A portion of the great room was standing as late as 1895, hidden behind Newgate prison and Cutlers' Hall in Warwick Lane. The room was approached across a courtyard, and the courtyard was entered from Warwick Lane under an archway over which Wren had put a dome which gave occasion for Sir Samuel Garth's rather obvious joke in the *Dispensary*:

> There stands a dome majestic to the sight,
> And sumptuous arches bear its oval height;
> A golden globe placed high with artful skill
> Seems to the distant sight a gilded pill.

The College continued to hold its meetings in this room until 1825, when it formally took possession of the house which it now occupies at the corner of Pall Mall East and Trafalgar Square.

Practitioners in England prescribed according to the *Pharmacopœia* of the Royal College of Physicians, commonly called the *London Pharmacopœia*, of which the last edition had appeared in 1788. Though it had undergone drastic revision in the middle of the century, it still contained many curious examples of polypharmacy. In Ireland the prescriber used either this volume or a *Pharmacopœia* which the King and Queen's College of Physicians had put out in a tentative way in 1794. In Scotland the *Edinburgh Pharmacopœia*, of which an edition had appeared in 1792, was used.

City Life in 1800.

By G. FIELDING BLANDFORD, M.A., M.D.Oxon, F.R.C.P.
Lecturer on Psychological Medicine, St. George's Hospital, London.

If we look back through the pages of history and compare the end with the beginning of successive centuries, we shall probably come to the conclusion that the changes which have taken place during the nineteenth century in the mode of life of the inhabitants of city and country are greater than those in any of the preceding. The end of the eighteenth century was a time of great gloom and depression, and it is doubtful if there was any real advance beyond that of the seventeenth. The contrast between the state of England under the vigorous rule of William of Orange and that under

the third George at the end of the eighteenth is painful to recall. Though the former monarch was nearing his end, yet, in the words of Burke, "the whole nation, split before into an hundred adverse factions, with a king at its head evidently declining to his tomb, the whole nation, lords, commons, and people proceeded as one body informed by one soul." Louis XIV had proclaimed the son of James II king of England. William recalled his ambassador from the French Court, declared war with France, and had the nation at his back.

War and Scarcity.

In 1800, also, England was at war with France, and had been since 1793, and so far as the army was concerned, everything had been disastrous, and there was great distress and dissatisfaction. The lower classes clamoured for peace—for peace and plenty—while a succession of bad harvests increased the price of bread and led to rioting and tumult. In 1795 there were meetings at Islington and elsewhere at which addresses to the nation and the King on the critical and calamitous state of affairs were voted, and when the King went in October of that year to open Parliament, he was hissed and hooted, and a bullet from an air gun perforated the glass panel of his coach, but without doing further mischief. Stones also were thrown, and after he had alighted at St. James's the coach was smashed. In 1797 the Bank of England stopped cash payments and paid everything in notes, which were issued for small as well as for large sums, and were often compared with the French *assignats*. The 3 per Cents. fell to 48. In 1799 there was such trouble and distress among the poor that a subscription had to be opened to assist them, as had been already done in 1795. In February, 1800, in order to prevent a useless expenditure of wheaten flour by the consumption of new bread, a Bill was passed prohibiting any baker in London or Westminster, or within ten miles of the Royal Exchange, from selling bread until it had been baked twenty-four hours under a penalty of £5 for every loaf sold. Later in the same year there were riots in the city, and mobs assembled at the Corn Market and broke open shops of bakers and corndealers. There were at this time no police, and such gatherings had to be dispersed by soldiery, mostly volunteers. The century closed by a proclamation issued on December 3rd exhorting all persons who have the means of procuring food other than corn to use the strictest economy in the use of every kind of grain by abstaining from pastry, and reducing the consumption of bread in their respective families.

Thus the century died. Prices at the end were terribly high, and wheat was £5 13s. per quarter, the 4 lb. quartern loaf costing 1s. 10d. In 1798 a quarter of wheat cost only £2 9s. 8d., coals, meat, butter, candles, rates and taxes had risen in like proportion. The farmers were having a profitable time, and loud was the outcry that they held back their corn to keep up the price. In January of the new year the sale of fine wheaten bread was forbidden, and none allowed to be sold but that which contained the whole meal with the bran. All this added to the clamour for peace, so, after Bonaparte's serious reverses in Egypt, negotiations began, and before the end of 1801 the preliminaries were signed, and illuminations and rejoicing celebrated the event. Wheat fell and Consols went to up 65. But Bonaparte's peace was a mere device, and in 1803 war was again declared.

The population which had to be fed at the beginning of this century was a small one compared with that of the present day. The total population of England and Wales in 1801 was 8,892,536, and of this number 4,721,252 lived in rural districts—that is, rather more than half. In 1891 the total population of England and Wales was 29,002,525, and of this number 5,534,000 lived in rural districts—that is, not quite one-fifth. Instead of being paramount as in 1801, rural interests in 1891 were those of less than one-fifth of the whole people.

London in 1800.

In order to make any fair comparison between life in the towns at the end of the last century and at the present day it will be best to try to draw a picture of London in 1800, for the population of no other town at that day would bring it fairly into the same category with the great centres of today. London in 1801 had 922,000 inhabitants; Manchester, the next most populous town, only 121,000.

Though densely crowded in certain parts, London was a much smaller place than it is now. What its exact size was we can learn very accurately from an excellent map prepared in 1799 by Horwood for the Phœnix Fire Office. In this, which is on a large scale, 26 inches to the mile, not only every street but every house with its number in the street is delineated, and we have a complete picture of the town and its suburbs, with all the fields and market gardens then existing.

If a citizen started from the Bank and walked north by Finsbury he would find the streets completed as far as Old Street, but thence to the Angel at Islington there were only a few houses. If at Old Street he turned west he would reach Clerkenwell, then thickly covered with houses which extended a short distance north of Clerkenwell Green, whence a stretch of fields led past the New River Head to Islington. Continuing west he would find that the House of Correction and Foundling Hospital were the boundaries of the town, and from the latter the foundlings looked across fields to Somers Town and Highgate. Russell Square and all north of it were fields, but Tottenham Court Road and the adjoining streets were finished as far as the New Road, now called Euston. In this New Road there were no houses with the exception of a few near Baker Street. Mr. Lord's Cricket Ground was where Dorset Square now is, and to the west was a nursery and Lisson Green. A row of houses fringed one side of the Edgware Road, but Upper Berkeley Street and Gloucester Place were the limits of buildings in this neighbourhood. The Grosvenor estate round Grosvenor Square was by this time covered with houses, as was all the land between it and Piccadilly. There were a few houses at the top of Grosvenor Place as far as Chapel Street, but from thence one could walk across the Five Fields to Sloane Square. Kensington and Chelsea were separate and distinct places, the Brompton Road and Sloane Street were bordered by houses, but only a small portion of Chelsea was built upon round the hospital and church. Chelsea Common with a cricket ground and various nurseries occupied the remainder. From Chelsea Hospital or Ranelagh, if our wayfarer looked east, no buildings interrupted his view of the towers of Westminster Abbey, but he would see a few houses in Rochester Row and Horseferry Road between him and the ancient city of Westminster with its many streets; all between was Tothill Fields, where long since the beginning of the century snipe have been shot, a favourite haunt of cockney sportsmen, such as Seymour loved to delineate.

On the other side of the river lay Battersea, Kennington, and Lambeth, with many a field and marsh between them. Further east was the closely built and thickly inhabited borough of Southwark and the old parish of Bermondsey, whence some houses bordering the river led to Rotherhithe;

all south of these parishes was fields. Crossing the river again he would find a fringe of houses on its bank as far as Limehouse, after which came the Poplar marshes. Stepney was a village separated by fields from Mile End, and from Stepney to St. George's Church were fields. There were some streets east of Shoreditch, but Bethnal Green and Hackney were quite in the country.

Dress.

What manner of men and women were they who inhabited this London and walked in its streets? We gain much information on their dress and appearance from the caricatures of the time, and as we learn the fashions in vogue from the drawings in *Punch* by Leech, Keene, or Du Maurier, so we may study the manners and costumes of 1800 in those of Gillray and Rowlandson. The latter illustrated books as well, and from his figures it is easy to see what our forefathers and foremothers wore. The French rage for the so-called classical dress had extended to England in spite of the war. "No one," we are told, "can doubt the beauty of this style of dress, but it was totally unfitted for outdoor use and even for evening dress." It clung close to the figure with very high waist, and was only suited to the young and slight. It does not appear to have been carried to such extremes here as in France, where the dresses were very *décolletées* and at the same time very short. A lady having asked Talleyrand if he admired her gown, "*Oui, Madame*," he replied," "*C'est magnifique, mais elle commence trop tard et elle finit trop tôt.*" The English ladies wore their dresses low and arms bare out-of-doors, and the dresses were of such thin materials that one wonders how in our climate they ever kept themselves warm. Petticoats they had none or next to none, for there was no room, and drawers had not come into fashion, and did not till the third or fourth decade of the century. They began with children's pantalettes, but older people did not wear them for warmth till much later, there being a strong prejudice against donning so masculine a garment. The stockings and shoes were as thin as the dresses. The bonnets just at this time were of the "poke" order, but there were many varieties, and the fashion changed continually. The men were nearly as eccentric in their dress as the women, and they too affected tight clothes. There were many *macaronis*, dandies, or bucks, who carried fashions to an extreme, wore two watches in two fobs, padded their shoulders, and had their collars as high as their hats. No one wore trousers; these came much later, and were violently resisted. Even so late as in 1812, undergraduates at Trinity and St. John's, Cambridge, were forbidden to come into hall so clad. In 1800 all had knee breeches and stockings, top boots, or gaiters, except a few who wore tight-fitting pantaloons and Hessian boots. In the evening or when full dressed, all donned breeches and silk stockings. Perukes, periwigs, or as the word was shortened, wigs, were rapidly going out, but the professions—divinity, law, and physic—still adhered to them, as have the lawyers to the present day. In a picture of a *comitia* at the old College of Physicians in Warwick Lane (p. 1837), Rowlandson has represented the whole of the Fellows as wearing white, that is powdered, wigs. Some of the bishops retained the wig to our own day. Hair powder was not so much the fashion since Mr. Pitt put a tax on it in 1795, a tax which was only repealed in 1869, but which at first brought in £20,000 a year. Men did not now carry swords, except when full dressed, neither did they carry umbrellas; for although Jonas Hanway was said to have invented them so far back as 1755, they were in 1800 considered feminine and Frenchified, and were only used by ladies. Hats varied much; the three-cornered hat was dying out, and the high-crowned hat was beginning. This was generally made of beaver, and also had to pay a tax.

The Streets.

When the citizens of London walked abroad the streets did not offer many attractions; the shop windows were high, with small panes of glass, and no great show was made in them. There was pavement in the principal streets, but in all others "kidney" stones formed the *trottoir*, and after rain the water flooded the roadway for want of channels and sewers to carry it off. The dismal processions to Tyburn were abolished, but a man in the pillory at Oxford Street or Charing Cross was occasionally to be seen. Cabs and omnibuses there were none. Those who wanted to ride had to take a hackney coach, the fare of which for one mile and a quarter was a shilling, and sixpence for every half mile further. Then there were also hackney chairs, while those who were near the river could go by water with either oars or sculls at very moderate rates—for example, from London Bridge to Chelsea, Battersea, or Wandsworth the fare with oars, that is two watermen, was two shillings, with sculls one shilling. To reach the country or suburbs there were stage coaches and stage waggons, the latter a cheap but slow conveyance that we read about in Smollett and elsewhere.

Public Amusements.

Places of amusement were not numerous. There was the British Museum in old Montague House, but access to it was not easy, for visitors had to leave their names on one day and call for tickets on the next, the tickets specifying the day and hour of their visit. There were the animals at Exeter Change, and some more at the Tower; and in 1802 Madame Tussaud brought over her wax figures from France. Before that time Mrs. Salmon exhibited waxworks in Fleet Street, and there were always those in Westminster Abbey. There was at this date no National Gallery, but the Royal Academy existed, and held an exhibition once a year. The multitude cared little for pictures. What it loved was tea-gardens, and of these there was an abundant supply in all parts of London. White Conduit House, Bagnigge Wells, and Islington Spa were in the north. Kensington Tea Gardens, Marlborough Tea Gardens, and Union Tea Gardens were in the west; the Yorkshire Stingo, and Kilburn Wells were near the Edgware Road: Chalk Farm, Canonbury House, Highbury Barn, and Hornsey Wood House were all in localities known in modern times, and a dozen or more might be enumerated did space permit. Open-air amusements were much in fashion, especially at night, and Vauxhall and Ranelagh were long frequented by the rank and fashion of the town. Outdoor singing and dancing took place at the smaller as well as at these fashionable places of resort.

Eating and Drinking.

It was an age of heavy eating and drinking, of dinners when the table "groaned" under a weight of dishes containing food enough for four times the number of guests. This fashion had lasted many years before the end of the century and did not cease till long after the commencement of the present—till, in fact, the dinners *à la Russe* supplanted it. Mrs. Lybbe Powys in 1781 mentions having been at a dinner at Norwich at which the guests were seventeen and the first course consisted of eighteen dishes, including the two soups. The big dishes would be placed at the ends of the table, and along the sides would be an array of others, all of which had to be carved on the table by guests of more or less skill, then removed and others put in their places; in the middle were wine coolers to hold the



A Comitia at the Old College of Physicians in Warwick Lane. (From a drawing by Rowlandson.)

champagne, while sherry or madeira decanters were scattered up and down. Even so late as 1835 Mr. Walker in the *Original* says: "As tables are now arranged, one is never at peace from an arm continually taking off or setting on a side-dish or reaching over to a wine-cooler in the centre. Then comes the more laborious changing of courses, with the leanings right and left, to admit a host of dishes that are set on only to be taken off again, after being declined in succession by each of the guests, to whom they are handed round." These huge displays of dishes necessitated large and handsome joints, poultry, fish, and game at a ruinous expense, and must have been a source of great discomfort to the guests.

The drinking was no less heavy than the eating. Teetotal or temperance societies were things of which one heard nothing at the end of the last century. Teetotallers of to-day would say without much exaggeration that every man drank to excess 100 years ago. Getting drunk was no disgrace, and was almost the rule in evening entertainments. It is recorded to the credit of Pitt, then Prime Minister, that he never was seen drunk in the House of Commons except on one occasion. Yet he drank port wine immoderately, suffered from gout, and died at 47. With the eating then prevalent, and the drinking of port wine, gout attacked numbers, and in the caricatures a man with his foot swathed in flannel and bandages is a constant object. At dinner parties the drinking was for the most part during the dessert, but at the meal it was the fashion for the guests to take wine with the host and with each other, and a good deal was consumed in this way. This fashion prevailed throughout the first half of this century.

Here are some of the prices paid for wine according to a wine merchant's list of this period. For superior old port, 38s. per dozen; prime old sherry, 42s.; prime old madeira, 63s.; bucellas, 40s.; mountain, lisbon, and calcavella, 38s.; superior claret, 70s., claret being a French wine was expensive; cognac brandy was 20s. per gallon, old Jamaica rum 15s., and Geneva 10s.; champagne is not mentioned in the list. These were the days of three-bottle men, who were not uncommon. One bottle or two bottles were hardly worth recording. Yet we read in the *Morning Post* of July, 1800, that "at a village in Cheshire three clergymen after dinner ate fourteen quarts of nuts, and during their sitting drank six bottles of port wine and no other liquor." Beer, however, was the national beverage, and was brewed out of malt and hops, and not out of glucose. Beer was drunk at all, or nearly all dinners in the last course, and in the annals of a dinner club which still exists, strong beer and spruce beer figure in the bills at the end of the eighteenth century.

If our ancestors drank more they certainly smoked less than we do. Cigars—segars, as they were often written—

though not unknown at this time, were by no means common, nor did they come into general use till after the battle of Waterloo. Smoking was done by means of the long churchwarden pipe, but did not take place at every dinner or where there were ladies. People took their tobacco in the form of snuff, and this was universal; both ladies and gentlemen carried a snuffbox, and George III's Queen Charlotte was usually depicted with one in her hand.

HOUSES AND THEIR WATER SUPPLY.

What of the houses in which the inhabitants of London in 1800 lived and died? We know something of them, for a large proportion of the City and West End which was then built is standing and inhabited now. The great fire destroyed a large area in the City, and the rebuilding was an improvement in many respects. In the West good substantial houses had been built by the brothers Adams and others, which are still in use and in good repair. But sanitary methods and appliances were in their infancy. Probably at this date there was not such a thing as a bath room in the whole of London, and, as a witness remarked before the Health Commission towards the middle of the nineteenth century, the only two occasions on which one of the labouring classes was washed all over were after he was born and after he had died. Appliances for washing did not go beyond the footbath, and folks used but little water, for the good reason that they had not much to use. The well-to-do by this time had water brought into their houses from waterworks in most quarters of the town, the Chelsea waterworks supplying the West, the New River and the works at London Bridge serving the City and northern parts. But many of the West End houses had their own well and pump, and have still, though we will hope it is not used. Even in 1800 the contamination through the London gravels must have been very serious. In Lambert's *History of London* (1806) we read that "No city in the world is better supplied with water than London, every house in which may receive a regular supply of this necessary article three times a week by paying a moderate annual sum to one of the water companies." Drinking water was carried about in barrels from favourite springs at Hampstead and elsewhere to those who could afford to pay for it.

The old rivulets which in ancient days supplied Londoners with water had long before 1800 passed first into the quality of dirty ditches, and thence into sewers. Such was the Fleet, the River of Wells as it was called, from the number of wells which poured their contents into its stream. From being the Fleet River it became the Fleet Ditch, and was converted into a sewer, but not completely covered in till about 1841. Another was the Tyburn, which once supplied the City with water and shared the same fate. And a third was the Westbourne, which, flowing down the Serpentine, became the Ranelagh sewer, and runs in an iron pipe through Sloane Square Station unto this day. There were other sewers by 1800 in the different parts of the town, and Lambert speaks of "arched vaults called sewers communicating with each house by smaller ones." It is very doubtful, however, whether this was generally the case. The system in 1800 was one of cesspools, which at first had no communication with the street sewers, but were emptied by "night men," who worked by night as the dustmen by day. About 1778 Joseph Bramah, the lockman, patented an improved watercloset, which was adopted and continued till quite modern times, but it came into use very slowly, and it is not likely that there was a high service of water at the end of the last century, at any rate in the west of London. If a watercloset was joined to a cesspool, and there was no communication with the sewer, the overflow soaked into the surrounding soil. There were no pipe drains; at this date all were of the old brick-barrel kind.

MUNICIPAL POLICE.

The streets were lighted in 1800 by oil lamps, and a few private houses had the same sort of lamps at their front doors. These lamps had to be filled with oil and trimmed, and various caricatures portray this process to the detriment of the passers-by. Indoors candles were almost the sole illuminant, wax candles or tallow candles, which required frequent snuffing. The writer remembers a church near the Royal Exchange, where at evening service an old man went round with a pair of steps and large snuffers, and snuffed the candles at intervals. Gas was not introduced till later. Westminster Bridge was lighted with gas in 1813, and the streets generally in 1814. Their insecurity in 1800 was increased by there being no police. By day they were not patrolled at all, and at night they were entrusted to the care of a small number of ancient watchmen, veritable Dogberrys, who armed with a staff, a rattle and a lantern, called the hours, and then retired to a sentry box till the next call was due. There were a few Bow Street runners and constables at the police-courts, chiefly employed in thief-taking, but the new police of Sir Robert Peel were not introduced till 1829. In 1800 severe punishments were thought the best preventive of crime, and there were no fewer than 160 offences for which capital punishment was the penalty. Among these were such as "stealing a cotton counterpane," "stealing a pair of stockings," "six silver spoons." These sentences were passed at the Old Bailey in September, 1801.

CHURCHYARDS AND BURIAL GROUNDS.

When the end came and the Londoner lay dead, where was he to be buried? First he had to be wrapped in woollen. This had been the law for many years, a law which was not repealed till 1815, and was supposed to benefit our woollen manufactures. Then he was "inspected" by inspectors appointed for the purpose. He was buried in London, for not till long after were there any extramural cemeteries. In 1800 every church had a churchyard, with few exceptions, or the parish had graveyards elsewhere. In the parish of St. George Hanover Square the graveyard was in Mount Street, and when this was filled another was opened in the Bayswater Road, and besides the graveyards there were vaults under many of the churches. There were no fewer than seventy-two parish graveyards outside the City in addition to the large number attached to the city churches, and there were also by this time some private burial-grounds started as speculations, owing to the overcrowding of the parish grounds. They were none of them large, and soon became filled, for their charges were cheap. The overcrowding and the practices adopted in them to make room for more were so disgusting that they contributed not a little to the passing of the Act under which the metropolitan burial-grounds were closed in 1852.

After death there was yet another terror—the resurrection man. At this time the only subjects for dissection were the bodies of those executed for murder, and as the teaching of anatomy was now zealously practised in many schools, subjects were an absolute necessity, and were not to be obtained in any other way. This state of things went on for many years, for it was not till 1832 that the Anatomy Act was passed. The numerous burial-grounds in London gave great opportunities to the body snatchers.

Such was life in 1800; what it is in 1900 we know. What will it be like in 2000?

Anatomical Teaching in 1800.

By ALEXANDER MACALISTER, M.D., LL.D., F.R.S.,
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Of the changes which have taken place in medical education in the course of the nineteenth century, few are greater than those in the method and extent of anatomical teaching. This was the only scientific branch of the curriculum which, at the beginning of this period, was studied by practical work, but the nature and kind of the laboratory instruction then given differed widely from the dissecting-room teaching of the present day.

The "anatomy" taught in 1800 was certainly wide and comprehensive. I have the good fortune to possess several students' notebooks on the subject, containing the abstracts of the anatomical lectures in various schools about the beginning of the century. From these and the textbooks in use one learns that it included not only what was known of the structure of the body, but also the current theories of the functions of organs, as well as their relations to injuries and disease. Those who taught were practising surgeons or physicians, and their primary aim was to make emphatic the applications of anatomy to surgery or medicine; indeed, more than half of the lectures was taken up with morbid anatomy or the recital of cases.



A Last Century Dissecting Room. The figure standing up above the rest is William Hunter; his brother John is on his right-hand side, and Matthew Baillie is the next figure to William Hunter on the left; Cruikshank is seated at the extreme left of the picture; and Hewson is working on the eye of the subject on the middle table. (From a drawing by Rowlandson.)

Minute Anatomy.

Of the minute anatomy of tissues little was known beyond that which could be seen with the aid of a simple lens, for the compound microscopes of the period distorted as much as they magnified. The student had generally to be content with the word of his teacher in this and several other departments, and was seldom practically instructed in the art of verifying by original observations the descriptions given. John Bell, one of the best teachers of his time, scoffs at the "noisy mistake" of the Abbé Torré in supposing that red blood corpuscles are other than spherical, and says that the deception arises from some strange refraction either an effect of lenses or in the nature of these globules. According to him, the Abbé's spherical lenses magnified too highly.

Textbooks of the Day.

Dissection was hampered by the scarcity of bodies which there was no legitimate method of procuring, and was limited by the difficulties attendant on their preservation. In consequence it was usually hastily done, and restricted to the general topography of the viscera and to the cleaning of muscles and vessels. The latter could be injected easily, and the injected preparations could be rendered permanent by steeping in turpentine, drying, and varnishing. Preparations of this kind were kept in most medical schools, and hence a fairly good knowledge of the courses and branchings of the arteries was easily acquired, and constituted a large part of the anatomy which a student had to learn. Veins and lymphatics were little noticed, except such of the former as were superficial, and the peripheral nervous system occupied but a small part of the course. In the large *Edinburgh Anatomy* published in 1784, out of 1,410 pages of text the whole peripheral nervous system occupies 20, and, though written by Monro, is of the most meagre description. For example, in speaking of the cutaneous nerves of the hand, he says: "In

describing the posterior branches of the ulnar and muscular nerves, I did not mention the particular fingers to the convex part of which they are distributed. My reason for this omission is the uncertainty of their distribution; for though sometimes these posterior branches go to the same fingers to the concave part of which the anterior branches of the ulnar and radial are sent, yet frequently they are distributed otherwise" (iii, 325).

In the account of the brain in the textbooks of that day there is no description of structure, and little more than the list of surface markings on the exterior or within the ventricle.

The method of teaching was systematic, not topographical. Textbooks were all constructed on this plan, and had not (as the systematic textbooks of the present day have) directions for the dissection of each part. The separate guides to topographical anatomy now so universal, did not appear in Britain until about the end of the first quarter of the century. Scratchley's miserable *London Dissector* came first; then the anonymous first edition of the *Dublin Dissector*, written by Harrison; and later, the *Edinburgh Dissector*. Particulars concerning anatomical teaching at this period are given in the *Memoirs of James Macartney*, and the life of J. F. South.

As a type of the textbooks then in use, one of the best and most characteristic is that of John Bell, of Edinburgh, of which the second edition was published in 1797. This only included bones, joints, muscles, and arteries. In the third edition, published in 1811, Sir Charles Bell added a description of the nerves and viscera. The second edition consists of two large octavo volumes of 955 pages. It is written in a lively though somewhat verbose style. Were the material it contains sifted and all that is now regarded as descriptive anatomy selected and put together, this bulk would be diminished to less than one-third; and, were the facts in those selected portions expressed in the terse form which it has become necessary to use nowadays in anatomical manuals, they might be fully expressed in half that space.

In this farrago of archaic physiology, of morbid anatomy, of comparative anatomy, and of surgery through which the slender stream of descriptive anatomy meanders we miss two things: First, the definiteness and precision which characterise modern anatomical descriptions; and, secondly, instruction as to method whereby the statements may be verified. There is not from first to last a single direction as to the method of dissection. Indeed, he says that many things are better to be "read in the closet than taught in any public course."

In his preface of twelve pages he deprecates technicalities, "the pride of anatomists and the disgrace of their science." But his abstention from the use of specific names makes his descriptions exceedingly vague.

THE BONES.

The first book is occupied with the account of the bones, and begins by thirty-five pages of generalities concerning the growth of bones and the formation of callus in fractures. There is no reference to Haversian canals, although Gagliardi's pegs are mentioned. This is followed by detailed accounts of the several bones, beginning with those of the head, which occupy seventy pages, of which six are occupied with consideration of fractured skull, the relation of sutures to drainage, etc. His style in describing the bones may be exemplified by his account of the inferior turbinal bones, which are "very spongy, much resembling puff paste, having exactly such holes, cavities, and network as we see in raised paste. They lie rolled up in the lower part of the nose, are easily seen either in the entire subject or in the naked skull. Their point forms that projection which is touched by the finger in picking the nose, and from that indecent practice very often serious consequences arise." Then follows a page on polypi and other conditions, in the course of which the position of the bone is given thus: "The curling plate hangs down into the cavity of the nostril with its arched side towards the nose." "It has no cells connected with it," and it "covers the end of the lachrymal duct." "In the bare dissected skull we find a neat small hook upon the spongy bone by which it is hung upon the edge of the antrum maxillare, for this lower spongy bone is laid upon the side of the antrum, so as to help the palate bone in closing or covering that cavity from within."

The other bones occupy 20 pages and the principal characteristic of the accounts of these is the vagueness of description, which gives no help in the attempt to visualise the part. There are also positive inaccuracies, for example, he says that the neck "according as it is long or short sometimes has eight pieces, sometimes only six": that the rib "being fixed to the body of one vertebra and to the transverse process of the vertebra below the motions of the vertebræ are much curbed." In the account of the pelvis as much space is taken up by discussion as to the occurrence of loosening of the pelvic joints during labour as is occupied by the actual description the pelvic bones themselves.

The muscular attachments are seldom mentioned in the description of the limb bones; indeed, not one muscle is mentioned as being attached to the shaft of the femur. Of the metacarpus he says, "Nothing of importance can be said concerning the individual bones. To speak of them individually is a mere waste of time." How a present-day student would love an examiner who thought so little of such details as Bell does!

THE MUSCLES.

In the 197 pages describing the muscles of the body the attachments are given shortly and in general terms. For the most part he follows Winslow, Cowper, Douglas and Albinus in his accounts of them. Nearly as much space is taken up in detailing their uses as in describing their attachments, and in no case is nervous or vascular supply mentioned. The account of the muscular system concludes with 17 pages on muscular contraction, containing neither an account of muscular structure nor of any of the then known experiments on muscular action. The general tone is a deprecation of the attempt to import physical or mechanical considerations into the study of the *vis insita*, which he regards as an inherent and original attribute of muscle. The descriptions of tendons, bursæ and sheaths are general, and there is no attempt at topographical description, although Monro's treatise had been published nine years before. The younger Monro, although in his *Elements of Anatomy* he only gives a very short account and classification of bursæ takes occasion to introduce Sömmerring's eulogy on his father's work.

JOINTS.

The joints, which fill 53 pages, are meagrely given, but the accounts, though falling far short of the detail of present-day work or of the precision of the newer animal mechanics, yet are on the whole of more value than the accounts of the bones.

CIRCULATORY SYSTEM.

In the second volume the account of the heart is good, but takes careful reading to understand, while it is spun out to 250 pages by long digressions on the circulation, on respiration, on exploded views of the fœtal circulation, so that the

descriptive part is masked, and the student's mind left in a maze with the discussion of conflicting hypotheses. The latter half of the volume, on the anatomy of the arteries, is the best bit of real descriptive work in the book, but according to modern notions fails from the want of detailed relations. Many actual mistakes occur. He makes the superior laryngeal artery enter between the cricoid and thyroid cartilages, and brings the greater sciatic nerve over the pyriformis. Here the second edition ends, but to the third the author's brother Charles has added chapters on the remaining parts of the anatomy. These consist of a very brief description of the brain and a still more insufficient account of the peripheral nerves, which in this edition are placed at the end of the second volume.

Special Senses.

In the third volume, also by Charles Bell, the organs of sense are first treated, beginning with a psychological disquisition on sense perception, and a sketch of the principles of optics, which occupy 25 pages. Then follow about 100 pages on the anatomy of the eye, of which more than one-third is taken up with digressions on the seat of vision, squinting, nyctalopia, etc. The anatomy of the ear is treated in much the same way, but here the description is padded out with accounts of the ear in the lobster and other animals, with details concerning diseases of the tympanum, and on the sense of hearing.

Abdominal Viscera.

After the senses come the abdominal viscera, treated more physiologically than anatomically, and he sarcastically criticises those who attempt to reduce physiology to a physical process. "Let us be satisfied with knowing a little. The life residing in the gland is an agent controlling the affinities."

The illustrations absent in the first volume, few in the second, are more numerous in the later third, but are of very little use in rendering the text intelligible. The student whose knowledge was derived from such a textbook might be amused with the destruction of effete theories, but would have, except in the article of arterial branchings, a poor acquaintance with human structure.

The century has taught us that anatomy is nothing if not definite; that anatomical illustrations for the use of students must be diagrammatised; and that the real nexus whereby the discrete facts may be best strung together is morphological relationship. It has been said that human anatomy is a worked-out field; the comparison of old textbooks with those of the present day is the best refutation of this charge, which is based on ignorance, and it is by no means improbable that those who see the end of another century will be able to record advances both in knowledge and method even greater than those that have taken place in the last hundred years.

Physiology in 1800.

By HENRY POWER, M.B., F.R.C.S.,

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Physiology as a separate study can hardly be said to have existed in this country at the commencement of the present century. In books and in lectures alike it was united with, and considered a part either of medicine under the general term "Institutes of Medicine," or of anatomy. In the great schools of medicine of the Metropolis they were not divided until the first thirty years had passed away. The University of London set the example, which was soon followed at Guy's Hospital. In an advertisement of 1833 the statement is made that lectures at this hospital were the only special lectures on physiology delivered in London, excepting the course at the London University, then under the charge of Dr. Sharpey. At Guy's the curious practice existed of confiding the teaching of physiology to the lecturer on midwifery, and Dr. Haighton and Dr. Blundell successively held the two offices. In 1846 anatomy and physiology having been in the interval taught simultaneously by Bransby Cooper, the two subjects were once more separated, and the lectureship on physiology was entrusted to Dr. (afterwards Sir William) Gull. Soon after, certain evenings in the week were devoted to instruction in microscopic work, and Mr. Birkett, who still survives to witness the immense development of the subject he taught in its infancy, was appointed the teacher. Histology was associated with physiology when Dr. Pavy succeeded to the chair in 1857, and classes in practical physiology, at which the use of the microscope was taught, were first instituted at this school in 1871. The process of the separation of physiology from anatomy and the introduction of histology followed a similar course in other schools.

The extraordinarily rapid development of physiology is partly owing to the great advances that have been made in chemistry and physics, the sciences on which it rests, and partly to the progress effected in the means of observation. The balance and the methods of chemistry, the microscope and the methods of the histologist, have introduced a degree of precision into modern research unattainable by the older inquirers, who trusted to the unaided senses and have enabled observations to be made revealing the internal processes of the economy almost as astonishing as those which result from the application of the Roentgen rays in displaying the form and position of the bones of the living man.

The tendency of modern research is to show that all those acts and phenomena which were formerly regarded as the results of the operation of a special force, the vital force, are to be explained by the ordinary laws of physics and chemistry. There are many processes that are still enigmatical. We do not know the exact chemical changes that precede the evolution of hydrochloric acid in the gastric juice, nor the mode in which impulses are propagated along nerves, but it is presumed that in both instances intelligible, though perhaps not thoroughly comprehended, molecular changes take place, and that they are certainly not due to the supposititious "anima," or vital spark, which the older writers so readily accepted.

The physiological works published in the eighteenth century were few and unimportant, and were chiefly written in Latin or German. The monumental treatise of Baron Haller, the *Elementa Physiologiæ Corporis Humani*, appeared in eight volumes between the years 1757 and 1766. He had already, as early as 1747, sent forth a small book, entitled *Primæ Lineæ Physiologiæ*, which was a precursor as well as a condensation of his larger work, and translations were immediately made into French and English. In 1786 a translation was published under the auspices of Dr. Cullen, the well-known Professor of Medicine in Edinburgh. This book, with notes by Wrisberg, constituted almost the only physiological work in the hands of the student in this country, whilst the original was used in most of the foreign universities. It represents the high-water mark of physiological knowledge at the close of the last century, and in considering the progress of physiology during the present century it may advantageously be taken as standpoint.

BLOOD.

Taking the subject of the blood and circulation, it may be noted that the physical characters of the blood, its coagulability, and the morphological elements it contains, were fairly well known, owing to the observations of Malpighi, Leeuwenhoek, and Jurin abroad, and those of Hewson and Hunter in this country. It is remarkable that no separate section is devoted in Haller's *Primæ Lineæ* to an account of the blood, the little that is said of it being given under the head of "Secretion." The corpuscles were held to be globular, but the estimates of their size were remarkably correct considering the instruments used. Blumenbach gave their diameter as $\frac{1}{3500}$ inch, and Sprengel $\frac{1}{3000}$ to $\frac{1}{3200}$. Haller's estimate was too low—$\frac{1}{2000}$—but the method he adopted was ingenious, for he compared their size with that of the scales on the wings of a butterfly, which, being arranged in rows, permitted the number in an easily measurable space to be counted. The composition of the blood, the existence of hæmoglobin with its special affinity for oxygen, the origin of the blood corpuscles, their numbers, the mobility and diapedesis of the white corpuscles, the absorption bands the blood presents under spectrum analysis were all unknown, and the cause of the coagulation of the blood, which, however, is even now a subject of discussion, is wholly ignored.

CIRCULATION.

The fundamental facts in regard to the action of the heart and the circulation of the blood were established by Harvey in the seventeenth century, and the principal addition made to his conclusions in the eighteenth were founded on the classical and extremely ingenious experiments of Hales on the pressure of the blood in the vessels. The importance of a correct appreciation of the causes of the sounds of the heart and their relation to its movements in medicine led to many researches being undertaken both in this country and abroad at the commencement of the present century. It was not surprising in view of the many difficulties attending the experiments that the conclusions arrived at were in some instances conflicting, and the order of the movements of the heart and of its divisions could scarcely be regarded as settled until the introduction of the graphic method in the hands of Volckmann, Vierordt, Ludwig, and Marey. The employment of the mercurial manometer by Poiseville in place of the long and cumbrous glass tube of Hales enabled the blood pressure in each vessel and in different animals to be easily ascertained, and the cleverly-devised double tubular sound ending in an elastic bag devised by Chauveau, and introduced through the vena cava and auricle into the right ventricle, permitted the pressure of the blood even in those not easily accessible cavities to be registered with comparative facility. The remarkable observation of the brothers Weber in 1845 on the restraining influence of the vagi on the heart opened up a new chapter in physiology, and the phenomena of inhibition, as the effect is named, have been shown to constitute an important function of the nervous system in many other instances. It led to careful examination of the influence of other nerves on the action of the heart, and the origin and course of the accelerating and inhibitory cardiac nerves are now well known. The discovery by Cyon of the depressor nerve, which influences the action of the heart by acting as a vaso-dilator of the vessels of the abdominal viscera, was also of great value. The sphygmograph, by which the number and form of the pulse waves can be accurately shown, though valuable in some instances, presents difficulties in its clinical application that has prevented its general introduction into medical practice. The structure of the heart and vessels was first thoroughly elucidated by the careful microscopic observations of Kölliker, and various instruments have been devised by Volckmann, Ludwig, and others to determine the rapidity of the pulse wave and of the flow of the blood.

SECRETION.

The knowledge of protoplasm and of its immense importance being unknown, perhaps the chapter in physiology in which the teaching was most foggy was that dealing with the secretions of the various glands. Withdrawn from observation by their concealed position, the subjects of innumerable fanciful and often absurd speculations, misunderstood by reason of the imperfect chemical knowledge of the day, such glands as the liver and pancreas with their secretions were riddles hard to read by Haller and his contemporaries. Their conclusions were vitiated by two errors. First, that the secretions existed preformed in the blood, and, secondly, that the blood vessels and the ducts of the glands were in their finest ramifications continuous with each other. Thus Haller observes that "there are many arguments to persuade us that the liver is a mere vascular fabric, whence the bile distils immediately from the extremities of the porta into the pori biliarii or roots of the biliary ducts without passing any cells or follicles by the way."

Elsewhere, after pointing out that the blood contained coagulating serum, water, viscid mucus, and oil, he maintains that the blood vessels entering the glands represent strainers the length, size, and form of which determine both the nature and the escape of the particular constituent of each secretion. The differences in the quality of the secretion depended, in his view, upon the position its particles occupied in the blood stream. Fat and marrow were believed to be deposited without the intervention of glands from the small mouths of the minute arteries into the cellular substance; the secretion of the various forms of sebaceous glands, and of milk, was due to the separation of the oily portions of the blood, and the mucus of the surface of the intestine and genito-urinary tract to the separation of the mucus previously existing in the free state in the blood.

The secretions of the thinner juices were considered to be made not from sanguineous but from smaller pellucid arteries arising from the former, to the secerning mouths of which not only no red blood, but no serum, fat, or other gross material could have admittance. It is in this way "that the more thin and pure humours"—those of the eye, for example—"must necessarily be separated." Nor was less importance attached to the angles at which the smaller vessels were given off from the trunks; different secretions being formed according to whether the mode of ramification of the arteries was, as in the spleen wisp-like, or as in the intestines pencil-like, or like serpents as in the kidneys or in the form of stellæ as in the liver or in a "radiated circle" as in the vivea, or like a lock of hair curled up into the form of a button as in the testis.

Haller well knew how to cover ignorance by high-sounding phrases, and the following paragraph may be quoted as a good example of darkening counsel by words. Speaking of the bile he says: "It takes in the saponaceous water of the stomach by the absorbing veins together with the subfetid alkalescent vapours of the abdomen, which transpire through the whole surface of the intestines, stomach, omentum, liver, spleen, and mesentery, which are absorbed again by the veins as we know by incontestable experiments of anatomy; and, finally, the alkalescent semi-putrid acrimonious humidity from the fæces, while they continue to thicken in the large intestines, which is taken up by the internal hæmorrhoidal veins, from

whence that bitterness, alkalescent, and putrescent disposition of the bile is derived."

It is curious to find that as late as 1823 Adelon in his physiology declaring without hesitation that the blood vessels and the ducts of the glands are continuous without any intermediate organ, the former discharging by their capillary extremities the fluid which is secreted from the blood, only since the blood can no longer reach this point it is no longer called a blood vessel but an exhalant vessel. It was Müller who in 1830 first demonstrated that these two systems of tubes were not continuous. Dutrochet was amongst the first to recognise the importance of the cell, and its structure was studied by Purkinje, Schleiden, Schwann, Henle, Huxley, and Bowman, and in later years by Flemming, Strasbürger, Leydig, Frommann, Hertwig, and many others, with wonderful and far-reaching results affecting every department of physiology.

The labours of C. Bernard, Pavy, and a host of other observers have thrown a flood of light on the functions of the liver and have demonstrated that whilst there may be a conspicuous outward or excrementitial result of the activity of the gland, as in the case of the bile, which has its own purposes to fulfil in the economy, there may also be a not less important internal or excrementitial product, as glycogen, which is entirely concealed from superficial observation, whilst there are organs like the thyroid or adrenals that yield no visible secretion yet exercise a considerable influence on the general nutrition of the body by discharging the products of their activity into the blood. The structure of the kidney and the composition of the urine were not thoroughly understood until the masterly researches of Bowman demonstrated the relation of the blood vessels to the urinary tubuli which were followed by those of Henle on the epithelium of the tubuli. The composition of the urine, to which Haller devotes only a short paragraph, is now accurately known through the labours of innumerable observers in all countries. The influence of the nervous system on the glands has been clearly shown in the case of the salivary, sweat, lachrymal and other instances.



ALBRECHT VON HALLER.
Physiologist, Botanist, Poet. Born, 1708; died, 1777.

Respiration.

The mechanism of respiration was well understood in Haller's time. More than a quarter of a century was to elapse before the normal and abnormal sounds of the respiratory acts were to be rendered familiar to all by Laënnec through the application of the stethoscope. The chemical processes involved in those acts had just been elucidated by the genius of Lavoisier, but his clear exposition of them had not as yet gained entrance into the textbooks. Haller seems to have thought that in the lung substance the small arteries exhaled a plentiful vapour into the cells, whilst the veins absorbed a watery vapour from the same cells. Hence a thin solution of wax could be made to pass from the arteries into the air cells, and from thence to the bronchi; or from the veins into the same spaces, and so to the bronchi; or lastly, from the arteries into the veins, and *vice versâ*, the air cells being thus regarded as the common meeting place and seat of free communication of the minutest arteries, veins, and air tubes. Yet he elsewhere says that in the lungs the "cold air very nearly touches the blood." The unsatisfactory condition of chemistry in the period antecedent to Cavendish and Priestley rendered it impossible to give an intelligible account of the changes occurring in respired air.

So little was the entrance of air into the blood by chemical affinity understood, that it is stated that "no elastic air is here received into the blood as is demonstrated from the impossibility of forcing air into blood if it retains its elasticity, from the inutility of its reception, if the spring of it should be lost, into the blood; from the perfect immutability of the blood by cold; from the minuteness of the inhaling vessels, with the mucus that perpetually lines the sides of the vesicles in the lungs, to which add the nature of the elastic air self, which is very unapt to pass through capillary vessels, with a repulsion of it by water that hinders it from passing paper, linen cloth, or skins that are wetted by water." It is thought necessary to assure the reader that the air being driven into the windpipe never passes the heart, or whenever it does it is forced thither by violence. The effects of the passage of the blood through the lungs on the temperature of the blood was very obscurely stated. It was felt that the warming of the expired air and evaporation of the watery vapour must coo blood: but on the other hand, since arterial blood is warmer than venous, the blood must acquire its heat in the lungs, and in this error even Lavoisier participated. After the above quotation, in which phrases are used only to cover ignorance, let us give the simple and pregnant, but at the time he wrote them perfectly novel, expressions of Lavoisier, about 1776. "Of two things," he says, "one must occur: either the portion of oxygen contained in the air is converted into carbonic acid gas in traversing the lungs, or an exchange of gases takes place in this organ. On the one side oxygen is absorbed, and, on the other, the lung restores a quantity of carbonic acid gas of nearly equal volume." He subsequently read a memoir, in which he maintained that a combustion or oxidation of hydrogen took place in the lungs. Of course

nothing was known of the process of internal respiration, or the exchange of gases between the tissues and the blood.

Animal Heat.

The imperfect knowledge of chemistry led to the wildest guesses at the cause of the high and uniform temperature of the animal body. By many the heart was regarded as the source of animal heat, the blood there undergoing a kind of fermentation; by others it was attributed to the friction of the blood corpuscles against the walls of the blood vessels, and by others again to some obscure influence of the nervous system. The extremely ingenious and careful experiments of Lavoisier led physiologists to juster views. He was even able by means of his calorimeter to ascertain the total quantity produced. At the time the *Primæ Lineæ* were written, though nearly ten years had elapsed from the time when Lavoisier's views were published, they had not received general acceptance, or at least were not taught. Haller's views were not clear upon the subject, and he deals with animal heat very slightly. The chief error of Lavoisier was the conviction that animal heat was generated in the lungs themselves instead of in the tissues of the body at large.

The observations of Hunter and of Dr. John Davy on the temperature of different races of man in various climates, and subsequently of Newport on the temperature of bees, and of Valentin on man, were highly suggestive and instructive. By the use of a thermo-electric apparatus Nobili and Nulloin were able to recognise very slight changes of temperatures. The influence of functional activity on the local temperatures was shown by Ludwig in the case of the salivary glands, and the action of the sympathetic on the vaso-motor system, and its secondary action on temperature by Brown-Sequard and Schiff. Of late years the results of the careful experiments of Frankland, Ranke, Hirn, Helmholtz, Rubner, and others on the heat equivalents of different kinds of food and upon the seats and amount of heat production have shown the uses of applied physiology in providing appropriate and economical food for sailors, soldiers, prisoners, and other bodies of men, both when at rest and when doing work, and also by furnishing a measure of tissue consumption constituting a most valuable aid in the prognosis and treatment of febrile diseases.

Such inquiries also showed and furnished an explanation of the correlation of hibernation and such phenomena as the development of fur and change of plumage according to season in animals with variations of temperature.

Digestion.

Digestion, the details of which occupy so large a space in modern textbooks, was very imperfectly understood. The opinions of Pitcairn who thought that the muscular force of the stomach was equal to 117,088 pounds weight, and was supplemented by an equal force derived from the diaphragm and abdominal muscles; as well as that of Dr. Drake, that digestion is performed in the stomach, as in a Papin's digestor; and that of Cheselden, who held that digestion is no other than corruption or putrefaction of our food, and is performed by a menstruum which is chiefly saliva, were discredited after the experiments of Reaumur and Spallanzani, but it was reserved for Dr. Prout in 1824 to show that the gastric juice contained hydrochloric acid, and for Schwann in 1836 to isolate pepsin. Haller maintained that in fasting the stomach contained a considerable quantity of a limpid fluid or humour resembling saliva, but more mucous, and that the sensation of hunger proceeds from the attrition of the sensitive folds of the lining membrane of the stomach. His account of digestion is as follows: "The aliments taken into the stomach begin to corrupt or change into a nauseous liquid, often ascescent or putrescent, though this is less frequent in mankind from our use of bread and salt, or it may be rancescent, as appears from the flatus and other matters eructated, often of a most fœtid, caustic, and inflammatory nature." From which we may conclude, if the Baron described his own symptoms, that either his food was not very wholesome or his digestion was very bad. He ends with the remark that there is, therefore, no particular kind of ferment in the stomach "from which the design of Nature, the disposition of the stomach and its use, are all very remote."

The chemistry of the digestive processes, almost entirely unknown, as we have seen in Haller's time, has of late years attracted the attention of a multitude of observers, partly owing to the ease with which the fluids can be obtained in a nearly pure state by the formation of fistulæ, and partly from the interest which is excited by the attempt to follow the steps effecting the conversion of non-living into living matter. Tiedemann and Gmelin, Liebig, Strecker, Majendie, Kühne, Bernard, Leuret and Lassaigne. Liebig, Bernard, Chauveau, Colin and Kühne, and Pavy suggest themselves at once as the names of a few only of those who have followed generally the changes of the food in the stomach and intestines, or who have studied the action of the fluids poured into the alimentary canal by the salivary, gastric, pancreatic, hepatic, and intestinal glands. But, perhaps, none made such solid contributions to our knowledge on this subject as Dr. Beaumont, who about 1834 continued his observations for more than a year on a young Canadian who had a gastric fistula from a gunshot wound permitting the digestion of numerous articles of food to be carefully watched. The general result has been to rectify many errors into which the older physiologists fell, and to place our knowledge of the processes of digestion on a sound basis. The earlier changes that the different kinds of food undergo, whether oily, starchy, or albuminous, are now fairly well known, as well as the mode in which they are absorbed, and the channels by which they pass into the blood, though much remains to be done before the assimilation of food can be regarded as thoroughly understood.

The account of the pancreas and of its secretion, given by Haller, constitutes a measure of the advances that have been made in our knowledge of that gland. No account of its structure is given, but the pancreatic juice he describes as watery, insipid, thin, neither acid nor alkaline, and as the gland is three times larger than the salivary glands, the quantity of the fluid it discharges must, he thinks, be considerably greater. Its expulsion, is due partly to the force of the circulating blood, and partly to an alternate pressure from the incumbent and surrounding viscera. Its use is to dilute the viscid cystic juice, to mitigate its acrimony, and mix it with the food. It fulfils every office of the saliva. It need hardly be said that now, after the researches of Claude Bernard, that secretion would be described in very different terms, as highly alkaline, ropy, small in quantity, and acting on starches, oils, and proteids, through the action of different ferments.

Nervous System.

But perhaps no department of physiology has undergone greater and more striking changes than that of the nervous system. It has been attacked on many sides. The scalpel has followed the course of the fibres with the nicest care; all

the methods known to the histologist have been applied to it. Fragments have been separated, hardened immediately upon their removal from the body, embedded in supporting material, cut with sharp knives into the finest sections, stained with one, two, three, or more colouring agents, in acid, neutral, or alkaline solution, affecting differently the various elements; mounted in transparent balsams and examined with microscopic lenses that magnify a thousand times or more the apparent size of objects. Based on the fact that the portion of a nerve fibre remaining continuous with the nerve cell from which it springs preserves its histological characters when the nerve is divided, whilst the distal portion undergoes very obvious changes, fatal to the performance of its function, what have been termed degeneration experiments have been performed by Waller and others; and by the aid of these the course of fibres and the functions of different parts have been determined. The distinctive characters of the anterior and posterior roots of the spinal nerves were ascertained independently of each other by Sir Charles Bell and Majendie. The theory of reflex action was developed by Dr. Marshall Hall. The structure of the spinal cord was carefully investigated by Lockhart Clarke and Schroeder Van der Kolk. Their investigations have been largely extended; and the columns of the cord, in which definite bundles of nerves are united, have been distinguished by Goll and Burdach and Turck and Gowers. This knowledge has proved of great importance in localising disease.

The whole subject of the functions of the brain was of course very superficially known. The functions of the different parts which were anatomically described with sufficient precision, could not even be guessed at as long as the brain and cerebellum were supposed to be insensitive to tactile and other impressions. The high sensibility of the dura mater led to curious ideas in regard to its functions. The seat of the soul was discussed and placed successively in the pineal body, the corpus callosum, the corpora quadrigemina, and even in the liquid contained in the ventricles of the brain; by Haller himself it was more sensibly held to be situated in the crura of the medulla, corpora striata, thalami, pons, medulla oblongata, and cerebellum, and the origins of all the nerves. Nevertheless, the mistaken notion of Malpighi that the cortical substance of the brain is glandlike in structure, and that the fluid secreted is poured into the tubes of the medullary portion, which constitute excretory ducts, was still held.

The nerves were seen to be composed of fibres, and these fibres were known to be continuous with the fibres of the brain. Some indeed thought they were solid threads which, when excited, vibrated and conducted the particular impressions to the brain, but Haller notices their softness, their want of elasticity, and absence of tension, and after adducing various arguments to show that the nerves could not act as vibrating cords, concludes with this remark: "Therefore, upon the whole, it seems to be certain that from the vessels of the cortex a liquor is separated into the hollow pipes of the medulla which are continuous with the small tubes of the nerves, even to their soft pulpy extremities, so as to be the cause both of sense and motion. But there will be a twofold motion in that humour, the one slow and constant from the heart, the other not continual but exceedingly swift, which is excited either by sense or any other cause of motion arising in the brain." Lastly, as the fluid could not be constantly pouring into the nerves, and not overflow, he thinks that it probably exhales through the cutaneous nerves: possibly some may be resorbed and may exhale into the various cavities of the body, as the stomach and intestines.

Of the existence as well as of the advantages of the decussation of many nerves Haller was well aware.

The observations of Hitzig and Ferrier—that stimulation of certain convolutions of the brain was followed by responsive action of various muscles, sufficiently constant to be predicted with tolerable certainty—opened up a new field, with the result, to some extent anticipated by Broca—who indicated the third left frontal convolution as specially dedicated to speech—that certain areas of the cortical substance had as their function the reception of the impressions of the several senses, whilst other convolutions presided over or originated movements of various muscles; and at the present time it is accepted by all physiologists that the occipital lobes are the psychical centres of vision, the temporo-sphenoidal lobes those of hearing and smell, and that the ascending parietal and ascending frontal convolutions proceeding from above downwards are related to the muscles of leg, arm, and face. The functions of the cerebellum still remain to be elucidated.

Some progress had been made by 1800 in the physiology of the special senses, especially of the eye, but perhaps no parts of the body have been of late years investigated during the nineteenth century with such extraordinary diligence and success as these organs. This is evidenced both by the advances that have been made on the purely theoretical side as well as by the improvement in practice that has taken place in the diagnosis and treatment of their diseases by the application of such instruments as the ophthalmoscope.

The subject of muscular contraction has been also pursued with great perseverance. Haller recognised in muscle elasticity, and irritability, the *vis insita*, or, more correctly speaking, contractility and sensibility, but little was known either of its structure or properties. Bowman gave the first full and accurate description of its histology. Krause, Dobie, and others followed. Its composition was studied by Kühne, Brücke, and others, and many articles have been written on the sources of muscular energy, the metabolism that takes place in muscle during rest and fasting, and in full diet and work. The form and rapidity of the wave of contraction has been investigated with special instruments. The phenomena of tetanus and of rigor mortis have been examined, and the action of muscles in various positions of the body and in various movements have been followed out.

Embryology.

Of embryology there is no space to speak; it is enough to say that it constitutes one of the most vigorous offshoots of the parent stem, and that many observers are engaged in the problems it offers to the naturalist.

Applications to Hygiene.

A secondary but by no means unimportant result of the study of physiology has been its practical application to the affairs of daily life. Applied physiology points out the necessity of food that shall be abundant and wholesome, of free supply of water for drink and for ablutions, regular exercise in the open air, good ventilation in houses, appropriate intellectual training for the child, and avoidance of excessive mental and bodily exertion for the adult. The nation that will follow the dictates of sound physiology will have the best developed and healthiest men and women for its constituent units, and will have the fewest hospitals, asylums, and prisons. Disease and premature decay are in a large number of instances the result of the neglect or opposition to the rules of physiology intelligently applied.

Pathology in 1800.

BY D'ARCY POWER, M.A., M.B.OXON., F.R.C.S.,
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IT is perhaps difficult to say whether a greater advance in pathology was made between the years 1700 and 1800, or between 1800 and 1900. The workers of the eighteenth century swept away mystical pathology, which owed its birth as much to an ignorance of physics and chemistry as to faulty observation. The workers of the nineteenth century have collected an enormous number of isolated observations, made possible by improvements in physical science, but no master mind has yet appeared to correlate and subordinate these facts, whilst in some departments, notably in pathological chemistry, we have still as much to learn as had our ancestors a century since in the science of chemistry itself.

A hundred years ago modern pathology was in its infancy, but its students had begun to place the new science upon a firm footing of morbid anatomy. The Hunters bequeathed their school and methods to Matthew Baillie, a most worthy disciple and distinguished physician. In 1793 Baillie published *The Morbid Anatomy of Some of the Most Important Parts of the Human Body*, which he illustrated in 1799 by *A Series of Engravings representing every Diseased Change of Structure to which the Internal and more Important Parts of the Body are Subject.* The two books long served as textbooks of pathology, and a short analysis of their contents will best show wherein we have gained knowledge since they were published.

TERMINOLOGY.

The first thing which strikes a reader of the *Morbid Anatomy* is the faultless English in which it is written and the easiness of the style. There are no cumbrous pathological terms; inflammation of the liver is not a hepatitis, nor is dropsy of the kidney a hydronephrosis. A few words differ from those now in use: thus, venous is always "veinal," endemic is "endemial," curdy is "curdly," and tuberculous is, of course, "scrofulous," tubercle being employed throughout in its anatomical sense of nodule rather than in the restricted specific sense it now has. Although Dr. Baillie was Snell Exhibitioner of Balliol College, Oxford, he writes "schirrus," still a stumbling-block to students, and "apthæ"—mistakes which are to be excused, perhaps, by the passage in his autobiography which says: "I went to the Latin School at Hamilton before was quite 7 years old, and remained there six years. The master of the school was named Whale. He was an excellent Latin scholar, but was not very thoroughly acquainted with the Greek, although he had enough of the latter language for the creditable teaching of his school."

The arrangement of the book is essentially anatomical. The matters dealt with are matters capable of being shown by dissection. There is very little theory and there are no generalisations. Baillie, as the nephew, heir, and pupil of the Hunters, often quotes the opinions of his relatives, and always with the greatest respect. John Hunter he speaks of as "Mr. Hunter, an anatomist whose opinion is of great weight," whilst William Hunter is always mentioned as "the late Dr. Hunter." The work is essentially modern in tone, but occasional glimpses are afforded of the time at which it was written, as when arsenic is said to be "the poison most frequently taken," and it is suggested that "every person is acquainted with the appearance of the mucus of the nose when dried," for there were no tests for the mineral poisons, and handkerchiefs were not in general use.

FEVER.

The absence of all knowledge derived from auscultation and percussion makes the chapters upon the diseases of the chest singularly barren, yet Baillie availed himself of such means of physical examination as were then in use. He recommends that "the heat of the internal parts will be most conveniently measured by putting a small thermometer into the rectum." How much he was in advance of his time in this matter is shown by the following passage from the obituary address by his friend and contemporary, Sir Henry Halford, who says: "He appeared to lay a great stress upon the information which he might derive from the external examination of his patient, and to be much influenced in the formation of his opinion of the nature of his complaint by this practice. He had originally adopted this habit from the peculiar turn of his early studies; and assuredly such a method, not indiscriminately but judiciously employed, as he employed it, is a valuable auxiliary to the other ordinary means used by a physician of obtaining the knowledge of a disease submitted to him. But it is equally true that, notwithstanding its air of mechanical precision, such examination is not to be depended upon beyond a certain point. Great disordered action may prevail in a part without having yet produced such disorganisation as may be sensibly felt, and to doubt of the existence of a disease because it is not discoverable to the touch is not only unphilosophical, but must surely in many instances lead to unfounded and erroneous conclusions. One of the inevitable consequences of such a system is frequent disappointment in foretelling the issue of the malady, that most important of all points to the reputation of a physician; and though such a method of investigation might prove eminently successful in the skilful hands of Dr. Baillie, it must be allowed to be an example of dangerous tendency to those who have not had his means of acquiring knowledge, nor enjoyed the advantages of his great experience, nor have learned by the previous steps of education and good discipline to reason and judge correctly."

DISEASE OF THE HEART.

Baillie knew that "when the heart is much enlarged it is attended with palpitations. These may not only be felt by the hand when applied to the left side, but may often be perceived by the eye, even when the chest is covered by the ordinary clothing. In one or two instances I have known the pulse at the wrist to beat with an unusual degree of vigour, but much more commonly the pulse is feeble and irregular. The muscular parietes of the heart being generally very thin in proportion to the enlarged size of its cavities, the heart has little power to propel an increased quantity of blood into the more distant branches of the arterial system. At times there is much difficulty of breathing, and there is a purplish hue of the cheeks and lips. The colour is more deep in its tinge at one time than another, according as the blood has been transmitted with more or less difficulty through the lungs. The causes which produce a morbid growth of the heart are but little known; one of them would seem to be rheumatism attacking this organ, as Dr. Pitcairn has observed in several cases." A thickening and opacity of the semilunar valves and of the valvular apparatus between the auricles and the ventricles are described correctly enough, and when the auriculo-ventricular valves are thickened the heart is said to be "often found to be considerably enlarged beyond its usual size. I have also seen the valvular apparatus between the auricle and the ventricle in a state of inflamma-

tion and covered with a layer of coagulable lymph. This I believe to be very uncommon." He then goes on to say that "the symptoms which are produced by a diseased alteration in the structure of the valves of the heart are not so distinct as to be clearly discriminated in practice. They consist of difficulty in breathing; of occasional palpitations; of a weak and often an irregular pulse; and in some cases there has been observed a disposition to fainting. No observations have yet been made by which practitioners may be led to conjecture what set of valves is diseased."

No Knowledge of Microscopical Anatomy.

The difficulty of pursuing morbid anatomy without the use of a microscope is manifest throughout the book, and it is doubtful whether Dr. Baillie had any clear idea that capillaries nearly always connect the ends of arteries with the beginning of veins. He says, in speaking of blood in the pericardium without a rupture of the heart "blood may have been thrown out by the extremities of the small vessels opening upon the surface chiefly of that portion of the pericardium which forms the intermediate covering of the heart, whose orifices may have been to a very uncommon degree relaxed." In the same manner he thinks that the air found in the stomach may have been "separated from the blood in the blood vessels of the stomach, and poured by the small exhalents into its cavity." The absence of a microscope prevented any knowledge of the minute changes which occur in an inflamed tissue, and caused all hard tumours to be classified together as "scirrhous." Hypertrophy of the prostate, therefore, was called "scirrhous of the prostate," and was not recognised as a disease of old age, whilst uterine fibroids are described as "scirrhous enlargements of the uterus."



MATTHEW BAILLIE, M.D.
Born 1761, Physician to St. George's Hospital 1787-1799, died 1823. (From a print in the collection of the Royal Medical and Chirurgical Society)

The explanation of many pathological processes was made difficult by the teaching that the blood was a living substance in the sense that more active changes took place in it than in the tissues, whereas we know now that the tissues are the more important, and that few pathological changes take place in the blood itself.

Pathological Chemistry.

The backward state of chemistry in like manner prevented any clear subdivision of the diseases of the kidney. Albuminuria was of course unknown, but curiously enough there is no mention of the appearance of blood in the urine. Dr. Baillie had arrived at the conclusion that gall stones "commonly do not consist of inspissated bile," and that white flaky crystals could be obtained after boiling them in spirits of wine. Better results had been obtained with urinary calculi, for the experiments of Dr. Wollaston, the chemist, had enabled them to be grouped into fusible calculi, mulberry calculi, and phosphatic calculi, a basis of classification which is still adopted.

Parasitology.

Dr. Baillie must at one time have been greatly interested in the subject of comparative anatomy, and, acting probably under the guidance of William Hunter, he had made some original observations in connection with parasitic worms. Two great obstacles stood in the way of a true appreciation of the facts connected with them. The one was that the doctrine of spontaneous generation was still in full force and all cysts were spoken of as hydatids, and the other that Baillie knew nothing of the alternation of generations which is now so familiar to us. Under the heading of intestinal worms Dr. Baillie describes the ascaris lumbricoides, or as he calls it lumbricus teres. He had dissected it very carefully, and he compares its structure with that of the earthworm, with whose anatomy he was equally well acquainted, for he even knew something of its nervous system. He also describes the tænia solium and bothriocephalus latus, threadworms, and the trichocephalus dispar or trichuris. Speaking of them he says: "There is nothing in the œconomy of animals more obscure than the origin of intestinal worms; were they found to live out of the bodies of living animals, one might readily suppose that their ovula were taken into the body along with the food and drink, and there gradually evolved into animals. This, however, is not the case; they do not seem to be capable of living any length of time in any situation, except within a living animal body, which appears to be the proper place for their growth and residence. We might, therefore, be led to another supposition, namely, that intestinal worms are really formed from the matter contained in the intestines, which previously had no regular organisation; but this idea is widely different from all analogy in the production of animals where there has been any satisfactory opportunity of examining this production. The origin of such animals is a subject of much obscurity, and I do not pretend to throw any light upon it. When the whole evidence, however, in support of the one and the other opinion is compared together, I own that the grounds for believing that in some order of animals equivocal [that is, spontaneous] generation takes place, appear stronger than those for a contrary opinion."

If he was in trouble about parasitic worms, he was in worse trouble about hydatids, for he says: "The origin and real nature of hydatids are not fully ascertained; it is extremely

probable, however, that they are a sort of imperfect animalcules. There is no doubt at all that the hydatids in the livers of sheep are animalcules; they have been often seen to move when taken out of the liver and put into hot water, and they retain this power of motion for a good many hours after a sheep has been killed. The analogy is great between hydatids in the liver of a sheep and in that of the human subject. In both they are contained in strong cysts, and in both they consist of the same white pulpy matter. There is undoubtedly some difference between them in simplicity of organisation; the hydatid in the human liver being a simple uniform bag, and the hydatid in that of the sheep having a neck and mouth appended to the bag. This difference need be no considerable objection to the opinion above stated. Life may be conceived to be attached to the most simple form of organisation. The probability of their being animalcules is very strong; and it appears even more difficult to account for their production according to the common theory of generation than for that of intestinal worms." Yet knowing this, or perhaps biassed by it, we find the only piece of really faulty observation to which he has committed himself in the following passage in the volume of *Engravings* to which reference has been made above: "A portion of a placenta is here represented which had been converted into hydatids. It had belonged to an ovum which was not far advanced—namely, to about the third or fourth month. It is not uncommon for every part of an ovum except the fœtus to have hydatids formed in it, and these put on a different appearance from the hydatids which grow in the human liver. They are oval in shape, and have a very narrow neck or process running out from one extremity of them. Their coats are thinner than those of hydatids of the liver, and they are not enclosed like them in hard cysts. They possess a procreative power, and smaller hydatids are often to be seen attached to the coats of the larger ones. They appear to have the same claim with hydatids of the liver to be considered as animals of a very simple structure."

General Accuracy with Many Deficiencies.

It is clear from the foregoing extracts that the morbid anatomy learnt by students a hundred years ago was essentially modern in tone, and was for the most part accurate. The curious thing about it was the huge gaps which remained to be filled. Pneumonia and the changes produced by it in the lungs are dismissed very summarily. The lungs are said "to be sometimes converted into a solid substance very much resembling the liver, but I have only seen an example of this change in a preparation, and I am inclined to believe that it had been produced by a wide-extended inflammation, in which a large quantity of coagulable lymph had been extravasated into the substance of the lungs." In the same way emphysema is almost neglected. Dr. Baillie says, "In opening into the chest it is not unusual to find that the lungs do not collapse but that they fill up the cavity completely on each side of the heart. When examined their cells appear full of air, so that there is seen upon the surface of the lungs immediately under the pleura a prodigious number of small white vesicles. The branches of the trachea are often at the same time a good deal filled with a mucous fluid."

There is one passage which may be read to convey a suggestion of typhoid ulcers, for in speaking of inflammation of the intestine he says: "In the follicular glands, which are gathered together in little oval groups, I think ulceration occurs more frequently than in other parts of the intestine."

Students in England were fortunate, therefore, in having so good a teacher as Dr. Baillie, who in turn owes much of the success of his *Illustrations of Morbid Anatomy* to the "drawings made by a young man, who is not only well skilled in his own art, but who possesses a considerable share of knowledge in anatomy." The name of the artist is not mentioned, but on turning to the plates each is signed "W. Clift," first the amanuensis, then the friend of John Hunter, afterwards the faithful guardian of his collection, whose daughter married Sir Richard Owen.

Pathology in Scotland.

At the beginning of the century it was only in England that pathology had become a separate subject. In Scotland it was still combined with physiology and therapeutics under the general heading of "The Institutes of Medicine." Dr. Andrew Duncan in 1782 issued a small volume entitled *Heads of Lectures on Pathology*, but his notes show that he taught upon the old lines, and was dealing with a highly speculative science instead of with one based upon morbid anatomy. The lectures were extra-academical, and attracted a large number of students, but it was not until 1789 that Duncan succeeded to the chair held by James Gregory, whose election he had contested in 1776. The University Chair of Pathology was not founded until 1831, the first professor being John Thomson, father of Professors William and Allen Thomson, but it was not until nearly the middle of the century that any separate textbook on modern pathology was published.

Pathology in Ireland.

In Ireland things were still more backward, and Professor Macalister, in his recent memoir of James Macartney, has given a lively picture of the state of the profession in Dublin a hundred years ago. Macartney transcribed a series of "Opinions Peculiar to Mr. Dease, Professor of Surgery in the College of Surgeons, advanced in his course, 1796." Amongst these Professor Macalister quotes, "the brain is an inorganic mass, devoid of sensibility and irritability, secreted by the arteries of the pia mater, and consequently incapable of inflammation; that polypi in the nose, like other animals, have their infancy, maturity, and death." John Cheyne, however, Professor of Medicine, 1813-19, in the University of Dublin, devoted himself more particularly to the study of pathology, and with the assistance of Dr. Robert Percival, the Professor of Chemistry, established a museum of morbid anatomy in connection with the House of Industry Hospitals.

Medicine in 1800.

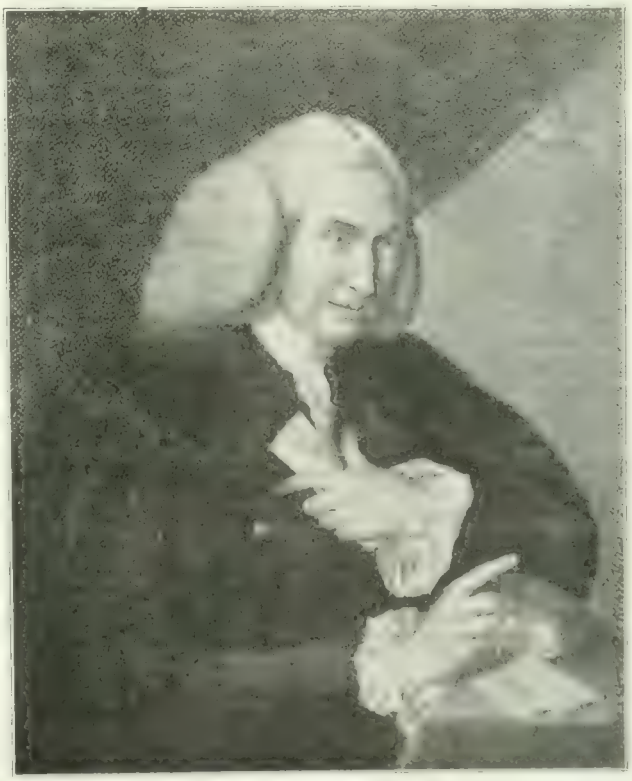
By T. CLIFFORD ALLBUTT, M.D., F.R.S.,
Regius Professor of Physic in the University of Cambridge.

The Editor has asked me to describe the state of medicine at the beginning of the nineteenth century, and has pointed out that the works of Cullen are worthy of regard as a monument of that time. Cullen's *First Lines of the Practice of Physic* was published first in 1769, and went through many subsequent editions, until in 1827 an excellent edition of Cullen's works was published in two volumes by Dr. John Thomson of Edinburgh; this edition I have used in the preparation of the present article. Cullen was born in 1712, and died in 1790.

In the history of thought we find that after periods of extravagant speculation, whether in the direction of realism or of mysticism, or indeed of a sounder philosophy of a literary or academic kind, a phase of "common sense" sets in. With this phase, if he come to hear of it, the ordinary man is

delighted, for he thinks that by common sense is meant his prevalent notions; wherein he is grievously mistaken. Common sense is not vulgar sense, nor does it deal in commonplaces; on the contrary, common sense means that which is contrasted with special sense; it is a sense of relative values, a delicate appreciation of many conflicting and contingent facts and principles, so that in the atmosphere of all the ideas concerned each has its own perspective. What may be lost in ingenuity or in passion is gained in breadth of touch, in balance and moderation; and such was the character of the eighteenth century. In times of this common sense then is often a lack of inspiration, nay, even of penetration of the mind; but things are shepherded together, and gains are counted at net values. The bent of such times is to a broad and critical rather than to an intense and creative purpose; and so it was that at the beginning of the nineteenth century criticism was stronger than creation. The kind of creation which distinguishes our own time is that inspired by the experimental method; but this method, although established in physiology by Harvey, Haller, and Lavoisier, did not get into full swing till the latter half of the nineteenth century. The immediate effect indeed of Harvey's discovery of the laws of mechanics in the field of the animal body was at first to impel men not to common sense, but to a vigorous exaggeration of the new point of view: every function was to be regarded as mechanical; and thus arose the "iatro-mechanical school." Under a like impulse, deriving from the chemical discoveries of Boyle and his followers, an iatro-chemical school sprang up. Nay, more strangely still—though by no means without precedent — men turned to opposite extremes or reactions, and from these more positive conceptions swerved off into realism of the most extreme kind, as in the animalism of Stahl, into the refurbishing of old *a priori* principles such as the sthenia and asthenia of Brown, or into mysticism as involved as that of Hahnemann, a characteristic product of Germany. Chemistry, however, was much behind mechanics and hydrostatics, and had not advanced so far as to obtain a ready acceptance for iatro-chemical doctrines; chemical principles, indeed, formed little part of the doctrine, which consisted rather in a preference for mineral before galenical drugs: the cardinal function of respiration, for instance, which might have taken a greater place in the chemical theories of the day, was strangely neglected; even the discoveries of Priestley and Lavoisier were left almost unacknowledged in the institutes of medicine, as we see in the works of Cullen. In Cullen's attitude to his great contemporary, Lavoisier, in his indifference to a revolution in physiology as great as the discovery of the circulation of the blood, the reader may be reminded of the attitude of Bacon to Harvey. For Lavoisier Harvey's discovery had been waiting; without it the function of sanguification was unexplained: yet in Cullen's physiological chapters we find the animal heat referred to the motion of the blood,—not to the friction of the blood, either in its channels or in its own particles, which by some perverseness is deliberately excluded,—and the respiration is deliberately excluded. "The breathing animals," says Cullen, "are the warmest; but that they are warmer because they breathe is not more probable than that they breathe because they are warmer."[1] Herein we see that Cullen was far behind even Boyle and John Mayow, who lived a hundred years before him.

The iatro-chemical school then was in no great vogue in Cullen's day; and Cullen himself was a loyal adherent of the mechanical school. I have said that the impulse given by Harvey to a mechanical physiology was powerful enough to last even into our own century. As might be expected, its chief strength was in Padua and in the other Italian seats of medical learning. In England the iatro-mechanical school never won a firm footing: but Archibald Pitcairn (1652-1713), the author of the *Elementa Physico-Mathematica*, advocated its doctrines in Scotland; and thus may have formed some tradition of the kind in the Chairs of Glasgow and Edinburgh which Cullen successively occupied. But if we may judge from internal evidence, it was rather from abroad that Cullen drew these opinions. Like all physicians of his time he was influenced by Boerhaave of Leyden, though he does not hesitate to contradict his master and to attach himself rather to his disciple, Gaubius, a sensible eclectic physician whose name will enjoy no long immortality.



WILLIAM CULLEN, M.D.
Born 1712, died 1790. From the mezzotint by Valentine Green after the picture by Wm. Cochrane in the Royal College of Physicians, Edinburgh.

Boerhaave's reputation in the first quarter of the eighteenth century has truly been called "stupendous"; perhaps no physician ever enjoyed so great a fashion with so little scientific merit. It is difficult to say wherein Boerhaave benefited medicine save of course by his pursuit of practical clinical teaching in hospital wards: wherein, however, he seems to me to have shown less insight and skill than his pupil van Swieten, and less power of clinical observation than the memorable succession of English physicians, who may be indicated by the eminent names of Sydenham, Friend, Mead, Huxham, Fothergill, and Pringle. However, Boerhaave, chiefly by virtue of his personal character, was a prodigious leader, and reigned alike in the kingdoms of physiology and in medicine, studies

[1] Cullen's Works, ed. Thomson, vol. i, p. 203.

which were scarcely differentiated till our own generation. It is not easy to see that Boerhaave held anything of the spirit of Harvey; he seems to have made no experiments, and, in his writings at any rate, to have contented himself with hashing up the partial truths and the entire errors of his time. He was essentially an iatro-mechanic, and this chiefly on mere reasoning; a bad example. And in the ranks of the iatro-mechanics was a greater than Boerhaave, namely, Frederick Hoffmann of Halle. While Stahl at the same university was proclaiming a doctrine of the soul, as a biological principle, in terms of which Aquinas and van Helmont would have been ashamed, Hoffmann was devoting far greater powers of mind in constructing a theory of life on geometrical methods. Either through Gaubius or more directly, Cullen drew much of his mechanical physiology from Hoffmann. In this view the body is a hydraulic machine: its inward movements cause its heat; by its velocities the blood drives out humours and obstructions; the brain is the centre of tonus, and a nervous fluid permeating the intimate structures carries energy with it; the body is made of a "mixt" of water and gluten ("tissues" were unknown till Bichat's *Anatomie Générale*, 1801) the proportions of which accounted for degrees of elasticity, flexibility, friability, etc. (*debile laxum*, *debile tenerum*, *debile fissile*, etc.) in health and disease; its connective and vascular parts by their pressures govern growth, activity, and death; it observes rhythms, as do other moving masses, hence come critical days and periods, such as sleep and menstruation; in the fluctuations of nervous energy, spasm and atony arise, and are causes of many, and originally, perhaps, of all diseases; fevers and inflammations are directly due to a flogging of parts of the brain or other parts by the rebellious blood, which breaks out into guerilla wars in this region or in that (inflammation and fever); and so forth. All this is, of course, mere ratiocination; of experiment there is not a poor ha'porth. Still Hoffmann saw what Boerhaave did not see; he saw that pathology is an aspect of physiology, a view then novel enough; he did something also for neuro-muscular conceptions, and something more for the circulation in the arteries; but for biological categories—for distinction between life and non-life, for the difference between the organic and the inorganic, for insight into nutrition and secretion—the world had to wait till all these men of principles were supersede d by the men of experimental verification—to wait, in a word, for Bernard. But what of Haller, a brilliant and distinguished man of science, a true experimenter, and a cautious reasoner? Well, although his *Elements of Physiology* appeared in 1757-60, for these forgers of general principles Haller might never have existed! Into Cullen's works some of the Hallerian teaching seems to have found its way by means of the eclectic Gaubius, but of the method and spirit of this great man we discover little. Even Bichat was rather anatomist than physiologist; and, if Haller's inspiration failed to fashion Bichat, we shall look in vain for its manifestation in smaller men. Thus was it that Haller in the eighteenth century always seems to me to have been something of a *vox clamantis;* and I repeat that for the reader of Cullen's physiological lectures Haller might never have existed! This hollowness makes the medical writers of the latter half of the last century and the beginning of this seem farther from us than even Galen himself, in whom, as Dr. Payne has lately reminded us, the true spirit of experimental science was awake.

If Haller was thus neglected what of the equally great Morgagni, whose celebrated letters on the seats and causes of disease were published in 1761, twenty years before Cullen's *Practice of Physic* appeared? An eminent writer says that Morgagni's great work "made pathological anatomy a science, and diverted the course of medicine into new channels." Would that it had! The reader may peruse *Cullen* from cover to cover and fail to find out that Morgagni again had ever existed. As Haller had to wait for Bernard, so Morgagni had to wait for Laënnec and Bright; disciples worthy also in this that, like their great forerunner, they never forgot that, for the physician at any rate, pathology can only be studied profitably in connection with clinical medicine; and thus in them it was preserved from the scholasticism of Rokitansky. Even Matthew Baillie I can scarcely acquit of some forgetfulness of this truth, that only in the combination of the two points of view—the clinical and pathological—can medicine find its safety.

The tendency of iatro-mechanics was, as might be expected, away from spirits and humours and towards solidism. The deposition of Galen's humoralism was an advantage, and the tendency to express living processes in terms of "movements" was wholesome. Of modern molecular physics of course Cullen had no conception, but often he uses the word "movements," in no unscientific manner, of intimate processes far more scientifically than in some modern speculations. The fault of the iatro-mechanicians was not that they pressed mechanical conceptions to their utmost applications, this is a sound use of analysis, but that they argued about them instead of testing them; even Bichat was apt to forget that after mechanical categories are exhausted other categories come in; and that after chemical categories in their turn are exhausted other facts remain, for the interpretation of which neither chemistry nor physics is sufficient—those which for the present we call vital. In a sense fashionable to-day, all these phenomena are at the bottom mechanical; but in my opinion much misunderstanding is caused by extending the word "mechanical" beyond the movement of masses to the movements of molecules and of atoms; that is, from the physical into the metaphysical world. When Cullen and the iatro-mechanical school tried to explain life and disease by mathematical and physical conditions and moments their explanations were not alien but inadequate.

I have said that in the eighteenth century the chemical school had less ascendency; chemistry was then not understood sufficiently well to be used readily in physiological conceptions. In his eclecticism, however, Gaubius dealt a little in chemistry; he attributed certain diseases to "acrimonies"—a word often in use at the time; and he said, not without shrewdness, that vegetables are apt to run to acrimonies (acids), and animal foods rather to ammoniacal putresence, in which opinion Cullen followed him; though Cullen protests against too ready a belief in hypothetical acrimonies. We begin, also to hear of the "cacochymies" with which, under the name of "crases," the school of Rokitansky made so great play. Cullen is not far wrong in declaring that the chemiatrics of his day had become frivolous and hypothetical; that they were not "chaste" enough to avoid baseless speculation; yet in a neighbouring page he does not hesitate to try by ratiocination to ascertain the causes of hunger, thirst, and other organic sensations.

With all its limitations, however, the mechanical physiology made for moderation and discouraged extravagance. As I have said, Cullen is a model of good sense, even in his philosophy. His own hypotheses are set forth with modesty and "chastity." If he asks his hearers to grant him a moment for "*lusus ingenii*," he warns them that they will bestow a few moments upon them at their peril. On the other hand he says well that to profess to avoid all theory is mere talk, and to preach practice without theory is "specious but

impracticable;" every man has his theories, good or bad: weak and ill-trained minds have frivolous or dangerous hypotheses, their facts are as false as their reasons, and they do not know where to stop. Even Sydenham, whom Cullen honours, had his theories, and bad ones too; but he held them, says Cullen, in a light hand, and did not allow them to blind him in practical matters. For, as Cullen goes on to say, mere empiricism is an impossibility—to huddle facts together without organising them is but confusion; we must reason as we observe: yet observation is fallacious, man variable and peculiar; the work of Nature secret and complex, the lack of facts lamentable, and our slavery to words pernicious! Thus, for example, Cullen's criticism of the current teaching on "temperaments" is admirable and characteristic; treat of them he must, but mainly to declare that the whole matter is smothered with the doubtful guesses and untrustworthy descriptions of men who could observe only through the medium of their prepossessions. We are not surprised to find that Cullen leaves little of this fictitious structure standing. Yet while thus positive and shrewd, and thus lamenting the lack of authentic facts, Cullen tries to supply them not by more scientific observation and some experiment, but by more arguments; arguments which differed from those of other teachers only in their greater sobriety. He did not see that in physiology, as in other sciences, by experiment only can a body of law be obtained. For instance, he thinks well of cold water treatment in fevers, and wishes that by a thermometer the method could be made more precise; yet it does not occur to him to try, although Haller had set him the example, he prefers to argue on. In his criticism of the "*vis medicatrix Naturæ*" is an instance of Cullen's "common sense." He points out that although Nature is a moving system, tending to readjustment or disturbance, yet to attribute to this system of causes an intention of cure is no less a vice than to assert that all natural processes are good. He does not hesitate to say this trust in "Nature," if useful in a protestant time, brought weakness and timidity in practice upon Sydenham, as it had done upon Hippocrates himself.

Let us now turn from Cullen's physiology to his *First Lines of Physic*, and see how he treats this subject. The influence of the great Linnæus, then in the ascendant, led his contemporaries to press even to greater extremes the logical classifications which had their origin in the Aristotelian scholasticism; and, like many worse men, Cullen was impressed by the fallacious notion that diseases are susceptible of arrangement into genera and species, as are plants and animals; whereas, of course, diseases are not individuals, but various states of an individual. Being qualities, not things, they can no more be divided into genera and species than, let us say, colours can be.

Cullen divides diseases into two main classes—namely, Pyrexiæ and Neuroses. The Pyrexiæ he divides into Fevers, Inflammations, Exanthemata, Hæmorrhages, and Profluvia. In their observation of fevers—"*morbi sine materia*"—the elder physicians were at their best. Cullen takes intermittent fevers as the type, and remittents as aberrations. Continued fevers are another kind, which he divides naturally enough into the "inflammatory" and the "nervous," by the latter those being signified which, affecting the nervous system, manifest tremor, coma, prostration, etc. For the inflammatory fevers (many of which, as he admits, are symptomatic) he has no causation but his "phlogistic diathesis," of general or local manifestation, a god which he brings out of many a machine. The delirium of nervous fevers he attributes to "an impetus to the brain," though, on remembering that such impetus must occur in violent exercise also, he is a little bothered; but everywhere in such difficulties he not only avoids the hypothesis of toxic influences, but also overtly prefers his mechanical hypotheses as less visionary. He recognises, however, the poisonous effects of overcrowding, as in gaols, etc.; and also those of miasmata (ground effluvia): but, except in gaol fever and in intermittents, he gives them no great part in disease. He notes curiously the comparative immunity of scavengers. Hectic fevers for him denote suppuration. The inflammations are, of course, local rebellions of the blood in this part and that; whether ophthalmias, cynanches, gastritis, hepatitis, nephritis, or the rest (nephritis vera or idiopathica he admits, but dwells chiefly on that due to calculus). He notes that in rigor the temperature is rising, and that constriction of the superficial arteries is a part of the process. He proposes a fanciful debility as the immediate cause of the attack. On pp. 42-44 of the second volume we may find sufficient evidence of the prevalence of diphtheria within the sphere of Cullen's practice.

The class of hæmorrhages is a very heterogeneous one: containing epistaxis, hæmoptysis, hæmatemesis, hæmaturia, menorrhagia, leucorrhœa, piles, etc. Phthisis pulmonalis comes under hæmoptysis, and with this disease he deals in a remarkable way. He contests the wisdom of sending these patients to warm climates, and of coddling them; on the contrary, he recommends plenty of fresh air, if possible by sailing on the sea. Mercury and much bleeding, even in highly febrile stages, he is sure is mischievous. Finally, he tells his pupils that they "will discover nothing satisfactory in books" for the treatment of phthisis, and he wishes he had "the time and the genius" to work out a better treatment. He is clinician enough to be assured that tubercle—a "noxious acrimony"—is almost without exception the cause, not the consequence, of hæmoptysis. He traces phthisis also to dusty occupations, as in stonemasons, flaxdressers, and others. He urges that there is also a kind of phthisis attributable to calcareous deposits, for in some cases he has seen such matter voided from the lungs. For the amenorrhœa due to phthisis, by some "pious and innocent fraud," he was wont to avoid the emmenagogues for which he was generally importuned. Balsams, in his opinion, disorder the stomach, prevent nutrition, and are indeed of little use.

Under hæmatemesis we find in Cullen practically no pathology; liver obstruction is doubtfully suggested, and some ulceration of the stomach supposed to be "possible."

Of pulmonary and cardiac diseases Cullen has little to say that need detain us, and of their pathology he had scarcely a glimmer; in one place he does allude to a hepatiform change in the lung, but of this fact he makes no use. The singular jewel in the chapter is his recorded necropsy, whereby he proved that perihepatitis may simulate a pleurisy. (We must remember that when Cullen published his *First Lines* Matthew Baillie was only about 16 years old.) The discoveries of Avenbrügger are noticed once or twice, but to no advantage; in this respect Cullen was no worse than his neighbours, for not till the genius of Laënnec revealed the methods of physical diagnosis was justice done to the great Viennese physician. The second chief class of diseases—the neuroses—is no less heterogeneous and inconsistent; no less founded on very superficial resemblances and analogies. First come the Comata—apoplexy and palsy. Then the Adynamiæ (consisting in a weakness or loss of motion in function); these are syncope, dyspepsia, hypochondriasis. The third sections are the Spasmodic affections without Fever namely, tetanus, epilepsy, chorea, palpitation, dyspnœa, asthma, whooping cough (recognised as contagious)

pyrosis, colic, cholera, diarrhœa, diabetes, hysteria, hydrophobia. Cullen is at his best in subjects for which a sagacious observation and large experience are most effective. Thus he is well equipped for dyspepsia, which he perceives to be often a secondary affection, for syncope, and the like. Hypochondriacs, he tells us, are not to be driven out of their position by reason or raillery, but by artifice and stratagem. In epilepsy he recommends the ligature of a limb above an aura; he distinguishes those attacks wherein the spasm is partial in its origin, and consciousness usually not lost; and he recognises the evil of repetition of attacks of nervous disease, as tending to a habit.

The Vesaniæ form an important division, and they lent themselves no less then than now to mild philosophisings and literary descriptions. He thinks in mania the control of "awe" is a therapeutical means not to be forgone, and that thereunto "stripes" should be cautiously exhibited; advice for which there was no need. (William Tuke and Lindley Murray called their meeting to found the Retreat at York in 1792, about ten years after the first edition of Cullen's *Practice of Physic*.)

Headache is inserted next by Dr. Thomson from the *Clinical Lectures*. "As a disease," says Cullen, "it is obscure, as a symptom difficult." He objects to attribute it to the "acrimony (acidity as we call it) suspected everywhere, even in the nervous fluid itself." His description of megrim is good, especially of the pulse in this malady; but in treatment he is not so good as he might have been; he mixes simple headache with organic disease of the brain, and satisfies himself with such words as "topical fever." He recommends low diet, cold bathing, and avoidance of debauch and fatigue. Of other divisions, such as Cachexias, Emaciations, Intumescentiæ (including adiposity, flatulence, dropsies, and even rickets); and of Impetigines (including scrofula, syphilis, scurvy, jaundice (he denies "hæmatogenous jaundice" but had for the most part gall stone in his mind) we have not space to treat, interesting as are many of the parts; but the essential confusion of his explicit classification is such that his best paragraphs can only be regarded as *obiter dicta*. As gout must be a "spasm" or an "atony," it appears as an atony of the stomach. On therapeutics Cullen is on the whole negative and pessimist. He does not by any means give up bleeding, but is cautious and sparing in its use; he has seen much harm done by its large and routine use in all kinds of patients, and especially in the convalescence which, after free bleeding, is apt to be delayed by weakness and anæmia. In rheumatic fever he notices this disadvantage, as indeed did Sydenham himself; and he advises the practitioner to be content with woollen clothes and the new "Dover's powder." Of purging he has even less favourable things to say, unless there be a cold and bound belly, from which he thinks some infection may arise. The passions of the mind are be mitigated in illness, a measure which he "leaves to the philosophers, or, if you will, to the divines." He also promotes for good the wholesome conditions of life, urging in the prevention and relief of disease the temperance which he never forgets in his philosophy. Concerning drugs Cullen speaks with the same reticence and mistrust: many are the deceptions to which we are liable in estimating their effects; indeed, he leaves few galenical reputations standing. On the one hand, he feels that art is needed as well as Nature; but on the other, experience did not strengthen his faith in medicine as it was in his day; our feeling is that his patients had an eminently judicious physician who would make few mistakes, but inspire no confident hopes. The divorce of surgery from medicine was unfortunate in Cullen's time, as in all other times; for, in the positive and experimental work of the Hunters and the Monros, surgery was then making the way for the regeneration of medicine. The modern reader of Watson's *Lectures* (published about 1840) may wonder at the vast distance between Watson's standpoint and his own; but in Watson's generation physicians had at least assimilated much of the teaching of the morbid anatomists (Morgagni, Baillie, Bright), and of the great French school of Laënnec, by which the art had been transformed. Out of these materials was built a more comprehensive and scientific method, in which the thought of a teacher of medicine was dictated by likenesses and difference of a far profounder kind than were recognised in the time of Cullen. If to us Watson seems far off, the vista of the half century from Watson backward to Cullen seems so much farther as to carry us not as it were into a previous generation, but into a previous age. Still by his sceptical and cautious temper Cullen prepared the way for the new constructions; thus he sapped the foundation of the old medicine, and dismissed the philosophers. In discussing mental disorders he could not but mention such thinkers as Descartes and Leibnitz, but he calmly says that their systems explain nothing, and if admitted, have no application in medical doctrine. Of the experimental method, of pathology human or comparative, of embryology, or even of evolution itself, Cullen knew nothing; but of the old conceptions, to be destroyed for the new, Cullen proclaimed the emptiness. And one great reform he promoted which is yet far from consummated—he dethroned Disease and set up the Patient; he distrusted systems, and he saw that the only real is the individual. Another example he set which it were well that we should imitate: he thought with vigour, discernment, and accuracy, and therefore wrote with lucidity, proportion, and correctness. *O! si sic nostra!* If Watson's admirable style is at times a little precious, if the labour of his file is sometimes to be overheard, Cullen writes so far better than he. The careless reader of Cullen, who runs and reads, does not know how much had gone to that insight, shrewdness, limpidity, and precision. And, as a summer lightning which is everywhere and yet nowhere, there is within all his reflections a keen sense of humour; but it is the humour of an artist who will not sacrifice his art of perfect expression even for a witticism. Cullen was not a great man, nor even a scientific man in his own sphere; there were many fruitful things even within his reach of which he was too sceptical to see the promise; but he was eminently one of those in whom *initium sapientiæ est stultitia caruisse*. And yet this lucid and temperate spirit had scarcely taken wing when the chimera of the disputatious and disreputable Brown caught the fancy of half Europe. Such is the irony of history!

Lunacy and its Treatment in 1800.

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IN no department of medicine, perhaps, is the contrast between the knowledge and practice in 1800 and the knowledge and practice in 1900 so great as in the department that deals with insanity. In these days, when county vies with county, and borough with borough, in the erection of palaces, ever more and more magnificent, for the reception of the insane pauper; when the leading idea in the treatment of the insane seems to be to impress them with the splendour of their abodes; when a single slap given to a troublesome lunatic by

an exasperated nurse echoes through the length and breadth of the land, is the subject of magisterial jurisdiction, is solemnly investigated by commissioners, is recorded in Blue Books, and formally reported to the Lord Chancellor and the nation; it is difficult to realise the state of the accommodation and treatment of the insane that existed one hundred years ago.

Chains, Manacles, and Muzzles.

In 1800 the Retreat at York had been established for eight years, and the system of treating the insane with humanity, which Samuel Tuke was thus conducting, aroused a frantic opposition. Pinel's labours were unknown in this country, and Tuke was regarded as more fit to be the inmate than the conductor of an asylum. The number of asylums in England, public and private, was 15; it is now 170. The number of registered insane persons in 1799 was about 10,000; in 1899 it was 106,611. Large numbers of insane persons, for whom there was no accommodation in asylums, were detained in prisons; many more were in workhouses, chained in the cellar or in the garret; fastened to the leg of a table; tied to a post in an outhouse, or perhaps shut up in an uninhabited room, or left to ramble half-naked and half-starved through the country.

Of all the lunatics in the kingdom it was computed (by Sir G. Paul) that one-half were not under any kind of protection from ill-treatment, or placed in a situation to be relieved of their malady. Indeed the lot of those who were merely neglected was enviable indeed beside that of those who were "cared for" in madhouses. These institutions were all conducted on much the same principles, and the curious circumstance to us is, that while some attempts were made to conceal the greatest atrocities, the general routine of barbarity was complacently admitted and upheld, as the necessary, proper, and praiseworthy method of dealing with the insane. The modes of concealing what was too bad to be revealed were not marred by any excess of squeamishness. At the York Lunatic Asylum in 1814 it was discovered that of 365 deaths only 221 had been reported; that a patient having been killed, his body was hurried away to prevent an inquest; that two sets of books were kept, one containing the actual receipts and disbursements, the other a fictitious set of accounts for the use of the governors; and lastly, that when the inquiry was pushed, a wing of the asylum conveniently caught fire, and was burnt, together with several patients and much that was to be inquired into.

As to Bethlem, the authorities took some pains by denial and prevarication to evade responsibility for the worst cases, but for the most part they rather boasted of, than apologised for, their arrangements. The presiding genius was Haslam, the resident apothecary, who seems to have exercised autocratic power, and whose *Observations on Madness*, containing humane recommendations strangely at variance with his practice, were published in 1798. According to his evidence before the Select Committee in 1815, the patients were generally chained to the wall, either with manacles or by one leg or arm. Some of them were chained to the tables and sat there in absolute nakedness the whole year round. One patient, a man named Norris, was secured by an iron collar which was chained to the wall; by an iron frame in which his body was encaged, confining his arms above the elbow; and by a chain from his ankle to his bed, and in this predicament he was kept for twelve years. His treatment was considered by the governors "to have been upon the whole rather a merciful and humane than a rigorous and severe imposition." Haslam swore that this mode of confinement was "decidedly necessary"; and the governors declared that the general management of Bethlem, as affecting the health, the cleanliness, and the comfort of the patients was of a nature creditable to the governors and others concerned in its administration.

In the Lancaster Asylum are still preserved muzzles, chains, girdles, handcuffs, manacles, and leg-locks by the hundredweight, all of which were in use in 1800, and most of which were in use to as late a date as 1840. This was at a time when the Retreat at York had demonstrated for many years that nothing was lost and everything gained by treating lunatics as human beings.

Lunacy Law.

Legal protection for the insane there was practically none. It is true that madhouses, as they were termed, had to be licensed, but the Act of 1774, which contained this provision, provided also that licences should be granted "to all persons who shall desire the same." The commissioners had no power to discharge a patient, however satisfied they might be of his sanity; and although they could revoke a licence, they could not refuse to grant it again when it was applied for, so that their power of revocation was effectually nullified. The commissioners were empowered and required by the Act to visit madhouses, but, as these powers were limited to making a report to the College of Physicians, which itself was impotent to enforce any of their recommendations, they soon ceased to exercise their useless visitorial function. The same admirable Act required for the legal detention of a lunatic an order made by a friend of the patient and a medical certificate. It contained no provision, however, that the certificate should be made by a duly-authorised physician, surgeon, or apothecary, so that certificates could be, and great numbers of them were, signed by unlicensed and unqualified persons, who called themselves apothecaries for this purpose. Again, anyone who styled himself the friend of the patient could sign the order for his admission; the same person who signed the order could, and often did, sign the certificate as apothecary, and the one designation was often as false as the other. Moreover, the keeper of the madhouse could himself sign both the order and the certificate for a person placed under his charge.

The commissioners were fully aware of all these abuses, but they were powerless to interfere. Bill after Bill was brought into and passed through the House of Commons to put a stop to them, but all were thrown out by the Lords, where the opposition was led by that great champion of legality, Lord Eldon. Among those who were chained, manacled, whipped, and kept in nakedness the whole year round were notoriously a certain percentage of sane people. Anyone who was troublesome to his friends or whom it was desired to get rid of, could be seized and taken to a madhouse, from which none had power to discharge him; and, to baffle investigation, the keepers of these dens had a system of bestowing fictitious names upon their prisoners, whose real names were known to their gaolers only.

Corporal Chastisement.

More surprising even than the chains and manacles, the nakedness and other horrors, was the use of corporal chastisement avowedly as a means, not of punishment, but of cure. It was taught that the sentiment of fear is the first, and for a long time the only, means by which the mind of a lunatic can be influenced. "When a maniac fears he commences to reason more justly, to connect certain effects with certain causes, and to judge the future by the past. The appeal to his fears is the first essential step to take in his treatment." Accordingly, a necessary part of the equipment of every

"keeper" was a whip, which he used at discretion, and in Hogarth's pictures of Bedlam the keeper is depicted with a whip stuck in his belt. This practice was still continued in 1800. "Keepers" were allowed, and even encouraged, to retaliate upon violent patients; and even George III, the revered Father of the people, who was rarely spoken of but with slavish adulation, was not only repeatedly put into a strait-waistcoat, but on at least one occasion was knocked down "as flat as a flounder" by his keeper. This was told by an eyewitness to Dr. Paul of Camberwell, who died in 1899.

MEDICAL TREATMENT OF INSANITY.

The medical treatment of insanity was in intelligence and humanity much on a par with the mechanical. Dr. T. Munro, who was physician to Bethlem in 1800, has thus described it: "Patients are ordered to be bled about the latter end of May, according to the weather; after they have been bled they take vomits once a week for a certain number of weeks; after that we purge the patients. That has been the practice invariably for years, long before my time; it was handed down to me by my father, and I do not know any better practice." The venesections were not scamped. In acute mania 30 or 40 ounces were drawn at a time, and this was followed by the application of 20 or 30 leeches to the temples. Sir Everard Home advised that George III should be bled till he fainted, but the king flatly refused this mode of treatment, and the court physician had to content himself with an abundance of leeches. The other remedies employed were hellebore, setons, issues, blisters to the head and legs, opium, camphor, musk, medicated snuffs, ice and snow to the head, and music.

THEORIES OF THE NATURE AND CAUSES OF INSANITY.

As an alternative to the "unnatural and brutish violence," as he calls it, with which the insane were usually controlled, Pargeter insists with great solemnity and force upon the importance of "catching the eye" of the patient, and he relates several cases in which most intractable maniacs were subdued by this simple means. "I suddenly unlocked the door," says he, "ran into the room, and caught his eye in an instant. *The business was then done*; he became peaceable in a moment, trembled with fear, and was as governable as it was possible for a furious madman to be."

Pargeter did not think it possible for the human understanding to advance any other theory of insanity than that of Cullen, that the nervous fluid or electric aura which is secreted by the cerebrum and cerebellum and propelled into the nervous tubules, is capable of manifold variations in quantity, of many alterations in quality, may become thicker or thinner in consistence; and "a certain morbid or irritating principle or quality of that fluid acting upon the brain is the primary cause of insanity,..... but what the specific nature of that morbid quality is it is impossible to conceive, and it will no doubt remain for ever secret."

The causation of insanity lay chiefly in the luxury of the times. "Our ancestors deviated from the regular and temperate manner of life—our grandfathers were therefore weaker than our ancestors ..... their offspring were still weaker than themselves, and we of the fourth generation have scarcely any idea, except what we learn from history, of former health and vigour." In addition to this, "the frequent and immoderate use of tea—long fasting—inflammatory food—turning day into night and night into day—the order of Nature most shamefully inverted—our time ..... is vilely prostituted—every active instrument of health is mutilated and maimed—our bodies become enervated, and our intellectual faculties impaired, and the date of life abridged—it is seriously to be remarked that in this age it is easier to meet with a *mad* than a *healthy* woman of fashion."

So wrote Pargeter, the chief authority upon insanity, in 1792, and if we are inclined to smile at the crudity of his inferences, we may perchance recover our gravity by asking ourselves what opinion our descendants in the year 2000 are likely to hold of the view that insanity is increasing at the beginning of the twentieth century owing to the hurry and rush of life, the increased severity of competition, the crowding into the towns, the spread of education, and the general rise in the standard of living.

Midwifery and Gynæcology in 1800.

By G. E. HERMAN, M.B., F.R.C.P., F.R.C.S.,
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THE progress that has been made in midwifery and gynæcology during the century that is closing, will be most clearly brought out if the reader be invited to look through what at the beginning of this century was a standard work upon the subject. Dr. Thomas Denman was then the leading practitioner in that department; he was an able, well-informed, and judicious man. The fifth and last edition of his *Introduction to the Practice of Midwifery* was published in 1805, and may fairly be taken to represent the high-water mark of knowledge of its subject at that time. In many things it corrected error and improved practice, but it is not the present purpose to dwell on its merits, but rather to point out where it has been left behind. Gynæcology hardly existed then; the word "midwifery," as used by Denman, included the diseases special to women.

PELVIC DEFORMITIES.

Denman's description of the normal pelvis is such that a modern editor, while he might perhaps fill in a little more detail, would hardly erase anything. But when Denman treats of deformed pelves, we find that he was aware that rickets and osteomalacia deformed the pelvis, but there his knowledge stopped. He could say nothing more about a deformed pelvis than that it was deformed. Since his time the pelvic deformities caused by the two diseases he mentions have been differentiated and explained: different varieties of the rickety pelvis have been shown to exist: and many pelvic deformities unknown to Denman have been described, methods for their diagnosis supplied, and their effects on labour analysed. Knowledge always brings power. The knowledge which enables us now to distinguish different kinds of pelvic deformity from one another, and to measure the amount of pelvic contraction, has given us the power of conducting labour with contracted pelvis with a precision of aim and a certainty of successful result impossible to Denman and his contemporaries.

We have realised another advance, curiously predicted by Denman, though not exactly in the way that he expected. Speaking of osteomalacia, he says: "It is far less frequent than the rachitis, but more dreadful in its consequences, which no medicine hitherto tried has had sufficient efficacy to prevent or to cure." A page further on he says, "Yet it is possible, by attending to the secretions, and discovering an excess or defect of phosphoric acid or the like principles, th

deficiencies and exceedings might be supplied or lessened, and perhaps the disease removed together with its effects." We can now, by removing the ovaries, remove osteomalacia, but not its effects. The benefit of oöphorectomy was discovered, not by any *a priori* reasoning such as Denman anticipated, but by the observation that cure followed delivery by Porro's operation.

Urethral Growths and Uterine Polypi.

Going a little further into Denman's book we find him mentioning that enlargement of the clitoris may require removal, and that "excrescences of various forms and sizes" may grow from the bladder, urethra "and about the meatus urinarius"; but of the different conditions that may enlarge the clitoris, and the various kinds of excrescence that may occur about the meatus he seems to have been ignorant. Denman devotes 12 pages to the subject of uterine polypus. Most of them are filled with a description of the operation of tying a polypus, and the relation of cases in which this was done. He tells the reader that "the first sign of a successful operation is the scent of something putrefying." In one of the cases he very candidly and instructively relates, an inverted uterus: and in another, a malignant growth, was taken for a polypus. At the present day a snip of the scissors relieves the patient of her polypus without any "scent of putrefaction." Denman's favourite remedy for prolapse was a globular pessary, which, when once put in the vagina, was left there. He mentions a case in which it was worn without harm, so far as he knew, for fourteen years.



THOMAS DENMAN, M.D.
Born 1733; Physician-Accoucheur to the Middlesex Hospital 1769-1783; died 1815.

Ovarian Dropsy.

The rise and progress of ovariotomy is within the memory of many. At the beginning of the century not only could ovarian dropsy, as it was called, not be cured, but it could not be diagnosed. Denman tells us that it has often been mistaken for ascites, and that "when it is increased to a large size, unless it be of an irregular form, and we are acquainted with the early symptoms, the distinction is very difficult or sometimes impossible." Denman makes no mention of uterine fibroids excepting when assuming the polypoid shape.

Abdominal Palpation.

Denman's practice differs strikingly from that of to-day in his very limited use of abdominal palpation. This no doubt was the reason of his imperfect knowledge of fibroids and ovarian tumours. In his directions for the diagnosis of pregnancy, for the differentiation between true and false labour pains, and of the position and presentation of the child, he gives no instructions as to the examination of the abdomen. He examined it sometimes; for he says: "In a few cases I have known the action of the abdominal muscles so regular and strong that the whole volume of the uterus has been heaved up and down alternately, in such a manner that it was scarcely possible to distinguish between this strange succussion and the proper action of the uterus." But he almost entirely relied upon vaginal examination; his deficient appreciation of the value of abdominal examinations was no doubt due to the fact that as he did not practise it, he was not expert at it. Describing irregular contractions of the uterus in the third stage of labour, he speaks of "the uncertain information we may acquire by the application of the hand to the abdomen." He advises that when the placenta has been expelled the attendant should put his hand on the abdomen to see that the uterus is not inverted; but, he adds, "this method is not always satisfactory." Even in *post-partum* hæmorrhage the only abdominal manipulation that he recommends is "moderate pressure upon the abdomen with a very cold hand." His treatment of this dangerous condition was to get away the placenta by vaginal manipulation, and then give drugs and "cordials," and keep the patient cool and recumbent. How strange it would appear to Denman could he revisit us, and see a modern obstetrician conduct a labour without any vaginal examination! Next to such great things as anæsthetics and antiseptics, hardly any improvement in our methods has brought about better results than the systematic use of abdominal and bimanual palpation.

The Forceps and the Vectis.

The forceps which Denman recommends have their blades covered with smooth and thin leather, which, "without any significant increase of bulk, renders their introduction more easy, and takes off, both in appearance and reality, the asperity of the instrument." The instrument was twelve inches long, and was to be applied over the child's ears. If the ears could not be felt, either because the child was too high or too closely locked in the pelvis, it was improper to use forceps. Denman warmly approved the vectis. He says he knows several gentlemen of eminence, accustomed to use the forceps, who have abandoned it for the vectis, but he has never known anyone accustomed to the vectis who has relinquished its use and resorted to the forceps. Denman lectured at one time in conjunction with Dr. William Osborn, and his opinion about the vectis brought a bitter attack by Dr. Osborn, not only on the ground that the forceps was the better instrument (he plainly said that he believed Denman had never used the vectis), but for the singular reason, as it now seems, that Denman's advice would do

much harm because it was so easy for accoucheurs to use the vectis without their patient's knowledge. Denman had neither cephalotribe nor craniotomy forceps; after perforation his only resource was to pull with the crotchet, fixing this in different places, and pulling till something came, thus getting the head away in bits if it would not come through entire. As to Cæsarean section, if this seemed called for, the question before Denman was not whether Cæsarean section or some other mode of delivery should be chosen, but whether Cæsarean section should be performed at all; whether it was not kinder to the patient, and better, to let her die undelivered than to perform a painful and almost certainly fatal operation.

Puerperal Diseases.

The pathology of eclampsia was in 1805 shrouded in darkness. Its connection with albuminuria was unknown, and it is doubtful whether Denman had a clear idea of the differences between an epileptiform fit and other convulsive seizures.

Finally, the last chapters of Denman's book bring us to realise the most stupendous advance that has ever been made in medicine: the discovery that disease is produced by micro-organisms, and the power of antiseptics to protect human beings from such disease. Puerperal fever was to Denman a fatal disease, presenting clinically various forms (which he made no attempt to differentiate), the cause of which was utterly unknown. It is now certain that this disease can be prevented; although it is unfortunately also true that many women are still attended in labour by persons who either do not know or do not use the methods by which it can be prevented. Since Denman's time anæsthetics have relieved labour of its pain, and by making artificial delivery easier and more frequent have robbed childbirth of some of its danger.

Cæsarean Section.

But the consequences of Lord Lister's discoveries reach far further and are not yet exhausted. The once almost certainly fatal Cæsarean section is the simplest of all abdominal operations. When the surgeon opens the abdomen to remove a diseased part, he can never before exactly tell in what way the disease may have displaced or otherwise altered the parts he will have to deal with; and therefore he may in any such operation meet with some unexpected and formidable difficulty. In spite of this, the percentage of deaths following such operations is very small. No such difficulty attends Cæsarean section. In this operation the operator has to deal only with structures that are healthy and in their natural relations. The terrible mortality of the operation in the past came from septic poisoning, from bleeding, because operators knew not how to sew up the uterus; from the operation being done on patients who were exhausted and their tissues damaged by protracted labour; and from its being done in a hurry, under unfavourable circumstances, and by inexperienced operators. All these causes are preventable, and there seems no insuperable reason why the mortality of Cæsarean section should not be brought down to that of natural delivery. The dream of obstetricians for years has been the abolition of craniotomy. Denman helped to prevent the destruction of the child in a large class of cases by teaching the induction of premature labour. Within the last quarter of a century it has seemed as if the revival of symphysiotomy would render premature labour unnecessary. There is now good ground for believing that in the near future a perfected method of Cæsarean section may relegate craniotomy, the induction of premature labour, and symphysiotomy alike to the past.

Surgery in 1800.

By STEPHEN PAGET, M.A.Oxon., F.R.C.S.,
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The teaching of surgery at the beginning of the century is well represented by Samuel Cooper's *Dictionary of Practical Surgery*, an excellent piece of work, comprehending all methods of treatment of surgical cases, and all special surgery, and much physiology and pathology; and enlivened by many little personal touches of humour and of vehemence that are kept out of the textbooks of the present day. Having strength and soundness of constitution, it enjoyed a long life. It was still the best textbook of surgery, more than twenty years after it first appeared. In 1834, when the late Sir James Paget began his apprenticeship, he was told by a friend in the profession that he must possess the *Dictionary*:—

"For your *first year's Library*, let me recommend the last Edition of Cooper's *Surgical Dictionary*, an admirable Book, containing everything, the price about one guinea; you may keep it at home, and refer to it whenever you meet with a *hard* word."

Let us take in order some of the more important articles in the *Dictionary*, and see what were the principles and the practice of surgery about a hundred years ago.

Abdomen.

Cooper follows John Bell's teaching, that the entry of air into the abdominal cavity is not in itself dangerous to life. In any case of protrusion of wounded intestine through a wound of the abdominal wall, he would suture the intestine and return it; he might even, in quite recent cases of wounded intestine without protrusion, dilate the wound of the abdominal wall, "to see whether the part is near enough to be got at." But "when the wounded bowel lies within the cavity of the abdomen, no surgeon of the present day would have the rashness to think of attempting to expose the injured intestine for the purpose of sewing up the breach of continuity in it." He is inclined to operate, in favourable cases, for the cure of fæcal fistula. He would not operate on any case of gunshot wound, or on any wound of the gall bladder. And he does not say a word about operation for internal strangulation, or for any sort or kind of internal obstruction.

Achilles Tendon.

Nothing is said of any operation to unite a ruptured tendo Achillis, and nothing is said of tenotomy.

Amaurosis.

This article, 17 pages long, is a good example of the confusion and vagueness of ophthalmic surgery before Helmholtz invented the ophthalmoscope; we understand the old joke, "Amaurosis is a disease in which the patient is blind, and the surgeon can't see anything." Cooper makes no clear distinction between cases of optic neuritis and cases of disturbed vision from remote causes. He defines amaurosis as a "paralytic affection of the retina and optic nerve;" but he seems to pass without a break from the transient hemianopia of migraine to the worst cases of optic atrophy.

Amputation.

Writing before anæsthetics, he is terribly concerned for the want of more dexterity in these operations:

"The reason of the knife being so badly handled in th part of surgery, may generally be imputed to carelessness, slovenly habits, and fear and confusion on the part of the

operator. There are several egregious faults in the method of amputating, which even many hospital surgeons in this metropolis are guilty of."

Especially, he says, men are clumsy in dividing the bone:—

"In no part of the operation of amputation do operators in general display more awkwardness than in sawing the bone. It is one of the most common remarks of such persons as are in the habit of frequently seeing amputations, that the part of these operations, which a plain carpenter would do well, foils the skill of a consummate surgeon, and few operators acquit themselves well in using the saw."

He emphasises the need of using a linen retractor to the cut muscles, to avoid the "unnecessary, unjustifiable torture" of wounding them with the saw. Of ligatures he says that they are "commonly made of inkle, waxed together with white wax."

Amputation of the Heads of Bones.

Under this curious title he describes the first cases of excision, done by Park, Jeffray, and the two Moreaux, father and son. These earliest excisions were, of course, at a frightful disadvantage. He says of them in the *Dictionary* what he had said of them seven years before in a prize essay:—

"The grounds on which I shall at present withhold my approbation from the attempt to cut out large joints, are the following: (1) The great length of time (many months) which the healing of the wound requires. (2) Even supposing the excision of the knee to be followed with all possible success, is the advantage of having a mutilated, shortened, stiff limb, in lieu of a wooden leg, sufficiently great to induce any man to submit to an operation, beyond a doubt infinitely more dangerous than amputation? I think not."

Antrum Maxillare.

For abscess of the antrum he recommends perforation through, or just above, the alveolar edge. For malignant disease, he describes at great length one case of partial resection by Desault; but would prefer in a similar case only to open the antrum freely and scrape out the disease.

Bronchocele.

"The most famous mode of curing the bronchocele," he says, "is by giving internally burnt sponge, and occasionally a calomel purge, at the same time employing frictions to the tumour itself." He advises that the burnt sponge should be given in lozenges containing 10 grs. each of burnt sponge burnt cork, and pumice stone. It would be of interest, in the present day, to work out the active principles of this lozenge. With regard to operation, he condemns it. Of two operations recorded by Mr. Gooch, one had been abandoned half-way; the other had been followed by secondary hæmorrhage, it had been impossible to tie the vessels, and the patient's life had been saved by digital compression kept up without intermission for a week. Still, he would not absolutely forbid the attempt to save life, either by removal of the gland, or by tying the arteries, in certain rare cases of bronchocele with dangerous obstruction.

"Bronchotomy."

Tracheotomy, which is called bronchotomy, is very carefully described. He commends the operation in cases of a foreign body in the air passages, and in certain forms of laryngeal disease with obstruction. He is not very hopeful of it in cases of "membranous croup;" and he condemns the horrible proposal that it should be performed in cases of extreme chronic enlargement of the tonsils. Artificial respiration, as now practised, was not known to him: and he approves of bronchotomy, with inflation of the lungs, in cases of apparent death from drowning. "It may be executed with a penknife, if no better instrument be at hand; and when the incision has been made, a pair of common bellows will suffice for the inflation of the lungs."

Cancer.

This wise long-sighted article on cancer is one of the best in the *Dictionary:* not for its pathology, which is almost *nil*, and the microscope is not once spoken of, but for its sound practical teaching. He disfavours all caustics, and urges the early removal of the disease. "The operation is always permissible when every particle of the disease can be removed by it. Even large open cancers, if they can be entirely cut away, are often capable of being effectually cured." He is, of course, hampered by the inevitable difficulties of his time; but, within its set limits, his teaching here is excellent.

Cataract.

The prodigious length of the article on cataract, 33 pages long, is in sharp contrast with his indifference to the surgery of the ear and of the throat. The chief diseases of the eye have each their separate place in his system; the diseases of the ear are all dismissed in one article of 9 pages. It was long before Wilde in Dublin, Toynbee in London, Politzer in Vienna; there was no Eustachian catheter, save a futile sort of irrigator passed through the nose, no Politzer's bag, no "Wilde's incision," no sort or kind of mastoid operation; indeed, he does not so much as mention the mastoid. The old reproach held true, that the diseases of the ear were divided into those that could be cured by syringing and those that could not be cured by anything.

"Cirsocele."

In treating of cirsocele (varicocele), no word is said of any operation: only, "other writers have related cases of cirsocele, in which the pain was so intolerable and incurable that nothing but castration could afford the patient any relief." It does not appear from the article that the existence of a varicocele was any bar to naval or military service.

Electricity.

It is hard to realise the amazing uses and abuses of electricity before Duchenne's time. Shocks and sparks were administered on general principles; and had been "tried" in cases of tuberculous synovitis, syphilis, and tetanus. There was no faradic current, no diagnostic use of electricity; men found enough encouragement in Mr. Abernethy's cryptic statement that "electricity has a tendency to promote whatever action or process happens to be going on in a diseased part at the time of its application."

"The electrical fluid, as a topical remedy, has been chiefly confined to the following diseases—namely, superficial inflammation, ophthalmia, gutta serena, deafness, scrofulous enlargements, anomalous tumours, fistula lachrymalis, ulcers, cutaneous eruptions, cancers, and abscesses."

Empyema.

Nothing is said of auscultation or percussion: it was three years before the invention of the stethoscope; but it was five years after Corvisart's translation into French of Avenbrugger's *Inventum Novum ex Percussione Thoracis Humani*. Without these physical signs, the diagnosis and the treatment of empyema stood about where Hippocrates had left them; and the *Dictionary* is melancholy reading here, telling of patients who died, and "were opened," and their chests found full of pus. The operation, as in the time of Hippocrates, was incision, and, in some cases, drainage; no bone was removed.

Fractures.

This article, more than fifty pages long, is full of profitable teaching, and gives a very good account of all special frac-

tures. For the whole treatment of compound fractures it quotes Perceval Pott at great length. For the treatment of ununited fracture, where all else has failed, it describes the operation, first performed by Charles White, of Manchester, on January 3rd, 1760, "to cut down to the ends of the bone, rasp or saw them off, and then treat the limb just as if the case were a recent compound fracture." It quotes, with some approval, four or five cases of this kind; but says that the operation had frequently failed, and had sometimes proved fatal. And, it adds, "a modern proposal has lately been suggested—namely, to pass a seton through the new joint." The operation invented by White was, of course, without any wiring or pegging of the ends of the fragments.

Gonorrhœa.

Cooper dares not decide as to the unity or duality of the venereal poison. "The reader must weigh the different arguments himself." He quotes Hunter, Swediaur, and others to support the doctrine of unity, and Benjamin Bell for the duality; but, for himself, he "waives all attempts to decide the point." Only, he goes so far with the dualists, that he would not for gonorrhœa exhibit mercury, nor do most of the best practitioners:—

"If venereal symptoms do ever follow gonorrhœa, they are so excessively rare, and, I may add, always so imputable to other causes, that the employment of mercury as a prevention would, upon the whole, do more injury than benefit to mankind; and this, even admitting (what, in my mind, has never been unequivocally proved) that the matter of gonorrhœa is really capable in a very few instances of giving rise to the venereal disease."

Hæmorrhoids.

He would not operate for hæmorrhoids, save in very severe cases, after all palliative treatment had failed. He prefers the knife to the ligature, and is opposed to the use of caustics or the cautery. And he condemns the common opinion that hæmorrhoids are of a salutary or critical nature.

Hernia.

In the article on hernia, which extends to fifty pages, many authorities are quoted, and at grea length: Scarpa, Pott, Lawrence, Hey, Astley Cooper, and many more. In the account of the ordinary operation for strangulated hernia it is taken as a matter of course that the sac shall be laid open freely: only, in a strangulated hernia of enormous size, old, adherent, never properly reduced, the stricture should be divided, "but without laying open the hernial sac, or attempting to reduce the parts. The reasons against the common plan are the difficulty of separating all the old adhesions; the hazardous inflammation which would be excited by laying open so vast a tumour; and the probability that parts so long protruded might even bring on serious complaints if reduced." Lawrence's advice against attempting to divide the stricture without opening the sac is approved; so is his advice, if the intestine be gangrenous, not to attempt to unite it over a bobbin, nor to moor it in the wound, but only to dilate the stricture, and to leave the adherent knuckle of intestine to slough. With regard to the "radical cure," it should not be attempted on an irreducible hernia; Cooper quotes Pott's vigorous words:

"I am not unapprised what influence a successful operation or two of this sort has had on the unknowing; but I also know that such accidental successes have emboldened the same operators to commit more than one or two murders in similar cases; and that, from the prevalence of fashion, some of these rupture-doctors have been largely rewarded, when they ought to have been hanged."

But for a suitable case of reducible hernia Cooper would not wholly condemn the "royal stitch," that is, the simple ligature of the sac through a two-inch incision. And he adds, "After performing the common operation for the relief of a strangulated bubonocele, might not this opportunity be taken to learn whether a radical cure would not more frequently be accomplished than is at present the case?" He also gives at prodigious length the arguments for and against a rough and ready radical cure of umbilical hernia in children, by the ligature of sac and skin together.

Hydrocele.

Six methods of radical treatment for hydrocele are enumerated: incision, excision, caustic, tent, seton, and injection. He commends the last, according to Sir James Earle's method—two-thirds of wine to one-third of water.

Intussusception.

In the article on intussusception, "called also volvulus," he reviews and finds useless all methods of medical treatment, and condemns operation.

"If the equivocal and uncertain nature of the symptoms of volvulus were not enough to deter us from undertaking an operation, which under the most favourable circumstances could not fail to be extremely difficult, and imminently hazardous to the patient, the state of the invaginated parts will entirely banish all thoughts of such an imprudent attempt."

Joints.

In an excellent article on the joints, full of practical wisdom, he sets aside a vast number of remedies for tuberculous joints; and chiefly praises rest, and counter-irritation with blisters and issues. He says nothing of the value of extension with a weight; but his other rules of treatment are excellent.

Lumbar Abscess.

As to lumbar abscess (psoas abscess) he teaches that when it must not be left alone it should be treated by Abernethy's method of repeated puncture:

"His method is, to let out the matter, and heal the wound immediately afterwards by the first intention. He justly condemns all introductions of probes and other instruments, which only irritate the edges of the puncture, and render them unlikely to grow together again. The wound is to be carefully closed with sticking plaster, and it will almost always heal."

It is a pity that Abernethy recommended also "other means to promote dispersion of the abscess; blisters kept open with savine cerate, issues, electricity, occasional vomits of zincum vitriolatum."

Mamma.

The successive stages of the operation for removal of the mamma are described very carefully: for, says Cooper, "I could not find, in any surgical book with which I am acquainted, what I conceived to be a proper description of the mode of removing a diseased breast." He insists on the supreme importance of early operation in cancer: the nipple must be removed in all cases, and the skin over the tumour; and the incisions must be carried down "at a prudent distance from the swelling, so as to be sure to remove with the diseased mass every atom of morbid mischief in the vicinity." Enlarged glands are to be removed through a separate incision.

Mortification.

This article of seventeen pages is based for the most part on Larrey's magnificent *Mémoires de Chirurgie Militaire;* and upholds his rule, that "when gangrene is the result of a mechanical cause, and puts the patient's life in danger, amputation ought to be performed, without waiting until the disorder has ceased to spread." The date of Larrey's first operation of this kind is 1796.

Nephrotomy.

"The operation of cutting a stone out of the kidney" is, he states, "a proceeding which, perhaps, has never been actually put into practice." "There is no doubt," he adds, "that stones have often been extracted from abscesses about the region of the kidneys, after their presence has been detected with a probe. But with regard to cutting into the kidney, the deep situation of this viscus, and the want of symptoms by which the lodgment of a stone in it can be certainly discovered, will always be strong objections to the practice."

Œsophagotomy.

It is somewhat surprising to find that this operation was performed, and with success, so long ago as 1738, and again some years later (Goursand, Rolland). Cooper approves of it if a patient were dying of obstruction by a foreign body: "Doubtless the uncertain chance of the operation should be preferred to the certainty of a fatal result." There is no mention of any sort of gastrostomy.

Ovarian Dropsy.

The whole subject of the surgical diseases of the female organs and their treatment takes but a few pages: and these are of no particular value. No word is said of ovariotomy. (The date of McDowell's first operation is 1809.) Uterine polypi, and the chief displacements of the uterus, and their treatment, are noted; but there is nothing, or next to nothing, about the inflammations of the pelvic organs.

Rectum, Cancer of.

For the treatment of "the scirrho-contracted rectum," there is the use of bougies, and the administration of palliative treatment. (The date of Amussat's first colotomy is 1839.)

Spina Bifida.

Cooper describes very carefully Benjamin Bell's proposal to ligature the tumour—"I do not know whether this gentleman ever put the above scheme in practice; but suppose not"—and two cases, one of them successful, treated by Abernethy and Astley Cooper by repeated puncture and pressure. He makes no mention of any method of injection.

Testicle, Diseases of.

This article is mainly taken from Perceval Pott. But in truth it is impossible, at this present time, to understand his account of these diseases; the term "sarcocele" was applied by him to diseases that have long since been defined and set apart.

Tongue, Diseases of.

No mention is made of tuberculous or syphilitic ulceration of the tongue; but something is said of the latter in the article on Venereal Disease. It is probable that in the tongue and in the testicle tertiary syphilis was seldom recognised. "Very malignant" ulcers of the tongue, Cooper says, are sometimes cured by medical treatment. For "true cancerous disease," he advises free removal by the knife, and not caustics. "Cruel as the operation of removing the tongue may appear, we should not hesitate to perform it whenever the disease has made a certain progress and is decidedly of a cancerous nature."

There is no need, and no space left, to contrast the surgical teaching of 1800 with that of 1900. But it may well be doubted whether any of our present surgical textbooks far excel this old *Dictionary of Practical Surgery* in common sense, carefulness, and safe doctrine put in plain words. We have come into vast legacies of facts, and take as a matter of course things that Cooper never had; but that does not prove that we make better use of our opportunities, or have more love of our work, than the men of a hundred years ago.

Sanitary Knowledge in 1800.

By W. H. CORFIELD, M.A., M.D.Oxon., F.R.C.P.,
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In order to understand the condition of things from a public-health point of view at the end of last century and the beginning of this, it is necessary to consider briefly the important discoveries with regard to the prevention of disease made during the eighteenth century.

Small-pox.

It was near the beginning of that century that inoculation for small-pox was introduced into this country by Lady Mary Wortley Montague, the wife of the English Ambassador to Turkey, this practice having arrived in Constantinople, it is supposed from Circassia, before the end of the seventeenth century. The advantages and disadvantages of inoculation have been so frequently discussed that it is unnecessary to enlarge on the subject here. That the practice itself became almost universal is a sufficient proof of the general prevalence of small-pox, and also (to quote from a lecture I delivered in Birmingham in 1874)

"Shows us at once, in the most striking manner, the fearful nature of the disease. Here was one of the most loathsome diseases, and certainly the most terrible and fatal disorder to which mankind has ever been subject, and yet people deliberately took the poison of this fearful disease and inoculated their children and themselves with it, and this was done in the last century amongst all ranks up to the Royal Family. Why was this? Every inoculated person became a focus for the spread of the disease, and yet inoculation was to a great extent successful, not in preventing the spread of the disease, but in diminishing the number of deaths from it. What does that mean? There is only one thing that it can mean. If they increased the number of centres from which the disease could spread, and actually did spread, in the most virulent form, and in spite of that the death-rate was lessened, which it was considerably, there is only one conclusion to which we can come, which is that the whole population was so infected by the disease that the multiplication of the centres of infection was a matter of little importance compared with the advantage obtained by getting the disease in the milder form in which it usually appeared after inoculation. Inoculation did spread the disease, because during the periods when inoculation was practised epidemics were more frequent than they were before or have been since; but for all that the death-rate was less. For instance, before inoculation was practised, there were 71 or 72 epidemics every 100 years. During the 63 years when inoculation was practised, there were no fewer than 53 epidemics, which is equivalent to 84 every 100 years. This practice is now illegal, and very wisely so."

Lead Poisoning.

Next came the discovery by Sir George Baker that the "Devonshire colic" was produced by lead poisoning. This disease was very prevalent in that county at the beginning of the century, and was generally attributed to the drinking of cider. Various theories, which we need not trouble ourselves with, were started by different observers to account for such a disease being produced by cider. Sir George Baker, however, recognised the symptoms as those of lead poisoning. He had samples of Devonshire cider analysed and found lead in them, whereas samples of cider from Here-

fordshire, where the disease did not prevail any more than it did in Gloucestershire or Worcestershire, showed no lead. He traced the lead to the use of that metal in the apparatus for making cider in Devonshire, which he describes in considerable detail, showing how the juice of the apples necessarily came into contact with the lead, and he submitted his views to the Royal College of Physicians in a series of masterly papers, the first of which was entitled "An Essay concerning the Cause of the Endemial Colic of Devonshire, which was read in the theatre of the Royal College of Physicians in London on the 29th day of June, 1767."

SCURVY.

Some idea of the excessive prevalence of scurvy among sailors in the eighteenth century may be gathered from the statement of Sir Gilbert Blane in his account of "The Progressive Improvement of the Health of the Royal Navy at the end of the Eighteenth and beginning of the Nineteenth Century," to the effect that Dr. Lind, the Physician to the Haslar Hospital, had informed him that in one of the years of the American war "there had been sent on shore from the Channel Fleet in the course of four months 6,064 men, almost all affected with fever or scurvy, and that on another occasion after a ten weeks' cruise 2,500 men were brought into port ill of scurvy." This terrible disease was prevented by the use of lemon juice. This had already been recommended by John Woodall in his work entitled *The Surgeons' Mate; or Military and Domestic Surgery* (1639), in which he says, speaking of the cure for scurvy, "The use of the juyce of lemmons is a precious medicine and well tried, being sound and good; let it have the chief place, for it will deserve it." After some directions as to how and when it is to be given, he adds: "In want whereof use the juyce of limes, oranges, or citrons, or the pulpe of tamarinds." Later on in the seventeenth century lemon juice was occasionally supplied to merchant ships, but its use was not generally adopted.

Dr. James Lind in his *Treatise on the Scurvy* (second edition, 1757) describes some experiments which he made with different remedies on patients suffering from scurvy, and says: "The most sudden and visible good effects were perceived from the use of the oranges and lemons, one of those who had taken them being at the end of six days fit for duty; the other was the best recovered of any in his condition, and being now deemed pretty well was appointed nurse to the rest of the sick." Dr. Lind also recommends the use of onions for the prevention of scurvy.

Lemon juice was ordered to be supplied to the Royal Navy in 1795. The result of this Sir Gilbert Blane, writing in 1830, describes as follows: "The scurvy has been prevented, subdued, and totally rooted out by the general use of lemon juice, supplied for the first time at the public expense in the year 1795; and which operated so speedily that in less than two years afterwards it became extinct, and has remained so," and he adds later on, "by this the scurvy has been so entirely eradicated—or, rather, prevented, that there are now surgeons in the navy of long standing who have never seen a case of it; and it has been already mentioned that in less than eighteen months after the general supply of it Lord Spencer did not find a single case of it in Haslar Hospital."

No wonder that in his *Observations on the Diseases of Seamen*, 3rd edition, 1803, he wrote: "The introduction of this article (lemon juice) may therefore be considered as an æra in the internal œconomy of our navy."

In the meantime Captain Cook had performed his famous first voyage round the world. He started in 1772, and it took three years and eighteen days. During this voyage he only lost four men, three by accident and one by phthisis, out of 118 sailors. The secret of Captain Cook's success in keeping his men healthy is to be found in the journal of his last voyage to the Pacific Ocean, 1776 to 1780, in which occurs the following statement:

"From the time of landing our brewers began brewing; and the woods affording plenty of spruce, the crews of both ships were supplied with this wholesome beverage during our continuance at New Zealand, and for several weeks after we were at sea. This liquor was found so salutory that it seemed to strike at the very root of the scurvy, and left not the least symptom of it remaining about any man in the ships.

"Indeed, great care was taken to supply the crews daily with plenty of scurvy-grass and wild celery to boil with their portable soup, and salt meat was withheld, and fish substituted in its room."

To Captain Cook is no doubt due the credit of showing how to carry out long voyages under healthy conditions.

JAILS AND JAIL FEVER.

Typhus, or jail fever, which had produced the "Black Assizes" at Oxford and other places during the sixteenth century, when (according to Sir Gilbert Blane) Francis Bacon (Lord Verulam) "pointed out clearly that this was a production of filth accumulated by the long neglect of the persons of the prisoners," was extremely prevalent during the eighteenth century, when it even attacked the army and navy.

It is due to the labours of John Howard, who was appointed High Sheriff of Bedfordshire in 1773, that the shockingly insanitary condition of the overcrowded prisons in this and other countries was thoroughly investigated and made public, with the result that an Act was passed in 1774 for the improvement of the health of prisoners and the prevention of jail fever, and that improvements in the sanitary conditions of the prisons in the United Kingdom have gone on ever since, so that now there is not only no jail fever, but the late Sir Robert Rawlinson used to say that from the sanitary point of view a prison was "the best place in England for a man to live in." It must be remembered that enteric fever, which was endemic in some jails, and notably in Milbank Prison, was then considered to be a form of typhus fever.

VACCINATION.

The last great sanitary discovery of the eighteenth century was that of vaccination for the prevention of small-pox, made by Edward Jenner in 1795, and published by him in 1798. The results of this discovery were so thoroughly brought out in this JOURNAL in a number published in 1896,[1] that it is not necessary to refer to them again, so I will merely content myself by pointing out that so far from small-pox decreasing as an epidemic disease during the last century, as has been stated, the five most severe epidemics of that century all occurred in the latter half of it, and the most severe one of all in 1796. Of course, as is always the case, the death-rate of the next few years was much smaller, as, after a great epidemic like that, which caused no fewer than 184 deaths out of each 1,000 deaths from all causes, the number of susceptible persons in the population is very much diminished.

DISEASES OF OCCUPATIONS.

In the year 1703 there was published at Utrecht a most remarkable book entitled, *De Morbis Artificum Diatriba*, by Bernardino Ramazzini, the Professor of Medicine in the University of Padua. The book was translated into English by Dr. Robert James (author of the *Medicinal Dictionary*, and compounder of the celebrated "Fever Powders" which are still called by his name), and was published in London in 1746,

[1] BRITISH MEDICAL JOURNAL, May 23rd.

under the title of "*A Treatise on the Diseases of Tradesmen*, to which they are subject by their particular callings, with the method of avoiding and treating them." This treatise consisted of 43 chapters, and Chapter I., "Of the Diseases of Metal-Diggers," begins as follows:—

"The various and numerous diseases produced in artificers by the exercise of their respective trades are, in my opinion, derived principally from two causes, first, the noxious quality of the matter on which they work, and which, by breathing out noxious steams and subtile particles offensive to human nature, gives rise to particular diseases, and in the next place certain violent and disorderly motions and improper postures of the body, by which the natural structure of the vital machine is so undermined as gradually to make way for violent distemper."

Then follow chapters on the Diseases of Gilders, Surgeons, Chemists, Potters, "those who work in copper and tin," Glass-makers and Glass-Grinders, Painters "such as work upon Brimstone," Blacksmiths, "such as work in Lime and Plaister of Paris," Apothecaries, "Clensers of Jakes" (privies), Fullers, etc., etc., including Tobacconists, Midwives, Nurses, Masons, and Bricklayers, Fishermen and Mariners, "such as stand when they are at work," "such tradesmen as sit much," "of the Diseases of the Jews," Couriers or Runners, "those who work upon Minute Things which strain the Eyes," "Music-masters, Singers, and Others of the like Professions," Husbandmen, which begins, of course, with the quotation from the "Prince of Poets":

O fortunatos nimium, sua si bona norint
Agricolas.

"Of the Diseases usual in Camps," and lastly, "Of the Diseases of Learned Men," to whom he apologises for including them among working men, and about whose diseases he writes an excellent chapter. Early in it he points out the frequency of dyspepsia in the following words:

"All the Men of Learning used to complain of a Weakness in the Stomach. Celsus says (Lib. I, Cap. II): A great many of the Inhabitants of Cities and Towns, and almost all the Lovers of Learning, have Weak Stomachs. There is no hard Student almost but complains of his Stomach: for while the Brain is employed in digesting what the Desire of Knowledge and the love of Learning takes in, the Stomach cannot but make an imperfect Digestion of the Aliment, because the animal Spirits are diverted and taken up in the intellectual Service."

And at the end he sums up with the following advice:

"'The Professors of Learning ought therefore to pursue the Study of Wisdom with Moderation and Conduct, and not to be so eager upon the Improvement of their Mind, as to neglect the Body: They ought to Keep an even Balance, so that the Soul and the Body may like Landlord and Guest observe the due Measures of Hospitality, and do mutual Offices, and not trample one another under Foot.'"



An Early Form of Watercloset. (Reproduced from Sir John Harington's *Metamorphosis of Ajax*.)

There is also a Supplement consisting of twelve short chapters on the Diseases of Printers, Writers and Amanuenses, Confectioners, and various others. The chapter on Diseases of Writers and Amanuenses is remarkable from the fact that the symptoms of Writers' Cramp are described in it.

In order to compile this epoch-making treatise, Ramazzini, as he tells us in his Preface, "thought it no indecency to step sometimes into the meaner Sort of Workhouses, and view the Secrets of Mechanic Arts," and alluding to the directions of Hippocrates as to the questions a physician should ask when he visits a patient, he says: "To which I would presume to add one Interrogation more, namely, *what Trade he is of*."

Hospitals.

The subject of military hospitals and the "cure of camp diseases incident to soldiers" received considerable attention during the last century, the most important treatise on it being Dr. Richard Brocklesby's *Economical and Medical Observations* (1764). In this treatise he urges the advantages of temporary sheds as hospitals. The first instance he gives he describes as follows:

"In October, 1758, a greater number of sick, as before hinted, were landed out of the transports on the Isle of Wight than all the spare outhouses, barns, and empty cottages which could be procured for money or the sake of humanity at Newport were capable of containing. In this distress some gentlemen of the hospital proposed to erect a temporary shed with deal boards upon the open forest, and to have it thatched over with a coat of new straw thick enough to keep out wind and rain, and capacious enough to hold one hundred and twenty patients or upwards, for doing which and the use of the boards the country workman, who was undertaker, exacted forty pounds. Although the hovel was finished in a fashion the most slovenly, and apparently inadequate to the end proposed, upon trial it was found that, notwithstanding much extraordinary cold as well as moisture which the sick there lodged had suffered, remarkably fewer died of the same diseases, though treated with the same medicines and the same general regimen, than died anywhere else, and all the convalescents recovered much sooner than they did in any of the warmer and closer huts and barns hired round Newport, where fires, and apparently better accommodations of every sort could be provided for them."

A little further on in his treatise he says:

"I had a further opportunity to prosecute my inquiry about this matter, in the second campaign afterwards, in the year 1760, when a dangerous putrid fever made its appearance amongst the sick of the thirtieth regiment at Guildford, in Surrey, in their infirmary, which was remote from camp about five miles. This place for the sick was crowded with more

than four times the number it ought to have contained; therefore, on my first visiting the house I strenuously remonstrated against that pernicious practice of huddling so many sick in so closely confined a place."

He then selected a spot upon Sand-Heath near Ripley, and erected a temporary hospital there at a trifling expense with the result "that though several soldiers were admitted into this repository ill of a true petechial jail fever, only one or two at most died in it, and I candidly ascribe their fortunate escape more to the benefit of a pure keen air they breathed therein every moment than to all the medicines they took every six hours or oftener."

In the next year he did a similar thing at Winchester Camp where

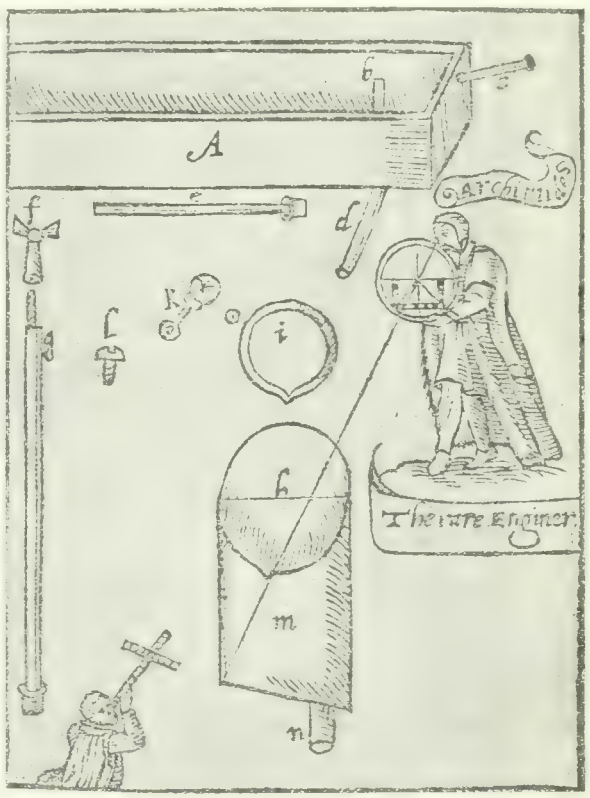
"Three such mansions for the sick were erected, with all speed, at about two hundred yards in the rear of the camp, and air holes in the thatch, to be occasionally opened, served instead of windows at proper distances. All men in fevers whom I judged it safe to remove were immediately admitted into them from the close infirmary at Winchester, as well as from the camp. And the effect in less than a fortnight was to reduce the number in proportion as four to one, and soon to reduce these numbers (twenty-four in hospital) to less than half-a-dozen. In this manner matters went on to the very end of the campaign, with much fewer sick than ever they had before, and all the men admitted there were cured, except three at most."

Yet another instance:

"The following year, 1762, the like method was followed on the chalky soil of a different encampment, and the sick were parcelled out in small field hospitals, constructed upon the abovementioned plan, with the addition of a large airing porch before each hospital door, for the sick, who could crawl out occasionally, to breathe untainted air, as well as to eat their meals in it; one of the three regiments likewise which was encamped there, and now persuaded to this plan, lost not a man during the whole encampment."

A plaine plot of

This is Don AJAX houſe, of the new faſhion, all in ſunder, that a workeman may ſee what he hath to do.



Here are the parts ſet downe with a rate of the pryſes, that a builder may gueſſe what he hath to pay.
A. the ceſterne ſtone or bricke priſe. 0.6.8.
B.D.E. the pype that comes frō the ceſterne with a ſtopple to the waſher. 0.3.6
C. a waſt pype, 0.1.0.
F.G. the ſtem of the great ſtopple with a key to it. 0.1.6.
H. the forme of the vpper brim of the veſſell or ſtoole pot.
M. the ſtoole pot of ſtone priſe. 0.8.0.
N. the great braſſe ſluce, to which is three inches current, to ſend it down a gallop into the lax. 0.10.0.
And leaſt you ſhould miſlike with this phraſe, I had it in a verſe of a graue author that was wont to walke up and downe the Court, with a foreſt bill, I houe forgot how it begun (like a beaſt as he was) but it ended in ryme.

O that I were at Oxenford, to eate ſome Banberie cakes.

I. the ſeate with a peke deuaunr for elbow roome, the whole charge 30. ſhillings eight pence, yet a maſon of my maſters was offred thirtie pounds for the like.
Memorandum the ſcale is about halfe an inche to a foote.

VENTILATION.

During the eighteenth century the ventilation of public buildings was much more attended to than it had been previously, and a ventilating fan, for either extracting or propelling air, was devised by Desaguiliers, and applied to the ventilation of the House of Commons. A method for the ventilation of ships by means of pipes connecting various parts of the ship with the ashpit of a fireplace, and so causing air to be extracted by means of the fire or fires, was also devised by Mr. Samuel Sutton, and was adopted in the ships of the Royal Navy and in some buildings.

WATER PIPES.

The water mains under the streets were made of trunks of trees, with holes bored through them longitudinally, so as to form pipes; one end of each was tapered and pushed into the other end of the next pipe, which had an iron band round it to prevent its being split. Such pipes are still not infrequently dug in the London streets, and specimens of them may be seen at the Parkes Museum of Hygiene.

SEWERS AND DRAINS.

The drainage arrangements of towns and houses in the year 1800 were still in a very primitive condition. Pipe drains had not been yet invented, and the drains and sewers were consequently made of bricks or stone. As they were originally intended to carry off surplus water, they were made to discharge into the rivers, after their prototype the *Cloaca Maxima* of Rome. The excremental refuse of the houses was collected in cesspools or middens, in many cases under the houses themselves, and with overflow drains discharging into the drains or sewers of the town, although this proceeding was forbidden.

WATERCLOSETS.

But it was in the eighteenth century that the use of watercloseta in this country began. It is quite true that an appliance of the nature of a watercloset, by which the excremental matters were removed by the use of water, was adopted in the palace of the Cæsars at Rome and in other buildings in that city.

It is also the fact that an apparatus of this kind was devised by Sir John Harington, the learned translator of Ariosto, and was described in detail by him in a work now of extreme rarity, entitled, *A New Discourse of a Stale subject called the Metamorphosis of AJAX*, and printed in 1596. In this rare book are to be found drawings representing the apparatus, which he styled "A Priuie in Perfection," (1) in parts, (2) fitted together ready for use, and (3) in use, by a learned divine in college cap and gown. These three engravings are reproduced here from a copy of the work in the writer's collection, together with the following quaint verses referring to the third of them:

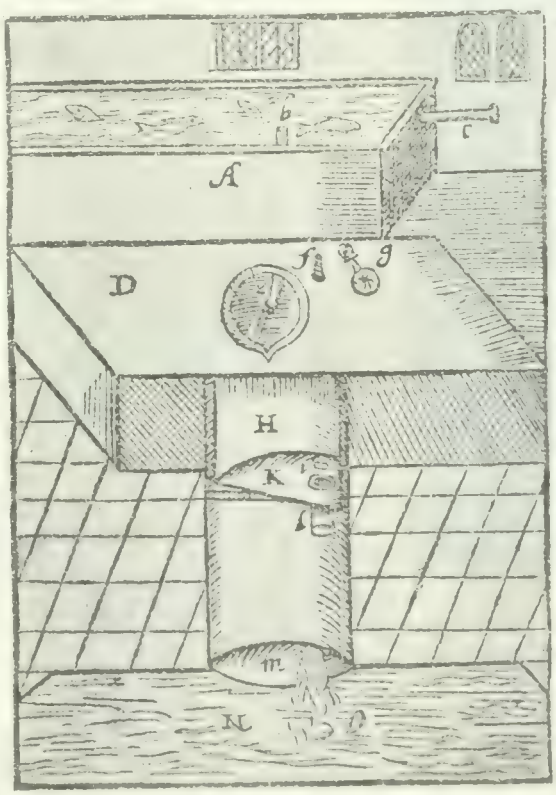
A godly father sitting on a draught,
To doe as necde, and nature hath vs taught,
Mumbled (as was his maner) certain prayr's,
And vnto him the diuel straight repayr's:
And boldly to reuile him he begins,
Alledging that such praiers are deadly sins
And that it shewd, he was deuoyd of grace,
To speake to God, from so vnmeete a place.
The reuerent man, though at the first dismaid,
Yet strong in faith, to Satan thus he said.
Thou damned spirit, wicked, false, and lying,
Difpairing thine owne good, and ours enuying:
Ech take his due, and me thou canst not hurt,
To God my pray's I ment, to thee the durt.
Pure prayr assends to him that high doth sit,
Downe fals the filth, for fiendes of hell more fit.

It will be noticed that fish are shown in the water tank to indicate that it contains clean water, and that the overflow or "wast" pipe of this tank is shown as a warming pipe, and is not continued down into the cesspool, as was so often done in later times.

But, as has happened with many other inventions, the watercloset had no chance of coming into general use until it was patented and someone was interested in bringing it forward. This was done by one Alexander Cumming, who devised and patented an apparatus in 1775, and this apparatus was improved a few years afterwards by Bramah, the forerunner of our present valve closet.

A Priuie in perfection.

Here is the fame all put together, that the workeman may fee if it be well.



A. the Cefterne.
B. the litle wa fher.
C. the waft pipe.
D. the feate boord.
E. the pipe that comes from the Cefterne.¶
F. the Screw.
G. the Scallop fhell to couer it when it is fhut downe.
H. the ftoole por.
I. the flopple.
K. the current
L. the fluce.
M,N. the vault into which it falles: alwayes remember that ( ) at noone and at night, emptie it and leaue it halfe a foote deepe in fayre water. And this being well done, and orderly kept, your worft priuie may be as fweet as your beft chamber. But to conclude all this in a few wordes it is but a ftanding clofe ftoole eafilie emptyed.
And by the like reason (other forms and proportions obferued) all o- other places of your houfe may be kept fweet.

The Teaching of Hygiene.

Of teaching of public health in our medical schools in 1800 there was none, which is hardly to be wondered at considering that it has only become a recognised subject of general medical education during the last few years; but in 1807 a successor appeared to the celebrated *Regimen Sanitatis Salerni* of the sixteenth century in the shape of a work written by the Right Honourable Sir John Sinclair, Bart., "founder of the Board of Agriculture," entitled *The Code of Health and Longevity*, or *Rules and Principles for, first, Preserving Health, second, Prolonging Life, and third, Curing and Alleviating Diseases, with Directions for appropriate Diet and Regimen*. This book is a most interesting and important treatise, and in the edition published in 1830 the subject is divided into chapters with the following headings, and with various subdivisions:

I. Air. II. Liquid Food. III. Solid Food. IV. Digestion. V. Exercise. VI. Sleep. VII. The Passions. VIII. Dress or Clothing. IX. Habitation or Place of Residence. X. Travelling. XI. Residence in Foreign Climates. XII. Customs and Habits which Influence Health. XIII. Bathing. XIV. Means of Preventing Accidents or Common Disorders. XV. Education and Management of Children. XVI. Professional Occupation. XVII. Marriage or Connubial Connections. XVIII. Amusements; and XIX. Advantages to be derived from Knowledge and Science.

In the section of the chapter on Digestion, which treats of the excretions, he refers to the experiments of Sanctorius, the learned physician of Padua, who during the seventeenth century devised a balance by which he was able to determine, among other things, the amount of the perspiration.

This book, originally published in Latin under the title of "*Ars Sanctorii Sanctorii de Statica Medicina Aphorismorum Sectionibus Octo Comprehensa*," was translated into English first by Abdiah Cole in 1663 (under the title of "*A New Art of Physick, contained in Eight Sections of Aphorisms concerning Insensible Perspiration, being a Vapour or Breathing from the Body*, Plainly shewing that Health and Sickness is best discerned by Weighing the Body"), who associated his name with that of the author as if they were joint authors, and altered "I" into "we" in the "Address to the Reader;" secondly, by "J. D." in 1676, under the title of *Medicina Statica, or Rules of Health, in Eight Sections of Aphorisms:* and lastly by John Quincy, M.D., in 1720. In his Address to the Reader, as translated by "J. D.," Sanctorius says: "It is a thing new, and not before heard of, in Medicine, that any one should be able to find out the exact weight of insensible perspiration, nor has any one of the Philosophers or Physicians attempted the doing of any thing in that part of the Medical Faculty. I am the first that has essay'd it, and (if I am not mistaken) brought the art to perfection, by reason, and the experience of thirty years." The engraving of Sanctorius in his chair is here reproduced from an edition of his work published in Latin in London in 1701.

Sinclair's book concludes with three chapters of Appendices, the last (Chapter XXII) giving accounts, with portraits of all of them, of eight "persons who attained extraordinary ages," from Isobel Walker, 112 years, to Petratsch Zortan (or Czartan), a Hungarian, who is said to have died at the age of 185 years. To give an idea of the detailed way in which he treats the various parts of his subject, I may mention that in Chapter XV. on the Education and Management of Children, he

discusses their food, clothing, air, exercise, amusements, habits, health, personal appearance and behaviour, mental



Sanctorius in his Balance.

information, and, lastly, moral and religious instruction. Sir John Sinclair's book was, in fact, the first systematic work on hygiene of the nineteenth century.

The Poor Law in 1800.

By J. MILSON RHODES, M.D.,
President of the Poor-Law Unions Association of England and Wales

Great as the progress of the Poor Law during the nineteenth century has been, in no department has the progress been greater than in that portion dealing with the sick poor. During the first third of the century the condition of the sick poor was deplorable in the extreme, whether looked at from the old or the new Poor Law point of view.

Even Thomas Carlyle, who was no admirer either of the "Old Poor Law" or new Poor Law, very properly describes the "Old Poor Law" as founded "on unthrift, idleness, bastardy, and beer drinking." In the earlier part of the century there was no Central Authority, either Poor-law Commissioners or Local Government Board. The consequence was that only now and again, when Parliament, becoming alarmed at the ever-increasing burden of paupers asked for statistics, could any clear idea of the state of the country as regards "pauperism" be obtained. The overseers of every parish had the power to do what was right in their own eyes; and very peculiar those ideas of right were.

In some of the large towns, like Manchester and Liverpool, "select vestries," or similar administrative bodies, had been established, and had placed the administration of the Poor Law on an improved basis; but still the condition of the sick poor throughout the whole country was miserable in the extreme.

A bad system of Poor-law relief, accompanied by bad laws, had resulted in the utter demoralisation of the poorer classes of this country. That the assertion is no mere figure of speech is proved by the statistics of the time showing the enormous amount of pauperism existing in the first year of the century.

Returns called for by Parliament in 1801 show that, out of a population of 9,000,000, no fewer than 1,000,000 were paupers; roughly speaking, 12 per cent. were burdens on the State. At the commencement of the century war and famine had raised prices to an enormous extent; how heavy the burden upon the ratepayers was may be judged from the fact that the relief of the poor cost in the year 1811 no less than 17s. 6d. a head of the population. To-day, with all our improvements, the cost is only 7s. 2½d. a head.

Enormous as this expenditure was, it certainly did not provide proper medical relief for the poor. Even after the passing of the Poor Law Reform Bill, out of an expenditure of £4,600,026, upwards of £254,000 was simply wasted upon the Law of Settlement and Removal, and only £147,000 was spent on medical relief; so that £100,000 less was expended on the "sick poor" than was expended on useless law costs and the often cruel and dangerous removal of sick and sometimes dying paupers.

In considering the Poor Law of the first half of the century it is necessary to remember that the term "workhouse" was to a great extent a correct description of an institution that is now—with the exception of a few "test houses"—becoming almost extinct. Everyone acquainted with modern Poor-law institutions is well aware that the so-called "workhouse" is really a hospital, an asylum, an almshouse, and a school. The real "able-bodied pauper," especially the "outdoor adult able-bodied pauper," who used to be known as the "roundsman," and who was the *bête noire* of our forefathers, is disappearing from the scene, and now only exists as "a sad memory of a melancholy past." Even so late as 1843, out of 88,000 indoor paupers, only 10,000 were classed as sick, and only 146,000 out of 365,000 outdoor patients were so described.

If these figures are compared with statistics of to-day, they prove an enormous improvement in the economic condition of the people. The vast majority of present-day adult paupers are suffering from mental or physical disease—an altogether different class from the able-bodied, idle vagabonds that constituted a large part of the paupers in the earlier years of the century.

How horrible the state of affairs in some of the workhouses was, even as late as 1838, is proved by the records of the Poor-law Commissioners. Dr. Southwood Smith describes the condition of affairs in the Whitechapel Workhouse in the following words: "I was struck with the fact that out of 104 children resident in the House 89 had recently been attacked with fever. On examining the dormitory in which these children slept, my wonder ceased; in a room 88 feet long, 16½ feet wide, and 7 feet high, with a sloping roof rising to 10 feet, live 104 children, together with 4 women who had charge of them slept. The beds are close to each other; in

all the beds there are never less than 4 children, in many 5. The ventilation of the rooms is most imperfect. I was likewise struck with the dull and unhealthy appearance of a number of children in the same workhouse, in a room called the infant nursery; these children appeared to be from 2 to 3 years of age; they are 23 in number, they all slept in one room, and they seldom or never go out of this room, either for air or exercise. Several attempts have been made to send the children into the country, but a majority of the Board of Guardians has hitherto succeeded in refusing the proposal."

"In the Whitechapel Workhouse there are two fever wards. In the large wards the beds are much too close. Two fever patients are placed in each bed; the ventilation is most imperfect, and the room is so close as to be dangerous to all who enter it, as well as most injurious to the sick. The privies in the workhouse are in a filthy state, and the place altogether is very imperfectly drained; there is not a single bath in the house"; and Dr. Southwood Smith sarcastically adds to the report "these facts are the more remarkable because before I went over the house it was represented to me as being in all respects in a very excellent state." It is only right to state that the Whitechapel institutions are really now in an excellent state.

Fever then, was like the poor, always present; in one year three of the medical officers in two London unions were struck down with typhus fever. At another workhouse a room 55 feet by 8 feet by 6 feet found accommodation for 28 young men who slept 5 in a bed. In the young women's ward 16 beds were considered sufficient for 64 young women to sleep in. One of the dormitories was over the washhouse, and usually it was filled with steam; when it is added that there was not 100 cubic feet per head, the condition of things in this ward, which was used for women and children, can be imagined. The sick wards never exceeded 10 feet high, half of them being only 8 feet; no wonder that the report adds "the wards were close and foul." Anyone who has studied the literature of the times will find similar and worse reports than those quoted.

Bad as the provision for the sick poor was, the remuneration of the medical officers was equally so. The Act of 1834 had extended the areas for which the so-called "parish doctor" was responsible, while the system of remunerating him for his services was one that certainly did not lend dignity to the profession. Before the report of the Select Committee on the Poor-law Amendment Act, 1838, it was the custom to advertise for tenders from medical men, and the lowest tender for drugs and attendance was accepted. The Committee did not approve of so degrading a system, but from the report it is very evident that a miserable cheeseparing system existed. Some of the tenders must have been low indeed, judging from the evidence, and, if the result was that the drugs were not of the best quality, as was stated by some of the witnesses before the Committee, it can hardly be wondered at. I find in the evidence that Mr. Rumsey proposes and Dr. Kay supports the proposal "That the scale of remuneration to union medical officers should be about 6s. 6d. or 6s. per case." Mr. Rumsey supposes that this would be about double the present amount of remuneration! The first-named gentleman was then Secretary of the Provincial Medical and Surgical Association, and he strongly advocated before the Committee the appointment of a Medical Commissioner to act with the other Poor-law Commissioners in matters concerning the medical relief of the sick poor. It was not to the credit of the Commissioners that they declined to support this recommendation. That there was ample need for it is proved by the fact that so miserable was the payment to the medical officers that even in 1844, though a great improvement had taken place, yet still the remuneration received by 2,680 medical officers in England and Wales only amounted to £124,532. As the amount expended for the same purpose last year was £397,000, and the number of paupers was little more than one-half what it was then, there has been some increase in the scale of remuneration, but it must be confessed that in a large number of cases there is still room for improvement.

The conditions under which the medical officers of that time worked, and the slums into which they had to go, appear to have been, if possible, more horrible than those which exist at the present time. In Manchester there were in 1844 4,443 cellar habitations containing upwards of 18,000 people. How the people existed may be imagined from an official report, which shows that there were in these cellars

1,500	cases	where	3	persons	slept	in one bed
738	,,	,,	4	,,	,,	,,
281	,,	,,	5	,,	,,	,,
94	,,	,,	6	,,	,,	,,
27	,,	,,	7	,,	,,	,,
2	,,	,,	8	,,	,,	,,
31	without beds					

Fever cases were continually on their books; in Manchester, in the year 1838, the deaths from epidemic diseases amounted to 1,924; the number was nearly equal to one-third of the total number of deaths. As a very considerable number of these deaths took place in the workhouses the unnecessary burden cast upon the ratepayers must have been enormous. Bad as the condition of the physically sick poor was, the condition of the mentally sick was, if possible, worse.

Lord Shaftesbury, in his evidence before the House of Commons, gave a horrible description of the imbecile wards. His evidence as to the state of affairs in one of the large workhouses was terrible. He described the patients as being many of them chained like dogs to the wall, and usually left from Saturday night to Monday morning to sleep on a bed of straw, with no food provided for them but a jug of water and some dry bread. Some of these places were ventilated and lighted simply by apertures in the wall destitute of glazing. The wretched imbeciles were often very meagrely clad: in many cases in a state of absolute nudity; and the "keepers" often of the lowest and most brutal class.

Since the close of the first half of the century, when Lord Shaftesbury and his friends took up the question of How to Raise the Working Classes, enormous improvement has taken place. Many of the readers of the British Medical Journal will remember the splendid work done by Mr. Hart, when he was on the staff of another medical journal, in drawing attention to the horrors that existed in far too many of the workhouses in England, not only in the small unions but also in the metropolis; the three greatest improvements in the administration of the Poor-law have come from the Midlands and the North.

To the Chorlton Union belongs the honour of establishing the first pavilion hospital on modern lines for sick paupers, and it may be of interest to some of the medical profession to know that when the plans for that hospital were submitted to the Poor-law Commissioners of that time they were met with the remark, "You do not surely expect your ratepayers to pass those plans;" the reply made by the then clerk to the guardians was, "You pass them and we will meet the ratepayers." To the honour of the ratepayers of the Chorlton Union be it said they have always supported the guardians in making proper provision for the sick poor, and the example they have set has happily to a great extent spread throughout the length

and breadth of the land, and many of the union hospitals are now fully equal to the voluntary hospitals.

To Liverpool must be given the credit for reforming the system of nursing in workhouses. Half a century ago the total number of so-called nurses employed in the 591 unions was 171; their salaries amounted to £2,161, a sum equal to about one-third of what was then expended upon workhouse porters. The whole credit of the reform is due to Mr. William Rathbone, who, suffering from typhoid fever, found so much comfort from trained nurses that he offered for three years to pay the cost of providing them for the Brownlow Hill Hospital; the system of course succeeded, though one of the most eminent authorities at that time expressed the belief "that it was worth trying, but she did not think it would succeed."

Of all the reforms effected in relief of the sick poor during the century, that in my opinion is the greatest.

To Birmingham belongs the honour of properly providing for workhouse children by establishing their cottage homes at Marston Green.

No doubt many reforms are still required, but looking at the condition of affairs in the earlier years of the century, and that existing now, we may look forward with hope and courage to the coming century as one that will see the relief of the sick poor based on a satisfactory footing both as regards the sick poor themselves and those under whose care they are placed.

Military Medicine in 1800.

It should perhaps be explained that the term "military medicine" is intended to include the applications of the healing art in all its branches to the special needs of fighting men whether they serve their country by land or sea. For this extended use of the word "military" we have the authority of that great naval expert, Captain Mahan of the United States Navy, and it is fully justified by its philological propriety not less than by its practical convenience. The Navy is the senior of Her Majesty's two military services. Hence it is fitting that it should have the first place in the following sketch.

Naval Medicine.

If in 1800 the surgeons of the British Navy were not skilful in their profession, assuredly it was not for lack of experience. Most of them had seen the effects of hard knocks and of epidemic disease in its worst forms in various parts of the world. Splendid work in preventive medicine had been done by some of them in the latter half of the closing century. James Lind, who had spent some of th early years of his professional life in the navy, and who was physician to Haslar Hospital till his death in 1794, was indefatigable in his efforts to improve the health of seamen. The conditions under which they lived on board ship may be gathered from Lind's statement that "the number of seamen in time of war who die by shipwreck, capture, famine, fire, or sword are but inconsiderable in respect of such as are destroyed by the ship diseases and by the usual maladies of intemperate climes." This was written in 1774 in the "advertisement" to the third edition of his *Essay on the Most Effectual Means of Preserving the Health of Seamen in the Royal Navy*, the first of which was published in 1757.

Scurvy and its Ravages.

The most destructive of the ship diseases to which Lind refers was scurvy. "This disease alone," he wrote in the preface to his famous *Treatise on Scurvy*, which saw the ligh in 1754, "during the last war proved a more destructive enemy and cut off more valuable lives than the united efforts of the French and Spanish armies." Lord Anson, in his great voyage of circumnavigation, lost four out of every five of his ship's company by scurvy in two years. It was the narrative of the sufferings of his crew that moved Lind to write on scurvy. In the preface to his treatise he says: "It was acknowledged that the best descriptions of it are met with in the accounts of voyages, but it was regretted that those were the productions only of seamen, and that no physicians conversant with this disease at sea had undertaken to throw light upon the subject, and clear it from the obscurity under which it had lain in the works of physicians who practised only on land." Lind himself had had considerable experience of scurvy at sea, particularly in two Channel cruises in 1746 and 1747, and had tried many plans of treatment; but the result of all his experiments was that "oranges and lemons were the most effectual remedies for this distemper at sea" Lind did not claim the credit of having discovered the virtues of the fruit juices which he recommended; indeed, he says: "These fruits have this peculiar advantage above anything that can be proposed for trial, that their experienced virtues have stood the test of nearly two hundred years." In proof of this statement he quotes B. Ronsseus, who wrote in 1564, and according to Lind was the first writer on the subject, as saying that "in all probability the Dutch sailors had by accident fallen on this remedy when affected with scurvy on their return from Spain loaded with these fruits, especially oranges."

Lind's work on scurvy was soon translated into French, and his teaching was at once accepted by the medical profession throughout Europe. But it is written that no man is a prophet in his own country, and there is hardly to be found in history a more striking illustration of the truth of this aphorism than the indifference with which Lind's advice was received by the British Government. The case is cited by Mr. Herbert Spencer as an example of the "amazing perversity of officialism." But it would be difficult, were there not the clearest evidence in proof of the fact, to believe that even the most red tape-bound official could have failed to see the importance of the matter. While scurvy was slaying our sailors by thousands, making our fleets useless, and threatening to undermine our sea power, the Admiralty, with the means of prevention actually in its hands, remained impassive like the gods of Lucretius. In 1780 Admiral Geary had to return to port with 2,400 men of the fleet disabled by scurvy. Fifteen years later Lord Howe almost lost his fleet in the Channel owing to the same cause. This at last aroused the naval authorities from their apathy, and—two hundred and fifty years after the remedy was discovered, and nearly half a century after one of the chief medical officers of the Government had demonstrated its efficacy—they issued an order that a regular supply of lemon juice should be furnished to the navy.

This order was issued in 1795, a year after the death of Lind. The reform was doubtless due to the influence of Sir Gilbert Blane, who in that very year had been appointed Chief Officer of the Navy Medical Board. What Lind did has been well set forth by Sir John Simon in the following words: "The fact that scurvy, which used to cripple fleet after fleet, and to waste thousands on thousands of the bravest of lives, has.....become an almost forgotten disease is due emphatically to Lind; and to him therefore, even thus far, we owe such saving of human life as probably to no other one man except the discoverer of vaccination."

"Ship Fever."

Even this service however, great as it is, does not exhaust Lind's claims to the eternal gratitude of those who go down to the sea in ships. He studied with close attention the epidemic diseases which in his day frequently raged on board ships, and he was able to furnish conclusive proof of the truth of Sir John Pringle's doctrine of the identity of typhus with "jail" and "ship" fever. He published the results of his investigations in *Two Papers on Fevers and Infections*, which appeared in 1763, and in *The Jail Distemper and the Proper Methods of Preventing and Stopping its Infection*, which was issued two years later. Lind's work in this field of preventive medicine may again be summed up in the words of Sir John Simon: "The system of rules which he laid down for limiting its ravages in ships and populous establishments is one to which our after-times have made little or no material additions, and to which we no doubt are in great part indebted for our comparative freedom from epidemics of typhus."

An Era of Naval Sanitary Reform.

Endeavours had been made, with the help of contrivances invented by Stephen Hales (1741) and Samuel Sutton (1742) to find a remedy by efficient ventilation for the "putrid" air of ships, and Captain Cook, in his report on *The Method taken for preserving the Health of the Crew of His Majesty's Ship The Resolution during the late Voyage Round the World*, for which the Copley Medal was awarded to the great explorer by the Royal Society in 1776, had shown how by obedience to the elementary laws of hygiene it was possible even in those days, with a company of 118 men, to perform "a voyage of three years and eighteen days, throughout all the climates from 52° North to 71° South, with the loss of only one man by a disease." At the close of the century the spirit of naval sanitary reform had its most active embodiment in the person of Sir Gilbert Blane. He had served with distinction as Physician to Lord Rodney's Fleet in the West Indies during the last three or four years of the American war, and his mind was so impressed by the amount of disease believed by him to be preventable, which he had seen among seamen, that he set himself seriously to the task of finding means of prevention. In 1780 he issued to the flag officers and captains of the fleet a circular containing instructions as to the preservation of the health of their men, the treatment of the sick, and the checking of invasions of disease. This, he says, "was extremely well received," and he was doubtless thus encouraged to attempt the bold task of enlightening the official mind. At any rate in the following year he laid an elaborate scheme of naval sanitary reform before the Board of Admiralty, following up the attack with a further memorial in 1782. Blane also placed the fruits of his experience before the medical profession in a work entitled *Observations on the Diseases of Seamen*, which was published in 1785. Soon afterwards he was appointed Commissioner for Sick and Wounded Seamen, and Chief Officer of the Navy Medical Board under the Admiralty, positions which gave him the opportunity of carrying into effect the reforms which he had advocated. Of this opportunity he availed himself to the full extent of his lights. Simon ranks Blane with Mead, Pringle, and Lind as one of the most effective of the early promoters of modern preventive medicine.

Dr. Munk, in his *Life of Sir Henry Halford*, tells a curious story which illustrates at once the confidence the Government had in Blane and the condition of the medical department of the sister service in the early years of the present century. In 1809 Sir Lucas Pepys, then President of the Royal College of Physicians of London, as well as Physician-General to the Army and President of the Army Medical Board, was ordered to proceed to Walcheren to report on the grievous sickness which caused such havoc among the troops in that ill-starred expedition. The Physician-General, however, refused to undertake this duty on the extraordinary ground that he was not acquainted with the diseases of soldiers in camp or in quarters! Blane was then asked to go, and when he had sent in his report of his mission the question of remuneration caused the Government not a little perplexity. Lord Palmerston, then Secretary for War, applied to Sir Henry Halford for help in the difficulty. Halford's reply, which is characteristic in its combination of Turveydrop like stateliness with practical sense, is worth quoting. He writes:

"It is difficult to appreciate satisfactorily Dr. Blane's services under the circumstances which your Lordship states; but as you do me the honour to write to me confidentially, I will tell you what I think without reserve.

"I should suppose that £1,500 would be a liberal remuneration, without risk of being thought a prodigal one. It is not material to the case how much or how little inconvenience the Doctor might sustain in his private affairs by his absence at Walcheren: nor do I allow it to bias my judgment that he knew he was to encounter some personal hazard by his attendance on the sick there; a physician should never consider that, but the occasion was an extraordinary one. He obeyed the directions of the Commander-in-Chief instantly, and *his patient was an army*.

"In this point of view, I really think Dr. Blane's reward should be one of magnitude, though I admit that the public purse should be opened on all occasions with more caution and reserve than that of an individual, and particularly at this time."

Naval Surgery.

The average naval surgeon at the end of the last century was probably "in a professional respect" not very far above the level of those of whom Smollett, who had himself been surgeon's mate in a line-of-battleship in the middle of the century, has left immortal pictures. He was less coarse in his habits, and a good deal better educated, but he stood comparatively low in the social scale. It was not indeed accounted a part of his duty to shave the ship's company, as was the case in the service of some other countries. In his *Curiosities of Medical Experience*, Dr. Millingen records the fact that for refusing to act as barbers to the crew some English surgeons who had joined the Swedish navy were summarily dismissed the service. This was in 1801. Tonsorial operations appear to have been included among the duties of Portuguese army doctors in the Peninsular war, for Millingen says that so late as the year 1809 one of his assistants in the Portuguese army felt much hurt at his declining his offer to shave him. But though the surgeons of the British navy held, as may be gathered from Marryat's novels, a fairly good position among their brother officers, it is clear that they were respected for their personal qualities, not for their rank. The popular estimate of them at a considerably later period is seen in a review of Barry O'Meara's *Voice from St Helena*, published in the *Quarterly Review*, in which the writer speaks with insolent scorn of the author's low class in life. As late as in 1831 an order was issued that naval officers were not to presume to present themselves at Court levees; and though the offensive order was speedily rescinded, the mere fact that it should have been made may be taken as a proof of the humble position in the social hierarchy which was assigned to surgeons of the navy even at a time within the memory of persons still living. Indeed, in the medical profession itself the navy was not regarded with much favour as a career if we may judge from a remark attributed to Abernethy. When

Richard Owen had completed his studies and went to take leave of his teacher Abernethy, the latter asked him what he proposed to do. Owen, who had been a midshipman in the navy, replied that he thought of going to sea again, whereupon Abernethy declared that he might as well go to the devil!

EXAMINATIONS FOR ADMISSION TO THE NAVY.

An amusing account of the examinations which some candidates, at any rate, for admission to the medical service of the navy had to pass at the beginning of the present century, is given by Dr. Bozzi Granville in his *Autobiography*. Dr. Granville was an Italian whose mother was of English descent. After a variegated career he determined to enter the British Navy. He had received a regular professional training in the University of Pavia, and, as he boasts, was the holder of a diploma signed by "Scarpa, Rasori, Frank, Borda, Moscati, and Volta, under the great sigillum of the goddess of Liberty and the inscription of 'Repubblica Italiana.'" The following is his account of the examinations which he had to undergo for the position of Assistant Surgeon on board a British warship in 1807:

"Admiral Robert Montagu directed the medical officers of Haslar Hospital to examine me as to my being qualified to serve as assistant surgeon, which operation accomplished, and a certificate of my fitness obtained, the admiral confirmed Captain McKinlay's nomination to the same vessel, dated May 25th, 1807, the day after the examination. The medical officers at Haslar were Dr. Hope, Dr. Magennis, and Mr. Vance. The latter gentleman became in after-years well known in the metropolis, where he settled as a physician, acquiring great reputation as a successful practitioner in complaints of the stomach, for which he used to prescribe certain famous pills, known under the name of Vance's pills. It was my lot, when it came to my turn to practise in London, to meet him in consultation, and later to commiserate, in common with the rest of the profession, the sad and singular fate he met at the hands of an insane patient he had just visited in the upper floor of a house in Sackville Street, who threw the doctor over the bannisters to the bottom, killing him on the spot.

"At my examination at Haslar none of the gentlemen spoke any other European language than their own. Of that language I was then, if not completely ignorant, at all events little able to understand more than a few words or an expression or two picked up during the very short time I had been on board the *Raven*, the surgeon of which ship, a Mr. Francis Johnstone, a Scotchman, spoke Latin with a certain facility and a pronunciation analogous to that of the Italians. Indeed, our own official intercourse on board had been carried on in that language as the only possible means of communication. And so it was the case at the Haslar examination, to which Mr. Johnstone had accompanied me, suggesting that it should be conducted in that language, a task which Drs. Hope and Magennis undertook, Mr. Vance interpolating now and then a few practical surgical questions, which were translated to me into Latin by the other two examiners, Mr. Vance possibly not feeling himself competent to employ the more learned language.

"Whilst noticing here the first difficulty I encountered on English ground, and which was thus overcome, I must not omit to add that it was followed by more than one of the same sort during the first twelve months of my professional experience in this country. I allude to the number of times I was subjected officially to medical examinations, for having not long after been transferred from the *Raven* to the *Millbrook*, a war schooner with a sliding keel invented by Sir Samuel Bentham, carrying sixteen sixty-four pound carronades on a flush deck, commanded by a Lieutenant Leach and a sub-lieutenant, with an assistant surgeon only, I felt naturally anxious to make my appointment a permanent instead of a temporary one. To attain this object it was imperatively necessary that I should appear before the London naval authorities to prove my fitness for the office. Presuming myself sufficiently acquainted with the English tongue, to which I had applied myself in the meantime, I obtained leave to go up to London to present myself before the Transport Board, by whom I was directed to the Royal College of Surgeons to be examined for the rank of permanent assistant surgeon in the navy. This examination was followed by another before Dr. Weir, Medical Commissioner of the Transport Board, on which occasion I obtained my first parchment warrant (now called, I believe, a commission) as a regular assistant surgeon in the Royal Navy, dated November 21st, 1807. Then again in less than ten months I was examined before the same two public bodies for the attainment of my full rank of surgeon, which was conferred on me not long after on my appointment to His Majesty's sloop of war *Cordelia*, Captain Kennedy."

An idea of the way in which those old medical examinations in Latin were conducted may be obtained from a description given by Granville of his examination before the President and Censors of the London College of Physicians in 1817. He had, he says, as companions in the adventure two remarkable fellow candidates, namely, "the surgeon who had received the last words and sigh of Nelson on board the *Victory*, and a Doctor Armstrong, author of a treatise on fever which had created quite a *furore* among the profession, and had secured an enormous practice to its author, for which latter reason he was pulled up by the Censors, and made to come before them for his licence." Armstrong was, however, rejected, not from malice, nor because he was almost entirely ignorant of the Latin language, but for gross ignorance of anatomy and physiology. Dr. Paris told Granville some time after, that Dr. Armstrong had failed to answer almost every question as regards the internal organisation and functions of the body, although the examiners patiently waited a considerable time after every question. "At last," said Dr. Paris, "I thought of one of the simplest possible questions that should give him a chance to come off well, and so I asked, '*Dic, mihi, domine, ubi locatum est hepar?*' '*In corpore, domine,*' was the immediate reply! (Where is the liver placed? In the body, sir.) '*Satis est,*' exclaimed the president, 'you may retire, sir,' and he was accordingly not admitted."

It is gratifying to read that "Nelson's surgeon," doubtless Dr. Beatty, "passed and became an M.D."

THE MEDICAL SERVICE OF THE ARMY.

An interesting sketch of the evolution of the medical service of the army is given in the *Autobiography* of Sir James MacGrigor, who was Principal Medical Officer under Wellington in the Peninsula. From the year 1747, he says, when a warrant of George the Second created an Apothecary General "perpetual furnisher, with remainder to his heirs of all the medicines necessary for the general service of all the land forces in Great Britain," an authoritative precedent was established for "a system of monopoly, exclusive patronage, and collusions in the Army Medical Service, prejudicial alike to the army itself and to the interests of the public." The monopoly created by this warrant appears to have been to some extent infringed at a later period, for till the close of 1796 the surgeon of each regiment, aided by a surgeon's assistant, received a sum proportioned to the strength of the corps, on the condition that he supplied all the necessary medicines. A regulation was then made that the medicines should again be provided by the Apothecary-General, while the pay of the surgeons was increased, obviously with the object of indemnifying them for the loss of the profits which they had previously made on the drugs supplied. In 1794 a Medical Board was constituted for the administration of the medical affairs of the army, and this was a distinct advance, though a wide field was still left for abuses. The Board was composed of a Physician-General a Surgeon-General, and [an] Inspector-General of Hospitals.

Each of these members exercised an exclusive and independent patronage over one branch of nominations and promotions. By the regulations laid down in 1798, it was the province of the Physician-General to nominate to office all the physicians of his department, and to inspect the medicines furnished to the army by the Apothecary-General, whose accounts he had to control jointly with the Surgeon-General. He further presided in all matters concerning medical science—the examination of candidates for offices in the medical department of the army and in the military hospitals. The Surgeon-General had the appointment of all the surgeons of his department, and, as the exigencies of the service required, the discretion of placing those who were disposable in the hospitals, camps, and military districts. On the Inspector of Hospitals devolved the appointment and promotion of the apothecaries, purveyors, and their deputies, assistants, nurses, and servants for the hospital; the direction of the transport of medical supplies to the army and hospitals; and, lastly, in conjunction with the Surgeon-General, the examination of the claims of military officers for wounds and loss of limb.

As may easily be believed, from this separation of the service and patronage into three branches, made wholly independent of each other, though in reality they were, by the very nature of things, mutually dependent, there arose many serious inconveniences. The Surgeon-General was debarred of all right to present either the physicians of the army, or the inspectors, the purveyors, apothecaries, or hospital assistants to promotion. Yet was he held responsible for the functions of all these officers, since he had the disposal of them in the different posts of service.

The Inspector-General of Hospitals, again, selected on his own responsibility for the service of those hospitals the surgeons and assistant-surgeons who were nominated and promoted on the recommendation of another authority. The system was ingeniously contrived to bring about conflicts of authority and to cause intra-departmental jealousies.

By a regulation enacted in 1798 regimental surgeons were made at once medical officers, contractors and managers of expenditure—an arrangement that would seem to have been designed to offer at once the greatest possible temptation to corruption and the amplest facilities for succumbing thereto. "It would, however," says Sir James MacGrigor, "be difficult to believe, so powerful in the learned professions is the sentiment of honour in their calling, that even at that time when the subordinate class of medical officers was not always composed of men of the high standard of a later period, advantage was taken of such opportunities of malversation."

Abuses there were, however, and in 1808 a Military Inquiry was instituted into the administration of the Medical Board. This inquiry, which lasted four years, brought to light the hardly surprising fact that the expenditure on the medical service of the army had been profuse. The result was a pedantically rigorous economy in trifles whereby, in the words of Sir James MacGrigor, "the higher professional interests and those of science were almost wholly sacrified to pence."

History repeats itself in the medical affairs of the army as in other things. At the end of the last century, as at present, every improvement in the position and pay of the medical officers was wrung from an unwilling War Office by the brute force of circumstances. Soon after the beginning of the revolutionary war with France the greatest difficulty was found in getting properly qualified men for the service. It was at one time found absolutely necessary to advertise for them; and in fact, as Sir James MacGrigor puts it, to beat up for them by offering present pay and good quarters. Placards were posted on the college gates of Dublin, Edinburgh, and Glasgow, offering commissions to such as could pass some kind of examination, which, if passed, immediately entitled them, under a warrant of the Army Medical Board, to pay and quarters. They had, moreover, all their travelling charges defrayed from the place whence they came. This was continued for many years—indeed, till near the close of the war, and it was the occasion of many uneducated and unqualified persons being introduced to the service, not a few of whom, in quarters where the promotion was rapid, found means to pass through different grades to the rank of regimental and staff-surgeon. A good many apothecaries, and even druggists' apprentices, found their way into the service in this manner.

So impressed was Sir James MacGrigor by these evils, which he says he had witnessed hundreds of times, that when he became head of the Army Medical Department in 1815 his first object was to find a remedy for them. He gradually collected exact information as to the education and services of every medical officer in the army, and when in full possession of the facts he intimated to everyone who was deficient that he was not to expect any further promotion in the service until he had completed his medical education according to a scale which the Director-General, in conjunction with his colleagues at the Board, had established. At the end of the war there was a great reduction of medical officers, and a very large number were placed on the half-pay list. These Sir James MacGrigor recommended to betake themselves to colleges and schools of medicine, either at home or abroad. Accordingly a great number proceeded to Edinburgh, Glasgow, Dublin, Paris, and the German schools. Several went to these schools to perfect their studies, and to pass the time till they should be recalled to full pay, it being intimated to all that, the higher the qualifications any individual possessed, the better chance he would have of promotion. Further, not a few of the officers on full pay, at home or abroad, obtained six or twelve months' leave of absence, and proceeded to some of the schools to add to their qualifications. The effect of this measure, says Sir James MacGrigor, exceeded the most sanguine expectations he had formed of it. There appeared a new spirit of emulation in the service, which gained for officers of the department much credit with their brethren in civil life: while the effect of the measure in the advantage gained to the public service was incalculable.

The Surgeons of the Peninsular War.

Sir James MacGrigor's *Autobiography* enables us to form a tolerably vivid picture of the army surgeon of the beginning of the century. His own career was almost from the beginning one of marked success and distinction. After studying at Aberdeen and Edinburgh, he purchased a commission as medical officer, and was gazetted to the 88th, or Connaught Rangers, in 1793. In the following year he went with his regiment to Holland, where, he says, "the want of system in our hospitals and the inexperience of medical officers in the duties in which in after-years they became so expert were at this time very striking." He afterwards accompanied his regiment to the West Indies, to India, to Egypt, and to Walcheren. He then served as Chief of the Medical Department in the Peninsula under Wellington, whose confidence he won to a degree unusual with that inexpansive chief, who called him familiarly "Mac." So great was his influence, that he prevailed on Wellington to mention

medical officers in despatches, a thing which had never been done before. This was after the capture of Badajoz. The story is best told in MacGrigor's own words:

"I immediately made my way to Lord Wellington, and found him in his tent writing the despatches. He received me most cordially, and after I had given him my detail, thanked me much. He was in excellent spirits; I therefore said: 'I trust, my lord, you are satisfied that the medical officers during last night did their duty, as well as the military officers, and that you will receive my testimony that they discharged their arduous and laborious duties most zealously, and often under circumstances of personal danger of which they were regardless.' He replied that 'he himself had witnessed it.' I then added: 'Nothing could more gratify those officers, nothing could be a greater incentive to their exertions on future occasions, than his noticing them in his public despatches.' He asked, 'Is that usual?' My reply was: 'It would be of the most essential service,' and I ventured to add that 'really their extraordinary exertions gave them in justice a claim to this.' He rejoined, 'I have finished my despatch; but, very well, I will add something about the doctors.'

"When the gazette appeared, the medical officers of the army in England saw with delight that the merits of their brethren had been publicly acknowledged, in the same manner as those of the military officers. This was the *first time* that their merits had been thus publicly acknowledged; and the example of Lord Wellington has been followed after every great action that has since been fought, and some time afterwards the navy followed the example."

In the retreat to Portugal the extreme displeasure of Wellington was loudly expressed against more than one quarter. He at one time went so far as to say: "The medical department is the only one which will obey orders; on them I can rely for doing their duty." After the passage of the bridge of Salamanca, MacGrigor was disabled by the kick of a horse. No cart or other vehicle could be found to carry him off the field, and it seemed as if he must fall into the hands of the enemy. Wellington, hearing of his situation, instantly ordered his carriage—the only one in the army—to take him up, and in the course of the day the General called to inquire about him.

As a proof of the respect in which Sir James MacGrigor was held by military officers of all ranks, the following story, which is only one example of many of like nature that might be told, may be related. Long after the Peninsular war a medical practitioner paid a professional visit to a major who was suffering from a severe affection of the chest, to which he had been subject periodically since his lungs had been severely wounded by a musket ball at the storming of Badajoz. The officer, after giving particulars of his case, and explaining the nature of the injury which was the cause of his sufferings, suddenly inquired, "How is Sir James MacGrigor?" On being informed that he was tolerably well, the patient exclaimed, "We of the old times worshipped that man!" The last words, says the writer who tells story in the *Lancet* of October 12th, 1850, were uttered in a faltering tone, and followed by a flow of tears; when the nerve and firmness of the veteran returned, he added, "I love him! I love him!" The man must have had no common qualities who could make so lasting an impression on a lad of 16, for the officer in question was only of that age when the services for which he felt a lifelong gratitude were rendered him by Sir James MacGrigor.

The Iron Duke, who was not lavish of praise, wrote of MacGrigor in 1814: "I consider Mr. MacGrigor one of the most able, industrious, and successful public servants I have ever met with."

How splendidly the medical officers did their duty in the Peninsula appears from the following striking testimony:

"It was said with much truth by an eminent individual that he thought the extraordinary exertions of the medical officers of the army might be said to have decided the day at Vittoria, for their exertions had undoubtedly added a full division in strength to Lord Wellington's army."

The war was the means of developing operative skill of a high order among the surgeons. Speaking of the battle of Toulouse, MacGrigor says that many operations were performed after that bloody engagement, and he adds: "Great experience and reflection had at this time created among us a body of operators such as never were excelled, if ever before equalled, in the British Army."

Graphic pictures of the Peninsular surgeons are also given in *A Prisoner of France*, the memoirs of Captain Charles Boothby, of the Royal Engineers, from which extracts were given in the BRITISH MEDICAL JOURNAL of December 23rd, 1899. The delightful Dr. Maurice Quill, of *Charles O'Malley*, may also be taken as one type of the men who healed the wounds of Wellington's soldiers. Charles Lever, himself a member of the medical profession, had known many of the Peninsular veterans, and his sketch of the genial doctor whose "fine feathers" stirred the wrath of Wellington, was doubtless drawn from life.

THE SURGEON OF THE GRANDE ARMÉE.

The greatest military surgeon at the close of the last and the beginning of the present century was, however, Dominique Jean Larrey, the famous Surgeon-in-Chief of the Grande Armée Larrey was not only a great organiser and administrator, but a brilliant operator. He was the first to perform amputation at the hip-joint for gunshot wound, and to him surgery owes the oval method of amputation at the shoulder.

Few surgeons can have had anything like Larrey's experience in amputation. He was an ardent advocate of immediate amputation for gunshot wound, and he on one occasion removed no fewer than 200 limbs in twenty-four hours. A striking testimony to his skill is the fact that of the primary amputations performed by him in the wars of Napoleon he saved three-fourths, and that at a time when antisepsis and anæsthesia were as yet undreamt of. Of his readiness of resource and his masterfulness in carrying out whatever he considered to be for the benefit of his patients many stories are told. On one occasion, when the supply of meat ran short and there was no nourishing food to be had for the wounded, Larrey "commandeered" the horses of some officers of a cavalry regiment to make soup for his patients. When complaint was made to Napoleon, he upheld his Chief Surgeon. In Egypt, Larrey fed his sick on camel soup, which he pronounced to be superior in quality to horseflesh.

Napoleon in his later years often spoke of Larrey. Las Cases in his *Memorial of Saint Helena* reports the Emperor as speaking to the following effect on October 23rd, 1816:

"What a man, what a brave and worthy man is Larrey! What care was given by him to the army in Egypt and everywhere! I have conceived for him the highest esteem. If the army were to raise a column to the memory of any one, it should be to that of Larrey. He has left in my mind the idea of a truly honest man. He is truly a worthy man, for to science he unites all the virtue of an effective philanthropist. All the wounded are of his family. The chief object of his consideration has been to exert himself in his hospital, in which he has been so successful as to entitle him to both my esteem and my gratitude." Not long afterwards Napoleon made his will, and wrote in it: "I bequeath to the Surgeon-in-Chief of the French army Larrey, 100,000 francs. He is the most virtuous man I have ever known."

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[*Corrected to Nov. 30th, 1900.*

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Cumming, W. J. H., Esq., Bank Street, Lochgelly (dead
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Finlay, W., M.B., 29, Scotland Street, Edinburgh (dead
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Turnbull, Alex., M.D., Insp.-Gen. of Hospitals and Fleets R.N. (retired)
Turnbull, H. P., Surg. R.N.
Twigg, G. D., Fleet-Surg., R.N.
Tyndall, J., Dept. Surg-Gen. R.N.
Underhill, J. W. O., M.B., Staff-Surg. R.N.
Vasey, C. L., Fleet-Surg. R.N. (ret.)
Vasey, S. W., Fleet-Surg. R.N.
Vaudin, M. L. M., M.B., Surg., R.N.
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Whicher, J. C. F., Staff-Surg. R.N.
White, R. D., M.D., Fleet-Surg. R.N.
Williams, E. H., Fleet-Surg. R.N.
Williams, J. O'B., M.D., Fleet-Surg., R.N.
Williams, R. W., Fleet-Surg. R.N.
Willis, J. P., M.B., Surg., R.N.
Wilson, G., M.B., Staff-Surg. R.N.
Wood, J. C., Surg., R.N.
Woods, H. C., M.V.O., M.D., Insp.-Gen of Hospitals and Fleets, R.N
Woollcombe, A., Surg. R.N.
Yeo, R. F. Fleet-Surg., R.N. (retired)
Young, W. R. M. Staff-Surg., R.N.

ARMY MEDICAL SERVICE.

In this list, Surgeon-Generals of the Army Medical Staff, as well as retired officers of the late Army Medical Staff, are distinguished by the letters A.M.S. Officers of the Royal Army Medical Corps by the letters R.A.M.C., and retired officers of the late Medical Department by the letters A.M.D.

MEMBERS—854.

Adams, G. G. Major, R.A.M.C.
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Cooper —, Captain
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Corkery, T. H., Major, R.A.M.C.
Cottell, A. B., Major, R.A.M.C.
Cottell, R. J. C., Major, R.A.M.C.
Cotton, H., Lt.-Col. (ret.), A.M.S., Tower Lodge, Ipswich—E. A. Br.
Coutts, G., M.B., Major, R.A.M.C.
Cowan, James, M.B., Lieutenant, R.A.M.C.
Cowen, W. D. A., Lt.-Col., R.A.M.C.
Craig, R. M., Lt.-Col. (ret.), A.M.S.
Crawford, G. S., Captain, R.A.M.C.
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Creagh, Hon. Brig.-Surg. W., Surg.-Maj., (ret.), A.M.D., Burton-on-Trent
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Crooke-Lawless, W. R., M.D., Major, R.A.M.C., Surg.-Maj., Coldstream Guards
Crowe, Hon. Brig.-Surg. J. D., Surg.-Lieut.-Col. (retired), A.M.S. Weymouth—D. & W. H. Br.
Cuffe, O. Med., C.B., Surg.-Genl., A.M.S.
Cullen, Surg.-Gen. D., M.D. (retd.), A.M.D. (dead)
Culling, J. C., Major, R.A.M.C.
Cummins, H. A., M.D., Major, R.A.M.C.
Cummins, S. L., M.B., Capt., R.A.M.C.
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Cusack, R. O., Lieut.-Col., R.A.M.C.
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Hale, G. E., D.S.O., Major, R.A.M.C.
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Hall, R. H., M.D., Major, R.A.M.C.
Hall, E. J. D., Major, R.A.M.C.
Hall, Sydney O., Lieut., R.A.M.C.
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Hamilton, J. B., M.D., Surg.-Gen. (ret.) A.M.S.
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Hardy, W. E., Capt., R.A.M.C.
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Harris, F. W. H.D., Major, R.A.M.C.
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Harvey, Hon. Dep.-Surg.-Gen. C. H., M.D., Brig.-Surg. (ret., A.M.S.
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Hayman, S. J. W., Major, R.A.M.C.
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Hetherington, R. P., M.B., Major, R.A.M.C.
Heuston, F. S., Major, R.A.M.C.
Hewett, A., Lt.-Col., R.A.M.C.
Hickman, J., Major, R.A.M.C.
Hickson, S., M.B., Major, R.A.M.C.
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Hodson, R. D., Lt.-Col. R.A.M.C.
Hoile, Hon. Brig.-Surg. E., M.D., Surg.-Maj. (retired), A.M.D.
Holmes, C. J., M.D., Major, R.A.M.C.
Holmes, T. J. P., M.B., Lt.-Col. (retired), A.M.S.
Holt, M. P. C., Major, R.A.M.C.
Holt, R. H. G., Captain, R.A.M.C. (dead)
Holvoake, R., Major, R.A.M.C.
Hopkins, C. H., Capt., R.A.M.C.
Hore, H. St. G. S., Major, R.A.M.C.
Hosie, A., M.D., Major, R.A.M.C.
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Howell, H. A. L., Captain, R.A.M.C.
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Hoysted, T. N., Surg.-Maj.-Gen. (ret.), A.M.S.
Hubbard, R. W., Captain, R.A.M.C.
Hughes, G. A., M.B., D.S.O., Lieut.-Col., R.A.M.C.
Hughes, M. L., Captain, R.A.M.C. (dead)
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Irving, L. A., Lt.-Col., R.A.M.C.
Irwin, C. Graves, M.B., Dep.-Surg.-Gen. (ret.) A.M.S.
Irwin, J. M., M.B., Major, R.A.M.C.
Jackson, R. W. H., M.B., Captain, R.A.M.C.
James, H. D., M.D., Major, R.A.M.C.
James, W. M., Lt.-Col. (retired), A.M.S.
Jameson, J., M.D., C.B., Q.H.S., Surg.-General, A.M.S., Director-General Army Medical Service
Jameson, J. C. M. B., Capt., R.A.M.C.
Jeffcoat, Hon. Dep.-Surg.-Gen. B., [illegible] (ret.), A.M.S., Surbiton.—S. E. Br.
Jennings, Hon. Brig.-Surg. U. A., Lt.-Col. (retired), A.M.S., Cork.—C. and S. of I. Br.
Jenney, G. W., C. [illegible], R.A.M.C.
Jennings, J. W. [illegible]
Jennings, R., M.D., Major, R.A.M.C.
Jerome, J. W., M.D., Major, R.A.M.C.
Johnson, C. W. [illegible]
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Johnston, H. [illegible]
Johnston, Hon. Brig.-Surg. J. C., Surg.-Major (ret.), A.M.D.
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Jones, J. M., Lt.-Col., R.A.M.C.
Josling, C. L., Major, R.A.M.C.
Joynt, E. H., M.D., Lt.-Col., R.A.M.C.
Joynt, H. W., Lt.-Col. (ret.), A.M.S.—D. Br.
Julian, O. R. A. [illegible]
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Kearney, J., M.D., Major, R.A.M.C.
Keatly, J., Ma[illegible]
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Kelly, R. E., M.D., Major, R.A.M.C
Kennedy, A., Major, R.A.M.C.
Kenny, W. W., M.B., Lt.-Col., R.A.M.C.
Keogh, A., M.D., Major, R.A.M.C.
Kerin, M. W., Lt.-Col., R.A.M.C.
Keys, C. W. Moore, M.D., Lt.-Col. R.A.M.C.
Kiddle, F., M.B., Captain, R.A.M.C.
Kiddle, W., M.B., Major, R.A.M.C. (dead)
Kilkelly, C. R., M.B., Major, R.A.M.C., Surg.-Major Grenadier Guards
Kirkpatrick, H. C., M.D., Lt.-Col., R.A.M.C
Kirkpatrick, R., M.B., Major, R.A.M.C.
Knaggs, H. T., Major, R.A.M.C.
Knox, M., Lt.-Col. (retired) A.M.S.
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Lamprey, J. J., Lt.-Col (retired), A.M.S.
Lane, A. V., Major, R.A.M.C.
Lane, C. A., Major, R.A.M.C.
Lane, W. L., M.B., Lieut.-Colonel R.A.M.C.
Langdon, Hon. Brig.-Sg. J., Lieut.-Col. (ret.), A.M.S., Brecon
Langridge, G. T., Lt.-Col., R.A.M.C.
Latchford, J., M.B., Lt.-Col. (ret.), A.M.S.
Lavie, T. G., Major, R.A.M.C.
Lawson, C. B., M.B., Captain, R.A.M.C.
Leader, N., Lieut.-Colonel (ret.), R.A.M.C.
Leake, G. D. N., Lt.-Col., R.A.M.C.
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Le Quesne, F. S., V.C., Major, R.A.M.C.
Lever, R. C., M.B., Maj. (ret.), A.M.D.—O. Br.
Lewer, Alfred, Surg.-Maj. (ret.), A.M.S., Southsea
Lewer, R., Surg.-Maj.-Gen. (ret.), A.M.S
Lewis, R. C., Captain, R.A.M.C.
Lilly, A. T. I., Major, R.A.M.C.
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Longhurst, B. W., Captain, R.A.M.C.
Longhead, S. F., M.D., Major, R.A.M.C.
Love, R. L., M.D., Lieut.-Col., R.A.M.C
Lowsley, M. M., Lieut., R.A.M.C.
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Luther, A. J., Major, R.A.M.C.
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McFarland, Hon. Brig.-Surg. F. E., Surg.-Major, (retired), A.M.D., Belfast—N. of I. Br.
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Maclean, F. B., Lieut.-Col., R.A.M.C.
McLoughlin, G. S., M.B., Captain, R.A.M.C
McMillan, J. F., Captain, R.A.M.C.
McNalty, G. W., M.D., C.B., Lt.-Col. (ret.) A.M.S.
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MacNeece, J. G., Lieut.-Colonel, R.A.M.C.
MacNeece, T. F., Lieut.-Col., R.A.M.C.
Macouachie, J., Major, R.A.M.C.
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MacQuad, P. J., Lt.-Col. (ret.) A.M.S.
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Magrath, C. W. S., M.D., Major, R.A.M.C.
Maher, J., Major, R.A.M.C.
Major, N. B., Colonel, R.A.M.C.
Mallins, J. R., Major, R.A.M.C.
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Marriott, E. W. P. V., Captain, R.A.M.C
Marsh, T. A. P., Major, R.A.M.C. (dead)
Martin, C. B., M.B., Captain, R.A.M.C.
Martin, H., M.B., Lieutenant-Colonel, R.A.M.C.
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Norrington, H. L. W., Capt., R.A.M.C.
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O'Brien, R. F., Major, R.A.M.C.
O'Callaghan, D. M., M.D., Major, R.A.M.C.
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O'Connell, Morgan D., Lieut.-Col., R.A.M.C.
O'Connell, Mathew, D., M.D., Lt.-Col., R.A.M.C.
O'Connor, A. P., Lieut.-Col., R.A.M.C.
O'Donnell, J. J., M.B., Major, R.A.M.C.
O'Donnell, T. J., Major, R.A.M.C.
O'Dwyer, T. F., M.D., Surg.-Gen. A.M.S.
O'Farrell, T., M.D., Col., R.A.M.C.
Ogg, Surg.-General, —, M.B., ——
Ogilvy, Surg.-Gen., M.D., (retired A.M.D.), (dead)
O'Grady, Sade O., Lieutenant, R.A.M.C.
O'Halloran, M., M.D., Major, R.A.M.C.
O'Nial, J., C.B., Surg.-Gen., (ret.), A.M.S., Killaloe
O'Reilly, H. W. H., M.B., Captain, R.A.M.C.
O'Reilly, Hon. Brig.-Surg. J. J., Lt.-Col. (ret.), A.M.S.
Ormsby, G. J. A., M.D., Lieutenant, R.A.M.C.
Osburne, J., Major, R.A.M.C.
O'Sullivan, D., Lieut.-Col., R.A.M.C.
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Paterson, H. F., M.D., Surg.-Maj.-Genl. (ret.), A.M.S.
Patterson, T. W., D.S.O., Lt.-Col. (ret.), Ramelton
Paxton, J., M.D., Lieut.-Col. (ret.), A.M.S., Bedford
Peard, H. J., Major, R.A.M.C.
Pearse, Albert, Captain, R.A.M.C.
Peeke, H. S., Major, R.A.M.C.
Penton, R. H., D.S.O., Major, R.A.M.C.
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Phillips, R. E. G., Capt., R.A.M.C.
Philson, S. C., Major, R.A.M.C.
Phipps, E. V. A., Major, R.A.M.C.
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Poole, W. C. T., Major, R.A.M.C
Pope, W. W., Major, R.A.M.C.
Porter, F. J. W., Captain, R.A.M.C
Porter, R., M.B., Major, R.A.M.C.
Powell, E. E., Captain, R.A.M.C.
Powell, S., M.B., Major, R.A.M.C.
Power, J. H., Capt., R.A.M.C.
Power, R. I., Major, R.A.M.C.
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Quill, R. H., M.B., Lieut.-Col., R.A.M.C.
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Younge, G. H., Major, R.A.M.C.
Yourdi, J. R., M.B., Major, R.A.M.C.

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AN EPITOME

OF

CURRENT MEDICAL LITERATURE.

MEDICINE

(1) Nervous Complications of Diabetes Mellitus.

DESBONNETS has collected the various symptoms of diabetes as manifested by the nervous system (*Thèse de Paris*, 1900), and which he divides into motor, trophic, sensory, and mental. Under the first head muscular feebleness has long been recognised. It appears sometimes suddenly in the midst of apparent perfect health, affecting chiefly the lower extremities. It disappears with the reduction of sugar. Paralysis of various forms may occur—namely, monoplegia, hemiplegia, and paraplegia. Monoplegias do not seem to be common. They may affect the whole of the limb or a group of muscles. The majority of cases of paraplegia are in reality due to lesions of the peripheral nerves coming on very insidiously, many of the symptoms being worse at night. In some cases the lesion is temporary, while in others it remains. This form of paralysis may also affect the upper as well as the lower limbs, and bears considerable resemblance to alcoholic paralysis, there being marked foot drop, accompanied by wasting and reaction of degeneration. There is loss of the muscular sense, gait is uncertain, and Romberg's symptom is not uncommon. Cases exhibiting these symptoms therefore strongly resemble tabes, and as there may be anæsthesia, gastric crises, perforating ulcer, etc., the diagnosis may not be clear at first sight. Sensory manifestations of diabetes consist in various severe forms of neuralgia, affecting especially the sciatic, the trifacial, the intercostal, and cervico-occipital nerves. These may coexist or alternate, and are not infrequently bilateral, a fact which is of assistance in diagnosis. The pain is intensely severe, and may be very rebellious to treatment. There is generally an underlying neuritis. Gastralgia and arthralgia and angina pectoris are further manifestations met with in cases of diabetes. Even the special senses may be affected: thus, taste and smell may be lost or perverted; deafness is also met with. Eye symptoms have been recognised for a long time, and of these cataract is the most frequent, but amblyopia and ocular paralysis also occur. Bouchard believes that cataract is most frequent in albuminuric diabetes. Amblyopia occurs in two forms, the temporary and the permanent; the latter is progressive. Under the head of trophic lesions perforating ulcer was due to diabetes in 14 out of 91 cases collected. Muscular atrophy, loss of the nails and hair, inflammation of the nailbed are other forms. Mental symptoms vary. There may be profound depression with delusions. Narcolepsy and mania are recognised, while coma of the characteristic kind is of course the commonest. The writer considers that these nervous manifestations of diabetes have not much prognostic significance, as they may appear in so many different degrees in different patients.

(2) Examination of the Blood: Its Value to the General Practitioner.

AT the recent meeting of the American Medical Association, M. Howard Fussell read a paper on this subject in the Section of Practice of Medicine. He said that in some cases the blood examination is as important, and in other cases it is more important than the examination of the urine, and it is already acknowledged that an examination of the urine is necessary in every case. As a general practitioner the author examines the blood in all obscure cases. As a result of such an examination: (1) The physician will avoid administering iron to a patient because the face is pale; since all pale people are not anæmic. (2) It will be found that patients with flushed faces often have decided reduction of the hæmoglobin and of the number of red blood corpuscles. (3) Patients with cardiac and pulmonary symptoms are sometimes diagnosed as cases of organic disease, when a blood examination would reveal chlorosis. (4) Blood examination will positively indicate the presence or absence of malaria. (5) The diagnosis between leukæmia and other organic conditions, such as tuberculosis and carcinoma of the stomach, may be made. (6) The blood examination combined with the Widal test will diagnose between typhoid fever and malaria; or possibly, show a combination of the two diseases. (7) Counting the leucocytes will often give satisfactory results in clearing up obscure conditions. The physician does not need to take a microscope to the bedside of the patient; if the diluting tube is surrounded by a rubber band the blood may be preserved for a long time, and the counting may be done at leisure.

(3) Fæcal Vomiting and Antiperistalsis.

G. LANGMANN (*Festschrift A. Jacobi*, New York, 1900) describes the case of a young woman, aged 21, who was admitted to the German Hospital in New York in 1889 for vomiting and hæmatemesis. Four years previously the left leg had been apparently paralysed for nine months after an injury. Since that time severe pain along the spine was occasionally felt. During the two years before admission patient was said to have had attacks of peritonitis, vomiting, and hæmatemesis, and had habituated herself to hypodermics of morphine. In the hospital the patient sometimes vomited fæcaloid material, sometimes actual hard formed fæces. Scybala an inch thick were at one time thrown up. A fistulous communication between the stomach and colon was suspected, owing to repeated hæmatemesis and circumscribed pain in the gastric region. Indigo administered with an enema was ejected, together with fæces, from the mouth in less than fifteen minutes. An exploratory laparotomy was performed, but nothing abnormal could be discovered except a darning needle, which was impacted in the anterior wall of the stomach between serosa and mucosa. The wound healed well, and the vomiting ceased. About thirty-three days after the operation, however, nausea with vomiting of mucus and blood recommenced. Afterwards hard fæces were brought up again. About six weeks after the operation the stomach was washed out, and tepid water containing indigo was injected into the rectum. The patient was carefully watched, so that deception could be excluded, and yet nine minutes after the enema was administered she vomited a fæculent mixture of milk coagula with indigo. A week later some hard fæces wrapped in paper were found under the patient's pillow. The patient left the hospital soon afterwards, and was detected in some tricks at another hospital. She was then lost sight of. Langmann believes that the stercoraceous vomiting was genuine and spontaneous, and could not be brought on by will, and that only after perceiving on what point the medical interest centred did she try to imitate a symptom which had created so much sensation.

SURGERY.

(1) The Early Diagnosis of Laryngeal Cancer and its Treatment.

AT the meeting of the American Laryngological Association recently held in Washington (*Phil. Med. Journ.*, May 5th) a discussion on the early diagnosis and treatment of laryngeal cancer was introduced by John N. Mackenzie, of Johns Hopkins University, Baltimore. He said that leaving out of account the possible existence of a cancer bacillus, there remained three methods of diagnosis - namely: (1) The naked eye, or diagnosis by ocular examination; (2) thyrotomy; and (3) the microscope. The second, of course, was often included in and ancillary to the first. In his opinion it was impossible to exaggerate the importance of examination by the naked eye. It was the most practical of the three methods, and it was unfortunate that it was so often relegated to a subordinate position. Every resource of clinical work should be made use of before recourse was had to the microscope. It, indeed, should be the very last court of appeal. The literature of the day showed that far too little reliance was placed on clinical work, and far too much on the microscope. There was no solitary sign by which they could detect cancer. They must group all the phenomena and form their diagnosis accordingly. But supposing they had weighed all the facts, and a reasonable doubt still existed, would they not then be justified in removing a portion of the growth for the purpose of subjecting it to microscopical examination? In spite of all the authorities to the contrary, he emphatically said "No." The reasons he had for

objecting so strongly to the removal of any part of the affected tissue were that it exposed the patient to autoinfection, stimulated the growth of the cancer if such it proved to be, and often led to misleading conclusions. It was not to forgotten that cancer was an infectious process. He believed that sooner or later its bacillus would be discovered, and that then the disease would cease to be treated surgically, the place of the knife being taken by an antitoxin. Meanwhile the cardinal fact that they had to face was that the surgical treatment of cancer had resulted in failure because the methods had not been sufficiently radical. They had not completely removed the disease. So long as they left the lymphatics to carry infection to other parts they were bound to fail, and after painful experiences he had come to the conclusion that the only hope of success lay in the total extirpation of the organ and also the lymphatics.

(5) Excision of Circumscribed Cancer of Stomach.

Herhold (*Deut. med. Woch.*, February 15th, 1900) repeats Schuchardt's assertion that the surgeon must expect to encounter gastric cancer in three forms—first, as an essentially ulcerating variety with surrounding infiltration; secondly, as an infiltrating variety where there is little ulceration but widespread stiffening of the walls of the stomach, which at the same time shrink at certain points; and lastly, as a true tumour, well-localised and sessile or even pedunculated. Schuchardt finds that the first variety is worse than the first, owing to speedy infection of lymphatics beyond the limits of the stomach, whilst the third is the least malignant and certainly the best for operation and for good after-results. Herhold reports the case of a very cachectic man who consulted him in April last year, giving the usual history of great pain after eating and frequent vomiting. A hard movable tumour of the size of a hen's egg lay somewhat to the right of the middle line, three fingers' breadth below the ribs. Two months later Herhold found it lying to the left of the middle line; the patient admitted that it was very movable. Great and constant local pain with extreme emaciation set in, and the patient implored that an operation be undertaken. On July 29th, after the stomach had been washed out, Herhold made an incision in the middle line at the epigastrium. He found an exceedingly small stomach completely contracted around a tumour of the size of a man's fist. On opening the organ the tumour was found to be attached by a broad base to the middle of the anterior wall. The tumour was excised together with about one-fifth of an inch of the gastric parietes immediately surrounding it. The wound in the stomach was closed with a continuous suture, including the serous coat, and made firmer by several interrupted sutures. Then the abdominal wound was closed. Nutrient enemata were given for a week; no rise of temperature occurred. On November 25th, just four months after the operation, the patient had gained 40 lbs. in weight, and was able to cut wood and perform other manual labour.

(6) Branchial Epithelioma of the Neck.

Vean (*Rev. de Chir.*, March, 1900) describes a special variety of cervical tumour which is characterised: (1) From an etiological point of view, by its appearance at an adult stage of life, and almost exclusively in males; (2) clinically, by intense malignity; (3) anatomically, by its epithelial structure, its situation on one side of the neck, its close contact with the large cervical vessels, and its adherence to the internal jugular vein. The starting point of this growth serves to afford it a special place amongst tumours of the neck. It is not developed at the expense of any of the normal organs of this region, and by most of those who have studied its pathogeny it is regarded as a morbid outgrowth of remnants of the branchial apparatus. Branchial epithelioma, which is not by any means a rare disease, and has been carefully studied by many pathologists, is a deep-seated, firm, and rapidly-growing tumour, situated on one side of the neck, and making its first appearance below the angle of the jaw and above the level of the upper margin of the thyroid cartilage. The growth is, as a rule, freely movable from side to side. It is almost always adherent to the main vascular trunks of the neck, more especially the internal jugular vein, often involves the sterno-mastoid muscle, and only when fully developed and of large size attacks and produces ulceration of the skin. The chief, and often the sole functional symptom is severe pain. Operative interference with the growth is usually found dangerous and difficult, and total removal is often followed by recurrence in the course of one or two months. The chief source of danger in the operation for removal is the almost constant adhesion of the growth to the internal jugular vein. After a careful study of the relative pathogeny of these growths and other forms of malignant growth in the neck, the author arrives at the conclusion that the tumours here described as branchial epitheliomata are developed at the expense of fœtal residues included within the normal structures after obliteration of the branchial clefts. As one of the chief points in favour of this view, the author states that in observations by Cuneo and himself on the evolution of the branchial arches the production and transformation of epithelial *débris* around the internal jugular vein were distinctly proved.

(7) The Surgery of Tuberculous Kidney.

König (*Deut. med. Woch.*, February 15th, 1900) discusses tubercle of the kidney at great length, both as to its pathology and surgery. He distinguishes two forms, tubercle confined to the glandular substance and renal tuberculosis with pyelitis. Diagnosis of the first variety is rarely possible, whilst tuberculous pyelitis can often be distinguished, even when the bacillus tuberculosis cannot be found. On the other hand, clinical symptoms are not always typical, even in undoubted tuberculous pyelitis. Nor is it invariably possible to make sure that the opposite kidney is healthy. Nephrotomy and cystotomy are not the right operations for tuberculous kidney except in rare cases; the only reasonable course is extirpation of the diseased organ. That operation must often be undertaken when it is not possible to make sure beforehand that the pyelitis is tuberculous or the opposite kidney healthy. König goes further, and declares that it will prolong life and make existence tolerable in many cases where the bladder, prostate, and testis, or even the other kidney, are clearly tuberculous.

(8) Blepharitis and Scabies.

Scabies of the palbebral fissure is not a commonly-recognised condition. Raehlmann, however, describes this form of scabies (*Journ. de Méd.*, February 10th, 1900). The acarus seems to affect the ciliary follicles and may thus escape detection. There is considerable blepharitis, accompanied by itching and tingling, along the free border of the eyelids. The eyelashes fall out. There is hyperæmia of the inner marginal zone and of the neighbouring skin. A honey-like secretion covers the border of the eyelids and adheres specially to the point of emergence of the eyelids. There is often a considerable degree of conjunctivitis. The treatment recommended by Raehlmann consists in applying an ointment of Peruvian balsam 2 parts, lanoline 6 parts; or Peruvian balsam 2 parts, lanoline 4 parts, oil of sweet almonds 2 parts. This must be applied every day, and left on for about half an hour. The condition may be cured in four or five days, but the applications ought to be continued for some time.

MIDWIFERY AND DISEASES OF WOMEN.

(9) Uterine Fibroids and Heart Disease.

Chavannaz (*Rev. Mens. de Gyn. Obstét. et Péd.*, March, 1900) in describing a case of fibroid in a woman aged 37, states that she had been subject for eight years to intermenstrual pain; dysmennorrhœa had been present from puberty. At the end of seven years Fieux, of Bordeaux, discovered an interstitial fibroid as big as two fists, sharply bent on the cervix. The os externum barely admitted a surgeon's probe. The patient refused operation, but asked for relief from the dysmenorrhœa. Stomatoplasty was performed and a stem retained. The pains soon returned; nine months after the minor operation panhysterectomy was performed. The pulse was distinctly intermittent, the intermissions occurring several times in a minute. At the operation strong adhesions between the lower bowel and the tumour had to be separated. Owing to alarming symptoms the chloroform was discontinued before the pelvic floor was sutured; the gap between the broad ligaments was

drained. The patient was seen and examined five months later. She was in perfect health; a few attacks of a feeling of deep depression had come on at night, but these were due, in Chavannaz's opinion, to the removal of both ovaries. The pulse had become absolutely regular. He refers to a similar case recently reported by Cauchois, where an irregular pulse became regular after hysterectomy. It was implied in Chavannaz's report, and in the discussion, that the cardiac lesion was organic, but its nature did not transpire.

(10) Panhysterectomy for Cancer of Pregnant Uterus.

LUDWIG (*Centralbl. f. Gynäk.*, No. 14, 1900) operated on a woman aged 40 in the sixth month of her seventh pregnancy. The cervix was in great part destroyed by malignant ulceration, hæmorrhage had been severe, pain slight, and emaciation absent. The uterus was totally extirpated through an abdominal incision. There was some difficulty owing to the right parametrium being invaded by the new growth. At first there was high temperature and a small abscess developed in the parietes, when the pus escaped; afterwards recovery was rapid. Ludwig found an intact ovum in the uterus, but first removed the liquor amnii with a trocar in order to analyse its contents as compared with the contents of the same fluid at term. He found of solid matter 15.5 parts to 1,000 (average at term 10.7 to 16, Kaltenbach), of albumen 5.19 (average at term 1.8, Schröder), of urea 0.53 (average at term 0.16 in hydramnios 0.48, Prochownik, but Fehling detected as much as 4 parts of urea to 1,000 in the tenth month). The high proportion of albumen was noteworthy.

(11) Decidnoma Malignum: Pulmonary Symptoms.

PEHAM (*Centralbl. f. Gynäk.*, No. 14, 1900) removed a uterus from a woman aged 25. In March, 1899, she aborted; free hæmorrhages followed, and continued till the operation on October 9th, 1899. At that date the uterus was bulky, anteflexed, and quite movable. The cervix admitted the forefinger, which could reach a raw area as big as a half-crown towards the left cornu. A piece of the diseased tissue was excised, and the appearances of chorionic epithelioma detected; on that account the uterus was removed. Severe flooding set in on November 4th, just within a month after the operation; it was traced to a metastatic deposit on the anterior vaginal wall. A few days later hæmoptysis occurred, and since then there has been free expectoration of blood-stained sputum, in which no tumour substance could be detected. The physical signs indicated metastasis. In the substance of the uterine tumour (which was a vascular mass 1¾ inch in diameter) both syncytial cells and groups of the cells of Langhans's layer were detected. The vaginal metastases showed the same elements. Marchand found the two types of cell in pulmonary deposits in a similar case.

(12) Pessaries and Uterine Cancer.

MORESTIN (*Bull. et Mém. de la Soc. Anat. de Paris*, March, 1900) reports an instructive case of a patient who underwent a great deal of gynæcological treatment within ten years. When 34 a cystic tumour of the right ovary was removed. She recovered, a hernia developed in the cicatrix, and troublesome bearing-down pains set in. The uterus became slightly prolapsed. A red-rubber ring pessary was introduced, and gave relief, but the patient seemed to neglect all precautions as to cleanliness, and the instrument was not removed for years. For a few months she was troubled with a free sanious vaginal discharge. Morestin found a firm bleeding mass, shaped like the clapper of a bell, in the vagina. This mass was a hypertrophied, cancerous posterior lip of the cervix. It fitted in the aperture of the pessary, which was covered with old deposit. The uterus was the seat of myoma. It was removed by vaginal hysterectomy; *morcellement* was practised. The patient recovered from the operation. The cancer and the myoma were coincidences no doubt; but the prolonged local irritation caused by the pessary may have been the cause of the malignant disease, and certainly aggravated it when it had developed.

THERAPEUTICS.

(13) Monomethyl-xanthine.

ALBANESE (*Arch. Ital. de Biol.*, Tome xxxii, Fasc. 3, 1899) has obtained monomethyl-xanthine from the urine of dogs, excreted during the administration of caffeine, in sufficient quantities to study its physiological action. It occurs normally in dogs' and human urine, but in very small quantities, 1,000 litres of human urine containing only 1 gram. It is closely allied to theobromine and caffeine, as the following formulæ will show: Xanthine $C_5H_4N_4O_2$, monomethyl-xanthine $C_5H_3(CH_3)N_4O_2$, theobromine $C_5H_2(CH_3)_2N_4O_2$, caffeine $C_5H(CH_3)_3N_4O_2$. Extracted from the urine of caffeinised dogs it occurs as brilliant crystalline needles, which are insoluble in ether, almost insoluble in cold absolute alcohol, slightly soluble in cold water, easily soluble in hot. It is readily soluble in solutions of ammonia and other alkalies. It furnishes a hydrochlorate, which rapidly decomposes in water. In its physiological action, as would be expected from its chemical constitution, it occupies a position between the higher methylated xanthines and xanthine. In the frog, caffeine, the highest of the series, has two distinct actions—one on the spinal cord, through which, like strychnine, it produces true tetanic convulsions; the other on the muscles, which become rigid, as in rigor mortis, independently of the nervous system. Theobromine causes still greater muscular rigidity, but affects the spinal cord less than caffeine. In monomethyl-xanthine this difference is accentuated, so that while in rana esculenta a few tetanic contractions may take place, in rana temporaria there is only muscular rigidity. Xanthine itself produces muscular rigidity, but has no action on the spinal cord. In mammals, monomethyl-xanthine in large doses produces clonic and tonic convulsions, and arrests the respiration while the heart continues to beat. It has a much less powerful action on the heart than caffeine. Thus while caffeine in moderately large doses lowers the blood pressure, and causes irreguiarity of the pulse, a condition resembling the last stage, when digitalis is pressed, monomethyl-xanthine, even in very large doses, never produces cardiac irregularity, though the pulse-rate is increased and the blood pressure rises; in other words, large doses of monomethyl-xanthine produce the same effect on the circulation as small doses of caffeine. The most striking result of the administration of monomethyl-xanthine to rabbits is an abundant diuresis, the quantity of urine being often raised to more than ninety times the original amount. This diuresis is not observed in cats or dogs, and in this monomethyl-xanthine resembles caffeine and theobromine. The diuretic action of the series also accords with their chemical constitution. Thus caffeine is the feeblest diuretic, theobromine is more powerful, and monomethyl-xanthine more powerful still. No researches have been made as to the diuretic action of xanthine, but *a priori* it should be very energetic. The diuretic property of theobromine has already been utilised in practice. Combined with salicylate of sodium it forms the soluble "diuretin," which is superior to caffeine as a diuretic, and less dangerous, because the tetanic element is less marked. For the same reasons, and also because the fatal dose is much higher, monomethyl-xanthine should be preferred to theobromine, at any rate theoretically. Its disadvantages are its slight solubility and the method of preparation.

(14) The Feeding of Infants.

KELLER (*Centralbl. f. inn. Med.*, April 21st, 1900) opposes the old view that infants in the first year of life should be fed every two hours. Luckily very few mothers actually feed their children so often, unless they are ill. In the Breslau Children's Clinic no infant, whether healthy or diseased, receives more than five feeds in the twenty-four hours, the intervals between each being four to five hours. The results as regards nutrition are excellent, and the children soon become contented and used to the new regimen. Some experiments of Keller's showed that the absorption and retention of nitrogen and phosphorus, and therefore the assimilation of albumens, were uninfluenced by the length of the intervals, whether two or four hours, between the feeds. He interprets this to mean not that the length of the intervals is immaterial, but that rules for feeding infants should be made almost exclusively from clinical observation. In foundling hospitals and large institutions there is always more illness if the shorter intervals are the rule than when longer ones are adopted. Czerny found that neither the fact that the stomach was empty, nor that it was

possible to make the child suck were any indications for the giving of nourishment. The healthy stomach of a breast-fed infant is empty one and a half to two hours after a feed, but free HCl is not found till one and a quarter hour later. In an infant fed on cow's milk under physiological conditions three hours at least are required for the emptying of the stomach and two more for the appearance of free HCl. Czerny therefore fixes the minimum interval between the feeds at three hours for breast and four hours for bottle-babies. If the stomach is constantly overloaded the reaction, showing free HCl, and the motor function both decrease. In disease remnants are found in the stomach four or even five hours after a feed, and no free HCl can be detected. This proves that a certain time during which the stomach is empty is even more necessary for an ailing child than for a healthy, if the gastric motor and secretory functions are to be maintained. Although little importance is now attributed to gastric digestion, Pavlow's researches have proved that the excretion and composition of gastric juice influences the properties of all the other digestive excretions. It is therefore evident to what an extent digestion and assimilation are inhibited, when, two hours after a feed, fresh nourishment is introduced into the stomach of an ailing infant in which no free hydrochloric acid is present.

(15) Galvanism in the Treatment of Furunculosis.

Langmann (*N. Y. Med. Journ.*, June 2nd) has since 1881 treated furunculosis by the application of the galvanic current. His method is as follows: The cathode, exhibiting more intense reaction upon the tissue, is placed upon the furuncle; the anode somewhere in the neighbourhood, and a current of about 2 to 5 milliamperes is applied for from five to ten minutes. As a rule, one sitting daily is sufficient. The intensity of the current ought to vary both with the stage of development of the boil (the earlier stages being more sensitive), and with individual sensitiveness. Whoever has no galvanometer on his battery may regulate the current according to the sensations of the patient; the feeling of a lively sting, entering, as it were, the centre of the boil, just enough to be tolerated, indicates about the proper strength of the current. After having subjected to this treatment during these 19 years more than a hundred different cases of furunculosis, including all stages and types from a slight boil to an almost well-developed carbuncle, he feels entitled to say that all furuncles when treated in their incipiency dry up (abort). When a yellow pustule has formed around the central hair this little mass of pus is extruded, but no suppuration follows. Even when fluctuation is present the core is soon thrust out, pus escapes through the central hole, but the suppuration is insignificant, and the whole swelling quickly disappears, with or without antiseptic dressing. Whenever there is extensive suppuration he places a flat pledget of cotton soaked in 1-1,000 sublimate solution between the sponge and the skin. Whether this powerful antiseptic has a beneficial effect by cataphoric action or not he leaves undecided; those who have great confidence in cataphoresis may use it on all boils. Under such treatment some boils disappear after one or two applications, others require as many as eight; on the average four or five sittings terminate their existence. He did not have the chance during these years to encounter a regular malignant carbuncle, but he would not hesitate to treat it in the same way. Large furuncles with five or six pustules have yielded to the treatment as well as smaller ones. A well-known fact of the cathode is evident directly after its application—namely, the anæsthetisation. Patients, without being questioned, volunteer the assertion that they feel much easier around their boil, and this effect seems not to be transient; it lasts for a long time, perhaps a whole day. Whether faradisation may bring on the same or a similar result as the galvanic current he is unable to say. The electrolytic action of the induced current is decidedly weaker; its extended application, however, may have the same effect as that of galvanism. The minor satellites of the principal boil were either covered with the same electrode or left to themselves. They always aborted, and he has never seen a relapse within the following months.

(16) Artificial Carbonic Acid Baths.

Pajor (*Pester med-chir. Presse*, December 17th, 1899) recommends a simple apparatus, manufactured by Wagner and Co., Vienna and Buda-Pesth, for the preparation of carbonic acid bath. CO_2 is liquefied and stored in metal cylinders under pressure. Cold water under a pressure of one atmosphere is conducted by a pipe into an iron cylinder where the stream is divided into a fine spray. Into this cylinder the liquid CO_2 is also conducted and combines so intimately with the small particles of water that in a bath at 90·5° F. every litre contains about 2,000 c.cm. of CO_2, which agrees closely with the amount present in the strongest natural springs containing CO_2. Sufficient hot water is added to the bath to raise it to 90·5° F. while the cold carbonic acid containing water is flowing in. The pressure in ordinary supply pipes is usually sufficient for the cold spray, but if it is not a pressure of one atmosphere is obtained by pumping or from a cistern 10 metres above the bath. A carbonic acid bath thus prepared has great advantages over one prepared with bicarbonate of sodium and hydrochloric or sulphuric acids. The CO_2 is evenly distributed, and the quantity present is maintained uniformly until the end of the bath, just as when natural carbonic acid spring water is used. There is also no danger of damaging the skin, as is the case when acids are added to the water after the patient has entered the bath. For excitable or extremely neurasthenic patients or for cardiac cases weaker baths may be obtained by introducing the liquid CO_2 into the cylinder at a less pressure, for instance, half an atmosphere.

PATHOLOGY.

(17) Proteus Vulgaris and the Serum Reaction.

Rodella (*Centralbl. f. Bakt.*, May 4th, 1900) has conducted an experimental investigation on this subject. The animals were inoculated subcutaneously and intraperitoneally with ½ to 1 c.cm. of a two days' old culture in broth, or of sterile broth to which a portion of a two days' old agar culture had been added. For studying agglutination a 14 to 24 hours' old agar culture mixed with broth was used; the blood was obtained from the ear of the inoculated animals. With a 1 in 60 dilution a positive result was usually obtained in a quarter of an hour, with a 1 in 5,000 to 10,000 dilution in an hour and a quarter to two hours. The results are summarised as follows: (1) Power of agglutination was produced by injection of virulent cultures, or of the filtrate, or of cultures killed by heat. (2) This was also conferred by repeated feeding of guinea-pigs with cultures. (3) The blood of newborn guinea-pigs was agglutinative in two cases where the mothers had been inoculated 20 and 39 days before birth with a virulent culture. In one case where the mother was inoculated 10 days before birth the result was negative. (4) The milk of guinea-pigs whose young gave a positive result was also agglutinative. (5) The agglutination of proteus in the experiments described is specific.

(18) Mixed Infection in Pulmonary Tuberculosis.

Sata (*Beiträge zur pathol. Anat., Supplm.*, No. 3) has published the results of the examination of 21 cases of phthisis with reference to the question of mixed infection. The bacteria which in the course of the tuberculous process find their way into the lungs are first contained in the cavities, and then pass into the walls of the latter, and produce in association with the tubercle bacillus pneumonia, toxæmia, and septicæmia. Broncho-pneumonia results from the aspiration of the contents of the cavities into healthy lung tissue. Pneumonia is the principal result of mixed infection, and examination will show the secondary bacteria to be present in large numbers and in the walls and pneumonic surroundings of the cavities. Secondary broncho-pneumonia is in the first instance due to the tubercle bacillus, but the foci eventually contain other bacteria. The most advanced cases of phthisis are examples of mixed infection, and most of the pathological changes present are due to the latter. Clinically the condition can be deduced from the presence of fever. The most important bacteria in question are streptococcus pyogenes, staphylococcus pyogenes aureus, diplococcus pneumoniæ, pneumo-bacillus and its varieties, and a pseudo-diphtheria bacillus pulmonaris often found by Sata.

AN EPITOME

OF

CURRENT MEDICAL LITERATURE.

MEDICINE

(19) The Prognosis in Diabetes.

F. HIRSCHFELD (*Berl. klin. Woch.*, June 18th and 25th, 1900) has collected the views of the chief modern writers upon this subject, and supplements them by the results of his own experience. All agree that the variability of the functional disorder in diabetes is so great that the prognosis in the milder form is considerably more favourable than has hitherto been held to be the case. According to the author, a relative cure—urine free from sugar on a diet containing 200 grams of carbohydrate a day—is to be anticipated if at the onset of the disease 80 to 85 per cent. of the carbohydrate consumed is completely burnt up in the body. He has observed the carbohydrate assimilation to retrogress after influenza, after attacks of colic (? pancreatic), and particularly on the supervention of boils or gangrene. He states that an increase in the glycosuria is often indicated by an increase in the amount of urine, while an improvement is accompanied by a decrease. Not infrequently a rapid increase in the body weight is associated with more glycosuria, which subsides upon stricter dieting. The cardiac weakness, which is a frequent complication, is favourably influenced by an antidiabetic diet—diminution of, if not complete abstention from, carbohydrates.

(20) Pulmonary Rheumatism.

RENDU describes a cases of what has been termed "pulmonary rheumatism" (*Journ. de Méd.*, May 10th). A young girl was admitted into hospital under his care with very marked pulmonary symptoms which closely simulated pneumonia in some respects. There is in such cases no initial rigor nor vomiting, while cough and expectoration are usually absent. There is, however, very intense dyspnœa, respiration being very rapid. There is considerable joint affection in the majority of these cases previous to the pulmonary symptoms, which latter come on as rapidly as does the arthritis. There seems to be on examination some superficial congestion of the lung without any evidence of pleural involvement. Breath sounds are somewhat harsh, and may even become tubular, but no *rales* appear. Percussion note is somewhat impaired. These signs may change from one part of the lung to another with considerable rapidity. In severe cases very grave conditions may show themselves in a short time ending with asphyxia. It is chiefly in the more severe cases of acute rheumatism that such pulmonary complications are observed. After a certain amount of resolution the symptoms may all return in the course of a few hours. The duration of these cases is as a rule from fifteen to twenty days, but occasionally may be prolonged from four to five weeks. The author does not find that salicylates are very advantageous; antipyrin seems to have a better effect from its sedative action on the nervous system. The drugs that are most strongly recommended are opium and digitalis combined. The former seems to reduce the depressing dyspnœa, while the latter acts as a cardiac tonic. Their administration, however, ought not to be prolonged beyond two or three days. The writer strongly recommends dry cupping, and also states that bleeding is the surest and best way to reduce the intense dyspnœa and the rapid spread of the signs through the lungs.

(21) The Diazo-reaction as an Aid to Prognosis in Tuberculosis.

MICHAELIS (*Berl. klin. Woch.*, March 26th, 1900) finds that the diazo-reaction of Ehrlich is of value as a prognostic indication in cases of pulmonary tuberculosis, and that when the reaction is present it renders the prognosis grave. From a large number of observations made on phthisical patients he has found that in 167 cases of the disease 111 gave a positive diazo-reaction and 56 gave no reaction. Of the latter class 5 patients were cured, 44 improved, 5 were unchanged, and 3 died. In the group of cases which gave the diazo-reaction the mortality was greater and the improvement smaller. Thus of 111 patients 30 died, 13 were not improved, and 15 were improved, while none were cured.

(22) Ungual Striation.

TREVES (*Giorn. dell' Acad. de Med. di Torino*, April, 1900), after examining the nails of some 800 persons, mostly mental cases, finds clear evidence that in addition to the transverse striations found in the nails after illnesses, there is peculiarly abundant and regular transverse striation which may be observed after attacks of periodic mental trouble. It is in psychoses of the periodic type that this transverse striation is especially well marked.

(23) Family Periodic Paralysis.

PUTNAM records the following case (*Amer. Journ. of Med. Sci.*, February, 1900). A young man, aged 24, of good health and unusual muscular development, and having a rather nervous temperament, was first attacked, when he was 14 years of age, with a peculiar form of paralysis. The attacks generally occur on Sunday or Monday, at intervals; the onset is generally rapid, the patient going to bed in his usual health, and waking in the morning unable to move hand or foot, though premonitory signs may be present in the form of a slight tendency to toe drop. It was noticed, also, that he was inclined to irritability a day or so before the attack. In the severer seizures the paralysis is so complete that the patient can hardly move any of his muscles excepting those of the lips and eyes. He is unable to raise his head if it slips off the pillow; there is no alteration of sensation. In less severe attacks the limbs feel heavy and difficult to move. The attacks last from a few hours to two or three days, but it may be a week or so before the muscles completely recover their power. The disorder seems to begin distally, the dorsal flexion of the foot being the first to go. The patient himself is under the impression that any set of muscles recently subjected to severe effort are the first to manifest any weakness. The paralysis usually comes on during the night, and when the attack is at its height the movements of the limbs nearest the trunk were the most impaired. The knee-jerks are absent, and the abdominal and plantar reflexes cannot be obtained. There is no response in the larger muscles to faradism, but the interossei respond to strong currents. In the interval between attacks, electrical actions are normal the reflexes are present, in fact, no abnormality can be ascertained. The only predisposing factor seems to be taking an unusual heavy meal. Similar cases have been recorded by Taylor, Mitchell, and others, who describe cases of recurring paralysis, and often met with in several members of the same family. These writers are inclined to look upon this disease as due to an auto-intoxication acting in a somehat similar manner to curare; in fact, the resemblance is very strong between the two conditions. Reference is also made to the analogies between periodic palsy and migraine.

SURGERY.

(24) Auto-infection in Cases of Hydatid Cysts.

A QUESTION of some interest with regard to the clinical history of hydatid cysts has recently been discussed at the Société de Chirurgie de Paris (*Bull. et Mém.*, Nos. 9, 10, 11, 1900). Peyrot, in communicating a case of extensive multiple development of hydatids in the omentum and the walls of the pelvic cavity following a rupture of a large hydatid cyst of the liver, expressed the opinion that this was an instance of invasion of the peritoneum by hydatids resulting from rupture of the primary and hepatic cyst. As a necessary condition of such infection the effused fluid, it was held, must contain scolices. Potherat, in the course of the discussion on this paper, opposed this view, which he regarded as a zoological heresy. A hydatid cyst, this surgeon asserts, cannot either by its fluid, its daughter cysts, or its scolices, reproduce a cyst of a like kind, such cyst being an intermediate stage in the evolution of the tænia echinococcus. When in the same subject there exist either in the same organ or in different viscera, or on the surface of a serous lining, multiple hydatid cysts, then, according to Potherat, these multiple cysts are to be regarded as diffused manifestations of a single or repeated invasions of the embryos, and not as inoculations of the contents of the primary cyst. Potherat's statement, however, was generally controverted by

subsequent speakers, amongst whom were Quénu, Broca, and Tuffier, and strong clinical evidence was given in favour of the view that daughter vesicles from a ruptured hydatid cyst may become engrafted in other structures, and by subsequent growth may form secondary hydatid growths.

(25) Meckel's Diverticulum; Fatal Obstruction.

Schmidt (*Deut. Zeit. f. Chir.*, vol. liv., December, 1899) in a valuable monograph on Meckel's diverticulum and ileus, relates a new case. A girl, aged 15, had been subject in infancy to discharge from the navel. When 6 an attack of obstruction occurred. For four weeks, when seen by Schmidt, a worse attack had been in progress. A lumbricus was discharged through the umbilicus, and the vomit was fæcal. The obstruction was incomplete, and irregular in severity; the patient was reduced to a skeleton. Schmidt operated, extirpating the umbilicus; then he discovered a diverticulum as thick as a lead pencil and quite viable. It ran into intestine, a half loop as it were; the other part of the loop could not be found, and the half loop was quite empty, yet surrounded with greatly dilated intestine. Several adherent loops were exposed; in a gentle attempt to separate them the intestinal wall was torn, and fæces escaped. The rent was sewn up and the wound closed; the diverticulum had been ligatured. The patient died within twenty-four hours. At the necropsy it was, as in many such cases, impossible to define the nature of the obstruction with accuracy; so the lower part of the ileum, cæcum, and ascending colon were taken away and dissected at leisure. The vermiform appendix was found to coil round an almost empty loop of intestine posteriorly. The lower half of the loop was the end of the ileum entering the cæcum. The upper half included the point on the ileum where the diverticulum entered. Three inches and a half higher up the loop ended at a point where the ileum was sharply kinked, chiefly by the end of the vermiform appendix, which adhered to it posteriorly and internally. The ileum, held against the umbilicus by its diverticulum, had become sharply coiled between the diverticulum and the colon; this had caused adhesive peritonitis and obstruction at the root of the coil. The adhesion of the vermiform appendix was no doubt secondary, and not the cause of the kinking of the gut. The hole made by the operator's fingers lay in the dilated intestine immediately above the obstruction.

(26) Treatment of Complicated Fracture of the Neck of the Humerus.

Farquhar Curtis (*Annals of Surgery*, March, 1900) reports three cases of fracture of the neck of the humerus with dislocation of the upper fragment, treated by operation. Careful consideration, based on his own and previously recorded cases of the relative merits of reduction, has led the author to the following conclusions: (1) In fracture of the upper end of the humerus with displacement of the upper fragment from the glenoid cavity, when proper attempts at simple reduction under general anæsthesia have failed, operative measures should be resorted to unless shock, other injuries, or extensive damage to the soft parts about the shoulder justify delay; (2) anterior displacements require an anterior incision, subglenoid or posterior displacements require a posterior incision, probably by Kocher's method; (3) the head of the humerus should, if it be possible, be restored to its place, and resection should be resorted to only when reduction is impossible or likely to cause such extensive damage to the parts, or such prolongation of the operation, as to increase the risks of wound infection or of shock; (4) resection will probably give a better result in fracture of the anatomical than in that of the surgical neck of the humerus, but reduction is to be preferred in both cases; (5) asepsis is an indispensable requirement for a good functional result, and operative interference in this class of injuries should not be undertaken except under aseptic conditions; (6) motion should be begun in the joint as soon as the wound has healed—in ten to fourteen days after the operation.

(27) Treatment of Unreduced Dislocation of the Elbow.

Loison (*Rev. d' Orthopédie*, No. 2, 1900) reports two cases of old unreduced dislocation of the elbow, in which he removed the lower end of the humerus. In his comments on these cases, the author states that in instances of long-standing displacement of the bones after backward dislocation of the ulna and radius at the elbow, no treatment short of osseous resection can have any good results. Passive movement, massage, subcutaneous section of fibrous adhesions, and even arthrotomy will usually fail in consequence of the development of ossifying periarthritis and the formation of osteophytes both in connection with the bones of the joints and as detached bodies in the surrounding muscles. The author holds that in such cases partial resection is indicated, and he agrees with Ollier that the best course to pursue is to remove the lower extremity of the humerus, and to leave intact the upper extremity of the ulna with the olecranon, and so to preserve the attachments of the biceps and brachialis anticus muscles. This operation, it is pointed out, is attended with some difficulty by reason of the irregularity of the displaced bones, and of the presence of osteophytic growths. The method of resection practised in the author's cases was that of a single cortical incision on the posterior surface of the limb carried through the triceps tendon and the median line of the olecranon.

(28) Umbilical Hernia: Operation on Newborn Child.

Kessel (New York *Med. Record*, March 3rd, 1900) adds a case to the two already recorded by Coley (*Ibid.*, November 4th, 1899; both cases operated upon about twenty-four hours after birth, both survived operation). In Kessel's patient the coils of intestine and liver could be seen clearly through the transparent membranes of the cord. Apparently all the abdominal viscera were in the tumour, which was as large as the child's head. The contents could be easily reduced. The umbilical ring was at once cut through, and the raw edges united with silk. The infant died during the night. Kessel concludes that death was due to the pressure of the reduced viscera in the abdominal cavity, which was too small to hold them. He observed, before operating, that every time that he reduced the hernia the pulse weakened, and grew strong directly he relaxed the pressure.

MIDWIFERY AND DISEASES OF WOMEN.

(23) Puerperal Gangrene of Uterus.

Beckmann (*Zeits. f. Geb. u. Gynäk.*, vol. xlii, 1900) insists that the so-called "metritis dissecans" should be given the name which really explains it—"puerperal gangrene of the uterus." It is much more frequent than is suspected by living authorities, and, owing to the perfection of antiseptic and aseptic treatment in public lying-in establishments it is commoner in private practice where such treatment is not so easy to carry out. Beckmann declares that diagnosis is easy, though our teachers say the contrary. The uterus enlarges from the beginning, and involution is completely checked. The discharge is characteristic, and so is the temperature range. Prognosis depends much upon the degree of infection, and complications of which the most essentially fatal is perforation of the uterine wall. The mortality is 27.5 per cent. Uncomplicated cases usually recover. Restoration of uterine function depends much upon the amount of necrosis of tissue before the advance of the disease is checked. The endometrium is rarely regenerated, and if so, it is renewed from relics deep in the uterine wall. Puerperal gangrene is due to streptococcus infection. The germs run deeply and widely along the blood vessels and lymphatics and cause extensive thrombosis. It is this pathological change which causes the gangrene of uterine tissue. The gangrene in fatal cases proceeds unlimited, in milder cases demarcation occurs, and suppuration along the limiting line causes the expulsion of the sloughy tissue. Beckmann notes that in no less than 52 per cent. of all the cases which he has collected some obstetric operative measure had been undertaken before the complication occurred. Lingering labour is frequently associated with puerperal gangrene. Enteric fever certainly predisposes to it. In the parts of the uterine wall which escape necrosis Beckmann detected vacuolation of the muscle cells. As to treatment he emphatically states that intrauterine injections are contraindicated.

(30) Calcium Carbide in Inoperable Carcinoma of the Uterus.

GRUSDEW of St. Petersburg (*Münch. med. Woch.*, June 12th, 1900) has employed calcium carbide in a number of cases of inoperable uterine cancer. Guinard was the first to introduce the treatment and to recognise that the effect is produced by the disinfectant action of acetylene and the caustic action of the lime, which are produced when calcium carbide comes in contact with water, according to the formula, $CaC_2 + H_2O = C_2H_2 + CaO$. The patient is placed in the lithotomy position, the vulva and vagina are disinfected, the cervix is exposed with a Simon's or Cusco's speculum, and the vaginal walls and the surface of the tumour are dried with cotton wool. One or two fragments of calcium carbide are then placed on the surface of the tumour by means of dry forceps, and are kept in place by a tampon, which is so arranged as to protect as much as possible the healthy parts of the vagina from the caustic action of the lime. The fragments of carbide are selected so as to correspond in shape to the surface of the growth, a pointed conical piece for a crateriform ulceration, and a plate-shaped piece for a superficial ulcer. The patient can then go about her work. In one to three days' time the tampon is removed, and a douche of carbolic acid or perchloride of mercury is given to remove any necrotic masses of growth and fragments of lime. According to the condition of the ulcerated surface the procedure may be repeated at once, or not until the symptoms (hæmorrhage, etc.) recur. The calcium carbide may also be applied in powder form through a vulcanite insufflator. After a single application all ragged, easily bleeding excrescences are destroyed, and there remains a clean wound, which generally does not bleed, or bleeds very slightly, and gives rise to very little secretion. Hæmorrhage, the most dangerous symptom of advanced carcinoma, is always arrested, however obstinate or of long standing it may have been. During the actual treatment the fœtid discharge generally increases, but soon after the removal of the tampon it diminishes and loses its intolerable odour. In many cases the pain is alleviated or removed, though this anæsthetic action of the carbide is not always obtained. After a week or perhaps longer the symptoms gradually return and the treatment requires repetition. Though the results are less permanent than those obtained by operative measures, such as scraping the growth with a sharp spoon and cauterising it with the thermo-cautery or bromine, the simplicity of the procedure makes it unrivalled under certain conditions; for instance, in outpatient work, and in practice when assistance or instruments are unobtainable. In Grusdew's experience the treatment is devoid of danger and painless, though some French gynæcologists have reported cases where it was painful. In one case the acetylene is said to have been developed so suddenly that it exploded and blew the speculum out of the vagina; the patient fainted, but was otherwise unharmed. In other cases the acetylene has forced its way through the uterus and tubes into the peritoneal cavity and caused violent abdominal pain. These accidents can be avoided (1) by well drying the vagina so that the acetylene is not developed too suddenly, and (2) by not plugging so tightly as to prevent the escape of the gas *per vaginam*. The writer never observed diarrhœa or other symptom of general calcium carbide poisoning.

(31) Preventive Gynæcology.

R. R. SMITH (*Amer. Journ. Obst.*, xli, 632, May, 1900), summarises the various possibilities of preventive gynæcology under the five headings of care of the woman before marriage, during gestation and labour, and during the climacteric, prevention of gonorrhœa and syphilis, and prevention of carcinoma. With regard to the two last named: carcinoma is to be prevented by the repair of all tears of the cervix occurring about middle life, and gonorrhœa and syphilis by the diffusion of a knowledge of the risks run when a woman marries a man of loose habits. The care of the woman before marriage includes the making of a physical examination in all cases of persistent or severe pain at or between menstrual periods and of protracted amenorrhœa without constitutional cause, also when there is menorrhagia without evident cause. At puberty the girl ought to have explained to her by her mother the fundamental facts of her reproductive functions. Care in pregnancy of course includes the examination of the urine. In labour surgical cleanliness is a *sine qua non*: a judicious use of the forceps may be a most useful means of preventing future gynæcological mischief. Tears should be repaired. The woman should be examined three months after labour. Minor pelvic surgery is the conservative gynæcology of to-day; when this is recognised there will be less major or abdominal surgery.

(32) Amniotic Knot on the Umbilical Cord.

COUVELAIRE (*Bull. et Mém. Soc. Anat. de Paris*, 6 s., ii., 282, 1900) describes a remarkable case in which an amniotic band passed from one part of the membranes to the other and in its passage was twisted thrice round the umbilical cord and in addition formed a knot on it in the third twist. The pregnancy, which was normal, was the seventh that the mother had had, but the labour came on prematurely about three weeks before it was expected. The infant was a male, weighing 3,850 grams; no fœtal heart was heard during labour and the infant had the appearance of being recently dead; *post mortem* no naked-eye lesions could be found. The placenta was circular and to the naked eye normal, but the membranous sac was incomplete, only half of the placental border giving attachment to a large piece of membranes from which a thin cord-like structure passed to another piece of membranes. The thin cord-like structure was composed of amnion alone and was more that 23 cms. in length. It had the relation to the umbilical cord mentioned above; it surrounded it thrice and formed a knot on it. The umbilical cord was 51 cms. long, very thick and œdematous save at the constricted point, where it had a diameter of only 7 mms. Through the constriction in the umbilical vein thus produced water could be driven, but only with the use of much force.

THERAPEUTICS.

(33) The Bath Treatment of Typhoid Fever.

BÄUMLER (*Sonderabdr. aus deut. Archiv f. klin. Med.*) gives the results obtained in 1,019 cases of typhoid fever by the cold-bath treatment in the medical clinic of Freiburg-in-Breslau. The mortality, which was 9.32 per cent.—or, excluding cases which were moribund on admission, 7.9 per cent.—contrasts favourably with Sidney Phillips's estimate, made in 1898, that the average death-rate from typhoid fever was still 18 per cent. (BRITISH MEDICAL JOURNAL, vol. ii, pp. 1485 and 1492). Baths act not so much by lowering the temperature as by improving general nutrition through the circulation and nervous system. In a similar case it is rarely possible to lessen the temperature by more than a daily average of 0.7° F. Several factors, however, influence the circulation: the peripheral vessels contract; the difference between the arterial and venous blood pressure, on which depends the rate of flow in the vessels, is accentuated, and the heart is stimulated mechanically: at the same time the respirations become deeper. For any permanent benefit to be obtained it is essential that the baths should be repeated frequently, so that the flow of blood from the peripheral to the central parts and from the central to the peripheral continues uninterruptedly. It is an open question whether the bath treatment has any influence on the mortality from intestinal perforation, and on the mortality from hæmorrhage it has almost certainly none. Apart from intestinal lesions the greater number of deaths (27.3 per cent.) were due to pulmonary complications, though bronchial catarrh was certainly less common than in cases treated without baths. The reason for this is that, owing to the comparatively good general condition of the patient, descending tracheo-bronchitis from the inhalation of infected material from the upper air passages—and this is the commonest cause of bronchial catarrh in typhoid fever—is avoided. It is most important to give the patient a drink of water after every feed in order to remove any remnants of milk or other decomposable material. As a rule the heart stands repeated baths excellently, and they are not generally contraindicated in cases complicated by nervous tachycardia, or by a rapid pulse due to pulmonary changes (emphysema, fibrosis, or chronic bronchitis) even when accompanied by great cyanosis. The same is

true of cases complicated by anæmia and fatty degeneration of the heart, though naturally caution is necessary. Practically, then, the only contraindications are abdominal pain and collapse, and when peritonitis, perforation, or hæmorrhage are suspected. The actual technique used at Freiburg is as follows: Whenever the temperature in the axilla reaches 103° F., a bath at from 82.4° to 75.2° is given. The patient remains in it with his head resting on an air cushion until he begins to feel cold, generally from 8 to 10 minutes, the skin, especially over the extremities, being rubbed constantly. After the bath he is wrapped in a dry sheet and covered with blankets; a hot-water bottle is placed at the feet. Some wine is given before the bath, and immediately after it more wine and hot soup. If there is great mental dulness, delirium, or pulmonary catarrh with atelectasis or broncho-pneumonia, cold water at 50° to 59° F. is poured over the patient for a short time at the end of each bath. Whenever possible, one bath should be given during the night. If the first bath is well borne, and the patient's strength is maintained, the temperature of the baths is soon reduced to 68° F. The diet should be liquid, and not too much alcohol should be given; large quantities relax the arteries and have the same action as the typhoid toxins. When there is great cardiac weakness, camphor is very useful and ammonia may be tried. Antipyretic drugs are only harmful. The patient should be made to drink large quantities of fresh cold water all through the illness.

(34) The Medicinal Treatment of Heart Disease.

Franz Dorn (*Berliner Klinik*, June, 1900) calls attention to the fact that the modern treatment of cardiac disease is so largely physical and dietetic that the study of the appropriate drugs has fallen somewhat into the background. He details the remedies used in Mendelssohn's clinic and their particular indications. In palpitation from mere nervous excitability cold-water bandages or icebags are not always effectual; in such circumstances a combination of valerian with sodium bromide is recommended. Not infrequently actual valvular disease is complicated by this heightened excitability, which may act unfavourably upon compensation; for this the author also gives valerian with aqua laurocerasi, belladonna, or bitter almonds. In mild cases of valvular disease an infusion of the leaves of nerium oleandri may be used as a substitute for digitalis; it is claimed that this quiets the heart and diminishes the pulse frequency, while at the same time it is very well borne. It is particularly indicated in the early stages of compensatory failure; later on digitalis is indispensable, and is, according to Dorn, best given as Traube recommended—that is, with quinine. The latter appears to exert a favourable influence upon the subjective symptoms. Where, however, these—for example, paroxysmal dyspnœa—are not so easily kept under, narcotics should be used; the author strongly advocates a hypodermic injection of morphine in the evening to ensure a good night. Where the kidneys are affected sulphonal or trional must be substituted. In the special dyspnœa of aortic valvular disease, with its wearing cough, the author advocates the administration of heroin, or, if that is not satisfactory, codein. He treats dropsy by a diuretic mixture containing digitalis, strophanthus, citrate of caffein, acetate of potash, and liquorice; he has sometimes found diuretin of great value in combination with one or other of these drugs. In chronic myocarditis and fatty heart—most cases of which he believes to arise from alcoholic excess—Dorn advises regulation of the diet, rubbing with cold, and spirituous applications, and the administration of quinine and iron. Where these fail the tone can often be restored by the nerium infusion mentioned above.

(35) The Dilution of Milk for Infants.

Bonifas (*Prog. Méd.*, February 24th, 1900) protests against the dilution of cow's milk in bottle-fed infants, because (1) the dilution, *pari passu*, weakens the digestive functions; (2) the added water demands an increased water-absorption by the stomach, and thus leads to early fatigue of the organ, whilst at the same time it acts as an irritant to the gastric mucous membrane; (3) the increased volume of fluid necessary for adequate nutrition causes digestive disturbances, and leads to gastro-intestinal dilatation and flatulence. Admitting that the best infant's food is the mother's milk, the writer holds that cow's milk approaches the relative composition of human milk very nearly, whilst the dilution of cow's milk tends not to approximate, but to entirely alter, its likeness to "mother's milk." To take one of the cases cited: A child, healthy at birth, was fed upon milk diluted with half water. The appetite was soon lost, and when two weeks old there was vomiting and diarrhœa. The stomach was distended, skin pale and leathery, abdomen tense, and body wasting. When 2½ months old, treatment was commenced. Two-thirds milk, one-third water was given. After two to three days three-fourths milk, and after four to five days whole milk was ordered. A week afterwards the child became bright, contented, and slept well; there was no vomiting, and the fæces were quite normal. A month later the abdominal distension had almost disappeared. From the day of birth cow's milk should be given undiluted, and increased in proportionate quantities as the child ages. By this means the constant crying, frequent vomiting, diarrhœa and wasting will be considerably minimised.

PATHOLOGY.

(36) The Parasitic Origin of Eczema.

Torok (*Ann. de Derm. et de Syph.*, February, 1900) discusses this question. He considers that we are only concerned with common forms of eczema. The parasitic theory rests on the following facts: (1) Every cutaneous fissure or abrasion may be the starting point of an eczema; (2) the auto-inoculablity of acute and chronic eczema; (3) the transmissibility of eczema; (4) the presence of parasites in the discharges. The author points out that auto-inoculability is not a proof of parasitism, because it may occur in acute eczemas of artificial origin. With regard to the transmissibility of eczema the greatest caution is necessary in the explanation of facts. As an example of this Torok cites the case of an infant affected with eczema since birth, whose mother contracted vesicular eczema of the hands. The latter was, however, found to be caused by tobacco juice. The parasites which may be found in eczematous products are numerous, and include staphylococcus aureus, citreus, and albus; streptococcus pyogenes; bacillus subtilis, etc. The author urges that these parasites only modify the disease, and are not the origin of it. In conclusion, Torok says that there is no serious argument in favour of the parasitic origin of eczema.

(37) The Heart in Anæmia.

Wybauw (*Journ. Méd. de Brux.*, March 15th, 1900) has made some observations on the alterations in the size of the heart in anæmic subjects. He finds that dilatation is commonly met with, and sometimes, especially in chlorosis, elevation of the diaphragm displaces the heart upwards and an apparent dilatation is found. Anæmic dilatation is to be considered true idiopathic dilatation resulting from overstrain. None of the usual symptoms are present; gastralgia alone is complained of. The precordial dulness should therefore be examined in anæmia, especially where gastralgia is one of the symptoms. This form of dilatation may disappear early, may persist for some considerable time, or may even be permanent in certain cases. In the latter hypertrophy is probably superadded.

(38) Invasion of the Intestinal Wall by Anguillula Intestinalis.

Askanazy (*Centralbl f. Bakt.*, March 4th, 1900) describes a case in which this hæmatode was found in the stools. The patient had pain in defæcation and melæna. *Post mortem* the stomach, duodenum, and jejunum were the parts in which the parasites were most numerous. The animal bores its way into the mucous membrane, finds nourishment there, and deposits its eggs. The embryos, unlike young trichinæ, do not find their way into the circulation, but are discharged into the lumen of the gut, producing hæmorrhages in escaping. When first the parasite finds its way into the intestine wall it burrows in the submucosa, but in the reproducing stage it is surrounded by inflammatory material, and the affected wall has a nodular, uneven appearance. The patient in this case died from intercurrent disease.

AN EPITOME

OF

CURRENT MEDICAL LITERATURE.

MEDICINE.

(39) Indicanuria.

REALE (*La Clin. Mod.*, An. v, p. 22), discussing the clinical significance of indicanuria, finds it difficult to believe it can be due to fæcal retention, as in these cases the fæces are hard and, like solid bodies, almost insoluble. Indicanuria probably indicates defective proteolysis, and is often found in conjunction with uroerythrinuria. If the uroerythrinuria is constant and unaccompanied by indicanuria, it probably indicates hepatic disease; but if indican is present, the hepatic trouble is more likely to be functional. Indican is not necessarily due to putrefactive changes in the intestine, but may result from the mere breaking up of albumen. Indicanuria may also be present from altered tissue change, and is a fairly constant symptom in arthritics.

(40) Muscle Tone and Tendon Reflexes.

J. MUSKENS (*Neurol. Centralbl.*, December 15th, 1899) enumerates the following facts and views in support of the existence of a true reflex muscle tonus: (1) That after section of the posterior spinal roots muscular hypotonia results; (2) that in cases of unilateral facial paralysis the face is drawn towards the sound side, but that this inequality disappears in profound sleep; (3) that the sphincter ani remains contracted in sleep or in moderate narcosis from chloroform, etc.; (4) that the external strabismus produced by section of the third and fourth cranial nerves could be abolished by direct stimulation of the frontal lobes of the cerebrum (Sherrington), indicating a relaxation of the tonus of the muscles innervated by the abducens nerve; (5) that curare diminishes muscular tonus by producing a block to the nerve currents entering the muscle; (6) that in tabes dorsalis hypotonia of the thigh muscles in front (quadriceps extensor) is found. Observations were also made by Muskens on 400 patients, of whom 75 were subjects of chronic nervous diseases and 20 of internal (visceral) troubles. Special attention was paid to muscular tonus (measured by a special tropometer), to the tendo Achillis reflex, the knee-jerk, the plantar reflex, and myototic irritability. Dividing patients into three classes—for example, those with normal muscular tonus, those with increased (hyper-) tonus, and those with diminished (hypo-) tonus, it was found that the vast majority of patients with hypotonus showed also diminished tendon reflexes, the exact proportion being 90 per cent. In the remaining 10 per cent. of hypotonic patients the tendon reflexes were increased. Of patients who were hypertonic, two-thirds showed increased knee-jerks. It appeared therefore that there is some relation between the degree of tonus and the activity of the tendon reflexes, although there are fairly numerous exceptions to this rule. On specially investigating a large number of patients subject to alteration of cutaneous and tendon reflexes it was found that while in some there were exaggerated tendon reflexes and normal or diminished skin reflexes, in an equal number there were contrary phenomena—for example, exaggerated skin reflexes and normal or diminished tendon reflexes. As a result of these studies Muskens further concludes that the tendon phenomena are not true reflexes, although he admits it is impossible to decide this absolutely, and that a more careful study of the mechanical irritability of muscles is needed.

(41) General Paralysis.

SÉRIEUX AND FARNARIER have made a long series of investigations (*Rev. de Méd.*, February) as to the etiology of general paralysis. The conclusions they come to are as follows: By far the most frequent cause is syphilis, their statistics showing 18 per cent of cases certain and probable, in 50 per cent. absolutely certain. This disease is the sole factor in 31 per cent., in other cases combined with alcohol or heredity. In some few cases syphilis occurred with cranial traumatism. There is neuropathic heredity in two-thirds of the cases, but the writers are of opinion that this figure is too low, and that more extensive observations will show a greater percentage, for in their opinion heredity is almost an essential. The incubation of the disease is from 14 to 15 years, 6 and 36 being their extreme figures. In this period, however, they include the invasion of the disease, that is to say, that period during which the symptoms are unmistakable but the patient is not fit to be certified. This period of invasion may extend over 2 or 3 years. The average age for patients to show general paralysis in such a degree as to require certifying is 40, and taking into account 15 years for incubation and invasion, it would mean that at 25 the patient began his general paralytic history. As to the influence of syphilis, the writers admit that other poisons such as lead and alcohol, and possibly autointoxication, are competent to cause this peculiar form of meningo-encephalitis, but that the number of such cases is small. Therefore the action of syphilis is not specific, but seems to be merely a malign influence acting in conjunction with some hereditary fault.

(42) Extraordinary Impulses towards Auto-Mutilation.

BERILLON reported at a recent meeting of the Société d'Hypnologie et de Psychologie (*Rev. Neurol.*, February, 1900) the case of a man, aged 31 years, who was the subject of impulses of a dangerous and determined character towards self-mutilation. One morning, shortly after rising, he was seized with an irresistible impulse, and struck his head with a hatchet so as to bleed copiously. On another occasion he attempted to tear out his right eyeball, and as this did not succeed he had recourse to a knife for the purpose, and, later, he extracted several of his teeth one by one with pincers. One day he seized hold of his genitals with both hands and pulled at them forcibly so as to tear them out; and at times he would thrust his hand into the interior of his throat, which he would pull and dig till it bled. He once put out his tongue, and, closing his teeth over it, struck himself a violent blow upwards on the lower jaw so as to cause the tongue to be bitten through. While he was in the act of performing these mutilations the patient experienced no suffering, and seemed to be gratified when he had succeeded in accomplishing what he desired. These attacks or crises were never accompanied by loss of consciousness, nor by foaming at the mouth, nor involuntary micturition. They were acts reproducing in reality the material of dreams during the night immediately preceding such acts. This patient was subjected to hypnotic treatment. On the morning of January 16th, 1900, he once more had ideas of auto-mutilation, but his hands having been paralysed by hypnotic suggestion, he was not able to give effect to his impulses for self-destruction. The patient had become an object of scandal and notoriety in his district, and was regarded with horror by his fellow citizens. M. Berillon expressed his hope that with a continuance of the treatment he is undergoing there were hopes of his ultimate definite cure.

SURGERY.

(43) The X Rays in Surgery.

THE *American Journal of Medical Sciences* for July contains the report of the Committee of the American Surgical Association on the medico-legal relations of the *x* rays. After reviewing the evidence available on the subject, the Committee came to the following conclusions: (1) The routine employment of the *x* ray in cases of fracture is not at present of sufficient definite advantage to justify the teaching that it should be used in every case. If the surgeon is in doubt as to his diagnosis he should make use of this, as of every other available means, to add to his knowledge of the case, but even then he should not forget the grave possibilities of misinterpretation. There is evidence that in competent hands plates may be made that will fail to reveal the presence of existing fractures, or will appear to show a fracture that does not exist. (2) In the regions of the base of the skull, the spine, the pelvis, and the hips, the *x*-ray results have not as yet been thoroughly satisfactory, although good skiagraphs have been made of lesions in the last three localities. On account of the rarity of such skiagraphs of these parts special caution should be observed, when they are affected, in basing upon *x*-ray testimony any important diagnosis or

line of treatment. (3) As to questions of deformity, skiagraphs alone, without expert surgical interpretation, are generally useless, and frequently misleading. The appearance of deformity may be produced in any normal bone, and existing deformity may be grossly exaggerated. (4) It is not possible to distinguish after recent fractures between cases in which perfectly satisfactory callus has formed and cases which will go on to non-union. Neither can fibrous union be distinguished from union by callus in which lime salts have not yet been deposited. There is abundant evidence to show that the use of the *x* ray in these cases should be regarded as merely the adjunct to other surgical methods, and that its testimony is especially fallible. (5) The evidence as to *x*-ray burns seems to show that in the majority of cases they are certainly and easily preventable. The essential cause is still a matter of dispute. It seems not unlikely, when the strange susceptibilities due to idiosyncrasy are remembered, that in a small number of cases it may make a given individual especially liable to this form of injury. (6) In the recognition of foreign bodies the skiagraph is of the very greatest value; in their localisation it has occasionally failed. The mistakes recorded in the former case should easily have been avoided; in the latter they are becoming less and less frequent, and by the employment of accurate mathematical methods can probably in time be eliminated. In the meanwhile, however, the surgeon who bases an important operation on the localisation of a foreign body buried in the tissues should remember the possibility of error that still exists. (7) It has not seemed worth while to attempt a review of the situation from the strictly legal standpoint. It would vary in different States and with different judges to interpret the law. The evidence shows, however, that in many places, and under many differing circumstances the skiagraph will undoubtedly be a factor in medico-legal cases. (8) The technicalities of its production, the manipulation of the apparatus, etc., are already in the hands of specialists, and with that subject also it has not seemed worth while to deal. But it is earnestly recommended that the surgeon should so familiarise himself with the appearance of skiagraphs, with their distortions, with the relative values of their shadows and outlines, as to be himself the judge of their teachings, and not depend upon the interpretation of others who may lack the wide experience with surgical injury and disease necessary for the correct reading of these pictures. These conclusions were unanimously adopted as expressing the views of the American Surgical Association.

(44) Closure of the Cleft Palate by Lingual Implantation.

Carl Beck contributes a preliminary report on this subject to the *New York Medical Journal*, June 30th, 1900. In a case of cleft palate in which the Langenbeck as well as the Davies-Colley operation failed to cover the immense congenital defect he recently implanted a portion of the tongue. The ease with which even extensive resection of the tongue is tolerated by carcinomatous patients induced him to form a lateral flap from the tongue, which, after being turned and reflected near the base, was united with the freshened edge of the cleft of the same side. The gaping wound margins of the side of the tongue were accurately united then, and the floor of the mouth and the lingual angle packed with iodoform gauze. During the after-treatment a mild solution of boric acid was sprayed through the nostrils every fifteen minutes. Liquid diet was given exclusively. After nine days the base of the flap was severed, and one week later the flap was united with the opposite margin of the cleft, according to the usual uranoplastic procedures.

(45) Gluten-Casein as an Aid to Intestinal Suture.

Katzenstein (*Deut. med. Woch.*, October 12th, 1899) has utilised Buchner's discovery that certain vegetable albumens produce chemiotaxis when applied to serous surfaces in his experiments on dogs. These show that gluten-casein, which is a proteid substance obtained from gum, produces firm adhesions when applied to the peritoneum. After dividing the small intestine transversely, and powdering the cut edges with gluten-casein, the writer joined them with ten to twelve sutures involving the peritoneal and muscular layers. In every case the wounds were found to be firmly united eight days to six weeks later, and to have contracted fairly extensive adhesions to other parts of the intestine and the omentum. The hydrostatic pressure which the junction would stand without giving way increased after the operation from day to day. Even in rabbits, in which successful suture of divided intestine is extremely difficult, the method gave equally good results. Some control experiments proved that the same number of sutures were insufficient to completely seal the intestine without the aid of gluten-casein. Since the cut surfaces of the intestine, however closely sutured, unite by the adhesion of the peritoneal surfaces, and give way only because adhesions do not form sufficiently rapidly and closely, it is possible that the artificial local peritonitis produced by gluten-casein may prove of value in operations on the intestines of man.

(46) The Treatment of Old Fractures of the Patella.

Alessandri (*Il Policlin.*, May 15th, 1900), in old fractures of the patella with considerable separation of the fragments, has used with success a modification of Ferraresi's operation. A median longitudinal incision is made over the knee, completely exposing the fragments and a considerable part of the quadriceps extensor. A portion (10 cm. × 2 cm. × 5 mm. thick) of this tendon is dissected out, the fibrous tissue between the fragments cut, and the fragments freed from all adhesions, refreshed at the edges, and brought together. Next, the portion of tendon dissected out is firmly fixed by suture to the upper margin of the superior fragment, and its lower end carried over the two fragments and well sutured to the patellar ligament below; additional sutures are inserted along the sides. The edges of the gap left in the quadriceps were brought together with sutures, and the limb fixed in a position of forced extension.

MIDWIFERY AND DISEASES OF WOMEN.

(47) Porro-Cæsarean Section for Labour impeded by Fibroid.

Lepage (*Ann. de Gynéc. et d'Obstét.*, February, 1900) operated last summer on a woman, aged 41, in labour at term for the second time, and suffering from severe flooding. The placenta was inserted in the inferior segment, and the uterus was the seat of fibroid disease. Over two years previously, at her first labour, great hæmorrhage occurred from placenta prævia. The cervix, deformed and displaced by the fibroid, was dilated with great difficulty, but the child was dead already. The mother nearly succumbed. At the second labour hæmorrhage set in with labour pains. Lepage at once determined to operate. The os, dilated to the size of a franc-piece, was displaced forward by a tumour, which occupied without blocking the posterior and upper part of the pelvic cavity. A "Porro" was determined upon beforehand, if a pedicle could be formed, as the patient was in danger and required a speedy operation, nor could the vagina be thoroughly disinfected. Hence total hysterectomy was not thought advisable. Directly the uterus was drawn out, a median incision was made, and a living male child 10 lbs. in weight, was extracted. It was very pale, but survived, and was in good health when six months old. There was not much difficulty in making a pedicle and fixing it in the wound. The patient made a good recovery. In this case the fibroid masses—there were two—could be pushed up above the brim, but the fœtus could not be reached by the finger during labour, nor would it have been possible to get the hands or forceps into the uterine cavity to extract the fœtus. Lepage insists that when the child is living it should be extracted through an incision in the uterus before that organ is amputated.

(48) Total Extirpation of Septic Uterus.

Zipperlen (*Inaug. Diss.*, Tübingen, 1899) has collected 74 cases, and adds 2 in Doederlein's practice. In the first there was retention of placental relics, and in the third week after labour the curette was twice employed. Malignant degeneration was suspected. Grave septic symptoms appeared. The uterus was extirpated through the vagina; convalescence was very slow. In the second there was also retained placenta. The labour was at the seventh month,

with transverse presentation and premature rupture of the membranes. Abdominal section was performed. A uterus bipartitus septus was removed; it was infested with multiple interstitial fibro-myomata. The right ovary was not removed; the patient recovered. Of the 74 cases already reported, more than half (38) died. Zipperlen prefers original hysterectomy. Panhysterectomy by abdominal section is only to be practised in complicated cases, such as the presence of a myoma, etc. The retro-peritoneal abdominal operation is, of course, quite out of the question when the uterus is septic.

(49) Intestino-vaginal Fistulæ.

CONDAMIN AND VORON (*Arch. Prov. de Chir.*, June, 1900) state that intestino-vaginal fistula is not infrequently observed after operation on the pelvic organs. Such fistula is sometimes the result of an abnormal communication between the intestinal canal and a purulent collection (inflamed dermoid cyst or suppurative annexitis), established before the date of surgical intervention, and in other instances was caused during the operation either by laceration of the intestine in breaking down adhesions, or by puncture with a trocar or wounding with a cutting instrument. The authors regard this lesion as by no means a serious one, and state that the fistulous communication nearly always heals spontaneously and in a short time. In the rare cases in which the fistula persists it may be closed either by cauterising the fistulous track or by laparotomy and intestinal suture. The benignity of intestino-vaginal fistula, if considered with regard to the equal frequency and the much greater gravity of stercoral fistula following laparotomy, constitutes, it is held, an important argument in favour of the vaginal method in the treatment of inflammation and suppuration of the pelvic organs.

(50) Double Vulvar Tumour.

A. O. LINDFORS (*Upsala läkareförenings Förhandl.*, N. F., Bd. v, p. 213, March, 1900) describes the case of a woman, 44 years of age, who for three or four years had suffered from a solid tumour of the right labium majus. Examination disclosed the fact that there was a second tumour cystic in nature on the other side in the left labium majus. Both were operated upon, and it was then found that the one on the right was a fibroma and the one on the left a cyst of Bartholin's gland. Lindfors remarks on the rarity of double tumours of the vulva. The uterus was retroverted and somewhat tender, and the ovaries were slightly prolapsed.

(51) Treatment of Uterine Fibroids.

EDWARD J. ILL (*Buffalo Med. Journ.*, lv, p. 751, May, 1900) stated at a recent meeting of the Buffalo Academy of Medicine that the mere presence of a uterine fibroid was not an indication for operation. The contraindications he grouped under seven heads: (1) When the patient was unaware of having a growth or any symptoms therefrom; (2) when she discovered the growth but suffered neither mentally or physically; (3) when the symptoms were of minor importance; (4) when she could nurse herself, suffered little, and could afford to be carefully watched; (5) when she had passed the monopause, having an old and likely a calcareous tumour causing few if any symptoms; (6) when she was near the menopause and could remain under observation until it was past; and (7) when she was suffering from other and more serious disease likely to lead to fatal results. The cases which were to be treated by operation were: (1) Those in which life was or might be endangered directly or indirectly by the growth, as with the bleeding or septic or twisted or inflamed myoma; (2) those in which health was so impaired that life became a burden, although not endangered, as from large or very movable or very painful tumours; and (3) those in which mentality suffered because of the presence of the tumour, as in sensitive unmarried women, women bordering on the melancholic, and women who thought all tumours must of necessity be cancerous.

THERAPEUTICS.

(52) The Electric Light in Rheumatic Affections.

MOUBINOFF (*Vratch*, No. 6, 1900) after experiencing in his own person the favourable effect of the electric light in acute rheumatism, began in 1897 a series of clinical experiments with that agent. In the majority of cases he used the electric arc of 20 to 25 ampères and 50 to 60 volts. The light was reflected by a parabolic mirror, and the action of the heat rays was sometimes suspended. Without committing himself to a definitive judgment as to the therapeutic effect of the electric light, the author provisionally formulates the following conclusions: (1) The temperature of the light of the electric arc (20 ampères) reflected by a parabolic mirror is in direct ratio to the distance. Thus at a distance of 125 cm. from the source of the light it is of 110° C., whilst at a distance of 4 metres it is only 24.2° C. (2) The light (with or without heat rays) acts not only on the superficial layers of the integuments, but on the deep-lying tissues. (3) The pencil of light having traversed a living tissue decomposes bromide of silver on a luminous plate. (4) The action on a luminous plate coated with gelatine bromide does not belong exclusively to the blue-violet rays of the spectrum but equally to the others. (5) The light pencil having traversed a living tissue acts on the gelatine bromide plate with greater rapidity and intensity the thinner the tissue and the more concentrated the rays. (6) The brilliancy of the light pencil (in its entirety, not the so-called chemical rays alone) after traversing a living tissue is considerably less than that of a pencil which is on the point of entering a tissue—a fact which is obviously due to the thickness and physical properties of the tissue. (7) To obtain the therapeutic effect the light pencil must be used in its entirety without exclusion of the heat rays where this is possible. (8) The light of the electric arc directed on a given portion of skin induces hyperæmia of an intensity proportional to the nearness and intensity of the source of the light; in some cases hyperæmia is produced even when the light rays have been suppressed. The hyperæmia is produced more rapidly and is more intense when the light falls on the skin perpendicularly than when the direction of the pencil is oblique. (9) Besides hyperæmia the light produces sweating at its point of action. When the temperature of the light rays is high the sweating is profuse, and if the action of the light is prolonged sweating often becomes general. (10) On whatever part of the body the pencil, with or without heat rays, is directed a modification in the pulse wave is noticed. (11) After some hours of application of the electric light general fatigue and drowsiness are observed in most cases; less frequently there is more or less pronounced excitement. (12) As regards the therapeutic action of the light a diminution, or even disappearance, of the pain is noticed from the first. This effect persists for a period varying from a few hours to two days. If the treatment is prolonged the pain permanently ceases. (13) Under the influence of the electric rays the articular exudations which are present in rheumatic affections and in serous affections of the pleuræ disappear. The same thing takes place in the œdema of gouty affections. Relapse, however, sometimes occurs. (14) The electric light has a certain influence in reducing temperature. The light of the electric arc (20 to 25 ampères and 50 to 60 volts) is sufficient to cure affections of rheumatic character and certain diseases of the skin. The author thinks that the electric light will unquestionably occupy an important place in the therapeutic arsenal. At present, however, it must be used with precaution, as it is not altogether free from danger.—A. G. Minime (*Ibid.*, March 11th, 23) reports several cases in which he employed a 16 candle-power incandescent light in the treatment of joint affections—such as acute articular rheumatism, acute synovitis, etc.—and also in hæmatomata, torticollis, and neuralgia. He uses a combination of massage and illumination of the part. Absorption of large hæmatomata was effected in three sittings. Small effusions of blood were absorbed after fifteen or twenty minutes' treatment. In a case of acute traumatic synovitis of the elbow, the effusion disappeared in seven sittings. Ivanoff has devised a special lamp which is a combination massage roller and electric lamp.

(53) The Action of the Heat Rays of Light.

DRIGALSKI (*Centralbl. f. Bakt.*, June 23rd, 1900) records some experiments on the bactericidal and therapeutic results obtained by the use of the incandescent electric light in the form of a "light

bath." It is to Finsen that we owe the suggestion of the value of light therapeutically employed, and the bactericidal action of the blue, violet, and ultra-violet rays. In contradistinction to sunlight and the electric arc light, the incandescent light has been used by Kellogg, Winternitz, and others, and accredited with some special and somewhat mysterious property. The action of the green and yellow rays has not been thoroughly investigated; Finsen has shown that the red rays act entirely as heat rays, and that it is the chemical rays—the violet—which restrain the growth of bacteria. The red rays, the chief constituents of the incandescent light, certainly produce very rapid and extensive perspiration, but Kattenbracker has found that animals infected with the tubercle and diphtheria bacilli show increased resistance when kept in a light bath of these rays as compared with animals similarly infected and kept in the dark. Drigalski has carried out experiments with anthrax, and has obtained exactly opposite results. The light used was an incandescent lamp of 15-candle power; it induced excessive perspiration and symptoms of exhaustion, and all the animals infected with anthrax and kept in this light bath died before those kept in the dark. He concludes that these rays are worse than useless therapeutically, and should be excluded in any light bath.

(54) Treatment of Rodent Ulcer by X Rays.

Stenbeck (*Hygeia*, Stockholm, 1900, p. 18) describes a case of rodent ulcer on the tip of the nose of a woman, aged 67, treated by the Roentgen rays. The rays were applied for ten minutes daily at a distance of 10 cm. Reaction occurred after four sittings, and on the tenth pus appeared. After thirty-five sittings the ulcer was more healthy, and the epidermis began to grow in from the edges. After a short interval the sittings were increased to fifteen minutes, and a second reaction took place followed by improvement. The epidermis grew over the ulcer, the edge flattened down, and in a month a smooth cicatrix was left, differing little from the facial epidermis, and surrounded by a slightly raised border.

(55) Hedonal.

Schüler (*Wien. klin. Woch.*, June 7th, 1900) publishes 21 cases in which this new hypnotic was used in Krafft-Ebing's clinic. Hedonal is methyl-propyl-carbinol-urethan, a white crystalline body which can be administered either dissolved in dilute spirit, or, if its rather persistent after-taste is objected to, in cachets. The dose is from 15 to 30 grains, given an hour-and-a-half after the evening meal; in successful cases natural sleep followed in from a quarter-of-an-hour to an hour and a-half. Its perfect harmlessness bears out Dreser's experiments on lower animals. In Schüler's series of patients hedonal was completely successful only in 9; in 5 it failed, while in the other 7 its action was doubtful. The author concludes that it is not to be regarded as a universal hypnotic but that it is very valuable in cases of mild insomnia where the capacity for rest and sleep is present, but its onset is hindered by cerebral irritability. It is free from the special disadvantages of chloral and paraldehyde and can be usefully given alternately with trional, even for a prolonged period.

(56) Exercise Treatment of Heart Disease.

Vaquez (*Gazz. degli Osped.*, June 12th) is not in favour of the Oertel method, but thinks that benefit may arise from the Schott-Nauheim treatment, the exercises being much more important than the baths. In so treating patients, it is most essential to begin slowly and gradually, for example, first with partial massage, then passive movement, and finally carefully supervised active movements. The chief contraindications are high arterial tension and albuminuria, with renal insufficiency. Contrary to the experience of most authors, Vaquez has found the Schott treatment useful in angina pectoris. Again, he differs from many writers in strongly condemning the bicycle as a means of exercise in heart disease. In tachycardia and other cardiac neuroses little benefit has followed the Schott treatment.

PATHOLOGY.

(57) The Bacteriology of Purulent Meningitis.

Scheib (*Wien. klin. Woch.*, No. 25, June 21st, 1900) records the bacteriological results he obtained in a case of purulent meningitis in a female child, 8 days old. Cultures were made both from the pus in the meningeal cavity and from microscopical sections of the meninges, which were in a state of advanced purulent inflammation. Micro-organisms were found presenting the following characteristic morphological features: they were short rods, usually constricted in the middle, and distinguished by their rounded ends. They measured on an average from 1.4 to 2 mm. in length and 0.5 m. in breadth. They usually occurred as single rods, more rarely in pairs, being as a rule situated in the interior of the cells, and easily accessible to the process of discoloration by Gram's method, and not motile. With reference to its identity, this micro-organism differs from the bacterium coli commune, for which it might be mistaken by its luxuriant growth upon all nutrient media and its entire immobility; further, by the fact that in solutions of milk sugar and grape sugar the organisms cause intense fermentative action, and that they yield no typical reaction when treated with indol. From the bacillus pneumoniæ (Fraenkel) again they differ by their great capacity for, and the rapidity with which they induce, fermentative processes, and also by the absence of any brown coloration in gelatine cultivations, so highly characteristic of the former. Cultures injected either subcutaneously (in large doses) or into the veins (in small doses) of mice, guinea-pigs, and rabbits, the animals, as a rule, died within a few hours of inoculation, or at latest after a period of from one to three days, death being preceded by violent diarrhœa and high elevation of temperature. On the strength of their biological and morphological characters, and particularly their great pathogenicity for mice, rabbits, and guinea-pigs, the author is inclined to identify this organism as the bacillus lactis aërogenes, which was first cultivated by Escherich, along with the bacterium coli commune, from the fæces of infants. Since Escherich's description this bacillus was found by other observers in connection with cystitis, pyelitis, and pyelonephritis, and is—at least by some bacteriologists—regarded as the actual morbid agent of the last-named affections.

(58) Micro-organisms in Ascarides.

Demateis (*Gazz. degli Osped.*, June 3rd, 1900) in view of the fact that ascarides may cause small punctiform wounds of the mucosa (already more or less irritated by their presence) and may under the stimulus of high temperature emigrate into surrounding tissues, carrying with them whatever germs they may have in or about them, has carefully analysed the contents of the intestine of a certain number of ascarides. In each case bacteria were found, some of which were pathogenic or liable to become so. The chief varieties found were: B. coli, acidi lactici, erythrogenes, subtilis, mesentericus vulgaris, fluorescens, and varieties of streptococcus, for example, S. cereus, pyogenes, liquefaciens, aureus, etc. It is obvious that organisms which carry about with them such microbic luggage as this may give rise to trouble wherever they deposit their burdens, for example, in the liver, causing abscesses.

(59) Lymphoma: Malignant or Innocent?

Le Count (*Journ. of Experimental Medicine*, vol. iv, Nos. 5 and 6), in an article on lymphoma resembling a lymph gland, describes at length the pathological features of a tumour of this kind. He begins by showing that the classification of tumours more or less made up of tissue resembling that which makes up normal lymphatic glands is at present unsatisfactory. Hence the prognosis of a tumour of this kind is very uncertain; most surgeons tend to consider that it is malignant. When such a growth disappears spontaneously it is generally held to be an enlarged lymphatic gland. Le Count's sample was neither a malignant tumour nor an enlarged gland. It developed in the left groin of an adult male, and attained the size of a pigeon's egg by a gradual growth extending over fifteen years. The inguinal canal was not patent, and there was no enlargemen of the adjacent glands nor of those of the opposite side. The patient was in good health; there were no similar tumours elsewhere in the body. The operation was performed three years ago and there has been no recurrence. The tumour was a non-inflammatory new growth of lymph nodes.

AN EPITOME

OF

CURRENT MEDICAL LITERATURE.

MEDICINE.

"(60) Hysterical Fever."

KOBLER (*Wien. med. Woch.*, June 23rd, 1900) adds two curious cases to those recorded by Heubner and by Dippe. The first was that of a healthy baker, aged 21, who, while under treatment for an ulcer of the foot was suddenly attacked with convulsions and fever. He had opisthotonos, twitching of all the muscles, spasm of the eyelids, and repeated stoppages of respiration lasting from half to three quarters of a minute. There was almost total loss of consciousness. The temperature rose to nearly 108° in the axilla, but the pulse was 72, and quiet. These attacks lasted from three to ten minutes, and were repeated daily at about the same hour; they were accompanied by œsophageal spasm, completely preventing deglutition. The hysterical nature of the affection was shown by the fact that the attacks yielded equally well to enemata of chloral hydrate or plain water; they were ultimately cured by the threat of immersion in ice-cold water. The second patient was an 11-year-old boy, in whom during convalescence from an attack of enteritis there supervened each evening at 6 o'clock precisely sudden and intense pain in the ileo-cæcal region, lasting for three or four hours, during which period he had complete motor aphasia. The temperature rose meanwhile, at its highest touching 106°; the pain and aphasia disappeared as suddenly as they had come on. No abnormal physical signs were detected. The patient was cured in the same way as the former. The author discusses the probable pathology of these cases, and concludes that they seem to support the notion of a true "hysterical fever."

(61) Epilepsy Cured by an Attack of Hemiplegia.

D. BRUNET (*Arch. de Neurol.*, March, 1900) publishes the following case. Usually cerebral lesions which result in hemiplegia are followed by epileptiform troubles or by choreiform and athetoid disturbances; but the reverse—namely, the arrest (or cure?) of epileptic seizures by the occurrence of hemiplegia is novel. The case is that of a woman born in 1812, single, uneducated, an inmate of La Charité since March 1857. She was epileptic since the age of 7 years, the first convulsive attack following scarlet fever. The attacks took place once every month or fortnight, and were followed by delusions and visual hallucinations of men assailing or attempting to kill her. In 1857 she had an attack of incomplete left hemiplegia following violent convulsive attacks. Thereafter the fits which she used to suffer from gradually diminished in severity, and in 1860 she was entirely free from fits. There was complete freedom from fits for seventeen years till her death in 1877. During this time her intelligence was almost normal; she could walk and could use her hands in needlework, though the left leg and arm were rather weak, and her disposition and character were quiet and orderly. She only suffered from occasional lassitude or from headaches, her habits were clean, and she never wetted her bed as patients in asylums not uncommonly do. No explanation can be offered to account satisfactorily for the complete disappearance of her epileptic attacks. A necropsy was not obtained in this case, but it is believed that cerebral hæmorrhage was the immediate cause of the attack of hemiplegia.

(62) Contracture and Spasm in Facial Paralysis.

GHILARDUCCI (*Il Policlinico*, June 1st, 1900) reports 7 cases of facial paralysis (peripheral), upon which he founds the following theory as to the pathogenesis of contracture in these cases. He believes it to be due to a want of equilibrium in the opposing tonic forces of the facial muscles: for example, if the orbicularis palpebrarum acts whilst its opposing muscle, the frontalis, is paralysed, the palpebral fissure is lessened and the eyebrow drawn down. The associated spasms are explained as an exaggerated (owing to loss of control by the atrophied muscles) degree of what occurs in a mild degree physiologically, as one of the modes of emotive expression (compare Spencer's account of why we laugh or cry from emotion). The prognosis of the contracture depends on the greater or less degree of the paralysis and atrophy of the muscles opposing those which are contracted. This theory brings facial contracture after paralysis into line with the similar condition of things in infantile paralysis of the limbs.

(63) Permanent Non-Progressive Ataxia.

SANGER BROWN (*Amer. Journ. of Med. Sci.*, June, 1900) reports three cases of this affection. All commenced with an acute illness, probably infective in nature, and in two associated with severe headache. This was followed by profound general muscular ataxia, conspicuously affecting the muscles of articulation. The ataxia once established became stationary, and the general health and mental condition were thenceforth normal. In a case recorded by Dinkler, where the initial acute infection lasted only five days, marked improvement occurred in the ataxia, during a course of treatment extending over five years. Sanger Brown believes the disease to be due to a toxin affecting either the part of the cerebellum subserving the co-ordination of voluntary movements, or the neurones connecting this part with other regions of the nervous system. Its localisation and pathological nature are, however, still quite uncertain, and the speech condition is remarkably unlike that in any common nervous disease; the patient, with mental powers unimpaired, being reduced to a few guttural monosyllabic grunts, or at best an occasional isolated simple word, in which the dental and labial qualities are strikingly deficient.

SURGERY.

(64) The Muscular Affections of Gonorrhœa.

BRAQUEHAYE AND SERVEL lately contributed an article on the subject of gonorrhœal myositis, and Servel now publishes further observations (*Thèse de Bordeaux*, 1900), which go to show that lesions of the muscles are very much much more frequent in this disease than has been supposed. In a slight degree the muscular affection may constitute a merely myalgia, but in more severe forms actual inflammation is present constituting myositis. This is much more common among men than women, and the important cause seems to be some severe muscular effort. It may be several weeks after the infection, or by relapse to an acute condition in an old-standing case that the attention of the patient is drawn to some part by severe muscular pain. Three weeks is generally speaking the average period for such to appear. As a rule there is little else than pain, and physical examination of the part may reveal nothing, there being no redness, swelling, or œdema. In other cases the slightest touch may demonstrate considerable tenderness sufficient to make the patient cry out, and at the same time it may be noticed that the muscle contracts irritably. Sometimes the patient assumes various attitudes to obviate the severity of his suffering. The general condition is as a rule good, but in the more severe cases there may be some more temperature—that is to say, than in those properly called myositis. In these cases there may be marked swelling of the muscles, and palpation becomes intolerable. The swelling is hard, non-fluctuating, and merges insensibly with the mass of the muscle affected. This swelling is unconnected with the skin, and may be moved with the muscle. Even in severe cases œdema and glandular swelling are uncommon. Prognosis generally speaking is good, subsidence being the rule, whereas in other forms of myositis suppuration is not uncommon, and even should this not occur there is generally some alteration, fibroid or otherwise, of the muscle, none of which occur in the gonorrhœal form. The duration of the disease extends over some days, ten at the very utmost. The treatment consists in sedative applications and wrapping up the affected part. Hot douching is extremely good.

(65) The Radical Treatment of Varicocele.

NARUTH (*Wien. klin. Woch.*, January 25th, 1900) states that all his cases of varicocele were associated with considerable enlargement of the inguinal canal. In the belief that this is of some importance in the etiology of varicocele he has devised a new radical

operation. An incision about 4 inches long is made as in Bassini's radical cure of hernia, and the veins are resected within the inguinal canal, which is then closed by Bassini's method. The advantages are that the circulation in the spermatic veins is interrupted with greater certainty, and the spermatic artery is spared more surely than in any other method. The etiological factor of the enlarged inguinal canal is done away with and the testis is raised. At the same time the difficulties of sterilising the skin of the scrotum and of isolating the spermatic artery from the venous plexus are avoided.

(66) Radiography in Pulmonary Surgery. Tuffier (*Bull. et Mém. de la Soc. de Chir.*, March 6th) in the course of a discussion on the operative treatment of multiple bronchiectasic cavities, directed attention to the use of radiography in the diagnosis of this morbid condition. He believes that in many cases in which the diagnosis is doubtful, or the auscultatory signs do not give reliable results and fail to localise with precision the pulmonary cavity, the Roentgen rays will reveal them on the fluorescent screen. Interlobular collections inaccessible to the usual methods of examination may thus be diagnosed. In a case of gangrenous abscess of the superior lobe of the right lung, in which, as usually occurs in cases of this kind, the stethoscopic signs were negative, Tuffier, by the help of radiography, was enabled to discover and open the abscess. Instances of this kind, it is stated, might be multiplied. A radiographic examination will in most instances of multiple cavities reveal the presence of all, and so prevent the surgeon from acting under the impression that there is only a single cavity. Radioscopy, however, it is pointed out, is not an absolutely infallible means of diagnosis. In cases in which the existence of pulmonary cavities is rendered certain by auscultation the *x* rays may fail to give any result. This is not surprising, especially if the lesions be situated in the lower parts of the lungs near the abdominal organs and the heart, as the affected regions are then covered by organs which are too thick to be readily traversed by the rays. The radiographic picture does not present the exact limits of the pulmonary cavity, but only the extent of the surrounding zone of sclerosed tissue. Tuffier has much faith in the prospects of radiography in the surgery of the lungs, and believes that, with further improvement of apparatus, observers will be able to distinguish minute differences in the thickness of tissues, and so determine with precision the seat, the limits, and, probably, the nature of pulmonary lesions.

(67) Restoration of Movement after Nerve Section. Robert Kennedy (*Proc. Roy. Soc. Edin.*, 1899) points out that after union of a divided nerve the return of function may be, as is well known, not only a restoration of tracts or fibres for sensation and voluntary movement, but the re-establishment may be sufficiently precise and complete to allow of complete localisation of sensation and a complete co-ordination of movement. To investigate the point whether such perfect recovery of sensation and of movement was due to a majority of the fibres in the divided end being accurately adjusted *in situ* before suturing, three experiments were made on the sciatic nerves of dogs. In two experiments the peripheral cut end, before reunion by suture, was twisted to the extent of a semicircle, so as to bring a maximum number of non-corresponding fibre-ends into juxtaposition, while in the third experiment reunion was made as accurately in the normal position as possible. The following results were obtained: (*a*) In the case of the wrongly coapted nerve, the dog until the seventh day after the operation showed no sign of returning function, and when it walked the hind paw was dragged along the ground dorsal surface downwards. On the seventh day the plantar surface was for the first time correctly placed on the ground in walking. Frequently, while walking, the paw turned over and was rested on the dorsal surface, but the normal position was voluntarily regained after a step or two. "This was taken as evidence of returning co-ordinated movements." On the tenth day undoubted evidence of sensation was obtained; on the fourteenth day (the bandages being removed and the wound being found healed) the animal could use the paw correctly, "almost always placing the plantar surface of the paw on the ground correctly." On the fifty-fourth day the nerve was exposed by incision, and was found united in the position in which it had been sutured, and stimulation of the nerve "above, below, and on the seat of reunion gave the normal contractions in the muscles of the leg." (*b*) In the case of the second dog similar results were obtained as recovery of movements and of sensation, and examination of the nerve on the thirtieth day showed it to be united in the position in which it was sutured, and to have regained its normal irritability and conductivity. (*c*) In the third case the sutured ends being very accurately coapted *in statu quo ante*, the animal first showed signs of recovery of function on the seventh day, and on the following day it was able to voluntarily readjust the paw when it happened to place its dorsal surface on the ground. By the eleventh day evidence of sensation was obtained, and by the fourteenth day the recovery of function was complete. On the forty-ninth day "the physiological examination showed that reunion of the nerve had taken place both anatomically and physiologically." As regards recovery of function, therefore, these three experiments followed a practically identical course. Microscopical examination made at the site of union showed the cicatricial segments were all three practically identical in structure. The arrangement of the young fibres was very irregular and tortuous, the fibres showing in all directions and closely resembling the appearance of a neuroma. In no case could continuity of nerve fibres from the central to the peripheral segment be traced in a single section. It is hence doubtful whether the restoration of function was accompanied by a re-establishment of the old paths by decussation of fibres in the nerve cicatrix. The practical conclusion is that in suturing a divided nerve no trouble need be taken to secure coaptation precisely *in statu quo ante*, the simple approximation of the two ends being all that is required.

MIDWIFERY AND DISEASES OF WOMEN.

(68) Treatment of Gonorrhœa in Women. Gardner (*Montreal Med. Journ.*, April, 1900) gives the results of his experience as follows: In the acute stage the patient should be kept in bed. The diet should be simple, the bowels regulated by salines and warm hip baths, and frequent irrigation of the genitals employed. Irrigations of linseed tea are very soothing. After the acute stage douches of permanganate of potassium 1 in 5,000, perchloride of mercury 1 in 5,000 to 1 in 2,000, or formaldehyde 1 in 4,000 to 1 in 2,000 may be used. The perchloride must be used with caution, owing to the fact that a pool of the solution sometimes remains in the vagina, and this may be absorbed. The perchloride douche should, therefore, be followed by warm water. The douche should be given in the dorsal position on a bed pan. Douching should be followed by careful application of silver nitrate (20 to 60 grs. to the ounce) to the whole surface affected, through a sinus speculum. Protargol or argonin may be used instead. The urethra and Skene's tubules, the ducts of Bartholin's glands, and the cervical canal must be treated by application of the same remedies. The urethra and cervical canal may be treated by instillations, the Skene's tubules and Bartholin's ducts with a small, slender-nozzled syringe. In the intervals of the silver applications, a solution of 5 to 10 per cent. ichthyol-glycerine may be applied to the accessible affected areas by means of tampons. In the treatment of the uterine cavity, local treatment must be avoided in all but the advanced chronic stage, because instrumentation in the early stage is apt to lead to extension to the tubes and ovaries. In affection of the Fallopian tubes and ovaries the author advises time and patience. By long rest in bed, good nursing, and judicious symptomatic treatment, many cases get well, and a favourable pregnancy may follow. Moreover, if operation be inevitable, the longer the interval since the acute symptoms have subsided, the more favourable will be the result. The fact of the extreme rarity of general gonococcal infection of the peritoneum supports this view.

(69) Torsion of Hydrosalpinx. Hartmann (*Ann. de Gynéc. et d'Obstét.*, February, 1900) reports a case of

a woman, aged 33, who was seized with vomiting, abdominal pain, and distension after having been subject for nine years to pelvic inflammatory symptoms traced to gonorrhœa. She had been once pregnant, just ten years before the attack. She referred the pain to the right iliac fossa, but it soon radiated in all directions. After rest and the application of ice to the abdomen the symptoms abated, but there was much local pelvic pain. He exposed, on opening the abdomen, a mass of omentum, which strongly adhered to a round black structure adherent to all adjacent parts. On liberating the structure, it proved to be a hydrosalpinx with twisted pedicle; it seems to have revolved on its short axis as well, like the hand of a watch. The ovary, which, like the distended tube, lay on the left side, was not twisted. The pedicle of the tube was ligatured. The thread snapped; immediately the uterus swung round to the right; it had been twisted half a turn to the left, forwards, by the hydrosalpinx, which had swung in that direction and become adherent. The affected tube and ovary were really the right; on search the left were found almost healthy and therefore not removed, but the appendix adhered to the twisted tube. Its mesentery was tied, then the usual collar made, with excision of the mucous membrane, and the stump was sutured into the cæcum. The pelvis was drained. Recovery was rapid. Hartmann collects 15 cases of twisted inflamed tubes. The right tube seems to rotate to the left, like the hand of a watch in natural motion; when the left tube twists it moves to the right, like the hand of a watch when its owner is putting back the time.

(70) Dystocia: Teratoma of Fœtal Omentum.

PAQUY (*Comptes Rendus de la Soc. d'Obstét. de Paris*, May, 1900) publishes the report of a 7-para subject, towards the eighth month, to œdema of the abdominal walls and inferior extremities. There was no albuminuria, but the patient was placed on milk diet. Labour set in and in nine hours the waters burst, they were greenish and very free. The shoulder presented and the cord prolapsed. One foot was brought down. Then it was discovered that the fœtal abdomen was much distended and ascites was suspected. Traction was made on the breech, but without effect, the os was imperfectly dilated. Suddenly sharp pains set in and the child was delivered within ten and a half hours from the beginning of labour. It was a female and quite dead. The abdomen measured over 14 inches in circumference and through its walls a soft tuberous mass could be felt; at points there was obscure fluctuation. All the abdominal and pelvic organs were normal, except the omentum, which was occupied by a tumour made up largely of cartilage with glandular elements and abundant blood vessels. In fact it was a teratoma due to fœtal inclusion. They are always supraumbilical and closely connected with the digestive canal. Out of 28 cases collected by Répin their seat is noted in 14, namely, between the layers of the transverse mesocolon 5; between the kidney, pancreas, and diaphragm, that is to say, at the base of the transverse mesocolon, 1; in the folds of the mesentery, 5; between the layers of the great omentum, 2; in the gastro hepatic omentum, 1 case.

(71) Rapid Growth of Uterine Fibroid.

OLSHAUSEN (*Zeitschr. f. Geburtsh. u. Gynäk.*, vol. xliii, Part II, 1900) successfully removed a myoma of the uterus weighing 39 lbs. There was some trouble on account of great dilatation in the veins of the left broad ligament, but little blood was lost. The tumour tissue was firm as usual, free apparently from any mucoid degeneration. The patient was 50 years old. Olshausen found that she had been examined by a competent authority just ten years since, when she was 40, and the uterus appeared normal. When 42 a small uterine tumour was detected. When 44 she was first examined by Olshausen. He found that the uterus was of about the size it usually reaches at the sixth month of pregnancy. After that examination the fibroid steadily attained colossal proportions. There were no cysts in the tumour substance, but one lymphatic vessel on the surface was so big that at first the operator suspected that he had cut away part of the ureter.

THERAPEUTICS.

(72) A New Method of Toxin Treatment in Tuberculosis.

LANDMANN (*Hyg. Rundschau.*, Jahrg. x, 1900, No. 8) describes a preparation of tuberculous toxin which he has named "tuberculol." He considers that such a preparation should be (1) a true fluid and sterile; (2) capable of killing healthy guinea-pigs in small quantities; and (3) must contain all the specific and active elements of the bacillus culture in unaltered form as far as possible. It should also be suitable for subcutaneous injection, and thus used should immunise the animal and produce antitoxin in considerable quantity. He takes exception to Koch's tuberculin R. on the ground that it is only a suspension, that the dose is too large, and that some of the active elements of the culture are excluded by the long subjection to a temperature of 100° C. Neither Buchner's plasmin nor Behring's toxin fulfils the above-mentioned requirements. The author's preparation is obtained by extraction, first, at 40° C. by physiological salt solution, distilled water, and glycerine, and subsequently at higher temperatures, gradually reaching 100° C. The various extractives are mixed and kept *in vacuo* at 37° C. The final residue is wholly inert, showing that all the active elements of the bacilli have been removed in the extracted material. The preparation is subsequently filtered and standardised. Landmann succeeded by means of this tuberculol in conferring immunity on animals in a large number of experiments. Subsequently he administered it to patients, beginning with a very small dose and slowly increasing; he eventually gives much larger quantities than in Koch's method with tuberculin R. He avoids exciting any great reaction at first, and extends the injections over a period of about four months, increasing the intervals gradually for fear of any cumulative action of the toxin. He succeeds in conferring a degree of immunity which is retained over a long period, although it is not of high degree. Tuberculol is a clear, thin fluid, but is best kept in a dry form; it consists in this form of brown scales, easily soluble in water.

(73) The Influence of the New Food Substances on Intestinal Putrefaction.

CARL LEWIN (*Zeitschr. f. diätet. u. physikal. Therapie*, July, 1900) records the effects of a large number of new food preparations on the bacterial processes in the large intestine, as shown by investigation of the ethereal sulphates, fatty acids, phenol, and indican in the urine. The substances he employed were plasmon, tropon, nutrose, somatose, sanatogen, aleuronat, and eulactol. Their action was compared in the same subject with a normal diet, and in some cases with that of five times the amount of scraped meat (that is, 250 grams per diem against 50 grams of the artificial food) as well. The author finds that the casein preparations exhibit no advantages as regards intestinal putrefaction over those made from meat or vegetable proteid. Pure casein derivatives, such as plasmon and nutrose, evoke no less intestinal putrefaction than tropon or aleuronat, while nutrose causes more fatty acid to appear in the urine than any of the others. None of these bodies influences the process more than another, and they cannot be said to affect it either favourably or unfavourably to any appreciable extent. Of some therapeutic importance is the fact that the administration of pure albumen preparations during convalescence from scarlet fever led to no untoward consequence. The five fold quantity of scraped meat had no more effect on intestinal putrefaction than the proteid preparations. Hence Lewin concludes by agreeing with Leyden that the sole value of these foods is the concentrated way in which they provide nutriment.

(74) Roentgen Rays for the Removal of Hair.

W. A. PUSEY (*Journ. Cutan. and Genito-urin. Dis.*, xviii, p. 302, July, 1900) points out how the accidentally-discovered effects of the *x* rays upon the skin and its appendages have been utilised in the treatment of various cutaneous affections. These effects have been (1) epidermal, as seen in the pigmentation of the epidermis, in the blanching and outfall of the hairs, and in trophic changes in the nails; and (2) dermal, as seen in inflammatory changes in the corium and subcutaneous tissues. Schiff and Freund have succeeded in

removing undesirable hairs by this means, and Jutassy has reported 40 cases in which there had been no regrowth of the destroyed hairs; and the author has shown that with a very weak but definite current the hairs from an entire area can be successfully removed. The removal is attended by no disagreeable sensations and by no accompanying symptoms beyond at times a slight erythema or pigmentation lasting a short time. It is not nearly so tedious as electrolysis, and can be applied to the hairs of a large surface at one time, and it is particularly adapted to cases in which it is desired to remove down and profuse growth of hair. In mycotic diseases of the hair and hair follicles the first part of the treatment consists in epilation, and this can be done in an ideal way by the *x* rays; further, the rays may do yet more good by their bactericidal action, due either to their direct effect or to the increased phagocytosis which they set up.

(75) "Hetol" in Phthisis.

Ewald (*Berl. klin. Woch.*, May 21st, 1900) has employed intravenous injections of "hetol" (sodium cinnamate) in 25 cases of phthisis, selected to fulfil as far as possible those conditions which Landerer, who introduced the method, considers to give the best chance of success. Thus no large cavities were present; in 11 the entire course was apyretic, in 10 there were long apyretic intervals, and in 4 only was there continued pyrexia. The technique is simple and quite devoid of danger if thorough asepsis of the skin and syringe is secured. After causing a vein, which is generally the median, to become prominent by a bandage round the arm, the point of the needle is introduced through its walls, and the required amount is injected into the circulation. The 25 patients received 461 injections between them without a single mishap. One mg. ($\frac{1}{65}$ gr.) of a solution of hetol (the strength of which is not mentioned) is the initial dose. The injections are usually given every other day, and the dose is gradually increased up to 15 mg. (about $\frac{1}{4}$ gr.), which should not be exceeded. Hetol is said to act by causing active inflammation round, and eventual cicatrisation of, the tuberculous foci, and the process has been actually demonstrated experimentally in the rabbit. Eleven of Ewald's cases were under treatment for 80 or more days, that is far more than the average time required, according to Landerer, for the cure of slight cases. Amongst these one was treated for 316 days, another for 221 days, and several for 150 days or more. The other 14 cases were treated, with one exception, for 30 to 80 days. Only 3 cases showed an improvement more marked than any usually seen in the clinic with ordinary hygienic treatment. (1) A woman, aged 28, was admitted for hæmoptysis, with dulness and moist crepitations at both apices. After 5 hetol injections there was another slight attack of hæmoptysis. Six days later, as the condition had improved and the temperature was normal, the injections were resumed, 35 being given in 127 days. The crepitations gave place to harsh respiration, the tubercle bacilli disappeared from the sputum, and the weight increased 8 lbs. 13 ozs. (2) A man had dulness at both apices after acute pneumonia, with tubercle bacilli in the sputum. After 19 injections the dulness had disappeared, though there were some inspiratory crepitations in the right suprascapular fossa, there was no expectoration, and there was an increase in weight of 17 lbs. 10 ozs. (3) The third case improved remarkably for a time, but there was a relapse, and death occurred six months later. The necropsy showed that the tuberculous process was still active. A fourth patient died, apparently of phthisis, but *post mortem* the cause of death was found to be fatty degeneration of the right ventricle, the tuberculous process in the lungs having healed. He had been under treatment for 316 days and had received 70 injections. Altogether 14 cases improved, though 11 not more than could be accounted for by the ordinary hospital treatment, and 10 were unbenefited. Of these 7 died, though some had been treated for 120 to 221 days, and had had as many as 58 injections. These results contrast very unfavourably with the 51 to 85 per cent. of recoveries obtained by Landerer himself. The probable explanation of the difference is that the favourable climatic conditions of Landerer's sanatorium are more powerful factors in the recovery of his cases than the injections of hetol. Disadvantages of the treatment observed by Ewald are a tendency to hæmoptysis, and in many patients great weariness and somnolence. The bacilli show no degenerative changes, and the temperature and night sweats are uninfluenced. Nevertheless, since the injections are not dangerous, they deserve further trial (see also Epitome, vol. i, 1899, par. 237).

(76) Treatment of Boils.

Hutchins (*Atlanta Journ.*, April, 1900) recommends the employment of antiseptic poultices in the treatment of boils after incision. A flaxseed meal poultice is made with 3 per cent. carbolic lotion, and applied over a layer of gauze. The poultices should be changed frequently. By this means continuous drainage by absorption in the poultice is obtained, and all pus and necrotic tissue come away. The carbolic acid prevents reinfection, and the warmth and moisture of the poultice are said to prevent premature union of the edges.

PATHOLOGY.

(77) Pathology of Plague.

Zabolotony (*Arch. des Scien. Biolog.*, T. viii, No. 1) has had the opportunity of studying plague in Bombay, in Arabia, and in the district of Weytcharg in Mongolia, where it has been endemic for ten years. He gives detailed account of his observations, dwelling specially on the cases that came under his care in the last locality. Here the disease appears in June, and subsides towards September; of 16 cases, 7 were of the pneumonic, 9 of the bubonic, type. Ten of these were treated with Roux's serum, 6 died, and 4 recovered. The pustular form described by several authors did not come under his observation. In the bubonic or Levantine type the virus probably enters through some solution of continuity in the epidermis, and the primary bubo is formed in the nearest lymph glands. A case is cited where the point of entrance was furnished by an ulcer on the breast, and the author also relates how in extracting the contents of a bubo with a syringe he had the misfortune to prick his finger; this was followed by pain in the forearm, rise of temperature, and *malaise*. He injected 60 c.cm. of serum, and the symptoms subsided. In the pneumonic form of the disease the virus enters by the nose or mouth; the mortality is higher than in the bubonic cases, and should the bacillus find its way into the general circulation in either form, death usually follows within twenty-four hours. In all cases examination of the blood shows a leucocytosis, and after a certain period it acquires agglutinative properties This last characteristic appears at the end of the first weeks, and is absent during the early days, so that it is useless as a diagnostic sign. During convalescence the blood is antitoxic. An attack of the disease confers immunity, and recurrence is rare. This immunity is much more certain than that conferred by the injection of serum or of dead cultures (Haffkine's method). Zabolotony thinks the serum of Roux preferable to Haffkine's prophylactic; it must be of standard strength estimated by testing its antitoxic power on animals. The preventive dose is from 25 to 40 c.cm., but as a curative agent the amount must be larger, from 50 to 100 c.cm. The essence of the process of recovery is the phagocytic activity of the leucocytes, and it is by stimulating and exciting this that the serum acts.

(78) A Parasite in Leukæmia.

Löwit (*Centralbl. f. allgem. Path.*, Bd. xi, No. 9, p. 315) describes a parasite which he has discovered in the lymphocytes in leukæmia. It is about one-sixth to one-third the size of a red blood cell, of a ring-like shape, and contains characteristic nucleus-like bodies and vacuoles. It is best demonstrated by staining with a strong solution of methylene blue. In rabbits infected with the disease the same bodies are found, but, whereas in man multiplication takes place by simple sporulation, in these animals a kind of sporocyst is formed resembling that of the malaria parasite. Löwit speaks of the organism as an amœba; he considers that the formation of a sporocyst in rabbits is due to the fact that the tissues of these animals are not favourable to the development of the parasite, and the symptoms of the disease are proportionately insignificant.

AN EPITOME

OF

CURRENT MEDICAL LITERATURE.

MEDICINE.

(79) Typhoid Fever Among American Soldiers.

Vaughan (*Philadelph. Med. Jour.*, June 9th, 1900, p. 1315), records the results of the investigation by a Board into the causes of the existence and spread of typhoid fever in the American National encampments during the time of the Spanish-American war. Every regiment in the service of the United States in 1898, both volunteers and regulars developed typhoid fever, and that, speaking generally, within eight weeks of going into camp. Typhoid became epidemic both in the large and in the small encampments. If any such disproof were needed these investigations disproved the miasmatic theory of the origin of typhoid, also the pyogenic theory, while they confirmed the doctrine of the specific origin of typhoid. If the men of any particular regiment did not bring typhoid from their homes there was ample opportunity of introducing it from other regiments. Its dissemination was shown to depend on the transference of the excretions of an infected individual to the alimentary canal of others. It is probable that immune individuals may carry and excrete the specific bacillus for a long time, and its longevity, both inside and outside the body, is much greater than is generally supposed. The likelihood of typhoid becoming epidemic is much greater in camps than in civil life, on account of the difficulty of disposing of the excreta. A man infected with typhoid may, indeed, spread the infection in every latrine of a regiment before the disease is recognised in himself. While some camps were unwisely located, and in others the space allotted to regiments was inadequate, many camps were allowed to remain on one site too long. As a general principle the number of cases of typhoid fever in the different camps varied with the method of disposing of the excreta. The tub system and the regimental pit system were both found unsatisfactory. It was recommended that, in permanent camps where water carriage could not be secured, all fæcal matter should be disinfected and then carted away from camp, preferably in galvanised iron troughs containing milk of lime. The evidence showed that infected water was not an important factor in the spread of typhoid fever in the camps in 1898, but flies undoubtedly acted as carriers of infection and that both in the way of mechanical transportation and in their digestive tract. It is more than likely that the men transported infected material on their hands or on their clothing and boots. Personal contact was undoubtedly one of the means by which the infection was spread and particularly so in tent life. It is probable that infection was disseminated to some extent through the air in the form of dust. A regiment badly infected with typhoid does not lose its infectivity by simply changing its location; indeed, it then carries the bacilli elsewhere in the bodies of the men, in their clothing, bedding, and tents. Even an ocean voyage was shown not to relieve infected regiments of their infectivity. It was recommended that the soldiers' beds should be raised from the ground, lifting them clear from infected dust. The overcrowding of tents should be avoided and medical officers should insist on soldiers removing their outer clothing at night whenever possible. About one-fifth of the soldiers in the camps in the United States in 1898 developed typhoid fever and the percentage mortality among these cases was 7·5 per cent. When a camp is thoroughly saturated with typhoid it is probable that from one-third to one-fourth of the men will prove to be susceptible to the disease. There was no evidence that dietetic errors or simple gastro-intestinal disturbance predisposed to typhoid. The shortest period of incubation in typhoid fever is probably something under eight days, and one who has lived in a camp in which typhoid fever is prevalent is liable to develop the disease any time within eight weeks after leaving it.

(80) Pneumonia.

De Dominicis (*La Clin. Med.*, An. 6, N. 26), lecturing on the pathogenesis and treatment of pneumonia, lays stress on the general nature of the disease, and teaches that the local lung symptoms are secondary to the blood condition, which in its turn is due to the alteration in the function of the digestive organs. On this view treatment is aimed at purifying the blood *viâ* the stomach and intestine. Mag. sulph., calomel, and other purgatives are given, and to disinfect the digestive canal fairly large doses of alkaline iodides are given, or sod. bit. or bic., which act as true expectorants by rendering the exudation more fluid and more easily detachable. The blood itself may even be washed by injection of physiological salt solution, but this is only of temporary value; the same applies to bleeding. As to the value of oxygen, the author is very sceptical. Serum-therapy holds out a better hope.

(81) The Uric Acid Diathesis.

A. Svorchotoff (*Russky Archiv.*, tom. v, May 31st, 1900) gives an analysis both of four cases of his own observations and of the more important and recent contributions and investigations made by other observers in connection with gouty affections; and has arrived at the following conclusions: (1) During the acute manifestations of gout, or during the later stages of the disease, when the patient is in a state of great debility, caused either by the occurrence of too frequent attacks or by great reduction in nutrition, clinical phenomena appear which unmistakably point to the vaso-motor system being largely involved. Coincidently a contraction, more or less spasmodic in character, of the smaller vessels may be observed. (2) Uric acid, varying in amount and rate with each individual, is deposited in and around the affected joints, and this not in the form of globules or calculi, as Pfeiffer specially maintains, but as needle crystals, which chiefly consist of biurate of sodium. (3) As regards the question whether the kidneys are capable of allowing albumen (in larger quantities) to filter through them during the acute stage of the disease, or while the depressing effects of the affection are well marked and far advanced, the author believes it to be the case. Moreover, he thinks this elimination of albumen by the kidneys may take place without—having regard to the pathological side of the question—any unfavourable consequences on the part of the secreting tissue of that organ. (4) Again, change in the general condition and the state of normal nutrition of the tissues, and possibly, also, alteration in the rate and amount of circulation through these structures, are the determining factors for the localisation of the gouty deposits in special tissues and organs. (5) As pointed out by former writers, that during an attack of gout, and particularly when the latter reaches its acme, both the quantity of urine and the amount of urea is noticeably diminished, while the rate of uric acid excreted is considerably increased: the author endeavours to confirm these observations. (6) With regard to the pathology of gout, the author is inclined to regard it as the result of a chronic autointoxication by the products of a morbidly altered metabolism; these abnormal bodies thus formed are in all probability closely allied to uric acid, and possibly contain also one of the bodies of the so-called xanthine group. (7) In conclusion, the author says that—at least in a large number of gouty patients—surgical interference becomes sooner or later inevitable, and is attended by good results.

SURGERY.

(82) Endothelioma of Bone.

Thévinot (*Rev. de Chir.*, June, 1900) publishes a full and instructive review of our present knowledge concerning a variety of morbid growths, to which much attention has lately been paid by surgical pathologists. By the term endothelioma, given to this form of growth, is designated a tumour developed at the expense of the endothelial elements existing in blood vessels or lymphatics, or forming the internal coat of serous cavities. Such growths may occur in any organ containing endothelial elements, and have been studied in the dura mater, in lymph glands, in the spleen, and, especially, in their favourite seats, the eyeball and the salivary glands. There seems to be no doubt that it occurs in bone more frequently than many pathologists have supposed, and that it has frequently been overlooked in supposed instances

of osseous sarcoma and aneurysm of bone. Any portion of the skeleton may become the seat of endothelioma. The morbid growth attacks both the long and the flat bones, and has been observed in the bones of the cranium and in the lower jaw, and in the femur, tibia, and humerus. It is usually developed in the spongy tissue, and, as a rule, involves the extremity of a long bone. The fully-developed growth, which is usually enclosed within a capsule, varies in different cases in consistence, being sometimes soft, and even fluctuating, at others firm and bony. On section the cut surface is of a deep red colour, resembling muscle. The growth on its surface presents a number of dilated blood vessels, and on its central part may often be found large cavities, probably formed by the communication of similar enlarged arteries and veins. The existence of these cavities, some of which are often as large as the hen's egg, accounts for the pulsation with *bruit* and the compressibility of the growth, which are such characteristic signs of osseous endothelioma. An important distinguishing character of the structure of an endothelioma is the complete absence of osseous lamellæ. The author describes at full length the histological distinctions between this morbid growth and such growths as osteo-sarcoma, angio-sarcoma, myeloid sarcoma, and carcinoma of bone. Endothelioma of bone may occur at any period of life between childhood and advanced age, and is not influenced to any marked degree by sex, there being but a slight excess of men over women. It is developed very insidiously, and without causing pain, so that in many instances attention has been first directed to the disease by the occurrence of a spontaneous fracture of the affected bone. The tumour, when well advanced in growth, presents a swelling, usually of small size, which is irregular over its surface, of variable consistence, some parts being soft and depressible, others of bony hardness, not adherent to the skin, and, even when seated in the epiphysis of a long bone, not involving the adjacent articulation. It is not accompanied by enlarged superficial veins, which present so characteristic a feature in cases of sarcoma. In course of time the disease involves remote parts of the body, usually other bones, in exceptional instances the lungs and pleura. The patient becomes weak and cachectic, and after an interval from the first appearance of the disease, varying in the list of recorded cases from 6 to 19 months, death results. Endothelioma, therefore, is to be regarded as a malignant tumour, which, if left to itself, will prove as rapidly fatal as sarcoma. The author, in his remarks on the diagnosis of osseous endothelioma, discusses the value of the sign of pulsation, which has been met with in about one-third of the recorded cases. This sign, which, he states, is common to endothelioma, angioma, and myeloid sarcoma of bone, should not lead the surgeon to consider the probability of the pulsatile tumour being an aneurysm of bone. Such term, he holds, does not imply a distinct and definite morbid growth, but is really a generic one, covering several forms of growth of varying nature and gravity. The treatment of endothelioma of bone, it is suggested, should consist of resection of the diseased structures, when the growth is small and still in an early stage, and in amputation or exarticulation when the tumour has attained a considerable size. The author seems disposed to prefer localised surgical treatment to extensive mutilation.

(83) Operations for Perforating Gastric Ulcer.

Lund (*Boston Med. and Surg. Journ.*, January 11th, 1900) reports a successful case, and adds a very useful table of statistics of 40 additional cases collected by himself, making all the published cases—Dennis to 1894, Cobb to 1897—amount to 181. The following analyses are specially important:

	Cases.	Recoveries.	Percentage of Recoveries.
Dennis (older cases) ...	43	10	23
Cobb (cases from 1894 to 1897)	98	50	51
Lund (1897 to autumn of 1899)	40	28	70

Thus the percentage of recoveries has steadily mounted up. Lund next analyses results of operation within twelve hours after the onset of symptoms of perforation:

	Cases.	Recoveries.	Percentage of Recoveries.
Dennis and Cobb... ...	45	35	78
Lund	14	12	86

These results should be compared with a third analytical table of cases operated upon within twenty-four hours:

	Cases.	Recoveries.	Percentage of Recoveries.
Dennis and Cobb... ...	70	49	63
Lund	26	19	73

Amidst cases operated upon days or weeks after perforation an occasional recovery is to be found, as the ulcer, whether on the anterior or posterior surface of the stomach, sometimes opens into a cavity walled off by adhesions. Localised abscesses—subphrenic, circumsplenic, etc.—result, and are finally opened and drained, with an occasional recovery. The urgency for immediate operation is very plainly demonstrated by these statistics.

(84) Prophylaxis of Syphilis.

Lang remarks that a complete knowledge of the biology of a disease need not of necessity precede the search for methods of immunisation against the disease; this is proved by Jenner's historical discovery. He suggests (*Wien. med. Woch.*, June 2nd, 1900) the possibility of certain experimental observations on persons in what he calls the post-initial stage of the disease, that is, between the stage of the initial lesion and the appearance of initial symptoms. A fresh infection may occur during this period, but it appears not to alter the course of the disease, so that experimental inoculations might be carried out without fear of untoward results. Experimental inoculations have already been made on themselves by some observers, but these can never be sufficiently numerous, and Lang suggests using prisoners who are undergoing long sentences and who would, he thinks, be induced voluntarily to undergo the inoculations in the interests of society, seeing that all danger might be eliminated by constant medical supervision and treatment. The author relates a case of syphilis transmission from a corpse during the performance of a *post-mortem* examination.

MIDWIFERY AND DISEASES OF WOMEN.

(85) Forceps Delivery of Live Child Fifteen Minutes after Death of Mother.

Egon Neumann (*Centralb. f. Gynäk.*, No. 10, 1900), in reference to Fleischmann's case of forceps delivery after death (*ibid.*, No. 4), publishes another which occurred as long ago as 1869, in the practice of his colleague, Dr. Koerbitz. That physician was called in suddenly to a shopkeeper's wife, and found her dead in labour. He sent at once for his instruments, which arrived in six minutes. Then he applied the forceps and delivered the corpse of a a female child, who lived and was reared. Delivery was completed just fifteen minutes after the patient's death. Koerbitz had never seen the woman before; she had suffered all through pregnancy with continually increasing dyspnœa and swelling of the legs. There was no *post-mortem* examination. The child showed no signs of asphyxia, and cried out well when delivered. The space of time after death was longer than in any of the three other cases of forceps delivery on the dead body (Fleischmann's case 10 minutes, Heinricius's 5 minutes, Piskacek's 5 minutes). Neumann also dwells on Fleischmann's practice in respect to parturient women, moribund or very ill from advanced pulmonary disease. The latter, just before the death of his patient, introduced one blade of the forceps after placing her in a half-sitting position as the orthopnœa was severe. Death occurred before he could pass in the second blade. Egon Neumann relates a somewhat similar case where premature labour was induced and the patient saved. She was a very sickly woman, aged 40, with

general anasarca and albuminuria. Orthopnœa was marked. The bougie was introduced, the patient being kept in the sitting position. In six hours the os being well dilated, perforation was performed and the fœtus extracted, without any flooding. Several assistants held up the patient, who was more dead than alive. Next day, the placenta was removed by expression. After delivery the patient seemed worse. Several incisions were made in the skin of the legs, and almost 2 pints of serum flowed away. Then she steadily improved, and the œdema almost disappeared. At the end of nine days she could ascend two steps unaided, and she ultimately recovered, though with permanent morbus cordis.

(86) Arrested Labour from Distended Bladder in Fœtus.

Couvelaire (*Bull. et Mem. de la Soc. Anat. de Paris*, March, 1900) reports the delivery a little before term of a primipara, aged 24. Pregnancy had been normal. When she was admitted into hospital it was not certain how long the waters had escaped. There was slight albuminuria. The occiput presented to the right posteriorly, and there was some difficulty in delivering the head. Then the shoulders could not be extracted, even when the posterior arm was lowered. The child died during these manœuvres. The head midwife drew down the anterior arm, but the humerus was fractured and the shoulders remained fixed. On exploration the thorax appeared normal, but the abdomen was much swollen, and fixed above the pelvic inlet. The trocar was used, and 550 grams of fluid came away; it was clear, lemon-yellow in colour, and highly albuminous. Then the child was easily extracted. It weighed, excluding the urine already removed, over 6½ lbs., and measured 18¾ inches; the biparietal measurement was 3½ inches. It was a female. The distention of the abdomen was due to retention of urine. The cause of the retention could not be detected; there was no malformation, and the urethra was quite free from stricture. The ureters and renal pelves were dilated. Gaüdon, Cornelli, and Lefour have reported similar cases where no stricture existed. In Porak's case the obstruction was due to a valvular fold in the mucous membrane, which Hergott of Nancy suspects must exist in all such cases, but is easy to overlook. As a rule retention of urine is due to complete congenital stricture.

(87) Placental Transmission.

Dorland (*Amer. Gyn. and Obst. Journ.*, June, 1900) reviewing the literature of the placental transmission of drugs and specific diseases, finds that certain drugs—not all—show a tendency to traverse the placenta and entering the placento-fœtal circulation exert a positive influence for good or evil. Maternal medication is therefore indicated in certain conditions. The drugs which most notably affect the fœtus are opium, mercury, copper, lead, arsenic and the iodides. In appropriate doses they may be administered to the mother in suitable pathological conditions, with beneficial results to mother and child. Any morbific influence acting on the mother either acutely, as in the case of the exanthemata, or more slowly, as in tuberculous and specific infection, will react deleteriously on the product of conception and either destroy it through its overwhelming toxic action and render it feeble and less resistant to subsequent and postnatal invasion, or the disease will run an atypical course during uterine life with or without apparent vestiges at birth. The entrance into the fœtal structures is accomplished through the agency of a fœto-placental circulation. It is probable that access is gained through bacterial action, the germs rendering the placental villi less resistant to invasion, whereas both the microbes and their toxin pass the natural barrier at the chorio decidual junction. As a rule, infectious diseases do not manifest their characteristic visceral lesions in the fœtus, probably because of the passivity of these organs before birth. The germs, however, may be detected in large numbers by bacteriological and microscopical examination.

(88) Puerperal Eclampsia and Cerebral Hæmorrhage.

Boissard (*Bull. de la Soc. d'Obstét. de Paris*, February 15th, 1900) observed a case of this kind where, though albuminuria was marked, the fits did not seem severe. Prognosis is ever uncertain in eclampsia; repeated fits and long periods of coma do not always end in death, and after delivery the obstetrician often thinks that recovery is certain if the slightest amelioration occurs within a few hours. In Boissard's case the patient had three fits, and seems to have been but slightly comatose. Delivery was effected speedily, and the coma began to pass off. Six hours after delivery two fits occurred. Venesection was performed, but three hours later the patient died. The rapidity of death after the fits suggested cerebral hæmorrhage. Free hæmorrhage was discovered on the surface of the convolutions of the left hemisphere. There were also very widely distributed hæmorrhages in the liver, subscapular, interlobular, and intralobular. Bar, in discussing this case, declared that cerebral hæmorrhages were common in eclampsia. Schwaab recalled his case, where temporary hemiplegia occurred. Maygrier spoke of his more recently reported case where sudden and rapidly fatal asphyxia was caused by cerebral hæmorrhage, which nearly destroyed the bulb and the floor of the fourth ventricle.

THERAPEUTICS.

(89) The Treatment of Epilepsy.

Fleury who has made a careful study of the treatment of epilepsy (Abstract in *Journ. de Méd.*, May 10th, 1900), strongly believes in the autotoxic nature of this neurosis, and therefore considers that diet forms one of the most important elements in the treatment of epilepsy, and should be combined with methods tending to free the gastro-intestinal tract from toxic material. Fleury admits that some cases of epileptic seizure seem to be directly due to lesions, meningeal and otherwise, of the central nervous system, and such accordingly are very difficult to treat, but many others, and by far the greatest number, show no cerebral lesion other than possibly some inherent excitability, but in whom disorders of circulation, be they due to autointoxication or reflex irritation, are the cause of the seizure. These seizures may vary in very many respects, under the influence of diet, suppression of alcohol, etc. Patients so affected must have their diet carefully regulated and all the surroundings modified, and after this bromides may be administered. These latter become more efficacious when patients have been properly prepared for their exhibition. The writer points out the extreme frequency of gastro-intestinal disorders (possibly dilatation of the stomach), atony of the intestine, and constipation. Indicanuria is also a frequent feature. Such patients are put on dry toast, boiled eggs with ham, light fish, such as sole, whiting, veal, chicken, beef, and mutton in small quantities for the first midday meal, and an extremely reduced quantity at night, the last meal being preferably vegetarian. Dry cakes, biscuits, one or two glasses of water, especially mineral or hot water, should constitute the only beverage, alcohol being contraindicated. Euonymin, cascara, and similar drugs should be freely administered, while copious enemata should be given daily. Should there be any extreme dilatation of the stomach this organ should be washed out. Under such conditions of diet the bromides, especially the bromide of soda, will render much service. Chloral has also been found of much use. The administration of bromides should be relegated to the time of the seizures according as they are nocturnal or diurnal. In the case of daytime fits bromide should be administered before each meal. Massage, cold douching, brine baths, and mountain air are all more or less of great importance. The injection of an artificial serum, consisting of 1 per cent. of phosphate of soda, sulphate of soda, chloride of sodium, and carbonic acid, is useful. Eight to 10 grams of this may be administered daily by hypodermic means. According to the writer some weeks of such treatment should stop any tendency to epileptic seizure.

(90) Dormiol as a Hypnotic.

Schultze (*Neurol. Centralbl.*, No. 6, 1900) describes the results from the use of dormiol in various kinds of insomnia. Dormiol is a compound produced by the action of chloral on amylene hydrate, and in a 10 per cent. aqueous solution is colourless, and has a menthol-like odour, and a similarly cooling taste. His observations were made at the Andernach Asylum on patients suffering from various forms of mental and

nervous disease, and, in all, he has administered it over a thousand times. It was found to be effective in producing sleep and rest in 75 per cent. of the cases, and was particularly effective in melancholia and hypochondria, where it acted like magic. The sleep produced by its use lasted from five to eight hours, and neither unpleasant after-effects nor any depression of the cardiac action or circulation followed its use. In a few cases of hypochondria, however, the patient complained of some headache the day following its use. The usual dose was from 20 to 40 minims, never exceeding 45 minims. As regards hypnotic efficiency, Schültze places dormiol on or about the same level as sulphonal or trional, and makes the observation that one may succeed where the other fails. He lauds it especially for the remarkably excellent effects it gives in melancholia and hypochondria.

(91) The Treatment of Chorea.

LÉVY has published some investigations on this subject (*Thèse de Lyon*, 1900). It has already been pointed out by Aran and F. Siredey that arsenic in large doses will generally cause rapid disappearance of chorea. The drawback is that occasionally vomiting and diarrhœa supervene. Some experiments performed in 1879 by Chapuis have shown that arsenic when combined with butter appears infinitely less toxic than when given in solution. These investigations have been repeated by Lévy working with Weill. This author finds that the amount of butter should be invariably fixed to 10 grams whatever the quantity of active principle incorporated with it. To prepare the mixture a known quantity of arsenious acid is taken according to the dose to be administered. To this is added sodium chloride in such proportion that 0.1 gram corresponds to 0.005 of arsenious acid. This mixture must be very perfect, as on it depends the accuracy of the dosage of arsenic contained in the given amount of the butter, and the proportion must be maintained according as the dose of arsenic is greater or less. This mixture of sodium chloride and arsenic is triturated with 10 grams of fresh butter, and this amount is given spread on bread, a form of medication which is extremely palatable to children. One of the chief points is that the drug must never be administered while fasting. Experimentation has shown that when arsenic is given to dogs while fasting they very soon showed symptoms of arsenical poisoning. The writer finds that the best results were obtained when arsenical butter was administered during a meal. The whole dose should be given at a time, but two doses a day seem to be sufficient. It would seem from the writer's investigations that under this method of treatment it is not even necessary to confine the patient to bed or to put him on a milk diet, and that as a matter of fact a more liberal diet gives better results. This method of dosing can even be confided to inexperienced hands. Another point is that the same dose can be administered to children of almost any age. Lévy seems to prefer a somewhat rapid increase of the dose of arsenic, and from his numerous observations he appears to have obtained some very excellent results.

(92) Fersan.

SILBERSTEIN (*Therap. Monats.*, July, 1900) reviews the various methods which have been recommended for the administration of iron, the number of which indicates that no one of them can give universal satisfaction. He gives a full account of the latest ferruginous drug, fersan, which was first made by Dr. Adolf Jolles of Vienna. It is produced by centrifugalising whipped blood and treating the separated red blood corpuscles with concentrated hydrochloric acid. There are thus formed a histon-like base and an acid-albumin containing all the iron and phosphorus. It is a chocolate-like powder with a slightly salt taste, is perfectly soluble in warm water and does not coagulate on heating; it contains more than 80 per cent. of proteid and is absolutely free from alloxan bases and other products of proteid katabolism. Winkler showed that its administration to animals caused an increased deposition of iron in the liver and spleen, and Kornauth proved its inhibitive value by giving it to healthy men. Silberstein has used it in cases of anæmia in primary and tertiary syphilis, of severe early syphilis and of anæmia following uterine hæmorrhage, also as a nutritive agent in children convalescent from acute specifics. He reports that the results obtained were uniformly good. As fersan is not acted on by artificial gastric juice it is probably absorbed only from the intestine, and that the absorption is very complete is shown by the fact that the fæces are not coloured by ferric chloride as after the administration of other iron salts. The adult dose is 3 to 6 teaspoonfuls a day, but 3 ounces a day have been given to a man for some weeks without ill-effect. The author lays great stress on the entire absence of all secondary consequences, which are so frequent a drawback with other iron preparations.

PATHOLOGY.

(93) Etiology of Pneumonia.

MME. N. SCHULTZ (*Arch. des Scien. Biolog.*, tome viii, No. 1) records some experiments on the mode of infection by Fränkel's diplococcus. Hitherto it has been almost universally held that the organism gains entrance to the lungs by the respiratory channels, and that some tissue change, such as that produced by chill, is necessary to determine their characteristic pathological activity. In 1893 Ouskoff stated his opinion that the pleurisy and pericarditis which not infrequently accompany pneumonia are due not to infection by continuity, but to the fact that the virus is in the blood. The diplococci have since then been detected by several observers in the general circulation and in the different organs of the body, especially in the more acute cases of the disease. Mme. Schultz used rabbits for a series of experiments, and introduced the organism directly into the jugular vein. Out of 14 animals thus inoculated, pneumonia resulted in 8, and microscopical examination showed the usual exudation of fibrin, hyperæmia, and leucocytosis, and the presence of the diplococci in large numbers. The experiments show that no antecedent alteration in the lungs is essential to the incidence of pneumonia, but that the disease may result from infection of these organisms through the blood stream, the pneumococci finding here the most favourable site for their multiplication and for the development of an active virulence.

(94) Influence of Sterilised Air on Animals.

KIJANIZIN (*Archiv. d. Biol.*, tom. xvi, p. 663) in 1894 published some researches on the influence of bacteria in the intestinal canal on the assimilation of nitrogen, and showed that in their absence the amount of this element absorbed is considerably lessened. This is to be explained on the ground that these organisms are capable of aiding peptonisation and the breaking up of albumen by their fermentative action. In the course of these experiments he found that if he confined animals in a chamber to which only sterilised air was supplied some died after a few days of this confinement, others though taken out alive died shortly after, and the rest showed symptoms of extreme lassitude and weakness. These results were proved by the author not to be due either to starvation or to the exhalation of any toxic matter by the animals, or to the presence of any carbonic oxide in the sterilised air, and the present series of experiments was undertaken to elucidate the problem. Analysis of the urine of the animals thus confined showed that the quantity of leucomaines, which are the products of incomplete oxidation of albumen, was largely increased, while the proportion of urea, the product of complete oxidation, was much decreased. In other words the oxidation processes which normally go on in the tissues themselves were found to be considerably interfered with by the exclusion of organisms from the respired air. Reference is made to the experiments of Gautier, Ehrlich, and others which have shown that in the processes of oxidation which take place in the tissues themselves certain ferments, hitherto undefined, are the active agents; the author's observations point to the fact that these ferments are supplied by bacteria which gain access to the blood and probably to the leucocytes in the lungs. The actual cause of the debility and death in the animals is the enormous accumulation of insufficiently oxidised products which exercise a toxic influence. Kijanizin in fine states his conviction that in addition to the oxygen of the air certain micro-organisms normally present therein are necessary to life; that by gaining access to the blood they aid in the ultimate oxidation processes in the tissues, and that in their absence imperfectly oxidised products accumulate and cause death.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

HELD IN PARIS, AUGUST 2nd to 9th.

SECTION OF INTERNAL MEDICINE.

The first question on the programme of this Section was the Pathogeny of Gout. The discussion was introduced by Dr. Le Gendre, Physician to the Tenon Hospital, Paris, Sir Dyce Duckworth, and Professor Wilhelm Ebstein, of Gottingen. The following are abstracts of their reports.

(95) The Pathogeny of Gout.

Dr. P. Le Gendre said that since the uratic nature of tophi and urichæmia in gouty subjects had been determined the efforts of theorists had almost always had as their object an explanation of the pathogeny of gout by accumulation of uric acid in the economy and the precipitation of urate of soda in the tissues. The author rapidly reviewed the principal theories, namely, the introduction in excess of uric acid by the food or of nitrogenous substances generating uric acid; the formation in excess of uric acid by destruction of the nucleins or nucleo-albumins proceeding from the leucocytes or from the nuclei of all the cells in the body; the accumulation of uric acid by insufficiency of transformation into urea whether through torpidity of the liver or default of a ferment permitting it to fulfil its uropoietic function, or by inadequate oxidization throughout the organism; the retention of uric acid in the blood by insufficiency of the eliminatory function of the kidney; the resorption of uric acid in the kidney, which being supposed normally to have the function of effecting by certain of its cells the formation of uric acid by combination of the urea and glycocol proceeding from the liver, would become incapable of eliminating the acid formed. This being reabsorbed would in the blood become quadriurate of soda, which being present in superabundance precipitates itself under certain influences in the tissues in the state of biurate of soda. Some hold that the presence of urate of soda in the articular tissues sets up therein only a paroxystic inflammatory reaction as a foreign body. Others maintain that the uric acid acts as a chemical poison causing necrosis, and that the preliminary mortification of the tissues is necessary to the formation of the crystallised uratic deposits. Some explain the gouty localisations by the smaller vascularisation or the less resistance of predisposed tissues and the onset of attacks by the hindrance of the renal functions. Others attribute the localisations, paroxysms, and metastases to a nervous influence. It has also been believed that uric acid was hurtful only after having undergone certain physical or chemical modifications, and that a pathogenic *rôle* should be attributed equally to substances other than uric acid, such as alloxuric bodies. Each of these theories is open to valid objections, chemical, physiological, or pathological; the most plausible, moreover, can explain only the mechanism of the gouty paroxysm, not the permanent and hereditarily transmissible disturbance of cellular transmission, which is the necessary link between the intermittent morbid phenomena in the individual as between the disease of the father and that of the son. Clinical statistics, however, have placed it beyond question that gout is observed with a special frequency in individuals whose ancestors or descendants suffer from diseases of the so-called arthritic group or from trophic inadequacy. First, diabetes and obesity, and that gout is often associated with some of these diseases in the same person. The numerical relations established between diseases of the arthritic group warrant us in attributing to each of them the pathogenic process which has been shown to be true as regards one of them by Bouchard, after whose investigations it is no longer permissible to doubt that diabetes consists in a diminution of the aptitude of the tissues to burn up sugar, to carry to the extreme the transformations of carbohydrates. If clinically gout is of the same nature as diabetes, there is a great probability that there exists in the gouty subject a defective elaboration of nitrogenous material, an inaptitude of the tissues to destroy albumin thoroughly. Among the consequences of the incomplete destruction of refuse must be included the incumbrance of the organism both by certain acids (oxalic, acetic, lactic, etc.), which can diminish the conditions of solubility of uric acid without that substance being necessarily in excess in the blood, and by certain organic bodies the toxicity of which may contribute to the production of the manifold accidents of gout. Clinical statistics further place in evidence the morbid affinities of gout with simple albuminuria and interstitial nephritis as the frequency and intensity of the disturbances in gouty subjects. It may be inferred from these coexistencies that the functional disturbances of the kidney, as those of the nervous system, play a part in the preparation of gout and in the outbreak of its paroxysms, either by hindering the eliminations of the toxic waste products of the denutrition of the tissues, or through neurotrophic inhibition of the intracellular metabolism. When gout is acquired, the nutritive disturbance of the cells is brought about by a defective hygiene (abuse of food stuffs, nitrogenous or rich in oxalic acid, and of certain fermented drinks, insufficient physical activity, and overstrain of the nervous system), or by the action of a poison (lead). When gout is hereditary it is that the nutritive disorder of the cells of the first begettor has been continued through the ovum or the spermatozoon in the descendants of these cells.

Sir Dyce Duckworth read a paper, of which the following is a summary: (1) That gout as a morbid condition depends on an inherent vice of nutrition, which is manifested by an imperfect metabolism in various organs or parts of the body, presumably in the kidneys, and probably in the liver. (2) That this trophic disorder or inadequacy leads to the formation of uric acid, probably in excess, and to the periodic retention of it in the blood (gouty urichæmia). (3) That histology throws no light upon the intimate nature of this defect, which thus relates to cellular potentiality, possibly under neurothropic influence, and not, as far as we know, to structural alteration. (4) That this textural disability, or a tendency to it, may be primarily acquired, and also transmitted as a fault, thereby inducing from time to time urichæmia with gouty manifestations in the descendants. (5) That in most instances, under conditions which provoke it and in some cases independently of these, attacks of gout may grow up and come to a crisis. Such crises are attended by an alteration in the solubility of the uratic salt in the blood, whereby irritating crystals of biurate of sodium are produced and precipitated in various parts of the body. (6) That a paroxysm of gout, the sites of its occurrence, and its metastases, are determined by nervous influences, probably dominated from the bulbar centre, and that the local attacks alight either in the joints or in textures which have been weakened or rendered vulnerable by impaired nutrition, owing to past injury or overuse. (7) That this central neurosis is an essential and transmissible feature in the pathogeny of gout, and pertains to the arthritic diathesis generally. (8) That the urichæmia of gout is peculiar and unlike that which is induced by other morbid conditions, but that the occurrence of urichæmia in the gouty is by itself inadequate to induce attacks of gout. (9) That uratic deposits in any part of the body may be removed in course of time, but are apt to be permanent in the least vascular tissues. (10) That uratic deposits may occur to an enormous extent in gouty persons without the occurrence of any pain or paroxysms. (11) That the clinical features of gout indicate that both hæmic changes (due to inherent morbid tissue metabolism) and a neurotrophic disturbance act as pathogenic factors, and that, consequently, gout is to be regarded as a neuro-humoral malady.

Ebstein summed up his conclusions as follows: (1) Gout is a more or less chronic disease of which the fundamental substratum is a hereditary morbid proclivity, which is almost always congenital. To this proclivity is given the name "uric acid diathesis." (2) As regards ultimate cause of the uric acid diathesis, nothing more than hypothesis can be advanced. The intimate relations existing between the nucleins and uric acid make it probable that we have to do in the uric acid diathesis

with an abnormal state of the cell nuclei or of the protoplasm of the individual proclivity, which can be followed throughout whole generations and races of men is in any case of the greatest importance in the uric acid diathesis. (3) It appears that there are various circumstances which may contribute to the development of the diathesis and its transformation into positive gout. Among these circumstances must be mentioned the following: (*a*) Gout develops, all the circumstances being alike, the earlier and more intensely the diathesis is more pronounced; (*b*) there are habits—laziness, luxurious living, often a combination of both these causes, in the highest degree the abuse of alcohol—which favour the development of gout; the temporary variations that have been observed may generally be attributed to those circumstances; (*c*) there are acute and chronic intoxications, which, given the existence of the diathesis, favour the development of gout; bacillary poisons are in that case of great importance; relations of gout with rheumatism, syphilis, and lead poisoning should in the first place be borne in mind: influenza, too, seems to favour the appearance of gout; (*d*) contagion, which was considered a factor of the first importance by Boerhaave, appears to be of no importance; (*e*) climate seems to have no influence. (4) Uric acid seems to be the poison (the *materia peccans*) of gout. The question of knowing whether or not, besides uric acid, other products of the organism belonging to the family of the alloxurs or nuclein bases play a part is still unsettled. It is probable that it is only the uric acid formed at the expense of the nucleinic substances of the human body and not that formed at the expense of the nucleins of the elements which has an influence on the pathogeny of gout. It has not yet been proved that in gout uric acid is formed in excess, and Ebstein does not think that this is indispensable. Nevertheless he thinks that an excess of uric acid is very probable. The history of leukæmia teaches that gout is not the result of increased production of uric acid (estimated according to the quantity of uric acid separated in the urine) for there is in some cases of leukæmia a secretion of uric acid such as is never seen to such a degree in gout. (5) Uric acid is a chemical but not a septic poison. The influence of the poison is not equal either on different animal species or on animals of the same species differing in age. Inflammatory and necrosing changes of the tissues in question are the necessary consequence of the presence of uric acid, which finally causes a complete necrosis. When the tissues are utterly dead, but not before, the acid is deposited in them in the form of crystalised acid urate of soda (mono-natrium-urate, Tollens), (sodium biurate, Roberts). Tollens thinks that the uric acid circulates in the blood and the alkaline juices of the human body in that same form and not, as Roberts has supposed, as sodium quadriurate (called more rationally hemi-sodium-urat by Tollens). It may be admitted without hesitation that the mono-natrium-urate (Tollens), natrium-biurate (Roberts), may be deposited in a crystalline form in the tissues necrosed either by uric acid or another poison. (6) To understand the pathogeny of the different symptoms of gout one must assume (*a*) a primary articular gout; (*b*) a primary renal gout. The former is the most widespread form of gout which does not prevent its subjects from reaching an advanced age. Primary articular gout develops itself first under the influence of a retention of uric acid; this retention is localised because it effects only one or more parts of the human body. In primary renal gout we have to do from the first with a generalised retention of uric acid, which consequently affects all parts of the body; it is always caused by a primary and material change in the kidneys.

(96) Diagnosis of Renal Insufficiency.

This subject was introduced by C. Achard, who said that the diagnosis formerly rested entirely on a complex of general and functional disturbances, such as uræmic phenomena—dropsies, slight signs of "Brightism," *bruit de galop*, and a summary examination of the urine consisting in the estimate of its volume and density, and the discovery of albumen and casts. Thanks to the simplicity of the investigation, and the long experience acquired with regard to them these signs still remain the primary conditions of every renal affection. But they are better fitted to establish the existence and the nature of the lesions of the kidney than to make known functional disturbances of these organs. The anatomical change and physiological disorder do not always proceed *pari passu*, and on the other hand the functions of the kidneys may be seriously compromised even when the preceding symptoms remain unpronounced. A deceptive appearance of general health is maintained, and a more or less precarious compensation masks the danger—which is nevertheless very real—that threatens the organism. Therefore some complement of the investigation into the state of the function becomes necessary. To this end a whole series of researches has been devised, having for their object the exploration of the urinary secretion especially by comparing the urine and the blood, by various procedures, clinical (dosage) physical (cryoscopy) and physiological (toxicity). Moreover, instead of studying the product of the spontaneous secretion of the kidney it has been proposed to inquire how that organ accomplishes a work set to it to do, consisting in the induced elimination of a foreign substance introduced in a known dose into the organism. Of the methods referred to, only two are sufficiently practical—cryoscopy and induced elimination. The comparative cryoscopy of the urine and the serum which affords knowledge of the number of the molecules without distinction of nature contained in the two fluids, indicates the permeability of the kidney combined with the dosage of certain ingredients of the urine, the measurement of its amount, and the estimation of the weight of the body, it appears capable of also furnishing very instructive information as to the state of the renal circulation and the nutrition as a whole. Achard, however, thinks it possible that the ingenious calculations which allow us to draw all those deductions are somewhat wanting in the simplicity necessary for everyday practice. As regards the test of induced elimination which is generally carried out with methylene blue, it enables us to judge within what limits of time, and in what proportion the kidney accomplishes the disincumberment of the organism from the substances for which it serves as the emunctory. Differing in their mechanism, those explorations may furnish somewhat dissimilar indications. It is advantageous, therefore, to combine them. They are interesting in a double respect. First, they constitute a method of study applicable to pathogenic researches, and are suitable for the elucidation of certain obscure points in the domain of theory. Next they have a practical utility, for they confirm by making more precise the data acquired by simple clinical examination, as it is carried out cursorily at the bedside. Sometimes even they suffice for the detection of disorders of the renal function which would have remained uncertain or unknown; this is especially the case in certain cases of interstitial nephritis running an insidious course.

S. Laache in his report treated the question from the clinical and the therapeutic point of view. He took for his starting-point the function by virtue of which the kidney is the most important secretory apparatus of the organism for waste matters, liquid and solid, the last being represented chiefly by urea. He referred to renal œdemas, *œdema fugax*, general anasarca, and the decisive part played by the heart. As regards diagnosis, in connection with which he alluded to the milder form of Bright's disease, he said the researches of Achard and Castaigne had opened up a new way. Treatment should be by preference prophylactic; but if this was impossible, the well-known principles already followed in the treatment of renal affections should be applied. Special attention should be given to the state of the heart.

(97) Treatment of Muco-membranous Colitis.

Dr. Albert Mathieu, physician to the Hôpital Andral, Paris, said he would confine himself to a summary review of the principal pathogenic and symptomatic indications, and the broad lines of treatment corresponding thereto. (1) Constipation is the rule in muco membranous colitis; it is often spasmodic. The diarrhœa, which is always transient, is the result of a *débâcle* or an attack of catarrhal colitis. (2) There always exists in muco-membranous colitis a secretory irritation of the mucous membrane. (3) The syndrome muco-membranous colitis does not occur in its full intensity except in individuals predis-

posed by a pre-existing neuropathic condition. The colitis tends to aggravate this neurosis, and localise it in the abdomen. The same holds good with regard to visceral ptoses. Locally, the neurosis induces hyperæsthesia of the walls of the large intestine and disorder of its motility; it is especially a cause of spasmodic contractions. (4) The general and local conditions very often react on each other in muco-membranous colitis, and reciprocally aggravate each other. In treatment both these elements must be kept in view. Disorders of alimentation, attacks of pain, doubtless also autointoxication, are a cause of anæmia, wasting, sometimes even true cachexia. (5) Lastly, certain complications, acute dysenteriform or febrile attacks, hæmorrhage, etc., furnish special indications for treatment. The constipation is at once a cause and an effect; before everything, the removal of this condition must be aimed at, its disappearance is the sign and guarantee of the cure of muco-membranous colitis. In dealing with it measures must be employed that do not increase either the secretory irritation, the pains, or the tendency to spasm. Castor oil, large enemata, and belladonna are especially useful. The castor oil should be given in the morning in small doses with the early breakfast, its employment should alternate with that of the large enemata; these should be given at a low pressure, slowly and at a temperature near 104° F., in doses of 1½ to 2½ litres. These enemata soothe the painful and spasmodic irritation of the intestine, bring about the evacuation of material accumulated within it, and act as a mechanical antiseptic. Boiled water may be used, with a weak solution of biborate or salicylate of soda to reinforce the antiseptic action, and a very dilute solution of neutral ichthyolate of ammonia to exert a modifying action on the intestinal catarrh. Care must be taken to avoid everything likely to cause irritation of the bowel; for instance, drastic purgatives, astringent injections, massage in the cases where there is marked hyperæsthesia of the intestine or painful spasm of the colon. It has sometimes been recommended that food rich in vegetable detritus—green vegetable, cooked fruits, wholemeal bread, etc.—should be given; in many cases, however, this is not tolerated, and one is obliged to prescribe a regimen that favours constipation but lessens the irritation of the digestive mucous membrane. Enemata of oil are often very useful, especially combined with large enemata at low pressure. Belladonna is often prescribed with success; it soothes pain, and antagonises the tendency to spasm. More rarely one may have recourse to opium and its derivatives. Hot local applications and hot baths have a useful sedative effect; prolonged baths and large hot enemata form the basis of the treatment at Plombières and similar stations. Sometimes in these places ascending douches given at too high a pressure have been abused. It is often also of advantage to act on the general neurosis by the employment of nerve sedatives and hydrotherapy; often the patients are weakened and emaciated, and it is necessary to raise the standard of their nutrition, and at the same time to prescribe a regimen more appropriate to the state of their digestive canal. The dysenteriform attacks should be treated with enemata of a weak solution of nitrate of silver; the hæmorrhages by preparations of hamamelis and large enemata at a temperature of 113° F.

F. Boas (Berlin) next dealt with the symptomatology, diagnosis, and clinical course of muco-membranous colitis: (1) By muco-membranous colitis is understood a special catarrhal disease tending to plastic mucous formations of the colon; (2) in addition to this form, which is the most frequent, there is another much more rare, in which the process manifests itself in paroxysms, whilst in the intervals there is no noticeable malady except constipation; this form is denoted by the term mucous colic; (3) lastly, there is a third form which may be designated by the name of artificial muco-membranous colitis; by astringent injections, especially tannin, this form may be induced in persons who are the subjects of colitis, but not in healthy individuals; 4) the symptomatology of muco-membranous colitis includes constipation, colic, spasmodic atony of the intestines, glairy or membranous masses in the stools, and a general neurotic state; nevertheless, several of the symptoms may be wanting, the only one of them that is almost constant is constipation; (5) that which alone determines the diagnosis is the existence of characteristic mucous masses, the other symptoms—sensitiveness of the colon, coloptosis, movable kidney, and atony of the intestine—at the most can only help to confirm the diagnosis; (6) it is indispensable that it should be ascertained whether the muco-membranous colitis is an idiopathic condition or a complication; it is equally of great importance to ascertain whether the membranous colitis is of artificial origin; (7) in regard to the differential diagnosis the only alternative that need be considered is mucous colic; by frequent observations and methodical intestinal injections in the intervals it will almost always be possible to come to a decision; (8) the clinical course of muco-membranous colitis is absolutely parallel to that of habitual constipation; influences which correct the latter will cause the former to disappear, and *vice versâ*.

Dr. Julius Mannaberg, Physician to the General Polyclinic, Vienna, dealt with the pathogeny and pathological anatomy of enteritis membranacea and colica mucosa. (1) A distinction must be made between membranous enteritis and mucous colic. (2) By membranous enteritis is understood a subacute or chronic catarrhal affection of the large intestine, accompanied by evacuations particularly rich in mucus. (3) By mucous colic is denoted a morbid state of which the special clinical symptoms are: Paroxysmal crises of colic followed by evacuation of masses of mucus. (4) It is a question whether the two processes may occasionally be combined. (5) Each of the two morbid forms of which the only common element is the existence of mucous evacuations has a pathogeny peculiar to itself. (6) The first form is nothing more than a catarrh of the large intestine characterised by an abundant evacuation of mucus; it has the same pathogeny on the whole as ordinary catarrh of the large intestine. (7) Mucous colic on the contrary has a special pathogeny. In the great majority of cases it rests on a basis of general neurosis (hysteria, neurasthenia), and there is a tendency to consider the disease as an expression of the neurosis. In the exceptional cases where there is no underlying general neurosis the morbid state must be regarded as a mono-symptomatic neurosis of the intestine. In addition to this fundamental etiological factor certain occasional factors capable of producing paroxysms must be taken into account. The principal among them are diseases of the genital apparatus (in man as well as in woman), mental disorders, constipation, irritating rectal irrigations, organic diseases of the intestine. (8) Mucous colic is frequently accompanied by other pathological manifestations to which its production cannot be attributed, but which may be regarded as equivalents of the fundamental nervous element—gastric achylia, nervous dyspepsia, spasmodic constipation, enteroptosis. (9) The pathological anatomy of membranous enteritis is the same as that of enteritis in general. (10) As regards mucus colic in the very rare cases in which it has been possible to make an examination either on the living or the dead body no appreciable lesion of the mucous membrane has been found.

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(98) Pulmonary Œdema.

Professor von Basch (Vienna) dealt with this question under the following heads: (1) Under what conditions is pulmonary œdema produced? What is the nature of the process producing it? (2) What are the secondary consecutive processes? (3) What relation is there between the doctrine of pulmonary œdema and that of dyspnœa and cardiac asthma? What relation is there between pulmonary œdema and muscular insufficiency of the left heart? (1) The first pathogenic condition of œdema is that the capillary circulation of the alveoli should be arrested owing to the elevation of the blood pressure in the left auricle. The second is that the afflux of blood coming from the right heart, that is to say, from the side of the pulmonary arteries, should be unimpeded. The mechanical consequences of these two conditions are the enlargement of the pulmonary alveoli and increase of resistance in their walls. The enlargement is produced by elongation of the capillary vessels and the increase of resistance by the high tension of the blood in the capillary network. To these two consecutive processes may be added transudation into the alveoli—a natural consequence of the circulatory stasis in

the lungs. (2) The enlargement of the alveoli and the increased resistance of their walls create a mechanical obstacle to respiration, and as a consequence a disturbance in the ventilation of the blood. From this arises a morbid sensation, dyspnœa, which is only the expression of the disproportion between the work of respiration and its effect. This morbid sensation becomes intensified proportionately to the increase of carbonic acid which accumulates in the blood as a result of the disturbance of its aëration. It causes an increased excitement of the respiratory centres and forced labour of the respiratory muscles. The obstacle increases still more when intra-alveolar transudation is added to the preceding conditions—enlargement of the alveoli and increased resistance of the lungs. There is need to insist on the fact that the transudation alone without concomitant enlargement of the lungs does not hinder respiration so much as is believed. An abundant transudation, if it is associated with a slight pulmonary enlargement and moderate resistance of the lungs, produces much less dyspnœa than a slight transudation combined with a considerable enlargement of the lungs and a strong resistance of the alveoli. The persistence of the dyspnœa causes an increase of carbonic acid in the blood. The result is death of the heart in consequence of general asphyxia. (3) The dyspnœa and cardiac asthma develop in the prodromal stage of pulmonary œdema, that is to say, before the production of the alveolar exudate; but a slight transudation is very difficult to discover by clinical examination, and it is probable that it accompanies both these diseases equally. (4) Cardiac dyspnœa, cardiac asthma, and pulmonary œdema have their starting point in muscular insufficiency of the left ventricle, and not merely in primary insufficiency, which is characterised by a low arterial pressure, but also in secondary insufficiency, which is characterised by increase of arterial pressure.

Professor Masius of Liège dealt with the pathogeny of acute pulmonary œdema. Œdema, he said, is an abnormal accumulation of lymph in the plasmatic spaces. Acute pulmonary œdema is only a particular form of it, presenting two peculiar characters, both depending on the acuteness and activity of the pathogenic process and its particular localisation. These, are first, the accumulation of the liquid not only in the lymphatic tissue, but also and particularly in the alveolar cavities by transudation through the walls or by rupture of these; next, the suddenness with which the phenomena show themselves on which depends the almost uniform clinical symptomatology. The theories of the pathogeny of œdema regarded generally are three: (1) The purely mechanical theory which attributes œdema to a notable increase of lateral pressure in the capillary vessels—this should be rejected: (2) the view of Hamburger and Heidenhain which considers the formation of lymph as a secretory act of the endothelial cells of the capillary wall and œdema as an exaggeration of this function; (3) the theory of Starling, Winter, Théaulon, which attributes the genesis of the œdema to modifications of the osmotic relations between the liquids situated on either side of the vessel wall and to variations in the permeability of this wall. In regard to the question to be considered two facts are of predominant importance: A. An active simple non-inflammatory hyperæmia of the vessels without hindrance to the flow of the liquid is by itself incapable of producing œdema. B. Lesions of the capillary walls entailing an increase of permeability are an important factor of œdema. For this reason Masius is unable to admit that acute pulmonary œdema has only one pathogeny, clinically it assumes three forms: (1) Inflammatory œdema; here in all probability we have to deal with a reflex vasodilatation, circumscribed or widespread, developed under the influence of some casual factor and followed by a direct lesion of the walls by microbes dwelling in the substance of a normal pulmonary parenchyma—a fact demonstrated by one of Masius's pupils. (2) Stasic œdema, which is by far the most frequent. This is the form met with in affections of the heart, especially initial stenosis, in affections of the vessels—aortitis or arterio-sclerosis—in diseases of the kidney such as primary sclerosis. The experimental studies on the subject have been numerous, but their conclusions are often contradictory and seldom applicable to human pathology. The fact which appears best established is the production of œdema under the influence of an increased pressure in the pulmonary artery dependent on the normal or increased activity of the right ventricle coincidentally with stasis dependent on a paretic or spasmodic inactivity of the left heart. The pathogeny of the œdemas included in this group therefore comprises a great variety of factors. One only among these seems to adapt itself to all cases, and so to constitute the basis of the affection; this is the deterioration of the wall of the capillaries of the lung. Thus in chronic aortitis, in the small red kidney, there is often an extensive arterio-sclerosis and disorders of nutrition which are re-echoed in the osmotic tension of the plasma as well as on the molecular constitution of the vessel walls. Modifications in the permeability of the walls are in Masius's opinion one of the principal causes favouring œdema. On the other hand, many of the affections referred to, especially arterio-sclerosis and sclerous nephritis, react on the left heart and singularly diminish its resistance. To explain the suddenness of the accidents, one must invoke occasional factors such as sometimes irritation of the cardio-pulmonary plexus causing reflexly vasodilatation of the pulmonary vessels; sometimes, on the contrary, sudden paresis or spasm of the left heart coexisting with normal or exaggerated contraction of the right ventricle. C. Toxic œdema, which is known only in the experimental domain. Thus there is an œdema caused by muscarine, the cause of which is a cramp of the left heart, combined with a direct action of the poison on the vessels. Again, there is iodine œdema in the pathogeny of which the last-named factor is probably predominant.

Dr. Teissier holds that there is a definite clinical entity to which the name acute œdema or serous apoplexy of the lung may justly be given. The symptoms are premonitory sensations of tickling in the throat or painful intra-thoracic tension, violent dyspnœa accompanied by spasmodic and continued cough, soon followed by foamy and pinkish expectoration, a true bronchial froth caused by transudation of blood serum with a rain of fine *râles* heard over all the œdematous region. Teissier has come to the conclusion that primary acute œdema of the lung requires for its production a special soil—previous infection (acute articular rheumatism, influenza, the puerperal state, typhoid fever, pneumonia), or intoxication (Bright's disease, and a long way after, alcoholism). Changes in the heart affecting the zones of distribution of the nervous plexuses or ganglions—base of heart, coronary region, left ventricle—must also be given an important place among predisposing causes. The immediate cause of the onset is generally a rapid chill, fatigue, or emotion. Under an influence of this kind, a sudden rise of pressure having been produced in the territory of the pulmonary veins, previous changes in the blood, facilitating serious transudation and concomitant vasomotor disturbances favouring stasis, œdematous fluction will be brought about. As interstitial nephritis presents these various pathogenic conditions in the highest degree, it is not surprising that this form of Bright's disease so often presents as an epiphenomenon the syndrome of acute pulmonary œdema. Teissier has been able to confirm this view of the etiology by experiments. In general terms the gravity of acute pulmonary œdema depends on the degree of renal permeability. In regard to treatment, bleeding, besides relieving the circulation, withdraws a certain amount of toxic substances. Derivatives applied over the nerve trunks and the cardiac plexus are also beneficial. Atropine has not proved of service. Oxycarbonated nitrite of amyl may perhaps be found useful owing to its vasodilator properties and its marked influence on the contractile energy of the heart. Teissier has in serious cases obtained good results from the administration *per rectum* of carbonic acid combined with the use of derivatives and wet cupping. Morphine is a dangerous agent. In desperate cases puncture of the right auricle and tracheotomy with aspiration of the liquid blocking the larger bronchi have been recommended. Teissier has had no experience of these measures.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

HELD IN PARIS, AUGUST 2nd to 9th.

SECTION OF SURGERY.

(99) Surgery of the Pancreas.

A discussion on this subject was opened by Professor Andrea Ceccherelli, of Parma, who summarised his conclusions as follows: (1) Surgical operation on the pancreas stands in direct relation with all questions affecting the function of the organ. (2) Wasting, the presence of fat in the fæces, sugar in the urine, bronzing of the skin, jaundice and pain, are the symptoms accompanying the majority of pancreatic affections. (3) Considerable difficulties are met with in complete extirpation owing to the pancreas being deeply situated in intimate relation with other viscera, and being very rich in vessels and nerves. (4) The surgery of the pancreas has not hitherto advanced as it appeared legitimate to hope from the progress of visceral surgery, because very often the diagnosis is difficult, and on that account it is seldom possible to attack the morbid process at its beginning. At present everything tends to show that the surgeon is warranted in operating on the tail of the pancreas rather than its head. (5) It has been proved experimentally that extirpation of the pancreas is possible and compatible with the life of an animal. It has not been proved that the same thing holds good in the sphere of clinical surgery, notwithstanding a few positive cases. This is all the more true that the morbid processes which call for the operation are generally not limited to the pancreas. As a matter of fact one has to do with malignant tumours infiltrating the neighbouring parts, or with adenomata which can be diagnosed only with difficulty. Extirpation is not justified in tuberculous or syphilitic disease. Partial extirpation should be performed in such a manner as to leave one of the two ducts provided the duct of Santorini does not end in a blind sac. (6) The tumours that most frequently develop in the pancreas are cysts. These may be blood cysts, the result of injury or apoplexy; retention cysts, or hydatid cysts. In these intervention is legitimate and useful, but extirpation of the whole organ is not necessary; extirpation of the cyst, if it be possible, or incision being sufficient. In regard to extirpation, one has to consider the question of opening Wirsung's duct, and of the probable escape of the pancreatic juice into the abdominal cavity. In incision of the sac it is prudent, if possible, to stitch the walls of the cyst to the abdominal parietes. (7) In the case of pancreatic calculi the surgeon may usefully intervene for their extraction. (8) An affection which has lately been studied with great care is necrosis of the pancreas. This may call for intervention for the elimination of the fragments of the necrosed organ. (9) In cases of suppurating or gangrenous pancreatitis the rule is not to operate in the acute stage. Later, if there is an abscess, or if the organ is gangrenous, intervention may be useful. Three routes may be chosen: Lumbar, extraperitoneal, transpleural, or median subumbilical. Suppuration must be avoided, but sometimes it is necessary that a portion of infiltrated or necrosed pancreas should be eliminated. (10) In cases of chronic pancreatitis complication may be produced by compression of the bile duct or the pylorus, but in that case the surgeon may usefully operate not on the pancreas but on the liver or the stomach, in order to prevent the interference with function caused by compression. (11) In hernia of the pancreas following wounds reduction and even fixation may be suitable. The thoracic route is preferable if the hernia is diaphragmatic. (12) Intervention may be necessary in contusions and wounds of the pancreas, especially if bleeding occurs. In that case hæmorrhage should be stopped either by suture or by ligature of the bleeding vessels; the clots found in the abdominal cavity should also be removed. (13) Cases of movable pancreas may be observed. Experimental pathology justifies fixation of the organ. (14) In invagination of the pancreas Ceccherelli thinks the surgeon should intervene if complications occur and if elimination is not regularly performed. (15) If as the result of any process the opening of the duct between the pancreas and the duodenum is blocked, a new channel for the pancreatic juice may be made, or if that is not possible a pancreatic fistula may be established. (16) Pancreatic hæmorrhages may occur even without wounds. They depend upon disease of the pancreas most frequently gangrenous. In this case the surgeon should intervene as if the hæmorrhage were traumatic. (17) In "annular" pancreas surgeons have hitherto abstained from operating, but it might be necessary to cut the band or to intervene to remedy the results caused by it on the stomach or intestine. (18) Sutures through the pancreatic parenchyma cause no disorder or change, and are tolerated just as they are in the kidneys, the liver, and the spleen. (19) Wounds of the pancreatic duct may be sutured, but as far as possible in such a fashion that the thread be not in the middle of the duct, in order to avoid the probable formation of concretions. (20) Union of wounds of the pancreas takes place by proliferation of the cells, especially of the connective tissue. (21) It is certain that regeneration of the pancreas takes place. (22) After complete extirpation there is seen a great development of the glands of Galeati, and especially a karyokinetic increase in the epithelium, so that it may be supposed, in accordance with the experiments of Martinotti, that these are capable of adequately replacing the extirpated viscus. (23) The escape of the pancreatic juice into the abdominal cavity does not always cause peritonitis because absorption is rapid. There is reason to believe that, like bile, pancreatic juice is harmless if it is healthy, and hurtful if altered. (24) In extirpation of the pancreas care must always be taken to place ligatures before so as to avoid hæmorrhages and the escape of pancreatic juice. Neither thermo-cautery nor galvano-cautery should be used. They are unsafe, and in such cases the separation of eschars is to be feared; moreover, by radiation they may produce dangerous effects in the neighbouring parts.

Professor Mayo Robson, who presented a report on pancreatic surgery, began by stating that he is convinced that pancreatic affections are much more common that is usually thought. He bases his remarks on his personal experience, he having operated on 40 cases of pancreatic disease and having seen a considerably larger number of cases in which operation was either not consented to or not thought advisable. He dwelt on the importance of posterior drainage where practicable in acute and in suppurative pancreatitis. For reaching the main pancreatic duct he has found it practicable to incise the second part of the duodenum and lay open the termination duct from the papilla. Cancer, of which he has seen over 50 cases, he has found usually to occur after 40, and he believes that the cases occurring earlier in life are, in many cases, chronic interstitial pancreatitis, which may resemble cancer not only in the symptoms but in the naked-eye appearance after death. After describing the symptoms he remarked on the importance of distinguishing between cancer of the head and that of the body and tail of the pancreas. He then discussed the diagnosis, advising that especially in young subjects, but also at times in older patients, a hopeless prognosis should not hastily be given before surgical treatment has been tried, as if the case turns out to be chronic interstitial pancreatitis a cure may result from treatment. He expressed the opinion that excision of the pancreas for cancer can seldom be feasible or justifiable except in those cases where the disease is limited to the body or tail of the organ, and then only when it is caught in an early stage. Of the 15 cases on which he had operated for the relief of symptoms by cholecystotomy or cholecystenterostomy, nine recovered and lived for some time in greater comfort. The important fact, however, that some of the cases operated on and thought at the time to be cancer of the head of the pancreas, but which recovered and are now in perfect health—showing the tumours to have been chronic interstitial pancreatitis and not cancer—has led him to advocate operation in all cases not too far advanced, especially in young or middle-aged patients, not because much good will be done if the case be truly cancer,

but under the hope that the tumour may be inflammatory and not malignant. *Pancreatic Cysts.*—The author has operated on five cases of pancreatic cyst, for which as a routine treatment he advocates incision and drainage, which he has performed in four cases with three recoveries. In one case the cyst was so easily enucleated that it was removed in that way, and the patient made an uninterrupted recovery, but his experience not only in his own cases, but in others seen under the care of his colleagues, would lead him to believe that excision can only rarely be justifiable. In none of his cases were any pathognonomic symptoms present, and the author thinks that the diagnosis must usually be made from the physical signs. *Pancreatitis.*—Mayo Robson draws a parallel between the inflammatory diseases and the liver, such as infective and suppurative cholangitis and chronic interstitial hepatitis and similar diseases of the pancreas and its duct. He believes he has seen functional ailments of the pancreas ending in recovery that would come under the heading of infective catarrh of the pancreatic ducts, and he adduces positive evidence of suppurative catarrh of the ducts, as well as of chronic interstitial inflammation of the gland. He believes that as diagnosis becomes more perfected these diseases will be more frequently recognised and awarded their proper place in medicine. The author assents to the pathological classification proposed by Fitz, of dividing acute pancreatitis into suppurative, hæmorrhagic, and gangrenous pancreatitis; for clinical purposes he considers the subject under acute, subacute, and chronic pancreatitis. In discussing the etiology, he laid stress on bacterial infection as being the essential and immediate cause, but enumerated a number of extrinsic causes such as gastro-duodenal catarrh, injury, and pancreatic and biliary lithiasis. The mode of infection he believes is nearly always through the ducts. Although pancreatitis is a disease without exact pathognomonic signs, the diagnosis can usually be arrived at by a careful study of the history, mode of onset, and the combination of symptoms and signs. A case of acute and infective pancreatitis coming under the author's observation is related, also four cases of the suppurative form which were operated on after abscess had formed; of two in which the pus was evacuated by an incision in the loin, recovery followed, of two opened from the front, both died. In both cases leakage of pus had previously occurred into the stomach and had been vomited. In one case of suppurative pancreatitis in which rupture of the abscess occurred in the bowel, the patient was too ill when seen to bear operation, and gradual recovery occurred without surgical treatment. The treatment of acute infective and frequently that of suppurative pancreatitis practically resolves itself into that of peritonitis commencing in the superior abdominal region, and Mayo Robson lays stress on the getting rid of inflammatory products by lumbar drainage if practicable, although it may be necessary to make the diagnosis by an interior incision. In the acute form he draws a comparison between gangrenous appendicitis and acute infective pancreatitis and considers surgical treatment just as necessary in one as the other as soon as a probable diagnosis can be arrived at. If there be great distension in the epigastrium it will be easier and safer to make the exploratory incision in the left costo-vertebral angle. Treatment other than operative in order to get rid of the distension, relieve pain, fever, and other symptoms until a definite diagnosis can be made was also considered. The details of reaching the abscess when found were also discussed, whether the collection be lumbar, subdiaphragmatic, epigastric or pelvic. *Chronic Interstitial Pancreatitis.*—Professor Mayo Robson lays great stress on the importance of this disease, which he believes is often mistaken for cancer of the head of the pancreas and which he believes has not received much attention either from clinical observers or from pathologists, certainly not as much as it deserves. His experience in this class of cases has resulted from his having operated on a considerable number of cases of jaundice depending on obstruction in the common duct, the obstructive jaundice, wasting, paroxysmal attacks of pain and ague-like seizures having given rise to the suspicion of gall stones, and the absence of relief by medical treatment having rendered surgical treatment necessary. He argues that its recognition is of vital importance, since it is a disease not only capable of relief but of absolute cure by surgical treatment. The author illustrates his assertion by a brief report of 15 cases on which he has operated, with recovery in 14. In the fatal case, operated on when the patient was almost too ill for recovery, a necropsy showed a simple cirrhosis of the head of the pancreas. In another case in which relief was given by cholecystenterostomy, but in which there was a recurrence of the trouble owing to closure of the opening followed by death three months afterwards, a necropsy showed chronic interstitial pancreatitis and not cancer, as the course of events had led those observing the patient to suppose would be found. The author believes that chronic interstitial pancreatitis with inflammation in the pancreatic ducts is a regular accompaniment of gall stones in the common duct, and that it frequently continues after the original cause has passed. This observation has been confirmed by Dr. Ferguson, of Edinburgh, who says that his almost universal experience in cases where death has resulted from infective or suppurative cholangitis is that beads of pus can be expressed from Wirsung's duct. The cases related illustrate the symptoms and the treatment by cholecystotomy, which at once removes tension and allows the pancreatic duct to empty the organ of its infective products. Doubtless at times the manipulation of the head of the pancreas, which occurs during the operation, may detach calculi and inspissated mucus or pus from the pancreatic duct. The simulation of malignant disease of the head of the pancreas by chronic interstitial pancreatitis should lead the surgeon to hesitate in declining operation in any case of distended gall bladder with jaundice, where the patient is able to bear it, as although little good will be done if the disease is malignant, should the disease prove to be inflammatory a real and permanent cure may be brought about. After some remarks on hæmorrhagic pancreatitis, which in the author's experience of 3 cases has always been traumatic, and associated with effusion into the lesser peritoneal sac, he discussed the subject of pancreatic calculi, which form the paucity of specimens in the museums, from the very few examples found *post mortem*, and from the few recorded cases, the author believes must be a rare disease, and usually only recognised by the pancreatitis and the obstruction to the common duct with infective cholangitis to which the calculi give rise. For their removal he recommends exploration of the duct through an opening in the second part of the duodenum, of which operation he gives examples. In conclusion, the author looked forward to the time when pancreatic diseases would be awarded the place they deserved in the diagnostic efforts of the physician, and when the surgeon would be called on much more frequently to treat them at a stage when operation, whether exploratory or curative, might be undertaken with every hope of temporary success or permanent cure.

JULES BOECKEL (Strassburg) said: Operations on the pancreas are indicated in cases of injury, inflammation and its consequences (suppurating, gangrenous or hæmorrhagic pancreatitis, pancreatic necrosis with fatty necrosis), tumours, solid and liquid (cysts). In recent injuries the scope of intervention is very limited, wounds of the pancreas generally proving fatal very quickly from hæmorrhage or concomitant lesions of the neighbouring organs. Of 10 recorded cases death occurred in 8. The only rational treatment is to plug the wound after asepticising it. The search for and ligature of injured vessels, though right in theory, are practically impossible in the great majority of cases on account of the dangerous condition of the wounded person. In inflammations and tumours the surgical procedure is sometimes on the gland itself, sometimes on its more or less immediate neighbourhood. The latter condition is realised when a collection of blood, pus, or other material developed primarily in the pancreas ruptures and becomes encysted between one or other of the numerous peritoneal folds near that organ, or when a solid tumour insinuates itself among the same folds. Under these conditions the operation is extremely simple. The tumour causes a more or less considerable projection, and the serous folds covering it are intimately bound together. One need generally only incise the most project-

ing part of the tumour to lay it bare and then act according to circumstances. On the other hand, when only the gland itself is involved, intervention is more delicate, more laborious, and necessarily limited. It is delicate because the pancreas lies deep, surrounded by numerous and important vessels, the wound or ligature of which may cause fatal accidents. It is limited because only small portions of the pancreas can be extirpated, complete removal inevitably inducing a rapidly fatal form of diabetes. These intrapancreatic operations are indicated in localised tumours and inflammation of the gland. When the affection has been diagnosed—and this is the difficult point, since diseases of the pancreas have no really pathognomonic symptoms—the first thing to be done to lay bare the organ. According to the case it may be reached by three different routes: (1) Subgastric, when, as is seldom the case, the tumour projects above the lesser curvature of the stomach; (2) gastrocolic. This is the procedure of choice; (3) transmesocolic when the tumour has insinuated itself between the folds of the transverse mesocolon. In exceptional cases recourse may be had to incision through the flank (tumours of the tail of the pancreas), the operation then being continued outside the peritoneum. The pancreas having been cleared, search must be made for the focus or the tumour, and then curetting or enucleation should be carried out. Intraglandular operations are of course more dangerous than extraglandular, but even as regards the latter, unless when one has to do with cysts, the prognosis is sufficiently gloomy. The limited statistics at present available prove nevertheless that pancreatic affections which a short time ago were looked upon as incurable may now be dealt with successfully by surgical intervention made at the right time. Thus among 20 cases of suppurating and gangrenous pancreatitis there have been 11 cures and 9 deaths; in 23 cases of hæmorrhagic pancreatitis there have been 5 cures and 18 deaths; in 11 of solid tumours there have been 3 deaths and 8 cures, 4 of which were permanent. Cysts have been operated in 144 cases, which may be subdivided as follows: Operation in one sitting 99 cases, 92 cures, 7 deaths, of which 2 occurred during the operation. Operation in two sittings—16 cases, all cured. Total or partial extirpation—25 cases, 21 cures, 4 deaths. Cases of which no details are forthcoming, 4; 3 cures, 1 death. Extirpation, which is more rarely applicable, is more serious, more troublesome, and often incomplete. It should be attempted only exceptionally when the cyst is movable and a pedicle can easily be formed. In addition to these radical operations, palliative procedures may be practised when phenomena of compression of the bile duct or of the duodenum place the life of the patient in danger, as in tumours and chronic inflammations of the head. The serious risks of these operations and the very slender advantages obtainable from them make it impossible to recommend them. In the case of solid tumours cholecystenterostomy has given in 15 cases 7 speedy deaths and 8 recoveries with a maximum survival of 14 months. As regards cholecysto-gastrostomy (4 cases with very transient improvement), pancreatico-enterostomy (1 case which ended fatally), gastro-enterostomy (2 cases of which 1 died speedily and 1 survived 4 months), they need only be mentioned by way of record. Jejunostomy, recommended recently by Maydl, seems to give better results. The same operations may be performed with success in chronic pancreatitis of the head, which is so often taken for cancer of the organ. They may even be curative rather than palliative when regression of the inflammatory process takes place, which may happen when the lesions are not too old. Cure is then definitive.

(100) Radiography in the Study of Fractures and of Luxations.

G. Maunoury (Chartres), in opening a discussion on this subject, said that the errors that might be committed in the study of the results of radiography were attributable not to the method itself but to defective interpretation. To avoid such errors it was desirable to secure greater precision in the examinations, and to indicate on the prints certain data, notably the point where the vertical line let fall from the focus on to the plate meets the plate. *Fractures.*—Dealing first with simple fractures, the author said that in diagnosis radiography rendered invaluable services by indicating the number, form, and position of the fragments, their over-riding—which, when the proof was clear, corresponded with sufficient exactness to the shortening of the limb—their displacement in different directions, and the situation of splinters. To obtain precise information as to the disposition of a fracture it was necessary to radiograph it at two different angles; generally it was taken from the front (frontal plane) and in profile (sagittal plane). There was no absolute rule about this, and each fracture might require a special position of the tube. Very exceptionally a fracture might escape detection even when the bone was examined in different directions. Stereoscopy also gave valuable information as to the position of fragments. The clinical diagnosis of fractures was as valuable as ever, but radiography complemented it very successfully by making it more definite. It might even give it a character of certitude in cases where the complexity of the lesions or considerable swelling of the soft parts left it doubtful. Lastly, it made it less painful by reducing to a minimum the exploratory manœuvres directed to the seat of fracture. Radiography is useful in all fractures, but especially in fractures of the upper end of the humerus, which are often at the bottom of stiffness and ankylosis attributed to periarthritis; of the lower end of the radius, which are often accompanied by lesions of the carpus; of the leg, and especially those involving the tibio-tarsal articulation in these last radiography alone can give exact information as to the relations of the astragalus, with the tibio-peroneal mortise, a vital point in the prognosis and treatment of these fractures; of the astragalus which a few years ago were wrongly looked upon as being very rare; lastly of the metatarsal bones, which are the anatomical lesion of an affection well known to military surgeons, as to the pathogeny of which there had long been much discussion without its true nature being suspected. The formation of the callus is very interesting if studied with the help of radiography. The first stage cannot be observed, but after some twelve days at the end of the fragments there becomes visible a light clouding which becomes gradually darker. If coaptation of the fragments is perfect the callus forms at the line of the fracture a diffuse globular mass which by degrees becomes transformed into a distinctly limited fusiform sheath incorporated with the compact tissue. If there is slight overriding the cloudy deposit on each fragment forms the medullary canal and constitutes a thick layer where the fragments touch each other at the side. If the overriding is very extensive this lateral interfragmentary callus does not extend the whole depth of the line of contact, but is produced only at the level of one of the fractured ends, which seems to take a predominant part in the work of the bony union. The time taken in the formation of the definitive callus varies, seeming to be larger in proportion to the size of the bone. In certain cases, notably in oblique fractures of the tibia, the callus may remain a long time invisible even when consolidation appears to be complete. Radiography makes visible in the living body all the varieties of callus known to pathological anatomy, and shows how certain kinds of callus may simulate a perfect coaptation of two fragments which are nevertheless very badly reduced. It shows that in the child the work of bony consolidation, instead of, as is the case in the adult, being limited to the immediate neighbourhood of the line of fracture, spreads far along the line of fragments. In treatment radiography enables us better to reduce fractures and to see to what degree such reduction is possible; it is easy to watch the position of the fragments and to rectify it as far as may be necessary during the work of consolidation. When the patient may be regarded as cured, radiography furnishes precise information as to the result. By its means the action of different splints and apparatus—immovable, for continuous extension, etc., can be studied. It has shown that if they are often very effective, they are far from always giving perfect anatomical results: fortunately, perfection of form is not indispensable for the satisfactory restoration of function. Radiography indicates in what cases wiring of the bones may be practised: it is especially in fractures communicating with a joint that this procedure is valuable—for example, in fractures of the elbow and the ankle. In

such cases radiography enables one to see if the relations of the articular surfaces have been sufficiently re-established by reduction. If instead of a recent articular fracture one has to do with an old one, radiography alone can define the position of the bones and their deformities, and indicate what operation may be necessary, in what direction the bones should be divided, what should be removed, etc. It will also guide us in the treatment of faulty and irregular callus. In compound fractures radiography greatly simplifies the operative intervention so frequently indicated, obviating the necessity of groping about for splinters, and in cases where wiring is needed showing how the fragments are to be sawn. In fracture of the joint it shows whether conservative surgery or resection is preferable. In fracture by gunshot it shows the presence of foreign bodies. *Luxations.*—Radiography is much less useful in the case of luxations, although in some cases where a luxation has been overlooked it has shown its existence. But it has so far given no information as to the most frequent causes of irreducibility which lies especially in the soft parts. In old luxations it shows the new-formed bone productions which oppose reduction and reveals the production of false joints. Radiography has enabled us to study and to treat better congenital dislocations of the hip, and it also gives interesting information as to luxations which supervene in coxalgia.

PROFESSOR E. VON BERGMANN, of Berlin, presented a communication on the progress in the treatment of fractures made since the introduction of the Roentgen rays. During the last ten years our knowledge of fractures had made important progress in two particulars: first in regard to the operative treatment of certain simple fractures, with the object of effecting exact coaptation of the fragments; secondly, the diagnosis of the seat of fracture and the pathological anatomy of the bone lesions by means of radioscopy and radiography. There are obvious local causes that hinder the union of fractured surfaces; it is known, for instance, that in a broken femur the interposition of muscular fibres prevents the formation of the callus. Unfortunately, it is not possible with the help of the Roentgen rays to define this with sufficient exactness to warrant an incision. We can only suppose that the case is so if in the image given by the fluorescent screen we see a gap between the bone surfaces separated from each other in the sense of a *dislocatio ad longitudinem*, and this gap always remains equal in the most various positions in which we may place the broken limb. There are, however, other local causes of want of union which are shown clearly by radiography; this is particularly the case in fractures of joints and of small bones. It is sufficient to quote an example, namely, fracture of the patella. Malgaigne had deplored the frequency with which cases of fracture of this bone remained unhealed, and recommended long before the antiseptic era an operative intervention by the application of the hooks known by his name. These hooks, however, are much more dangerous than incision and suture of the fragments with silver or bronze aluminium wire. Examination of fractures of the patella by means of radiography reveals three principal obstacles to union: (1) The inequality in the size of the fragments, the upper being much larger than the lower; they therefore require wiring to keep them in place; (2) the number of the fragments. In addition to the two principal fragments there are small accessory fragments, or small splinters which slip into the line of fracture, and thus prevent accurate coaptation. (3) One of the fragments may be displacement by a movement of rotation in such a manner that the fractured surface of the other fragment meets it at its outer surface, so that contact of the fractured surfaces cannot take place. These various displacements being made visible by radiography, the surgeon is able to make up his mind as to the necessity of an operation, and to search for the seat of fracture, so as to remove the obstacles which have been mentioned, and wire the broken fragments together. Bergmann, in his clinic, has obtained complete bony union in more than twenty-five cases of this kind. The operations proved that the union was bony, and not fibrous, and that the metallic suture cured speedily and permanently. Therefore the operation is the general mode of treatment of fracture of the patella. The question of operation presents itself in a different aspect in the case of other fractures; for instance, when one had to do with a fracture of the lower end of the radius, a subject which has been thoroughly studied by E. Gallois. Whilst the treatment of fractures of the patella is almost uniform, the case is otherwise in respect of fracture of the lower end of the radius, the treatment of which varies according to the seat of the fracture and the displacement of the fragments. Professor v. Bergmann showed a series of photographs taken in his clinic demonstrating the different types of those fractures. Fractures of the tarsal and metatarsal bones were almost entirely unknown before the invention of radioscopy. The symptoms of those fractures were taken for inflammatory swelling or contusion of the foot, and were often treated by massage, with the result that the displacement of the fragments was increased. When the fracture is recognised, it must be treated by complete immobilisation. Illustrations of these fractures were also shown.

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(101) The Treatment of Infected Wounds. A DISCUSSION on this subject was introduced by Dr. Oscar Bloch, Surgeon-in-Chief to the Royal Frederick Hospital, Copenhagen. He said Lister's antiseptic method (treatment by carbolic acid) was based on the treatment of infected wounds (compound fractures). Although all surgeons were agreed as to the superiority of this method, it was not long before new remedies were sought more efficacious than carbolic acid. The most remarkable outcome of these researches was the replacement of the antiseptic by the aseptic method. All the experiments on various methods of treating wounds were founded on a considerable number of valuable investigations on all questions relating to wounds and their complications—for instance, on microbes and their toxins, on the bactericidal qualities of various remedies, the best method of disinfection, ligature, etc. The author shows that the outcome of all these investigations is that, from a practical point of view, *every wound, without exception, is to be looked upon as infected, and that infection and its complications are due to the retention of secretions containing microbes.* From this it follows that for the efficacious treatment of wounds the surgeon must put before him two objects: To destroy the microbes or their hurtful products, and to prevent the retention of secretions. In other words, antisepsis and drainage must be employed. In order to prevent reinfection of a wound so treated it must be dressed rationally; this is the only way to prevent secondary infection. The author dwelt on the want of agreement and conflicting results of different authorities, and concluded that scientific experiment is incapable of settling the question, what method of treatment is the best for a satisfactory solution of this problem we must have recourse to clinical experience. As the result of his own experience the author holds that *every wound must be treated antiseptically; that carbolic acid is the best antiseptic remedy; that wounds should be drained, and that to dress them in a rational manner an unquestionably sterile dressing must be applied and must be made antiseptic, at least in part, at the moment of application.* Moreover, the dressing must be absorbent, so as to dry up the wound and prevent the surplus of the wound secretions from coming into direct contact with the surrounding air which contains microbes. Lastly, the dressing must be of such a nature as to filter the air which gains admission to the wound and thus purify it from its microbes. Professor Bloch has attained this object by means of dressings of sterilised gauze, carbolised water, and cotton wool. He described in great detail the technique of the dressings which he adopts for different kinds of infected wounds. With regard to internal antiseptics and febrifuge remedies, with a few exceptions he said he placed little reliance on them, and he criticised the value of therapeutic serums, especially anti-streptococcus serum. According to Professor Bloch, it will be well before using these remedies as curative, to wait till experiment has supplied a firmer basis for practice, and a more solidly grounded estimate of the real value of serumtherapy in the treatment of infected wounds.

(*To be continued.*)

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

HELD IN PARIS, AUGUST 2nd to 9th.

SECTION OF SURGERY.

[*Continued from p. 28.*]

(101) The Treatment of Infected Wounds.

M. Felix Lejars (Paris) said that in recent years the treatment of infected wounds had formed the subject of numerous experimental and bacteriological researches. They had yielded valuable information but all required to be controlled by observation. For the profitable study of the problem, which is very complex, it must be considered under two heads: (1) Recent infected wounds in which the infection has not yet expressed itself in local or general reactions. These might perhaps be better designated recent wounds assumed to be infected. This assumption, however, should in practice be extended to every accidental wound, and bacteriological examinations show that it is well founded. It is known that even operation wounds are far from being amicrobic. On the other hand, there are no means of recognising in a recent wound by what microbes it is contaminated, what is their virulence, and what their ultimate effect. It has been proved that neither the look nor the visible course of traumatic foci are in this respect sufficient guides. *Therefore, every accidental wound should be treated as infected.* But how is it to be treated? It is known that the absorption of virus through the injured surface is almost immediate; the rapidity of absorption, however, varies with different microbes; moreover, the dose increases with the duration of impregnation. From this may be drawn the conclusion that the cleansing of the wound, in order to be efficacious, should be as early as possible, but whenever it is done it will be useful. Experience has shown (*a*) that we are powerless to destroy all the germs in a traumatic focus; (*b*) that the natural defensive power of living tissues plays a preponderant part in the fight against infection. The very first procedure, therefore, is mechanical cleansing, which should be minute and complete, aided if necessary by enlargement of the wound and removal of dead tissue. Care should, however, be taken to respect the integrity of living cells, which should be helped in their defensive reactions, nothing more. Sterile water, artificial serum, sterilised boiled compresses entirely answer these requirements; it is not the nature of the fluid used but the method of its employment that gives practical results. Hurtful in large doses, antiseptic solutions, when diluted sufficiently not to alter the living cells, have really no other useful effect than mechanical cleansing. Physical conditions of the same order have to be fulfilled by the dressing. It must be aseptic, absorbent, protective and immobilising, in a degree applicable to the different regions and for a variable period. (2) Infected wounds, the infection of which is expressed by more or less pronounced reactions local and general. Here, also, two conditions have to be distinguished: (*a*) the clinical signs of infection may be of recent date and the wound is not suppurating; (*b*) the wound is in active suppuration. In either case specific serumtherapy is indicated; this Lejars considers the scientific, natural method, and the method of the future. Unfortunately as yet only antitetanus and antistreptococcus serum are available. The former is only efficacious as a preventive, while the latter has mostly been used in puerperal fever and erysipelas. Against other microbic infections of wounds we have as yet no effective serum, and against associated infections we are powerless. This makes the treatment of the local focus all the more necessary, and, as in dealing with cases belonging to the first category, the surgeon has to set before him a twofold object. The first thing to be done is to cleanse the whole surface of the wound; then it should be dressed so as to favour exosmosis, continuous drainage of the whole surface, and prevent all stagnation and superadded infection. The object of the cleansing is especially mechanical, while that of the dressing is especially physical. If these conditions are thoroughly fulfilled the surgeon will have, as far as is possible, protected the living cells against the attack of septic agents without hindering their defensive reactions. In dealing with a suppurating wound the same principles must be applied—thorough exposure of the suppurating focus, and complete and continuous drainage. In certain putrid and gangrenous forms, and in burrowing wounds, oxygenated water, which appears to have a powerful effect on anaërobic microbes, is most useful. (3) Infected wounds with grave general infection — traumatic septicæmia. Here also it is to specific serumtherapy that we must look for rational treatment, but its action is much less certain than in the early stages of infection. At present only experiments can be recorded, and even antistreptococcus serum has seldom been used in traumatic septicæmia. Lejars thinks that it deserves to be tried on a more extensive scale in large doses. In the meantime we must use local treatment preceded by thorough cleansing of the focus. On the other hand, artificial serumtherapy, by restoring the blood pressure and stimulating diuresis, increases the natural defence and vital resistance of the organism.

(102) Intestinal and Gastro-Intestinal Anastomoses.

Dr. Roux (Lausanne) opened a discussion on this subject. He said experiments on dogs did not give a faithful picture of what was observed in man, whose digestive canal presented a material more manageable and less untrustworthy. Anastomosis had for its object the turning aside of the course of the food whether on account of the dangers or inconvenience caused by its presence or its passage over certain points of the gastro-intestinal canal or on account of one or more obstacles which it would be impossible, dangerous, or inopportune to remove. It is a procedure palliative in appearance, but has often a curative effect. In regard to risk, technique and results it stands midway between fistulæ (jejunal fistulæ, enterostomy, and preternatural anus) and radical operation (pylorectomy, excision of tumours or diseased loops). Anastomosis is effected by lateral apposition. It is the most practical of intestinal unions (*a*) because it requires less strict precision, (*b*) because it allows a larger junction without risk of forming a diaphragm or valve, (*c*) because it allows an opening of unlimited length which is less subject to later contraction, (*d*) because it is independent of the calibre of the tubes to be united. It is also the procedure most within reach of all operators. Entero-Anastomosis.—*Acute Affections.* Anastomosis is contra-indicated: (1) When the state of the patient does not allow more than enterotomy. (2) When the state of the intestine demands, under penalty of death, the immediate removal of one or more loops; nevertheless it may be combined in some cases with extraperitonealisation of these loops (for instance, strangulated hernia). (3) When the state of the patient and that of the intestine together with the skill of the operator allow something better to be done. Anastomosis is indicated: (1) When the re-establishment of a channel for the fæces is alone in question, especially if a more radical operation appears to be too long or too dangerous. (2) Even after the success of a disinvagination or untwisting, if fear is entertained for the peristaltic function. *Chronic Affections.* — A. Anastomosis should be preferred in cases where there are numerous adhesions, where it offers a better chance, leaving out of account the nature of the disease. B. It should be the operation always chosen: (1) In cases of inoperable tumours. (2) In presence of certain complex, multiple, inaccessible inflammatory foci (tuberculosis with burrowing, actinomycosis). C. Recourse should be had to anastomosis as a preliminary operation: (1) In cases of operable tumours in very debilitated patients (for instance in commencing occlusion): (2) In cases of inflammatory affections with deep burrowing, external pyostercoral or genital fistulæ, etc., which are often cured by this first intervention if care has been taken to combine anastomosis with unilateral exclusion, a procedure which only takes two or three minutes, and which is suitable for all cases of classes B. and C. Life is compatible with 1 metre 50 centimetres of jejunum and the half of the colon, the rest being excluded. The surgeon therefore need not be afraid to operate on healthy loops at a distance from the focus of disease. Gastro-intestinal Anastomosis Gastro-enterostomy, as being less dangerous, should precede

pylorectomy as a preliminary operation when the condition of the patient makes it desirable. It may replace it if the tumour is inoperable. It should always complete it (Billroth's second method) so as to give the patient at once the benefit of the radical and of the palliative operation when recurrence takes place, by making a new pylorus at as great a distance as possible from the old one. In non-cancerous affections of the pylorus and the stomach, for which an easier evacuation of the gastric contents is desirable, gastro-enterostomy should be preferred to pylorectomy and pyloroplasty, because it is easier and equally efficacious whether in its ordinary form or as duodemostomy. Gastro-anastomosis is very much superior to gastroplicatio and gastropexy; if done by the Y method it is an ideal operation. For the surgeon who is equally handy with the seamstress's needle and with the more or less automatic approximation apparatus, suture will remain the method of election, because it alone gives reunion of the mucous membrane by first intention, and because it allows easy post-operative treatment, an important matter in all cases. Murphy's button, the best thing of the kind, should be reserved for cases — and they are too numerous—where minutes have to be counted. It gives unlooked for results. In all these operations a surprising proportion of deaths from pneumonia takes place; these are not sufficiently explained by the necrosis.

DR. SOULIGOUX (Paris) said: Intestinal anastomosis constitutes most frequently the principal operation in the treatment of cancer and of stricture of the intestine; or the operation may be complementary. In presence of a case of acute or even chronic intestinal obstruction, intestinal anastomosis must yield precedence to preternatural anus, even if one has to intervene by a secondary procedure later. In case of retardation in the flow of fæces without obstruction, if the surgeon finds himself in presence of a movable tumour which can easily be taken away, it is enterectomy that should be practised; but the operation should be completed by anastomosis, either lateral or termino-lateral, operations which are more simple, more rapid, and more certain than circular enterorrhaphy. If the tumour is adherent, and its removal greatly complicates intervention, anastomosis is the only operation to be performed. It is of slight gravity, and, although only palliative, gives a fairly considerable survival. In cases of stricture or cancer of the cæcum, it should consist of turning of the ileum into the sigmoid flexure, and in the rest of the large intestine of a junction of the parts of the colon situated above and below the obstacle. In the case of strangulated hernia it may be either a preparatory or a definitive operation, much simpler and more certain than a circular enterorrhaphy. Souligoux summarised his conclusions as follows. The stomach has become an organ essentially belonging to surgery. Only dyspepsia of nervous origin lies outside the sphere of intervention. In cases of cicatricial stenosis of the pylorus or of the first part of the duodenum, gastro-entero-anastomosis is the operation of choice; indeed the only one admissible since it is almost free from danger, it provides against all accidents, and thanks to it, patients recover flourishing health. Moreover, it is less serious and more sure than pylorectomy or gastroplasty. In cases of stenosis of cancerous origin it is also gastro-entero-anastomosis that in the present state of opinion both of medical men and of patients will be most frequently employed. Pylorectomy is to be preferred to it only in cases of commencing cancer, without adhesions to the liver, pancreas, or colon, without involvement of the preaortic, pancreatic, and hepatic glands, and of course when there is no trace of generalisation; in a word, when it is easier of performance, and provided the surgeon adopts the technique recommended by Hartmann and Cunéo. Gastro-entero-anastomosis will most frequently be the necessary complement of pylorectomy when extensive resections of the stomach and duodenum have been performed. In the case of gastric ulcer in process of evolution gastro-jejunal anastomosis will still be useful, not to stop hæmorrhage, but to place the organ in a state of repose, and to allow cicatrisation of the lesion to take place. In bilocular stomach of cicatricial origin gastro-entero-anastomosis is the operation of choice; it is much superior to gastroplasty. In cases of dyspepsia when no improvement has been brought about by medical treatment, when phenomena of retention of food with violent pains causing contraction of the pylorus persist, it will be the operation of necessity. Done early it is not very serious, and allows the stomach to get well by establishing a means of escape for the gastric contents. Von Hacker's method is much the best when it is feasible. The anterior route should be followed only when it is impossible to perform posterior anastomosis. The operation which is physiologically the most complete is that of Roux. Nevertheless the posterior route, which provides against most of the accidents of circulus vitiosus, appears preferable to Souligoux. Whether carried out with the help of suture, of anastomotic buttons, or of crushing as he has recommended, it is the most rapid and therefore the less dangerous. In cases where phenomena of obstruction by adhesion may occur, one should not hesitate to perform a secondary jejuno-jejunal anastomosis as Ricard himself and many others have done.

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(103) Exploratory Operations on the Stomach.

MR. A. ERNEST MAYLARD (Glasgow) presented a communication on this subject. He said its object was threefold: (1) To indicate those conditions for which the operation of early exploration is of special value; (2) to make clear the safety and simplicity of the operation; and (3) to demonstrate the best method of performing it. With regard to the first point, early direct digital examination with visual inspection would, in obscure cases, determine whether the disease was innocent or malignant. If the former, the appropriate treatment would be suggested, and the patient's mind relieved of all doubts and fears, so distressing and harmful in their indirect effects; while, in the latter, the growth might be removed at such an early period of its development that its eradication might prove complete and permanent. With regard to the second point—the extreme safety and simplicity of the operation—the greatest encouragement may be held out to the patient to submit to the operation. When no harm can follow even if no practical result can be obtained, there need be no hesitation on the part of the practitioner in advising the operation, and none on the part of the patient in submitting to it. The third point concerns the operation itself. Upon the thoroughness with which this is executed to a large extent may depend the value of the procedure. The steps of the operation, including the fore and after-treatment, are as follows: (1) *Preparation of the Patient.*—Lavage is practised for two days previously; the diet is simple; the bowels are well emptied. A nutrient enema and a subcutaneous injection of liquor strychninæ are given just prior to operation. (2) *Abdominal Incision.*—In most cases the median incision above the umbilicus is sufficient. In some cases, however, the left oblique (Fenger's) is necessary. (3) *External Examination of the Stomach.*—The mobility of the organ is first noted to determine the presence or otherwise of adhesions. The anterior surface is palpated, and the posterior, by tearing to the required extent, through the gastro-colic omentum. Bidigital palpation should also be practised. (4) *Internal Examination of the Stomach.*—This is effected, first, by direct inspection, and, secondly, by digital exploration. To render inspection efficient, the stomach must be completely cleared of its contents through an incision in its anterior walls. This is effected by a specially-devised siphon apparatus. Fluid is introduced as required, and withdrawn until the cavity of the organ is perfectly clean. All proper protective measures are taken o guard against infection of the peritoneal cavity. As soon as all fluid is withdrawn the speculum is introduced. The specula employed are of special sizes. They resemble the ordinary large size glass-reflecting vaginal specula (Fergusson's), only are much longer, and cut both obliquely and transversely at their ends. By means of these, and either direct daylight or reflected artificial light, a perfect visual inspection of the mucous membrane is obtained. Digital exploration follows visual, and is executed by the index finger of the right hand, coupled with, if necessary, the external manipulation of the stomach with the fingers of the left hand. (5) *After-treatment.*—The gastrotomy wound is closed by a continuous Lembert, and the abdominal incision united in three separate layers. The patient is fed for

the first forty-eight hours by nutrient enemata. Of various illustrative cases cited the following is a good example:—A lady had suffered for years from dyspepsia. Various medical opinions had been expressed, and the commonest conception of her troubles was that they were due to antecedent ulceration. She was much depressed by the various opinions expressed as to the cause of her complaint, and the more or less apparently useless effects of the innumerable drugs administered. An exploratory operation revealed a chronic gastric catarrh. So far as the operation itself was concerned the patient suffered not the slightest ill-effects, while the result mentally upon the patient was of the very best. To her all doubts in her case were settled, and, aside altogether from the use of appropriate drugs and suitable food, the beneficial effect of the mind upon the body seemed to have most to do with her comparatively rapid and complete recovery.

(104) Gastro-enterostomy.

Dr. A. Monprofit (Angiers) presented a communication on gastro-enterostomy, which, he said, at first used solely in the treatment of inoperable tumours of the pylorus, may also be employed as a palliative in malignant tumours of the stomach not involving the pylorus. Such patients are relieved and their life is prolonged. Gastro-enterostomy and gastrotomy should not be opposed to each other, but an endeavour should rather be made clearly to determine the limits where one and the other of them stop. There is at the present day less tendency to remove, at the cost of considerable mutilations, large extensive and adherent tumours. These cases derive much more benefit from gastro-enterostomy. On the other hand, limited small movable tumours of the pylorus can be removed with excellent results. The procedures that have been successively used have been anterior gastro-enterostomy by Wölfler's method, which does not always give good results; then the methods most employed are those of von Hacker and Roux. The procedures of apposition by means of Murphy's button or by the method of Souligoux have each their partisans. Monprofit has always employed sutures with excellent results. He does not produce coprostasis, but contents himself with carefully protecting the abdominal cavity. When the stomach is much distended with liquids, he empties it by means of an india-rubber tube introduced through a puncture made in the mucous membrane before complete incision. Following the example of Roux, he feeds his patients as early as possible, giving them first liquid, then solid food within the first few days.

Dr. Bourget, Professor of Clinical Medicine in the Cantonal Hospital, Lausanne, read a paper based on 100 cases of stricture of the pylorus, in 46 of which gastro-enterostomy had been performed. The communication was presented to the Section of Medicine, but an abstract of it may conveniently find a place here. His conclusions may be summarised as follows: (1) Gastro-enterostomy is required whenever the calibre of the pylorus is insufficient to allow the free passage of food from the stomach into the intestine. (2) To warrant the performance of the operation the cause of the stricture must be permanent or definitive in character either tumour band, cicatrised ulcer, or fibrous ring. (3) It is contraindicated in cases of temporary narrowing of the pylorus, as by pyloric spasm in neurasthenic persons, and in gastric stasis from ptosis or atony of the walls. (4) It should be done only after a careful study of the mechanical working of the stomach, which should be examined in different stages of digestion by means of test meals, these being strictly the same for each examination. In cases where a transient cause of stricture (neurosis) is suspected similar explorations should be made, but should be repeated more frequently on account of the variability in the results. The effect of a prolonged tepid bath, bromide of potassium and even suggestion should be tried. (5) Insufflation of the stomach is necessary to obtain information as to cases of gastric ptosis or as to the importance of the dilatation. (6) Gastro-enterostomy is a curative operation in cases of pyloric stricture from cicatrised round ulcer, fibrous ring, or peri-pyloric adhesions. (7) It is palliative in cases of malignant tumours involving the pylorus, but it may prolong the life of the patient to an altogether remarkable extent. (8) The results of the operation have not been satisfactory in neurotic patients or in those who are the subjects of ptosis. (9) After the operation the chemical function of the stomach is but slightly influenced, although the standard of acidity is lowered. (10) The mechanical work of the stomach is considerably modified. The evacuation of the gastric contents is ensured; it is performed in a normal and rhymical manner as if it were regulated by a normal pylorus. The duration of work of gastric digestion in a patient who has been operated on (after healing of the surgical wound) is the same as in the normal individual. (11) The stomach gradually regains its normal size and position.

(105) Transplantation of the Tendons in Treatment of Paralysis.

Dr. Oscar Vulpius, *Privat-docent* of Surgery at Heidelberg, read a paper on this subject. He said that the transplantation of tendons had come into use only in recent years, although the idea of replacing the action of paralysed muscles by that of healthy muscles was sufficiently obvious, the procedure not very difficult, the danger infinitesimal, the results good, and the occasion of operating frequent. He based his communication on 160 operations done in his clinic. Thanks to the most rigorous asepsis, including the use of gloves and a mask, he had had a series of 130 transplantations without any trace of infection. He prefers what he calls the "descending" method; he sacrifices no muscle, but brings the distal end of the divided tendon into connection with the neighbouring muscles. In this way he benefits the paralysed muscles without damaging the healthy muscles which are to replace them. The most important indications for the operation are: Destruction of muscles, tendons, and nerves by injury and spinal paralyses, foremost among them being infantile spinal paralysis. In partial paralysis the operation is distinctly indicated; in total paralysis the surgeon must choose between it and arthrodesis. Transplantation has shown that total paralysis is in truth more rare than is believed. As regards results, success should be instantaneous in this sense that, at the end of the operation, a normal position of the articulation should have been obtained. Vulpius's 160 operations have shown that this improvement of position is permanent and that it is followed by a return of more or less normal mobility. The success is sometimes increased to a surprising extent under the influence of post-operative treatment. The more circumscribed the paralysed territory, and the nearer healthy muscles having a similar function are to be found, the more brilliant will be the success of the operation. In spastic paralyses success consists not only in correction of the attitude but in disappearance of the spasm. The results also depend on the localisation of a paralysis. The most favourable part for the operation is the leg, the thigh is less so; the musculature of the fore-arm presents greater difficulties, although Vulpius has had some very satisfactory results. Complete failures are very rare if there has been no defect in technique. Relapses have become much more rare as experience has increased, and in such cases a second operation may correct the first. On the whole Vulpius thinks himself justified in warmly recommending transplantation of tendons in the treatment of paralysis. A rational combination of the various modern methods may at least make life worth living for thousands of poor paralysed sufferers.

(106) Surgical Treatment of Hydatid Cysts of the Liver.

Professor Thomas Jonnesco (Bucharest) said that at the present time four kinds of operations are performed for hydatid cysts of the liver: (1) Puncture, whether followed or not by parasiticide injections; (2) marsupialisation; (3) incision followed by evacuation and suture of the cyst; and (4) enucleation and extirpation of the cyst. The last operation, which is ideal, is so rarely applicable that it can hardly be taken into account unless as an exceptional intervention. Puncture should be given up as uncertain and even dangerous. Marsupialisation, in view of the duration of the treatment, remains an operation of necessity applicable to suppurating cysts, and to those in which the calcified adventitia no longer allows retraction of the pouch to take place. The operation of choice consists in incision of the cyst, which is

emptied of its liquid contents, daughter cysts and germinal membrane, and suture; the pouch is left without drainage or fixation of the cyst to the abdominal wall. Jonnesco has operated in 6 cases of cysts varying in size from that of a man's fist to a diameter of 20 or 30 centimetres, and always with success. The effusion of bile into the cyst is not a contraindication. He has cured one case of this kind. In a woman operated on by him he was able in the course of a second intervention for a fresh cyst to observe the result of the first operation two years afterwards. The pouch had completely disappeared, and in its place there remained only a hard cicatrix adherent to the under surface of the liver.

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(107) Anæsthesia by Subarachnoid Injections of Cocaine in the Lumbar Region.

Dr. Severeanu (Bucharest) said he had induced surgical anæsthesia about 70 times by injecting hydrochlorate of cocaine into the spinal canal. This method seems to him to have certain drawbacks which he considers it important to point out. The amount of cocaine which he used varied from 1 to 4 centigrams. In all the cases he observed a general weakness lasting one or two days, and sometimes causing great anxiety, There was very frequent vomiting, with headache, which was generally very severe. Independently of the dangers of the use of cocaine, he finds there is a very serious inconvenience attaching to this particular procedure—namely, that it allows the patient to witness the operation.—M. Tuffier said he had performed 125 operations, among them 58 laparotomies, after cocaine anæsthesia by Bier's method. The phenomena which follow the injection are nausea, which may go on to vomiting when too large a dose has been injected; pallor of the face, respiratory distress, increase in the frequency of the pulse on the day after the anæsthesia; there may also be some vomiting, and more or less violent headache lasting fifteen to twenty-four hours is practically always observed. Of the 125 patients operated on, 5 died; in 4 of these the method of anæsthesia could not be held responsible for the result. The other patient died on the very day of the operation. *Post-mortem* examination showed the existence of a heart lesion complicated with pathological condition of the lung, and M. Tuffier thinks that in that case too the injection of cocaine had nothing to do with the death.—M. V. Nicoletti (Naples) said he had been able to show by numerous experiments on the rabbit and the dog that there is no histopathological lesion of the nervous system following subarachnoid injections of cocaine in the lumbar region. This appears to warrant the inference that the anæsthetic property of cocaine results solely from its action on the vascular system of the spinal cord. He has been able to produce anæsthetic effects in animals by subarachnoid injections not only of cocaine, but of ergotin, antipyrin, and quinine.—M. Racoviceanu-Pitesci (Bucharest) said that, like M. Tuffier, he had operated on 125 patients after anæsthesia by Bier's method, using doses varying from 1 to 4 centigrams. In 80 cases he noticed symptoms of slight intoxication which sometimes lasted four and even five days. In 3 patients the symptoms were so severe as to necessitate artificial respiration and subcutaneous injections of ether. He further stated that he knew of 2 cases in Roumania in which death had followed cocaine anæsthesia produced by injection in the lumbar region. He does not think, therefore, that this method can replace chloroform anæsthesia.

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(108) Pericardotomy through the Thoracic Insertion of the Rectus Abdominis.

Dr. A. Voïnitch-Sianojentzky presented a communication on this subject, in which he said that pericardotomy by a single longitudinal incision through the thoracic insertion of the rectus abdominis is a perfectly simple procedure. The incision corresponding exactly to the anatomical axis of the anterior mediastinum makes it possible to penetrate the pericardium without touching the pleura, and this can be done with perfect certainty, whatever may be the size of the pericardial effusion. This procedure should always be preferred for cases of small pericardial effusions, or when it is impossible to diagnose the size of the effusion. The longitudinal incision can be enlarged without difficulty downwards to the bottom of the pericardium as soon as that has been laid bare; in consequence of this the best drainage can always be obtained. The tubercle of the left sixth chondro-sternal articulation is a landmark in the incision and in the puncture of the pericardium.

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(109) Surgery of Cancer.

M. J. L. Faure (Paris) holds that cancer is a local disease which can be cured by a local operation. It is necessary that the operation should be complete, going far beyond the limits of the disease. Every incomplete operation is invariably followed by recurrence or rather continuation of the disease, for "cancer does not recur, it continues." While removing the disease, therefore, the surgeon should take no heed of how the breach is to be filled up—the wound must be dealt with afterwards as may be possible. Taking these principles as his guide, M. Faure has during the last five years operated on a considerable number of cancers in all regions—face, tongue, jaw, pharynx and larynx, thyroid body and glands of the neck, branchial remnants, stomach and intestine, testicle, ovary, breast, uterus, and rectum, scapula, femur and ilium. He groups together all kinds of malignant tumours, whether epithelioma or sarcoma, as he holds that the same rules should apply to both these affections. He does not include in his statistics any case dating from less than a year back. Under the conditions defined he has had 93 cases of cancer in every situation and of every degree of gravity. In 18 no recurrence occurred within a space of time varying from 12 to 47 months. Of these 2 who had had extensive epithelioma of the upper jaw and of the floor of the mouth died, after 24 and 40 months respectively, of an intercurrent malady without sign of relapse. This gives in round numbers 20 per cent. of cures. Faure admits that the period mentioned is not sufficiently long to justify him in speaking of definitive cure, although he has never seen, at least in external cancers, recurrence take place after a year of apparent cure; but 14 of his patients, or 15.05 per cent. of the whole number who were discharged from the hospital cured, have disappeared and cannot be heard of, and Faure assumes that among them there have been some other instances of prolonged freedom from recurrence. He regards his statistics of 20 per cent. of cures, which include favourable, moderately favourable, and extremely unfavourable cases, as "truly consoling," and as enforcing the conclusion that it is wrong to despair of curing cancer and that we have the right, and should consider it a duty, when confronted with that disease to "undertake everything and dare everything."

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(110) Cancer of the Cheek.

M. Morestin (Paris) said that 12 patients suffering from primary cancer of the cheek had come under his observation. Of these 1 was a woman and 10 of the 11 men were smokers, while the eleventh, who did not smoke, chewed. All had very bad teeth, and some had leucoplasic patches in the immediate neighbourhood of the tumour or on the opposite cheek. In 10 of the 12 cases the growth started in the immediate neighbourhood of the lower gingivo-genial *cul-de-sac*, extending afterwards on the one hand to the internal surface of the cheek, and on the other invading the mucous membrane of the alveolar portion of the jaw. The glands became enlarged early, they became fused with each other and with the submaxillary gland and soon became adherent to the jaw. The upper gingivo-genial *cul de sac* is not involved, and below it there remains a band of healthy mucous membrane. The floor of the mouth, too, generally remains intact for a fairly long time. The prognosis of cancer of the cheek is always very grave, its evolution takes place in a few months, and it soon gets beyond surgical treatment. In the cases in which intervention is possible the most general plan will be to remove *en bloc* the tumour of the cheek, the submaxillary glandular mass, and the corresponding part of the maxillary bone. Of the 12 cases reported by M. Morestin, 7 were inoperable. In the other 5 he operated, and one of the patients, who was absolutely cachetic, died the same day. The other 4 bore the operation well, in 3 relapse occurred, death occurring in from three to eight months; the fourth was lost sight of.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

HELD IN PARIS, AUGUST 2nd to 9th.

SECTION OF GYNÆCOLOGY.

(111) Treatment of Cancer of the Uterus. Dr. Gustave Richelot (Paris) introduced a discussion on this subject. Dealing first with vaginal hysterectomy, he said total extirpation of the uterus through the vagina is a *rational* method, whilst division of the cervix such as used to be done formerly allowed the infiltration, which had made its way through the isthmus and reached the uterine mucous membrane, to persist, and sections, even when done early, on histological examination showed between the muscular layers cancer cells divided by the bistoury, the rest of which had been left in the stump. By total extirpation we remove all those causes of immediate recurrence. Richelot has a series of 100 operations with 6 deaths. In the eyes of every man who studies his own observations rather than figures which cannot be controlled or analysed the few cases of failure occurring in consequence of incomplete diagnosis and exceptional difficulties fade into insignificance before the marvellous simplicity and almost certain success of all operations performed on definitely circumscribed tumours and movable uteri; and these are, after all, the only cases in which one can count on getting satisfactory results. Again, vaginal hysterectomy has proved *efficacious*, having given prolonged survivals and survivals without recurrence. The author calls special attention to the absence of recurrence up to the date of his report. Ott, of St. Petersburg, has had cures maintained after 12, 11, 10, 8, and 6 years; Landau after 9½, 8, 7, 6, 5, and 4 years; Le Dentu and Pozzi after 6 years; Quénu, Terrier, and Hartmann after 5 years. Olshausen, Fritsch, and Lauwers have had similar successes. Richelot's results at the date of his report were as follows. In 1894 he had two old cases in which a cure had been maintained for 7 and 6 years respectively. One of them lived 12 years, and died of cerebral hæmorrhage; the second is still alive and well 12½ years after the operation. Other cases with which he still keeps in touch have remained well for 10, 9, 8, 6, 4, 3, 2¾, and 2½ years. More recent cases are left out of account. Others he has lost sight of who had remained well 5, 4½, 4, 3½, and 3½. Among those patients who have so distinctly benefited by intervention there was one in whom the cervix was much ulcerated, almost destroyed, the uterus, however, being perfectly movable; another with a cervix much shortened and excavated; another with a cervix friable and much infiltrated, and another with the posterior *cul-de-sac* slightly invaded. Some authors manifestly exaggerate when they speak of definitive cure after the completion of 3 years. Richelot refrains from using that word even after 5 years and more, although he is strongly tempted to regard cases which remain well for 9, 10, and 12 years as definitively cured. But to deny prolonged cures and the good results of vaginal hysterectomy in cases of typical cancer, clearly shown to be such by their clinical course and microscopic structure, is to shut one's eyes to evidence. And since among his 100 cases he is able to point to at least 18 in which the operathoroughly beneficial, of whom many appear to be definitively cured, he thinks himself justified in saying that his anticipations were well founded, and that those only can say that they are disillusioned who have dreamt of an impossible degree of success. Passing to the consideration of abdominal hysterectomy, Richelot said the distinct improvements in technique had again brought the high operation into favour, and many surgeons are induced to practise it without sufficient criticism. He absolutely condemns surgeons who attack spreading cancers with the pretence of "removing everything," and do not hesitate to resect the broad ligaments, to burrow through infiltrations and neoplastic fragments, and to follow glands up to the aorta. One must adopt the same principles as for all cancers, namely, to intervene at the earliest possible moment and to remove not only the primary tumour but the corresponding lymphatic zone and glands. Looked at in this way the abdominal method is applicable particularly to cases in which there is no propagation appreciable clinically. But to insist always on the "emptying of the pelvis" in the simplest operations appears to Richelot an exaggeration. There have been cases of hysterectomy in which there has been no search for glands and which have yet given very prolonged survivals. That search is often uncertain and illusory; besides the glands, there is the infected zone of vaginal wall and parametrium and the invisible tracts through the tissues. The slightest reflection and observation make it difficult to understand how surgeons can dream of the complete dissection of infected tissues. The comparison with cancer of the breast is misleading. The axillary glands are united in a bundle and buried in a mass of fat, which is easily detached, and in order to destroy all the tissues and all the lymphatic vessels between the tumour and the group of glands it is permissible to cut wide and deep and to take away in one mass, skin, fat aponeurosis and even muscles, without having any organs to be careful about or dangers to encounter. But what is to be done in the pelvic cavity? What signifies the opening up of the broad ligament as if we could scrape its two folds and the laying bare of the ureter as if we could really strip it, destroy the last connective mesh and follow the cancer cells along the iliac arteries? The glands are only resting places in the path of infection; what is the use of removing some of them? For these reasons Richelot holds that the pursuit of the cancerous invasion through the pelvis is an illusion. After making praiseworthy efforts to show that this method is capable of giving longer survivals and more frequent radical cures, writers give as examples only cases of women who have died or are about to die or too recent to supply grounds for any conclusion. Discussing the relative value of the two methods Richelot said cancer is primary local and infects secondarily. Many authors have adopted the parasitic theory, but the soundest investigators have shown that in spite of certain rough analogies the hypothesis of a microbic etiology is improbable. Richelot is disposed to think that epithelioma, however local may be its origin, is a disorder of nutrition not dependent on external causes. One proof among others is heredity, the influence of which is manifest; another is the link connecting cancer with arthritis. A hundred times he has seen cancer and arthritic disease transmit each other, alternate with each other, and coincide in such a fashion that to his mind it would require a very rooted scepticism to exclude malignant tumour from a pathological family where it so naturally finds a place. It is just in this mysterious and varying action of the economy which regulates the degree of cellular anarchy, modifies its evolution, and determines the prognosis that we must learn to see things as they are. It is this that gives us means of combating the disease while at the same time marking out limits which cannot be passed. The variability of cancers of the uterus is well known. Most striking is the different course which in women of equal age and without apparent reason two cancers similar in structure and situated in the same region may run. Another remarkable and well-known fact is the more favourable prognosis of cancers of the body. They last for years, and remain much longer circumscribed and operable. Why? The anatomy of the uterine mucous membrane and wall and the arrangement of the lymphatics do not tell us how it happens that the uterus, profoundly degenerated on its inner surface and reduced to a thin shell, is not always surrounded by a zone of cancer and infected glands. In short it is known that uterine cancer passes through two periods: that it remains shut up in the uterus before invading the neighbouring regions, and that the duration of those two periods is subject to unknown conditions, among which doubtless is the influence of the "morbid temperament." This being the case what is our object and what can be our pretension? The end dreamt of is to intervene during the first period before the smallest cancer cell has escaped from the uterus. We can do this by

operating soon after the commencement. We can also do so a little later if we chance to meet with a cancer of slow course. What, then, will happen? Having left no trace of diseased tissue we have nothing to fear from our usual enemy, recurrence by simple continuation, and we come very near to obtaining a radical cure. We should, in fact, get it, but for the possibility of a constitutional predisposition, which may not be exhausted, and may produce a new cancer after a longer or shorter space of time. This, however, is only a contingency, and for this reason, whilst admitting the instability of our victories, it is permissible to believe in definitive success. Such, said Richelot, was the idea that inspired him fifteen years ago—to prevent invasion, not to pursue it; and such he still holds to-day is the true treatment of uterine cancer. Outside that all is precarious, uncertain, or foredoomed to failure. Nevertheless, the accommodating organism still comes to our aid. Intervention is not always useless when we operate a little too late. There are cancers of slow course where the continuous invasion and infection by continuity of tissue preponderate over the invasion of lymphatics and the carriage of cells to a distance. It would be going too far always to refuse the advantages obtainable from the improvements made in the technique of abdominal hysterectomy. The cases are rare and difficult to form a judgment of, but it is legitimate to operate by the high method in the case of a very moderate invasion, apparently limited to the vaginal wall, sufficient to put the other method out of court, but excluding the idea of a real diffusion of the cancer, and in presence of a slowly developing tumour, when the surgeon has been able to follow the evolution of the disease long enough to judge that its pursuit will not be altogether illusory. For this reason Richelot has welcomed abdominal hysterectomy, without believing it a sovereign remedy and without adopting it exclusively, because it enables the operator to go a little further afield to seek for favourable cases. He must, however, walk in this path with the greatest caution if he does not wish to meet with numerous disappointments. In conclusion, Richelot said his object was to show how vaginal hysterectomy effects cures which appear to be definitive, when it is done early enough to prevent invasion; that it gives prolonged survivals, and that abdominal hysterectomy in an additional resource in a small number of cases, but performed deliberately in cases of invading cancer is an imprudence, and in cases of limited cancer an illusion. This means that he differs widely from those who see in the former an operation always incomplete and necessarily only palliative, and in the latter the only procedure by which everything can be removed, and therefore the only one which is logical and rational. He is tempted to invert the proposition and to say that the truly curative operation is that which precedes cancerous infiltration, while the palliative operation is that which professes to pursue it. He admits that this formula may be too absolute, as it is difficult to find words to express all clinical shades of difference and possibilities.

PROFESSOR DMITRI DE OTT (St. Petersburg) dealt with the surgical treatment of cancer of the uterus. The following are his conclusions: (1) Surgical treatment is now the sole means of successfully combating cancer of the uterus. In a whole series of cases it is possible to effect a complete cure by operation. The results of the radical cure are undoubtedly made better by early diagnosis based on a histological examination of all doubtful cases. (2) The biological purpose of the womb as well as the peculiarities of its anatomical structure necessitate a special study of cancer of the uterus, and observations on cancer in other parts of the body as well as the conclusions drawn from those cases can be applied to the uterus only after verification for the particular case. (3) Total extirpation of the uterus must be performed in all cases of cancerous lesion of any part whatever of the organ, as this procedure gives the best guarantee against recurrence. (4) Removal of the ovaries and appendages generally should be practised only when there are special indications. (5) A radical cure is obtained by following the principles set forth above. The enucleation of retroperitoneal glands, recommended especially of late, should be practised only by the abdominal route. It should not be accepted as the rule, being warranted neither by theoretical considerations nor by fairly convincing clinical facts. It should also be looked upon as much more dangerous, and the indications for it are not sufficiently established. (6) Total extirpation of the uterus by the vaginal route is preferable to all other methods. The improvement of the technique now makes it possible by this route to overcome all the obstacles which quite recently made it necessary to have recourse to cœliotomy, exposing patients to all the risks of that procedure. (7) Morcellation in cases of considerable size of the organ or complication with fibrous tumours, which are frequent in cases of cancer of the uterus, is to be regarded as a conquest of great value in gynæcological surgery. (8) In cases of pregnancy complicated with cancer of the uterus extirpation is indicated, as well as where there is no pregnancy. The vaginal route is to be preferred. This method of operating may be practised up to the seventh month of pregnancy inclusive and presents but little difficulty in view of the possibility of lessening the size of the organ by removal of the ovum after opening up of the *cul-de-sac* and suture of the uterine vessels. If pregnancy is more advanced, in view of the viability of the child cœliotomy is the operation of choice, although one may have recourse to extirpation by the vaginal route after having delivered the child by vaginal Cæsarean section. (9) It is better not to close the wound leading into the abdominal cavity after total extirpation of the uterus and to confine oneself to light plugging with iodoform gauze. (10) The ovaries having been saved, sexual life undergoes no modification after extirpation of the uterus. (11) The remote results of the surgical treatment of the upper part of the uterus (cancer of the body) are infinitely more favourable than those of the lower part (cancer of the cervix). (12) Total extirpation of the uterus should be practised even in very advanced cases, for by means of that operation one can most effectually relieve the patients and postpone the fatal termination. In certain cases owing to the want of clinical precision in defining the limits of the new growth one may even succeed in obtaining a radical cure. (13) The mortality of the vaginal extirpation of the uterus can easily be reduced to a minimum; in any case it does not exceed 2 per cent. (14) In the series of cases operated on by the author a radical cure (over six years) was obtained in 10 per cent. Extirpation was practised in all cases of cancer, even those in which the disease was relatively advanced.

DR. THOMAS S. CULLEN (Baltimore) presented a communication on the treatment of Carcinoma of the Uterus. He briefly referred to the gradual improvement in the operation for carcinoma of the uterus, commencing with amputation of the cervix, as practised by Schroeder and his contemporaries; abdominal hysterectomy, as recommended by Freund; the catheterisation of the ureters, as employed by Pawlik and Kelly; and the more radical operation, consisting in the removal of the iliac glands, as advocated by Ries, Rumpf, and Clark. Cullen then pointed out the danger of implanting carcinomatous into healthy tissue, as is very likely to occur when the radical operation is performed. He next described in detail the operation as performed by Werder of Pittsburg. In this operation the chances of implanting carcinomatous tissue are reduced to a minimum. The various stages in the abdominal operation, where the cancer is limited to the cervix, are as follows: (1) Removal of broken-down carcinomatous cervical tissue, preferably a few days before; (2) insertion of ureteral bougies if desired; (3) ligation of the ovarian vessels and round ligaments; (4) freeing of the bladder from the uterus and broad ligaments; (5) opening of broad ligaments, location and freeing of the ureters to the points at which they enter the bladder; (6) ligation of the uterine vessels near their points of origin; (7) dissection of bladder free from vaginal vault; (8) dissection of rectum from vaginal vault; (9) removal of pelvic lymph glands; (10) freeing of vaginal fornices; (11) closure of pelvic cavity by uniting the vesical peritoneum with that of the rectum, an assistant meanwhile making strong traction on the cervix from below; (12) closure of the abdomen; (13) ringing of the vaginal vault with a thermo-cautery or knife, thus freeing the uterus and its

surrounding vaginal mucosa; (14) application of a light gauze pack to the space left in the vaginal vault. As will be noticed the uterus is freed on all sides, the vagina dissected loose from the bladder and rectum, and the pelvic and abdominal cavities closed before the operator comes in contact with the carcinomatous cervix. Even then there is little or no danger of transplantation of carcinomatous tissue. Cullen advised this operation in all cases where the patient is not excessively stout. Of course in such instances one has frequently to rely on a vaginal operation entirely. In adeno-carcinoma of the body of the uterus the same operation may be performed, but the wide removal of the vaginal mucosa is not necessary. The speaker then briefly analysed one hundred and seventy-six of carcinoma of the uterus occurring in the Johns Hopkins Hospital during the last six years as follows: *Variety of Carcinoma.*—Operative cases: Squamous cell carcinoma of the cervix 61, patients well January 1st, 1900, 13 (21 per cent.); adeno-carcinoma of the cervix 12, patients well January 1st, 1900, 12 (16 per cent.); adeno-carcinoma of the body of the uterus 30, patients well January 1st, 1900, 19 (63 per cent.). *Cases coming too late for operation.*—Squamous cell carcinoma of the cervix, 62 cases; adeno-carcinoma of the cervix, 6 cases; adeno-carcinoma of the body, 5 cases; total, 76 cases. The prognosis is most favourable in adeno-carcinoma of the body; least promising in adeno-carcinoma of the cervix.

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(112) Cervical Metritis.

PROFESSOR S. POZZI (Paris) introduced a discussion on this subject. He formulated the following conclusions:—(1) Acute or chronic inflammation of the cervix may exist for a long time isolated without invading the body of the uterus. (2) Nevertheless, acute lesions of the cervical mucosa easily spread to the mucous membrane of the body, and chronic lesions of the cervical parenchyma of inflammatory origin (sclerous and sclero cystic degeneration, partial or complete), quickly react on the nutrition and the anatomical state of the body of the uterus as a whole. (3) The operation of trachelorrhaphy is inferior to bi-conical resection of the cervix, more or less modified according to circumstances. It should be given up. (4) There is a large number of acute, subacute, and chronic inflammations of the cervical mucosa in nulliparous women, which are associated with narrowness of the external orifice and the insufficient drainage resulting therefrom. The most important part of the treatment is then the operative reconstitution, in a permanent manner, of a sufficient orifice for the uterine cervix.

DR. DOEDERLEIN (Tübingen), said that to-day the causes of inflammatory diseases of the canals or cavities of the body communicating with the exterior should first of all be sought for in a microbic infection. Modern bacteriological researches had led to the conclusion that it is the external orifice of the uterus which forms the boundary between a lower portion of the genital organs containing micro-organisms, and an upper part not containing micro-organisms. Therefore there are, as a rule, no microbes in the cervix or its mucus. Micro-organisms introduced naturally, or artificially during experimental researches, are destroyed by the alkaline mucus of the cervix. Owing to this bactericidal property the cervix of the uterus not only protects itself against microbes but at the same time defends the uterus, tubes, and peritoneal cavity against the micro-organisms which penetrate into the vagina and live there. Among the pathogenic parasites or germs which penetrate into healthy and living tissues and set up inflammation there are only two species, the gonococcus of Neisser and the bacillus tuberculosis of Koch, that are of any etiological significance in regard to cervical metritis. Whilst the localisation of gonorrhœa in the cervix is very common, tuberculous infection limited to that region is extremely rare. The means of protection of the cervix are powerless against gonococci; the other germs that penetrate with the gonococci, or after them, cannot establish themselves there, so that mixed infections in that part are improbable. Tuberculous, syphilitic, and diptheritic diseases of the cervix of the uterus are distinct maladies, very different from what is called cervical metritis. If one considers non-infectious cervical metritis, it is recognised that lacerations of the cervix play a large etiological part, as well as all the causes and diseases which produce metro-endometritis. The mucous membrane of the cervix is disposed to hyperplasia, polypi and indurative or erosive lesions; that of the vaginal portion, on the other hand, is prone to changes of the epithelium, that is to papillary and follicular erosions. The pavement epithelium is replaced by a cylindrical epithelium which has a tendency to extraordinary proliferation. Anatomo-pathological lesions are well known and beyond all question, but, on the other hand, the etiology requires further study both by bacteriological research and clinical observation.

DR. MENDES DE LEON, of Amsterdam, said that the pathological lesions of the cervix which are held to characterise the syndrome, cervical metritis, are from the clinical point of view difficult to separate from chronic inflammations of the body of the uterus, notably from those of its mucous membrane. That which it has been agreed to designate by the name of "erosion" plays an important part in the symptomatology of these changes. The divergent opinions concerning its origin may be grouped in four principal classes: (1) Erosion is looked upon as a loss of substance desquamation of the pavement epithelium on an inflamed site, which really constitutes a first degree of ulceration (C. Mayer). (2) Erosion is regarded as a metaplasia of the pavement or cylindrical epithelium co-existing with a glandular new formation (Ruge and Veit). (3) Erosion is considered partly as a congenital histological ectropion and partly as a true ulceration of the cervix (Fischel). (4) Erosion is equivalent to ectropion (Doléris). According to the opinion of Doléris ectropion is, properly speaking, a spot denuded of epithelium. Thus the presence of cylindrical epithelium would be no proof of metaplasia, but rather evidence of an ectropion of the cervical mucosa. If beneath this glands are found, they should be regarded as the cervical glands of the ectropic mucous membrane, and not as new growths, as is maintained by Ruge and Veit. From the clinical points of view this question is of merely secondarily interest to gynæcologists unless co-existing phenomena give rise to the suspicion of malignant new formation. In opposition to certain authors who speak of metritis only when the disease has developed under the influence of micro-organisms, Mendes de Leon holds that two forms of inflammatory process in the uterus can be distinguished—namely, a bacterial and a non-bacterial form. The importance of this distinction is unquestionable from the theoretical point of view. It would also be of great practicable value in concrete cases. But in view of the fact that it is almost impossible to discover the etiology of chronic forms, it is more rational to judge according to the clinical syndrome (history, pathological anatomy) if one has to do with a catarrhal endometritis properly so called, or a pseudo-endometritis (hypertrophy, hyperplasia). According to pathological anatomy, the catarrhal form is characterised by the presence of leucocytes in the stroma. Pseudo-endometritis is distinguished by an exuberant glandular proliferation, and by increase of the stroma, whilst in atrophy of the mucous membrane the latter is composed almost entirely of atrophied connective tissue. The symptomatology of the metritis of French writers perfectly agrees with that of the endometritis recognised by the author, as does the pathological anatomy as far as the mucous membrane is concerned. But, on the other hand, inasmuch as it happens often that many cases of endometritis are not characterised either by increase in the size of the uterus or by induration of the cervix while the muscular tissue of the organ has suffered no change, it follows that the term "metritis" is not always applicable. It is only in the gonorrhœal and septic affections of the uterus that the inflammatory process regularly penetrates more deeply down to the muscular substance. In the etiology of non-infectious affections of the endometrium one recognises the preliminary influence of long-standing, passive or active, hyperæmia of the genital apparatus such as might be caused by physical fatigue, colds, the habit of taking cold baths at the menstrual period, chronic constipation, *coitus reservatus*, masturbation, as well as *post-partum* or *post-abortum* subinvolution; lastly, fibromyomata and displacements of the uterus. As

for infectious septic or specific inflammations of the uterus, their origin must be sought in bacteria of all kinds whose presence in the lower part of the genital canal, even in perfectly healthy women, has been proved beyond doubt. There is particularly a puerperal endometritis, where not only the enlargement of the entrance to the uterine cavity facilitates invasion by microbes, but where the internal surface of the organ, riddled with wounds, with its blood and lymph vessels open, offers a favourable field to the micro-organisms which have penetrated into it. But in the non-puerperal uterus also an inflammatory disease may develop in cases where any lesion of the endometrium (as after operation or artificial abortion) coexists with invasion by pyogenic germs (staphylococci and streptococci), while certain specific bacteria, such as gonococci and the bacilli of tubercle, syphilis, or diphtheria, are capable by themselves of setting up inflammation in an intact mucous membrane. Most of those agents, whether combined or not with disorders of circulation, can induce the syndrome of cervical metritis. Here one is met by the question whether the symptoms that have been mentioned are rigorously limited to the cervix. It is improbable that an inflammatory process which has taken possession of an organ entirely covered with mucous membrane, and continually in contact with all sorts of harmful influences, would be arrested by a boundary so easy to cross as the ostium internum. Moreover, it has been shown by the clinical phenomena as well as by the pathological anatomy that partial affections of the uterine mucosa must be classed among exceptional cases. There is a difference of opinion with regard to the correlation of cervical catarrh with catarrh of the body. Pozzi, in his *Manual of Gynæcology*, says on this subject: "The localisation of the disease is usually at the cervix. This is the cervical catarrh of certain authors. I believe that it is wrongly described as a circumscribed lesion; in such cases there is always a concomitant change of the mucosa of the body. The practitioner must act accordingly on pain of disappointment." Mendes de Leon is completely of the same opinion. Some years ago as the result of researches undertaken by him in conjunction with Dr. Van Tussenbroek he was able to satisfy himself that among 100 specimens of mucous membrane examined in only 3 cases was there isolated cervical catarrh. On the other hand, he found catarrh of the body in 55 cases. In 39 of these it was circumscribed, while in 16 it was combined with cervical catarrh. When the presence of symptoms indicative of cervical metritis has been ascertained it is difficult to prove or to exclude affection of the mucous membrane. Erosions of of all forms, an open cervix, or cyanotic engorgement of the cervix certainly indicate the existence of cervical metritis, whilst the source of metrorrhagias and menorrhagias is usually found in the mucosa of the body, provided they do not arise from cervical polypi or very extensive papillary erosions which bleed at the slightest touch. In the absence of erosions, and when nevertheless there is a more or less abundant mucous or purulent secretion, it is all but certain that one has to do with a catarrh of the body. Moreover, the preponderance of indirect and reflex symptoms such as fatigue, mental depression, headache, anorexia, dyspepsia, palpitations, tenesmus of the bladder, incontinence of urine, etc., especially shows the existence of lesions of the mucosa of the body, one of the principal symptoms of which consists in pain and abundant metrorrhagia following introduction of the sound. The treatment of cervical metritis almost always in connection with affections of the body has, particularly in France, formed the subject of many discussions and set in motion a large number of pens. It appears from the literature of the subject that, whilst as far as the pathogeny and symptomatology are concerned the two lesions are generally to be considered separately, the same thing does not hold good in regard to treatment. There has but seldom been any question of indications for exclusive treatment of the cervix, although the technique of such treatment has been keenly debated. Even in pronounced cases of cervical catarrh with marked ectropion, where surgical treatment has been regarded as indispensable, most authors recommend a preliminary curettage. In general the indications for this treatment really exist, as the mucosa of the body is almost always found to be affected at the same time; while in doubtful cases where the clinical symptoms are not distinctly marked, one can always invoke the aid of the microscope to confirm the diagnosis. Nevertheless, it appears to Mendes de Leon irrational if, in spite of long continued local treatment, one has failed to conquer a refractory purulent leucorrhœa, whether accompanied or not by erosions and ectropion, to decide on amputation of the cervix before having thoroughly convinced oneself of the state of the mucosa of the body; because when the latter is equally affected, as is generally the case, curettage is indicated as being capable of giving much better results than so mutilating an operation. As to the numerous methods of treatment and operative procedures in use for the cure of cervical metritis the author declines to express any opinion, as he has seldom found occasion to apply treatment to that condition exclusively. He sums up his views in the following propositions: (1) One must not consider or treat cervical metritis as an isolated affection, seeing that in the large majority of cases it is associated with a similar affection of the body of the uterus. (2) The term "cervical metritis" should in most cases be replaced by that of "cervical endometritis" since the inflammation of the mucous membrane, but seldom coexists with a lesion of the deeper tissues.

DR. JONNESCO (Bucharest) described himself as exclusively a partisan of the high method in the radical treatment of uterine cancer. He had done vaginal hysterectomy in 8 cases with 8 operative successes, but in all the cases recurrence took place within eight months at the outside. Now in the case of spreading growths, after noting the extent of the lesions, he ties all the arteries supplying the uterus, closes the abdomen, and removes or scrapes away the carcinomatous masses. In limited non-invading cancers he does abdominal hysterectomy, removing the upper part of the vagina and completely emptying the upper and lower pelvis. He had done this operation 12 times with 6 deaths, but in spite of this large mortality he held that the operation was legitimate.

DR. MORISANI (Naples), without expressing absolute preference for either abdominal or vaginal hysterectomy, held that the former was suitable for extensive neoplasms, the latter for limited tumours. But he insisted that hysterectomy should not be used in a pregnant woman. If the pregnancy was in the early stage he contented himself with partial operations or electrolysis. Near term his first object was to deliver a living child; then he performed hysterectomy, abdominal or vaginal, acording to the seat and extent of the neoplasm.

DR. FRITSCH (Bonn) stated that in Germany there is a tendency to use the high route in the treatment of cancer. His own practice is to do the high operation when the parametrium is attacked; in simple cases without peri-uterine invasion he does vaginal hysterectomy.

DR. DÉLAGÉNIÈRE (Mans) declared himself a partisan of the high route, and insisted on preliminary ligature of the hypogastric and uterine arteries.

DR. BOUILLY (Paris) gave the following as the results of his treatment of cancer by vaginal hysterectomy. In a first period (1886 96) he operated in 127 cases; in a second (1897-1900) he had operated in 56, being a total of 183 operations. Better antisepsis and improved technique had diminished the mortality in the second series to 5.35 per cent., as against 19 per cent. in the earlier series. Deducting from the 183 cases 28 in which death followed the operation and 21 in which the patients were lost sight of, there remain 144 operated on in the last 14 years and followed up. Of that number only 18 are still living, and in 2 of them (1 operated on 3 years and 4 months, the others 2 years and 8 months ago) recurrence has taken place. Of the 16 others who remain in apparent good health 1 was operated on 12 years ago (in this case the histological examination appears to give some reason for doubt as to the nature of the tumour), 1 four years and three months, 4 three years, 4 more than a year and a half, 3 one year and less ago, while 5 have been operated on since the beginning of the present year. Taking all his cases together the average survival has been two years.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

HELD IN PARIS, AUGUST 2nd to 9th.

SECTION OF MILITARY MEDICINE AND SURGERY.

(113) Etiology and Prophylaxis of Typhoid Fever in Armies in the Field.

Dr. Vincent, Médecin-Major de 2e classe, Professor-Agrégé at the Val-de-Grâce Military Hospital, said that typhoid fever is a constant accompaniment of all wars, and in many of them has been more murderous than the fire of the enemy. The pathogenic factors are the same as in time of peace, but in the field their noxious influence is at its maximum. *Predisposing Causes.*—Among these must be counted the age of the soldier, his customary country origin, the time of mobilisation and military operations (summer, autumn), monotonous and imperfect diet with resulting digestive disturbances, inevitable deficiencies in bodily hygiene and in clothing, hot climate as in colonial expeditions, aggregation of troops and overcrowding in cantonments, bivouacs, forts, and towns, besieging or besieged forces, long continuance of war, the depression of defeat. Over-fatigue is the most formidable predisposing factor. *Determining Causes.*—The typhoid bacillus is ubiquitous. It may remain in the latent state and in the digestive canal and multiply there under the influence of the predisposing causes; from this ensue epidemics that are apparently spontaneous (Kelsch). Other causes are the importation of the germ by troops arriving from infected garrisons, and contagion from man to man. There is danger from clothes, blankets, drinking and soup cans, platters, etc., that have been used by men suffering from typhoid latent or declared. Transmission by ingesta, drinking water, plays a most important part (Egyption expedition, Turko-Russian, Spanish-American, South African wars, etc.). Food brought from infected regions and vegetables may carry the disease. Flies play a part, especially in colonial countries, in the contamination of food and clothing, and of the face and hands. The soil is the habitual receptacle of the typhoid bacillus, which may live very long in it. Impregnated with urine and specific dejecta from commencing cases and others of the ambulatory type, befouled by the excrements of men and animals, by offal, etc., the soil may transmit the germ to the soldier either directly or by the medium of drinking water, foot-gear, and clothing. The air carries about pathogenic dust resulting from the desiccation of the infected soil. 2. The necessities of war make the prophylaxis of typhoid fever very difficult. *General Prophylaxis.*—At the commencement of mobilisation all men out of health should be eliminated or drafted to the auxiliary services. At the beginning of the campaign there should be given to each man, or at least to each officer, a leaflet of instructions setting forth the principal rules of the prophylaxis of infectious diseases, particularly of typhoid. During the period of concentration and during active operations care should be taken to prevent over-fatigue as far as is compatible with the exigencies of war. For colonial wars only men should be chosen of at least 25 years of age, and the expeditionary force should be followed by a large number of bearers, etc. The purity and variety of food, individual cleanliness, the hygiene of cantonments, bivouac, and camps, and that of latrines (which should be lighted at night), protection against the plague of flies, the ventilation of tents, huts, etc., the sanitation of fields of battle—all these things should be the object of constant and rigorous supervision. Suspicious wells should be placed out of bounds and guarded. Only filtered or boiled water, or better still light tea or coffee should be used. Alcoholism should be prevented. *Special Prophylaxis.*—The value of antityphoid vaccination by Wright's method has not yet been established. Each Army Corps should be provided, as is the case in the German and American armies, with a bacteriological outfit for use in the field, so that the early cases of an epidemic, which often pass unnoticed, may be recognised. Troops coming from infected garrisons should if possible be made to camp or bivouac apart. Sick men should be enjoined to report themselves without delay. The most serious cases should be sent to special hospitals. The evacuation of other cases of typhoid and suspected cases far from the zone of operations is possible, and should be carried out in the early days of the disease. It seems to be necessary to establish special hospitals for typhoid cases. The dejecta and everything that may have been touched or soiled by the sick should be disinfected or sterilised. In cantonments, localities and dwellings infected with typhoid fever should be avoided. Quarters should be cleansed and ventilated, and if need be disinfected. Soil, water, and air should be protected against contamination by specific faecal matter. Dejecta and filth should be burnt, or, if that is not possible, disinfected and buried. Cantonments should not be kept long in the same place. In temporary camps, besieged places, and besieging armies, the same rules for combating contamination of the soil, water, air, food, etc., should be observed. If typhoid fever spreads the camp should be abandoned. A detail should be left there to carry out disinfection, and a new camp should only be established after a bivouac for at least fifteen days so as to give time for incubating cases of typhoid to declare themselves.

(114) Prophylaxis of Dysentery in Armies in the Field.

Dr. Antony, Médecin-Major Principal de 1e Classe, Professor at the Val-de-Grâce Military Hospital, after referring to the fact that the nature of the germ of dysentery is unknown, and pointing out that the secondary causes—cosmic conditions, atmospheric changes, over-fatigue, nature of food, infection and contagion in time of war—act simultaneously and acquire their maximum of intensity, said the most vigilant prophylaxis could do little against the first four of these; it could only attenuate their immediate effects. War will always expose armies to sufferings and privations of all kinds and to bad weather, often without any shelter, and the most careful commander will never be able to spare his troops hard work and the overfatigue resulting therefrom. This can be borne by strong, hardened men if they are properly cared for; but recruits and weakly men have always shown themselves incapable of resistance. It is necessary, therefore, that these should be kept away from the fighting line until their military training is complete. To act otherwise with the object of putting into the field a larger effective force can only lead to disaster. As regards food, the rations should never be solely composed of preserved food when it can be helped. Intemperance and all forms of excess should be severely repressed. For the purification of water every available method should be used, but the most practical and certain is boiling. Soldiers willingly adopt these precautions if tea or coffee is served out to them for use with the water. As the sanitary service is not adequate to cope with the necessary work of disinfecting hospitals and the sanitation of battlefields, there should be organised in time of peace a special service for those purposes which should be in a condition to set to work from the very beginning of mobilisation. A service of this kind was tried with success by the Russians in 1877. In hot countries, where malaria and dysentery acquire a special character of frequency and intensity, besides the precautions just referred to, care should be taken, if possible, not to carry out military operations during the time of year when these diseases generally prevail, and the troops should be subjected to prophylactic treatment by quinine.

(115) Etiology of Dysentery in Armies in the Field.

Dr. Simonin, Médecin-Major de 2e classe, Professor-Agrégé at the Val-de-Grâce Military Hospital, said the history of ancient and mediæval wars as well as that of modern campaigns, even the most recent, showed that dysentery is one of the most constant factors in the morbidity of troops in whatever region the warfare is carried on. Its outbreak appears almost inevitable and always occurs very early. It may show itself at once frequent and grave as well in temperate as in tropical climes. The pathogenic agent has not yet been definitely

determined, and the uncertainty on this point tends to invalidate the opinion of clinicians who are prone to regard this affection as a well-defined entity of unequivocal nature whatever be the circumstances and the regions in which it happens to prevail. At present it appears as if the term "dysentery" represents merely a pathological syndrome. Some ascribe its causation to animal parasites (amœbæ). Others have found the etiological factor in a number of microbes which grow in the organism of which they are more or less habitual inhabitants. Some, again, have associated both microbes and amœbæ in the etiology of dysentery. However this may be, the most general tendency is to consider the morbid agent as an ordinary inhabitant of the human economy which in certain circumstances acquires a special power of growth and virulence. Dysentery appears most frequently to originate in infection. The virulence of the morbid agent once developed appears to be maintained in external media for a certain time. It may consequently be said that the disease originates in ordinary causes which may deteriorate the organic medium and allow the abnormal development and acquisitton of virulence by germs that are ordinarily harmless. The affection thus started seems to propagate itself subsequently by means of the contagion generated by these germs which have become virulent. In armies in the field the influences making for the production of dysentery are manifold. First of all come cosmic conditions (climate, heat, season). Heat particularly helps to make dysentery the principal disease that attacks troops in tropical countries. The influence of atmospheric changes and particularly of sudden chilling of the body or the abdomen plays a considerable part in the onset of diarrhœic and dysenteric fluxes. In addition to these etiological factors must be counted bad and insufficient food, the prolonged use of tinned foods, salt pork, green fruit, weavly biscuit, etc. Intemperance in drink and in food, especially in tropical countries, is also a cause. At all times and in every country the use of water, non-specifically fouled by organic or excrementitious matter, seems to be capable of inducing dysentery. Over-fatigue, which is unavoidable in war, by accumulating products of combustion in the organism engenders a true auto-intoxication, diminishes the phagocytic resistance, and favours in the highest degree the acquisition of virulent properties by the germs which cause dysentery. Soon, also, there intervenes a new infective factor, the importance of which most frequently becomes predominant, especially if the war is protracted within restricted territorial limits. This is the pollution of the soil and to a lesser degree of the air. The accumulation of organic refuse and of the dead bodies of men and animals gives this factor a very formidable potency, particularly in camps and beleaguered towns. When dysentery has made its appearance most often under the form of diarrhœa it spreads rapidly in armies, owing to the specific infection of the place and the inevitable aggregation of persons multiplying contacts. Then comes in anew the influence of the water, the soil and the dust of dwellings specifically polluted by virulent dejecta. These again transmit the infection by direct contact or by fomites. Arising most often in the points of concentration of troops dysentery is rapidly disseminated along the great lines of communication, at the halting places and cantonments where troops succeed each other. Most frequently armies infect the populations through which they advance; sometimes, also, they receive from them the infection which they themselves sowed in the first instance. From all these causes, widespread and interminable, pandemics often arise. Dysentery then prevails permanently. In temperate climes it is often associated with typhoid fever, in tropical climates with malaria. If the war continues the infection rages, together with typhus and scurvy, among the exhausted and famished troops.

(116) Extemporaneous Methods of Water Purification.

SURGEON-MAJOR SCHUCKING, of the Austrian army, said that of the various methods of purification there are only two that can be taken into account for the use of troops in the field, namely, (1) filtration, (2) purification by the addition of chemical agents. Among filters aiming at the sterilisation as well as the clarification of water, the Berkefeld-Nordtmeyer alone is so constructed as to meet the exigencies of war. But, although well adapted for use in field stations, it can only be carried in baggage waggons. Portable filters only clarify muddy water. The use of them, therefore, requires to be supplemented by some means of destroying microorganisms. After extensive experiments and researches (Traube, Lode, Kratschmer, Vogel) such a means has been found in hypochloride of calcium. In a dose of 8 milligrams of chlorine to a litre this chemical agency certainly kills all bacilli in thirty minutes.

DR. VINCENT, head of the Bacteriological Laboratory of the Military Hospital of Antwerp, said boiling gives absolute security, and requires no special apparatus, and the tastelessness of the water can be qualified with tisane or weak coffee. The filters in most general use are the Berkefeld and Pasteur. The experience of numerous observers as well as Dr. Vincent's own make him regard these as about equally valuable. But even when they are carefully sterilised, these filters do not give a water rigorously and constantly aseptic. Among the few germs which they allow to pass there are saprophytic as well as pathogenic organisms. After a few days they must be sterilised anew. Two methods particularly are used for this purpose. One of these is heat, which is the best, but also the longest. The other (Guinochet) is based on the use of potassium permanganate. This is more rapid and more practical, but does not produce absolute sterilisation. Dr. Vincent, however, considers it sufficient in view of the fact that there are always a few germs which pass even when sterilisation has been perfect.

(117) Plague Epidemics in the Far East.

MM. SIMOND AND YERSIN said plague does not rise spontaneously in a place. It does not even reappear there when it has disappeared for twenty years unless it is reimported. This fact has been established in regard to Constantinople, Venice, Genoa, and Messina epidemics in 1347 when the scourge came from Jaffa; in regard to that of Marseilles in 1720, when it came from Syria, and in regard to that of Cutch-Mandvi in 1812, when it was imported from Mecca. A study of recent epidemics leads to the same conclusions. The following principles may be laid down: (1) That plague spreads around a centre, like a spot of oil, by circular extension; (2) that the transportation of a primary focus to a distant centre may rapidly be brought about if there are direct and rapid communications between these points; (3) that the contamination of distant centres is exceptional if they are not connected with the focus by railways, or lines of navigation. In the Far East plague has gone forth from its endemic foci by the same road as merchandise. Its march, at first very slow, has become accelerated in proportion as it reached points where human movements were most rapid. On the other hand, neighbouring regions separated from the foci by natural barriers have been protected. The Gharwhaal in the Himalayas has not infected India, nor has the Yunnan in China infected Tonkin. It is from the Yunnan that have come the germs which have spread over the whole world. They took 30 years (from 1850 to 1880), following the rivers and roads of communication to reach Long-Tcheou and Pakoi. In 1893 English diplomacy succeeded in getting the Canton River opened to trade. The plague starting from Long-Tcheou reached Canton and Hong Kong, whence in four years it spread to the five parts of the world. It is useless to recall the origin of the plague of Bombay, but it is more important to determine at what point the scourge issued from India. The port of Cutch-Mandvi seems to be the starting point. The sanitary police is admirably organised at Bombay and at Karachi; but arrival at and departure from Cutch-Mandvi, where there are no Europeans, requires no formality. This native port is the centre of a very busy trade, and is in constant relation by means of small sailing ships with Madagascar, Zanzibar, the Mauritius, Jeddah, and the Persian Gulf. Whilst the infection derived from Long-Tcheou was spreading so far, Pakhoi was contaminating the surrounding little boat ports in the island of Hainau, at the mouth of the Vinh in Tonkin, in the bay of Quang-Tcheou-Van, and at Nha-trang. The first time in the memory of man that plague raged in Cochin China was when it reached the villages at the River Vinh. Without any measures of precaution, it remained localised in two or

three villages, where it died out without making any victims. It was observed at Quang-Tcheou-Van by the French warships stationed in that bay in 1899. Certain villages where the plague ranged among human beings, and especially among rats, were evacuated. The population fled and went to camp out in the fields. According to Fathers Maréchal and Ferrand, the disease showed itself in 1891 at Chek-chen, a town situated on the west of the bay, which since that time has remained an endemic focus. For a moment it was feared that the epidemic of Nha-Trang had come from the Pasteur Institute, where plague cultures were kept. A minute inquiry, however, proved that this epidemic also had come from Pakhoi. Three months before in the village of Culas, situated opposite Nha-Trang, on the opposite bank of the estuary, an unusual mortality had been observed, which was found to be caused by plague. The first person attacked had dwelt on the isle of Bai-Meou, a port which is in constant relations with Pakhoi. The history of this epidemic showed the inefficacy of disinfection by antiseptics, and the efficacy of the destruction by fire of the contaminated huts. It also afforded an opportunity of showing the advantages of serumtherapy, both as a curative and a preventive method. MM. Yersin and Carré tried vaccination with attenuated viruses at Nha-Trang. They noted that by aging of the cultures it was possible to obtain races of plague bacilli possessing all degrees of virulence, from bacilli which killed a rat in forty-eight hours to microbes that did not kill them at all. They were passed through cultures which caused the death of 80, 50, 20, and 10 per cent. of the animals inoculated in a space of time varying from four to fifteen days. After long trials MM. Yersin and Carré obtained a plague bacillus which killed only 20 per cent. of rats inoculated, and which they called the C bacillus. The germs deprived of virulence do not vaccinate. The animals which have resisted plague bacilli of feeble virulence are vaccinated. Immunity seems to be acquired at the end of fifteen days. As to whether it persists, an experience of three months is insufficient to determine. The virus which kills 40 to 50 per cent. of the rats was inoculated in monkeys, which showed only a passing *malaise*, and which finally resisted the virulent bacillus. Dr. Yersin inoculated the C bacillus on himself without any other result than slight feverishness and pains in the limbs. The inoculations are made with a lancet, as in Jennerian vaccination. This is the chief advantage of the method which has a better chance of being accepted than vaccination with a syringe.

(118) Prophylaxis of Tetanus in Hot Countries.

Dr. Calmette, Director of the Pasteur Institute of Lille, said tetanus is very frequent in the most of the French Colonies in the torrid zone, and in particular on the West Coast of Africa in Guiana and in the Antilles. It specially attacks young children, and in Cochin China many newborn babes succumb to the infection. The black race appears to be most sensitive, the white coming next in the order of susceptibility, and the yellow third. During the colonial wars of the second half of the nineteenth century the mortality due to tetanus among the wounded averaged 3 to 5 per cent. This figure is not high, but the knowledged acquired as to the prophylaxis of the affection since the discovery of its specific microbe by Nicolaïer makes it a duty to preserve troops from it and to protect the lives of thousands of native children whom it decimates every year. The etiology of tetanus in hot countries is almost always to be found in the contamination of wounds by bits of earth or animal dejecta. The tetanus of newborn babes is due to infection of the umbilical wound by dirty linen or dressings. The measures that should be taken to prevent this cause of mortality are: (1) To make general in the colonies, in the hospitals, ambulances, and columns on the march the use of antitetanus serum to prevent tetanus in wounded men where the wounds may be soiled by earth or contain pieces of clothing. All cases of gunshot wounds should after the first dressing at the ambulance receive a preventive injection of 10 cubic centimetres of antitetanus serum. (2) In all tropical colonies native midwives should be educated and authorised to attend confinements only after giving proof of sufficient knowledge to ensure at least elementary antiseptic treatment for the women and newborn children. For this purpose there should be organised in each centre of colonisation where there are medical men elementary courses of instruction with practical exercises in the native hospitals. In these instructions special stress should be laid on the need of rigorous cleanliness in the dressings of the umbilical cord. By this simple and inexpensive measure there would be saved every year a very large number of lives precious for the economic future of the countries in question.

(119) Pathogeny and Prophylaxis of the Bilious Hæmoglobinuric Fever of Hot Countries.

Dr. Firket of Liége does not recognise a parasitic infection from the outside immediately preceding the attack to be a sufficient cause of bilious hæmoglobinuric fever. It is prepared by a chronic change in the organism, and directly brought on by the action of multiple factors that would not be adequate to produce it in a perfectly healthy subject. The preparatory changes involve the various viscera, and especially the hæmatopoietic organs resulting in abnormal fragility of the blood corpuscles. They have, as principal cause a preceding malarial infection, whether that infection has manifested itself by repeated febrile attacks or has established itself slowly with a minimum of pyrexial reaction. To the influence of malaria must be added that of unfavourable hygienic conditions, hot climate, absence of comfort, depression, and drink. The effects of these various etiological factors tend to become cumulative in proportion as the sojourn of the individual in the unfavourable medium is prolonged, and thus make him liable to the action of secondary causes. These may be common non-specific influences, notably cold, fatigue of all kinds, violent emotions, in fact, everything that can disturb the unstable equilibrium of the tissues. It may be a fresh attack of malarial fever suddenly increasing the alteration of the blood, or it may be an intoxication; perhaps in certain cases an auto-intoxication of gastro-intestinal origin; at other times a drug intoxication by quinine. That medicinal substance has been justly accused in certain cases, but it should not be considered as an exclusive cause, and even in the cases where its pathogenic *rôle* appears to be established it acts only by favour of a predisposition. In these conditions the prophylaxis of the bilious hæmoglobinuric fever of hot countries in great measure corresponds with that of malaria. The principles are, on the one hand, to avoid infection particularly by the systematic preventive use of quinine; on the other, to combat the effects of infection when contracted by a rational treatment and by all the necessary elements of comfort to facilitate the restoration of the diseased organism; to reduce the usual period of residence in dangerous climates; lastly, to avoid as far as possible all secondary causes, and as regards the use of quinine to make the indications and the dosage more exact.

(120) Etiology and Prophylaxis of Endemic Bilious Hæmoglobinuric Fever.

Dr. Clarac said bilious hæmoglobinuric fever had never been observed in a person absolutely free from malaria. The serious symptoms which characterise it are the result of a profound intoxication acting more especially on the red corpuscles. The essentially malarial nature of this affection was till within the last few years admitted by all medical men who had practised in tropical countries. These observers invoked in support of their opinion the geographical distribution of hæmoglobinuric fever which has been observed only in parts of the globe where malaria prevails with intensity. At the penitentiary of St. Jean of Maroni (Guiana) after extensive turning up of the earth and clearing away of forests which produced a veritable explosion of malaria there were observed within two years 20 cases of bilious hæmoglobinuric fever with 16 deaths. Clinically the affection is related to malaria. Its appearance is always preceded by one or more attacks of fever of greater or less severity. Itself it constitutes only a more severe attack with the addition of a new symptom, hæmoglobinuria. This episode is followed in most cases by intermittent attacks as to the malarial origin of which there can be no doubt. Pathological anatomy also supports the identity of origin of these two affections. In both cases there is observed hypertrophy of the abdominal viscera and a quantitative,

and probably qualitative, change in the red blood corpuscles. It is true Laveran's hæmatozoon has not always been found in persons suffering from bilious hæmoglobinuric fever, but then these patients had taken quinine, the first effect of which is to cause disappearance of the hæmotozoon. In addition to malarial intoxication there are other causes which by increasing the energy of the poison or by supplementing it prepare the soil for the evolution of bilious hæmoglobinuric fever. Such is the influence of cold, of race, of constitution and foregoing pathological states. Attempts have been made to show that quinine intoxication plays a preponderant part in the etiology of bilious hæmoglobinuric fever. As a matter of fact in certain cases hæmoglobinuria has followed the administration of quinine, but as this was in persons affected with malaria it is more logical to refer the cause of hæmoglobinuria to the latter poison. Moreover there have been observed in Europe very marked cases of bilious hæmoglobinuric fever in subjects who had contracted malaria in tropical countries but who for a long time had taken no quinine. That drug is in daily use in the colonies, and in the vast majority of cases it acts powerfully on the malarial manifestations without causing the appearance of hæmoglobinuria. Quite recently it has been sought to show that bilious hæmoglobinuric fever is a special microbic disease—a sort of typhus having nothing in common with malaria. Yersin found in the urine of two patients a small bacillus which Bréaudad demonstrated to be the coli bacillus. Vincent has not found in the urine any pathogenic bacterium, nevertheless he admits the infectious and parasitic nature of bilious hæmoglobinuric fever as very probable. To sum up: there is no special bacillus, or at least none has been found. The prophylaxis of bilious hæmoglobinuric fever is the same as that of malaria. Attacks of the disease are more serious in proportion to the frequency of their repetition. Hence it is necessary that convalescents should leave malarial foci and return to Europe in order to avoid fresh attacks which often end fatally. Malarial subjects who are compelled to live in places where the disease is endemic must redouble their precautions to combat attacks and prevent their recurrence by the judicious use of quinine salts. All causes of chill should be carefully avoided.

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(121) Etiology and Prophylaxis of the Hæmoglobinuric Attack.

DR. E. MARCHOUX said that of the authors who had given attention to the etiology of the hæmoglobinuric attack some considered the affection as one of the manifestations of malaria; others denied that it had any connection with that disease, and looked upon it as a substantive affection endemic in certain countries; while others again regarded it as the result of quinine intoxication. If the hæmoglobinuric attack were of purely malarial nature, it ought more frequently to be met with in the period when malaria is in the acute stage, when attacks are more severe, and the number of sufferers greater. But, on the contrary, it shows itself by preference after the bad season at the time when only chronic intermittent fever is observed. It is difficult also to explain, if the hæmatozoon is the only agent, why it never produces hæmoglobinuria in the first attack of fever, or why this symptom is so seldom seen in natives of the coast of Africa who are sometimes, especially in early life, as sorely smitten with malaria as Europeans. Lastly, if Laveran's parasite is the immediate cause of the hæmoglobinuric attack, it should be met with more easily in the blood of patients. Instead of regarding the hæmozoon as the cause, other observers look upon the affection as a special disease occurring only in certain regions, and as the result of certain influences. They base their view especially on the two facts that (1) the affection does not occur in all malarial countries; (2) quinine has no useful action in its treatment. It is the fact that hæmoglobinuria does not occur in all malarial countries, but it has been observed in all regions where malaria assumes the specially severe form met with in the tropics. Africa, which is the part of the world where malaria rages with the greatest violence, is also that in which hæmoglubinaria occurs most frequently. But it has been seen in the Antilles, in Central America, in Mexico, in Guiana, in Brazil, in the New Hebrides, in the islands of Polynesia, in Tonkin, in Cochin China, in Burmah, and in India. In Europe, it has been met with, though more rarely, in Sicily, in Italy, in Greece, on the banks of the Danube, and in the Caucasus. The bacillus found by Yersin in the urine has never been seen by anyone else. As for the parasites that have been described by certain authors occurring in the blood of sufferers from hæmoglobinuria they need not be more particularly referred to. The third opinion is certainly that which most satisfies the mind and is most in harmony with the facts. The experiments of Tomaselli, Carreau, Yersin and Dumas leave no doubt as the possibility of producing hæmoglobinuria by quinine. The cases in which that drug can be incriminated are now so numerous that they could not be counted. Among the reasons that have prevented investigators from universally attributing the hæmoglobinuric attack to quinine the following are the two chief: (1) Patients most frequently come to hospital with the hæmoglobinuria already established, and it is always difficult to get exact information as to its origin; (2) quinine given sometimes in large doses by way treatment has not prevented a certain number of patients from recovering. In point of fact quinine is not sufficient of itself to produce hæmoglobinuria. It is further necessary that the patient should be the subject of lesions generally of a transitory nature, but sometimes lasting, which favour the toxic action of the drug. Repeated and ill-treated attacks of fever are the most common cause of those lesions. It is after a more or less series of attacks of fever that one fine day after the administration of a dose of quinine hæmoglobinuria makes its appearance. Therefore, however paradoxical such reasoning may appear the best prophylactic means that can be employed to ward off hæmoglobinuria is the preventive use of quinine and the rational treatment of malarial attacks when, in spite of everything, they come on.

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(122) Treatment of Bilious Hæmoglobinuric Fever.

DR. PAUL GOUZIEN, Médecin Principal des Colonies, presented a communication on the employment of large hypodermic injections of artificial serum and infusion of *Ahouandeme* (Cassia occidentalis, L.) in the treatment of bilious hæmoglobinuric fever. Since he has used injections of the physiological solution of sea salt (7 grams per 1,000) he has seen oliguria with alarming uræmic symptoms in only one case. Generally a dose of 100 to 300 grams at a time of this artificial serum is sufficient to stimulate and maintain the vital energy during the time necessary for corpuscular repair and the restoration of functional equilibrium. The injections should be repeated if need be. Dr. Gouzien has never found it necessary to go beyond four injections; sometimes one or two are sufficient. Dr. Gouzien's rule of practice is as follows: If at the end of twenty-four hours of hæmoglobinuria the urine shows no tendency to clear, and the temperature is not above 39° C., a first injection of 100 to 300 grams of artificial serum should be given in the thigh, and if necessary repeated on the following days. Each injection should last from five to fifteen minutes. Ordinarily it is well borne. In cases of moderate severity Dr. Gouzien also uses with advantage small enemata of the serum, of 200 grams each in the twenty-four hours. He has also employed with much success an infusion of *Ahouandeme*, the name given by the natives of Dahomey to the cassia occidentalis L. Whether the preparation acts solely by virtue of its diuretic, diaphoretic, and cholagogue properties, or whether it has a specific action on the pathogenic agent, is at present unknown. In some cases it acts almost at once, the urine clearing and being increased in quantity, with profuse sweating and copious stools, followed by rapid convalescence. The recognition of the good effects of the plant have led to its widespread cultivation in the colony. The following is the formula employed by Dr. Gouzien: *Ahouandeme* leaves, recently dried, 15 grams; infused in 950 grams of water. Filter and add juice of one small native lemon, and syrup 50 grams. A glassful to be taken at short intervals to a total amount of 1 to 3 litres in the day. From January, 1897, to the end of March, 1900, the number of patients treated by Dr. Gouzien for bilious hæmoglobinuric fever was 53 without a death.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

HELD IN PARIS, AUGUST 2nd to 9th.

SECTION OF OBSTETRICS.

(123) Etiology and Nature of Puerperal Septicæmia.

M. Doléris presented a communication on this subject. He said the genius of Pasteur had determined the fact of the microbic nature of puerperal septicæmia, for we owe to him the notion of the existence, virulence, and contagiousness of the pathogenic puerperal germs. The ordinary pathogenic germs of puerperal septicæmia are:—The streptococcus pyogenes (the most common of all), the staphylococcus aureus, the gonococcus, the bacterium coli commune, etc. They are anaërobic or mixed. The search for anaërobic germs has led to the classification among the pathogenic agents of this order, in addition to the ordinary septic bacillus of the B. putridus, and some others less well defined. The conclusion is, therefore, that at the present time it must be admitted that certain anaërobic saprophytes can develop and act like true pathogenic germs, especially in the case of retained placenta. The association of different species appears to act more certainly in producing infection. The infection generally kills by toxæmia; the lesions also contribute to the production of death, notably in hyperacute peritonitis, by nervous inhibition or intestinal obstruction. The staphylococcus aureus may cause death by grave visceral metastases to the pericardium, pleura, kidney, etc. The demonstration of the pathogenic action of certain putrefactive saprophytes brings the discussion to the question of autogenetic infection. "Autogenetic" has recently received a special interpretation, according to which pre-existent pathogenic agents in the pathological vaginal uterine secretions should not be considered as saprophytes; and, since autogenetic infection is to be understood as depending on saprophytes, this comes to the same thing as denying their existence. This, said M. Doléris, is only an interpretation. From the clinical point of view one is bound to admit the reviviscence *in situ* of these pathogenic germs pre-existing in the uterine cervix and Fallopian tubes, and the possibility of such an infection becoming generalised after confinement without any fresh importation of pathogenic microbes from without.

(124) Etiology and Nature of Puerperal Fever.

Drs. Menge and Krönig, of Leipzig, said that under the name of puerperal fever was to be understood a disease following confinement in which pathogenic bacteria starting from the puerperal wounds produced during confinement injury to the organism. A rise of temperature above the normal point is unfailing. Among pathogenic bacteria it is not possible at present to distinguish between those which act solely in virtue of their toxic properties and infectious bacteria which have the property of penetrating into the tissues of the organism. It is likewise impossible at present to draw a distinction between a puerperal fever due exclusively to the absorption of bacterial toxins, and one resulting from the penetration of bacteria into the tissues of the organism The pathogenic bacteria that to day can be considered as capable of producing puerperal fever are: (1) Streptococcus pyogenes puerperalis, (2) staphylococcus pyogenes aureus, (3) gonococcus Neisser, (4) bacterium coli commune, (5) bacillus diphtheriæ, (6) diplococcus pneumoniæ, (7) certain bacteria, obligate anaërobes, but whose biological properties are not yet known. We may, nevertheless, regard these bacteria as pathogenic as they are found in the tissues of puerperal wounds. Neisser's gonococcus should not be excluded from the list of the pathogenic bacteria that must be taken into account when one has to do with puerperal fever. Puerperal infection caused by these bacteria may be heterogenetic or autogenetic. By autogenetic puerperal infection the authors understand an infection, produced by pathogenic bacteria that have lived in the condition of saprophytes before labour on the integuments of the external genitals or in the genital canal of the woman, and which, during confinement or immediately after it, invade the organism through the puerperal wound and set up disease. By heterogenetic puerperal infection they understand an infection produced by pathogenic bacteria carried by the air, by the instruments of the obstetrician, or by the hands of persons in attendance on to the puerperal wound and thence infect the organism. Gonorrhœal puerperal fever, having as its starting point a urethral, vaginal or cervical gonorrhœa, should not, any more than the infections of puerperal wounds proceeding from the blood or from infectious foci situated on the external and internal genital organs before confinement, be counted among autogenetic puerperal infections, because in these cases the infectious agent has not a saprophytic character. It is a case simply of the expansion of an infectious process pre-existent in the body. As the streptococcus pyogenes puerperalis, the streptococcus pyogenes aureus, the bacterium coli commune, the gonococcus Neisser, the bacillus diphtheriæ and the diplococcus pneumoniæ, do not live in the condition of saprophytes in the vaginal secretions of pregnant women, an autogenetic infection by those bacteria cannot have as a starting point the vaginal secretion of such women. An autogenetic infection produced by anaërobic bacteria of puerperal fever coming from the vaginal secretion is improbable. But still it cannot be absolutely rejected, because we have not yet succeeded in distinguishing the anaërobes of puerperal fever from the saprophytic anaërobes of the vaginal secretion of pregnant women in regard to their biological properties. Taking clinical facts as a guide, the authors regard as rare and as of favourable prognosis the autogenetic puerperal infection by pathogenic bacteria that have lived as saprophytes on the skin of the external genital organs. Pathogenic bacteria starting from the skin of the external genital organs may after confinement find their way even into the cavity of the puerperal uterus. An autogenetic infection produced by bacteria that have lived as saprophytes in the cervical canal, or in the cavity of the uterus, or in the tubes, can be absolutely rejected, for these organs never contain bacteria in the condition of saprophytes. Unlike autogenetic infection, heterogenetic puerperal infection is of the highest importance. Among the factors of an infection great importance must be attached not only to the virulence of the infectious germs and to the predisposition of the infected individual but also to the number of the infective agents. From this point of view the air, which is poor in germs, hardly plays any part in the production of a heterogenetic puerperal infection. When the obstetric instruments have been sterilised, the hands of the persons in charge of the confinement become the essential carriers of the infected agents. At the present day we are still met by insurmountable difficulties when we wish to determine the degree of virulence of the bacteria which play a part in puerperal fever. We can only consider it as demonstrated by experience that, as a general rule, virulence is diminished when the bacterium in question has long lived in the saprophytic state. Apart from general predisposition to puerperal infection, a local predisposition seems to exist in the case of insufficient hæmostasis in the genital passages or in the case of extensive lesions of the genital organs. The primary infective focus may be situated in the wounds of perineum, vagina cervix, and in the whole endometrium, remain localised there, or else spread by continuity or by metastatic infection. This extension most often takes place when the endometrium and the placental wound are affected. More rarely the infection starts from infected wounds of the cervix; most rarely of all it starts from infected wounds of the vagina and perineum. In the propagation of infectious microbes in the organism, the blood vessels and lymph canals are almost as often utilised. The streptococcus pyogenes puerperalis has the greatest tendency to overstep the limits of the primary focus. Nevertheless the majority of cases of infection by the streptococcus limit themselves to the endometrium and get well of themselves.

(125) Etiology and Nature of Puerperal Infections.

Dr. Pestalozza (Florence) proposed to

study the channels by which the different pathogenic agents could penetrate into the tissues of the genital canal of a lying-in woman and the conditions favouring this penetration. For this purpose he has analysed the results obtained in the Obstetrical Clinic of Florence during the five years 1895-1899, comprising a total of 4,015 women. This period was chosen because in 1895 disinfection of the vagina in a healthy woman in labour was for the first time abandoned. The clinic includes a lying-in department with an isolation pavilion for cases of puerperal infection. Here are received both women who have been delivered outside and developed symptoms of infection, and women who have become infected after delivery in the clinic. The lying-in department during the five years in question has admitted 3 847 women. Of this number, only 32 have had to be transferred to the isolation pavilion on account of infectious symptoms of any gravity, and these were for the most part women in whom labour had begun some time before admission. Of the 32, 30 were discharged cured; 168 women were admitted to the isolation pavilion after being delivered outside. Of these 25 died. The 3,847 delivered in the clinic were not subjected either to prophylactic disinfection of the vagina, or to vaginal or uterine injections after confinement, even in cases of artificial delivery. Those measures were reserved for very rare cases of women on whom suspicious manipulations or examinations had been practised before admission. The author's researches, clinical, anatomical, and bacteriological were made on the 200 women in the isolation pavilion. The results of these researches led him to the following conclusions: (1) The aseptic course of events following delivery depends on the rigorous application of procedures of disinfection of the external genital organs of the woman and of the hands and instruments of the obstetrician. (2) Disinfection of the vagina of a healthy woman in labour is to be condemned as superfluous and dangerous. (3) In cases where there appears to be justifiable doubt as to the asepsis of the vagina, that is to say, in women suffering from infectious diseases of the genital apparatus, the best thing to be done is to abstain from vaginal examination during delivery; (4) disinfection of the vulva and of the hands of the obstetrician is sufficient to obviate all possibility of infection during delivery; but there remains possibility of a puerperal fever arising from intoxication (sapræmia). (5) An antiseptic system properly managed should also include precautions necessary to limit the possibility of a putrid intoxication. That is to say, the prevention of premature rupture of the amniotic sac, the union by immediate suture of every vulvar, vaginal, or cervical wound, and especially careful assistance during delivery, no premature intervention being excluded. This is the best means of avoiding the retention of shreds of membrane, fragments of placenta and blood clots, which would present too favourable a soil for putrefactive processes. (6) After labour the practitioner should abstain from any vaginal or uterine injection. A large number of cases of infection must be referred to the imprudent use of these measures. (7) Should infectious phenomena show themselves, it is of the greatest importance to obtain an exact knowledge of the point of entrance of infection, that is to say, whether one has to do with a vulva, vaginal, cervical, or uterine infection, or a combination of these. The practice of forthwith having recourse in every case of fever to uterine injections is strongly to be condemned. There is reason to believe that they very often give occasion to extension of the infectious process. Especially in cases where there may seem to be ground for suspicion that the assistance has been imperfect from the point of view of antisepsis, one must always satisfy oneself as to the condition of the cervix uteri. Treatment of infection should also be preceded by careful diagnosis of the point of entry of the infection. This diagnosis in the present state of knowledge is of much greater importance from the practical point of view than the diagnosis of the nature of the infectious germs, a matter which is still surrounded by too many difficulties. (8) Bacteriological researches confirm the fact of the frequent occurrence of streptococcus infection. The streptococcus is the only agent which the author has been able to discover in cases of puerperal peritonitis or in metastatic foci. As for staphylococcus infection he has been able to find it only in the form of multiple abcesses in the substance of the uterus (cases of criminal abortion). Bacterioscopic examination is not always sufficient because there are forms of streptococci anaërobic in development that are often met with in forms of sapræmia, and which have not manifested any pathogenic property. The B. coli has not been found by the author except in cases of *intra-partum* fever arising from decomposition of the amniotic fluid. Lastly, there are cases that might seem to establish the possibility of diplococcic infection. In all probability, however, in such cases one has to deal with forms of sapræmia, or else the transport of decomposed fragments of the thrombus has prepared the soil for the growth of the diplococci which were on the wound.

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(126) Conservative Treatment of Chronic Inversion of the Uterus.

Dr. Spinelli of Naples described (in the Section of Gynæcology) a conservative procedure which he said he had employed with success in the treatment of chronic inversion of the uterus. After disinfection of the vagina he seizes the inverted uterus and draws it towards the vulva. By a vertical incision he divides the anterior surface of the cervix and inverted body and by a transverse incision crossing the first he lays open the anterior *cul-de-sac*. By this means he gets two lateral flaps which give a large opening allowing the end of the inverted organ to be seized and reduced by traction from above downwards combined with pressure from below upwards. After reduction he sutures the anterior incision of the cervix and body, replaces the organ in the abdomen, and closes the anterior *cul-de-sac*. This operation, he says, is at once harmless, conservative, and effectual. It does not expose the patient to the risk of a backward displacement following a cure of the inversion, a condition which would frequently occur as a sequel of posterior colpo-hysterectomy.

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(127) Treatment of Apparent Death in a New-born Infant.

Dr. Ribemont-Dessaignes said that during labour the child may suffer under the influence of numerous causes which need not be considered. Thus at birth it may present itself with the following marks of apparent death: Absence of cry, flaccid limbs, complete muscular relaxation while there is persistence of the heart beats, though sometimes very weak and at long intervals. Sometimes the cutaneous surface is bluish, violet, almost black; the face is swollen, the eyeballs project, and the conjunctivæ are congested; in fact, the child is in a condition of blue asphyxia. Sometimes, on the contrary, the skin is white, pale, discoloured, the mucous membranes are also whitish, the heart beats are imperceptible. This is what has been wrongly called white asphyxia. It is a syncopal condition. Lastly, in certain cases one meets with mixed forms, the characters of which are not sufficiently defined as to make it possible to label them either asphyxia or syncopal state. On the basis of this clinical description the author established the line of conduct to be followed in these different cases. In practice the asphyxial form is the most frequent. As it is due to obstruction of the air passages by mucosities or amniotic fluid loaded with meconium, it will be necessary first to clear the respiratory passages; secondly, to facilitate the entrance of air into the lungs in order to re-establish or regulate the cardiac and pulmonary functions. Very often the mucosities are only in the pharynx, and then a simple swabbing out with the finger wrapped in a piece of linen is sufficient to remove them and to induce the first inspiration. Skin frictions, either simple or with alcohol, ether, brandy, or eau de cologne, hot baths, mustard baths, baths alternately hot and cold, set up cutaneous stimulation which is often the starting point of a reflex action ending the production of respiratory movements. On this physiological principle rests the excitation of the pituitary, buccal, and pharyngeal mucous membranes. The method of rhythmical tractions of the tongue introduced by Dr. Laborde in 1892 has for its object the starting of the respiratory reflex. Very often the procedures that have been mentioned are not sufficient, and recourse must be had to artificial respira-

tion. There are numerous methods having for their object to cause the air to penetrate into the air passages: Mouth-to-mouth insufflation, Sylvester's method, and the methods of Schultze and Rivière. These methods fulfil only one of the two indications that have been laid down, namely, the clearance of the air passages and the facilitation of the entrance of the air. On the strength of these indications Dr. Ribemont-Dessaignes has been led to the conclusion that insufflation is the method of choice. The following principles have guided him in devising the instrument which bears his name: (1) The insufflation should be instrumental; (2) the apparatus used should make it possible to aspirate the mucosities; (3) it should introduce into the lungs only an amount of air proportionate to their capacity. Instrumental insufflation dates from last century, but Chaunier was the first to construct a tube penetrating directly into the larynx. The instrument was afterwards modified by Depaul, then by Pinard, but that tube still has many drawbacks. It is difficult to introduce into the larynx, it is easily displaced, it does not prevent the reflux of air, and does not indicate at each instant whether it has left the larynx and penetrated the œsophagus. With the object of remedying these defects Dr. Ribemont-Dessaignes thought that the tube should be constructed in accordance with exact anatomical facts. He therefore studied with care on frozen sections of bodies of newborn infants, on the one hand the bucco-laryngeal curve, and on the other the calibre and form of the interior of the larynx. The results obtained led him to have made a tube consisting of two parts. The first of these is formed of a conical portion which serves as a mouthpiece; on this can be placed a pear-shaped india-rubber ball of the capacity of 28 cm., having a perforation at the base. From the base is continued another portion also conical in shape. At the point of junction there is a double crown of pearls, the roughness of which gives a firm hold that prevents the instrument from rolling about between the fingers. The bucco-laryngeal part consists of a cylindrical buccal portion; it presents a double curve moulded on the projection of the alveolar edge and the concavity of the arch of the palate. The laryngeal portion has the form of a very short cone flattened on the sides and separated from a terminal knob by a circular constriction; on the concavity of the curve is situated an orifice for the escape of the air. When the instrument has been constructed exactly according to the pattern fixed on by the author in 1877, it presents the following qualities: (1) Its introduction is made easy by its curved shape and the arrangement of its terminal extremity; (2) the curve ensures its retention in the respiratory passages; (3) it prevents the reflux of air out of the larynx; (4) it makes it possible easily to aspirate the liquids and mucosities obstructing the bronchial tubes; (5) its proper position in the larynx or its introduction by mistake into the pharynx and œsophagus is at once indicated; (6) the india-rubber bag sends into the lungs only the quantity of air sufficient to indicate capacity. This obviates the danger of rupture of the pulmonary vesicles which are so fragile at birth.

DR. CHAMPNEYS (London) referred to the two stages of asphyxia (*a*) apoplectic or livid; (*b*) syncopal or pale, and described their mutual relations. The worst cases were common when the head came last; therefore the condition was not due to pressure on the head. Asphyxia was an exaggeration of physiological "air hunger," or "necessity for breathing." Remarkable instances were quoted of the survival of apparently dead children. The diagnosis of the stage of asphyxia was important—practically all serious cases were pale. Dr. Champneys laid stress on the uselessness of reflex stimulation in pale cases. The pupils were widely dilated in profound asphyxia, and they contracted on the re-establishment of respiration, but not of the circulation. The question of bleeding from the umbilical cord as a therapeutical method was considered. The objects of artificial respiration were: (1) Removal of foreign bodies from the air passages; (2) procuring the patency of the air passages; (3) excitation of the circulation; (4) ventilation of the lungs; (*a*) removal of foreign bodies from the air passages, by manipulation or by catheter; (*b*) procuring the patency of the air passages; the method of Schultze alone (of all methods by manipulation) favoured this; traction of the tongue did not directly raise the epiglottis; tilting up the chin was useless in children; bending the head backwards was useless for this purpose. (5) Excitation of the circulation was dependent on ventilation of the lungs; pressure on the precordia directly raised blood pressure. (6) For ventilation of lungs only two methods of manipulation were efficient—namely, those of Schultze and Silvester. The method of Silvester produced (unnatural) superior costal respiration, though the most powerful; the method of Schultze also caused descent of diaphragm. The methods of Marshall Hall and Howard were useless for children. Other methods were direct inflation of the lungs. The objections to mouth-to-mouth insufflation of air were (*a*) the danger of rupturing the lungs, (*b*) the danger of tuberculous infection, and (*c*) the danger of inflating the stomach.

PROFESSOR B. S. SCHULTZE (Jena) said the asphyxia of the newborn at the moment of birth was the result of an impediment to the placental respiration occurring in the course of labour. Paul Cazeaux was the first to enunciate this opinion in opposition to other doctrines which had previously prevailed. He said (in 1850): "In all cases the asphyxia of the newborn is evidently the result of the suspension of the placental respiration." The asphyxia of the newborn is, therefore, a kind of suffocation, the action of which may be interrupted, and which does not certainly cause death. The treatment consists in putting the pulmonary respiration in motion as soon as possible. Schultze emphasises the words "as soon as possible." Already in 1812 Legallois had ascertained the important fact that the younger an organism is, the better it can without perishing do without respiration. In many children born in a state of apparent death, the limit beyond which respiratory power will be lost is very nearly reached, and as long as the circulation goes on the blood becomes poorer and poorer in oxygen. The venous state of the blood, which is the ordinary stimulus to respiration, is in the child born in a state of asphyxia, already much above the normal standard: it no longer induces the medullary reflex. The medulla may still react under the influence of other irritations. For instance, one of the best stimulants is the effect of cold on the skin: a brief immersion up to the neck in cold water gives a better result, because it is more rapid than the rhythmical tractions of the tongue which have lately been suggested (Laborde). When the asphyxia has reached a still more marked degree, the medulla of the child no longer reacts. Then we must do all we can to re-establish the excitability of the medulla. This result can be secured only by bringing blood rich in oxygen to the medulla, and it can be brought only by way of the circulation. The object to be attained is then to re-establish the pulmonary exchanges, and to set in motion the blood in the vessels. By the insufflation of air many children born in a state of asphyxia have been brought to breathe regularly. In fact, after the first or second inspiration, the heart beats are a little accelerated; but, if the asphyxia is very deep, the heart speedily stops. The inspiration of air increases the pressure of the gases within the thorax as much as pressure made on the chest with the hand to imitate expiration. This procedure does not, however, make the circulation of the blood more active. The best procedures are those which, acting directly on the chest wall, induce marked and regular variations of the atmospheric pressure within the thoracic cage. Marshall Hall's method is of little use in the newborn child, because its thorax has its elastic equilibrium in the position of expiration. Silvester's method is very effective. Schultze's own "swinging" method brings about greater variations of atmospheric pressure in the thorax (25 c.cm. passed through the lungs at each inspiration in his experiments on still-born children). By such variations the pumping movements of the heart are immediately and energetically started. The difference of tension between the column of arterial and that of the venous blood is re-established, and the capillary circulation is thus set in motion. In this manner arterial blood is as rapidly as possible carried to the medulla, which thus recovers its excita-

bility, and becomes capable of obeying the call for breath. The following is Schultze's method of treating the asphyxia of the newborn: (1) If the child is of a reddish-blue colour, if there is still some tension of the muscles, it should be left in communication with the umbilical cord as long as any heart-beat is perceptible. Mucosities must be removed from the mouth, and the skin reflexes must be excited. If it does not react immediately the cord should be cut, and the child should be plunged rapidly and for a very short time into very cold water, then placed in a hot bath. These immersions should be repeated till the child cries lustily. (2) If the child's body is pale and flaccid, like a corpse just after death, one need not expect any result from excitation of reflexes, and precious time will be lost by attempting to provoke it. The cord should at once be divided, the mucosities should be removed from the mouth and pharynx by pulling forward and pressing the base of the tongue so as to raise the epiglottis, and artificial respiration either by Silvester or by Schultze's method. In the latter case the treatment should be begun with a prolonged expiration "swing." There is no better way of emptying the bronchi of mucosities. After making the child pass from the position of expiration to that of inspiration eight or ten times in a minute, it should be put into a hot bath and watched, when it will be seen that the heart-beats become stronger and more frequent, the skin becomes red, and muscular tension reappears. If the treatment is not speedily successful the child should be again "swung" after the bath. The expiration movement usually produces the first spontaneous inspiration, then the child is immediately put into a hot bath. If, nevertheless, the respiration continues to be shallow the child should be plunged into iced water. It reacts at once, strongly flexes the thighs, and cries lustily; the medulla now responds to excitation of the reflexes. A child born in a state of asphyxia should never be looked upon as completely restored till it cries continuously and loudly.

DR. AUDEBERT (of Toulouse) stated that he had tried artificial cooling for the resuscitation of asphyxiated children with the best results.

DR. LEPAGE (of Paris) said that recently rhythmical tractions of the tongue had been proposed as a substitute for insufflation, but he was of opinion that the former was much superior to the latter method. He had never been able by tractions of the tongue to reanimate a child when artifical restoration had failed.

DR. WALLICH (of Paris) said that when the bodies of newborn infants that had presented the phenomena of apparent death were examined *post mortem*, more or less extensive visceral lesions, hæmorrhagic or other, were often found. From this he drew the conclusion that it was important that manipulations for the purpose of recalling these children to life should not be too violent, and he thought that artificial insufflation with the aspirating and inspirating tube was in this respect preferable to the large swinging movements recommended by Dr. Schultze.

DR. DRAGHIESCU described the technique employed in the maternity hospital of Bucharest in the serious cases in which pulsation was no longer perceptible in the cord. After having cleared the upper air passages by means of a little sterilised swab rolled round the forefinger, an elastic catheter slightly curved and perforated at the end was introduced into the larynx. The mucosities and foreign substances which the child might have swallowed were withdrawn by aspiration. When this was not sufficient artificial respiration was performed in the following manner: After mouth-to-mouth insufflations, light pressure was made with the hand now on the belly, now on the chest, imitating the movements of inspiration and expiration. Insufflation could often be made with advantage by means of a ball of oxygen.

DR. RAPIN (of Lausanne) found that pressure on the chest was sufficient to clear the air passages of mucosities, and he had found the manipulations recommended by Schultze very successful.

DR. STRATMANN (Solingen) said he had been able by means of manometric instruments to assure himself that Schultze's method gave the largest amplitude of respiratory movements.

DR. VERRIER (Paris) said that without having recourse to the wide swinging movements involved in Schultze's procedure he used extensive movements of raising and lowering of the arms, which seemed to be equally successful in producing dilatation of the chest with less violent shaking.

DR. DEMELIN (Paris) said that comparisons had been instituted between the method of tractions of the tongue and of insufflation greatly to the advantage of the latter procedure. He remembered having seen M. Tarnier use both methods side by side. When after having insufflated the child and thus obtained a return of almost regular heart beats, with gasping inspiratory movements, the artificial respiration was given up and tractions of the tongue practised, the inspiration became less frequent, and the heart beats progressively weaker. On recommencing artificial respiration the condition of the child again improved. Dr. Audebert's experience of the beneficial effects of cooling did not agree with that of the majority of obstetricians, who rather dreaded the effect of cold. A distinction must be drawn between cases of livid asphyxia, which might be benefited by swinging, and those of white syncopal asphyxia dependent on cerebral and bulbar injuries, against which the practitioner was almost powerless.

PROFESSOR PINARD said that in the case of children born in a state of apparent death the practitioner must strive to restore respiration and circulation. To attain this object he found himself in contradiction with the physiologists in preferring artificial respiration to methodical traction of the tongue. For the performance of artificial respiration they had the method of manipulation, one of the types of which was Schultze's procedure and the laryngeal tube. External manipulations did not generally succeed in emptying trachea and the bronchi; with the tube it was easier to clear the air passages. Schultze's method, if a little brutal, exposed the child less to the risk of pulmonary emphysema.

DR. CHARLES confessed that he did not find the method of mouth-to-mouth aspiration at all bad. As regards mucosities, the greater part might be expelled by pressure on the chest.

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(128) Asthma and the Puerperium.

DR. AUDEBERT said that common asthma like hay-asthma sometimes appeared during pregnancy. It might also manifest itself only during gestation, and become a true sign of pregnancy. Halliday Croom had published three cases and Chambrelent two others. Adding to these five two cases observed by himself, he had, from a study of the course of this complication, been led to the following conclusions: the disease redoubles in intensity during pregnancy. At the time of confinement the attacks are especially violent and dangerous. The prognosis is serious for the mother (one death in seven cases), and especially for the child (two deaths), which shows manifest signs of suffering during the paroxysms. Contrary to what might be supposed, the difficulty of breathing, even when very intense, does not produce contractions of the uterus, although the suffocation should cause an excess of carbonic acid in the blood. As regards the etiology of such attacks of asthma during pregnancy we are reduced to hypotheses. Is it the embarrassment of the lungs by pushing up the diaphragm that must be, or is it irritation of the pneumogastric? Or else have we to do with a kind of menorrhæmia, that is to say, poisoning of the blood in women in whom the periods have been suspended as the result of conception? Whatever may be the pathogeny of the affection, the treatment which Audebert has found most efficacious is the use of morphine and quinine. From an obstetrical point of view it is important as soon as possible to withdraw the child from the influence of the maternal crises by premature delivery, induced at a fitting time and speedily terminated.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

HELD IN PARIS, AUGUST 2nd to 9th.

SECTION OF PSYCHIATRY.

(129) The Psychoses of Puberty.

PROFESSOR MARRO (Turin) summed up the results to which his own researches and experiences had led him in the following conclusions: (1) Puberty exercises a notable influence on psychical life which manifests itself either by giving to pre-existent mental disorders characters which they had not formerly or which they had in a lesser degree, or by opening the way to the onset of psychoses. (2) Among the psychoses that may attack boys and girls at the period of puberty there is one in particular, the hebephrenia of Hecker, that may be regarded as specific, inasmuch as in it are combined the several characters which it shares with other psychoses. (3) The morbid manifestations of this particular form of psychosis and the changes found on necroscopic examination show that the cerebral cortex and the meninges are the seat of a morbid anatomical process. The symptoms of invasion tend to prove that its source may with a certain probability be found in a process of auto-intoxication, caused by disorders of the digestive apparatus. (4) From the period of puberty and the premature and abnormal exercise of the generative function, other morbid manifestations take origin. The influence of these impresses a peculiar stamp on the character of the individual which is permanent in nature, though age and favourable conditions of life may obliterate the evidence of it. (5) The prophylaxis of the mental disorders requires that the greatest care should be taken to avoid all causes of weakening that may interfere with the development of the mind and body at this most important period of life, such as overfatigue, physical or intellectual, and above all precocious and abnormal sexual indulgence.

DR. JULES VOISIN, Physician to the Salpêtrière, said that all authors had considered puberty to be an important cause of insanity. Pinel, Esquirol, Marc, Spurzheim had particularly called attention to the subject, but in their view the psychoses of puberty did not constitute a morbid entity. It was Kahlbaum in 1863, and his pupil Hecker in 1871, who first described under the name of "hebephrenia" or insanity of youth a distinct affection having its own characters and course. They placed it in the class of paraphreniæ that is to say, psychoses connected with a phase of physiological evolution. Soon these authors perceived that hebephrenia presented two different forms: A serious one to which they reserved the name "hebephrenia," which terminates in a profound dementia; and a slight form to which they gave the name "heboid" or "heboidophrenia," which terminates in arrest of intellectual development approximating to imbecility. Numerous writings have appeared on the subject, both in France and elsewhere. While Kahlbaum considered hebephrenia to be independent of hereditary taint, Krafft-Ebing, Sterz, Finck, Kovalewsky, Thomas Clouston, Maichline, Serbsky, Morel, Lagnan, Legrand, du Saulle, Falret, Regis, Joffroy, etc., regarded it as being either due to a disease inheritance or as a result of acute psychoses of infancy. Almost all these authors agree that most psychoses which develop during puberty, and especially at its commencement, got well without leaving any trace, and that among demential psychoses there was a dementia in all points resembling the progressive general paralysis of the adult with the exception of the ambitious delirium. It was therefore necessary to admit several varieties of psychoses of puberty and the puberal evolution was not the only cause. Whether one invokes the theory of reflex cerebral excitation or the theory of glandular secretion it is certain that other elements enter into its causation. First of all what is puberty? What are the limits of that period? Puberty is not only characterised by sexual maturity but also by growth of the body, development of the intelligence, and the appearance of new sentiments having relation to that maturity. The period of puberty, which extends from 12 or 14, according to sex, race, or climate, up to 22 years, comprises diverse physiological acts, which may be arrested, disturbed, or perverted in their evolution by infinitive causes physical or pathological. These causes have an influence all the stronger when they act upon a predisposed subject. Painful menstruation, which undermines the nervous system; over-abundant menstruation, which depresses it; too rapid growth; defective or insufficient nutrition; work, physical or intellectual, that is too prolonged or above the strength of the subject: an infectious illness, a moral or physical shock, play the principal determining part in the great majority of cases. Grave conditions of dementia appear to be caused rather by these causes than by the on-coming of sexual life. In most young girls the appearance of the menses causes no mental disturbance and passes unperceived. If mental disturbance does occur, it generally does not last long, and shows itself only in persons with a marked hereditary predisposition. A prepared soil is therefore necessary for the development of the psychoses. But the indispensable element is heredity. Puberty and all debilitating causes or illnesses of that period are only secondary. The combination or symptoms presented by the psychoses of puberty is a further proof of the important part played in these affections by heredity: alternations of excitement and depression, periodicity of symptoms, impulsive paroxysms. These disorders are very variable, having sometimes the form of a pure psychosis, sometimes that of a mental regression or degeneration, sometimes that of a neuropsychosis, sometimes that of a toxic delirium. Dr. Voisin proposed the following form of classification:—1.—Pure psychoses of puberty: (*a*) Melancholia (simple passive melancholia; active melancholia with excitement, melancholia with stupor, catatonia); (*b*) mania (simple mania, typical form, rare in adolescence; irritable mania, simple choreic mania with hallucinations; catatonic form); (*c*) mental confusion; (*d*) hallucinatory insanity. 2.—Regressive states: (*a*) dementia of puberty; hebephrenia, acute or primary dementia; acute stupor; (*b*) early simple dementia; (*c*) progressive general paralysis; (*d*) epileptic spasmodic dementia (see epilepsy). 3.—Mental degeneration: (*a*) paranoia; (*b*) periodic insanity; (1) intermittent and (2) circular or double form; (*c*) phobias, obsessions, insanity of doubt and of touch; (*d*) kleptomania, dipsomania; (*e*) sexual aberrations; (*f*) impulses; suicide; homicide; (*g*) moral insanity; (*h*) delirium of degeneration. 4.—Combined psychoses: (*a*) neurasthenia; (*b*) hypochondriasis; (*c*) hysteria; (*d*) chorea; (*e*) epilepsy (1) chronic psychosis, spasmodic dementia; (2) acute psychosis. 5.—Psychoses from intoxication: (*a*) infectious autointoxication; (*b*) alcoholic intoxication. Dr. Voisin formulated his conclusions as follows: (1) By psychoses of puberty are to be understood mental affections developing during the period of puberty, that is to say from 12 to 14 to 22 years of age. This period is characterised by sexual maturity and the physical and intellectual development of the individual. (2) All varieties of psychoses may show themselves at this period. Hebephrenia does not exist as a morbid entity: the term should be reserved for cases of dementia. Psychoses which develop at the commencement of puberal evolution are less grave than those that show themselves during the course or towards the end of puberty. The former may be called psychoses of puberty; the latter are psychoses of adolescence. (3) Hereditary predisposition is the predominant cause of these affections. It is the association of incomplete intellectual development with hereditary taint that gives the disease its "hebephrenic" stamp. (4) Pure psychoses, or more properly those that most approximate the pure forms, present atypical mixed forms which in the majority of cases get well. (5) Melancholia most often appears under the grave form of stupor, being accompanied by impulsive acts, obsessions, and imperative hallucinations directed against the life of the patient and those about him. At the same time very often mysticism and onanism are observed. (6) Mania is seldom present in the benign form. It

most often takes the character of moria, and also presents many impulsive elements. (7) The early dementia (hebephrenia) described by Kahlbaum and Hecker occurs in two forms—a grave and a slight one. The grave form may present the symptoms of stupor dementia, catatonia, and mental confusion. This makes the diagnosis difficult. The light form or early simple dementia (one of the stigmata of mental degeneration, Morel) must be distinguished from progressive general paralysis and spasmodic epileptic dementia. (8) Mental confusion represents a delirium of dreaming which has much analogy with alcoholic delirium. This oneiric delirium is the characteristic of the psychoses of auto-intoxication, and it is almost certain that disorders of nutrition in adolescence are the causes of this delirium. Recovery takes place in one half of the cases. It is generally announced by crises, sweats, diarrhœa, salivation, menstruation, abscesses, boils, etc., and retro-anterograde amnesia is almost always observed as in cases of polyneuritic psychoses. (9) Juvenile progressive paralysis is distinguishable from the same disease in the adult by the absence of ideas of grandeur and ambitious delirium, and by its slower course. Many authors attribute its causation to hereditary syphilis. (10) Degenerative psychoses and neuropsychoses are the most frequent. They generally reappear in adult age. (11) From a medico-legal point of view psychoses of puberty are subject to the same rules as those relating to adult life, except in regard to civil capacity, since the French law recognises no civil capacity under the age of 21 years. Criminal responsibility, which is fixed at the age of 16, has, of course, to be taken into account.

Professor Ziehen (Jena) said that from a study of some 400 cases of mental diseases, the first symptoms of which showed themselves at puberty, that is to say from 13 to 21, he had come to the following conclusions: (1) Mental morbidity is at one of its maximum points at puberty; heredity gives a much larger morbidity at that period, and in addition anæmia, over-work, physical and intellectual, acute infectious diseases, and sexual excesses play an important part in the etiology of the psychoses; (2) almost all known psychoses are met with at puberty. A special influence due to that period shows itself only in this that certain psychoses are very prevalent, while often, but by no means always, mental maladies at that time undergo certain special modifications in their symptoms and course. It is, therefore, in error that certain authors have spoken of a special psychosis of puberty which should include the majority of cases of mental disease occurring at that time of life. The one psychosis which belongs almost exclusively to puberty—the hebephrenic dementia or hebephrenia of Kahlbaum—contributes a relatively small number of cases to the sum of the psychoses of puberty; (3) the psychoses prevalent at that period apart from hebephrenia are the following: *Folie circulaire*, mania, melancholia, acute hallucinatory paranoia (the amentia of certain authors), and insanities of hysterical and epileptic bases. (4) The most important modifications produced by puberty are the following: Exaggerated weakness of effective disturbances ("affective dissociation"), want of harmony between these disturbances and mimic reactions ("hebephrenic paramimia") in coherence not only in delirious ideas but in normal thought, a tendency to mimic verbal, etc. stereotypes, illogical, trivial, and fantastic character of the delirious ideas and tendency on the one hand to a circular course, on the other to progressive dementia. All these modifications are met with in some psychoses of puberty more often than in others: (5) the prognosis is, owing to the changes just indicated, in general worse than in post-puberal psychoses; (6) the treatment does not in general differ from that of post-puberal psychoses. Total confinement to bed is indicated only in cases where there is great exhaustion. Regular occupation both of body and mind fixed for every hour of the day is of particular importance in the majority of cases. The use of narcotics should be restricted as far as possible. Great care is required in the selection of the adult patients with whom those at the age of puberty are placed in the same ward.

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(130) Rest in Bed in the Treatment of Acute Forms of Insanity.

Dr. Clemens Neisser (Leubus) introduced a discussion on rest in bed in the treatment of acute forms of insanity, and the modifications which it may bring about in the organisation of institutions for the reception of lunatics. He said that by the introduction of rest in bed into the treatment of mental diseases the principle that lunatics should be dealt with as persons suffering from disease had been irrevocably admitted. A distinction must be made between confinement to bed applied to special cases, and the same measure employed as a general system of treatment. Dealing with the latter first, Dr. Neisser said: (1) It is a general principle that for all individuals whose attitude and conduct are disorderly, excited, or merely strange, whether one has to do with maniacs, melancholics, subjects of hallucinations, patients suffering from methodical delirium, epileptics, general paralytics or dements, the best treatment is confinement to bed. Of course, the physician may, if he thinks proper, allow the patient to get up in order to take his share in work, amusement, walks in the garden, or meals in common; but stupid standing about, lounging and clustering in corridors and day rooms must be strictly forbidden and replaced by bed. (2) The patient should be put to bed immediately on his arrival, or rather after the bath, which should be the first part of the treatment. As it is indispensable that the patient should be in bed for the first medical examination, no special indication for this is necessary. In other words, bed is the treatment naturally called for; it can be dispensed with, temporarily or definitively, only in special cases as enjoined by medical order. (3) Confinement to bed facilitates the necessary supervision and care, which in certain cases would be impossible without it; therefore, for this reason and in the general interest, it may also be indicated in the case of patients recognised to be incapable of undergoing direct therapeutic action (either at first or in the course of the malady). With regard to confinement to bed as a special treatment, Dr. Neisser said: (1) It is not a specific treatment of mental affections any more than of fevers or wasting diseases. It is only one of the means of treatment which must be suitable for the case and for the individual. Confinement to bed, the most simple, natural, and general therapeutic measure to sufferers from mental disease, has been regarded as something almost new and special; but this is not so. (2) Confinement to bed meets only one therapeutic indication, rest for the brain, using this term in a physiological sense as opposed to psychical suggestions. (3) It is therefore indicated in all cases where it is necessary to act against symptoms of irritation, first of all in all diseases of acute type. (4) The individual mental condition must be taken into account, especially by placing and grouping the patients in a judicious manner either in one of the common wards or in separate rooms, the door of which may be open or shut but under constant watch. The most precise individualisation is an absolute necessity in this matter. (5) On the one hand, as long as an acute condition of illness exists, the essential part of the treatment is physical rest, that is, rest of the diseased organ. On the other, as soon as the acute symptoms begin to disappear without there being any tendency to recovery, treatment should be directed to the conservation and quickening of the remains of the psychical personality by imposing on the patients occupations for that purpose starting from a given moment. That moment is not easy to determine. If it be allowed to pass, the patient easily falls into the "bed mania"—a mania difficult to combat, and which is hurtful both to his physical and moral constitution. It is therefore advisable, sometimes even in the acute stage, to combine confinement to bed with work and exercise in the open air. This may be done in several ways (occupation in bed, alternation of rest and work, or of walks, mixed system of Toulouse). In the majority of juvenile mental affections, confinement to bed should not be too much prolonged. As regards the modifications in the organisation of establishments for the insane necessitated by the treatment, Neisser said: (1) Confinement in bed does not necessarily involve considerable changes in construction, and can be carried out in old institutions; as a proof of this, he cited the plans of Leubus. (2) There should be no sections comprising only

separate cells, except in asylums for criminal lunatics. (3) It is desirable to have as many sections as possible, not too large or varied. Given mixed asylums for curable and incurable cases of medium dimensions, they should be allocated in the following proportion: For every 100 patients two or three sections, each containing about 20 beds. Each of these sections should comprise three or four rooms of different size, and agreeably furnished for patients warded together, a common day room, and three or four separate rooms. The rooms should be arranged in such a fashion that an efficient watch can be kept by a small number of attendants. 4. Each section should contain what is needful for baths. 5. There should be 100, at most 200, patients for each physician, even if the inmates do not change frequently, otherwise the treatment is difficult to carry out. 6. The treatment involves an increase in the number of attendants only if their time of duty is shortened and they are more frequently replaced. It is evident that in looking after patients actively an attendant becomes more fatigued than in watching persons shut up in cells or perhaps chained. 7. The attendants must of course be under the direction of the physician. 8. By confinement to bed in wards room is gained, separate sleeping rooms being no longer required for many patients. 9. Statistics collected at Leubus showed that the bed treatment is, from the administrative view, productive of economy in the matter of clothing.

PROFESSOR S. S. KORSAKOFF (Moscow) said: (1) We must distinguish between confinement to bed as a system of internal organisation of asylums and its use as a therapeutic method. (2) The bases of the system are as follows; (*a*) Bed is considered as an essential element of the treatment; (*b*) stay in bed is secured not by violence but by means of the moral effect and suggestive influence of the environment; (*c*) the attendance must be organised in such a way that it shall be a means of nursing the patients and carefully observing the physical and psychical symptoms of the disease. One of the principal advantages of the system is the diminished use of cells. (3) The exact apportionment of the time to be spent in bed, in walks, and in occupations out of bed, is the essential part of the system. The treatment should be regulated in all its details, from absolute confinement to bed to the most limited stay there. (4) The use of common wards is a potent means of help in the regular organisation of the system, although it may be necessary to apply it also in separate rooms. Confinement to bed by force is not an element in the treatment. (5) The chief advantages of the system are: Better order in the asylum, especially if it is crowded; greater safety for the patients; greater facilities for nursing and for clinical observation; less use of separate rooms; the system may make it possible to dispense entirely with confinement in cells. Mental diseases characterised by excited states run a milder course in asylums where the system of bed treatment is carried out; the mortality of some grave acute psychoses is notably diminished. (6) In addition to confinement to bed, other systems which act favourably—such as the moral influence, no restraint, work and open-door systems—must not be neglected. A happy combination of these is perfectly feasible. The quietism which sometimes becomes developed in the medical staff of an asylum under the influence of the bed treatment is mere abuse. (7) The indications for absolute rest are only imperfectly established. Before they can be placed on a scientific footing it will be necessary to make not only further researches, but to widen their scope. Points deserving of study are: The effect of the rest in bed and of the want of exercise on the composition of the blood, the elimination of toxins, and on the psychical functions, especially on the energy of the directing apparatus of the mind (apperception). (8) The principal indication for confinement to bed is a condition of excitement. It should not be too long or too rigorously applied in patients of inactive intelligence, predisposed to apathy, anæmia, and masturbation. It is very important that the effect of this treatment in the mental diseases of young persons should be particularly studied, especially in relation to their becoming incurable. (9) The treatment should be applied in a different manner according to individual indications in almost all psychoses acute in form, especially in the initial stage of the disease. Its action is particularly favourable in most patients suffering from mania and alcoholic delirium, and in many forms of mental delusion and melancholia. There may be special indications for its use in cases where the mental disturbance is connected with an infection, a high temperature, or great exhaustion.

DR. JULES MOREL (Mons) presented a communication the conclusions of which may be summed up as follows: I. Every lunatic admitted into an institution should first be placed in the observation quarter for thorough examination, physical and mental. II. Confinement to bed should be employed in the following cases: (1) All cases of acute or chronic psychosis presenting intercurrent conditions of excitement and depression; (2) all in which there is any disturbance of the general nutrition; (3) all cases of patients incapable of behaving in accordance with the rules of ordinary life—those that are mischievous or refuse their food or show suicidal tendencies, etc.; (4) all cases in which there exists a complicating somatic affection of any gravity. III. In order that the object of the bed treatment may be satisfactorily attained, it is necessary (1) that the institution should have a competent medical staff proportionate to the requirements of the service; (2) that the various physicians attached to the institution should live in it and have each a real share in the observation and treatment of the patients; (3) that no means of restraint should be used except in very rare and exceptional cases; (4) that the medical staff should undertake the professional instruction of the attendants and eliminate from among them all who are not entirely satisfactory; (5) that the staff of attendants should be composed of intelligent persons of irreproachable morals sufficiently paid and having the prospect of a retiring pension after a certain number of years of service; (6) that the buildings and their offices should satisfy all requirements as regards comfort both for the patients and the staff.

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(131) The Pathological Anatomy of Idiocy. DRS. G. E. SHUTTLEWORTH and F. BEACH presented a communication on this subject. They said that as far back as the time of Hippocrates the physical characteristics of idiocy were noticed. In the first volume of the English translation he speaks of the Macrocephali, who were in the habit of producing cranial deformations of the head. Pliny, too, in his *Historia Naturalis* mentions the Macrocephali, and Tulpius (*Observationes Medicæ*) has a chapter on hydrocephalus, which he had seen associated with idiocy. Willis, in his *Collected Works* in the part dealing with the anatomy of the brain (English edition) describes and figures, the brain of a young man, completely imbecile, the size of whose brain was scarcely one-fifth of that of an ordinary man (microcephalus.) Pinel (*Traité sur l'Alienation Mentale*) also describes and gives illustrations of two cases of microcephalus, and Gall and Spurzheim in their atlas accompanying their *Anatomie et Physiologie du Système Nerveux en Général et du Cerveau en Particulier* give plates not only of microcephalic heads and crania but of hydrocephalic crania, in one case of a cretin in the other of an imbecile child. The above remarks have reference to the size of the head. As regards the form, bony deformations are noticed by Meckel in *Mémoires de l'Académie de Berlin* published by him in 1760. With respect to conformation Tulpius (*Observationes Medicæ Rariores*) remarks that the convolutions are less numerous, and Malacarne (*Encephalotomia nuova universale*) states that the lamellæ of the cerebellum increase or diminish according to the development of the intelligence. As regards the organisation, Meckel (1760) remarks that in idiots there are dryness and hardness of the cerebral substance, and Bonnet and Haller report tumours and ulcerations in the brain and cerebellum. Finally, Esquirol (*Des Maladies Mentales*) notices that the convolutions are small, atrophied, compact and thin, and that the lateral ventricles are of small capacity. Apparently the first observers dwelt most on the size and shape of the head as causes of idiocy, the structure of the brain being noticed at a later period. Coming now to recent times, modern authors are of opinion that pathology and classification are mutually interdependent. According

to this view, Drs. Shuttleworth and Beach have classified the anatomo-pathology of idiocy under three chief heads—namely, (1) congenital formative defects; (2) developmental cases; and (3) acquired cases. Under the first head they place (1) microcephalus; (2) hydrocephalus; (3) scaphocephalus; (4) Mongol imperfections of the osseous, cutaneous, mucous, and in some cases cardiac tissues; (5) neuropathic *genetous* cases, in which the convolutions are coarse and simple, or are small, slender, and curling (mycrogyry); (6) amaurotic *genetous* cases; (7) sporadic cretinism, due to defective structure or absence of the thyroid gland; and (8) partial local defects, such as defect of the corpus callosum, or porencephalus. Under the second head they include (1) eclamptic cases, with hæmorrhagic or inflammatory lesions; (2) epileptic cases: (3) syphilitic and juvenile general paralysis cases; and (4) paralytic cases, in which there are degenerative changes in the vessels of the brain, or in some cases atrophy of the brain. These cases may be due to birth palsy, to palsy coming on after whooping-cough, or to inflammation. Under the third head are comprised (1) traumatic cases, due to pressure on the head during labour, owing to abnormal narrowness of the pelvis, prolonged labour, or less often the use of the forceps, and lesions produced by accidents; (2) post-febrile inflammatory cases; under this sub-head is placed hypertrophic idiocy, a monograph on which subject has been published by one of the authors; and (3) sclerotic idiocy, a disease first described by Bourneville in 1832. The changes in the brain observed in this disease were noted by Dr. Wilmarth in 25 out of 100 cases, and have been frequently noted by Beach, who not only described the changes already observed, but also hyperæmia, softening, tumours, and disease of the membranes of the brain; asymmetry of hemispheres and convolutions; alteration in relation of grey to white matter of brain; simplicity of convolutions, thickening of the arteries, thrombosis, disease of the cerebellum and spinal cord; and anomalies of the convex surface and base of the cranium in Tuke's *Dictionary of Psychological Medicine*, 1892. The microscopical appearances of idiocy have been observed and noted by one of the authors, and by Bevan Lewis, Andriezen, Mierzjewski, Hammarberg, Bourneville, and A. W. Campbell. A beautiful series of drawings by the last-named, illustrating microscopical appearances observed by him in five brains of idiots was shown to the Section.

Dr. Bourneville said that as the result of researches pursued during twenty-five years at the Salpêtrière, and especially at Bicêtre and on the communications which had been published during the same period on idiocy, or to speak more accurately on the various forms of idiocy, he had been led to distinguish up to the present, from the anatomo-pathological point of view, the following forms: 1. Idiocy symptomatic of chronic meningitis (meningitic idiocy). 2. Idiocy symptomatic of chronic meningo-encephalitis (meningo-encephalitic idiocy). 3. Idiocy symptomatic of arrested development of the convolutions without malformations, with lesions of the nerve cells (congenital idiopathic idiocy). 4. Idiocy symptomatic of hypertrophic or tuberous sclerosis. 5. Idiocy symptomatic of atrophic sclerosis, (*a*) sclerosis of a hemisphere or of both hemispheres of the brain (hemispheric or dihemispheric sclerosis); (*b*) sclerosis of a lobe of the brain (lobar sclerosis); (*c*) sclerosis of separate convolutions; (*d*) shagreen sclerosis of the brain? 6. Hemiplegic or diplegic idiocy, symptomatic of focal lesions due to vascular obliteration or to hæmorrhage (pseudo-porencephaly, etc.). 7. Idiocy symptomatic of simple ventricular hydrocephalus or complicated by extraventricular hydrocephalus (hydrocephalic idiocy). 8. Idiocy with pachydermic cachexia or myxœdematous idiocy associated with absence of the thyroid gland. 9. Idiocy symptomatic of an arrested development of the brain with congenital malformations (true porencephaly), absence of corpus callosum, etc. 10. Idiocy symptomatic of microcephaly from arrest of development with or without malformations or having for cause lesions occurring after birth (microcephalic idiocy properly so-called or symptomatic). Dr. Bourneville has seen no case of idiocy that could be referred exclusively to an osseous lesion, in particular to premature synostosis of the bones of the skull.

Dr. Mierzejewski, formerly Professor of Clinical Psychiatry at St. Petersburg, said that the classification of the various forms of idiocy proposed by Dr. Bourneville answered the practical needs of science in its present state, but with the progress of knowledge an anatomo-pathological classification based on the study of the delicate nervous structure and its elements, and on exact embryological data will become necessary. The basis of all anatomical lesions in the brains of idiots is a deviation of development of the nervous tissues; its origin must be sought for in embryonic life or in the pathological lesions which are produced in earliest infancy, and are the starting point of later deviations of development. There is no true arrest of development in a morphological and histological respect affecting the brain as a whole, but there is a true arrest of development of certain regions of the brain tissue which may be recognised by the presence of neuroblasts. Among the brains of idiots belonging to this category, which from their special characteristics may form a group apart, are those in which the white matter of the cerebral hemispheres is very slightly developed, whilst the grey matter of the cortex is distinguished by its prodigious abundance. These brains, which belong to microcephalic and demi-microcephalic idiots, have most often microgyric convolutions, but this may be absent. The brains of such idiots are characterised by very slight development of the centrum semi-ovale, and by the enormous distension of the ventricles, the cerebral hemispheres becoming transformed into bladders with thin walls. There is a special type of microcephalic brain characterised by richness of grey matter and insufficient development of white matter and by microgyry. This type is distinguished from the ordinary type of microcephalic brain by the fact that in the latter, with general diminution of the nervous tissue of the hemispheres, the corresponding proportions between the grey and the white matter are maintained. After this special type peculiar to certain microcephalic brains come certain demi-microcephalic brains in which arrest and development of the white matter attain a less high degree, and are accompanied by diffuse subcortical heterotopia of the grey matter. In both cases the type remains the same, and its special character consists in this—that between the grey matter of the cerebral hemispheres and the centrum semi-ovale the nervous tissue is sometimes found in a state of true arrested development, as proved by the presence of neuroblasts, and in other cases in a state of deviation of development which manifests itself by the presence of elements resembling the ganglionic cells of the deep layer of the cortex. The examination of brains of idiots proves that abundance of grey matter and of nerve cells may be accompanied by idiocy, but in such cases the system of connections between the convolutions is arrested in its development, and this want of paths of communication, and the lack of harmony of development in the different nervous elements, render the organ imperfect. In the central nervous system everything depends not on the quantity but on the quality of the elements, and their combinations with each other. The richness of the layer of neuroblasts in the hemispheres of idiots, which indicates true arrest of development of certain parts of the cerebral tissue, undoubtedly produces insufficiency of function of the nervous system and of the manifestations of the intellect. In favourable conditions of nutrition, however, neuroblasts may become transformed into elements of a superior order, that is to say, nerve cells. In the layer of neuroblasts there are sometimes found polymorphic cells. Thus the neuroblasts, which for a certain time preserve their embryonic forms, and which are in a state of functional lethargy, may under the influence of a propitious impulse become transformed into nerve cells and help in reinforcing the activity of the cerebral functions. It is perhaps in this way that are to be explained the cases of profound and apparently hopeless idiocy in which there sometimes in a manner not at present understood occurs a marked improvement of the intellectual faculties. The idiot seems to awake from a long sleep whilst nevertheless retaining permanently the stamp of his mental infirmity, though in a less marked degree.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

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SECTION OF PHARMACOLOGY, THERAPEUTICS, AND MATERIA MEDICA.

(123) Treatment of Biliary Lithiasis.

IN introducing this subject Professor NAUNYN (Strassburg) said: The formation of biliary calculi does not take place solely in the gall bladder. Some are formed in the ramifications of the hepatic duct. Cholesterine and calcium (bilirubinate of lime), the chief chemical constituents of biliary calculi, come from the mucous membrane of the biliary ducts. Lithogenic catarrhs of the mucous membrane may be excited by microbes (coli bacillus, Eberth's bacillus, possibly also by others). They are therefore of infectious origin. Nevertheless, great virulence of the germs is by no means favourable to the formation of concretions. It is rather slight infections caused by microbes whose virulence has been attenuated that induce lithogenic catarrhs. These slight infections may become developed as soon as there is stagnation of bile. Indeed, normal bile is not absolutely sterile, but the germs, among which only the coli bacillus need be mentioned, are present in very limited number, and have no virulent property as long as evacuation of the bile proceeds in a normal manner. From what has been said it may be gathered that in ultimate analysis it is disturbances in the flow and evacuation of the bile that are the principal causes of the formation of biliary concretions. The space of time required for the formation of the different kinds of biliary calculi is of very variable length. It is not impossible that the formation of one or other kind of calculus may take place very rapidly. Biliary concretions may remain for a long time in the gall bladder without their presence being indicated by any symptom. Among the evil results caused by the presence of calculi in the bile passages, inflammations of mucous membrane, cholecystitis and calculous cholangitis occupy the foremost place. They are of infectious origin, and may be induced by the appearance in the bile of microbes proceeding from the blood (Eberth's bacillus) or from the intestine. If any calculi are present, there these microbes multiply with great rapidity. In fact, the calculi prevent evacuation of the bile, and just like the residual urine in the bladder, the residual bile, that is to say, the permanent residue of bile, forms an excellent soil for the development of an infection. The residual bile may in like manner be the starting-point of auto-infections of grave character. The coli bacillus which is almost invariably present in normal bile may become extremely virulent in residual bile. This infectious cholecystitis may cause an expulsion of calculi, and in this manner become the starting-point of hepatic colic and icterus. On the other hand, hepatic colic may become the starting-point of a cholecystitis when a calculus owing to other causes escapes from the gall bladder. Cholelithiasis may be cured in each phase of its evolution by evacuation of all the calculi. This evacuation may take place by the natural channels as well as through the formation of fistulæ. In the great majority of so-called "cures" one has to do only with a cure of the infectious complications. The disease becomes latent as soon as the bile ducts are no longer obstructed. It is impossible to foretell the duration of such a state of apparent cure; it may be indefinite. The surgeon alone can place before him complete cure as an object to be aimed at. Nevertheless, a complete cure is not altogether the same thing as the evacuation of calculi by operation. There are cases in which pain and the appearance of calculi in the stools persist after operation. As for internal medication, it can aspire only to remove obstruction of the bile passages and to remedy the infectious complications. Once the disease has become latent, the object of medical treatment is attained. The most efficacious means is the most abundant possible secretion of bile. It is, however, more than doubtful whether the remedies that cause an abundant secretion of bile under normal conditions produce the same effect when the bile channels are obstructed (infectious cholangitis). The inefficacy of ordinary cholagogues as long as an infectious cholangitis exists seems only natural. As regards medical therapeutics, it is only apparent cure that can be aimed at by its means, and to obtain this the practitioner must place before himself two objects: (1) To mobilise the calculi contained in the bile duct, the cystic duct, or the gall bladder, and to modify the concomitant infectious alteration of the bile passages. The method of fulfilling the former indication has given rise to much discussion, for the muscular coat of the excretory channels, the contraction of which contributes very effectually to the expulsion of concretions, may also by spasm imprison them, so that one has to choose between excitants (purgatives, emetics, cold wraps, and electricity) intended to increase contraction, and sedatives (opiates, belladonna, chloroform, and hot water internally and externally) intended to bring about relaxation of the spasm. Dr. Naunyn thinks that unquestionably the latter procedure is the more logical, and it is to it that he has recourse. He summed up his view on this matter in the formula: No emetics or purgatives, but opium and heat. With regard to cholagogues, theoretically the production of a larger quantity of bile seems as if it ought to favour the expulsion of the calculus; in reality, however, it is not the volume of the bile that is important, but its pressure in the biliary ducts, and if one takes into consideration the fact that according to Heidenhain that pressure does not exceed 300 mm. of water, whilst Oggi has shown that the sphincter of the bile duct only allows itself to be forced by a pressure of 700 mm. of water, it will be understood that the action of cholagogues is very feeble, if there be any at all. Olive oil and oleate of sodium, which have recently been employed successfully by many practitioners, but of which Dr. Naunyn has had no personal experience, undoubtedly act directly on the mucous membrane in question. The same thing possibly holds good with regard to hot sulphate of soda waters. As regards alkaline waters, the efficaciousness of which has for so long been an article of faith, it appears to Dr. Naunyn beyond question that they do not exert any kind of solvent action on calculi. As regards the cholagogue effect, it has never been clearly demonstrated, and, moreover, Dr. Naunyn does not think that if they had such an effect it would be of any use. Must it therefore, he asks, be admitted that hot mineral water has a sedative effect on the nervous phenomena which cause occlusion of the sphincter of the bile duct? This is possible, but the fact that alkaline waters also act upon affections of the liver quite different from cholelithiasis leads him to attribute to them a special action on the circulation of the liver, which, under their influence, becomes particularly active, and brings to the tissue a more abundant and richer blood, thus making possible an easier repair of pre-existent lesions.

MM. A. GILBERT AND L. FOURNIER (Paris) dealt with the subject under five heads: (1) *Nature of Biliary Lithiasis.*—Biliary lithiasis is in the generality of cases the result of a microbic action—and most commonly of a coli-bacillary action—on the mucous membrane of the channels for the excretion of the bile (intrahepatic and extrahepatic ducts, gall bladder). Ascending infection by germs feebly but sufficiently virulent determines a catarrhal angio-cholecystitis. The mucus abundantly secreted and the desquamated and degenerated epithelium furnish in large quantity the lime and cholesterin which are the principal constituent elements of calculi. The lime combines with pigments to form insoluble compounds. The small precipitates (bilirubinate of lime), and the desquamated epithelial cells agglutinated by mucus, may form the primary centres, the nuclei of the calculi. Biliary lithiasis therefore constitutes the type of lithiasis of parietal origin as contrasted with lithiasis of secretory origin. Ascending infection of the bile ducts takes place with extreme frequency under very various influences. Biliary stasis is its essential condition. This acts also by retaining within the excretory channels the calculi that are recent formation, small in size, and soft, and by permitting their growth

and increase of consistence. It is not impossible that certain hetero-intoxications or auto-intoxications are lithogenic in consequence of the same process of catarrhal angiocholecystitis. (2) *Spontaneous Cures and Pseudo-Cures.*—We may conceive the possibility of a spontaneous cure of biliary lithiasis by the expulsion of calculi already formed and the *restitutio ad integrum* of the mucous membrane of the bile passages. Doubtless the same thing occurs in many circumstances, particularly in the case of recent lithiases. These are abortive lithiases in which the lithiasic product is expelled before term, that is to say, before its complete maturation. The return to the normal state of the biliary evacuation is on the other hand the essential condition of the cure of superficial biliary infections. Calculi may be expelled through fistulæ. Choledochoduodenal fistulæ are the most favourable. The atrophy and shrivelling of the gall bladder over calculi, and the encapsulation of the latter, constitute only pseudo-cures which by no means protect the patients against the occurrence of serious complications. (3) *Prophylaxis.*—Certain hygienic rules constitute in themselves true prophylactic means against lithiasis (regular meals, taken at short intervals, the use of clothing which does not cause displacement or deformation of the abdominal organs, exercise, etc., careful regulation of the digestive functions); one of their principal results is indeed to prevent to a certain degree stasis of the bile and ascending infection. The prophylactic treatment should be complemented in all cases where the conditions that are the habitual causes of lithiasis are present by a series of therapeutic measures (use of alkaline substances, cholagogues, massage of the abdomen, and, in particular, of the gall bladder, large cold enemata), particularly after pregnancy and after general diseases that are frequently accompanied by ascending biliary infections (typhoid fever, malaria). (4) *Treatment of Lithiasis when Developed.*—The same hygienic rules are applicable to the treatment of lithiasis when developed. What is known of the action of the different cholagogues and lithontriptic substances does not at present warrant the hope of obtaining a cure of biliary lithiasis by means of them. Nevertheless, it is evident that the expulsion of numerous calculi and considerable improvement, if not true cure, are obtained by regular courses of treatment in certain mineral water stations. On the other hand, the authors believe that the question of lithontriptics is not yet definitively settled, and that researches having for their object the breaking up and destruction of calculi within the biliary passages deserve to be carried further. Such a result if it were obtained, though not directly attacking the cause but only the effect, would be all the more valuable, as the danger run by a subject of lithiasis is caused in great measure by the calculi. The presence of these in the biliary passages, their normal and especially their abnormal movements are, in fact, the most potent causes of secondary infections, which are sometimes of great gravity, and of profound changes not only of the biliary passages, but also of the liver itself. (5) *Indications for Surgical Intervention.*—The threatening of serious complications is the essential indication for surgical intervention. The signs of a chronic obstruction of the bile duct, swelling, signs of intrahepatic angiocholitis, the occurrence of painful crises too frequently repeated, especially if they are accompanied by febrile phenomena, are the principal circumstances in which surgical intervention has to be considered. The recent progress of the surgery of the bile passages has rendered the prognosis of complicated lithiases much less unfavourable than it was.

DR. EHRETT (Strassburg), said that, in conjunction with Dr. Stolz he had made numerous experiments with the object of ascertaining the amount of micro-organisms present in the bile as well as the conditions favouring pullulation of the germs in the biliary ducts. They first satisfied themselves that in the normal state the bile, though only feebly antiseptic, is none the less almost sterile. In fact, cultures are obtained from it only by sowing large quantities of biliary fluid (4 to 5 c.cm. at least); even in those conditions scarcely 10 colonies per cubic centimetre of bile sown are obtained, and, moreover, the germs are of very attenuated virulence. After injection of a culture of streptococcus into the gall bladder the bile ducts clear themselves very rapidly of the microbes thus introduced, and after eight days the bile is as aseptic as it is in the normal state. Absolutely analogous results are obtained when infection is produced through the blood. The streptococci disappear as quickly from the bile as from the blood, and the return of the bile ducts to the normal state is accomplished in about a fortnight. On the other hand, if there are introduced into the gall bladder foreign bodies perfectly aseptic but capable of interfering with the contractility of that receptacle, the bile becoming stagnant is rapidly invaded by innumerable micro-organisms among which the coli bacillus predominates. There is no doubt that this pullulation of microbes is due to the forced immobility of the gall bladder and to the presence of residual bile. These facts appear to Dr. Ehrett to establish the importance of the evacuation of the bile for the integrity of the excretory ducts of the liver, and they account for the frequency of infection of the bile ducts in all circumstances in which their permeability is compromised by the presence of calculi.

DR. DOYEN said: Surgical intervention in biliary infection is sometimes urgent, and in regard to certain cases there can be no discussion about this. It is clear that a gall bladder full of pus must be emptied on the same principles as any other purulent infection. Apart from those indications, there are certain contingencies which may bring the lithiasic patient within the province of the surgeon. Whenever there exist signs of chronic obstruction of the bile duct, one should operate within a period of five to six weeks in order to prevent the development of a cirrhosis which, by the disturbance of the general health entailed by it, would constitute an absolute contraindication. From the point of view of technique, everything depends on the condition of the gall bladder, which may be free or adherent. In the former case the surgeon may confine himself to simple evacuation of the gall bladder and removal of calculi. Nevertheless, M. Doyen has a leaning to cholecystectomy since he has succeeded in performing that operation by the subperitoneal route, which prevents all danger of the overflow of bile into the abdomen. On the other hand, when the gall bladder is adherent, the adhesions must, if possible, be torn through with the finger. Sometimes, however, the gall bladder is retracted on the under surface of the liver, and buried in the thickness of an enormous mass of inflammatory adhesions. When this condition is present he does not hesitate to perform transhepatic puncture of the gall bladder. Anastomosis of the gall bladder with the duodenum appears to M. Doyen to be indicated only in the very rare cases where there is cicatricial obstruction of the bile duct or the ampulla of Vater.

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(133) Indications for Bleeding.

PROFESSOR GEORGES HAYEM (Paris), introduced a discussion on this subject. He summed up his conclusions as follows: (1) A therapeutic measure is *indicated* when it is established that in certain given circumstances it gives greater relief than any other. Bleeding, therefore, can be looked upon as *indicated* only in the cases in which it acts in a manner unquestionably superior to all other therapeutic measures. (2) The employment of repeated bleedings as a method of treatment, formerly called the antiphlogistic method, appears to be definitively condemned. On the other hand, the opening of a vein once or several times at relatively long intervals deserves to be preserved as a useful and sometimes heroic measure. (3) The cases in which bleeding is indicated are, generally speaking, those in which life is placed in immediate danger either by disturbances of the circulation or by toxæmia. (4) The principal conditions in which bleeding is clearly indicated are the following: acute œdema of the lung, particularly in diseases of the large vessels and the kidneys; certain cases of pneumonia of œdematous or simply congestive form; certain mechanical disturbances of the circulation due to disease of the heart or the great vessels, particularly in the case of arterial hypertension, but also sometimes with evident asystoly; congestive and hæmorrhagic forms of acute nephritis; cerebral congestion and

hæmorrhage at the beginning in patients who are the subjects of hypertension; acute or recent uræmia, puerperal eclampsia; poisoning of the blood by certain gases, notably by carbonic oxide. (5) In all other pathological conditions the indications for bleeding are disputable; this is notably the case as regards chlorosis. (6) The indications for bleeding are established empirically by observation. In this respect records of any real value are very few. Statistics are scarcely utilisable, for it is very difficult to group facts which are often of disparate character in a satisfactory manner. The so-called physiological effects of withdrawal of blood can give only a very imperfect idea of the therapeutic effects of bleeding. These result essentially from the peculiar conditions created by the disease. It appears to be possible to connect them in large measure on the one hand with the mechanical effect produced by sudden withdrawal of a certain quantity of blood, on the other with an elimination of toxic material. Clinical facts observed with accuracy prove that these therapeutic effects are very powerful. (8) The resistance of man and the higher animals to withdrawal of blood is considerable, in all cases where there does not exist a pathological cause of deglobulinisation or an obstacle to the renewal of the blood. Except at the extreme ends of life, in the morbid conditions that have been mentioned a fairly considerable bleeding (300 to 500 c.cm.) is always easily borne, even when the patients are markedly anæmic, which happens with considerable frequency in uræmia and puerperal eclampsia. (9) The renewal of the blood takes place in sick people, as in the physiological state, by the intermediary of the hæmatoblasts; the elements of the marrow of bones take no part in it. These elements pass into the general circulation only in cases of excessive loss of blood repeated time after time.

M. A. Robin said that, in addition to the mechanical and antitoxic effects of bleeding, a considerable share must be attributed to the action which the withdrawal of blood had on nutrition and organic exchanges. These effects, which hitherto have been little known, are constant and considerable, and seem to M. Robin to throw light on the mode of action of bleeding. Researches carried out by him for many years have satisfied him that, after bleeding to 150 to 250 grams in patients suffering from pneumonia, uræmia, and heart disease, the occurrence of polyuria is regularly observed, whilst at the same time the standard of solid materials—urea, phosphoric acid, nitrogen—is notably increased. On the other hand, pulmonary ventilation is accelerated; in one case the amount of air traversing the lung was increased by 61 per cent. The proportion of oxygen consumed by the tissues undergoes a parallel augmentation. Analogous but less considerable changes are observed after hæmorrhage, either physiological (menstruation) or pathological (epistaxis, hæmatemesis from simple ulcer of stomach). M. Robin summed up his view in the statement that bleeding is an excellent means of increasing cellular oxidation. He held that it is therefore indicated in all cases where nutrition is compromised not by excess of disassimilation but by insufficiency of oxidation.

(134) Should Fever be Treated?

Dr. Stokvis (of Amsterdam) said there are certain cases, though they are rare, in which it is impossible not to intervene in a case of fever. As, when alarming symptoms connected with the great functions of the economy (heart, respiratory apparatus, nervous system) place the patient in imminent danger of collapse. In such circumstances inactivity is out of place. But how is the practitioner to interfere? Dr. Stokvis thinks it is a serious error to try to reduce the temperature by the administration of antipyretics, and holds that recourse should be had solely to hydrotherapy and to the use of analeptics. The employment of medicinal agents, however, is sometimes legitimate in the absence of any threatening collapse. This applies to affections for which we have a specific medication, for in that case it is not only the pyrexia that we can combat but the fever itself. Unhappily this is very seldom the case, and, except in regard to malaria and acute articular rheumatism, the specific antipyretic is still to seek. In presence of a febrile malady it is equally exceptional to have to deal with symptoms of immediate gravity and to be in possession of a specific medication. Dr. Stokvis is, therefore, of opinion that the general rule, which applies to the immense majority of cases, is not to treat persons suffering from fever but to nurse them. He thinks that it is not by drugs but by hygiene and diet that one should deal with such cases.

Professor Lépine (Lyons) said that from antiquity up to the present century the healing virtue of fever had been held as a kind of dogma. Liebermeister taught that the heat was the enemy to be fought. The treatment of pyrexia is the treatment of fever. More attentive observation, however, has shown that if pyrexia generally speaking indicates the gravity of a febrile malady, it is far from being the principal factor of it, and an endeavour must be made to treat the fevers specifically. This fortunate result has been reached as regards certain diseases, but as regards others the practitioner is reduced to watching the reaction of the organism, sometimes by moderating it by means of antipyretics which are to a slight extent specific in regard to certain pyrexiæ; sometimes by stimulating it by hydrotherapeutic measures; sometimes by the application of cold (especially in the case of hyperpyrexia); lastly by supporting the system.

M. A. Robin maintained that the treatment of fever should be based on a study of the organic exchanges in the pyrexial patient. From this point of view two types of pyrexia must be distinguished: a simple pyrexia in which the general oxidations and the respiratory activity are increased; and a grave pyrexia produced by profound infections, the effect of which is to diminish oxidations, and on the other hand to increase disassimilation. Antipyretics, which are the moderators of oxidation, are therefore indicated in fever of the former type, while they can only be hurtful in the the latter. In dealing with this grave form of pyrexia the aim of the therapeutist should be threefold: 1. He should endeavour to diminish the phenomena of disintegration. For this purpose certain antipyretics, such as sulphate of quinine, may be very useful, provided they are given in small doses (50 to 60 centigrams to be taken in three doses in 24 hours), for the ordinary doses would produce the opposite effect. The analeptic treatment treatment recommended by Dr. Stokvis fulfils the same indication. 2. He must promote oxidation by aëration, by inhalation of oxygen, by the drinking of large quantities of fluid, and especially by hydrotherapy. 3. He must combat the retention of organic residues and facilitate their elimination, and to this end making them soluble. Oxidation itself is a very general process of solubilisation. Further, by the administration of salicylic and benzoic acid the insoluble glycocol is transformed into salicyluric or hippuric acid, which are easily eliminated by the urine. In short, M. Robin holds that there are fevers that must be respected and fevers that must be combated; and for this latter purpose it is not sufficient to fight the pyrexia, which is only an outward expression of the febrile state.

M. Huchard said the question did not admit of only one solution. Illustrating by a few examples the diversity of indications furnished by one and the same pyrexia, he said it is easy to assure oneself that the mere symptom pyrexia does not give an idea of the gravity of the febrile state. Whilst a temperature of 40° or 40.5° is normal in scarlatina, it becomes alarming in acute articular rheumatism. In typhoid fever again, as everyone knows, acceleration of the pulse is a more disquieting sign than increase of temperature. Again in pneumonia diminution in the amount of chlorides in the urine, if it falls below 50 centigrams in twenty-four hours, indicates a very grave, if not fatal, condition. In pulmonary tuberculosis (in the treatment of which quinine has been so much abused) it would not be rational always to use the same antipyretic, seeing that the fever is the result of at least three different mechanisms (fever of germination, fever of inflammation, fever of absorption). In like manner the "Pfeifferian fever," in pure influenza, and the pyrexia dependent upon associated affections, should not be treated in the same manner. In dealing with a case of fever two different results may be obtained—*antithermia*, easy to produce but of little

utility; and *antipyresis*, much more difficult to produce, for an antipyretic should at the same time quicken organic *chimisme*, increase diuresis, and give tone to the nervous system. This threefold end may sometimes be attained by combining the use of quinine in small doses with that of cold baths.

(135) Physiological and Therapeutic Actions of Digitalis and of its Active Principles.

Sir Lauder Brunton presented a communication on this subject in which he summarised his conclusions as follows: (1) The physiological action of digitalis is exerted chiefly (*a*) on the heart, (*b*) on the blood vessels, (*c*) on the secretion of urine. (2) Its action on the heart is that it (*a*) slows the cardiac beats chiefly by stimulation of the roots of the vagus in mammals, (*b*) increases the force of systole, and (*c*) increases the extent of expansion in diastole. Both *b* and *c* are due to an action on the cardiac muscle. (3) It contracts the peripheral vessels, and thus slows the current of blood through them. (4) By its combined action of contracting the peripheral vessels and of increasing the power of the heart it raises the blood pressure. (5) The diuresis which digitalis produces is chiefly due to increase of blood pressure. (6) Digitalis contracts the arterioles in the kidney sooner than those in other parts of the body. The renal vessels may contract so much as to arrest the secretion of urine altogether, although the general blood pressure is high. (7) When blood pressure is already high, digitalis cannot be expected to have a powerful diuretic action; but if the blood pressure be low, from natural constitution or disease, digitalis will have a diuretic action. (8) Digitalis is a local anæsthetic, but also produces pain. It therefore belongs to the class termed by Liebreich "anæsthetica dolorosa." (9) In large or in accumulated doses it gives rise to gastric irritation. (10) The action of digitalis is due to digitalin, digitaleine, and digitoxin. These principles all have an action similar in kind but differing in degree. (11) The therapeutic actions of digitalis and of its active principles are that they (*a*) regulate the heart's action, (*b*) assist a failing circulation, and (*c*) act as diuretics. (12) The regulating action of digitalis is useful in palpitation and functional disturbances of rhythm. (13) The most important use of digitalis and of its active principles is in the treatment of mitral incompetence due either to disease of the valves or dilatation of the ventricle. (14) In cases of aortic regurgitation digitalis is (*a*) unnecessary and not without danger when compensation is complete, (*b*) very useful when compensation fails. (15) When the blood pressure is already high digitalis may be injurious by increasing it still farther, and thus causing symptoms of angina pectoris or tending to produce apoplexy.

Dr. Joanin (Paris) said that of all medicinal substances of vegetable origin there are few which have raised scientific controversies so protracted and so numerous as digitalis. The fundamental remedial properties of this plant were recognised almost at once. Although since its introduction some twenty-five years ago, it has been proposed to use digitalis in the treatment of various affections, the plant has always been considered as the medicament of choice in the treatment of certain pathological conditions of the cardio-vascular system. Its use in the latter class of cases is nowadays very precisely defined, and clinical observation has accurately determined its advantages and benefits. But if the clinician is well informed from the didactic point of view as to the good effects which he has a right to look for from the administration of digitalis, the case is by no means the same when from the practical point of view he seeks to give the patient the benefit of the advantages which theory has taught him to anticipate. The results of the treatment are inconstant, and in this regard practice is not in agreement with theory. The author has sought to find answers to the following two questions: On what depends the inconstancy of the effects, and how can it be remedied? In the great majority of cases failure results either (1) from the employment of defective preparations, the defect being due to the extreme variability in composition of the substance dependent on the place and time of the gathering of the plant, the drying of it, and its possible adulterations; (2) from the employment of products bearing a great diversity of names, which pass for the immediate active principles of the plant, and are obtained industrially by very different methods; (3) from the use of the same name in certain cases to designate different substances on the market. The only way to avoid the errors and inconstancies of action attributable to the preparations used appears to Dr. Joanin to be the unification of the means of control and the methods adopted for obtaining the different products. In view of the variability of composition of the different organs of the plant, and of the multiplicity of the factors which are the causes of these variations, it might be well (*a*) to attempt to establish a control (by analytical procedure and physiological experiment) on digitalis leaves in the market, so as to place in the hands of the pharmacist a product as to which he would be fully informed, and the genuineness of which he might verify for himself; (*b*) to adopt a rigorous method of procedure for the obtaining of a galenical preparation, conserving as far as possible the physiological properties recognised as belonging to the plant, and to submit the galenical preparations thus obtained to the same control as the plant itself. As far as the active principles are concerned, Dr. Joanin suggests that it would be advantageous (*a*) to adopt a uniform terminology for the designation of the same substances; (*b*) to establish with precision the method of obtaining the different immediate principles which seem to be chemically defined; (*c*) to adopt a uniform method for the extraction of these active principles.

(136) Treatment of Arrests of Development.

Dr. Springer, of Paris, said the various influences, whether hereditary (syphilis, alcohol), or acquired (infections, intoxications), which determine arrests of development, in ultimate analysis, act on the connective cartilages, particularly on that of the lower end of the femur. Electrical stimulation of these organs is capable of quickening their functional activity, and bringing about a renewal of the process of growth. In order, however, that this method should give the best results, it is necessary to place the organism in the best possible conditions of nutrition. This is accomplished by previously treating any coexisting pathological conditions, notably gastro-intestinal and hepatic disorders. It is well to associate with the electrical treatment the administration of preparations of thyroid, since insufficiency of the thyroid body is frequent in the subjects of incomplete development. For the purpose of avoiding the bad effect on the nutrition which these preparations often produce, Dr. Springer recommends the use of a fresh decoction of barley or other cereal substance as a habitual drink. By this combination of therapeutic methods he has succeeded in bringing about a growth of several centimetres in a few weeks, and this even in persons who have passed the age when it is generally believed that growth is ended (25 years in one case, 32 in another).

(137) Ergotin in Pneumonia.

Dr. Kleczkowski (Grand-Fresnoy) said that ergotin employed in a daily dose of 3 to 5 grams from the period of rigor, before the appearance of bronchial breathing, had the effect of making the disease go through its evolution in four or five days. Given later it does not appreciably shorten the duration of the febrile stage; but it moderates the fever, relieves the dyspnœa, and calms the delirium, which never resists its action more than twenty-four hours. Dr. Kleczkowski has used this treatment for eighteen years, and in all that period has never seen a single fatal case of pneumonia except in diabetic subjects.

(138) Sodium Sulphate in Small Doses as a Laxative.

Dr. Manquat (Nice) said a small dose of sodium sulphate (4 to 8 grams) dissolved in a large glass of water at 38° C. taken in the morning fasting is a laxative which can be recommended for ordinary constipation, and also in patients in whom it is important to prevent any effort in emptying the bowel (piles, apoplexy, persons on whom abdominal operations have been performed, etc.). Moreover, by the regular use of the same solution it is possible to obtain a true mineral water "cure" which has given him the best results in a certain number of dyspeptics. In such cases the treatment should be suspended for ten days every month.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

HELD IN PARIS, AUGUST 2nd to 9th.

SECTION OF PATHOLOGY.

(139) The Histogenesis of Malignant Tumours.

Professor V. Babes (Bucharest) presented a communication on the histogenesis of epithelioma, in which he said that although the origin of such tumours was one of the obscurest problems of pathology, a solid basis for attacking it might be found by bearing in mind the following principles:—(1) The notion of cancer and epithelioma should be precisely defined. At the present time, especially in France, people talk of cancers which are not epitheliomata and of epitheliomata which are not cancerous. From the histogenetic point of view, one must regard as cancers only new growths of epithelial origin possessing malignant characters not only in point of site, but especially as regard their intimate relation with the lymphatic system, by which path are produced metastases and relapses, and a special cachexia is determined. (2) This limitation is necessary on the one hand because of the relations of epitheliomata to surfaces and to surrounding tissues; and, on the other hand, in order that it may be possible to apply a natural classification to those tumours. (3) From the careful study of a large series of cancers, the impression is obtained that in most of these cases the new growth begins by non-cancerous lesions which at a certain time, changing their characters, become cancerous. It must be admitted that congenital tumours or epithelial germs misplaced or detached from their natural continuity at a more or less advanced stage of development constitute in a large number of cases the soil on which cancer develops; and the departure from the fundamental rules of development becomes more and more pronounced. A similar departure will occur if the adult epithelium becomes the seat of a chronic irritation by displacing it, changing its relation to neighbouring tissues, and forcing it to develop in the substance in an independent manner. The same displacement will take place if by weakening of the tissues at an advanced age the epithelium in certain regions is placed in special conditions of liability to proliferation. (4) The architecture and finer structure of cancers is fairly well known, and it may easily be ascertained with the microscope at what moment a chronic inflammation, a tuberculous, or a benign epithelial tumour changes its character and becomes cancerous. (5) The vital question in regard to the histogenesis of cancer is to know whether the departure from the rules of development and normal growth may begin from the operation of causes inherent in the soil, or whether some casual determining cause must be invoked for that effect. Again, there is the further question whether such a cause must be specific in character or whether it also may be ordinary. (6) It is undoubted that cancer declares itself at the time when the epithelium of the integuments or of the glands shows a tendency to emancipate itself to enter on a career of irregular proliferation, to become detached and form substantive colonies, leaving the basal membrane and entering first into the lymph spaces in the form of plugs or solid cords. In such modified conditions of life the epithelium necessarily changes character, forming irregular mitoses, abnormal secretions, and special degenerations. Having no longer normal outlets or relation with the surfaces, all the special products of epithelium remain enclosed in the heart of the colonies or the cells. (7) A series of careful workers using excellent methods for the demonstration of the products of this irregular working of cancer colonies have shewn that the cellular intrusions which have been taken for parasites of cancer are only very varied modifications of the nucleus, nucleoli, nuclein, and paranuclein of substances engaged in the process of karyokinesis, the protoplasm inclusions of other cells, leucocytes, or epithelial cells, atrophies, and degenerations—keratinic, hyaline, filamentous, mucous or pseudo-mucous vitreous, colloid, amyloid, hydropic, etc. (8) As most of the most curious formations which have been looked upon as parasites have been recognised to be products of cellular transformations, there is no justification for regarding as parasites certain formations whose origin has not yet been fully elucidated. In fact, the morphological characters and histo chemical reactions of the different phases of developments of coccidia or blastomycetes differs essentially from the inclusions of carcinoma. (9) All serious authors recognise that the parasitic neoplasms produced by coccidia and by blastomycetes differ essentially from true cancer, coccidial tumours having a papillomatous structure and those produced in animals by blastomycetes having the characters of a chronic inflammation, with or without participation of epithelium. (10) The communicable tumours of certain animals have likewise a structure differing from cancer, being papillomatous or adenomatous. In their genesis a large part must be attributed to local or family proclivity. (11) If researches on the nature and parasitic origin of cancer have up to the present failed, the question presents itself whether the idea of the parasitism and specificity of cancer should be given up. Babes holds that, on the contrary, it should be taken up again and the investigation pursued along other lines to reach a certain conclusion. With this end in view new methods should be sought for the demonstration of parasites or specific substances in cancer, those made up to the present in that direction not being conclusive. The question must be carefully studied whether, as a matter of fact, cancer gives rise to epidemics and endemics analogous to those of infectious diseases, and the search for an effective method of transplantation of cancerous tissue must not be abandoned. (12) But histogenetic researches tending to prove the non-specificity of cancer should not be neglected, as these have hitherto given encouraging results. Since one is forced to admit that the majority of tumours, and especially of epitheliomata, have their origin in anomalies, displacements, irregularities in the development of tissues, what ground is there *a priori* for the exclusion of carcinoma from the category of such tumours? The question of site, which has been rather neglected recently under the influence of the great bacteriological discoveries, is gradually regaining its place in the interpretation of diseases; and we must ask whether special peculiarities in the site of disease cannot impress on these characters analogous to those of specificity. As Babes has shown that non-specific microbes can produce true epidemics among the patients of a hospital ordinary irritant causes, traumatisms, tuberculosis, or leprosy, or other chronic irritations may possibly determine in a soil prepared by anomalies or by epithelial tumours the vicious growth and peculiar degenerations of cancer. (13) As cancer essentially corresponds to a microscopic picture characterised by profound derangement in the architecture and in the direction of proliferation of epithelium, it may be assumed that any kind of irritation, mechanical, chemical, or infectious, acting on the predisposed epithelial tissue—that is, a tissue liable to enter on irregular and profound proliferation may determine the derangement which the clinical course of the disease inevitably entails. (14) There is no objection to the supposition that whatever may be the intimate nature of the deep irritation of a certain predisposed region of the body, or of a wart, a papilloma, an adenoma, a chronic ulcer, or a tuberculous lesion, as soon as epithelium becomes deranged downwards in a certain manner, there results therefrom always the same tissue, with similar disastrous consequences for the organism. Babes's personal researches on cancers developed on the site of a chronic tuberculosis, on carcinoma of the cirrhotic liver, on cancer of the tongue developed in a patch of leucoplasia, plead rather in favour of this view.

Professor W. Podwyssotzki (Kieff) dealt with phagocytosis and autophagism in cancers and other tumours. He said (1) the process of phagocytosis is widespread among malignant tumours, and is a means of defence, though an imperfect one, on the part of the mesoderm against the progressive encroachment of the neoplastic tissue. This process has been

observed by Klebs, Stroebe, Claessen, Korotneff, Soudakevitch, Ruffer, and others, but the interpretation of it has often been wrong. (2) This process of defence is exercised in different tumours in a very different manner, although it is always the cells of mesodermic origin that work at the destruction of a certain number of the cells of the tumour itself. There is also a great difference in the degree of resistance of the cells of different tumours in regard to this destructive and phagocytic action of the mesoderm, although cancers of epithelial origin produce in the surrounding connective tissue a more or less powerful inflammatory reaction which might be regarded as an attempt at defence on the part of the mesoderm against the invasion of the epithelial tumour. The cancerous cells themselves, however, appear to be less amenable to the phagocytic and histolytic action of the mesoderm; as long as the epithelial cancerous cell is young and full of life it can defy the phagocytes. It is only cells in course of regressive metamorphosis and cells already dead that succumb to the invasion of the phagocytes, and as such epithelial cells are only found in the interior of cancer buds at a distance from vessels, it is evident that it is only the mobile phagocytes—the leucocytes—that work at the definitive destruction of these cancerous cells. In this case the leucocytes are true necrophages. Around the weakened cells there is observed an agglomeration of polynuclear leucocytes which devour them, with the help of an intracellular, but more often extracellular, phagocytosis. This process is most evident in cancroid tumours. (3) Between a living cell and one in course of degeneration or already dead there is this main bacteriological difference—that the living cell should produce some kind of defensive substance against the mesoderm and against the invasion of leucocytes, and that this substance is completely wanting in cells that are dead or in course of degeneration. On the other hand, the latter produce a substance having a very pronounced positive chemiotaxis, and it is evidently to this substance that are due the the attraction and invasion of the leucocytes from the vessels towards the degenerative or dead cancerous cells. (4) The inflammatory reaction produced in the connective tissue by the growth of the cancer buds, although accompanied by a whole army of mesodermic elements possessing great histolytic and phagocytic power, in no way contributes to the destruction of the epithelial cells. The principal cause of this relative weakness of the mesoderm in regard to the cancerous cells is the defensive substance with which cancerous cells, when young and in a state of proliferation, are normally endowed. On the other hand, the reaction on the part of the connective tissue, followed by its growth in the direction of the cancer buds, contributes to a disorientation of the epithelial cells, as has been shown by Kibbert and Fabre-Domergue, and causes an acceleration in the growth of the cancer. The leucocytes alone, as being mobile mesodermic elements capable of introducing themselves into the interior of the epithelial buds take part in the destruction of the weakened epithelial cells. But as these cells are already in course of degeneration this phagocytic work represents only a necrophagism, and for that reason hardly counts in the defence of the mesoderm against the tumour. (5) In a whole series of round-celled sarcomata, and in some endothelial cancers, a very pronounced phagocytosis is often met with. The phagocytic action is produced sometimes by the cells forming the principal mass of the tumour, sometimes by special cells larger than the cells of the tumour itself. These large cells represent true macrophages and are provided with a large oval nucleus; sometimes they are giant cells. The protoplasm of these macrophages contains sometimes a single cellular inclusion, sometimes a mass of such. Part of Virchow's physaliphores and of the so-called parasitic inclusions are nothing more than a phagocytosis with vacuolisation around the englobed cell. In a series of microscopic plates may be studied all the successive changes even to complete disappearance undergone by those inclusions in the interior of the macrophages. Some of the cells of the tumour phagocytosed by other cells of the same tumour—the weaker by the less weak—seem to be engulfed while still alive, as may be observed after staining of the nucleus, so that there is not only a process of necrophagism, but also one of biophagism. (6) Phagocytosis in the cases referred to being effected by the cells of the tumour itself, this process may naturally be termed "autophagism. Malignant tumours of mesodermic origin are met with in which autophagism is extremely pronounced. The process of autophagism is often accompanied by an agglomeration in the phagocyte of a mass of fatty granules and droplets, and after fixation in Flemming's solution these phagocytes are quickly recognised by the black staining of the fat. (7) The cells of the englobed tumour undergoing in the protoplasm of the phagocyte a series of degenerative changes may resemble inclusions of parasitic nature so closely that often it is absolutely impossible to differentiate them. In many cases the parasitic inclusions themselves owe their origin to a phagocytosis—that is to say, certain cells of the tumour engulf a quantity of parasites and destroy them. (8) A good, and perhaps the sole, means of treatment of cancers and inoperable malignant tumours would consist in a diminution by some means of the substance in the young cancerous and neoplastic cells, or an increase of the histolytic and phagocytic power of the mesoderms, macrophages, and leucocytes. These means have still to be sought for. (9) A part of the so called parasitic inclusions represents the centrosome hypertrophied with the zone of protoplasm surrounding it in a state of colloidal degeneration. The centrosome with its surrounding zone may depart from its normal state so far that it becomes foreign to the cell, and as such becomes detached from the protoplasm of the cell and exists free in a vacuole of greater or less size. If in certain cancers, and notably in cancroids, it has hitherto been impossible to find inclusions that are undoubtedly parasitic, the contrary may be affirmed in regard to endothelial cancers as well as cancers of the breast, pancreas, stomach, and other glands. A part of the numerous inclusions found in these cancers is of indubitably parasitic nature. But the resemblance of these parasites to inclusions due to the autophagism of the tumour, as well as to hypertrophied and degenerated centrosomes, may in some cases be so striking that differentiation is often almost impossible.

SECTION OF BACTERIOLOGY.

(140) Immunity.

Professor Buchner, of Munich, introduced a discussion on this subject. Dealing first with "natural resistance," he said that term appeared preferable to "natural immunity," more often used, because the word "immunity" may then be reserved exclusively for a very characteristic specific state altogether different from natural resistance. Natural resistance—setting aside cases of innate invulnerability in regard to toxins—consists principally in the microbicide power of the juices and of certain cells of the organism and in their richness in alexins. This also hold for the cases of cure of infective processes threatening the organism attacked, as far as the specific immunity recently acquired plays no part therein. In staphylococcus infections (furuncle, abscess, etc.) cure seems to be produced by an increase of natural resistance, local or general, not by a specific immunisation. A purely humoral theory of natural resistance has never been formulated unless by those who wish to oppose it. The alexins of the serum—without the cells—are sufficient only in very exceptional cases to explain the phenomena of resistance. Nevertheless it is impossible to exclude the alexins of serum altogether from investigation seeing that their existence implies a certain limitation of the theory of phagocytes. As it has been observed since 1894 that the alexins had their origin in the leucocytes, the researches on phagocytosis and those on the effects of the alexins have become more and more approximated in their final results, and there now remains only one point of difference that requires to be settled. Metchnikoff and Bordet themselves noted some years ago that the alexins of serum for the most part have their origin in leucocytes. They suppose, however, that one has not to do here with a secretion of living cells, but with an outflow of living alexins into the serum after death and after dissolution of the cells. This is the point of difference which requires to be cleared up by experiment. Laschtschenko has

found in Buchner's laboratory that by means of a series of different serums heated to 60° C. it is possible to extract the bactericidal alexins from the leucocytes of rabbits without destroying them. Here there is clearly a secretion without destruction of leucocytes; moreover, the leucocytes do not die so easily as is supposed. According to observations made by Nakanishi in Buchner's laboratory, leucocytes of different kinds of blood kept at a low temperature not only remain unchanged in form from 1 to 4 weeks, but also retain their vitality. In distilled water they die rapidly, but dissolution takes place very slowly, so that after 24 hours a large number of leucocytes have still preserved their form. The alexins, therefore, appear usually to be a secretion of living leucocytes, and to explain phagocytosis, it follows that the bacteria are already weakened by a chemical process before they are devoured. It is unquestionable that living and even virulent bacteria may be devoured by leucocytes, but it is known that microbes have phases of latent life during which the latent functions are suspended to be awakened again into existence at a suitable time. If, therefore, in consequence of external and hurtful influences the processes of nutrition and pullulation are arrested at intervals, it must not be concluded that the micro-organism is destroyed or weakened for ever. The chief argument against phagocytosis as a universal principle is the fact that within the body, in the exudates, etc., bacteria may be destroyed without the presence of leucocytes. It can never, therefore, be proved that even when phagocytosis is observed a chemical damage has not taken place before the engulfing. The microscope does not help us to a decision of the question, which, therefore, will long remain undecided. It is unquestionable that phagocytosis is not always an indispensable condition for the destruction of bacteria, and in order to judge of the principal *rôle* of the leucocytes, it must never be forgotten that there is a chemiotaxic attraction not only by living but by dead bacteria, by the proteins of the bacteria, by gluten, casein, etc. This proves that their essential character is that of resorption cells. The production and secretion of alexins appear to be in perfect accord with this fact when alexins are counted among the histolytic enzymes observed in the first place by Th. Leber—enzymes which can effect dissolution of the histogenic elements (for instance, in the softening of abscesses or on the injection of substances chemiotaxic for leucocytes, such as balsam of Peru). The same tissue dissolving effect may also be extended to pathological histogenic elements (softening of tubercle), and even to bacteria (bactericidal effect). Phagocytosis, or dissolution in the interior of leucocytes by the same histolytic enzymes, thus appears only as a special case as compared with the general fact of dissolution outside the leucocytes. Passing to specific immunity, Professor Buchner made three chief divisions: (1) Specific antitoxic immunity, (2) specific bactericidal immunity, (3) specific hæmolytic immunity. These three principal types of specific immunity are produced by preparatory treatment, in the case of (1) by means of specific toxins or non-toxic modifications; in the case of (2) by specific bacteria, living or dead; in the case of (3) by specific erythrocytes, fresh or heated to 60° C. In all these cases, there appears in the blood and serum of the animals treated a specific antagonistic body which is not destroyed by a temperature of 65° C. In case (1) it is the well-known antitoxin contained in antidiphtheria, antitetanus, etc., serum. In cases (2) and (3) the specific antagonistic body produces no immediately visible effect, but works first in combination with the normal non-specific alexins. There are no "specific bactericidal substances" or "specific hæmolytic substances." In both cases one has to do with combined effects, the bacteria and erythrocytes being predisposed to the effect of normal alexins by the action of the specific antagonistic bodies. At the same time it is of no consequence whether these alexins proceed from the same species of animal in which the antagonistic body has been produced by a specific treatment, or from another species. The predisposing effect, as is demonstrable, consists in specific hæmolytic immunity, in an attraction and combination between the antagonistic body and the specific erythrocytes, in consequence of which the latter are more easily dissolved by the normal alexins. For the specific bactericidal effect the conditions are doubtless the same. It must be taken as established that the antagonism of antitoxins towards specific toxins is based on a mutual combination. The true principle of specific immunity therefore, always and in all cases, consists in the special attraction and combination between the antagonistic body and the object of specific reaction (toxins, bacteria, erythrocytes, etc.). The riddle which has to be solved in the future is mainly the nature and origin of the antagonistic bodies and further the intimate nature of the specific combination which takes place between antitoxin and toxin, the antagonistic body and the object of reaction. Professor Buchner summed up his general conclusions as follows: "Natural resistance" and "specific immunity" differ in principle, the former being characterised by alexins, the latter by specific antagonistic substances. The alexins are destroyed at 60° C. They differ according to the animal species which produces them; they show no attraction towards the object of reaction. The antagonistic bodies are still stable at 65° C; they differ not according to the animal species that produces them, but according to the object of reaction which has been employed in the preparatory treatment, and they present a specific attraction towards the object of reaction with which they are combined. Alexins and antagonistic bodies act in the same organism at the same time, often concurrently. Natural resistance and specific immunity may combine their effects, the one reinforcing the other. The cure of typhoid fever, for instance, may be brought about by an increase of natural resistance concurring with a production of specific antagonistic bodies. The study and differentiation of all the phases of those two processes belongs to the domain of clinical medicine.

SECTION OF MEDICAL DISEASES OF CHILDREN.

(141) Artificial Feeding of Nurslings.

Professor O. Heubner of Berlin said that a method of artificial feeding of nurslings could be established scientifically only by the study of the healthy child born at full term, not by that of the deceased nursling. Just as the diet of a sick person could not be taken as a guide in regulating that of a healthy workman, so inferences could not be drawn as to the best way of feeding the normal nursling from failures or successes obtained in dyspeptic children. This, however, is what is often still done by medical practitioners, doubtless because they have most frequently to do with sick children. For this reason there is not available a sufficient mass of facts to serve for the scientific establishment of the most rational method of artificial feeding. Every year hundreds of thousands of children are successfully nourished artificially during their first twelve months of life. Nevertheless observations continued for a long time so as to give information as to the qualitative and quantitative method of artificial daily feeding of children whose growth has taken place satisfactorily are not so exact as those concerning feeding with mother's milk. For this reason we have with regard to this question more theoretical ideas than conclusive facts. At all times, however, the good sense of nurses has led them to see that nothing could better replace women's milk than animal's milk. This is confirmed by chemical analysis which shows in fact that the milk of domestic animals, especially of the cow and goat (at least as far as concerns nutritive principles) differs from woman's milk no more than the various kinds of meat differ among themselves. This is the case as regards the meat of pig and ox, which the child, like the adult, eats alternately or successively. Their general nutritive value and their potential energy are in both cases almost the same (650 to 700 calories per litre). The intestine of the healthy nursling is capable of digesting cow's milk just as well as woman's milk; only the work of digestion is greater in the former than in the latter case as the large proteid molecules require a greater digestive effort than the small hydrocarbon molecules, and cow's milk is particularly rich in the former and woman's milk in the latter. In consequence a larger amount of residue remains in the intestine after the digestion of animal milk than after that

of woman's milk. All the researches, however, hitherto made as to the organic exchanges in the nursling show that it is perfectly capable of finding the necessary amount of sustenance in cow's milk, provided it absorbs a quantity of it equivalent to that which it would get from its mother's breast at the corresponding period of development. Naturally this amount varies within certain physiological limits. The supply of artificial milk should not exceed the proper measure of the exact daily dose of animal's milk, whether diluted or not, or whether mixed with such-and-such an ingredient or otherwise. It is in the first place the drawing up of exact rules that presents the greatest difficulties in artificial feeding. Other difficulties arise from the dangers of infection and decomposition to which the animal milk finds itself exposed before its ingestion. Mother's milk is safeguarded against these dangers. We have learnt to avoid them in artificial milk feeding only since we have been brought to understand the insufficiency of macroscopic cleanliness and the necessity of asepsis. In this matter the production of sterilised milk constitutes the greatest progress of the century. To realise this condition in a satisfactory manner there is no need to heat the milk for half-an-hour at a temperature of 100°. It is sufficient to boil it for five or at most ten minutes. Even a milk heated twenty-five minutes at 65° appears to undergo perfect sterilisation without presenting changes of taste and nutritive value (Forster). It is another matter if we have to nourish artificially a dyspeptic nursling. Here the digestive power of the intestine is disturbed as well as the regular modifications of the nutritive substances. For this reason the energy gained by the elaboration of these same ingesta is weaker than in the normal condition. According to researches made in recent years it is not the protein that seems to present the greatest difficulties, as it was believed till lately, but the fat of the milk. This fact agrees with what has been demonstrated by analogous investigations made in the adult. But a too high proportion of nitrogenous material in the milk may equally become dangerous, and even the sugar, if it is not perfectly burnt up, may prove a hindrance to the good effects of the food. In such cases we must seek to attain the end by an indirect path. We must diminish the quantity of fat and of the proteid substances of the milk by diluting it to one third with boiled water, and to compensate for the diminution of energy thus brought about we must increase the quantity of sugar so as to make it correspond to that of the mother's milk (7 per cent.). One can make milk less concentrated that the natural milk richer by another hydrocarbon. For this purpose rusk is much preferable to wheat, rye, corn, or rice. Moreover an attempt may be made to facilitate the digestion of nitrogenous substances by previous artificial digestion (peptonised milk, the milk of Voltmer, Backhaus, and others in Germany). Others prefer only to lessen the quantity of proteid substances in the milk whilst endeavouring to preserve the original amount of fat by centrifugalising the diluted milk so as to obtain 1 per cent. of casein and 3 per cent. of fat (Goertner's *Fettmilch*) or by adding precisely measured quantities of cream to the diluted milk. Again, the sugar of the milk has been successfully replaced by another sugar more thoroughly burnt by the tissues of the organism, namely, maltose (Liebig's *Suppe* and Keller's *Malt-suppe*). These are the most important principles which have up to the present been most frequently applied in the preparation of artificial milks for weakly and ailing nurslings. The practitioner will succeed with one or other method, but he must feel his way. We have not yet got beyond this stage of therapeutic knowledge. If all other methods fail, one always comes back to woman's milk, which is superior to all methods of artificial feeding if we have to do with grave disease.

SECTION OF SURGERY.

(142) The Arrest of Hæmorrhage in Resection of the Liver.

DR. J. B. SEGALE, Chief Surgeon to the Duchess de Galliera Hospitals, Genoa, described what he called a new method of suture to be used in resection of the whole thickness of the liver. He said that an examination of the statistics published in recent years relative to the surgery of the liver showed an excessive number of failures, most of which were due to hæmorrhage, primary or secondary. The author believes that such failures depend partly on an imperfect operative technique, but especially on the insufficiency of the methods of hæmostasis now in use. A solution of the problem of the prevention of hæmorrhage of resection of the whole thickness of the liver can be found only in suture. He discussed the various methods of suture recommended by operators—hepatorrhaphy, which is chiefly of use in wounds; ligature, which is of service in pedunculated or pedunculable tumours; intra-hepatic ligature and interrupted suture by the methods of Kosnetzoff, Pensky, and Auvray. The author remarked that all these procedures more or less take as their *point d'appui* the hepatic and peri-hepatic tissue, which has a very feeble resistance. In practice, as operators know, what happens is that the tissue tears if the suture or ligature is pulled tight enough, while if it is not pulled tight enough it is ineffective in stopping hæmorrhage. No account is taken of the compressibility of the liver substance; thus it happens that even when the suture is effective at the time of operation, it afterwards ceases to be so, with the result that secondary hæmorrhage occurs. Dr. Segale therefore believes that the necessary conditions to make a suture sure and effective in resections of the liver are to avoid directly taking up points in the liver tissue, and to secure gradual and constant pressure. For this purpose he has devised a method after the fashion of the quilled suture, but in place of quills he uses small beads of ebony or ivory; these beads, which are hollowed in the middle, fit into each other at the ends, and are threaded together with catgut so as to form a small rod. The material was chosen because it lends itself to easy and certain disinfection, while the bead-like arrangement favours the natural encapsulation of the component parts of the rod which are incapable of absorption. The mode of use is as follows: At the boundary of the lobe of the liver which it is intended to remove, and along a transverse line, there is passed a series of loops of elastic thread of sufficient resistance for the loops to stick out on the lower surface of the liver; one of the little rods is passed through these loops by which it is held fixed, while the other is placed on the upper surface between the two free ends of the thread; these are next drawn sufficiently tight and fixed with knots of catgut. The resection is then carried out, care being taken to make the two incisions in such a fashion as to have a solution of continuity triangular in section, with the apex directed towards the middle; in this manner it is possible to bring together the free surfaces by suture. Secondary hæmorrhage is prevented by the gradual pressure which is exercised by the elastic tension of the threads; the knots when they have served their purpose soften and become absorbed; the same thing happens in the case of the catgut which threads together the beads that make up the rods, and these become broken up into small pieces which are easily encapsuled. The author gave particulars of a number of experiments on large animals, showing the harmlessness of the sutures, the perfection with which they do their work, and the complete encapsulation of the beads. Segale thinks that the experiments warrant him in affirming that the practical question which they were undertaken to solve may be regarded as settled, and that his method makes complete hæmostasis in resection of the whole thickness of the liver possible.

(143) Results Immediate and Remote of Cholecystectomy.

M. MICHAUX stated that he had performed 45 operations on the bile ducts. Among them were 32 cholecystectomies, with 4 deaths and 28 recoveries. He observed no serious complication except reflex cardiac disturbance, which occurred in 3 or 4 patients, and in 2 caused anxiety. After cholecystectomy the bile flow is generally much less abundant than after cholecystostomy; only two or three times Michaux has seen some small calculi eliminated within a few days of the operation. The results of cholecystectomy are most satisfactory both immediately after the operation and several years later. Michaux has seen all the patients operated on by him long afterwards, and was able to satisfy himself as to their perfect condition of health.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(144) Ulceration of the Stomach.

In the Section of Internal Medicine at the recent International Congress, Professor Dieulafoy presented a communication of which the following are the conclusions: There are found in the stomach ulcerations of every size, from the minute punctiform erosion up to large deep ulcers bigger than a five-franc piece. Digestive disturbances, gastric intolerance, vomiting, hæmatemesis, perforation of the stomach with its consequences, and the addition of cancer are symptoms and complications common to many ulcerations of the stomach. Instead of passing in review each of these symptoms and complications, Dieulafoy thought it preferable to choose among ulcerations of the stomach a certain number of types representing, from the clinical, pathological and anatomical point of view, sharply-defined morbid entities. As examples of some of these types he gave the following:—(1) Erosion is the smallest of ulcerations, it shows itself on the mucous membrane in the form of hæmorrhagic points more or less numerous. Notwithstanding their minute size the erosions might cause abundant hæmatemesis. (2) In certain circumstances there are found on the mucous membrane of the stomach one or more losses of substance a little more extensive than erosion. Dieulafoy has proposed for this lesion the name "exulceratio simplex." However superficial it appears, this ulceration may reach the arterioles running under the muscularis mucosæ and cause terrible hæmorrhages, often proving fatal if treatment does not prevent this consummation. (3) The simple ulcer of Cruveilhier (ulcus simplex) is the type of gastric ulcers chronic in evolution and tending to perforation. Hæmorrhage and perforation are the complications most to be dreaded. (4) Mention should also be made of specific ulcers of the stomach, due to tuberculosis and syphilis, and possibly, like simple ulcer, leading to hæmorrhage and perforation. (5) It not rarely happens that cancer grafts itself on an ulcer of the stomach. (6) The pathogeny of gastric ulcerations is not yet completely cleared up. Infectious agents, toxic agents, arterial lesions, and changes in the gastric juice, must be taken into account. It is possible that an ulceration, quite small at first, may end in ulcus simplex. (7) The treatment of gastric ulcerations is, according to circumstances, medical, specific, and surgical.

(145) Nasal Crises in Tabes.

Henri Jullian (*Rev. de Méd.*, July 10th, 1900) recounts what he states is the second case of nasal crises in tabes to be described. In the previous instance recorded by Klippel, the crises appeared in the third year of the disease. There was diminished sensibility of the nasal mucous membrane, and on the left side a lessened sense of smell. The crises were preceded by a sort of aura, a curious sensation limited to, or more marked on, the left side of the face, particularly the cheek, and accompanied by hyperæsthesia of the affected region. Then followed a sensation as if the left nostril were stuffed up, and a prickly feeling round the larynx; finally, there was a violent fit of sneezing, which terminated the crisis and the abnormal sensations in the region of the fifth nerve. In Jullian's case, a patient in the fifth year of the disease, there was no aura, but merely a prolonged bout of sneezing, preceded by irritation of the mucous membrane, and unassociated with any increase in the nasal secretion. There was some permanent anæsthesia of both cheeks, which was complete on the sides of the nose; there was total anosmia and some diminution in the sensibility of the nasal mucous membrane.

SURGERY.

(146) Pathogeny and Treatment of Abscess of the Liver.

In the Section of Surgery at the recent International Congress of Medicine, Dr. Giordano (Venice) introduced a discussion on this subject: Since 1884 he has operated on 72 cases of abscess of the liver. This, to his mind, proves that the affection is not purely exotic. Most of his patients have been alcoholics, and he believes that cirrhosis caused by alcohol predisposes to hepatic suppuration. In order to reach the liver the peritoneum must be freely opened up without interfering with the costo-diaphragmatic *cul-de sac*. The liver having been exposed is carefully isolated from the rest of the peritoneal cavity by means of sterilised compresses; there then remains nothing but to incise the abscess and establish drainage without washing out. Among his 72 operations he had 42 cures and 30 deaths, the fatal result in most of these occurring after operations that had been too long delayed.—Dr. Adamidi (Cairo) said that alcoholism evidently plays a predisposing part in the production of liver abscesses; the determining cause, however, is an ascending angiocholitis of intestinal origin. A certain number of cases of spontaneous cure following rupture of the liver abscess into the bronchi have been recorded. On the other hand, said the author, how many deaths have been due to this mode of termination? The only treatment of hepatic abscess, according to him, consists in wide and early opening by the slow procedure, which certainly gives better results than when the operation is completed at once. When the abscess is situated very high it can easily be reached by resection of ribs.—M. Hache (Beyrout) expressed the belief that ultimately Little's method, although so "seductive," would be completely abandoned. It was seldom indeed that there existed adhesions sufficiently resistent to protect the large peritoneal cavity, and the existence or absence of such adhesions could by no means be foreseen. He said that for his own part he could cite 2 cases of death from peritonitis that were distinctly consecutive to rapid opening by Little's method. The best means of avoiding infection of the peritoneum was preventive suture of the liver to the abdominal wall.

(147) Intracranial Resection of the Trigeminal Nerve.

In the Section of Surgery at the recent International Congress of Medicine Professor Fedor Krause (Berlin) gave details of 24 cases of intracranial resection of the trigeminal nerve and their results. He said that intracranial resection of the branches of the trigeminal nerve was not certain in its result; therefore when opening of the skull appeared to be indicated, extirpation of the Gasserian ganglion and of the trunk of the trigeminal nerve should be performed. He had performed this operation 24 times in patients from 30 to 72 years of age, and had always used the temporal method devised by him in 1892. A woman, aged 58, who was extremely exhausted, died of collapse, and a man aged 72, died on the sixth day after the operation, owing to sclerosis of the coronary arteries and cardiac insufficiency. In this case the wound had healed by first intention without fever. Of the first patients operated on there were still living a woman aged 75 and a man of 62 on whom the operation was performed seven and a-half years ago; a woman aged 76 and one of 53 operated on six years ago; a woman aged 42 operated on five years ago; and one aged 50 operated on four years and three months ago. All these patients had remained free from pain up to the present time. The advantages of the operation were in Krause's opinion so great that notwithstanding the dangers attending it, it would keep the place it has gained. These cases of very severe neuralgia very frequently lead to attempted suicide on account of the terrible suffering.

(148) Tropical Phagedæna.

In the Section of Tropical Medicine at the recent International Congress, Dr. Le Dantec, Médecin de 1e Classe of the French Navy, and Professeur-Agrégé in the Medical Faculty of Bordeaux, presented a communication on tropical phagedæna. He defined the condition as a complication of wounds characterised by the presence of a [illegible] membrane which transformed a simple [illegible] into a spreading sore. He was inclined to regard it as identical with the condition described in temperate climates under the name of hospital gangrene. The pathogeny of phagedæniculcer in natives warranted the belief that the natural habitat of the microbe was not the hospital but moist earth. In the soil there were found three microbes that were dangerous to wounds in man: the septic

vibrio, the tetanus bacillus and the phagedænic bacillus. These general considerations were of the greatest importance to medical officers who accompanied expeditions.

MIDWIFERY AND DISEASES OF WOMEN.

(149) Early Tubal Pregnancy: Difficulties in Diagnosis.

Toth (*Centralbl. f. Gynäk.*, No. 38, 1900) publishes two cases which seem to show that extrauterine gestation is even commoner than is now suspected, and that pelvic inflammation, often its cause, may mask its earlier stages completely. The first patient had been treated for a protracted period for extensive inflammatory exudation in the pelvis. After antiphlogistic measures it partially disappeared, and then a well defined bilateral tumour was discovered. At the operation a tubo-ovarian cyst was found on the left side, and on the right a dilated tube, distended with blood, and a small hæmatocele. Chorionic villi were detected in the right tube. The history of the case gave no indications of the possibility of tubal gestation. In the second case abdominal section was performed for a bilateral tumour; as in the first, no evidence of pregnancy of any kind was to be obtained. An ovarian tumour was removed, and on the opposite—the left—side a distended tube, full of clot, was found. Its ostium opened into a great mass of clot in Douglas's pouch. Chorionic villi were detected in the tube. Both patients recovered.

(150) Cocaine in Midwifery.

Marx, of New York (*Medical News*, August 25th, 1900), has tried with success the method of injecting small doses of cocaine solution into the spinal canal in cases of labour, the cases (eight in number) being very gratifying as to results. The method was used to promote analgesia during labour, and without danger to mother or child. The cases thus treated were all at the New York Maternity Hospital. The patient's back (lumbar region) being thoroughly disinfected, the patient lay on the side with the back arched. The thumb of the left hand was placed on the spine of the fourth lumbar vertebra. A needle about 4 inches long was employed with a metal hypodermic syringe, both of which had been boiled 10 minutes. The needle was inserted half an inch in front of and just outside the edge of the thumb at an angle of about 165°, the direction of its entry being upwards and slightly towards the middle line. If the point of the needle struck the lamina (of the vertebra), it is to be moved gently up or down until the space between the vertebræ was felt. The puncture is made between the 3rd and 4th, or between the 4th and 5th vertebræ. The point is slowly pushed in until cerebrospinal fluid is seen to run out. Ten minims of a cocaine solution representing ⅛ gr. are now injected, and the needle withdrawn. Labour pains in these cases proceeded without pain, total analgesia being present below the level of the umbilicus. The uterine contractions took place as usual during and after the birth of the body. In some of the cases the patient suffered from headache and slight elevation of temperature the day after the injection, a condition noticed also in surgical (non-parturient) cases. Dr. Marx states that as the above experience was limited to eight cases and no danger was apparent, it would be well to try the method in cases of prolonged labour, adding that the patients were exceedingly grateful for the complete relief of pain and suffering during their labours. Burman and Kreis (*Semaine Médicale*, July 18th, 1900, report six cases (five being primiparæ) also with good results.

(151) Primary Cancer of Fallopian Tube.

Novy (*Monats. f. Geburts. u. Gynäk.*, June, 1900) publishes a full report of a case under the care of Pawlik of Prague. The patient was a widow, aged 70, she was extremely fat, and had pendulous abdomen. She had borne ten children. Cancer of the vagina was diagnosed, but nothing more than colpitis granulosa detected. Sanious discharge was distinctly noted. The curette being used, a piece of tissue was removed which bore the character of adeno-carcinoma; but at every other point on the endometrium that was scraped the tissues only showed evidence of endometritis glandularis. Hysterectomy was performed on August 11th, 1896, Pawlik reserving publication till a sound after-history could be obtained. The vagina was divided around its attachment to the cervix, but the uterus was not freely movable, and could not be drawn downwards. An abdominal incision was therefore made. Then a tumour was detected. It consisted of the right tube. The uterus was removed, together with the right appendages; the ligatures, excepting one applied to the right ovarian vessels, were drawn down into the vagina. The vaginal wound was closed and the abdominal wound drained, because the patient was so fat. Recovery from the operation was complete though slow. The patient enjoyed two years' complete immunity, then recurrence set in, causing death in five months. The tube was quite healthy in its inner or uterine third, and the remainder was the seat of cancer, apparently malignant degeneration of a papilloma. The malignant deposit in the endometrium was secondary.

(152) Extrauterine Pregnancy: Twisted Pedicle.

Pozzi (*La Gynécologie*, June 15th, 1900) reports a case where the patient ceased to menstruate after the beginning of last January. On the 19th of that month she was seized with sharp abdominal pain with show of blood. The pains and metrorrhagia continued till an operation was performed on April 2nd. At that date the cervix was large, soft, and patulous. The body of the uterus was anteflexed, and above and to the left was a mass as big as a fœtal head, and of the consistence of a fibroma. On opening the abdomen a very dark tumour was detected; it looked as though it were an ovarian cyst with twisted pedicle. It was covered above with adherent omentum, and was found on careful scrutiny to be a distended right tube twisted over to the left. The pedicle was twisted a whole turn from right to left. The tumour weighed under ¾ lb. It contained a fœtus of the third month, of normal development, dead, but not macerated. The outer part of the left tube was obliterated. Pozzi made an artificial ostium. The patient recovered.

(153) Single Placenta in Case of Triplets.

Saniter (*Monats. f. Geburts. u. Gynäk.*, June, 1900) recently exhibited before the Berlin Obstetrical and Gynæcological Society a single placenta which was delivered after the birth of three infants, all males and all breech presentations; they measured each about 12 inches. All died shortly after birth.

THERAPEUTICS.

(154) Cacodylate of Iron.

In the Section of Therapeutics at the recent International Congress of Medicine, Dr. P. Lereboullet (Paris) said that cacodylic medication in the form of cacodylate of soda having proved useless as a remedy for chlorosis and chloranæmia, Dr. Gilbert and he had used cacodylate of iron in the treatment of these affections. They injected under the skin ferric cacodylate, a very soluble and only slightly toxic salt, in a solution dosed at 3 cg. per c.cm.; they also gave it by the mouth in the form of drops to be taken before meals. The daily doses varied from 3 to 10 cg. hypodermically, and from 5 to 30 cg. by the mouth. Both methods of administration proved to be alike free from inconvenience. In no case have they observed local or general disturbances; in particular there have been none of the renal complications which are so frequent after injection of other iron salts. Cacodylate of iron is indicated in affections where one has at the same time to counteract the diminution in number of the red corpuscles, and the fall in the amount of hæmoglobin (chlorosis, chloranæmia, lymphadenia, leukæmia). Tuberculous chloranæmia, provided the pulmonary lesions are not too far advanced, seems to be specially benefited by this treatment, which has never caused congestive phenomena or hæmoptysis. Albuminuria, which is frequent in such patients, is not a contraindication but rather the contrary. In 5 cases the kidney lesions underwent marked improvement after the injections.

(155) Hypodermic Injections of Phosphate of Lime in Pulmonary Tuberculosis.

In the Section of Therapeutics at the recent International Congress of Medicine, Dr. G. Angiulli (Naples) read a paper on this subject. He said the principle of the treatment was to place the diseased organism in a position to repair

the losses of phosphate of lime, which take place from the commencement of the disease—sometimes even before it shows itself, constituting in such cases what has been called pre-tuberculous phosphaturia. With the object of repairing this daily loss most rapidly and in the most surely assimilable form, he gives hypodermic injections of phosphate of lime. In slightly advanced cases of slow progress he has seen after some months of treatment the general resistance greatly increased. The patient gains weight, menstruation which had stopped comes on again, and by degrees all the symptoms of the disease disappear—even at last fever, so that from the clinical point of view the patients may be looked upon as cured. In very advanced cases with numerous cavities and hectic fever he has seen the strength regained to such an extent that patients too weak to move were able after twenty or thirty injections to go out. At the same time the symptoms, with the exception of fever, have subsided, but the malady, though rendered slower and milder, has nevertheless continued to progress. In such cases Dr. Angiulli, a few months ago, began to use inhalations of finely-powdered oxide of lime; these are used several times a day for a variable length of time according to tolerance. Though too short a time has elapsed for any complete result to be recorded, Dr. Angiulli is able to state that the patients have readily become habituated to the inhalations, and that their condition shows remarkable improvement. Analysis of the urine made every day has proved that the phosphate of lime given hypodermically is completely assimilated; under its influence the quantity, which was increased before treatment, has gradually diminished till it has reached the normal standard. The good results which the author claims for the treatment have been obtained without any alteration in the hygienic conditions—sometimes very bad—or in the diet of the patients.

(156) The Intensive Use of Guaiacol in Pulmonary Tuberculosis.

In the Section of Therapeutics at the recent International Congress of Medicine, Drs. Weill and Diamantberger (Paris) presented a communication on this subject. They claim to have been the first in France to use guaiacol in hypodermic injections. For the last eleven years they have employed the method, and they have now a record of more than 500 cases treated and considerably ameliorated by the systematic use of guaiacol. The failures which have been experienced by other practitioners depend (according to the authors) on: (1) The inferior and variable quality of the liquid, so-called commercial, guaiacol. The authors use the synthetic crystallised guaiacol, a substance which they describe as very antiseptic, anæsthetic, and non-toxic; it may be given in a daily dose of 3 grams, and even 4 grams without fear of reaction or intoxication; (2) the very small quantity used. The formulæ of Picot and Pignol—1, 2, and 5 per cent.—are quite insufficient, all the more as there are added iodoform, which causes diarrhœa; eucalyptol, which is an irritant; and carbolic acid, which is a caustic. The authors use the following formula: ℞. Crystallised guaiacol: oil of sweet almonds sterilised at 120°, āā 10 grams; hydrochlorate of cocaine 20 centigrams; this is dissolved in an equal quantity of water and kept in a dark bottle. A daily hypodermic or intramuscular injection of 1 c.cm. is given in the gluteal region. Besides the injections they use: (*a*) Painting the different parts of the chest wall with the same solution every night over a space of 8 to 10 square centimetres; (*b*) enemata of 100 grams of tepid milk, to which 40 or 50 drops of the same solution have been added; (*c*) pills of the following composition: ℞. Crystallised guaiacol 1 centigram, crystallised terpin 2 centigrams, benzoic acid 3 centigrams, extract of belladonna, extract of hyoscyamus, āā 1 milligram; to make one pill; mitte 100; one to be taken every three or four hours. The "intensive and daily guaiacolisation," combined with hygienic and dietetic treatment, should be continued for several months, with interruptions of eight or ten days every three weeks. The symptoms that are most beneficially influenced by the treatment are, in the order of their importance: Expectoration (in respect of amount and fœtor), cough, hæmoptysis, fever, night sweats, diarrhœa, and general debility. Intensive guaiacolisation is indicated in all forms of pulmonary tuberculosis, in chronic bronchitis with abundant expectoration, in pulmonary gangrene, and in intestinal tuberculosis.

(157) Diet in Albuminuria.

In a paper on this subject read in the Section of Therapeutics at the recent International Congress of Medicine, Dr. A. Robin (Paris) said: It is recognised that the same system of diet is not suitable for all sufferers from Bright's disease. In particular the exclusive use of milk causes in some of them an increase, at least for a time, of albumen in the urine. Further researches prosecuted for many years have convinced him that an exclusive milk diet diminishes albuminuria always less than a vegetable diet, sometimes even less than the use of meat alone. In all cases a mixed diet of milk and vegetables or of milk and meat has a better effect than the exclusive use of milk. The following is the system that he adopts for the purpose of ascertaining the regimen most suitable for each patient. He begins by giving only milk. This has the effect of first increasing the amount of albumen in the urine; then it diminishes, and remains stationary. At this stage vegetables are added to the diet. New oscillations are then produced; when these have ceased meat is cautiously allowed, whilst milk and vegetables are continued. In this way it is easy to ascertain which of the three systems of diet—milk, milk and vegetables, or milk, vegetables and meat—brings about the most marked diminution in the amount of albumen eliminated. It is important, also, to ascertain the value of each alimentary substance in regard to the production of albuminuria. Some researches which Dr. Robin has made on this subject have led him to the following conclusions: Bread has no effect on the albumen; wine causes an increase; amongst meats, beef and veal are more to be recommended than mutton or fowl; fish should be forbidden.

(158) Hepatic Opotherapy in Diabetes Mellitus.

In a communication on this subject, presented to the Section of Therapeutics at the recent International Congress of Medicine, Dr. Gilbert said: The ingestion of liver substance modifies, in a certain number of diabetic subjects, the amount of sugar excreted. But the effects observed differ considerably in different cases. Sometimes hepatic opotherapy causes diminution or disappearance of glycosuria; sometimes on the contrary it has no appreciable influence thereon, whilst in certain cases it undoubtedly increases the amount of sugar. It is easy to assure oneself that the cases in which the administration of liver substance brings about improvement are those in which the diabetes is connected with a functional inadequacy of the liver (characterised by diminution of urea, urobilinuria, etc.) On the other hand, cases of diabetes that are not benefited or are even made worse by the treatment, are those in which the glycosuria appears to depend on over-activity of the organ. This kind is more frequent than the others; it is generally hereditary, and is accompanied by increased size of the liver, with structural integrity of the organ, considerable elimination of urea, etc. Therefore hepatic opotherapy in diabetes mellitus is not only a therapeutic method useful in a certain number of cases, but also a diagnostic procedure which, in connection with other signs, allows the clinician to differentiate diabetes due to functional activity from forms of the disease due to over-activity of the liver.

(159) Therapeutic Use of Thymus.

In the Section of Therapeutics at the recent International Congress of Medicine, Dr. Blondel (Paris) read a paper on this subject. He said it was generally admitted that chlorosis depended on an auto-intoxication, in the production of which the absence, or at least the insufficiency, of the internal secretion of the ovary played an important part. Hence was derived the idea of administering preparations of ovary as a remedy for that affection. Previous researches having satisfied Dr. Blondel that there was an almost absolute functional analogy between the thymus and the genital glands, he conceived the idea of employing preparations of thymus instead of ovary in the treatment of chlorosis. In 15 patients treated in that manner he had seen marked amelioration of the general condition take place within a few weeks, whilst

at the same time appetite and sleep returned, the colour was restored, the number of red corpuscles was notably increased, palpitations and jugular *bruit* disappeared. In addition to this, Dr. Blondel followed up the researches of Owen on the administration of thymus in Graves's disease. He had treated in this manner 4 patients with very satisfactory results. In a few weeks the circumference of the neck diminished by several centimetres, the pulse fell from 120 or 130 to 80, tremor became less, etc. Lastly, in 10 nurslings in whom development was slow and imperfect—in some owing to premature birth, in others to congenital debility—the administration of thymus caused a regular rise in the weight curve which till then had been stationary or even on the down grade. In all these cases he used lamb's pancreas, which is much cheaper than that of the calf. In order to prevent any feeling of disgust he first peptonised the thymus. He gave his patients from 1 to 2 grams of thymus peptone daily. A peptone of ordinary meat given to the same patients in equivalent doses produced no appreciable effect.

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(160) Treatment of Aneurysms of the Aorta.

IN the Section of Therapeutics at the recent International Congress of Medicine, Dr. Golubinin of Moscow, said he had employed in 8 cases the method of treating aortic aneurysms by injection of gelatinised serum recommended by Lancereaux and Paulesco. The number of injections varied according to the case from 2 to 15. Of the 8 patients 4 died in a short time and the other 4 were lost sight of; in 3 of the cases belonging to the latter group the injections produced no effect. In the remaining one they were followed by slight improvement in the subjective symptoms without modification of the objective signs. Dr. Golubinin had come to the conclusion that the method did not fulfil the expectations that had been founded on it.—Dr. Huchard said: In the treatment of aortic aneurysms it is a mistake to allow oneself to be hypnotised by the changes to be brought about in the contents of the sac, that is to say, in the blood, and to take no account of the containing structure. The method of gelatinised injections, which is useful, although insufficient, is open to this criticism. To complete its action, especially in persons with large heart and increased arterial tension—they are almost always at the same time subjects of Bright's disease—medicaments should be chosen which diminish arterial tension, such as potassium iodide, trinitrine, nitrite of amyl, and especially tetranitrate of erythrol, or tetranitrol, which Dr Huchard has now used for a considerable time and which, as compared with trinitrine, has the advantage of a more durable action. Moreover, an essential point is to supervise the diet not in regard to quantity, as in Valsalva's method, but in regard to quality. Meat, which holds too large a place in our food, contains toxins, which have an excessively powerful vaso-constrictor action. The best treatment of aortic aneurysm is still absolute milk diet regularly adhered to.

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(161) Artificial Foods.

PROFESSOR A. JACOBI (New York) read a communication on this subject in the Section of Therapeutics at the recent International Congress of Medicine. He said: The results of the analyses of human milk are contradictory; no two are alike. Alterations in different periods of lactation which are asserted by some are denied by others; those caused by menstruation, sickness, or ingesta are either well understood or dimly appreciated but rarely measurable. The nature of its proteid, whether uniform or compound, is not sufficiently known. Whether there is an essential quality that is beyond the domain of chemistry is not known. That is why so many and so different ironclad rules have been established for the selection of substitutes, and why the uncertainty has rendered experimentation with commercial substitutes, by chemists and even by respectable clinicians, so common. If human milk were a uniform body, the demand for an exactly equivalent substitute would be justified. Nature, however, is more liberal in allowing latitude than a chemist. Heat both improves and injures milk. When milk is exposed to 68° to 70° C., ten or fifteen minutes' heat destroys the bacterium coli and bacillus lactis aërogenes; after long exposure it kills pathogenic germs; at 80° C. it coagulates albumen and changes the taste and odour of the milk. Even at 70° C. it changes casein so as to impair its value for dairy purposes. In boiling, a part of the albumen is deposited, the lecithin is destroyed, the fat altered both chemically and physically. Serious changes appear to take place, through long boiling, both in casein and nuclein. High temperatures continued for hours are required to destroy some of the long-lived spores; their injuriousness, however, is not entirely clear. Boiled, pasteurised, or sterilised cow's milk is never woman's milk; it is not a curative agent; it presents, however, the great advantage of destroying fermenting and pathogenous germs; that is why it is indispensable in large cities and during the prevalence of certain epidemics, and wherever fresh and unpolluted milk is not accessible. When employed as exclusive infant food, cow's milk, watered or not, is liable to cause constipation, or diarrhœa, rickets, and scurvy. To preserve its antibacterial effect heat should be followed by immediate and rapid cooling, but not freezing. Ample dilution of the artificial food of the infant, and particularly of the newly-born, is required because of the heterogeneous composition of cow's milk; even those who are as usual put to an incompetent breast require water to combat loss of weight and the tendency to nephritis and to nephrolithiasis, the former of which is still more frequent than the latter—indeed, very frequent. A large amount of liquid does not interfere with the motility of the stomach and does not cause dilatation — first, because the normal infant is no glutton, and secondly, because absorption begins at once. Easy and equal digestibility of the casein in woman's and in cow's milk is either asserted or denied by good observers. When cereal decoctions are mixed with cow's milk, its casein is claimed and proved to precipitate in fine tufts. On the other hand, cereals are said to have no such effect any more than water. Water, however, is recommended by the same authors as addition to cow's milk. This contradiction is met by those who recommend dextrinised flours for the dilution of cow's milk. The digestibility of a certain amount of amylum, such as is contained in cereals, has been erroneously and persistently denied, when it had long been proved both by experience and by experiments to exist. Cereal decoctions are the proper diluents for the surplus casein of cow's milk. Milk sugar is partly absorbed in the stomach, partly in the intestine, partly changed into lactic acid. It is required for digestion, and is an antiseptic. Not enough of it, however, can be given to have the latter effect to the same degree that is exerted by flours. Besides, milk peptones disappear with acid fermentation. That is why milk sugar should not be given in large quantities, but other carbohydrates in its stead. Cane sugar should take its place particularly, as for the purposes of digestion there is milk sugar enough in cow's milk that forms part of every artificial food, and because there is a ferment in the intestine of the young which inverts cane sugar and renders it absorbable. Besides, every other carbohydrate has the same power to protect albumen against putrefaction. Fat is added to cow's milk for the alleged purpose of increasing its nutritive property (by preventing the loss of the fat and albumen of the tissues), and by loosening and separating the minute particles of casein. It should be remembered, however, that even human milk contains often so much fat as to cause "fat diarrhœa;" that the normal infant fæces eliminate unchanged fat in goodly quantity; that, moreover, the fat globules of cow's milk are larger, less numerous, and less absorbable than those of woman's milk; that the two fats are not equal chemically; and that the urine is liable, after feeding with cow's milk fat, to contain ammonium and the gut toxins. The mineral constituents of cow's and human milk are different. The addition of chloride of sodium to artificial foods is required both for physiological and chemical reasons. Home-made artificial foods are preferable to the proprietary foods of the market, for many reasons. The separation of the component parts of cow's milk by mechanical means, and the recomposition of the same, is a procedure of doubtful value. Experience of the physician and of the well directed public is equivalent at least to laboratory and library theories based on facts that are *sub judice*.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(162) Post-pneumonic Paralysis.

It has been recognised for some time that paralysis may occur after pneumonia. Janakief has made a special study of this subject (*Thèse de Lyon*, 1900). This author divides post-pneumonic paralyses into two groups—(*a*) early, (*b*) late. In the first group the paralysis appears at the beginning or during the course of pneumonia, and is usually of a monoplegic type, sometimes hemiplegic, rarely paraplegic. The hemiplegic type has been particularly noticed by Charcot and Vulpian. In the second group are included cases which appear quite at the end of the disease or during convalescence. The forms are very variable, being sometimes paraplegic, crossed, purely localised, or ascending paralysis of the paraplegic type. The author quotes Boulloche as stating that these forms of paralysis are essentially marked by their diffuseness, their liability to affect the lower limbs, and, in the great majority of cases, by their curability. They differ absolutely in their course from permanent forms of paralysis due to other causes. According to Janakief's investigations they are apt to follow severe attacks of pneumonia, especially when epidemic in form. According to this writer the most frequent period for their appearance is within a fortnight of the crisis, although an earlier occurrence is not exceptional. The first thing which the patient may complain of is itching, tingling, a certain degree of numbness in the limbs, or a sensation of cold in the legs or arms. In some, mydriasis or ptosis may be the first symptom, with a feeling of constriction in the pharynx with difficulty in swallowing. There may be pain in the back of the neck, also paralysis of the palate. Very frequently the legs are attacked first, afterwards the arms. In other cases the paralysis may remain localised in an arm or leg. In a short time symptoms become more marked, the legs become flexed and do not respond to voluntary stimulus. The grip becomes enfeebled, and objects are allowed to drop; the fingers become flexed in the palm and immovable. Walking becomes more and more difficult, and the patient is obliged to take to bed. Frequently these paralytic phenomena are accompanied by more or less pain, especially in the neighbourhood of the joints. Alterations of sensation are very slightly marked. Muscular atrophy is usual, but varies considerably in its intensity. Although it is usually located in the limbs this form of paralysis may affect other parts such as the palate and ocular muscles internal and external. The occurrence of post-pneumonic paralysis is essentially low. In ocular cases there is progressive improvement in all the symptoms, and, in fact, in the majority of cases recovery is complete. The duration varies. Some cases have lasted from 12 days to 3 or 4 weeks, others 2, 3, 7 or 12 months. In some exceptional cases death is due to generalisation of paralysis extending to the bulbar region. These paralyses are grouped under the class of polyneuritis, but, so far, the lesions present have not been exactly determined, and it may be supposed that they are due to the action of pneumonia toxin on the ocular or peripheral nerves. The prognosis depends, therefore, on several factors; the nature of the pneumonia, the form and seat and extent of the paralytic lesions. The most severe form of post-pneumonic paralysis is that which, beginning in the lower extremities, increases rapidly in intensity, invading the muscles of the thighs, the abdomen, the thorax, and the upper limbs. It subsequently involves the muscles of the larynx, pharynx and tongue. This is, in fact, a form of acute ascending paralysis. It is also uncommon to meet with fatal cases of pneumonic myelitis. It may be stated, therefore, that with some exceptions post-pneumonic paralysis is a form of peripheral neuritis which tends to recovery. There is no special form of treatment required, the measures in use in other forms of polyneuritis being indicated.

(163) Neuritis following Malaria.

Sacquépée and Dopter (*Rev. de Méd.*, April, 1900) give a summary of all hitherto published cases, and in addition record 3 of their own. A colonial administrator had an attack of malaria when 41 years old. During the following ten years he had periodic attacks. When 51, he became enfeebled, and complained of shooting pains in the joints and right hypochondrium. The pain over the hepatic region became fixed, and fever, sweatings, vomitings, and gastric troubles followed. There was also intestinal colic, severe and continuous diarrhœa, and the urine was loaded with urates and biliary pigment. On admission to the hospital when 52, there was paresis of the lower limbs with intense pains in the joints. The pains followed the course of the sciatic nerve, and were most severe during the night. Sensibility was diminished, and the muscles atrophied. Over the hepatic region there was superficial and deep pain, and the skin was hyperæsthetic but not œdematous. A diagnosis of hepatic suppuration was made, and laparotomy was performed. The liver was found to be very enlarged and hard, but although numerous exploratory punctures were made, there was no fluid or pus to be found. After the operation the trouble in the hypochondrium ceased, but torturing lancinating crises occurred in the arms, the pains gradually extending to the thenar eminence and fingers, and being accompanied by rapid atrophy of the thenar and interosseous muscles. The palms were hyperæsthetic, and the skin covering the hands "glossy." The lower limbs became œdematous, albuminuria and coma followed, and death occurred three months after admission. The necropsy revealed slight tuberculous lesions in the lungs, and degeneration of the median and sciatic nerves. These were examined in osmic acid, and there was scarcely a healthy fibre left. The axis cylinders had disappeared, and only drops of myelin and a few nuclei remained. The liver was enlarged and hard, but there was no hepatitis. In two other cases treatment consisting of rest, electricity, massage, warm baths, quinine, and antipyrin produced considerable improvement. The authors have restricted their choice of cases to those of which the malarial origin was absolutely incontestable. The cases are of considerable interest in regard to conditions frequently met with in patients who have resided in tropical climes, and the subject is not without importance in insurance work.

(164) Senile Bronchitis.

R. W. Wilcox (*Amer. Journ. Med. Sci.*, cxix, May, 1900) points out that the tissue changes of old age are chiefly of the nature of (1) pure atrophy of the constituent elements of the tissue; (2) a progressive infiltration into certain tissues of organic (fatty or albuminous) or mineral (calcareous) elements foreign to their normal condition; and (3) an exaggerated production of connective tissue. All these changes can be found in the chest contents of the aged, and produce a modifying effect upon the clinical characters of senile bronchitis. The disease always tends to become chronic, because senility follows the same course. The amount of expectoration must be lessened, and here belladonna, which does so much for children, generally fails, and strychnine and ammonium carbonate are to be recommended. Opium and its alkaloids should not be given, for "they simply drown the patient in his own secretion." Systematic massage yields the most brilliant results; it increases chest expansion, improves nutrition, and facilitates expectoration and also diminishes the amount of sputum.

SURGERY.

(165) Hernia of Bladder through the Pelvic Outlet.

Harrington (*Annals of Surgery*, September, 1900) publishes an interesting case of hernia of the bladder through the pelvic floor from the traction of a large recurrent subperitoneal fibroma. The subject of this very rare affection was a single woman, aged 46. The fibroma [illegible] had its origin in the subperitoneal tissue in front of and to the left side of the bladder, and in its growth had evidently pushed through the fibres of the levator ani. This tumour was removed in 1893. Six years later it had again developed to a great size, and was so attached to the bladder that by its weight it had drawn this organ through

a gap in the levator ani, producing a vesical hernia and complete retention of urine. The hernia, which was a para-peritoneal one, involved almost the entire bladder, the portion remaining in the pelvis being drawn into a narrow tube by the traction of the tumour. The author decided that an abdominal operation would be the most feasible method for the reduction of the hernia and the removal of the tumour, but an attempt in this direction having failed, an incision was made from the tuberosity of the ischium to the upper part of the labium. This exposed the tissues of both the anterior and posterior tumours, which arose from a common base. It was difficult at first to distinguish the bladder wall from the fibrous tissue of the tumour. The bladder, having been distended by air, could be readily deflected from the tumour, and was then pushed back into the pelvis through the opening in the floor of this cavity. The tumour itself was then cut away from the attachments to the skin and subcutaneous tissues. As the bladder showed a marked tendency to prolapse again an attempt was made to prevent any further escape by using the uterus as a plug. Such step was justified, the author holds, by the age of the patient and repeated attacks of severe uterine hæmorrhage. The appendages having been removed on both sides, the fundus of the uterus was drawn down to the gap in the levator ani muscle and fixed there by a ligature. The patient made a good recovery and since her convalescence the vesical function has been properly performed.

(166) Removal of Fibroma of Mesentery.

LEXER (*Berl. klin. Woch.*, No. 1, 1900) reports a case in Von Bergmann's wards. The patient was a strong man, aged 41. He was in good health till last April, then attacks of dragging and colicky pains came on, lasted for weeks, and disappeared. A very hard tumour was detected, but he declined operation for several months. At the end of that time the tumour was spherical, as big as a child's head, and clearly circumscribed, excepting below, where it seemed as though fixed to the pelvis. Above it reached to the umbilicus. Lexer specially notes that it could only be moved slightly and from side to side until the patient was put under chloroform. Then its mobility was extreme; it could be pushed up from above the symphysis to over the level of the umbilicus, and it could also be rolled into either flank. On October 12th, 1899, Lexer operated. The tumour lay completely engaged in the mesentery, yet with a distinct pedicle consisting of the part of that fold nearest the spine. Enucleation was impracticable, and as it was not certain that the tumour was innocent, that operation was not attempted. Some very large mesenteric arteries and veins were secured in the pedicle, and then the tumour with its mesenteric capsule and about 6½ feet of small intestine connected with that segment of the mesentery were cut away. Lexer believed that a circular suture or a Murphy's button with end-to-end anastomosis would alike be objectionable. He therefore practised lateral entero-anastomosis, and the severed ends of intestine were sucessfully united. The patient was able to leave his bed in three weeks. Six weeks after the operation he could eat ordinary diet, and felt no local pain. The tumour weighed 5 lbs., and was 9¾ inches wide at its greatest diameter. It was a pure fibroma, with signs of mucoid degeneration at certain points.

(167) Ankylosis of the Spine.

CANTANI (*Il Policlinico*, f. 8, September 1st, 1900) reports some cases of idiopathic ankylosis of the spine (spondylosis rhizomelica), and discusses the subject generally. The cases are distinguished by a more or less complete rigidity of the whole or part of the vertebral column, without deformity. Sometimes the neighbouring articulations are occasionally affected, namely, the hip, temporo-maxilary. But the small joints, for example, fingers and toes, are spared. The thorax may be affected. There is no evidence of marked nerve affection; what muscular atrophy exists is probably due to disease; there is never any reaction of degeneration. The disease usually attacks adults not far advanced in age, and shows a marked preference for males; it generally begins with pain in the spine, especially in the sacro-lumbar region. The prognosis *quoad vitam* is not bad, but as regards the disease itself is not at all promising. As regards etiology, little certain is known; some cases seem to be of rheumatic origin, others gouty, and possibly syphilis plays a part. Pathologically it appears to start as a fibrous arthritis of the articulation, going on to complete ossification of the ligaments. In treatment some benefit has been derived from the application of a seton on the most fixed part of the spine.

(168) Resection of the Pylorus.

RYDYGIER (*Centralbl. f. Chir.*, No. 32, 1900) reports the subsequent course of the case in which he performed his first operation for resection of the pylorus in November, 1881. The disease indicating such treatment was non-malignant ulceration that had spread from the pylorus to the pancreas, and necessitated also removal of a portion of this gland. The patient, a woman, now 42 years of age, has been in good health during the long interval since the date of operation. She has been able to attend to her domestic duties, has not found it necessary to restrict or alter her diet, and has given birth to five children, the oldest of whom, a daughter aged 17, is now living. In cases of ulceration and cicatricial stenosis of the pylorus the author is an advocate of resection against gastro-enterostomy, provided the patient be in a good general condition and the adhesions be not too extensive. His grounds for this preference are the frequency of the development of cancer in simple ulceration of the pylorus and its resultant scar, the occasional occurrence of serious hæmorrhage from pyloric ulceration after gastro-enterostomy, and the bad results which sometimes follow the latter operation in consequence of reflux of the intestinal contents into the stomach.

MIDWIFERY AND DISEASES OF WOMEN.

(169) The Danger of the Long-Tube Nursing Bottle.

WENDE (*Buffalo Med. Journ.*, lvi, 104, September, 1900) has made microscopic sections of unemployed rubber tubes taken from nursing bottles, and has found that their internal surfaces presented numerous imperfections peculiarly adapted to resist cleansing, to permit decomposition and the growth of germs, and to lead to the formation of toxic matter which would contaminate and poison the milk as it flowed through. There were elongated pits and sinuses which might be likened in their effects to bacteriological "breed ovens," and sometimes the tubes were constructed of more than one layer between which enormous spaces were frequently developed directly connected with the lumen of the tube by the pits and sinuses referred to. The material used in the manufacture of the tubes was also very porous. In this way there was produced a perilous combination of pits, sinuses, and porosities in which bacteria would be readily caught and retained. From the bacteriological examination of a used and infected piece of rubber tubing Wende was able to recognise a deposit of decomposing material coating the inner surface, and being thickest near to the nipple and glass tubing, it consisted of a coagulated casein with innumerable bacteria, including specially the bacillus acidi lactici, the staphylococcus pyogenes aureus, and the oidium albicans. Injected into guinea pigs the material caused rapidly fatal results.

(170) Extirpation of Septic Cancerous Uterus after Labour.

MITTERMAIER (*Centralbl. f. Gynäk.*, No. 10, 1900) operated on a woman who had been pregnant twenty-two times, eighteen times to term. This, her twenty-third, pregnancy ended by expulsion of a dead ovum at the fifth month; she was then 47. In searching for the placenta, cancer of the cervix was diagnosed. The pulse was 135, the temperature over 104°. Two fingers could be passed into the cervical canal. There was not much flooding, the placenta was retained. The uterus was emptied of its contents and then extirpated through the vagina. The uterine tissue was very septic. The serous coat was raised up by gaseous exudation at several points. The vaginal wound was closed with catgut sutures. The temperature fell to normal at once, the pulse remained rapid for a day longer. On the ninth day, when the uterus was exhibited at a medical society, the patient was doing well. In discussion, some doubt was expressed about the

sepsis being generalised as Mittermeier implied. The nature of the bullæ developed from the serous coat was also contested. Roesing, Staude, and Seeligman believed that they did not represent detachment of the peritoneum by septic gas, but were due to mechanical force during the preliminary extraction of the placenta.

(171) Amputation in Error of an Inverted Uterus.

Morestin (*Bull. et Mém. de la Soc. Anat. de Paris*, March, 1900) examined a woman, aged 67, suffering from acute vaginal hæmorrhage, which evidently arose from a fleshy mass distending the vulvar aperture. There had been hypogastric pain and sanious discharge for a few months. The mass was large, covered with sloughy shreds, and was pedunculated. Morestin took it for a malignant tumour developed in the fundus, or a polypus of the fundus undergoing malignant degeneration, which had caused inversion of the uterus. Placing the patient in the usual position, without chloroform, he divided what he thought was the pedicle, believing that the upper part of the mass above the line of section was a small inverted uterus; but he found a serous canal open on the cut surface of the supposed pedicle, and this canal was simply made by invaginated peritoneum. In fact, the greater part of the inverted uterus had been cut away. The patient experienced little pain when the knife passed through the uterus. Pressure forceps were applied to the divided uterine tissue, a strip of iodoform gauze was passed into the serous canal, and the vagina plugged with the same material. The forceps were then removed; there was no bleeding. In a few days high temperature set in and there were rigors, broncho-pneumonia at length developed, but the patient recovered. The new growth was a spindle-celled sarcoma almost sessile. It was bulky and had dragged the body of the uterus, which assumed the appearance of a thin cord or pedicle, hence the error.

(172) Perforation of Bladder in Ectopic Pregnancy.

Baatz (*Centralbl. f. Gynäk.*, No. 24, 1900) relates a case of high interest. The tubal sac opened into the bladder at the fourth month. Pieces of bone came away during micturition. By means of the catheter masses of a hard structure could be detected in the bladder. On the right of the uterus lay a tumour of the size of a child's head; it crepitated on pressure. Radiography proved a failure, but by the aid of the cystoscope bones were seen in the bladder. The urethra was dilated, and a number of bones, incrusted with salts, extracted. The ectopic sac was removed through the vagina without opening the peritoneum. A great mass of bones with inspissated pus came away. The cavity left behind was freely washed out with lysol and drained. Another piece of bone came away from the bladder during convalescence. A few months later the urethra once more had to be dilated for the extraction of five more pieces of bone. Slight incontinence of urine persists. Baatz finds 13 similar cases already reported.

THERAPEUTICS.

(173) Apomorphine as a Hypnotic without Nausea.

Douglas (*Merck's Archiv*, June, 1900) points out a fact little known to physicians, that apomorphine acts as a prompt and effective hypnotic if injected subcutaneously in doses of about one-thirtieth of a grain, more or less. The dose should be adjusted as to be large enough to produce sleep and small enough to avoid nausea, and this being only about one-third of the ordinary emetic dose it is quite harmless. Douglas claims to be the first to show its hypnotic value, the *Handbook of Materia Medica and Therapeutics* of Potter (1899) stating that though a derivative of morphine the drug is "neither hypnotic nor narcotic in any degree." In mild insomnia and in furious delirium it was found to produce sleep within 25 minutes. The sleep is refreshing and restful, and no disagreeable after-effects followed. If a delirious patient refuses to go to bed, apomorphine will cause him to voluntarily lie down in a few minutes, and sleep will follow. There is no possibility of a "drug habit" being formed, as it becomes a vigorous emetic if the dose be increased. There are no cumulative effects. The small hypnotic doses usually accelerate the heart's action slightly. It was accidentally discovered that it becomes inert if dissolved in a saturated solution of boracic acid, the action of the drug, both as a hypnotic and emetic, being then completely neutralised. During four years apomorphine was given to 300 patients, and the hypnotic effect failed, or was slight, only in 2 or 3 cases (idiosyncrasy). In such rare and exceptional cases it was also found that the emetic effect did not follow even large doses. Tilton has stated that when used as an emetic in croup it is followed by a decline in the fever. The drug is therefore recommended as a safe one, deserving widespread use.

(174) Hypodermic versus Intracerebral Injections of Antitetanus Serum.

Loeper and Oppenheim (*Arch. Gén. de Méd.*, April, 1900) published 5 cases of tetanus; 4 were treated with hypodermic injections of antitetanus serum, and recovered, while the fifth, who was treated, after being trephined, with injections of 10 c.cm. of the serum into each hemisphere, died. In one of the cases which recovered, tetanus followed the manual removal of a sloughing placenta after an abortion; the incubation period was short (eight days), the onset was very acute, and the condition appeared desperate. In all 360 c.cm. were injected during thirteen days. On the other hand, in the fatal case, though the incubation period was short, the symptoms before the intracerebral injections were not alarming. As no reliable conclusions could be drawn from 5 cases, the writers collected 203 more, 59 of which were treated with intracerebral and 144 with hypodermic or intravenous injections of antitetanus serum. The total mortality among the latter class was 35.4 per cent., and even among the more severe cases, with an incubation period not exceeding ten days, was only 43.8 per cent. In cases with an incubation period of eleven days or more, the mortality was only 16.7 per cent. These results were far superior to those obtained by intracerebral injections, which gave a totality among 59 cases of 73 per cent. Dividing these cases into severe and slight, according to whether the incubation period was less than or exceeded eleven days, the mortality for the first group was as high as 82 per cent., and for the second 60 per cent. Thus even among cases classified by their publishers as "subacute" the mortality was 60 per cent. as compared with 16 per cent. for cases treated by the hypodermic method. An analysis of the cases proves that those treated intracerebrally were on an average no more serious than those treated hypodermically, and that the statistics for the two groups are strictly comparable. Whatever may be the explanation of the divergence between these clinical results, and the experiments of Roux and Borrel on guinea-pigs, the fact remains that intracerebral injections are less efficacious than hypodermic, and may be actually harmful. Probably the actual injection is not so devoid of danger as most writers have asserted; small hæmorrhages or even large cavities containing clots have been found *post mortem* in the cerebral substance. In the writers' case there was a hæmorrhage the size of a small nut in the centrum ovale of one hemisphere, and in a case reported by Gibb in the British Medical Journal of July 1st, 1899, death took place eight weeks after the last intracerebral injection from a cerebral abscess. The intracerebral method should therefore be entirely abandoned. Although the hypodermic method has not been proved experimentally to be more than a preventive, its curative effect is proved clinically by (1) the recovery of severe cases which would from past experience have proved fatal without it, and (2) the immediate improvement in or even arrest of the symptoms, such as trismus and fever, in the less severe cases. The quantity of serum used and the number of injections given must be regulated by the case, and may range from a few c.cm. to a total of 3,000 c.cm. or more, 100 c.cm. being given daily in a severe case. Two other methods of administering the serum have been tried successfully, though in too few cases for any reliable conclusions to be drawn as to their real value. These, which consist of intra-arachnoid injections (3 cases with 2 recoveries) and intravenous injections (10 cases with 7 recoveries) deserve further trial in desperate cases. Indeed, the intravenous method may eventually prove the most suitable for all but slight cases.

(175) Potassium Iodide in Acne.

GALLOWAY (*Practitioner*, May, 1900) reports the case of a man suffering from acne vulgaris, who treated himself with a certain "blood mixture." A severe iodide rash was the result. This in time disappeared, but some pustules had to be incised. There was, however, no recurrence of the acne, and the author thinks that iodides are worth a trial in cases of acne if precautions are taken not to produce too severe a reaction, and to warn the patient what to expect. Potassium iodide as a cure for acne, especially acne indurata, was recommended in doses of 5 grs. thrice daily by Leviseur (*New York Med. Record*, November 11th, 1899). The drug should be discontinued when the local reaction occurs, or when there is iodine in the urine. When inflammation subsides the treatment should be repeated. Ichthyol soap and sulphur ointment are used in the intervals.

(176) The Relief of Lumbago by Acupuncture.

SIR JAMES GRANT has recently redirected attention, in the *Montreal Medical Journal*, July, 1900, to the value of acupuncture in the treatment of lumbago and other myalgias. He inserts some 12 or 14 small (No. 8) fine steel needles, their number varying with the extent of the part to be treated, from one-half to three-quarters of an inch into the muscular tissue through the skin, at a distance apart of from one-half to three-quarters of an inch, and allows them to remain *in situ* for one or two minutes. He has observed that although before puncture the painful muscles may be hard and tense they very soon relax, while the needles are in position, and become soft, pliable, and painless. The patients, although previously almost immobile on account of the pain, can walk about quite freely after they have been withdrawn. He seems inclined to connect the relief from the distressing symptoms with changes in the electrical potential of the muscle, induced by the introduction of the needles. After their removal the skin is sponged, and friction is applied with a rough towel.

(177) Rectal Injection of Cod-liver Oil in Tuberculosis.

ZEUNER (*Therap. Monats.*, June, 1900) recommends that in cases where cod-liver oil cannot be taken by the mouth it could be administered *per rectum* with advantage, and beneficial effects may be obtained by using for the purpose the partially digested oil in an alkaline or neutral emulsion. To 100 parts of cod-liver oil are added 20 parts of water, 2 parts of pancreatin, ⅔ part of sodium chloride, and ½ part of inspissated ox-gall. The mixture is well shaken up into an emulsion, digested for two hours, and warmed before being administered. An injection of 3 or 4 ounces may be given once daily, an hour after the bowels have been evacuated by a natural motion or by the use of a simple enema. The patient is placed in the knee-elbow position, and the prepared cod-liver oil emulsion is slowly injected. If the emulsion is slightly acid, it should be neutralised or rendered slightly alkaline before injection.

(178) Influence of Static Electricity on the Normal Body.

YVON (*Arch. d'Elect. Méd.*, June, 1900) has made a large number of experiments upon the influence of the electric bath on the elimination of urea and phosphoric acid, and its action upon respiration, circulation, and the body temperature. He immersed himself for two hours at a time in a bath supplied by a Wimshurst machine acting at a potential of 115,800 volts, and driven by an electric motor. When all causes of error, such as changes in the heart and respiration rate, had been as far as possible excluded, the author found that static electricity had little or no influence on the healthy body, thereby confirming the original opinion arrived at in 1855 by Duchenne.

PATHOLOGY.

(179) A New Bacillus of Vaccine Lymph.

NAKANISHI (*Centralbl. f. Bakt.*, Bd. xxvii., No. 18) describes a bacillus which he finds constantly present in vaccinia pustules and which he has experimentally investigated. This is present in the epithelial cells of the "vaccine-pulp" of calves, either as a rod-shaped form staining in a bipolar fashion or as a spherical or oval form taking the stain less perfectly. In the lymph from children on the other hand the rod form is not found but large round refractive organisms are present similar to those found in calf lymph, which are looked upon by the author as variation forms of the bacillus. Pure cultures of the bacillus were obtained on agar plates both from the calf lymph and from lymph drawn from seven days old vesicles on the arms of children. The organism grows best on solidified blood serum and resembles morphologically the diphtheria and the so-called pseudo-diphtheria bacilli; it is a facultative anaërobe. The younger forms are wedge or "candle-flame" shaped, others are rod shaped, and in old cultures club shaped and rounded forms are common. Experimental inoculations in calves and guinea-pigs were negative. In rabbits intraperitoneal inoculation was also negative in result, but ulceration is produced by inoculation of the cornea and in the epithelial cells of this round or oval bodies are found. These are identical with the bodies described by Guianieri and Pfeiffer in the corneal tissue inoculated with vaccine lymph and in the corneal vesicles in variola and which were considered by them to be probably protozoa. By inoculation of cultures of the bacillus into the arms of several children, a student, and himself, the author was successful in producing typical vesicles. Two other students gave no reaction; possibly they were immune. He argues that the described bacillus is in all probability the specific agent in vaccinia, but with regard to the round and oval forms found in the corneal epithelium he hesitates to decide whether they are really varieties of the bacillus so modified by the unfavourable site on which they are growing or whether they are degeneration foci in the epithelial cells themselves. The fact that somewhat similar shapes are found in old cultures seems to give countenance to the first view. Much evidence has been collected to show that the "protozoa" of Guianieri, the so-called "cytorrycytes variolæ," are characteristic and specific, and as the author has produced identical forms by inoculation of cultures of this bacillus, he deduces that the bacillus is characteristic of small-pox lymph, and in all probability the exciting factor in small-pox itself. Further, as the organism resembles the diphtheria bacillus, so he draws a parallel between this disease and variola clinically and pathologically, and finds close analogies.

(180) Trauma and New Growths.

WÜRZ has studied 713 cases of new growth in the Tübingen clinic with regard to their relationship to previous traumatisms. Of these, 219 were benign, 584 malignant. Of the former, only 5 presented a probable relationship to previous trauma, in 2 others the connection could only be said to be possible, giving an average of 3.12 per cent. Of 503 carcinomata, 8, or 1.5 per cent., were of traumatic origin: and of 82 sarcomata, 6, or 7.3 per cent. He summarises his work as follows: A single trauma only comes into consideration as an etiological factor in osteoma, carcinoma, and sarcoma, and can only be said to play an important part in the first and last of these. The statistics have not concerned themselves with cases of repeated trauma or chronic irritation, but only with those giving evidence of a single injury: in other words, the occurrence of new growth in ordinary scar tissue is the real subject of the study.

(181) Pericarditis in Bright's Disease.

CHATIN (*Rev. de Méd.*, June 10th, 1900) records a number of experiments on the pathogeny of pericarditis in renal disease. The question at issue is as to whether there is a special renal or uræmic pericarditis, or whether the complication is a mere septic incident of ordinary Bright's disease. In 3 fatal cases which Chatin investigated the pericardial effusion was always sterile, while the toxicity of the blood serum was constantly below normal, although the pericarditis was acute, subacute, and chronic in the 3 cases; these facts are all inconsistent with the uræmic hypothesis. The pleural effusion in a case was also hypotoxic. The author hence concludes that in spite of Bosc's case of secondary infection the pericarditis of Bright's disease is aseptic and sterile. He holds also that his investigations fail to support the idea of a toxic pericarditis in such cases.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(182) Acetonuria.

H. C. Geelmuyden (*Norsk. Mag. f. Laegevidensk.*, lxi, 705, July, 1900) understands by the acetone series the three substances known as oxybutyric acid beta, or $CH_3CH(OH)CH_2COOH$; acetono-acetic acid, or $CH_3CO\,CH_2\,COOH$; and acetone, or $CH_3CO\,CH_3$. He gives the name acetonuria to the state in which one or several of these bodies are found in the urine: and he believes that the oxybutyric acid beta is the most characteristic of the three, and always predominates in the most serious cases—as, for example, in diabetes. Acetonuria may be due to insufficient decomposition of hydrocarbons, or to insufficient supply of them in the food (alimentary acetonuria), or to the absence of the power to decompose them in the system (diabetes). Marked acetonuria in cases of diabetes is always a grave symptom, pointing to the supervention of coma, and Geelmuyden believes with Stadelmann that the coma is the sequel of an acid poisoning, and may be retarded by the administration of large doses of sodium bicarbonate. The question of the origin and mode of formation of the acetone series is still an unsettled one.

(183) Polyuria and Pollakiuria of Hysterics.

Jean Abadie (*Arch. de Neurol.*, March, 1900), of Bourdeaux, has published cases which might make a distinction possible between polyuria of hysterics and that due to diabetes insipidus, simple polyuria, traumatic, alcoholic, and other polyurias, etc. Case 1. A man, aged 43, was seen by Professor Pitres for troubles of micturition. Temperate habits, suffers from rheumatic pains. Mother neurotic, and has had attacks of *grande hystérie*. Patient's brother is rheumatic. In 1870, during the Franco-German war, he contracted a mild gonorrhœa without complications. Later he suffered from much exposure to cold and wet on board ship in a storm, and suddenly thereafter began to be affected with troubles of micturition—namely, frequent desire to pass urine, even with an empty bladder, which gradually became in a few days a very troublesome feature. The urinary stream became thin and threadlike, and surgical examination showed a complete patency of the urethra, and the total absence of any stricture. Patient is not syphilitic, and appears in good health. There is a large erythematous patch on the anterior aspect of the left thigh. No facial or ocular symptoms of nerve trouble. No motor or sensory disturbances in the limbs, but the abdominal reflexes are feeble, and the cremasteric inconstant. Later there appeared areas of anæsthesia in the left foot, leg up to the knee, on the left side of the front of the chest, and on the left forehead and side of the nose, and the left side of the tongue and nasal cavity. Slight concentric lessening of field, but sight good, and free from colour or other disturbances. Intelligence average. Slight depression of spirits. Free from headaches or vertigo. Examination of kidneys, urethra, and bladder disclose nothing abnormal. The only troubles are frequency of desire to pass urine, polyuria, smallness of stream, and a slight vesical tenesmus accompanying the effort to urinate. He passes urine twenty or thirty times in the twenty-four hours. There is no sugar, albumen, bile, indican, blood or other abnormality in the urine, which is faintly acid, and has a specific gravity of 1007. Abadie points out that adult men are the usual subjects of the syndrome characterised above, that it is rare in women, and that alcoholism is generally present in male or female cases. Quantitative analysis of the urinary solids shows absence of phosphaturia, diminution of urea and nitrogen, and increase of the chlorides—all characteristic of hysterical polyuria according to Ehrhardt. By pollakiuria is meant the imperious necessity experienced for frequent micturition, a feature slightly marked in saccharine diabetes and Bright's disease, and more marked in vesical inflammations. In the first the frequency is a simple function of the polyuria. Abadie also thinks that a cerebral micturition centre exists which may be stimulated by visual and auditory stimuli, and instances such cases recorded by Pierre Janet (pollakiuria psychopathica). This patient was eventually fully cured of his trouble, and this is regarded as another point favouring its hysterical origin. It is also shown that polyuria and pollakiuria can be induced by hypnotic suggestion, and they then present the same characters as those of hysterical origin, as in the present case, and both are curable by direct or indirect suggestion.

(184) Catarrhal Affections of the Nose and Pharynx.

Wells (*Med. Record*, April 21st) emphasises the need for discovery of the constitutional causes underlying these conditions. The local trouble is generally of secondary nature when (1) there is no apparent adequate local cause, and local treatment has failed; (2) when the catarrhal inflammation follows a constitutional trouble, or when other catarrhal inflammations are present; (3) when the supposed cause is sufficient to produce the effects, and treatment of it relieves the catarrh. Herpes, urticaria, and pemphigus may appear as true reflexes of nasal origin, or act as a primary cause of nasal trouble. Dyspepsia often causes nasal catarrh, which is therefore relieved by nux vomica, pepsin, and hydrochloric acid, *post cibos*. Usually the nasal catarrh flatulence should be relieved, cardiac lesions examined for, and movable kidney, hysteria, and the gouty diathesis appropriately treated. When the latter state is obvious from the engorged baggy velum, fauces, and pharyngeal walls, pain in the larynx, difficulty in swallowing, and gouty deposits in the vocal cords, the general condition should be improved by salicylates, iodides, and alkalies, and 2 to 4 per cent. solution of thiol in glycerine applied locally. In hay fever constitutional treatment should always be adopted. Zinc phosph., $\frac{1}{12}$ gr.; quinine sulph., gr. ij; ext. belladon., $\frac{1}{8}$ gr.: one pill before each meal ought to be given in addition to the local treatment. In neurasthenia the glycero-phosphates are very efficacious.

(185) Chorea and Chorea Gravidarum.

Gilles de la Tourette (*Rev. Neurol.*, June 30th, 1900) opposes the view that chorea is associated with rheumatism. He states that of 17 consecutive cases of chorea at his clinic, only one had rheumatism before or during the attack, and that of several who returned after recovery none had shown any sign of the latter disease. He concludes that chorea has nothing to do with rheumatism, and that its diagnosis is entirely uninfluenced by the presence or absence of rheumatic manifestations. He maintains further that true Sydenham's chorea never comes on after puberty; he bases this statement on the fact that the two oldest of his patients, girls of 16 and 18 respectively, had never menstruated. From this he deduces the further view that chorea gravidarum is not the same as Sydenham's chorea; he holds that many cases so described are really examples of hysterical tremor, while others belong to the category of the convulsive tics, the pregnancy acting as the exciting cause. He admits that a few may be classed under the rare heading of chronic or Huntington's chorea. The author attaches great importance to the fact that in one of his cases the movements persisted after delivery. He believes that with the improvement of diagnosis along the lines he has indicated there will be no further need for the induction of premature labour in this affection.

SURGERY.

(186) The Surgical Treatment of Gastric Ulcer, with Hæmorrhage, but without Perforation.

Rodman (*Philadelph. Med. Journ.*, June 9th, 1900) discusses the treatment of the group of cases of gastric ulcer, not amenable to medical treatment in a reasonable time in which there is severe pain and uncontrollable vomiting. The operation of excision, having a mortality of 15 per cent., cannot be advised in all cases, but should be held in reserve for the more severe ones. If the ulcer is at the pylorus, or upon the anterior wall, [illegible] to [illegible], but if it be situated [illegible] and at the same time adjacent [illegible] frequently is, to adjacent [illegible] then gastro-enterostomy is preferable. The latter operation facilitates the healing of the ulcer by empty-

ing the stomach, permitting the ulcerated area being at rest, and by promptly relieving the hyperchlorhydria. If the ulcers are multiple, gastro-enterostomy should be preferred. When the element of shock is of grave import, then one of the quicker methods of gastro-enterostomy should be employed—for choice, that by the Murphy button. In regard to the hæmorrhagic cases it would be highly injudicious to perform laparotomy for the first hæmorrhage, and even when the surgeon sees the case the first time after the hæmorrhage has ceased and the patient is rallying from the shock. But when a case has bled freely once, has recovered, and then in a few days has bled seriously again, too great delay is hazardous, as the recorded cases show. In such conditions, pylorectomy, if the ulcer is at the pylorus, or gastrectomy for ulcers situated elsewhere, is the ideal operation. Both the hæmorrhage and the risk of perforation are cogent reasons for the complete operation should the conditions be favourable. If, then, the ulcer is at the pylorus, or on the anterior gastric wall, and reasonably free from adhesions, it should be removed. But if the bleeding point cannot be located the gastro-enterostomy, which cures the hæmorrhage on an entirely different principle, should be employed. It is especially successful in small and frequent hæmorrhages. Ligation of the bleeding vessel *in situ* is not to be recommended; the mucous membrane is so friable, it tears so easily, and bleeds so freely, that hæmorrhage is more likely to be increased than checked by any attempt to tie the open vessel. The other possible methods, except that of ligation *en masse* of the gastric mucous membrane, which is often desirable after an exploratory gastrotomy, suture of the ulcer, cauterisation, pyloroplasty, gastrorrhaphy, and curetting of the ulcer with or without cauterisation are not to be preferred to the methods advised, which have given a large number of favourable results.

(187) Treatment of Fractures of the Leg by Fixation Plates.

Steinbach (*Annals of Surgery*, April, 1900) states that in the open treatment of fracture of the leg, he has obtained good results from the application of a silver plate in the form of a cleat to the flat subcutaneous surface of the tibia secured by small galvanised steel screws. This method, he asserts, is simple in its execution, and, by maintaining the fragments in unyielding apposition, shortens the time required for bony union, and restores unimpaired function of the injured limb without shortening. The plate, which is designed to meet the indications of any fracture of the diaphysis of the tibia, is made of silver $\frac{1}{16}$ inch in thickness, $3\frac{1}{2}$ inches in length, and $\frac{3}{4}$ inch wide, with perforations for the screws $\frac{1}{2}$ inch apart, an incision slightly exceeding the length of the plate is made through the integument along the median line of the inner surface of the broken tibia, its centre corresponding to the line of fracture when the bone is broken in one place only, or to the centre of an additional fragment. After removal of small fragments of bone, blood clots, lacerated tissue, and other interposed or extraneous substances, the fragments are placed in position, the plate adjusted, and the drill applied through the perforations selected for the reception of screws. Two screws are usually employed at each end, and are secured by means of an ordinary screwdriver. Coexisting fracture of the fibula may in exceptional cases require attention, but, as a rule, such fracture adjusts itself fairly well when the tibia is properly set. The integument is united over the plate by sutures and the limb placed in a splint. The plate is permitted to remain in position until bony union has been effected. Its removal may then be accomplished with the aid of local anæsthesia alone.

(188) "Exothyropexy" in a Newly-born Infant.

Genevet (*Lyon Méd.*, October 29th, 1899) showed an infant 1 week old before the Soc. des Sciences Méd. de Lyon, who at birth was in a state of apparent death. After being resuscitated by energetic treatment there were great dyspnœa, noisy respiration, and retraction of the ribs. No nourishment could be taken. Pollosson discovered a tumour in the neck so small that it was not easily detected. It was uncertain whether it was the thymus gland, a hæmorrhage into a cyst of the thyroid, or a goître. A median incision was made, and a fairly large goître, which dipped deeply backwards, was found. The tumour was pulled outside the wound by gentle traction (exothyropexy), and the dyspnœa ceased at once and did not return. The hypertrophied lobe was left outside the wound without any dressing, as Pollosson preferred to await its atrophy, and later, if necessary, to hasten it by a few punctures of the thermo-cautery to excising it. The child's mother was goîtrous, and had lost a former child with similar symptoms.

(189) Congenital Diaphragmatic Hernia.

Funck-Brentano (*Bull. et Mém. Soc. Anat. de Paris*, No. 6 p. 537, June, 1900) describes the case of a female infant suffering from congenital diaphragmatic hernia. She was the result of the ninth pregnancy of a healthy woman who was forty years of age; two of the previous gestations had ended prematurely and four of them had been abortions. At the time of birth the infant seemed healthy, and during the first day of life expelled meconium and took the breast satisfactorily. On the second morning, however, it took convulsions, became cyanotic on several occasions, and died when 55 hours old. A radiograph was made of the cadaver and compared with that of a normal infant of the same age, and it was at once evident that the left side of the thorax contained a large packet of the intestines. On making a necropsy it was found that in the abdominal cavity were the genito-urinary organs, the liver, stomach, pancreas, and the terminal part of the large intestine. Posteriorly and on the left side there was a free communication between the abdominal and thoracic cavities; and in the left pleural sac were the small and large intestines and near to them the spleen, which was enlarged and deeply furrowed in an irregular manner. The left lung was discovered at the top of the thoracic cavity and consisted of two lobes which, together, were no larger than a bean. The heart was entirely displaced to the right of the middle line, as were also the great vessels, but they passed by the usual openings through the diaphragm. The right lung contained air, but was displaced upwards and backwards. There were no other malformations.

MIDWIFERY AND DISEASES OF WOMEN.

(190) Torsion of Pedicle of Pedunculated Fibroid.

Schwarz (*Comptes Rendus de la Soc. d'Obstét. de Paris*, May, 1900) reports a case of a relatively rare condition compared with torsion of the ovarian pedicle. The patient was a nullipara, aged 48, regular and free from metrorrhagia. In July, 1899, she suffered from severe general peritonitis; the symptoms lasted for six weeks. During convalescence a hard fixed tumour was detected in the hypogastrium and left flank, mounting to the false ribs. In the middle of April Schwarz saw her and diagnosed torsion of the pedicle of a fibroid, as he had observed a similar case three years before, and there was evidence of torsion of a pedunculated tumour which was clearly connected with the uterus. He operated and found the tumour adherent to the parietes, intestine, and omentum. On separation of the adhesions the tumour appeared like a large kidney, about 4 inches long by nearly 8 broad. It was connected with the right cornu of the uterus by a pedicle only $\frac{3}{4}$ inch long and as thick as a stout pencil. It was twisted one turn and a-half. The tumour was removed, the pedicle being ligatured. As a myoma lay in the posterior wall of the uterus and the patient was 48, Schwarz removed the appendages. The pelvis was drained on account of oozing. The patient recovered.

(191) Vaginal Hysterectomy for Cancer.

Howard Kelly (*Bull. of Johns Hopkins Hosp.*, March, 1900) now considers that as ordinary uterine cancer extends progressively through the tissues from the cervix, whilst glandular metastases are very late, the aim must be to clear away as much of the cervix as can be done rather than to run needless risks in extirpating the pelvic glands. The ureters must be first catheterised, the diseased area scraped, and the vagina stripped up quite one inch around the area of infection. The peritoneum is opened on both sides; if necessary, a piece of the base of the bladder is excised. The uterus is now only held in by the broad ligaments. The fundus is drawn down and the uterus bisected vertically. Then one half of the body is severed from

within outwards, from the corresponding half of the cervix, the uterine vessels, round ligament and uterine cornu clamped. The remaining half is treated in the same way. Ligatures are now placed where the clamps were applied. The ovaries and tubes are next removed; as there is no uterine body in the way, this stage of the operation is easy. The last stage but one of the special part of Kelly's new procedure is the removal of that half of the cervix which appears the least diseased. As much of the tissue around it is cleared as is possible, the rigid catheterised ureter must be kept under all the time during the enucleation. There is now plenty of space for removing the more involved side of the cervix. Skene's cautery-clamp or Mackenrodt's igni-exterpation may be used at this stage. If the ureter be free and beyond the diseased area it may be dissected out and left intact. If otherwise, the operator must not hesitate to cut it off above the diseased area, proceeding with the wide enucleation of the nodule as if the ureter did not exist. After the enucleation, the ureter may then be turned into the denuded bladder and stitched there. In conclusion, the anterior and posterior peritoneal surfaces are drawn down and attached to the vagina and are again sutured together in the middle line, so as to leave but two small openings up into the pelvis which are loosely stuffed with gauze. Kelly has operated on nine cases after this method, which allows of a freedom of manipulation at the most important stage which no other method can afford. Hence more tissue around the limits of the cancer can be removed, so that there must be a high percentage of permanent recoveries.

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(192) Breech Presentations: Value of Prophylaxis.

De Monchy (*Nederland. Tijdschrift van Geneeskunde*, No. 5, 1900) places a low value on manipulation for the conversion of breech into head presentations, and objects to it being taught to midwives. In the Leyden extern practice, 100 breech cases occurred in the ten years ending last autumn. The students are of necessity not highly experienced, and the resident assistant obstetrician is changed almost yearly. Nevertheless, 93 children were born alive, 42 without help from the assistant, 7 were delivered asphyxiated or dead, including, it must be noted, 1 case of placenta prævia; only 3, it appears, were lost. Out of the 93 cases, 18 were in primiparæ, whilst out of the 3 cases where the child was dead 2 occurred in primiparæ. During the same period, 25 breech cases were delivered in the Leyden Maternity; 20 children were saved, 11 of these cases being in primiparæ; 5 children were born dead; in 2 the labour was premature and the pelvis narrow; in 2 there was placenta prævia, in 1 congenital malformation of the child. In many of the above successful cases labour was so quick that the student had hardly time to manipulate. Not a single child was lost when the resident assistant was present. Prophylactic turning, then, is of questionable value, so well do most breech cases fare if not interfered with too much. Explorations weekly or fortnightly during the later stages of labour worry the patient. Midwives are now as ever too fond of counting breech presentation as pathological, and therefore too ready to interfere.

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(193) Placenta Prævia: Air in Veins.

Hubl (*Wien. klin. Woch.*, February 1st, 1900) reports two deaths in placenta prævia cases, from the entrance of air into the veins. The first patient was a rachitic woman, aged 40. She had borne five children. There was very severe flooding; the tampon was applied for forty-eight hours, and then version was performed under an anæsthetic. Little blood was lost during the latter manœuvre, yet the patient died suddenly. The left ventricle was found contracted; the right ventricle and pulmonary artery were resonant on percussion, and distended with air. In the second case there was no necropsy. The patient was delivered, then became cyanosed, suffered from severe dyspnœa, and died fourteen hours after delivery. The cardiac area was increased, but was resonant on percussion, and bubbling sounds were heard on auscultation.

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(194) Tertiary Syphilis appearing in Pregnancy.

Marschner (*Centralbl. f. Gynäk.*, No. 27, 1900) publishes notes of a woman, aged 27, who, after two normal pregnancies, miscarried four times. At the beginning of her seventh pregnancy she was treated carefully with potassium iodide, though no symptom of syphilis had apparently been noted beyond the suspicious miscarriages. At the fourth month, notwithstanding all care in treatment, specific ulcers appeared on the perineum and labia. Within a week the integuments of the perineum and the mucous membrane of the vulva and vagina were completely destroyed. During this process the patient was taking tannic oxide of mercury by the mouth. The ulceration was stopped by local application of mercury dissolved in fuming nitric acid and large doses of potassium iodide. Abortion, however, followed. Six months later a fresh attack of ulceration occurred, finally cured, after much trouble, by Zittmann's decoction.

THERAPEUTICS.

(195) The Treatment of Hay Fever by Immunisation.

Holbrook Curtis (*New York Medical News*, July 7th, 1900) conceived the idea that immunisation against hay fever and other forms of rhinitis and coryza might be attained by hypodermic injections of weak extracts of the plants or flowers found most prone to induce attacks of hay fever. The idea was suggested by observing that two girls who were susceptible to coryza from inhalation of ipecacuanha powder could acquire a temporary tolerance for the drug by taking internally small doses of the tincture or syrup of ipecacuanha for a few days. Having been consulted by a lady patient who suffered from coryza and severe sneezing whenever she passed a florist's shop, Curtis prepared aqueous extracts of flowers which he administered to her hypodermically with the hope of establishing immunity. This was first tried with an extract of roses with the result that tolerance was acquired and immunisation established. Then various other extracts of flowers were prepared and similarly administered, until the lady acquired a complete tolerance for flowers, and could enter a florist's shop without suffering any distress or inconvenience. As hay fever was traceable in several instances to the action of ragweed, golden-rod, and lily of the valley, preparations of these flowers were made and administered hypodermically to patients who were found to have contracted hay fever from the smells and odours of these plants. In the case of ragweed gratifying results were obtained, and Curtis states his belief that many varieties of hay fever seen by him were cases of ragweed coryza-asthma, and that they were cured by the treatment adopted. He urges the importance of further work and observation in the direction of treating hay fever and other forms of rhinitis and coryza on the principles above mentioned, so that the true value of the method may be ascertained.

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(196) The Significance of Iodinophile Leucocytes in Diseases of the Blood.

Hofbauer (*Centralbl. f. inn. Med.*, February 10th, 1900) has sought for Ehrlich's iodine reaction in the leucocytes in certain anæmic conditions in man. Czerny, in 1893, showed that Ehrlich's reaction, which consists in the granules of certain leucocytes being stained brown by iodine, was obtained in some anæmic conditions in dogs, though not normally present in them. The staining fluid used by the writer consists of iodine 1 gram, potassium iodide 3 grams, and water 100 c.cm. to which enough gum arabic is added to produce the consistency of syrup. An excess of this is placed on a slide, the dried film of blood on the cover slip is allowed to swim on its surface for one minute, and the excess of the iodine solution is removed from the edge of the cover slip as completely as possible by blotting paper. The preparation is then ready for examination. Hofbauer's investigations show that, broadly speaking, iodinophile leucocytes are found only in pernicious anæmia, in severe anæmia secondary to serious diseases, and in leukæmia, that is, in cases where the prognosis is bad. The presence or absence of the iodinophile cells does not, however, necessarily indicate respectively bad or good prognosis, since cases where the cells are found may recover, and cases where none are found may end fatally. Thus, iodinophile cells may be absent in the early

stage of pernicious anæmia and in pseudo-leukæmia. Goldberger and Weiss concluded that the intracellular iodine reaction, even when present in a small number of leucocytes only, pointed to the presence of some active suppurative process. They added that this conclusion was not justified if pneumonic processes were present. The writer's researches show that it is not sufficient to exclude pneumonia before diagnosing suppuration from the iodine reaction, since it may be present quite apart from coexisting suppuration in certain blood diseases. The statement of Kaminer that the iodine reaction is never found except in cases of marked leucocytosis is not correct, since the writer found it in cases of pernicious anæmia and severe anæmia where the quantity of leucocytes was diminished.

(197) Treatment of Eczema in Children.

Rille (*Wien. klin. Rund.*, March 18th and 25th, 1900) thinks that tar preparations are contraindicated in children, and that milder applications should be used. For intertrigo he recommends talc as being less liable to form lumps than the vegetable dusting powders such as starch and lycopodium. When the genitals are affected he uses carron oil or lead lotion. In severe cases a 0·05 per cent. solution of sublimate lotion is employed. He is of opinion that ointments aggravate acute eczemas, and recommends a lotion of boric acid, menthol, and carbolic acid (1 per cent.) in spiritus vini Gallici. In moist eczemas with crusts, after removal of the latter, he applies compresses of silver nitrate (1 in 400) twice daily for two hours, and in the intervals diachylon ointment. Cases of universal eczema are treated in bed, vaseline being applied several times a day, and the inside of the night dress dusted with starch.

(198) The Best Method of Administering Diphtheria Antitoxin.

Musser (*University Med. Mag.*, March, 1900) prefers to give antidiphtheria serum in small and, if necessary, repeated doses, rather than to employ the large initial dose usually recommended. For children below 8 years he gives at first only 500 immunising units, to be repeated at intervals of six hours if the temperature does not fall, or if the local or general symptoms become worse. For children over 8 years he gives 1,000 units, and repeats the dose every 8 or 12 hours, as needed. He claims to have secured results as good as any recorded, and to have had fewer cases of urticaria and general reaction than is usual after large initial doses. The only disadvantage is the pain caused by successive injections, but this does not outweigh the advantages.

(199) Case of Psoriasis cured by Thyroid Extract.

Petrini (*Bull. de l'Acad. de Méd.*, February 20th, 1900) reports a case of general psoriasis cured by thyroid extract alone, the patient having no local treatment. In the course of a few months the patient took 543 capsules, each containing 0·10 centigramme of thyroid extract. No symptoms of thyroidism occurred.

(200) The Influence of Light on Morbid Processes.

Boeder (*Arbeit a. d. Kaiserl. Gesundh.*, vol. xvii, pt. 1) has carried out certain experiments on the therapeutic value of electric light, with results mainly negative, and in some respects unfavourable. The results of other authors have differed widely. He experimented on guinea-pigs, rabbits, mice and rats infected with anthrax, cholera, tubercle, and other bacterial poisons. By attenuating cultures he was able to study the effect of the light on subacute and chronic as well as on acute processes. He summarises his results as follows: The electric rays, both incandescent and arc, have a direct bactericidal power. This, however, has no appreciable effect on general infective processes, acute, subacute, or chronic. Localised disease processes, where bacteria are present either in or under the skin, are favourably affected by the arc light, that is to say, some bactericidal action is to be observed. Exposure to the light stimulates cell activity and increases the vascularity of a part, and in this way acts favourably on the morbid processes. It is only in chronic infective processes that the light-baths are likely to be used with advantage, and perhaps exclusively in those where the process is cutaneous or subcutaneous.

PATHOLOGY.

(201) Variability in Epileptic Reactions to Toxic Agents.

Joffroy and Servaux (*Revue Neurolog.*, March, 1900) communicated to the Société de Neurologie of Paris the following results obtained from an extensive series of experiments on various animals to determine the toxicity of various substances. Observing that absinthe, even in small doses, has a rapid tendency to produce epilepsy, while in large doses it produces grave cerebral troubles in animals, the authors note that in man there is a hereditary predisposition to act differently for different poisons. This predisposition (or variability) of individuals is found also in animals. Thus: (1) In the case of 113 rabbits subjected to the action of ethyl-alcohol, 1 had epilepsy, 4 had non-epileptic general convulsions, and 83 had localised convulsions, and the others non-convulsive troubles; for the same poison in 33 dogs, 1 had epilepsy major, 2 had non-epileptic localised convulsions, and 29 had non-convulsive troubles; (2) For the study of furfurol, 85 rabbits were used; 19 had epilepsy major, 18 had non-epileptic general convulsions, 25 had localised convulsions, and 23 had non-convulsive troubles; (3) the action of aldehyde on 58 rabbits gave 8 cases of major epilepsy, 9 of non-epileptic generalised convulsions, 22 localised convulsions, and 19 non-convulsive accidents; (4) for absinthe given gradually and in small doses to a lethal degree in 10 rabbits, 1 had major epilepsy, 2 had non-epileptic general convulsions, 4 had localised convulsions, and 3 died without convulsions; (5) for morphine in 38 rabbits, 11 had major epilepsy, 9 had general convulsions without epilepsy, 10 had localised convulsions, and 8 non-convulsive accidents; (6) with urine in the case of 42 rabbits, 3 had major epilepsy, 8 had localised convulsions, and 31 had no convulsions; (7) in all cases the lethal dose was sensibly constant, even when the individual reactions varied.

(202) Parasitic Bodies in Vaccinia Vesicles.

Siegel (*Centralbl. f. Bakt.*, August 22nd) describes the bodies found in the vesicles of vaccinia, and in the young vesicles of foot and mouth disease which he considers parasitic in nature. There are three forms: (*a*) a large cyst form with double contour, dark brown in colour, and from 10 to 18 micros in diameter; (*b*) smaller form brighter in colour, and from 6 to 8 micros in diameter; (*c*) a minute form which is usually found collected into groups. Between these three there is a genetic connection; they are all very resistent to stains and chemical reagents, especially the small forms in groups, and Siegel has not been able to discover a satisfactory method of staining. He considers them coccidia. The cyst forms contain spores, but the young forms multiply by simple division. Siegel considers that these researches may have an important bearing on immunity. In all the acute exanthemata there is a period of immunity of greater or less duration; it may be supposed that during this time sporocyst forms are still present in the individual, and that until they are destroyed a new infection is impossible. The organisms were not cultivated, and do not grow on ordinary media.

(203) The Tubercle Bacillus in the Milk of a Tuberculous Mother.

Roger and Garnier (*Compt. Rend. de la Soc. de Biolog.*, 1900, p. 175) report the case of a mother, aged 34, with acute tuberculosis and a large cavity in the upper lobe of the left lung, in whose milk the tubercle bacillus was found to be present. A guinea-pig inoculated with the milk died five weeks later with general tuberculous lesions. The child of the patient was suckled from the third to the sixth day after birth, and after that fed by the bottle; it died at the sixth week, and *post-mortem* examination showed tuberculous foci in the mesenteric glands, liver, spleen, and kidneys, in which the bacillus was demonstrated microscopically. The affection of the mesenteric glands points to the probability of infection being intestinal. Clinically the breasts of the mother were quite healthy, which shows that absence of tuberculous disease of the udder is no guarantee that cow's milk does not contain the bacillus. Cattle, therefore, which show no reaction in the udder to tuberculin may still convey the infection if there are tuberculous lesions elsewhere.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(204) The Etiology of Exophthalmic Goitre.

Breuer (*Wien. klin. Rundschau*, 25, June 24th, 1900) records some observations which are likely to throw new light upon the causation of exophthalmic goitre. Speaking generally, two views are held with regard to the etiology of the malady: Some regard it as due entirely to an alteration in the secretion and the normal physiological activity of the thyroid gland, and denote this morbid condition by the term of "hyperthyroidism;" while others hold that there occurs coincidently with this alteration in the normal function of the thyroid gland a pronounced change in the central nervous system, and that this latter condition is not a mere accident, but plays, indeed, a highly important part in the production of the affection in question; hence they suggest the name—as a matter of simplification of the nomenclature, as they call it—"neuro-cardiac disease," as expressive both of the pathology and the striking clinical phenomena. The first of these views has, in the very first instance, received most of its support from German and English pathologists, and especially from Moebius in Germany and Greenfield (Bradshaw Lecture, 1893) in this country; of late years, however, this view has been adopted, though modified to some extent, by far the greater number of all the writers on this subject. Breuer, in this paper, endeavours to show that, if this view be applicable, it could be only applied to a limited number of cases, while in the remainder the etiology varies individually. Thus, he reports the case of a man, whose previous general condition showed no morbid signs, in whom he was able to observe the development of the well-known triad of clinical symptoms in connection with a sudden formation of an inflammatory abscess in the thyroid gland; and in another group of cases (10) all the typical signs of exophthalmic goitre followed upon and were evidently, according to the author, produced by the external application of a strong solution of iodine to the thyroid gland. This observation forms a valuable contribution to our knowledge of the etiology of exophthalmic goitre; indeed, it clearly shows that exophthalmic goitre, both in an acute and chronic form, may arise under conditions which are by no means favourable to the so called thyriogenic theory, which—possibly in the absence of better knowledge—has now obtained the favour of most clinicians. Moreover, the cases published in support of the latter view, in which thyroid extract given in excess—nay, even a single overdose, as in the famous case reported by Beclère—produced symptoms (great prostration, followed by sweating, distressing headache, tachycardia, tremor) not unlike those of Basedow's disease, do not stand a close examination with regard to their actual relation to that affection. Hence the conclusion may be rightly drawn: (1) That the question with reference to the genesis of exophthalmic goitre is far from being settled; (2) that in all probability there is a combination of diverse etiological factors, varying, of course, in degree and extent in different individuals, which act together in producing the disease under consideration.

(205) The Remote Prognosis of Sero-fibrinous Pleurisy.

Salanoue-Ipin has endeavoured to ascertain by means of statistics some information concerning the important question of prognosis in pleurisy (*Arch. de Méd. Navale*, No. 4, 1900). It has been stated that all cases of pleurisy are tuberculous unless proved to be otherwise, and consequently pleurisy *a frigore* does not in the opinion of some exist. The investigations of Kelsch Vaillard and others appear to support the conclusion that the vast majority, if not all, of cases of pleurisy not appearing in the course of some definite disease result from an invasion of the pleura by tubercule. Dieulafoy, Netter, Débove and Achard, on the other hand, believe that there are many cases of a simple primary pleurisy which are non-tuberculous. The importance of Salanoue-Ipin's observations is that they have been collected under the same circumstances, namely, sailors in the French navy. All cases manifestly tuberculous were eliminated as well as pyæmic or other forms of pleurisy having a definite history. The writer collected 352 cases of primary sero-fibrinous pleurisy. Thirty-two died during the course of the attack, and of the remaining 320, 131 died after leaving hospital. Of these 84 showed definite tuberculous affection, in 19 the cause of death was unknown; in 13 it was independent of tubercle, and 15 lost their lives at sea. Thus, the enormous proportion of tubercle is striking, and very probably the 19 cases of which the cause of death could not be ascertained included other cases of tubercle. As a rule, tubercle seems to appear very shortly after the outbreak of pleurisy, while if several years have passed it becomes much less common. Another interesting point emphasised by the writer is the high proportion of cases of tubercle among those leading a seagoing life. The idea that such persons are likely to escape tubercle is fallacious. They are exposed to considerable changes of temperature, and for many hours at a time are shut up in close confined spaces.

(206) Fibrinous Bronchitis.

Cesaris-Demel (*Giorn. dell' Accad. di Med. di Torin.*, July, 1900) publishes a case of fibrinous bronchitis (fatal) in a man, aged 50, due to pressure on the left bronchus from a large aneurysm of lower part of the aortic arch. The left lung was completely atelectic. There was no evidence of previous bronchitis. Pressure on the bronchial vessels doubtless led to separation and death of the pulmonary epithelium, which acted as a fibrin ferment on the plasma, and so produced the fibrinous clot, which measured 10½ cm. in its greatest length. The case adds a further possible symptom to the number of those already known in aortic aneurysm, and shows that pressure may be a cause of fibrinous bronchitis.

(207) The Plantar Reflex in the Newborn Infant.

Gaetano Finizio (*Pediatria*, vlii, 254, August, 1900) draws certain conclusions from the study of the plantar reflex in over 500 newborn infants in the Maternity at Naples. He notes the difficulties of exact observation of this reflex in young infants, and points out that it is necessary to elicit it when the muscles of the leg and foot are relaxed; further, he has found that in the same newborn infant tickling the sole will cause flexion of the toes, while pricking will produce extension, so that in order to get reliable results the same degree of cutaneous excitation must be employed. In 5 per cent. of the cases (infants from 1 to 3 days old), the plantar reflex was absent: in 10 per cent. it was indefinite; in 15 per cent. it produced extension of the great toe alone or of all the toes; and in 70 per cent. it caused flexion of the toes. It may therefore be concluded that in the great majority of newborn infants the plantar reflex shows itself in flexion of the digits. The cases in which there was digital extension were generally those in which the birth had been abnormal—for example, delayed labour, forceps application, face presentation, etc.; in two instances in which forceps had been used there was flexion of the toes on one side, and extension on the other. The plantar reflex is one of the most constant of all the skin reflexes: on the other hand, the cremasteric reflex is only met with in 2 per cent. of newborn infants: the patellar reflex, like the plantar, is present in 70 per cent. of the cases. When extension of the toes is met with, the other cutaneous and tendon reflexes are often well marked and active.

SURGERY.

(208) Non-Congenital Urinary Pouch in the Male.

Pouly (*Lyon Médical*, February 4th, 1900) relates a case of rare type in the practice of Rollet of Lyons. The patient was a man aged 64. He had never contracted gonorrhœa, but his urethra was ruptured by a blow in the perineum when he was 35 years old. For twenty years after the accident he suffered badly from stricture; then he underwent internal urethrotomy. Three years before admission into hospital

suprapubic lithotomy was performed, and three large calculi removed from the bladder. A year later the patient broke a catheter during use, external lithotomy was performed, and the end of the instrument, 2 inches in length, extracted. Then, about twelve months later, he noticed that during micturition a small tumour formed under the root of the penis, immediately in front of the scrotum. It increased steadily as the bladder emptied, and then went down just as regularly when the urine ran out of the meatus at the end of micturition. It was perfectly transparent, fluctuating, free from tenderness, and from any evidence or history of inflammation. It was not adherent to the skin, which was not red. Urine coming from the meatus in a stream at the beginning of micturition was first collected. Then the patient pressed the pouch, as he was always obliged to do under the circumstances, and it emptied; the urine collected was then found identical with the first sample. The prostate was enlarged. Full-sized catheters could be passed into the bladder, meeting with no resistance, except at the prostate. In retracting the catheter the end could be manœuvred into the pouch. The patient bore signs of chronic urinary poisoning. Rollet made an incision over the pouch. The cavity was clearly formed by a dilatation of the floor of the urethra, a little under 2 inches in the long axis. The tissues involved in the pouch were quite healthy; they were partially incised; then a No. 15 Nélaton's catheter was introduced, and the canal closed with three layers of suture. The patient's urine, it was already known, contained pus. On the tenth day uræmic symptoms set in and death followed within 24 hours. Both kidneys were suppurating, especially the left. Only 6 cases of non-congenital urinary pouch are recorded. They include three varieties: (1) Dilatation of urethra above an impacted calculus (Petit, 1; Voillemier, 2 cases); (2) dilatation of urethra after its rupture immediately above an impacted calculus (Paoli, 1 case); (3) dilatation of urethra apparently developed behind a stricture after chronic gonorrhœa (Chopart, 1 case); and (4) dilatation of urethra, following hæmatoma of perineum (Chopart, 1 case, in a postillion).

(209) Operative Treatment of Arterio-Venous Aneurysm.

STIMSON (*Annals of Surgery*, June, 1900) has recently brought under the notice of the New York Surgical Society a case of arterio-venous aneurysm of the femoral vessels from gunshot wound, in which he tied the femoral artery above and below the seat of communication between this vessel and the vein. The patient made a good recovery, and was discharged cured during the second week after the operation. In referring to the usual treatment of such cases by the application of the double ligature to both vein and artery, and extirpation of the sac, Stimson said that though he could conceive of cases where such a procedure would be preferable to simple double ligature, he held that an operation which did not interfere with the vein was less likely to cause subsequent trouble. By double ligation of the artery alone there is less interference with the circulation, and the danger of gangrene is diminished. In replying to some criticism made by Curtis, who is an advocate of the more radical operation, Stimson, whilst acknowledging that a recurrence is not unlikely to follow simple double ligation of the artery, pointed out that simultaneous ligation of the vein is a serious and sometimes a very bloody operation.

(210) Bladder Symptoms in Appendicitis.

DURET publishes a paper (*Sci. Méd. de Lille* 1900, and *Journ. de Méd.*, April 25th, 1900) in which he states the correlation which may exist between appendicitis and vesical symptoms. In the first place the vermiform appendix may be in actual contact with the bladder, and lesions of the former may therefore react upon the latter and produce a series of symptoms which are partly reflex, but in more severe cases may be due to actual involvement of the bladder itself. Thus retention, vesical tenesmus, dysuria, and frequency of micturition are recognised symptoms, but there may be a series of suppurative conditions as paravesicular abscess, vesical fistulæ in different forms, including salpingo-vesical, intestinal vesical, etc., all of which are accompanied by more or less severe cystitis and pyocystitis. Lastly, calculus may be due to appendicitis by adhesion between the two forms and the establishment of a fistula. These latter are, however, so extremely rare that the author considers it only necessary to mention them.

(211) Malignant Œdema of Eyelids.

THOINOT AND GIROT (*Progrès Médical*, January 20th, 1900) reports a case of this disease in a shepherd; it was due to a sting from an insect. There were cases of malignant pustule amidst flocks of sheep in the neighbourhood. The patient appeared to be dying, but on the application of compresses steeped in sublimate he rapidly improved and ultimately recovered.

(212) Congenital Lateral Ventral Hernia.

SCHENK (*Prag. med. Woch.*, No. 1, 1900) noted this rare condition in an infant which presented at the breech and was safely delivered. A swelling of the size of a walnut was observed on the right side, between the ribs and the crest of the ilium. It greatly increased when the infant cried, but was easily reduced when it was quiet. This hernia was found to slip through a hernial neck about two fifths of an inch in diameter. The finger passed through the neck could easily detect the edge of the liver Wyss declared that the hernia was of the lateral anterior ventral variety. There was no distinct evidence of congenital defect at the seat of the hernia or elsewhere. Yet it seemed most probable that the muscles on the right side of the abdomen were ill-developed owing to sharp pressure of the strongly-flexed right knee against the loin; when Schenck flexed the knee he found that it fitted into the gap in the muscles which formed the neck of the sac. This forced flexion of the knee in the fœtus is due to scantiness of liquor amnii in early pregnancy. A pad held on with strapping was applied to compress the sac.

MIDWIFERY AND DISEASES OF WOMEN.

(213) Mesenteric Cyst.

SCHRAMM (*Berl. klin. Woch.*, December 25th, 1899) operated on a woman, aged 48, free from any history of disease or injury until two years previously, when digestive troubles, constipation (very severe), abdominal swelling, and dyspnœa were noticed. Schramm found the abdomen extremely swollen, and tympanitic. On careful palpation a tumour of the size of an adult head was detected. It fluctuated, and was dull on percussion. There was resonance in both flanks. On vaginal exploration the tumour was found to be separate from the uterus. Ovarian cyst was diagnosed, and it happened that a tumour of this kind, as large as an orange, was discovered at the operation, where a median incision was made below the umbilicus, and a very thin-walled cyst, the chief cause of the enlargement, was then seen to lie between the folds of the mesentery. It was enucleated without much difficulty, and held over 13 pints of a watery fluid. The redundant mesenteric flaps were resected, and some vessels ligatured. The cyst wall was fibrous, and lined internally with a layer of endothelial cells. Schramm considers that this tumour was a cystic dilatation of the mesenteric chyle ducts. The ovarian cyst was also removed; the patient did very well.

(214) Retention of Dead Fœtus to Term.

BELLY (*Rev. Mens. de Gynéc., Obstet., et Pædiat. de Bordeaux*, June, 1900) reports a case where the fœtus died about the fourth month and was retained to term. The patient was 38, and had been married for eleven years; she had miscarried three times and borne two children to term. The last period was seen at the end of July, 1899. All the signs of pregnancy developed and proceeded normally till the end of November, when the patient received a shock. After that date she ceased to increase in size; indeed the abdomen soon began to grow less and less. The appetite and strength distinctly improved. The cervix was hardly if at all softened. The uterus seemed to be retroverted by a firm tumour, which felt more like a fibroid than a gravid uterine body. A case had recently been observed where amenorrhœa for five months and escape of colostrum-like fluid from the breasts had naturally given rise to suspicion of pregnancy, but at the operation the tumour was found to be a uterine fibroid with no fœtus in the uterine

cavity. On the 8th of May natural labour pains set in and Belly's patient was delivered of a fleshy mass weighing over three-quarters of a pound. It was firm, and whitish, the membranes were thickened and intact, the placenta was shrivelled and clearly had been for long detached from the uterus. On opening the membranes a thick dust-coloured fluid escaped and the fœtus appeared. It was covered with calcareous deposit which had almost obliterated the cranial sutures and made the limbs and even the cord rigid and brittle. In short, mummification had set in. In Vivie's recent case of retained fœtus septic symptoms set in; in Belly's case there was no evidence of sepsis. Fieux, in a discussion on Belly's case, referred to the death of the fœtus at the fifth month by twisting of the cord round the arm (*sic*). It was delivered four months later, just at term. Vivie believed that sepsis might occur even when the membranes remained intact. In long retention of a fœtus the cervix undergoes a characteristic toughening, quite unlike the toughness of that part of the uterus when gravidity does not exist.

(215) Echinococci Simulating Ovarian Dermoid.

STERNBERG (*Centralbl. f. Gynäk.*, No. 29, 1900) reports a case under the care of Gersuny, of Vienna. The patient was a girl, aged 20, who had noticed a tumour below the umbilicus to the right for two years; it grew steadily larger, and dull pains set in in the right hypochondrium. The tumour was very smooth and round, and fluctuated distinctly; its mobility was very marked. It seemed to be a dermoid of the right ovary. In Douglas's pouch lay a fixed, fluctuating tumour; its convexity rose high above the pelvic brim. Another tuberous mass lay in the left loin; it was movable, and seemed attached by a pedicle to the loin as far back as the left kidney, which could be easily defined. Abdominal section was performed. The right ovary was found stretched over the tumour, which lay to the right below the umbilicus. The tumour was enucleated from the broad ligament, and the incision with the remains of the ovary sewn together. The mass in Douglas's pouch was much more difficult to enucleate; the left ovary was stretched over its capsule, as on the right side. Then it became clear that the tumours were hydatid. The omentum was infested with echinococcus cysts of varied sizes; small cysts lay in the mesentery of the vermiform appendix. Two large cysts occupied the right lobe of the liver; they showed signs of old suppuration, and were no doubt the starting point of the disease. The mesenteric cysts were enucleated. One of the cysts in the liver was opened, then iodoform-glycerine emulsion poured in, and the cyst closed. The patient made a good recovery; prognosis is doubtful, as there may be cysts remaining in other organs. The ovary is rarely involved in hydatid disease.

(216) Hæmorrhage at Eighth Month; Rupture of Sinus Circularis.

DEMELIN AND GADAUD (*L'Obstétrique*, July 15th, 1900) report that a primipara, aged 31, was attacked with uterine hæmorrhage and sharp abdominal pain when advanced seven and three-quarter months in pregnancy. Next day the flooding ceased. The fœtal movements stopped on the day of hæmorrhage, March 12th. On the 17th the uterus was felt to be smaller; the fœtal heart had ceased to beat. The inferior segment was very thin. Rupture of the circular sinus was diagnosed by exclusion; there was no evidence of detachment of the placenta or of placenta prævia. On March 18th a macerated fœtus was expelled spontaneously; there was no trouble with the placenta. Recovery was rapid. There was a mass of clot close to the border of the placenta which compressed its cotyledons; from the clot dark-brown vascular tracts ran on each side to the circumference of the placenta, but at the point where the clot touched the placenta no trace of the circular sinus existed.

THERAPEUTICS.

(217) The Dangers of Hypodermic Injections of Gelatine.

FREUDWEILER (*Centralb. f. inn. Med.*, July 7th, 1900) considers that any conclusions as to the real value of hypodermic injections of gelatine as a hæmostatic are premature. It is certain, however, that the injections are not so harmless as has been generally stated, and that they have been followed by the appearance of boils, and by the production of thrombi in undesirable positions, such as the carotid arteries. One of Barth's patients died in convulsions shortly after an injection. The writer now reports two cases where the gelatine certainly aggravated the disease for which it was given, namely, hæmorrhagic nephritis. (1) A girl, aged 15, had had acute nephritis when 7 years old, from which she was said to have recovered completely. In May, 1899, the present illness began, the legs became œdematous, and the cardiac apex was found in the nipple line. The quantity of urine amounted to 21 or 28 ozs. daily, the specific gravity was 1012 to 1015, and there was from 1½ to 3 per mille albumen and a quantity of blood. As the condition did not improve 7 ozs. of a solution consisting of 1 gram of gelatine, 2 grams of glycerine and 100 c.cm. of water were injected under the skin of the thigh on both January 4th and January 6th. On January 6th and 7th the urine became smoky and contained numerous red corpuscles and a quantity of brown detritus. In the filtered urine methæmoglobin was present. Besides the increase in the hæmaturia and the addition of hæmoglobinuria the quantity of albumen steadily rose till it reached 9 per mille on January 18th. Though the hæmaturia and the hæmoglobinuria gradually disappeared, the quantity of albumen remained permanently double as much as it was before the injections. (2) A woman, aged 27 years, had acute hæmorrhagic nephritis after the puerperium. The renal hæmorrhage continued, and an injection of 10½ ozs. of a solution consisting of two grams of gelatine and 100 c.cm. of sterilised normal saline solution was given. The immediate result was, as in the first case, an intense hæmaturia and hæmoglobinuria with an increase in the albuminuria, but 8 days later the urine had returned to the condition in which it was before the injection, and no permanent damage resulted. These cases show that diseased kidneys are an absolute contraindication to the employment of gelatine as a hæmostatic. In this connection a case of Bauermeister is instructive: 15 c.cm. of a 1 in 15 gelatine solution were injected hypodermically 3 times a day for severe metrorrhagia in a woman with chronic parenchymatous nephritis. On the second day there was headache, and the patient rapidly succumbed with typical symptoms of uræmia. It is possible also that Barth's patient died of uræmia.

(218) Digitalis, Digitalin, and Digitoxin.

ARNOLD AND WOOD (*Amer. Journ. Med. Sci.*, August, 1900) have investigated the question whether any of the proximate principles found in digitalis represent the therapeutic activity of the crude drug. They avoid as useless any discussion as to the chemical relations of the various bodies which each in turn have been claimed by different investigators as the active principle of digitalis, and confine themselves to an examination of the comparative value of the tincture of digitalis of "digitalinum germanicum" (Merck's digitalin), which is readily soluble in water, and of digitoxin (Merck's). The experiments were made on dogs, and the drugs were injected intravenously. They conclude that both digitalin and digitoxin produce the full effects of digitalis on the circulation. (1) All three drugs stimulate the cardio-inhibitory mechanism both centrally and peripherally. The slowing of the heart is prevented or abolished by the injection of atropine, and is not wholly prevented by cutting the vagi. This shows that the stimulation of the cardio-inhibitory mechanism is limited chiefly to the peripheral part of the apparatus, though since the heart beats may increase in frequency on section of the vagi after they have been slowed by digitalis, stimulation of the vagus centre must also contribute. (2) Digitalis, digitalin, and digitoxin all cause a rise of blood pressure, due to constriction of the blood vessels, and a simultaneous increase in the force of the heart beats. In exceptional cases, where the strength of the cardiac beats does not increase in proportion to the peripheral constriction, the blood pressure may fall. (3) Toxic doses cause a great increase in the pulse-rate with a sudden rise in the blood pressure. This is due to paralysis of the cardio-inhibitory apparatus, since stimulation of the vagus at this period does not produce the usual slowing of the pulse-rate. (4) Very large doses of any of the

three cause the heart to stop suddenly in diastole. This is due to a direct paralysis of the cardiac muscle and not to excessive vagus stimulation; it is not prevented by previous paralysis of the inhibitory mechanism by atropine, and the vagi are always paralysed in the later stages of poisoning. The pharmacological action of both digitalin and digitoxin resembles closely, if it is not identical with, that of tincture of digitalis, and it is therefore surprising that digitalin, which is a perfectly uniform and stable body, should have the reputation of being clinically "uncertain." It is very unlikely that the substance should affect so powerfully the circulatory system of a dog and not that of man. The writers believe that the explanation of the discrepancy between the results of experiment and of clinical experience is that digitalin is given clinically in too minute doses. While comparative experiments on dogs show that gr. $\frac{1}{7}$ of digitalin corresponds to only about 16 minims of the tincture of digitalis (0.15 gram of the leaves), the dose of digitalin usually recommended is $\frac{1}{60}$ to $\frac{1}{30}$ gr. These important results require clinical confirmation. Wenzel and von Starck have reported good results with digitoxin, in doses of $\frac{1}{4}$ to $\frac{3}{4}$ mg. several times a day; but Arnold and Wood consider that it is too irritant for human medication. When given by the mouth it is liable to upset the stomach, and when injected hypodermically to cause abscesses. It is also very insoluble, and, being slowly absorbed and irregularly eliminated, has a marked tendency to cumulative action.

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(219) Large Doses of Olive Oil in Stenosis of the Pylorus and Duodenum.

IN the Section of Surgery at the recent International Congress of Medicine, Dr. Paul Cohnheim presented a report on the therapeutic action of olive oil in cases of organic and spastic stenosis of the pylorus and duodenum, and in consequence of those conditions (gastrectasia). The paper was based on his own observations and experiments, made during the past year. He drew from them the following conclusions: (1) Cases of gastrectasia dependent not on an organic obstacle but on spasm of the pylorus, following an ulcer or fissure at the orifice of the stomach, are cured or markedly improved in a short space of time by the introduction of large doses of oil (100 to 250 grs. daily). (2) In the same way cases of pyloric or duodenal stenosis of cicatricial character accompanied by secondary gastrectasia, are cured in a relative sense by the systematic employment of large doses of oil, that is to say, the patients feel no discomfort provided they avoid all excess. In such cases the resistance caused by friction is diminished by the mechanical effect of the oil. (3) Cases of relative stenosis of the pylorus and duodenum, which are characterised by continuous secretion and pyloric spasm after the principal meals, are improved or completely cured by the oil. (4) It is well that the oil should be taken or administered through a tube during a more or less considerable period of time, thrice a day in doses of 50 c.cm. an hour before meals. If for other reasons this plan is impracticable a dose of oil (100 to 150 c.cm.) at the temperature of the body should be given once a day. The use of the oil meets three indications: It causes relaxation of the spasm, it diminishes the friction, and improves the nutrition, since the oil, even in cases of very pronounced stenosis, reaches the small intestine and is absorbed. (6) In cases of ulceration the oil acts on the spasm as a narcotic. If it be pure it has no unpleasant secondary effect; it causes neither eructations nor diarrhœa; patients take it willingly. (7) Cohnheim has hitherto not succeeded in obtaining any favourable effect from the oil in cases of cramp of the stomach of purely nervous character. This fact supplies a means of differential diagnosis between nervous and organic spasm. (8) By means of the oil cure it is possible to relieve a number of cases of pyloric stenosis with consecutive gastrectasia to such an extent that surgical intervention becomes superfluous. Cohnheim therefore thinks it is desirable to try this method of treatment in cases of stenosis of the pylorus before having recourse to operation.

PATHOLOGY.

(220) Complete Transposition of Viscera.

LENORMANT AND DURAND-VIEL (*Bull. et Mém. de la Soc. Anat. de Paris*, March, 1900) have dissected a perfect case of "situs mutatus," or complete transposition of the viscera. The patient was a woman, aged 22, who died of subacute phthisis. It is not stated that the anomaly was detected before death. There was no defect of development in any of the viscera. The right lung had three lobes, the left two, the apex of the heart pointed to the right, the arch of the aorta passed backwards from left to right, the right recurrent laryngeal passed under and turned upwards behind it, whilst the corresponding nerve on the right side turned up under the subclavian artery. The innominate artery gave off the left subclavian and common carotid, the right subclavian and common carotid each arose direct from the arch. The azygos veins were reversed in a similar manner, and it was the right vagus that ran along the front of the œsophagus. The stomach and liver were also consistently reversed, the spleen lay above the right loin, the head of the pancreas lay to the left, the tail to the right. The vena cava lay to the left of the aorta, the right ovarian vein ran into the renal vein, the left into the vena cava.

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(221) The Detection of Typhoid Bacilli in Stools.

REMY (*Ann. de l'Inst. Pasteur*, August 25th, 1900) reviews the progress made towards the establishment of the specific *rôle* played by Eberth's bacillus in typhoid, and its distinction from the B. coli. There are still some who favour the view that the latter is not distinct from the typhoid bacillus, or that they are but varieties of one species both capable of producing the symptoms of typhoid. These opinions have been founded (1) on the alleged rarity of Eberth's bacillus in the stools; (2) on the antagonism between the two bacilli in artificial media; and (3) or the almost constant absence of the typhoid bacillus in water which has caused typhoid while the B. coli and other forms of the nature of transition types are found therein. These objections must be answered. Remy has devised a gelatine medium containing a large proportion of salts and of acid reaction, on which he was able to cultivate and separate the typhoid bacillus from the stools of 23 patients in every case successfully. He takes exception to the commonly used gelatine of Elsner on account of the inconstancy of its composition. He remarks on the importance of being able to detect with certainty the bacteria in the stools, in view of the fact that the serum reaction test cannot always be relied on. The organisms are most numerous in the second week, and gradually diminish in numbers after this; in 3 cases they were found in the stools when the clinical signs were inconclusive and the serum reaction negative, enabling the physician in charge to make a definite diagnosis, which would otherwise have been impossible.

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(222) Etiology of Whooping-Cough.

THE pathological cause of whooping-cough is far from having been satisfactorily decided; several organisms have been described as present in the disease, but none have been shown capable of reproducing it. Luzzatto (*Centralbl. f. Bakt.*, June 30th, 1900) has studied a series of 41 cases occurring at Graz. Sputum was obtained, washed with water, and examined microscopically. Inoculations were also made on blood serum and agar plates smeared with human blood. Two different organisms were present in almost all cases, one short and thick, often in pairs, and morphologically resembling diplococcus lanceolatus and allied forms. It is probably identical with that found by Czaplewski, and shows the same bipolar staining when treated with acetic acid and weak carbol fuchsin. It was pathogenic to mice and rabbits, but intratracheal injection in a monkey produced no result. The second form commonly present was a long slender bacillus; in several cases of simple pertussis without lung signs it was present in pure culture and in great quantity. It was also found *post mortem* in the smaller bronchi in two instances. Luzzatto consists that this form is possibly specific, though he was not able to reproduce the disease by intratracheal injection in a young dog. It resembles the influenza bacillus, but is distinguished by certain characteristic appearances in cultures.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(223) Bilateral Pneumothorax.

Drasche (*Wien. med. Woch.*, June 30th, 1900) states that Skoda, in all his large experience, had never met with a single case of bilateral pneumothorax which could be diagnosed during life, and that he considered that it would be impossible to do so unless the second pneumothorax were incomplete or partial. In ten years there were 318 necropsies on cases of tuberculous pneumothorax from the Vienna General Hospital, and among these there were 11 in which the pneumothorax was bilateral. In some, perhaps the majority of cases, the second pneumothorax occurs just before death, and no diagnosis is possible. Drasche has observed 3 cases of bilateral pneumothorax 2 of which were diagnosed during life. (1) A woman, aged 22, had advanced phthisis. Pneumothorax occurred first on the right side and then, within twenty-four hours, on the left, the symptoms being on both occasions those of acute suffocation. The position of the heart was practically unaffected. The woman lived for twelve hours after the occurrence of the second pneumothorax, and a fairly thorough examination was possible. The conditions claimed by Skoda as necessary were present, though in inverted order, the second (left) pneumothorax being complete, while the first (right) pneumothorax was partial, owing to the presence of adhesions between the whole of the posterior surface of the right lung and the parietal pleura, and was limited to a portion of the anterior section of the right pleural cavity. On the left side there were three perforations of the pulmonary pleura, but so minute that the escape of air into the pleural cavity must have taken place very slowly. This doubtless contributed to the exceptional duration of life after the occurrence of the second pneumothorax. *Post mortem* the diaphragm formed a projection convex towards the peritoneal cavity, and there was no fluid in either of the pleural cavities. (2) In this case the duration of life after the establishment of bilateral pneumothorax was much shorter than in the first—namely, two hours. A phthisical man, aged 22, developed a left pneumothorax on March 15th. Under treatment he improved considerably, but on April 18th he had a sudden attack, accompanied by dyspnœa, cyanosis, and syncope. The diagnosis of an additional pneumothorax on the right side was made. The chest on the right side suddenly increased in circumference, and there was tympanitic resonance over it. *Post mortem* air escaped with a hissing sound from the pleural cavities when opened. The left lung was compressed against the vertebral column, and there was a small amount of serous fluid in the pleural cavity. In the right pleural cavity there was air only. In both lungs there were fairly large perforations of the pleura, which communicated with cavities. (3) A phthisical man, aged 26, developed left pneumothorax on June 11th. The heart was displaced considerably, showing that the air in the pleural cavity was under considerable pressure. On July 24th, while up and about, he gave a sudden cry, fell on to the bed, and died almost immediately. *Post mortem* pneumothorax, complete on both sides, was found. The perforation over the right lung was large, and so allowed the air to escape suddenly. Death was therefore instantaneous.

(224) Etiology of Chorea Minor.

T. Frolich (*Norsk. Mag. f. Laegevidensk.*, lxi, 901, September, 1900) deals with 47 cases of chorea minor treated during seven years in the hospital of the University of Christiania. The age of the patients varied from 3 to 16 years, and in 28 of them the disease had begun from seven to eleven years previously; 39 were girls and 8 boys. In 24 cases there was the family history of rheumatism or of psychical affections. Among the 47 patients there were 15 who had had rheumatic fever, either before or during the chorea, and in 16 (34 per cent.) the chorea had begun or had been accompanied by febrile phenomena with angina, articular affections, or erythema nodosum. In these 31 cases the author recognises the element of infection; in 4 others the chorea had undoubtedly followed infectious diseases, such as scarlet fever and influenza, and in the remaining 12 instances there was some slight evidence or possibility of infection. It is therefore claimed that in 80.85 per cent. of the cases the element of infection was definitely proved. Frolich specially refers to an interesting case in which the patient was first attacked with gonorrhœal vulvo-vaginitis, then with chorea, with endocarditis, and finally with monoarticular gonorrhœal rheumatism.

(225) Prognosis of Pneumonia.

Huchard, in a clinical lecture (*Journ. de Méd.*, July 10th, 1900), describes the case of a woman, aged 44, admitted under his care with pneumonia. There was a considerable degree of obesity. The disease had already lasted some days, and physical signs showed scattered patches of consolidation in the right lung. There was rusty sputum; dyspnœa was intense, but pyrexia was never a very marked symptom. Diuresis was free, but there was a considerable amount of albumen present in the urine. The patient died, and on *post-mortem* examination a right-sided pneumonia was found with some pleural effusion. The chief point shown by examination of the organs was a general fatty infiltration and degeneration. The lecturer showed that in all cases of pneumonia where adiposity is a marked feature the unhealthy condition of the organs is a very much more important factor than the actual amount of lung disease or the degree of pyrexia. It is on this account that the prognosis of pneumonia is so good early in life but so grave in later years. In cases such as this Huchard recommends bleeding to relieve the heart, and subsequently the administration of digitalis. Theobromin in small doses is also serviceable. The diet ought to be exclusively milk. Another point on which Huchard lays considerable stress is the amount of chlorides present in the urine. He states the fact that in every case of pneumonia in which the total chlorides fall below 1 gram the prognosis is very grave. Whatever be the explanation, the absence of chlorides in the organism indicates a fatal prognosis. Chlorides are absolutely necessary for gastric secretion and for the maintenance of nutrition, and accordingly Rommelaere states that those cells which chiefly require chlorides die under such conditions. The estimation of these salts, therefore, in the urine should not be neglected, as is so frequently done, as the amount of chlorides will help to indicate the prognosis. It is suggested that when chlorides are absent they should be replaced by means of salt injections, well-salted foods, etc.

(226) Tuberculous Glands in Relation to General Tuberculous Infection.

Von Noorden (*Münch. med. Woch.*, 1900, No. 4) states his opinion that now that so much attention is being paid to the subject of tuberculosis, the *rôle* of tuberculous glands as foci where the bacilli may long remain latent should be insisted on. According to different statisticians, between 70 and 90 per cent. of all children suffer at one time or another from "enlarged glands." Whether this occurs in connection with some infectious disease or with a general scrofulous habit of body, the glands usually become infected with the tubercle bacillus; they may of course be definitely tuberculous to begin with. They remain in a state of chronic inflammation, and tuberculosis of the lungs is often to be traced to the multiplication and transference of the organisms from them. Von Noorden urges the value of the tuberculin test in cases where the tuberculous nature of the swelling is not certain, and incidentally suggests its value in distinguishing such a condition from sarcoma, Hodgkin's disease, etc. He has discarded all treatment except removal by operation as early as possible, even in the first year.

SURGERY.

(227) Ligature of the Abdominal Aorta below the Diaphragm.

Keen of Philadelphia (*Amer. Journ. of the Med. Sciences*, September, 1900) records a case of ligature of the abdominal aorta just below the diaphragm, the patient surviving for forty-eight days. A man, aged 52 years, married, labourer, and with the probable history of syphilis, had suffered for two months

from severe epigastric pain radiating to the back. There was constipation and anorexia. The urine was normal. The examination of the abdomen showed a globular tumour half way between the umbilicus and the xiphoid process, and nearly 3 inches in diameter. It gave distinct expansile pulsation and a *bruit* on auscultation, and was diagnosed as an aneurysm. Operation was proposed, but the patient refused and left hospital. Five days later he was brought back in an ambulance, and examination showed in addition to the above tumour, the presence of a hæmatoma over the whole of the left side of the abdomen, and extending to 1½ inch across the linea alba. This tumour was soft, smooth, and elastic. The patient was in a condition of collapse, with very feeble pulse, but rallied under a small dose of alcohol, and an operation was at once made, as it was evident the aneurysm had ruptured and death was imminent. On opening the abdomen a large retroperitoneal hæmatoma appeared on the left side and connected with the aorta. In view of the patient's alarming condition and the certainty of fatal hæmorrhage if the clot were removed, the wound was closed. The temperature after the operation rose to 101°, and then fluctuated between 99° and 100°. The patient improved, and the effect of gelatine injections (2 per cent. in sterile normal saline solution) was tried without benefit. At the second operation (December 12th) the abdominal aorta was ligatured after exposing it above the pancreas and between it and the stomach. The working space above the aneurysm was 2 to 2½ inches. With the fingers the tissues on each side of the aorta were torn through and the vena cava was separated, four strands of disinfected floss silk were passed round, and the aorta ligatured under considerable difficulty. When this was completed pulsation ceased in the femoral artery and in the sac of the aneurysm, while the man's head, face, and neck became deeply congested and almost livid. This lividity subsided in a few hours. Ether was used in the operation, and the duration of the anæsthesia was one hour and twenty-five minutes. The abdomen was flushed out with salt solution and closed, and the legs (which were cold) were wrapped in cotton-wool and surrounded with hot-water bags. Collateral circulation was set up by the external mammary and epigastric arteries in front. On January 10th the patient sat up in bed for a while. Gelatine injections were made into the now diminished sac of the aneurysm. Eventually the patient developed chills and rigors, being a sufferer from malaria, and died 48 days after the operation. The necropsy showed that much oozing had taken place into the abdominal cavity in the neighbourhood of the ligatures which had cut through. The kidneys and liver were normal, but the bladder was the seat of myxomatous tumours, a very rare condition. A summary of cases of ligature of the aorta (13 in all) is appended to Keen's paper, the first of these being the classical one of Sir Astley Cooper.

(228) Ligature of the Aorta.

TILLAUX (*Bull. et Mém. de la Soc. de Chir. de Paris*, May 8th, 1900) reports a case of diffuse aneurysm of the left external iliac artery in a man aged 56, which was treated by median laparotomy and proximal ligature. The aneurysmal swelling which had evidently resulted from the accidental rupture of a primary aneurysm involving the distal portion of the external iliac artery and the commencement of the common femoral artery was as large as the adult head, and extended from the groin to a line a little below the level of the umbilicus. The author, finding it impossible to excise this large mass, practised ligature of a large vessel which he believed to be the common iliac artery of the left side. The patient did well for some days after this operation, but subsequently became weak and lost flesh, and presented signs of obstruction to the venous circulation in both lower extremities. The swelling increased in size and again pulsated. Before the appearance of the unfavourable symptoms neither limb presented any signs of disturbance of the circulation. Both were free from pain and swelling, and the temperature of the left was higher by half a degree than that of the right limb. The patient died on the thirty-ninth day after the date of the operation. At the necropsy it was found that the aorta just above its bifurcation had been tied, and not, as had been supposed, the common iliac artery. This case is certainly one of much interest and importance. Ligature of the aorta is a very rare operation, this being the twelfth instance on record. The death of the patient, it is pointed out, could not be attributed to the operation, as the fatal result occurred just as it would have done had such treatment not been practised.

(229) The Way to the Gasserian Ganglion.

KRAUSE (*Centralbl. f. Chir.*, No. 16, 1900) in supporting his own against rival operations for the relief of trifacial neuralgia, states that every surgeon who has attempted to extirpate the Gasserian ganglion on the living subject knows that the difficulties of the operation begin when the third branch has been exposed within the cranial cavity. At this stage it is necessary to have a clear view of the field of operation which lies between the base of the cranium and the dura mater. In order that the ganglion may be freely exposed the temporal lobe of the brain together with its covering of dura mater must to a sufficient extent, though yet with as little force as possible, be detached from the middle cranial fossa. In any other method the operator must work in the dark in a very dangerous region, and run the risk of wounding the cavernous sinus, the internal carotid, or one or more of the three motor nerves of the eye. With the object of reaching the ganglion with the least possible disturbance of the brain, the cranial cavity should be exposed at the junction of the lateral wall with the base of the skull. It is quite unnecessary, it is asserted, to remove any portion of the zygomatic arch. The author has recently modified the first stage of his operation by cutting away the base of the osseous portion of his lateral osteoplastic flap. After this flap has been formed by the use of Gigli's wire saw and division of the soft parts, it is turned down and the portion of bone forming its base is broken down. The bone between the line of fracture which usually runs across the thinnest part of the squamous portions of the temporal bone above, and the infratemporal crest below, is then cut away, and thus free access is permitted to the base of the cranium.

MIDWIFERY AND DISEASES OF WOMEN.

(230) Prolapse of Urethral Mucous Membrane.

VOILLEMIN (*Thèse de Paris*, 1900) attributes this condition to unusual laxity of the submucous connective tissue, which is normally abundant. The mucous membrane slides downwards till it appears at the meatus as a more or less circular pad. This disorder is met with in children from 2 to 12, and in women between 50 and 75; it is exceptional in adults in the prime of sexual life. The predisposing causes are said to be weakening of the tissues concerned from different reasons, frequent child-bearing, and senile involution. The most common exciting cause is straining in coughing, defæcation, and micturition. Hence prolapse occurs very rapidly in some cases. Vulvo-vaginitis, urethritis, and injuries appear to have some influence in causing this disease. The first symptom is dysuria; straining, to which the patient naturally resorts, increases the obstruction by forcing down more mucous membrane. A little red projection is then to be detected, generally on the posterior edge of the meatus; sometimes a second lies on the anterior edge; the two puzzle the observer as to their nature. More rarely at this early stage a complete circle of mucosa comes down, an appearance easier to interpret correctly. When established the prolapse causes sharp pain not only during micturition, but also in walking, and in making any effort. Coitus becomes very painful. The prolapse bleeds during micturition and at other times, but never severely. When advanced the everted mucosa becomes œdematous and very painful, small areas of slough develop, and may cause severe bleeding. Diagnosis is easy when the prolapse is complete, as a probe can be passed through the centre of the red swelling, but cannot be pushed at any point between the swelling and the urethral walls. At an early stage reduction of the prolapse is often sufficient if a compress be applied, and the patient kept at rest. Astringent lotions may prove beneficial. Cauterisation is less satisfactory, ligature not to be thought of. The thermo-cautery or galvano-cautery may be used for the removal of the mass, but excision with scissors, followed by suture of the edges of the mucous mem-

brane to the border of the meatus, is the best proceeding for the permanent cure of a large prolapse.

(231) Extraction of Living Twin 19 Minutes after Death of Mother.

Kirch (*Centralbl. f. Gynäk.*, No. 25, 1900) was called in by the friends of a shopkeeper's wife who, they said, had just died suddenly three-quarters of an hour after giving birth to a child. She was 40, and subject to mitral disease, the result of rheumatism. Very grave cardiac symptoms had developed at the end of the previous pregnancy. Kirch at once visited the patient, who lived close to his house; he found her quite dead; much sanious mucus had run out of her mouth on to the pillow. A nurse was attending the new-born child. Kirch found a fœtal leg projecting from the vulva. He at once extracted the fœtus—it was asphyxiated, but was revived; however, it died within a few hours. On the evidence of Kirch and the nurse the second twin was delivered just 19 minutes after the death of the mother. The husband stated that the patient had calculated term at three weeks later. She was working in the shop till 10 P.M.; a few minutes later pains set in, then the membranes ruptured. She was speedily put to bed and the child was at once delivered spontaneously. Dyspnœa then set in, lasting for some time, when the woman suddenly ceased to breathe, froth escaping from the mouth. Kirch arrived a little before midnight.

(232) Normal Labour after an Unnecessary Cæsarean Section.

Bissell (*Amer. Journ. of Obstet.*, April, 1900) publishes clinical details of a case very grave from an ethical aspect. A married woman, aged 19, and pregnant, was subject to prominent coccyx. Her physician did not even make an effort to deliver her with forceps; he had satisfied himself several months before term that the child could not be born through the genital canal, and openly declared that the long-looked for opportunity of his life had arrived. He performed Cæsarean section, and afterwards advised the patient to have her uterus removed, for another pregnancy, in his opinion, would kill her. She consulted Bissell about two years after the operation. The pelvic measurements were perfectly normal. The coccyx was slightly sensitive to pressure, and inclined considerably forward, but it was movable and did not diminish materially the antero-posterior diameter of the outlet. A few months later she became pregnant. Bissell attended her in labour. He found the pains strong, the head presented in the right occipito-anterior position. But a few hours later, as the head did not descend well and the pains were weak, he ruptured the membranes. This did not stimulate uterine action much, so the forceps was applied, and the child, which weighed a little under eight pounds, was delivered with comparative ease. The perineum was lacerated, but immediately repaired. Mother and child did well. Thus the previous operation, though utterly unjustifiable, did no more harm than to cause slight atony of the uterus.

(233) Cæsarean Section twice in the Same Subject.

Selhorst (*Centralbl. f. Gynäk.*, No. 27, 1900) was compelled to operate on a patient, aged 40, subject to flat, rachitic pelvis, with a conjugate of $3\frac{1}{2}$ inches. Craniotomy was practised at her first three labours. At the fourth Cæsarean section was performed, the usual vertical anterior incision being made. Nine years later Selhorst operated, as the patient was pregnant for the fifth time. He intended to do the operation before labour pains set in, but the patient came to him too late. He had great trouble in the first stage of the operation, as the uterine cicatrix adhered firmly to the abdominal wall; there were also strong adhesions to coils of small intestine, and suture-track abscess in the uterine tissue. As the serous coat of the intestines was damaged during separation of the coils, it had to be sewn over. The child was extracted alive and saved. The uterine wound, made a little to the right of the cicatrix, was closed with deep and serous sutures. The operation, on account of the difficulties in the first stage, lasted two hours. The patient did very well. Selhorst prefers the old to the fundal incision, as the subsequent contractions affect the sutures less, the hæmorrhage is not greater, and the extraction of the child quite as easy. He insists that ether is a safer anæsthetic than chloroform, especially for the child. At the first Cæsarean operation, which presumably was shorter than the second, chloroform was used, but the child was lost.

THERAPEUTICS.

(234) Glycerine as a Medium for Antiseptics.

Von Wanschheim (*Wien. klin. Woch.*, July 26th, 1900) has investigated the efficacy of various antiseptics when dissolved in glycerine. The most important results were obtained with glycerine of carbolic acid, which has been commonly substituted for carbolic oil, since Koch proved that carbolic acid lost all power as a disinfectant when mixed with oil or absolute alcohol. Glycerine itself has some power as a disinfectant both when pure and when moderately diluted with water; less than 30 per cent. glycerine has no effect on the bacterium coli or the staphylococcus aureus, and but little on the cholera vibrio; 50 to 70 per cent. glycerine kills the staphylococcus more quickly than pure glycerine, whilst pure glycerine kills the bacterium coli in a few days, but when diluted has little effect on it. Owing to this antiseptic action of glycerine it would appear theoretically to be an excellent medium for antiseptics. Practically, however, this is not the case. With three exceptions all the substances used in the writer's experiments developed a much feebler antiseptic power when diluted with glycerine than when mixed with water. This applies to solutions of sulphuric acid ($\frac{1}{2}$ per cent.), oxalic acid (1.89 per cent.), caustic potash (1.5 per cent.), carbolic acid, orthokresol, parakresol, and metakresol ($\frac{1}{2}$ per cent.), creolin (2 per cent.), lysol (2 per cent.), saprol (2 per cent.), formol (2 per cent.), tannin (10 per cent.), and thymol (1 per mille). For instance, the lysol solution with glycerine failed to kill the staphylococcus aureus after thirty minutes, while the watery solution, after the addition of an emulsion of staphylococcus, was sterile after five minutes. The three exceptions to this rule are (1) glacial acetic acid, which has the same bactericidal power with glycerine as with water, and acetone and hydrochloric acid, which are more powerful bactericides when mixed with glycerine than when diluted with water. The addition of glycerine to antiseptic soaps likewise lessens greatly their antiseptic value. Thus a 10 per cent. solution of soft soap in pure glycerine to which 5 per cent. of carbolic acid is added requires thirty minutes to destroy the staphylococcus, while a solution made with soap and water instead of water and glycerine requires only five minutes; $2\frac{1}{2}$ and 5 per cent. solutions of carbolic acid in glycerine have no antiseptic action whatever, though a 10 per cent. solution in glycerine has the same value as one of equal strength in water. It is a remarkable fact that the addition of water to solutions of carbolic acid in pure glycerine increases their antiseptic power, so that a 5 per cent. solution of carbolic acid in pure glycerine, which is useless as an antiseptic, becomes efficient when it is reduced to a $2\frac{1}{2}$ per cent. solution by the addition of an equal quantity of water. In the same way an efficient 10 per cent. solution of carbolic acid in pure glycerine becomes useless if reduced to a 5 per cent. solution by the addition of glycerine, but remains efficient if reduced to a 5 per cent. solution by the addition of water. In fact, a solution of carbolic acid in equal parts of glycerine and water is equal as a disinfectant to a solution of the same strength in water alone. Hence carbolic acid, when used as an antiseptic, should not be mixed with pure glycerine in concentrations of less than 10 per cent., or, if less concentrated solutions are required, the glycerine should be diluted with an equal quantity of water.

(235) Methylene Blue as an Analgesic.

Klemperer (quoted in *Méd. Mod.*, June 27th) has recently published his results obtained by the employment of methylene blue as an analgesic in 27 cases of sciatica. In 8 cases it failed entirely, in 6 cases the pains marvellously disappeared in five days, in the remaining 13 the sciatica resisted the treatment for several weeks, but the pains were less frequent and the patients were enabled to sleep at night. Three to six capsules containing 0.45 gram (about 7 grs.) were given daily. Slight gastric disturbances occurred, but they

involved no serious inconvenience, and any pain during micturition was easily annulled by adding a little nutmeg to each dose. The writer has found the medicament very useful in tabes, neuralgia, and myalgia in diminishing the intensity of the pains. In these conditions it is best to commence with 0.25 gram (4 grs.) twice a day, and very gradually increase the dose up to 1 gram (15½ grs.) or more. The substance must be absolutely pure, otherwise gastric, toxic, and diarrhœic troubles will follow. It should be administered in well-made cachets, so as to avoid any coloration of the oral cavity. The patient should be warned of the urinary change of colour, and that some slight vesical spasm and dysuria may occur. The action of the blue causes at first a numbness, passing gradually into analgesia; its action is rapid, but of not long duration. Hence it is necessary to continue the medication whilst any pain is felt. Local effects can also be obtained, but the disadvantage of its colouring power has not yet been overcome. It has been proposed also to use the blue in subcutaneous injections, but at present there have been no experiences published. It is claimed that methylene blue in excessive doses does not cause the depression, etc., of increased amounts of the ordinary analgesics, and is worthy of extended use.

(236) Arsenic in Infantile Eczema.

Neuberger (*Archiv f. Derm. und Syphilis*, vol. xlvii, 1899) has had good results from the treatment of chronic eczema in infants by the internal administration of arsenic. To infants of 2 years and upwards he gives one drop of a mixture of equal parts of Fowler's solution and distilled water. This is given in milk after the midday meal, and gradually increased to six or seven drops. In sucklings and infants under 2 years of age he gives one drop of Fowler's solution of the strength of 1 in 3, and this is gradually increased to five drops. The infants are said to take the drug well, and no bad symptoms were observed. The treatment usually lasts sixteen or eighteen weeks, and relapses sometimes occur.

(237) Treatment of Gonorrhœal Arthritis.

Mackenzie Forbes (*Amer. Journ. of Cut. and Gen. Urinary Diseases*, January, 1900) considers that the rational treatment of urethral rheumatism consists in local treatment of the urethra combined with general treatment of the arthritis. He points out that urethral arthritis is either due to the migration of the gonococcus or some other microbe from the urethra to the joints, or to the absorption of their toxins. Hence (1) if it is due to the migration of gonococci to the joint, as we know from experimental evidence and from the fact that they have been rarely found except in acute cases, gonococci do not flourish in the joint, and therefore the rational treatment is to cut off the source of supply in the urethra. (2) If it is due to the migration of other microbes or to the absorption of toxins, we may assume that all exacerbations are due to reinfection of the joint from the urethra. Here the same treatment applies. In order to cure a urethral arthritis the urethra must be kept as sterile as possible, and its mucous membrane must be without abrasion. The urethral tract must be carefully examined and the lesions found treated till the canal is in a healthy condition. This treatment may have to be continued after the joints are well. The local treatment carried out by the author in ordinary cases of anterior and posterior urethritis consists in the internal administration of a pill containing methyl blue and boric acid, or urotropin combined with lavage with permanganate of potash and injections and instillations of protargol.

(238) Venesection in Heat-stroke.

C. Klein (*Münch. med. Woch.*, July 3rd, 1900) observed a case of heat-stroke where venesection gave prompt relief. A powerful, temperate, and healthy coal-heaver, aged 28, acted temporarily as stoker on board ship. After a few hours' work he suddenly became unconscious and was seized with violent general convulsions. He was brought on deck, ice was applied, and artificial respiration was carried out as far as the convulsions permitted. Chloroform inhalation was tried, but abandoned as it had a bad effect on the respiration. The convulsions increased in violence, and four sailors could hold the man with difficulty. The pulse, at first hard and full, became thready and intermittent; the respiration became more and more laboured, and there was great cyanosis. The man was evidently dying of œdema of the lungs; Klein therefore abstracted about 8 ounces of blood. The effect was immediate; the pulse and respiration improved, the convulsions gradually ceased, and the cyanosis was replaced by pallor. After a ten-hours' peaceful sleep the patient awoke weak, but hungry, and in a few days had recovered completely.

PATHOLOGY.

(239) The Action of Diphtheria Toxin on the Nervous System.

Bielschowsky and Nartowski (*Neurol. Centralbl.*, July 1st, 1900) describe experiments which they have recently carried out in Mendel's laboratory. The pathological changes have been located in three situations—the peripheral nerves, the spinal cord (parenchymatous and interstitial myelitis, with secondary changes in the nerves and muscles), and the muscles. The authors injected sterile diphtheria toxin into white mice, rabbits, and guinea-pigs. Large doses produced rapid death, with anatomical evidence both of general intoxication and of a special action on the vascular system. The animals which survived this stage developed, eight or ten days after the injection, more or less typical post-diphtherial palsy. The vessels were found quite full and with pathological changes in their walls leading to scattered foci of hæmorrhage. There was no sign of meningitis or encephalitis, nor were the nerve cells of the brain or cord with a few isolated exceptions affected. Preparations by Marchi's method showed nothing noteworthy in the brain or cord, but extensive degeneration of the myelin sheaths of the peripheral nerves; this was confirmed by Weigert's procedure. The muscle fibres were the seat of fatty change. The conclusion is drawn that the essential lesion is parenchymatous degeneration of the peripheral nerves; the slight changes in the anterior horn cells are held to be secondary or of cachetic origin; while the vascular alterations play but a subordinate *rôle* in the pathogeny of post-diphtherial palsy.

(240) Toxic Nephritis and Uræmia.

Lindemann (*Centralbl. f. allgem. Path.*, No. 9, 1900) has conducted an interesting series of experiments on this subject. A serum is prepared by injecting into an animal of one species (A) the finely pounded kidney substance of another series (B); the serum taken from B is found to act directly as a renal poison when injected into animals of species A. This "nepholytic" action is, however, much more powerful when the kidney substance injected into B is diseased, as, for instance, by acute nephritis. Lindemann produced acute nephritis in dogs by administering potassium chromate, and in experiments in part complementary to the above he found that the serum of these dogs acted as a strong kidney toxin, in others, producing albuminuria, suppression of urine and uræmia, in lethal doses. He proposes further investigation to discover what element of the serum is the active agent in producing these symptoms. No potassium chromate is present, and normal blood serum has no such effect.

(241) Minute Changes in Varicose Veins.

Janni (*Langenbeck's Archiv*, Bd. lxi, Part 1) observes that there is a considerable difference between the accounts of these changes hitherto published. He has taken the enlarged veins of the spermatic cord as the material for his investigation. In these are to be observed not only degenerative and regressive changes brought about by passive distension, but also, especially in the early stages of the enlargement, considerable connective tissue proliferation, which chiefly has its site in the tunica intima. It shows itself in the form of a nodular or flaky endophlebitis. At the larger nodes there is also an increase in the fibres of the inner elastic layers. Where the connective tissue nodes and plates are well marked the process may extend to the middle coat. Janni does not agree with Epstein that these changes are compensatory, but considers them of the essence of the disease, a true hyperplasia.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(242) Kernig's Sign.

Roglet (*Journ. de Méd.*, October 10th, 1900) has made an extensive series of observations on the subject of Kernig's sign. As is now generally known, this sign consists in the impossibility of completely extending the leg on the thigh when in the sitting posture, in a patient suffering from certain meningeal diseases. There is a certain amount of contracture of the flexors of the leg. This contracture, on the other hand, disappears, and complete extension can be obtained when the patient is lying on the back. It is therefore easy to elicit this phenomenon if, after having ascertained the absence of all contracture in the supine position, the patient is made to sit up with his legs hanging free, or even sitting up in bed. Certain precautions are therefore necessary. The observer must see that the patient sits straight upright, and does not lean to one side or the other, and that the thighs form a right angle with the trunk, certainly not less. Disregard of this point may lead to considerable error. The attempt to obtain Kernig's sign is sometimes attended with considerable pain. The amount of extension obtained at the knee varies considerably. When Kernig's sign is well marked it is impossible to exceed a right angle; when slight an obtuse angle equal to 135 degrees; but intermediate degrees may be obtained. Nor is the sign always bilateral; occasionally it has been observed on one side only, or to an unequal extent in both limbs. The intensity of the phenomenon may vary from day to day, or may even disappear completely. To be therefore sure of its non-existence several observations are necessary. Kernig's sign may appear at the same time as the other symptoms, rigidity of the neck, ocular symptoms, contracture, etc., but most usually it appears about the third or fourth day of the disease. In tuberculous meningitis its appearance is most delayed. It is very rare for it to be the only symptom present. Kernig's sign may disappear at variable periods. In meningitis ending fatally, it may persist up to the end, but in other cases it may disappear shortly before death, especially in cases where, owing to coma, there is general flaccidity, and all contractures give place to paralysis. It is under such circumstances that Kernig's sign has been missed in several cases of meningitis. The diagnostic value of this sign is considerable, as it has been met with in 85 to 90 per cent. in cases of meningitis. It is, however, present in other conditions with meningeal inflammation for example, meningeal hæmorrhage and cerebral abscess—but this seems to be exceptional. Its value is reduced, therefore, by the fact that it rarely appears at the beginning of the case or occurs alone. The diagnosis is consequently in many cases apparent independent of this sign. Roglet explains the phenomenon as follows: In a person in a sitting posture with the thighs flexed to some degree, and the trunk of the legs extended, the flexor muscles are on stretch, and their elasticity is soon exhausted. If under the influence of spinal irritation and irritation of the spinal roots, where this may be due to increase of intraspinal pressure or to the presence of purulent exudation, there is naturally produced some increase of muscular tonicity. This diminishes the elasticity and length of the flexor fibres, which then become too short to allow of extension of the leg on the thigh, and thus the sign is produced.

(243) Polymyositis.

Th. Struppler (*Deut. Arch. f. klin. Med.*, 1900, vol. lxviii, p. 407) records a case of acute hæmorrhagic polymyositis in a man aged 33. The commencement was sudden, shortly before admission to the hospital. On admission the swelling had already somewhat subsided in the lower extremities, but the supinator and extensor muscles of the left upper extremity were much involved, and the symptoms in the right arm were beginning. The tongue, throat, trachea, bronchi, and lungs were also affected, and the man died within six days from the commencement of the illness from acute œdema of the larynx. The fever, swelling of the spleen, pleurisy, and multiple hæmorrhages in this case confirm the opinion, suggested by previous cases, that the disease is of an acute infectious nature. No cause for the infection could be discovered. The heart was unaffected, but later on in the disease, had the patient lived longer, it might have shown the pathological changes described by Bauer. The present case, therefore, furnishes no evidence against the view that the heart is generally involved in acute hæmorrhagic polymyositis. Struppler also describes a case of "relapsing acute rheumatic polymyositis," recalling the features of "dermatomyositis." The patient, a young man aged 24, had erythema multiforme and myositis of both gastrocnemii, the peroneus brevis, and (an undescribed feature) of the left temporal and both frontal muscles (chiefly right). He also suffered from acute articular rheumatism, with old cardiac valvular disease, chronic parenchymatous nephritis, and chronic pulmonary tuberculosis. The patient left the hospital, and the termination of the muscular affection is unfortunately not given.

(244) An Unusual Symptom in Helminthiasis.

Papi (*Gazz. degli Osped.*, June 10th, 1900) records the case of a child, aged 18 months, suffering from gastro-enteritis and cough, who developed Cheyne-Stokes respiration. No cause could be detected for this in the thorax, the heart was normal, and the lungs only contained a few *râles* of bronchitic character. The child vomited ascarides, after which the respiration became rather better, but still had a Cheyne-Stokes character, until free purging and vermifuge treatment was adopted. As soon as the worms were expelled the respiration became normal. The author believes the Cheyne-Stokes phenomenon was due to some poison secreted by the ascarides.

(245) Retrobulbar Hydatid.

Lavagna (*Giorn. dell. R. Accad. di Med. Torin.*, July, 1900) records the case of a child, aged 2½, from whom a hydatid cyst situated behind the left eye was successfully removed. The child was first seen December 16th, 1898, with a history of left ptosis and exophthalmos of three months' duration. On examination a tumour was felt behind the eye; no distinct fluctuation could be detected, no pulsation, nor any inflammatory symptoms. When the right eye was bandaged the child was able to play as if it saw with both eyes. There was a slight degree of optic neuritis in the left eye. The child had been particularly fond of dogs. On December 22nd, 1898, the cyst, which proved to be a double hydatid, was successfully removed. A small rubber drainage tube was left in for twenty days. When last seen (July, 1900) the child could see quite well with the left eye, shows no trace of the operation, and no symptoms of return.

SURGERY.

(246) The Treatment of Inoperable Cancers.

Czerny (*Centralbl. f. Chir.*, No. 28, 1900) insists on the importance of careful and methodical treatment in cases of recurrent and inoperable forms of malignant growth. The large proportion of cases of carcinoma and sarcoma unamenable *ab initio* to operative treatment, and the very frequent instances of recurrence of malignant disease after operation, are undoubted facts that render it necessary for medical men to direct attention to the most suitable means of alleviating the sad condition of patients in such unfortunate circumstances. Unfortunately, it is stated, in too many instances the medical man, when he finds that there is no prospect of cure by operation, ceases to take a deep interest in the case, and many, particularly the younger members of the profession, are wanting in a knowledge of simple methods of palliative therapeutics, and also of that professional diplomacy which is capable of doing so much to relieve their wretched lot, and to secure their confidence. Czerny, using the term "inoperable" in reference to the inadequacy of surgical treatment for radical cure, points out that much good may be done in cases of incurable cancer by palliative operations such as gastro-enterostomy, intestinal anastomosis, gastrostomy, and colotomy. In cases of ulcerating malignant growth the profuse discharge and occasional bleeding may be arrested

and the severe pain relieved by the application of the actual cautery and caustics and the free use of the sharp spoon. Formalin in solutions from 10 to 40 per cent. is recommended as a good local application to an ichorous and hæmorrhagic ulcer. In the local treatment of inflamed and very painful open cancers, aseptic powders, such as boric acid, salicylate of soda, orthoform, and iodoform, are regarded as indispensable. In concluding his paper, Czerny states his belief that the effectual cure of cancer by a general and medicinal method of treatment, prospects of which are afforded by the occasional good results of artificially-produced erysipelas in cases of sarcoma, cannot be brought about by any means short of systematic and centralised research and by the more general establishing of special hospitals for cancer like those that are at present to be found only in London and New York.

(247) Complete Prolapse of the Rectum.

Gérard Marchant (*Bull. et Mém. de la Soc. de Chir. de Paris*, April 17th, 1900) supports the view recently expressed by Ludlow, that prolapse of the rectum is due to yielding of the wall of the intestine at the level of the vesico-rectal *cul-de-sac*, this yielding being caused by pressure of the small intestines contained within the pouch of Douglas; by constipation, giving rise to weakness of the coats of the rectum, and probably by some congenital malformation of the *cul-de-sac*. The anterior wall of the rectum is first protruded into the intestinal lumen, and in course of time, as it descends, carries with it the lateral and posterior walls, so as to form a complete prolapse. Marchant points out that the reflection of the peritoneum over the anterior wall of the rectum at the *cul-de-sac*, corresponds to the valvular fold of this portion of the intestine known as the third sphincter, or the sphincter of Nélaton. This sphincter, it is stated, always forms the lower extremity of the protrusion in fully-developed forms of rectal prolapse. If this view of the pathogeny of prolapse be correct, it would be necessary to modify the present method of dealing with this condition, as it must be evident that resection of the protruded portion of intestine is a futile as well as a dangerous operation. The surgical treatment, it is held, should be directed with the objects of diminishing the length and width of the protruded portion of rectum, and of suspending this to some unyielding structure. Reference is made to a case successfully treated by Pauchet, in which this surgeon performed an operation devised by Marchant, and described under the title of "recto-coccypexy." This operation consists in (1) in contracting the anus by excising a part of its circumference; (2) in diminishing the capacity of the prolapsed portion of intestine by folding its walls by sutures passed both vertically and from side to side; and (3) by fixing the contracted intestine to the posterior wall of the pelvic skeleton.

(248) Surgical Treatment of Rectal Prolapse.

W. Krajewski (*Przeglad Chirurgiczny*, iv, 539, 1900) discusses in detail the various operative procedures for rectal prolapse. With regard to the different measures for narrowing the anus and rectum, such as the excision of radiating folds of the anus and posterior rectorraphy, with or without torsion of the lower end of the intestine, he comes to the conclusion that they only remove one morbid condition, the anal relaxation, leaving untouched the weakened suspensory apparatus and the dilatation of the rectal ampulla. He gives details of 5 cases in which he operated by another method, that, namely, of amputation of the prolapsed portion of Mikulicz's operation, but sums up on the whole against it, as after it the prolapse may be reproduced, and the cicatrices may cause rectal rupture or stenosis. This operation is to be restricted to the cases in which the prolapse is irreducible or complicated by ulceration or necrosis. For all other cases he is inclined to recommend fixation of the prolapsed intestine either below (rectococcypexis) or above (colopexis) in such a position as will prevent its descent; but the operations of Gérard-Marchand and Jannel, which aim at the accomplishment of these manœuvres, have yet to be tested and probably modified.

(249) Cæcum Adherent to Vas Deferens.

Célos (*Bull. et Mém. de la Soc. Anat. de Paris*, March, 1900) detected this condition in the body of a man, aged 75, who had died of interstitial nephritis without any signs or clinical history of appendicitis. On lifting up the cæcum at the necropsy the vas deferens was stretched till the testis was pulled upon. On further dissection the vas appeared closely united to the fundus of the cæcum by numerous adhesions, which also bound down a little white cord, the vermiform appendix greatly contracted. Its orifice was obliterated. The extremity of the appendix reached to within a third of an inch of the vas. It is not rare to find the appendix adherent to the vas; in this case the cæcum itself adhered to the seminal duct. The vas, strictly speaking, ran high in this case, so that it was not a case of the cæcum being drawn down to the vas, but just the reverse. Old perityphlitis had involved the vas, which was abnormally near the seat of disease. Dieulafoy published a case of adhesion of the appendix to the cord, manifested by fits of testicular pain, as in renal colic.

MIDWIFERY AND DISEASES OF WOMEN.

(250) Ovariotomy Statistics.

Bürger (*Festschrift für Prof. Schauta: Monats. f. Geburtsh. u. Gynäk*) publishes statistics of 394 ovariotomies performed in fifteen years in Schauta's wards. Every case was performed as early as possible with aseptic precautions. Schauta seemed to make a point of removing the tumour undiminished in size whenever it could be managed. Silk was usually employed for suture and ligature, and the abdominal wound was closed in three layers. In 78 per cent. of the cases only one ovary was affected. The right and the left ovary were the seat of tumour with about equal frequency. The mortality came to 9.5 per cent.; of the recoveries, 97 per cent. were permanently cured, and 76 per cent. had sound abdominal cicatrices. Good as these results proved, Schauta always endeavours to remove ovarian tumours through the vagina whenever practicable, but of the last 60 vaginal ovariotomies the tumour was totally extirpated in 19; in 10 this method had to be given up and the abdominal operation performed. The mortality of the purely vaginal operations that were completed was 1.94 per cent.

(251) Gonorrhœa in the Genital Tract of a Newborn Child.

Aichel (*Hegar's Beiträge*, vol. ii, Part 2, 1900) observed this case. The mother had gonorrhœal discharge from the urethra, verified by microscopic examination. Four days after birth the infant had swelling with redness about the vagina; from that date to the tenth day there was purulent discharge which for the three succeeding days was sanious. The infant's general condition remained good, no inflammation of the surrounding connective tissue followed. Plenty of gonococci were detected in the pus, which when cultured yielded diplococci and bacillus coli communis. Aichel suspects that gonorrhœa of the vulva may be frequent in the infant, and that it ascends quickly, the vulva healing. It may explain the bleeding and erosions not rare in infants; also it may cause the so-called "congenital" atresia vaginæ.

(252) Extrauterine Fœtal Bones Retained Seventeen Years.

Klingensmith (*Amer. Journ. Obstet.*, September, 1900) reports the case of a patient, aged 53, who suffered from profuse diarrhœa and pricking pains during the latter half of 1896. The fæces seemed rough and sandy. In January, 1897, one cranial and one long bone were removed from the rectum; in March and August of that year more bones were extracted through the rectnm. Altogether twenty-four bones came away. The patient had borne four children, one labour was a twin birth. After the third labour she became pregnant again and miscarried in 1879. A few months later she seemed to become pregnant, colicky pains set in at the tenth week, severe enough to be remembered. Fœtal movements were never strong. In August, 1880, the membranes ruptured, the amniotic fluid gradually escaping. There were no labour pains. The abdomen diminished in size and a fœtid discharge set in and continued for one year, after which time menstruation became regular again. From 1882 to 1896, when the diarrhœa set in, the patient experienced no particular inconvenience.

(253) The Danger of a Pyosalpinx.

Toth (*Centralbl. f. Gynäk.*, No. 38, 1900) operated on a woman, aged 43, amputating the vaginal portion of the cervix for a fibroid as big as an apple in the anterior lip. The wound was sutured. On the sixth day the temperature rose to 101°; the wound was examined; then the temperature increased to 105°, with a rigor. Next morning it fell to 99°; the sutures were removed; the wound was sloughy at several points. Peritonitis set in, and death occurred on the eleventh day. At the necropsy purulent peritonitis was discovered, and buried in old adhesions a pyosalpinx lay on each side of the uterus; there was a circumscribed cavity full of pus outside the right pyosalpinx, in the adhesions, and this was undoubtedly the starting point of the diffused suppurative peritonitis. But there was no communication between the field of operation and the pyosalpinx; the wound and the parametrium were alike free from necrotic processes. Toth suspects that during the operation or the examination when fever set in the tubes may have been stretched and detached from their adhesions, so that the suppurative process was set up again. Tunkai related a similar case. Tauffer, in the discussion at Buda Pesth on these two cases, remarked that absolute asepsis is impossible in a vaginal operation, whilst in Toth's cases there were two suppurating foci. He had seen sloughing of vaginal wounds in a clinic where soap and soft brushes were applied to the parts for several days before operation, then sublimate solutions thrown up, and lastly iodoform packed into the vagina. Doktor remarked that we lay too great stress on killing bacteria before the operation and too little on careful attention to the wound afterwards.

(254) Pregnancy and Alexander's Operation.

Stratz (*Centralbl. f. Gynäk.*, No. 28, 1900) read at the April meeting of the Netherlands Obstetrical Society a case where a patient under his care had undergone Alexander's operation four years previously. She was 36 and had been seven times pregnant. For a few years she suffered from gall-stone colic. Recently she had been at sea for a month and owing to uncontrollable vomiting had to be fed with nutrient enemata. Gall-stone colic further troubled her during the voyage. The period had last been seen on July 4th, 1899. On March 6th, 1900, she was admitted into hospital at the end of the eighth month of pregnancy. There was icterus, pulse 72, temperature subnormal. The right round ligament was very tense, thickened, and painful. The vertex presented in the first position. Morphine was given, then the violent colic which distressed her ceased, and a large gall stone was detected in a motion. But the vomiting which accompanied the colic continued unabated, and, as the patient was much reduced, labour was induced on March 14th. The os was easily dilated with the finger and a bullet forceps. Braxton Hicks's version was then practised, and one foot brought down with the bullet forceps. Directly the waters broke the tendency to vomit ceased but solid food was rejected. The child, a female, was very sickly and asphyxiated at birth. It bled from a wound made by the forceps. Two hours later manual extraction of the placenta was effected; it set up nausea. Next day the patient could keep down fluid nourishment and oysters. Thenceforth she did well and never vomited. The child died on the second day. Stratz feels sure that the trouble was due to Alexander's operation, though performed in this case by a great authority. On the fourteenth day of the puerperium a hæmatoma could still be detected in the right round ligament. Stratz attended at the labour of another case where the same operation had been done, and detected a bilateral inguinal hernia.

(255) Pregnancy with Gangrenous Fibroid of Uterus.

Münchmeyer (*Centralbl. f. Gynäk.*, No. 27, 1900) recently exhibited at a Society in Dresden a myomatous uterus of the size of a man's head. In its cavity was found a normal well-developed ovum of the second month, with a healthy fœtus, yet a gangrenous interstitial myoma projected into the cavity. As the catamenia were irregular before the operation pregnancy was suspected.

THERAPEUTICS.

(256) Diphtherial Paralysis and Antitoxin.

Ransom (*Journ. Pathol.*, vol. vi., No. iv.) gives the results of experiments on this subject. The investigation was suggested by statements which have been made to the effect that cases of post-diphtherial paralysis are more frequent now than they were before antitoxin was introduced. The experiments showed that: (1) Paralysis is to be expected after injection of about one-fourth of the minimum lethal dose; after one-half it always occurs; doses below one-fourth may cause paralysis but not constantly, and below one-eighth it was not produced. (2) Neutralised mixtures of toxin and antitoxin do not cause paralysis, but when the mixture contains a deficiency of antitoxin, paralysis occurs and the greater the discrepancy the severer is the paralysis. (3) When the antitoxin is administered fifteen to twenty-two hours after intoxication, even the largest doses do not with certainty prevent paralysis where the dose of toxin approaches the minimum lethal dose. With increased doses of antitoxin, however, the paralyses decrease in severity. Small doses of antitoxin have no evident effect in diminishing the paralysis. The bearing of these results on the administration of antitoxin to human beings is pointed out by the author. Large doses given early should influence favourably or prevent paralysis, especially such general symptoms as heart failure. If paralysis is more frequently noted in these days it must be due to the fact that many of the severer cases are rescued by the antitoxin and develop these symptoms, whereas without the antitoxin they would not have survived. Severe cases are likely to be followed by some paralysis in spite of large doses of antitoxin. Guinea-pigs were used for the experiments, as they are liable to characteristic ost-diphtherial paralysis.

(257) Treatment of Sciatica.

Ghietti (*Gazz. degli Osped.*, September 23rd, 1900) in two obstinate cases of sciatica, of many years' duration, has tried with complete success injection of salophen. An aqueous alkaline solution was made, of which each 10 c.cm. contained 1 gram of salophen. This was injected into the gluteal muscles every other day. After the sixth injection the pain was materially lessened, and had practically gone after the eleventh. The patients were kept in bed until the fifteenth injection. Thirty injections were given in all, after which the patients, feeling quite well, wished to leave the hospital. They were seen fourteen months later, and had remained quite free from pain for the whole of the time. Salophen is supposed to split up into salicylic acid (of which it contains 51 per cent.) and acetylparamidophenol, when taken into the body.

(258) Ichthalbin in Intestinal Disorders.

Rolly, of the Heidelberg Polyclinic (*Merck's Archives*, August, 1900), in order to obtain definite knowledge of the action of ichthalbin, made observations on 28 cases of intestinal diseases, with the following results: (*a*) Simple chronic enteritis (8 cases). The following case is typical: F. D., aged 5½ years; chronic enteritis, anæmia, and pseudo-ascites; constant diarrhœa for last three and a-half years; oat gruel, acorn cacao, tannin preparations, etc., were only of transient value; bodily emaciation with abnormal increase in size of abdomen; the bowels were distended and the stools loose, frequent, and fœtid. Was treated with 8 grs. of ichthalbin three times a day, the diet remaining the same as before treatment. The diarrhœa disappeared and the motions were more natural. On suspending the ichthalbin, diarrhœa ensued on the four days following, but disappeared on administering doses of 23 grs. ichthalbin daily for three days. From this time onward an increase of 26 ozs. in body weight took place in two weeks. Treatment was continued, and nine months after the patient presented a very good appearance, having gained weight and health. Small doses of the medicine were still taken from time to time. In the other 7 cases there was also improvement of the catarrh. (*b*) Chronic enteritis with peritonitis (3 cases). The following case is typical: H. H., aged 4 years; chronic enteritis, with severe catarrh of the colon and peritoneal exudation and tuberculous peritonitis. (A sister of the patient had died of tuberculosis, and so had the grandparents.) Patient suffered from a year and a-half with alternate diarrhœa and constipation. Of late there was great increase in size of abdomen, with

emaciation of the entire body; complete anorexia; much mucus in the stools. Only a transitory slight improvement with resorcin, diet, and inunctions of green soap. Forty-five grains of icthalbin were prescribed three times a day, the diet being as before. In a week the stools were regular, two or three times daily, and of semi-solid consistence. The appetite was remarkably increased, and patient constantly desired food. The peritoneal exudation—which before reached to a finger's breadth above the navel in the recumbent position—had decreased. Improvement continued, action of bowels once or twice daily; the body weight increased 3 lbs. in five weeks. The patient still takes a little of the medicine daily. Estimates of the ethylsulphates in urine showed that shortly after the taking of icthalbin there was a decided decrease in intestinal fermentation. (*c*) Chronic enteritis with tuberculosis (5 cases). Satisfactory results had already been obtained in Neumann's clinic in this class of cases, and Kilburn Jones had also recorded good results in chronic intestinal catarrh with tuberculosis. In Rolly's 5 cases, all improved and gained weight, but 3 of them died subsequently of miliary tuberculosis at the ages of $2\frac{1}{3}$, 3, and $2\frac{1}{2}$ years. (*d*) Subacute gastric and intestinal catarrh (12 cases). The medicine exerted a beneficial effect on the catarrh; appetites and general conditions improved, the stools became natural, and, after treatment—8 to 15 grs. thrice daily—for three to eight days, were discharged cured.

(259) Iodipin in Syphilis.

RADESTOCK (*Therap. Monats.*, 1899, page 551) draws attention to a new preparation of iodine—iodipin—which is a combination of iodine with oil of sesamum (10 per cent. of iodine). The compound is said to be stable, and is recommended for tertiary syphilis in place of potassium iodide. It is said to cause no marked iodism or gastric troubles, and to have a more lasting effect than the iodides. It is administered internally in doses of 40 to 50 grams, or by inunction. The author quotes two severe cases, one of acquired and one of hereditary syphilis, which cleared up under this treatment after resisting the usual methods. Klingmüller (*Berl. klin. Woch.*, 1899, p. 540) also reports favourably on the drug, and recommends its use by subcutaneous injections of a 10 per cent. solution in doses of 20 c.cm. every other day.

(260) Anæsthesia by Means of Intramedullary Injections of Cocaine.

MANEGA (*Rif. Med.*, October 11th-12th, 1900) has practised the above method of inducing anæsthesia in 30 cases. He uses a strong needle about 8 cm. long to pierce the medullary canal, and before injecting the cocaine (a 2 per cent. solution containing about 19 to 20 milligrammes) he makes sure of the entrance of the needle into the canal by waiting for the exit of a few drops of cerebro-spinal fluid. The patient being seated, a transverse line is drawn between the posterior superior iliac spines, and the spinal canal pierced just below this. Complete anæsthesia of the parts supplied by the nerves coming from the spinal cord in the lower two-thirds of the body follows in about ten minutes. No serious symptoms have been observed; merely a certain amount of nausea, vomiting, and headache. The author's operations lasted from half an hour to an hour and a-half, and the anæsthesia was well maintained the whole time. Of the more serious operations were 4 laparotomies (ovariotomy, excision of the head of the pancreas, hysteropexy, and purulent peritonitis), 2 were severe operations on the kidney, and 10 were for hernia. The patients ranged from 5 to 75 years in age.

PATHOLOGY.

(261) Gastro-intestinal Disinfection.

NICATI and others have shown that to produce general infection by injection of cholera cultures into the duodenum some injury to the intestine is necessary, and that otherwise the bacteria die in the intestine. Schutz (*Berl. klin. Woch.*, June 18th, 1900) has investigated this intestinal disinfectant action on the cholera vibrio. In the stools of dogs fed with cultures of the bacillus none of the organisms were to be found; the gastric juice was then excluded by a cannula placed in the duodenum, and the culture was introduced directly into the latter; in this case, also, the stools were free, the rectal contents were also free, the colon gave only one colony, and in the small intestine cultures were only obtained with difficulty. Exactly similar results were obtained by investigating the intestinal contents of animals to whose food the cultures were added, showing that the hydrochloric acid of the gastric juice does not take the active part in disinfection that has been assigned to it. An interesting discovery was that after castor-oil and calomel (especially the latter) the bacilli are found even in the stools, and the ordinary bacteria were also more numerous. It is to be deduced from the experiments that, apart from disinfection by the gastric juice, which is very transient in its action, there is some natural antiseptic excreted by, or in some other way connected with, the small intestine, which is active in the absence of both hydrochloric acid and bile, and probably of the nature of a ferment, as suggested by Buchner. With this antiseptic action calomel interferes; and though Schutz does not argue that artificial disinfection should be given up, yet he maintains that it rests on a very uncertain basis.

(262) Lead Poisoning in Childhood.

HAHN (*Arch. f. Kinderheilk.*, Bd. xxviii, Ht. 3) points out that the pathology of lead poisoning in children is very different from the course in adults. It is very infrequent and possibly often overlooked. The effect is almost confined to the nervous system, and in no case have the well-known symptoms of colic, anæmia, and the blue line on the gums been recorded. He relates the case of a child treated for a month with Hebra's ointment for eczema of the head, who developed symptoms of cerebral compression, became comatose, and died. A considerable quantity of lead was found in the brain by chemical examination. The author has collected all the recorded cases in children, and draws attention to the fact that the intoxication is becoming more generally recognised. Most cases have been due to the application of plasters containing lead. Many of the ordinary sticking plasters contain a small quantity. He remarks that it is strange that no case arising from the sucking of lead soldiers has yet been recorded.

(263) Infection.

RADZIEVSKY (*Centralbl. f. Bakt.*, August 22nd, 1900) includes under the term "infection" all the effects which follow the entrance of micro-organisms into the animal body. All authors ascribe the most important changes to the action of specific poisons produced during the development of the infecting organism. Some, however, consider these poisons decomposition products of the action of the organism on the tissues, while others have brought evidence to show that there is active poisonous matter in the living structure of the organisms themselves. This active poison is, according to some, secreted as a normal vital act of the organisms, while others believe that the appearance of the poison follows their decay and dissolution. Cantani and Pfeiffer believe that the organisms are killed by contact with living cells, and that the dead specimens are taken up and dissolved, the contained poison being thus carried into the circulation. Radzievsky has observed the course of events in fatal infection with bacillus coli. In the first stage the multiplication of organisms is in the ascendant, in the second stage their destruction is remarkable, and involves a steadily increasing number of examples. When a culture not specially virulent is injected the number of living specimens is notably decreased before death. Bactericidal substances are formed which kill the microbes, and, the dead bodies being dissolved, the bacterial poison gains access to the general circulation, and produces the clinical signs of infection. The destruction of the microbes is extra-cellular in the fluid elements of the tissue. The microscopical changes found after infection with a dead culture are the same as those to be observed in infection with living organisms. The author's observations point to there being important toxic substances in the structure of bacteria which are largely responsible, when the latter are killed and dissolved, for the clinical signs of infection.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(264) Disturbances of Respiration in Hemiplegics.

Boeri and Simonelli (*Gazz. degli Osped.*, October 7th, 1900) have studied the respiratory movements in 61 cases of hemiplegia. In almost every case respiration was both absolutely and relatively diminished; in 49 of the cases there was a distinct difference in movement between the two sides; in 39 the movement was less on the paralysed side, and in 10 it was more marked and full when compared with the sound side. These differences applied not only to exaggerated voluntary efforts, but to quiet automatic respiratory movements. The nature of the cerebral lesion made no difference. The difference was as a rule more marked in proportion to the degree of paralysis, especially when the greatest stress was seen in the upper limbs. In some cases a unilateral arrhythmia was observed. The authors believe there is a superior cortical centre for respiration, probably situated somewhere near the motor centre for the upper limb, to which the medulla centre is subservient. The greater frequency of respiration on the paralysed side is explained by supposing that this centre is excited by irritation rather than depressed. Automatic respiration could be carried on by the medulla centre, but when voluntary the cortical centre would be called into play.

(265) Brown-Sequard's Paralysis.

Woods of Philadelphia (*Amer. Journ. the Med. Sci*, August, 1900) records a case with the clinical symptoms exactly as described by Brown-Séquard in hemisection of the spinal cord. The patient was stabbed in the back of the neck, and as a result suffered from paralysis of the left arm and left leg. The reflexes were normal, but there was incontinence of urine. On the fourth week some slight power was returning to the left hand, and the next week to the left leg. In the seventh week he was able to walk awkwardly, there still being present a paresis and dragging of the leg. A year later, at the Pennsylvania Hospital Dispensary, he was found to have an excessive knee jerk and some ankle clonus in the paralysed leg. In the paretic arm the tendon reflexes were also exaggerated. As regards sensory alterations they closely conformed to Brown-Séquard's type—namely, hyperalgesia and tactile hyperæsthesia in the paralysed limb, anæsthesia and analgesia in the non-paralysed limb. Muscular sense and consciousness of position were lessened in the paralysed limb, but unaltered in the non-paralysed limb. Thermal sensibility was lost in the sound limb and increased in the paralysed limb. In surface temperature the paralysed leg was warmer. Similar differential conditions prevailed as regards the paralysed and non-paralysed arms, and the facts confirm the view of Brown-Séquard that the paths of tactile and painful sensibility decussate after entering the spinal cord.

(266) The Differential Diagnosis of Functional from Organic Hemiplegia.

Babinski (*Gazz. des Hôp*, May 5th and 8th, 1900) points out that in organic hemiplegia the paralysis is limited to one side of the body, while in hysterical hemiplegia it is not. This observation applies particularly to the face, the paralysis of which in the hysterical form is generally bilateral. In the organic form the paralysis is not systematic. If, for example, one side of the face is profoundly paralysed, the weakness remains quite evident during the bilaterally associated movement of the face, but in the functional the paralysis is usually systematic. For while the unilateral movements of the face may be completely abolished, the facial muscles on the paralysed side act well during the bilateral movemehts. In the organic there is muscular hypotonicity, principally at the beginning, which is shown in the upper limb by the exaggerated flexion of the forearm. In the functional form there is no hypotonicity; when there is, for example, facial asymmetry, it is due to spasm of the one side. The periosteal and tendon reactions are either abolished, diminished, or increased at the beginning in the organic, and later they are nearly always exaggerated with ankle clonus; but in the functional form these deep reflexes are unaltered, and there is no ankle clonus. In the organic hemiplegia the skin reflexes are generally altered; the abdominal and cremasteric are usually weakened or abolished; the movements of the toes on eliciting the plantar reflex is one of extension; in the functional hemiplegia the cutaneous reflexes are unaffected, and the plantar reflex is the normal flexor response. The character of the contracture in the organic paralysis could not be reproduced by a voluntary contraction of the muscles, while in the functional paralysis it well might. The evolution of the organic hemiplegia is regular; contracture follows flaccidity; improvement is progressive, and the paralysis does not fluctuate, now better, now worse. In the functional paralysis the evolution is capricious; the paralysis may remain indefinitely flaccid, or it may even be spasmodic at the beginning. The paralysis is variable in degree and in form, and there may be actual remissions.

(267) Larval Forms of Tabes.

Erb, of Heidelberg (*Münch. med. Woch.*, No. 29, 1900), refers to larval forms of tabes dorsalis, the diagnosis of which is difficult, and alludes to the fact that such forms may persist for years. The points of diagnostic value are (1) "lightning" pains, (2) slight paræsthesiæ, (3) diminished sexual power, (4) Romberg's symptoms, and (5) unilateral Argyll-Robertson's pupil. If to these symptoms be added the history of a previous syphilis, the diagnosis is made certain. The knee-jerk may or may not be absent; thus in 5 cases the knee-jerk was present, but the presence of the other signs confirmed the diagnosis. In one class of cases visceral crises (gastric, laryngeal, recto-vesical, etc.), appear early, and such cases may persist in the larval condition for a considerable time, or may develop into typical tabes dorsalis. For treatment mercurial inunction should be freely employed, and suspension may be regularly carried out by the use of suitable apparatus. The ultimate prognosis is, however, not favourable.

SURGERY.

(268) Suture of Wounds of the Heart.

Terrier and Reymond (*Rev. de Chir.*, October, 1900) publish a table of 11 instances of the suture of cardiac wounds collected from different sources. Death resulted in 8 of these cases, and the remaining 3 patients recovered. The fatal result was due in 2 cases to great loss of blood, and in 4 cases decided symptoms of infection were present. The authors in discussing the technical details of the surgical treatment of such lesions are of opinion that the best method of exposing the seat of injury in most instances is to form a thoracic flap, including with the soft parts the cartilages of the fourth, fifth, and sixth ribs, the hinge or attached portion of this flap being placed externally and away from the left margin of the sternum. Care should be taken after elevation of this flap to push the left pleura outwards, and not to cut into the pleural sac in exposing the pericardium. A continuous suture is preferred to an interrupted one in closing the cardiac wound. It is held advisable to close completely when possible, the wounds in the pericardium and pleura, and not to attempt drainage.

(269) Remote Results of the Radical Cure of Hernia.

Delbet (*Bull. et Mém de la Soc. de Chir.*, No. 28, 1900), who is attached to a "service des bandages," the function of which consists in the distribution of elastic stockings and trusses, publishes some statistics he has collected with the object of removing the uncertainty that at present exists with regard to the persistence of the results of the so-called radical cure of hernia. During the first six months of the present year trusses were applied in this "service" to 1,586 cases of hernia, 1,516 of which were inguinal hernias and the remaining 70 crural. Of the 1,516 inguinal hernias 1,509 had not been treated by any operation, and 7 only had recurred after operation. In the cases of crural hernia the proportion of failures was greater, as out of 70 instances of this variety there were 2 of return after operation. The author concludes that if the enormous number of operations performed for the radical cure of hernia in the Paris hospitals be taken into consideration, the small num-

ber of recurrent hernias observed in institutions for the supply of trusses is a sure indication that operations for the cure of this affection are really radical.

(270) The Etiology of Intestinal Hæmorrhage in Strangulated Hernia.

Kukula (*Ann. de la Soc. Belge de Chir.*, No. 7, 1899) by a study of an original case in Maydl's clinic and of 14 cases published by other authors, has been led to formulate the following conclusions with regard to the causation of intestinal hæmorrhage consecutive to reduction of strangulated hernia. Cases of such bleeding may be divided into two groups. In the first group, in which the discharge of blood occurs very soon after the reduction, this discharge may be caused by: (1) Contusion of the intestinal walls produced during taxis; by (2) temporary compression of the veins of the strangulated portion of intestine, or by venous thrombosis, such disturbances of the local venous system resulting in hæmorrhagic infarction of the intestine and mesentery and consecutive intestinal bleeding; or by (3) hæmorrhagic infarctions after very severe strangulation followed by complete ischæmia of the intestine. The hæmorrhage from the first is usually slight and indicated only by minute clots or by a black colour of the fæcal discharge. The hæmorrhage when abundant is in most instances due to the second cause. The association between intestinal bleeding and the third condition has not been clearly demonstrated. In the second group of cases in which the hæmorrhage is observed some time after the taxis or herniotomy, the discharge of blood is the result of exfoliation and ulceration of the mucous membrane of the strangulated portion of intestine. Such pathological change in the mucous membrane may be due to (1) Gangrene developed in consequence of complete intestinal ischæmia in a case of very acute and intense strangulation; to (2) necrosis caused by venous congestion either after violent strangulation of short duration, or after slight but prolonged strangulation; or to (3) necrosis of the mucous membrane due to venous thrombosis developed in consequence of compression, and involving more or less of the intestine.

(271) Tuberculosis of a Hernial Sac.

Faguet (*Prog. Méd.*, September 23rd, 1899) observes that this condition was recognised first by Cruveilhier in 1862. Joannesco reported 11 cases in 1891. The last published case (Nurdin's) appeared in 1897. Faguet's patient was an agricultural labourer, aged 18, previously healthy. In raising a heavy plough he felt a sharp pain in the left groin, and a rupture was discovered. Local colicky pains occurred. Seven months after the development of the hernia a reducible enterocele was detected; the testes and epididymis were healthy, but an indurated piece of tissue could be felt on the fundus of the sac. Radical cure of the hernia was performed. The intestine was healthy, so was the sac near its neck, but its fundus really consisted of tuberculous deposit of the diameter of a two-franc piece, and one-fifth of an inch thick. The deposit was uniformly nodulated, and not tuberous; indeed, its surface was regular. On microscopic examination, however, all the elements of tubercle were discovered. Six months later the patient entered the same hospital suffering from pulmonary and peritoneal tubercle, which proved fatal.

(272) Interstitial Inguinal Hernia.

Knott (*Annals of Surgery*, December, 1899) adds a recently observed instance of strangulated interstitial hernia to the scanty literature of this subject. The patient was a man aged 64, who made a good recovery from an operation performed within five hours after the first appearance of the symptoms of obstruction. This case, the author points out, illustrates the danger of herniæ of this kind when strangulation has occurred. Although the patient was submitted to operation after so short an interval, the gut was found in so bad a state that the propriety of returning it into the abdomen was for some time in question. It is asserted that in all cases of inguinal hernia presenting an unusual location or shape of the sac, great care should be exercised that a reduction of a portion of the contents of the sac into another compartment of the same be not mistaken for a complete reduction into the abdomen. The author believes that every case of properitoneal or interstitial hernia, even when not strangulated, should be subjected to operative treatment without delay. The application of a truss to a hernia of this kind is held to be unjustifiable.

MIDWIFERY AND DISEASES OF WOMEN.

(273) Treatment of Damaged Ureter in Abdominal Section.

Fenomenoff (*La Gynéc.*, October 15th, 1900) describes a very rough-and-ready way of dealing with a case of badly-damaged ureter, justified at least by success in this particular instance. He removed a pair of strongly-adherent broad ligament cysts. He feared that they were septic from suppuration, and therefore dissected very freely around their outer walls. In so doing he accidentally cut away a considerable segment of the right ureter. Hence neither suture of the two ends, nor even implantation of the proximal end into the bladder was possible. Fenomenoff, therefore, drew the ureter up out of the retro-peritoneal space, applied two ligatures as high up as possible, and then reduced the damaged duct. The patient made a complete recovery, without any renal symptoms save during the first week, when she felt lumbar pain, and the excretion of urine was below the normal. The corresponding kidney was somewhat enlarged. The patient was well in five weeks. Seven months later the patient reported that she still felt the pains, but there was no trouble with the urine. Experiments on animals have shown that sudden and permanent obstruction of the ureter causes atrophy of the kidney; this change must have occurred, Fenomenoff believes, in his own case.

(274) Spleen in Female Pelvis

Gouraud (*Bull. et Mém. de la Soc. Anat. de Paris*, May, 1900) describes this important anomaly, which he detected at the necropsy on a woman, aged 60, whose death was due to cancer of the pylorus. The long diameter of the spleen was horizontal, and it lay over the bladder and uterus. Its left side touched the pelvic wall, from which it was separated on the right by the sigmoid flexure, which turned to the right and covered the spleen. The peritoneum invested the spleen entirely, save superiorly to the left, where the organ adhered to the colon at a point where it received its vessels. The pedicle of the spleen was entirely retroperitoneal, and consisted of a dilated, tortuous splenic artery. The twists were produced by two fibrous cords, both vascular, probably containing the vasa brevia. One cord, retroperitoneal, passed towards the cardiac end of the stomach, the other, invested with serous membrane, passed to the inferior extremity of the kidney. There was no splenic vein. The pedicle ended behind the tail of the pancreas, which organ lay very obliquely, its tail being almost vertical. Along the posterior border of the pancreas ran a small vein in the position of the splenic and a tributary of the vena porta, but it arose at the tail of the pancreas, and had no connection with the spleen or its pedicle. The nature of the pedicle seemed to imply that the displacement of the spleen was congenital, but the twisting of the splenic artery looked as though the organ had descended from its original position; if so, however, the prolapse must have been very early.

(275) The Palliative Treatment of Inoperable Uterine Cancer.

Küstner (*Centralbl. f. Gynäk.*, April, 1900) says that one of the most trying symptoms of the advanced stages of uterine carcinoma is the offensive and penetrating odour which is evolved. In order to palliate this condition, he proposes to close the vulvar orifice, and by means of a vagino-rectal fistula divert the discharge into the rectum, where it may be more under the influence of the will, and hence regularly and effectively discharged. The operation employed consists of the following steps: (1) the removal of all necrosed tissue from the os by the thermo-cautery; (2) the application of a tampon (to which a thread is tied) impregnated with alcohol; (3) the formation of a recto-vaginal fistula and suturing of its edges with catgut; (4) thorough cleansing, vivifying, and joining together the vestibule and its walls by hair sutures. The tampon may be removed on the fourth day. The newly-formed fistula must be kept open, and any tendency towards obliteration obviated by dilatation. Should hæmorrhages occur, the vagina should be packed through the fistula, and the

usual water irrigations employed. The rectum and anus will need antiseptic attention in order to keep them clean and free from irritation.

(276) Cysts of Placenta.

De Jong (*Monats. f. Geburtsh. u. Gynäk.*, June, 1900) has carefully investigated this morbid condition and studied its literature. Placental cysts are either multiple or solitary, and vary greatly in size from microscopic proportions to a diameter of 4 inches. They lie on the fœtal aspect of the placenta in the basal part of the chorion. The cyst is developed by fusion of the ends of adjacent villi by fibrinous exudation after the atrophy of the syncytium. This exudation is probably secreted by the chorionic epiblast (Langhans's layer of epithelium). The inner wall of the cyst is lined with Langhans's cells, which hypertrophy and also break up and fall into the fluid contents of the cyst, their own secretion. A certain amount of hæmorrhage is observed in some placental cysts. The development of placental cysts seems to be a purely local change not due to inflammation or to any constitutional disorder. The obstetrician should therefore remember that even a number of large cysts in the placenta is of no clinical importance.

(277) Rupture of a Fœtal Sac into an Ovarian Cyst.

Urbain (*Gaz. Hebdom. de Méd. et de Chir.*, May 3rd, 1900) was consulted by a woman who believed that she had reached term. After exploration he diagnosed cyst of the right ovary and left extrauterine gestation. The patient was very ill, the legs œdematous, the belly enormously distended, its veins dilated, and its outline bilobular. The right lobe was the larger; it fluctuated. The left was firm and irregular in shape. The os uteri was patulous; the uterus measured over 4½ inches. At the operation a large ovarian cyst was emptied; it was multilocular, and in breaking down the septa the left tumour was found to communicate with one of the loculi. Urbain withdrew a macerated fœtus of the seventh month. Hæmorrhage was so severe that he at once packed both cystic cavities; the outer wall of the ovarian cyst was marsupialised. The placenta came away in fragments, and the patient was well in six weeks. On careful revision of the history of the pregnancy it transpired that during the seventh month the patient had an attack of abdominal pain and vomiting which lasted forty-eight hours. The fœtus doubtless entered the ovarian cyst at once.

THERAPEUTICS.

(278) The Treatment of Tetanus.

Moschrowitz (*Annals of Surgery*, October, 1900) in concluding an elaborate review of the modern treatment of tetanus, says that a rational treatment of this affection would have to include five important points. With regard to the first of these, recent researches indicate the necessity of destroying the bacteria at the seat of infection, and thereby preventing a further production of toxins. It is important to enlarge the wound, remove all foreign matter, and to destroy all organisms—saphrophytic germs as well as tetanus bacilli by actual antiseptics. It is necessary, in the second place, to endeavour to eliminate from the body the toxins already absorbed from the source of infection. The author basing his recommendation upon the theoretical ground that in experiments on animals the blood is nearly always found to contain the toxins, suggests that it may be well to perform venesection, withdraw a certain quantity of blood, and substituting for it normal saline solution. In dealing with the important point of neutralising and rendering innocuous the poison already absorbed by the injection of the serum of animals which have been rendered immune to the disease, the author gives no very decided opinion. The antitoxin treatment, he states, appears to have a distinctly beneficial influence on the course of tetanus, and the statistics he has collected show that with this treatment the mortality has been reduced from 90 to 40 per cent. The fourth question of immunising the body after local infection has taken place involves, it is pointed out, the injection of antitoxin as a prophylactic measure in all wounds when there is reason to suspect the possibility of the subsequent development of tetanus. By such treatment, it is asserted, an extensive epidemic of puerperal tetanus in a lying-in hospital at Prague was cut short, and numerous instances of good results from a similar course have been recorded in veterinary practice. Although the use of serum is a most important factor in the treatment of tetanus, the other recognised therapeutic measures, the author insists, should not be neglected. It is important to overcome the symptoms induced by the action of the toxins, and to calm the increased reflex irritability of the higher nerve centres by isolation of the patient and the free administration of narcotics.

(279) Formaldehyde as a Disinfectant.

Abba (*Centralbl. f. Bakt.*, Band xxviii, No. 12, 13) gives an important summary of the experimental results recently obtained with formaldehyde as a disinfectant for rooms. The controversy as to its value has lasted for several years, but careful researches have of late thrown much doubt on its practical utility. Abba states (1) that formaldehyde disinfects surfaces only when these are quite smooth or polished; (2) that it cannot be relied on when there is perceptible dust in the room; (3) floors, frames, ledges, cornices, etc., are not disinfected; (4) the surfaces of upholstered furniture are only rarely and not uniformly disinfected; (5) only smooth or polished walls are disinfected, and not reliably; (6) it is recognised on all hands that formaldehyde does not penetrate bedding; (7) disinfection with formaldehyde must be reinforced by sublimate and steam if it is to be thorough; (8) disinfection with formaldehyde requires at least ten hours for each room, necessitating special housing arrangements for poor people who come from infected rooms. As a rule, especially where ventilation is difficult, the rooms are not inhabitable for twenty-four hours; (9) the process is not cheaper than others; on account of the variability and inequality of its effects, it cannot be considered of practical utility as a disinfectant for general use.

(280) Toxic Symptoms following the use of Izal.

Hobday (*Journ. Comp. Path. and Therap.*, September, 1900) describes the toxicological effects following the application of a dressing of izal to the skin of dogs and cats. Being assured that as an external application it was absolutely harmless, he used it in the treatment of skin affections. But recollecting that a similar statement had been made in connection with creolin and its preparations, and that these had caused fatal results on several occasions, he used it with caution. From observations on dogs and cats he is convinced that izal, like creolin, is poisonous to them if used injudiciously. Its action is irritant and narcotic, and there is great necessity for caution in its use, particularly when it is applied to a large area of skin. In some instances the animal seemed to be well out of danger when paralysis of the hind limbs developed, and death ultimately ensued. Compared with creolin, its toxic action is not quite so rapid or so violent, but, as with that drug, it would be unwise to apply with friction to any large area of the body, in such a manner that it would be absorbed, a preparation containing more than 10 or 15 minims per pound of body weight. The first signs of danger are subnormal temperature, continual irritation, and involuntary muscular twitchings. These are followed by complete inability to rise, coma, and death.

(281) Treatment of Lupus by Unna's Method.

Krzysztalowicz (*Rev. de Thérap. Méd. Chir.*, 1900, p. 167) reports favourably on this method which consists in the combination of caustics and bactericides. For superficial cases the following formula is used: Salicylic acid, chloride of antimony aa 2 parts; creosote, extract of Indian hemp, aā 4 parts; adeps 8 parts. This is spread on the affected parts, covered with gutta-percha tissue, and kept in place for 24 to 48 hours. It is then replaced by simple boric vaseline for two or three days. The process is repeated till the granulation tissue begins to cicatrise. Deep cases of lupus are not much benefited by this application, and for these the following is substituted: Caustic potash, lime, green soap, distilled water: equal parts. In order to obtain a deep action, the paste must be moistened and covered with impermeable tissue. A tampon of damp wool is applied over the paste, and this is covered with pink aconite.

On mucous membranes the tampon is useless, because the mucous secretion moistens the paste. The scab separates after several days, and is replaced by granulation tissue. If there are deeper nodules left after the cauterisation they are treated by compresses of an aqueous solution of caustic potash, 1 in 5,000 to 1 in 10,000.

(282) Treatment of Gonorrhœa.

Garrow (*Montreal Med. Journ.*, February, 1900) considers abortive methods of no value unless cases are seen very early. His method of treatment is by copious irrigations with weak antiseptic solutions—bichloride of mercury and permanganate of potash used at a temperature of 115° F. to 120° F. Each irrigation is followed by an injection of protargol (⅛ to 2 per cent.) which is retained for 15 to 30 minutes. Irrigation should be begun at once, and repeated twice daily for four or five days; then daily for a week or more till the discharge is clear and the gonococci have disappeared. When the discharge is thin and serous the patient is ordered a mixed mineral and vegetable astringent injection. If the whole treatment is carried out by the patient the results are not so good. Alkaline diuretics combined with an anodyne are also recommended. Salol combined with cubebs helps to diminish the pus in the second week. The author does not recommend copaiba or sandal wood. In anterior urethritis when the morning drop and the "clap threads" persist there are always granular patches or inflamed follicles, which should be treated with nitrate of silver, followed by 25 to 40 per cent. boroglyceride. Posterior urethritis when acute should be treated with rest in bed, hot hip baths, leeches to the perineum, hot irrigations and injections of protargol. Tepid saline enemata and urinating in a hot bath are useful adjuncts. Salol and pulv. ipec. co. help to relieve vesical tenesmus. In chronic gonorrhœa irrigation with hot saline solutions followed by instillations of increasing strength of silver nitrate are useful. Local spots of inflammation can be treated by instillation by Ultzmann's syringe, after urethroscopic examination.

PATHOLOGY.

(283) Leucocytosis in Typhoid Fever.

Courmont and Barbaroux have made a series of observations on the changes both in number and character of the leucocytes in typhoid fever (*Arch. de Phys. et de Pathol. Gén.*, July, 1900). They state that there does not seem to be a fixed formula for the leucocytic condition in typhoid. Many different changes may be observed, so that in cases practically similar to the leucocytic curve may be quite different. In fact, two of their cases showing the greatest divergence in the behaviour of the leucocytes occurred in two patients, aged 33 and 35, both treated at the same time and in exactly the same way, and there being only a difference of one day in the duration of the two weeks; in one there was hypoleucocytosis, with decrease in the percentage of polynuclear cells; in the other there was hyperleucocytosis, with increase in the polynuclear percentage. In one the leucocytic curve rose during convalescence; in the other it fell. This shows the importance of not allowing the prognosis or diagnosis in typhoid to be too much influenced by the condition of the white cells. In some fatal cases hyperleucocytosis was present; while in others of a mild character the white cells were decreased. In the greatest number of cases, however, hypoleucocytosis was the rule. This may be temporary or constant. It is shorter in mild cases; more prolonged in severe. The authors are uncertain as to the exact period the decrease in leucocytes may be observed; their earliest case was on the seventh day. They also noted that frequently there is a rise in the leucocytic curve and the number of polynuclear cells towards the end of pyrexia or when the temperature begins to drop. As regards the polynuclear cells, as a rule they follow the leucocytic curve, but by no means constantly so. In the greater part of average cases, the percentage of polynuclear cells keeps high, notwithstanding that the total number of leucocytes diminishes. The writers therefore formulate the statement that hypoleucocytosis is due to decrease in the lymphocytes. The total number of polynuclear cells falls by proportionately much less, and their percentage is generally increased. In certain severe cases, however, the percentage of polynuclear cells is never raised above the normal, so much so that one might almost be tempted to give this fact some importance in prognosis were it not that this same condition is now and then observed in mild cases. One of the most constant observations is the considerable decrease of the leucocytes, especially polynuclear, during convalescence. It is not possible so far to define the relation of this with the gravity of the cases, nor to say how this phenomena is related to relapse. In cases of typhoid fever the leucocytic curve regains fairly rapidly its normal condition, though now and then the process is much prolonged. The reason of this is to seek. It is more especially the lymphocytes and mononuclear cells that first reach the normal. There may even be a temporary hyperleucocytosis, as a kind of reaction.

(284) Fat Embolism.

Ribbert (*Deut. med. Woch.*, June 28th, 1900) makes a further addition to his numerous contributions on this subject. He confirms his former discovery that multiple ecchymoses and fatty degeneration are common sequelæ when the emboli affect the brain and heart muscle respectively. The brain affections lead to definite symptoms, such as vertigo, etc., which do not come on for some days after the incident causing the embolism. Owing to the viscosity of the embolus, or more probably to the feebleness of the circulation, impaction occurs first in the lungs, and it is only if and when the embolus breaks up again that the systemic circulation is affected. An extensive fat embolism of the lungs may be seen within an hour of an injury, but even if it reaches into the capillaries from the first, which is not always the case, some time must elapse before any can be squeezed into the pulmonary veins. The author's further researches bear upon the source of the fat and arose out of an observation made by him of a case in which a man had a most extensive fat embolism without any fracture. This raised the possibility of the occurrence of this condition from simple concussion of the marrow. In the first place, it is not easy to understand the mechanism by which the fat would get into the vessels in the case of a fracture; the conditions of pressure would prevent the escape of more than the merest fraction of that found in an ordinary fat embolism. Secondly, if all the fat set free got into the circulation, it would not account for the amount actually occurring in a moderately extensive case, which Ribbert estimates at from 15 to 20 c.cm. Thirdly, very marked fat emboli may be seen in cases of trifling fractures—for example, of the skull and sternum, bones which contain very little fat, but injury of which is usually associated with extensive concussion of the whole body. The author hence concludes that not only is concussion of the bone marrow a far more important etiological factor than fracture, but that in every case of concussion of a fat-containing bone fat embolism results. He confirms these revolutionary views by experiments on rabbits, showing that the lesion can be produced by striking any of the long bones or by simply dropping the animal from a height on to the ground. He hence regards fracture of a bone as merely an associated phenomenon and of no more importance in respect of fat embolism than as an indication of concussion of the bone marrow.

(285) Elimination of Bacteria by the Liver and Kidneys.

Metin (*Ann. de l'Inst Past.*, June 25th, 1900) has conducted experiments to decide whether bacteria are eliminated in the bile and the urine, the opinions on this question being contradictory. Rabbits were intravenously injected with cultures of B. subtilis, staphylococcus aureus, B. anthracis, and other organisms, and guinea-pigs were inoculated subcutaneously with the same. Great care had to be taken to obtain the bile and urine unmixed with blood. These secretions were taken at periods from a quarter of an hour to twenty-six hours after inoculation, and in all cases where they were free from blood they were found sterile; B. anthracis causes hæmaturia and lesions in the kidney and urine taken twenty-four hours after inoculation gives cultures of the organism, but the bile is sterile. The kidneys and liver must therefore be considered impermeable to bacteria, unless the latter produce an admixture of blood with the secretion.



Fig. 1.—Case I. Acromegaly.



Fig. 4. Case II.—Infantile myxœdema.



Fig. 2.—Hand of Case I. Showing padded condition of palm and flexor surfaces of fingers.



Fig. 3.—Skiagraph of hand of Case I. Acromegaly.

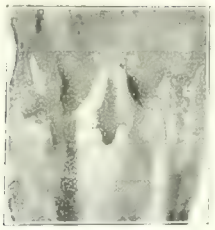


Fig. 2.—Child, aged 3 months.



Fig. 1.—Child, aged 10 weeks.

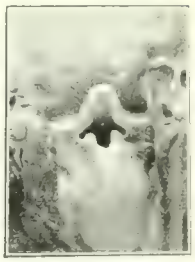


Fig. 3.—Child, aged 3 months



Fig. 6.—Adult larynx.



Fig. 4.—Child, aged 3½ years



Fig. 5.—Boy aged 9 years.



(7) Before experiment.



Fig. 9.—Lee's case of infantile stridor, child, aged 1 year, death from diphtheria.



(8) During experiment.

Figs. 7 and 8.—Larynx of newborn child.



Fig. 10.—Refslund's case of infantile stridor, child aged 2½ months, death from pneumonia.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(286) Arterio-sclerosis.

J. W. Runsberg (*Finska Läkures Handlingar*, Bd. xliii, No. 8, 1900) says that, as regards the pathology of the condition, the heart is the principal seat of the sclerosis. The cardiac symptoms are, however, of somewhat contrary significance, one set arising from sclerosis of the coronary arteries, the other caused by disorganisation of heart functions consequent upon a general sclerosis in the arterial system. In the latter state there is cardiac hypertrophy; in the former myomalacia or myocarditis. Both conditions, however, may be present in the same patient, and the resultant symptoms be more or less mixed. There is also a sclerosis of the heart which commences in the aorta and semilunar valves. The arterio-sclerotic symptoms of other organs depend upon defective nutrition due to the degenerated state of the vessels (which weakness also may lead to ruptures of the cerebral arterioles), or to circulatory disturbances due to the heart hypertrophy. The author divides the scleroses in three classes: (1) Syphilitic sclerosis, attacking both small and large arteries, and characterised by intense local, without any general, trouble. (2) Arterio-capillary fibrosis, attacking the smaller and smallest arteries, characterised by important general circulatory disturbance. (3) Senile sclerosis, affecting all the arteries, and manifested by both general and local symptoms. It is not rare to meet with combinations of the three classes. The prognosis is bad, but in the syphilitic variety the process may be arrested by suitable early treatment. In all cases iodide of potassium is the only drug which appears to directly deal with the fibrosis. Prophylactics, in the shape of diet, alcoholic abstinence, exercise, and eliminatory measures should always have particular attention in likely subjects, and the condition of the heart regularly investigated. Angina, cardiac asthma, and other organic symptoms will require the usual remedies.

(287) Suprarenal Hæmorrhage.

Arnaud draws attention to some very interesting cases of hæmorrhage taking place into the suprarenals (*Arch. Gén. de Méd.*, July, 1900). In this paper he brings together some 80 observations. In more than half the cases, hæmorrhage into the suprarenals gave rise to no appreciable symptoms; in others it produced a voluminous hæmatoma, which in a certain few was quite palpable. The symptoms of this condition are at the best vague. As a rule, there are no true Addisonian manifestations, though occasionally there may be some bronzing and asthenia. It is pointed out, however, that, usually speaking, death follows too rapidly to allow such symptoms to be produced which requires more or less time. In other cases the symptoms are of a peritoneal character, and on *post-mortem* examination a considerable amount of post-peritoneal hæmorrhage is ascertained, with pressure on the abdominal organs. In other instances the symptoms are those of extreme nervous shock, characterised by almost sudden or rapid death, with occasionally delirium, convulsions, coma, subnormal temperature, and syncope. This latter group seems to contain the majority of cases. The shock, as may be gathered, is very severe, being evidently due to interference with the solar plexus. The term "suprarenal apoplexy" has been suggested, and the cases certainly possess distinctly apoplectic characteristics. The causation of suprarenal hæmorrhage is obscure. It seems to be chiefly due to lesions of the vessels of a degenerative character, or else chronic venous congesiion, under which condition the veins become greatly enlarged, and the whole capsule itself increases in size. Such enlarged veins are liable to become thrombosed with resulting hæmorrhage behind the block. In other cases, infective conditions and intoxications have a predisposing influence or are directly causal. The diagnosis of these cases, as will be seen, is extremely difficult, and it can only be by attention to every possible detail that one may surmise the presence of capsular hæmatoma.

(288) Actinomycosis of the Lungs.

Parascandolo (*Clin. Mod.*, November 7th, 1900), in a clinical lecture on the surgery of actinomycosis of the lung, summarises 14 recorded cases. The only 2 which recovered were those in which radical operations, with resection of four or five ribs, and cauterisation of the disease cavity in the lung were carried out. All those that were simply incised and drained ended fatally. The infection of the lung may be secondary to either cervico-facial or pharyngeo-œsophageal actinomycosis, or it may be primary, either through the bronchi or from an external wound. There are three forms clinically: (1) The pulmonary, with insidious onset, going on to induration of a large area of lung, generally in the subclavicular or postero-lateral regions, the apices being usually free; (2) the bronchial, with a diffuse bronchial catarrh, and fœtid muco-purulent expectoration, containing the fungus; (3) the pleural, with effusion: the coexistence of pleural effusion with retraction of some part of the thoracic parietes—due to fibrous changes in the lung—is pathognomonic. Another pathognomonic symptom is the presence of a swelling in the wall of the thorax where it has been invaded by the fungus, along with shrinking of the lung causing retraction of the thoracic walls; later on this softens and becomes subfluctuating without the formation of large abscesses. Puncture obtains a fluid containing fragments of fungus. Death may occur after months or years, according to the varying invasion of other organs by the disease; in one case of rapid diffusion of the fungus death occurred in twenty-four days.

SURGERY.

(289) Indications for Nephrectomy.

D'Antona (*Il Policlin.*, October 15th, 1900) in a paper on nephrectomy discusses the danger of leaving the patient with a single kidney. As a fact the recurrence of the disease in the other kidney is very rare, for the increased and more active circulation and the stronger current of liquid secreted protect it to some extent against suppuration, tubercle, or calculus. In truth, the healthy kidney, relieved from the presence of the diseased one, is less disposed to be attacked than it was before the operation. It is of course essential to be certain that the other kidney is really sound and acting well. D'Antona deprecates ureteral catheterisation; with the greatest care in disinfecting the bladder one cannot be certain that catheterisation may not infect the sound kidney; symptoms in case of infection are often insidious and delayed, and may not be attributed to their true cause. In many cases the diseased products occur intermittently in the urine, and even if the urine is normal but once in a given case it is enough to prove that there is one healthy kidney. The absence of this intermittence, however, has no diagnostic value. When the abnormal constituents are continuously secreted, so that there is doubt as to the functional integrity of one kidney, if the general condition of the patient is good, that in itself is enough to exclude a bilateral lesion. D'Antona tabulates 39 nephrectomies done by himself, with a mortality of 23 per cent. (only 16 per cent. among those done for pyonephrosis).

(290) Wound of Heart Successfully Treated by Suture.

Fontan (*Bull. et Mém. de la Soc. de Chir. de Paris*, May 15th, 1900) reports a case of wounding of the left ventricle and also of the left lung, in which free exposure of the injured organs and closing of the wounds by sutures resulted in complete cure. The patient was a soldier who came under the author's care in a very critical condition with six self-inflicted punctured wounds between the third and seventh ribs in the precordial region. There was a large collection of blood under the skin, and on percussion of the chest distinct signs both of pneumothorax and of hæmothorax could be made out. A large flap including the anterior portions of the fourth and two following ribs detached in front by dividing the costal cartilages, and loosened externally by section of the fourth and sixth ribs and fracture of the intermediate one, was turned outwards, and the large orifice thus made in the wall of the chest exposed the left pleural cavity containing a large quantity of blood, a superficial wound in the diaphragm, a wound of the anterior margin of the left

lung, and a third wound about 1 cm. in length in the pericardium. This last having been enlarged, a penetrating wound about 12 mm. in length was exposed on the anterior wall of the left ventricle. This last wound was closed by a continuous suture of catgut, and the cavity of the pericardium irrigated with boiled water. The wound in the lung was also closed by a similar suture, and the pleural cavity washed out. The patient made a good and speedy recovery, and when discharged after an interval of two months presented no signs of any bad results from his injuries. The author in his comments on this case states that the application of the suture to the wound in the left ventricle was attended with much difficulty due to the violent and extensive movements of the heart, which were caused mainly by the disordered action of the diaphragm set up by the sudden collapse of the left lung and the consequent disturbance of respiration.

(291) Transplantation of Thiersch's Grafts on the Inner Surface of the Larynx and Trachea.

Lénárt (*Pester medizinisch chirurgische Presse*, No. 19, 1900) points out the difficulty of preventing a serious degree of stenosis of the larynx and trachea after free removal of mucous membrane either by ulceration or by a surgical operation, and reports a case in which he practised with success Thiersch's method of skin transplantation with the object of covering a large surface denuded of mucous membrane during an operation for the removal of multiple papilloma, involving both the larynx and the upper part of the trachea. The extensive raw surface was covered by grafts taken from the left arm of the patient, which were kept in place by rolls of sterilised gauze. The incision in the larynx and trachea was left open for a time, and in the course of two weeks closed without the application of sutures. The operation for the removal of the growths was preceded by an inferior tracheotomy and the introduction of Trendelenburg's cannula. This cannula was removed at the end of the sixth week. At this time the interior of the larynx, examined by means of a mirror, was found to be slightly congested, but in other respects seemed quite normal. There was no disturbance of the relative positions of the vocal cords, and the inner surfaces of the air passage were quite smooth. The breathing was absolutely free, and the patient's voice, though somewhat muffled, was still distinctly audible.

(292) Wounds in Stomach Repaired by Transplanted Omentum.

Enderlen (*Deut. Zeit. f. Chirurg.*, April, 1900) has made some experiments in the interest of abdominal surgery, as not only has the omentum been sutured to a perforating gastric ulcer with success (Brann's case), but Senn has advocated transplantation of a severed piece of omentum for the repair of damage to the alimentary canal. W. H. Bennett successfully closed a large gastric ulcer by means of an omental plug. Turning to the pathology of injuries of the stomach, it is noted by Enderlen that small breaches in the mucous membrane from wounds, hæmorrhages, and caustics repair well, the glandular substance being restored. Enderlen made a series of experiments on cats and dogs. Portions of the wall of the stomach were excised. The surrounding mucous membrane always prolapsed freely. The piece of omentum, already fixed to the serous coat close to the seat of excision, was now sewn around the wound, the omental tisue being fixed to the serosa as before. A process of omentum was now sewn over the whole, being united by three or four sutures. This was necessary in the case of cats, where the omentum is very thin. The abdominal wound was now closed, and the animal was kept alive for a varying extent of time. The experiments proved not only that the transplantation succeeded, but that the omental tissue gradually assumed the character of gastric mucous membrane. Well-formed glands developed. This latter result is specially important and satisfactory when we remember that the gastric mucosa is a very important organ in itself.

(293) Suture of the Intestine for Perforation in Typhoid.

Bolton (An. Report Met. Asylums Bd., 1899, p. 189), after describing a case in which laparotomy was performed—though the life of the patient was not saved, yet there was no extension of the peritonitis after the operation—reviews the whole question of operation for perforated intestinal ulcers. If the operation is performed between twelve and twenty-four hours after the perforation there is the greatest chance of recovery. The chances are also greater if the perforation occurs at a late stage of the disease and if the case be mild. In regard to the operation, it is important not to waste time in searching for a second perforation. The aperture should be closed by invaginating a longitudinal strip of intestine by means of Lembert's or Halsted's sutures, after emptying the gut if it is loaded, and without paring the edges of the perforation. If the gut is badly ulcerated, the formation of an artificial anus is preferable to resection on account of the time saved and the less severe nature of the operation. The abdomen should be cleansed with saline or some mild antiseptic solution, and probably it is better to introduce a drainage tube than to stitch up the wound completely.

MIDWIFERY AND DISEASES OF WOMEN.

(294) Rupture of the Uterus.

Franz (*Monats. f. Geburts. und Gynäk.*, October, 1900) reports 12 cases of rupture in the Halle Maternity; 10 were complete and 2 incomplete. Out of the complete ruptures, 6 were transverse and anterior, 1 transverse and posterior, 2 longitudinal rents in the cervix extending into the uterus, and 1 transverse rent in the anterior vaginal fornix. Both the incomplete ruptures were longitudinal and in the cervix. The pelvis was narrow in 7 cases—6 head presentations and 1 cross-birth. There were also 2 cross-births without contracted pelvis; in the 3 remaining cases there was no mechanical obstruction. Of the 10 complete ruptures, 3 were due to violence. Franz adds the very important information that in 1 of the 3 the accident seems to have occurred after delivery during manual expression of the placenta. The symptoms of threatened rupture are not always prominent. Extreme tension of the cervix was only noted in 1 out of 4 cases where this condition was sought for by exploration, and in 1 of the 4 tension was quite absent. Out of the 10 complete ruptures, 9 were subjected to abdominal section; 1 admitted moribund, was plugged. In 4 of the 9 operations the child was delivered through the abdominal wound. In 4 panhysterectomy was performed, in 4 the rupture was sutured, in 1 supravaginal hysterectomy was preferred. Only 2 out of the 9 abdominal operations were saved—these were the panhysterectomies; 5 died from sepsis, 3 from bleeding (including the case where no operation was possible). Of the incomplete ruptures, 1 was treated with the tampon and died of sepsis, 1 underwent supravaginal amputation and died of hæmorrhage. All cases of rupture of the uterus should be treated as though already septic, for, though some are attended before infection has set in, this fact cannot be proved in actual practice. Hæmorrhage and sepsis are the two dangers and they are best met by total hysterectomy. He prefers the vaginal route. Franz admits that all cases of rupture do not demand operation. In every case, even when the rupture is complete, conservative treatment must first be considered.

(295) Cancer of the Body of the Uterus.

Calderini (*Ann. de Gynéc. et d'Obstét.*, September and October, 1900), out of 150 cases of uterine cancer under his care, observed 8 where the cervix was quite healthy. Diagnosis was always made by scrapings, and vaginal hysterectomy was recommended in all; 6 patients consented; 3 have recovered, and the disease has not recurred. In the first the operation was performed in 1891, in the second in 1892, and in the third in 1893. The first patient was 38 when operated upon; she had been subject for three years to hæmorrhage, and recently the discharge had become fœtid. The second was 46; she suffered when 45 years old from amenorrhœa for twelve months, followed by fœtid mucous discharge for four months. The curette brought away fragments which showed adenoma becoming malignant. The third patient was 59, and four years after the menopause (which seemed delayed till 55) a show came on about once a fortnight, lasting for a year and a-half, when the operation was done. Thus, though cancer of the body is rare, it is by no means unknown, and fungous

endometritis must always be looked upon with suspicion. Calderini insists that when this affection is diagnosed by the curette in an elderly patient the uterus should be removed at once, as it is exceedingly prone to degenerate into adeno-carcinoma of the body. By acting on this principle there will be no fear of recurrence or of operating when it is clear, on the evidence of what is discovered during the hysterectomy, that the disease has advanced beyond the limits of the uterus.

(296) Abdominal Hysterectomy for Cancer.

König (*Centralbl. f. Gynäk.*, No. 43, 1900) finds that the more favourable the immediate results of vaginal hysterectomy the less satisfactory were the after-histories. He preferred abdominal hysterectomy after Freund's method, which he had practised in seven cases, with three deaths. This high mortality was due to the fact that all cases were too advanced to allow of the vaginal operation. Peiser's practice was adopted; that is to say, that the pelvic cellular tissue was carefully cleared—before the removal of the uterus—of glands, lymphatic vessels in connection with the genitals, and plain muscle fibres. The operation was long lasting, from two and a-half to three hours, but very little blood was lost. Preventive ligature of the hypogastric artery is unnecessary and useless, as the collateral circulation is too freely established. As much as possible of the pelvic peritoneum should be saved. Thorough isolation of the ureters is of high importance, and can be done without catheterism of those ducts. On the morning of the operation the cancerous tissue is thoroughly scraped out and cauterised, and just before the abdomen is opened the cavity made by the scraping is once more cauterised and the vagina thoroughly disinfected.

(297) Pregnancy and Fibroid in Uterus Unicornis.

Kehrer (*Das Nebenhorn des dippleten Uterus*, Heidelberg, 1900) has prepared an important monograph on uterus unicornis, including uterus bicornis with one horn obstructed. He reports 82 cases from recent medical literature, including one under his own observation. The patient was 28 and had borne three children. She had exceeded term for three weeks. Pregnancy in right rudimentary cornu being diagnosed, it was amputated, and the patient again became pregnant. He divides these malformations into two varieties connected by intermediate forms: (1) Uterus bicornis and septus bilocularis with relatively good development of the musculature and vessels of the more or less atresic, gravid, rudimentary cornu. Here that cornu undergoes almost normal evolution. Rupture is rare till the seventh month, and as a rule pregnancy continues till beyond term. The pedicle is usually thick, it may contain a very narrow cervical canal. (2) Uterus bicornis and septus bilocularis, with very ill-developed rudimentary cornu. Evolution is here very imperfect, so that rupture within the first six months is almost certain. The pedicle is constant, and usually solid, seldom bearing a trace of a canal. As to prognosis, Kehrer finds that most cases rupture within the first six months, in some the fœtus, dead before or at term, is retained, whilst some undergo operation. Twelve cases of hæmatometra in this variety are recorded; the distended cornu was never larger than a goose's egg. In 5 there was hæmatosalpinx as well. In 1 only the hæmatometra ruptured, apparently between the layers of the broad liga- When a trace of a cervical canal, patent throughout, exists, conception in the ordinary way is always possible. When the pedicle is quite solid, the sperm cell may fertilise an ovum in the opposite ovary (transmigratio ovuli et seminis externa, seu intraperitonealis), or may get over to the ovary attached to the rudimentary cornu and fertilise an ovum on that side (transmigratio seminis externa seu intraperitonealis). The pedicle was solid in 78 per cent. of all Kehrer's cases. The right or left cornu were involved with almost equal frequency. Rupture is most frequent in the fourth month (47 6 per cent.), as the gravid cornu has begun to rise above the protecting bony pelvis. The normally developed horn ceases to menstruate, as a rule, hypertrophies, and develops a decidua which may be cast long before the death of the fœtus. Cornual pregnancy is rarely painful at first, as is the case with tubal pregnancy; rupture is often sudden and is very fatal. In 23 out of the 82 cases where rupture did not occur, the fœtus died before, at, or after term, its death usually being preceded by labour pains and active fœtal movements. A cachectic condition follows. The results of operation are favourable: 45 out of the 82 cases underwent abdominal section, 39 recovered (86.7 per cent.), 7 bore children again afterwards; 2 of the 6 deaths were due to loss of blood before the operation, 4 were from peritonitis, 1 of the cases being clearly septic beforehand.—Heinricius (*Monats. f. Geb. u. Gynäk.*, October, 1900) reports a case of myoma in each cornu of a rudimentary uterus bicornis unicollis. In 1891, when the patient was 31, she was first examined; she was married, but the period had never appeared, though smart pains set in about every two or three weeks. Sexual intercourse was attended with occasional pain, but it was somewhat pleasurable, except during the pseudo-period. The vagina was about an inch deep. Uterus rudimentarius was diagnosed. The breasts were well developed, the pubic hair thick, and the external organs normal. In 1897 the same patient came again under Heinricius's care. A firm, movable tumour filled the lower part of the abdomen; on pelvic exploration, a second tumour as big as a fist was detected. At the operation, the tumours were found to be myomata, each in one undeveloped cornu, each bearing a rudimentary uterine cavity with endometrium, and each had a round ligament and Fallopian tube proceeding from it. There was a rudimentary cervix of the size of a pea. Both ovaries were present. Convalescence was rapid. The blind sac representing the vagina did not communicate with the cervix. The same authority (*ibid.*) reports a case of ovarian tumour, hæmatometra, and hæmatocolpos in uterus bicornis, unicollis rudimentarius, and vagina rudimentaria. The patient was a girl, aged 21; she had never menstruated, but was subject to pains and vomiting about every third week ever since she was 15. The breasts, pubic hair, and vulva were well-developed. The vagina was entirely absent, and the tissue between the rectum and urethra very thin. There was a tumour as big as a fist, pressing on the rectal wall, and almost fixed, and another, movable and reaching above the pubes. The operation was complicated, and the bladder and urethra were damaged. There was a cystic tumour of the left ovary, which was removed with its tube. This tube and the round ligament were connected with a left uterine horn full of blood, which extended into a blind vagina. The right tube and ovary were normal, the tube and round ligament sprang from a small nodule representing the right cornu. As an artificial vagina was made and the right ovary not removed, the period came on, though irregularly, after convalescence.—Gunsett (*Hegar's Beiträge*, Vol. iii, March 3rd, 1900) reports 3 cases of myoma in double uterus. (1) Multipara, aged 40, menorrhagia and tumour. There was a fibroid in the right cornu, partly interligamentary. The uterus is classified as "duplex bicornis cum vagina septa," and the left uterus with its appendages were left untouched. It is not stated if the myomatous cornu were perfect. (2) Multipara, aged 28. Amputation of the whole mass supravaginally was performed, and reported as "uterus bicornis unicollis, with myoma of the inner wall and the septum." (3) Multipara, aged 46. Amputation as in second case. "Uterus duplex myomatosis." A large myoma in the right cornu; in the left were two interstitial fibroids, and a large growth of the same kind lay in the septum, between the cornua.—Freund (*ibid.*), in a monograph on the relation of abnormal growth of hair associated with malformations, reports one case where a woman, aged 22, was in her first pregnancy; there was hair on the face, breasts, back, abdomen, and thighs. The uterus was of the septus bicornis type, and abortion was induced. The second case was in a bearded woman, a multipara, aged 42. She had a patulous urachus, a long vermiform appendix, and a deep post-anal dimple. The uterus is described as unicornis.

THERAPEUTICS.

(298) The Light Treatment in Rodent Ulcer.

Valdemar Bie (*Dermat. Zeit.*, vol. vii, August, 1900, Part 4, p. 630) contributes a paper on the treatment of epithelioma

of the skin (ulcus rodens) by means of concentrated light. Finsen brought 16 cases before the Copenhagen Dermatological Society. In 3 the results had been *nil*: 5 patients were improved, but not cured; 7 were cured, at any rate no recurrence had up to the time been noted. One patient, apparently cured, had had a recurrence. One of the 3 unsuccessful cases, with a palm-sized rodent, had had 89 sittings, but the case from the description was evidently a bad one. Why the 2 others had not improved (81 sittings in one, number not stated in the other) could not be explained. Among the patients who had been improved the rodent was situated on the eyelids in two, hence the treatment had to be carried out gingerly and unsatisfactorily for fear of injuring the sight. There has been no recurrence in the 7 cases reckoned as cured for 2½ years, 11, 11, 9½, and 6 months (latter lapse of time in 3 cases). Whether the cure is certain in these cannot be positively asserted. In these patients, too, the disease was superficial and limited in extent, and therefore very suitable for the light treatment. In all the cases a microscopical examination was carried out, definitely showing the disease was a rodent ulcer. In one or two cases it was apparently epitheliomatous (that is, rapidly-growing cancer of the skin in contradistinction to rodent ulcer). One growth is noted as (microscopically) carcinoma (scirrhus), and affected the lip. This patient's condition was first treated under the impression that it was lupus vulgaris. He was improved, but after microscopical examination it proved to be cancer of the lip, and he was sent to hospital for surgical treatment. In connection with the effects of the light rays on the living organism, the following are of some interest: Finsen, examining the tail of a tadpole after an exposure of 10 to 15 minutes to the chemical rays, observed that the circulation in the smaller capillaries became slower, terminating in complete stasis, with diapedesis of the white corpuscles. A few red blood corpuscles were also extruded. Magnus Möller, of Stockholm, has confirmed this by his microscopical investigations of normal human and rabbit skin subjected to weak electric rays (Möller, Influence of Light on the Skin in Health and Disease, *Bibliotheca Medica*, Abth. D. ii, Heft 8, 1900).

(299) Subarachnoid Cocainisation.

This method of producing anæsthesia in the lower portion of the body is now being much used even in private practice, and various modifications are gradually introduced to overcome difficulties of technique. Fowler (*New York Med. Journal*, October 20th) describes a combined aspiration and injection instrument for the purpose. It consists of a double needle, one passing within the other. The inner one is of steel, and projects beyond the outer platinum one. This enables a very fine point to enter the spinal canal, and only necessitates the withdrawal of the inner needle if any clot, etc., occludes the lumen, thus avoiding a second puncture. The inner needle is secured to the outer one by a bayonet lock. A glass bulb is arranged to receive the cerebro-spinal fluid as it exudes, and there is a small aspirating bulb by means of which a vacuum can be maintained until the needle has been partially introduced, and any blood aspirated from the lumen. Massey (in the same number) reports from his private practice a case of hæmorrhoids in which he used this method of anæsthesia, and points out that many persons have a special idiosyncrasy for cocaine, hence care should be taken to adopt the dosage to the individual, and the solution should be used as weak as possible. In his case, 30 minims of a ½ per cent. solution produced total anæsthesia for five hours, but the operation was fully concluded within an hour and a half, so that probably 15 minims would have sufficed. Goffe (*Medical News*, October 13th) used the injection in a case of abdominal hysterectomy, in which the analgesis was complete and the results gratifying.

(300) Lumbar Puncture.

Hand (*Amer. Journ. Med. Sci.*, October, 1900) gives a summary of what is known as to the value of lumbar puncture, which was first introduced by Quincke in 1891 for the relief of excessive intracranial pressure in hydrocephalus. The causes of increased tension in the cerebro-spinal fluid are: Inflammation of the internal or external membranes, including hydrocephalus; tumours, chlorosis, traumatism, toxic states, such as are produced by lead, uræmia, or the infectious fevers. Pfaundler has shown that the normal subarachnoid pressure in the sitting position is 20 to 25 mm. of mercury, about half of which is hydrostatic and disappears when the patient lies down. A sterilised trocar should be introduced 5 to 10 mm. to one side of the middle line between the third and fourth lumbar vetebræ and passed for 2 cm. in children, or for 4 to 6 cm. in adults, slightly inwards, and in older children and adults upwards, until the sense of touch determines when the cavity is reached. As an aid to diagnosis the method has a wider field than as a therapeutic agent. The fluid drawn off may vary chemically and physically. Thus the glucose it contains, which normally amounts to 4 or 5 centigrams per 100, is increased in pneumonia and is absent in the later stages of tuberculous meningitis and in the whole course of meningitis caused by Weichselbaum's meningococcus or Fraenkel's diplococcus. The normal amount of albumen, which is about 0·2 per mille, is increased in inflammation and some cases of tumour or apoplexy. In meningitis it is commonly 2 to 3 per mille, and in purulent meningitis as much as 7 to 9 per mille. Turbidity speaks for meningitis, though in tuberculous meningitis the fluid may be almost clear. Fibrin always forms in meningitis when the fluid is allowed to stand, but never does so in cerebral tumour. Blood in the fluid is usually due to puncture of a blood vessel by the needle, but is also met with in injuries to the head or spine, subdural hæmorrhages, or apoplexy into the ventricles, and occasionally in meningitis. Staphylococci, streptococci, pneumococci, meningococci, typhoid bacilli (in two cases), bacterium coli, and tubercle bacilli, have all been found in the fluid. The last-named organism may be demonstrated by injecting the fluid into a guinea-pig, or by allowing the fluid to stand for some hours, fishing out the slight net of fibrin which forms at the bottom with a platinum needle, fixing it on a cover-slip and staining. It is not safe to draw conclusions from negative bacteriological results. Therapeutically, lumbar puncture is of value in epidemic cerebro-spinal meningitis, and if frequently repeated may bring about recovery, partly by evacuating the pus from the subarachnoid space. In tuberculous meningitis it is only palliative, temporarily lessening headache and contractures. In cases of cerebral tumours with a high intra-arachnoid pressure, lumbar puncture has frequently been followed by sudden death, either because the tumour blocks the Sylvian aqueduct or because the withdrawal of fluid from the spinal subarachnoid space allows the tumour to sink towards the foramen magnum and press on the vital centres. In chronic hydrocephalus lumbar puncture may accomplish as much as ventricular aspiration. In apoplexy, hæmorrhagic pachymeningitis, cerebral softening, and embolism its use is dangerous and useless. Lumbar puncture has also been used with apparent success in uræmia, lead encephalophy with coma, chlorosis, infectious diseases with cerebral symptoms, and in spinal injuries with paraplegia.

PATHOLOGY.

(301) Pathology of Plague.

In addition to cases of primary pneumonic plague, in a certain number of bubonic cases there are pulmonary complications and signs of broncho-pneumonia. The sputum in these cases contains the bacillus in greater or lesser quantity, and its presence is easily demonstrated by inoculation into animals. Metin (*Ann. de l'Inst. Pasteur*, September 25th, 1900) has conducted a series of experiments to discover how long the bacilli remain present in the sputum, and whether they are virulent during convalescence. He found that by the eighth day of apyrexia the virulence of such bacilli as were present was attenuated, and that on the tenth day the sputum was inoffensive in all cases examined. Metin also studied by experiment the properties of the serum of individuals convalescent from plague. He found that in the case of guinea-pigs it exhibits properties preventive and even curative. Similar experiments on mice, when the serum was three months older, were negative in result.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(302) The Toxic Dyscrasia of Diabetes.

Lépine (*Sem. Méd.*, November 21st, 1900) discusses the toxic symptoms of diabetes. A diabetic urine contains not only acetone and diacetic acid, but also, especially when toxic symptoms are present, β-oxybutyric acid, and an increased proportion of ammonia. Acetone and diacetic acid are not strong enough poisons to account for the symptoms; β oxybutyric acid has no marked toxicity when given in large quantities to a dog whose pancreas has been removed; so that a slow acid infiltration of the tissues has lately been regarded as the cause of the toxic phenomena. This, however, does not explain certain symptoms which precede the origin of coma—for example, acceleration of pulse and dyspnœa. Moreover, the inefficacy of alkaline medication points to an additional causative factor. Now, β-amido-butyric acid, given experimentally to a dog or cat, causes acceleration of pulse, increased amplitude of respiration, and coma. This acid has not been found in the urine or organs, but may still be an intermediate product during the formation of β-oxybutyric acid from proteid matter, an origin which is probable in addition to that from fat. β amido-butyric acid on hydration gives rise to β-oxybutyric acid and ammonia, and is itself an hydration product of nitrile amido-butyrate, which is practically innocuous. Such reactions would account for the increase of ammonia in the urine at the onset of toxic symptoms, and indicate a rational line of treatment. If the foregoing explanation be true, it may well be possible, by means of a phenol, to carboxylise the poison in the tissues, and so produce a harmless nitrile body in its stead. Treatment by phenols has not so far been very successful, but is worth trial. In the absence of further investigation, however, Lépine advises reliance upon the recognised measures: (1) Alkaline medication; (2) the intravenous injection of salines, (3) inhalation of oxygen.

(303) Diphtheria of the Digestive Tract.

Schoedel (*Münch. med. Woch.*, June 26th, 1900) in a case of diphtheria, found *post mortem* a large patch of membrane in the stomach, in which the bacillus was present in pure culture. There were also signs of enteritis in the duodenum, ileum and colon. This led him to investigate other cases as to the presence of the organism in the digestive tract, with the result that in two cases of faucial disease the bacillus was found in pure culture in the stomach, and in another case where enteritis was present it was found in the lower ileum. In 8 cases the fæces were analysed bacteriologically with negative result, except that a single specimen was thought to have been observed in one culture. No negative observations in regard to the stomach and intestine are given by the author. He believes that under ordinary circumstances the hydrochloric acid of the gastric juice is able to deal with such bacteria as gain entrance to the stomach, but that in a severe attack, where this secretion is interfered with, a local diphtherial process may be set up and also attack the intestine.

(304) Aphasia Complicating Infectious Diseases in Children.

Inschitta (*Gazz. degli Osped.*, June 17th, 1900) draws attention to the occurrence of aphasia in children during or after an attack of one or other of the infectious diseases—for example, measles, scarlet fever, typhoid, pneumonia, etc. The mode of action is probably a toxic poisoning by the toxins of the specific disease, causing very minute and more or less temporary changes in the speech centre. Occasionally the aphasia may be embolic; for example, as a result of detachment of an embolus in the course of an endocarditis. The prognosis, as far as life is concerned, is good, and most of the cases recover as far as function is concerned, although in post-diphtherial aphasia the outlook is not so good. In the aphasia which sometimes occurs in the course of tuberculosis the prognosis is always bad. The relative frequency of aphasia in certain of the exanthemata is given as scarlet fever, measles, and variola, in the order named.

(305) The Earliest Symptoms of Multiple Neuritis.

Popoff (*Neurol. Centralbl.*, No. 13, 1900) states that the general belief that paræsthesiæ and pareses are the earliest symptoms in patients suffering from multiple neuritis is only partially correct. It is now possible by the use of electrical methods to detect even earlier changes in muscles and nerves. Thus in alcoholic patients, before the onset of polyneuritis, it is possible in some cases to show that the interossei muscles of the hand do not contract to faradic stimulation, while the response to galvanic stimulation is diminished. In an elderly alcoholic patient, aged 68, and the subject of an old left-sided hemiplegia, there were present ataxia in the legs, pain in the calves, and Romberg's symptom. Electrical testing showed a diminished reaction to faradic stimulation in the left foot (muscles of the toes) and left hand (fingers). These indicated a commencing peripheral neuritis, which subsequently grew more pronounced. In another patient, a man, aged 40 years, and a sufferer from lead poisoning, there was hemiparesis and loss of cutaneous tactile sensibility on left side. The thenar muscles of the right hand and thenar interossei muscles of the left hand reacted feebly to the electric (faradic) current, and at a later stage distinct symptoms of polyneuritis appeared. The absence of response to faradic stimulation and the diminution of response to the galvanic in the peripheral muscles are thus valuable diagnostic signs as the earliest indications of polyneuritis.

(306) Solitary Adenoma of the Liver.

Barbacci (*La Clin. Mod.*, an. 6, No. 38) reports the case of a man, aged 50, who died of cardiac mischief, and in whose liver was found *post mortem* a small solitary adenoma. No symptoms had been present during life. The author has collected 11 similar cases, and a study of these shows the following characteristics of this class of tumour. When discovered it has always been by accident, so that it is obvious they give rise to no symptoms; they are about equally divided as to sex; may affect any age from 2 to 69 years, and any part of the liver; as a rule, the surrounding liver tissue is unaffected. In shape they are rounded, and vary from yellowish to greenish white. They are clearly marked off from the liver substance by a capsule, from which they can easily be enucleated. Structurally, they are formed of cells, which present the fundamental morphological characters of hepatic cells. They are absolutely benign, and probably congenital in origin.

SURGERY.

(307) Urethral Fistula.

Unterberger (*Monats. f. Geburt. u. Gynäk.*, March, 1900) and Jahn (*Beit. zur klin. Chirurg.*, vol. xxvi, part 2, 1900) have published two memoirs on this subject, as important as the collection of papers on urachal cysts noted last year (Epitome, vol. i, 1899, par. 510). In the original case published by Unterberger the symptoms of fistula developed through obstruction to the bladder caused by retroversion and partial incarceration of the gravid uterus. The patient, aged 23, was sent into hospital as a case of "ovarian cyst ruptured through the umbilicus." A clear yellow fluid had run away from the navel for three weeks. A cystic tumour extended as high as the umbilicus; a tense, elastic swelling filled the pelvis, pressing down very low; the cervix could not be reached; the vagina showed the violaceous discoloration of pregnancy; an aperture, very minute, was detected in the umbilical cervix, and fluid which proved to be urine flowed from it. For a fortnight no urine had passed by the urethra. Into that canal Unterberger passed a long curved metallic catheter. Nearly two pints of urine came away mixed with pus, the cystic tumour disappearing, and urine ceased to flow through the navel. The pelvis was still filled with the elastic mass. The patient was kept at rest and carefully catheterised, the umbilicus became dry as no more urine escaped from it, and at the end of about three weeks the uterus reduced itself. The sound was passed for diagnostic purposes; next day contractions set in, and four days afterwards the patient was delivered of a five months child. A fortnight after

labour the uterus was found retroverted and retroflexed. The original displacement was traced to a fall ten feet on to a floor during the first month of the same pregnancy. On discharge, two months after delivery, the catheter could be passed almost to the umbilicus. The urine was clear and passed voluntarily without pain. In the original case which forms the basis of Jahn's paper, the patient was a boy, aged 5. Shortly after birth his parents noticed that but little urine passed from the urethra, but quantities of fluid escaped from the navel. When 5 years old a right inguinal hernia developed, then further attention was directed to the older trouble. The umbilicus was flat and nearly as big as a shilling. It bore a funnel-shaped depression, whence urine issued when the abdominal muscles were set in action. A catheter of about one-fifth of an inch diameter passed easily for over 5 inches downwards in the direction of the symphysis. Another catheter, after passing with ease through the urethra into the bladder, touched the former passed from above. On applying pressure to the umbilicus urine could be passed, though in a weak stream, through the urethra. The parts were examined by the cystoscope passed from above. Von Mikulicz operated. He dissected away the umbilicus and the walls of the urachus, which widened greatly towards the bladder. The peritoneum was opened at one point and closed. Finally, the urachus was cut away at its vesical attachment, and the transverse wound in the bladder closed by suture. The lower end of the wound over the sutured bladder was drained with iodoform gauze. About two months later three attacks of fever occurred without any cause being manifest; micturition was normal. Three years and a-half after the operation the child, now 8½ years old, was in very good health. The urine was passed in a full stream, and was normal.

(308) Etiology and Pathogenesis of Appendicitis.

KLECKIEGO (*Przeglad Chirurgiczny*, iv, 586, 1900) has investigated experimentally the causation of appendicitis, and finds that the chief cause resides in the infection of the appendix vermiformis or in the action of the products of the micro-organisms which invade this organ. It is not yet known which of the intestinal microbes is the chief agent in appendicitis. In artificially-produced appendicitis in the rabbit the author has noted an increase in the virulence of the bacterium coli commune. Further, experiments by Kleckiego show that (in the rabbit) appendicitis may also be determined by diminished resistance in the organ. The infection is always secondary to factors which act indirectly by creating a morbid predisposition or by acting in an accidental fashion. In this category must be placed certain anatomical peculiarities of the appendix (excess of length, deformity, displacement), mucomembranous enteritis, scybala, foreign bodies, etc. The many pathogenic theories of appendicitis all emphasise this or that secondary factor, neglecting all the others; under this heading come the "appendicular colic" theory of Talamon, and the "closed cavity" theory of Dieulafoy.

(309) Intestinal Obstruction from Gall Stone.

MORESTIN (*Bull. et Mém. de la Soc. Anat. de Paris*, February, 1900) reports this condition in a woman aged 82, admitted into hospital five days after the beginning of an attack of vomiting and abdominal pain, which had never ceased. Neither fæces nor flatus passed, and the vomiting was becoming fæcal. The parietes were fat, the abdomen chiefly distended in its middle part, and tender in the umbilical region, no tumour could be felt, and resonance was universal. At the operation much red serum escaped from the peritoneal cavity; the obstruction was detected over 19 inches above the ileo-cæcal valve. A foreign body could be felt through the walls of the gut; its yellowish-white colour and its facets showed through the intestinal tissues. This body, a calculus, was readily extracted by an incision an inch in length, made along the convex border of the intestine. The intestinal walls were united in two layers. The operation was over in a few minutes, but the patient never rallied, and died in three hours. The large intestine, especially the sigmoid flexure, was full of hernial diverticular pouches, each containing an oval pellet of hard fæces. There was an adhesion between the gall bladder and the duodenum at the junction of its first and second part, and the walls of the adherent structures had yielded; the fistulous communication, through which the calculus had passed, was wide enough to admit a finger. The cavity of the gall bladder was capacious enough to lodge a pigeon's egg, and contained one faceted calculus as big as a cob nut. The gall stone which had caused the obstruction was as big as a large chestnut, and weighed over a quarter of an ounce.

(310) Carcinoma of the Appendix Vermiformis.

HURDON (*Johns Hopkins Hosp. Bull.*, July-August, 1900) describes a case of primary and a case of secondary carcinoma of the appendix. The first was discovered in the course of an operation for retroflexion of the uterus. The appendix was in the pelvis and enveloped in dense vascular adhesions. The distal end was distended, but in the middle third the lumen was almost obliterated by firm new growth; a concretion was present. The new growth was found to consist of epithelial proliferation and infiltration in the form of nests and cylindrical processes, originating in the Lieberkühn's glands. Only three cases of carcinoma of the appendix have been reported in which a microscopical examination was made—one in a woman of 50 who died of heart disease closely resembling the one here recorded; in the other two the disease involved the cæcum secondarily, and communicated with the surface of the abdomen by sinuses. A case has been recorded by Gifford, where a sarcomatous growth surrounded a concretion in the appendix. The case of secondary carcinoma was discovered during an operation for ovarian carcinoma; there was also a growth at the pylorus, and the surfaces of the broad ligament were studded with small nodules. The muscular and submucous layers of the appendix were infiltrated with new growth, the outer third was distended and contained a concretion.

(311) Treatment of Strabismus in Young Children.

PRIESTLEY SMITH (International Congress, Utrecht, 1899) advocates the treatment of strabismus in early infancy—in fact, from its inception. In this way loss of power of fixation in the squinting eye may be avoided. Our means of treatment are, broadly speaking, three. First, we can diminish accommodative effort and sharpen vision by glasses, or we can hold accommodation in abeyance by the continued use of atropine. Secondly, we can exercise the squinting eye, or both eyes alternately, by the use of a pad or shade. Thirdly, we can operate. If no improvement results from steady persistence in the use of glasses and the pad, he resorts to early tenotomy, as he thinks the chance of getting binocular vision is thereby much increased. He has operated several times at 2 years of age, and more frequently at 3 and 4, and has seen no reason to regret it. He urges that in every case the child should be thoroughly examined soon after the squint begins, and that the profession, and through them the public, should have this principle impressed upon them.

MIDWIFERY AND DISEASES OF WOMEN.

(312) Malignant Adenoma.

SELBERG (*Virchow's Archiv*, Bd. clx, Hft. 3, 1900) has had the opportunity of examining a large number of preparations which microscopically were true adenomata, but the clinical history of which was that of carcinoma. There is a considerable difference of opinion amongst authors as to whether the malignant adenomata should be considered a distinct group of new growths. The malignant adenomata of the uterus have provided most of the literature of the subject; Schröder was the first to give an accurate description of these growths, and divided them up into adenoma diffusum and adenoma polyposum. Most authors have followed him in distinguishing the disease from carcinoma; but Kaufmann has maintained, on the ground of a single specimen, of a growth originating in a cervical stump left after supravaginal amputation, that there is no distinction between the two. The author describes two specimens of cervical adenoma and three of adenoma of the body of the uterus clinically malignant, but consisting entirely of glandular proliferation—that is, spaces

lined with epithelium resting on a fibro-muscular framework. The cells are all of the one type; there is not the polymorphism of cancer cells, nor are the solid masses or columns of cells characteristic of the latter disease found in the malignant adenoma. Five cases of malignant growth of the digestive tract are also described, all microscopically true adenomata. In these as in the uterus polypoid excrescences are a common characteristic. Single benign polypi are, of course, not uncommon both in uterus and intestine; in the latter also there may occur extensive multiple polyposis without malignant characters, but this condition in either situation should always suggest malignant adenoma. The author considers that this type of growth is distinct from true carcinoma, in that it retains its glandular characters both in primary growth and metastases, that the cells are of one constant type, and that no solid masses or multiplied layers of cells are formed.

(313) Hæmorrhage in a Case of Placenta Velamentosa.

Kaygrier (*Sem. Méd.*, November 21st, 1900) mentions a variety of puerperal hæmorrhage, which, as distinct from placenta prævia and accidental hæmorrhage, is dangerous to the child only and not to the mother. He relates a case in which pregnancy was normal and no bleeding took place until the rupture of the membranes. When the patient was first seen the fœtal heart sounds could not be heard; otherwise nothing abnormal was discovered. A stillborn child was delivered naturally. Examination of the after-birth showed that the cord was inserted 5 cm. from the edge of the placenta, and at the point where rupture of the membranes had occurred a torn umbilical artery was seen. A careful search for pulsation over the presenting membranes is therefore advisable as a routine measure. If such pulsation is discovered the proper treatment is early artificial rupture of the membranes as far away from the pulsating area as is practicable.

(314) Dermoid Tumour of Pelvic Connective Tissue.

Beyea (*Amer. Journ. Obstet.*, April, 1900) adds to literature a case of this rare disease, with a good summary of earlier reports. Sänger in 1890 first showed that a tumour may develop primarily in the subperitoneal connective tissue independently of the ovary. De Quervain proved this theory by the report of a case occurring in a man. Beyea's patient was a coloured woman, aged 38. Both uterine appendages had been removed when she was 26. Since that operation the period had never been seen again. Six weeks before she came under Beyea's observation she began to suffer from backache and tenderness in the right iliac fossa. There was also a hernia of the old operation wound. A tender cystic tumour projected above the right groin, half way to the umbilicus, and extended downwards into the right fornix, displacing the small atrophied uterus to the left. Beyea operated and found that the tumour completely separated the layers of the right broad ligament. It was enucleated, the bleeding from the cavity was not uncontrollable, but with the uterus unavoidably wounded it was otherwise, so that organ was removed. Convalescence was uncomplicated. The tumour was a bilocular cyst, was 4 inches in diameter. Its loculi contained yellow liquid grease, which solidified on cooling, its inner wall bore skin, rudimentary mammary and sebaceous glandular tissue, bone, cartilage, a little hair and much fat. There were no indications of remaining ovarian tissue; the surfaces of both ligaments close to the uterine cornua were smooth and normal.

(315) Calcified Ovarian Fibroma: Extreme Chronicity.

Pokrovsky (*Khirurghi*, January, 1900) notes a singular case where a very little tumour had existed for some twenty years, according to the patient's own report. For two years it caused occasional paroxysmal pain, especially when it slipped into the abdomen out of the pelvic cavity. It could be clearly defined by placing the patient in the genu-pectoral position, then it slipped over the pubes, and felt stony. It was freely movable and well pedunculated. As it worried the patient, who was 58, it was removed by abdominal section. The tumour measured 2 inches by 2½ inches, but weighed 8 ounces, and was of stony hardness. It proved, on microscopic examination, to be a fibroma completely calcified. Traces of ovarian tissue were detected. There was no ascitic fluid in the peritoneal cavity.

THERAPEUTICS.

(316) Protection against Malaria.

Experiments under the direction of Professor Grassi (*Centralbl. f. Bakt.*, November 5th, 1900) have been carried out at Paestum with a twofold object: (1) To prove conclusively that malaria can be transmitted only by the bites of *Anopheles*; (2) to overcome the difficulties of the practical application of this discovery, and to decide on the means to be taken to rid Italy of malaria. Paestum was chosen on account of the special prevalence of the disease there. Here during the malaria season most of the inhabitants either leave or spend their night on the surrounding hills; a certain number, for example, the railway officials, have to remain, and it was determined to use these for the attempt at protection. In the first place all those who showed any trace of malaria during the healthy season (January to June) were treated with quinine; and secondly, all under observation were protected from the bites of mosquitos by nets during the infective period. The first infected mosquito was found on June 14th, and, allowing twelve days' incubation, malaria was anticipated on the 26th; as a matter of fact, the first case occurred on that date outside the zone of experiments. Three cases of relapse occurred during the infective season in persons who had falsely asserted that they had not previously had the disease. The preventive rules laid down were: to keep within the protected dwellings from sunset to sunrise, and in the case of officials who had duties during this time to wear light veils and thick cotton gloves. The houses were protected everywhere, even the chimneys, with wire netting. Here and there an *Anopheles* was found in the houses, but they were for the most part caught before they had stung anyone. All the persons under observation were visited twice a day; precautions were taken against their procuring any quinine, and yet all continued free from malaria. The number was 104. In the country surrounding the protected zone, on the other hand, the disease was general, and affected by far the majority of the inhabitants, even when living on farms in high situations. The twofold object of the experiments was therefore attained, and the practical protection from the bites of *Anopheles* shown to be feasible.

(317) Treatment of Alopecia.

Scheffer (*Méd. Mod.*, May 19th, 1900), after pointing out that the generally assigned causes of this disease are microbic and nervous, describes a mode of treatment which attempts to control the former by sublimate and the latter by pilocarpin injections. Pilocarpin is chosen from its property of sweat inducing. The sweat glands are analogous with the hair follicles, both embryologically and structurally, hence the suggestion that pilocarpin may equally stimulate the nervous centres of hair production. It is well known that in many diseases in which the skin takes up extended excretory functions there is an increased production of soft new hair in certain regions. Additionally, pilocarpin produces a local vaso-dilatation. The alopecial patch is well cleansed with 90 per cent. alcohol, and a syringe is then filled with the two medicaments: it holds about 12 minims. The upper third is filled with $HgCl_2$ solution 1 in 1,000, the second with 1 in 200 pilocarpin nitrate, and the lower third with 1 in 1,000 $HgCl_2$. The needle is introduced parallel with the scalp, and just underneath the epidermis; it is then emptied, and leaves a small lentil-sized swelling. Such is repeated around the periphery of the patch, and in a circle within it, the punctures being about 1 cm. apart. An alopecial patch the size of a 5-franc piece requires about 12 punctures. The *séance* should be repeated every other day for some six or seven days. The immediate effects produced are an anæmic zone followed by a marked vascularity lasting for several hours. Five or ten minutes after the injection drops of sweat appear on the vascular zone, and this exudation continues for an hour. The secondary results (tabulated from some 60 cases extending over three years) are immediate arrest of the alopecia extension, and a gradual regrowth of hair first light and then darker—from periphery to centre. This growth

should be evident after four *séances*. but in all cases the treatment should be persistent. Its extent is indicated by the size of the bare patch, the age of the lesion, the position—temporal and occipital alopecia is always the more difficult to obtain good results—and the age of the subject. The treatment has yielded most successful results.

(318) Iodine Parotitis.

GRÖN, (*Norsk. Mag. f. Laegevidensk*, lxi, 685, July, 1900) describes the case of a man, aged 26, under treatment for repeated returns of syphilitic manifestations. He developed an acute attack of parotitis upon many of the occasions on which he took iodide of potassium. Upon sixteen separate occasions he was treated with the iodide, and on eight of these parotitis followed, sometimes as the result of small doses, at other times not until large quantities had been given. On yet other occasions he took large doses without any affection of the parotid. The continued use of the iodide did not make the parotitis worse; in fact, the recovery was always complete. The only medicine which seemed to hinder the toxic action of the iodide was the bromide of potassium if given simultaneously. Only on one occasion was there any other manifestation of iodism (headache, with nasal, pharyngeal, and conjunctival catarrh). There was no albuminuria. Grön believes that the cause of the parotitis was idiosyncrasy.

(319) Aluminium Salts as Disinfectants.

AUFRECHT (*Deutsche aertzl. Zeitung*, February, 1900) caused experiments to be made in his laboratory in order to determine the comparative value as antiseptics of acetate of aluminium in the form of the 8 per cent. liquor aluminii acetici of the German *Pharmacopœia* ("liquor Burowii"), and of the aluminium acetico tartaricum (acetotartrate of aluminium), which has been recently introduced by Athenstaedt under the name of "alsol." Alsol in a 5 per cent. solution destroyed the spores of anthrax in ten hours, acetate of aluminium in an 8 per cent. solution in two hours, while carbolic acid in a 5 per cent. solution had no effect whatever on their development. In the case of streptococcus pyogenes, staphylococcus pyogenes aureus, the gonococcus, and the tubercle bacillus, however, carbolic acid has a greater bactericidal power than acetate of aluminium. The combination of the acetate with the tartrate greatly raises the bactericidal power, so that alsol is considerably more potent than carbolic acid.

PATHOLOGY.

(320) The Cause of Diabetic Coma.

GRUBE (*Arch. f exper. Pathol.*, Bd. xliv, s. 349) has conducted a series of experiments to test the opinin of Sternberg that β-amidobutyric acid is the active agent in the causation of diabetic coma. He has injected this substance into cats, and records the general, respiratory, and circulatory disturbances resulting. In all cases he was able to produce, by large doses, a coma-like state, while control experiments with other substances were negative. Respiration was conspicuously influenced, and the type was similar to that observed in diabetic coma. The force of the heart beat was increased by the administrations, but the blood pressure was not affected. Acetone was frequently present in the urine. The author concludes that the condition produced in cats by large doses of this substance is very similar to diabetic coma in all its symptoms.

(321) Blastomycetes and New Growths.

PETERSEN AND EXNER (*Beitr. z. klin. Chir.*, Bd. xxv, 1899) have made a series of culture experiments on this subject. As a result, they express their agreement with the opinions of Busse and others that up to the present there has been no satisfactory proof of any causal relationship between yeast forms and malignant tumours. (1) The cell inclusions in carcinomata, which have been looked upon as parasites, have but very slight resemblance to blastomycetes. (2) A pure culture of yeast from a true malignant tumour has hitherto been so seldom obtained that probably it occurs only as a contamination or as a saprophyte. In 22 cases of aseptic carcinomata and sarcoma the authors have not been able to cultivate such an organism, though they have used many different media and methods. (3) The diseases which have been shown to be due to this class of organism have no resemblance to malignant tumours worth the name. (4) Although pathological tumours have been produced by the experimental inoculation of blastomycetes, they belong to the granuloma class rather than to that of true new growths. At the most it has been shown that certain malignant lymphomata can be produced by such infection.

(322) The Pathology of the Blood.

FOA AND DEMEL (*Arch. Ital. de Biol.*, July, 1900, two papers) record the results of their preliminary investigations of normal and pathological blood stained with Ehrlich's neutral red. They claim that these throw much new light on the origin of the red corpuscles. They state that the coexistence of nucleus and granules in the erythroblasts is easily demonstrated, that the former is actually expelled in the formation of red corpuscles, but that in all probability the expulsion is preceded by an escape of many of its granules into the protoplasm, where they may be fixed by neutral red. The authors have discovered that in normal blood red corpuscles containing such granules are present to the extent of about 0·5 to 0·8 per cent. of the total number. After repeated bleeding this proportion may rise as high as 18 per cent., and as in the organs in which red corpuscles are formed the proportion is also very high, it is deduced that these granular red corpuscles are young forms which have entered the circulation soon after losing their nuclei. Their presence is hence an index of the degree of functional activity of the hæmopoietic organs and of the state of the circulation in the marrow. Further experiments showed that in most cases of artificial anæmia, whether brought on by bleeding or by the administration of pyridine, the diminution in the number of red corpuscles was associated with an increase in the proportion of those with granules, which did not, however, come on till the recuperative period. In a case in which the granular forms did not reappear the animal rapidly succumbed. Quinine caused a great diminution in their number followed by an increase after two or three days. The injection of lecithin also produced a remarkable diminution, so that there were no granular red corpuscles in the blood or marrow and very few erythroblasts; the blood condition did not return to normal for about 10 days. Hence it seems that certain influences tend to favour the maturation of existing red corpuscles rather than the formation of new ones. The authors suggest that this maturation occurs normally in the marrow and that the corpuscles escape into the blood after being deprived of their granules; in circumstances of great need and circulatory disorder young granular corpuscles enter the circulation just as do the normoblasts. It has further appeared that infection of an animal, whether immunised or not, causes a rapid diminution in the granular red corpuscles, while the hæmoglobin and number of corpuscles alike remain constant. Finally, in a young anæmic girl the granular erythrocytes were almost absent, but after 14 days of treatment with iron had attained a proportion of 6 per cent. of the total red corpuscles.

(323) The Pancreas in Relation to Sugar Reduction and Diabetes.

UMBER (*Zeits. f. klin. Med*, Bd. xxxix, p. 13) has carried out a series of experiments to test the observations of Blumenthal that the expressed tissue juices of the liver, spleen, and pancreas have a reducing action on grape sugar, most active in the case of the pancreas, least in that of the spleen. Umber finds that if the pancreas is excised with aseptic precautions and all foreign matter excluded, the expressed juice has no reducing capabilities. He also excised portions of pancreas from a living dog and added them to a sugar solution, but four days' digestion produced no result. Experiments were also made on the glycolytic action of blood; this was taken from different vessels, including the pancreatic vein, directly into sterile slightly alkaline sugar solution; a distinct though small reduction was observed, but there was no difference between the blood from the pancreatic vein and other specimens. These experiments would seem to disprove the idea that the derangement of glycolysis in diabetes is due to the absence of certain pancreatic sugar-reducing ferments.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(324) Thoracic Aneurysm Presenting Intermittently through the Sternum.

Cabot (*Amer. Journ. Med. Sci.*, April, 1900) reports the following case: A married woman, aged 42, had a tumour the size of a lemon and the shape of a stump of a cow's horn over the manubrium sterni; its apex was black and gangrenous, and was surrounded by a deep red areola. The tumour was soft and elastic, and showed expansile pulsation synchronous with the heart beats. There was a soft blowing murmur over it. Below this tumour, and on a level with the third and fourth costal cartilages in the middle line, was a second pulsating mass, larger, flatter, and less inflamed than the other. It was not elevated more than half an inch above the surface, and though it rose and fell with each heart beat, the pulsation was not expansile. The heart sounds were transmitted through the tumour, but there was no murmur heard over it. The heart's apex was in the fifth interspace in the nipple line. The radial pulses were equal and synchronous, there was no "tracheal tugging," the pupils were equal and reacted normally. The history given was that the upper swelling had appeared seven years previously, and had quickly attained its present size. Under potassium iodide internally it disappeared completely. Since then the tumour had come and gone several times, becoming more noticeable during periods of hard work, and disappearing usually while the patient was taking iodide of potassium. The general health had been good, and there were no pressure symptoms. There was nothing suggestive of syphilis except the facts that there had been seven successive miscarriages, and that there were scars on the back, chest, and arms, which were attributed by the patient to chickenpox and boils. The tumours were diagnosed as gummata of the sternum by Cutler, and 90 grams of potassium iodide were given daily. Three days later the upper tumour burst, and gave exit to a quantity of bloody puriform material, but no blood. A week after this the lower swelling was incised, and material similar to that from the upper tumour was evacuated. Three weeks later there was no prominence at the site of either tumour. There was, however, a sinus 1 inch below the sternal notch in the middle line, which passed at first directly backwards, and then downwards, parallel to, and presumably behind the sternum for 3 inches. The patient remained in good health for about two months, and then suddenly fell dead, with blood gushing from the chest. There was no necropsy. During life radiographs were taken, and though they showed clearly a tumour in the region of the aortic arch, the significance of this was not understood. No gap was present in the sternal shadow, and the false inference was drawn that no perforation was present, although the position of the vertebral column would prevent even a large perforation from showing. The diagnosis of aneurysm, in view of the fatal termination, was almost certainly correct. The probe showed that the hole in the sternum was small. Probably then at one time blood would ooze through and clot outside the sternum, while at another the clot inside the aneurysmal sac would become sufficiently firm to prevent blood from escaping through the sternum. What was the exact nature of the cheesy material evacuated, and whether it was broken-down clot is uncertain. It is remarkable that an aneurysm could erode and perforate the sternum in two places without any pain or symptoms of pressure, and it is possible that the process in the sternum was partly gummatous.

(325) Hydatid Cysts of the Liver.

Chauffard considers some of the points which are of assistance in the diagnosis of this condition (*Journ. de Méd.*, March 10th, 1900). A good deal depends on the stage of the disease. Thus, in the first or aseptic stage corresponding to the active life of the parasite there is practically nothing to go upon. The second stage, or septic necrosis, with death of the parasite; and the third is the stage of septic necrosis in which there is infection of the neighbourhood of the cyst. A case quoted by the author is interesting as throwing some light on the earlier symptoms. The patient was a woman, aged 30, who for four years had suffered from vague pains in the region of the liver, some dyspepsia with a remarkable inability to take any fat or oil, with several attacks of urticaria and frequent sharp pains in the right shoulder. There was no jaundice, no ascites, and no enlargement of the spleen. After a considerable time it was possible to ascertain some increase in size of the hypochondrium, and about the same time epistaxis occurred at intervals. A curious symptom remarked in this case was the intermittent elimination of methylene blue in the urine. This phenomenon, the writer observes, is met with in other affections of the liver, and seems to indicate a considerable degree of involvement of that organ. In this instance, taken in conjunction with the occurrence of urticaria, it suggested the diagnosis of hydatid cyst of the liver, notwithstanding that there was no irregular prominence to be found on palpation, but a general increase of liver dulness observed. The diagnosis was verified by an exploratory puncture. Chauffard, however, strongly deprecates this procedure, as he once met with a case in which a few moments after puncture the patient was seized with an intense pruritus but without any urticaria. Shortly afterwards purpuriform attacks came on, and death occurred within twenty-five minutes. Nor is this the only case on record, for it would seem, according to the lecturer, that when a small amount of hydatid fluid is withdrawn some toxic material is rapidly absorbed from the remainder. The safest procedure, therefore, is when puncturing to be prepared to evacuate the cyst completely. Under these circumstances there does not seem to be the same danger of toxic absorption. In conclusion, it is pointed out that while in many cases a local projection from the liver together with negative evidence of other conditions will indicate the presence of hydatid, there may be cases without any such physical signs, but in which a diagnosis may still be made by careful attention to the symptoms as demonstrated by the writer, notably the occurrence of urticaria and the methylene blue phenomenon. The sign called "hydatid fremitus" Chauffard considers hardly worth mention.

(326) Glycosuria in Tramps.

G. Hoppe-Seyler (*Münch. med. Woch.*, April 17th, 1900) has observed several cases of transitory glycosuria in persons, especially tramps, who for a long time have led an irregular life, while exposed to all weathers and frequently in want of sufficient, or at least properly-prepared and digestible, food. The course of the glycosuria and the conditions were always similar. Glycosuria was found on admission to hospital, but quickly disappeared with an abundant mixed diet, which included a large proportion of carbohydrates, and did not return even when 100 to 200 grams of grape sugar were given on an empty stomach. This form of glycosuria can depend neither on disturbances in the medulla oblongata nor on latent diabetes, and is probably caused by a disordered function of the digestive organs, especially the liver and pancreas—that is, in general terms, by malnutrition and its consequences. The liver was enlarged in all the cases, but there were no other signs of cirrhosis.

(327) Myositis Ossificans.

Lydia M. De Witt (*Amer. Journ. Med. Sci.*, cxx, 295, September, 1900) gives details of two cases of myositis ossificans affecting the muscles of the leg, in both of which there was thrombosis of the femoral vein, and in both of which the process was not discovered till the necropsy. Warthin performed the *post-mortem* examinations. In one instance the cause of death was widespread tuberculosis. The authoress believes that the primary condition is an inflammatory process in the intermuscular connective tissue, resulting in degeneration of the muscle fibres; the second condition seems to be the establishment of the processes of repair and the formation of a tissue rich in fibroblasts and small blood vessels; but before this process can be completed and mature connective tissue formed it is interrupted by the change of a part of the tissue into trabeculæ of firm osteoid substance, which becomes calcified, while the parts enclosed by the trabeculæ change to bone marrow. With

regard to causation the authoress notes that the alleged exciting causes are often too slight to be active, while the evidence in favour of atavism, direct heredity, and embryonic disturbance is but small.

SURGERY.

(328) Inflammatory Pyloric Tumour: Disappearance after Gastro-enterostomy.

DEMOULIN AND TUFFIER (*Bull. et Mém. de la Soc. de Chir. de Paris*, October 31st, 1899) publish the case of a naval lieutenant, aged 32, who suffered from severe dyspeptic symptoms early in 1897, aggravated by a diet of preserved meat during a cruise round the coast of Ireland. Early in 1898 a hard swelling developed in the epigastrium. Medical treatment at Vichy and elsewhere was of no avail. His weight fell to 77 lbs, the cachexia was marked, and emaciation extreme. The swelling was as big as an orange, movable transversely, and following respiratory movements; it was tough rather than hard. Directly the patient swallowed anything, even a few spoonsful of water, great distension of the epigastrium with severe pain occurred, due evidently to contraction of the stomach for forcing its contents through the pylorus. Malignant tumour was diagnosed, and Demoulin operated on December 1st, 1899. An incision 4 inches long was made in the middle line above the umbilicus. A soft tumour of the size of an orange lay around the pylorus and adjacent parts of the stomach and duodenum. It felt like a fatty growth, and was not adherent to any surrounding structures; a stellate cicatrix on its upper aspect shows signs of a healing ulcer. There were no enlarged glands in the neighbouring peritoneal folds; the liver and gall bladder were healthy. The patient was in so exhausted a condition that a pylorectomy was considered impracticable. Demoulin therefore performed a Van Hacker's gastro-enterostomy (posterior and transmesocolic), leaving the tumour alone. A litre of salt solution was injected under the skin directly after the operation. The patient's life was in great peril for several days from ether-bronchitis. On the third day hæmatemesis occurred, and nearly a pint of blood was vomited. By the tenth, the patient was able to eat fish and fowl without any bad effects. On the twentieth, Demoulin for the first time palpated the epigastrium; to his surprise the tumour could no longer be felt, its site being marked by a little thickening which vanished within ten days. In May the patient was again on active naval service; no local symptoms remained, but he was troubled with an obstinate cough and free expectoration.

(329) Insanity after Extirpation of Brain Tumour.

BAYERTHAL (*Münch. med. Woch.*, 1899, No. 46) publishes a case recently read at the Munich Congress of Naturalists and Physicians which is particularly interesting, as the patient after the extirpation of a tumour of the brain recovered completely from acute hallucinatory paranoia which had supervened during the development of the tumour. A merchant of 29, married three years, without family, without hereditary taint, though at the age of 18 he began to suffer from strumous suppuration of the cervical glands, was attacked in January, 1897, with symptoms of motor and sensory irritation of the cortex (Jackson's epilepsy), succeeded in the course of 21 months by paralysis of the left leg and arm, to which (since September 1898) was added, probably by reason of visual hallucinations, a mania of persecutions; consciousness was hardly obscured at all. From its progressive character the disease was referred to a tumour in the paracentral lobe, perhaps involving the arm centre. This view was supported by a circumscribed tenderness to percussion over the right parietal corresponding to the position of the supposed tumour. An operation, commenced under choroform and morphine narcosis had to be interupted on account of the condition of the patient's pulse, but Professor Heidenhain was able to complete it (without chloroform) two days later and removed a subcortical solitary tubercle about the size of a small walnut from the paracentral convolution. The under side of the tumour must have been close to the corpus callosum. The mental condition of the patient may be said to have improved from the time of the operation; the paralytic symptoms also improved steadily, the convulsions in the left arm disappeared very gradually and slowly, the patient was discharged on the sixty-fifth day after operation walking well with a stick. At the present time (nearly a year after the operation) he is quite well mentally, drags his foot still, but can walk for 45 minutes without fatigue. He has dragging pains and transitory stiffness in the left limbs. He has had repeated attacks of convulsions (4), extending from the left leg to the arm, face and tongue muscles of the same side and followed by loss of consciousness.

(330) The Regeneration of the Crystalline Lens.

RANDOLPH (*Johns Hopkins Hospital Reports*, vol. ix), as the result of his experiments, draws the following conclusions: (1) Regeneration of the lens in the rabbit's eye occurs only when some portions of the lens are left behind at the extraction. (2) Removal of the lens in its capsule is followed by a negative result. (3) Panophthalmitis will lead to a negative result. (4) The volume of the regenerated lens may be equal to that of the original lens. (5) The regenerated mass is lenticular, though sometimes it is ring-shaped and at other times semilunar. (6) The reason why positive results occur so much less frequently than negative ones is because we are unable to protect the animal from infection after the operation. We have nothing to take the place of the after-treatment which is always employed in cataract operations upon human beings. (7) Theoretically one would suppose that the longer the animal were allowed to live the greater would be the volume of the regenerated mass. This, however, was not the case. In one instance, when an animal was killed fifteen months after the extraction of the lens, the regenerated lens was about equal in size to that seen in a rabbit killed after six weeks. (8) A mild iritis, lasting for a week or ten days after the operation, is conducive to a successful result. This may be explained by the increased vascularity of the parts which lie next to the lens. (9) In the case of the newt, extraction of the lens is followed by its regeneration. (10) Regeneration (in the newt) occurs even when the lens has been removed in its capsule, so that the new lens must take its origin from tissue having a different physiological value, and, as the experiments of Wolff have shown, this structure is the iris. He is not sure that the phenomena noticed in these experiments on rabbits and newts find any conspicuous analogy in the history of cataract in human beings, although activity of the capsular epithelium after the extraction of cataract is often to be seen.

(331) Resection in Tuberculous Disease of of the Hip.

KIRMISSON (*Rev. d'Orthop.*, No. 3, 1900) in reviewing a recent discussion at the Société de Chirurgie de Paris on the surgical treatment of hip-joint disease, states that he has been led to take a very unfavourable estimate of the utility of resection for such disease in young subjects. This operation, he states, is undoubtedly a serious one, is often followed by return of the disease, and its results from an orthopædic point of view are inferior to those of a strictly conservative treatment. Strong objection is raised against the frequent practice of making free incisions into cold abscesses associated with hip-joint disease and spinal caries. As soon as such an abscess is accessible the author treats it by simple puncture, and the injection of iodoform and ether. By such treatment practised under strict aseptic precautions septic mischief, which so often occurs after free incision, may be avoided. Much stress is laid on the importance of rest in bed during the whole of the acute stage of hip-joint disease. This view, it is stated, is confirmed by the fact that there is now a general tendency in the surgical practice of the United States and other countries to discontinue the ambulatory method of treating coxalgia. This method, it is held, is likely to provoke corrosion of the articular surfaces, and thus to result in suppuration and deformity of the joint. The patient, Kirmisson asserts, should be kept at rest until the affected limb is quite free from pain.

MIDWIFERY AND DISEASES OF WOMEN.

(332) Placenta Prævia.

AMADEI AND FERRI (*Il Policlin.*, November 17th, 1900) reported to the Italian Gynæcological Congress a series of 97 cases of placenta prævia in 5,136 cases at the Milan Maternity hospital, a propor-

tion of 1.89 per cent. Eleven were in primiparæ and 86 in multiparæ, and in only 24 cases did the mother reach the full term, all but 1 of these 24 being marginal. In 5 cases the mother died: (1) Severe anæmia due to hæmorrhage from the placental site and from a laceration of the cervix; (2) embolism on the second day; (3) embolism during intra-uterine irrigation after delivery; (4) severe anæmia during podalic extraction; (5) acute pleuro-pneumonia on seventeenth day, after dilatation of cervix and use of forceps. The treatment was varied; in 2 cases it was medical only. Plugging was used in 10 cases, loss of 1 mother and 1 child; rupture of amnion in 16 cases of longitudinal position of the fœtus, no mother and 5 children lost; in 2 cases of rupture of the sac after external version 1 child was lost. In many cases the rupture of the amnion failed to stop the hæmorrhage. Podalic extraction was practised in cases of marginal placenta prævia, where the cervix was more or less dilated, enough to permit the bringing down of the limb. In a case of central placenta prævia Tarnier's method was used. (In this hospital continuous traction by means of a weight is often adopted to secure slow extraction with great advantage to the mother.) Turning was done 42 times; 23 by the clasical method and 19 by Braxton Hicks's method, with 8 and 7 fœtal deaths respectively. Forceps were used in 7 marginal cases; in 1 case the mother died (pleuro-pneumonia). There were 3 craniotomies in cases of dead fœtuses with excellent results as regards the mother.

(333) The Psychoses of the Menopause.

CHAPIN (*Philad. Med. Journ.*, August 25th, 1900) endeavours to show that the danger of insanity beginning during the menopause has been exaggerated. Out of 8 320 women admitted into various institutions, only 188 were specified as becoming insane at the menopause, nor was it clear how many out of the 188 went mad through the special changes in the genital tract at that period of life. The statistics of the Pennsylvania Hospital show that between the ages of 45 and 55, representing the usual range of the menopause 975 men and only 876 women were admitted into that institution. S Weir Mitchell, in his Analysis of 3,000 Cases of Melancholia, shows that the exact percentage of cases between the ages of 45 and 50 was 20.2 in men and 21.4 in women, the difference being very, very slight, and once more not due, on any distinct evidence, to the local changes of the menopause. The dread or risk of insanity at the approach of the menopause in a woman ordinarily of sound mental and psychical health and inheritance has no better foundation than a popular delusion based on borrowed fears.

(334) Ossifying Enchondroma of Ovary.

BART (*La Union Medica*, No. 4, 1900) relates a remarkable case, where an extremely tough and deeply lobulated tumour filled the abdomen of a woman, aged 38, extending for 2 inches above the umbilicus. It had grown slowly. The patient suffered badly from pressure symptoms, the uterus was pushed far down in the pelvis, and the bladder much displaced. The operation was simple, and recovery rapid. The tumour weighed 14½ lbs. It had a stroma of fibre with cartilage between the meshes; the cartilage was ossifying at certain points.

THERAPEUTICS.

(335) Treatment of Tetanus with Subcutaneous Injections of Brain Emulsion.

KROKIEWICZ of Cracow (*Wien. klin. Woch.*, August 9th, 1900) publishes two cases of traumatic tetanus treated by hypodermic injections of brain emulsion. (1) A medical man, aged 33, cut his right index finger while making a necropsy on an exhumed body; twenty hours later tetanic symptoms appeared in the right arm. On the eleventh day general tetanic spasms set in and death seemed imminent. There were profuse sweating, cyanosis, pyrexia (100.5° F.), rapid respiration (32), and a thready scarcely perceptible pulse. With the aid of large doses of champagne he was moved safely a five hours' railway journey to the Cracow hospital, where he was treated with morphine hypodermically, iodide and bromide of potassium by the mouth, and inhalations of ether. Nevertheless a very severe tetanic spasm occurred and lasted three and a half hours. An hour and a half after this had abated an unfiltered emulsion of the entire brain of a rabbit was injected hypodermically, and this procedure was repeated on the second and fourth succeeding days. After the first injection there was no repetition of the tonic convulsions, the temperature fell gradually, the respirations became 16 to 18 in the minute. An occasional sensation of stiffness and twitching in isolated groups of muscles, however, persisted for three weeks. The third injection produced an aseptic abscess, which healed rapidly after incision. Chloral hydrate, sulphonal, iodide and bromide of potassium, strophanthus, caffeine, digitalis, and valerian were also prescribed for various symptoms as they arose. After a tedious convalescence recovery was complete. (2) A woman, aged 35, ran a splinter into the right thumb. Six days later trismus appeared, with dysphagia, and laboured breathing and phonation. Shortly afterwards the spasms involved the muscles of the whole body. On the tenth day of the disease, after the usual methods of treatment had failed, an emulsion of one rabbit's brain was injected under the skin of the thorax. The next day the convulsions were frequent, but less severe, so that swallowing was possible for the first time, and the speech became distinct. On the twelfth day there was a further improvement: after a prolonged and uninterrupted sleep there was no spasm between 10 A.M. and 3 P.M. The patient was then visited by some Jewish relations, who compelled her—"from religious motives"—to get up and walk about for about thirty minutes, although the tetanic spasms reappeared. Early next morning death occurred suddenly. Both these were severe cases of tetanus, and both had failed to improve under pharmaceutical preparations. The rapid improvement in the first case was remarkable, and recovery would have probably taken place in the second but for the fanatical relations. This method of treatment was first practised by the writer in 1898, after Wassermann and Takaki had experimented on animals. Since then 10 cases had been reported, with 8 recoveries. In both the fatal cases there was a temporary improvement, and in one there were necessarily fatal lesions, including an impacted calculus in the ureter and a ruptured uterus. In all drugs had failed, and in one (Schuster's) the brain emulsion succeeded after two injections of antitetanus serum into the subarachnoid space (Jacob's method) had failed. These results compare very favourably with those obtained by antitetanus serum, with which the mortality is, according to Holsti, 43 per cent.

(336) Treatment of Psoriasis by Oil of Cade Baths.

BALZER AND MONSSEAUX (*Journ. des Praticiens*, No. 21, May, 1900, p. 321) recommend for the treatment of psoriasis oil of cade in the form of baths. The oil of cade is added to a soft soap emulsion. The following are the formulæ: Soft soap, 100 grams; water, 200 grams. To this emulsion the oil of cade is added in the proportion of: Oil of cade, 100 grams; soap emulsion to 250 c.cm. The latter represents the amount to be used for one bath—30 gallons. As to the bath, it must be prepared as follows: First put the oil of cade emulsion in the bath; then let the water run in; or the emulsion may be well stirred up in a bucket of hot water beforehand. The patient must before the bath use plain soap and water to get off the scales. The authors do not state the temperature of the bath or the time the patient is to remain in it. They had good results as far as the individual attacks were concerned; but of course this treatment does not cure the complaint. In some of their cases oil of cade was also rubbed in and applied on lint locally in addition to the baths.

(337) The Treatment of Venereal Sores with Itrol.

WERLER (Reprint from *Lassar's Dermatolog. Zeitschr.*) has obtained good results in 40 cases of venereal chancres by the use of itrol (silver citrate). The preparations employed were a 1 in 4,000 solution in water, and a dusting powder of the pure silver citrate, both of which should be put up in yellow glass bottles. The solution can be applied on compresses, and is much less irritating to the skin than mercury or carbolic acid lotions. It is still better to apply it daily by means of a spray. After the sore is thoroughly cleansed with the lotion, it is dried, covered with a thin layer of the powdered itrol, and en-

veloped in cotton wool. If the chancre is very painful, a 5 per cent. solution of cocaine may be applied before the first dressing. Itrol is an energetic bactericide, which acts continuously, and penetrates deeply among the diseased tissues. It therefore produces a rapid cessation of destructive ulceration, and converts the infected chancrous surface into a healthy granulating wound. It does not cauterise or destroy healthy tissue, and therefore causes no retention of discharge behind a slough. The writer never met with secondary buboes among his cases, and the treatment has the great advantages of being completely odourless, practically painless, unirritating, and cheap. It is suitable for simple soft chancres, for gangrenous and phagedænic sores, and for the rarer diphtheroid ulcers. Unless the case were very urgent, the writer would always attempt to arrest phagedæna with itrol, before resorting to the actual cautery. Even hard sores heal rapidly with itrol, and in cases in which the diagnosis between simple and primary syphilitic sores is doubtful it is always indicated.

PATHOLOGY.

(338) The Tubercle Bacillus in "Scrofulous" Glands.

D'Arrigo (*Centralbl. f. Bakt.*, Bd. xxviii, No. 16) has previously described a method of staining the tubercle bacillus which demonstrates it clearly and with certainty in tissues and organs. He has used this method to investigate the questions: (1) Whether the bacillus is present in so-called scrofulous glands; (2) what phases the bacillus passes through in these glands; (3) what histological alterations it produces. He has arrived at the following conclusions: All so-called scrofulous glands are truly tuberculous and contain the bacillus. Between the ages of 4 and 12 this form of tuberculosis is especially common in the cervical and submaxillary glands; between 12 and 30 the axillary glands in women and the inguinal in men are chiefly affected. The bacillus is found to present a considerable range of polymorphic forms—rods short and long, thick and slender, single and connected in chains, and in addition certain round or oval involution forms. The usual forms of the bacillus are found in the small glands in the early stages of the condition; the long forms and chain forms in old caseous foci; the oval and round forms in glands containing young tubercles either free or in the lymphocytes. The greater number of organisms are present in the peripheral parts of the gland, few in the centre and near the hilus. They are in the perivascular lymph spaces in the early stages, and are more numerous in these early stages than later. The histological changes at first consist of hyperæmia, lymphoid infiltration, and the formation of necrotic coagulation areas; later the leucocytes are transformed into large epithelioid cells, and extensive fatty degeneration occurs. True giant cells are uncommon. The lymphocytes exhibit considerable phagocytic properties. The lymph glands constitute a strong barrier against the entrance of the bacillus. They act as filters, and can lessen the virulence of the organism. When, however, the intrusion of the bacillus is considerable and long-continued, and when the resistance is enfeebled, the bacilli may find their way out of the glands into distant organs, and may also serve as foci from which bacilli find their way into the blood and cause miliary tuberculosis.

(339) A New Pathogenic Fungus, formerly Described as a Protozoon.

Ophüls and Moffitt (*Philad. Med. Journ.*, June 30th, 1900) records the following case of a man, aged 19, who entered into hospital suffering from pleural effusion. One gallon of fluid was drawn off by tapping. There was irregular fever, at times reaching 104° to 104 4°. The diazo-reaction was present, but not the Widal. The joints of the elbows, wrists, shoulders, knees, and ankles were also affected, and a painful, fluctuating swelling developed over the left eye. In the left supraclavicular fossa a large gland was noticed later. He had cough, with muco-purulent (occasionally blood-stained) sputa, but no tubercle bacilli were found. The diagnosis was septicæmia. The patient died after being a fortnight in hospital, and the necropsy revealed the following conditions: Nodular masses, with necrotic centres in the right lung, the tissues between the nodules being atelectatic; several abscesses in the middle lobe of the lung; nodules like tubercles in the right lung, and a large abscess in the mediastinum. The pillars of the diaphragm were infiltrated with pus, and there were necroses and abscesses in the retroperitoneal lymphatic glands. An encapsulated empyema was found in the left side. The spleen was soft and pulpy, with yellow patches of softened tissue in places. The kidneys showed cloudy swelling, with miliary nodules undergoing central caseation and miliary abscesses with thick membranous walls, mostly in the pyramids. The liver showed cloudy swelling and fatty infiltration, but no visible nodules. There was purulent ostitis and periostitis in the frontal bone and left tibia, and abscesses in the lymphatic glands above described as enlarged and affected. Sections of the liver showed very many microscopic nodules with necrotic centres. Microscopic examination of the pus, lungs, spleen, liver, and kidney showed parasitic organisms, which in the last three organs were found in pure culture. In the abscess over the eye these were met with in combination with staphylococci and streptococci, and in the left pleural empyema pseudo diphtheria bacilli were also found. The parasitic fungi were spherical, encapsuled, highly refractile, with granular protoplasm, and staining well with aniline dyes and hæmatoxylin. They grew up to a size of 30 inches in diameter, and were perfectly spherical. They were not motile, and in the larger sizes vacuoles could be seen. After reaching the adult stage the encapsuled protoplasm breaks up into about a hundred or more spore-like bodies, also non-motile, and which grow into adult forms without transformation. Cultures made on agar resulted in the formation of a mould developing a mycelium. The colour was white with a faint tinge of yellow. Injections of cultures into guinea-pigs produced local chronic suppuration, and secondary nodules and abscesses showing the organism in pure culture. Growth in a free medium without obstruction gave rise to mycelium formation. Some of these spores formed chains. Chlanydospores were not formed. Wernicke (*Central. f. Bact. u. Parasit.*, xii, 1892) has observed similar forms before but regarded them as protozoa.

(340) Agglutinative Property in Typhoid Blood Conferred on a Child in Utero.

Zängerle (*Münch. med. Woch.*, June 26th, 1900) relates the following case: A woman in the third week of typhoid gave birth to a full-grown female child. The latter was in every respect healthy; slept, fed, and passed natural motions. Two days after birth its blood gave a positive result examined by the Gruber-Widal serum test, and the mother's blood gave the same result. In this case the specific agglutinative property of the mother's blood was evidently transmitted *in utero*, though the child remained free of the disease itself. Three similar cases have been described and the author remarks that they throw considerable light on the immunity of children born of syphilitic parents, but showing no signs of the disease. Here also some agent capable of conferring immunity probably passes into the circulation of the fœtus through the placenta. The author does not argue that agglutinative power is synonymous with immunity, but suggests a relation and an analogy between them.

(341) Necrotic Broncho-pneumonia in Association with a Streptothrix.

Norris and Larkin (*Journ. Expér. Méd.*, vol. v, No. 2) reports two cases of this condition in which the clinical signs were those of extensive consolidation and bronchial catarrh throughout the lungs. Histologically in both cases the lesions consisted of intense exudative and necrotic inflammation of the bronchi and surrounding alveoli. In the bronchi and bronchioles were small masses composed of a network of streptothrix. The bronchial exudate of Case I introduced into the trachea of three rabbits produced pulmonary abscesses and empyema in one; that obtained from Case II was introduced into the ear vein of one rabbit and into the trachea of another, in both cases producing pulmonary abscesses and empyema. The streptothrix was recovered from these lesions. It could not be cultivated on the ordinary media, but grew upon fresh sterile kidney surface.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(342) Precocious Obesity.

It is sometimes supposed that a considerable degree of fatness in a child is a sign of health, but according to Chauffard (*Journ. de Méd.*, March 10th, 1900) it is a sign of degeneration, and unless treated may end fatally. The writer had under his care a man, aged 34, of middle height, and of very excessive obesity. From early childhood this had been the case, and it was discovered that there were several instances in his family of hereditary obesity. Examination showed considerable cardiac embarrassment and dyspnœa. He was put on milk diet alone, together with some doses of thyroid extract, and under this treatment he lost a good deal of weight in three weeks. He returned home and resumed his ordinary diet, on which he regained a kilogramme per diem. It was found that his heart was failing, and had ceased to react to digitalis and other tonics. The patient died of asystole. It is difficult to state exactly the pathogenesis of congenital obesity. In some, apparently, there is too rapid an assimilation of nutritive material, while in others combustion is not sufficiently rapid. It has also been supposed that there is some peculiar lipogenic ferment, but the evidence of this is not sufficient. In constitutional cases treatment is very much more difficult, especially in view of the fact that they are not infrequently gouty, diabetic, or the subjects of renal disease. A great deal also depends on the state of function of the heart and kidney, which are indeed the indications of most importance. Not infrequently there is tachycardia or arrhythmia. On *post-mortem* examination the muscular structure of the heart is generally found to be considerably affected. A point which has, so far, not been sufficiently studied is the thyroid gland. In the cases quoted by the author, this organ was double the normal size, and its structure profoundly altered, there being a condition which could best be described as a hypertrophic cirrhosis. In such cases the main line of treatment is, first, to impress on the patient the absolute importance of reducing his weight, otherwise the heart may be suddenly hampered, and give way. Next, to put him on a very limited diet, chiefly milk, and to order a carefully graduated scale of exercises. It is important that it should be judiciously increased, and it may be combined with massage. The administration of thyroid extract is undoubtedly of use according to the writer, but its action must be carefully watched. It is contraindicated in cases where there is severe cardiac embarrassment. When given it should be taken for a week at a time, followed by the administration of Carlsbad salts. If taken too frequently the result may be cardiac failure.

(343) Dermatitis Gangrænosa Infantum.

Judson Lipes (*Albany Medical Annals*, vol. xxi, No. 1, 1900, p. 1) first reviews the subject generally, and gives a bibliography. He then relates a case which came under his own observation in a female child, aged 2 years and 3 months. The points of interest about the case are (1) the fact that the condition commenced as a large flattened bulla, which ruptured spontaneously, the derma becoming gangrenous and gradually sloughing off from the periphery towards the centre. (2) The large size of the lesion, which extended from a little below the umbilicus upward for a distance of 12 to 14 cm., the transverse diameter being somewhat less. (3) A short time after this lesion appeared, erythematous spots, from a pea to a 25-cent piece in size, were observed about the anterior part of the neck and upper anterior margin of thorax. In some bullæ developed, but there was no gangrene: a bulla also appeared on the right upper eyelid and one on the scalp. (4) There was a trace of albumen in the urine, which was otherwise normal. (5) The fourth week after the appearance of the large abdominal lesion a condition corresponding to that of post-diphtherial paralysis was observed. The legs were symmetrically paralysed and the knee-jerk was lost. There was also weakness of cervical muscles. Recovery came about slowly, the loss of motion in the legs enduring longest. Recovery was ultimately perfect. Lipes considers the bullo-gangrenous lesion was due to a paralysis of the arterioles, this being a primary manifestation of a toxic neuritis caused by the presence or elimination of some chemical product of the growth of some organism—in all probability the tubercle bacilli—which showed itself later in the temporary paralysis of the legs. There was a decided tuberculous history in the case. It is on this basis alone that Lipes raises his hypothesis. The author recommends quinine and arsenic internally, *plus* local antisepsis—by boracic acid solutions, etc.

(344) Tertiary Syphilitic Diarrhœa.

Fournier and Lereboullet contribute an article on this subject to the *Gaz. Hebdom. de Méd. et de Chir.* of July 8th, 1900. The latter describes the case of a man the subject of chronic diarrhœa for 18 months, which had resisted all treatment. The first symptom was hæmorrhage from the bowel, recurring after several weeks, and gradually succeeded by diarrhœa with colic and rectal tenesmus. The patient was cured by antisyphilitic treatment; his attack of syphilis had occurred 15 years before. Galliard (*Presse Méd.*, January, 1897) has described the very diverse lesions which tertiary syphilis may produce in the intestine, miliary gummata, discoid infiltrations varying in thickness and extent and in later stages going on to ulceration, primary ulceration rarely proceeding to perforation, and cicatricial contraction and stenosis. The syphilitic ulceration gives rise to no specific symptoms, and the diarrhœa, etc., is often no doubt attributed to other causes. Fournier believes that it usually occurs in the course of the disease; there is nothing characteristic about the diarrhœa except its resistance to ordinary remedies, and its tendency to relapse, even after apparent cure with antisyphilitic remedies.

(345) Neuroses of Childhood.

De Merritt (*N. York Med. Journ.*, June 16th, 1900) believes that hysteria and neurasthenia are common causes which, starting in childhood, produce grave neurotic disturbances or mental troubles of later life. The symptoms begin insidiously in children, and are often passed over by the practitioner, who may assure the parents that the child will "outgrow" it. The child's disposition may be irritable and eccentric, with high-strung nerves. For want of appropriate and continuous training such children may grow up with exhausted nervous systems, to swell the great army of neurological wrecks so common at the present day. Heredity is both direct and indirect in these cases—direct in that the child is born with an unstable cerebro-spinal nervous system, and indirect in that neurotic parents nag and scold their children incessantly, and yet have not will power enough to enforce real discipline, with the result that the child's mental equilibrium is upset. Overstudy in schools is not *per se* a cause of neuroses except in predisposed children. German children study harder than American children, yet the former break down less frequently because their home life is more sedate and restful, and because precocity is suppressed, not encouraged, as in American families. Exercise in moderation and pursued in the open air is a great aid to treatment. The infectious fevers of childhood, anæmia, and poor food favour the development of neuroses. The neurotic child may show tendencies to hysteria or to neurasthenia; but it is hard to strictly separate these two—and, indeed, differentiation is of little practical importance. The more common symptoms exhibited are great irritability of temper, insomnia, *pavor nocturnus*, a tendency to lie and to invent plausible falsehoods merely for the love of so doing, masturbation, fits of crying and screaming with passion on little or no provocation, a facility for malingering or feigning, and an excessive desire for sympathy. Rest from school study should be enjoined in the few cases where this may be needful, because the mental and moral discipline of school life acts as a tonic to the brain, and may prevent the hypochondriac tendency. School gymnastics, now almost universally taught, are an adjuvant towards brain hygiene, and should be encouraged. Neurotic and hypochondriacal parents must be warned not to display their defects

before the child, who readily copies them. Among drugs—which are only of secondary importance in treatment—the bromides and hyoscyamus are useful, but must be given with caution, and warm sponge bathing before bedtime will soothe the nervous irritability and help to procure sleep and brain recuperation. Treatment and watchfulness for years will overcome many of the tendencies to nervous diseases, and perseverance is necessary.

(346) The False Cardiac Hypertrophy of Adolescence.

HUCHARD describes a case (*Journ. de Méd.*, July 10th, 1900) of what he calls false cardiac hypertrophy. The patient was a boy aged 16, whose family history was negative. He complained of palpitation and general fatigue. There was loss of weight, but no cough. He was supposed to have cardiac hypertrophy by some, and pericarditis by others. This case, according to Huchard, represented what has been described by Sée and others as hypertrophy of growth, and by Stokes as palpitation of puberty, a condition which the writer absolutely denies. Huchard points out that in very many young subjects, even in the absence of tubercle and rachitis, the chest may be ill-shaped, being long and narrow, with diminution in the transverse and antero-posterior diameters, and showing some bilateral flattening. In these cases it is not that the heart is over-developed, but that the thorax is undersized, and thus its movements are hampered. The apex may appear lower, and its impulse is somewhat more heaving than should be the case. These are all accounted for by insufficient thoracic space. This interference with cardiac action may be followed by changes in the heart itself, and even real hypertrophy may result. The heart is compelled to press considerably against the thoracic wall at each systole, and it is not surprising, therefore, to find that it undergoes some increase in size in many cases as time goes on, though this is not met with in all. The recognition of this point is, of course, important therapeutically. The correct treatment consists in gymnastic exercises and methods to enlarge and extend the chest—a line of treatment which is the opposite of that required in true hypertrophy of the heart.

(347) Pupillary Anomalies in Idiots.

KOENIG of Daldorp Asylum (*Journal of Mental Science*, July, 1900) has made several observations on pupillary anomalies in paralysed and non-paralysed idiot children, and attempted to trace their relation to hereditary syphilis. A search through literature only gives 3 incomplete cases, quoted by Freund in his well-known monograph (*Die infantile Cerebrallahmung*, 1897). The clinical link uniting cases of uncomplicated idiocy and such cases as are associated with paralysis is represented by a group of symptoms, such as epileptiform and hysterical seizures, athetoid, choreiform, and myoclonic disorders of movement, and finally, disturbances of the ocular apparatus—namely, nystagmus, ophthalmoplegias, neuritis, and optic atrophy. Fuchs, in a recent memoir, giving notes of 100 cases of infantile cerebral paralysis, reports in one case an inequality of the pupils, but no other anomalies. Koenig's material is divided into three groups. Group A shows a more or less frequent alternate dilatation of the right and left pupil (alternate mydriasis). Group B showed transitory sluggishness of the pupil to light, with slight inequality and a moderate degree of paralytic exophthalmos. Group C comprised the majority of the cases, and included a chronic state of irregular pupillary activity. Eleven cases—8 boys and 3 girls—belonged to this group, the ages varying between 7 and 15 years. In all instances but 3 the children were mentally deficient from birth, or were noticed to be defective in intelligence before the close of the first year. All these patients but one had histories of convulsive attacks at some time or other of life, followed by paralysis or mental enfeeblement. Several of these cases were of syphilitic parentage. Koenig concludes that, having regard to the heterogeneous mass of cases of congenital and early weakmindedness in which parental syphilis plays an etiological part, we may recognise three varieties—namely, non-paralysed idiots, paralytic idiots, and infantile and juvenile general paralytics. In every one of these three groups abnormalities of pupillary action may be present. This may be regarded as the rule in juvenile general paralysis, and in many cases of brain syphilis. It is the exception, however, in infantile cerebral palsy proper, and still more so in ordinary non-paralytic idiocy.

(348) Cutaneous Oxyuriasis.

BARBAGALLO (*Gazz. degli Osped.*, September 16th, 1900) records 4 cases where the presence of oxyurides gave rise to a special form of intertrigo in the anal, perineal, and inguino-crural region. The rash is usually of an intertriginous character. In the first period the oxyurides emigrate and by irritating the skin prepare the way for a permanent lodgment, whereon they nourish themselves and deposit their eggs. It is not a common condition, and has an uncertain duration; it is not confined to any particular age, and is amenable to the usual anthelmintic treatment.

SURGERY.

(349) Compression of Pedicle of Movable Kidney by Distended Gall Bladder.

REYMOND (*Rev. de Chir.*, June, 1900) reports an instance of the very rarely observed association of movable kidney with distension of the gall bladder due to biliary lithiasis. The patient, a woman aged 33, came under observation with intense intermitting pain in the abdomen on the right side, much general abdominal distension and tenderness, diminished flow of urine, and high fever, with marked prostration. The local and objective signs indicated both a distended gall bladder and a movable and distended kidney. There was a distinct pear-shaped swelling in the region of the former organ, and behind this could be felt, on combined abdominal and lumbar palpation, a more extended tumour presenting the characteristics of an abnormally mobile and enlarged kidney. The author performed nephropexy, and, on exposing the kidney, found that it was almost twice its normal volume, and much congested. In front of the organ, and attached to the renal pelvis, could be felt a firm mass, which corresponded to the anterior abdominal tumour, and gave the impression of its being a gall bladder distended by fluid and calculi. After an interval of a week, during which the kidney had rapidly regained its normal size, cholecystostomy was practised, and 60 grams of purulent fluid and four calculi, one of which measured 4 cm. in length and 3 cm. in thickness, were removed from a much distended and adherent gall bladder. The patient ultimately made a complete recovery, but persistence of a biliary fistula gave some trouble, and necessitated a plastic operation.

(350) The Best Method of Collecting the Urine from the Ureters for Diagnostic Purposes.

HARRIS (*Ann. of Surg.*, August, 1900) discusses the relative values of the urethral catheter and the urine segregator in the diagnosis of renal disease. In summing up he finds that catheterisation of the ureters has a field of application which is absolutely distinct, in the sense that no other means at disposal accomplishes the objects of determining the nature and location of obstructions of the ureter; of locating the ends of a severed ureter; of serving as a guide in certain intrapelvic operations; of tapping and draining fluid accumulations in the renal pelvis, and of fulfilling certain therapeutic purposes such as dislodgment of calculi and irrigation of the renal pelvis. Catheterisation of the ureters simply for the purpose of collecting urine for diagnostic purposes has its drawbacks and limitations, among which may be mentioned temporary anuria due to the presence of the catheter in the ureter; contamination of the urine with blood and epithelial cells from the the ureter; and the danger of infecting a healthy ureter and even the kidney. Catheterisation of a healthy ureter has been regarded as unjustifiable in cases in which the bladder is infected or the opposite kidney tuberculous. If this objection be generally recognised, the benefits of this aid to diagnosis will be denied to a large class of patients. The segregator likewise has its limitations, and cannot be applied with any prospect of success in cases in which diseased and painful conditions of the bladder interfere with the proper use of the instrument. But for the differential diagnosis of certain tumours of the abdomen; for determining which kidney is diseased and the

functional capacity" of each; for making out whether the bladder is infected or not; and for differentiating between certain bladder and renal infections the segregator gives results that are perfectly reliable. In infected cases it has the advantage over the urethral catheter of being free from the danger of carrying disease to a healthy kidney.

(351) Paracentesis and Drainage in Hydrocephalus.

Montini (*Gazz. degli Osped.*, August 12th, 1900) records the case of a hydrocephalic child aged 3 upon whom he operated with success. The head measured 63 cm. in the suboccipito-bregmatic circumference, 66 cm. occipito-frontal, and 55 cm. mento-frontal. The child was semi-idiotic, squinted, and showed all the mental and physical signs of hydrocephalus. The skull was trephined just behind the coronal suture with a trephine 2 cm. in diameter, a trochar was then slowly plunged into the ventricle and about 350 grams of fluid let out. As the condition of the child became alarming the operation was hastily finished and a horse-hair drain left in. The cerebral fluid continued to drain out for seven days, and altogether about 900 grams of fluid came away. The child is still alive a year after the operation. The squint is less marked, and there have been no convulsions for several months; the movements of the child show some attempt at co-ordination and are more objective in their character.

(352) Operative Treatment of Cortical Epilepsy.

Lunz (*Deut. med. Woch.*, June 7th, 1900) publishes two cases of cortical epilepsy which present much interest with regard to the nature of the initial lesion in both, and to the good results which followed craniectomy in one of the patients. There could be no doubt, the author asserts, of the cortical nature of the epilepsy in both cases, and the localisation of the morbid process could be strictly defined in each. In the first case the upper part, and in the second case the middle and lower parts of the central convolutions were affected. The subject of the first case was a woman, aged 53, who in early life had suffered from suppurative and, probably, tuberculous disease of the left shoulder. On removing a portion of the cranial vault over the region diagnosed as that of the initial lesion, the author found that the dura mater was thickened, and adherent on the one hand to the wall of the skull, and on the other to the pia, which latter membrane was also adherent to the surface of the brain. This condition was regarded as one of cicatricial thickening and adhesion due to some old morbid process, probably of a tuberculous nature. The results of the operation in this case have, it is stated, been very good. The patient has remained almost quite free from the severe epileptiform attacks by which she was [illegible] monthly troubled every day before [illegible] treatment, having [illegible] very slight one. The author acknowledges, however, that the interval, which does not exceed four months, is too short to afford any guarantee of complete cure with regard to the convulsive attacks. In the second case reported by the author, the intracranial morbid condition consisted in adhesions of the dura and pia mater over the lower third of the fissure of Rolando, and also in a deposit in and about the region of nodular growths, which presented under the microscope the characteristic features of tubercle. The operation was followed, in the course of about three weeks, by a return of severe and frequently repeated convulsive attacks.

(353) Spontaneous Fistula from Gastric Ulcer.

Kronheimer (*Deut. Zeitschr. f. Chir.*, October, 1899) reports a case verified by *post-mortem* examination after an unsuccessful operation. The patient was aged 45, subject to anæmia for nine years; she had never been pregnant, and the period had ceased for two months. Dyspeptic pains had lasted for some time, and fixed pain was at length localised to a point a little below the left hypochondrium. At length violent vomiting and paroxysmal aggravation of the fixed pain took place. The pain was trifling when the patient fasted. A hard swelling developed at the site of the pain five months before admission into hospital, it grew red, then soft, and burst a fortnight before; dark fluid and pieces of food began at once to escape, and the pain diminished. Emaciation was advanced, the integuments were intensely irritated. Fluids drank by the patient escaped in jets through the fistula, and very little nutritive material was digested, hence feeding through the mouth or through the fistula was impracticable. Nutrient enemata were given, but the patient clearly could not be kept alive for long by such means. Hermes undertook an operation for the excision of the fistula. But the patient took the anæsthetic badly, and the heart's action was very weak; there was also double bronchitis. He therefore, having made a median incision above the umbilicus, did an enterostomy, opening the jejunum directly after its transition from the third part of the duodenum. His aim was to feed the patient through the jejunal fistula till her strength would allow of a more complete operation. This was practicable, but peritonitis set in, and the patient died on the ninth day. A large oval chronic ulcer was found in the anterior wall of the stomach, corresponding to the fistula.

MIDWIFERY AND DISEASES OF WOMEN.

(354) Menstrual Condition of the Average Girl in Average Health.

George L. Engelmann, of Boston (*Med. Record*, December 1st) has collected facts on this point from the records of 4,873 cases from high and normal schools, colleges, and department stores. The girls were between 15 and 26 years old, the majority between 18 and 22, in rather better than average health—in good health, and in numbers sufficient to admit of positive deductions as to what may be termed normal or average menstruation. In brief, the menstrual period proper was intensified by the increase of all vital energies, followed by a depression which appeared with the coming of the flow. Under ideal conditions and in perfect health the physiological status was such that this epoch, preceded by a day or two of heightened activity, was marked by a moderate lassitude, mental and physical, the flow persisting for from four to five days, and recurring at regular intervals of about twenty-eight days. It was a period of heightened susceptibility that quickly recorded any variation from the normal; excitement or exertion, or fatigue, mental or physical, were promptly reflected by variation in the function, and in our everday life such disturbing elements constantly occurred, so that conditions actually existing varied greatly from this ideal. The average period of the average girl in average health presented very different features: Regularity in 50 per cent. of the cases only; recurrence every 28 days in 30 per cent., varying most frequently from 26 to 42 days, 45 per cent. being over 28. The duration varied from 2 to 7 days, average 4 to 6. From 66 to 70 per cent. suffered more or less, the number of sufferers varying, according to age and nature of occupation, between 30 and 90 per cent. Lessened ability for exertion, mental or physical, was admitted by 60 per cent. Some few were habitually incapacitated from work, and 30 per cent. occasionally. The function of the girl in good health, under modern conditions of life, was by no means an ideal one in Engelmann's judgment; and, in fact, the functional health of the American girl—the coming mother of American men—was far from what it should be by right of inheritance and surroundings. This fact practitioners must recognise, and upon them and educators devolved the duty of study and correction of the evil.

(355) The Circulatory Apparatus in Pregnancy.

E. Bonomi (*Annali di Ostetricia e Ginecologia*, xxii, 753, October, 1900) has investigated anew the question of cardiac hypertrophy in pregnancy. From clinical observations upon 28 pregnant women and from the examination of various animals (cow, sheep, rabbit, cat, guinea pig) in a pregnant and unimpregnated state, the conclusion is drawn that there occurs a physiological and transitory hypertrophy of the cardiac muscular fibres. Observations of the blood of both hospital and private patients showed that pregnancy induced a state of slight anæmia, so slight as not usually to produce morbid symptoms; this tended to disappear with the establishment of lactation. The cardiac hypertrophy is to be accounted for by the increase in the mass of blood and in the abdominal pressure,

along with the addition of a new zone of circulation and the irritant action of excrete fœtal products circulating in the maternal blood.

(356) The Ovary in Mollities Ossium.

Scharfe (*Centralbl. f. Gynäk.*, No. 45, 1900) has carefully examined three pairs of ovaries removed from patients with mollities. Two were extirpated by vaginal hysterectomy on subjects not pregnant, the third were removed at a Porro's operation at term. The evidence was entirely negative, nor was there any distinction between the pair removed from a pregnant subject and the others. So far the effect of castration does not seem to depend on the removal of any pathological conditions resident in the ovary.

THERAPEUTICS.

(357) Treatment of Lupus.

Beilage (*Dermat. Centralbl.*, June, 1900) recommends the following formula, proposed by Unna: Acidi salycilici, liquor antimonii chlor. ad. 2; creosoti, ext. cannabis ind. ad 4; adip. lanæ S. The antimony is said to kill the bacilli, the creosote and cannabis indica allay the pain, and the salicylicacid aids penetration. When the disease is deep, liquor antimonii chlor. is applied on wooden matches, the ends of which are cut off and left *in situ* for 48 hours.

(358) Calomel Injections in Syphilis.

Fournier *Rev. de Therap.*, November 1st, 1900) gives his experience of the value of calomel injections in the treatment of syphilis. The method must not be regarded as a routine treatment, but as an exceptional one to be used in certain severe conditions, such as spinal and cerebral syphilis, iritis, phagædena, chronic palmar and plantar syphilides, ulcerating tuberculous syphilides, glossitis, and tertiary laryngeal and pulmonary syphilis. It should be regarded as a temporary measure to be used for one or two months till the severe condition is improved, when it should be replaced by more ordinary treatment. In the author's opinion, it is the most powerful agent we possess against syphilis. The technique is as follows: The calomel should be sublimed and not precipitated, as the latter is apt to form lumps. It is afterwards washed with boiling alcohol and then dried. The best vehicle is sterilised olive oil. A Pravaz syringe is used holding a gram, which contains 5 centigrams of calomel. The needle is introduced deeply into the gluteal muscles, and a slight interval allowed to elapse before the injection is made, to see if any blood appears. If this occurs the injection should not be made, since there is danger of pulmonary embolism. Fournier quotes a case in which this occurred. The average dose is 5 centigrams injected every seven or ten days. This may be increased to 7, 8, or 10 if necessary. In women, 3 or 4 centigrams are enough. Four or six injections are usually sufficient. The author remarks on the rapid action and beneficial results in many cases, and quotes several severe cases in his clinic which were cured by a few injections, sometimes only one. On the other hand he points out that such good results do not always follow, and sometimes the method fails. The objections raised against the method are the occurrence of stomatitis, gastro-enteritis, toxic effects, local reaction, and pain. Fournier, with doses of 5 centigrams, has seldom observed any bad mercurial symptoms; swelling and induration of the buttocks are frequent, but abscess is rare. Pain is the chief complication, and occurs in 3 out of 5 injections. It is sometimes very severe, but in the author's opinion the method should not be abandoned on that account in the severe and intractable cases in which he recommends it.

(359) The Germicidal Power of Ethylic Alcohol.

Bertarelli (*Il Policlinico*, October 1st, 1900) has tested the germicidal properties of ethylic alcohol in various strengths, from 25 per cent. to 100 per cent. Silk threads were impregnated with various bacilli (for example, B prodigiosus, pyocyaneus, staphylococci, vibrio, B. typhoid., etc.), and then immersed in alcoholic solutions of varying strength. From these researches alcohol appears to have only a moderate antiseptic value, and the more concentrated the solution the less the antiseptic power; 50 per cent. solutions are the most efficacious. Perhaps the reason of the comparative inefficacy of the stronger solutions is due to the fact that they cause greater coarctation of the peripheral masses of bacilli, and so leave the central masses more or less untouched. In spite of its low bactericidal power alcohol hinders the development and later vital manifestations of the micro-organisms. Alcohol appears to have an inhibitory effect on the antiseptic power of certain germicides (for example, corrosive sublimate) dissolved in it, and the greater the alcoholic strength the greater this inhibitory power.

PATHOLOGY.

(360) Diffuse Traumatic Amyotrophic Change.

Ballet and Bernard describe several cases (*Arch. Gén. de Méd.*, May, 1900) which have come under their own observation showing extensive atrophy of the limb muscles as the result of injury involving the peripheral parts of the extremity. The lesions in their cases consisted in penetrating wounds of the hand or forearm, bullet wounds, etc., together with one case in which the lesion was an arthritis of the wrist coming on in a labourer. In all of these cases the muscles of the shoulder group, upper arm, etc., showed atrophy. In each of these cases the most feature consisted in the appearance of ex limb, all the mu in size, which was progressive, though slow, and was accompanied by corresponding weakness. Sensation, objective and subjective, showed no departure from normal, except at times a slight amount of itching and tingling, which appeared considerably later than all the other results. In each case electrical examination showed decrease of faradic and galvanic stimulation, but no reaction of degeneration. The authors discuss the probable nature of this wasting. The idea that naturally occurs is that of an ascending neuritis, but on comparing the cases quoted with authentic instances of this affection certain differences are at once observed. The neuritis comes on very shortly if not immediately following the wound, and the nerve which has been injured is the only one to show the neuritic change as a rule. In the cases under consideration, however, there were no neuritic symptoms dating from the lesion, the nerve trunks remaining to all appearances healthy between the wound and the upper portion of the member. The authors state that in such cases certain chromolytic changes take place in the cornual cells corresponding to the limb affected, changes to which the name reaction from a distance has been applied, and which was originally described by Nissl. Such changes may be found under a variety of circumstances, such as wounds in the hand or foot, injuries to branches of the cauda equina, etc. It would appear according to the writers that when the terminations of the nerve are injured that this reacts on the cells of the neuron, which as a consequence suffers thereby, inducing the usual changes characteristic of degeneration of these cells.

(361) Congenital Absence of Fibula.

W. A. Wood (*Intercol. Med. Journ. of Australasia*, v, 260, May 20th, 1900) reports two cases of congenital absence of the fibula. In one of these, an infant 6 months old, no fibula was to be felt in the right leg, although both malleoli were present. The foot had three small toes and one large one, which the *x* rays showed to be a fusion of two toes. The right tibia had a slight antero-posterior bend. The left leg had no fibula; there was an acutely curved tibia with anterior convexity; the left foot was in talipes valgus position, and had two small toes and one big one. There had been constant pain in the uterus during pregnancy. In the other case, a child 2½ years old, the birth had been a face presentation. The thighs were much bent, and had been so at birth. The mother was normal, but had had a miscarriage of twins and a deadborn infant. Both the thighs were arrested in de[illegible]ent, the skin of the perineum [illegible]ut 1 inch from the knee. [illegible] was absent on the left side. [illegible] was dislocated wholly ou[illegible]t. He were three small toes [illegible] one. The [illegible] The *x* rays [illegible] dislocation of both [illegible]; in determining [illegible] kidney is diseased and the

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